

ECORESTORATION RESTORE SUBCOMMITTEE

This is the portal list of projects tied to Eco-restoration related projects.

Columns H-P you will note all of the respective sub-committee subjects. These represent check boxes in the portal project application process that an individual submitter may select.

Column H (the GRAY column) represents Eco-restoration.

Ecosystem_FULL tab represents all portal projects that checked the eco-restoration box.

Ecosystem_PARED represents a paired down or filtered list of portal projects.

Three classes of filter were placed on the FULL list:

- 1) projects already funded, going to be implemented, and/or vetted to be not feasible through earlier screening and vetting processes (LIGHT GRAY FILLED)
- 2) projects mischaracterized or misrepresented - i.e., shouldn't be considered under this respective sub-committee's charge (LIGHT ORANGE)
- 3) program like projects that are captured under broad program goals like Water Quality, Land Acquisition, and Beneficial Use, or too broad to be implemented as written (LIGHT GREEN)

No project has the "who" submitted the project identified.

MDEQ does not vet portal projects AT ALL. If a submitter says it costs \$1M we assume it does. We only vet a project once is identified as a potential for funding.

Go Coast	PROJECT ID	PROPOSAL DATE	PROJECT NAME	DESCRIPTION	LOC. COUNTY	ECOLOGICAL	INFRASTRUCTURE COMPONENT	INFRASTRUCTURE BUDGET PCT	ACT ECONOMIC DEVELOPMENT	RESEARCH AND EDUCATION	SEAFOOD	SMALL BUSINESS	TOURISM	INDUSTRY DEVELOPMENT	ACT OTHER	ESTIMATED COST	FUNDING AVAILABLE	COMMENTS
Eco Restoration	7	10/18/2013	Restore watersheds	FEMA is making flood insurance too expensive for many waterfront properties Property owners and the environment would both be well served by purchasing these properties and returning them to their natural state resulting in a better buffer in anticipation of the next Katrina like storm.	Hancock, Harrison, Jackson	Yes	No		No	Yes	Yes	No	No	No		\$ -	\$ -	
Eco Restoration	10	10/18/2013	Offshore Reef Restoration, Establishment and Monitoring	MGFB has been organized since 1969. We are a nonprofit group run entirely by volunteers. Our only goal is to build artificial reefs off the coast of Mississippi. In addition we monitor these reefs monthly to assess their viability and productivity as well as take periodic water samples to gauge Dissolved Oxygen content and contaminants. We continuously publish these findings on our website (MGFB.org) and have done so for 12 years. In addition we include numerous High Resolution photographs and videos. We are the only organization to do so, including the Mississippi Department of Marine Resources. MGFB is the permit holder for fourteen (14) approved reef sites. We have worked hand in hand with the MDMR since their inception. Together we have established an extensive reef system both within state waters and federal water off the coast of Mississippi. Unfortunately, we rely entirely upon donations. Since Hurricane Katrina these revenue streams have dried up. Any funding received from the Restore Act would be used exclusively for the construction and monitoring of additional reefs on our permitted sites. We have little to no overhead since we are volunteers. Our financial statements and monthly minutes can be found on our website. We pride ourselves on being good stewards of not only the environment but our financial resources as well. The habitat provided by these reefs greatly enhances the marine fisheries in our coastal waters. This has a direct and positive effect on many different aspects of fishing and diving in South Mississippi. This includes individual, commercial and licensed charter fishermen. Additionally, this extends to local businesses such as marinas, bait, tackle and ice sales and boat and fuel sales. Our organization has a long track record of being good stewards of the resources allotted to us. We will continue in that vein with any funds received as a result of this request.	Hancock, Harrison, Jackson	Yes	Yes	100%	Yes	No	Yes	Yes	Yes	No		\$ 1,000,000.00	\$ 50,000.00	
Eco Restoration	21	10/18/2013	Gulfport VA inshore reef enhancement	The Gulfport VA reef is a productive inshore reef. It could be greatly improved and restored by adding more quarry stone and surrounding it with a zigzag breakerwater rock pile. According to research, taller reefs attract a greater variety of fish species. The Katrina reef in Biloxi has proven to be a success. Gulfport needs a breakerwater reef. With the increasing popularity of kayaks and other small boats this would be a draw for them. The addition of oyster beds in the area would also improve water quality which is a constant issue in this location as well as others where drains empty into the gulf. Use plant material around drains to act as natural water filters. The planting of marsh grass in the protected areas of the breakerwater would also filter the water and act as breeding areas for sea life. Add additional marsh grass along the existing sandy beach near the boat ramps.	Harrison	Yes	No		Yes	No	Yes	No	Yes	No		\$ -	\$ -	
Eco Restoration	23	10/20/2013	Beach & Marsh Restoration	Planting marsh grass from Hwy 90 to the off shore islands in the MS Sound from New Orleans to Mobile. Allowing for beach spots placed where parking is now available so the less "imported" sand would be used would eliminate having to remove so much sand from the roads saving millions in maintenance per year. Planting the marsh in a staggered pattern running parallel to the beach would allow for boat passage, help with storm surge, protect the beach from the wind, provide estuary for animal and plant life, increase production of all forms of seafood, increase production of seafood industry, clean the water of pollution, make our beaches safer, cleaner, and more beautiful, provide sanctuary for all types of birds, and would increase revenues from tourism and provide fresh clean seafood for our many wonderful restaurants. Such a project would be a WIN, WIN, WIN situation for all of the Gulf Coast in the MS Sound all along the Gulf Coast.	Hancock, Harrison, Jackson	Yes	No		Yes	No	Yes	No	Yes	No		\$ -	\$ -	
Eco Restoration	24	10/21/2013	Monitoring Population Ecology of a Critical Coastal Biondicator, the Mississippi Diamondback Terrapin (Malaclemys terrapin pileata)	The Mississippi diamondback terrapin (Malaclemys terrapin pileata) is an estuarine turtle that exclusively inhabits coastal bays and salt marshes along the Atlantic and Gulf of Mexico coasts. It is considered a keystone species that contributes to the maintenance of salt marsh integrity. Terrapins were once abundant throughout their range; however, knowledge gaps exist regarding the viability of populations in many areas of the Gulf coast, including Mississippi. Numerous threats adversely affect terrapin populations including habitat loss, crab trap mortality, and nest predation. In addition to these current threats, pollution from the Deepwater Horizon oil spill degraded vital salt marsh habitats in the northern Gulf of Mexico. Monitoring a long-lived species in a disturbed environment can provide insight into the extent of damage to the particular species along with its habitats and prey. Because the diamondback terrapin is a long-lived species and plays an important role in these estuarine habitats, it represents a critical bioindicator of the health and integrity of salt marsh ecosystems. Salt marshes in Mississippi provide both ecological and economic gains to the state's residents; therefore, monitoring the status of a bioindicator of these important habitats will benefit the state. Long term surveys of diamondback terrapin populations in Mississippi were initiated in 2012, and these surveys are conducted in both salt marsh channels and nesting beaches. The surveys will continue to monitor the health, reproductive success, and population ecology of the diamondback terrapin so that an adequate assessment of short- and long-term damage to this declining species and its vital habitat can be made. This project will be a collaborative partnership between the Institute for Marine Mammal Studies and the University of Alabama at Birmingham.	Hancock, Harrison, Jackson	Yes	No		No	Yes	No	No	No	No		\$ 3,000,000.00	\$ -	
Eco Restoration	47	10/23/2013	Linear Park on Beach Boulevard	The concept is to engage leading landscape architecture firms to establish a master plan to transition the Mississippi Gulf Coast's 26-mile man-made beach into a flourishing linear park along the Gulf of Mexico. A linear park that will be a touted haven for tourists, significantly enhance the Gulf Coast environmentally and provide the state of Mississippi with a preeminent eco-tourism destination. Linear Park on Beach Boulevard perfectly complements the region's tourism landscape. Perhaps more importantly, the Mississippi Gulf Coast will see a transformation from a "budget beach" to a transcendent park nestled between scenic Beach Boulevard and the Gulf of Mexico - a truly unique and premier landing place developed with the environment, tourism and storm preparedness in mind.	Harrison	Yes	No		Yes	Yes	No	No	Yes	Yes		\$ 100,000.00	\$ -	
Eco Restoration	49	10/24/2013	Mississippi Coastal Improvement Process	The money should be used to fully fund the Mississippi Coastal Improvement Process (MSCIP). The MSCIP was set up to purchase low lying property from Katrina Victims and is well documented.	Harrison, Jackson, Hancock	Yes	No		No	No	No	No	No	No		\$ 500,000.00	\$ -	
Eco Restoration	52	10/24/2013	Graveline Bay Preserve Land Acquisition	The following is from the Department of Marine Resources web site: http://www.dmr.ms.gov/jpomia16/index.php/mississippi-gems/215-graveline-bay Coastal Zone Management Mississippi Department of Marine Resources Mississippi GEMS Graveline Bay Preserve Details:Category: Mississippi GEMS 1.Graveline BaySite Information Point(s) of Contact: Mississippi Department of Marine Resources, Coastal Preserves Program 2.Geographic Information: The land is located between Ocean Springs and Gautier along the Mississippi Gulf Coast. 1.Narrative Description of the Site: The wetland boundary of this 2,339-acre preserve is Graveline Bay and Bayou. One exception is the exclusion of one major tributary, Graveline Bay and Bayou represents one of few relatively undisturbed estuarine bays and small tidal creeks in Mississippi. The area supports salt marsh, brackish marsh, and several oyster beds. The bay, marsh, adjoining upland forest, and undeveloped beach front near the mouth of Graveline Bayou are an important landing area for neotropical migrant birds. This coastal bay/marsh estuarine system receives only local freshwater runoff and consists largely of mid-level needle rush (Juncus roemerianus) dominated marsh along its entire length. Smooth cordgrass (Spartina alterniflora) occurs largely as narrow (1-3 m) bands along the creeks and bayous. 2.Date When Information Last Updated: March, 1998 3.Location: Jackson County, N30 E 21" 47" W88 E 41" 41" 4.Area of Influence: Watershed 5.Ecological/Cultural Characteristics: Habitat type: The following ecological communities are expected or known to occur: Estuarine subtidal 1) muddy sand embayment 2) small tidal creek 3) mollusk reef 4) estuarine intertidal 1) sand beach 2) mesohaline marsh 6.Rare/Endangered Species:1.Malaclemys terrapin Diamondback Terrapin 7.Juniperus silicicola Southern Red Cedar	Jackson	Yes	No		No	Yes	Yes	No	Yes	No		\$ -	\$ -	
Eco Restoration	53	10/24/2013	Seafood Receiving, Processing, and Distribution Dock	The proposed location for this Working Waterfront Seafood Receiving, Processing, and Distribution Dock is the site of the former Gulf City Fisheries which is located on the east side of the Pascagoula River just north of the Highway 90 bridge. This facility will provide a one-stop, short-term and long term mooring, unloading, ice and fuel service as well as value added processing which occurred at this location from the late 1950's to the 1990's. This is a sincere effort to revitalize the local commercial fishing fleet which has been at-risk since Hurricane Katrina and further negatively impacted by the BP oil spill. A thorough hard copy of this proposed project has been forwarded to MDEQ Director Ms. Trudy Fisher. Thank you, Bruce W. Mathan	Jackson	Yes	Yes		Yes	No	Yes	Yes	Yes	Yes		\$ 4,881,792.00	\$ -	

Eco Restoration	88	10/29/2013	Mississippi Habitat Stewards Program	<p>Summary: Mississippi Wildlife Federation requests consideration of funding to continue growth and success of Mississippi Habitat Stewards Program along our Gulf Coast, assuring a team of trained volunteers to provide services to natural area managers, especially those related to public use, access and interpretation. Habitat Stewards also provide an engaged citizenry to support greater public support of natural areas management and restoration.</p> <p>Background: In July 2010, in response to the Deep Water Horizon explosion and the anticipated arrival of oil along Mississippi's shoreline, the National and Mississippi Wildlife Federations launched a volunteer surveillance network. This network of volunteers across the coast was established to monitor sections of shoreline and document their findings. By late summer, it became evident that damages from the BP oil spill would be dramatically different from those experienced after the Exxon Valdez disaster. However, many of the volunteers were still anxious to provide meaningful efforts on behalf of the coastal wildlife and their habitats.</p> <p>With this request in mind and with a clear understanding of the needs of natural lands managers on the Coast, Mississippi Wildlife Federation received grants from Shell Oil and BP in 2011 to develop a one-of-a-kind program for volunteers to be trained in coastal habitats and management of natural areas, named Mississippi Habitat Stewards. After completing the training, mentors introduce the new Habitat Stewards to natural lands managers to match volunteers with certain skills and partners with corresponding needs. The success rate of the program depends on the continued mentoring and landowner needs assessments by Mississippi Wildlife Federation. Currently, 38 students have completed the 24 hour training program. From 2011-2013, Mississippi Habitat Stewards have completed over 4,100 hours of volunteer service for natural land management tasks at many partner locations across the coast including: <ul style="list-style-type: none"> Mississippi Coastal Preserves (managed by Department of Marine Resources) Observation parks owned and managed by Land Trust for the Mississippi Coastal Plain Mississippi Sandhill Crane National Wildlife Refuge Brand Bay National Wildlife Refuge Walking Trails at USM Marine Education Center at Cedar Point state Rails at Shepherd State Park </p> <p>Wildlife Tourism, Natural Resource Management & Coastal Restoration: Because much of the work of the Mississippi Habitat Stewards is related to public use issues on natural lands in south Mississippi, there is a distinct overlap for ecotourism markets. Habitat Stewards are keeping natural area locations clean, safe and interpreted for all visitors, including eco-tourists. Mississippi Wildlife Federation's request for the Mississippi Habitat Stewards Program provides important capacity to continue the success of the program as well as filling a much needed void for thousands of acres of private and public land/land pine forests, swamps and coastal marshes within the three coastal counties are in need of management activities including prescribed burning and exotic plant control to restore habitats of native wildlife and plants and also to increase values of privately owned forest lands for recreational use and forest products. This program will establish an organization of professional fire practitioners to apply fire as a science based management tool on private and public wildlands adjacent to or in close proximity to established core conservation areas. All team teams will be trained by National Wildlife Coordinators. Each team includes the following staffing and equipment: type 1 prescriber (one burn boss type 1 tractor plow or tracked engine with operator, one type-6 engine with engine boss and three type-1 firefighters). Based on funding, a maximum of three teams will be established. Teams may work independently or in conjunction with each other or with established fire crews from local, state and federal agencies to apply prescribed fire on approved public and private lands. Team members will be available to make presentations concerning the benefits of prescribed fire to school and civic groups and to provide fire management training to local landowners and firefighters. When not engaged with prescribed fire-related activity, teams will engage with other land management needs: monitoring results of prescribed fire projects; conducting fuel reduction and invasive species control; monitoring, mapping and maintaining public access and nature trails; and prescribed fire education projects. Teams will be supervised by a field coordinator (professional fire manager) who will oversee safety, training, work assignments, planning and coordinating with local partners and cooperators.</p>	George, Harrison, Jackson, St. Tammany, Stone, Hancock, Pearl River, Mobile	Yes	Yes		Yes	Yes	No	No	Yes	No		\$	1,175,855.00	\$	600,000.00	
Eco Restoration	89	10/29/2013	Gulf Coast Prescribed Fire Cooperative	<p>The subject property is one of the last remaining contiguous tracts of land along the Mississippi's Gulf Coast of its size. Since the oil spill in 2010, nearby residents have noticed a big decrease in vegetation, marine life, wildlife and other resources predominant throughout the property before the spill. The loss of marsh land has been proven to magnify erosion by a significant amount. The land is well positioned to become a large scale multi-use development that could provide much needed amenities to the area including boat ramps, boardwalks, piers, bike paths and other economic drivers. At the same time, our intention is to keep a large portion of the land in its natural state and not disrupt the natural ecosystem of birds, wildlife and vegetation. The current height requirements for building on the land range from 16-18 foot above sea level. Given these minimum height requirements, most options for the land are not feasible due to capital required to abide by these mandates. Ideally, we want partners to form public/private partnerships to provide benefits from the reshaping of the land through infrastructure improvements (water, roads, etc.) and shoreline and marsh restoration. If these costs are not substantiated, it would be in the best interests for the allocation to be set aside to purchase the land for government use. With it's close proximity to Gulf Islands National Seashore, the property would be ideal for a multitude of uses including public access, recreation, outreach, research & education and economic development.</p>	Hancock Harrison, Jackson	Yes	No		Yes	Yes	No	No	Yes	Yes		\$	15,100,000.00	\$		
Eco Restoration	94	1/1/1900	Bayou Grand Shoreline Stabilization	<p>The subject property is one of the last remaining contiguous tracts of land along the Mississippi's Gulf Coast of its size. Since the oil spill in 2010, nearby residents have noticed a big decrease in vegetation, marine life, wildlife and other resources predominant throughout the property before the spill. The loss of marsh land has been proven to magnify erosion by a significant amount. The land is well positioned to become a large scale multi-use development that could provide much needed amenities to the area including boat ramps, boardwalks, piers, bike paths and other economic drivers. At the same time, our intention is to keep a large portion of the land in its natural state and not disrupt the natural ecosystem of birds, wildlife and vegetation. The current height requirements for building on the land range from 16-18 foot above sea level. Given these minimum height requirements, most options for the land are not feasible due to capital required to abide by these mandates. Ideally, we want partners to form public/private partnerships to provide benefits from the reshaping of the land through infrastructure improvements (water, roads, etc.) and shoreline and marsh restoration. If these costs are not substantiated, it would be in the best interests for the allocation to be set aside to purchase the land for government use. With it's close proximity to Gulf Islands National Seashore, the property would be ideal for a multitude of uses including public access, recreation, outreach, research & education and economic development.</p>	Jackson	Yes	Yes	2000%	Yes	No	Yes	No	Yes	Yes		\$	7,350,000.00	\$	-	
Eco Restoration	95	10/31/2013	Point Clear Island restoration/preservation and coastal access project	<p>The Point Clear Island project is a former DMR approved mitigation site for a casino project which was never built. As the owner of the island and adjacent mainland lot I have sought partners from the City of Gautier, Land Trust and Conservation Fund to acquire and implement the restoration and construct the pile supported island walkways and Graveline Bayou overlook. Land acquisition and construction is estimated to be less than \$400,000. It would be good to name the project the Jean Baptiste Beauvais de Graveline Island walk in honor of one of the earliest coast settlers.</p>	Jackson	Yes	Yes	6200%	No	Yes	No	No	Yes	No		\$	490,000.00	\$		
Eco Restoration	97	10/31/2013	Cedar Lake Acquisition	<p>Approximately 14 water front acres with a potential interpretive center could be acquired. The property is located at Cedar Lake adjacent to the Tchouatacouffou River. Approximately 2 acres are on Cedar Lake island with the remainder on the mainland. The property connects approximately 45 acres of preserved land to the river.</p>	Harrison	Yes	Yes	2000%	No	Yes	No	No	Yes	No		\$	890,000.00	\$	-	
Eco Restoration	98	11/30/2013	Artificial Reefs	<p>I have been propagating fin fish in front of my house for 15 years prior to Katrina on an artificial reef in front of my house. My stock matures quicker and spawns sooner than the natural stock. I'll be happy to pass my information on to the state. All I ask is that the state assign me a biologist to monitor the results and if satisfactory to MDQI, the results can be easily and cheaply duplicated.</p>	Harrison	Yes	No		No	No	Yes	No	No	No		\$	-	\$	-	
Eco Restoration	103	11/12/2013	Southern Mississippi Applied Restoration Toolkit (SMART): Coastal restoration vulnerability assessment and prediction	<p>Barrier Islands and marshes serve as buffer zones and filters between the Gulf of Mexico and maintain human population centers and infrastructure, protecting these communities from the most devastating impacts of oil spills. Mississippi (MS) barriers and marshes themselves are also some of the most popular tourist and recreational destinations along the Gulf Coast. Furthermore, they support diverse micro-, meso-, and macrofaunal assemblages and ecosystems. Over the past 50 years, the MS barrier islands and marshes have been eroding rapidly primarily due to a combination of accelerated relative sea-level rise, hurricane impacts, and anthropogenic influences coupled with a marked decrease in sediment deliveries to the coast. These factors are expected to have a continued widespread impact for the coming decades along the MS coast. Therefore, our vulnerability to future oil spills might be increasing significantly, not to mention additional adverse effects associated with loss of these coastal environments. Numerous coastal restoration projects in the state of MS have been proposed to meet the RESTORE program goals. For example, some of these efforts aim to restore hydrology patterns, dune fields, marshes, vegetation, barrier islands, and forests covering 10K+ of thousands of acres. These will truly be large efforts, and highlight the importance of these environments towards mitigating future risk. However, in order to fully remedy harm and reduce risk to the MS Gulf Coast natural resources, a detailed understanding of the balance between sediment supply, sea-level changes, and hurricane impacts is of crucial importance. Without this, many of these projects could potentially see short-lived success. This information could thus be used to better plan these restoration efforts, and make them more successful in the long-term, in addition to understanding current and future vulnerability.</p>	Hancock Harrison, Jackson	Yes	No		No	Yes	No	No	No	No		\$	4,905,000.00	\$	-	
Eco Restoration	108	11/14/2013	Comprehensive Water Quality Enhancement Program in the Mississippi Gulf Coast Region	<p>The Mississippi Gulf Coast Region Utility Board (the Board) respectfully presents to the Mississippi Department of Environmental Quality (MDEQ) this proposal to fund a comprehensive water quality enhancement program in the Mississippi Gulf Coast region through the Resources and Ecosystems Sustainability, Tourist Opportunities, and Revived Economies of the Gulf Coast States Act of 2012 (the "SETOUR Act") 33 U.S.C. § 1321. Background The Board was created pursuant to the Gulf Coast Region Utility Act (the "GCRUA") Miss. Code Ann. §§ 49-17-703, et seq., as a forum for the six county utility authorities in the Mississippi Gulf Coast region to collaborate and cooperate regarding, among other things, water, wastewater and storm water issues, to assist in the efficient management of water, wastewater and storm water resources, to develop recommendations pertaining to water, wastewater and storm water systems, and to provide assistance, funding and guidance to the member county authorities to assist in the identification of the best means to meet all present and future water, wastewater and storm water needs in the Mississippi Gulf Coast region. Following Hurricane Katrina, Mississippi Governor Haley Barbour designated \$65.7 million of the United States Department of Housing and Urban Development's Community Development Block Grant (CDBG) funds to the Mississippi received for water, wastewater, and storm water infrastructure improvements through the Mississippi Gulf Coast Regional Infrastructure Program (the "GCRIP") and the Mississippi Department of Environmental Quality (MDEQ) as the agency responsible for accountability of funds, technical oversight, and project management for the Program. Funding under the Program was utilized for projects by the county utility authorities for five of the six counties in the Gulf Coast region (Pearl River, Stone, Harrison, Jackson, and Hancock Counties), with George County opting out of the Program. Under the Program's Action Plan, the objective was to identify the most critical needs in water and sewer infrastructure in the Gulf Coast Region and to prioritize and implement projects to meet those needs. Projects under the Program provide a backbone for many existing water systems to provide water in the event of future storms and consolidation of wastewater treatment. Water Quality Concerns and Needs Unfortunately, certain activities under the Program's Action Plan were not eligible for CDBG funding. Accordingly, numerous subdivisions and communities throughout the five participating counties in the Gulf Coast region remain unconnected to new wastewater treatment facilities and rely on decentralized, onsite, malfunctioning septic systems that cannot be repaired or replaced with a functioning onsite sewage disposal system due to the high seasonal water tables and poor soil conditions. The failing septic systems discharge raw sewage and effluent with polluting concentrations exceeding established water quality standards into subsurface and surface waters, contributing significant amounts of pollutants, especially nitrogen and microbiological pathogens. Consequently, excessive nitrogen discharges to sensitive coastal waters and phosphorus pollution of inland surface waters, which increase algal growth and lowered dissolved oxygen levels, as well as the contamination of important shellfish beds and swimming beaches by pathogens. Most of the rivers and bays in the Gulf Coast Region are listed on Mississippi's Section 303(d) List of Impaired Water Bodies, which include stream reaches, lakes, water body and water body segments with chronic or recurring monitored violations of the applicable water quality criteria where required pollution controls are not sufficient to attain or maintain applicable water quality standards. Proposed Water Quality Enhancement Program The only viable solution to this precarious situation facing the Mississippi Gulf Coast is to establish a comprehensive water quality enhancement program to implement a collection system infrastructure to pump the raw sewage in these unconnected neighborhoods and communities to the new wastewater treatment facilities for treatment and disposal. Such a program is an ideal fit for funding under the RESTORE Act, which has the statutory purpose of supporting projects aimed at helping the Gulf Coast region recover from environmental and economic injuries experienced as a</p>	Pearl River, Stone, Hancock, Harrison, Jackson	Yes	Yes	9000%	Yes	No	Yes	No	Yes	No		\$	994,400,000.00	\$	-	
Eco Restoration	109	11/19/2013	Habitat Restoration & WQ Management in the mallini Bayou System	<p>Design-Build project involving the dredging of 5.7 miles of 12 inter-connected bays, construction of a seawater inlet pipeline-pump station and installation of aeration devices. Facility operations intend to manage WQ through the system to eliminate fish kills caused by stagnation & hypoxia, reduce nutrient content & coliform counts, and restore functionality as an aquatic nursery.</p>	Harrison	Yes	Yes		No	No	No	No	No		\$	20,375,000.00	\$	-		
Eco Restoration	1146	10/7/2011	Blow River	<p>(ORIGINAL ID#1139) Palmer Creek and Blow River are the west boundary of the parcel that is adjacent to the DeSoto National Forest on its southeast and north boundary. Conservation of the parcel would preserve natural species flowing into the Blow River that flows into Back Bay on the Mississippi Coast.</p>	Harrison	Yes	No		No	Yes	No	No	No		\$	750,000.00	\$	-		
Eco Restoration	1147	7/12/2011	Restoring Finfish of Importance to the Northern Gulf of Mexico	<p>(ORIGINAL ID#102) Aqua Green, LLC is an established Recreational firm located in Pelicanon, MS. The company is involved in production of freshwater and marine finfish for food as well as for restoration purposes. The following juvenile marine finfish species can be produced by Aqua Green to help restore northern Gulf of Mexico coastal waters (prices/species available upon request): red drum (Sciaenops ocellatus), spotted seatrout (Cynoscion nebulosus), cobia (Rachycentron canadum), southern flounder (Paralichthys lethostigma), Florida pompano (Trachinotus carolinus), and Atlantic croaker (Micropogonias undulatus). In addition to the company's operational status with completed facilities, Aqua Green has established working relationships with the following partners: Auburn University, Gulf Coast Research Laboratory, Louisiana State University, Louisiana Universities Marine Consortium, Mississippi Dept. of Marine Resources, Mississippi State University, Mote Marine Laboratory, Southern University, and USDA. Aqua Green can provide immediate impact to the restoration of finfish of importance to northern Gulf of Mexico inshore and nearshore waters.</p>	Hancock Harrison, Jackson	Yes	No		No	No	Yes	No	No	No		\$	5,000,000.00	\$	-	
Eco Restoration	1148	1/1/1900	Case Manager/Strimmer	<p>(ORIGINAL ID#134) OH clean-77up on the north side of the Gulf of Mexico.</p>	Hancock Harrison, Jackson	Yes	No		No	No	No	No	No		\$	-	\$	-		

Eco Restoration	1152	11/9/2011	BLS Municipal Harbor Improvements	(ORIGINAL ID#11459) This project consists of improvements to the BLS Harbor located at 100 Lady Compretta Drive, near Downtown. Proposed projects consist of: 1. The City proposes to construct Pier 5 inside the BLS Harbor. The project consists of permitting and coordination with regulatory agencies, design, bidding and construction of a new 10' wide timber pier with concrete piling associated water and electrical utilities and lighting. The BLS Harbor has proven to be an economic driver for Hancock County and BLS since it's opening in 2013 and boasts one of the highest occupancy rates of all harbors on the MS Coast. The proposed Pier 5 project will add approximately 18 65' wet slips and approximately 25 35'-40' wet slips. These slip sizes represent the size range in most demand, all current slips in this size range are leased to long term slip holders. 2. Planning and preparing a maintenance dredging plan for BLS Harbor dredging and for removal of approximately 60,000 CY of material from the BLS Harbor basin. The planning stage will consist of hydrographic surveying of all canals and the harbor basin to determine the amount of material which needs to be dredged and utilized for marsh restoration. 3. Bay St. Louis proposes to extend the existing Day Pier which is located adjacent to the Rutherford Pier at the Municipal Harbor. The Day Pier is used daily to dock local transient vessels which frequent the nearby downtown establishments. The current pier is approximately 201 ft in length can not support the amount of vessels which frequent the area. The extension would add an additional 400 ft of docking space and enhance and support local and regional tourism efforts.	Hancock	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No	\$	4,300,000.00	\$	-	
Eco Restoration	1154	9/26/2011	Heller Park Environmental Enhancement Project	(ORIGINAL ID#11204) Heller Park Environmental Enhancement Project is designed to increase public awareness of the Coast's natural resources such as wetland plant and animal species unique to the bayou ecosystem. Included in the proposal is funding to restore Bayou La Porte's natural tidal flow thereby improving water quality and marine conditions for aquatic animals as well as restoration of wetlands to eradicate non-native plant species and replacement with native wetland plants. The total cost of BP, PLC to partner with the City of Biloxi would be \$2,900,000. The plan for Heller Park includes those improvements in the original Tidelands Grant application and also replacement of the existing boat ramp with finger piers and a parking area in Bayou La Porte. Dredging of Bayou La Porte to remove sediment will enhance the natural tidal flow to the Bayou, improve water quality in the Bayou and Back Bay, provide better marine habitat conditions, and provide better access to the boat ramp. Also proposed are four fishing piers, an 800' boardwalk to be located in Back Bay along the north shore of the park as well as wood footbridges in other natural areas. The piers will provide access to recreational fishing, crabbing, and shrimping, and will assist the City of Biloxi Summer Playground program by allowing children to fish, throw the cast net, and learn about nature. The boardwalks will increase public access throughout the park and will have benches, lighting, and educational signage describing native plant and animal species as well as other resources of coastal and bayou ecosystems. The existing bulkhead will be replaced to provide safer access to onshore fishing in the park. The Mississippi Renaissance Garden is a public garden and horticulture center that will promote horticulture therapy, sustainable healthy lifestyles and economic growth to the residents, volunteers, and visitors of the Mississippi Gulf Coast. It will include walkways, gazebos, specialty gardens, water features, outdoor classroom, festival area, benches, greenhouse, composting area, and previous parking lots. The City also proposes to perform wetland restoration along the banks of Back Bay and Bayou La Porte to include removal of non-native plant species and replaced with native wetland plants. This will restore the shoreline's ability to act as a natural filtration system of the stormwater runoff and will enhance the natural ecosystem of the bayou and support marine and wildlife habitat.	Harrison	Yes	Yes	Yes	No	No	No	No	Yes	No	\$	2,900,000.00	\$	-	
Eco Restoration	1155	9/26/2011	Bayhead Swamp Environmental Enhancement and Wetland Restoration Project	(ORIGINAL ID#11201) Bayhead Swamp Restoration project is a unique opportunity to create a highly visible environmental project along the major Biloxi tourist thoroughfare Hwy 90. The City of Biloxi has \$4,000,000 of the total \$8,815,000 needed to complete this project. The State of Mississippi has approved this environmental project and the project is currently awaiting award of Public Trust Tidelands money. Located across from the Biloxi Lighthouse, a national registered monument, the original Bayhead Swamp has been filled by private owners and more recently Hurricane Katrina. In its original state, the swamp served as a catch basin for an estimated 40 acre area of the City of Biloxi. The City proposes to purchase land from private ownership, restore Bayhead Swamp to a functioning catch basin, and restore native plant species. The total project funding from BP, PLC would be \$4,815,000. The City proposes to purchase approximately 1.25 acres of property from various private property owners and restore the northern portion of the property to its original state as a functioning bayhead swamp. This will include removal of accumulated sediment and illegal fill and the re-contouring of the banks to restore the natural drainage flow and to hold stormwater runoff. Wetland and wildlife habitat will be restored along the banks through the removal of invasive plant species and reintroduction of native plants. The native marsh grasses and plants will enhance the bayhead swamp's natural filtration process, help to remove nonpoint source pollutants from stormwater and improve water quality before entering the Mississippi Sound. This project provides opportunities to enhance the environment but also to expand public recreation and coastal resource education through public walking trails, benches, and educational signage. Additional parking will be installed along Hwy 90. Construction of a pedestrian bridge will increase public access and link the parking area to the children's playground area and a nature trail that will loop through the restored bayhead swamp. All weather educational signage will be installed along the trail to identify bayhead swamp ecosystems, functional native plant species and wetland plants and animal species unique to the bayou ecosystem. Bench type seating will be located along the trail to allow park visitors a place to stop and enjoy the unobstructed views of the Biloxi Lighthouse and the Mississippi Sound from the shade of ancient oak trees.	Harrison	Yes	Yes	Yes	No	No	No	No	Yes	No	\$	4,815,000.00	\$	-	
Eco Restoration	1157	9/26/2011	Bayou Auguste Environmental Enhancement and Wetlands Project	(ORIGINAL ID#11193) Bayou Auguste Environmental Enhancement Project is designed to protect and enhance Bayou Auguste. In the aftermath of the oil spill, BP affirmatively acted to protect this delicate area from harm therefore both parties have recognized the environmental importance of this body of water. The goal of the project is conservation and restoration of the waterway to its natural function as a tidally influenced water body. A secondary goal of the Bayou's environmental importance via a trail along its banks. The total project funding sought from BP, PLC would be \$685,000. The City of Biloxi has been working with the Gulf Coast Community Design Studio (GCCDS), Biloxi Housing Authority, Biloxi Public Schools, and the Land Trust for the Mississippi Coastal Plains in their effort to enhance and restore Bayou Auguste. The goal of this work is to conserve and restore Bayou Auguste to its natural function as a tidally influenced water body, to enhance public access to the Bayou through a trail along its banks, and to improve water quality not only in the bayou but also in Back Bay. The project will include improvements to the bayou's effectiveness as a natural filtration system for stormwater runoff and will enhance the ecosystem of the bayou to support marine and wildlife habitat, wetland restoration and public access. This project will include removal of riprap along the banks, removal of the Old Bayview Ave Bridge and re-grading of the Bayou banks to remove sediment thereby returning the Bayou to a more natural flow which will increase stormwater retention capacity. Wetland marsh restoration will also occur which will include the removal of accumulated sediment and illegal fill and replacement of non-native plant species to be replaced with native wetland plants. This will improve the natural ecosystem and provide for improved stormwater runoff pollution removal capabilities which will result in better water quality in the bayou and Back Bay. An educational walking trail will be installed along both the North and South sides of the bayou to provide safer public access to the bayou. This trail will include boardwalks, walking trails, observation platforms and signage identifying native plant and animal species. The trail will begin upstream along the Bayou and will end at Back Bay Blvd. This will help to increase the public awareness of and appreciation of the Coast's natural resources such as wetland plants and animal species unique to the bayou ecosystem.	Harrison	Yes	No	Yes	No	No	No	No	Yes	No	\$	685,000.00	\$	-	
Eco Restoration	1158	7/8/2013	Tchoutacouffu Nature Area/Blueway & Greenway	(ORIGINAL ID#12019 2) The Tchoutacouffu River Blueway/Greenway is an exciting project that addresses the unique riverine resources that start in the upper reaches of Harrison County and drains some 75 square miles of watershed that eventually enters Back Bay and then the open waters of the MS Sound. The City has acquired CAP and Tidelands funds to make limited investments in procuring sensitive lands for conservation purposes. The Tchoutacouffu River watershed has been studied by the MDEQ as part of the Coastal Independent Streams Basin. At present, the City and the Land Trust for the MS Coastal Plains have partnered to expand CAP funds to purchase stream side property in association with the proposed Riverside Park just north of Lamey Bridge Road. Now is the time to acquire available properties along various parts of the river for conservation and public access purposes. BP Funds of \$3.5 M are requested to purchase property yet developed to further protect the water quality of this waterway leading to the fragile fisheries nursery downstream	Harrison	Yes	Yes	100%	No	Yes	No	No	No	\$	3,500,000.00	\$	400,000.00		
Eco Restoration	1161	7/8/2013	Brodie Bayou Reclamation/D'berville Water Treatment Facility Adaptive Reuse	(ORIGINAL ID#12022) The Brodie Bayou Reclamation/Public Access is a unique project that seeks to convert the old D'berville waste treatment plant (\$4.5M) to support the collection and transmission of wastewater to the Ocean Expo project at the interstate. Also, plans envision acquisition of adjoining shoreline and wetland areas to allow public access to Back Bay. Approximately 12 acres (5.5 DM) is needed to plan 713 acres of city owned land. This adaptive re-use project provides new public access to a very special shoreline area known as Brodie Bayou. Wetlands reclamation and enhancement in this bayou will provide immediate benefits for the ecology and public access to these once off-limits shorelines. This would create a new bay front park on the west side of the 110 where no such facilities currently exist. Adaptive reuse of the facility to support Ocean Expo is both creative and an efficient use of city property and facilities.	Harrison	Yes	Yes	Yes	Yes	No	No	Yes	No	\$	7,500,000.00	\$	-		
Eco Restoration	1163	7/8/2013	Fountain Beach Public Access and Wetlands Restoration	(ORIGINAL ID#12020) The Fountain Beach Public Access and Wetlands Restoration project that seeks to expand the available acreage for public access to the shoreline. The unique wetland areas and near shore waters associated with Fountain Beach would be restored and enhanced. The City has invested local and Tidelands funds over the last decade to make Fountain Beach a popular bay front park for the public use. New public fishing piers would be constructed in an already popular public facility. Approximately 4 acres is needed to expand the current footprint along the Bay. With improvements and amenities, the project is estimated to cost \$4.0M.	Harrison	Yes	Yes	No	Yes	No	No	Yes	No	\$	4,000,000.00	\$	200,000.00		
Eco Restoration	1164	7/8/2013	D'berville Working Waterfront & Commercial Seafood Harbor	(ORIGINAL ID#12018 1) The idea of a working waterfront for the seafood industry in D'berville is not new. In fact, the City has tried for over 20 years to raise sufficient money to expand the current harbor limited to the space underneath the 110 Bridge. The City has tried to negotiate leases with bay front property owners to be available. The City has prepared several plans over the years to construct a working waterfront harbor but funds to acquire shoreline properties have not been available. The commercial harbor is part of the overall plan to revitalize the downtown one block north linked with the French Market one block north. The City has Tidelands funds that would be leveraged to effectuate land purchases and then on to construction of the harbor. The attached summary provides an overview of the project and how well it fits the Seafood Industry portion of the GO2020 Report. Approximately 20 acres of property is needed to accommodate water-side and landside needs. Wetland restoration on both sides of the existing harbor is planned. The working waterfront is a key component of the City's downtown revitalization plan. In conjunction with existing Tidelands Funds, land and development costs are estimated to be \$8.5M.	Harrison	Yes	Yes	Yes	No	Yes	Yes	No	Yes	\$	8,500,000.00	\$	800,000.00		
Eco Restoration	1165	11/7/2011	Fountain Beach Environmental Enhancements & Public Access	(ORIGINAL ID#1433) This project seeks to undertake restoration and enhancement activities for on site tidal wetland areas, repair erosion of the shoreline, and improve public access through repairing and extending the existing fishing pier.	Harrison	Yes	No	No	Yes	No	No	No	\$	300,000.00	\$	25,000.00			
Eco Restoration	1166	11/7/2011	Baytown Wetlands Restoration	(ORIGINAL ID#1439) The scope of the project seeks to restore a small tidal wetland area in the downtown waterfront area in D'berville, Mississippi.	Harrison	Yes	No	No	Yes	No	No	No	\$	400,000.00	\$	50,000.00			
Eco Restoration	1167	9/2/2015	Gautier Town Center Revitalization	(ORIGINAL ID#11212) Gautier would like to expand our Town Center area to create an Economic Development hub and to create a mix-use walkable environment. The Gautier Town Center Project, located in Gautier's central business district just 13 miles from the Alabama state line, consists of two master-planned phases. One phase would be a public infrastructure component including roadways and lighting that will facilitate the construction of retail, industrial, and mixed-use commercial developments including off-campus housing for the adjacent MS Gulf Coast Community College (MCC) and a business incubator. The other phase would be implementation of master plan components for the 32-acre Town Commons Park which will be an urban park surrounded by development. The park features spring-fed tributaries that feed the Pascagoula River. While these projects are directly linked, they can each be constructed independently. This Project Description focuses on the infrastructure component and a separate Project Description outlines the City's plans for the Town Commons Park. The City of Gautier is one of the few cities on the Mississippi Gulf Coast that lacks a traditional downtown. The purpose of this project is to develop a multi-modal street grid with town center attractions to facilitate the further revitalization of Gautier's urban core in proximity to MCCC and civic buildings. The Gautier Town Center Project incorporates 2.5 miles of roadway, 1.3 miles of multi-use pathway, and a transit link to a 16-acre area to be redeveloped into a residential and recreational area together. The project will provide the transportation infrastructure necessary for the revitalization of downtown Gautier with an improved living and working environment that has multiple transportation options. The five proposed roadways create a street grid on 23.6 acres north of an existing regional mall, big box retailers, and the Community College. The roadways will facilitate new Town Center mixed-use master-planned development in close proximity to Interstate 10, and will also provide a connector from Gautier/Vanceave Road to Beachley Road - a dead-end road that currently provides the only ingress/egress for the County's landfill, municipal buildings, residential neighborhoods, and heavy commercial uses. In recent years, the City invested Hurricane Katrina recovery dollars in a Town Center Streetscape Project that included a multi-use pathway as a first step towards making Gautier a walkable community and to foster the development of a city core by creating an identifiable town center with the theme of Nature's Playground. Other grant funding enabled the City to acquire the 32 acres near to Singing River Mall to be developed as the Town Commons Park. The mall has recently undergone demolition and will be re-built with a \$90 million private investment into an open-air mall with natural terrain, and the right-of-way for the planned roadways has been donated. Continuity partners on this project include the Mississippi Gulf Coast Community College, the City of Gautier, and the Compressed Natural Gas Fueling Station. The City's infrastructure plans are also included in the Gulf Coast Planning Commission's Regional Transportation Plan. The City is therefore poised to implement the next phase of transportation improvements. The proposed transportation network will provide access to existing anchors and new recreational areas by constructing urban transportation corridors with street parking and sidewalks as an alternative to the high speed multi-lane arterials such as Gautier/Vanceave Road and US Hwy 90. This infrastructure along with appropriate zoning will bring high density mixed use development creating a much needed affordable housing and enhanced transportation opportunities. The projected economic effects of the project included expanded employment, increased real estate values and municipal tax revenues, more affordable housing, and enhanced transportation opportunities. This project along with the Town Commons Park Project will result in improved livability and enhanced sustainability for the City of Gautier's residents and visitors.	Harrison Jackson	Yes	Yes	100%	Yes	No	No	No	No	\$	7,500,000.00	\$	-		

Eco Restoration	1170	6/1/2015	Waterfront Master Plan: Shepard State Park and Riverwalk	(ORIGINAL ID#11215) The City of Gautier assumed the daily operations and management of Shepard State Park in January of 2013. Shepard State Park is a 395 acre park located south of US 90 on Graveline Road in Gautier. The park is open year-round and currently has a mix of developed campsites and primitive camping sites. The park offers approximately eight miles of trails over five different locations and features live oaks, long leaf pines, and magnolias as well as a variety of coastal plants and wildlife. In order to maintain and enhance public access to park amenities, the City of Gautier requires funding for improvements that include shoreline restoration and wildlife observation decks, road repair, clearing underbrush and invasive species, adding water lines, sewer lines, power, and lights; and the addition of a bathroom, pavilion, and a playground area. In addition, Gautier desires to preserve the 35 waterfront acres just south of Shepard Park, owned by the Shepard family, south of Graveline Road. These tidally-influenced lands would be preserved and a riverwalk constructed for eco-tourism, to increase the out-of-state visitors who already visit the park annually. The park's trails, wetlands, and wildlife offer unique educational opportunities.	Jackson	Yes	Yes	100000	No	No	No	No	Yes	No	\$ 6,000,000.00	\$ 100,000.00
Eco Restoration	1171	9/26/2011	Establishment of Wetlands Bank	(ORIGINAL ID#11211) The City of Gautier contains large tracts of land that are currently undevelopable due to wetlands scattered throughout the tracts. The wetlands mitigation procedures are very costly and time consuming for developers. Being a coastal city, the City of Gautier is very sensitive to the balance between protecting natural resources and fostering development and growth. The wetlands scattered around the large tracts of land are considered to be lower class wetlands. While lower class wetlands sometimes provide important functions and benefits, they also can be classified as a mitigation bank because a map delineating the wetlands and flood conditions are not indicative of the wetlands. Higher class wetlands provide the greatest level of benefits and are afforded a higher level of protection. The City of Gautier would like to perform a regional wetlands mitigation plan to encourage development and protect high quality natural resources. As a part of the regional mitigation plan, the City would like to purchase a tract of land adjacent to the Mississippi Sandhill Crane National Wildlife Refuge and create a high quality wetlands mitigation bank. The regional wetlands mitigation along with the local mitigation bank will simplify an otherwise daunting task for developers and encourage development of these otherwise undevelopable properties. The tract is approximately 490 acres. The locations of the wetlands bank will provide an additional buffer for the MS Sandhill Crane Refuge which will in turn provide protection for the mitigation bank's eco-system.	Jackson	Yes	No	Yes	No	No	No	No	No	No	\$ 30,000,000.00	\$ -
Eco Restoration	1172	6/13/2013	Graveline Bayou Restoration Project	(ORIGINAL ID#606) Graveline Bayou is located in the southwest corner of the City of Gautier. The bayou is an intricate network of waterways that contain marsh habitats, deeper water habitats, and adjacent coastal habitat for native wildlife. The bayou empties into the Mississippi Sound which is a part of the Gulf of Mexico. Historically, the bayou provided direct easy accessibility to the Gulf of Mexico for commercial and recreational fishermen, as well as sailing, kayaking, and ecological viewing. This allowed commercial fishermen to anchor their boats at their residences, saving harbor fees & slip rental, transportation fees, etc., thereby reducing product costs to the consumer. Due to deterioration of the bayou, accessibility has been severely compromised or completely blocked, and the natural habitats have changed in character. What was once a thriving ecological, commercial, and recreational hub has been reduced to residences with a water view, without the benefit of the Gulf access. The main factors contributing to the deterioration of the bayou are: 1. Sediment accumulation at the mouth of the bayou due to sediment transport westward by the prevailing southeast wind, and the associated wave action, has eliminated the ability of most passenger boats and commercial vessels to navigate out of the bayou to the open Gulf. 2. Erosion of upstream drainage channels due to bank erosion is continuously depositing sediment into the upper reaches of the bayou, which then travels further downstream during subsequent rain events, filling in the channel and reducing the allowable depth for navigation. 3. The closure of the mouth of the bayou during the Deepwater Horizon Oil Spill Crisis compounded the sediment accumulation problem removing any further of the bayou by boat traffic which may re-suspend and flush out the newly deposited sediment. Boat traffic was greatly diminished on Graveline Bayou in the spring and summer of 2010 because of the fear that oil in the bayou from the blowout could damage engines. As a result, this shallow bayou did not receive the normal bottom sediment scouring associated with boat traffic and the subsequent flushing with the tidal cycle. Now that the bayou depth is less than three feet, scouring is still minimal and boats can no longer navigate the bayou. During an average tidal cycle, approximately 40% of Graveline Bayou is flushed and replaced. This would include any re-suspended sediment present in the water. 4. The depth of Graveline Bayou presents a flood hazard. Following Hurricane Katrina, the bayou began silting in more rapidly than in preceding years. This problem was further exacerbated by the Deepwater Horizon incident. Now, the bayou is so shallow it no longer affords protection to shoreline properties from flooding. In order to restore the bayou, the siltation needs to be removed from the bayou and the area adjacent to the mouth, to restore the bayou and outlet depths. Any compromised banks need to be stabilized and protection measures need to be implemented to prevent re-siltation. The U.S. Army Corps of Engineers has informed the City that they will conduct a study of Graveline Bayou that will include wave action study, jetty need and location, erosion issues and resolution, marsh restoration, flooding concerns, soil migration, etc.	Jackson	Yes	Yes	100000	No	Yes	Yes	No	Yes	No	\$ 7,200,000.00	\$ -
Eco Restoration	1173	9/26/2011	Danzler Street Bridge Elevation	(ORIGINAL ID#11209) The Pascagoula River Audubon Center is being relocated to downtown Moss Point. The Danzler Street Bridge needs to be elevated three feet to accommodate this relocation and the four boats and to comply proposed for areas around Pelican Landing and Bearside Lake and from McInnis Avenue to Elder Street. The bridge and bridge approaches will need to be raised as well existing city utility lines.	Jackson	Yes	Yes	Yes	No	Yes	No	No	Yes	No	\$ 651,000.00	\$ -
Eco Restoration	1175	9/26/2011	Property Acquisition to Complete Waterfront Walking	(ORIGINAL ID#11207) Identification and fee title acquisition of waterfront properties in three areas of Moss Point for protection via restriction for waterfront greenpace, conservation of natural communities and habitat, and for low impact public use such as boardwalks or trails. The three areas are adjacent to and around Pelican Landing, the area along McInnis Avenue from Downtown Waterfront Park to Elder Street, and within Bearside Lake on the Edgewater River.	Jackson	Yes	Yes	No	No	No	No	No	No	\$ -	\$ -	
Eco Restoration	1182	8/19/2011	Old Fort Bayou Walking Track/ Pier/ Park/ Kayak Launch/ Restrooms/ bird watching Pavilion/ Parking	(ORIGINAL ID#856) Old Fort Bayou Walking Track/Pier/Park/Kayak Launch/Rest rooms/bird watching Pavilion/Parking - \$3 million (City has conceptual design). Ten-acre site will soon be conveyed to the City at no cost. Walking path along beautiful Old Fort Bayou and wetlands ties into nature trail on adjacent property owned by Land Trust for the Mississippi Coastal Plain, preserving over one mile of pristine bayou front property and enhancing low impact access. This project would be ready to bid in three months.	Jackson	Yes	Yes	No	No	No	No	No	No	\$ 3,000,000.00	\$ -	
Eco Restoration	1183	8/19/2011	Front Beach Sand Replenishment / Extension to create 'Living Shoreline'	(ORIGINAL ID#855) Front Beach Living Shoreline and Upstream Improvements to Increase Resilience. Employ a Living Shoreline approach to approach to reduce erosion on Front Beach while mitigating upstream flooding. Replace failing drainage outlets into the MS Sound with strategy to mitigate the flow of water from upstream, while replacing traditional concrete pipe culverts at the Mississippi Sound with a strategy that combines traditional drainage with a "Living Shoreline" that distributes water flow through aquatic plantings and structures, trapping and accreting sediment to minimize erosion. The City received a MS/AL Sea Grant award that allowed them to develop a preliminary engineering and landscape design and cost estimate. The project relates to the Army Corps of Engineers Mississippi Coastal Improvement Program (MCCIP). This project is ready to develop bid specifications and construction is estimated at \$4 million.	Jackson	Yes	No	No	No	Yes	No	No	No	\$ 4,000,000.00	\$ 32,000.00	
Eco Restoration	1189	12/8/2012	B.B. Jennings Park Ecological and Wetlands Education Center & Blueway Connection	(ORIGINAL ID#1864) Pascagoula is pursuing a citywide revitalization strategy to reconnect neighborhoods to their waterfronts on bayous and wetlands, the Pascagoula River, and the Mississippi Sound. In its Park Master Plan, the City identified B.B. Jennings Park as a historic neighborhood as an opportunity for residents to gain an understanding of the region's complex hydrology and ecology. The Mississippi Department of Marine Resources chose the park as a demonstration project for its Coastal Smart Growth Initiative and provided funding for conceptual redesign. Planned activities at B.B. Jennings Park include: 1. A citywide nature education center where visitors and local school children will be introduced to the region's plants, animals and ecosystem processes. 2. The stabilization and restoration of a natural streambed via marsh and wetland habitat plantings and erosion prevention measures. 3. New green infrastructure to include a nature trail, green parking and stormwater management best practices. These projects will demonstrate the use of these water quality strategies to the public and encourage wider use. 4. Connections from Pascagoula's Complete Streets bicycle and trail network to the Park's interpretive nature trails. 5. Property acquisition to expand habitat and visitor capacity. 6. Creation of a Pascagoula River Blueway connection from B.B. Jennings Park to the Pascagoula River. Environmental benefits include marsh and wetland restoration in the Pascagoula River watershed, which suffers from numerous water quality impairments. The bayou flowing through this park is part of a larger system that traverses marshland and drains from Krebs Lake into the Pascagoula River. The demonstration of best stormwater management practices and acquisition of adjoining undeveloped parcels will produce measurable water quality benefits onsite and in the region. Reducing stormwater pollution will improve water quality for fish and wildlife and support economic development through the area's growing eco-tourism industry. Increased amenities also serve Pascagoula's economic development goal of retaining professionals, who cite local quality of life as a key reason for relocation. Mississippi ranks highest in the nation in obesity, and community benefits to the project include expanded recreational opportunities for physical fitness through hiking, jogging and boating.	Jackson	Yes	Yes	70000	Yes	Yes	No	No	Yes	No	\$ 2,781,250.00	\$ 50,000.00
Eco Restoration	1195	9/5/2012	North Jackson Marsh Restoration/Enhancement	(ORIGINAL ID#1791) Historically, this area has provided many critical functions to the marsh ecosystem and City of Waveland. As a transitional estuarine/freshwater wetland the area: 1) provides the marsh with fresh water; 2) collects, holds and treats much of the City's storm water runoff; 3) provides a natural refuge for estuarine species; and 4) is the heart of natural corridors for plants, amphibians, reptiles and birds. Alteration and development has seriously degraded the area's ability to provide these functions. A non-structural restoration/enhancement of the area can play a key role in the City's recently approved Hazard Mitigation Project. As proposed here a multifaceted approach will be used to restore/enhance the area by: 1) removing accumulated debris and sediment; 2) remove invasive plant species; 3) restore, expand and enhance the area's various wetland habitats; and 4) incorporate minor stream bank enhancements to the area between the pond and northern limits of Jackson marsh. Enhancement/restoration activities will include selective (hack and squirt) herbicide applications to remove invasive species, grubbing, sediment and debris removal. Once grubbing and sediment/debris removal activities have been completed, native wetlands species will be planted and monitored within the site. A restrictive covenant/conservation easement will be placed on the property to prevent any adverse impacts to the property once restored. The City of Waveland has an existing contract with the Pickering Firm, Inc. which will allow them to provide the environmental, engineering and other professional services needed for the project. The area will function as a city recreational park area with an emphasis on nature.	Hancock	Yes	Yes	No	Yes	No	No	No	No	No	\$ 380,000.00	\$ -
Eco Restoration	1196	6/23/2011	Hancock County Shoreline Stabilization and Oyster Restoration	(ORIGINAL ID#825) Coastal Environments, Inc and partners propose to fabricate and install bio-induced oyster reefs to stabilize shorelines and help restore and sustain valuable and sensitive estuarine ecosystems along coastal SW Hancock County, Mississippi. This project will stabilize up to +/- 12 miles of shoreline by restoring intertidal oyster reef habitat using a cost-efficient and effective vertical breakwater technology called ReefBIX. The ReefBIX units function as a substrate for oyster spat attachment and allow growth of an intertidal oyster reef that provides both shoreline protection and habitat for estuarine organisms. As oyster growth progresses and the reef unit becomes more dense, the bioengineered structure dampens and dissipates wave energy and protects the estuarine marsh from erosion. These proven living shoreline and erosion control methods are currently using the concept of bioengineering and self-sustainable living oyster reefs that expand both linearly and vertically to buffer wave action and reduce erosion in Texas, Louisiana, Alabama and Florida. High vertical profile oyster reefs also enhance species habitat diversity and provide oyster larvae for recruitment to adjacent public oyster grounds, thus increasing an area's economic value as related to commercial and recreational fishing, oyster harvesting and ecotourism. Based on historical aerial photography that can be verified for the lower Hancock County area we can deduce these data: - 12 miles of ReefBIX protection (63,360 linear feet/32,672 individual ReefBIX units) in this area to restore an average of +/- 43.64 acres of marsh +/- 3.66 acres per mile) and provide protection to +/- 5,900 acres of existing marsh. In the project area: - Linear erosion rates average from 275 - 750 feet since 1958. Average 5.3 +/- 24.5 feet per year since over that period. - Average erosion rates range from 50 - 250 acres since 1958. Average 1 acre to 4.8 acres per year. - Some areas as much as 1,150 and 1,450 linear feet of coastline erosion in the 52 year period (specifically on the eastern facing shore of Point Clear). Average 22 +/- 28 linear feet per year. CEI proposes to design, fabricate and install a patented artificial reef system, ReefBIX, along the shorelines of SW Hancock County, Mississippi. The overall goals of their project include reef construction, shoreline stabilization, marsh regrowth, faunal utilization, and seagrass colonization.	Hancock	Yes	No	No	Yes	No	No	No	No	No	\$ 12,000,000.00	\$ -
Eco Restoration	1197	6/22/2011	Mississippi Gulf Coast Oyster Shell Recycling	(ORIGINAL ID#227) The objective of this project is to develop a cost effective program on the Mississippi Gulf Coast to recycle oyster shell from consumers (restaurants, including houses, oyster fishermen, individuals who purchase oysters by the sack, etc.) that can then be used to restore and enhance shellfish habitat destroyed or damaged as a result of the Deepwater BP Oil Spill. An effective program will require educating consumers on the importance of recycling and encouraging their participation in a program that recycles oyster shell for use in replenishing natural oyster beds and stabilizing shorelines. Substituting this critical, non-developing viable reef (oyster shell) preferred by oyster larvae is oyster shell. Since the early 1900's, the various Gulf states have been depositing oyster shell, mainly native shell, on public oyster grounds to build and enhance reefs. Currently a significant amount of the shell produced by consumers is deposited in landfills, because much more shell is removed from public oyster grounds than is returned for habitat development and enhancement, the Gulf of Mexico is experiencing a shell deficit. This project is designed to reduce that deficit by recycling and re-using oyster shell on upland landfills. The additional recycled shell will then be available for current and future reef and shoreline restoration projects. Developing a cost-effective program to recycle shell for use in reef building will be crucial to coastal restoration projects in the Gulf of Mexico. Similar programs have already produced positive results in Chesapeake Bay as well as in coastal areas of North Carolina, South Carolina, New Hampshire, and Texas. The project proposed here will use information from those state programs to develop an effective program for recovering oyster shell produced by Mississippi Gulf Coast consumers.	Hancock, Harrison, Jackson	Yes	No	No	Yes	Yes	No	No	No	No	\$ 800,000.00	\$ -

Eco Restoration	1199	3/6/2012	Oyster, Fish, Habitat and Water Quality Monitoring associated with Oyster Culture Restoration and Artificial Reef Project	(ORIGINAL ID#11647) Eco-Systems, Inc. (Eco-Systems) is pleased to provide this proposal to conduct baseline conditions sampling and on-going monitoring activities associated with the restoration of 1,430 acres of oyster cultch and the creation of 100 acres of artificial reefs. Eco-Systems proposes to complement and enhance on-going DMR/DEQ coastal restoration efforts and support the currently approved BP Early Restoration Project as identified below. Eco-Systems proposes to monitor oysters, fish, habitat, and water quality before, during and after the restoration of the 1,430 acre oyster cultch restoration project and the expansion of 100 acres of nearshore artificial reef. This monitoring effort is designed to complement the DMR projects and on-going oyster and artificial reef monitoring efforts currently in place in coastal Mississippi. The data collected will be utilized to establish baseline conditions and to monitor trends at both oyster restoration and artificial reef project locations. Creation of oyster beds and artificial reefs have been linked to improved water quality and critical fish habitat. The proposed scope of work will strengthen these claims by providing "hard data" to support the theory of improved conditions in Mississippi coastal waters. It would be our hope to use the analytical results to demonstrate if water quality improvement can be tied to the restoration efforts, to document the growth, health and survival of oysters in newly created beds; to record the anticipated increased diversity and density of fish in the restored and created artificial reefs; and to demonstrate the improvement in overall fish/oyster habitat in coastal waters of Mississippi. Two project tasks are proposed: (1) Initial baseline monitoring to establish baseline conditions and (2) on-going monitoring for ten years (quarterly monitoring for two years to determine seasonal variations; semi-annual basis for an additional three years; and annual monitoring for an additional five years). The objective of the proposed monitoring efforts is to establish baseline conditions and document anticipated improved coastal conditions over time such as improved water quality, oyster population, fish diversity, and habitat. The following objectives and tasks are proposed: Phase 1: Review Background Information. a. Obtain site drawings and background information. b. Obtain information on location and condition of oyster beds and reefs from DMR. c. Obtain best available imagery of sites. d. Identify dominant species at project sites and determine the typical range of tolerance. e. Contact Gulf Coast Research Laboratory to obtain relevant site information pertaining to biological and physical characteristics of areas. f. Contact MDEQ and request their available sampling data and analytical results for the coastal project areas. Phase 2: Initial Field Investigations and Preparation of Sampling Plans. a. Schedule field visits in coordination with DMR and DEQ. b. Conduct visual assessment of general site conditions. c. Identify monitoring locations representative of overall site conditions. d. Prepare sampling plans and submit to DMR/DEQ for concurrence and approval. Phase 3: Conduct Assessments (Baseline Sampling and On-going Monitoring) a. Fish Monitoring at Identified Sampling Locations at 100 Acres of Nearshore Artificial Reefs. The Eco-Systems team will sample baseline conditions of fish and shellfish at the artificial reef locations and provide on-going monitoring at the sample locations identified during the initial baseline assessment event to document fish/shellfish use of reefs over time. The scope will include fish and shellfish assessment and water quality sampling at designated sampling locations specified within sampling zones. Sampling zones will be discussed with and approved by DMR and DEQ prior to mobilization. Eco-Systems recommends monitoring fish diversity, density and size utilizing sampling methods to include use of: gill nets, trawl nets, cast nets, and hook-and-line. Water quality will also be determined at each of the sampling locations. A collection permit will be obtained prior to mobilization. The primary target species to monitor will include: Atlantic croaker (Microgobius undulatus), Spotted trout (Cynoscion nebulosus), Black drum (Pogonias cromis), White trout (Cynoscion arenarius), Speckled trout (Cynoscion nebulosus), Red drum (Sciaenops ocellata), Sheepshead (Archosargus probatocephalus), Southern kingfish (Menticircus americanus), Pinfish (Lagodon rhomboides), Naked goby (Gobiosoma boscii), Blue crab (Callinectes sapidus), Striped blenny (Chasmodes bosquianus), Stone Crab (Menippe adina), Oyster toadfish (Opsanus tau), Eastern oyster (Crassostrea virginica), Silklift (Gobiosoma strumosus), Shrimp (various species) b. Oyster Monitoring at Identified Sampling Locations within the Restored/Created 1,430-acre Oyster Bed: The Eco-Systems team will sample baseline conditions of oysters at identified sample locations within the 1,430-acre oyster restoration area and will provide on-going monitoring of oysters over time. Eco-Systems team will utilize a modified Sampling Protocol for Projects in Public Oyster Areas from Louisiana. The following tasks are proposed: 1. Sample oyster presence/absence.	Hancock, Harrison, Jackson	Yes	No	No	No	No	Yes	No	No	No	No	\$	2,500,000.00	\$	-
Eco Restoration	1201	6/5/2013	Repair Port Bienville Dock Area	(ORIGINAL ID#11995) Bulkhead Dock Repair May 19, 2013 FACTS: The bulkhead and docking facilities at Port Bienville Industrial Park (PBIP) play a major role in the recruitment and retention of industries. This facility suffered extensive damage from hurricane Katrina and hence has not been able to be utilized to its fullest potential. One of the reasons for the company Peninsular Leasing PBIP was the damage to this facility. Industries wishing to locate at PBIP always require us to our berthing and dock facilities. The replacing of the bulkhead and upgrading of docking facilities would enhance the use of maritime goods and services to our industries. This project would also pickup the interest of shipping vessels to use the facility and thus increase the amount of commerce going to and from Port Bienville. The spillover of new jobs created by increased stevedoring, trucking, and warehousing of goods would benefit more than just industry. REMEDY: Plans and specifications are completed. The Corps of Engineers has issued a 5 year permit on this project with 2 years remaining. Once funding is received this project can begin immediately.	Hancock	Yes	Yes	No	No	No	No	No	No	No	\$	6,000,000.00	\$	-	
Eco Restoration	1204	6/2/2013	Drainage from Stennis International Airport	(ORIGINAL ID#11989) Improvement of rainwater drainage at Stennis International Airport May 19, 2013 FACTS: Stennis International Airport is owned and operated by the Hancock County Port and Harbor Commission. Located one mile north of the intersection of Interstate 10 and Mississippi state highway 603 Stennis is a major hub for military and local industry air traffic. The airport has an 8000' runway which is the third longest in the state; recently constructed manned FAA tower has made the airport more visible to aviation interests throughout the United States. Currently rain water drainage at Stennis is being impeded by neglect and effects of hurricane Katrina. JUSTIFICATION: The airport's drainage system consists of two open ditches that parallel the runway and converge approximately 1300 ft. south of the runway. From that point a single open ditch flows beneath Interstate 10, through private property, and then into a tributary of Bayou Lacrotz. This is the only drainage culvert within 1.5 miles east and 1.25 miles west. Over time water has begun to backup and saturate soils at Interstate 10 and the southern end of the runway. In addition to the saturation the water in this area has become stagnant which causes odors and wildlife issues. Such issues include the trouble with beavers and alligators that run along the runway and a major proliferation of water fowl which adds danger to incoming and outgoing aircraft. REMEDY: The excavation and clearing of this drainage area will greatly improve both aviation and transportation issues. Many the decline in possible obstacles to incoming and outgoing aircraft, but also lessen the damage to the subsurface of Interstate 10.	Hancock	Yes	No	No	No	No	No	No	No	No	No	\$	1,000,000.00	\$	-
Eco Restoration	1205	4/25/2012	Continued Shrimp Fishing Effort Data Collection Through the Use of an Electronic Logbook System in the Gulf of Mexico	(ORIGINAL ID#11685) Because the red snapper stock of the Gulf of Mexico is classified as overfished, the National Marine Fisheries Service has regulated the directed commercial (IFQ system) and recreational (size and trip limits and closed seasons) red snapper fisheries to reduce mortality of large juvenile and adult fish. To reduce the fishing mortality of small juvenile fish, the NMFS has also regulated the shrimp trawl fishery, a fishery that is thought to bycatch adult populations. Disagreement has existed regarding the magnitude, age composition, and monthly distribution of shrimp trawl red snapper bycatch in time and space. The Foundation completed a research study that augmented the collection of electronic logbook (ELB) data through the use of observers in the fishery. The goal was to enable the fishing industry to evaluate and address fishery management issues, including the estimation of shrimp fishing effort and bycatch. The ELB was developed by IGO, Ecological Research Associates, Inc. to directly measure shrimp fishing effort, thereby reducing the dependence on modeling to provide better estimates of effort and red snapper bycatch. Over the course of a 1 year pilot study, ELB systems were placed onboard commercial shrimp fishing vessels to collect fishing effort data. Results from this study indicated that the ELB system accurately estimated the fishing practices of a vessel on a per trip basis and that individual tows could be identified. Currently, shrimp fishing effort data recorded by ELBs are used as a proxy for estimating red snapper bycatch mortality in the offshore shrimp fishery. We propose to continue the foundation's ELB observer program that collects data with the ELB system and observers to make the results of the previous work more robust. Importantly, this will increase the data available to verify models used by scientists to compute red snapper bycatch levels within the fishery. Specifically: 1) Complement an electronic logbook (ELB) study with onboard observers to collect data on fishing effort, red snapper bycatch, and shrimp landings within the Gulf of Mexico; 2) Analyze all observer collected data to further assess that ELB landings estimates are accurate and realistic; and 3) Determine the spatiotemporal abundance of juvenile red snapper, compute a total mortality (Z) estimate for shrimp trawl red snapper bycatch, and conduct a formal cohort analysis (CPA) on observer collected red snapper data. The ELB program is vital to managing the shrimp and red snapper fisheries in the Gulf and needs to be continuously funded, especially as the impacts of the Deepwater Horizon oil spill become better understood.	Hancock, Harrison, Jackson	Yes	No	No	No	Yes	No	No	No	No	\$	500,000.00	\$	-	
Eco Restoration	1207	4/25/2012	Development and Distribution of Gear Technology to Improve Fuel Economy and Reduce Bycatch in the Gulf Shrimp Fishery	(ORIGINAL ID#11678) The offshore shrimp trawl fishery accounts for a significant portion of landings in the Gulf of Mexico. Due to a multitude of events (i.e. hurricanes, oil spill, imports), the fishery has seen a substantial decline in fishing effort while operating costs have continuously risen. With increasing fuel prices, fuel saving technologies are a logical avenue to assist in reducing operating expenses. A paucity of information exists documenting the effect of gear technologies on fuel consumption. Cambered trawl doors are currently being utilized by some fishermen in the southeastern United States. These trawl doors have evolved significantly over the past decades, but until recently have not received much attention in the southern shrimp fishery. Evaluations of these doors have yielded promising potential to reduce fuel consumption in the shrimp fishery. Several door sizes have been evaluated, but cambered trawl doors, 50% smaller than the traditional wood or aluminum doors, are documented to have fuel savings of 25-30% during actual fishing conditions. Additionally, bycatch reduction remains a high priority issue in the southeast. Reducing incidental bycatch has been shown to improve catch quality and reduce fuel consumption. We propose to conduct a series of experiments aimed at documenting the fuel savings achieved by cambered trawl doors and continue to improve the bycatch reduction capability already in use in the fishery. More specifically we aim to: 1) Evaluate cambered door gear technology within the southeastern shrimp trawl fishery; 2) Continue to elicit industry participation in evaluating complex bycatch reduction devices (BRDs); and 3) Conduct further demonstration and dissemination activities of the newly documented gear (doors & BRDs) to shrimp fishermen throughout the southeast to increase the acceptance and use of these gears. Through years of experience, we have found that informal meetings are an optimal forum for information dissemination, providing two-way dialogue from industry and allowing for an effective one-on-one exchange of ideas. As such, we will convene a series of informal meetings throughout the southeastern US to disseminate the results of this study. By continuing our research and development efforts to reduce bycatch within the shrimp trawl fisheries, commercial fishermen will become actively involved in BRD research and development and will be more accepting of those devices tested.	Hancock, Harrison, Jackson	Yes	No	No	No	Yes	Yes	No	No	No	\$	1,500,000.00	\$	-	
Eco Restoration	1208	6/12/2011	Saving the Gulf Coast one bale at a time.	Our process uses large 4'x5' round bales of hay that weigh approximately 800-1000 lbs each, to form a barrier along shorelines and marsh edges that are in need of protection from erosive wave energy. The barriers will catch/sit/sediment and ultimately contribute to the creation of "new" soil. This forms a more natural buffer against erosive waves when compared to rocks, concrete, or metal structures that are traditionally used for erosion control. An advantage of using a 4-5 ft. soft natural barrier is the bales serve more effectively by raising the height level for natural absorption. The bales act as a natural sponge that absorbs the water to help dry out and stabilize the soil. Hay is used in many situations for erosion control with the use of blankets/mats, spraying of chopped hay and as mentioned, small square bales. Using a large round bale is a completely new approach that has never been applied. 50' barriers will be placed along the shoreline in need of protection from erosive wave energy. When the waves approach the shore, the hay filters and traps the captured sediment. Over time the sediment built up forms a solid barrier to protect eroding shores and bank lines that will regenerate over time or purposely plant with desired vegetative species. Bales can also be injected with selective seeds or plugged with native plant seedlings to stimulate vegetation growth. Consider the size and weight of the hay bales that are used to build the barriers. There is a double row of bales 50' long. This becomes a 80,000 lb. wall, 50' long by 10' wide by 5' tall. Immediately the hay begins to absorb water and sit and weighs even more. Eventually what you have is a natural levee/ridge. The collection of silt in the tightly rolled hay that forms the bale creates "mud" to keep the straw together and prevent the hay from disintegrating. Construction and installation Construction and installation is streamlined. Very little material and equipment are needed for this process. * Hay * 2 work boats * Jig * Forklift * Treated post (size determined) * Work crews/fabrics per job site * 1 utility airboat (pile driver) * Wire/rope Hay will be transported to a central location/dock where the hay will be linked with the wire/rope. Sections will be floated by boat to the restoration location where posts have been driven in the marsh bottom.	Hancock, Harrison, Jackson	Yes	No	No	Yes	No	No	No	No	\$	250,000.00	\$	-		
Eco Restoration	1212	10/24/2011	GULF OF MEXICO HATCHERY AND FISHERIES RESTORATION CONSORTIUM	(ORIGINAL ID#11412) GULF OF MEXICO HATCHERY AND FISHERIES RESTORATION CONSORTIUM Problem: The Deepwater Horizon Oil Release (DWH) caused environmental and economic damage to fisheries in the northern Gulf of Mexico. America must employ novel and effective approaches to restore both economic and resilience well being of the affected fisheries. In addition, habitat destruction caused by hurricanes and other man-made causes (over-fishing, erosion and spills) have led to significant decrease in Gulf fish populations during the last decade. Solution: Marine aquaculture of key species can be employed to restore fisheries through fishery transfer and stimulation of small business and technology transfer and stimulation of small business and technology job creation. This effort should be highly collaborative involving institutions in all five Gulf States as well as other national and international institutions, public and private, with significant hatchery technologies. Implementation Team: Gulf of Mexico Hatchery and Fisheries Restoration Consortium - Gulf Coast Research Laboratory/University of Southern Mississippi (GCR; lead institution) - University of Texas Marine Science Institute (UTMSI) - Louisiana University Marine Consortium (LUMACON) - Auburn University (AU) - Marine Laboratory (ML) - University of Maryland-Baltimore (UMB) - These institutions are leaders in marine aquaculture and stock enhancement, implementation, and technology transfer for the northern GOM. The consortium is built on established relationships and will employ the highest quality science and economic approaches to implement, and transfer the technology to raise significant numbers of fish for fishery restoration and to stimulate private sector small business development. In addition to the implementation team, the consortium has established scientific, governmental agency and commercial advisory teams. Implementation Plan: The technology for aquaculture of marine fish varies among species. This necessitates the collaborative involvement of these stakeholders and institutions that have conducted research on over 10 of the most economically and ecologically important Gulf fish species. Among the species are those for which the technology to implement stocking, technology transfer, and business stimulation already exists. The species targeted for immediate implementation of stocking and technology transfer include Red Drum, Spotted Sea Trout, Red Snapper, White Shrimp, Gulf Menhaden, Croaker, Florida Pompano, Cobia, Greater Amberjack and Southern Flounder. Projected Results: The work of the consortium will allow us to advance technology use by Gulf States fishery agencies and private industry. Similar efforts in the Mediterranean Sea led to a \$1 Billion industry in 10 years. The 2007 NOAA aquaculture plan projects 75,000 jobs created for every million tons of seafood produced by aquaculture. It is estimated that aquaculture of Gulf fish species would double the seafood output of the Gulf of Mexico (\$7000 Million in 2008). Additionally, the recreational fishing industry (\$512 Billion in 2008) would realize expanded employment and business opportunities as natural populations are restocked with hatchery produced fingerlings.	n/a	Yes	No	No	Yes	No	No	No	No	\$	60,000,000.00	\$	-		

Eco Restoration	1251	11/26/2012	Ecological Restoration/Enhancement and Community Flood Reduction in Franklin Creek Watershed in Jackson County, Mississippi	(ORIGINAL ID#11856) The Jackson County Board of Supervisors is pleased to present this proposal to request National Resource Damage Assessment (NRDA) funding for hydrologic modeling, hydrologic improvements, coastal habitat restoration/enhancement, assessment of an endangered species habitat, and flood reduction in select communities located in Jackson County, Mississippi. This proposal contains a proposed scope of work, scheduling, and preliminary budgetary estimates to satisfactorily achieve the goals of this watershed project. BACKGROUND: The proposed project area is located along the Mississippi and Alabama border in the Gulf Coast in Jackson County, Mississippi within the Franklin Creek watershed located south of Highway 90. The CSX railroad spans through the middle of the project area and the Grand Bay National Wildlife Refuge and Grand Bay National Estuarine Research Reserve are located adjacent to the project area to the southwest. In the latter part of the 19th century, the CSX railroad was constructed in this area resulting in the redirection of natural flood waters to the north and west to an area bounded by Highway 90 and the CSX railroad. A preliminary project and hydrologic evaluation conducted in 2004 identified that an upland ridge located to the west of Franklin Creek and abutting the CSX railroad to the south prohibiting floodwaters from sheet flowing through the Grand Bay Savannah and marsh. Rather than floodwaters naturally flowing through the marsh, the water is directed to the area bounded by Highway 90 and the CSX railroad resulting in the continuous flooding of the Necon Grove Community. PROPOSED SCOPE OF WORK: The following proposed scope of work has been generated to conduct hydrologic modeling, hydrologic improvements, coastal habitat restoration/enhancement, and flood reduction in local communities located in Jackson County, Mississippi. The ultimate result will be to reconnect natural hydrologic patterns to the Grand Bay Savannah and marsh lands, restore/enhance the wetland habitat, and reduce flooding of the nearby Necon Grove Community. It is the belief of the Board of Supervisors that the health of coastal marshlands and wetlands (including oyster beds) and the result of this project once fully implemented. Task #1: Gopher Tortoise Survey Eco-Systems, Inc. conducted field surveys for the review area on August 22, 2012 and followed the USFWS 7 Standard Operating Procedure for Gopher Tortoise Burrow Surveys (November, 2009) guidance document. Pedestrian transects were traversed throughout the review area to determine the presence of gopher tortoises, burrows, signs, etc. Transect width was determined in the field based on the visibility provided by the vegetation present. Sighted burrows were flagged and GPS located. A 600-foot radius around each sighted burrow was thoroughly traversed to identify burrows in within this identified range. No gopher tortoise individuals were sighted during field reconnaissance; however, burrows were observed within the review area and classified as old, inactive or active. It should be noted, all burrows were identified in Mobile County, Alabama and for more information, the Eco-Systems report should be reviewed entitled Gopher Tortoise Survey Report and Identification of Anticipated Burrows for the Proposed Hydrologic Modification Site for Watershed Restoration in Mobile County, Alabama and Jackson County, Mississippi dated September 13, 2012. Based on the findings of the survey, the proposed hydrologic restoration project could have the potential to affect the gopher tortoise colony identified and surveyed. When the project construction plans are further refined, a biological assessment and affect determination should be prepared. If impacts to the gopher tortoise colony are identified as a potential result of the proposed project, consultation with the USFWS should be conducted. Special provisions before and during any proposed land disturbing activities should be made to protect any gopher tortoise individuals and burrows. Prior to any construction activities, all construction workers should be educated on gopher tortoise identification, as well as establishing a minimum 25 foot radius buffer around each identified burrow. If any gopher tortoises are sighted during construction, all activities will cease and USFWS will be immediately consulted. Task #2: Environmental Assessment A thorough environmental assessment of the project area to determine the presence of jurisdictional waters of the United States along with any other environmental factors that may be of concern will be conducted and a summary report with associated figures and maps will be prepared. Task #3: Permitting and Review Process The Jackson County Board of Supervisors anticipates multiple permits to be required during the course of this project. Permits that may be required are detailed below: CWA Section 404 Wetland Permitting and Mitigation: Based on the preliminary project concept, permitting will be required through the U.S. Army Corps of Engineers, with consent and federal consistency determination issued from the Mississippi Department of Transportation. Shrimp migrates in from the gulf three times a year. Research need to be done to restore the shrimp. Move into the estuaries. On this basis the adult shrimp needs protecting when they move up out of the gulf to spawn. As a net maker I see this happen three times a year. Letting the shrimp spawn correctly will increase the juvenile release from the estuaries. Letting the eggs, larvae (juvenile and adult shrimp come safely into the estuaries without being caught by the shrimp trawls.) When we have maximum spawn we will have maximum juvenile release when the conditions are correct in the estuaries. This will help the ecology (shrimps, more shrimp, more shrimp, etc.). One time the shrimp population will increase and there will be more food for the other ecology. After the migration is established then the law must be fixed in order to protect the shrimp from the nets when they are spawning. This involves changing the opening and closing of the shrimping season. The Marinovich Plan was researched twenty years ago and the shrimpers about 80 percent agreed to it. The Marinovich Plan has the dates when the shrimp spawn because it happens every year; but it has to be proven to the scientific community. Thank you for opportunity to make this proposal. Let work together to save the food for the gulf ecology.	Jackson	Yes	Yes														\$ 3,760,000.00	\$ -	
Eco Restoration	1254	11/22/2013	Marinovich plan to restore the gulf shrimp	Shrimp migrates in from the gulf three times a year. Research need to be done to restore the shrimp. Move into the estuaries. On this basis the adult shrimp needs protecting when they move up out of the gulf to spawn. As a net maker I see this happen three times a year. Letting the shrimp spawn correctly will increase the juvenile release from the estuaries. Letting the eggs, larvae (juvenile and adult shrimp come safely into the estuaries without being caught by the shrimp trawls.) When we have maximum spawn we will have maximum juvenile release when the conditions are correct in the estuaries. This will help the ecology (shrimps, more shrimp, more shrimp, etc.). One time the shrimp population will increase and there will be more food for the other ecology. After the migration is established then the law must be fixed in order to protect the shrimp from the nets when they are spawning. This involves changing the opening and closing of the shrimping season. The Marinovich Plan was researched twenty years ago and the shrimpers about 80 percent agreed to it. The Marinovich Plan has the dates when the shrimp spawn because it happens every year; but it has to be proven to the scientific community. Thank you for opportunity to make this proposal. Let work together to save the food for the gulf ecology.	Harrison, Jackson	Yes	No													\$ -	\$ -		
Eco Restoration	1260	10/1/2014	Natural Resource Enterprises - Restoring Coastal Habitats and Economies along the Mississippi Gulf Coast	Conduct a series of 6 educational workshops training coastal landowners, sports fishing guides, commercial fishers, resource agency and economic development professionals, and community leaders along the MS Gulf Coast in natural resource enterprise development and associated land & water conservation practices. We will partner with agency and organizational partners, including but not limited to the MS Department of Environment and Quality, MS Department of Marine Resources, MS Gulf Coast Research Laboratory, MS Coastal Extension Service, Audubon Society, and local boards of supervisors and city officials to host these training events. We will train interested landowners, sports fishing guides, and commercial fishers to develop a diversity of outdoor adventure excursions drawing outdoor enthusiasts to the Mississippi Gulf Coast. Through development of these new businesses and associated conservation, we will improve the environmental health of coastal lands, wetlands, watersheds, estuaries, and the Mississippi Sound on the MS Gulf Coast.	Hancock, Harrison, Jackson	Yes	Yes													\$ 165,094.00	\$ -		
Eco Restoration	1263	12/4/2013	Mississippi Gulf Coast Arboretum Trail - Coastal Arboretums for Restore Canopy and Reduce Injury	The MS Urban Forest Council is a 30 year old nonprofit organization that works with community leadership and citizen to establish healthy tree canopies. We have the only arboretum program in the state and have been certifying arboretums in MS for over 50 years. This project addresses community resilience, injury, restoring canopies, economic development, tourism benefits and much more. This project has two phases. Phase I of developing arboretums along the MS Gulf Coast will include 3 arboretum, one per county. The project is to scale, landscape level/easily managed, no land acquisition and shovel ready. We can have trees in the ground as early as six months after approval. This project will fully develop local public green spaces into arboretums creating a network of linear green spaces. This project has multiple benefits: Community resilience, job training, eco-tourism, economic development, recreation, social and ecological benefits, water quality and storm mitigation, and other benefits. This project will phase one on creating quality green spaces in the three coastal counties. Three sites (one per county) will be created another 30-20 existing sites will be identified and certified as arboretums. Phase II will include developing an arboretum for every coastal city, (12) sites. In all, a total of 15 arboretums developed and another 15 existing sites that can qualify as an arboretum will be certified. So when the project is complete there will be a minimum of 30 certified arboretums along the coast that can be linked as green way, tourism and promotion of communities and other sites. The arboretum will be included on a GPS system so that citizens and visitors can visit and view these sites. These sites will be highly visible. The value of related water quality functions will be determined for these sites based on I-Tree formulas. The project has four basic components: 1. The key objective is to establish healthy MS Gulf Coast Arboretum in every city in the 3 counties of the Mississippi Gulf Coast; Harrison, Hancock and Jackson. 2. MUPF already has an established and working network of communities on the MS Gulf Coast through the Scenic Communities and Tree City USA programs. We will work in partnership with local communities, other organizations and counties to plant perpetual green spaces, and provide management training, job training, and all resources to create sustainable green spaces. There are identified spaces on the coast that will remain forever green, identified by the Gulf Legacy Inventory and the proposed urban tree canopy inventory. We will combine our efforts with other restore projects to add the urban forestry element. We will provide training and other skills, develop a long term inventory of trees, replant the right tree in the right place, address storm preparedness and ensure long term green infrastructure and healthy tree canopies. 3. We will work with each entity, responsible for these green spaces to develop a series of strategies/activities including massive tree planting. Currently, we have 15 Tree City USA on the MS coast. These partner communities will be included in our project. We will provide resources, training and strategies working with local communities, provide advanced long term training on tree maintenance and use of tree inventories to better manage trees and identify important environmental and social values for existing and new trees and community forests. The project will do all these activities through partnerships with local city/county to build knowledge, resilience, create citizen involvement, develop interactive observation activities and ownership. Communities will learn community resilience aspects and connecting to a healthy gulf based on their actions within their own community. 4. Includes policy implementation on local and regional level as well as storm preparedness and mitigation for landscapes. Funding: This funding includes complete development of 15 arboretum in the six coastal counties. Project elements include planting over 50 native species trees (1-3 inch trunk diameter), tree	Hancock, Harrison, Jackson	Yes	Yes													\$ 420,000.00	\$ 50,000.00	water	
Eco Restoration	1262	12/4/2013	Coastal Wild Pig Problem	The largest wildlife issue in the Coastal Counties are wild pigs. They are damaging coastal marsh systems, laws, golf courses, pond levees, beach properties, as well as creating extensive damage to natural resource areas including state owned wildlife management areas and national wildlife refuge properties. In FY 14 USFWS will receive approximately 520 million in federal funds to begin working on wild pig problems across the country. I suspect all of the coastal states will receive some of this funding which we may be able to use as matching funds for projects in our respective states. Any opportunities to tie into NFWF funds or any other funding sources to assist with coastal wild pig problems would be greatly appreciated.	Hancock, Harrison, Jackson	Yes	No													\$ -	\$ -		
Eco Restoration	1265	12/4/2013	Restoration of the Gulf Coast Ecosystems	We represent companies and associations who welcome the nation to enjoy our seafood, one of a kind culture and world-class fisheries, beaches and tourist destinations, as well as the wide spectrum of firms poised to conduct future ecosystem restoration projects. As such, we encourage the use of funds from the recently passed RESTORE the Gulf Coast Act to create local job and training opportunities, strong communities, and long term economic health by investing in the restoration of the Gulf's wetlands, oyster reefs and barrier islands. Gulf Coast ecosystems are an important economic driver for our state and our regional economy, helping us to provide critical services and products needed to drive job creation, including: - Production of 1.1 billion pounds of seafood annually - with double value of \$661 million; - Supporting the largest remaining wild oyster harvest in the world; - Attracting more than 23 million recreational fishing trips annually, and - Flooding more than 600,000 jobs and \$9 billion in wages annually in tourism and recreation. Healthy wetlands, barrier islands and oyster reefs also mitigate the impacts of hurricanes and other extreme weather events on our communities and other coastal assets. The annual losses associated with these events are currently estimated at approximately \$17 billion. Thanks to the resources made available through the RESTORE Act, there is an unprecedented opportunity to restore the Gulf, to strengthen our traditional industries, create new economic mobility and accelerate emerging markets centered on environmental restoration. Coastal restoration projects will create new business for a wide variety of firms in the engineering, construction, transportation, and manufacturing sectors, generating demand for more workers across these sectors. As a result, there will be new opportunities for employment of Gulf Coast residents, which will increase as innovative technologies are developed and exported out of the region. Further, the restoration of the Gulf of Mexico will draw more visitors to our beaches and towns, promote thriving fisheries, and make our communities more resilient in the face of future storms and sea level rise. These benefits can only be realized with a significant investment of RESTORE Act funds into ecosystem restoration projects. A recent study conducted by Mather Economics estimated that investing these oil spill penalty funds into ecosystem projects could create 72,453 new jobs over 50 years. We therefore encourage you to invest a substantial amount of the oil spill penalty funds from the RESTORE Act into these types of projects, which will reap the maximum benefits for the long-term prosperity of our region. Additionally, we believe it is good public policy for firms involved in ecosystem restoration projects to work in partnership with government and workforce development stakeholders to increase their abilities to prepare and hire qualified local, low income and disadvantaged workers. Those of us that may be involved in these projects stand prepared to partner with the State to identify the necessary skill-sets and training programs to prepare our state's workforce to conduct future restoration projects and find new economic opportunities. We encourage the State to invest a portion of the RESTORE Act funds that will be allocated to the State for this new challenge.	Hancock, Harrison, Jackson	Yes	No														\$ -	\$ -	

Eco Restoration	1266	12/4/2013	NRDA Project Proposals State of Mississippi May 13, 2011	The Nature Conservancy in Mississippi is pleased to present the following Project Proposals that we feel are eligible for early NRDA funding based on guidance provided in the "Framework for Early Restoration Addressing Injuries Resulting from the Deepwater Horizon Oil Spill" document. These Projects support the conservation and restoration of critical Gulf of Mexico habitat types including sub-tidal oyster reefs, coastal marsh and forest, sea grass beds and acquisition and restoration of critical coastal lands through the existing Coastal Preserve Program of Mississippi administered by the Mississippi Secretary of State's Office and the Department of Marine Resources. Specifically, these projects meet the requirements delineated in paragraph 6 in that they: <ul style="list-style-type: none"> Contribute to making the environment and public whole by restoring, rehabilitating, replacing, or acquiring the equivalent of nature resources or services injured as a result of the spill; Address one or more specific injuries to natural resources or services associated with the incident Seek to restore natural resources, habitats or natural resource services of the same type, quality, and of comparable ecological and/or human use value to compensate for identified resource and service losses resulting from the incident; Are not inconsistent with the anticipated long-term restoration needs and anticipated final restoration plan; and Are feasible and cost-effective. The Nature Conservancy has been actively engaged in conservation of the Gulf of Mexico ecosystem for nearly 40 years including over 15 years in Mississippi. During that time we have restored or protected hundreds of thousands of acres of a variety of habitat types across the five Gulf states in partnership with our state and federal colleagues as well as private landowners and businesses. We are well-versed on the ecology of the Gulf and are expert at developing, implementing, and monitoring restoration projects. 1. Hancock County wetlands stabilization and oyster restoration project 2. Restoration and enhancement of coastal marsh and transitional forests in Coastal Mississippi 3. Using living shoreline technology to mitigate the effects of previously hardened shorelines 4. Living shorelines - wetlands restoration projects, Mississippi Gulf Coast, Harrison and Jackson Counties 5. Sub-tidal oyster reef restoration in Bilal Bay, Mississippi 6. Sub-tidal oyster reef restoration in Bay St. Louis, Mississippi 7. Mississippi Coast wide seagrass community based conservation program 8. Acquisition of property on Round Island, Jackson County, MS 9. Acquisition of property on Deer Island, Harrison County, MS 10. Acquisition of Private Coastal Lands for Preservation, Hancock, Harrison, and Jackson Counties, MS	Hancock, Harrison, Jackson	Yes	Yes		Yes	Yes	Yes	No	Yes	No		\$ 5,153,865.00	\$ -	
Eco Restoration	1267	12/4/2013	The Gulf of Mexico Ecosystem: A Coastal and Marine Atlas	The Gulf of Mexico provides extraordinary goods and services to the Gulf Coast region and the entire nation, but its ability to continue to do so rests on effective restoration and management of natural resources. The Atlas is a tool to aid current and future Gulf restoration efforts and improve the ongoing management of the Gulf ecosystem. The Atlas portrays this large marine ecosystem by depicting and describing the following, which, when assembled collectively, broadly characterize: Physical features and processes that define and drive the Gulf ecosystem Fish and wildlife resources, emphasizing species and habitats of concern that were affected by the BP Deepwater Horizon oil disaster as well as species of commercial or other importance Systemic environmental stressors Related human uses, influences and their effects on the Gulf ecosystem	n/a	Yes	No		No	No	No	No	No	No	\$ -	\$ -		
Eco Restoration	1269	12/7/2013	Ecological Restoration of Slash Pine on the Barrier Islands and Coastal Wetlands	Hurricane Katrina and the BP oil spill were very damaging to the barrier islands of the Mississippi, Alabama and Florida Gulf Coast. There is a consensus developing that some restoration of the island ecosystems will be required, including replanting the vegetation, especially the trees. Nothing has been written about the seed sources for the restoration plantings. The arboreal vegetation of the barrier islands of the eastern Gulf Coast of the US consists mostly of slash pine (<i>Pinus elliottii</i> var. <i>elliottii</i>) and live oak (<i>Quercus virginiana</i>). During tropical storms, these islands are often inundated with sea water. After Hurricane Katrina (2005), 80% of the slash pine and 50% of the live oak were dead within a few months after the storm. There was very little wind-throw. The mortality was undoubtedly due to exposure to sea water. With these events occurring every decade or so, one might expect that natural selection would result in some genetic adaptation in these populations to temporary salt water inundation. Slash pine occurs not only on the barrier islands but well inland, far from salt water exposure. Seed sources normally found in commercial nurseries are derived from inland populations. It could be a serious error to replant the island vegetation with inland sources that are not adapted to salt water exposure. Mergen et al. (1966) compared barrier island slash pine with mainland sources and found morphological differences. Salt tolerance was not studied. Land (1973) found salt tolerances higher in slash pine than in loblolly pine. It is not a coincidence that slash pine is the only pine found on the Mississippi barrier islands. This study will seek to explore genetic differences in salt tolerances among half sib families and populations of island and mainland slash pines, with the goal of identifying appropriate salt-tolerant seed sources to use in restoration projects. Seed will be collected from individual trees of three types of populations: 1. Barrier island slash pine, attempting to sample all barrier islands; 2. Marsh populations adjacent to the island populations, i.e., populations exposed to salt water through tidal actions; and 3. Mainland populations sampling south-to-north transects starting at points ranging from southeast Louisiana to northwest Florida. Seedlings will be grown for several months and then tested in replicated trials by dipping in artificial seawater. In addition, DNA samples will be tested to determine the level of genetic diversity and differentiation in these populations. Both sets of information will be utilized to recommend and develop adapted seed sources for reforesting the barrier islands and coastal wetlands. At present, seed samples have been collected and GPS-located from Cat Island (Mississippi), Deer Island (Mississippi) and northern Harrison County, Mississippi, and pilot studies on salt tolerance testing have been initiated. This study will have an important impact on the management of slash pine ecosystems throughout the Gulf Coast by providing guidance to restoration efforts. There will also be a significant educational impact, due to the involvement of cooperating university scientists and graduate students. Eighty five percent of all sturgeon species on Earth are at risk of extinction, placing them on the International Union for the Conservation of Nature Red List of Threatened Species (Anonymous 2008). Overfishing and population declines due to human development (e.g., dams, low water sills) and catastrophes (i.e., Hurricane Katrina, Deepwater Horizon oil spill (DWH)) are problematic to the recovery of sturgeons, many of which do not spawn annually and can live to be 100 years old. It was evident post DWH that there was a lack of existing data regionally on a number of important ecological patterns of all taxa which would allow scientists, managers, NGOs, and NRDA to assess any potential damage to the environment from the largest accidental oil spill in history (Alford et al. 2014). This project would partner and enhance three existing acoustic array projects that are currently funded to study the western population (Pascagoula and Pearl River populations) of Gulf sturgeon, Acipenser oxyrinchus desotoi, through assessment projects from USACE (Mobile District, through 2017) and Adams International Consulting (Gulfport PI Authority expansion project, through 2014) and the Pascagoula River estuary project (3 yr NOAA, ending 2014). The project proposed here will focus on four themes: 1) Long-term movement and regional occupancy; 2) Short-term, high resolution movement and occupancy in estuaries; 3) Trophic ecology via stable isotope analyses (SIA), and 4) Predict Gulf sturgeon estuarine/marine movement patterns relative to water quality indicators (water temperature, salinity and dissolved oxygen), surface current speed and direction, and meteorological variables (wind and surface current speed and direction and rainfall). Conducting a comprehensive assessment of the western population will allow scientists and managers needed information on larger spatial and temporal scales over which to effectively manage and conserve this threatened species. The extensive data collected will also allow state and federal agencies and NRDA to more effectively assess future environmental impacts and damages. These data sets will also be extremely useful to any state and federal agency whose mission is to manage Threatened and Endangered species in light of probable restoration activities due to DWH via funding from RESTORE/NFWF/MSDEQ/MSDMR or other venues. The USM Fisheries Ecology and ERDC laboratories jointly have extensive experience with Gulf Sturgeon (Heise et al. 2004, Ross et al. 2009, Havrylykoff et al. 2012, Peterson et al. 2014), and its ecology and conservation and work closely with NOAA and USFWS on its recovery plans. Jointly, our team will become the Central Point of information and data collection on the long-term and short-term occupancy (via Vemco VR2M Positioning acoustic System (VPS), movement patterns of Gulf Sturgeon, and use of federally-designated critical benthic habitat (river, bays, nearshore areas, and barrier islands) for the entire Mississippi Sound region.	Harrison	Yes	Yes		No	Yes	No	No	No	No	\$ 2,750,000.00	\$ 250,000.00		
Eco Restoration	1277	12/16/2013	Comprehensive assessment of the western populations of the threatened Gulf sturgeon, Acipenser oxyrinchus desotoi: long term movements and occupancy patterns, short-term residency patterns, environmental correlates of estuarine/marine movement, and trophic	This project would partner and enhance three existing acoustic array projects that are currently funded to study the western population (Pascagoula and Pearl River populations) of Gulf sturgeon, Acipenser oxyrinchus desotoi, through assessment projects from USACE (Mobile District, through 2017) and Adams International Consulting (Gulfport PI Authority expansion project, through 2014) and the Pascagoula River estuary project (3 yr NOAA, ending 2014). The project proposed here will focus on four themes: 1) Long-term movement and regional occupancy; 2) Short-term, high resolution movement and occupancy in estuaries; 3) Trophic ecology via stable isotope analyses (SIA), and 4) Predict Gulf sturgeon estuarine/marine movement patterns relative to water quality indicators (water temperature, salinity and dissolved oxygen), surface current speed and direction, and meteorological variables (wind and surface current speed and direction and rainfall). Conducting a comprehensive assessment of the western population will allow scientists and managers needed information on larger spatial and temporal scales over which to effectively manage and conserve this threatened species. The extensive data collected will also allow state and federal agencies and NRDA to more effectively assess future environmental impacts and damages. These data sets will also be extremely useful to any state and federal agency whose mission is to manage Threatened and Endangered species in light of probable restoration activities due to DWH via funding from RESTORE/NFWF/MSDEQ/MSDMR or other venues. The USM Fisheries Ecology and ERDC laboratories jointly have extensive experience with Gulf Sturgeon (Heise et al. 2004, Ross et al. 2009, Havrylykoff et al. 2012, Peterson et al. 2014), and its ecology and conservation and work closely with NOAA and USFWS on its recovery plans. Jointly, our team will become the Central Point of information and data collection on the long-term and short-term occupancy (via Vemco VR2M Positioning acoustic System (VPS), movement patterns of Gulf Sturgeon, and use of federally-designated critical benthic habitat (river, bays, nearshore areas, and barrier islands) for the entire Mississippi Sound region.	Hancock, Harrison, Jackson	Yes	No		No	Yes	No	No	No	\$ 4,230,000.00	\$ -			
Eco Restoration	1278	12/14/2013	MONITORING MARINE MAMMALS IN THE MISSISSIPPI SOUND AND ADJACENT COASTAL WATERS - Research, Education and Outreach Program	Coastal marine mammals are at higher risk of being adversely impacted by the intense human activities in these regions. Lack of basic knowledge about marine mammal (MM) populations in the MS Sound and adjacent waters precludes conservation of these protected species and hinders the ability of natural resource managers to assess the impacts of human-related activities such as the Deepwater Horizon oil spill. In the Gulf of Mexico's (GOM) estuaries and coastal waters, including the Mississippi Sound, the bottlenose dolphin (BD) is the most common marine mammal species. As a marine top-predator, BDs are prone to accumulating toxic compounds ¹ for example by consuming contaminated prey ² which are transferred to their offspring via lactation at higher concentrations. New techniques in MM research coupled with the fact that BDs are long-lived, top predators with a diverse diet (e.g., squid, shellfish, fish) allow their use as prime indicators of marine ecosystem health (Wells et al. 2004). This year, an Unusual Mortality Event (UME) of BDs on the East coast was linked to an episodic case of morbillivirus. The largest UME declared in U.S. history is on going in the GOM, encompassing the coastline from the Texas/Louisiana border to Franklin County, Florida. Since 2010 more than a thousand dead dolphins have been recorded in this UME. Mississippi is second only to Louisiana in the number of stranded dolphins; so far the causes of this UME have not been identified. The DWH oil spill and the UME significantly raised awareness about the inadequacy of Gulf-wide baseline knowledge for estuaries and coastal BD populations and how it limited the assessment of the DWH oil spill impacts on marine mammals (MMC 2013). This is particularly problematic for these BD stocks, including the MS Sound stock, because of their strategic status (i.e., population shows signs of decline or high human-caused mortality). The failure to meet monitoring obligations mandated by the Marine Mammal Protection Act, is in part due to the daunting number of management units defined for the conservation of BD populations (>30 stocks) in the GOM. Although an abundance estimate was produced for the MS Sound (Miller et al. 2013) BD population for 2007, the official stock estimate is still considered unknown (Waring et al. 2013) for management purposes because the study area did not fully align with the geographic delineation of the MS Sound stock. Another limitation in evaluating impacts on the MS Sound BD population, is the uncertainty about whether the current stock delineation is supported by genetic and/or behavioral data. Whether the MS Sound consists of genetically uniform groups is unknown. Knowledge about the behavior, residency and movement patterns of dolphins is essential even in the absence of genetic distinction among groups because discrete communities, arising from a tight social structure and high site-fidelity, also require monitoring under the MMPA. The primary goal of this project is to combine abundance, behavioral and genetics data to better understand BD population structure (i.e., identify geographic boundaries of the stock) in the MS Sound, which is essential to evaluate impacts of future oil spills and Unusual Mortality Events (UMEs). Assigning mortality events (i.e., stranded dolphin carcasses) to the source population is critical to evaluate the significance of adverse impacts on a specific stock. Using coastal and ocean circulation modeling, we will develop a tool that allows managers to predict the likely source of stranded carcasses. In addition, these models will examine whether mortality on the MS Sound, based on the number of stranded carcasses on the coast, is under- or over-estimated due to transport by ocean currents. Several UMEs in the GOM, and recently on the Atlantic coast, have been attributed to microorganisms, including dolphin morbillivirus. Morbillivirus affects the central nervous system causing problems with swimming, diving and navigation and, ultimately, stranding. Dolphin populations may be more susceptible to contracting a fatal disease when experiencing stressful conditions (e.g., oil spill, scarce prey). Microbiomics, the identification of bacteria and viruses by means of nucleic acid extraction and identification (sequencing), is a powerful method for describing microbial diversity on	Jackson	Yes	No		No	Yes	No	No	No	No	\$ 5,000,083.00	\$ -		

Eco Restoration	1279	12/16/2013	Mississippi Reef Fish Program: Addressing Data Needs for Regional Management of Red Snapper and Assessing Reef Fish Ecosystem Function	<p>The red snapper, <i>Lutjanus campechanus</i>, is the most economically important reef fish species in the Gulf of Mexico (GOM), supporting major commercial and recreational fisheries in the five Gulf states. The stock has, however, been overfished since the 1980s, prompting the Gulf of Mexico Fishery Management Council to adopt the Reef Fish Management Plan in 1984 to institute catch limits and seasonal closures on the fishery. A subsequent rebuilding plan was approved in 2003. Despite these efforts, a combination of increased directed effort, repeated quota overages and uncertainty about stock status has resulted in more restrictive management measures. For instance, the recreational red snapper season in the GOM has been incrementally reduced from a year-round season (365 days) prior to 1997 to only 28 days in 2012. Over the same time period, the size limit has been increased from a 13-inch to a 16-inch minimum length, and the daily bag limit has been decreased from seven to two fish per angler. As a result, the management of red snapper has become quite controversial.</p> <p>Compounding this management issue are impacts to red snapper stocks from the Deepwater Horizon oil spill in 2010. The release and dispersal of oil from the damaged MC252 well encompassed natural and artificial areas that serve as primary habitat for the species, thereby jeopardizing biological and ecological function of juveniles and adults. Further, red snapper spawn from May through September in Gulf waters, a time period overlapping the spill, and those pelagic larvae would have been subjected to oil exposure in the water column during their pre-settlement phase. While the scale of oil impacts remains undetermined, the distribution and benthic nature of red snapper made them particularly susceptible to oil exposure, and the stock was undoubtedly impacted by the Deepwater Horizon event.</p> <p>The State of Mississippi currently manages more than 16,000 acres of permitted offshore reef sites at 15 fish havens north and south of its barrier islands, and an additional eight sites are part of the Mississippi Rigs to Reef Program, coordinated with the Bureau of Ocean Energy Management. However, unlike Alabama and Louisiana, Mississippi currently does not utilize a standardized reef fish sampling protocol. Therefore, data on abundance, distribution and life-history characteristics of reef fish occurring at those locations that could contribute to regional management decisions are lacking. Given the uncertainty in various stock parameters for GOM red snapper and the unknown status of spill-related impacts, the purpose of this program is to obtain comprehensive ecological data on reef fish species occurring in northern GOM waters off Mississippi for use in regional stock assessment. Data on abundance, size and age composition, feeding, habitat use, population structure, movements/migrations, growth rates, mortality rates, and habitat value will address significant gaps in our knowledge of fishes inhabiting Mississippi's offshore reefs. A unique aspect of our approach is to use cultured red snapper to validate estimates of vital rates obtained with more traditional sampling techniques. Relaying tagged cultured fish of a known age and health status will contribute to a better understanding of red snapper biology and habitat quality. By addressing key data gaps, this program will benefit the reef fish management process, serve as a basis for the regional management of GOM red snapper, and enhance the recovery and sustainability of the resource. Additionally, project sampling will provide new data for determining the distribution and ecology of invasive species such as the lionfish, which has been shown to impact reef ecology by altering trophic dynamics.</p> <p>Based on the needs identified herein, we propose to:</p> <ol style="list-style-type: none"> 1) implement standardized sampling protocols to fill data gaps for red snapper and other reef fish species occurring at Mississippi artificial reef sites to support regional assessment and management; 2) utilize traditional and acoustic tagging techniques to determine habitat use, movements/migrations, growth and mortality of wild red snapper. 	Hancock, Harrison, Jackson	Yes	No	No	No	Yes	No	No	No	No	No	No	\$ 14,600,544.00	\$ -	-
Eco Restoration	1280	12/16/2013	Emerging infectious diseases affect recovery of coastal marine ecosystems	<p>The problem</p> <p>Salt marsh and oyster reef habitats support complex communities of plants and animals, that are the foundation for coastal ecosystem services. Among the more important services are nutrient removal, storm surge protection, and nursing commercially and recreationally important species. Unfortunately, salt marshes and oyster reefs are among the most vulnerable and declining of habitats. Climate change and natural events such as hurricanes and anthropogenic disruptions such as Deepwater Horizon oil spill are contributing to the decline of these biological communities. Episodes of infectious diseases that emerge as a result of such natural and anthropogenic disturbances suppress or remove species from the communities and affect the health of plant and animal communities thus compromising recovery and functioning of the coastal ecosystem.</p> <p>The solution</p> <p>To remedy the disruption to salt marshes and oyster reefs from epizootics of infectious diseases following the Deepwater Horizon oil spill, we propose a multifaceted program to address important nonindigenous and indigenous pathogens, determine the roles and consequences they have for recovery and restoration of Mississippi salt marsh and oyster reef communities, and assess their threats to human health. The multidisciplinary program will elucidate the patterns and dynamics of occurrence and infection and transmission dynamics of these emerging infectious diseases (EID). The proposed program will provide the ability to evaluate the consequences of outbreaks, assess the likelihood of emergence of coastal diseases, and provide effective management strategies for resource managers, conservationists, and public health officials.</p>	Hancock, Harrison, Jackson	Yes	No	No	No	Yes	No	No	No	No	No	\$ 7,941,630.00	\$ -	-	
Eco Restoration	1281	12/16/2013	Evaluation of best management strategies for restoring carbonate-dependent habitats such as oyster reefs in estuaries and the near shore of Mississippi	<p>Oysters and oyster habitat are among the nearshore and estuarine habitats most susceptible to the vagaries of man. The Deepwater Horizon oil spill and its aftermath including the opening of freshwater spillways to limit oil incursion devastated the oyster population over much of the Louisiana coast east of the Mississippi River estuary through Mississippi Sound. Even prior to the spill, regional investment in oyster reef restoration and restoration was significant every year post spill; this will only increase. Oysters are the dominant nearshore producers of carbonate upon which their habitat and a range of valuable ecosystem services depend. But, other carbonate producers influence soft-bottom habitats over much of the estuarine and nearshore region. Although time-honored practices are routinely used in reef restoration, rarely have they been rigorously evaluated. In addition, little attention is given to the vastly larger in acreage soft-bottom habitats where recent evidence suggests carbonate production may play an important role and which may be equally sensitive to environmental assaults stemming from decisions on freshwater diversion, pollutant impact, and resource management. What has not been implemented is a rigorous and encompassing evaluation of carbonate management, comprehensive of the reefal and adjacent soft-bottom region, directed both at best practices for restoration and for sustainable management.</p> <p>We propose a study that will identify a new standard in restoration management in which investment is made based on scientific principles and in which project design results from goal-oriented application of these principles with sustainability as an underlying requirement. The challenge is not just to revitalize an oyster population, but rather to restore to long-term sustainability the habitat (reef) itself. This challenge involves not just an improved application of present knowledge on oyster population dynamics, but also the application of the basic principles controlling the fate of carbonate in the coastal zone. We propose to test the hypothesis that oyster reef restoration may hide substantial long-term compromises in function urgently in need of address. The proposed effort has broad implications. Carbonate is at the nexus of the human and natural world in our estuaries and lagoons. Most commercial species are carbonate-producing organisms (e.g., shellfish) or animals dependent upon or benefiting from carbonate production. Bivalves generate a dominant habitat type (e.g., oyster reefs), yield important commercial products (e.g., oysters, clams, scallops), provide a high-value food resource (e.g., crabs, fish) and are impacted by the activities of a diversity of managing management bodies and private sector parties. Stocks are managed for commercial production. Habitats are managed for ecosystem activities by federal and state agencies, and non-profit groups. Fisheries are prosecuted in a number of strategies, including transplant of seed and wild harvest of adults by tong and dredge. The expectations that exist often result in competing uses of carbonate, poorly resolved goals for management, and undesirable outcomes of management activities. The complexity of management goals and strategic options depends upon the application of sound scientific principles in a culturally astute way, implementing scientifically tested best management practices will allow this to be fully realized. Our goal is to develop improved options based on the biological and geochemical principles controlling the fate of carbonate in the coastal zone and merge these with the necessary cultural and economic realities of carbonate management to address the critical challenges facing the competing uses of carbonate in the coastal zone. We will include significant empirical tests of options for carbonate addition and management to provide the first rigorous information from which long-term environmental and habitat outcomes can be judged. We will also include extensive educational and outreach efforts designed to disseminate the scientific approach and findings of the proposed research not only to secondary school students but also to key regulatory bodies, fishermen organizations, and management agencies to achieve improved management goals and more successful and sustainable outcomes.</p>	Hancock, Harrison, Jackson	Yes	No	No	Yes	Yes	No	No	No	No	No	\$ 4,900,000.00	\$ -	-	
Eco Restoration	1282	12/17/2013	Developing a novel framework to evaluate restoration and function of coastal wetland structure in a spatial-temporal context using coastal preserves as reference sites	<p>In light of damages to salt marsh resources following the Dwell oil spill, it is anticipated that substantial efforts will be focused on restoring salt marsh habitats within the northern Gulf of Mexico region. In order to track the recovery of ecosystem services and function of restored salt marshes, USMCM's GCR Coastal Ecosystems Group (CEG) and MSU Coastal Research and Extension Center propose to conduct integrated assessments of the functional equivalency of restored and reference salt marsh habitats at various levels of trophic and landscape organization. The proposed project will assess the functional equivalency of restored/created salt marshes compared to reference habitats found on the MS Department of Marine Resources (DMR) Coastal Preserves using an integrated approach involving: primary production, benthic secondary production, nekton abundance, marsh bird communities, and trophic linkages assessed using stable isotope analysis (SIA). These trophic levels are important in understanding production and use of salt marsh habitat as a nursery and the role restoration has in restoring these functions. Additionally, we will be estimating a number of important water and sediment quality and quantity metrics that are vital to development of a better understanding of salt marsh function. The proposed project will address issues related to conservation, preservation, and enhancement of emergent salt marsh habitat. We will develop standardized quantitative assessment metrics that can be utilized at future created salt marsh sites in coastal Mississippi and the Gulf of Mexico region.</p> <p>SPECIFIC ACTIVITIES:</p> <ol style="list-style-type: none"> 1. Building a Geodatabase On Marsh Restoration Projects We will develop a geodatabase using GIS by compiling permits from previous coastal marsh restoration projects in Mississippi from the US Army Corps of Engineers Mobile office and the MDMR. This database will provide information on the geographic location of restored/created marshes, when they were built, and other related information. Such a database does not currently exist and is a critical need, not only for this particular project, but also for the broader research and resource conservation management in the Gulf of Mexico region. In order to develop an efficient experimental design that covers spatial and temporal gradients required to assess salt marsh restoration success, the information collated in the geodatabase will be used to choose a range of ages (10-15 years and 4-5 years) of restored/created sites and those will be paired with adjacent natural reference sites (located on Coastal Preserves). The study marshes will be stratified into two broad types based on the ecological processes that drive them; namely riverine-dominated (e.g., Pascagoula or Pearl River marshes) versus marine-dominated systems (e.g., Grand Bay NERR). At each site we will be looking at the temporal/spatial functionality of marsh ecosystems from a variety of perspectives outlined below. 2. Developing Standardized Methods For Functional Assessment: a) Plants and benthic microalgae primary production b) Invertebrates and macrobenthic secondary production c) Resident nekton and reproduction function d) Resident marsh birds as trophic indicators e) Stable isotope analysis and trophic linkages f) Landscape configuration and habitat modeling 	Hancock, Harrison, Jackson	Yes	No	No	Yes	No	No	No	No	No	\$ 8,000,000.00	\$ -	-		
Eco Restoration	1285	12/19/2013	Hillier Park Renaissance Garden Educational/Restoration Project	<p>The Mississippi Renaissance Garden Foundation's (MRGF) Horticulture for Humanity (H4H) movement began as an environmental recovery effort in the aftermath of Hurricane Katrina. Our mission is empowering humanity through horticulture. A 1.4 acre Hillier Park Renaissance Garden (HPRG) site on Back Bay Bluff was leased from the city of Biloxi in 2007. The huge oak trees, nearby stream, waterfall and woodlands provide a tranquil retreat and family friendly learning destination. A future nature trail, organic gardening demonstration, including worm composting and drip irrigation will support a community garden. HPRG has become the cornerstone of the MRGF efforts. Today, this all-volunteer undertaking utilizes this centrally located botanical and edible demonstration garden to support H4H educational goals.</p> <p>HPRG features labeled plants, trees, flowers and inspirational areas promoting the coastal MS landscape. It highlights plant uses such as food, environmental education, horticultural therapy and native, endangered and historical flora, as well as wildlife habitats and natural waterway uses. A small horticultural center with an office, multipurpose room, library, eco-art exhibit, gift shop, rest rooms and small catering kitchen is planned for visitors of all ages and abilities to learn wise use and conservation of our natural resources and to plant, protect and restore disaster-threatened environments. Requested funds for HPRG would be used to: 1) hire professional assistance to design and construct a green horticultural center utilizing solar energy; 2) an irrigation system and lighting; 3) a green house with shed; 4) two outdoor pergola classrooms; 5) new garden beds and plant signage; 6) accessible walkways; and 7) security fencing.</p> <p>The MRGF assists six gardens maintained by local residents. HPRG would use NRDA funds to assist those gardens to accomplish H4H goals to 1) demonstrate that gardens are inspiring, functional, affordable, attainable and beneficial to the community, its residents, visitors and the economy; 2) increase healthy, sustainable lifestyles and community involvement; 3) distribute free seeds, plants, trees and other resources for their landscapes; 4) provide a base of operations (HPRG) for the MS Gulf Coast Horticulture for Humanity Movement. By addressing the injury to the physical, mental, emotional and spiritual needs of coastal people and injury to ecological, marine and wildlife caused by man-made or natural disasters, HPRG would be a model of its benefits and inspire development of other H4H gardens locally, statewide and nationally. NRDA funding would allow the HPRG and horticultural center to become a major ecological tool in the future of the MS Gulf Coast environment, its people and its nature-tourism industry.</p>		Yes	No	No	Yes	No	No	No	No	No	\$ 2,000,000.00	\$ -	-		

Eco Restoration	1286	12/20/2013	Restore and Re-populate Addressing Potential Impacts of the Deepwater Horizon Oil Spill to Fishes in Coastal Mississippi Rivers	Coastal streams in Mississippi flow through many miles of urban and suburban areas, longleaf pine forests, agricultural lands, ancient bottomland hardwood forests and cypress swamps and empty into a network of marshes and lakes and the Mississippi Sound. They are home to many species of wildlife, including migratory birds that winter in South America as well as several threatened and endangered species of fish. Fish, such as Gulf Striped Bass, Morone saxatilis, travel coastal stream waters to the Gulf of Mexico and return to the rivers to spawn. These rivers provide vitally important spawning and post-spawning habitat for Striped Bass and other species. Freshwater fish, such as the Largemouth Bass, Micropterus salmoides, Spotted Bass, Micropterus punctulatus, (species of black bass) and several sunfish species, Lepomis spp., and crappie, Pomoxis spp., provide the driving force of the freshwater fishing activities of Gulf anglers. All of the coastal river systems are important and include the Pascagoula River watershed deemed as the last unimpacted system in the continental United States and the closest we have at least in the lower 48 states to a natural paradise by Dr. Bailey Thomson, University of Alabama; the lower Pearl River which serves as the 116-mile boundary between Mississippi and Louisiana; and, the Coastal Streams like the Jourdan, Wolf and Tchoutacabouffa Rivers and numerous bayous. Statement of Need The Gulf Oil Spill affected important estuaries and open waters that serve as habitats for fish throughout their life cycles. Gulf Striped Bass are a recreationally and economically important throughout the Coastal counties and this species occupies affected habitats. MDWFP proposes to repopulate Striped Bass populations and augment populations of black bass and sunfishes in these impacted river systems through the methods outlined below. Expansion of Turcotte Fish Hatchery, in Canton, will be necessary to provide advanced sized fingerlings for the coastal streams. An additional hatchery employee will be needed to address the increased workload. Methods: -Repopulate Fish Populations of Conservation Concern -Determine relative abundance and age structure of Gulf Striped Bass populations in the Pearl, Pascagoula the Jourdan, Wolf and Tchoutacabouffa Rivers. -Improve fish production capacity at Turcotte Fish Hatchery near Canton, MS, for increased production of Gulf Striped Bass, black bass and selected sunfish. -Produce advanced fingerling black bass, and selected sunfish at to enhance populations of game fish in the coastal streams. Monitoring and Evaluation -Collect biological data on existing Gulf Striped Bass populations in coastal rivers. -Collect biological data on existing Largemouth Bass, Spotted Bass and sunfish populations in coastal rivers.	Hancock, Harrison, Jackson	Yes	No	No	Yes	No	Yes	No	Yes	No	Yes	No	\$	5,500,000.00	\$	-
Eco Restoration	1568	1/1/1900	Habitat Restoration with Artificial Reefs	(ORIGINAL ID#3) Placement of artificial reefs at existing permitted nearshore and offshore sites. The artificial reefs may be engineered structures and/or concrete rubble from Hurricane Katrina.	Hancock, Harrison, Jackson	Yes	No	No	No	No	No	No	No	No	\$	-	\$	-		
Eco Restoration	1569	1/1/1900	Sand Renourishment / Replenishment Development Program	(ORIGINAL ID#1) Replacement and/or replenishment of sand at beaches along the coast of Mississippi, such as at Deer Island and other key locations in the three coastal counties. Some of the beaches may be replanted with marine grasses.	Hancock, Harrison, Jackson	Yes	No	No	No	No	No	No	No	No	\$	-	\$	-		
Eco Restoration	1570	1/1/1900	Giving Gulf Wetlands a Future	(ORIGINAL ID#58) Use of purchases and conservation easements to protect low coastal uplands surrounding the Gulf of Mexico. A planning horizon of 50 years should guide this protection.	n/a	Yes	Yes	No	No	No	No	No	No	No	\$	-	\$	-		
Eco Restoration	1571	6/22/2011	Using Living Shorelines technology to Mitigate the Effects of Previous Hardened Shorelines in Coastal Mississippi	(ORIGINAL ID#215) Project utilizes established, proven methods already in use across the Gulf of Mexico, which has achieved effective, long term results. We do not anticipate any problems going through the permit process, no listed species will be impacted by the project. Listed species in the area, primarily the Gulf Sturgeon and some species of sea turtles, are rare, highly mobile, and not likely to venture into the project area. Deployment of living shorelines structures may produce short term and localized turbidity. Permits needed will be applied for through the Mississippi Department of Marine Resources, and if need be, U.S. Army Corps of Engineers. For projects of this type, state permitting is usually adequate and typically takes 30 days to obtain. Like all shoreline areas in the United States, Coastal Mississippi has experienced a population increase and more people move to the coast. In fact, some 70% of all Americans now live within 50 miles of a coast. As coastal areas develop, shoreline land owners often seek to protect valuable property from erosion by erecting seawalls, bulkheads and riprap. While these structure function well in their intended purpose, they usually destroy nearby habitat. Substantial areas of previously hardened shoreline exist in all three Mississippi coastal counties. TNC will work with MS DMR, local governments, and local landowners to select appropriate areas to construct 4 miles of living shoreline monitoring. The project will measure the project term effectiveness. Living shorelines typically leads to the loss of any coastal habitat in their immediate area. Construction of living shorelines structures seaward of a hardened shoreline should encourage deposition of sediment, encourage regrowth of marsh vegetation, re establishment of natural beaches and increase shoreline complexity. These positive changes will encourage use by fish, invertebrates and resident and migratory shorebirds. It is unlikely that these structures will have any effect on federal or state listed species.	Hancock, Harrison, Jackson	Yes	No	No	No	No	No	No	No	No	No	\$	3,400,000.00	\$	-	
Eco Restoration	1572	6/22/2011	Sub tidal oyster reef restoration in Biloxi Bay, Mississippi	(ORIGINAL ID#216) The sub tidal oyster reef habitats in coastal Mississippi have been degraded over time due to poor riverine water quality, questionable land use practices in watersheds, shoreline hardening and natural processes such as hurricanes. Substantial expanses of suitable bottom area exist in all Mississippi bays and estuaries. The proposed project will construct oyster reef habitat using natural oyster shell, on suitable water bottoms. Careful scientific monitoring will document long term success. Restoration of oyster reefs in Biloxi Bay began in 2007, with the construction of a 10 acre pilot project. The reef was later expanded to 22 acres. Suitable water bottoms exist in the Bay for further restoration. TNC has requested additional funding from FishAmerica to add an additional 30 acres of reef. Project timeline: Permitting and design: July 2011. Pre deployment sampling: October 2011. Reef construction: December 2011. Reef construction: May 2012. Post construction monitoring: until May 2017. When compared to other areas, Mississippi's oyster reefs are in fairly good condition, but significant losses have occurred. Restoration of sub tidal oyster reefs produces increased biomass and species diversity, along with a shift to important sport fish, including spotted sea trout, white sea trout, black drum, and southern kingfish (ground mullet). Resident and migratory shorebirds will also benefit. It is unlikely that restored oyster reefs in Biloxi Bay will have any effect on federal or state listed species.	Harrison	Yes	No	No	No	No	Yes	No	No	No	No	\$	875,000.00	\$	-	
Eco Restoration	1573	6/22/2011	Sub tidal oyster reef restoration in Bay St. Louis, Mississippi	(ORIGINAL ID#217) The sub tidal oyster reef habitats in coastal Mississippi have been degraded over time due to poor riverine water quality, questionable land use practices in watersheds, shoreline hardening and natural processes such as hurricanes. Substantial expanses of suitable bottom area exist in all Mississippi bays and estuaries. The proposed project will construct oyster reef habitat using natural oyster shell, on suitable water bottoms. Careful scientific monitoring will document long term success. Restoration of oyster reefs in Bay St. Louis began in 2007, with the construction of a 2 acre pilot project. In 2009, a larger, 14 acre project was constructed nearby. Sampling of both reefs in early 2011 showed that both reefs are fully functional, and contributing to the productivity and biodiversity of the Bay. Suitable water bottoms exist in the Bay for further restoration. TNC has requested additional funding from NOAA to add an additional 30 acres of reef. Project timeline: Permitting and design: July 2011. Pre deployment sampling: October 2011. Reef construction: December 2011. Reef construction: May 2012. Post construction monitoring: until May 2017. When compared to other areas, Mississippi's oyster reefs are in fairly good condition, but significant losses have occurred. Restoration of sub tidal oyster reefs produces increased biomass and species diversity, along with a shift to important sport fish, including spotted sea trout, white sea trout, black drum, and southern kingfish (ground mullet). Resident and migratory shorebirds will also benefit. It is unlikely that restored oyster reefs in Bay St. Louis will have any effect on federal or state listed species.	Harrison	Yes	No	No	No	No	Yes	No	No	No	No	\$	375,000.00	\$	-	
Eco Restoration	1574	6/22/2011	Hancock County Wetlands Stabilization and Oyster Restoration Project	(ORIGINAL ID#218) The proposed project will create a living shoreline of intertidal oyster bars to stabilize and protect critical coastal marsh habitat within the Hancock County Coastal Preserve. A series of oyster bars, each several hundred feet long, will be created along 11.5 miles of shoreline from Bayou Caddy west to the mouth of the Pearl River creating up to 160,000 sq ft of oyster habitat. Local substrate conditions are ideal for the use of living shorelines, including oyster reef blocks, to prevent erosion and habitat loss. In some areas, marsh accretion may occur, allowing for additional future restoration of salt marsh habitat. Additionally, the oyster reefs will provide valuable ecosystem services including increased water clarity and water quality, fish and invertebrate habitat, and increased habitat complexity. Timely protection of the Hancock County Coastal Preserve is critical and this project, if funded, will be the largest coastal stabilization and habitat restoration project to date utilizing living shoreline (oyster reef block) techniques in the State of Mississippi. To date, a preliminary site survey has been completed, potential contractors (single source) have been identified, and the permitting process has been initiated. Construction of reef block will begin immediately (YR1-YR2), deployment of reef block will start in priority site where erosion is most severe (YR1-YR2), followed by deployment of reef block over the remaining area (YR2-YR3). Five to ten miles of oyster reef habitat will be created along 11.5 miles of shoreline in Bayou Caddy-Heron Bay, Hancock County, Mississippi over a two year period. Reefs will be constructed and deployed in a non-contiguous, staggered design to allow for tidal flow, boat access to marsh creeks, etc. These reefs will protect approximately 5,900 acres of adjacent estuarine marsh. Pre-assessment and post construction monitoring activities will occur over a five year period.	Hancock	Yes	No	No	No	No	No	No	No	No	No	\$	18,797,603.00	\$	-	
Eco Restoration	1575	6/22/2011	Acquisition of Private Coastal Lands for Preservation	(ORIGINAL ID#219) Land acquisition will be made of biologically, and ecologically significant lands in any of the three coastal counties in Mississippi (Hancock, Jackson, and Harrison). Properties will be transferred to the Mississippi Coastal Preserve system where they will be managed by the Department of Marine Resources for the use and enjoyment of the citizens and visitors to the state of Mississippi. Such uses include bird watching, kayaking, recreational fishing and hiking. The Mississippi Coastal Preserve System manages over 83,000 acres of coastal lands in perpetuity. The island contains a large interior slash pine forest, estuarine and intertidal wetlands, and beach habitat. Gulf wide coastal island habitats are in decline due to erosion, channelization and geological changes in land source availability, as nesting areas for diamondback terrapins. Placing additional properties into the Coastal Preserve System will afford the property protection from development, incompatible visitor uses and make it available for recreational opportunities to visitors and local residents. Wetland habitats provide nurseries grounds for commercially and recreationally important fish, filter water, provide habitat for amphibians, reptiles, birds, mammals and invertebrates while providing a wide variety of recreational opportunities for people. Coastal wetlands protect the mainland from tropical storms, slowing down storm surge energy and absorbing water. Maritime forests provide stop over habitat for migratory passerines, nesting trees for osprey, and are potential nest sites for bald eagles. Coastal beach habitats are loafing, foraging and nesting areas for migratory and residential shorebirds including: least terns, plovers, red knots, black skimmers, American oyster catchers and herons. Additionally, beaches provide habitat for a variety of invertebrates and could potentially be used as nesting areas for diamondback terrapins. Commercial fishing, sport fishing, kayaking, wildlife observation, and other nature-based activities are extremely important in southern Mississippi. Restoration of coastal habitats will enhance all of these activities. The proposed efforts will produce a number of immediate jobs while enhancing water based employment in the long term.	Hancock, Harrison, Jackson	Yes	Yes	No	No	No	No	No	No	Yes	No	\$	5,000,000.00	\$	-	
Eco Restoration	1576	6/22/2011	Living Shorelines - Wetlands Restoration Projects, Mississippi Gulf Coast	(ORIGINAL ID#230) Loss of coastal marsh from shoreline erosion is a major problem across the entire Gulf coast. In Mississippi, estuarine marshes are considered to be imperiled. In certain areas in Coastal Mississippi, it is possible to document through aerial photography, the loss of up to 1500 linear feet. Three areas of rapidly eroding wetlands shorelines, totaling 2.25 miles, were selected for this work, based on either public ownership of lands, or willing private landowners. In each area, demonstrated shoreline erosion has sometimes exceeded 250 linear feet, over 50 years. Oyster based living shorelines structures will be placed along selected wetlands. This project will create oyster based living shoreline structures along eroding marsh shorelines in Harrison and Jackson counties. These structures will prevent further erosion and should accrete sediments, leading to recreation of lost marsh habitat. In addition, the living shoreline structures themselves will create marine habitat. There are no structures of this type in use in Mississippi; however, they are in widespread use in Louisiana, Alabama and Texas. In each case significant shoreline protection has been achieved, and accretion of new marsh has occurred. Other sources of funding are being sought but have not yet been located. It is hoped that successful completion of these pilot projects will stimulate interest in further wetlands restoration. By protecting and restoring coastal marsh, one of the most important habitats on earth, this project will protect and restore habitat for marine fish and invertebrates and migratory and resident seabirds. These species include most of the important commercially fished species, including shrimp, crabs, and spotted seatrout, red drum, and bull minnow. State and federally listed species in the area include Gulf Sturgeon and some species of sea turtles, but they are unlikely to use this habitat. In addition to the positive effects on coastal marshes, the living shorelines structures themselves also provide habitat for oysters, mussels, and other marine fish and invertebrates.	Hancock, Harrison, Jackson	Yes	Yes	No	No	No	No	No	No	No	No	\$	2,250,000.00	\$	-	
Eco Restoration	1577	6/22/2011	Restoration and enhancement of coastal marsh and transitional forests in Coastal Mississippi	(ORIGINAL ID#231) Mississippi has a very successful Coastal Preserve system, which has preserved thousands of acres of coastal marsh and transitional forests over the past 25 years. These lands are owned by the Secretary of State and managed by the Department of Marine Resources. While acquisition funding has typically been available, restoration funding has not, leaving a backlog of restoration needs. This project will seek to manage the Coastal Preserve system by restoring degraded marsh and transitional forest lands. Part of the funding will pay for long term scientific monitoring of project sites to measure the term effectiveness of the project. In the proposal stage, limited restoration has been conducted by the Coastal Preserve manager. In addition, the MSCIP (Mississippi Coastal Improvement Plan) contains several coastal lands restoration projects. Completion of this project would enhance the efforts of others and restore 1,000 acres of compromised coastal marsh to full function. Other sources of funding sought but have not yet been identified. Substantial areas exist in all three coastal counties, and final site decision will be made by the manager of the Coastal Preserve. Due to the complexity of the problems and multiple locations, this project will likely take several years to complete. This proposal will restore coastal marsh impacted by a variety of problems, including the oil spill, Hurricane Katrina, invasive species, and pollution. This restoration will improve wildlife habitat, increase coastal resilience, restore natural function, and improve storm attenuation. These coastal marshes are prime habitat for many important marine fishes and invertebrates, and also serve as important habitat for migratory birds. It is highly unlikely that these projects will have any effect on federal or state listed species.	Hancock, Harrison, Jackson	Yes	No	No	No	No	No	No	No	No	No	\$	13,600,000.00	\$	-	

Eco Restoration	1579	6/22/2011	Mississippi Coast Wide Seagrass Conservation Project	(ORIGINAL ID#4232) Seagrass beds have been demonstrated in numerous publications to be critical habitat for many recreational and commercial marine fisheries such as shrimp, crabs scallops reef fish, speckled trout, and mullet. Due to increase in activities related to inshore fisheries and their increase in shallow draft recreational boating, propeller scarring has been identified as a serious threat to the integrity of seagrasses. Propeller scars destabilize seagrass substrate as well as uproot the plants themselves. This damage has been shown to be reversible, provided the plants have time to regenerate. Seagrasses are valuable because of the biodiversity and habitat they hold, but also provide distinct economic benefits to local and regional communities. According to some estimates, the recreational and storm protection values of seagrass beds range from \$4,000 to \$10,000 per hectare. To address damages to sea grass beds this project will be designed to inform the local constituency how they can take stewardship responsibilities for Mississippi's seagrass. A public awareness campaign will target recreational and commercial boaters along the Mississippi coast. Public service announcements will be presented on television and the radio targeting appropriate demographics. Additionally, billboards will be used along interstates and highways along the Mississippi Coast. Project will be implemented for two years and focus conservation messages during the spring through summer months. The anticipated benefits of this project will be the conservation of critical seagrass beds within the state of Mississippi National Seashore, and the Grand Bay Research Reserve. This restoration activity is aimed at assisting the ecosystem's recovery by ultimately reducing and preventing further damage to seagrasses by prop-scarring from recreational and other boating activities, therefore allowing the system to heal itself. We anticipate an abatement of incompatible boat activity as a result of this project.	Hancock, Harrison, Jackson	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	\$ 438,262.00	\$ -	
Eco Restoration	1580	7/7/2011	Deployment of New Turtle Excluder Devices in Shrimp Fisheries	(ORIGINAL ID#4838) The objective of this project is to provide a complete set of new Turtle Excluder Devices (TEDs) to all shrimp fishing vessels required to use TEDs in the Gulf and South Atlantic including skimmer trawls, if required. The benefits of this project will be to increase the overall effectiveness of public and private sector efforts to protect and restore endangered and threatened species of sea turtles and other species of concern. Endangered and threatened populations of turtles that forage and nest throughout the Gulf and South Atlantic region were adversely impacted by the oil spill and by the clean-up activities, including the use of dispersants and controlled burns. These impacts reduced the overall effectiveness of long-standing public and private sector efforts in the US and internationally to protect and restore these sea turtle populations throughout the Atlantic basin. A major component of these efforts is the use of TEDs in the US shrimp fishery. TEDs are highly effective in reducing injury and mortality of sea turtles and other species of concern, including various species of coastal sharks. The effectiveness of TEDs to reduce sea turtles and other species decreases over time with constant use, even with maintenance. The cost of new TEDs and maintenance is high relative to the financial condition of the shrimp fishery, and this serves as a disincentive to replace or maintain old, less effective gear. This can reduce the level of sea turtle protection achieved by the fishery. The full deployment of new TEDs on all shrimp vessels required to use TEDs would reduce sea turtle injury and mortality, increase the effectiveness of public and private efforts to protect and restore threatened and endangered sea turtles, and contribute to the mitigation of the adverse impacts of the oil spill and clean-up activities on these species. Please see attached.	Hancock, Harrison, Jackson	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	\$ 10,800,000.00	\$ -	
Eco Restoration	1581	7/7/2011	Acquisition of lands for restoration, protection, and management	(ORIGINAL ID#501) Healthy marshlands protect us from future storms and floods and open coastal landscapes provide critical ecosystem services on which so many other things depend: clean water and clean air as well as a home for wildlife and vital resting refueling places for migrating species. Land Trust for the Mississippi Coastal Plan (LTMCP) proposes to acquire lands of ecological significance for restoration and protection in the three coastal counties including Jackson, Harrison, and Hancock. LTMCP also proposes to provide long term management of the lands to restore and improve the area's hydrology, wildlife habitat, natural function, and water quality. The restored lands will be conserved in perpetuity in accordance with Land Trust Alliance standards. 529 +/- acres have been identified in the following counties: Harrison County = 45 acres of marine estuarine wetlands and freshwater wetlands; habitat 356,000 Jackson County = 37% acres of riverine, marine estuarine wetlands and uplands habitat 4,574,000 Hancock County = 100 acres of riverine and marine estuarine wetlands habitat 550,000	Hancock, Harrison, Jackson	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	\$ 5,424,000.00	\$ -		
Eco Restoration	1582	7/7/2011	Bay St. Louis Harbor	(ORIGINAL ID#521) To develop a harbor in downtown Bay St. Louis as a catalyst for restoring eco-tourism in Hancock County	Hancock	Yes	Yes	No	Yes	No	No	Yes	No	Yes	No	No	No	\$ -	\$ -			
Eco Restoration	1583	7/7/2011	Mississippi Byways to Space & Mississippi Scenic Beach Boulevard Byways	(ORIGINAL ID#522) 43 miles of eco tourism by ways connecting the INFINITY Science Center to the outdoor laboratory to re-establish the visitor market for the gulf coast region	Hancock	Yes	Yes	No	Yes	No	No	No	Yes	No	No	No	No	\$ -	\$ -			
Eco Restoration	1584	8/4/2011	Low-cost, 10km-range Oil Spill Sensor and Spread-predictive Sensor Deployment	(ORIGINAL ID#633) This project will establish a low-cost, remote oil spill monitoring system with the following features: (1) Sensor Design: There is an urgent need for inexpensive, weather robust oil spill sensors that can wirelessly report oil data. Existing oil spill sensing technologies have the following drawbacks: (1) Inaccuracy: Infrared thermal sensing and ultrasonic wave / pulse cannot accurately detect oil existence and thickness levels because the temperature, weather, and water current can greatly change their readings; (2) High-cost: SAR imaging and laser fluorosensors use heavy, expensive, large-size devices, and thus are not suitable to large area monitoring; (3) Power inefficiency: Although some wireless sensors can use low-cost light array sensors to detect oil thickness, their chip designs have not emphasized low-power circuit layout. More importantly, it does not have long-distance wireless transmission capability due to its use of common, low-sensitivity antenna (to be discussed in next item); (4) In this project, we will design a low-power, low-cost, weather-robust oil spill sensor and its corresponding sensor operation control software (such as sampling rate adjustment and sleep/wake control) - 10 km oil sensing data transmission: The harsh sea conditions necessitate 10-km-transmittable oil sensors. Due to the large area monitoring of sea surface, the existing wireless sensors cannot be used here due to their short RF communication range (typically less than 100 m). The windy sea weather and harsh water current could make any two neighboring sensors separate from each other (even if they are adhesive to the oil). In this project, we will use our unique ferrite miniature antenna technology to achieve a 10 km RF communication distance and 1-km neighbor communication range. If an oil sensor cannot use its neighbors to relay the sensing data, it can directly send signals to a wireless base station. Those floating base stations are pre-deployed sporadically on the sea surface. A sensor can communicate with its neighbors or 10 km away base stations. - Oil spill boundary estimation: It is important to build an accurate oil spill spread estimation model based on the analysis of the data from oil spill sensors. Such a boundary estimation model can be used to guide the deployment of new sensors /y	Hancock, Harrison, Jackson	Yes	No	No	Yes	No	No	No	No	No	No	No	No	No	No	\$ 350,000.00	\$ 1,000.00	
Eco Restoration	1585	7/22/2011	Increased Catch and Effort Reporting for the Gulf of Mexico's Marine Recreational Fishery Based on 1-month Waves	(ORIGINAL ID#648) Recreational anglers lost access to a considerable portion of federal and state waters in the northern Gulf that were closed to fishing during the BP oil disaster. Fishery closures meant lost ecosystem services or human uses of resources that the National Resources Trustees are required to estimate and offset through appropriate compensatory restoration projects. One strategy for compensating the angling public for lost fishing access is making investments in fishery management tools that help keep fishery resources healthy and available to anglers. One such tool is the Marine Recreational Fisheries Statistics Survey (MRFS), which collects data on recreational fisheries data used to estimate total catch. The public can be compensated for lost access to fishing grounds during the 2010 Deepwater Horizon BP oil spill by establishing a one month survey reporting waves versus the current two month reporting waves of MRFS. A more timely reporting system would benefit the public by lowering the likelihood of overfishing and accountability measures (i.e., penalties), which if triggered, could result in a shorter fishing season. Increased data collection and reporting periods will lead to more precise and timely catch estimates. MRFS in the Gulf of Mexico does not produce timely fishery catch and effort estimates required by managers. The MRFS catch and effort estimates are based on a two-month data collection waves with estimates produced up to 45 days after the end of a wave. For reporting to be on one month waves, with sufficient precision for management, an increase in sampling will need to occur. MRIP proposes to meet this goal; however a concurrent increased funding allotment has not been secured. Survey costs, on average, will need to double from the current level of funding. The National Research Council's 2006 Review of Recreational Fisheries Survey Methods, recommended for one month reporting of catch and effort estimates be implemented. The Marine Recreational Information Program (MRIP) is redesigning the MRFS survey to accomplish this task. As an example, the red snapper season, as currently defined, closes well before the estimates are produced. The current estimation methodology has inadvertently allowed the recreational fishery to overharvest red snapper in twelve of the last twenty years, and has triggered fishery accountability measures, such as shorter red snapper seasons for recreational anglers. A timely and accurate recreational data reporting system will allow fishery managers to be proactive in the Gulf of Mexico, improving their ability to predict fishing trends and prevent overfishing.	Hancock, Harrison, Jackson	Yes	No	No	No	Yes	No	No	No	No	No	No	No	No	No	\$ 10,000,000.00	\$ -	
Eco Restoration	1586	7/22/2011	Enhancements to marine charter for-hire fishing surveys	(ORIGINAL ID#67) Make enhancements to the charter for-hire telephone fishing effort survey for improving fisheries management. Link to Injury: Members of the public who hire charter boats to fish offshore lost access to a considerable portion of federal and state waters in the northern Gulf of Mexico that were closed to fishing during the BP oil disaster. Charter boats provide access to offshore fishery resources for members of the public who do not own vessels themselves. Benefit and Rationale: A telephone survey is the primary method used by fishery managers to collect charter for-hire fishing effort, which helps track quota usage. Making enhancements to the survey, such as increasing frequency and sample size, would result in more effective monitoring of fishing effort, improved management and possibly longer fishing seasons. Better data from enhanced telephone surveys would help fishery managers be more responsive and adaptive in their management of fishery species exposed to oil. Other: This project could be compensatory in nature if a reduction in fishing that anglers experienced in 2010 due to oil-related fishery closures is offset in the future by extending fishing seasons made possible through better (more accurate and precise) data on fishing effort. For example, an enhanced charter for-hire telephone survey in summer 2010 increased the precision of catch and effort estimates that allowed, in part, the red snapper fishery to reopen in the fall of 2010 after a summer closure.	Hancock, Harrison, Jackson	Yes	No	No	No	Yes	No	Yes	No	No	No	No	No	No	No	\$ 5,000,000.00	\$ -	
Eco Restoration	1587	7/29/2011	BP Deepwater Horizon Oil Spill Restoration Evaluation and Monitoring Program	(ORIGINAL ID#739) The Natural Resource Damage Assessment regulations make clear that final Restoration Plans should include a monitoring component so that the effectiveness of restoration measures can be evaluated. Given that BP is providing \$5 billion for early restoration projects before completion of a Deepwater Horizon Restoration Plan, some of these funds should be used to establish a restoration evaluation and monitoring program. There is precedent for funding monitoring activities before an oil spill restoration plan is final. Before a restoration plan was complete, the Exxon Valdez Oil Spill Trustee Council invested funds in tracking injury and recovery at the species level, as well as research and monitoring at the ecosystem scale, to identify restoration opportunities, understand factors limiting recovery, and evaluate the effectiveness of restoration measures. An early and steady flow of information on the recovery status of specific natural resources and ecosystem services generated through this program would help managers make responsive management decisions. Without this information, less effective restoration may result, potentially requiring managers to restrict human uses of these resources. Specifically, a restoration evaluation and monitoring program is needed to: 1) evaluate the effectiveness of early restoration projects; 2) track the recovery of specific injured natural resources or lost or reduced services; and 3) report to the public on the status of injured resources, lost services, and progress toward restoration. Establishing a restoration evaluation and monitoring program for early restoration needs change and transition into a longer-term program. On behalf of the Deepwater Horizon Oil Spill Trustee Council, NOAA, in cooperation with the Department of Interior (USFWS), is in the best position to establish and administer a Deepwater Horizon Oil Spill restoration evaluation and monitoring program. Together, NOAA and USFWS have the experience and existing infrastructure to coordinate monitoring across state/federal boundaries. Both agencies would serve as joint custodians of this program. This structure will facilitate the efficient gathering of data that will allow comprehensive monitoring of the full range of restoration activities. Regardless of the entity implementing monitoring, this program will require coordination among trustee agencies and possibly some new data gathering. Each year NOAA and USFWS would produce a report on the results of restoration measures, recovery of injured species, and newly discovered injuries.	Hancock, Harrison, Jackson	Yes	No	No	Yes	No	No	No	No	No	No	No	No	No	No	\$ -	\$ -	
Eco Restoration	1588	7/29/2011	Habitat Mapping for Improved Stock Assessments and Developing an Integrated Habitat Restoration Approach for Marine Habitats	(ORIGINAL ID#740) Habitat mapping will facilitate comparisons of species distributions and abundances across like habitats, allowing scientists to better stratify fishery-independent sampling by habitat type and improve the quality of information used to assess the health of fish populations. Habitat mapping is critical following the BP Deepwater Horizon disaster because fishery scientists will need the maximum amount of spatial precision to detect changes in abundance of fish exposed to or injured by oil or chemical dispersants. This information would also reduce the scientific uncertainty used to define catch limits and would improve managers' ability to aid the recovery of injured fish species through suitable measures. A better understanding of habitat types and distributions generated through habitat mapping would also help the Deepwater Horizon BP Trustee Council identify habitats for restoration that would provide services of the same type and quality and of comparable value to those lost. Results of habitat mapping could be used in an Integrated Habitat Restoration Approach, which is a comprehensive plan based on restoration of key habitats that, together, will benefit the range of offshore oil-related species of the Deepwater Horizon BP oil spill. This project will provide the foundation for future research and management applications of habitat mapping, and has the potential to be integrated with additional information systems. For example, coordination with oceanographic data (Gulf Coastal and Ocean Observing System) or the development a fishing vessel data collection system habitat maps could be incorporated into real-time management and research tools. The cost of this project is scalable, depending on the size of area and degree of resolution selected for mapping activities can be done in consultation with the Southeast Fisheries Science Center whose stock assessment scientists would be among the primary users of this information. Time to implementation is six months to one year.	Hancock, Harrison, Jackson	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	\$ -	\$ -	

Eco Restoration	1603	4/21/2011	BioRestore?	(ORIGINAL ID#1206) BioRestore? will contribute to help mitigate marine resource status quo. BioRestore? is a process based on the Capture and Culture of Post-larvae (PCL) marine animals. The idea is to effectively rescue a small proportion of post-larval fish before predation, then rear and release them to boost marine ecosystem recovery. Restocking can thus be achieved for a wide range of coastal fish species, and pre-release juveniles are conditioned to survive in the wild before restocking. We feed them on live food, and a patented halfway house is created placed in the nursery where the fish can become familiar with them. Pieces of the halfway house are then released in the same area as the fish, thus reducing stress and encouraging the juveniles to settle at that location. BioRestore? is a 3-step all inclusive marine restoration process in full accordance with the maritime status quo and the regulatory context. It simultaneously aims to monitor biodiversity losses, to mitigate impacts and help rebuild stocks of local species. This process is being used in the Mediterranean sea.	n/a	Yes	Yes	Yes	No	No	Yes	No	No	No	\$	300,000.00	\$	-	
Eco Restoration	1604	9/26/2011	Acquisition of Property on Round Island	(ORIGINAL ID#1198) This land acquisition would protect 60.85 acres of Round Island. The property would be transferred to the Mississippi Coastal Preserve system where it would be managed by the Mississippi Department of Marine Resources for the use and enjoyment of the citizens of Mississippi. Such uses include bird watching, kayaking, recreational fishing and kayaking. The Coastal Preserve System manages over 83,000 acres of coastal lands in perpetuity. The island contains a large interior slash pine forest, estuarine and intertidal wetlands, and beach habitat. Gulf-wide coastal island habitats are in decline due to erosion, channelization and geological changes in sand source availability.	Jackson	Yes	Yes	Yes	No	No	No	No	Yes	No	\$	1,800,000.00	\$	-	
Eco Restoration	1605	9/26/2011	Acquisition of Property on Deer Island	(ORIGINAL ID#1199) This land acquisition would protect 8.5 acres of Deer Island. The property would be transferred to the Mississippi Coastal Preserve system where it would be managed by the Mississippi Department of Natural Resources for the use and enjoyment of the citizens of Mississippi. Such uses include bird watching, kayaking, recreational fishing and kayaking. The Coastal Preserve System manages over 83,000 acres of coastal lands in perpetuity. The island contains a large slash pine forest, estuarine and intertidal wetlands, and beach habitat. Gulf-wide coastal island habitats are in decline due to erosion, channelization and geological changes in sand source availability.	Harrison	Yes	Yes	Yes	No	No	No	No	Yes	No	\$	5,000,000.00	\$	-	
Eco Restoration	1606	9/27/2011	Integrated Ecosystem Monitoring and Mapping Network	(ORIGINAL ID#1229) The University of Southern Mississippi's Department of Marine Science, Gulf Coast Geospatial Center, and Center of Higher Learning will focus on acquiring and interpreting environmental, habitat and ecosystem data to improve restoration success in the northern Gulf of Mexico. All information will be collected by field sensors, ship surveys, and remotely sensed data products using existing methodologies employed by USM scientists. Data integration and distribution is required to fully develop the Integrated Ecosystem Monitoring and Mapping Network. Objective: We will provide a single, integrated data information network for the mapping and monitoring of northern Gulf coastal habitats, on land and in the water. The user-friendly web-based product will provide scientists, decision-makers and stakeholders with needed biological, physical, geological and chemical information necessary for successful restoration activities. Activities: Restoration projects proposed for marshes, submerged aquatic vegetation (SAV), oyster and fisheries, are all sensitive to the water quality (dissolved oxygen, pH, temperature, salinity, turbidity, microbes, algae and nutrients), physical energy (currents, wave heights) and geomorphology (terrain and seabed variation and sediment type). Most proposed restoration projects will conduct limited site monitoring. However, we propose to integrate these with our uniquely capable suite of instrumentation and personnel to integrate all into a single network of information using: i) fixed node sensors (i.e. buoy) capable of providing real-time 24/7 biological, physical and chemical information; ii) in situ data collection data (i.e. ship surveys); capable of providing additional functionality by expanding biological, physical and chemical information over a larger sampling area; iii) remotely sensed data collection including LIDAR, RADAR, and spectral sensors that can provide spatially intensive data at various scales. The data will be synthesized and placed into state-of-the-art visualization tool available online to restoration scientists, decision-makers and stakeholders. Outcomes: Emerging technology in sensors, wireless sensing, and ecosystem modeling can provide scientists, decision-makers and stakeholders with tools necessary for improving restoration success. This collaborative team will provide much-needed product for the benefit of all proposed restoration activities.	Hancock, Harrison, Jackson	Yes	No	Yes	No	No	No	No	No	No	No	\$	8,500,000.00	\$	-
Eco Restoration	1607	10/25/2011	GULF OF MEXICO HATCHERY AND FISHERIES RESTORATION CONSORTIUM	(ORIGINAL ID#1419) Problem: The Deepwater Horizon Oil Release (DWH) caused environmental and economic damage to fisheries in the northern Gulf of Mexico. America must employ novel and effective approaches to restore both economic and environmental wellbeing of the affected fisheries. In addition, habitat destruction caused by hurricanes and other man-made causes (over-fishing, erosion and spills) have led to significant decrease in Gulf fish populations during the last decade. Solution: Marine aquaculture of key species can be employed to restore fisheries through restocking and to restore economic vitality through technology transfer and stimulation of small businesses resulting in job creation. This effort should be highly collaborative involving institutions in all five Gulf States as well as other national and international institutions, public and private, with significant hatchery technologies. Implementation Team: Gulf of Mexico Hatchery and Fisheries Restoration Consortium - Gulf Coast Research Laboratory/University of Southern Mississippi (GCR/L) lead institution; University of Texas Marine Science Institute (UTMSI) - Louisiana University Marine Consortium (LUMCON) - Auburn University (AU) - Mote Marine Laboratory (MML) - University of Maryland- Baltimore (UMB) These institutions are leaders in marine aquaculture and stock enhancement research, implementation, and technology transfer for the northern GOM. The consortium is built on established relationships and will employ the highest quality science and economic approaches to implement, and transfer the technology to raise significant numbers of fish for fishery production and to stimulate private sector small business development. In addition to the implementation team, the consortium has established scientific, governmental agency and commercial advisory teams. Implementation Plan: The technology for aquaculture and fishery restoration of marine fish varies among species. This necessitates the collaborative involvement of these 6 leading institutions that have conducted research on over 10 of the most economically and ecologically important Gulf fish species. Among the species are those for which the technology to implement stocking, technology transfer, and business stimulation already exists. The species targeted for immediate implementation of stocking and technology transfer include Red Drum, Spotted Sea Trout, Red Snapper, White Shrimp, Bull Minnows, Croaker, Florida Pompano, Cobia, Greater Amberjack and Southern Flounder. Projected Results: The work of the consortium will result in advanced technologies for use by Gulf States fishery agencies and private industry. Similar efforts in the Mediterranean Sea led to a \$1 billion industry in 10 years. The 2007 NOAA aquaculture plan projected for every million tons of seafood produced by aquaculture, it is estimated that aquaculture of Gulf fish species would double the seafood output of the Gulf of Mexico (\$700 Million in 2008). Additionally the recreational fishing industry (>\$12 billion in 2008) would realize expanded employment and business opportunities as natural populations are restocked with hatchery produced fingerlings.	n/a	Yes	No	No	No	Yes	Yes	No	No	No	\$	60,000,000.00	\$	-	
Eco Restoration	1608	10/26/2011	GULF OF MEXICO HATCHERY AND FISHERIES RESTORATION CONSORTIUM	(ORIGINAL ID#1423) Problem: The Deepwater Horizon Oil Release (DWH) caused environmental and economic damage to fisheries in the northern Gulf of Mexico. America must employ novel and effective approaches to restore both economic and environmental wellbeing of the affected fisheries. In addition, habitat destruction caused by hurricanes and other man-made causes (over-fishing, erosion and spills) have led to significant decrease in Gulf fish populations during the last decade. Solution: Marine aquaculture of key species can be employed to restore fisheries through restocking and to restore economic vitality through technology transfer and stimulation of small businesses resulting in job creation. This effort should be highly collaborative involving institutions in all five Gulf States as well as other national and international institutions, public and private, with significant hatchery technologies. Implementation Team: Gulf of Mexico Hatchery and Fisheries Restoration Consortium - Gulf Coast Research Laboratory/University of Southern Mississippi (GCR/L) lead institution; University of Texas Marine Science Institute (UTMSI) - Louisiana University Marine Consortium (LUMCON) - Auburn University (AU) - Mote Marine Laboratory (MML) - University of Maryland- Baltimore (UMB) These institutions are leaders in marine aquaculture and stock enhancement research, implementation, and technology transfer for the northern GOM. The consortium is built on established relationships and will employ the highest quality science and economic approaches to implement, and transfer the technology to raise significant numbers of fish for fishery production and to stimulate private sector small business development. In addition to the implementation team, the consortium has established scientific, governmental agency and commercial advisory teams. Implementation Plan: The technology for aquaculture and fishery restoration of marine fish varies among species. This necessitates the collaborative involvement of these 6 leading institutions that have conducted research on over 10 of the most economically and ecologically important Gulf fish species. Among the species are those for which the technology to implement stocking, technology transfer, and business stimulation already exists. The species targeted for immediate implementation of stocking and technology transfer include Red Drum, Spotted Sea Trout, Red Snapper, White Shrimp, Bull Minnows, Croaker, Florida Pompano, Cobia, Greater Amberjack and Southern Flounder. Projected Results: The work of the consortium will result in advanced technologies for use by Gulf States fishery agencies and private industry. Similar efforts in the Mediterranean Sea led to a \$1 billion industry in 10 years. The 2007 NOAA aquaculture plan projected for every million tons of seafood produced by aquaculture, it is estimated that aquaculture of Gulf fish species would double the seafood output of the Gulf of Mexico (\$700 Million in 2008). Additionally the recreational fishing industry (>\$12 billion in 2008) would realize expanded employment and business opportunities as natural populations are restocked with hatchery produced fingerlings.	n/a	Yes	No	No	No	Yes	Yes	No	No	No	\$	60,000,000.00	\$	-	
Eco Restoration	1610	10/26/2011	Restoration of Oyster Habitats in Point aux Chenes Bay in Eastern Jackson County, Mississippi, within Grand Bay National Estuarine Research Reserve	(ORIGINAL ID#1425) A cooperative, federal, state, and private project to restore the Point aux Chenes Bay ecosystem and its historic oyster habitats through: 3. The rebuilding of the Grand Batture islands with sediments maintenance dredged from nearby channels or Mississippi Sound (USA C03); 3. The removal of sections of man-made levees along US HW 90 & the COX barrier that restrict freshwater inflows into the bay (MDDOT C3X); 3. The restoration of freshwater inflows to establish proper estuarine conditions for oyster setting, survival, growth, & reef development; 4. The re-establishment of water-bottom conditions through planting of oyster shells and/or crushed concrete aggregate materials (by MDMR); 5. The relaying & transplanting of live oyster stocks from Pascagoula Bay & Graveline Bayou by private oyster fishermen under the direction of MDMR; 6. The removal of upland sources of domestic & industrial wastewater that now flow into Bayou Cumbest & Bangs Lake (by MDEQ); 7. The reclassification of Point aux Chenes Bay & Bangs Lake as approved or conditionally approved shellfish-growing waters (by MDMR & USDA); 8. The requirement that Mississippi Phosphate Company restore Bangs Lake to its pre-spill status including the funding of oyster restoration thereon; 9. The re-emburment of local oyster fishermen for assisting with oyster relaying & replanting in Point aux Chenes Bay & Bangs Lake; and 10. The re-establishment of commercial & recreational oyster fisheries in Point aux Chenes Bay, Bangs Lake, & in Bangs, Crooked, & Cumbest Bayous.	Jackson	Yes	No	No	No	Yes	Yes	No	No	No	\$	2,500,000.00	\$	-	
Eco Restoration	1611	11/9/2011	Nursery for Marsh Grass Restoration	(ORIGINAL ID#1437) This project consists of providing funding for the full implementation of a plant nursery to allow for state-wide marsh restoration. The Center for Plant Restoration and Coastal Plant Research (CPR) is located at the University of Southern Mississippi's Gulf Coast Research Laboratory in Ocean Springs. The mission of the CPR is to provide expertise and assistance for the restoration of coastal wetlands, salt marshes, beach and dune vegetation, and submerged aquatic plants including sea grasses. To that end, the University operates a 1,200 square foot state-of-the-art temperature controlled greenhouse, routinely growing over a dozen species of common native salt marsh and beach plants. In addition, CPR has indoor and outdoor growing facilities for propagation of four important species of submerged aquatic vegetation. For large scale restoration and mitigation projects, the CPR partners with local nurseries and agency partners to provide the necessary numbers of plants. Three project scenarios are envisioned depending on restoration needs: 1. Small scale (<100,000 plants): Requires at a minimum 4,000 sq ft of heated greenhouse space and 10,000 -20,000 sq ft of outdoor open space for final staging of plants. 2. Medium scale (100,000 to 1 million plants): Requires at a minimum 8,000 sq ft of heated greenhouse space. Additionally 0.5 -> acres of outdoor open space for final staging of plants. 3. Large scale (>1 million plants): Requires at a minimum 10,000 sq ft of heated greenhouse space. Additionally 5 or more acres of outdoor open space should be available to final staging of plants. CPR anticipates that several sites will be established along the coastal counties in Mississippi, depending on the requirements of the restoration projects necessary. Some existing areas are available.	Jackson	Yes	Yes	No	No	No	No	No	No	No	\$	5,000,000.00	\$	-	
Eco Restoration	1612	11/21/2011	5-Year Increase in Gulf of Mexico Fishery Observer Coverage for Monitoring Marine Mammal, Sea Turtles, and Bluefin Tuna	(ORIGINAL ID#1523) Temporary (5-year) increase of vessel coverage for Gulf of Mexico shrimp trawl, shark gillnet and pelagic longline observer programs to quantify the extent to which marine mammal, sea turtle, and bluefin tuna bycatch mortality is a source of stress on injured populations. Going forward, these data will shed light on whether bycatch mortality is limiting recovery from injury related to the BP oil disaster and help managers that can be implemented to shorten recovery time. A temporary but significant increase in observer coverage in the shrimp trawl, shark gillnet and pelagic longline fisheries is needed to improve estimates of marine mammal, sea turtle, and bluefin tuna bycatch rates and mortality in these fisheries. Additional observer coverage and the resulting observational data will help scientists determine to what extent bycatch is a source of mortality and stress limiting recovery from DWH oil spill injuries. Additional biological samples gathered through observers could reveal lingering sub-lethal injuries resulting from oil exposure and help scientists detect impacts on marine mammals, sea turtles or bluefin tuna populations still recovering from the DWH oil disaster. In fishery observer programs around the country, biological samples (organs, tissue, etc) are collected from marine mammals and sea turtles incidentally taken in commercial fisheries. An increase in observer coverage in the Gulf would likely mean an increase in the number of samples for analysis of hydrocarbon and/or chemical dispersant signatures. These data would help scientists at the genetic and population level and provide valuable information to guide restoration efforts. Together, bycatch and biological data will help inform additional restoration measures needed to help the recovery of affected species. A Gulf of Mexico fisheries observer program already exists, providing the organizational structure for additional monitoring of marine mammal and sea turtle fishery interactions. Note that the estimated cost of \$6.5 million is per year over five years. The estimated cost is based on the amount allocated to the Southwest Regional observer program in FY2009.	n/a	Yes	No	No	No	Yes	No	No	No	No	\$	6,500,000.00	\$	-	
Eco Restoration	1613	11/28/2011	Shrimp Restoration	(ORIGINAL ID#1531) We believe we have a very unique hatchery. We have been in the R&D stage for three years and believe we are the only commercial hatchery in the U.S. that has had success raising domestic shrimp at the hatchery facility. As a Hatchery we have been able to produce healthy shrimp for the seafood industry by supplying the fishery industry with the appropriate plants, restaurants, and all the local businesses that depend on a thriving shrimp industry. Given the recent dramatic falloff in wild shrimp catch in the Gulf of Mexico, (which may or may not be related to the effects of the BP oil spill), there is a need to replenish the wild stocks in time for the 2012 harvest. Scientific Associates of Florida has perfected hatchery techniques so that they can produce hundreds of millions of soon larval shrimp (P.L.5, i.e. baby shrimp), typically transported at the 10 days into the larval phase (PL10). They have been raised in a closed, fully recirculating system that has now been in continuous operation for three years. There are no antibiotics used. The shrimp are free of disease. The PL's are first generation offspring coming from brood stock (mom and dad) taken directly from the Gulf of Mexico waters. With this technique, the shrimp can be raised in appropriate water conditions for the locations where they would be released, i.e. similar pH and salinity to maximize survival rates. This is an opportunity to restock the estuaries with hundreds of millions of viable larval shrimp and bring the Gulf shrimp industry back to health. This is a one-time program can be for a short duration or on-going. The available species are Litopenaeus setiferus (Gulf white shrimp) and Farfantepenaeus duorarum (Gulf pink shrimp). In order to change production to produce this product for Spring 2012, arrangements would need to be agreed fairly soon. Please feel free to contact me with any questions or suggestions and please feel free to pass this e-mail along to appropriate individuals. Dave Brockwell President of Scientific Associates LLC 239-677-8914 or e-mail at dave@scientificassociates.us	n/a	Yes	No	No	No	Yes	No	No	No	No	\$	-	\$	-	

Eco Restoration	1614	12/2/2011	Mississippi Invasive Plant Control Program-Cogongrass Eradication Effort	<p>(ORIGINAL ID#11538) Cogongrass (Imperata cylindrica) is an invasive, non-native grass, which occurs in the southeastern United States. A pest in 73 countries and considered to be one of the Top 30 Worst Weeds in the World. Cogongrass affects ecosystem survival, wildlife habitat, recreation, native plants, fire behavior, site management costs and more. Cogongrass is currently documented in 62 of the 82 counties in Mississippi and has become an extremely serious problem in MS Gulf Coast Counties. Cogongrass negatively affects native ecosystems by creating a monoculture of itself wherever it occurs. It disrupts natural ecosystems and displaces native plant and animal species, including many listed as threatened or endangered, such as: the Gopher Tortoise, Black Pine Snake, MS Redbelly Turtle, Eastern Indigo Snake, MS Sand Hill crane, Red Cockaded Woodpecker, Yellow-Blotched Map Turtle, Pondherry, and Louisiana Quailwort. Cogongrass creates extremely hazardous fire conditions for flora, fauna and humans. Due to it's high silica content, Cogongrass burns on the average four (4) times hotter than normal native fuel loads. Native ecosystems have evolved to thrive in normal pyric events. The hyper-intense fires of Cogongrass exceed the temperature level of normal environmental fires, thereby decimating native ecosystems and their inherent ability to recover and restore post-pyric biodiversity. Cogongrass also presents an economic strain to the already reduced economy of South Mississippi. It competes with all species of timber producing trees for nutrients and water, thereby reducing financial forestry growth rates. Even domestic live oak groves are affected because cogongrass are not palatable to oaks or other livestock. Various agencies, both federal and state, have conducted Cogongrass control programs through the state. While these have been effective at suppression on a local basis, none has had the means to attempt eradication, in a systematic logistical manner in South Mississippi along the Gulf Coastal Counties most affected by Cogongrass. Therefore the Mississippi Forestry Commission is soliciting the Restore Program for aid. The focus of this project will be eradicating the non-native cogongrass and restoring native ecosystems for the protection habitat for native flora and fauna. This is in turn will increase biologic diversity and both the inherent natural and economic value of Gulf Coastal ecosystems and forest.</p> <p>Proposal Objective: Identification/education/treatment program 4C Treatment of active cogongrass spots is very important in the suppression of this non-native plant species. With the average cost being \$579 / acre for treatment, it is quite expensive and cost prohibitive for many landowners to fund treatment. All of the funding for this project will be used for treatment programs in Hancock, Harrison and Jackson Counties, MS. We will treat the small spots using MFC personnel. For larger areas, we will schedule treatments by contract vendor. An extensive database will be maintained, along with GIS shape files, of all infestations mapped and treated.</p> <p>Timeline: Five years from approval</p> <p>Budget: \$10,000,000.00</p> <p>Actions, Outcomes, Costs, Timeline:</p> <ul style="list-style-type: none"> 1-Review The MFC with \$10,000,000.00 for cogongrass control activities through Landowner Assistance Programs 1- Based on Mississippi Cogongrass Eradication Programs, it costs \$579 per acre to control cogongrass. This funding would equate to controlling 17,271.16 acres of cogongrass in Hancock, Harrison and Jackson Counties, MS. Using the statewide average of 0.134 acres per infestation that would equate to treating 128,889 infested spots. 2- The MFC will provide infrastructure for control, implementation, and outreach. 3- Will include hiring contractors for spraying infestations 4- May include hiring of part-time forest plant specialists 	Hancock, Harrison, Jackson, George, Harrison, Jackson, Mobile, Hancock, Hancock, Stone, B, Tammany, Mobile, Jackson, Pearl River, Harrison, George	Yes	No		Yes	Yes	No	Yes	Yes	Yes	\$	10,000,000.00	\$	300,000.00	
Eco Restoration	1615	12/9/2011	Increase the pace, quality and permanence of voluntary land and water conservation through the Partnership for Gulf Coast Land Conservation	<p>(ORIGINAL ID#11548) The Partnership for Gulf Coast Land Conservation Project The Partnership for Gulf Coast Land Conservation (PGLC) is a new coalition of local, regional state and national land conservation organizations devoted to advancing land and water conservation in the Gulf of Mexico region. This initiative is organized under the auspices of the non-profit Land Trust Alliance (Alliance) and is patterned after other successful land trust coalitions across the country. Today our membership consists of 25 national, regional and local land trusts operating in the Gulf States. The Partnership is committed to work together with the five Gulf of Mexico states to improve the quality and permanence of voluntary land and water conservation in the coastal region. Land trusts are community-based non-profit organizations that work with landowners to permanently conserve forests, rivers, farms, ranches and other natural areas critical to a sustainable environment and healthy, thriving communities. Through this project, the Partnership proposes to: 1. Increase the effectiveness and efficiency of land trusts in the Gulf Region. 2. Develop and promote a public policy agenda which will reduce the barriers to private sector conservation efforts and increase funding for acquisition and restoration. 3. Develop collaborative projects that will enable the land trust community and supporters to implement landscape scale conservation measures in the region. Collaborative projects may be built around water quality, critical habitat, or other criteria. 4. Institute landscape-scale conservation planning in collaboration with other conservation partners (resource agencies and other non-government organizations) that prioritizes habitat for endangered and threatened species, improvements to water quality, connectivity to other protected lands, trust resources and important cultural and recreational features. 5. Participate in and coordinate our efforts with other ongoing conservation planning and implementation activities through entities such as the Gulf of Mexico Alliance and the Gulf of Mexico Foundation and others.</p>	n/a	Yes	Yes	Yes	No	Yes	No	No	No	\$	1,000,000.00	\$	-		
Eco Restoration	1616	12/9/2011	Mississippi Coastal Data Integration and Management Program	<p>(ORIGINAL ID#11580) Through its resource and management agencies and public institutions, the State of Mississippi has developed a wealth of scientific information on its coastal waters and associated biological resources. While those data have been collected in large part through the State's Department of Marine Resources (MDMR) and Department of Environmental Quality (DEQ), partner institutions such as the University of Southern Mississippi's Gulf Coast Research Laboratory (GCRL) have historically collaborated on research endeavors. To the great benefit of the State, several monitoring and assessment programs span multiple decades and provide data necessary for evaluating long term trends in fishery stocks and associated fauna. Those data are shared among state institutions to assist in maintaining proper management strategies for Mississippi marine resources. There are, however, data that are collected independently and not properly integrated into one coherent (or multiple related) datasets). We recommend that a small portion of restoration monies be devoted to the establishment of a Mississippi Coastal Data Integration and Management Program that would develop uniform data standards to allow the State to integrate its existing data sets and seamlessly merge future data into one consistent data storage program with associated metadata files created to properly capture the source and structure of the data. Subsequently, various software applications can be applied to allow user-friendly data queries, which would greatly assist the Trustees as they move forward in the NRDCA process to determine Deepwater Horizon impacts to Mississippi coastal resources. We propose that this program be a joint effort among GCRL, MDMR, DEQ and other pertinent partner institutions.</p>	Hancock, Harrison, Jackson	Yes	No		No	No	No	No	No	\$	375,000.00	\$	-		
Eco Restoration	1617	2/2/2012	Bird-friendly lighting on oil and gas platforms in the Gulf	<p>(ORIGINAL ID#11605) Bird species impacted by the BP oil disaster are also among those that are vulnerable to the lighting generated by oil and gas platforms. In particular, tubenoses (e.g., petrels, shearwaters) and migratory birds are susceptible to plants that are illuminated at night. An estimated 20,000 bird collisions deaths may occur each year in the Gulf due to changes in flying behavior influenced in part by platform lighting. Reducing bird-platform collisions by replacing existing lighting with bird-friendly lighting could have an immediate effect in reducing mortalities and help the recovery of species affected by the oil disaster. Replace white tube lights and orange (sodium high pressure) lighting on oil and gas platforms with lights to spectral red.</p>	n/a	Yes	No		No	No	No	No	No	\$	-	\$	-		
Eco Restoration	1619	2/7/2012	Gulf of Mexico Ecosystem Assessment: The Role of and Possible Oil Spill Impacts to Menhaden as a Keystone Species	<p>(ORIGINAL ID#11610) Description: This multi-year, interdisciplinary research project would aim to clarify questions about the role of Gulf menhaden in the ecosystem and whether and how their population and ecosystem were affected by BP Deepwater Horizon oil. The resulting models and information could improve estimates of menhaden productivity and guide fisheries management decisions that bear on recovery of menhaden from any Gulf oil-related injuries. Link to menhaden spawning and subsequent egg/larval drift between the northern Gulf of Mexico and the western Gulf coincided with the DWH oil disaster. Juvenile menhaden and oil would have been in the estuary at the same time. Therefore, it is likely that menhaden in one or more life history stage was exposed to the oil or chemical dispersants. Brown pelican and other species whose diets include menhaden were injured. Benefit and Rationale: An ecosystem assessment is needed to better understand the role and productivity of menhaden in the Gulf of Mexico and to what extent that DWH oil may affect the future health and ecological role of its population. Gulf menhaden is a significant part of Gulf of Mexico's base food web. Menhaden eggs, larvae, and young of the year are a major forage source for many economically important finfish. Upwards of 95 percent of the brown pelican's diet can be Gulf menhaden. The revenue generated by this fishery is of great economic importance to the Gulf of Mexico, especially Louisiana. Recommendations made in an October 2011 stock assessment for Gulf menhaden provide an excellent starting point for the types of research needed for an ecosystem assessment. For example, the stock assessment recommends research to examine menhaden reproductive biology, predator-prey relations, genetics, and natural mortality through tagging studies. These studies are important components of an ecosystem assessment. Other: The Exxon Valdez oil spill injured Pacific herring and pink salmon in Prince William Sound and likely contributed to the long-term collapse of the herring population in that region. As a result, the Sound Ecosystem Assessment (SEA) project was designed to determine the root causes of their decline and elucidate the factors that driver their productivity. Between 1994 and 1999, the SEA program yielded an ecosystem level understanding of factors influencing juvenile pink salmon and Pacific herring survival in Prince William Sound. Multiple models were developed that better explained the relationships between such elements as the environment, predation and the associated food webs.</p>	n/a	Yes	No		No	No	No	No	No	\$	-	\$	-	No	
Eco Restoration	1623	7/2/2012	Enhancing Remnant Wetlands to Decrease the Impacts to Coastal Degradation	<p>(ORIGINAL ID#11717) The TNC-MS Chapter's Freshwater Program proposes to implement controlled drainage practices on remnant oxbow wetlands in the Mississippi Delta. While serving as a drainage catchment, installation of an innovative surface controlled drainage strategy, low grade weir, in the systems outflow channel would create a series of in-stream wetlands with in the systems channel. These in-stream wetlands will also be altering flow velocities of runoff entering these remnant systems and provide the very important service of first flush capture of nonpoint source pollutants that would have eventually exited the system. These pollutants are derived from the agricultural production in the region that is ubiquitous in its use of inorganic fertilizers to increase crop yields, which in turn, often result in the delivery of high nutrient loads from the landscape to adjacent receiving waters. It is these nutrient loads, mainly nitrate-N, associated with these watersheds that are rooted deeply in the causes of coastal ecosystem degradation and eutrophication. This is no more prevalent than in the hypoxic zone off of the Mississippi coast to the Gulf of Mexico. Several thousand acres of remnant oxbow wetlands in the Mississippi Delta currently go unmanaged. These systems could significantly contribute to decreasing nitrate-N concentrations and loads reaching Mississippi's coastal ecosystem while also serving as a critical significant surface water source capable of providing sustainable irrigation supplies as well as needed in stream flows. Using remote sensing data through the Light Detection and Ranging (LiDAR) software we were able to determine precise water volumes associated with water elevation fluxes of several remnant oxbow wetland systems. Two of the systems alone would have a combined water storage capacity of 1,500,000,000 liters following implementation. Project sites would be modeled and replicated for future projects of its kind aimed at enhancing water quality and securing additional sustainable water supply in the Delta's watersheds by using the landscape's natural features. The project is in the preliminary stages and although we have a strong consensus from the private landowners, the most important steps include securing funding for the project and potentially leveraging that funding with other interested partners. Project sites range from the northern to southern portions of the Mississippi Delta region and are dependent on funds allocated. Funds from the Restore Act would aid in enhancing critical wetland habitat to decrease the impacts to downstream water quality, with the added potential to provide data that would establish these remnant wetlands as an additional sustainable water supply that could be managed and is needed in this region's irrigation-dependent agricultural economy. The agriculture community has begun to embrace the notion of water resource conservation, but alternative strategies are actively being sought. Failure of the conservation community and associated partners in this region to engage in this process will represent a lost opportunity with wide ranging implications.</p>	n/a	Yes	Yes		No	Yes	No	No	No	\$	1,000,000.00	\$	-		
Eco Restoration	1625	10/16/2012	Enhancement of the existing DMR Smart Growth and Sustainability Model Utilizing Geographic Information Systems (GIS) Technology and Coast Specific Data for the Lower Three Coastal Counties (Hancock, Harrison and Jackson Counties)	<p>(ORIGINAL ID#11835) The Mississippi Department of Marine Resources (DMR) is pleased to provide this proposal to develop an enhanced smart growth and sustainability model for the lower three coastal counties (Hancock, Harrison and Jackson Counties) and the cities and towns within the three lower counties, utilizing the latest technology and coast-specific data. DMR proposes to complement and enhance on-going DMR/DEQ coastal restoration efforts by providing a tool for use by local governments, private interests, and the general public that will identify and highlight opportunities for continued smart growth and sustainable development in coastal Mississippi. We envision this as being a phased project, with the first phase focusing on the model development for the three lower coastal counties, and as funds are available, DMR hopes to expand the model to include Pearl River, Stone and George Counties in the future. In summary the model will include the following: - Enhancement of the existing Smart Growth and Sustainability GIS Model through the incorporation of additional existing data sets and creation of new data sets designed to provide local stakeholders with a decision making tool to assist with growth and development in Coastal Mississippi; estimated cost: \$1,750,000. Introduction: In December 2009, the Office of Coastal Management and Planning (CMP) of the Mississippi Department of Marine Resources (DMR) hired Eco-Systems and began development of a series of tools designed to provide coastal Mississippi with the necessary resources to make informed decisions regarding growth, development, environmental restoration, and resiliency. With Smart Growth and Sustainability as the guiding principles, Eco-Systems and CMP worked to develop an Internet-based Smart Growth and Sustainability Toolbox for coastal Mississippi. The primary principles of Smart Growth encourage: - Development that includes a compatible mixture of land uses, - A focus on compact building design to maximize density where appropriate, - Creation of a range of housing opportunities and choices, - Creation of walkable and pedestrian friendly neighborhoods, - The creation of business districts and attractive communities with a strong sense of place, - Preservation of open space, farmlands, natural beauty and critical environmental areas, - Development directed towards existing communities to take advantage of existing infrastructure and to reduce urban sprawl, - A variety of transportation choices, - Policies that make development decisions predictable, fair, and cost effective, and - Community and stakeholder collaboration in development decisions. The Coastal Mississippi Smart Growth and Sustainability Toolbox and the GIS Smart Growth and Sustainability Model were designed to illustrate existing smart growth and sustainable development opportunities and to encourage new developments to follow suit. These concepts include: - Community Character, - Transportation Choices, - Resiliency and Natural Hazards, - Policy in Practice, and - Growing Green. The GIS Model, as it currently exists is a raster-based model that includes a number of data sets from the six coastal counties. These data sets combined, provide a tool for the user to identify areas of existing smart growth and sustainability and also allow the user to identify smart growth and sustainability elements in the coastal communities that may be enhanced by smart growth and further the goals and objectives of Smart Growth. The data sets currently incorporated into the existing model include: - Public Transportation including the Coast Transit Authority (CTA) routes and stops, - Areas certificated for water and wastewater infrastructure through coastal utility districts and authorities, - Historic and National Register Districts, - Municipal, community, and county boundaries, - Cultural Resources including parks, playgrounds, public areas, churches, schools, museums, etc., - MDEQ designated floodplains, - Beachfront properties, - Jurisdictional wetlands, - DMR Designated Flood Zones, - Land parcels and building footprints, and - Government-owned lands. In development of the Model, each data-set was converted from vector to raster data, enhanced with buffers and assigned a value to be incorporated into a global formula to determine areas with high potential for smart growth and sustainability related development. The formula creates a ranking from 0 to 10, with 10 being the highest. The combination and layering of data-sets allows for a weighted score of all areas within the six coastal counties. The formula also includes a formula-based moderates this weighted score to ensure that all areas are potentially balanced with respect to positive and negative measures of smart growth and sustainability. The expansion project, as proposed, will enhance and expand the existing model to enhance the Smart Growth aspects of the model. The proposed Model enhancement project will provide additional benefits to include: - A single repository of relevant and critical GIS data housed in on-line servers that will be available to local governments, businesses, individuals and others for use in future emergency and disaster recovery</p>	Hancock, Harrison, Jackson	Yes	No		No	Yes	No	No	No	\$	1,750,000.00	\$	-		

Eco Restoration	1626	10/24/2012	A Gulf-wide multi-year research project to determine best practices for minimizing barotrauma effects on red snapper following capture and release	(ORIGINAL ID#11840) Proposed Restoration Project: The project would clarify the effects of barotrauma on red snapper and better define expected rates of discard mortality in the Gulf of Mexico. Additionally, the project will determine, through stakeholder involvement, methods and devices best fit to increase post-release survivorship of red snapper in Gulf fisheries. A detailed understanding of barotrauma and its effects on red snapper will inform efforts to help the recovery of fish populations impacted by the Deepwater Horizon (DWH) oil disaster. Link to injury: The DWH oil disaster footprint overlapped with portions of the geographic range and spawning period of many reef fish species, including red snapper (<i>Lutjanus campechanus</i>). The eggs and larvae of red snapper and other finfish spawning at the time, in addition to adult fish, were exposed to petroleum hydrocarbons and chemical dispersants. Acute mortality of fish eggs and larvae and sublethal effects on adult fish could affect year class strength and population levels. Barotrauma: Red snapper is an iconic popular recreational and commercial fish species in the Gulf. In 2011, commercially landed red snapper had an ex-vessel value of \$11.5 million. The recreational fishery generates millions of dollars as well. Red snapper are known to suffer from barotrauma related injuries and mortality. Barotrauma is the condition that results when a fish is brought up from depth rapidly and the change in ambient pressure can cause potentially lethal internal injuries. Most red snapper barotrauma studies have been regional, and have not encompassed the full geographic depth and temperature ranges in which the red snapper fishery is prosecuted. Increasing the post-release survival rate of red snapper Gulfwide would reduce the impacts of fishing and allow the population to recover from the DWH injury. Description: Red snapper are susceptible to barotrauma. Barotrauma can cause internal injury (e.g. gas bladder rupture, hemorrhaging, etc.) and positive buoyancy (i.e. floating). These injuries may not allow the fish to return to depth upon release or cause behavioral effects that can increase their risk of predation. Overfished populations of red snapper and could enter recovery from DWH impacts. Overall, fishery managers lack data on the post-release mortality of many reef fish species, including red snapper. This prevents accurate prediction of discard mortality in commercial and recreational fishery harvest estimates and stock assessments. Lack of confidence in release mortality may lead to increased management uncertainty. Accurate prediction of post-release survival is integral to setting appropriate annual catch limits of affected species in order to meet conservation goals. This project barotrauma would follow the established protocols (e.g. Jarvis and Dowd), modified as necessary for red snapper, for both field (e.g., cages, release devices, etc.) and laboratory procedures (e.g., hyperbaric chambers and underwater acoustic tags). In general, these protocols focus on and characterize internal/external signs of barotrauma, physiological status, and short/long term post release mortality of the species. Stakeholder participation will define their needs and will assist in development of best release practices for this species. Preliminary studies have demonstrated recompression devices have great potential to increase fish survival from barotrauma related injuries. Though promising new methods are available to fishermen, including recompression devices (e.g. Sequalizer, Shelton Fish Descender, etc.), information of their real world applicability has yet to be determined in great detail. Identifying recompression devices most effective at reducing post release mortality and determining the ones best suited to anglers through active involvement of stakeholders will guide outreach efforts to increase their acceptance and use among fishermen. This is especially important for those species affected by the DWH disaster, potentially offsetting DWH impacts by allowing these populations to recover at a faster rate than if these devices went untested and unused. Results of this research project will add to the state of knowledge regarding methods of survivorship for reef fish species. Data derived from this pilot study will help managers determine tools that can aid the recovery of red snapper populations impacted by DWH and are suitable for wider use in Gulf of Mexico fisheries. These data will also increase the accuracy of discard mortality estimates and improve annual catch calculations. This project could generate significant support and interest in the recreational fishing community. Location of Project: To be determined, but likely in multiple Gulf of Mexico locations (depending on fishermen interest)	n/a	Yes	No		No	Yes	Yes	No	No	No	\$ 2,000,000.00	\$	
Eco Restoration	1627	12/14/2012	Increase amount of assessments for potentially impacted finfish species	(ORIGINAL ID#11862) Proposed Restoration Project: Conduct more frequent stock assessment updates for overfished or near overfished Gulf finfish species and first-time stock assessments for lesser known, unassessed finfish species that were potentially impacted by the Deepwater Horizon (DWH) oil disaster. The information will be used to inform adaptive management of fisheries and promote recovery of populations impacted by DWH. Link to injury: Many commercially and recreationally fished species in the Gulf of Mexico were exposed to oil or dispersants during the DWH disaster. As a result, potentially injured populations, and shifts in migratory patterns and highly migratory species in order to help managers better track population status and trends and set catch quotas consistent with recovery from the DWH disaster. Benefit and rationale: Finfish contribute to regional seafood sales totaling \$17 billion and support a thriving recreational fishing industry, which generates nearly \$10 billion in economic activity and supports 92,000 jobs in the Gulf of Mexico. Therefore, knowing the status of finfish populations through assessments is critical for effective management of fisheries and maintaining the health of the ecosystem and the fishing related industries that depend on it. The 2012 DWH disaster may have affected the year-class strength of exposed Gulf fish species by reducing survival of eggs and larvae, if it could have reduced the spawning population itself through lethal or sublethal impacts. Sublethal exposure to oil and dispersants could, for instance, compromise the immune system of affected fish, and signs of compromised immunity in the form of external lesions and abnormal markings on fish (e.g., red snapper) have been documented by researchers at LSU and USF. The population status of Gulf species is assessed through the Southeast Data, Assessment and Review (SEDAR) process, which is the stock assessment process established by the South Atlantic, Gulf of Mexico, and Caribbean Fishery Management Councils. These three Councils are all served by the Southeast Fisheries Science Center within NOAA Fisheries. All three Councils rely heavily on SEDAR assessments for generating science-based management advice for NOAA Fisheries. However, due to the large volume of managed species in the Southeastern U.S., only a small fraction of managed species are assessed in any given year, and many have never been assessed. Assessed species are managed through multi-year population projections in year-to-year assessments, but episodic events such as hurricanes, red tides, or oil spills can affect the population in ways that can reduce the usefulness of the population size projections, potentially leading to inappropriate management decisions. For species that are nearing an overfished condition or are overfished, the DWH disaster may have further negatively affected population health. More frequent status updates are needed to ensure that these species do not become overfished or if a species is already overfished that reducing its on track. There are currently four species in the Gulf that are rebuilding plans: red snapper, gag, grouper, and gray triggerfish. More frequent assessment updates for gag grouper have been implemented to prevent the population from deteriorating from a near overfished condition in 2005 to severely overfished in 2009 (due to a 2006 episodic mortality event that reduced the spawning stock biomass by 18 percent). More frequent status updates may have also been able to detect the lack of progress in greater amberjack rebuilding and prevent missing the rebuilding deadline. Species impacted by DWH that have not been assessed present a unique challenge to fishery managers because their population status and how DWH might have affected population status is unknown. Managers need accurate population size estimates to detect changes in abundance that might be influenced by sub-lethal effects resulting from DWH. This information will facilitate adaptive management and recovery and help managers prevent overfishing while achieving optimum yield. Specifically, an evaluation of available data post-assessment methods and application of the most suitable ones to unassessed/undermanaged Gulf species is needed. An additional need is a method for annually setting catch limits for these species that is based on feedback control to adjust for errors in our perception of population status and changes in abundance trends. Alternative catch setting methods, based either on results from simple assessment methods or empirical data, can be tested using simulations through the management procedure approach. Employing this approach would enable managers to choose the method that is expected to best meet management goals and to respond appropriately to any changes in population trends that may result from DWH impacts. Description: Annual biennial update assessments would be performed for previously assessed managed Gulf species that have been determined to be overfished or are nearing an overfished condition. These updates would be done in-house by the Southeast Fisheries Science Center or responsible state.	n/a	Yes	No	No	No	No	No	No	No	\$ 150,000,000.00	\$		
Eco Restoration	1629	3/20/2013	Mississippi Watershed Structure Restoration Project	(ORIGINAL ID#11936) 1) BACKGROUND OF RC&D PROGRAM: The North Central Mississippi Resource Conservation & Development Council (NCRCD) covers 10 counties in North Mississippi. The NCRCD is a 501 c(3) non-profit organization made up of volunteers who identify needs in our communities and find solutions that work. Our Council's sponsors are the Board of Supervisors and Soil & Water Conservation Districts. 2) NATURAL RESOURCE DAMAGE: The NCRCD recognizes the need to fund a project to restore or rehab approximately 77 watershed structures that are near failure. Structures will require new pipes installed, dirt work, and woody vegetation removed from these dams. These water control structures were built in the late 1960s-1960s by USDA. Soil Conservation Service along deep channels for erosion control purposes. Over the past 60 years they have trapped tons of nutrients and sediment. Not if, but when these structures fail, sediment and nutrients will pollute streams on down the Gulf of Mexico. 3) EXECUTIVE SUMMARY: Goal is to restore or rehab 77 water control structures back to original design in Mississippi watersheds that have little Tallahatchie, Coldwater, Horn Lake-Nonconah, and Wolf River. The NCRCD is capable of administering this project. 4) ACTION PLAN: The NCRCD will be responsible for project coordination and seeing that the project is completed in a timely and efficient manner. The action plan includes the following: A) NCRCD and Watershed District or local sponsor will obtain easements B) USDA - Natural Resources Conservation Service will provide as-built plans (designs already completed) and provide personnel to inspect the rehab of structures as matching funds for the project C)NCRCD will provide assistance in obtaining copies of as-built plans, bid advertisements, bid packages, contracting, payments, and final reports D)NCRCD will provide sub-grants to local organizations and/or certified engineers if needed. 5)BUDGET: A) 77 Water Control Structures Restored (\$2,475,000) B) Project Coordination - Easements, Contracting, Misc. Engineering (\$200,000) C) Travel(\$15,000) D)NCRCD - 4% Administrative Fee (\$107,500) E)in-kind Matching Funds (USDA-NRCS)(540,000) 6) EVALUATION OF PROJECT: A)Number of structures restored B)Efficiency & timeliness of project completion C)Reduction of sediment and nutrients into the Gulf of Mexico.	Panola	Yes	Yes	No	Yes	No	No	No	No	\$ 2,797,000.00	\$ 450,000.00		
Eco Restoration	1630	3/20/2013	Mississippi On-Site Wastewater Treatment Project	(ORIGINAL ID#11937) 1) BACKGROUND OF RC&D PROGRAM: The Mississippi Association of Resource Conservation & Development Councils (MARCCD) has 1 local Resource Conservation & Development (RC&D) Councils that cover the entire state of Mississippi. The MARCCD & RC&Ds are 501(c)3 non-profit organizations made up of volunteers who identify unmet needs in their communities and create solutions that work. 2) NATURAL RESOURCE DAMAGE: The MARCCD recognizes the need to fund a statewide project to address environmental damage caused by rural homeowners with failing septic tanks & homes without septic tanks (single septic tanks) to protect upstream damage from polluting streams that drain into the Gulf of Mexico. According to the Mississippi Department of Health(MDOH), 425,000 homes or 40% of homes are not connected to sewer systems located in rural areas of the state. A MDOH official estimated 15-20% of rural homeowners statewide have failing septic tanks or without septic tanks. 3) EXECUTIVE SUMMARY: Goal is to install a minimum of 200 wastewater treatment systems in existing low-income households within rural areas of MS. The MARCCD is capable of administering this project. Plan is to give sub-grants to local groups such as RC&D Councils, Conservation Districts, Health Dept. Boards, and other community groups. 4) ACTION PLAN: The MARCCD will make sub-grants to local organizations to allow septic tanks to be installed in a timely and efficient manner. Local organizations will work with local health departments to complete these activities; A) homeowner completes application B)health department determines homeowner eligibility rating (Health department makes on-site evaluation & system type needed D)eligible homeowners receives septic system maintenance training E) groups of at least 5 septic tanks will be advertised in the local newspaper F)applicant to eligible homeowners (globe bids and award contracts to certified contractors I)health dept. certifies work meets standards. 5)BUDGET: A) 200 septic tanks installed (\$1,000,000) B) Project Coordination - Local Organizations (\$160,000) C) MARCCD - 4% Administrative Fee (\$46,400) 6) EVALUATION OF PROJECT: A)Number of septic tanks installed B)Efficiency & timeliness of project completion (Reduction of fecal coliform bacteria into the Gulf of Mexico.	Tate	Yes	Yes	No	Yes	No	No	No	No	\$ 1,206,400.00	\$		
Eco Restoration	1631	3/27/2013	10-Year enhancement for improving Gulf of Mexico Sea Turtle Stranding Network response and science capacity	(ORIGINAL ID#11947) Proposed Restoration Project: The project will augment resources available to the Sea Turtle Stranding and Salvage Network (STSN) in the Gulf, led by NOAA, and help participating entities respond to and learn from future sea turtle strandings and thus increase the survival of rescued animals and the recovery of populations impacted by the Deepwater Horizon (DWH) oil disaster. Link to injury: Sea turtles were exposed to petroleum hydrocarbons resulting from the Deepwater Horizon oil disaster and likely to chemical dispersants used during DWH response. More than 450 visibly oiled, live sea turtles and 18 visibly oiled, dead sea turtles were recovered during DWH response from April 2010 through February 2011. Another 500+ stranded sea turtles with no visible external signs of oiling were also reported during this period. Animal autopsies revealed that the cause of death for a subset of non-visibly oiled sea turtles was consistent with drowning, but whether and how the DWH disaster contributed to strandings of non-visibly oiled sea turtles remains under investigation. Benefit and Rationale: NOAA leads the STSN in the Gulf of Mexico, but depends on employees of federal and state agencies, universities, non-governmental organizations to run on-the-ground operations and foot response. In some cases, STSN participating entities receive limited or inconsistent institutional support and conduct STSN activities using their own limited time and funding. However, they are often the first to respond to sea turtle strandings, a key function in maximizing the survival of live stranded animals and route to more desired and dedicated funding to help support monitoring and response to strandings. Since April 2010, the number of viable turtle strandings in the northern Gulf has approached 2,000 animals, far exceeding the historical average. Stranded sea turtles would not be located, rescued and rehabilitated were it not for the network and the participating organizations. Rehabilitated animals released back into the wild are given another opportunity to reproduce and thus contribute to the recovery of populations impacted by episodic events like the DWH disaster. Sea turtles, as the ocean's "canaries in the coal mine" and stranding networks, through routine samplings, necropsies, and genetic testing, can help scientists understand the condition of animals that can not only help scientists understand the cause of illness or death but detect subtle or significant changes in ecosystem condition or function. The collection of biological information from stranded animals is critical to understanding more clearly the long-term effects of the DWH disaster and other human activities on Gulf sea turtles. Description: This project would increase capacity for sea turtle stranding programs at the state or regional level such that they are in a better position to respond to strandings. This project would maximize survival of recovered animals, and improve the consistency and quality of pathological information collected from tissue samples or post mortems. Specifically, this project would increase capacity across Gulf STSN programs in the field by making investments in the following operational areas: 1) developing and implementing uniform animal detection and data collection methods; 2) equipment (including vehicles); 3) supplies (including oiled); 4) supplies (including oiled); 5) data entry, management and synthesis (recognition); 6) data entry, management and synthesis (recognition); use and public consumption and 6) rehabilitation facilities (including salary support and other administrative costs such as coordination with other networks and resolving permit problems). In regards to #1, this project would cover the cost of developing uniform animal detection and data collection methods, which are important for understanding how stranded turtles represent the entire population. Hiring experienced researchers and veterinarians from other regions to train local responders in the activity of collecting information from stranded animals is needed to ensure that information from stranded animals is consistent across stranding networks in the Gulf, integrated with other health assessment studies, contributes to a better understanding of the impacts of the DWH disaster on Gulf sea turtles, and informs sea turtle recovery strategies going forward. Note: Specific program needs will vary on a state by state basis and therefore should be determined by in-state coordinators. Note: This proposal was prepared by Ocean Conservancy, with input from stranding network members. Ocean Conservancy is not seeking funding for this project, nor does it anticipate receiving funds, if approved and adopted in whole or in part, by the Trustees, the Gulf states, the National Fish and Wildlife Foundation, the Restore Council, or any other funding entity.	n/a	Yes	No	No	Yes	No	No	No	No	\$ 1,000,000.00	\$		

Eco Restoration	1632	4/19/2013	Expand and improve Gulf of Mexico Marine Mammal Stranding Response and Science Capacity	(ORIGINAL ID#11964) Proposed Restoration Project: The project will standardize response to the Marine Mammal Health and Stranding Response Program (MMHSRP) network members in the Gulf, helping them respond to and learn from future marine mammal strandings and thus increase the survival of rescued animals and the recovery of populations impacted by the Deepwater Horizon (DWH) oil spill. Added benefits from this project are the ability to augment the resources and response capability across networks that serve other impacted marine wildlife species, such as sea turtles and sea birds. Link to Injury: Marine mammals (whales, dolphins, and manatees) inhabit the northern Gulf and likely were exposed to petroleum hydrocarbons and impacted by cleanup activities resulting from the Deepwater Horizon oil spill. Aerial surveys conducted under the Natural Resource Damage Assessment observed 6 species of whales or dolphins swimming in surface oil in offshore waters. Two dolphins were rescued after being trapped behind oil barges. Live dolphin health assessments conducted in Barataria Bay in 2011 showed that animals in this highly impacted region were exhibiting signs of severely compromised immune systems – symptoms consistent with those seen in other mammals exposed to oil. Approximately 930 marine mammal strandings (almost entirely bottlenose dolphins) have been reported as of 7 April 2013 as part of an ongoing Unusual Mortality Event that began in February 2010 in the northern Gulf. Strandings in 2010-2012 far exceeded the historical average (Figure 1). The majority of the strandings occurred in Louisiana, followed by Mississippi, Alabama, and the Florida panhandle (Figure 2). Scientists are still investigating the cause of the strandings. The potential for long-term impacts exists for marine mammals that were exposed to contaminants, but may take many years to be realized. Benefit and Rationale: The collection of biological information from stranded marine mammals is critical to understanding more clearly the long-term effects of the DWH oil spill and to ensuring the recovery of affected populations. Prior to the spill, stranding response efforts were patchy and inconsistent in many portions of the region, especially Louisiana and Alabama. Response capabilities increased in certain areas during the spill with funding from the Natural Resource Damage Assessment; however, long-term funding is needed across the Gulf because it is not known where or when delayed strandings related to the DWH spill may arise in the future. Institutional funding is variable but generally inadequate to provide the level of response needed for ongoing injury assessment. Limited global expertise in marine mammal veterinary care and diagnosis underscores the need to recruit and retain properly trained specialists in the impacted region. MMHSRP network members are often the first and only responders to marine mammal strandings in the Gulf region. Rapid response to live- and dead stranded animals is key to collecting the high quality samples necessary to determine cause of death and to monitor the health status of wild populations. The availability of trained and qualified stranding responders, technicians, and veterinarians is essential in providing effective medical and forensic response. The unusually high number of sick and dead marine mammals recovered in the northern Gulf since the DWH oil spill underscores the importance of the network members in responding to, rescuing, and rehabilitating stranded marine mammals. Often, MMHSRP network members participate also in response efforts for other injured or dead marine wildlife, including sea turtles and seabirds. Although none of the marine mammals rescued during the DWH event could be released back into the wild, other live-stranded marine animals (e.g., seabirds and sea turtles) were rescued and rehabilitated by network members and typically were released. There is an ongoing need to treat and successfully release stranded dolphins, whales, and manatees back to the Gulf. Released animals are then able to reproduce and contribute to the recovery of the wild population. Follow-up monitoring of released animals via tagging and resightings will provide data on the success of rehabilitation efforts and assist in adaptive management of rehabilitation and release techniques. Marine mammals, among other species, are the ocean's "canaries in the coal mine," and MMHSRP network members, through biological sampling and post-mortem examinations, collect high value information on the condition of animals that can help scientists not only understand the cause of illness or death, but also detect subtle or significant changes in ecosystem condition and function. Stranding response complements on-water observational studies of free-swimming wild animals, which provide a means to measure population vitality, births, juvenile survival, visual health indicators, and incidences of injury or harassment by human activities (e.g., vessel strikes and fisheries interactions). Description: This project would maximize the survival and recovery of marine mammals affected by the DWH oil spill by increasing the capacity of Gulf marine mammal health.	n/a	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	\$ 45,000,000.00	\$ -
Eco Restoration	1634	4/30/2013	Flood Water Retardation Watershed Structure Rehabilitation	(ORIGINAL ID#11968) We have a need to renovate and bring back up to standard flood water retardation watershed structures. These dams were built in the 1960-1970 time period to reduce down stream flooding and sediment erosion. These structures are still functioning at this capacity but the metal trash racks are in need of replacement. These dams have an acre still providing a great service in controlled runoff of sediment, water and nutrients from towns and agricultural lands. Because of the rusting of the metal trash racks and some woody vegetation on emergency spillways, the local waterborne districts are in need of financial assistance to do the work. These local waterborne districts do not have the funds to carry out some annual maintenance but are not financially able to do so. We would like to preform these type of overhauls. If these dams are not brought back up to current mandated standards, these dams would be breached allowing the 40-50 years of trapped sediment, nutrients and possible pesticides to be released into the down stream waterways. And the increased flood hazard would endanger many homes, businesses and highways, railroads, utility services, wetlands and agricultural lands. These watershed areas all drain to the Gulf of Mexico by way of the Tombigbee River. The areas above these dams have created wetlands that are important to local wildlife and riparian birds.	Alcorn, FISHINGHOLE, Lee, TAWAMBA, Prentiss, Chickasaw, Calhoun, Webster	Yes	Yes	100%	No	Yes	No	No	No	Yes	No	No	No	No	No	\$ 400,000.00	\$ 40,000.00
Eco Restoration	1636	5/16/2013	Reduction of Nutrients and Sediments from Agricultural Lands	(ORIGINAL ID#11976) This project would involve landowners with livestock on land adjacent to field ditches, creeks, streams and waterways to reduce the amount of nutrient and sediments entering the stream flow. This would involve assistance to landowners with fencing out of streams, improvements to pasture grass conditions, water sources, feeding areas, grazing rotations and educational meetings to assistance landowners in best management practices and to learn about other sources of funding. This project would reduce the amount of nutrients and sediments entering the waters that flow into the Tombigbee river basin and then the Gulf of Mexico. This would be administered through the NE Miss. RC&D with the assistance of the local Soil and Water Conservation Districts and Miss. Soil and Water Conservation Commission and the Natural Resources Conservation Service office.	Alcorn, FISHINGHOLE, Lee, TAWAMBA, Prentiss, Chickasaw, Calhoun, Clay, Monroe, Lowndes, Oktobbe, Webster, Choctaw, Neshaws, Kemper	Yes	Yes	Yes	Yes	No	No	No	No	No	No	No	No	No	No	\$ 1,750,000.00	\$ -
Eco Restoration	1637	5/16/2013	Wetlands use as nutrient traps	(ORIGINAL ID#11977) This project would be used to reduce nutrients in stream waters by directing waters from grazing and croplands into created wetlands. This project would assist interested landowners in the creation of 1 to 15 ac. size wetlands with both hard core type water control structures to regulate water levels and provide still water areas to settle nutrients and sediment from near by agricultural lands. Open areas would be planted to plants favored by water fowl and aquatic wildlife. Assistance would be provided for creating, engineering, construction and management of these areas as well as education for long term management once they are in place.	Clay, Oktobbe	Yes	Yes	Yes	Yes	No	Yes	No	No	No	No	No	No	No	\$ 110,000.00	\$ -	
Eco Restoration	1641	7/7/2013	Joseph Trawl restoration project	(ORIGINAL ID#12017) VALLEY RESTORATION PROJECTS: Here we would become a very valuable restoration project. Replacing the toxic gear that the Mississippi fishermen are using in the gulf. I think this project could be beneficial for fisherman and for my small business. This is also think this could be seen as a public serve. No one from Joseph's Trawl or anyone I hire to work for Joseph's Trawl will never touch this gear. This is non-negotiable. This gear is toxic making people sick. This is the reason I want to do this, to get this toxic gear off of the boats and out of hands of these fishermen. Fishermen will bring gear to drop off point and get into a dumpster (Joseph Trawl districution) explains what gear they dropped into the dumpster. I think other states should fund there gear manufacture accordingly. With oil and dispersant in the gulf I want to do something to help those most affected by this. I know gear has become toxic due to the oil dispersant get absorbed onto the gear and makes this gear toxic. (Joseph's Trawl) I feel the gear should be replaced at least one time a year until the research shows that the oil dispersant are gone from the gulf. Clean gear will not get toxic and dispersant back into the gulf. I think you would agree to couple stipulations. 1) Commercial fishermen must use a Mississippi Commercial fishing license. 2. The gear maker must either have a busin ess or live in the state of Mississippi. Proof of this is required. 4) I agree if get this project to buy back in lower three counties when possible. When not possible to buy from our local economy then I think I should use Mississippi products and/or distributor. All products should be made in America if all possible. If the products are not made in America then use an international distributor. Mississippi first. 5) Being that we are such a small company and our labor pool of Quality employees is limited. There will be some time on the making of new gear with in reason due to unness circumstances beyond our control. product supplies storage acts... New employees will be hired and trained as needed for fish gear orders. This will be part of the work force development. I think this could be win,win for state of Mississippi ,for ecological well being of the gulf, for fisherman for my small business. I also think this could be seen as public serve / public relations . Thank you, Joseph W. Ferguson	Hancock, Harrison, Jackson	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	\$ -	\$ -
Eco Restoration	1642	7/11/2013	Management Strategy Evaluation Model (MSE) to develop improved management strategies for fisheries and shellfisheries resources of Mississippi	(ORIGINAL ID#12036) An MSE is a complex model designed to provide a vehicle to test, through numerical simulation, a range of management options and to evaluate the influence of those options on the target species (e.g., oyster, red snapper), the fishery, and the shore-based business community. An MSE contains a series of modules: (a) a population dynamics module for the stock, (b) a metapopulation module describing recruitment dynamics, (c) a survey module, (d) a management module containing the assessment process and regulatory decision making process, (e) a module describing the fishing process including vessel characteristics and fishermen/Captain behavior, (f) an economic model describing the economics of the fishery itself, and (g) a shore-based infrastructure model describing the economics of the business community supporting the fishing enterprise. MSEs are becoming more frequently implemented when challenges from, for example, climate change or anthropogenic insult (e.g., oil spills) require re-evaluation of management approaches and regulatory reform. Examples include king mackerel, surfclam, and summer flounder. The MSE developed for surfclam has the important characteristics of being coded into a general form adaptable for many applications. This MSE will be developed into a form viable for a range of fish (e.g., red snapper) and shellfish (e.g., oyster) species. In the course of this process, important information on the economics and sociology of the fishing enterprise will be obtained that will provide an important database to guide further development of recreational fishing as part of a comprehensive approach to improving the tourism industry of coastal Mississippi.	Harrison	Yes	Yes	No	No	Yes	No	No	No	Yes	No	No	No	No	\$ 2,500,000.00	\$ -	
Eco Restoration	1644	7/12/2013	Monitoring ecosystem health in northern Gulf of Mexico by assessing habitat biodiversity using parasites of fishes as indicators	(ORIGINAL ID#12038) Parasites are ubiquitous and abundant in any healthy ecosystem and absent or rare in a disturbed or sick environment because they have complicated life cycles with multiple stages, each requiring different free-living hosts for completion. Consequently, parasite diversity and abundance in a habitat may be used as a proxy for overall diversity. The proposed study uses fish parasites to investigate long-term maintenance of biodiversity in the northern Gulf of Mexico (GOM). Parasite assemblages of several important fish species will be monitored and outreach will be fostered through education and training of undergraduate and graduate students. The parasite assemblages of the gulf killifish (Estuaria species), and the Atlantic croaker, (coastal species), will be assessed over a period of 5 years and data on presence and abundance of parasite species will be compared with historical data from these hosts from off Mississippi collected between 1970 and 2012. Additionally, Parasite assemblage data will be collected from coastal and GOM pelagic fishes (tunas, mackerels), reef fishes (snappers, trigger fishes) to identify baselines and trends. Thirdly, a college-level course (Parasites as Indicators of the Environment) will be developed for USA, Department of Coastal Sciences (Summer Field Program) which will train students and produce data for the presently proposed project. Establishment of the course would enable the continued collection and expansion of established datasets indefinitely beyond the 5-year project deadline.	Jackson	Yes	No	No	Yes	No	No	No	No	No	No	No	No	No	No	\$ 1,225,000.00	\$ -
Eco Restoration	1647	7/25/2013	Conduct tagging and tracking of large marine vertebrates in the Gulf of Mexico to monitor their status, distribution, and changes in habitat use.	(ORIGINAL ID#12046) Satellite-based tags or radio transmitters will be used to track the movement, habitat use and status of marine mammals, sea turtles, and marine birds impacted by the Deepwater Horizon (DWH) oil spill. The information would be used for the following: 1) monitor species' exposure to areas of lingering DWH oil; 2) detect important changes in habitat use, distribution, and life history of species/stocks that may be a result of the spill; 3) help determine the rate of recovery since the DWH event; and 4) inform recovery strategies. Link to Injury: Surface of directly impacted marine mammals, sea turtles and marine birds, as documented through aerial surveys, at-sea observations and animal recovery efforts for the DWH Oil Spill Natural Resource Damage Assessment. Six cetacean species were observed swimming in surface oil in offshore waters and hundreds of bottlenose dolphin strandings have been reported during an Unusual Mortality Event that began in February 2010 in the northern Gulf. More than 450 wildlife live sea turtles and 18 wildlife oiled sea turtle carcasses were also recovered during the DWH response from April 2010 through February 2011. Another 500+ stranded sea turtles with no visible external signs of oiling were also reported during this period. A number of visibly oiled live and dead marine birds were also recovered during DWH response. Benefit and Rationale: Satellite-linked tags and radio transmitters attached to marine animals can provide a wealth of information on habitat use, foraging behavior, distribution, and exposure to hydrocarbons. These data are transmitted via satellite or radio waves in virtual real time to scientists. Satellite-based tags, in particular, are useful for helping scientists track the movement of marine animals with wide-ranging, offshore distributions. Tags also enable scientists to propose and conduct visual and photographic assessments of health and reproductive success (i.e., calf presence) following a piscidic events like DWH. Between 2010 and 2012, scientists initiated tagging of oceanic marine mammals (e.g., sperm whales) in the Gulf, estimate and coastal/shelf dolphins, and tagged Kemp's ridley turtles as part of injury assessments conducted for the DWH Oil Spill Natural Resource Damage Assessment (NRDA). Expanded and, in some cases, continued monitoring of cetaceans, sea turtles, and marine birds impacted by the DWH oil spill using satellite or radio transmitters is important for tracking trends in (see species') rates of recovery of species and the overall health of the Gulf ecosystem. Studying the responses of animals at high trophic levels to ecosystem change like a major oil spill can shed light on the health and stability of the marine food webs that support them. Food webs themselves are changing to monitor directly. Monitoring populations at high trophic levels, such as feral sperm whale social aggregations, with moored home gear, could be an effective way of comparing known affected areas with those that are more like control regions. By tagging and tracking wide-ranging large marine vertebrates and comparing their collective movements to oceanographic conditions over time, scientists are in a much stronger position to learn whether or where ecosystem change is occurring (see www.gtopp.org). For example, pattern changes in the movements of sentinel species derived from satellite tracks could be a sign that the abundance or distribution of prey is shifting, perhaps in response to environmental stresses such as habitat degradation, climate disruption, or other human impacts. This information can help resource managers fine-tune recovery strategies. Description: Scientists familiar with the species of marine mammal, sea turtle and marine birds impacted by the DWH oil spill will decide which species are appropriate for tagging, whether for the first-time or as part of ongoing studies initiated under NRDA injury studies. The duration of the tagging and tracking will be determined by the lead PI but should continue for 5 to 10 years to account for inter-annual variability and so that sufficient data for animals with life spans are obtained. The project is broken down into three phases. During Phase 1, scientists identify target species (see below) for tagging, define research objectives and sample size, obtain required permits, and execute field work (e.g., radio, satellite tagging). During Phase 2, scientists collect geospatial animal tracking data and conduct vessel-based health assessments of tagged animals to include tissue sampling (e.g., remote biopsy, live capture/release) and visual documentation of individuals and offspring when possible. During Phase 3, data from Phase 2 is analyzed, interpreted for the public, and published in the scientific literature. One or more reports should be produced for the public. For example, for example, tags are non-responsive (broken or lost) or additional tagging is needed to maintain an acceptable sample size or time series data for identifying trends. The data from tagging studies will be evaluated against historical and other baseline data, as available, on habitat use, foraging behavior, distribution and abundance. Observed changes from baseline will be used to assess DWH impacts on	n/a	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	\$ 3,500,000.00	\$ -

1649	8/7/2013	A comprehensive examination of bottlenose dolphin (Tursiops truncatus) stock structure and habitat characteristics in the north central Gulf of Mexico	(ORIGINAL ID#12057) The Mississippi Sound supports one of the largest estuarine bottlenose dolphin populations in the world; however, the lack of a current stock assessment and subsequent poorly understood stock structure and habitat use within the region make this area ripe for study. Furthermore, the long-term unusual mortality event (LME) in the history of the northern Gulf of Mexico has resulted in more than 750 bottlenose dolphin strandings with over 200 occurring along the Mississippi coast. Gauging the effects of the LME and potential causative factors associated with unprecedented mortality requires an accurate understanding of stock structure and environmental factors controlling movement within the region. This purpose of this project is to conduct long-term, comprehensive monitoring of population dynamics and habitat characteristics of bottlenose dolphins in the north central Gulf of Mexico. Transsects spanning the entire Mississippi Sound will be surveyed multiple times each season to generate population estimates based on distance sampling theory. Additionally, photo identification survey routes will be traveled within the study area several times each season to make population estimates using mark-recapture statistics. Photo identification data will also provide critical insight into stock structure within the region as it will elucidate home ranges, site fidelity, and seasonal movement patterns of individual dolphins. Intensive water quality sampling at regular intervals at established locations throughout the Mississippi Sound will accompany line transect and photo identification studies to gauge the effects of environmental factors (e.g., temperature, salinity, dissolved oxygen, etc.) on the species. Additional potential prey items will be sampled in selected areas within the region to better understand feeding ecology of bottlenose dolphin stocks. Bottlenose dolphins are apex predators that can reliably indicate overall ecosystem health. Thus, monitoring bottlenose dolphin habitat use in response to environmental variation is crucial for understanding the health of the Mississippi Sound and the larger north-central Gulf of Mexico. This work will be augmented with population dynamics and environmental data collected by NMMS over the last ten years, and will be critical for understanding the effects of recent disturbances and promoting recovery and enhanced management of this sensitive species.	n/a	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	\$ 10,000,000.00	\$ -	-	
1650	8/7/2013	Monitoring the Recovery of the Critically Endangered Kemp's Ridley Sea Turtle in a Vital Developmental Habitat	(ORIGINAL ID#12058) The northern Gulf of Mexico represents important foraging habitats and migratory corridors for the Critically Endangered Kemp's ridley sea turtle (Lepidochelys kempi). In addition, recent research has revealed that the historically understudied Mississippi Sound is a vital Kemp's ridley developmental habitat, which was not identified in the revised edition of the Kemp's ridley sea turtle recovery plan. Following the Deepwater Horizon oil spill, hundreds of sea turtles, mostly juvenile and sub-adult Kemp's ridley sea turtles, stranded in the northern Gulf of Mexico, with over 800 washing up along the coast of Mississippi. Further, approximately 300 immature Kemp's ridley sea turtles have been incidentally hooked at local fishing piers in Mississippi. This species was making a recovery prior to oil spill in 2010, but the influence of this environmental catastrophe on that recovery is unknown. This project will conduct long-term monitoring of juvenile and sub-adult Kemp's ridley sea turtles in the Mississippi Sound to elucidate potential consequences from the DWH oil spill. It will be a collaborative partnership between the Institute for Marine Mammal Studies (IMMS) and Mississippi State University. Various sampling sites will be selected in the Mississippi Sound where turtles will be captured using accepted methodology, tagged, and released. Samples will be obtained from each turtle so that health assessments, stable isotope and dietary analyses can be done. Additionally, satellite telemetry will be utilized to examine the movements and migrations of wild-caught immature Kemp's ridleys. These data will yield greater understanding of habitat use and site fidelity of these younger life history stages. IMMS scientists have used this technology to study the habitat ecology of successfully rehabilitated Kemp's ridleys since 2010. A high priority in the Kemp's ridley sea turtle recovery plan is to establish monitoring sites in foraging areas. Due to the abundance of juveniles and sub-adults in the Mississippi Sound, this region represents a suitable monitoring site that can provide valuable insight into the species' viability. The Kemp's ridley sea turtle is an ideal bioindicator due to its ecological role as an apex predator and being a long-lived species. Therefore, monitoring and promoting the restoration and recovery of this species is a critical developmental habitat will foster the restoration and recovery of the northern Gulf of Mexico.	Hancock, Harrison, Jackson	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	\$ 5,000,000.00	\$ -	-	
1652	8/7/2013	Monitoring Population Ecology of a Critical Coastal Bioindicator, the Mississippi Diamondback Terrapin (Malaclemys terrapin plebeia)	(ORIGINAL ID#12060) The Mississippi diamondback terrapin (Malaclemys terrapin plebeia) is an estuarine turtle that exclusively inhabits coastal bays and salt marshes along the Atlantic and Gulf of Mexico coasts. It is considered a keystone species that contributes to the maintenance of salt marsh integrity. Terrapins were once abundant throughout their range; however, knowledge gaps exist regarding the viability of populations in many areas of the Gulf coast, including Mississippi. Numerous threats adversely affect terrapin populations including habitat loss, crab trap mortality, and nest predation. In addition to these threats, the degradation of their spawning and nursery habitats in the northern Gulf of Mexico, specifically salt marsh habitats, is a major concern. Salt marshes in a disturbed environment can provide insight into the extent of damage to the particular species along with its habitats and prey. Because the diamondback terrapin is a long-lived species and plays an important role in these estuarine habitats, it represents a critical bioindicator of the health and integrity of salt marsh ecosystems. Salt marshes in Mississippi provide both ecological and economic gains to the state's residents; therefore, monitoring the status of a bioindicator species in these important habitats will benefit the state. Long-term surveys are currently underway in the northern Mississippi were initiated in 2012, and these surveys are conducted in both salt marsh channels and nesting beaches. The surveys will continue to monitor the health, reproductive success, and population ecology of the diamondback terrapins so that an adequate assessment of short- and long-term damage to this declining species and its vital habitat can be made. This project will be a collaborative partnership between the Institute for Marine Mammal Studies and the University of Alabama at Birmingham.	Hancock, Harrison	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	\$ 3,000,000.00	\$ -	-	
1655	8/1/2013	Greenhouse for Producing Restoration Nursery Stock	(ORIGINAL ID#12070) Many current and future restoration projects along the Mississippi Gulf Coast will have a need of quality nursery stock of native dune and marsh plants. Currently, large projects in Mississippi must purchase plant stock from nurseries in other states (usually Florida). The genetic provenance of these plants is usually hundreds of miles away from the project where the plant material is needed. We propose to construct a greenhouse at the Lake Thoreau Environmental Center (LTEC) in Hattiesburg, MS to serve as a facility to produce quality, locally grown nursery stock for Mississippi restoration projects that require installation of native plant species. Currently, no such facility exists in Mississippi. There is a small greenhouse located at the Gulf Coast Research Laboratory in Ocean Springs, MS but it is not large enough to handle the capacity needed for large restoration projects. The LTEC is a 200-acre preserve located 6.5 miles east of the campus of the University of Southern Mississippi (USM). The preserve is owned by USM and is managed by the Department of Biological Sciences. One of the primary functions of this facility is to provide quality environmental education for citizens of south Mississippi. In March 2013, USM constructed a new building at LTEC to house the university's herbarium and fish museum as well as a new classroom to be used specifically for environmental education. The building's architects designed the building to be modular and they have already drafted preliminary plans for this greenhouse to be added to the facility. An additional benefit to locating this facility at LTEC is that it offers protection from coastal storms. Preliminary planning and site selection for this project has already been completed. Infrastructure for the project (water, power, and sewer) has already been installed. If selected as a Restoration Project, we would be able to have the facility completed within six months and would be able to have nursery stock available for use within 6 months after completion of construction.	Forrest	Yes	No	No	No	Yes	No	No	No	No	No	No	No	No	No	No	\$ 850,000.00	\$ -	-	
1656	1/16/2014	Ingalls Drainage	The waterway connecting Yazoo Lake to the bayou to the north allows for limited drainage, but does not support natural sediment transport or ecological biodiversity. There is currently a manmade drainage structure running the length of the project. Restoring the open flow will allow for better tidal influences upstream, to support plant and animal life, as well as provide an opportunity for a greenerway connection between the Point Park, Beach Promenade, and revitalization efforts along the Pascagoula Riverfront. Major drainage improvements are needed as well, which will be addressed by opening the channel as proposed.	Jackson	Yes	Yes	4000%	No	No	No	No	No	No	No	No	No	No	No	\$ 2,170,050.00	\$ -	-		
1657	1/16/2014	Coffee Creek Restoration and Enhancement	Coffee Creek is about 1.25 miles long and drains portions of the City east of Hwy 49 and south of Pass Road. The estuarine channel collects and treats storm water runoff starting around the intersection of 28th St and Gulf Ave with direct outfall to the Mississippi Sound. This restoration project intends on enhancing the Coffee Creek's unsightly outfall, restoring the channel's natural flows, and improving public access and recreational activities to portions of the sand beach where access was limited due to oiling during the 2010 oil spill. Initially, the project will involve routine maintenance and debris removal on an approximate 1/2 mile stretch beginning at the outfall at the Gulf. These low impact, non-structural improvements will restore natural flows and revitalize coffee Creek as a natural corridor and refuge for estuarine wildlife. Secondly, beachfront enhancements are proposed in line with the current "Gateway" projects already underway within Harrison County. These enhancements may consist of aesthetic improvements (landscaping, etc.) and recreational improvements such as fire pits, showers, volleyball courts, pavilions, etc. while providing more access for fishing, the recreational improvements will complement the existing parking field already in place at this location. Further, a kayak rental facility will be constructed to encourage kayaking opportunities. Kayaking improvements will be in line with the Heritage Trails Partnership of the Mississippi Gulf Coast's blueways program. The final intent of this project will be to provide a boardwalk alongside Coffee Creek that will allow access from its outfall at the sand beach all the way to the existing Clower-Thronton Nature Trail just north of the existing railroad (approximately 1/2 mile to the north). A portion of Highway 90 will need to be raised approximately 6' to allow the boardwalk to pass underneath. This boardwalk will provide public access between these two recreational uses, and will encourage economic development and tourism by providing immediate (and safe) access between the upcoming Centennial Plaza development and Gulfport's pristine beaches.	Harrison	Yes	Yes	5000%	Yes	No	No	No	Yes	No	Yes	No	No	No	No	No	\$ 9,300,000.00	\$ -	-	
1659	1/17/2014	Greenways	A strong pedestrian and bicycle network of paths between parks, natural amenities and community services will enhance access to nature, meeting space, fitness opportunities, sports venues, and child-friendly playgrounds. The Greenways project will connect other major projects (Historic Pathways, Lighthouse Park, Riverfront Redevelopment, Beach Promenade, Point Park, Spinnaker Point) with a safe, inviting pathway. Major elements of the project include property acquisition, development of natural buffer zones near waterways, restoration of previously disturbed channels and bayous, wetland and marsh enhancement, boardwalk and pathway construction, lighting, and signage for information and educational purposes.	Jackson	Yes	Yes	1500%	Yes	Yes	No	No	Yes	No	Yes	No	No	No	No	\$ 3,828,868.50	\$ -	-		
1660	1/17/2014	Brickyard Bayou Restoration and Enhancement	Brickyard Bayou, the largest single drainage basin in south Gulfport, flows northeast from 42nd Ave around 20th St all the way to Bernard Bayou, east of the airport. This transitional freshwater/estuarine water body collects and treats much of Gulfport's storm water runoff and is a natural corridor and refuge for estuarine wildlife. Development and debris and sediment deposition has limited this drain ways natural flows causing, in particular, the area west of 8th Ave (south of the airport and including Hwy 49) to be prone to flooding of local buildings and streets. This area is of primary economic importance as it is centered between the Port of Gulfport and the airport, the two major commercial centers of the City. This restoration project proposes new conservation easements be acquired along with the redesign of, general maintenance of, and debris removal within the bayou. Controlled vegetative stabilization practices will provide protection to this resource. These low impact modifications will help restore natural flows, thereby alleviating flooding of streets and buildings in this area. This will bolster community resilience and encourage economic development. Further, additional emphasis would be placed on opening up recreational activities to residents and encourage eco-tourism. These improvements could include additional access points for fishing and kayaking, a kayak rental facility, etc. Kayaking opportunities would be coordinated with the Heritage Trails Partnership of the Mississippi Gulf Coast's blueways program. Brickyard Bayou is already designated a "Blueway".	Harrison	Yes	Yes	Yes	No	No	No	No	Yes	No	Yes	No	No	No	No	\$ 8,000,000.00	\$ -	-		
1661	1/20/2014	Turkey Creek Restoration and Enhancement	Turkey Creek is 1.3 miles long with an approximate 17,800 acre drainage basin. Located in the City of Gulfport, the City of Gulf Beach, and Harrison County, Mississippi, this transitional freshwater/estuarine water body collects, stores, and treats storm water runoff for multiple municipalities. Turkey Creek holds high levels of debris deposited by storm events and local residents. With its natural flows impeded, during high flow conditions, this creek overflows the storm drain bank and causes widespread flooding. In a 2005 "Flood Damage Reduction Study," the United States Army Corps of Engineers (USACE) recommended selective clearing and snagging for identified portions of the creek. Subsequent attempts to do so by Harrison County were halted by public protest from organizations such as the NACPO, the North Gulfport Coalition, and the Sierra Club. Initially, this project proposes the formation of a "Turkey Creek Improvement Committee" consisting of the above referenced municipalities and organizations. This committee would be focused on Public Outreach and be tasked with suggesting improvements to be designed and approving final design prior to construction. Anticipated improvements would be limited to low impact methods such as shoreline stabilization, sediment and debris removal, stream maintenance, etc. These improvements will restore natural flows and will enhance the natural refuge and natural corridor this creek provides to all sorts of estuarine wildlife. This project also proposes improvements within the watershed (drainage inlets and piping), particularly near the intersection of Crossett Rd and Ripley Rd. These improvements will allow storm water to flow more efficiently thereby reducing the flood levels in the lower Turkey Creek Basin. Flood level reduction will help spur economic development and community resilience. Further, additional emphasis would be placed on opening up recreational activities to residents and eco-tourism. These improvements could include additional access points for fishing and kayaking. Turkey Creek is already designated "Blueway" by the Heritage Trails Partnership of the Mississippi Gulf Coast; recreational improvements will be coordinated with this program.	Harrison	Yes	Yes	Yes	No	No	No	No	Yes	No	Yes	No	No	No	No	No	\$ 5,000,000.00	\$ -	-	
1679	1/21/2014	Hancock County Marsh Living Shoreline Project	We have designed and patented a system that will help control effects of sea rise. Our system will provide shoreline protection, will enhance building of habitat, and will assure land building. Designed to replace rock jetties, our new concept (Geo-TECH-jetty) is installed above the water line, considering projected sea rise (as determined by official government determinations). Our Geo-TECH-jetty units are filled with dredged material sourced from near the installation. Within a prepared area on top of the Geo-tech containers are RootStone Humus-Filled (R2H0), biodegradable containers. The R2H0-filled containers are planted with mature salt-tolerant grasses and other select native plants. Our specialized method, proven in several previous deployments, ensures highly energetic and sustained plant growth, while providing shoreline force and sea-rise protection. Land building also results as these solutions continue to work efficiently, while cooperating with nature. Once set in place the Geo-TECH-jetty units are stabilized with XX heavy duty PVC pipe, driven down 7 feet for firm hold, there are stainless steel rings on the bottom of units in three locations for PVC pass through. The PVC stabilization devices are designed so that they can be retrieved at a future time, when it may be determined that plant rooting and accretion has been achieved and our lifehold feature is no longer needed. Our proven methods allow for replacement of rock as stabilization means. Using our proven methods, we ensure rapid reestablishment of habitat. Shellfish, fin-fishes, invertebrates, and other vital coastal organisms are able to reestablish populations. Installing our Geo-TECH-jetty units, we accomplish rapid rebuilding of the entire food web, by providing the multiple benefits. (1) We provide protection from sea-rise. (2) We ensure rapid establishment of native plants along shorelines, making possible rapid habitat establishment. (3) Our methods assure accretion, as the long, well-set units of Geo-TECH-jetty prevent erosion. (4) The Geo-TECH-jetty also provide protection from surface and subsurface oil encroachments on shorelines and into adjacent marshes. (5) Shoreline areas of land, (marshes or barrier island shores), behind the rows of Geo-TECH-jetty units are filled with dredged material has our process continues, the filled R2H and R2H0 are applied to ensure fertility. The Geo-TECH-jetty is set in place, working from barges. Our Geo-TECH Placement System makes it possible for us to position units efficiently, one in front of the other, and over lapping with space between them allowing existing habitat to continue functions as installation is accomplished. If it is decided that marsh or shoreline is not to be filled in some areas where Geo-TECH-jetty are being installed, our units are set next to each other and can be used to serve as solid shoreline protection without back-filling.	Hancock	Yes	No	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No	\$ 6,248,000.00	\$ -	-

Eco Restoration	1660	1/22/2014	Land Acquisition - Forest Heights	Purchase approximately 600 acres at \$20,000.00 a acre for a total cost of \$12,000,000.00 The land is presently owned by Butch Ward which is located between Forest Heights Subdivision and I-10, west of the railroad track. It is mostly pine and savanna wetlands. It would be used as a permanent conservation easement, a mitigation bank, and not allow any development in this area.	Harrison	Yes	Yes			No	No	No	No	No	No	No	No	No	\$ 12,000,000.00	\$ -			
Eco Restoration	1661	1/22/2014	Hancock County Marsh Living Shoreline	After 46 acres of dredge material is installed Trident is proposing to plant approx. 800,000 native coastal grasses and plants with R2H0 (compost). Placed every 2.5 feet. Monitor growth for 1 year. Hire local labor and suppliers. Project coincides with installation of the Geo-TECH Jetty Units . Project ID #1679	Plaquemines (I think he meant to put Hancock)	Yes	Yes			Yes	Yes	No	Yes	No	Yes	No	Yes		\$ 2,110,000.00	\$ -			
Eco Restoration	1683	1/24/2014	Creeks and Streams Evaluation	Evaluate Harrison County creeks and streams for population, silted in obstructions, and clean/up program. Particularly the following: Name / County / USGS Topo Map Auguste Bayou / Harrison / Biloxi Bayou Acahan / Harrison / Bay St. Louis Bayou Bernard / Harrison / Gulfport North Bayou Laporte / Harrison / Biloxi Bayou Portage / Harrison / Bay St. Louis Big Creek / Harrison / Gulfport NW Biglin Bayou / Harrison / Biloxi Blow River / Harrison / Biloxi Brecher Bayou / Harrison / Biloxi Brickyard Bayou / Harrison / Gulfport North Cedar Bayou / Harrison / Bay St. Louis Cypress Creek / Harrison / Biloxi De Lisle Bayou / Harrison / Bay St. Louis Flat Branch / Harrison / Gulfport NW Flat Branch / Harrison / Gulfport North Flat Branch / Harrison / Success Fritz Creek / Harrison / Gulfport North	Harrison	Yes	No			No	No	No	No	Yes	No					\$ 85,000.00	\$ -		
Eco Restoration	1684	2/3/2014	Hancock County Living Marsh Shoreline Project	Mitchell Marine, Inc. will use a 12' hydraulic dredge to move material from a mining area 2000 feet off the shore to fill behind manmade berms. Approximately 130,000 yards of material will be moved over the planned berms. Mitchell Marine is located in Biloxi MS. This coincide with Project # 1679 and 1681.	Hancock	Yes	Yes			Yes	Yes	No	No	No	Yes	No	Yes		\$ 5,923,200.00	\$ -			
Eco Restoration	1685	2/11/2014	Pass Christian - Floodplain Restoration	This project would serve to restore existing floodplains/drainage pathways within the City limits that have been impacted by runoff from urban development over the years. The restored floodplains would improve drainage and help to preserve the ecologically sensitive native species of vegetation and animal habitats. The work involved includes removing debris from existing drainage pathways, installing appropriately sized drainage structures, removing sediment buildup in existing drainage channels, etc.	Harrison	Yes	Yes			No	No	No	No	No	No	No	No	No		\$ 3,500,000.00	\$ -		
Eco Restoration	1691	3/2/2014	Hancock County Living Marsh Project	Propose to deploy 435 tons per acre on 45 acres to equal 20,000 tons for Oyster Cultch. The material used will be 10% oyster shell and 90% #57 limestone. All work will be done in a minimum of 4 ft. of water at mean low tide.	Hancock	Yes	No			Yes	No	Yes	Yes	No	Yes					\$ 2,469,200.00	\$ -		
Eco Restoration	1703	2/4/2014	Pass Christian - Johnson Bayou Drainage Improvements	Study flooding effects and improve drainage characteristics of Johnson Bayou. This project will serve to reestablish the optimum drainage characteristics of Johnson Bayou and lessen the effects of flooding by adjacent properties caused by the obstructions (i.e., overgrowth of vegetation, sediment buildup, erosion, etc.) that currently exist in the channel. Work involved will include removing vegetative debris and sediment buildup from the side slopes and flow line of the channel; determine and establish the optimum cross-sectional area of the bayou for improved drainage characteristics; stabilize the surrounding ground with rip-rap or gabions on the side slopes; replant native vegetative species in the floodplain to help prevent erosion, etc.	Harrison	Yes	Yes			No	No	No	No	No	No					\$ 2,450,000.00	\$ -		
Eco Restoration	1712	12/24/2015	BP for restoring the gulf fisheries	This program will address fishery management needs in the Gulf of Mexico for the commercial, CFI and the recreational anglers. This "Blueprint for Restoring the Gulf Fisheries will be lost if not funded. This program will provide help with discards of reef fish, provide Seafood for the Consumer and provide a pilot program to test a method that will allow anglers to harvest the opportunity to fish for red snapper and grouper. This program will also allow the opportunity to study behavioral sciences. This program will address accountability and sustainability of our coastal marine resource and those that rely upon the resource for food, jobs and pleasure. The programs infrastructure contain many components. This program will include state agency's, commercial, CFI and private anglers. It will also have help from the Southeast science center with its design. A full proposal will be submitted if the council feels they are interested in a proposal that would test a license limitation for our recreational anglers. The fish would be leased from the present commercial quota so that it would not impact the regular open season. It would also collect data that is presently missing and needed in order to have a sustainable fishery for years to come. It will cost \$12 million to lease the fish for the pilot study. The remaining amount will be spent on outreach, permits, permits, taxes, P. permits, etc.	Harrison, Hancock, Jackson	Yes	Yes	100%	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Data need	\$ 5,000,000.00	\$ -		
Eco Restoration	1716	1/6/2014	Proposed RESTORE Fund Land Acquisitions	The Land Trust for the Mississippi Coastal Plain (LTMCP) is an accredited Land Trust dedicated to the conservation, promotion, and protection of open spaces and green places of ecological, cultural or scenic significance in the counties of the Mississippi coastal Plain. This proposal is intended to provide a brief overview of several properties the Land Trust for the Mississippi Coastal Plain has determined to be in line with the goals set forth in the Gulf Coast Ecosystem Restoration Council's Proposed Comprehensive Plan entitled, The Path Forward to Restoring the Gulf Coast: A Proposed Comprehensive Plan: 1) Restore and Conserve Habitat 2) Restore Water Quality 3) Repopulate and Protect Living Coastal and Marine Resources 4) Enhance Community Resilience 5) Restore and Revitalize the Gulf Economy. The proposed properties are dispersed throughout three of the six coastal counties in which the Land Trust for the Mississippi Coastal Plain Operates. Jackson County: Graveline Bayou-Cumbert 369 acres, Graveline Bayou-Whitehead 739.67 acres, Graveline Bayou-Mahoney 6.99 acres, Seapoint 16.64 acres, Bluff Creek 59.14 acres, Brickyard Bayou 138.82 acres; Harrison County: Turkey Creek 634.17 acres, Canal Land 238.50 acres; Hancock County: North Beach 41.169 acres, Ansley Area 331.57 acres, Magnolia Branch 19.89 acres, Curd Land Co. 132.85 acres. The attached document is designed to illustrate the value each of these properties holds. Acquisition of any one of these proposed sites and its subsequent conservation will increase property, economic, and aesthetic value of the area in which the site is located. The properties, if acquired by the Land Trust for the Mississippi Coastal Plain, all have the potential to restore and conserve habitats by providing havens for our unique coastal habitats and all species that reside within them. They can restore water quality by protecting our watersheds and, in turn, our water supply clean. They can enhance community resilience by offering educational opportunities and revitalize the Gulf economy by creating interesting new low-impact recreational spaces where adults, children, citizens, and visitors can fully immerse themselves in the beauty and intrigue of the Mississippi Gulf Coast in its restored natural state. Funding these acquisitions will ensure a legacy is left for our future, as RESTORE funds are meant to do.	Harrison, Hancock, Jackson	Yes	Yes			Yes	Yes	No	No	Yes	No					\$ -	\$ -		
Eco Restoration	1717	2/6/2014	Turkey Creek Drainage through Canal 1	During heavy rain events Turkey Creek flows west into Long Beach and will actually flow west into drainage Canal 1. Canal 1 needs significant work to ameliorate flooding issues in Long Beach flood plain. Canal 1 runs through Long Beach from Turkey Creek to Eggs Ave to Johnson Bayou. Eggs to Bayou Portage is located in Harrison County jurisdiction. Widens, clear debris, slope and stabilize banks, stabilize around bridges, and marsh restoration is needed at Bayou Portage. Hydrology Plan exists but has exceeded time of Environmental Impact Study, update in process. Canal will be maintained by Long Beach Drainage District and Harrison County.	Harrison	Yes	Yes			No	No	No	No	No	No	No	No	No		\$ 3,000,000.00	\$ -		
Eco Restoration	1718	2/6/2014	Bear Point Bayou Restoration	Bear Point Bayou is a historic Bayou that is spring fed, it originates in neighborhood and flows through USM campus and St. Thomas the Apostle Catholic Church to Gulf of Mexico. The water has become stagnate in some areas due to evasive species of plants that is closing natural flow of water. Removal of evasive plants and bank stabilization is needed to open natural flow of water to restore the Bayou. There may be a need to update culverts that the Bayou flows through under roads.	Harrison	Yes	Yes			No	No	No	No	No	No	No	No	No		\$ -	\$ -		
Eco Restoration	1720	2/6/2014	Hancock County Living Marsh Shoreline Protection	This is a add alternate to base bid Project ID# 1679, 1681, 1684 and 1691. Install 600 Geo-TECH Jetty Units fill with dredge material and on top of the Geo-tech containers are RootZone Humus-filled, (R2H0) biodegradable containers. The R2H0-filled containers are planted with mature native marsh grasses and other select native plants. Once set in place the Geo-TECH-jetty units are stabilized with XX heavy duty PVC pipe, driven down 7 feet for firm hold, there are stainless steel rings on the bottom of units in three locations for PVC pass through. Back fill 114,000 cubic yards dredge material within 40 acres behind Geo-TECH-jetty Units.	Hancock	Yes	No			No	No	No	No	No	No	No	No	No	No		\$ 8,175,200.00	\$ -	
Eco Restoration	1723	2/7/2014	Restore MS Endangered species	My proposal is to locate video camera on some of the piers/bridges in our coastal communities to help document the interactions of sea turtles with fishing gear. By doing so it will help to provide data for the science center to analyze to see what they can recommend to the anglers that are coming in contact with the turtle while fishing from these piers / bridges. I am aware of 11 or 12 piers where fishermen are coming in contact with two hundred or more Endangered species of turtles around these piers since the oil spill. This study will also help provide the effort data. The second part of the program is to provide some type of education about what the anglers can do to minimize contact and inter action with these turtles. There will be a outreach component of the study to interview those that do fish from the piers and document their interactions and their success of releasing the turtles unharmed. The camera will also help ground truth what is taking place on these fishing piers as they relate to the interactions under the endangered species Act.	All MS Counties	Yes	Yes			No	Yes	No	No	Yes	No					\$ 15,000,000.00	\$ -		
Eco Restoration	1725	2/7/2014	Hancock County Living Marsh Shoreline Protection/ Oyster Clutch	This proposal coincides with project ID# 1720 has add alternate. Propose to deploy 435 tons per acre on 95 acres to equal 42,000 tons for Oyster Cultch. The material used will be 10% oyster shell and 90% #57 limestone. All work will be done in a minimum of 4 ft. of water at mean low tide.	Hancock	Yes	No			Yes	No	Yes	Yes	No	Yes					\$ 5,068,500.00	\$ -		
Eco Restoration	1726	2/7/2014	Community Pier @ USM	Rebuild the Community Pier on beach in front of USM Long Beach Campus and create an artificial reef environment to promote marine life in area. Prior to Hurricane Katrina the pier was well used by the Community.	Harrison	Yes	Yes	9000%	No	No	No	No	Yes	No	Yes	No	Yes			\$ -	\$ -		
Eco Restoration	1728	2/7/2014	Jim Simpson, Sr. Memorial Fishing Pier	Create an artificial reef near Jim Simpson Pier to enhance recreational fishing.	Harrison	Yes	No			No	No	Yes	No	Yes	No	Yes			\$ -	\$ -			

Eco Restoration	1733	2/10/2014	Gulfport Urban Estuaries Enhancement	Turkey Creek Watershed covers approximately 11,000 acres in Gulfport, Long Beach, and Harrison County. The watershed's two (2) main waterbodies are in need of significant restoration and enhancement. Turkey Creek and Brickyard Bayou are approximately 34 miles and 5 miles long, respectively. Both waterbodies are slow-moving coastal streams/tidal creeks that flow into ecologically important, sheltered estuarine ecosystems connected to the Back Bay of Biloxi and the Gulf of Mexico. This project will restore and enhance these individual estuarine streams to provide an aquatic corridor that serves as a sheltered nursery and as a rearing area for multiple saltwater fish species including those with recreational and commercial value. In addition, recovering the ecological health of these small estuaries would allow them to provide a sheltered refuge for larger and more mature fish during natural or anthropogenic events such as storms, droughts, or oil spills. Enhancements to Turkey Creek will further offer an opportunity to actively organize and empower a local minority committee in designing, permitting, constructing and maintaining a socially acceptable restoration effort. Leah Manhand's 2013 film, <i>It Came Hell or High Water: the Battle for Turkey Creek</i> , describes the history of Turkey Creek, and the detrimental effects of human activity, land development, and natural occurrence. In 2006, a report was prepared by the <i>Mississippi Coastal Plain</i> and <i>Mississippi Watershed</i> implementation Plan for the Turkey Creek Watershed (funding from the Environmental Protection Agency Region IV). This report, focusing on Turkey Creek, the Brickyard Bayou and the entire Turkey Creek watershed, faces environmental degradation from: filling of wetlands, channelization, trash and debris, unregulated development and construction, uncontrolled stormwater increases, aquatic, terrestrial, and riparian habitat degradation, invasive species (particularly Chinese Tallow and cograss), and chemical contamination. Accordingly, Turkey Creek and Brickyard Bayou require similar restoration and enhancement efforts including, but not limited to: cleaning up debris and sediment, de-snagging and de-mucking, wetlands restoration, natural bank stabilization, and general enhancement. These activities would employ low-impact, EPA approved green infrastructure materials and techniques to the maximum extent possible supplemented by traditional best management engineering when necessary to maximize the Creek's capacity to capture, temporarily store, and treat urban storm and flood waters. Emphasis will be placed on selective removal of invasive species and reestablishment of native vegetation, within the creek banks, thereby encouraging storm water filtration. Assessing, reengineering, and restoring the Forest Heights levee along Turkey Creek are also proposed as a component of this project to bolster local community resilience. Additionally, public access, public education, and public recreational activities would be developed with interconnected walking and bicycle trails and public greenways at each estuary in accordance with the City's Redevelopment Master Plan. Many of these greenways would be constructed on lands already acquired by the City of Gulfport that were known to have repetitive coastal flooding claims, with minimal land acquisition expected. Restrictive covenant/conservation easements would be placed on portions of the property to prevent future adverse impacts after restoration is complete. To assist with public education, interpretive signs and maps would be provided on these trails that also highlight the fishing, bird watching, kayaking, and other eco-tourism opportunities created by this project. Kayaking opportunities would be marketed and coordinated with the Heritage Trails Partnership of the Mississippi Gulf Coast's <i>It Came Hell or High Water</i> program; both Brickyard Bayou and Turkey Creek are already designated <i>It Came Hell or High Water</i> trails.	Harrison	Yes	Yes			No	Yes	No	No	Yes	No	\$	13,000,000.00	\$	-	
Eco Restoration	1736	6/13/2013	Swetman Beach Restoration	Swetman Beach is located in Historic Gautier, south of Ladino Road, at the convergence of several bayous. There are fourteen beach parcels along the Gulf of Mexico that are for sale and in need of restoration. The conservation and restoration of these beachfront properties will protect ecologically-sensitive lands from residential encroachment. Improvements will require the re-alignment of the entry road, public parking, street lights, and a restroom in addition to a living shoreline restoration.	Jackson	Yes	Yes	100000	No	No	No	No	Yes	No	\$	5,000,000.00	\$	-		
Eco Restoration	1740	2/17/2014	Camp Wilkes Environmental Enhancement	Camp Wilkes, Inc., a 501(c)(3) non-profit, is seeking funding for restoration and enhancement of its 39-acre waterfront site on the Back Bay of Biloxi for the dual purpose of conserving its natural resources and expanding tourism attractions on the Gulf Coast. Development of project plans is underway.	Hancock, Harrison, Jackson	Yes	Yes		Yes	Yes	No	No	Yes	No	\$	-	\$	-		
Eco Restoration	1741	6/1/2014	MS Gulf Coast Environmental Educational Collaborative	Coast Ecosystem Education and Training Collaborative (CEETC) The Oil Spill has further exacerbated the gap between disadvantaged minorities (African-Americans, Hispanic, Vietnamese and low income whites) and available education, funding, job loss and access to marine vessels for education. The Mississippi Gulf Coast includes approximately 70 miles of coastline plus numerous bays, estuaries and navigable rivers. Not only does this ecosystem support a diversity of marine life and habitats, but our coastal waters support an economy that generates nearly \$146 million each year. Unfortunately, although the Coastal Counties (Hancock, Harrison, and Jackson) have an abundance of diverse ecosystems, recreational opportunities, and marine life education minority children rarely get the chance to experience any of this richness. It is the goal of CEETC to connect under-served children from Hancock, Harrison, and Jackson counties (to include African-Americans, Hispanics and Vietnamese but not limited to) with their habitat through our hands-on and fun wet adventures. Connecting our youth to the outdoors will offer a learning experience that has been previously accessible only to the more affluent, as well as open doors to career opportunities in the fishing industry, marine biology, conservation, and eco-science in general. The CEETC project will be a multi-year (4 year) year-round and ongoing ecosystem, environmental, educational and recreational project designed to educate coastal youth in the area of marine life studies, in addition to the aforementioned. All of the environmental education programs will be in partnership with the eight (8) school districts in the three (3) county area along the Mississippi Gulf Coast and each school district's science/marine biology courses. All of the educational programs will also be in partnership with the Mississippi Gulf Coast Community College Marine Biology Dept. The marine life studies program will run through some classroom, water safety classes (swimming and water survival), marine field trips, and practical experience provide instruction on the general ecology, habitats, vegetation types, wildlife and conservation issues of Coastal Mississippi. Other activities include, but are not limited to: the environmental and health hazards of marine debris, water and shore cleanups in conjunction with state environmental agencies to educate and certify young adults to work in environmental hazardous spill, remediation and marine wildlife laboratory investigations, marine arts and crafts, fishing, fish identification, insects and vegetation in our ecosystem, and an introduction to the micro-organisms in our water. This education will include aquatic life, invertebrates, and bays connected to the Gulf. "To protect and restore the Mississippi Gulf Coast Ecosystems through education, research and community stewardship." STRATEGY A: COLLABORATION Bring marine scientists, ecologists and organizations together to share resources and talents to effectively educate and mentor the under-served youth. STRATEGY B: EDUCATION Description: This project is to prevent further erosion of the Escatawpa river coastline. It will also build and restore natural habitats for indigenous species.	Hancock, Harrison, Jackson	Yes	No		Yes	Yes	No	No	No	No	Yes	\$	750,000.00	\$	-	
Eco Restoration	1742	2/18/2014	Restore Marshlands	This project includes the restoration of wetlands and the recovery of strategically located property located within the City of Moss Point.	Jackson	Yes	No		No	No	No	No	No	\$	-	\$	-			
Eco Restoration	1743	4/18/2014	Saracenia Wetlands	This project involves the restoration of wetlands and the reestablishment of land supporting the natural habitat of various species of wildlife.	Jackson	Yes	No		No	No	No	No	No	\$	-	\$	-			
Eco Restoration	1745	2/18/2014	Pelican Landing Eco Restoration	Clean up and restore area associated with old Hwy 613. This includes developing new water containment barriers and developing natural habitats to attract wildlife.	Jackson	Yes	No		No	No	No	No	No	\$	-	\$	-			
Eco Restoration	1746	2/18/2014	Old Highway 63 Bridge Restoration	The fresh waters that drain into these waters are important to the entire Eco-system. Restoration and Preservation of these Bayous and maintenance of the associate Tributary.	Jackson	Yes	No		No	No	No	No	No	\$	-	\$	-			
Eco Restoration	1748	2/18/2014	West-side Bayou Restoration	Contain, Develop, Restore wetlands and dry use land in order to maintain the eco system that contribute to the Escatawpa River	Jackson	Yes	No		No	No	No	No	No	\$	-	\$	-			
Eco Restoration	1750	2/19/2014	Hwy 63 Interchange Eco Restoration	Tributary runs through the western side of the city near Magnolia Jr. High. The bayou is inhabited by turtle species and other reptiles. We will also purchase equipment to analyze the health of the wildlife and plant population. Revitalization would include construction of walkways.	Jackson	Yes	Yes		No	No	No	No	Yes	No	\$	-	\$	-		
Eco Restoration	1752	2/19/2014	Moss Point River Front Maintenance and Information Building	This project will provide land and building assets in order to support water front ecological systems, eco tourism, and day to day activities of the riverfront. The building will showcase points of interest within the city with emphasis on wildlife and plant species that inhabit the Moss Point area. Education activities will include, guest lectures with expertise in the ecological system that surround the Escatawpa River. Electronic technology will be used to create and stimulate the culture and atmosphere that surrounds the Escatawpa River part of the facility will also support the maintenance of this technology and other physical necessary to maintain the riverfront.	Jackson	Yes	Yes		No	No	No	No	Yes	No	\$	-	\$	-		
Eco Restoration	1755	2/19/2014	Prentiss/Sherlawn Waterway	Clean up and restoration of lake that is west of Magnolia Street between Sherlawn Drive and Prentiss Ave as part of the tributary down stream which is a continuation of the Magnolia Street Bayou project.	Jackson	Yes	No		No	No	No	No	No	\$	-	\$	-			
Eco Restoration	1756	2/19/2014	Replace lights on oil rigs with ones birds are not attracted to (green)	http://www.ecologyandsociety.org/vol13/iss2/art47/ (Scientific article on green lights not attracting birds) American Bird Conservancy: https://www.abcbirds.org/newsandreports/stories/080319_oil.html	Gulf of Mexico	Yes	Yes		No	No	No	No	No	\$	-	\$	-			
Eco Restoration	1757	2/19/2014	MOOT Barrel/Pits	Restoration consist of 50 acres of land reserved for coastal preservation.	Jackson	Yes	No		No	No	No	No	No	\$	-	\$	-			
Eco Restoration	1763	2/22/2014	Brick Bayou restoration project	Debris removed from the Brick Bayou streams which runs from the mouth of the escatawpa river into the Pascagoula river and run along side of the Hwy 613. The city would like to restore Brick Bayou because it runs through Saracenia Wetlands consisting of 35 acres of wetlands which runs from Hwy 613 to Hwy 63. The project would include a wetland delineation which would determine the amount of land that can be used for other purposes such as nature trails, sport complex, Police firing ranges and fire fighters training fields.	Jackson	Yes	Yes	50000	Yes	Yes	No	No	No	No	\$	300,000.00	\$	-		
Eco Restoration	1764	2/24/2014	Medical Monitoring Program of Coastal Missisippians	This Request for Funding should be granted because it is one of the few proposals submitted for consideration which seeks to achieve several of the specific goals and objectives originally sought to be addressed by the Trustees of the BP Restoration Fund. The proposal that follows will serve to promote proactive environmental and cultural stewardship, education and outreach based on the gathering of real time data outlining how and to what extent, if at all, the substance released during the 80 oil spill and the agents used to disperse the same has or will impact and/or affect the health of those persons living within the three-county, Mississippi Gulf Coast, area of South Mississippi who were directly or indirectly exposed to the released substance and/or the agents used to disperse the release substance. From strictly an educational point of view, data will be gathered and disseminated to the MDOQ, EPA, DOI, CDC, Mississippi State Board of Public Health and any other regulatory bodies whose jurisdiction requires notification should there be evidence of any type of alarming trend related to a claimed exposure. Additionally, by capturing such data this will allow us to measure the human toll, if any, proximately related to the exposure to the substance and to identify the proper medical or treatment plans of care that produces the best and most expeditious outcomes. Having such information at our disposal will better equip our nation and more specifically the State of Mississippi and the entire Gulf Coast Region with the knowledge to properly respond to similar spills and/or release in the future. Another anticipated byproduct of implementation herein of the proposed medical monitoring system will be a healthier South Mississippi. Through the use and implementation of preventive healthcare techniques, physician led and sponsored preventative healthcare maintenance, it is believed that recreational and leisure activities among many who live within the three-county Mississippi Gulf Coast area will become the watch-word of the day and we will see individuals who will begin to strive to attain and live a more healthy lifestyle. Finally, funding of this request will have a specific intangible benefit of increasing the public's confidence that an independent group of healthcare professionals are monitoring the potential health effects of the oil spill as it relates to South Missisippians who may have been exposed to the same, either directly or indirectly, and that such group of diverse professionals are positioned to disseminate accurate and unbiased information. This will help to dispel much of the misinformation that has been disseminated by parties on every side of this controversy.	Hancock, Harrison, Jackson	Yes	Yes	27600	Yes	Yes	No	No	Yes	Yes	\$	14,121,000.00	\$	-		
Eco Restoration	1765	3/5/2014	East Jackson County Flood Control and Marine Habitat Enhancement	This project would add capacitance to the Escatawpa River watershed and remove encumbrances to sheet flow across the Grand Bay Savannah. This would be accomplished by construction of a flood control reservoir and/or alternately provide a means of flood water release by removing restrictions to flow created by I-10, Highway 90 and the railroad tracks south of Highway 90. Proposed project benefits: 1. Alleviate flooding in the Helena and Franklin Creek communities. 2. Establish sheet-flow across the Grand Bay Savannah to reduce bacteria levels in the eastern Mississippi sound allowing for reopening of the area's oyster beds. 3. Provide an alternate source of industrial water to Jackson County industries. 4. Provide recreational opportunities for area water enthusiasts and sportsmen.	Jackson	Yes	Yes	20000	Yes	No	Yes	Yes	Yes	No	\$	25,000,000.00	\$	-		

Eco Restoration	1767	3/18/2014	Grand Bayou Ecological Restoration	The Grand Bayou Ecological Restoration project is in Campbell Bayou-Bayou Caddy watershed (HUC 031700091401) west of the City of Waveland in Hancock County, MS surrounding Buccaneer State Park. The project includes three interdependent estuarine ecosystems: 1) Grand Bayou, 2) Mud Bayou and 3) Jackson Marsh. Grand and Mud Bayous are open estuarine marshes supporting sub-tidal and inter-tidal communities. The Mississippi Department of Marine Resources manages the 565-acre Grand Bayou as a Gulf Ecological Management Site for its special ecological significance and unique habitats for producing fish, wildlife and other natural resources. Jackson Marsh is abuts Grand Bayou upstream. A low-head dam built in the 1960s severely disrupted tidal influence in the marsh and freshwater flows into the Bayou. The altered hydrology and salinity allowed the bayou and marsh to become infested with invasive aquatic species, e.g. water hyacinth, cattail and Chinese tallow in riparian areas. Trash and debris further reduced flows and trapped sediment. The project will reestablish linkages between these ecosystems by restoring 1) the natural hydrology of 20,518 linear feet of streams and bayous and 2) 662 acres of adjacent wetlands and coastal marsh habitats. This will have significant and measurable benefits to highly altered coastal marsh habitats by providing integrated, aquatic green corridors in urban/suburban ecosystems. Further, the project addresses stormwater management and will be designed and constructed to use natural hydrology to minimize erosion and sedimentation throughout the ecosystems. The hydrology will be restored by removing trash and debris from the waterways and dewatering accumulated sediment from primary channels. To the maximum extent practicable, Green Infrastructure techniques and materials will be used to integrate the roughly 25% of the City of Wavelands stormwater run-off that enters Jackson Marsh and Grand Bayou into the natural hydrology. Modification or alternatives to the low-head dam will be evaluated and a solution negotiated with the property owner. For wetlands, invasive vegetation will be physically removed and native marsh plants with high phytoimmunity potential planted. This will effectively and inexpensively treat erosion and periodically continuing soil contamination once established. The restored hydrology will help return historic tidal flows and salinity levels to enhance delivery of estuarine natural resource services and hinder the return of invasive aquatic and riparian species. Finally, the project will add 2.2 miles of nature/education trails and up to four interpretive pavilions to Buccaneer State Parks trail system to enhance public access, recreation, and tourism to the restored coastal ecosystems. This project complements and supplements three (3) other proposed restoration projects: 1) the Mississippi Department of Environmental Quality (MDEQ) Restoration of Grand Bayou State Park Natural Resources Damage Assessment (NRDA) proposal, 2) Buccaneer Park Two-Tiered Restoration (Project 1813) and 3) Jackson Marsh, Grand Bayou and the Adjacent Gulf. Headwater Hydrologic Restoration (Project 1872).	Hancock	Yes	No		No	Yes	Yes	No	Yes	No		\$	9,600,000.00	\$	
Eco Restoration	1768	3/19/2014	Weeks Bayou Restoration/Education Project	The MEC is requesting support for a coastal habitat restoration project at the mouth of Weeks Bayou in the City of Ocean Springs, MS. The disturbed property was the site of a private residential home constructed on filled coastal wetlands habitat. The wetlands were filled in 2003, with the home completed in early 2005. The home was lost in Hurricane Katrina in 2005 and has remained undeveloped for the past eight years. The City of Ocean Springs acquired title to the property with FEMA funds and has conveyed the property to the Land Trust for the Mississippi Coastal Plain to restore the property to high-quality natural state. The MEC is proposing the restoration work will be planned and implemented through a cooperative partnership between the MEC, the City of Ocean Springs, Land Trust for the Mississippi Coastal Plain, Ocean Springs School District (OSSD), and Mississippi State University's Gulf Coast Community Design Studio (GCCDS). The MEC, working with the GCCDS, will plan a way to restore the site that is likely to include removal of part of the retaining wall, re-grading the land to include some high land near road with natural slope and access to water for sampling. The site will be replanted with appropriate native wetland plants under the direction of GCR/L&T's Coastal Ecology Group. A small observation deck and access to Weeks Bayou for water quality, fauna and flora sampling and monitoring will provide opportunities for MEC based educational and community outreach programs after completion. MEC educators will work with Ocean Springs School District to coordinate a program for 120 selected OSSD middle school students and 5 advising teachers. The monitoring may include data collection, water quality, elevation surveys on adjacent beach, sampling and analysis to assess restored slope function using benthic invertebrates and plant implementation. All sampling activities are covered under the Saltwater Scientific Collection Permit that is issued to GCR/L through the Mississippi Department of Marine Resources. The successful completion of this restoration/education project will have short-term and long-term benefits.	Jackson	Yes	Yes	1000%	No	Yes	No	No	No	No		\$	158,855.00	\$	
Eco Restoration	1769	3/20/2014	Restoration of Bayou Casotte, Bayou Chicot, Parsley Avenue, and Enger Bayou	This project will consist of water quality improvements through sediment removal in the identified degraded Bayous in this watershed. The purpose of sediment removal is to restore degraded green corridors to allow for increased boat traffic and efficient access to natural resources. These bayous have vast potential for restoration that greatly enhances their ecological value while directly engaging local communities. Restored streams help to manage storm water runoff, erosion, and sedimentation as well as provide quality habitat for wildlife. With a greater potential to manage stormwater runoff, the communities within the watershed show an improved resilience to the increase risk associated with sea-level rise and environmental stressors.	Jackson	Yes	No		No	No	Yes	No	No	Yes	\$	-	\$	-	
Eco Restoration	1770	3/20/2014	Bayou Casotte-Pt Aux Chenes Bay Watershed Management	This project provides for hydrologic modeling, hydraulic improvements, coastal habitat restoration/enhancements, and flood reduction within the Bayou Casotte-Pt. Chenes Bay Watershed. Detention of the watershed will be completed in an effort to reduce sedimentation of the watershed on Point Aux Chenes Bay through stream restoration plans and habitat reconstruction designs. The watershed faces loss of wetlands, shoreline erosion, and sedimentation from increased land development. Stabilization of these bayous and stream segments will significantly reduce the future sediment loading into Point Aux Chenes Bay and Bayou Casotte. Improvements to the highly impaired watershed are critical to ecological function of the region. The goal of this project is to develop a comprehensive watershed management plan as well as prioritize a list of significant restoration work.	Jackson	Yes	No		No	No	Yes	No	No	No	\$	-	\$	-	
Eco Restoration	1771	3/20/2014	Bangs Lake Viewing Pier and Park	In an effort to provide increased access to natural resources, the Bangs Lake Viewing Pier and Park will increase the ecological value of the area by providing a viewing center pavilion, fishing pier, and boardwalk park highlighting the natural beauty of marsh land. Not only will visitors come to walk along the marshes but a boat ramp will provide access to the lake and the Gulf. Along the boardwalk, interpretive stations will display information highlighting the history and legacy of Bangs Lake and the surrounding marshes. The area will also feature a watercraft outpost to rent kayaks, canoes, and paddle boards. Visitors are just a short ride to the Gulf and can explore the surrounding lake. By placing a park along Bangs Lake in a highly industrialized area, the marsh land within the park can be preserved and serve to further the beautification of the surrounding community.	Jackson	Yes	Yes		No	Yes	Yes	No	Yes	No	\$	-	\$	-	
Eco Restoration	1772	3/20/2014	Marsh Restoration	This project will use the sediment removed from the bayous within the Bayou Casotte-Pt Aux Chenes Watershed for marsh creation pits via sediment pipelines into an area of open water near the Pt Aux Chenes Bay. Marshes within the watershed have degraded to open water from a combination of factors, including lack of natural fresh water and sediment input. The sediment removed from the first project will be transported via sediment pipelines into an area near Bangs Lake. The material will spread over the project area and become primarily contained within existing land features. The pipeline will be camouflaged under the boardwalk in the area adjacent to the Bangs Lake Viewing Pier and Park. Unlike most marsh restoration projects that involve borrowing fill material from adjacent shallow water areas within the landscape, this project will utilize renewable bayou sediment minimizing disruption of the adjacent water and marsh platform.	Jackson	Yes	No		No	Yes	Yes	No	Yes	No	\$	-	\$	-	
Eco Restoration	1773	3/20/2014	Graveline Bayou Oyster Bed Restoration	This project will focus on restoring Graveline Bayou's oyster reefs through the planting of new cultch material, dissemination of seed oysters, and cultivation of existing reef beds. The goal of this project is to increase Jackson County's oyster reefs, enhance the ecological diversity of the watershed, provide support to the local seafood industry, and also maintain and monitor the oyster habitat going forward. Oysters are not only a vital part of the seafood industry, but they also stabilize shoreline by breaking up wave energy, provide habitat for other marine organisms, and help filter the water. Oyster reefs in coastal Mississippi have been severely degraded due to the impact from erosion and sedimentation, drought, production, and harvesting. These impacts were heightened by direct exposure to the BP Deepwater Horizon Oil Spill. By enhancing the quantity and quality of cultch material currently available and planting new material, the reef locations can be prioritized, oyster density quantified, and overall reef health and informed harvest strategies developed.	Jackson	Yes	No		Yes	No	Yes	Yes	No	Yes	\$	-	\$	-	
Eco Restoration	1774	3/20/2014	Graveline Bayou, Robert Hiram/Oakleaf Circle, Point Clear Restoration	This project will consist of removing sediment, water quality monitoring, and drainage improvements to the identified altered waterways. Sediment removal allows for previously impeded green corridors to be restored. Previously, these water systems were only accessible at high tide. The goal of this project will be to retain some level of environmental and historic value of these highly altered systems. The efficiency of use will increase boating travel, both commercial and recreational, along the bayous and improve the adjacent communities' quality of life. Sediment removal and water quality monitoring amends the previous loss of recreational opportunity and increases the access to natural resources. Restored water systems have a greater capacity to manage stormwater runoff, erosion, and sedimentation which can negatively impact coastal marshes, beaches, and oyster reefs. By restoring these water systems to their baseline, a quality habitat for birds and wildlife negatively affected by the Deepwater Horizon Oil Spill can be provided.	Jackson	Yes	Yes		No	No	Yes	Yes	Yes	No	\$	-	\$	-	
Eco Restoration	1775	3/20/2014	Graveline Bayou Watershed Restoration	This project includes the development of a watershed management plan and modeling of the Graveline Bayou Watershed. The hydrologic and hydraulic study will help to determine water mitigation or erosion measures that need to be taken moving forward. This watershed consists of freshwater wetlands, rivers, streams, and associated riparian areas. Facing wetland loss, shoreline erosion, and increased sedimentation from land development, creating a watershed management plan can help prepare and mitigate future impacts of both man-made and natural disasters. Part of the management plan will include a quantitative analysis of current pollutant and sediment loading. The goal of this project is to model the watershed, identify high risk areas, and develop a plan to address further impacts of urbanization on the habitat capacity and degraded streams and install management measures to monitor water quality of the watershed.	Jackson	Yes	No		No	No	No	No	No	No	\$	-	\$	-	
Eco Restoration	1776	3/20/2014	Channel Marker Replacement and Jetty Construction	This project will consist of the construction of a new jetty at the convergence of Graveline Bayou with the Pascagoula Bay that will provide protection to the channel and reduce the effects of silting in an effort to increase recreational boat traffic, channel markers within the bayou will be updated and replaced. This designation allows for management of preservation areas like the jetty reefs and expedites travel in and around Graveline Bayou. Jetty construction will stabilize the mouth of Graveline Bayou and limit the risk of shifting, as well as focus both tidal and bayou discharges through a single opening, thus combating the effects of littoral drift. With a deep and clear channel, boating traffic for both commercial and recreational can increase. The goal of this project is to increase the recreational opportunities of the adjacent community, allow for greater access to natural resources, and stabilize the convergence of Graveline Bayou with Pascagoula Bay.	Jackson	Yes	Yes		Yes	No	No	No	Yes	No	\$	-	\$	-	
Eco Restoration	1777	3/20/2014	Gulf Park Estates Fishing Pier Expansion	This project will renovate the existing fishing pier, while expanding the boat launches to accommodate a wider range of vessels. A park area will house organized parking, boardwalks, lighting improvements, landscaping, and amenities such as restrooms and fish cleaning station. The current pier is located along the Gulf outside of Biloxi Bay. This area is optimal for fishing and recreation activities. The expansion of the current fishing pier along with the creation of additional amenities will increase and enhance the Gulf Park Estates community quality of life, provide additional access to the natural resources along the Gulf, and enhance overall recreational experiences. Within the area surrounding the fishing pier, additional shoreline stabilization and riprap, will replace existing water edge treatments. The goal of this project is to increase recreational opportunities available to the adjacent communities and allow improved access to natural resources.	Jackson	Yes	Yes		No	Yes	Yes	No	Yes	No	\$	-	\$	-	
Eco Restoration	1778	3/20/2014	Seacliff Bayou and Upper Simmons Bayou Restoration	This project will consist of sediment removal in the Seacliff and Upper Simmons Bayou and water quality monitoring to restore a functional waterfront environment. Sediment removal allows for currently impeded green corridors to be restored. These water systems have limited accessibility being navigable primarily at high tide. The goal of this project will be to retain some level of environmental and historic value to these highly altered systems. The efficiency of use will increase boating travel, both commercial and recreational, along the bayous and improve the adjacent communities' quality of life. Sediment removal and water quality monitoring amends the previous loss of recreational opportunity and increases access to natural resources. Restored water systems have a greater capacity to manage stormwater runoff, erosion, and sedimentation which can negatively impact coastal marshes and beaches. By restoring these water systems to their baseline a quality habitat for birds and wildlife negatively affected by the Deepwater Horizon Oil Spill can be restored.	Jackson	Yes	Yes		Yes	No	No	No	No	Yes	No	\$	-	\$	-
Eco Restoration	1779	3/20/2014	Gulf Park Estates Marsh Restoration	This project will implement and manage marsh restoration within Gulf Park Estates. Sediment removed during the Seacliff and Upper Simmons Bayou sediment removal project will be reused as fill material to restore and recreate the marsh habitat. Marsh restoration in which excess sediment from a watershed environment is used to create new wetlands has become known as well as create new habitat for grasses and wildlife. Marshes within the watershed have degraded to open water from a combination of factors including lack of natural fresh water and sediment input. The sediment removed from Seacliff will spread over the project area and become primarily contained within existing land features. Unlike most marsh restoration projects that involve borrowing fill material from adjacent shallow water areas within the landscape, this project will utilize renewable bayou sediment, minimizing disruption of the adjacent water and marsh platform.	Jackson	Yes	No		No	No	No	No	No	No	No	\$	-	\$	-
Eco Restoration	1780	3/20/2014	Gulf Park Estates Bellefontaine Beach Restoration	This project will consist of a Wetland Coastal Preserves Program and Beach Restoration. The Wetland Coastal Preserves Program will target invasive species in and around the Gulf Park Estates and Marsh restorations, ensuring that native flora and fauna thrive. The Bellefontaine Beach Restoration will stabilize and enhance the Bellefontaine beach habitat. This project will serve to remedy or reduce the risks of future harm to the natural dunes and beach resources. The Preserve plans serve to enhance the ecological value of this important coastal habitat and manage the transition zone between the marsh, wetland, and beach areas within Gulf Park Estates. It will also strategically restore wetland and revegetate ecologically and economically important wildlife resources within Gulf Park Estates. The beach restoration will serve to preserve and protect the Bellefontaine shoreline, minimize economic issues caused by beach erosion, and maintain needed recreational and habitat beach areas.	Jackson	Yes	Yes		No	No	Yes	No	Yes	No	\$	-	\$	-	
Eco Restoration	1785	3/21/2014	Ocean Springs Coastal Restoration	This project will remove sediment in previously identified impeded waterways. This will improve water quality and restore the green corridors around Ocean Springs. This Coastal Stream and Habitat Restoration and Management initiative focuses on tidal freshwater flows into the Back Bay of Biloxi and into the Back Bay of Biloxi. Large part of the urban areas, many of these streams are highly altered systems yet retains some level of environmental and intrinsic historical value. The greatest improvements to the quality of life in Ocean Springs residents will be the re-establishment of Green Corridors across the city. These improvements will increase the areas potential for restoration that enhances the ecological value of the waterways and directly engages the local communities. A restored waterway helps manage storm water runoff, erosion, and sedimentation, which can have a negative impact of the coastal marshes, beaches.	Jackson	Yes	Yes		No	No	No	No	No	Yes	No	\$	-	\$	-
Eco Restoration	1786	3/21/2014	Ocean Springs Watershed Management	This project will include the development of a watershed management plan, and hydrologic and hydraulic study of the Back Bay of Biloxi and Davis Bayou-Biloxi Bay Watersheds to develop water mitigation and erosion plans. The project also proposes to take watershed management and water quality monitoring into the Back Bay of Biloxi. Improving the quality and clarity of the water within the watershed helps stabilize the sediment transported into the bay. Stormwater often impacts watershed morphology, function, or hydrology and can be identified as a cause of stream alteration. By modeling, identifying, and managing the water systems within these watersheds, plans can be developed to implement targeted management practices.	Jackson	Yes	Yes		No	No	No	No	No	No	\$	-	\$	-	

Eco Restoration	1788	3/21/2014	Waterway Restoration in Brickyard Bayou, Presley Lake, Little Black Creek, and Black Creek	This project will remove sediment in identified waterways to enhance the green corridor, improve water quality, and mitigate flood risk through the enhanced ability to manage stormwater runoff. The Brickyard Bayou, Black Creek, Presley Lake, and Little Black Creek are considered highly altered waterways that flow through urban areas. These streams and bayous have vast potential for restoration that will enhance their ecological value while directly engaging local communities. Restored streams help to manage storm water runoff, erosion, and sedimentation. The goal of this project is to remove sediment to increase the stormwater capacity, create strategies and restoration design that will continue to abate threats to these priority coastal streams, and restore habitat.	Jackson	Yes	Yes			No	No	No	No	Yes	No		\$	-	\$	-	
Eco Restoration	1790	3/21/2014	Watershed Management	This project will provide for hydrologic modeling, hydraulic improvements, coastal habitat restoration/enhancements, and flood reduction within Upper West Pascagoula-Pascagoula River, Black Creek Cooling Pond-Black Creek, and Beardslee Lake-Escatawpa watersheds will be completed in an effort to reduce the downstream impacts of the watershed on the Pascagoula River through stream restoration plans and habitat reconstruction designs. The watershed faces loss of freshwater wetlands, shoreline erosion, and sedimentation from increased land development. Stabilization of these bayous and stream segments will significantly reduce the future sediment loading into the Pascagoula River. Improvements to the highly impaired watershed are critical to the ecological function of the region. The goal of this project is to develop a comprehensive watershed management plan as well as prioritize a list of significant restoration work.	Jackson	Yes	Yes			No	No	No	No	No	No	No		\$	-	\$	-
Eco Restoration	1793	3/25/2014	Educational Exhibits at the Proposed Marine Education Center	Plans are in place to construct a new 28,000 sq. ft. MEC facility at GCRL's Cedar Point Teaching Site. The new MEC facility is an \$11.5 million dollar FEMA funded project with anticipated construction beginning in 2015. In this new facility is designated exhibit space that will be open to the public at no cost and will include a series of high quality, interactive educational exhibits. The three exhibits will focus on The Science of the Spill, Coastal Hazards/Community Resilience and Blue Water Science. The Science of the Spill exhibit will be an extension of the work that GCRL did as part of a Rapid Response Grant through the National Science Foundation in 2010 & 2011 and continued through an EPA grant in 2013. The exhibit will address the role of science during an emergency. It will use published research conducted by GCRL scientists and others to answer the questions set out by the Gulf of Mexico Research Initiative: 1.) What happened to the oil and the dispersants? 2.) What were the effects on the environment? 3.) What methods are being used for recovery and how are they working? 4.) What are the impacts on human health? The Coastal Hazards/Community Resilience exhibit will describe the natural disasters (e.g., hurricanes) and ecosystem processes (e.g., sea level rise) that can affect communities in the coastal region and highlight strategies that communities and individuals can adopt to be more resilient. The Blue Water Science exhibit will highlight the research of GCRL researchers in offshore environments that most people never experience. Ecosystem processes and species that may be highlighted include the loop current, sargassum, and large pelagic species such as whale sharks. Visitors to the MEC, which include students and citizens from the region, will gain a better understanding of the impacts on the Gulf of Mexico from the Deepwater Horizon oil spill and the importance of long term monitoring and research to help avenge a healthy Gulf.	Jackson	Yes	Yes			No	Yes	No	No	Yes	No		\$	2,782,000.00	\$	-	
Eco Restoration	1796	6/1/2014	The Crawfish Restoration Trail	Crawfish helps to maintain the eco system by scavenging and eating algae that eat fish and plants of sunlight and oxygen. Crawfish also act as a source of food for other animals. Because crawfish are sensitive to any form of pollution, they are good indicators of water quality. There are over 400 species of crawfish in North America and the most common, the red swamp crawfish, can be found in abundance in the Mississippi River Basin. However, there are two species of crawfish which can only be found in George, Green and Jackson Counties in Mississippi and Mobile County in Alabama, the dwarf crawfish and the least crawfish. Globally, NatureServe lists their status as vulnerable while in the State/Province Conservation list they are considered imperiled. Hope CDA request funds for the implementation of an environmental cultural stewardship program which would educate students and spur ecotourism using the crawfish as motivational symbol. OBJECTIVE: 1. Student Education a. Educate summer and afterschool program students on environmental stewardship and the importance of crawfish and other animals in maintaining the ecological balance of this river system. b. Provide education on the restoration site through maps and best management practices designed specifically for the project activity. c. Study the impact of growth and spawning by increasing water temperature using solar technology at an artificial manland system erected at Hope CDA. Information will be shared with scientist through the NatureServe, Citizen Science Program. 2. Student Restoration and Research Project a. Students will clean site and implement best management practices for the critical habitat of the crawfish and other animals and plants including but not limited to planting shade trees. b. Take eco tours along the Pascagoula River. c. Educate Public and Spur Tourism a. Sponsor an art contest to design/sulpt a crawfish which could be used as a conservation symbol and site marker along the river. b. Strategically place markers at river sites in three counties. c. Students will develop a virtual eco tour on the Hope CDA website describing actual sites marked by numbers 1-10 on the "Crawfish Restoration Trail (Tour)." d. A phone application or link to the Hope CDA website will be developed so that tourist can take the actual tour from markers 1-10 while being virtually guided by students through recorded video presentations about each site. Brochures will be provided to the Convention and Regional Visitors Bureau. promote trail during the Pascagoula River Nature Festival OUTCOMES 1. Students will learn that biodiversity is a natural heritage and take responsibility for stewardship of vital natural resources. 2. Crawfish species (least and dwarf) listed as imperiled will be elevated to secure in their conservation ranking. 3. Tourism will be increased through the institution of the Crawfish Restoration Trail.	Jackson	Yes	Yes			No	Yes	No	No	Yes	No		\$	300,000.00	\$	-	
Eco Restoration	1797	4/2/2014	Mississippi Dusky Gopher Frog Preservation Parcel at Tradition	Acquisition of 270 acre, currently owned by Columbus Communities, LLC, contiguous with the Desoto National Forest in central Harrison County. Gopher Frog Preservation Parcel at Tradition would serve multiple environmental purposes: a. enhance future water quality that the fish and plants of sunlight and oxygen. Crawfish also act as a source of food for other animals. Because crawfish are sensitive to any form of pollution, they are good indicators of water quality. There are over 400 species of crawfish in North America and the most common, the red swamp crawfish, can be found in abundance in the Mississippi River Basin. However, there are two species of crawfish which can only be found in George, Green and Jackson Counties in Mississippi and Mobile County in Alabama, the dwarf crawfish and the least crawfish. Globally, NatureServe lists their status as vulnerable while in the State/Province Conservation list they are considered imperiled. Hope CDA request funds for the implementation of an environmental cultural stewardship program which would educate students and spur ecotourism using the crawfish as motivational symbol. OBJECTIVE: 1. Student Education a. Educate summer and afterschool program students on environmental stewardship and the importance of crawfish and other animals in maintaining the ecological balance of this river system. b. Provide education on the restoration site through maps and best management practices designed specifically for the project activity. c. Study the impact of growth and spawning by increasing water temperature using solar technology at an artificial manland system erected at Hope CDA. Information will be shared with scientist through the NatureServe, Citizen Science Program. 2. Student Restoration and Research Project a. Students will clean site and implement best management practices for the critical habitat of the crawfish and other animals and plants including but not limited to planting shade trees. b. Take eco tours along the Pascagoula River. c. Educate Public and Spur Tourism a. Sponsor an art contest to design/sulpt a crawfish which could be used as a conservation symbol and site marker along the river. b. Strategically place markers at river sites in three counties. c. Students will develop a virtual eco tour on the Hope CDA website describing actual sites marked by numbers 1-10 on the "Crawfish Restoration Trail (Tour)." d. A phone application or link to the Hope CDA website will be developed so that tourist can take the actual tour from markers 1-10 while being virtually guided by students through recorded video presentations about each site. Brochures will be provided to the Convention and Regional Visitors Bureau. promote trail during the Pascagoula River Nature Festival OUTCOMES 1. Students will learn that biodiversity is a natural heritage and take responsibility for stewardship of vital natural resources. 2. Crawfish species (least and dwarf) listed as imperiled will be elevated to secure in their conservation ranking. 3. Tourism will be increased through the institution of the Crawfish Restoration Trail.	Jackson	Yes	Yes			No	Yes	No	No	Yes	No		\$	-	\$	-	
Eco Restoration	1798	4/3/2014	Mississippi Native American Heritage Program	The Dhr-O'Keefe Museum of Art sits on a four-acre stretch of the Mississippi Gulf Coast contiguous to the Mississippi Sound that archeological studies show once was inhabited by American Indian tribes. A central focus of the Dhr-O'Keefe Museum and an important part of the American Indian culture, dating from pre-historic times to the contemporary tribes of Mississippi, is pottery. The Museum proposes annual summer programming, to present cultural, educational and arts programming about not only the art and pottery of the Mississippi tribes, but also their customs and traditions, thereby enabling local and out-of-town Museum visitors of all ages to discover and explore the practices and contributions of past and present Mississippi Native Americans. Development of these programs will involve consultation with Mississippi tribal representatives, the Mississippi Department of Archives and History, the Mississippi Department of Marine Resources, and the National Museum of the American Indian in Washington D.C. The program, which will show a continuous flow of pottery tradition and culture on the Gulf Coast linking the Museum with Mississippi Native American Heritage, will include: • Seminars for the investigation, discussion and understanding of issues facing native communities in Mississippi that will provide a statewide forum for discussion, study and civic engagement of historical and contemporary topics of concern and interest to Native peoples and the general public. • Demonstrations, lectures, workshops, and films that will highlight both traditional and contemporary Native American arts and artisans. • After school and summer youth programs teaching Mississippi American Indian crafts and lore to children in a local venue. • Nature tourism relating to nearby Deer Island sites to tell the story of Mississippi American Indians' tribal art and way of life. Not only is Deer Island home to various eco-systems, but also it is home to Native American shell middens, pottery yards and firing pits. • Additional and contemporary art objects from Mississippi tribes will be professionally exhibited and interpreted in a Museum gallery. • Professional development opportunities for teachers through workshops that span a range of topics and enable teachers to discover analytical approaches to connect the museum's collections and content with classroom teaching strategies will be held at the museum for educators in all subject areas. The Mississippi Native American Heritage Program will benefit the community in numerous ways, including the promotion of partnerships with state and local entities, creation of jobs for artists, teachers and others connected to the programming aspects of the project, extended stays for visitors to the Gulf Coast, professional development opportunities for area educators, and expansion of nature tourism through a link with the Native American history on neighboring Deer Island. To enable the exhibition and program space that is required for the Mississippi Native American Heritage Program, the museum requests funding to complete construction of its final gallery space. With completion of this space there will be dedicated gallery space to devote to the Mississippi Native American Heritage Program in the galleries on the Museum campus.	Harrison/Hancock	Yes	Yes			Yes	Yes	No	No	Yes	No		\$	-	\$	-	
Eco Restoration	1799	4/4/2014	Multifaceted evaluation of living shorelines in the Mississippi Sound	Living Shorelines (LS) are primarily designed to control erosion using non-traditional materials that enhance shoreline stability while preserving natural coastal processes. Although these approaches for shoreline protection have been successful for increasing shoreline stability and improving localized biotic integrity in some areas, very few projects are monitored to evaluate long-term success. Given the novelty of LS, each project represents a unique opportunity to gain valuable information that can be used to inform future project design within an adaptive management framework. We propose a long-term, multifaceted monitoring approach for several proposed and newly constructed LS along the Mississippi coast that includes measuring physical and biological variables to determine if LS are improving shoreline stability and increasing biotic integrity compared to unaltered control sites. The first objective is to quantify the effects of LS on shoreline stability, soil properties, water quality, and biotic communities compared to unaltered control sites that are likely candidates for shoreline protection, but are not receiving a treatment. Physical parameters include shoreline erosion, sediment quality, and water quality. Biological parameters include infaunal, demersal, and nektonic communities, and diamondback terrapin nesting and movement. The second objective in this study is to develop cost-benefit analyses for each monitored living shoreline by valuing project costs and net benefits for each site using functional values of sediment storage, nutrient retention, shoreline habitat, land values, and project costs. Comparing physical, biological, and economic benefits of LS with control sites will help to determine which LS options are cost-effective. A more complete understanding of the functions provided by alternative shoreline protection measures is sorely needed in Mississippi and in the larger southeastern U.S. where very little research has been done. By gauging responses of a large suite of variables, we believe that the proposed research will illuminate the strengths and weaknesses of several different approaches for shoreline protection, which will ultimately improve future decision making in this region. The LS approach will continue to be a viable option to control erosion by natural resource managers; therefore, this research will help decision makers fund or permit appropriate cost-effective LS projects in the Gulf of Mexico.	Hancock	Yes	No			No	Yes	No	No	No	No		\$	5,000,000.00	\$	-	

Eco Restoration	1800	4/4/2014	A comprehensive approach for the restoration and recovery of essential prey items for Kemp's ridley sea turtles (Leiodochelys kempi) in the Mississippi Sound	Kemp's ridley sea turtles are a Critically Endangered species that relies heavily on the north-central Gulf of Mexico for developmental habitat for foraging juveniles and sub-adults. Since 2010, more than 800 sea turtles, mostly immature Kemp's ridley, have stranded dead along the Mississippi coast raising important questions about regional ecosystem health. Additionally, over 200 immature Kemp's ridley have been incidentally hooked at local fishing sites in Mississippi. A variety of factors are likely responsible for increased strandings including degradation of natural oyster reefs and subsequent declines in abundance of essential prey items of the species that rely on these habitats. Declared failures of both oyster and blue crab fisheries in recent years support this hypothesis and illuminate the importance of a healthy ecosystem for recovering populations of Kemp's ridley. The purpose of this project is to facilitate the recovery of Kemp's ridley habitat by 1) monitoring the effects of recently established artificial and oyster reefs in the Mississippi Sound on Kemp's ridley and essential prey items, and 2) establishing programs to enhance wild stocks of Kemp's ridley prey. These efforts will provide critical information for understanding the importance of reef habitats for developing Kemp's ridley and their prey, will promote the restoration of Kemp's ridley prey species, and could potentially promote development of new economic opportunities associated with stock enhancement. Recent research led by IMMS has revealed that the Mississippi Sound is a vital developmental habitat for Kemp's ridley. Further, ongoing research examining the value of artificial reefs for prey items of Kemp's ridley has indicated the importance of these areas for developing sea turtles. To promote the restoration and recovery of the endangered species, continued monitoring of its important habitats and prey and enhancement of local stocks of prey items is essential. Ultimately, this work will play an important role in both ecosystem and economic restoration of the north-central Gulf of Mexico.	Hancock, Jackson, Harrison	Yes	Yes	60000	No	Yes	Yes	No	No	Yes		\$ 18,000,000.00	\$ -	
Eco Restoration	1801	4/5/2014	Pascagoula Inner Harbor	The inner harbor - Pascagoula's only public harbor for pleasure craft - needs to be dredged and restored to a functional depth. The bulkhead around the perimeter is also in need of repair/replacement. The proposed work would help to secure neighboring properties from erosion, including roadways and will provide a restored safe harbor for vessels during times of emergency. The harbor was completely unusable for many weeks during the oil spill event and recovery because booms were installed to protect inland areas from potential contamination. The lack of use contributed to the siltation and current deaths. Sediment needs to be removed from the channel leading to Yazoo Lake to restore a functional navigational channel. Sediment gathered while access to the lake was limited during the oil spill response process. If determined feasible, spoils from the channel and harbor area can be used to restore lost marshland near the mouth of the harbor, increasing opportunities for ecological restoration in an area directly impacted by the spill.	Jackson	Yes	Yes	60000	No	No	No	No	Yes	No		\$ 3,177,441.95	\$ -	
Eco Restoration	1802	4/5/2014	Yazoo Lake Channel Dredging	Sediment needs to be removed from the channel leading to Yazoo Lake to restore a functional navigational channel. Sediment gathered while access to the lake was limited during the oil spill response process. If determined feasible, spoils from the channel and harbor area can be used to restore lost marshland near the mouth of the harbor, increasing opportunities for ecological restoration in an area directly impacted by the spill.	Jackson	Yes	Yes	60000	No	No	No	No	Yes	No		\$ 1,345,500.00	\$ -	
Eco Restoration	1803	4/5/2014	Property Acquisition East Pascagoula River (Flechas Acquisition)	Property owned by the Flechas family has long been used as an industrial shipyard on some of the most attractive waterfront property in the City. This project proposes to acquire the property, remediate, and clear it for further development.	Jackson	Yes	Yes		Yes	No	No	Yes	Yes	Yes		\$ 10,189,000.00	\$ -	
Eco Restoration	1810	4/14/2014	Long-term restoration, recovery, and monitoring of marine mammals and sea turtles in the north central Gulf of Mexico	In the aftermath of BP Deepwater Horizon Oil Spill, larger numbers of bottlenose dolphins and sea turtles have stranded in the northern Gulf of Mexico, and many of these strandings have occurred along the coast of Mississippi. The Institute for Marine Mammal Studies (IMMS) has played a central role in the stranding response and rehabilitation efforts during this time. The proposed project will promote the restoration and recovery of dolphin and sea turtle populations in Mississippi waters through a systematic approach of 1) responding to dolphin and sea turtle strandings; 2) rehabilitating sick and injured dolphins and sea turtles; and 3) monitoring the recovery of wild dolphin and sea turtle populations. Representing apex predators, dolphins and sea turtles are ideal bioindicators of ecosystem health. This project, led by Mississippi State University (MSU), will facilitate understanding of how these species have endured numerous environmental stressors and foster their future survival, which is imperative for the restoration and recovery of the northern Gulf of Mexico. This project adheres to the selection criteria set forth by the National Fish and Wildlife Foundation (NFWF), to remedy harm and eliminate or reduce the risk of future harm to Gulf Coast natural resources that were impacted by the Deepwater Horizon oil spill. This project conforms to NFWF criteria as follows: -The Mississippi Sound and adjacent waters were directly impacted by the oil spill and response activities. -Marine mammals and sea turtles experienced direct and indirect injury resulting from the oil spill and response activities in the north-central Gulf of Mexico -Project includes science-based methodologies that produce measurable and meaningful conservation outcomes to marine mammals, sea turtles, and their habitats -This project will help mitigate damages from the oil spill, aid in the restoration and recovery of these species, and enhance management of marine resources by state and federal agencies The Mississippi Sound and adjacent waters of the north central Gulf of Mexico (nGOM) provides essential habitat for several endangered and threatened species including Kemp's ridley	Hancock, Harrison, Jackson	Yes	No		No	Yes	No	No	No	No		\$ 16,520,879.00	\$ -	
Eco Restoration	1811	4/25/2014	Buccaneer State Park Two-Tiered Restoration	Buccaneer State Park is in the Campbell Bayou Bayou Caddy watershed (NCEC 0170091001) west of the City of Waveland in Hancock County, MS and abuts multiple diverse coastal ecosystems and habitats, i.e. inland marshes, bayous, estuaries and shoreline/beaches. The Park also provides affordable public access, recreation and tourism opportunities on the Mississippi Sound shoreline to swim, crab and fish. The shorelines, estuaries and marshes adjacent to the Park were physically injured by oil from the Deepwater Horizon (DWH) Oil Spill. A two-tiered Project is proposed to restore and protect these coastal habitats by siting, designing and constructing approximately 1) 1.9 miles of near-shore living shoreline, i.e. a low-crested submerged breakwater; and 2) 0.75 miles long by 100 yard deep high-profile, off-shore artificial reef. These features will complement and supplement three other proposed estuarine and upland restoration projects that encompass the majority of the Campbell Bayou Bayou Caddy watershed: 1) Mississippi Department of Environmental Quality (MDEQ) Restoration of Buccaneer State Park Natural Resources Damage Assessment (NRDA) proposal; 2) Grand Bayou Ecological Restoration (Project 1873) and 3) Jackson Marsh, Grand Bayou and the Adjacent Gulf: Headwater Hydrologic Restoration (Project 1872). This Project is the marine component of a holistic watershed approach to restore a habitat corridor for coastal marine mammals, birds and fish between coastal, estuarine and upland ecosystems and provides multi-barrier protection to prevent residual oil from the DWH Oil Spill from reaching these restored habitats. MDEQ prioritized \$2.6 million of NRDA Phase I early restoration fund to enhance Mississippi's 67 existing near-shore artificial reefs each of which is approximately three acres in size. These traditional near-shore reefs provide hard bottom foraging and shelter habitats for smaller encrusting organisms, e.g., juvenile shrimp, crab and oysters that live on the reef and in the sediment. Most recently, MDEQ selected the Hancock County Marsh Living Shoreline Project for NRDA Phase II early restoration funding. This \$50,000,000 Project combines constructing a 5.9 living shoreline to protect and enhance the shoreline and build 46 acres of subtidal oyster reef and 46 acres of marsh to increase near-shore secondary productivity. This Project proposes creating two mutually supporting habitats that will be sited to extend Mississippi's artificial reef system west of Jallhouse Reef. The combination of an off-shore, high-profile (roughly 30 feet above high tide) artificial reef and a low-crested, submerged living shoreline will create a unique coastal habitat in Mississippi. This two-tiered approach will restore damaged marine habitats and natural resources and protect coastal, estuarine and upland habitats from residual impacts from the DWH Oil Spill. The living shoreline will restore injured near-shore habitats and enhance secondary natural resource productivity while the larger, high-profile reef will attract and concentrate larger recreational and commercial fish and restore and enhance damaged habitats for marine mammals and marine and coastal birds. Florida recently permitted a similar high-profile artificial reef system two miles off Henderson Beach State Park. The living shoreline will also be designed and sited to provide a final barrier to slow and treat run off, including stormwater runoff, from the entire Campbell Bayou Bayou Caddy watershed before it enters the Mississippi Sound. MDEQ has a coastal water quality monitoring station immediately off shore of Buccaneer Park. This station can provide historical near-shore water quality data as the foundation of an expanded long-term monitoring effort to quantify and track the Project's secondary water quality benefits.	Hancock	Yes	No		No	No	Yes	No	Yes	No		\$ 8,900,000.00	\$ -	
Eco Restoration	1814	5/6/2014	Gulf Coast Reef Fish reproduction with Fish Management	This project will help reproduce the fish that were killed by the oil spill. The Gulf of Mexico has a management tool called ITQ. The commercial industry holds quota shares of Reef fish that can be leased, fished or sold. I have contacted some of the shareholders that are willing to lease some of their quota shares so that the fish can remain in the water to reproduce for the future. This will benefit the resource by allowing the fish to stay in the water and reproduce for the future. This reproduction will help restore the resource that was made sick by the oil spill and died. This project will not only help restore but will help give back to both the recreational fishers and commercial fishers as well as the consumers of this resource by allowing the fish to remain in the water and reproduce. This is a project that will do exactly what BP said they would do and that is to restore the living marine resource to it condition before the oil spill. This project will help keep our coastal communities that depend on our living marine resource as a source of income for their business' s strong.	Hancock, Harrison, Jackson	Yes	Yes		Yes	Yes	Yes	Yes	Yes	No		\$ 8,000,000.00	\$ -	
Eco Restoration	1815	10/16/2014	A Program to Assess and Treat Roadscape Sources of Aquatic Ecosystem Degradation in Coastal Mississippi, Alabama, and Louisiana: Phase I - Roadscape Assessments	The proposed five-year program would implement the specially designed Roadscape Watershed Recovery Program (RWRP) to assess, develop prescriptions, treat, monitor, and disseminate information for roadscape unpaired road crossing and borrow pit assets in the approximately 17,560-square-mile (11,238,400-acre) Pearl, Pascagoula, Mobile-Tombigbee, and Alabama River Basins within Mississippi, Alabama, and Louisiana (see Attachment Program Work Area Map). The primary resource areas addressed by the RWRP include water quality, aquatic habitats, rare and imperiled aquatic species, invasive species, and stormwater runoff. The RWRP was developed to provide roadscape maintenance and resource management end-users with ground-truthed information, methodologies and practices to improve decision making that result in the on-the-ground implementation of sustainable, long-term solutions. The assessment process includes a NEPA programmatic environmental assessment, prescriptions, treatments, monitoring, and information dissemination. Reductions in roadscape-induced sedimentation, culvert crossing biological barriers, and crossing zone invasive species would result in measurable water quality and aquatic habitat improvements in river basin watersheds and coastal ecosystems. Roadscape issues, impacts, the program process, costs, and anticipated benefits are discussed in the Attachment Proposal. Phase I assessments identify and characterize the location, features, conditions, maintenance regimes, previous projects, natural resources, and ecosystem impacts data for the work area unpaired road crossings, borrow pits, and crossing zone invasive species. The intensive data collection, analysis, and prioritization conducted in this phase establish the technical baseline for site treatment decision making, implementing measurable projects, and facilitating future requirements. The assessment process includes a NEPA programmatic environmental assessment; integrates previous projects' lessons learned; builds baseline resource datasets; inventories county roadscape maintenance processes and resources; collects and analyzes site-specific field data, and scores, ranks, and prioritizes sites for treatment. It is assumed that during Program Years 1 and 2 field surveys would be conducted at an estimated 2,500 unpaired road crossings and 300 borrow pits. A discussion of Phase I is presented in the Attachment Proposal.	Hancock, Harrison, Jackson, 32 other additional counties	Yes	Yes		No	Yes	No	No	No	No		\$ 2,343,000.00	\$ -	
Eco Restoration	1816	10/16/2014	A Program to Assess and Treat Roadscape Sources of Aquatic Ecosystem Degradation in Coastal Mississippi, Alabama, and Louisiana: Phase II - Roadscape Prescriptions	The proposed five-year program would implement the specially designed Roadscape Watershed Recovery Program (RWRP) to assess, develop prescriptions, treat, monitor, and disseminate information for roadscape unpaired road crossing and borrow pit assets in the approximately 17,560-square-mile (11,238,400-acre) Pearl, Pascagoula, Mobile-Tombigbee, and Alabama River Basins within Mississippi, Alabama, and Louisiana (see Attachment Proposal). The primary resource areas addressed by the RWRP include water quality, aquatic habitats, rare and imperiled aquatic species, invasive species, and stormwater runoff. The RWRP was developed to provide roadscape maintenance and resource management end-users with ground-truthed information, methodologies and practices to improve decision making that result in the on-the-ground implementation of sustainable, long-term solutions. The program is divided into five phases that include assessments, prescriptions, treatments, monitoring, and information dissemination. Reductions in roadscape-induced sedimentation, culvert crossing biological barriers, and crossing zone invasive species would result in measurable water quality and aquatic habitat improvements in river basin watersheds and coastal ecosystems. Roadscape issues, impacts, the program process, costs, and anticipated benefits are discussed in the Attachment Proposal. Phase II employs the findings from Phase I to develop prescriptions for selected high-priority unpaired road crossing and borrow pit sites, and an overarching treatment plan for crossing zone invasive species. A high-priority site is one identified for having a high potential for improving environmental rankings among the sites assessed for treatment. This phase determines the types of changes that could take place at high-priority roadscape sites. The prescriptions phase is a pivotal interim step between site assessment and project treatment that provides planners, engineers, and practitioners with information critical to minimizing project failures, maximizing the effectiveness and treatment extent of available funds, and facilitating the implementation of sustainable, long-term solutions. Phase II can only be conducted after completion of Phase I assessment. For Program Years 2 through 5, approximately 80 crossing and 40 borrow pit site prescriptions would be developed. A discussion of Phase II is presented in the Attachment Proposal.	Hancock, Harrison, Jackson, 32 other additional counties	Yes	Yes		No	Yes	No	No	No	No		\$ 995,000.00	\$ -	

Eco Restoration	1817	10/16/2014	A Program to Assess and Treat Roadscape Sources of Aquatic Ecosystem Degradation in Coastal Mississippi, Alabama, and Louisiana: Phase III - Roadscape Treatments	The proposed five-year program would implement the specially designed Roadscape Watershed Recovery Program (RWRP) to assess, develop prescriptions, treat, monitor, and disseminate information for roadscape unpaved road crossing and borrow pit assets in the approximately 17,560 square-mile (11,238,400 acre) Pearl, Pascagoula, Mobile-Tombigbee, and Alabama River Basins within Mississippi, Alabama, and Louisiana (see Attachment Proposal). The primary resource areas addressed by the RWRP include water quality, aquatic habitats, rare and imperiled aquatic species, invasive species, and stormwater runoff. The RWRP was developed to provide roadscape maintenance and resource management end-users with ground-truthed information, methodologies and practices to improve decision making that result in the on-the-ground implementation of sustainable, long-term solutions. The program is divided into five phases that include assessments, prescriptions, treatments, monitoring, and information dissemination. Reductions in roadscape-induced sedimentation, culvert crossing biological barriers, and crossing zone invasive species would result in measurable water quality and aquatic habitat improvements in river basin watersheds and coastal ecosystems. Roadscape issues, impacts, the program process, costs, and anticipated benefits are discussed in the Attachment Proposal. Phase III implements on-the-ground roadscape treatment projects that produce the desired measurable improvements identified in Phase I and conceptualized in Phase II. Projects are designed and implemented applying prescription alternatives to high-priority unpaved road crossings, borrow pits, and crossing zone invasive species. Crossing and borrow pit projects would include contracted project designs, engineering, and construction and support of county administered projects through technical consultation and site inspection services. Local construction companies would be used to support project design and implementation. As applicable, project activities would be conducted with state and federal regulatory agencies during project design phases. For Program Years 3 through 5 there would be construction projects for an estimated 15 crossings and 10 borrow pits and invasive species treatments at an estimated 750 crossing zones. A discussion of Phase III is presented in the Attachment Proposal.	Hancock, Harrison, Jackson, 32 other additional counties	Yes	Yes	80000	No	Yes	No	No	No	No	No	\$ 7,913,000.00	\$ -	-
Eco Restoration	1818	10/16/2014	A Program to Assess and Treat Roadscape Sources of Aquatic Ecosystem Degradation in Coastal Mississippi, Alabama, and Louisiana: Phase IV - Roadscape Monitoring	The proposed five-year program would implement the specially designed Roadscape Watershed Recovery Program (RWRP) to assess, develop prescriptions, treat, monitor, and disseminate information for roadscape unpaved road crossing and borrow pit assets in the approximately 17,560 square-mile (11,238,400 acre) Pearl, Pascagoula, Mobile-Tombigbee, and Alabama River Basins within Mississippi, Alabama, and Louisiana (see Attachment Proposal). The primary resource areas addressed by the RWRP include water quality, aquatic habitats, rare and imperiled aquatic species, invasive species, and stormwater runoff. The RWRP was developed to provide roadscape maintenance and resource management end-users with ground-truthed information, methodologies and practices to improve decision making that result in the on-the-ground implementation of sustainable, long-term solutions. The program is divided into five phases that include assessments, prescriptions, treatments, monitoring, and information dissemination. Reductions in roadscape-induced sedimentation, culvert crossing biological barriers, and crossing zone invasive species would result in measurable water quality and aquatic habitat improvements in river basin watersheds and coastal ecosystems. Roadscape issues, impacts, the program process, costs, and anticipated benefits are discussed in the Attachment Proposal. Phase IV provides comprehensive monitoring of crossings, borrow pits, and affected roadway pre- and post-treatment to document conditions and identify changes. Collection methodologies and protocols for each monitoring activity have been developed to provide standards, procedures, criteria, and indicators for collecting information. For Program Years 3 through 5, crossing baseline monitoring would be conducted biannually at 200 selected high-priority sites, while pre- and post-project construction monitoring would be conducted at 15 sites, sediment delivery monitoring at 10 sites, and aquatic ecosystem monitoring at 15 project sites. Borrow pits monitoring would include biannual baseline monitoring at 40 high-priority pits and annual project and aquatic ecosystem monitoring at 10 project sites. An estimated 75 crossing zone invasive species sites would be inspected annually. A discussion of Phase IV is presented in the Attachment Proposal.	Hancock, Harrison, Jackson, 32 other additional counties	Yes	Yes	No	No	Yes	No	No	No	No	No	\$ 346,000.00	\$ -	-
Eco Restoration	1819	10/16/2014	A Program to Assess and Treat Roadscape Sources of Aquatic Ecosystem Degradation in Coastal Mississippi, Alabama, and Louisiana: Phase V - Information Dissemination	The proposed five-year program would implement the specially designed Roadscape Watershed Recovery Program (RWRP) to assess, develop prescriptions, treat, monitor, and disseminate information for roadscape unpaved road crossing and borrow pit assets in the approximately 17,560 square-mile (11,238,400 acre) Pearl, Pascagoula, Mobile-Tombigbee, and Alabama River Basins within Mississippi, Alabama, and Louisiana (see Attachment Proposal). The primary resource areas addressed by the RWRP include water quality, aquatic habitats, rare and imperiled aquatic species, invasive species, and stormwater runoff. The RWRP was developed to provide roadscape maintenance and resource management end-users with ground-truthed information, methodologies and practices to improve decision making that result in the on-the-ground implementation of sustainable, long-term solutions. The program is divided into five phases that include assessments, prescriptions, treatments, monitoring, and information dissemination. Reductions in roadscape-induced sedimentation, culvert crossing biological barriers, and crossing zone invasive species would result in measurable water quality and aquatic habitat improvements in river basin watersheds and coastal ecosystems. Roadscape issues, impacts, the program process, costs, and anticipated benefits are discussed in the Attachment Proposal. Phase V provides the means to make the extensive amount of information developed by the program available to the public and to resource stewards responsible for implementing and/or maintaining roadscape treatment projects. The purpose is to: 1) increase citizen awareness of water resource benefits, impacts, and restoration activities and promote their active participation in watershed stewardship; 2) educate practitioners in roadscape asset maintenance and reclamation; and 3) promote partnerships among agencies, resource managers, and other organizations to address watershed-based restoration and conservation needs. The South Mississippi Watershed Recovery initiative program website would be deployed in Program Year 1, the roadscape manual would be developed in Program Year 4, and two webinars per year would be conducted during Program Years 4 and 5 for the proposed five-year funding period. Phase V is not constrained to the completion of any previous phase and can operate as needed in concurrence with the other phases. A discussion of Phase V is presented in the Attachment Proposal.	Hancock, Harrison, Jackson, 32 other additional counties	Yes	Yes	No	No	Yes	No	No	No	No	No	\$ 233,000.00	\$ -	-
Eco Restoration	1822	5/13/2014	Design and construction of a replacement for the R/V Tommy Munro	This document addresses the need for a mid-sized (110-120 ft) research vessel to replace the aging R/V Tommy Munro. The 988' R/V Tommy Munro was built in 1981 and has served USM and other Gulf academic, state, and federal users faithfully since then. However, the vessel no longer meets the needs of the expanded marine program at USM. We request present users including ongoing survey programs such as SSMAR to be retained on a new vessel. However, we note the dearth of vessels in this size category in the Gulf of Mexico. Other vessels of this size (e.g., the 1164' R/V Pelican built in 1985, the 1154' R/V Weatherbird built in 1982) are of the same vintage and offer similar constraints for use in modern at-sea research programs. Thus, we anticipate that a new vessel would attract considerably increased usage if properly designed. Included in this wider range of research are programs requiring quiet technology, such as acoustics, dynamic positioning for ROV deployment and precise bench sampling, modern speed and winch control for trawl gear testing, modern electronics capabilities including acoustic transmission for net sensors and conducting cable for overboard sampling gear, etc. The vessel would position USM as a leading vessel operator in the Gulf of Mexico and provide considerably expanded capability in support of many RESTORE programs. A replacement vessel should have the following characteristics: a. Length: 110-120 ft b. Draft: 18-20 ft c. Quiet technology (e.g., electric drive, etc.) to support acoustic research d. Trawl winches and hydrographic winches below deck/above deck to provide maximum free deck space aft e. Dynamic positioning f. Moon pool g. Auto-trawl system h. Capable of mounting a full range of net sensors i. Dry and wet laboratories j. Berthing for minimally 10 scientists plus crew k. State-of-the-art internal (e.g., laboratory to wheelhouse) and external (e.g., vessel wide satellite connectivity) communications l. Rigged stern for trawl deployment. Rigged port and starboard for overboard deployment of research gear (e.g. CTD/rosette, box core, plankton nets) m. Conducting cable on hydrographic winch n. Maximum fuel efficiency o. Competitive day rate p. Shore-based infrastructure to support expanded gear storage and mobilization demand Annual Operation & Maintenance Cost (8 years): GCRL manages its entire vessel fleet on a cost recovery basis. We anticipate usage, involved under a day-rate schedule plus fuel, to cover the costs of crew, at-sea use, equipment upgrade, and yearly maintenance.	Jackson	Yes	Yes	100000	No	No	Yes	No	No	No	No	\$ 20.00	\$ -	-
Eco Restoration	1823	5/13/2014	Center for Marine Ecosystem Health	The Center for Marine Ecosystem Health will provide scientific information and technology transfer to resolve ecosystem health issues associated with increased pressures on the coastal environment from oil spills, land runoff, introduction of animal pathogens with trade, and increased population growth. The center will conduct interdisciplinary research to overcome issues related to human health, ecosystem health, and the animal health constraints to the development of marine aquaculture. The goals of the Center are: (1) To protect seafood consumers and living marine resources from epizootics of indigenous and nonindigenous agents of disease that may be introduced from aquaculture, from ship ballast water, or from imported raw seafood products. To gain an understanding of the biology and epidemiology of pathogens important to marine resources. To provide information on identification and control of natural epidemics of mortalities of marine organisms. (2) To accelerate the development of marine aquaculture through an emphasis on biosecurity, stock health, and environmental stewardship. To gain an understanding of the influence of pathogens important in marine aquaculture. To provide expertise on quarantine and establishment of Specific Pathogen Free-based marine aquaculture. To provide information and advice on disease diagnosis and control in support of marine aquaculture. (3) To evaluate and enhance the environmental health of the Gulf of Mexico through a better understanding of marine toxins, including oil related products and their mechanisms of action, and to develop interventions and remediation strategies. To provide expertise, information, and advice on environmental contaminants to industry and governmental agencies. The project will build state-of-the-art facilities and assemble a team of outstanding scientists and technical personnel from the academic, government, and private sectors to focus on the study of diseases of marine organisms, diseases of humans conveyed by the marine environment, and marine environmental health, including seafood contamination. The center will provide expertise to evaluate diseases in wild aquatic organisms as monitors of the health of ecosystems. Furthermore, in order to make informed corporate and regulatory decisions, a real need exists by industry and governmental agencies for data on potentially toxic environmental contaminants. Location (City, County): GCRL in Ocean Springs (Jackson County). Infrastructure cost (8 years): \$6 million (3 yrs) Annual Operation & Maintenance Cost (8 years): \$2 million (7 yrs) How will this leverage with other RESTORE priority areas or non-RESTORE funds? Implementation of this project will address the key RESTORE priority areas of restoration, mitigation of insults caused by toxins and pathogens, and economic development. The project will build capacity for federal and private funding to sustain the Center after project completion. Information relevant to Economic Development (e.g., new construction, new employment opportunities, workforce development and training, etc.): The assumption of a leadership role by Mississippi through the Center in the prevention, control, and treatment of diseases of marine organisms and enhancement of environmental health will assure a long-term economic return for industry, a stable and sustainable economic base, and an enhanced quality of life and health for all citizens along the U.S. Gulf coast. SEF	Jackson	Yes	Yes	100000	Yes	Yes	Yes	No	No	No	No	\$ 6.00	\$ -	-
Eco Restoration	1824	5/13/2014	Bayou Yazoo	Provide watershed for an area affecting approximately 1/4 square miles (126 acres or 5,500,000 sq. ft.). Area includes 200-300 Residents and Businesses. The area floods during minimal rainfall, the residents and business are blocked from exit or emergency vehicles until water recedes. Options 1) Provide an unrestricted outlet from Bayou Yazoo to Comynie Bayou Ditches between Bayou Yazoo and Comynie need to be excavated for better water flow after rain fall. Silt removal from Bayou Yazoo and Comynie Bayou for added water retention and better water flow. Add bulkhead around area to direct water flow 2) Provide an unrestricted outlet from Bayou Yazoo, across Ingalls Avenue thru Ingalls Access into Yazoo Lake. Excavate area between Community Ave, Ford Street, and Desoto Street for water flow after rain fall. Remove Ford Street Bridge and Desoto Street Bridge obstructions. Remove West end of Community Avenue obstruction. Silt removal from Bayou Yazoo for increased water retention. Excavate Inner Harbor area for better water flow and water retention. Comynie Bayou and Yazoo Lake both empty into the Pascagoula River then into the Gulf of Mexico.	Jackson	Yes	Yes	50000	Yes	No	No	No	Yes	No	No	\$ 1,500,000.00	\$ -	-

Eco Restoration	1829	5/13/2014	Cumulative Impacts Assessment Tool for Ecosystem Based Management	<p>As multiple restoration projects are implemented in the northern Gulf of Mexico, there is a need to understand and quantify impacts on the ecosystem. While positive impacts are most likely, there is risk that interactions across projects may have unintended consequences. For example, changes in water quality such as salinity and sediment load may adversely impact desired habitat conditions. Consequently, a method that informs ecosystem based management is needed. This proposal is to develop and deploy a place-based cumulative impacts assessment tool (CIAT) for scientific assessments of synergistic interactions of multiple restoration projects. The CIAT will be built using existing technologies and data for conducting scenario analyses and simulations. The CIAT will allow managers to evaluate impacts of multiple projects on the overall quality of the ecosystem in the northern Gulf of Mexico and provide science based assessments for adaptive management as restoration projects develop over time. Additionally, enhanced assessment techniques will be used to evaluate the stability and sustainability of individual projects during construction and post construction. The project will be a collaborative effort with engineers and scientists from Mississippi State University (MSU) and the University of Southern Mississippi (USM) and will be coordinated with state and Federal agencies conducting restoration in the northern Gulf of Mexico. Emphasis will be placed on projects in the Mississippi Sound and Lower Mississippi River.</p> <p>This proposal includes two major tasks: 1) development and deployment of a cumulative impacts assessment tool (CIAT) that includes project information and simulation capabilities for assisting management and 2) enhanced observations using a variety of platforms (satellite, aerial, water borne (surface and subsurface), and field measurements) to assess project stability and sustainability. This combined approach will allow for adaptive management, incorporation and interaction with other assessments (e.g., MSCP), and provides a mechanism for public interaction.</p> <p>Recent and ongoing studies conducted by the Northern Gulf Institute (NGI) (www.NorthernGulfInstitute.org) provide a wealth of information on physical, chemical, and biological processes in the northern Gulf of Mexico. For example, NGI has established hydrodynamic models with ecological modeling capabilities for Bay St. Louis, MS and the Mississippi Sound (Carnacho and Martin, 2012, McAnally et al., 2012). These models provide capabilities for Integrated Ecosystem Assessments (IEA) and are part of the ongoing NOAA IEA program. They are also compatible with hydrodynamic models such as ADCIRC, FVCOM, and CH3D which have been applied in the region. This approach is also directly applicable to the Gulf of Mexico Alliance, Ecosystem Integration and Assessment Priority Issues Team. Additionally, NGI has developed and utilized Sullis, a decision support system, for activities such as regional sediment management in Mobile Bay (McAnally and Parsons, 2012) and ecosystem management in the Mississippi Sound (McAnally et al., 2013) that can be utilized for place-based cumulative impacts assessment tool and project management. The NOAA Gulf of Mexico team has adopted Sullis for use in integrated ecosystem assessment.</p> <p>Additional information is provided as an attached document.</p>	Hancock, Harrison, Jackson	Yes	No		Yes	Yes	Yes	No	Yes	No		\$	7,500,000.00	\$	
Eco Restoration	1830	5/13/2014	Crafting a mechanistic functional indicator of hypoxia and ocean warming	<p>The proposed project will contribute to a functional explanation of responses by benthic organisms to changing and interacting gradients of dissolved oxygen and temperature, stressors associated with two primary coastal health concerns, namely hypoxia and climate change. Furthermore, this research will take the next logical step toward producing a functional indicator of hypoxia for coastal estuarine ecosystems. The research questions are founded on the premise that macrobenthic population responses to organic enrichment and hypoxia should entail a number of mechanistic links to individual organisms in terms of their bioenergetic capacity to resist, consume, and allocate energy. Experiments will be performed using various body sizes of several prevalent benthic polychaete taxa. In addition to acute mortality, chronic effects in terms of autecological processes, including aerobic and anaerobic respiration, trophic-energetic parameters, as well as growth and degrowth rates will be quantified at various combined levels of dissolved oxygen (DO) and temperature. Information gleaned from lab experiments will be synthesized within the context of an incipient hypoxia mass balance model (HMBM) to examine how autecological processes would interact to elicit temporal changes in biomass-size distributions under alternative scenarios of DO and temperature. Model simulations will be compared to benthic samples in conjunction with continuous water quality data. In addition, incorporating parameter estimates within the HMBM will help to assess the feasibility and applicability of developing a functional indicator that can be mechanistically explained through autecological processes. An ultimate goal is to craft a model which can apprehend how effects of hypoxia and warming affect trophic transfer potential to important fisheries species, such as brown shrimp.</p> <p>Location (City, County): Ocean Springs, Jackson County Infrastructure cost (# years): None Annual Operation & Maintenance Cost (# years): \$2,000,000 (4 years) (actual budget depends on the amount of salt marsh restoration activity involved)</p> <p>How will this leverage with other RESTORE priority areas or non-RESTORE funds? This project addresses multiple RESTORE and GoCoast key and priority focal areas, and will complement anticipated substantial investments of RESTORE funds into understanding ecosystem consequences of hypoxia. The proposed project will interface directly with resource management agencies and NGOs, in the region in order to disseminate the findings from this project.</p> <p>Information relevant to Economic Development (e.g., new construction, new employment opportunities, workforce development and training, etc.): This project will engender many indirect economic benefits that follow from ecosystem services associated with ensuring healthy coastal ecosystems and essential fish habitat, including the promotion of sustainable seafood harvest and production, recreational fishing activities, and associated tourism.</p>	Jackson	Yes	No		No	Yes	Yes	No	No	No		\$	2,000,000.00	\$	
Eco Restoration	1831	5/13/2014	Artificial reefs and hypoxia: examining linkages and effects on reef fish populations	<p>Artificial reefs are commonly built to create fish habitat in hopes of increasing fish stocks. The Mississippi DMR has created many shallow reefs within Mississippi Sound using concrete rubble and oyster shells. Further offshore, a dozen offshore reef sites (8 to 10,000 acres) have been established. Ongoing research on nearshore artificial reefs in Mississippi Sound show that the benthos, a diverse community of microbes and invertebrates, that colonizes these surfaces are net heterotrophic and have a high biological oxygen demand, yet hypoxia rarely develops on these shallow reefs due to shallow waters and high water column mixing rates. The offshore reefs are deeper (50-100 ft) and located in a region where the water column is stratified during the summer. This stratification combined with riverine nutrient inputs leads to bottom water hypoxia. Benthos found on large offshore reefs will increase the biological oxygen demand and may contribute to hypoxia. We propose to examine the oxygen and nutrient dynamics of 5 offshore artificial reefs and at 5 non-reef sites over a 4 year period to determine if artificial reef sites are more susceptible to hypoxia relative to the non-reef sites. Stable isotopes of the major nitrogen species will be examined to determine the sources of dissolved nitrogen. Fish populations at each site will also be surveyed by underwater video collected by members of the Mississippi Gulf Fishing Banks (who frequently dive these sites) to determine effects on reef holding capacity. Bottom hypoxia associated with artificial reefs could deter the recruitment of juvenile fishes, which seek out reef habitats after settling from the plankton. Fish early life stages will be surveyed to examine evidence for fisheries production (eggs), as well as hypoxia-mediated relationships between larval supply (pelagic larvae) and settled recruits (juveniles).</p> <p>Location (City, County): Ocean Springs, Jackson County Infrastructure cost (# years): None Annual Operation & Maintenance Cost (# years): \$1,419,000 (4 years - \$355K/year)</p> <p>How will this leverage with other RESTORE priority areas or non-RESTORE funds? The proposed research fulfills many RESTORE/GoCoast priorities: expanding fisheries monitoring for Mississippi offshore waters, building local expertise, creating partnerships, and implementing ecosystem-based management.</p> <p>Information relevant to Economic Development (e.g., new construction, new employment opportunities, workforce development and training, etc.): Three graduate students will be trained on highly technical methods used for this project. In addition, local charter boats arranged through the Mississippi Gulf Fishing Banks organization will be employed for much of the sample collection.</p>	Jackson	Yes	No		No	Yes	No	No	No	No		\$	1,419,000.00	\$	
Eco Restoration	1832	5/13/2014	A management strategy evaluation for assessing coastal habitats and ecosystem services in the northern Gulf of Mexico	<p>The coastal continental and island habitats in the northern Gulf of Mexico (GOM) are subject to a range of chronic and episodic impacts. In order to maintain the health of these ecologically critical habitats, while balancing the needs of stakeholders, a management framework that considers the complex social, economic, and biological tradeoffs when considering various management options is necessary. We will conduct benthic assessments of critical habitats in the northern GOM and quantify the biological, chemical, geological, and cultural status of these areas. The Coastal Ecology Group at the Gulf Coast Research Lab is uniquely positioned, because of their broad expertise, to perform this work. This multi-disciplinary investigation of the northern GOM habitats will be combined with published information to provide a comprehensive inventory of northern GOM ecosystem structure and function. Given this information, we will use management strategy evaluation (MSE) to provide decision makers a framework to understand how the imposition of alternative management strategies will alter the function of coastal ecosystems. The MSE framework will provide decision-makers and stakeholders with the tools necessary for long-term planning and help ensure healthy and sustainable coastal ecosystems.</p> <p>Location (City, County): Ocean Springs, Jackson County Infrastructure cost (# years): None Annual Operation & Maintenance Cost (# years): \$467,375 per year (8 years)</p> <p>How will this leverage with other RESTORE priority areas or non-RESTORE funds? The proposed research project fulfills multiple focal including: Seafood (eco-restoration, habitat research), Research and Education (research capacity, partnership building, ecosystem-based management, critical habitat monitoring).</p> <p>Information relevant to Economic Development (e.g., new construction, new employment opportunities, workforce development and training, etc.): The project will train graduate students and provide information to managers and decision makers for long term planning.</p>	Jackson	Yes	No		No	Yes	Yes	No	No	No		\$	3,739,000.00	\$	
Eco Restoration	1834	5/14/2014	Mississippi Fisheries Oceanography, Monitoring and Assessment Program (MFOMAP)	<p>Variability in the recruitment of marine fishes to adult populations is largely related to the variability encountered in vital rates (e.g., growth, mortality) during the egg and larval stages. An understanding of this natural variability (environmental "background noise") will allow us to assess and predict the impacts of large perturbations (e.g., oil spills, tropical storms and hurricanes, and climate variability) on the marine fisheries resources of Mississippi. The overall goal of the Mississippi Fisheries Oceanography, Monitoring and Assessment Program (MFOMAP) is to collect long-term baseline data to understand the nature of nearshore and coastal environmental factors as they relate to fisheries production. The core components of this program will be monthly surveys to target the early life stages of marine fishes (eggs, larvae and juveniles) and decapods (megalopae, zoea), along with their zooplankton predators (e.g., gelatinous zooplankton) and prey (e.g., copepods). In addition, the physical environment will be characterized through field-based sampling (e.g., salinity, temperature, nutrients, dissolved oxygen). This ecosystem-based, "physic-to-fish" approach will utilize advanced sampling techniques, including a multinet plankton-environment sampler (e.g., MOCNESS or BROWNSS) and an in situ zooplankton imaging system (ZIS), to characterize the abundances, distributions, and seasonality of planktonic assemblages. Specific objectives for the MFOMAP will be to: 1) provide data and support for DMR science and management goals; 2) provide guidance for fisheries recovery and restoration efforts related to Deepwater Horizon; 3) establish a regional center of expertise for fisheries oceanography and plankton research; 4) provide research opportunities and training for our next generation of marine scientists and taxonomists; and 5) enhance awareness through continued community outreach and education. This program will provide a spatial and temporal expansion to the existing NMFS long-term plankton program (SEAMAP) that samples federal waters. The SEAMAP plankton database is the primary data source for the federal NMFS, and therefore a state complement would benefit Mississippi-specific assessments in the future.</p> <p>Location (City, County): Ocean Springs, Jackson County Infrastructure cost (# years): \$645,750 total (10 years) Annual Operation & Maintenance Cost (# years): \$1,410,000/year (10 years)</p> <p>How will this leverage with other RESTORE priority areas or non-RESTORE funds? The project fulfills multiple RESTORE priorities by expanding fisheries monitoring, building local expertise, creating partnerships, implementing ecosystem-based management, and conserving commercial and recreational species (along with the jobs and industries they support).</p> <p>Information relevant to Economic Development (e.g., new construction, new employment opportunities, workforce development and training, etc.): The project is labor intensive, highly technical, and therefore provides an excellent opportunity to employ and train personnel at multiple education levels. Anticipated personnel include BS- and MS-level technicians (n=6), high school and undergraduate interns (n=2), graduate students (n=2), data management support (n=1), and PhD-level researchers (1 postdoctoral associate, 2 principal investigators).</p>	Jackson	Yes	Yes	3000%	No	Yes	Yes	No	No	No	monitory	\$	2,055,750.00	\$	

Eco Restoration	1833	5/14/2014	Ecological assessments and development of fisheries-independent data and environmental indices for offshore pelagic habitats	Oceanic ecosystems are open systems where biological components are connected through complex interactions of life history strategies and physical processes. The distribution of floating Sargassum in the northern Gulf of Mexico and the spatial/temporal variability associated with the Loop Current are prime examples of these processes. Floating Sargassum represents an oasis of biogenic habitat in an otherwise featureless (habitat-depleted) ocean, and thus serves as critical habitat for residents and transient fishes, invertebrates, and sea turtles. Larval and juvenile stages of recreationally and commercially important species (e.g., tripletail, grey triggerfish, bluefin tuna, mahi mahi, wahoo, billfishes) use Sargassum habitats as nursery areas, as do the early life stages of important forage fish species (e.g., flyingfishes, halfbeaks) that serve as prey for many sportfishes. Similarly, frontal boundaries associated with the Loop Current and its associated eddies and filaments are spawning "hot spots" for tunas, billfishes and other large pelagics. The overall goal of this study is to examine the ecology and nursery habitat function of pelagic habitats, with an emphasis on Sargassum aggregations and Loop Current-derived features. Specific objectives of the project are to: 1) develop collaborations with colleagues at USM/DMS to ground-truth remote sensing observations and characterize the local and gulfwide extent/variability of Sargassum and Loop Current features; 2) characterize seasonal and interannual variability in larval and juvenile fish assemblages associated with these features; 3) characterize variability in food web dynamics and "nursery" functions associated with these features; 4) develop regional (Mississippi and Gulf-wide) predictive models of Sargassum distribution and biomass based on shipboard and remote sensing observations; and 5) develop larval and juvenile fish indices (for inclusion in stock assessments) "weighted" by information gained on fish associations with Sargassum and Loop Current features. Location (City, County): Ocean Springs, Jackson County Infrastructure cost (\$ years): None Annual Operation & Maintenance Cost (\$ years): \$1,124,000/year (5 years) How will this leverage with other RESTORE priority areas or non-RESTORE funds? The proposed research project fulfills multiple RESTORE and GoCoast priorities by expanding fisheries monitoring for Mississippi offshore waters, building local expertise, creating partnerships, implementing ecosystem-based management, developing novel habitat mapping tools, promoting research and education initiatives, and conserving commercial and recreational species (along with the jobs and businesses in Mississippi these resources support). Information relevant to Economic Development (e.g., new construction, new employment opportunities, workforce development and training, etc.): The proposed work is labor intensive, highly technical, and therefore provides an excellent opportunity to employ and train personnel at multiple education levels. Anticipated personnel include BS- and MS-level technicians (n=14), graduate students (n=2), and senior/PhD-level researchers (1 postdoctoral associate, 3 principal investigators). \$4f	Jackson	Yes	No		No	Yes	No	No	No	No	monitor	\$	5,620,000.00	\$	
Eco Restoration	1836	5/14/2014	Salt Marsh Restoration - Functional Equivalency Assessments	In light of damages to salt marsh resources following the Deepwater Horizon oil spill, it is anticipated that substantial efforts will soon be focused on restoring salt marsh habitats within the northern Gulf of Mexico region. In order to track the recovery of ecosystem services and function of restored salt marshes, and to properly assign credits in terms of ecosystem and economic value, P&AC, associated with the USM GCR, Coastal Ecosystems Group (CEG) and Center for Fisheries Research and Development (CFRD) propose to conduct follow-up integrated assessments of the functional equivalency of newly restored salt marsh habitats. Unfortunately, once saltmarshes have been created there is very little known on how they function, especially at various levels of organization. The proposed project addresses the assessment of created salt marshes in terms of marsh function using an integrated approach involving: primary production, benthic secondary production, nekton abundance, and biogeochemical perspectives. In a previous study funded by Tidelands conducted by the P&AC in 2005, various quantitative assessment metrics were developed. In this proposed study we will compare newly created marshes with reference sites over a time trajectory in order to determine to what extent the created marshes function equivalently to a natural marsh ecosystem components will include saltmarsh vegetation, infaunal and epifaunal invertebrates, nekton, and larger transient fishes, as well as nutrient and organic matter concentrations in the pore water and in the particulate phase, and stable isotope signatures of selected organisms at various trophic levels to assess the progression of change in the trophic structure of restored marshes relative to that representing natural reference conditions. Focal sampling of most of the metrics will be encompassed by replicate throw trap samples, from within which various other samples will be taken. Location (City, County): Ocean Springs, Jackson Infrastructure cost (\$ years): None Annual Operation & Maintenance Cost (\$ years): \$1,000,000/year (8 years) (actual budget depends on the amount of salt marsh restoration activity involved) How will this leverage with other RESTORE priority areas or non-RESTORE funds? This project addresses multiple RESTORE and GoCoast key and priority focal areas, and will complement anticipated substantial investments of RESTORE funds into salt marsh ecosystem restoration. The proposed project will interface directly with restoration projects in the region in order to monitor and document the attainment of normal salt marsh function. Information relevant to Economic Development (e.g., new construction, new employment opportunities, workforce development and training, etc.): This project will support the workforce involved with upcoming salt marsh restoration activities within the region. In addition, many indirect economic benefits will follow from ecosystem services associated with ensuring healthy salt marshes and essential fish habitat, including the promotion of sustainable seafood harvest and production, recreational fishing activities, and associated tourism.	Jackson	Yes	No		No	Yes	Yes	No	No	No	\$	8,000,000.00	\$		
Eco Restoration	1837	5/14/2014	Determination of the landscape resilience of saltmarshes to crude oil across gradients of riverine inputs and wave energy	The complexity of oil natural removal processes makes the spatial variability of oil residues onshore very high, leading to uncertainty as to how coastal wetlands, influenced by wave, tide and freshwater inputs, will recover from oil spill events among other affecting factors. We propose to study the changes of coastal wetland habitats affected by crude oil over time (4-7 years) at multiple spatial scales, from individual vegetation, to site characteristics of vegetation, to landscape, as a continuation of our NSF RAPID project (award number: DEB-104843) and Northern Gulf Institute Phase I BP Oil Spill Research (Task order # 131001-306811-04/70 D01), but we propose to switch the focus to longer-term dynamics and larger spatial coverage. A central hypothesis will be tested: coastal wetlands recover faster in the high energy shoreline or with high freshwater inputs than in the lower energy shoreline or when with low freshwater inputs. Based on our short-term data (one year), we have found that photosynthesis in saltmarshes recovered within 4-6 months in the high energy shoreline while photosynthesis was still depressed in the low energy shoreline after one year. We will develop a hierarchical Bayesian (HB) model to integrate data we have already collected and data that we will obtain at multiple spatial-temporal scales to study the impact by species, individual stress (individual scale), temperature, salinity, elevation (site scale), wave energy, freshwater inputs, distance to shoreline, historical loss rates (landscape scale), as well as initial oil impact level and oil residual (site scale), on vegetation characteristics at the individual (optimum quantum yield of the vegetation, Fv/Fm, and stem height), site (stem density and biomass) and landscape scales (represented by landscape metrics such as patch density and connectivity index distribution, etc.) over time in the contrasting environments. The HB model can simulate complex systems by decomposing the high-dimensional problem into levels of data model, process model, parameter and hyper-parameter within a fully consistent framework (Clark 2005). It allows for multiple sources of stochasticity including uncertainty in latent variables and parameters, and variability from fluctuations not explained by deterministic processes (Clark et al. 2001). Location (City, County): Administrative: GCRL, Ocean Springs; Field sites: saltmarshes in Jackson, Harrison and Hancock Counties Infrastructure cost (\$ years): None Annual Operation & Maintenance Cost (\$ years): \$360,000 per year (4 years) How will this leverage with other RESTORE priority areas or non-RESTORE funds? The project will provide information on coastline sustainability and improved guidance for developing optimal approaches to saltmarsh restoration. Information relevant to Economic Development (e.g., new construction, new employment opportunities, workforce development and training, etc.): The project will provide opportunities to train graduate students in landscape biology and modeling and provide information to coastal zone planners to optimize economic development while retaining ecological integrity. References: Clark J.S., 2005. Why environmental scientists are becoming Bayesians. Ecology Letters 8, 2-14. DOI: 10.1111/j.1461-0248.2004.00702.x.; Clark J.S., Carpenter S.R., Barber M., Collins S., Dobson A., Foley J.A., Lodge D.M., Pascual M., Pielke Jr., R., Pizer W., Pringle C., Reid W.V., Rose K.A., Sala O., Schlesinger W.H., Wall D.H., Wear D., 2001. Ecological forecasts: an emerging imperative. Science 293, 657-660. \$4f	Jackson, Harrison, Hancock	Yes	No		No	Yes	No	No	No	No	\$	1,440,000.00	\$		
Eco Restoration	1839	5/14/2014	Modernization of GCRLECM research infrastructure on the Halstead Campus	GCRLECM physical plant is not modern and so is energy inefficient, has inadequate backup generator power, and supports several buildings with modern-day uses very different from the original design intentions. Of particular importance is to reduce the energy footprint for the campus. In addition, the GCRLECM boat basin has not been renovated since prior to Hurricane Katrina. The following projects would substantially modernize the Halstead Campus. 1) Upgrade of electrical, air conditioning, and generator capacity for Taylor. Much of the lower level wiring is aging prematurely due to submersion in saltwater during Katrina. Generator capacity is grossly inadequate. The air conditioning and heating units should be replaced with modern energy-efficient power plants. 2) Upgrade of electrical, air conditioning, and generator capacity for the Research Building. Much of the lower level wiring is aging prematurely due to submersion in saltwater during Katrina. Generator capacity is grossly inadequate. The air conditioning and heating units should be replaced with modern energy-efficient power plants. 3) The Director's house, originally a home, now serves as an administrative unit. Efficient use of the facility requires renovation to e.g., remove the kitchen and replace it with office space. Movement of GCRLECM administration in total to this facility would open up badly needed office space for faculty and graduate students in the Oceanography Building. 4) The old toxicology building will be replaced by a new building sited on the Cedar Point Campus. Renovation of the old building to convert it into a modern laboratory and office facility will permit expansion of the Fisheries and Ecosystems Research groups. Location (City, County): Ocean Springs, Jackson, GCRLECM Halstead Campus Infrastructure cost (\$ years): \$1,900 million Annual Operation & Maintenance Cost (\$ years): GCRLECM supports full maintenance, utilities, and custodial services for these buildings. GCRLECM anticipates that the renovations will reduce, not increase, these costs resulting in a long-term cost savings to GCRLECM. How will this leverage with other RESTORE priority areas or non-RESTORE funds? GCRLECM expects the renovations to support a wide range of science programs aimed at fisheries, coastal restoration, ecosystem and landscape biology, and marine diseases, among others. Information relevant to Economic Development (e.g., new construction, new employment opportunities, workforce development and training, etc.): The project will permit GCRLECM to upgrade its physical plant and reduce its cost of operation. The facilities support a wide range of research programs affecting local, regional, and national economies by providing the location for a range of basic and applied research.	Jackson	Yes	Yes	100000	Yes	Yes	Yes	No	No	No	\$	1,920	\$		
Eco Restoration	1840	5/14/2014	Redesign of GCRLECM entrance, vehicular routes, and boat access	GCRLECM's main entrance is a road-based easement across a neighboring piece of property. Due to sea-level rise, this entrance is increasingly flooded preventing employees from attending work on some days and making the entrainment of employees and students already on site. In addition, (1) a number of areas of severe erosion endanger the property and adjacent marshes. In addition, boat-ramp access by local boaters, provided under an MOU signed with the City of Ocean Springs, generates congestion without providing a positive experience of the visitor. Growth of the MEC program has saturated available student parking and resulted in high traffic use on old, poorly marked roadways. The main entrance, vehicular routes, and parking should be fully redesigned. This will entail the following steps: 1) Purchase of the adjoining property; 2) Redesign of Halstead vehicular traffic by moving the main entrance to higher ground and re-orienting roadways consistent with the new entrance; 3) Establishment of a new boat launch and parking facility near the present entrance; 4) Development of a landscaping plan including a swale to capture storm runoff and erosional materials along the near-shorefront from the new ramp to the boat basin; 5) Addition of trees to improve wind management; and 6) Reconstruction of additional parking for students, staff, and faculty in the area where the present entrance road divides towards the boat basin. Location (City, County): Ocean Springs, Jackson, GCRLECM Halstead Campus Infrastructure cost (\$ years): \$735,000 Annual Operation & Maintenance Cost (\$ years): GCRLECM expects little additional long-term costs above present-day upkeep of the present entrance, as landscaping will be low maintenance trees and shrubs; mowing the grass on the new property will be the only additional maintenance item. Ocean Springs has obligated funds to maintain garbage pickup and to provide police security in the public access areas. How will this leverage with other RESTORE priority areas or non-RESTORE funds? GCRLECM expects the renovations to support a wide range of science programs aimed at fisheries, coastal restoration, ecosystem and landscape biology, and marine diseases, among others, as well as the middle to high school and undergraduate programs of the MEC and graduate level courses taught by GCRLECM faculty. Information relevant to Economic Development (e.g., new construction, new employment opportunities, workforce development and training, etc.): The project will permit GCRLECM to maintain its research and education program in the face of rising sea level and restore the shoreline to a more natural habitat in keeping with GCRLECM's commitment to coastal restoration. The project will support tourism by promoting boat access for recreational boaters and fishermen in a portion of Ocean Springs where independent access is not available.	Jackson	Yes	Yes	100000	Yes	Yes	Yes	No	No	No	\$	735,000.00	\$		

Eco Restoration	1842	5/14/2014	Marine shrimp farming industry for Mississippi	<p>Over ninety percent of all shrimp consumed in the United States is imported. Our current seafood deficit exceeds \$10B annually. The focus of the Marine Shrimp Farming Industry for Mississippi program (MSFIM) will be the demonstration and transfer of closed system, biosecure production technology for marine shrimp to develop a marine shrimp farming industry in coastal Mississippi. Closed, biosecure shrimp aquaculture systems undergo little or no water exchange, which prevents disease transfer, prevents pollution discharges, and allows for production of marine species at locations which are not adjacent to the ocean, thereby protecting sensitive coastal land and creating unique economic opportunities. This technology has been in development for approximately 10 years at various research institutions, including the University of Southern Mississippi's Gulf Coast Research Laboratory (GCRL). Through diligent research efforts the technology has reached a point where the private industry can adopt these technologies and put them to use. The goal of the program are:</p> <p>1. Demonstrate the use of sustainable, biosecure shrimp culture technology in the prototype commercial facility at GCRL.</p> <p>2. Engage and educate potential and existing shrimp fishers, seafood retailers, consumers, and members of Gulf of Mexico coastal communities with regard to sustainable marine shrimp aquaculture.</p> <p>3. Provide training and extension assistance to individuals interested in undertaking the culture of marine shrimp profitably and sustainably in south Mississippi</p> <p>Location (City, County): Headquartered at GCRL in Ocean Springs (Jackson County). Infrastructure cost (# years): \$500,000 (1 year) Annual Operation & Maintenance Cost (# years): \$1 million per year (5 yrs)</p> <p>How will this leverage with other RESTORE priority areas or non-RESTORE funds? Development of a Marine Shrimp Farming Industry for Mississippi addresses economic and workforce development. The facilities for demonstration of the technology are already available and require only slight modifications. The methodology is well known and the expertise for technology transfer is immediately available at GCRL.</p> <p>Information relevant to Economic Development (e.g., new construction, new employment opportunities, workforce development and training, etc.): Construction will be minimal but the development of a marine shrimp farming industry in Mississippi will yield substantial job creation and economic opportunities.</p>	Jackson	Yes	Yes	1000%	Yes	Yes	Yes	No	No	No	\$	5.50	\$	-
Eco Restoration	1844	5/22/2014	Gulf of Mexico Marine Stock Enhancement and Restoration Consortium	<p>Brief description of activities: We will develop a multi-state consortium to address scientific, hatchery based restoration and enhancement of economically important marine finfish species potentially impacted by ecosystem degradation including the Deep Water Horizon oil spill. Using a structure template developed through previous grants from NOAA and the Mississippi Department of Marine Resources, we will mobilize partnerships among universities, state management agencies, and private enterprise Gulf-wide to 1) develop hatchery technology and capacity for production of selected economically important species and 2) use the fish produced to test and implement strategies for achieving science-based restoration and mitigation. Disciplines ranging from reproductive biology, genetics, larval rearing, nutrition, and health management to coastal and fisheries ecology and economics will be represented and address fundamental hypothesis-driven questions relevant to the pursuit of these goals.</p> <p>Location (City, County): Headquartered at GCRL in Ocean Springs (Jackson County) with participants in all five Gulf states funded either by their respective states or from Federal RESTORE funds. Infrastructure cost (# years): \$10 million over 5 yrs Annual Operation & Maintenance Cost (# years): \$2 million per yr (10 yrs)</p> <p>How will this leverage with other RESTORE priority areas or non-RESTORE funds? The Mississippi component of the Gulf-wide consortium will be funded by Mississippi RESTORE funds. The component programs in each individual state will be funded by their respective state's RESTORE funds. The complete consortium could be funded by the Federal share of the RESTORE funds. The consortium can be at least partially sustained over the long term by user fees levied as part of commercial and recreational fishing licenses and taxes imposed on industry for use of public resources such as tidelands and waterways consistent with the Public Trust Doctrine.</p> <p>Information relevant to Economic Development (e.g., new construction, new employment opportunities, workforce development and training, etc.): New hatchery capacity will require construction and materials. Active hatcheries, research programs, and enhancement activities will add jobs to the economy and facilitate the development of a skilled workforce.</p>	Jackson	Yes	Yes	4000%	Yes	Yes	Yes	No	No	No	\$	30,000,000.00	\$	-
Eco Restoration	1847	5/28/2014	Developing aquaculture for stock enhancement of economically important marine fishes of the northcentral Gulf of Mexico	<p>Brief description of activities: The objective of the project is to develop the aquaculture and stock enhancement of marine fishes of importance to the Mississippi Gulf Coast. The project will be developed at the Thad Cochran Marine Aquaculture Center (TMAC) and will focus in a first phase on developing and optimizing technologies to (i) spawn and culture larvae and juveniles of selected marine species with a primary focus on red snapper and spotted seatrout, (ii) tag and release produced fish on natural and artificial habitats off the Mississippi coast, and (iii) monitor returns of released fish to the fishery. Protocols will be refined in subsequent years based on initial results in an adaptive strategy. The expected outcome is a contribution to the restoration of fisheries stock and an increase of recruitment and fishing opportunities in a stock enhancement program. As an example, the release of just 500,000 6-cm red snapper yearly would permit the allowable landings by Mississippi recreational fishermen to double over 2012 recorded landings. Production of red snapper at 500,000 released fish per year is readily achieved by present day GCRL facilities. The aquaculture technologies resulting from the project will allow development of industries producing these species for the food market and creating new jobs on the Gulf coast. The project will also investigate the feasibility of culturing new emerging species (e.g. triploid, gilthead groupers). The technologies will be made available to private entities investing in Marine Aquaculture and the center will support the development of industries through continued research, training and consulting.</p> <p>Location (City, County): Ocean Springs, Jackson County Infrastructure cost (# years): None Annual Operation & Maintenance Cost (# years): \$5,000,000/yr (10 years)</p> <p>How will this leverage with other RESTORE priority areas or non-RESTORE funds? The project builds on an existing partnership between USM and MDMR, partially funded by MDMR, to research stock enhancement of marine species. Stock enhancement will contribute to rebuild fisheries stock and will therefore be synergistic with efforts to restore recreational and commercial fisheries.</p> <p>Information relevant to Economic Development (e.g., new construction, new employment opportunities, workforce development and training, etc.): The aquaculture technologies that will be developed will be made available to initiate industries on the Gulf coast producing red snapper, spotted seatrout, or other emerging species resulting in the creation of new jobs. The center will support the development of these industries by providing consulting and training of individuals engaging in marine Aquaculture. In addition, these releases can directly increase the allowable landings for the recreational fishery with concurrent significant economic effects within the tourism and fishing sectors of the coastal economy.</p>	Jackson	Yes	No		Yes	Yes	Yes	No	No	No	\$	50,000,000.00	\$	-
Eco Restoration	1848	5/28/2014	Gulf of Mexico tuna aquaculture program	<p>Brief description of activities: Tuna are among the most valuable fishery species in the world and are subjected to heavy fishing pressure. In fact the Atlantic bluefin tuna stocks are severely overfished and stocks are declining at an alarming rate. The Gulf of Mexico is one of only two spawning areas for Atlantic bluefin tuna and the BP oil spill coincided in time and space with their spawning and larval development on the breeding grounds. The development of aquaculture of tuna will significantly contribute to relieving fishing pressure on wild stocks and can contribute to rebuilding stocks through supplementation. Presently, tuna aquaculture is limited to the fattening of wild caught juveniles in cages. The constraints to development of aquaculture of tuna are a lack of captive broodstock spawning and larval rearing. The Gulf of Mexico Tuna aquaculture program will develop the facilities and technology for the captive reproduction and spawning of yellowfin and bluefin tuna. Captive spawning yellowfin tuna have been successfully established in one facility on the Pacific Coast of Panama. We will transfer their methods to the Cochran Marine Aquaculture Center. Captive broodstock will be developed and work on the production of juvenile tuna for culture and stock enhancement will ensue. Subsequent to development of a captive population of yellowfin tuna for broodstock development, we will develop a captive population of bluefin tuna and initiate research on larval rearing that will culminate in the production of juveniles for release into the wild.</p> <p>Location (City, County): Headquartered at GCRL in Ocean Springs (Jackson County) with participants in all five Gulf states. Infrastructure cost (# years): \$5 million over 2 yrs Annual Operation & Maintenance Cost (# years): \$2.5 million/yr (10 yrs)</p> <p>How will this leverage with other RESTORE priority areas or non-RESTORE funds? The program will incorporate the expertise and facilities of the Gulf Coast Research Lab to develop aquaculture for tuna. The program will provide for economic development through development and expansion of marine aquaculture in coastal Mississippi.</p> <p>Information relevant to Economic Development (e.g., new construction, new employment opportunities, workforce development and training, etc.): A new tuna broodstock facility will require construction and materials. Active hatcheries, research programs, and enhancement activities will add jobs to the economy and facilitate the development of a skilled workforce.</p>	Jackson	Yes	Yes	1500%	Yes	Yes	Yes	No	No	No	\$	30,000,000.00	\$	-
Eco Restoration	1850	5/28/2014	Improving fish stock assessment and management in the Northern Gulf of Mexico using food web dynamics	<p>Brief description of activities: In the assessment and management of fish and invertebrate resources in the Gulf of Mexico (GOM), a major issue to stakeholders is how the surplus production of stocks should be allocated. In recent years, the priorities of managers have shifted to an ecosystem-based paradigm. In addition to allocating portions of biomass to the recreational and commercial sectors, decisions must be made about how to allocate fish to ensure ecosystem function. It is only with an increased knowledge of the ecological roles of predators and prey populations, that managers can ensure vibrant, economically sustainable fisheries, as well as promote ecosystem resilience. The goal of this project is to collect and analyze the diet compositions of fish resources throughout the northern GOM. We will partner with GOM states' resources agencies and expand the capacity of Mississippi's fish sample program. The objectives of this project are to expand and explicitly implement ecosystem-based fishery management in the GOM by: 1.) Describing the productivity dynamics in the northern GOM from zooplankton to the highest trophic levels of fish species using isotopic, fatty acid, and stomach content analysis; 2.) Evaluating the spatial and temporal patterns in diet among the multi-species fish community in the GOM; 3.) Providing a comprehensive understanding of the natural resources used by managed and incidentally caught fish stocks; and 4.) Directly implementing this information into stock assessment and management policy by communicating the results of the studies to industry and NGO stakeholders.</p> <p>Location (City, County): Ocean Springs, Jackson county Infrastructure cost (# years): None Annual Operation & Maintenance Cost (# years): \$606,933 per year for 6 years</p> <p>How will this leverage with other RESTORE priority areas or non-RESTORE funds? The proposed research project fulfills multiple resource foci by expanding fishery monitoring, building local expertise, creating partnerships, implementing ecosystem-based management, and furthering the understanding of community and ecosystem ecology.</p> <p>Information relevant to Economic Development (e.g., new construction, new employment opportunities, workforce development and training, etc.): The project will train graduate students and provide information to managers and decision makers for long term planning.</p>	Jackson	Yes	No		No	Yes	Yes	No	No	No	\$	3,641,598.00	\$	-

Eco Restoration	1852	6/3/2014	Establishment of an effective biomonitoring program to assess and protect coastal fisheries	Brief description of activities: Rapid and accurate assessment of the health status of coastal fishes is a vital component of fisheries management, environmental monitoring, and eco-restoration efforts. Many anthropogenic contaminants from sewage outfall, coastal runoff and accidental release events accumulate in estuarine and marine sediments, leading to increased exposure of sediment-associated species to both higher doses and longer durations than pelagic or planktonic species. Benthic fish species are reliable indicators of overall ecosystem health, and function as sentinel organisms in the event of unanticipated release events. We propose to establish a biomonitoring program that will examine key indicators of toxic and endocrine-disrupting contaminant exposure in two representative benthic species: southern flounder and Atlantic stingray. The Toxicology and Molecular Physiology Laboratories at GCR are uniquely qualified to monitor validated indicators of exposure, i.e. general stress (immunocompetence, toxin and heavy metal exposure (liver histology, expression of contaminant-induced genes cyp1a and mt), and endocrine disruption (ethinylestradiol, expression of induced genes cyp19 and vgl). Fish will be collected monthly at three stations selected to monitor Biloxi Bay, Davis Bayou and Pascagoula Bay. The fish will be assessed for evidence of anthropogenic impacts using the bioindicators listed above. Consistent monitoring of these species at the same stations over time will serve to protect and maintain healthy coastal ecosystems by: 1) Determining the natural spatial and temporal variability among exposure indicators in GCR sentinel species to aid in management decisions; 2) Establishing unimpacted baseline values to facilitate rapid analysis of impacts from future release events such as Deepwater Horizon; 3) Rapidly identifying areas that are transiently or seasonally impacted by anthropogenic impacts; and 4) Providing a mechanism for identifying unreported or unknown release events. Location (City, County): Ocean Springs, Jackson County Infrastructure cost (\$ year): None Annual Operation & Maintenance Cost (\$ year): \$336,000/year (5 years) How will this leverage with other RESTORE priority areas or non-RESTORE funds? This project will leverage several additional RESTORE and GoCoast priority areas by providing data that are directly applicable to seafood quality, tourism (recreational fishing), fisheries management, and healthy water resources. Data and outcomes from this program will be used to support proposals for continued funding beyond RESTORE support including federal sources, e.g. NSF IER. Information relevant to Economic Development (e.g., new construction, new employment opportunities, workforce development and training, etc.): This project will employ and train highly technical laboratory staff, increasing local resources and technical expertise in the state of Mississippi.	Jackson	Yes	No			No	Yes	Yes	No	No	No		\$	1,680,000.00	\$	-	
Eco Restoration	1853	6/3/2014	Gulf of Mexico large pelagic fishes tracking program	Brief description of activities: Large pelagic fish species, such as blue marlin, sailfin, bluefin tuna, and yellowfin tuna, inhabit offshore waters of the Gulf of Mexico and often undertake extensive migrations to accommodate various life-history requirements, crossing multiple management jurisdictional boundaries in the process. These species are of significant ecological and economic importance, yet management measures for sustainability of their stocks are often insufficient due to the lack of scientific data, including habitat use and migratory trends. The proposed program would use satellite tag technology as a viable scientific approach for the assessment of habitat preferences and movement patterns of large pelagic fishes, thereby enabling the integration of these data with species-specific biological factors. Use of satellite tags will aid in better defining management jurisdictions specific to each species and will provide a baseline for assessing future episodic events in the marine environment, such as deepwater drilling accidents, that may impact these stocks. Location (City, County): Ocean Springs, Jackson County Infrastructure cost (\$ year): \$200,000 annually for 10 years Annual Operation & Maintenance Cost (\$ year): \$475,000 annually for 10 years How will this leverage with other RESTORE priority areas or non-RESTORE funds? The proposed program addresses multiple RESTORE and GoCoast key focus areas, including Eco-Restoration, Seafood, and Research & Education, and pertains to specific priority items for: Seafood Research; Fisheries; Ecosystem-based Management; and Comprehensive Observation, Monitoring and Mapping. Information relevant to Economic Development (e.g., new construction, new employment opportunities, workforce development and training, etc.): Informed management of natural resources will promote sustainable seafood harvest and production and recreational fishing activities and subsequently benefit associated tourism.	Jackson	Yes	Yes	50000	No	Yes	Yes	No	No	No		\$	7,250,000.00	\$	-		
Eco Restoration	1854	6/3/2014	Quantitative fisheries assessment program	Brief description of activities: Proper fisheries management relies on quantitative assessments of exploited stocks to safeguard against overfishing and depletion of fishery resources. Maintaining the long-term productivity of fished stocks ensures a vibrant and sustainable economic base. Quantitative assessments inform management decisions to restore overfished or otherwise impacted stocks to sustainable levels, thereby creating exploitable production levels for commercial and recreational user groups. Traditional management has relied on single-species assessments utilizing data obtained from the various fishing sectors along with independently collected scientific data for target species. There is growing interest in the implementation of ecosystem-based assessments, which consider, among other things, trophic relationships, competitive interactions and environmental stressors and drivers in assessing the status of individual species and associated ecological components. This proposed program will support a combination of traditional single-species assessments and the development of ecosystem-based models for highly valued stocks, such as spotted seatrout, red drum, blue crab, eastern oyster and Gulf menhaden. The program will also identify and address data gaps and deficiencies in current sampling programs so that data inputs are readily available for model runs. The resulting assessments and management recommendations will provide a science-based foundation for the proper and continued management of Mississippi and associated regional fisheries to optimize the economic benefits of those resources. Location (City, County): Ocean Springs, Jackson County Infrastructure cost (\$ year): None Annual Operation & Maintenance Cost (\$ year): \$215,000 annually for 10 years How will this leverage with other RESTORE priority areas or non-RESTORE funds? The proposed program addresses multiple RESTORE and GoCoast key focus areas, including Eco-Restoration, Seafood, and Research & Education, and pertains to specific priority items for: Seafood Research; Fisheries; Ecosystem-based Management; and Comprehensive Observation, Monitoring and Mapping. Information relevant to Economic Development (e.g., new construction, new employment opportunities, workforce development and training, etc.): The project will lead to improved management of the State's natural resources and thereby promote enhanced seafood harvest and production, expanded recreational fishing activities, and associated tourism.	Jackson	Yes	No		No	Yes	Yes	No	No	No		\$	2,150,000.00	\$	-		
Eco Restoration	1856	6/3/2014	Completion of Shelf and Slope Experimental Taphonomy Initiative (SSETI)	Brief description of activities: SSETI is a long-term experiment designed to evaluate the fate of carbonate on the outer shelf and upper slope of the Gulf of Mexico. These regions include hardgrounds and Lophelia reefs of the type impacted by the BP oil spill. The program is unique in that the experiments have been in place for 20 years, making this the longest running experiment of its kind by more than 15 years. The last retrievals were made in 2006 after 13 years on bottom time. The program including recovery and analysis can be completed in two years time. SSETI is the single most important dataset monitoring long-term processes of carbonate destruction and preservation over a wide range of shelf and slope habitats. Results have direct implications for understanding the influence of ocean acidification, understanding the processes that result in the creation and maintenance of hardgrounds, and understanding the process of burial and carbonate preservation that provides the single most important sink for atmospheric CO2. Among SSETI sites are the most sensitive deepwater communities in the Gulf: mussel, clam, and tubeworm sites at petroleum seeps and Lophelia reefs. Recovery requires the deployment of a submersible or ROV. These technologies are available. Data analytical methods are well-described in a series of papers presenting the status of SSETI after 2, 8, and 13 years. Location (City, County): Ocean Springs, Jackson, GCR Halstead and Cedar Point Campuses Infrastructure cost (\$ year): None Annual Operation & Maintenance Cost (\$ year): \$1,500,000 over 3 years. No long-term funding is required: the project can be completed in 3 years. How will this leverage with other RESTORE priority areas or non-RESTORE funds? The project will influence a range of RESTORE programs targeting the outer shelf and upper slope by providing a long term dataset that can underpin a range of research programs pertinent to restoration and management of deepwater petroleum-rich, hardground, and soft bottom habitats. Because of its application in carbonate budget modeling by being the longest running taphonomic experiment in history and the only one with concurrent detailed geochemical data, the project will provide invaluable data for any project dependent upon carbonate production (e.g., oyster reef restoration, estuarine management strategy evaluations etc see an early section so named). Information relevant to Economic Development (e.g., new construction, new employment opportunities, workforce development and training, etc.): The project will support a number of graduate students at GCR for a period of three years.	Jackson	Yes	No		No	Yes	Yes	No	No	No		\$	1,500,000.00	\$	-		
Eco Restoration	1857	6/3/2014	Petroleum impacts on long-lived deep-water coral and gorgonian ecosystems: The role of seafloor carbonate in deep habitat formation and resilience	Brief description of activities: With the exception of isolated outcrops of hydrocarbon, coral communities on the continental slope depend upon exposure of authentic carbonate for settlement. We will investigate the development of authigenic carbonate hardgrounds consistent with the stages in the evolution of the coral hardground community and representative of recent anthropogenic influence. These include (1) the formation of hardgrounds by natural petroleum seepage; (2) the development of habitat islands at the sediment-water interface by examining a gradient from reef affected by spilled petroleum/dispersant (Macondo MC 252 in path of plume) to reefs upstream of the plume at MC-252; and (3) natural petroleum seeps at early stages of development (GC-185) and at waning stages of seepage (GC-234 & Vioska Knoll B26). Objective 1: Persistence and incorporation of petroleum/dispersant within hardground and skeletal carbonate: We will compare the framework of the hardground and the skeletal debris field from petroleum/dispersant affected reefs to those unaffected and to carbonate from natural petroleum seeps with respect to the retention of petroleum and dispersant within the hardgrounds and skeletal material using HPLC, and trace element analyses. Objective 2: Document the development of carbonate hardgrounds from early formation at methane/hydrocarbon seeps, through stabilization as coral-community habitat, and finally degradation, burial, and loss. We analyze young authigenic carbonates from natural petroleum seeps as well as carbonates from extinct seeps that serve as habitat for coral communities. Data will include age, composition, porosity, localized seep activity, trace elements, attached coral framework, encrusting epifauna, and response to petroleum/dispersant. Objective 3: Assess the role of local sediment pore-water geochemistry in promoting or prohibiting the development and maintenance of carbonate at the sediment-water interface: We will examine the geochemical milieu to establish whether the local sediments promote precipitation or dissolution of carbonates a) at natural petroleum seeps, b) after seepage stops (and the time when coral communities show), and c) after exposure to petroleum/dispersant. Objective 4: Development of the carbonate substrates/deep reef habitat model: We will adapt our reef carbonate budget model by parameterizing it for the stages of hardground development studied and use this model to a) examine the interplay of carbonate production and loss over a range of present-day and expected future environmental and biological conditions and b) develop from this an improved basis for managing these deepwater habitats. Location (City, County): Ocean Springs, Jackson, GCR Halstead and Cedar Point Campuses Infrastructure cost (\$ year): None Annual Operation & Maintenance Cost (\$ year): \$1,500,000 over 3 years. How will this leverage with other RESTORE priority areas or non-RESTORE funds? The project will influence RESTORE programs targeting the shelf and slope by providing an important dataset and modeling capability for one of the most sensitive of the deepwater communities impacted by the BP oil spill. Information relevant to Economic Development (e.g., new construction, new employment opportunities, workforce development and training, etc.): The project will support a number of graduate students at GCR for a period of three years.	Jackson	Yes	No		No	Yes	No	No	No	No		\$	1,500,000.00	\$	-		

Eco Restoration	1858	6/3/2014	Deep-sea crab population dynamics in the Gulf of Mexico: larval dispersal and genetic connectivity between northcentral and eastern Gulf populations of <i>Chaceon</i>	Brief description of activities: Understanding the processes that determine regional biogeography, population connectivity and species recovery following catastrophic events is crucial given the increasing number of anthropogenic activities, including resource extraction, that threaten deep-sea ecosystems. Central to identifying strategic information for management and restoration is knowledge of genetic connectivity, larval transport mechanisms, probable source populations, location of spawning populations, and natural historical changes in population size. The large variety of interconnected mechanisms that promote or impede the genetic connectivity of deep-sea species via dispersal (and the long-term maintenance of species or the subsequent divergence of populations leading to speciation) are key unknowns to understanding the fundamental evolutionary processes that structure both the diversity and biogeography of deep-sea fauna. Fortunately, the net results of these ecological interactions are represented in the patterns of genetic connectivity of the constituent species. We are targeting the red crab (<i>Chaceon quinquedens</i>) and the golden crab (<i>Chaceon ferrerii</i>) for study as ecological, chemical, and biological data are available for Gulf of Mexico populations prior to the Deepwater Horizon oil spill. Assessment of population recovery in the Gulf of Mexico via population genetic connectivity will provide fundamental new insights into the genetic, taxonomic, ecological, and evolutionary aspects of deep-sea species in the Gulf of Mexico. Location (City, County): Ocean Springs, Jackson County Infrastructure cost (\$ years): None; Ship time included in yearly cost Annual Operation & Maintenance Cost (\$ years): 3 year project; \$1 million/year How will this leverage with other RESTORE priority areas or non-RESTORE funds? This project directly addresses research and education objectives concerned with population genetics and connectivity, eco-system ecology and management, and fishery assessments as Chaceon species are harvested in the GOM and along the Atlantic Coast. Partnership with the Woods Hole Oceanographic Institution and with the Florida Marine Research Institute will provide needed expertise and access to existing biological and fishery data, respectively. Information relevant to Economic Development (e.g., new construction, new employment opportunities, workforce development and training, etc.): The study will provide employment opportunities for individuals with scientific and technical backgrounds.	Jackson	Yes	No	No	No	Yes	Yes	No	No	No	\$ 3,000,000.00	\$ -	
Eco Restoration	1859	1/1/1900	Genetic monitoring and repository of genetic resources for important Gulf fish species	Brief description of activities: Efforts to assess the effects of environmental stressors such as the Deepwater Horizon oil spill on populations of exploited fishes are limited by the absence of baseline reference data on affected fisheries stocks. In particular effects of such stressors on genetic diversity and population structure are especially difficult to document because available data for most marine species are insufficient in terms of genomic coverage and temporal and spatial sampling. In this project, selected species of economic importance and differing in their life history and habitat use (coastal/estuarine dependent, reef associated, pelagic) will be surveyed in the Gulf of Mexico and regionally to establish a robust database of genetic resources and temporal and spatial patterns of genetic variation. The database will be developed and maintained over the long term to allow studying comprehensively genetic change induced by environmental stressors on local populations if/when they occur. Tissue and DNA databases will be created and genetic characterization will be conducted over a period of 10 years to identify patterns of genetic variation. The data will be made available for assessment of demographic effects on populations exploited by Mississippi fisheries, and to assist in the identification of appropriate genetic resources for stock enhancement and restoration programs when they are needed. For species already cultured for stock enhancement or food production, a repository of genetic resources will be initiated consisting of genetically characterized germplasm. The repository will be made available for aquaculture-based stock enhancement and domestication programs. Location (City, County): Ocean Springs, Jackson County Infrastructure cost (\$ years): None Annual Operation & Maintenance Cost (\$ years): \$1,200,000/yr (10 years) How will this leverage with other RESTORE priority areas or non-RESTORE funds? The project will contribute to the assessment and rebuilding of fisheries stocks and will therefore be synergistic with efforts to restore recreational and commercial fisheries. Information relevant to Economic Development (e.g., new construction, new employment opportunities, workforce development and training, etc.): The database developed during the project will promote sustainable management of exploited resources. The project will also support aquaculture development both for stock enhancement/restoration and for the food market.	Jackson	Yes	No	No	No	Yes	Yes	No	No	No	\$ 12,000,000.00	\$ -	
Eco Restoration	1860	6/3/2014	Implementation of DyPoGen (Dynamic Population Genetics Engine) to identify significant impacts of resource management options on finfish and shellfish stock connectivity, genetic selection, and genotypic diversity	Brief description of activities: A gene-based population dynamics model, DyPoGen (Dynamic Population Genetics Engine) has been developed with funding from the NSF Biocomplexity and Ecology of Infectious Diseases program. This model is configured to simulate population dynamics of any marine species. The model simulates a population composed of multiple cohorts, each composed of multiple individuals. The age, sex, and genotype of each individual are independently simulated. The genetic structure of each animal is defined in terms of its chromosomal complement, each chromosome bearing a series of genes, each with a series of alleles. This permits the expressed phenotype to be derived from specified genotypes and subsequently to be selected through the normal course of population dynamics. The most recent implementation permits simulations of a series of populations within a metapopulation using larval (and hence gene) transfers based on transfer coefficients derived from a coupled larval-hydrodynamic model. A carbonate budget model is also coupled to DyPoGen and responds to the simulated population dynamics ultimately responsive to population genotype. This module is pertinent to species producing carbonate such as oysters and clams. DyPoGen permits examination of the influence of population genotypes, the development of disease resistance in diseased populations, and the influence of environmental change on population allele frequency and diversity. Of note, amenable to this model are questions related to the influence of fishing on maturity and growth rate of stocks, the influence of disease on oyster populations and carbonate production to sustain habitat, and the influence of freshwater inflow on genetic selection for adaptation to low salinity. This project can be activated to support any genetic analysis or management strategy evaluation where gene-based data are obtained or where issues of genetic bottlenecks or the influence of changes in population connectivity are posed. Location (City, County): Ocean Springs, Jackson, GCR, Hattiesburg and Cedar Point Campuses Infrastructure cost (\$ years): None Annual Operation & Maintenance Cost (\$ years): \$150,000 per year; period is flexible according to need. How will this leverage with other RESTORE priority areas or non-RESTORE funds? The project will influence a range of RESTORE programs targeting the fisheries, ecosystem health, marine diseases, and climate change. Information relevant to Economic Development (e.g., new construction, new employment opportunities, workforce development and training, etc.): The project will support a number of graduate students at GCR for the period of its implementation. Depending on implementation goals, the project will support sustainable management of marine resources (e.g., fish, oysters), the development of management measures to mitigate disease, and optimal management of freshwater inflow to limit fresher mortalities. Each of these has direct economic consequences for the Gulf coast. 4ef	Jackson	Yes	No	No	No	Yes	Yes	No	No	No	\$ 150,000.00	\$ -	
Eco Restoration	1861	6/3/2014	Monitoring the rat lungworm	Brief description of activities: The primary goal of this project is to monitor the invasive rat lungworm (<i>Angiostrongylus cantonensis</i>) in coastal Mississippi. The rat lungworm has a complicated life cycle in which the nematode normally develops in the lungs of rodents, especially the Norway rat. It has a severe human health impact. The larval infective stage occurs in terrestrial or aquatic mollusks, as well as in fishes, crustaceans, and other invertebrates. This species initially introduced by rats escaping from ships in New Orleans in the early 1980s is known to have spread from the Mississippi River levee and killed zoo primates as well as horses farther upriver. Infections can occur in fresh and marine waters as well as terrestrial habitats, in aquaculture ponds and in imported ornamental fishes and seafood products. In humans, the worm infects the brain rather than the lungs and causes neurological pathology and occasionally death. The nematode is probably present in coastal Mississippi, and its spread could be further exacerbated by the invasion of the parasite with Centers for Disease Control and Prevention (CDC) snails from the Gulf of Mexico. We have already discussed the invasion of the parasite with Centers for Disease Control and Prevention (CDC) snails from the Gulf of Mexico in Atlanta and will validate and use their molecular tools presently being developed. The project will analyze, using quantitative polymerase chain reaction (qPCR), snails from the three Mississippi coastal counties. The snails will be collected seasonally, especially focusing near areas with the presence of cargo and other ships plus the Norway rat. Where infections are found, fishes and shrimps that may have been in contact with the hosts will be examined for the larval infective to humans. We can then use these data to see if specific habitats are more susceptible to invasion and determine if remote sensing (offered to us by MSU) can detect these areas. The purpose of this project is not to frighten people from eating undercooked seafood products or handling mollusks but to determine the presence and intensity of infection so that public risk can be determined, evaluated, and followed. Continuing results will be made available to interested parties such as CDC, NOAA, USFWS, MDEQ, MDMR, and Public Health agencies. An attempt will be made to determine how to reduce or eliminate local infections and to inhibit the spread of infective agents into the Mississippi area. Location (City, County): GCR, field sites in Jackson, Harrison and Hancock Counties Infrastructure cost (\$ years): None Annual Operation & Maintenance Cost (\$ years): \$230,000 per year for 5 years How will this leverage with other RESTORE priority areas or non-RESTORE funds? This project would interact well with funds including RESTORE 1603(b), RESTORE 1603(c), NFWF natural resource and environmental restoration projects, BP Early Restoration, and NRDA Restoration. This project will address the key RESTORE priority areas of eco-restoration and mitigation of impacts caused by the invasive pathogen. Information relevant to Economic Development (e.g., new construction, new employment opportunities, workforce development and training, etc.): The project will require hiring people capable of collecting potential hosts, helping conduct molecular analyses, and analyzing public health risk. If infections are common, we will train public health officials regarding infections and results from our monitoring.	Harrison, Jackson, Hancock	Yes	No	No	No	Yes	Yes	No	No	No	\$ 1,150,000.00	\$ -	
Eco Restoration	1862	6/3/2014	Monitoring Dermis in Mississippi oysters	Brief description of activities: We will seasonally monitor oysters in Mississippi for "Dermis." Although both Jackson and Hancock Counties in Mississippi have oyster reefs that have been commercially harvested, those in Jackson County have been unproductive. We hypothesize that fatal infections by the protist parasite <i>Perkinsus marinus</i> (commonly referred to as <i>DEADermis</i>) in young oyster spat play a pivotal role in this lack of success, as part of a complex interplay of salinity, temperature, nutrients, predators, symbionts, and other stressors. We will test for this problem as well as provide data for ongoing oyster management by monitoring for the agent and conducting additional research. Dermis is an infectious agent in the common commercial eastern oyster (<i>Crassostrea virginica</i>) in Mississippi that is known to kill or lessen the quality of the oyster product, but its role in early stages of oyster development is relatively little known. We propose to collect oysters seasonally with cooperation of DMR and evaluate the prevalence and intensity of Dermis infection in young spat, juvenile, and adult specimens from different Jackson County locations and compare them with infections in monitored Hancock County reefs. We will use quantitative polymerase chain reaction (qPCR) that detects precise levels of the pathogen, even at initial stages of infection. We will complement the field monitoring with laboratory and field experiments with laboratory-reared spat and wild oysters. We have over 40 years experience working with oyster diseases and symbionts, including conducting Dermis culture assays for DMR and other agencies. In addition to publishing our results, we will incorporate monitoring results to Oyster Sentinel (www.oystersentinel.org), a Webcast/Dermis in the eastern oyster as an indicator of environmental health in the Gulf of Mexico from Texas to Florida. Results from this study will aid Eco-Restoration management for oyster reef recovery, will inform decision-making agencies involved in reef management as well as replenishing failed reefs by relaying oysters from other reefs, recommending addition of freshwater input, and other strategies. Location (City, County): GCR, with field sites in Jackson and Hancock County Infrastructure cost (\$ years): None Annual Operation & Maintenance Cost (\$ years): \$225,000/year for 5 years How will this leverage with other RESTORE priority areas or non-RESTORE funds? Successful Eco-Restoration of living coastal and marine resources requires research to understand and monitor the health of its major species, for seafood resources, this is particularly important. This project would fit objectives included in RESTORE 1603(b), RESTORE 1603(c), NFWF natural resource and environmental restoration projects, BP Early Restoration and NRDA Restoration. This project will address the key RESTORE priority areas of restoration and mitigation of sea-level impacts caused by stressors including pathogens. Information relevant to Economic Development (e.g., new construction, new employment opportunities, workforce development and training, etc.): In addition to providing information for management agencies, which will require training that we will provide, we will hire additional employees and students for field and laboratory work.	Jackson	Yes	No	No	No	Yes	Yes	No	No	No	\$ 1,125,000.00	\$ -	
Eco Restoration	1863	6/9/2014	Shannonhall Ecosystem Restoration, Stabilization and Sustainability Project - Living Shoreline Protection and Marsh Restoration	Hardening the Bay of Saint Louis with oyster and clams; reintroducing sea grasses along the shoreline compatible with tidal hydrology and salinity; monitoring both conservation and recovery are components of this project. By Hardening the Bay of Saint Louis with oyster and clams, water quality will be improved. Erosion as seen on slides 4 and 5 should be reduced or eliminated and monitoring stations should show anticipated accretion. In conclusion, the project restores the shoreline, restores water quality and enables monitoring for both conservation and restoration progress.	Hancock	Yes	No	No	No	Yes	Yes	No	Yes	No	\$ 740,500.00	\$ -	

Eco Restoration	1864	6/9/2014	Diamondhead Ecosystem Restoration, Stabilization and Sustainability Project - Water Quality Restoration Enhancement Project	Stream restoration, sedimentation control, ditch bank restoration, habitat restoration, natural resource and monitoring both conservation and recovery are the components of this project. Stream restoration will enhance the quality of water in adjacent waterways in addition to detention ponds and overflow discharge outfall located within the City. In conclusion, the project restores streams and drainage discharge areas to its original state with the addition of sediment traps which makes beneficial use of runoff.	Hancock	Yes	No		Yes	Yes	Yes	No	Yes	Yes		\$ 1,688,000.00	\$ -	
Eco Restoration	1865	6/9/2014	Diamondhead Ecosystem Restoration, Stabilization and Sustainability Project - Bird Estuary and Nature Trail	By accessing an elevated boardwalk the estuary becomes a living laboratory, information stations educate and monitor bird populations, nest areas and health of various wetland plants and ultimately water quality. In conclusion this project stimulates public interest and support as well as education and participation in recreation information, seafood participation and water quality.	Hancock	Yes	Yes	8000%	Yes	Yes	Yes	No	Yes	Yes		\$ 5,720,500.00	\$ -	
Eco Restoration	1866	6/9/2014	Diamondhead Ecosystem Restoration, Stabilization and Sustainability Project - Marine Education and Recreation Restoration	This project consists of a marine education center, a 9 mile kayak route and a 3 mile hiking and biking trail that will provide marine education and restore nature recreation. Identifies cypress, tupelo gum, fresh water, brackish water, saline marsh, environmental information and monitoring stations along the 9 mile route. In conclusion this project stimulates public interest and support as well as education and participation in recreation information, seafood participation and water quality.	Hancock	Yes	Yes	4000%	Yes	Yes	Yes	No	Yes	Yes		\$ 1,370,500.00	\$ -	
Eco Restoration	1867	6/9/2014	Diamondhead Ecosystem Restoration, Stabilization and Sustainability Project	Stream restoration, sedimentation control, ditch bank restoration, habitat restoration, natural resource and monitoring conservation and recovery are the components of this project a byproduct that makes beneficial use of trapped sediment also allows public access. By accessing an elevated boardwalk the estuary becomes a living laboratory, information stations educate and monitor bird populations, nest areas and health of various wetland plants and ultimately water quality. By hardening the Bay of Saint Louis with oyster and clams water quality is improved, sea grasses will be reintroduced and erosion as seen in slides 4 and 5 should be reduced or eliminated and monitoring stations should show anticipated accretion. This project consists of multiple activities that stimulate public interest and support as well as education and participation in recreation restoration, seafood production and water quality. In conclusion, the project restores streams and drainage to its original state with the addition of sediment traps which makes beneficial use of urbanized run off. The project also has build in monitoring stations that benefit growth and the City supports and embraces this project.	Hancock	Yes	Yes	8000%	Yes	Yes	Yes	No	Yes	Yes		\$ 9,515,500.00	\$ -	
Eco Restoration	1872	6/12/2014	Jackson Marsh, Grand Bayou and the Adjacent Gulf - Headwater Hydrologic Restoration	This project will restore the natural hydrology of streams, bayous and drainages flowing into the Gulf through Jackson Marsh and Grand Bayou adjacent to Buccaneer State Park in Hancock County Mississippi. The Deepwater Horizon oil spill physically erodes and near coastal areas. Hydrologic restoration is a prerequisite for all twelve (12) of the programmatic alternatives listed in the NRDA Draft Phase III Early Restoration Plan and Draft Early Restoration Programmatic EIS (Dec. 2013). A watershed approach to hydrologic restoration will directly benefit impacted areas and terrestrial, amphibious and aquatic wildlife species by restoring ecosystem connectivity to create migratory corridors in conjunction with three proposed downstream restoration projects; 1) Restoration of Buccaneer State Park, 2) Grand Bayou Ecological Restoration (Project 1367), and 3) Buccaneer State Park Two-Toned Restoration (Project 1813). This project has two coordinated approaches to restore natural hydrology in approximately 2,734 total acres. First a mainly structural approach will identify and implement cost effective methods to better incorporate stormwater (volume and timing) into Jackson Marsh/Grand Bayou from the approximately 1,488 acres of watershed covered by Wavelands stormwater infrastructure (Map 1). This would include redesigning and retrofitting some stormwater infrastructure to adapt Green Infrastructure tools and techniques to the maximum extent practicable. A collaborative approach will be used to evaluate rehabilitating and expanding Idlewood Pond and possibly adding a new retention pond on City property in Jackson Marsh headwaters (Map 2). Secondly, trash removal, denucking and channel rehabilitation together with natural, low impact approaches will be used on the roughly 1,236 acres west of Jackson Marsh (432 acres) and Grand Bayou (84 acres) including the Mud Bayou watershed (775 acres) (Map 3). This project encompasses all watersheds draining into the Gulf behind the Living Shoreline proposed in Project 1813. Also, Project 1367 addresses restoration of Grand Bayou (175 acres), Jackson Marsh (130 acres) and a portion of Mud Bayou (90 acres). All project elements would be designed to restore flows to maximize ecosystem services and create riparian and aquatic wildlife migration corridors from upland to coastal habitats.	Hancock	Yes	Yes	2000%	No	No	No	No	No	No		\$ 1,750,000.00	\$ -	
Eco Restoration	1873	6/17/2014	Land Acquisition	Land Acquisition consists of 1,255 acres located in George County, Mississippi and Mobile County, Alabama. It has 1000 acres, more or less, with planted pines, 20 years old and not thinned. The balance is hardwood timber on both sides of the Escapaway River. No oil or gas minerals are available. Asking sum is \$2,700 per acre subject to prior sale. Other tracts are also available in the area along the Mississippi Gulf Coast.	George, Mobile	Yes	Yes		No	No	No	No	No		\$ 3,988,500.00	\$ -		
Eco Restoration	1874	6/21/2014	COASTAL WATER GUARDIANS (an Education, Intern & Apprenticeship project)	This project involves education, research and internship opportunities for coastal high school, college and university scholars. For those enrolled in marine education programs, this would incorporate "hands on" opportunities. During the planning process, meetings will be held with coastal high schools and institutions of higher learning along the coast to determine how to incorporate the project in curriculum and to gain project approval from state and local educational authorities. The proposal includes Harrison, Hancock and Jackson counties. The project provides workforce development opportunities for low-income participants through apprenticeships. Stipends will be provided to learn the skills necessary to play an active role in the restoration of healthy sustainability of natural habitat and coastal waters. Many coastal residents still desire maritime occupations. Unfortunately, for the past several decades, such opportunities have become rare. This program would re-ignite such prospects and create opportunities to learn skills that could enhance employment opportunities, spur economic development, and sustain families along the coast. We should, and must provide an EQUAL OPPORTUNITY restoration, one that ensures ALL RESIDENTS a chance to benefit from the experience and knowledge gained through the recovery and restoration process. If restoration is to be preserved and maintained far into the future, it is imperative that our youth and young adults be educated and prepared to assume this task. Participation can begin as early as the 9th grade for students enrolled in Marine Biology or similar classes. Students enrolled in colleges or universities with Marine Biology classes and/or majors would also be eligible. Youth and young adults are the future stewards and keepers of our land, waters and other natural resources. Summer internships will include stipends to reward student success and provide economic relief. The component will also ease the school to work transition. Upon project approval, Visions of Hope would like to commence formal planning as soon as possible and arrange meetings to initiate the partnership agreement process. The organization's overall role in this project would include, but is not limited to: COORDINATOR - arrange/coordinate meetings necessary for planning, implementation and monitoring; secure partnership agreements with the various educational and other entities; gate/maintain/disseminate statistical data OUTREACH - disseminate information regarding the project; aid in securing program participants EDUCATION - GED/ABE classes, money management classes The cost quoted below is an annual estimated projection related to Visions of Hope's planning role and basic workforce development skills only. (\$250,000). This amount could change depending on meeting requirements and related costs such as transportation, lodging, food, etc. Internship/ apprenticeship costs are also not included.	Harrison, Jackson, Hancock	Yes	No		Yes	Yes	No	No	Yes		\$ 250,000.00	\$ -		
Eco Restoration	1876	8/1/2014	The Economic Impact of Alternative Nutrient Criteria on Mississippi Communities	*Project Partner - Mississippi Farm Bureau Federation* Research Goal The overall goal of this research is to better understand how Alternative Nutrient Criteria (NCC) can impact Mississippi (MS) communities. We include agriculture, urban storm water, septic, municipal wastewater, industrial and state resource agencies as the affected sectors in these communities. For each sector, the cost of adapting to a newly proposed NCC will be estimated. For example, we propose to estimate the cost of such standards upon the agricultural sector including, but not limited to, row crops, specialty crops, poultry, and cattle. Total costs will then be aggregated across sectors and a regional and state level economic impact analyses will follow. The NCC to be examined in this study has been proposed by the MS Department of Environmental Quality (MDEQ) under the Environmental Protection Agency (EPA) directives. Where possible, we primarily follow the methodology for estimating costs per sector under uncertainty as described by the Florida Water Quality Coalition's 2010 study. Research Study Area The State of Mississippi (48,434 mi ²) has nine major river basins with approximately 86,000 miles of streams draining directly into the Mississippi Sound and the Gulf of Mexico, the Mississippi River and the Tombigbee River (Figure 1). The basins of the Pearl and Pascagoula Rivers and the Coastal Streams represent 43% of the State's area and empty directly into the Gulf of Mexico off the coast of Mississippi (Figure 1). Livestock production is the most important agricultural activity in these areas. Nutrient and bacteria from animal wastes often get into the streams resulting in different water quality problems along the inland water bodies and the coastal waters. This entire area has been ranked nationwide in the top ten and top twenty areas in need of protecting water quality from manure nutrient contaminants (Kellogg, 2000). Mississippi State University Research Team James Barnes (PI) Assistant Extension Professor, Dept. of Agricultural Economics, Mississippi State University Matthew G. Interis (Co-PI) Assistant Professor, Dept. of Agricultural Economics, Mississippi State University	All MS Counties	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes		\$ 739,478.00	\$ -	
Eco Restoration	2025	11/9/2011	Mississippi Early Resource Restoration Using Artificial Reefs	This project intends to restore and enhance existing reefs within the Mississippi Sound using crushed concrete or limestone. These reefs would be low profile. Restoration would consist of adding acreage to the existing artificial reef footprint. MDMR's Artificial Reef Bureau would be working with the non-profit group Mississippi Gulf Fishing Bank (MGFB). MGFB is made up of fishermen throughout Mississippi whose interests are in creating valuable marine habitat in Mississippi's nearshore and offshore waters.	Hancock, Harrison, Jackson	Yes	No		No	No	Yes	No	No	Yes	\$ 6,700,000.00	\$ -		
Eco Restoration	2026	11/9/2011	Early Restoration of Oyster Cutch Area in Mississippi Sound	The goal of this project is to restore approximately oyster cutch areas in the marine waters of the State of Mississippi. The state of Mississippi has approximately 12,000 acres of total cutch areas. About 9,000 acres of the oyster cutch areas can be harvested while about 3,000 acres of cutch areas are closed to harvest. This project would restore and enhance the major and minor oyster cutch areas within the marine waters of Mississippi Sound of Mississippi. This project will utilize cutch planting to improve the oyster cutch areas. Specific activities consist of the following: (1) Deploying Cutch Material: Cutch would be deployed within existing oyster cutch areas. Locations for potential cutch deployment are known based on recent surveys. (2) Monitoring: MDMR staff would regularly monitor the newly established oyster cutch areas by low collections to assess the overall health of the oyster cutch. The cost for this project is \$10,000,000 to \$12,000,000.	Hancock, Harrison	Yes	No		No	No	Yes	No	No	No	Yes	\$ 12,000,000.00	\$ -	
Eco Restoration	2027	11/9/2011	Acquisitions/Restoration at Grand Bay Nat. Esquaine Research Reserve/Nat. Wildlife Refuge	The project consists of property acquisition and/or restoration. For property acquisition only, an understanding of potential restoration options would still be required to make acquisitions strategic. There are several key tracts of land at Grand Bay NWR/NWRW that are still private holdings. If restoration is pursued at Grand Bay, then it would be important for these areas to be in public ownership. Cost for acquisition is estimated to range between \$3 million and \$5 million. Cost for restoration is estimated to range between \$10 million and \$20 million.	Jackson	Yes	Yes		No	No	No	No	No	Yes	\$ 25,000,000.00	\$ -		
Eco Restoration	2028	11/9/2011	Nursery for Marsh Grass Restoration	This project consists of providing funding for the full implementation of a plant nursery to allow for statewide marsh restoration. The Center for Plant Restoration and Coastal Plant Research (CPR) is located at the University of Southern Mississippi's Gulf Coast Research Laboratory in Ocean Springs. The mission of the CPR is to provide expertise and assistance for the restoration of coastal wetlands, salt marshes, beach and dune vegetation, and submerged aquatic plants including sea grasses. To that end, the University operates a 1,200 square foot state-of-the-art temperature controlled greenhouse, routinely growing over a dozen different common native marsh and beach plants. In addition, CPR has indoor and outdoor growing facilities for propagation of four important species of submerged aquatic vegetation. For large scale restoration and mitigation projects, the CPR partners with local nurseries and agency partners to provide the necessary numbers of plants. Three project scenarios are envisioned depending on restoration needs: 1. Small scale (<100,000 plants): Requires at a minimum 4,000 sq ft of heated greenhouse space and 10,000 - 20,000 sq ft of outdoor open space for final staging of plants; 2. Medium scale (100,000 to 1 million plants): Requires at a minimum 8,000 sq ft of heated greenhouse space. Additionally 0.5 - 5 acres of outdoor open space for final staging of plants; 3. Large scale (> 1 million plants): Requires at a minimum 16,000 sq ft of heated greenhouse space. Additionally 5 or more acres of outdoor open space should be available to final staging of plants. CPR anticipates that several sites will be established along the coastal counties in Mississippi, depending on the requirements of the restoration projects necessary. Some existing areas are available.	Hancock, Harrison, Jackson	Yes	No		No	No	No	No	No	No	Yes	\$ 5,000,000.00	\$ -	

Eco Restoration	2029	11/9/2011	Restoration of Crab Fishing	Part 1 - Derelict Removal Program: Expanded cooperative effort with crab fishermen to remove derelict crab traps (resulting from oil spill and associated fisheries closures and storms) during closed seasons for directed trap cleanup. An annual closed season for crab traps occurs during which time derelict traps may be removed and recycled. Due to storms and man-made events, inadvertent cropping of float lines by propellers and theft, an estimated 20% of active crab traps become lost in the waters of the Mississippi Sound, creating navigational hazards and affecting marine resources such as the country's only estuarine turtle, the Diamondback terrapin. Resident licensed crab fishermen can continue to be enlisted to assist in the cleanup of derelict traps. Time to Complete: 6 months Part 2 - Crab Trap TED (Turtle Excluder Device) Program: Essential terrapin habitat in Mississippi marshes is expected to be damaged as a result of the oil spill. Terrapins can become inadvertently caught in crab traps. A grass roots cooperative effort between crab fishery participants and the MDMAR could be expanded. The MDMAR is assisting in the installation of turtle excluder devices (TEDs) in crab traps of volunteer commercial and recreational crab license holders at no cost to fishermen to help deter incidental catch. Crab fishery participants would also be entitled in the monitoring of terrapin populations through cooperative research projects. Time to Complete: several years Costs depend on extent of program and degree to which volunteers are used for the trap removal.	Jackson	Yes	No					Yes	No	No	No	Yes	\$	5,000,000.00	\$	-	
Eco Restoration	2030	11/9/2011	Harbors	Creation of marsh on the western side of coast wide harbors (i.e., the lee of the longshore current).	Hancock, Harrison, Jackson	Yes	No								Yes	\$	5,000,000.00	\$	-		
Eco Restoration	2011	11/9/2011	Expanded Real-Time Hydrological Monitoring Program	This project consists of expanding the number of hydrological monitoring stations in the Mississippi Sound utilizing current real-time technology. These stations are used as a marine management tool to aid in fishery resource monitoring and recovery from both natural (hurricanes) and man-made (oil spill) disasters. Currently the Mississippi Department of Marine Resources (MDMR), cooperatively with U.S. Geological Survey (USGS), operates eight time data monitoring stations in the Mississippi Sound. A more comprehensive mosaic of stations is needed to fully monitor conditions that affect marine resource populations and their movements in Mississippi waters. Current parameters of water temperature, stage, conductivity/salinity and anticipated additions of turbidity, dissolved oxygen, pH, etc. would be transmitted continually; the data would be available on the MDMR website. Marine resources managers, fishermen, and the general public would have more instant information with which to make fishery decisions. Historical data would be used to correlate studies with fishery occurrences and environmental phenomena.	Hancock, Harrison, Jackson	Yes	No			Yes	No	No	No	No	Yes	\$	400,000.00	\$	-		
Eco Restoration	2032	11/9/2011	Gulf Islands National Seashore (GUIS): Petit Bois, Horn, Ship and Cat Islands	This project would restore a total 7,000 acres on the Gulf Islands National Seashore. Hurricane Katrina and other recent storms have overwhelmed all barrier islands in the Northern Gulf causing severe erosion, severely damaging or destroying facilities and resources, depositing massive amounts of debris, degrading habitats, and setting the stage for rampant infestation, invasive plant and animal species. The proposed project is based directly on a post-storm needs assessment prepared by GUIS science and management staff. It includes assessments of impacts to water resources at GUIS following Katrina; removing debris, and reconstructing buildings and docks on Cat Island; repairing/rehabilitating Davis Bayou Trails damaged by Katrina; determining changes to water quality/chemistry as a result of Katrina; restoring Davis Bayou Grounds damaged by Katrina; removal of trees, brush and debris on Horn Island, East Ship Island, West Ship Island, Petit Bois Island Grounds and Horn Island West cross over trail; assessment of effects of Katrina on the flora and faunadiversity of GUIS; assess effects on wildlife and I&B species; vegetative/invasive species control, etc.	Hancock, Harrison, Jackson	Yes	Yes								Yes	\$	8,209,000.00	\$	-		
Eco Restoration	2033	8/2/2011	Submerged Aquatic Vegetation Pilot	Measures designed to evaluate techniques for restoring submerged aquatic vegetation (SAV), an essential component of an estuarine system. Specifically, five acres of SAVs in the Grand Bay National Estuary Research Reserve area that were destroyed by hurricane Katrina will be restored using different techniques. The results will be used to guide and develop other SAV restoration projects.	Jackson	Yes	No								Yes	\$	-	\$	-		
Eco Restoration	2034	8/2/2011	Turkey Creek Ecosystem Restoration	Restoration of 698 acres of an undeveloped site of degraded wet pine savannah habitat. Measures required to restore hydrology and natural vegetation of the site include filling drainage ditches, road removal and controlled burn.	Harrison	Yes	No								Yes	\$	-	\$	-		
Eco Restoration	2018	8/1/2011	Franklin Creek Ecosystem Restoration	This project consists of restoration of tidal hydrology, marsh, and dunes; shoreline protection; invasive species removal; and canal filling at various locations.	Jackson	Yes	No								Yes	\$	-	\$	-		
Eco Restoration	2017	8/1/2011	Bayou Cumbert Ecosystem Restoration	This project consists of financial assistance to local seafood industry entities, affected by the Deepwater Horizon event, with the participation of environmentally sustainable working waterfronts projects through a variety of methods such as the following: Environmental planning, design, engineering, and impact statements; legal activities; public facilities upgrades or repairs such as water and sewer services, access roads, parking and boat ramp facilities; dredging and/or cleaning of harbors and expanded commercial waterfront sites; repair and/or construction of piers, jetties (breakwaters), and other important structures for both short and long term; development of environmentally sustainable working waterfronts; and other measures that would provide a basic organization for recovering seafood industry operations, making funding opportunities available to qualified applicants for the establishment of support facilities to offload and sell Gulf products directly into a public market. The intent is to consolidate, where practical, harvesting, wholesale, and retail sales and processing in safe accessible locations, to achieve a more efficient operation that will benefit all stakeholders including the harvesters, the consumers, the processors and ultimately Mississippi's marine environment.	Hancock, Harrison, Jackson	Yes	Yes								Yes	\$	4,000,000.00	\$	-		
Eco Restoration	2040	8/2/2011	Pelican Landing	Restoration of marsh.	Jackson	Yes	No							Yes	\$	3,000,000.00	\$	-			
Eco Restoration	2041	8/2/2011	Marsh Point	Creation of a marsh at Marsh Point (north side) using dredged materials.	Jackson	Yes	No							Yes	\$	1,000,000.00	\$	-			
Eco Restoration	2042	8/2/2011	Heron Bay Estates	Heron Bay Estates buyout and restoration of 800 acres.	Hancock	Yes	Yes							Yes	\$	5,000,000.00	\$	-			
Eco Restoration	2043	8/1/2011	Beckendorf Tract Restoration	This project consists of restoring 580 total acres, with 330 acres of brackish Junonia and Spartina alterniflora marsh, 100 acres of Spartina pectinata high marsh and 150 acres of coastal shrub scrub with patches of slash and mixed maritime forest and live hammocks. Prescribed fire tasks are needed to help reduce this area of invasive species and storm debris. The invasive species Chinensis would also be combated on a regular basis, by cutting and herbicides. There are also infestations of the invasive species cogongrass and torpedograss, which would also be kept under control using herbicides. Continued monitoring would be required for wild pig, nutria, phragmites, and tallow. There would be prescribed fires for up to 250 acres and 100 acres of invasive species control.	Hancock	Yes	No								Yes	\$	1,254,000.00	\$	-		
Eco Restoration	2044	8/1/2011	Admiral Island Restoration	This project consists of restoration of the tidal hydrology, marsh, and dunes; shoreline protection; invasive species removal; and canal filling at various locations.	Hancock	Yes	No								Yes	\$	-	\$	-		
Eco Restoration	2046	8/1/2011	Coastwide Beach and Dune Restoration	This project consists of the creation of a dune field (2' high, 60' wide, and 36 linear miles long), the planting of dune vegetation, and placement of sand fencing.	Hancock, Harrison, Jackson	Yes	No								Yes	\$	-	\$	-		
Eco Restoration	2047	8/1/2011	Coastal Preserve Management Needs	This project consists of updating survey data and boundary markings throughout the Coastal Preserves. Given the current size of the Coastal Preserves (17,000 acres) and the current cost of surveys on large undeveloped parcels (approx. \$50 per acre), the basic budget for this work could exceed \$2 million dollars by the time additional logistics for marine work are included. This project would re-survey and mark boundaries to federal standards. Project benefit would be a total of approximately 400,000 acres of current and incipient Coastal Preserves lands. Using an average parcel size of 200 acres, this would mean approximately 2,000,000 linear feet of boundary needs to be surveyed and marked. This would create employment opportunities for local surveying contractors by providing roughly 6,000 man-days of work or approximately one year of work for 20 to 40 employees of Mississippi small businesses (surveyors, B, etc.). Many management techniques needed for maintaining the long term health of the Coastal Preserves (such as prescribed fire) require the boundaries be well established in order to avoid unintended actions on adjoining land. For example, adjoining land in silviculture may not benefit from the same type of burning required for ecological/habitat management, and any damage, whether real or perceived, could pose a potential liability for the State.	Hancock, Harrison, Jackson	Yes	No								Yes	\$	2,250,000.00	\$	-		
Eco Restoration	2048	7/25/2011	Danier Restoration	This project will restore a total of 900 acres (500 acres marsh and 400 acres forested). The Danier property was further from Katrina's core and suffered less direct wind and tidal surge damage than many of the other Coastal Preserves. However, serious long term consequences are anticipated due to the distribution of Chinese tallow tree propagules across the site. The effort to regain control of this area throughout the site and cleanup should be gradually aided by first conducting comprehensive prescribed burning. Restoring access roads and dunes will be necessary to prevent storm down fall can be accomplished as part of the preparation for prescribed burning. There would be prescribed fires, 400 acres of invasive species control via spraying and cutting, 75 acres of reforestation, and monitoring.	Jackson	Yes	No								Yes	\$	1,190,000.00	\$	-		
Eco Restoration	2050	7/25/2011	Restoration of Buzanceau State Park	The project consists of habitat enhancements including submerged aquatic vegetation (SAV) plantings. Historically, SAV beds of <i>Ruppia maritima</i> have been documented intermittently along the adjacent coastline. SAV beds are an important nursery for many commercially important species, such as blue crabs. Since the marine environment of the State Park can be impacted by freshwater from the opening of the Bonnet Carré spillway, it would be important to utilize a multiple habitat restoration approach for this area. Also, adjacent waters have some existing oyster reefs and sand borrow areas used for local beach nourishment projects. Therefore, oyster reefs could be re-established at the park. Oyster reefs could enhance the stability of the seabed, promoting additional SAV development shoreward of the reefs. Sand renourishment and construction of low profile artificial reefs would further to habitat and fisheries enhancements.	Hancock	Yes	No				Yes	No	No	No	Yes	\$	7,000,000.00	\$	-		
Eco Restoration	2051	7/25/2011	Deer Island Restoration	This project consists of restoration of a total of 400 acres (200 marsh, 200 forested) on Deer Island. During Katrina, Deer Island lost little actual land area, but a great deal of beach, dunes and higher land. A large number of slash pine trees were killed with mortalities approaching 100% near the east end. These trees will need to be replaced to maintain soil stability and avoid even more catastrophic erosion in the future. Advanced, high yield nursery trees such as "RPMA" would be ideal for this purpose. The existing marsh creation project survived relatively well and indicates that marsh creation should be expanded to help provide additional erosion protection and estuarine habitat. Remaining natural marshes on Deer Island have some invasive species issues, primarily torpedograss. Chinese tallow trees occur throughout the site, but not as severe infestations, and appear to have been stressed by Katrina; therefore, the time to treat is now. As with most of the other Coastal Preserve Program projects, prescribed fire is an important consideration for both for ecological and financial reasons. Thus, as part of this project, there would be 20 acres of marsh creation (2 miles of beach creation/renourishment), prescribed fires, 125 acres of invasive species control via spray and cutting, and 50 acres of reforestation.	Harrison	Yes	Yes									Yes	\$	1,389,000.00	\$	-	
Eco Restoration	2052	7/25/2011	LaFrancis Camp Tennis Restoration	The project would benefit 45 acres, all open water. This "trench" (canal) may simply be the right-of-way for the underlying gas pipeline that has been progressively widened by small boat traffic and tidal flow. Regardless, it intersects two bays and has significantly reduced their flow and sediment carrying capacity, resulting in a loss of navigability. It is also likely that this canal serves as a direct conduit for storm surge into the LaFrancis/Heron Bay/Anley community. It is recommended that this channel be closed and restored to its original marsh cover. Funding is also requested so that the northernmost bayou (Campbell's Inside Bayou) be dredged to the west, if necessary, to re-establish navigation to the LaFrancis marina and associated community. The primary task will be to plug the canal at LaFrancis (northern extent), both banks of the two natural channels (Interpoint), and its terminus at the Mississippi Sound. Plug will be constructed of concrete debris, augmented with salvaged whole trees, soil and organic storm debris. This would require at least six plugs. They would be vegetated with storm resistant trees, shrubs and grasses similar to the adjoining channels. Reclaimed dredge material could then be pumped into the areas between the plugs until adequate elevation is established for planting marsh species. There would be 45 acres of marsh creation, 25 acres of invasive species control via spraying and cutting, 25 acres of reforestation, and monitoring.	Hancock	Yes	Yes									Yes	\$	13,155,000.00	\$	-	
Eco Restoration	2053	7/25/2011	Wachovia Restoration	This project would restore 2,000 acres in total (800 marsh, 200 forested, and 200 savanna). Wachovia has significant marsh debris and scour from storm surge. However, the scoured areas appear to be forming high quality open water habitat evidenced by a high level of dragon fly activity and breeding. The scours are several feet deep and would require an invasive operation to be filled and replanted. The debris consists predominantly of natural material, mostly the remains of marsh "piled up" from the scoured areas. Much of the remainder of the tract is forested savanna which has suffered wind damage in the form of downed trees and vegetation. This has increased fuel loads and complicated access across the property. This is significant because the fuel loads at Wachovia were already high. The tract is very much in need of prescribed burning, particularly areas that were planted with longleaf pine several years back. The tract is immediately south of I-10 so special considerations will be necessary to facilitate a safe effective burn. Invasive species, particularly Chinese tallow, are present site wide and will require special attention in the post-fire restoration; therefore, there would be removal of debris in preparation for the project, prescribed fires, 400 acres of invasive species control via spraying and cutting, hydrology repair, 200 acres of reforestation, and monitoring.	Hancock	Yes	No									Yes	\$	1,465,000.00	\$	-	
Eco Restoration	2054	7/25/2011	Transportation of Black Warrior River High Quality Substrate	Currently, 30 to 40 million cubic yards of dredged sand from the Black Warrior River is staged upstate. For this project, the material would be transported to the northern Gulf coast for direct use, or be staged for future use. The material is considered valuable as a stabilizing, permeability-enhancing amendment for dredged material being incorporated into both upland and marsh creation projects. This could help replace the transport of coarse grained sediments from the upper waterheds of rivers draining into the northern Gulf, which is contributing to a loss of nearshore lands and habitats which will have long term effects. This material can be combined with locally obtained dredged material to greatly increase its stability and enhance its ability to accrete. The material could also provide more ecologically and aesthetically suitable substrates for projects such as submerged aquatic vegetation or beach restoration. This material further lends itself to designing more natural drainage/permeability characteristics for constructed uplands and wetlands.	Hancock, Harrison, Jackson	Yes	No									Yes	\$	600,000,000.00	\$	-	
Eco Restoration	2055	7/25/2011	Invasive Species Program	Impact from oil associated with the Deepwater Horizon disaster may have displaced native species thereby allowing non-native or invasive species to gain a foothold. Once established these invasive species can overtake an ecosystem and displace most native species. This project would reduce/eliminate invasive species and restore the native habitat and native species.	Hancock, Harrison, Jackson	Yes	No								Yes	\$	1,000,000.00	\$	-		
Eco Restoration	2056	7/25/2011	Ecosystem Restoration of Gulf Coast Natural Areas - Mississippi Coastal Preserves	This project would result in the direct restoration of 3,622 acres of coastal habitat and enhance thousands of additional acres. It may include removal of some debris in preparation for the project. Invasive species control (hand removal, mechanical treatments, and herbicides) on 2,662 acres and prescribed fire tasks on 3,063 acres, would restore these Coastal Preserve Program (CPP) lands to a condition that will have long term effects. This material can be combined with locally obtained dredged material to greatly increase its stability and enhance its ability to accrete. The material could also provide more ecologically and aesthetically suitable substrates for projects such as submerged aquatic vegetation or beach restoration. This material further lends itself to designing more natural drainage/permeability characteristics for constructed uplands and wetlands.	Hancock, Harrison, Jackson	Yes	No									Yes	\$	7,797,440.00	\$	-	
Eco Restoration	2057	7/25/2011	Marsh and Forest Restoration at Ansley	This project consists of restoring 800 acres of marsh and 100 forested acres to recover from natural causes of the area. The roads and trails would be cleared of storm debris and foot bridges would be repaired. Approximately 100 acres of invasive species would be sprayed/controlled initially with two annual follow-up treatments. Approximately 100 acres would be reforested. Excessive mosquito ditching disrupts the hydrology and creates crevices for invasive species, so hydrology restoration would occur by plugging 5 miles of mosquito ditches. This project would benefit the hardwoods in the area that were heavily damaged by previous storms and are now threatened by a significant invasive infestation, primarily from the Chinese tallow tree. The marshes that suffered limited scouring and are threatened by invasive species would be restored, improving their integrity to weather the oil spill.	Hancock	Yes	No									Yes	\$	559,000.00	\$	-	

Eco Restoration	2068	7/25/2011	DuPont Restoration	This project would benefit 650 acres total (170 acres marsh, 480 acres forested). The site is dominated by a 20 to 40 year rough (burned vegetation). Hurricane Katrina placed many acres of debris into the marshes and forest and downed a very high percentage of hardwoods on the property. There are massive debris fields that would be cleared to permit adequate assessment. There would also be prescribed fires to aid in the assessment and access to the marsh shoreline. Debris removal from the marsh and shoreline would occur to aid in the restoration of the area. Approximately 20 acres of marsh would be restored after the clean-up, providing habitats for species affected by the oil spill. There would also be 480 acres of invasive species control via spraying and cutting. 75 acres of reforestation and monitoring.	Harrison	Yes	No										Yes	\$	3,418,000.00	\$	-	
Eco Restoration	2069	7/25/2011	Pascagoula River Marsh Restoration	This project would restore 31.5 acres of marsh at the mouth of the Pascagoula River. This marsh has experienced an explosion of exotic, invasive species due to gaps from vegetation loss and disturbances in hydrology. Two species, <i>Salvinia molesta</i> (Giant Salvinia) and <i>Sapulum sibiricum</i> (Chinese tallow), are noxious and of greatest concern. Phragmites australis (common reed) is present in dense, nearly monospecific colonies, and is becoming a greater threat to native species. The area would be treated with herbicidal and biological controls to keep the invasive species in check, as well as by cutting the Chinese tallow. Hydrologic restoration and replanting would occur along Turner tract, a 42-acre estuarine fringe swamp forest.	Jackson	Yes	No										Yes	\$	3,300,000.00	\$	-	
Eco Restoration	2060	7/25/2011	Living Shorelines Initiative	In addition to Deepwater Horizon event damage, continued loss of the intertidal zone to shoreline hardening (wetlands modifications, bulkheads, etc.) has been shown to negatively affect numbers of marine species depending on estuarine nursery grounds. These marine life stages, ranging from predation, and are almost entirely lost due to the loss of intertidal zones. The current shoreline development practices have been identified in other Gulf States. By working with developers and nearshore property owners, the Mississippi Department of Marine Resources can encourage various methods of habitat-friendly erosion barriers which do not potentially decrease critical habitat for our recreational and commercially important species. Where appropriate, various municipality projects could be co-funded as examples of how living shorelines can work to benefit a growing coastal human population as well as the marine resources that the human quality of life and economies depend upon.	Hancock, Harrison, Jackson	Yes	No										Yes	\$	555,000.00	\$	-	
Eco Restoration	2061	7/25/2011	Rehabilitation of Marine Fish Stocks	This project consists of restocking of important species of marine organisms along the Gulf Coast of Mississippi. Major marine ecosystems have been impacted and interrupted by the Deepwater Horizon event. Potential species for restocking (e.g., mullet, crab, red drum, and others as appropriate) would be integral parts of the marine ecosystems.	Hancock, Harrison, Jackson	Yes	No										Yes	\$	10,000,000.00	\$	-	
Eco Restoration	2062	7/25/2011	Mississippi Endangered and Threatened Marine Turtle Mitigation Program, Mississippi Sound	This project consists of relocating endangered and threatened marine turtles away from areas of direct impact with oil from the Deepwater Horizon event. Marine endangered and threatened turtles would be captured in the Mississippi territorial waters close due to impacts from the Deepwater Horizon event and relocated to areas that were not impacted and safe for these species to survive.	Hancock, Harrison, Jackson	Yes	No										Yes	\$	1,000,000.00	\$	-	
Eco Restoration	2063	7/25/2011	Coastal Zone Acquisition Fund	This is a fund to acquire easements or fee title to key properties for ecological restoration and management. The initial fund will purchase select conservation properties with the remainder used to establish a trust, interest-generating endowment with a protected principal. An anticipated annual interest yield could be several million dollars depending upon the initial principal invested and the overall investment risk selected by the endowment managers. No other course of action would so dramatically affect the ecological character of the Coastal Zone than the purchase of ecologically significant properties that are otherwise at high risk for development. In many cases these properties are water associated and tend to have high ecological sensitivity but are frequently attractive for development from an aesthetic standpoint. Many of these properties are at increased risk for development because they contain uplands which are not protected by any comprehensive regulatory structure. However, the long term cost of such development is likely unacceptable both in ecological terms and in terms of resiliency to storm damage. The vulnerability of developed versus natural lands to storm surge damage is tremendous as post-Katrina observations have so vividly illustrated.	Hancock, Harrison, Jackson	Yes	Yes											Yes	\$	500,000,000.00	\$	-
Eco Restoration	2064	11/9/2011	Restoration Initiatives at the INFINITY Science Center	The INFINITY Science Center provides a unique opportunity to monitor the impacts of the oil spill and educate the public about coastal wetlands and the state of recovery. INFINITY is a state-of-the-art, interactive science and interpretive center under construction in Hancock County and is a gateway to 1,400 acres of upland and wetland habitats. Through hands-on activities in the Earth gallery, as well as in the field, visitors will learn about wetlands and participate in restoring vegetation in the nearby Pearl River watershed. Nature trails to the East Pearl River, which flows into the Mississippi Sound/Gulf of Mexico, will connect with 43 miles of scenic bays in Hancock County. The INFINITY trails will provide opportunities to monitor the impact of the spill on local wetlands, native wetland bird species and wetland-dependent migratory systems.	Hancock	Yes	No										Yes	\$	10,000,000.00	\$	-	
Eco Restoration	2065	9/28/2011	Deep Seafloor Habitat Restoration	Oil products from MC252 have covered a vast area of the deep seafloor, which may have sterilized the benthic habitat. Normal sedimentation rate in this area is approx. 1 cm/yr. Assuming burrowing organisms occupy the vertical space of ~60 cm into the sediments, full habitat recovery might require 60 years of sediment deposition to isolate the oiled layer from the biota. A habitat restoration project of 25 km ² is proposed to provide vertical attachment surfaces above the oiled seafloor for occupation by endemic biota. The recommended substrate consists of a 4 m length of black iron 3-inch diameter with 12 1/2-inch holes spaced 70 cm apart. The bottom of the pipe is flared and embedded 10 inches into the sediment. The top of the pipe is capped with a 6 inch diameter X 24-inch length. At a density of 1 pipe/2,000 m ² , 25,000 pipes are fabricated, loaded onto a barge and dropped into the Gulf using GPS coordinates for the project location grid. The force of gravity drives the descending pipe into the seafloor (>1,000 mBSL), allowing approx 3 m of pipe to extend above the oiled layer. Monitoring of the deep seafloor habitat grid (plus 60,000 acres adjacent) is performed for 30 months using ROVs. In addition to the ROVs, a scientific team using remotely deployed from a research vessel, will monitor the habitat grid and collect samples for species colonization of the pipe surface and the benthos, and pipe integrity (useful life estimated at 50 yrs). cost/pipe= \$25 \$625,000 delivery dockside \$3 \$75,000 vessel transport DWH \$5 \$125,000 Total cost/pipe \$33 \$825,000 Scientific Team \$300,000 Deep Submergence ROV \$500,000 Ship Time 60 days/yr \$300,000 1 yr monitoring cost \$1,100,000 1st yr total \$1,925,000 9 yr monitoring cost \$9,900,000 1 0 yr Total Project Cost \$11,825,000 Cost/km ² = \$473,000	Gulf of Mexico	Yes	No											Yes	\$	11,825,000.00	\$	-
Eco Restoration	2066	10/24/2011	Long-Term Recovery of Gulf Shorebirds and Waterbirds	NOAA Project ID# 12413. This collaborative proposal supports three strategies that contribute to the full recovery of shorebird and coastal wetland populations impacted by the oil spill, while ensuring such gains are sustained over the long-term. Specifically, the work proposed will: 1) Create and maintain nearly 28,000 acres of seasonal freshwater wetland habitat that completely address the habitat conservation 'gaps' for five important shorebird species, as well as provide demonstrable benefits to an additional 41 species of shorebirds, waterbirds, and waterfowl affected by the oil spill. 2) Increase the regional breeding populations of 31 species of beach and inland nesting waterbirds and shorebirds that were directly impacted by the oil spill by 10,000-16,000 birds by improved management of critical nesting and stopover habitat along the Gulf and Atlantic coasts. 3) Ensure bird population gains are sustained through long-term stewardship of their key habitats, thereby avoiding a common shortcoming of conservation actions - that is, diminishing returns over time because of lack of resources to maintain those initial gains. The plan proposed below will ensure the long-term recovery and health of Gulf Coast shorebird and other waterbird populations affected by the Deepwater Horizon oil spill. These strategies are meant to complement, not duplicate, other activities (e.g. coastal marsh and barrier island restoration) that are likely to be undertaken by others and funded through the NOAA programs. Key partners include the National Audubon Society, U.S. Fish & Wildlife Service, Ducks Unlimited, American Bird Conservancy, Manomet, Coastal Bird Conservation/Conservancy, and Gulf Coast Bird Observatory. In 2010 and 2011, NFWF directed more than \$13 million in the Gulf region towards conservation of birds that were likely to be negatively affected by the oil spill. Those innovative investments, developed and implemented collaboratively with federal, state, and private partners, resulted in habitat enhancement, restoration, and protection; direct augmentation of affected bird populations; and increased capacity for regional recovery of imperiled species. This proposal builds directly upon those initial investments.	Gulf of Mexico	Yes	No											Yes	\$	71,900,000.00	\$	-
Eco Restoration	2067	10/21/2011	Addressing Marine Debris to Expedite Recovery along the Gulf Coast	The significant and long-term negative impacts along the Gulf Coast resulting from the Deepwater Horizon oil spill will require a suite of restoration projects. In addition to physical marsh restoration and other activities to restore resources, the entire Gulf region will significantly benefit from a targeted, sustained outreach and education campaign to improve the health of impacted resources. This suite of restoration projects, conducted as part of NOAA in the past, will reduce future injury to protected species - both marine mammals and sea turtles - and their habitats through the reduction of existing marine debris as well as the prevention of future introductions of hazards. By preventing preventable future injuries, this project will enhance the capacity for habitat recovery and the time of impact to recovery will be shortened. Enhancing nearshore and shoreline habitats through reducing impacts of marine debris will aid in the long-term, sustainable recovery of the Gulf Coast at an accelerated rate. Specifically, this project will effectively coordinate and execute a two-year, intensive outreach and education campaign that will result in lasting changes after the project is complete. Hosted at the NOAA Disaster Response Center in Mobile, AL, and coordinated as a NOAA Partnership project with the NOAA Marine Debris Program as lead coordinator, this project will engage all five states, maintain and improve partnerships with state and local organizations, and strengthen public engagement across the Gulf. This project is specifically targeted to involve and educate Gulf Coast communities how marine mammals, sea turtles, and habitat will all directly benefit from debris prevention and removal. The project will also look to identify targeted areas for debris removal that will have the most impact to improve the ecological health of the Gulf. Our contract was awarded with this project already having strong professional working relationships across the region. As has been successfully demonstrated in previous projects in the Gulf of Mexico, Sea Grant extension agents have a unique capacity to strengthen community involvement - including select communities where English is not the first language - and broaden awareness through effective beach clean-ups, fish rodeos, etc. This project will incorporate powerful Public Service Announcements, print materials, and technology to effectively raise the awareness across the Gulf States that a sustained outreach campaign focused on debris prevention and removal will benefit livelihoods in the entire region in both the short and long-term.	Gulf of Mexico	Yes	No											Yes	\$	10,000,000.00	\$	-
Eco Restoration	2068	8/15/2011	Derivative of MSCIP ecosystem restoration: Deer Island, MS	This project will restore 100 acres on Deer Island and 60-100 acres on Round Island. The project involves installation of WADs for wave break around lands and also for creation of containment for placement of dredge. Dredge material will be provided by BU program - dredge permittee. Planting to be done after dredge fill settles. The original Deer Island site is a high priority in the MSCIP suite. Since establishment of the MSCIP program, there has been considerable advancement of the State of Mississippi's interests in beneficial use and sea level rise. Modifications to the MSCIP version of this project are being coordinated with MS DMR Coastal Program.	Jackson	Yes	No										Yes	\$	5,000,000.00	\$	-	
Eco Restoration	2069	1/2/1900	SAV Establishment plan (SAV-TRE)	Establishing a plan for submerged aquatic vegetation (SAV). Steps include survey of the resource; convening a panel of experts in beneficial use plan based on the areas and opportunities of need; providing guidance for community?based restoration for execution; and getting the state and other restoration efforts in the northern Gulf to implement the plan.	Project location misidentified; not applicable to Mississippi	Yes	No										Yes	\$	-	\$	-	
Eco Restoration	2070	9/7/2011	Blue Crab Trap Removal	Crab traps are a significant problem in the Gulf of Mexico, having negative impacts on habitat and species. Derelict gear such as blue crab traps can cause a number of problems since throughout the Gulf of Mexico, more than 250,000 traps are thought to be added to the derelict population each year (Gulliford 2001). The most significant is that they continue to catch and kill a variety of species, in a process called ghost fishing. Traps can also damage habitat, interact with threatened and protected species, and introduce debris into the food web. They also hinder commercial operations such as shrimp fishing and can result in damage to boats and injuries to people. Derelict gear can persist for decades once it is lost. These traps can be physically removed during winter months due to the shallow water depths at that time of year. This is a "shovel-ready" project that would involve both state partners as well as local fishermen who would be contracted to conduct the removal. Based on estimated annual trap losses, including increased loss rates due to hurricanes and storms, it is estimated that this project could retrieve 300,000 derelict crab pots if fully funded. States have derelict trap programs that are habitually compromised by inconsistent budgets and participation rates. There are no NEPA concerns, with the only legal requirement being coordination with State agencies for short-term closures to facilitate removal activities. Removal will positively impact species by minimizing bycatch, including more than 20 species of fish and a species of invertebrates. The number of derelict traps in the Gulf of Mexico is currently unknown. There are, however, some annual estimates of trap disposal and overall trap loss; the latter also includes trap loss due to theft. Estimates of annual trap loss on a percentage basis for each Gulf state range widely: 30%-50% in Florida; 20%-50% in Alabama; 20% 30% in Mississippi; and up to 100% in Louisiana (Gulliford 2001). Rolling fishery closures, coordinated closely with the most appropriate agency in each state, will allow for the physical collection of derelict or lost blue crab traps. States independently manage their own existing trap removal efforts, and have strong education and outreach. Traps will be removed from the coastal environment, and recycled to avoid waste contribution to landfills. Local fishermen and personnel will be consulted to determine the regions most in need of cleanup.	Gulf of Mexico	Yes	No											Yes	\$	10,000,000.00	\$	-
Eco Restoration	2071	7/27/2011	Coastal Land and Marsh Protection	This is a general recommendation, not tied to a specific project. Instead of habitat restoration, focus instead on purchasing lands in fee title or in easement to protect these fragile and ecologically important areas that are threatened by future development while they still exist. As you know, land development usually causes conditions that are irreversible. By protecting these areas in perpetuity, we would permanently protect these areas and the ecological services they provide: a multitude of coastal terrestrial and aquatic species, by doing so, we not only protect habitat for many species, but also prevent future damage to human structures as a result of climate change (severe weather events such as hurricanes, sea level rise, etc.). It is my personal opinion that protecting as much currently undeveloped land as is possible from future land development, especially in coastal areas that typical exhibit a more rapid growth rate than in other areas, is the single most important thing we should be doing with available funding. To me it is a more valuable use of dollars than habitat restoration, which is very costly and may or may not be successful.	Gulf of Mexico	Yes	Yes											Yes	\$	-	\$	-
Eco Restoration	2072	4/21/2011	Response and recovery of the periphyton in the near-shore habitats of the Gulf of Mexico	Periphyton play an important ecological role in seagrass leaves: 1) as primary producers in a seagrass system; 2) as sources of food for consumers; 3) as a source of sediments (calcareous algae); 4) as an indicator of environmental quality of water; and 5) as a source of habitat for other organisms. Periphyton in seagrass systems are highly sensitive to changes in water quality and light availability. Physiological characteristics (short-term responses) of the algal community and taxonomic shifts or losses in the community (long-term) in areas that have been impacted versus unimpacted areas throughout the Gulf of Mexico. Several stressors on seagrass communities have led to their worldwide decline, including an increase in nutrients, higher salinity, and increased wave energy. A new threat arises from the weathered oil and chemical dispersants from the Deepwater Horizon oil spill that could be impacting seagrass in coastal areas. Although seagrass beds may have been completely lost or their density may have been reduced, it is also important to understand that periphyton associated with the seagrass is a vital component of the seagrass ecosystem. The periphyton may buffer the seagrass from some of the moderate effects on the seagrass community. The various single-celled organisms that are part of the periphyton may also serve as sentry organisms; their physiological response to stress can signal an early warning of more substantial impacts to the ecosystem or that recovery is underway. Standardized protocols for sampling seagrass leaves will be used (such as certain distance from the growing tip) for sample collection. The number of replicates and the number of locations will be determined in coordination with work performed by other researchers. A database will be created that identifies the organisms (images of species), physiological status, and community structure indices at key locations. This information will be collected across seasons to understand natural variability, and through time, to determine the impacts to the ecosystem.	Gulf of Mexico	Yes	No											Yes	\$	850,000.00	\$	25,000.00
Eco Restoration	2074	7/14/2014	Oyster Reef Structural Complexity	Summary attached.	Hancock, Harrison	Yes	No				Yes	Yes	Yes	Yes	Yes	No	\$	438,035.00	\$	-		

Eco Restoration	2015	7/18/2014	MS Observing and Modeling Restoration Network (MSOMRN)	<p>A COMPREHENSIVE AND INTEGRATED OBSERVATION, MONITORING, MAPPING, AND MODELING PLAN FOR MISSISSIPPI</p> <p>Sustained, multi-disciplinary ecosystem monitoring facilitates which provide an understanding of the state of the Gulf ecosystem and how its components change over time are critically needed. Results from monitoring efforts yield baseline data that can provide early warning of potential environmental variability, perturbations, and concerns. The information can be used to prioritize issues for adaptive coastal policy and management, assess damage due to natural and man-made disasters, inform restoration projects, and evaluate long-term trends. Furthermore, ecosystem monitoring information can yield the true value of ecosystem services to the Gulf which in turn can lead to resource management and regulatory decisions that consider the effects of those decisions based on a more complete set of economic factors.</p> <p>This information is critical to resource managers and decision-makers having regulatory, management, protection, and emergency responsibilities. Over the past three decades, the Gulf of Mexico and its coastal communities have been impacted by increasing anthropogenic influences, primarily as a result of human population growth, energy extraction, and coastal development. The impact of severe storms, such as tropical cyclones, has increased as sea level rises, land subsides, and storm buffering coastal wetlands are lost. Because the Gulf supports a broad variety of interests, any of these impacts can result in a wide range of environmental and economic concerns. A fully integrated and sustained observing system that includes ecosystem, oceanographic, and biological parameters would help minimize risk to people and coastal and offshore resources (during various operations (e.g., oil and gas exploration and extraction, maritime operations, recreational boating and fishing activities)) by providing early detection of potential problems and expediting mitigation when the need arises (e.g., identify important habitat and species, assess status of indicator species). Climatological databases or monthly averages are not sufficient for making certain ecological decisions. Present technology is available to provide near real time capability for this decision-making.</p> <p>The University of Southern Mississippi's Marine Science Department has taken the lead to develop a comprehensive and integrated observation, monitoring, mapping, and modeling plan for Mississippi's coastal areas. The integrate plan has been divided into eight cohesive sections to help explain the needs of Mississippi as it is related to the Marine Science processes affecting Mississippi waters. These eight sections areas are:</p> <ol style="list-style-type: none"> 1. Physical, Chemical and Geological Drivers of Environmental Variations, 2. Modeling and Forecasting, 3. Living Marine Resources and Ecosystem Components, 4. Indicators of Stress, 5. Habitat Characterization, 6. Measurement Archival and Data Management, 	Hancock, Harrison, Jackson, St. Tammany, Mobile	Yes	Yes	2000k	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	\$ 47,000,000.00	\$	-
Eco Restoration	2016	7/13/2014	MS Living Marine Resources Restoration Network (MSLMRN)	<p>A COMPREHENSIVE AND INTEGRATED OBSERVATION, MONITORING, MAPPING, AND MODELING PLAN FOR MISSISSIPPI</p> <p>Sustained, multi-disciplinary ecosystem monitoring facilitates which provide an understanding of the state of the Gulf ecosystem and how its components change over time are critically needed. Results from monitoring efforts yield baseline data that can provide early warning of potential environmental variability, perturbations, and concerns. The information can be used to prioritize issues for adaptive coastal policy and management, assess damage due to natural and man-made disasters, inform restoration projects, and evaluate long-term trends. Furthermore, ecosystem monitoring information can yield the true value of ecosystem services to the Gulf which in turn can lead to resource management and regulatory decisions that consider the effects of those decisions based on a more complete set of economic factors.</p> <p>This information is critical to resource managers and decision-makers having regulatory, management, protection, and emergency responsibilities. Over the past three decades, the Gulf of Mexico and its coastal communities have been impacted by increasing anthropogenic influences, primarily as a result of human population growth, energy extraction, and coastal development. The impact of severe storms, such as tropical cyclones, has increased as sea level rises, land subsides, and storm buffering coastal wetlands are lost. Because the Gulf supports a broad variety of interests, any of these impacts can result in a wide range of environmental and economic concerns. A fully integrated and sustained observing system that includes ecosystem, oceanographic, and biological parameters would help minimize risk to people and coastal and offshore resources (during various operations (e.g., oil and gas exploration and extraction, maritime operations, recreational boating and fishing activities)) by providing early detection of potential problems and expediting mitigation when the need arises (e.g., identify important habitat and species, assess status of indicator species). Climatological databases or monthly averages are not sufficient for making certain ecological decisions. Present technology is available to provide near real time capability for this decision-making.</p> <p>The University of Southern Mississippi's Marine Science Department has taken the lead to develop a comprehensive and integrated observation, monitoring, mapping, and modeling plan for Mississippi's coastal areas. The integrate plan has been divided into eight cohesive sections to help explain the needs of Mississippi as it is related to the Marine Science processes affecting Mississippi waters. These eight sections areas are:</p> <ol style="list-style-type: none"> 1. Physical, Chemical and Geological Drivers of Environmental Variations, 2. Modeling and Forecasting, 3. Living Marine Resources and Ecosystem Components, 4. Indicators of Stress, 5. Habitat Characterization, 6. Measurement Archival and Data Management, 	Mobile, Hancock, St. Tammany, Jackson	Yes	Yes	2000k	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	\$ 49,000,000.00	\$	-
Eco Restoration	2015	7/30/2014	MS Habitat Characterization Restoration Network (MSHCN)	<p>A COMPREHENSIVE AND INTEGRATED OBSERVATION, MONITORING, MAPPING, AND MODELING PLAN FOR MISSISSIPPI</p> <p>Sustained, multi-disciplinary ecosystem monitoring facilitates which provide an understanding of the state of the Gulf ecosystem and how its components change over time are critically needed. Results from monitoring efforts yield baseline data that can provide early warning of potential environmental variability, perturbations, and concerns. The information can be used to prioritize issues for adaptive coastal policy and management, assess damage due to natural and man-made disasters, inform restoration projects, and evaluate long-term trends. Furthermore, ecosystem monitoring information can yield the true value of ecosystem services to the Gulf which in turn can lead to resource management and regulatory decisions that consider the effects of those decisions based on a more complete set of economic factors.</p> <p>This information is critical to resource managers and decision-makers having regulatory, management, protection, and emergency responsibilities. Over the past three decades, the Gulf of Mexico and its coastal communities have been impacted by increasing anthropogenic influences, primarily as a result of human population growth, energy extraction, and coastal development. The impact of severe storms, such as tropical cyclones, has increased as sea level rises, land subsides, and storm buffering coastal wetlands are lost. Because the Gulf supports a broad variety of interests, any of these impacts can result in a wide range of environmental and economic concerns. A fully integrated and sustained observing system that includes ecosystem, oceanographic, and biological parameters would help minimize risk to people and coastal and offshore resources (during various operations (e.g., oil and gas exploration and extraction, maritime operations, recreational boating and fishing activities)) by providing early detection of potential problems and expediting mitigation when the need arises (e.g., identify important habitat and species, assess status of indicator species). Climatological databases or monthly averages are not sufficient for making certain ecological decisions. Present technology is available to provide near real time capability for this decision-making.</p> <p>The University of Southern Mississippi's Marine Science Department has taken the lead to develop a comprehensive and integrated observation, monitoring, mapping, and modeling plan for Mississippi's coastal areas. The integrate plan has been divided into eight cohesive sections to help explain the needs of Mississippi as it is related to the Marine Science processes affecting Mississippi waters. These eight sections areas are:</p> <ol style="list-style-type: none"> 1. Physical, Chemical and Geological Drivers of Environmental Variations, 2. Modeling and Forecasting, 3. Living Marine Resources and Ecosystem Components, 4. Indicators of Stress, 5. Habitat Characterization, 6. Measurement Archival and Data Management, 	Harrison, Jackson, Hancock, Mobile, St. Tammany	Yes	Yes	2000k	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	\$ 19,000,000.00	\$	-
Eco Restoration	2016	7/30/2014	MS Indicators of Stress Restoration Network (MSISN)	<p>A COMPREHENSIVE AND INTEGRATED OBSERVATION, MONITORING, MAPPING, AND MODELING PLAN FOR MISSISSIPPI</p> <p>Sustained, multi-disciplinary ecosystem monitoring facilitates which provide an understanding of the state of the Gulf ecosystem and how its components change over time are critically needed. Results from monitoring efforts yield baseline data that can provide early warning of potential environmental variability, perturbations, and concerns. The information can be used to prioritize issues for adaptive coastal policy and management, assess damage due to natural and man-made disasters, inform restoration projects, and evaluate long-term trends. Furthermore, ecosystem monitoring information can yield the true value of ecosystem services to the Gulf which in turn can lead to resource management and regulatory decisions that consider the effects of those decisions based on a more complete set of economic factors.</p> <p>This information is critical to resource managers and decision-makers having regulatory, management, protection, and emergency responsibilities. Over the past three decades, the Gulf of Mexico and its coastal communities have been impacted by increasing anthropogenic influences, primarily as a result of human population growth, energy extraction, and coastal development. The impact of severe storms, such as tropical cyclones, has increased as sea level rises, land subsides, and storm buffering coastal wetlands are lost. Because the Gulf supports a broad variety of interests, any of these impacts can result in a wide range of environmental and economic concerns. A fully integrated and sustained observing system that includes ecosystem, oceanographic, and biological parameters would help minimize risk to people and coastal and offshore resources (during various operations (e.g., oil and gas exploration and extraction, maritime operations, recreational boating and fishing activities)) by providing early detection of potential problems and expediting mitigation when the need arises (e.g., identify important habitat and species, assess status of indicator species). Climatological databases or monthly averages are not sufficient for making certain ecological decisions. Present technology is available to provide near real time capability for this decision-making.</p> <p>The University of Southern Mississippi's Marine Science Department has taken the lead to develop a comprehensive and integrated observation, monitoring, mapping, and modeling plan for Mississippi's coastal areas. The integrate plan has been divided into eight cohesive sections to help explain the needs of Mississippi as it is related to the Marine Science processes affecting Mississippi waters. These eight sections areas are:</p> <ol style="list-style-type: none"> 1. Physical, Chemical and Geological Drivers of Environmental Variations, 2. Modeling and Forecasting, 3. Living Marine Resources and Ecosystem Components, 4. Indicators of Stress, 5. Habitat Characterization, 6. Measurement Archival and Data Management, 	Hancock, St. Tammany, Mobile, Jackson, Harrison	Yes	Yes	2000k	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	\$ 7,000,000.00	\$	-

Eco Restoration	2103	4/1/2015	Erosion Control and Sediment Management in the Coastal Zone	This project would propose to implement several types of sediment control strategies in the Coastal Zone. Surface runoff caused by heavy rains carries sediment, nutrients and chemicals to our streams, rivers and eventually to the Gulf of Mexico. Erosion takes place in all locations without sufficient vegetative cover. Those locations include house sites, industrial sites, timberlands, crop and pasture lands, road sides, stream banks and other waterway locations, recreational sites, abandoned properties such as houses, closed industrial sites, farms, and surface mines. Each site will require a different prescription to solve the erosion problem. Site locations will need to be identified and solutions recommended by trained professionals to assess the severity of the problem and to define the best, most economical solution for each site. There are several conservation practices that can be used to reduce erosion and slow down surface runoff. These include the use of cover crops, vegetative field borders, grassed waterways, permeable paving, no till crop rotations, managing crop residue, tree planting, stream bank stabilization, and the creation and renovation of water impoundments to trap sediment prior to entering our streams and rivers. Some of these water impoundments could also be used for fire protection. Many landowners can reduce or eliminate much of the erosion simply by changing the management practices used or implementing new ones. This will require identification and often education for the landowners to understand why the erosion is taking place, what practices are available to implement and how important erosion control can be for the immediate improvement in water quality for all species downstream as well as for the community's long term water quality. Some sites will experience unusual amounts of erosion during emergency storm events such as heavy rains, flooding and hurricanes. Often these are areas that repeatedly have erosion issues during heavy water flow. Determining a long term solution for the problem will be the overall goal, but having readily available funding for immediate repairs after these emergency events will greatly enhance the ability for landowners and business owners to diligently make a difference in the overall reduction in erosion and improvement in the water quality of their watersheds. Many emergencies cannot be predicted, but they will happen and the faster a community can respond, the less damage will result from those events.	Harrison, Hancock, Jackson	Yes	No	No	No	Yes	No	No	No	No	No	\$ 9,000,000.00	\$ -	-
Eco Restoration	2104	4/1/2015	Conservation Demonstration Working Farm	Thanks to numerous conservation innovation practices, as stewards of the land we are doing a much better job than in the past. As urban sprawl and demands for our natural resources continues to increase, we need a forum to demonstrate these new conservation advances to the public. A working demonstration farm would not only benefit consumers of natural resources but also the producers of those resources and others. The Farmä would be utilized in multiple ways to exhibit conservation practices. Farmers would be shown cutting edge farming practices that would benefit the environment while at the same time benefiting their bottom line. Students will take advantage of the facility to better understand the native habitats and the methods that are being used to handle the growing use of them today. Schools will be able to expose children to where the food and fiber that they consume daily comes from and what it takes to get those products to them. Researchers will continue to explore new mechanisms that will aid in conservation. State and County officials can use the site to better understand the pleas of those who they serve. There are just a few of the services that the Farmä could be of use to the public in its understanding of conservation. The CMSWCP would like the opportunity to establish a Conservation Demonstration Farmä if the land would be acquired and the necessary infrastructure established. The locations would ideally consist of varied topography within a watershed basin close to a major waterway.	Harrison, Hancock, Jackson	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	\$ 5,000,000.00	\$ -	-
Eco Restoration	2107	8/29/2014	Invasive Plant Species Control	Both terrestrial and aquatic invasive plants are causing devastating effects to the native Gulf Coast ecosystems, agriculture industry and public entities. Recent hurricanes spread many of these plants in the region. Grass farmers, timber growers, livestock producers, horticulturalists and many others in the industry are becoming overwhelmed with these invasives. The high cost of treatment and the aggressive establishment of many of these species is causing great concern to our agriculture industry. Native ecosystems are becoming greatly affected by these invasive plants as well, reducing biodiversity and decreasing native food for wildlife. The thick rhizomes of cogon grass make it difficult for tortoises and other animals to burrow. Cogon grass is highly combustible and burns at a much hotter temperature than native undergrowth, sometimes killing mature timber and creating a dangerous situation around structures. Aquatic invasives like salvinia, hydrilla and water hyacinth choke waterways and block sunlight. Japanese climbing fern can pull down saplings and Chinese tallow trees and privet hedge quickly colonize open areas. Public entities spend much money and staff time battling these plants. The Soil and Water Conservation Districts in the lower six counties propose an outreach and education plan for these invasive pest plants. In addition, we would develop a treatment program and task force consisting of State, Local and Federal Agencies, private businesses and organizations to deal with the encroachment of these species in the lower six counties of Mississippi.	Harrison, Hancock, Jackson	Yes	No	No	Yes	No	No	No	No	No	No	\$ 9,000,000.00	\$ -	-
Eco Restoration	2109	9/11/2014	Round Island Conservation Acquisition	From the Master Plan for the Beneficial Use of Dredged Material for Coastal Mississippi: Round Island is a 65 acre site south of Singing River Island. The lands are mostly privately and state-owned. It provides feeding, resting, and wintering habitat for a variety of migratory birds and a breeding area for Great Blue Herons. Rare and endangered species supported on the site include the Osprey, the American Alligator, and the Night Flowering Ruellia. The site is used on a seasonal basis for limited waterfowl hunting and fishing. Round Island is identified as a priority area for beneficial use of dredged material. It is rapidly deteriorating and may become submerged by 2040. Approximately 30 acres are available for acquisition by the State of Mississippi, which would then hold it in trust as a coastal preserve and make it available for disposal of dredge material.	Jackson	Yes	No	No	No	No	No	No	No	No	No	\$ 12,180.00	\$ -	-
Eco Restoration	2110	9/11/2014	Davis Bayou Coastal Preserve Acquisition	This program will identify willing sellers and purchase lowland and wetland areas within the Davis Bayou Coastal Preserve. These lands would then be held by the State of Mississippi in trust for the benefit of the public, and preserved and managed to encourage the growth and reproduction of native species of plants and animals. From the Department of Marine Resources website: The primary boundary of this 1,410-acre preserve follows the edge of the non-forested estuarine marsh along the Davis Bayou, Stark Bayou, Heron Bayou, and Simmons Bayou. For more information, go to: http://www.dmr.ms.gov/mississippi-gem/210-davis-bayou-shash-1f7fxbh.dpuf	Jackson	Yes	No	No	No	No	No	No	No	No	\$ 800,000.00	\$ -	-	
Eco Restoration	2111	9/12/2014	Graveline Bay Coastal Preserve Acquisition	This project will seek out willing sellers of land falling within the Graveline Bay Coastal Preserve, purchase that land, and preserve it as state-owned lands for future generations. From the Department of Marine Resources website: Graveline Bay and Bayou represents one of few relatively undisturbed estuarine bays and small tidal creeks in Mississippi. The area supports salt marsh, brackish bay, and several oyster beds. The bay, marsh, adjoining upland forest, and undeveloped beach front near the mouth of Graveline Bayou are an important landing area for neotropical migrant birds. It is a coastal bay/marsh estuarine system. http://www.dmr.ms.gov/index.php/mississippi-gem/211-graveline-bay-shash-8f2c93m.dpuf	Jackson	Yes	No	No	No	No	No	No	No	No	\$ 900,000.00	\$ -	-	
Eco Restoration	2112	9/12/2014	Grand Bay Coastal Preserve Acquisition	This program would locate willing sellers of land located within the Grand Bay Savanna Coastal Preserve, purchase the property and preserve it in the State for future generations. From the DMR website: This bioserve is contained in Mississippi and Alabama. The boundary line for this 26,300-acre preserve is drawn open ended going across the state line. This preserve is one of the largest expanses of Gulf Coastal Savanna remaining in a relatively undisturbed condition. There are open herbaceous communities dominated by grasses and sedges with scattered/clumped shrubs and trees. This is a high priority site. It supports numerous orchids and insectivorous plants and has high species diversity having 20-25 (36) species in .25 square meters. http://www.dmr.ms.gov/index.php/mississippi-gem/212-grand-bay-savanna-shash-rMRxq98.dpuf	Jackson	Yes	No	No	No	No	No	No	No	No	\$ 2,300,000.00	\$ -	-	
Eco Restoration	2113	9/12/2014	Pascagoula River Marsh Coastal Preserve Acquisition	This project would locate willing sellers of land located within the Pascagoula River Marsh Coastal Preserve, purchase the land and preserve it as part of the Coastal Preserve program, and manage it for the benefit of future generations. From the DMR website: This preserve consists of 11,150 acres that includes essentially all marsh associated with the mouth of the Pascagoula River. This brackish, coastal marsh has over 300 species of plants that are known to occur in these marshes, but needle rush (<i>Juncus roemerianus</i>) is the dominant species. Sections of this area are nesting sites for the Mississippi Red-Bellied Turtle and the Gopher Tortoise. This unique location provides excellent feeding, resting, and wintering habitat for numerous types of migratory bird species, such as the Brown Pelican, White Pelican, Osprey, and cormorants. Most of the area is essentially unspoiled, however some areas to the south of the Escatawpa River are suffering from development and pollution. The marshes are threatened primarily by industrial and residential developments that involve dredging, fill, and byproduct pollution. The Escatawpa River is believed to be a major source of industrial pollution. Future diversions of water from the Pascagoula River and its tributaries could result in an increase of saltwater intrusion and expansion of the marsh area northward into the area now forested. Diversion could also result in increase relative pollution as dilution is decreased. http://www.dmr.ms.gov/index.php/mississippi-gem/213-pascagoula-river-shash-7b1u1w9.dpuf	Jackson	Yes	No	No	No	No	No	No	No	No	No	\$ 100,000.00	\$ -	-
Eco Restoration	2114	9/12/2014	Escatawpa River Marsh Coastal Preserve Acquisition	This project will locate willing sellers within the Escatawpa River Marsh Coastal Preserve, acquire the land and preserve and monitor it for future generations. From the DMR website: This unique location provides excellent feeding, resting, and wintering habitat for numerous types of migratory bird species, such as the Brown Pelican, White Pelican, Osprey, and cormorants. This area is also known to be a rookery for Osprey. http://www.dmr.ms.gov/index.php/mississippi-gem/214-escatawpa-river-marsh-shash-oo58uXf.dpuf	Jackson	Yes	No	No	No	No	No	No	No	No	\$ 400,000.00	\$ -	-	
Eco Restoration	2115	9/12/2014	Bellevue Marsh Coastal Preserve Acquisition	The project will locate willing sellers within the Bellevue Marsh Coastal Preserve, acquire the land, and preserve and monitor it in the name of the State for future generations. From the DMR website: This preserve consists of 1,305 acres and is represented largely by a marine, mesohaline marsh/dune system in that it receives no major freshwater input. The marsh area lies between a coastal oak/pine forest and a narrow (5-10 m) beach dune system. The combination of <i>Scirpus</i> dominated marsh areas and shallow water ponds makes this area a prime waterfowl overwintering area. Lands adjacent to the Bellevue Marsh Coastal Preserve are either privately, locally, state or federally owned. Much of the property considered tidal wetlands, and owned by the State. http://www.dmr.ms.gov/index.php/mississippi-gem/206-bellevue-marsh-shash-M2y7v6.dpuf	Jackson	Yes	No	No	No	No	No	No	No	No	No	\$ 1,000,000.00	\$ -	-
Eco Restoration	2116	9/18/2014	Pascagoula River Basin Enhancement Program- Watershed Enhancement Management Program	Within the Pat Harrison Waterway District, there are eight USGS HUC 8 basins. By using the authority of the Pat Harrison Waterway District to develop watershed management plans, the upper basins that drain in the highly bio-diverse Pascagoula River can be properly maintained and monitored. The Pascagoula River is the largest by volume unimpeded river system in the contiguous 48 states. The goal of the watershed management program is to identify ecological stressors including habitat fragmentation and destruction, human induced changes in hydrology, altered sediment loading and future barriers on the mainstream and tributaries. The watershed approach would break down the hydrologic and hydraulic study of these systems by watershed. The focus will establish a baseline of river health. The next step is to develop management guidelines for each watershed by focusing on the baseline values and developing ways to maintain or improve the health of the basin. Key areas of focus include: water quality, sediment transport, and debris removal. Best management practices will be implemented in restoring the biological integrity of the watersheds and ensuring all systems achieve the MDä attaining aquatic life use support designation.	Jackson	Yes	No	No	Yes	No	No	No	No	No	No	\$ -	\$ -	-
Eco Restoration	2117	9/18/2014	Park Restoration and Expansion Initiative	Currently Pat Harrison Waterway district owns and operates eight parks. These parks provide camping, cabins, and recreational facilities for both locals and tourist to enjoy. As part of the Pascagoula River Basin Enhancement Program a renewed focus will be taken on maintenance and restoration of these parks to enhance recreational opportunities for the community. The goal of the park restoration and expansion initiative is to reach out to the local communities and civic groups to identify restoration needs of the parks as well as looking into the expansion of existing facilities based on attendance and local interest. By providing new pavilions, boat ramps, updating cabins, adding waterfront rental outposts, educational trails and interpretive stations, the existing parks can be improved to increase tourism and improve quality of life for the community. As part of the park restoration and expansion initiative, community outreach is imperative. Allowing the community to identify needs and concerns ensures the intended recipients of these improvements are satisfied. Event programming and outreach to increase tourism will be initiated in parallel with restoration efforts as well as updating the multi-media facilitation of park information.	Stone, Jackson, Pearl River, Perry, Harrison, George	Yes	Yes	Yes	Yes	No	No	Yes	No	No	No	\$ -	\$ -	-

Eco Restoration	2118	9/22/2014	Pascagoula River Basin Enhancement Program-Pascagoula River Water Trail	<p>The Pascagoula River Basin Enhancement Program has the opportunity to capitalize on the vast ecological treasures that the Pascagoula River Provides. The Pascagoula River Water Trail Project establishes the national designation of this water system in the National Water Trails System. This identification serves to bring existing and newly identified water trails together into one cohesive national network of water trails. The objective of the National Water Trail System is established as protecting and restoring America's Rivers, shorelines, and waterways and conserve natural areas along waterways. Also serves to increase access to outdoor recreation on shorelines and waterways.</p> <p>Using the established major tributaries to the Pascagoula, the Pascagoula Water-Trail seeks to unite the Pat Harrison Waterway District with a cohesive goal of recreational access and restoration of the riverine systems. The first phase would establish the Leaf, Chickasawhay, and Pascagoula Rivers as water trails. The second phase would expand to include other tributaries in areas that community outreach and support is strong.</p> <p>A key objective of the water trail is to develop trail-heads at strategic locations along the trail. These trail-heads will be existing park facilities that are adjacent to the water trail like Dunnâ€™s Falls and new facilities that will include water-sports outposts and convenience stores.</p> <p>Part of the development of the water trail will be the establishment of safe watercraft launches, campgrounds, walking trails, fishing outposts, and educational boardwalks. There is an opportunity to develop a cultural heritage museum at one of the trail-heads that would increase the tourism traffic to the trail. Additional infrastructure to connect the new facilities to existing roadways will be built as well as improvements to existing infrastructure.</p> <p>The goal of the water trail is to increase the quality of life in adjacent communities, increase the ecotourism appeal of the region, improve existing facilities, extend recreational opportunities, and highlight the historical significance of this unimpeded water system. Each water trail while designated nationally is locally managed. With community support the Pat Harrison Waterway District, Pascagoula Water Trail will provide recreational opportunities, educate the public about the value of water resources and cultural heritage, provide opportunity for conservation of waterway health, provide the public with accessible and understandable water trail information, maintain the routine and long term investments on the water trail, and plan for the future vision of the Pascagoula River Basin.</p>	George, Perry, Forrest, Jackson, Stone	Yes	Yes		Yes	Yes	No	No	Yes	No		\$	-	\$	-	
Eco Restoration	2119	9/22/2014	Pascagoula River Basin Enhancement Program- Pascagoula River Basin Forest Preserves Program	<p>Of the counties within the Pat Harrison Waterway district, an average of seventy-nine percent of the ground coverage is forestland. In order to preserve and maintain both pine and hardwood in the region, the Pascagoula River Basin Forest Preserves Program will restore pine and hardwood and provide technical and on-the-ground restoration assistance to family forest landowners interested in managing or restoring the pine and hardwood on their lands.</p> <p>The program will identify, protect, and manage forest habitat, recognizing that the abundance and productivity of the Pascagoula River Basin ecosystem is a product of the quantity and quality of the forest habitat. The south and central parts of Mississippi continue to face threats from the southern pine beetle on the forestry industry. As part of this program the movement and outbreaks of destructive species like the southern pine beetle will be monitored and evaluated for conservation initiatives.</p> <p>The goal of the Pascagoula River Basin Forest Preserves Program is to integrate landowner outreach with prescribed conservation to monitor, maintain, and restore the forest within the Pat Harrison Waterway District.</p>	Stone, Jackson, Forrest, Perry, Harrison, George	Yes	No		Yes	Yes	No	No	No	No		\$	-	\$	-	
Eco Restoration	2120	9/22/2014	Pascagoula River Basin Enhancement Program- Pascagoula River Riparian Buffer Maintenance Plan	<p>This program will seek to identify, monitor, and maintain riparian buffers along the Pascagoula River and its tributaries. Also provide outreach and technical assistance to accelerate firm-time enrollment of new riparian buffer through the conservation reserve enhancement program. Riparian buffers act to partially protect streams from the impact of adjacent land uses. Buffers increase water quality in associated streams as sediment is intercepted, serve to provide habitat, and reduce bank erosion by providing bank stabilization.</p> <p>The Pascagoula River Basin drains much of Southeast Mississippi into Pascagoula Bay. This management program is being undertaken to ensure that past and future development does not diminish the quality of water entering Pascagoula Bay from the upstream basin. This basin faces excessive erosion and sedimentation, storm-water runoff from new development can impact the riverine morphology. With planning and monitoring riparian buffers will help control channel instability, head-cutting, mass slumping, and wetland degradation. Riparian buffers that exist currently and proper planning of new buffers will help mitigate future loss in water quality.</p>	Stone, Jackson, Forrest, Perry, George	Yes	No		No	Yes	No	No	No	No		\$	-	\$	-	
Eco Restoration	2121	9/22/2014	Pascagoula River Basin Enhancement Program- Pascagoula River Species Stewardship Program	<p>This program will seek to establish a monitoring and planning program that will increase and maintain the habitat of species native to the Pascagoula River and its tributaries through stewardship activities. The stewardship program will focus on carrying out standard monitoring activities; implement best management practices to secure sensitive habitats and reduce human use and invasive species threats; and educate diverse audiences to increase understanding of the needs and value of the Pascagoula ecosystem.</p> <p>Several species native to the Pascagoula River Basin include the Gulf sturgeon and the striped bass that migrate to the river to spawn. Also found in this watershed are the Pearl darter, swallow tailed kite, Mississippi sandhill crane, and the yellow-billeded map turtle. All of these and any other identified threatened and endangered species will be included in this stewardship program.</p> <p>The goal of the Pascagoula River Species Stewardship Program is to restore and protect Pascagoula River species populations, reduce identified stressors and disturbances, and restore habitat to allow higher rates of survival.</p>	Stone, Jackson, Forrest, Perry, George	Yes	No		Yes	Yes	No	No	Yes	No		\$	-	\$	-	
Eco Restoration	2122	9/23/2014	Pascagoula River Basin Enhancement Program- Stormwater Management Initiative	<p>Stormwater Management Initiative: Pollution and Prevention Plan</p> <p>This plan is intended to develop a management program for current stormwater rehabilitation and future construction within the Pat Harrison Waterway District. The Pascagoula River and its tributaries feed a watershed that covers most of southeast Mississippi. The groundwater and surface water that feeds the riverine systems flow into Pascagoula Bay and ultimately the Gulf of Mexico. In order to best conserve and maintain the health of these riverine systems, proper upstream and on-off monitoring is vital.</p> <p>The Stormwater Management Initiative will focus on the streams and urban areas that flow directly into the Pascagoula and its tributaries. The program will seek to restore streams that are highly altered including green corridors enhancing their ability to handle stormwater runoff, erosion, and sedimentation. Also, runoff will be monitored for water quality to ensure proper best practice management and construction practices are being implemented. The goal of the Stormwater Management Initiative is to directly engage local communities to the importance of best management practices as well as promote proper construction and design of future stormwater systems.</p> <p>There are several approaches to stormwater management to consider. Low-impact development seeks to manage runoff using a distributed approach that mimics the predevelopment hydrology instead of conveying and treating stormwater at only the end of the drainage area. Green infrastructure is an approach that uses a natural system to capture, cleanse and reduce stormwater runoff using plants, soils and microbes. And environmental site design is an approach that mimics natural systems along the whole stormwater flow path through combined applications of design principles. The objective for the environmental site design is to replicate forest or natural hydrology and water quality. With proper incentives and partnerships pre-planning for future stormwater infrastructure can help properly conserve and maintain riverine systems.</p> <p>The Stormwater Management Initiative will focus on non-point sources of water pollution and prepare a monitoring program that coincides with the best management practices to be developed and adopted by communities that will identify areas of water quality concern. The identified locations will be the focus of the monitoring initiative and evaluated for improvement options where applicable. With a combination of community outreach and proper planning the Stormwater Management Initiative will seek to educate those on the importance of the ecological value of the Pascagoula River basin and encourage future responsible stormwater management techniques.</p>	George, Perry, Forrest, Jackson, Stone	Yes	Yes		Yes	Yes	No	No	No	No		\$	-	\$	-	
Eco Restoration	2123	9/23/2014	Pascagoula River Basin Enhancement Program- Waterfront Development Program	<p>Pascagoula River Basin Waterfront Development Program</p> <p>This plan is intended to develop a management program for future waterfront development within the Pat Harrison Waterway District. A waterfront can be the most desirable location for future development. Proper planning and adopted management programs for waterfront areas are fundamental when the need to arises to ensure environmental sensitivity in an ecologically diverse region. The Pascagoula River Waterfront Development Program will establish a best practices and development method that will ensure the desired waterfront economic and job creation are responsibly achieved in a way that mitigates environmental impact.</p> <p>Waterfront properties and recreational development can enhance the quality of life for communities. Greenways and riverwalks become tourist hot spots and can enliven a city's economy. The Pascagoula River Basin Waterfront Development Program will maintain environmental focus while properly monitoring future development along the riverine system. The development of educational boardwalks, farmers markets, and greenways all a part of waterfront development programs will promote tourism, economic development, and expand recreational options.</p>	Stone, Jackson, Forrest, Perry, George	Yes	Yes		Yes	Yes	No	No	Yes	No		\$	-	\$	-	
Eco Restoration	2124	9/22/2014	Pascagoula River Basin Enhancement Program- Digital Watershed Management Model Approach	<p>The Pascagoula River Basin is Mississippi's second largest river basin and is also the last unimpeded river system in the contiguous United States. It is approximately 364 miles long, 84 miles wide, and includes more than 15,000 miles of rivers and streams. Major rivers within the Basin include the Pascagoula, Chickasawhay, and Leaf Rivers as well as Black Creek and Red Creek. The Basin eventually drains into the Mississippi Sound/Gulf of Mexico at Pascagoula, Mississippi. The Basin's ecosystem is nationally recognized for its abundant wildlife, biological diversity, and rich cultural and historical heritage. It is an undisturbed natural treasure.</p> <p>As a prime tributary to the northern Gulf of Mexico, the water quality and biological health of the Pascagoula Basin contributes directly to the health, well-being, and quality of the Gulf. Following the BP Oil Spill and the subsequent impacts to Gulf waters, biota, and fauna, numerous initiatives have been proposed (and some initiated) to improve the ecosystem of the Gulf, specifically its inland water bodies and habitats. To this end, the Pat Harrison Water Management District envisions an initiative leading to quantification of the water quality and attributes of the Pascagoula River Basin, over which Pat Harrison exercises statutory oversight. This initiative addresses a need for developing a comprehensive, total watershed approach to water resources management throughout the Pascagoula Basin, including the major contributors the Pascagoula, Leaf, and Chickasawhay Rivers, also any minor contributing streams and creeks. The approach would facilitate collaborative relationships with other parties (local, state, and federal, as well as non-governmental organizations) with shared interests in the use, quality, and management of the waters of the Pascagoula Basin. The primary tool at the core of such a total watershed approach is a comprehensive, digital land base model of the Basin. This model will consist of a digital framework of data layers, the chief of which are ortho-imagery, topography, and hydrography â€” all at very high resolution. These enable the most advanced modeling and assessment possible. Essentially, this tool would serve as the foundation for all future studies and assessments of the Basin related to water quality, ecosystem and environmental health, infrastructure and economic development, or otherwise. The specific area proposed for development of the initial model is the combined watersheds of the Chickasawhay and Leaf Rivers, continuing to their confluence through the Pascagoula River in George County. Overall, this combined watershed comprises nearly 5,000 square miles.</p> <p>The goal of the digital watershed management model is to provide a tool that can be utilized by both public and private end users to serve a host of functions that ultimately promote the mutual interests and benefits of the Pascagoula Basin and Northern Gulf of Mexico. Specifically, the model will facilitate evaluating and establishing policy guidance regarding such issues as:</p> <ul style="list-style-type: none"> â€¢Ownership and allocation of water along water courses with multiple contiguous property owners, including addressing Riparian doctrine; â€¢Resource management and enhancement; â€¢Reservation of the balance of instream flows and nutrient levels along critical stream reaches, including issues related to Total Maximum Daily Loads; and â€¢Regulation of interbasin transfers. <p>Further, the watershed management model would facilitate these stated objectives, and others, by providing the digital database that would serve ongoing â€¢</p> <ul style="list-style-type: none"> â€¢Comprehensive, science based, data collection and assessment at all levels of federal, state, and local government; and â€¢Comprehensive inventory of water resources, including uses, quality, quantity, and availability. <p>The digital Pascagoula Basin Watershed Management Model will consist of framework â€¢layersâ€” of digital data representing the surface of the earth and selected features. In a seamless, geospatially-referenced format. The model includes data developed and managed according to â€¢layersâ€” of common information, the most important of which are high-resolution, digital</p>	Stone, Jackson, Pearl River, Forrest, Perry, George	Yes	Yes		Yes	Yes	No	No	No	No	No		\$	-	\$	-

Eco Restoration	215	9/23/2014	Pascagoula River Basin Enhancement Program- Water Supply Partnership	<p>Pascagoula River Basin Water Supply Partnership</p> <p>This partnership would focus on community water supply demands along the Pascagoula River and its tributaries within the Pat Harrison Waterways District. The partnership will provide the means for management and monitoring of water withdrawal and release limits in the basin. The plan would set up a cooperative program the best manage the water capacity of the basin as well as set in place severe condition plans to address any man-made or natural disaster event that occur.</p> <p>The precedent for this plan is an event that occurred in 2000. A severe drought limited the capacity of water reaching Pascagoula Bay. In an effort to mitigate risk of the economic impacts to the region, water from upstream reservoirs was released to help downstream industrial centers avoid costly shutdowns.</p> <p>The Pat Harrison Waterway District is situated to manage current and oversee future water transmission supply expansion. As the opportunities for development increase the Pascagoula River Basin Water Supply Partnership will manage current and future water intake as well as monitor and plan for water supply events that could harm the ecological and economic viability of the basin.</p>	Stone, Mobile, Jackson, Pearl River, Forrest, Perry, George	Yes	Yes		Yes	No	No	No	No	No	No	No	\$	-	\$	-
Eco Restoration	216	9/23/2014	Pascagoula River Basin Enhancement Program- Dam Safety Best Management Initiative	<p>Pascagoula River Basin Dam Safety Best Management Initiative</p> <p>The Pascagoula River is the largest by volume unimpeded river in the contiguous United States. However, there are several dams that were set in place to create reservoirs that help control flooding in the region along tributaries and streams that feed into the Pascagoula River.</p> <p>These dams are largely managed by the Pat Harrison Waterway District but several are managed by private landowners. The Pascagoula River Basin Dam Safety Best Management Initiative will ensure a cohesive inspection and monitoring plan is set in place. Through best management practices and coordination with private landowners, the initiative seeks to mitigate risk of dam related emergencies within the region. The formal guidelines will ensure dam owners coordinate with emergency management authorities to facilitate the development of plans that are comprehensive and consistent.</p> <p>As part of the comprehensive planning in the region, a second phase including analysis of dams considered at risk or demonstrating structural deficiencies will be completed to further mitigate dam failure threats.</p>	Stone, Mobile, Jackson, Pearl River, Forrest, Perry, George	Yes	Yes		Yes	Yes	No	No	No	No	No	No	\$	-	\$	-
Eco Restoration	217	9/24/2014	Wolf River and Eastuary Conservation and Restoration Project, Harrison County, MS, and public acquisition of selected low lying parcels of land not suitable for residential and commercial redevelopment	<p>Some of the Wolf River in Harrison County, Mississippi has been and is being protected for conservation, restoration and recreational use as part of the ecosystem of the Mississippi Gulf Coast. Land owners such as ourselves recognize the importance of the Wolf and other coastal rivers and streams to the health and productivity of the coastal ecosystem. The Wolf River has been designated by the State of Mississippi as a scenic and protected river from its headwaters in Laman County to its estuary in the Bay of St. Louis. There are many privately owned suitable parcels of land available for out right purchase which would further the conservation, restoration and recreational process and improve the water quality of the region. For example there is a 200 acre site available for sale just south of Cable Bridge and Cable Bridge Road well suited to a public recreational area and public access to the river. Such a site, and there are other suitable sites along the river, could also provide educational opportunities for improved public awareness and understanding of the vital role of our coastal rivers and streams within the coastal ecosystem.</p> <p>Another important restoration, conservation and recreational project to be considered within the coastal counties of Mississippi is the public acquisition of selected low lying land north and south of US highway 90. There are many vacant small and larger parcels throughout the 3 coastal counties which because of risk from storm surge and high insurance rates are not suitable for residential nor commercial redevelopment. Public assembly and acquisition of such sites will contribute greatly to regional recreational opportunities, improved water quality and to restore lost habitat for native plants and animals of the Mississippi "Coastal Ecolone".</p>	Harrison, Hancock, Jackson	Yes	No		No	No	No	No	No	No	No	No	\$	-	\$	-
Eco Restoration	218	9/25/2014	Impact of Suspended Sediment, Water Circulation, and Waves on Marshes and Oyster Beds	<p>We propose to deploy four moorings equipped with a downward looking RDI Workhorse Sentinel ADCP to measure the currents, Reynolds stresses, and suspended sediment concentration (SSC), a Valeport MIDAS DWR Directional Wave Recorder, and four Sonar YSI 6602DS to measure various parameters such as temperature, dissolved oxygen, salinity, turbidity, and chlorophyll at different depths. The moorings will be deployed for two years. They are placed at four locations for one year and then moved to another four locations for the second year. Guidance for these choices of mooring locations will be gained through application of the SWAN wave prediction model. The moorings will be placed near oyster reefs and/or marshes, preferably in water depths of at least 2 m. We intend to deploy moorings at healthy reefs or marshes or at unhealthy or eroding marshes. Whether we choose reefs or marshes may depend on recommendations from the RESTORE council. If our mooring locations overlap with the moorings that are part of the \$4M Mississippi Coastal Observing and Prediction Network (M-COP) submitted to the RESTORE council, we will consolidate instruments to reduce costs.</p> <p>To calibrate the SSC ADCP measurements, we will perform monthly surveys at each mooring. These cruises will also be used to maintain the moorings and replace the battery packs. We will measure conductivity and temperature with a lowered CTD and take water samples at various depths. The SSC in these water samples is measured using a filtration system. In addition we will collect bottom sediment cores during each survey to measure the grain size distribution and sediment properties in order to determine the critical shear stresses needed for sediment resuspension. The currents recorded with the ADCP and the orbital velocities estimated from the wave heights will indicate how often these critical shear stresses are exceeded, and provide insight into the active governing processes.</p> <p>The sediment distribution, shear stress and moored time series gathered as part of this project will all be leveraged by the modeling efforts submitted separately to the RESTORE council as \$4M The Influence of River Plumes, Hurricanes and Storm Fronts on the Hydrodynamics of the Mississippi Bight (MIB) that suite of model-driven investigations, coastal erosion and oyster bed viability were not local points, so within this proposal our ROMS model implementation for MS will be expanded to handle wetting and drying (Warner et al., 2013), as well as wind-wave coupling and the sediment transport capabilities of the ROMS-based Coupled Ocean-Atmosphere-Wave-Sediment Transport (COMCOT) model system (Warner et al., 2010). The comprehensive set of in situ measurements will provide a rich data set that reveals key mechanisms associated with sediment loading within the MS, which will inform the development and validation of this near-shore model. With validated erosion and suspended sediment distributions, the model will be positioned to provide insight into oyster bed viability, marsh and barrier island erosion assessment, as well as key water quality constituents that directly contribute to marine ecosystem function. Deliverables include geospatially referenced sediment cores, critical shear stress, time series of collected data and maps that indicate which marsh coastlines are most threatened and what locations may be most viable for oyster reefs.</p>	Harrison, Hancock	Yes	Yes		Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	\$	1,640,000.00	\$	-
Eco Restoration	219	9/26/2014	Quantifying Water Quality Using Remote Sensing for the Gulf of Mexico	<p>Since this project is Gulf wide, was interested in being considered for Council funding; however, just implementing same proposal in MS waters would be a great benefit to DMR and DEQ's day to day operations.</p> <p>The proposed effort will address the RESTORE Council priority area \$6M Water quality monitoring and improvement. The project will focus on establishing a time series (2013-2017) of satellite-based water quality products with improved spatial and temporal coverage. Water quality improvements to be achieved include detecting and monitoring: a) coastal river and land discharge points and impacts to estuarine systems; b) spread and dissipation of point source discharges; and c) tracking water quality changes from river discharge. The project will provide for the efficient and effective direction of public resources for the purposes of protecting public and environmental health. Present water quality monitoring programs are limited in the spatial and temporal coverage and cannot rapidly address if abnormal water conditions are occurring. By combining with daily satellite properties this will be remedied and enable rapid assessment of atypical water quality evident with enhanced spatial extent. Decision makers will be provided a capability to respond rapidly and send sampling collection and clean up actions. By continually satellite monitoring the impact of cleanup activities can be confirmed that water quality has returned to normal conditions.</p> <p>Outcome from this project will be improved water quality management in areas along the gulf coast. Decision makers in each state's environmental quality agency will have access to an automated web based decision aid that uses real-time satellite data with automated algorithms based in Best Available Science to facilitate critical decisions based on timely and accurate information.</p> <p>Please see detail proposal with description, benefits, and tentative Partners- Proposal is scalable from just MS waters to the entire Gulf of Mexico.</p>	Harrison, Jackson, Hancock, St. Tammany, Mobile	Yes	Yes	2000k	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	\$	12,000,000.00	\$	-
Eco Restoration	213	10/2/2014	Surface Currents and Wave Monitoring for the Gulf of Mexico	<p>The U.S. Gulf Coast is vulnerable to a variety of risks, including oil/contaminant spills, harmful algal blooms (HAB) and Vibrio, hurricanes, coastal land loss, and navigation accidents. Near real-time information on coastal ocean surface currents, waves and winds are an important element of a coastal ocean observing system necessary for mitigating these risks and for protecting public health and safety, emergency response, the coastal economy and sustainable use of coastal resources. This environmental intelligence, which can be gained through a system of coastal High-Frequency Radar (HFR) stations, can, for example: (1) improve monitoring of restoration projects (sediment transport, water quality), (2) Help track spilled contaminants and Harmful Algal Blooms to protect public health, water quality, and critical habitats, (3) Help ensure safe commercial and recreational navigation, (4) Enhance search and rescue efforts, (5) Improve ocean and weather forecast models, including those for storm surge, (6) Enhance public beach safety through the forecasting rip currents, and (7) Enhance community preparedness for coastal land loss issues.</p> <p>This project meets the RESTORE Act Plan Comprehensive Plan priorities for habitats, water resources, living coastal and marine resources, natural processes and shorelines, and science-based decisions by developing a U.S. Gulf coast wide network of High Frequency Radar stations to provide real-time monitoring of surface currents and waves in State waters. These stations are efficient, effective tools for meeting multiple public needs along the U.S. Gulf Coast. The proposal includes Project Management for the procurement, installation, and operation for these sites across the Gulf Coast. Also, includes Data Management for the design and integration to assure data meets all RESTORE Act Policies and Procedures. Real-time distribution of these data to numerical models, and agency decision makers are included. An Outreach component is included to work with the Public and Agency Decision Makers, to assure the understanding and training is in place to integrate these user-friendly products in to day to day operations of each agency.</p>	Hancock, St. Tammany, Mobile, Jackson, Harrison	Yes	Yes	2000k	Yes	Yes	Yes	No	Yes	Yes	Yes	\$	20,000,000.00	\$	-	
Eco Restoration	214	10/1/2014	I-110 Corridor Restoration & Enhancement	<p>The City of Biloxi proposes to implement its 1980s master plan for utilizing the corridor of public land located under Interstate 110, which runs north-south from the Back Bay of Biloxi to the Mississippi Sound. The original master plan, developed with considerable citizen input, is being updated to include storm water management improvements and acquisition/restoration of a wetlands area adjacent to the I-110 Corridor, north of Division Street.</p> <p>Storm water management improvements will include installation of BMPs along the corridor to filter nonpoint source pollutants from the interstate's storm water that drains unchecked from the elevated roadway. The BMPs will have an educational component, identifying their function in improving water quality through all-weather signage located along the walking paths that currently exist (and which are to be enhanced with additional lighting and drainage).</p> <p>Public safety and recreational amenity improvements will expand use of this area by residents and tourists. The south end of the corridor is located immediately west of the minor league baseball stadium being built and the Beau Rivage Casino Resort. The north end includes an under-utilized boat ramp, basketball and tennis courts, all of which are in need of improvements and lighting.</p> <p>Acquisition and restoration of the wetlands area north of Division Street will include removal of invasive, nonnative plant species as well as accumulated debris. Sediment will be removed and appropriate wetlands plant species will be installed to restore the natural functions of the wetlands area that is tidally-influenced by the Back Bay of Biloxi.</p> <p>The master plan will be scanned and uploaded as an attachment to this project proposal.</p>	Harrison	Yes	Yes	2000k	Yes	Yes	No	No	Yes	No	storm wa	\$	6,000,000.00	\$	-	
Eco Restoration	215	10/2/2014	Biloxi Peninsula Shoreline Stabilization and Public Access Improvements	<p>The City of Biloxi proposes to implement a variety of shoreline stabilization measures along the Biloxi Peninsula in areas owned and/or managed by the City to control erosion, adapt to sea-level rise and improve public safety and access. Shoreline improvements will include stormwater management BMPs accompanied by all-weather educational signage to identify short- and long-term public benefits of a properly-managed waterfront.</p> <p>Improvements will include removal of nonnative, invasive plants species; installation of appropriate native plant species to support shoreline stabilization and restoration of shoreline habitats; removal of concrete, riprap, abandoned/obsolete infrastructure and miscellaneous debris; and stormwater management improvements to improve water quality. Public safety and access improvements will include provision of lighted, ADA-compliant boardwalks, where appropriate, designed for storm resistance and to be constructed with a variety of materials as dictated by the terrain and proposed use. Some of these public access areas will include short fishing platforms/piers depending upon adjacent land and water uses and subject to federal and state permit approvals. Some of the public access areas also will include boat ramps for launching motorized and/or nonmotorized (jaysaks, canoes) boats along with supportive parking areas.</p>	Harrison	Yes	Yes	3000k	Yes	Yes	No	No	Yes	No	stormwa	\$	15,000,000.00	\$	-	

Eco Restoration	2117	10/4/2014	Purchase of Katrina-flooded properties and management of properties for community resilience and recreation	Officials should purchase properties north of Highway 90 in Harrison County that have not been re-developed since Katrina. These properties should be managed like the 'emerald necklace' of parks that line the Charles River in the Boston area. There could be running/biking/ped trails as well as pocket parks and other green spaces. These parcels will likely be inundated again and could be managed as part of a flood control strategy to protect the developed areas just to the north. A well-developed system of parks and green space could provide economic benefits through increased nature and sports tourism (marathons, bike races, etc.) and could support cafes, food trucks and other small businesses. This project would provide for a permanent effort to control litter in the three coastal counties and the near shore environments for the purposes of ecosystem restoration AND increased tourism. Permanent staff would be hired to work with cities, counties, law enforcement, private business and community groups to identify and implement a range of litter reduction strategies including: on-going public information campaign, increased enforcement of litter laws, and improvement of laws and regulations if needed. All of our roadways, waterways, and drainage areas have plastic items, cigarette butts, fast food wrappers, drinks cans scattered along them. These items leach dangerous chemicals, harm wildlife and pollute our waterways. They create an unfavorable impression for visitors.	Harrison	Yes	Yes		Yes	No	No	Yes	Yes	No	\$	-	\$	-		
Eco Restoration	2118	10/4/2014	Mississippi Gulf Coast Litter Control	This project would provide for a permanent effort to control litter in the three coastal counties and the near shore environments for the purposes of ecosystem restoration AND increased tourism. Permanent staff would be hired to work with cities, counties, law enforcement, private business and community groups to identify and implement a range of litter reduction strategies including: on-going public information campaign, increased enforcement of litter laws, and improvement of laws and regulations if needed. All of our roadways, waterways, and drainage areas have plastic items, cigarette butts, fast food wrappers, drinks cans scattered along them. These items leach dangerous chemicals, harm wildlife and pollute our waterways. They create an unfavorable impression for visitors.	Hancock, Harrison, Jackson	Yes	No		Yes	Yes	No	No	Yes	No	\$	-	\$	-		
Eco Restoration	2119	10/6/2015	Reduction in post hooking sea turtle mortality	This proposal will develop new technology to reduce sea turtle mortality by developing methods to remove fishing line without removing endangered sea turtles from the water. This new method will be designed for inshore fishing from piers and bridges. The Endangered Species Act can shut a fishery down after a certain number of takes occur. The device I have designed will not require a fisherman to haul the turtle up in the air to the pier surface in order to cut the line from the hook. We will collect data and film our interactions with the device and the line. I will call NMMS to come collect the turtle. After proof it works as it should then we will share our information. We will then do outreach and education to encourage the use of this technique by our Coastal recreational fishermen. This new technique will address the problems that our recreational fishermen are having in removing their fishing line from the turtles that they are interacting with while fishing in state waters. There has been increase interaction with these endangered species and this new technique will help with their protection. We will then be able to expand the use of this new method to other areas to help address their interactions with these endangered sea turtles. This device could be used as a midgation tool for a section 10 permits for the states. The data shows that these sea turtles die from becoming entangled in the line that was cut from the pole and left on the hook. A turtle can survive a hook but not fishing line. It causes them to drown and get infections. The new device would slide down the line and cut the line off at the hook without harming the turtle. This is a win for the turtle, the fishermen and the economy because our piers were not closed and I will supply as many as possible free to the states, the stranding team and fishermen. When this new technique is proven successful. A full report of the study and success of the new gear will be provided to All Gulf Coastal states and NOAA. This project will include providing new gear to be given to Mississippi recreational fishermen as long as the supply of gear is available in this pilot.	Jackson, Hancock, Harrison	Yes	Yes	25000	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	\$	500,000.00	\$	-
Eco Restoration	2140	1/1/2015	Sustainable Gulf Coast Oyster Restoration and Coastal Protection using Central Oyster Hatcheries and Gulf State Remote Setting Sites	In the face of poor spat sets, low harvests and declining oyster populations, a new approach is needed to restore oysters and the communities that depend on them. We propose a comprehensive long-term oyster restoration plan that restores habitat, improves water quality, revitalizes the economy of the Gulf oyster community, replenishes living coastal and marine resources and enhances community resilience by revitalizing the Gulf oyster industry economy. This will be accomplished by massively expanding regional oyster hatchery production capacity, establishing remote setting bases in each of the five states, working with state resource agencies in oyster restoration and stock enhancement and actively engaging university-based scientists in monitoring and adaptive management. This project will enhance and restore oyster populations throughout the region, providing significant ecosystem services (e.g., carbon sequestration, nitrogen removal, habitat for living marine resources and cultural) and encourage community resilience through long-term sustainable economic growth and job creation. The region-wide project will: 1. Use existing oyster hatchery capacity while conducting a rigorous site assessment (6 mos.) for a bio-secure mega-hatchery with the capacity to provide > 50 billion oyster eyed larvae/year (comparable to the world's largest oyster hatcheries), with spigots specific to each state within 18 mos.; 2. Build dockside remote setting facilities in each state, capable of producing > 10 billion spat on cultch; 3. Enhance up to 180,000 acres over 9 yrs. with 500,000 spat on cultch/acre, deployed by state resource agencies; 4. Monitor the success rate through rigorous university-based monitoring program in each state, to guide state-specific adaptive management; 5. Increase the resilience of the system by adding a second bio-secure mega-hatchery in year 4, and 6. Support a long-term comprehensive regional strategic plan, evaluated by university-based researchers and resource agencies, for the industry. For this project, siting and construction of the first hatchery and the dockside remote setting facilities will be accomplished within 18 mos. Larval production will be supported for 9 yrs., with monitoring to occur during this time, with 90 billion juvenile oysters added to up to 180,000 acres of public oyster beds through the region. In addition to the potential job creation and economic benefits of the enhancement of oyster populations, this project will also provide critical ecosystem services through improved water quality, increased biodiversity, creation of more diverse habitat and cultural services provided by productive oyster reefs worth up to \$200 million to harvesters annually, comparable to the value of the ecosystem services provided by the project.	Gulf of Mexico	Yes	Yes	28000	Yes	No	Yes	Yes	No	Yes	No	\$	112,200,000.00	\$	-	
Eco Restoration	2141	10/8/2014	Gulf of Mexico Alliance Restoration Coordination	The proposed project provides programmatic support for the Gulf of Mexico Alliance ("the Alliance") collaborative partnership to coordinate restoration-related activities among the various agencies, organizations, resource managers, scientists, consultants, and industry experts in the region. The Gulf of Mexico Alliance proposes to conduct the coordination through its priority issue teams that are well-established in direct support of the Gulf of Mexico Ecosystem Restoration Council's Comprehensive Plan. Coordination provided by the Gulf of Mexico Alliance provides the initial core steps in addressing a concern that restoration projects and programs conducted in its region are not being coordinated to maximum efficiency. While Council-level activities are highly coordinated by the RESTORE Council, the Gulf of Mexico Alliance provides the venue for on-the-ground resource managers, scientists, consultants, and industry experts to communicate and collaborate on a regular basis regarding the activities that are being conducted by many regional partners. Deliverables include reports identifying the following: <ul style="list-style-type: none">• going list of projects being implemented either as a result of DWH-funded settlements or other non-DWH project efforts (an online feature could be added as appropriate);• projects that may have overlap and duplicity with recommendations for solutions to leverage resources; and• Regional initiatives that may impact or inform restoration. Through the priority issue teams and the larger partner network as a whole, agencies and organizations involved in restoration activities will be better informed and able to make project implementation decisions with the maximum available information regarding on-going efforts in the region. As a result, priorities can be aligned, activities can be planned with minimal duplication, and leveraging opportunities can be identified. The overall budget request is \$467,500 per year for five years or \$2,337,500 total.	Gulf of Mexico	Yes	No		Yes	Yes	Yes	No	Yes	No	\$	2,337,500.00	\$	-		
Eco Restoration	2143	10/8/2014	Watershed Assessment Tool for Coastal Restoration	This project will utilize the resources described below to construct, maintain, and utilize a watershed assessment tool for coastal restoration. This tool will allow interactions with resource managers such as the Mississippi State Department of Environmental Quality and the Mississippi Department of Marine Science to assess both project and cumulative impacts of restoration activities. This tool will be calibrated and verified with scientific field and laboratory investigations and in conjunction with ongoing monitoring conducted by the Mississippi Department of Environmental Quality and the Mississippi Department of Marine Resources. Improved water quality is essential to restoration of coastal habitats and is among the highest priorities identified by Mississippi stakeholders. An ability to assess watershed process that contribute to degraded water quality is a necessary to identify activities within the watershed that can lead to improvements. Watershed management activities such as stream restoration, best management practices in agricultural areas, and low impact development practices in urban areas are all techniques to improve water quality. Consequently, monitoring and modeling of freshwater inflows into the Mississippi coastal system is required to assess the sustainability of ongoing and planned restoration. Researchers at Mississippi State University (MSU) are well experienced with the Watershed Modeling System that contains watershed and water quality models and Geographic Information Systems that are used in detailed watershed assessments. MSU has also conducted water quality modeling in Saint Louis Bay, numerous studies of coastal habitats such as beach erosion, stream restoration, and bank/shoreline stabilization. Additionally, MSU has acquired a complete hyperspectral data set for Grand Bay National Estuarine Research Reserve for habitat delineation and quality assessment. MSU will also have a complete data base of high resolution topography using Light Detection and Ranging (LiDAR) for the 6 counties of the Gulf coast by spring of 2015. These data will provide hydrographic maps for use by state and county managers and baseline conditions for hydrologic modeling. Mississippi State University researchers have extensive experience in watershed management practices to improve water quality. For example, wetland construction and restoration to improve water quality and riparian stream restoration for both habitat and water quality improvement are major components of applied research at MSU. The Watershed Assessment Tool will be calibrated and verified with field and laboratory studies and applied to restoration projects in the watershed to evaluate effectiveness. Workshops will be conducted with state and local resource managers to ensure that ongoing and proposed projects are effectively evaluated for hydrologic assessment and potential for water quality improvement. Public outreach will be conducted with production of reader friendly brochures. This is a four year project and will supplement ongoing planning activities as well as serve as decision support tool as new projects are recommended. The estimated cost is \$800,000 per year for a total cost of \$3,200,000.	Hancock, Stone, St. Tammany, Mobile, Jackson, Pearl River, Forrest, Perry, Orleans, Harrison, George, Washington	Yes	No		No	Yes	No	No	Yes	No	Yes	No	\$	3,200,000.00	\$	-
Eco Restoration	2149	1/1/2015	Edible Forests of the MS Gulf Coast	This project will develop fruit orchards in every city and county in the three county of the MS Gulf Coast, Harrison, Hancock and Jackson counties. The Mississippi Urban Forest Council will partner with our Tree City communities along the coast, local garden group and civic groups to develop the orchards. Training will be provided to citizens and those involved in the development of the orchards. Ongoing for long term maintenance will be provided. Correct fruit varieties for the area, soils and climate will be taken into account for selection of species. This project will provide model orchards, encourage more local fruit production, provide education to implement sustainable orchards, improve healthy eating and provide sources of value added products for local citizens.	Jackson, Harrison and Hancock	Yes	No		Yes	Yes	No	Yes	Yes	Yes	Yes	\$	450,000.00	\$	-	
Eco Restoration	2152	10/17/2014	Regional Sediment Management/Beneficial Use and Small Scale Habitat Restoration	GOMA's Habitat Conservation and Restoration Team (HCRT) suggests a project that generates more beneficial use projects in all the Gulf States while facilitating the continuation of the community-based, small-scale restoration program. The GCRP has a long history of galvanizing communities behind restoration and stewardship. GOMA HCRT efforts in RSM have significantly increased beneficial use of sediment resources, developed peer-reviewed technical resources, and laid the groundwork for managing sediment resources more productively. Leveraging these particular assets of two long-standing partners and doing so by investing in them as a joint venture will result in more sustainable restoration outcomes and continued community-level engagement.		Yes	No		No	No	No	No	No	No	\$	5,925,000.00	\$	-		
Eco Restoration	2153	10/22/2014	Rehabilitation of Moss Point's Bayous	This proposal defines the current state of 10 residential bayous within the city of Moss Point, MS, adjacent to approximately 150 residential properties, and last serviced for adequate and sustainable depth in the 1950-60 time period. The city of Moss Point is blessed with surface water. The Pascagoula and Escatawa Rivers adjoin the north and west areas of the city. Numerous bayous within the city connect to these major waterways. As the city has grown residential areas have evolved along these bayous resulting in several hundred waterfront homesites. Effective storm drainage is extremely important in maintaining the integrity of the residential areas in the city. The residential area bayous are a vital part of that system. In many cases, silt has retarded the effectiveness of bayou drainage. Rehabilitation will improve drainage for the adjacent community. Also, with improvement in water quality and subsequent improvement in tidal flow, marine habitat for shell and finfish will be enhanced. The biologic health of these waters is greatly dependent upon their depth. During significant temperature extremes increased mortality of fin and shellfish occurs. The city is moving forward with Ecotourism ventures to increase it's socioeconomic footprint. Rhodes Bayou adjacent to the new Audubon Center as well as several other residential area bayous are prime candidates for kayaking, bird watching, and associated activities. Usage also includes boating and fishing by both the adjacent landowners and others who launch boats from the city's public launches to take advantage of Moss Point's waterways. Last but not least, waterfront properties are taxed at a higher rate, valuating the label of "waterfront". Though the years waterfront property owners have depended on these bayous for drainage and have increased usage of same. Also, over time many areas of these waterways have endured erosion and siltation resulting in limitation or loss of normal drainage and usage. Subsequent to Hurricane Katrina the Corp of Engineers cleaned debris without any dredging for depth. Attempts in that regard through public entries have thus far been without success. With emerging funding sources on the horizon, now is the time to develop a study of Moss Point's multiple bayous leading to restoration of a more healthy and functional status by restoring stream depth and flow where indicated. Only then can the city's bayous possess improved water quality and marine habitat, as well as benefitting the community.	Jackson	Yes	No		No	No	No	No	No	Yes	No	\$	500,000.00	\$	-	

Eco Restoration	2154	10/24/2014	Projecting the Impacts of Restoration Activities in MS Coastal Waters	<p>The overarching objective of this project is to advance our informational basis of physical/biochemical linkages in the Mississippi Sound (MS) and northern Mississippi Bight (MB) region through execution of a field effort consisting of research cruises and moorings that obtain measurements needed to inform a state of the art modeling approach. The observations will characterize bottom sediment type, seasonal variation in sediment, nutrient and dissolved oxygen and transport of sediments under influence of wind forcing and surface waves, and hydrodynamically driven material exchanges between the MS and MB. The model system, supported by this knowledge, will be a platform that allows resource managers and restoration scientists to project the impact of RESTORE activities, thus enabling better planned restoration efforts that have a higher likelihood of sustained success.</p> <p>Numerous coastal restoration projects in the state of MS have been proposed to meet RESTORE program goals (http://www.restoretexas.com/ppp/overviewmap.html). Some of these efforts aim to restore hydrology patterns, marshes and barrier islands with the intent of mitigating the issues noted above, among others. In order to fully remedy harm and reduce risk to the natural resources of the Mississippi Gulf Coast, comprehensive understanding of the MS is required. Without this understanding, well-intentioned RESTORE projects may realize short-lived success. The overarching goal of the combined observational and modeling synthesis herein is to advance our informational basis through execution of a targeted field effort and integrate the acquired knowledge into a state of the art modeling approach that will enable better-planned restoration efforts, with higher likelihood of sustained success, as well as advance our understanding of current and future vulnerability.</p> <p>To attain the needed informational basis on waves, currents, sediment transport, and distributions of sediment, nutrients and dissolved oxygen, we propose to utilize moored instrument arrays and shipboard sampling to record the critical physical, geochemical and bio-optical measurements needed to characterize the processes and distributions of interest. These measurements will be used to inform and validate a model system that simulates the circulation, waves, sediment loadings and biogeochemistry of the MS and the hydrodynamic and material exchange with the MB. The resulting modeling system will be ideally suited as a tool for scenario exploration that provides assessments and insights into the viability of proposed restoration projects and resource management strategies. In particular, the model will provide temporally varying distributions of nutrients, dissolved oxygen, salinity and suspended sediment, all of which contribute to vitality of ecosystem functions in the MS.</p>	Hancock,St Tammany,Mobile Jackson,Harrison	Yes	Yes	15000	Yes	Yes	Yes	No	Yes	No	Yes	No	\$ 1,100,000.00	\$ -	
Eco Restoration	2155	10/27/2014	Establishment of an Algae-for-Aquaculture Center for Mississippi	<p>For this Project: Dr. Gordon Cannon, Vice President for Research USM</p> <p>The global population is rapidly increasing, and is expected to surpass nine billion by 2050. As the population continues to grow, the ability for the world to feed itself will become increasingly more difficult. Environmental factors and limitations on water, land, energy, and other vital resources will further stress food production throughout the world. New technologies that do not compete with current human food production resources and processes are urgently needed to support the growing food demand.</p> <p>Fish are a major source of high-protein food, and the demand for fish is increasing world-wide at a rate approximately double that of population growth. The world's oceans, however, cannot meet the increasing demand for fish, so aquaculture production must continue to expand to bridge the growing gap between what the oceans can provide and what the world demands. High-protein fish require high protein diets, and fishmeal, the primary source of protein in marine species' diets, is in short supply given that it is derived from the world's oceans. Thus, to support continued aquaculture expansion, a new source of protein for aquafeeds that is not derived from the world's oceans and does not compete with terrestrial food production is urgently needed.</p> <p>Algae are a promising candidate for fishmeal replacement (some species have protein levels in excess of 60%), and the State of Mississippi has the climate and resources necessary to support efficient algal biomass production. Further, the University of Southern Mississippi (USM), through its Gulf Coast Research Laboratory (GCRL) and The Cochran Marine Aquaculture Center (CMAC) affiliates, has the marine biology and aquaculture expertise necessary to understand algal biomass utilization and to ultimately validate algae as a fishmeal replacement in marine aquaculture feeds.</p> <p>General Atomics (GA) proposes to team with USM to establish an algae-for-aquaculture research center to demonstrate the value of algal biomass as a high-protein feed for future commercial aquafeeds. A research-scale algae growth facility utilizing GA's existing technology will be constructed at USM, on or near the grounds of the GCRL. Algae strains high in protein will be the focus for research. The facility will initially utilize algae strains provided by GA, but subsequent efforts will utilize local Mississippi algae strains, after suitable isolation and optimization at GA. The algae biomass produced will be used to conduct fish feed trials at CMAC, using the substantial aquaculture infrastructure already present as well as the cell biology, bio-science, and analytical support capabilities of USM. The results of initial fish feed trials will be used to modify algal strain selection and/or algal growth parameters as required to improve the overall fish health and growth rate observed in subsequent feed trials. The program will also allow USM to establish an aquafeed formulation and feed production capability which bridges the gap between algal growth and aquaculture feed and will provide more timely response to feed variation requirements.</p> <p>The initial program is expected to run for 24-30 months. This will allow for construction and systemization of the algae growth facility and installation of the supporting analytical equipment and procedures, estimated to require 9-10 months, followed by operation of the facility for 15-20 months. After several months of algae growth, the initial algal biomass will be available for inclusion in feed formulations supporting fish feed trials. Fish species of interest include Sea Trout, White Sea Bass, Red Snapper, and Cobia. Additional feed trials will be conducted at prescribed intervals as additional algal biomass is produced. The goal will be to show that algal biomass-containing aquafeeds yield a final fish product with health, growth, and taste comparable to that produced with current fishmeal feeds. Proof of the value of algal biomass as a substitute for fishmeal will confirm the economics of algal biomass production and will enable the establishment of commercial-scale algae growth facilities within Mississippi and elsewhere in the U.S. and the world.</p> <p>The benefits to the State of Mississippi associated with establishment of an algae-for-aquaculture industry are many and include:</p> <p>(1) Establishment of a world-class algae-for-aquaculture research center at USM; (2) Establishment of a new high-tech farming industry that can be exported to numerous other areas in the U.S. and the world; (3) Development of new high-tech jobs associated with high-protein algae production, feed formulation and production, and aquaculture; (4) Utilization of the State's abundant natural resources to support a new, sustainable industry.</p>	Jackson,Harrison	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	\$ 12,000,000.00	\$ -	
Eco Restoration	2156	10/28/2014	Synthesis and Decision Management Products	<p>This proposal for an Adaptive Management Strategy Tool, one of the 34 proposals in USM's Comprehensive and Integrated Observation, Monitoring, Mapping, and Modeling Plan for MS. We propose to implement management Decision Tool (MSE) models consistent with the analytical needs of the monitoring program. A MSE is a comprehensive model that includes the population dynamics of the resource, the economic components impacted by the resource (e.g., the fishery for an exploited resource; the business for a farmed aquaculture resource, such as aquaculture or mariculture operations; the value of ecosystem services for a keystone or foundational resource), and the management and political structure leading to the definition and implementation of policy and regulation. The goal of a MSE is to evaluate, using a numerical model, a range of management options to determine the most effective approach to resolve problems. MSEs are most often invoked when problems are complex, typically cross-cutting scientific disciplines, management agencies, and regulatory bodies, and typically grounded in hard science issues, but influenced by a myriad of human and natural components of the system.</p> <p>We describe two examples of problems that would require an MSE model for effective decision management: (1) Marine diseases increasingly affect the integrity of keystone, commercially important, and ecologically dominant species. Oysters, shrimp, and blue crabs are examples. Should we incorporate disease management into the management of resources significantly impacted by disease? What are the Best Management Practices (BMPs) for these challenges? How do we determine the BMP for any given event? Can we respond in a timely fashion to prevent expansion or to mitigate the damage caused by an epizootic once it occurs? Answers to these questions will allow Mississippi marine resource management and scientific communities to be better positioned than they are at present to respond to these eventualities. Some pathogens are capable of introducing enduring regime shifts by modifying habitat structure and function, food web structure, or genetic connectivity, thereby institutionalizing significant economic and ecological damage, making the present-day limited level of preparedness or near-zero concern. Demise in oysters is a classic case wherein a disease is capable of generating a permanent regime shift brought on by the loss of reef habitat. (2) One important option for an MSE is to assess options for carbonate management in the coastal zone, to identify the risks of management choices, to weigh long-term outcomes against short-term economic and ecological gains, and to understand the scientific basis for parameterizing carbonate destruction and mass balance models. Management of the habitat quality and natural resources of the estuaries and lagoons of the U.S., a dominant focus of public, private, and academic interests for a half century or more, is receiving even more attention as goals become more stringent, desirable outcomes harder to achieve, and the cost of management more expensive. A wide range of management decisions are driven by resource needs dependent upon carbonate. The challenge of meeting a diversity of resource goals depends upon wise use of the carbonate resource, but rarely can short or long term outcomes be predicted in terms of carbonate balance, and more unfortunately subsequent retrospective often identify consequences of carbonate imbalance that motivate further management measures of equally uncertain outcome. Therefore, the ability to model the ecosystem, to assess risk, and to develop management strategies all in terms of the carbonate budget is a primary challenge facing the management and user communities of the coastal zone.</p> <p>An MSE is a mechanism to evaluate best management practices. One should be implemented prior to the implementation of any large-scale restoration or management plan. Thus, the MSE provides the basis for wise investment of RESTORE or other State or National resources destined for investment in the restoration of the coastal ecology and/or the management of the coastal resources of Mississippi. In addition, comprehensive MSE models include an economics component that will inform the stakeholders concerning the relative economic benefit of various management and restoration options investigated by the MSE. The MSE is an objective way to evaluate economic benefit and the potential for economic development.</p>	Hancock,St Tammany,Mobile Jackson,Harrison	Yes	No	Yes	Yes	Yes	No	Yes	No	No	Yes	No	\$ 1,800,000.00	\$ -	
Eco Restoration	2157	10/31/2014	Trentwood/Parktown Drainage Improvements	<p>A large open drainage ditch collects runoff from several major residential areas on the north side of Highway 90. The ditch is 60-70 feet across and 12-15 feet deep. This ditch discharges into Davis Bayou on the south side of Highway 90. Erosion due to steep sides is occurring along private residential property that abuts the ditch. The project will address bank stabilization along the drainage path.</p> <p>The banks of the ditch are constantly subject to erosion endangering residential properties. In addition, a large amount of sediment is transported downstream to Davis Bayou which adjoins the Mississippi Sound. The ditch will be repaired where needed and lined with rip-rap. The ditch sides will be stepped or benched to decrease the slope and potential for erosion.</p>	Jackson	Yes	No	No	No	No	No	No	No	No	No	\$ 250,000.00	\$ 100,000.00		
Eco Restoration	2160	11/3/2014	Lancaster/Willington Drainage Improvements	<p>Some of the drainage structure in the residential neighborhood of Fort Bayou Estates is in need of repair. Existing concrete pipe is collapsing creating sinkholes and further erosion. The system includes 1,200 feet long with 300 feet of pipe and 1,300 feet of open ditches. The open ditches are filled with sediment causing overflow during rain events.</p>	Jackson	Yes	Yes	25000	No	No	No	No	No	No	No	\$ 200,000.00	\$ -		
Eco Restoration	2161	6/1/2015	Mercury Methylation Rates, Isotopic Composition, and Trophic Transfer in the Northern Gulf of Mexico	<p>The project will involve replacing the damaged pipe, cleaning the open ditches, and adjusting the grade to prevent further erosion and siltation in Fort Bayou.</p> <p>James Catzfel, Ph.D., University of Mississippi</p> <p>The Problem. There is a significant gap in understanding the sources and pathways of methylmercury (MeHg) entry into food webs in the northern Gulf of Mexico (GoM). This is of particular concern because, on average, residents of the Gulf Coast consume more marine fish than other U.S. residents, and because GoM fish tend to have higher levels MeHg than fish from other coasts. It is indeed, as much as 30% of the coastal population is estimated to exceed EPA's reference dose for MeHg, which is used as a criterion to protect human health. Moreover, with the economy of the Gulf coast states intricately linked to the GoM through fishing (both commercial and recreational), understanding the distribution, levels and cycling of Hg species is vital to the long-term health and stability of the region. Recognizing this, the National Science and Technology Council issued a 2004 report on MeHg in the Gulf of Mexico: State of Knowledge and Research Needs identifying major data and knowledge gaps. Nearly a decade later the Gulf of Mexico Alliance, Water Quality Team, Mercury Workgroup, developed a White Paper titled MeHg in the Gulf of Mexico: Research Needs and Recommendations. The document lays out many of the same scientific research priorities with the goal of mitigating risk of Hg exposure to humans. Yet there remains a paucity of measurements of MeHg in the Gulf and virtually no progress in answering fundamental questions such as: where in the GoM is MeHg, and how does it enter the food web? (i.e., where does the majority of MeHg enter the food web?). The time for action is now. Below is a plan that includes innovative analytical techniques that would finally help to answer these questions.</p> <p>Objectives. The objective of this work is to quantify and compare MeHg levels, isotopic compositions, and Hg methylation rates in a key estuary and coastal area in the northern GoM. We will, for the first time, use recently developed analytical approaches to trace the sources and movement of MeHg from sources through phytoplankton and other primary producers to fish. The educational objective is to work directly with students, including those from Historically Black Colleges and Universities (HBCUs).</p> <p>Research Approach and Innovation</p> <p>There are few measurements of MeHg in the GoM and its estuaries, and this critically limits our ability to assess the sources of MeHg that end up in GoM seafood. 3 Estuaries play an important role in the production and transfer of MeHg into primary producers (the key entry step into food webs), and, in some cases, are MeHg hotspots. MeHg, serving as net sources of the toxin to the ecosystem. Moreover, estuaries have oxic-anoxic fluctuations that affect the bioavailability of Hg. We will provide a comprehensive examination of Hg cycling in an estuary and coastal area in the northern GoM. It includes methylation rate measurements, MeHg in phytoplankton and bacteria is a key entry point for MeHg in food webs, and stable Hg isotope measurements, an exciting new approach to studying Hg biogeochemistry. The research will provide essential information to develop models that tie Hg sources, environmental conditions, and MeHg levels in Gulf seafood, which in turn is necessary to guide efforts to lower MeHg levels in fish. The Hg brings significant resources to bear on the project, including collaborations with leading researchers in the field, sensitive Hg-specific instruments, and a high resolution mass spectrometer.</p> <p>Methylation rate study. Measuring the rate of MeHg production in sediment from locations with different environmental conditions, allows not only spatial comparison of the strength of MeHg sources, but also elucidation of the factors controlling MeHg production in the first place. In methylation studies, an isotope of Hg (e.g. 199Hg) is injected into sediment collected in the field, altering</p>		Yes	No	No	Yes	Yes	No	No	No	No	Yes	\$ 120,000.00	\$ -		

Eco Restoration	2163	2/2/2015	Oyster Bayou Restoration Project at Beauvoir	<p>The purpose of this project is to implement the recommendations of The Nature Conservancy (TNC) assessment of Oyster Bayou. The plan is to assess the conditions within the Oyster Bayou drainage basin and develop a list of drainage improvements that can be implemented by stakeholders to improve drainage and habitat conditions. Oyster Bayou is a small tributary to the Mississippi Sound that meanders through the 32 acres of historic grounds of Jefferson Davis. Oyster Bayou was once part of a relatively large drainage basin that extended west and north of Beauvoir and Beauvoir Road. The drainage basin has been extensively developed with little regard for comprehensive and coordinated stormwater management within the basin. As a result, there has been an increased volume of water that flows through the lower portions of Oyster Bayou causing minor flooding and erosion which has impacted the natural habitat along the bayou.</p> <p>The objectives of TNC's assessment are to 1) evaluate upstream drainage conditions that result in discharges if stormwater into Oyster Bayou; 2) work with Beauvoir representatives and other stakeholders to assess opportunities for additional stormwater treatment functions of Oyster Bayou; 3) assess water flow characteristics and methods to stabilize and enhance areas along the 2,250 linear feet of riparian habitat associated with the system; and 4) implement selected ecological restoration activities within the Oyster Bayou drainage basin.</p> <p>The goal of Beauvoir's project will be to implement upstream drainage features west of Beauvoir Road that contribute to the quality and quantity of stormwater that discharges to Oyster Bayou; improve assimilative capacity and stormwater treatment functions within the drainage basin which will lead to enhanced water quality benefits and improved aquatic and terrestrial habitat adjacent to Oyster Bayou; provide additional water quality benefits and improvements for this tributary to the Mississippi Sound; implement ecological restoration activities within Oyster Bayou drainage basin; and provide education and outreach activities.</p> <p>Further restoration actions for the stream and adjacent uplands are also part of this project including an assessment of the stream by a hydrobiologist (since the flow/velocity is higher that would have been naturally due to much of the watershed being paved/channelized, increasing runoff), as well as, an assessment of current impediments to the flow of the stream (roads, etc.) and determine if a more stream-friendly design could be beneficial. The use of natural grade control structures (i.e., logs and tree stumps) to slow down water, which leads to erosion of the banks could be used to trap sediment coming downstream. Removal of non-native, invasive species such as Chinese tallow tree, privet hedges, etc. (these would be removed physically or killed by herbicide). Ornamental species that are not invasive, such as camellias and azaleas would remain as part of the grounds. Planting of native trees and shrubs such as cypress, sweet bay, black gum, etc., plus plantings of native grasses and forbs such as Junco including plants important to wildlife. Woods mowing to open the shrub layer on the nature path, bird nesting boxes along the stream (bluebird, wren and duck) and osprey nesting platforms would be added. An extension of the nature path throughout the property is also part of this project. All of this would be done in regards to the historic nature including interpretive exhibits along the bayou that points to different animals/birds/plants one is likely to encounter would be added. Lastly, education and outreach upstream regarding trash that is being dumped into the parking lots, storm drains, etc., including a trash collection device that would be located just downstream of the coliseum.</p> <p>Oyster Bayou and its adjoining bayhead swamp comprise approximately half of the Beauvoir 52-acre estate in Biloxi, MS. Operated through a 501(c)(3) nonprofit organization, Beauvoir is one of two National Historic Landmarks in South Mississippi and is open to the public every day of the year except Thanksgiving and Christmas. The estate, the last home of Jefferson Davis, includes a House</p>	Harrison	Yes	Yes	Yes	Yes	No	No	Yes	No		\$ 1,000,000.00	\$ -	
Eco Restoration	2164	11/6/2014	Monitoring and assessing the health of coastal marshes with remote sensing	<p>Overview and Motivation: Coastal marshes are a critical habitat needed for a healthy Mississippi Gulf Coast. These marshes provide many ecosystem services including: buffers to dampen hurricane waves, habitat for breeding coastal birds, and filtration of terrestrial runoff. Restoration marsh grasses in the Mississippi Gulf Coast is important to restoring the Mississippi Sound estuary. Before these critical habitats can be improved however, we must understand their current health so that we can monitor improvements in marsh grasses and their contribution to the ecosystem services.</p> <p>Project Goal: Use remotely sensed data to assess the marsh grass extent, health and vigor in the three coastal Mississippi counties and monitor changes over time as restoration projects proceed.</p> <p>Project Description: Before coastal marshes can be restored along the Mississippi Gulf Coast, there must be a complete assessment of their extent, health and condition. This assessment must be completed for the entire Mississippi Gulf Coast synoptically so that differences in marsh grass are due solely to health and condition and not seasonal variations. Medium resolution remotely sensed data, such as Landsat 8, has the spatial extent needed to cover the Mississippi Gulf Coast and create a synoptic assessment of the coastal marshes. Using the spectral data of these sensors, we can create indices that illustrate plant vigor and health. Where more detailed analysis is needed, high resolution, commercial satellite imagery will be used to create a depth analysis of coastal marshes.</p> <p>This synoptic assessment of Mississippi's coastal marshes is the first step in developing a program to monitor the changes as restoration proceeds. A well-defined starting assessment is needed to measure the effectiveness of a restoration project. The imagery and image processing techniques to be used are well accepted, scientifically evaluated tools that provide consistent and repeatable results.</p> <p>Budget and Timeline: Landsat data is distributed by the U.S. Geological Survey for no cost and this imagery will be used for the synoptic assessment of the Mississippi Gulf Coast. Higher resolution commercial imagery can be obtained for \$ 27 km². Completion of the assessment will require 3-4 person months, for a total estimated budget for initial assessment of \$50,000. Monitoring of the marsh restoration can be completed yearly, using Landsat 8 data, at a cost \$12,000 to \$15,000 per year.</p>	Hancock,Stovall,St Tammany,Mobile Jackson,Pearl River,Harrison	Yes	No	Yes	Yes	No	No	No	No		\$ 65,000.00	\$ 25,000.00	
Eco Restoration	2165	11/7/2014	Environmental Geophysics Measurements for Coastal Restoration	<p>Environmental Geophysics Measurements for Coastal Restoration</p> <p>Dr. Craig Hickey, Dr. Leonardo Macelloni, Dr. Arne Dierks</p> <p>Description: The University of Mississippi proposes to employ relatively inexpensive acoustic, seismic, electrical and other geophysical surveying techniques to collect dense subsurface spatial information about barrier islands, marshlands, and coastal environments that have been negatively impacted by human and natural events. This information will complement information gathered from visual inspection, local sampling, and remote sensing, creating a more complete picture to inform coastal restoration efforts, including restoring wetlands and barrier islands using dredged sediments. Impacts to the Mississippi Gulf Coast are due to human modification of rivers and streams flowing into the Gulf altering the sediment deposition patterns as well as natural events such as hurricanes which can alter large sections of the landscape. Mitigating or reversing these impacts requires restoration of wetlands and barrier islands using dredged sediments, reintroducing native plants, and reversing alterations to rivers and protecting shorelines from erosional forces. These restoration projects require a multidisciplinary group of scientists equipped with the best information attainable. Much of the information is obtained by visual inspection and measurements obtained by local sampling. Spatially dense information is obtained from remote sensing but the same is not usually obtained for the subsurface.</p> <p>Geophysical investigations are an indirect method of obtaining generalized spatially dense sub-surface geologic information by using special instruments to make certain physical measurements (Reynolds, 2011). Near surface geophysical techniques have been used for geotechnical and environmental problems and several handbooks describing their use have been published (EPA, 1993; ASCE, 1998). A recent handbook has been published on agricultural applications (Jalred, Daniels and Eason, 2008). Numerous geophysical methods are applicable to coastal restoration and include: acoustic/seismic, electromagnetic and resistivity, gravity, optical sensing, radar, magnetics, as well as others. Most methods can be used on land, within the transition zone (marsh areas), and in the water.</p> <p>Geophysical surveying provides unique and valuable subsurface information to assist with the evaluation of barrier islands, marsh lands, and coastal environments. It has the potential to provide information about the onset of subsidence, location and extent of freshwater aquifers, locations and extent of salt water intrusion, and the location and amount of sand reserves for coastal restoration projects (Andrews et al., 2007). The cost of geophysical explorations is generally low compared with the cost of core borings or test pits, and considerable savings may often be affected by judicious use of this exploration method in conjunction with other methods.</p> <p>The University of Mississippi proposes to leverage its extensive experience in using acoustic, seismic, and electrical methods for surveying and mapping agricultural soils, monitoring sediment transport in streams, mapping sediment accumulations in reservoirs, and investigating hydraulic structures such as dams and levees in the context of coastal restoration. UMSJ's choice of seismic and electrical methods is based on the fact that these methods provide orthogonal information. Seismic methods use mechanical energy that returns to the surface after traveling some distance through the ground. The 3D-velocity image maps can then be used to infer subsurface units/features having sufficient differences in elastic properties that are important, for example, in modelling subsidence of barrier islands. Electrical methods utilize direct currents or low frequency alternating currents to investigate the electrical properties of the subsurface. Most earth materials conduct electricity by the passage of ions in the pore water. Factors that affect the resistivity of soil-water mixtures include ionic concentration, porosity, surface conduction, tortuosity, and connectivity of phases. Therefore, the University of Mississippi can then be used to infer subsurface units/features having sufficient differences in elastic properties that are important, for example, in modelling subsidence of barrier islands. Electrical methods utilize direct currents or low frequency alternating currents to investigate the electrical properties of the subsurface. Most earth materials conduct electricity by the passage of ions in the pore water. Factors that affect the resistivity of soil-water mixtures include ionic concentration, porosity, surface conduction, tortuosity, and connectivity of phases. Therefore, the University of Mississippi can then be used to infer subsurface units/features having sufficient differences in elastic properties that are important, for example, in modelling subsidence of barrier islands. Electrical methods utilize direct currents or low frequency alternating currents to investigate the electrical properties of the subsurface. Most earth materials conduct electricity by the passage of ions in the pore water. Factors that affect the resistivity of soil-water mixtures include ionic concentration, porosity, surface conduction, tortuosity, and connectivity of phases. Therefore, the University of Mississippi can then be used to infer subsurface units/features having sufficient differences in elastic properties that are important, for example, in modelling subsidence of barrier islands.</p>		Yes	No	Yes	Yes	No	No	Yes	No		\$ 200,000.00	\$ -	
Eco Restoration	2167	11/7/2014	Biological Filtration: Using Sponges to Remediate Gulf of Mexico Coastal Contaminants	<p>Coastal marine ecosystems are crucial environments of the Gulf of Mexico, and the Mississippi Sound, that include important commercial fishery species, as well as threatened and unique species. Recent natural and anthropogenic stressors (including multiple Category 3+ hurricanes, as well as the Deep Horizon oil spill) within these GoM ecosystems have resulted in significant damage and loss of these critical resources. Thus, the restoration of water quality along the Mississippi coastline is crucial for residents and stakeholders. We propose to deploy a system of biological filters around the periphery of important GoM habitats (e.g., seagrass beds) to clear contaminants from the water column and improve water quality. Specifically, we will attach marine sponges to multiple deployed cinder blocks, and divers will position these 30-cm diameter identified habitats and/or between point source discharges and the habitat in question. Marine sponges are important filter-feeders with pumping rates in excess of 30 l per hr, and many contain extensive symbiotic microbial populations that have important roles in biogeochemical cycling (e.g., nitrification processes). Research by Drs. Slattery and Goehfeld has demonstrated significant clarification of particulate organic carbon (POC) and microbial metabolism of dangerous nitrogen species into biologically-usable nitrogen. Moreover, we can seed sponges with specific microbes that are known to clear PAHs and other toxic metabolites. We will position sufficient biological filters (i.e., cinder-blocks w/ sponges) to clear the water near habitats of interest, and through resources in UMSJ's Environmental Toxicology Research Program (ETRP), we will monitor changes in the water quality post-deployment. The data will be analyzed using appropriate time series statistics, as well as community profiling tools, and a final report will be provided to the appropriate resource managers to encourage and inform improvements in water quality remediation and habitat restoration, while outreach lectures will be provided to convey the results of the study and the implications for the regional stakeholders.</p> <p>The budget provided represents the aforementioned remediation for a single site only. This project can stand alone based on the efforts of a UM field collection team, as well as the laboratory efforts of the UM ETRP. However, value added mapping and/or tissue analysis options would be beneficial (see Restore Projects headed by Eason, Dierks, and Slattery, respectively).</p> <p>University of Mississippi: Marc Slattery, Deborah Goehfeld, John Rimoldi, & Kristine Willett</p>		Yes	Yes	3000%	No	No	Yes	No	Yes	No		\$ 311,763.00	\$ -
Eco Restoration	2168	11/7/2014	Gulf of Mexico Education & Outreach: Training the Next Generation of Environmental Health Managers	<p>In recent years, direct and indirect anthropogenic impacts on Gulf of Mexico, and the Mississippi Sound, coastal ecosystems have reached crisis levels. In addition to the recent oil spill, this region experiences nutrient enrichment and pesticides from agricultural run-off, metals and chemical pollutants from industrial discharges, and a variety of pharmaceuticals and personal care products from community wastewater. These multi-stressors emphasize that as stakeholders and future generations of scientists deal with these increasingly complex environmental issues, they will need training in novel interdisciplinary skills and perspectives that will enable them to tackle these issues in creative ways. Using the GOM as a natural laboratory, we will train graduate students in the varied effects of aquatic stressors using cutting-edge technologies from disciplines (i.e., Biology, Chemistry, Engineering, Geology, and Pharmacy), and we will apply these lessons to address the most pressing environmental and societal implications (e.g., Restoration Management, Law and Policy). The Environmental Toxicology Research Program (ETRP) at the University of Mississippi studies these issues using a variety of techniques including 1) Biomarker studies (cellular/molecular processes), 2) Environmental Processes (organismal- to community-level organizational effects), 3) Fate & Transport (chemical analyses), 4) Risk Assessment, and 5) Environmental Remediation. We propose to develop an intensive summer 300-hour camp with broad training and multiple perspectives in these core research areas. Participants will receive training and mentorship from ETRP scientists, as well as collaborators in government and private industry laboratories to prepare them to deal with current and future GOM health issues. Specifically, we will recruit interested students (undergraduate, graduate and high school) and stakeholders from Mississippi communities for month long summer sessions divided between the UM Field Station (Oxford MS) and the MS coast. During the first third of the course, students will receive focused lectures and intensive 30-hour on-site training in water quality analyses and biomarker surveys. The team will then drive to the Gulf Coast Research Laboratory where they will learn field monitoring procedures, and habitat remediation/restoration techniques.</p> <p>We plan to recruit 24 students into each of two summer sessions (i.e., June and July) for a total of 48 stakeholders trained each year. However, if funding will only allow a single cohort to be trained, the budget provided represents the aforementioned training for one month and 24 students only. This education and outreach program can stand alone based on the efforts of the UM ETRP personnel and their collaborators, but we will attempt to leverage outreach opportunities with other funded Restore Projects to provide greater context for trainees.</p> <p>University of Mississippi: Marc Slattery, Deborah Goehfeld, John Rimoldi, & Kristine Willett</p>		Yes	No	Yes	Yes	Yes	No	Yes	Yes		\$ 391,457.00	\$ -	

Eco Restoration	2169	11/7/2014	Gulf of Mexico Health Assessment: Instrumentation for Environmental Monitoring	<p>Marine coastal communities of the Gulf of Mexico, and the Mississippi Sound, represent important commercial fishery grounds, as well as habitats that support threatened species and provide essential coastal protection and recreation opportunities. Recent natural and anthropogenic stressors (including multiple Category 3+ hurricanes, as well as the Deep Horizon oil spill) to the GoM have resulted in significant damage and loss of these critical ecosystems and the species they support. Thus, the management of these important ecosystems along the Mississippi coastline is crucial for residents and stakeholders. This requires cutting edge monitoring strategies that focus on measuring the concentrations of contaminants: 1) in local seawater and sediment, and 2) in species tissues. We propose to acquire two incredibly powerful monitoring instruments to enhance the existing University of Mississippi Environmental Toxicology Research Program (ETRP) resources. Specifically, we will upgrade our existing Gas Chromatography/Mass Spectrometer (GC/MS) to address contaminant concentrations in seawater and sediment at resolutions that are approximately an order of magnitude more sensitive than our current instrument. Likewise, we will also upgrade the ETRP Synapt proteomics mass spectrometer workstation to include a MALDI TOF interface to measure contaminants in tissues of affected species. While our current resources enable us to perform the studies proposed in other RESTORE proposals (P: Slattery), these upgrades will provide state-of-the-art instrumentation for UM ETRP researchers, and will provide resource managers access to sophisticated monitoring approaches that focus on the fate and transport of contaminants in the environment, as well as the stress responses of affected species in their entirety (i.e., the proteome).</p> <p>University of Mississippi: Marc Slattery, Deborah Gochfeld, John Rimoldi, & Kristine Willett</p>	Yes	Yes	100000	No	Yes	Yes	No	No	Yes	\$	400,000.00	\$	-	-	
Eco Restoration	2170	11/7/2014	Monitoring the Health of Coastal Gulf of Mississippi Hard-bottom Communities	<p>Hard bottom reefs are crucial environments of the Gulf of Mexico, and the Mississippi Sound, that represent essential habitats for many important fishery species, as well as threatened marine life, and organisms that produce chemical compounds with potential biomedical importance (e.g., graptolins and sponges). Recent natural and anthropogenic stressors (including multiple Category 3+ hurricanes, as well as the Deep Horizon oil spill) to GoM hard-bottom reefs have resulted in significant damage and loss of these critical commercial resources. Thus, the restoration and management of these important ecosystems along the Mississippi coastline is crucial for residents and stakeholders. Our team of marine scientists, environmental toxicologists and natural product researchers proposes developing an environmental monitoring program to encompass current hard bottom reefs along the MS coastline. Specifically, at each site we will collect replicate seawater and sediment samples (n=10 ea), monthly over the course of one year, for the following fate and transport analyses: 1) fecal coliform levels, 2) PAH concentrations, 3) heavy metal profiles, and 4) the presence of other important anthropogenic contaminants (e.g., endocrine disruptors). In addition, we will monitor the health of the hard-bottom reefs through time by evaluating changes in biomass, biodiversity, and percent cover, as well as biochemical parameters indicative of stress (i.e., changes in proteins, carbohydrate, lipid and chemical constituents). The data will be analyzed using appropriate time series statistics, as well as community profiling tools, and a final report will be provided to the appropriate resource managers to encourage and inform improvements in water quality remediation and habitat restoration, while outreach lectures will be provided to convey the results of the study and the implications for the regional stakeholders.</p> <p>While we recommend complete coverage of MS hard-bottom reefs, it is possible that regional resource managers may wish to focus on a specific resource site and the data from that study can drive models for additional sites throughout the GoM coast. Thus the budget provided represents the aforementioned sampling regime for a single site only. This project can stand-alone based on the efforts of a UM field collection team, as well as the laboratory efforts of the UM Environmental Toxicology Research Program and National Center for Natural Products Research. However, value added mapping and/or tissue analyses options would be beneficial (see Restore Projects headed by Eason, Dierks, and Slattery, respectively).</p> <p>University of Mississippi: Marc Slattery, Deborah Gochfeld, John Rimoldi & Kristine Willett</p>	Yes	No		No	Yes	Yes	No	Yes	No	\$	294,392.00	\$	-	-	
Eco Restoration	2171	11/7/2014	Monitoring the Health of Coastal Gulf of Mexico Oyster Reefs	<p>Oyster reefs are crucial environments of the Gulf of Mexico, and the Mississippi Sound, that represent important commercial fishery species as well as biological sinks of anthropogenic contaminants. Recent natural and anthropogenic stressors (including multiple Category 3+ hurricanes, as well as the Deep Horizon oil spill) to GoM oyster reefs have resulted in significant damage and loss of these critical commercial resources. Thus, the restoration and management of these important ecosystems along the Mississippi coastline is crucial for residents and stakeholders. Our team from UMAC's Environmental Toxicology Research Program (ETRP) proposes to develop an environmental monitoring program along the MS coastline to encompass current and planned deployment of oyster reefs. Specifically, at each site we will collect replicate seawater and sediment samples (n=10 ea), monthly over the course of one year, for the following fate and transport analyses: 1) fecal coliform levels, 2) PAH concentrations, 3) heavy metal profiles, and 4) the presence of other important anthropogenic contaminants (e.g., endocrine disruptors). In addition, we will monitor the health of the oyster reefs through time including changes in biomass and percent cover, as well as biochemical parameters indicative of stress (i.e., changes in proteins, carbohydrate, and lipid). The data will be analyzed using appropriate time series statistics, as well as community profiling tools, and a final report will be provided to the appropriate resource managers to encourage and inform improvements in water quality remediation and habitat restoration, while outreach lectures will be provided to convey the results of the study and the implications for the regional stakeholders.</p> <p>While we recommend complete coverage of MS oyster reefs, it is possible that regional resource managers may wish to focus on a specific resource site and the data from that study can drive models for additional sites throughout the GoM coast. Thus the budget provided represents the aforementioned sampling regime for a single site only. This project can stand-alone based on the efforts of a UM field collection team, as well as the laboratory efforts of the UM ETRP. However, value added mapping and/or tissue analyses options would be beneficial (see Restore Projects headed by Eason, Dierks, and Slattery, respectively).</p> <p>University of Mississippi: Marc Slattery, Deborah Gochfeld, John Rimoldi & Kristine Willett</p>	Yes	No		No	Yes	Yes	No	Yes	No	\$	287,192.00	\$	-	-	
Eco Restoration	2172	11/7/2014	Monitoring the Health of Coastal Gulf of Mexico Seagrass Beds	<p>Seagrass beds are crucial environments of the Gulf of Mexico, and the Mississippi Sound, that represent essential habitats for many important fishery species as well as threatened marine life, biological sinks of nutrients and anthropogenic contaminants, and buffers for coastal erosion and storm surge. Recent natural and anthropogenic stressors (including multiple Category 3+ hurricanes, as well as the Deep Horizon oil spill) to GoM seagrass communities have resulted in significant damage and loss of these critical resources. Thus, the restoration and management of these important ecosystems along the Mississippi coastline is crucial for residents and stakeholders. Our team of marine scientists and environmental toxicologists from UMAC's Environmental Toxicology Research Program (ETRP) proposes to develop an environmental monitoring program along the MS coastline to encompass current and planned deployment of seagrass communities. Specifically, at each site we will collect replicate seawater and sediment samples (n=10 ea), monthly over the course of one year, for the following fate and transport analyses: 1) fecal coliform levels, 2) PAH concentrations, 3) heavy metal profiles, and 4) the presence of other important anthropogenic contaminants (e.g., endocrine disruptors). In addition, we will monitor the health of the seagrass community through time including changes in biomass and percent cover, as well as biochemical parameters indicative of stress (i.e., changes in proteins, carbohydrate, lipid, and photosynthetic function). The data will be analyzed using appropriate time series statistics, as well as community profiling tools, and a final report will be provided to the appropriate resource managers to encourage and inform improvements in water quality remediation and habitat restoration, while outreach lectures will be provided to convey the results of the study and the implications for the regional stakeholders.</p> <p>While we recommend complete coverage of MS seagrass beds, it is possible that regional resource managers may wish to focus on a specific resource site and the data from that study can drive models for additional sites throughout the GoM coast. Thus the budget provided represents the aforementioned sampling regime for a single site only. This project can stand-alone based on the efforts of a UM field collection team, as well as the laboratory efforts of the UM ETRP. However, value added mapping and/or tissue analyses options are would be beneficial (see Restore Projects headed by Eason, Dierks, and Slattery, respectively).</p> <p>University of Mississippi: Marc Slattery, Deborah Gochfeld, John Rimoldi & Kristine Willett</p>	Yes	No		No	Yes	Yes	No	Yes	No	\$	287,192.00	\$	-	-	
Eco Restoration	2173	11/7/2014	Integrated geophysical - geological characterization of Mississippi Sound and tributary estuarine seabed	<p>Background The Mississippi Sound and surrounding estuarine areas comprise a large portion of the State territorial waters in a unique geological, physiographic, and economic setting. Vast urbanized coastal areas adjacent to natural and recreational areas adjacent to very shallow water (0-15m) make seabed characterization very challenging. Traditional marine geophysical methods employing seismic/acoustic devices suffer strong absorption from the prevalent coarse sediment seafloor, and/or experience high noise levels from signal bouncing in the shallow water, while nearby land requires integration of offshore/onshore geophysical methods (i.e. Lidar topography/multibeam bathymetry, marine/land resistivity).</p> <p>Project goal The project is designed to employ innovative geophysical/geological methods to characterize the geology and morphology of Mississippi Sound and its important tributary estuaries. Geophysical and geological data integration will facilitate the creation of a multi-attribute geo-model and provide the fundamental baseline for restoration/sustainability activities including marine geo-hazards assessment, ecosystem assessment and restoration, contaminants mapping, marine infrastructures, sediment dynamics, beach nourishment, etc.</p> <p>Project Description UMACI-CAREE-NLST at the University of Mississippi has a long and varied experience in geophysical and geological exploration of the very shallow coastal zone. We have developed/customized geophysical systems to better image the seabed and the shallow subsurface. Multibeam Bathymetry and Side-Scan Sonar are used to image seabed morphology, characterize sediment texture, map sea grass, oyster beds, ship wrecks etc.; multifrequency chirp subbottom and Unibeam Seistec profilers image buried reefs, gas pockets, sediment thickness; marine magnetometer surveys image buried metal objects. Geological methods AC-vibra-core, gravity core, grab samples - provide sediment ground-truthing; geological and geochemical analysis characterize sediments and possible contaminants. Electrical resistivity profiles can be acquired in conjunction with seismic profiles to better define fluids circulation in the subsurface, i.e. fresh water table position/depth, buried seagrass, gas, tar and additional hydrocarbon pollution. We also have vast experience in processing and interpreting the various datasets that we collect, often devising innovative techniques to suit particular problems and challenges.</p> <p>Relationship to RESTORE goals Characterizing the seafloor and shallow subsurface of Mississippi's coastline and nearshore is vital to the biologic and economic health of the region and needed in order to evaluate natural and anthropogenic changes to this valuable resource. This project will identify and damaged areas that need to be addressed in order to ensure persistent, restoration, and economic safety in the area. It will inform habitat and ecosystem management and monitoring into the future, and assure that maximum care is taken in coastal health recovery and management.</p> <p>Methods A series of shallow-water cruises would be scheduled to collect geological and geophysical data from the Sound and estuaries. The whole suite of equipment can be operated from a small vessel that</p>	Hancock, Harrison, Jackson	Yes	No		Yes	Yes	Yes	Yes	Yes	No	\$	115,000.00	\$	-	-

Eco Restoration	2174	11/7/2014	Assessing fish stocks using horizontally scanning sonar	<p>Description:</p> <p>Restoration of the aquatic habitats of rivers draining into the Mississippi Sound, and of the Sound itself, is a goal of significant interest to the people of Mississippi. Improving the quality and quantity of fish stocks can be a major economic impact on the Gulf region by enhancing both sport and commercial fishing industries. The purpose of this proposal is to provide a low-cost, autonomous device for the acquisition of the data needed by the Mississippi Department of Environmental Quality (MDQ) and other stakeholders to monitor the physical condition of near-shore and coastal fisheries, thereby providing a metric for assessing the progress and ultimate success of restoration efforts. It is also worth noting that the proposed device may find of special utility both in the initial decision-making process regarding proposed development in or near Essential Fish Habitats and also during and following any permitted development by monitoring fish populations, thus providing a means of ground-truthing predictions of impact with observational data.</p> <p>We are proposing to leverage the considerable expertise acquired at the National Center for Physical Acoustics (NCPA) and the University of Mississippi (UM) during its previous federally funded research and development project on the counting and sizing of catfish stocks in commercial aquaculture ponds (Chambers et al. 2002, 2010; Heffington et al. 2006). Specifically, we propose to adapt two existing high-frequency (420 kHz) horizontally scanning sonar systems that were originally developed to size and count catfish in commercial catfish ponds to perform a similar task in rivers draining into the Mississippi Sound and in the sound itself. A typical catfish pond ranges in size from 0.04 to 7.2 hectares, with the most desirable size being about 4 hectares. Such ponds are typically about 100 meters in length and 1 to 2 meters in depth. The current device can accommodate this and deeper areas of most rivers and of the Sound itself, if desired. The current version of the sonar is capable of 1 cm (0.4 inch) range resolution combined with an approximately 100-meter (109-yard) maximum range. Areas of lesser depth can be sampled by use of higher frequencies, e.g., 1 MHz, although at the cost of reduced range.</p> <p>Use of the system may be divided into two parts, calibration and experimental measurements. The calibration procedure is necessary to correlate acoustic target strength (TS) with the size of fish in the target population. This is described in SRAC Progress Report 23 (2010). Briefly, a seine net is used to collect a sample of fish which are weighed and then allowed to swim back into the river through a PVC pipe. The active element of the sonar scans the region the interior of the pipe, and the returning echoes are recorded. The statistical relationship between target strength and measured fish weight is then determined. During experimental measurements of free-swimming fish, the pipe is removed and the data recorded from each of several hundred pulses (aka "Kongsigs"). However, an additional step is necessary to adjust each recorded TS for attenuation of the water and spreading of the acoustic wave. This is done by using the total time of flight of the signal to calculate the distance to the fish and applying predetermined correction factors. The final result will consist of one or more plots of the number of fish vs. size, weight or other desired endpoint.</p> <p>Budget:</p>		Yes	No		No	Yes	No	No	No	No	No	\$	215,000.00	\$		
Eco Restoration	2181	11/17/2014	Continuous record of water quality for evaluating restoration impacts (nutrients, trace metals, microbial communities and physical measurements)	<p>The goal of ecological restoration is to provide a productive and sustainable ecosystem that results in the increase in biodiversity and nutrient retention. In near shore marshes, plant diversity and species differences lead to carbon sequestration, changes in water quality and nutrient retention. However, such wetlands are generally either nitrogen or phosphorus limited and the availability of these essential nutrients affects plant community type and species richness. Therefore, an essential step in the restoration of Mississippi Sound is to understand the temporal aspect of water quality before and during restoration projects.</p> <p>Water quality indexes have been based on measurements of DIN, DIP, chlorophyll <i>a</i>, water clarity, and dissolved oxygen; however, because no DIP sensors are available such measurements are made on discrete samples and the availability of sampling people to sea. As a result there are limited temporal observations especially on hourly to daily time scales and when weather is bad. In contrast, studies of submersed aquatic vegetation (SAV) typically focus on off-the-shelf sensors (temperature, salinity, pH, DO, turbidity, light attenuation), but lack critical information about nutrient concentrations.</p> <p>To deal with these shortfalls, we have been developing and utilizing continuous fluid samplers (OsmoSamplers) for oceanic, estuarine, riverine, and land-based borehole research (Wheat et al. 2011). OsmoSamplers use osmotic gradients to draw fluids into small-bore tubing (Jannasch et al., 2004). Such systems have been designed for studies lasting days (samples every 15 minutes) to 5 years (samples every week). Samples also can be preserved in situ to stabilize dissolved metals, nutrients and microbial community structure (Robidart et al., 2013).</p> <p>We propose to deploy new state-of-the-art water quality monitoring systems that couples standard sensor measurements with OsmoSampler systems that are specifically designed to preserve fluids for nutrients, trace metals, and microbial community structure. We move beyond standard nutrient measurements to include trace metals and microbes. Trace metals can be toxic and are mobilized by excretion of salt glands in <i>Spartina alterniflora</i> and contaminated sediments the latter resulting from changes in redox state. Samples also will undergo standard microbial analyses with a particular interest in <i>E. coli</i>, an indicator species for human health issues. However, the entire biome will be assessed because not much is known about the temporal aspects of microbial structure and function in these environments.</p> <p>We propose to deploy 4 units in representative environments within Mississippi Sound for one year. Each unit will be recovered and redeployed every quarter (daily record) during which a companion deployment of a week in duration will be deployed and recovered (hourly record). Samples will be analyzed at UM and other universities (e.g. USM). Fabrication, deployment, recovery, and analytical costs are estimated at \$380K with university overhead.</p>	Jackson/Harrison	Yes	No		No	Yes	No	No	No	Yes	\$	380,000.00	\$			
Eco Restoration	2182	11/17/2014	Continuous Monitoring of Subsurface Water Quality (Nutrients, Metals, Salinity, Pressure) using Piezometers (Boreholes)	<p>The goal of ecological restoration is to provide a productive and sustainable ecosystem that results in the increase in biodiversity and nutrient retention. In near shore marshes, plant diversity and species differences lead to carbon sequestration, changes in water quality and nutrient retention. However, such wetlands are generally either nitrogen or phosphorus limited and the availability of these essential nutrients affects plant community type and species richness. Within marsh environments nutrients and availability of water affect plant zonation as a function of competition, physical stress and nutrient limitation. Therefore, continuous monitoring of these constituents is essential for restoration projects in Mississippi Sound to understand the temporal aspect of water quality before and during restoration projects and to elucidate the effect of tidal forcing on the subsurface environment. For example, temporal monitoring within sandy marsh and coastal aquifers show a tidal influence on nutrient consumption and microbial productivity within the system (e.g., Sansone et al., 2008).</p> <p>We propose to deploy novel sampling and sensor capabilities in piezometer (boreholes) within and near restoration projects to monitor nutrient, trace metal, salinity, and water level in the subsurface. Such data will provide an indication of water flow, availability of fresh water, the transport and consumption of nutrients, and the mobilization of metals in response to changes in redox state and productivity of microbial communities within sediment. This proposed work goes beyond standard analyses to include trace metals because mobilization of urban and industrial sources of trace metals (e.g., Fe, Mn, Cu, Cr, Pb, Zn, Cd, and Hg) through natural redox changes can reach concentrations that are detrimental or toxic in tidal creeks, watersheds, and in the subsurface.</p> <p>The novel system that we propose to deploy couples standard sensor measurements with OsmoSampler systems that are specifically designed to preserve fluids for nutrient and trace metal concentrations. OsmoSamplers are continuous fluid samplers that have been utilized for oceanic, estuarine, riverine, and land-based borehole and piezometer research (Wheat et al. 2011). OsmoSamplers use osmotic gradients to draw fluids into small-bore tubing. The slow pump rate and small bore result in plug flow, minimizing dispersion (Jannasch et al., 2004). Such systems have been designed for studies of days (samples every 15 minutes) to 5 years (samples every week) and can be designed to preserve samples in situ for laboratory-based analysis of dissolved metals.</p> <p>We propose to deploy 4 units in representative environments within Mississippi Sound proposed restoration projects for one year. Each unit will be recovered and redeployed every quarter (daily record) during which a companion deployment of a week in duration will be deployed and recovered (hourly record). Samples will be analyzed at UM and other universities (e.g. USM). Fabrication, deployment, recovery, and analytical costs are estimated at \$380K with university overhead included.</p>	Mobile/Jackson, H. Harrison	Yes	No		No	Yes	No	No	No	Yes	\$	280,000.00	\$			
Eco Restoration	2183	11/11/2014	RETINA: A K-6 STEM (Science, Technology, Engineering, and Mathematics) Program for Mississippi	<p>Restoration and monitoring projects in Mississippi Sound require STEM (Science, Technology, Engineering, and Mathematics)-trained personnel and a community that appreciates the benefits of a healthy ecosystem; however, there is a deficiency in both that could stymie the growth, continuity and quality of proposed restoration projects. To address these deficiencies and to position Mississippi for the future we need to develop a child's "capacity to develop theory-based learning, which is inherent and can be fostered by promoting curiosity and by exposing them to a spectrum of experiences. Such experiences play a vital role in achieving proficiency in science understanding, but unfortunately, a myriad of budgetary and socioeconomic reasons limits opportunities for youth, leaving many economically disadvantaged students trailing in STEM fields (NRC, 2007).</p> <p>To meet these challenges The RETINA Program provides schools with a cost-effective and administratively beneficial way to broaden the scope of student exposure through its STEM curriculum. The RETINA Program is a 50-minute per day program that lasts 5 days. The Program blends formal classroom instructional activities with hands-on, skill development in a team-based setting conducted by the teacher and guided by national science standards that are set for each grade (e.g., ecology and water quality). There are four different activities per grade that are presented during the first four days. Activities are chosen with the intention of integrating technology under the umbrella of a scientific process and are designed to provide consistency and a continuum of difficulty among the grades. The program focuses on interactive participation in the design and development of simple robotic and sensor systems, providing a range of challenges to engage all students through project-based learning and provide a medium for communicating interest, experience, and challenges on the fifth and final day of the program.</p> <p>The RETINA program has been designed, modified, and tested in several diverse schools in California and Vermont. It is now poised to expand. Because RETINA's hands-on activities require (1) components that may be prohibitively expensive in today's educational fiscal climate, (2) secure storage space, and (3) technology savvy individuals to maintain systems, the RETINA Program is designed as a traveling program that gives many students access to the same resources. We propose to (1) supply two towed cargo vans with all of the materials necessary for teachers to conduct the educational modules, (2) provide educators with program materials (lesson plan, PowerPoint presentations, homework, instructional videos, and images) and STEM professional development sessions, (3) introduce the RETINA Program within school systems to engage students, and (4) organize a community service organization to provide technical and logistical support to maintain and refurbish modules and to transport cargo vans from school to school.</p> <p>Each van will be loaded with modules to accommodate 5 different classrooms per grade for each of the K-6 grades at a particular school. Given a week-long program, one cargo van can reach ~20 different schools per year (10,000 students). With the two vans proposed herein the cost per student reached per year is <\$1, based on an initial cost of \$570K (2-yr award). Future costs to maintain and transport systems can be as low as ~\$10K for each cargo van per year (~\$0.05 per student) and supported by a community organization. Additional vans and professional development can be added to reach each of the 447 elementary schools in Mississippi.</p>	Pearl River, Washington, Hancock, Stone, St Tammany, Mobile Jackson, Forrest, Perry, Harrison, George	Yes	Yes	2000%	Yes	Yes	No	No	No	Yes	\$	570,000.00	\$		STEM Curriculum	

Eco Restoration	2184	11/11/2014	Marine data collection design competitions for Mississippi's engineering students	<p>Overview and Motivation: The collection of restoration science data in the Mississippi Gulf Coast will require the development of innovative new sensors and deployment platforms. New sensors are needed to efficiently collect important chemical and biological data to characterize the health of the Mississippi Sound Estuary. In addition to the sensor designs, new, low cost deployment platforms are needed to provide the vehicle to integrate the sensors into efficient data collection systems.</p> <p>Project Goal: Create a yearly design competition among engineering and engineering technology students at all Mississippi universities that will address the needs of the restoration science community and provide critical science data.</p> <p>Project Description: Collecting ecosystem data in a marine environment requires interdisciplinary engineering design to create compact and robust platforms that can be easily deployed and recovered. These data collection platforms must operate in the marine environment of currents, salinity and interference from fishing boats. The design of marine data collection platforms will require students to work as teams with representatives from different engineering disciplines.</p> <p>Based on the requirements developed yearly by the restoration science community, students at Mississippi universities will research and design solutions for new data collection platforms. These designs will be judged by a committee from the university and restoration science community and a prototype of the winning design from each university will be built. The prototypes will be judged and the winning design will be built and deployed to collect the needed data.</p> <p>The Mississippi Mineral Resources Institute (MMRI) at the University of Mississippi has a long history of designing, building, deploying and recovering marine data collection platforms. We will use this expertise and the resources of the MMRI Marine Technology shop to build multiple copies of the winning design, deploy and recover them in the Mississippi Gulf Coast.</p> <p>Budget and Timeline Each team would be supplied with a budget of \$1500 per year for materials and supplies. The cost of working prototypes, with all instruments, would be dependent on the cost of required instruments and is estimated to be \$150,000 per year. The cost to build, deploy and recover the final winning design is estimated at \$250,000 per year, including instruments, for a yearly cost of approximately \$425,000.</p>	Hancock,St Tammany,Mobile Jackson,Pearl River,Orleans,Har rison	Yes	No	No	Yes	No	No	No	No	No	\$	425,000.00	\$	-	-	
Eco Restoration	2185	11/11/2014	SS-ROV Summer Camp - Take the Plunge into a Week-long Day Camp for 6th-8th Grade Students	<p>Restoration and monitoring programs in Mississippi require STEM (Science, Technology, Engineering, and Mathematics) trained personnel and an enlightened, educated community that is cognizant of the need for a healthy coastal ecosystem; however, there is a deficiency in both that could stifle the growth, continuity and quality of such proposed programs. Middle school students, in particular, are at the crossroad between a future in a STEM career and one that typically lacks scientific and environmental influences. To engage this demographic, we have developed the SS-ROV (Seafloor Science and Remotely Operated Vehicle) summer camp, which is a unique STEM-oriented summer program offered to students entering grades 6th to 8th.</p> <p>We propose to offer the SSROV Summer Camp throughout the state of Mississippi, but in particular, for this call, in southern Mississippi. SSROV Summer Camp is a week-long day camp that has an overarching theme that mimics activities aboard an oceanic research vessel. The science program is based on exploration and exposing students to test new ideas and concepts in a stimulating, confidence building atmosphere. Within this scientific theme students are engaged in challenging project-based and team-oriented problem solving activities. These activities represent functional technologies that are needed to achieve successful real-life missions and lead to the students creating innovated missions that the students devise.</p> <p>During the camp, students are challenged to effectively communicate, create, and solve problems while completing practical projects and performing real-world tasks. Worksheets, schematics and instruction guide students toward success and understanding in technical and scientific activities such as:</p> <ul style="list-style-type: none"> Scientific method Seafloor exploration techniques Electronic circuits and components Underwater robotics Marine ecology Quantifying ecosystem composition Automated benthic rovers Sensor calibration and data interpretation Group communication and collaboration Role playing and responsibilities <p>SSROV Summer Camp was initiated in Oxford, MS in 2014. The program will be offered in for one week in each of four Mississippi towns in 2015 (Dorford, Tupelo, Holly Springs, and Southern) through the support of C-DEB, and National Science Foundation (NSF) funded Science and Technology Center. We propose to expand the program to dozens of other towns in southern Mississippi and to provide more than one week at a given venue. A team of educators (one instructor and 3 interns) can oversee 6 camps per summer with 28 students per camp (total of 168 students). Because of the technical nature of the camp an introductory week is necessary. We also reserve an extra week for the interns (early college or graduating high school seniors) to develop/improve an activity. Restoration and monitoring systems in Mississippi require STEM (Science, Technology, Engineering, and Mathematics) trained personnel and an enlightened, educated community that is aware of the benefits of these actions for the future health of the Mississippi Sound and for maintaining or improving all of the activities and benefits that mankind has expected from the Mississippi Sound. One of the best ways to reach a community is by providing an exciting and stimulating hand-on activity to student that relay this excitement to their parents. Given the breadth of potential science and engineering topics that exist on interactive participation in the design and development of simple robotic systems through team-based and project-based learning. Thus, young students experience discovery through technology in a collaborative atmosphere.</p> <p>We propose to extend an educational/outreach program that is currently operating in northern Mississippi to Southern Mississippi and to the entire state. The program introduces fourth grade students to the ecology of seafloor organisms (satisfying national science standards) and a mechanism to study these organisms using underwater remotely-operated vehicles (ROV). The program begins with an introductory assembly-style presentation to all of the 4th grade students at a particular school. This presentation introduces seafloor organisms, ecology, healthy ecosystems, and the functionality of ROVs while exposing students to potential careers. Then the class is split into teams to build, motor, and switches to build a simple, but functional ROV. Student teams then test the operational capabilities of their ROV and modify their ROV to complete a specified task or to get a desired outcome. The hands-on, interdisciplinary, and applied science nature of this program sets the stage for fun and rewarding learning opportunity and provides a real-world framework for understanding ecology and technologies that are active in the Gulf of Mexico. When students are finished with the ROV activity, they are given a sticker and homework (that can be completed in class) to provide a foundation for discussing the activity with siblings and parents.</p> <p>We propose to expand this program to reach many of Mississippi's 447 elementary schools. We request \$95K for salaries, supplies, and travel (gas/lodging) to reach 80 individual schools (~8,000 fourth grade students) with the help of volunteers and unpaid student interns.</p>	Hancock,Stone,St Tammany,Jackson,Pearl River,Forest,Per ryon,Washington,Ha rison,George	Yes	No	Yes	Yes	No	No	No	No	\$	40,000.00	\$	-	-	STEM Curriculum	
Eco Restoration	2187	11/11/2014	A Hands-on Ecology-based STEM (Science, Technology, Engineering, and Mathematics) Activity for 4th Grade Students	<p>Restoration and monitoring systems in Mississippi require STEM (Science, Technology, Engineering, and Mathematics) trained personnel and an enlightened, educated community that is aware of the benefits of these actions for the future health of the Mississippi Sound and for maintaining or improving all of the activities and benefits that mankind has expected from the Mississippi Sound. One of the best ways to reach a community is by providing an exciting and stimulating hand-on activity to student that relay this excitement to their parents. Given the breadth of potential science and engineering topics that exist on interactive participation in the design and development of simple robotic systems through team-based and project-based learning. Thus, young students experience discovery through technology in a collaborative atmosphere.</p> <p>We propose to extend an educational/outreach program that is currently operating in northern Mississippi to Southern Mississippi and to the entire state. The program introduces fourth grade students to the ecology of seafloor organisms (satisfying national science standards) and a mechanism to study these organisms using underwater remotely-operated vehicles (ROV). The program begins with an introductory assembly-style presentation to all of the 4th grade students at a particular school. This presentation introduces seafloor organisms, ecology, healthy ecosystems, and the functionality of ROVs while exposing students to potential careers. Then the class is split into teams to build, motor, and switches to build a simple, but functional ROV. Student teams then test the operational capabilities of their ROV and modify their ROV to complete a specified task or to get a desired outcome. The hands-on, interdisciplinary, and applied science nature of this program sets the stage for fun and rewarding learning opportunity and provides a real-world framework for understanding ecology and technologies that are active in the Gulf of Mexico. When students are finished with the ROV activity, they are given a sticker and homework (that can be completed in class) to provide a foundation for discussing the activity with siblings and parents.</p> <p>We propose to expand this program to reach many of Mississippi's 447 elementary schools. We request \$95K for salaries, supplies, and travel (gas/lodging) to reach 80 individual schools (~8,000 fourth grade students) with the help of volunteers and unpaid student interns.</p>	Hancock,Stone,St Tammany,Mobile Jackson,Pearl River,Forest,Per ryon,Washington,Ha rison,George,Ha rison,Stone,St Tammany,Mobile Jackson,Pearl River,Forest,Per ryon,George	Yes	No	Yes	Yes	No	No	No	No	\$	95,000.00	\$	-	-	STEM Curriculum	
Eco Restoration	2188	11/11/2014	Sub-bottom profile, sediment characteristics, and mapping of the shallow (<5m) water portion of Mississippi Sound aided through the use of autonomous surface boats	<p>Critical to all four of the proposals that will be submitted by Mississippi to RESTORE is the need to know the water depth (bathymetry) and subsurface composition in Mississippi Sound (e.g., mud, sand, hard substrate). More than half of Mississippi Sound is <3m deep, restricting navigation to small, low draft vessels and severely limiting the swath width of multi-beam sonars that are typically used to map the seafloor. Even shallower are the many sites that harbor eel grass, submerged aquatic plants, and future sites for restoration projects. While airplane-based LidAR has been used to map shallow coastal zones, this technology is limited when waters are not clear, is expensive to conduct, and does not provide a context for subsurface type and structure.</p> <p>We propose a solution to this problem that affords an expansive mapping program for these shallow water areas with the resolution necessary to track temporal changes in seafloor relief and to discern substrate structure and type. To complete such operations we propose to use a fleet of autonomous instrumented (e.g., single beam sonar, navigation and communication hardware) surface boats (kayaks) that is responsive to a manned boat (e.g., Boston Whaler) with a multi-beam system and a sub-bottom chirp sonar. This automation exists (e.g., Mahacek et al., 2009; Kits and Mas, 2009) and has been expanded upon for gradient following (e.g., Adamek et al., 2013).</p> <p>Multi-robot systems offer many advantages over a single system, including redundancy, coverage and flexibility. One of the key technical considerations is coordinating individual units. We have designed and fabricated a new low cost autonomous surface vessel (ASV) that is capable of autonomous navigation using the cluster space control technique. These ASVs are monitored by a centralized controller, implemented via a sea-based computer that wirelessly receives ASV data and relays drive commands that are monitored by humans. Humans can intervene to adjust spacing based on visual cues and bathymetric data that are relayed from the ASVs. Thus, our cluster space control approach allows one to get the best quality data in an unknown/varying seafloor terrain. Furthermore, the manned presence provides a measure of quality control for the multi-beam system and chirp sub-bottom sonar on the command vessel.</p> <p>We propose to fabricate 8 autonomous systems boats that will respond to a master computer on a command ship. Specifically we will use a Boston Whaler with pole mounted multi-beam and sub-bottom profiler sonars to tow the fleet of ASVs to the sites of interest. The ASVs will be initiated and follow in formation behind the command boat. We will use Mikal Skatjet powered kayaks at a speed of 10 knots they can go 20 knots for 8-10 hours) and lease a Boston Whaler for the command vessel. With side-by-side ASV operation with 10 meter spacing and at 10 knots, we will be able to cover 1.5 km²/hr or 14 km²/day (1,300 acres). This will provide a bathymetric map with centimeter resolution, characterize sediment type, and provide an indication of subsurface stratigraphy.</p> <p>Each kayak will cost ~\$19K to purchase, instrument, and integrate with the aid of a graduate student, engineering technical support, and a small operational team. These kayaks will be integrated into the command structure during Year 1. For Year 2 we propose 20 days of operation in Mississippi Sound to cover (~75,000 acres or 117 square miles). The total cost of the preparing the vehicles in Year 1 and operating them in the field for 20 days in Year 2 is \$660K. But will provide 117 square miles of data in a GIS format that can be revisited yearly at a much reduced cost to monitor changes in bedform to establish depositional and erosional rates within Mississippi Sound.</p> <p>Kitts, Christopher A., and Ignacio Mas. "Cluster space specification and control of mobile multibot systems." <i>Mechatronics, IEEE/ASME Transactions on</i> 14.2 (2009): 207-218.</p>	Jackson,Harrison	Yes	Yes	2000k	No	Yes	Yes	No	Yes	Yes	\$	650,000.00	\$	-	-	Equipment development and purchase
Eco Restoration	2189	11/12/2014	Development of a Statewide Engineering Innovation Program for Marine Science Applications in Support of Mississippi Sound Restoration Projects	<p>The National Oceanic and Atmospheric Administration highlights the importance of the marine sector. Each of every job in the United States is marine-related and over one-third of the U.S. Gross National Product originates in coastal areas! However, the number of trained engineers from institutions of higher learning that have a understanding of the challenges associated with working within the marine sector are insufficient and don't meet community needs. For example, remotely operated vehicles (ROV) in 2015 are anticipated to have net revenues of \$48 with an order of magnitude more spent on operations. Similarly, investment in AUVs is advancing with a projected increase in more than a thousand AUVs (\$2.3B) by 2019 and the growth of sensors and navigational equipment doubled in the 2010-2011 period alone (Lee et al. 2012).</p> <p>We propose to make an investment in the education of engineers at the college level within the state of Mississippi, by exposing students to challenging engineering applications in the marine world, thereby opening the door to a plethora of potential careers. To accomplish this feat we will team up with Dr. Chris Kitts, Associate Dean of Research and Faculty Development, School of Engineering, Santa Clara University, who is funding by the Kern Family Foundation to develop a multi-institutional, cooperative, engineering program in which teams of students engineers and mentors design and fabricate instruments, platforms, and/or sensors. These products are integrated among the various university-based teams to complete a specified task that accomplishes a scientific goal. This successful and long-standing program incorporates a donor, where the Kern Family Foundation wants to make a difference.</p> <p>Building upon this successful program, we propose to a similar program within the state of Mississippi to integrate each of the schools of higher learning with an engineering program. The National Institute for Undersea Science and Technology (NIUST), which is a partnership between the University of Mississippi and the University of Southern Mississippi, will take the lead in designing criteria for different sensors, vehicles, or platforms that will be developed at each of the participating universities. Student teams will design, fabricate and test their system in context of design criteria. This work will culminate with the teams meeting at the Gulf Coast Research Laboratory in Ocean Springs, MS. Each team will then participate in the mission to collect data for restoration projects.</p> <p>The cost for this program is \$160K per year with half of the funds being spent on materials/travel/sensors for engineering teams and the remainder for coordination and science outcomes. Potential Year 3 projects could include, for example, the development of autonomous surface vessels for water collection, preservation, and sensing at the initial project will depend on the amount of money available and current restoration projects.</p>	Hancock,Jackson	Yes	Yes	Yes	Yes	No	No	No	Yes	\$	160,000.00	\$	-	-	Curriculum development	

Eco Restoration	2190	11/12/2014	Purchase and Sea Trials of a 4000-m Capable Remotely Operated Vehicle for Marine Science Discovery and Experimentation	The National Oceanic and Atmospheric Administration highlights the importance of the marine sector. One of every six jobs in the United States is marine-related and over one-third of the U.S. Gross National Product originates in coastal areas. An example of the growth in the marine sector is the expectation that remotely operated vehicles (ROV) in 2015 are anticipated to have net revenues of \$4B with an order of magnitude more spent on operations. Similarly, investment in AUVs is advancing with a projected increase in more than a thousand AUVs (\$2.3B) by 2019 and the growth of sensors and navigational equipment doubled in the 2010-2011 period alone (Lee et al. 2012). However, no deep-water ROV systems for marine science are based in the state of Mississippi or in any of the five states that border the Gulf of Mexico. We propose to make an investment in the infrastructure of Mississippi Marine Technologies through the purchase and sea trials of a 4000-m capable remotely operated vehicle (ROV). The National Institute for Undersea Science and Technology (NIUST), which is a partnership between the University of Mississippi and the University of Southern Mississippi, will take the lead in designing criteria for an ROV that will be suitable for scientific operations within the Gulf. Upon delivery of the ROV, the NIUST team will subject the ROV to sea trials and design and fabricate the various tools that will be needed for scientific discovery and experimentation. The cost for such a vehicle would include a tether, winch, and tether management system, control van, and supply van. The vehicle would have 2 seven-function manipulators. The cost for this design, purchase, and sea trials is ~\$5M and would take 3-4 years to complete the final integration of systems for ocean operations.	Hancock, Jr Tammam, Mobile Jackson, Harrison	Yes	Yes	10000%	Yes	Yes	Yes	No	No	Yes		\$ 5,000,000.00	\$ -	Equipment development and purchase	
Eco Restoration	2197	11/13/2014	The Impact of Louisiana restoration projects on the Mississippi Sound, and Estuary	Coastal Louisiana has experienced substantial wetland loss since the construction of Mississippi River levees in the late 1800s. This land loss is largely a result of marsh edge erosion and submergence of interior wetlands, combined with smaller contributions from direct land removal for canals, construction purposes, etc. One cause is the elimination of spring over-bank flooding which delivers sediment to the marshes. Other factors include: 1) a reduced sediment load in the Mississippi River; 2) landscape and hydrology alterations from man-made canals; 3) a high rate of regional subsidence due to sediment compaction, tectonic subsidence, subsurface withdrawal associated with oil/gas/groundwater extraction, and eustatic sea level rise; 4) wave and tidal erosion, which accelerates in importance as water bodies become larger; and 5) tropical cyclone events. In response, Louisiana has developed a 50-year Master Plan which includes a mix of sediment diversions to build new deltas, removing existing barriers on Mississippi River tributaries such as the Bayou LaMoque floodgate, sediment piping and dredging to recreate marshland, and levees/floodgates to protect urban areas from storm surge. This Master Plan will be funded through a variety of sources, including different Restore Act avenues. However, the impact on Mississippi has generally not been considered. We propose a monitoring and surge modeling program to assess these impacts. Freshwater flow from diversions could affect Mississippi's seafood industry and also alter the Mississippi Sound ecosystem. The high-nutrient content of Mississippi River water is known to create hypoxic zones in the Gulf of Mexico. In addition, these nutrients may also be impacting wetland root systems in organic soils, making them vulnerable to storm surge as suggested by the high-erosion rate near the Caernarvon diversion. Deliverables include: 1) salinity and water quality monitoring with weekly boating surveys; 2) ocean modeling sensitivity studies of diversion outflows and floodgate removals; 3) sensitivity modeling studies of storm surge from floodgates in the Riglets and Chef Pass on Mississippi, which is part of the Master Plan.	Hancock, Jr Tammam, Mobile Jackson, Harrison	Yes	Yes	No	No	No	No	Yes	No			\$ 500,000.00	\$ 500,000.00		
Eco Restoration	2200	11/13/2014	Integration of Earth Observations with Computational Modeling to Improve Estuary Water Quality Monitoring in the Mississippi Sound Estuary	Project Goal: To integrate water quality parameters derived from remote sensing with hydrodynamic water quality models to improve the monitoring and assessment of Mississippi Sound estuary. Overview and Motivation: The Gulf of Mexico has received a tremendous amount of attention lately from government, private industry and the general public. As a result of the Deepwater Horizon oil release, a great deal of attention has been given to restoration of the Gulf of Mexico and as a result of Congressional action, the RESTORE Act was passed. During the Status of Gulf of Mexico conference organized by the Harte Research Institute at Texas A&M University at Corpus Christi, a large number of speakers spoke of the need for science data to monitor restoration projects and to evaluate the potential for success of selected restoration projects. The linkage of remote sensing with hydrodynamic modeling can provide that needed monitoring. Estuaries represent an important component of the complex and dynamic coastal watersheds. They are usually characterized by abrupt chemical gradients and complex dynamics, which can result in major transformations in the amount, chemical nature and along the river's sea transition zones. The ecological functioning of these areas is considered to be of major concern, as estuaries offer the last opportunity to manage water quality problems before they become uncontrollable in the coastal waters. Numerical models are capable of providing hydrodynamically computed water quality data to study estuaries, however, it is difficult to set initialization and boundary conditions and to calibrate and validate the models. Remote sensing data can provide surface observations, but these data are limited by proximity to shore, cloud coverage, and variable spatial and temporal resolution. Mapping and monitoring water quality with remote sensing is also limited to the surface and near surface conditions, with little or no information at depth. Numerical models have the ability to predict, in three-dimensions, the changes in water quality parameters over time, providing coastal management agencies with information needed to evaluate restoration projects for effectiveness. Satellite remote sensing provides a synoptic and multi-temporal view of water quality at different resolutions, spatial, temporal, and spectral. Satellite remote sensing commonly used for water quality parameters includes MODIS, VIIRS and Landsat. With their daily temporal resolution and good spectral bands for water quality, MODIS and VIIRS are ideal for monitoring and mapping water quality on a frequent basis. The Landsat series of systems has higher 30 meter spatial resolution, but is limited in its temporal resolution to a 16 day repeat cycle. With the frequent cloud concerns in a coastal environment, temporal frequency is important. While both techniques have weaknesses, when integrated they are a powerful tool to study water quality in estuarine environments. The integration of these techniques was developed and demonstrated through a recent application to study water quality problems in Lake Pontchartrain during Bonnet Carré Spillway opening in 1997 (Hossain et al., 2014; Chao et al., 2013; Chao et al., 2012). In that study, the integration of remote sensing data with the CCHED numerical water quality model was used to map and monitor suspended sediment concentrations, chlorophyll-a concentration and salinity in the lake water at high spatial and temporal resolution. Satellite imagery derived water quality data were used to initialize, calibrate and validate the numerical model. Project Description: Commercial Proving Ground for Space to Sea Floor Environmental Monitoring Technologies and Autonomous Airborne and Maritime Systems Project Overview and Rationale Testing and validating new environmental monitoring technologies to enable long term land use planning, management, and sustainability of coastal resources is a foundational precept of community resilience through ecosystem preservation and restoration. Protecting these coastal resources which provide critical ecological services to the communities along the Mississippi Gulf Coast in terms of buffers against storm surge and sea level rise requires long term dependable, detailed, and proven information to make decisions that affect restoration and preservation outcomes. The National Oceans and Applications Research Center (NOARC) is focused on developing, testing, and validating the commercial applications of environmental monitoring technologies and the information they provide to address Mississippi restoration objectives while enhancing the long-term economic sustainability of this expanding geospatial information industry on the Mississippi Gulf Coast. Expansion and sustainability of this industry and its long term benefits to ecosystem restoration is currently inhibited by inconsistent means to calibrate and validate the basic data sets that underpin the derived resource management information. Scientific sampling designs to determine ecosystem restoration trends and quantified geospatial frameworks to make informed restoration investment decisions are critically dependent on calibrated and quantified data sets of known positional, spatial, spectral, and radiometric resolution. Replicable, calibrated data is the fundamental requirement for measuring spatial and temporal trends in coastal ecosystems that address long term adaptive management alternatives. This proposal addresses the fundamental requirement for quantified data and geospatial information products by Federal, State, NGO, and private organizations focused on wetland restoration and sustainability. In addition, the long term viability of this growing environmental monitoring service industry on the Mississippi Gulf Coast is also dependent on proven, demonstrable data and information product performance. The NOARC team will provide a comprehensive test range comprised of calibrated and instrumented target sites as well as highly instrumented and surveyed ecosystem reserves to Mississippi companies and universities to validate data products and derived geospatial information. The Mississippi Proving Ground will provide a unique, competitive edge to our companies and universities as they fully demonstrate and prove new monitoring technologies and information products to broader national and international markets. [e] Opportunity The market is currently exploding in low cost environmental monitoring technologies including commercial small satellites, unmanned air vehicles (UAVs), and autonomous maritime vehicles operating on and below the surface. To reduce vehicle cost, weight and power requirements, these platforms typically omit on-board calibration equipment. Therefore, the only way environmental data streams from these platforms can be validated and calibrated is through well characterized, calibrated, and instrumented ground-based test ranges. This proposal addresses this requirement by providing the means for Mississippi companies to enter the market with proven and tested information products and platforms. At the same time a well characterized, instrumented test range is aligned with RESTORE objectives focused on sustainable wetlands and resilient communities. The natural ecosystem component of this range will be used as the reference condition for conducting trend analyses on wetlands undergoing restoration and to aid in reporting long-term outcomes of restoration. In addition, the natural ecosystem test sites will be used to develop quantified sampling and monitoring techniques to determine long-term health and condition of wetland habitats including changes in areal extent, species composition, and competing land uses.	Hancock, Jr Tammam, Mobile Jackson, Harrison	Yes	No	No	No	Yes	No	No	No	No			\$ 750,000.00	\$ -	
Eco Restoration	2201	11/13/2014	Commercial Proving Ground for Space to Sea Floor Environmental Monitoring Technologies and Autonomous Airborne and Maritime Systems	Project Description: Commercial Proving Ground for Space to Sea Floor Environmental Monitoring Technologies and Autonomous Airborne and Maritime Systems Project Overview and Rationale Testing and validating new environmental monitoring technologies to enable long term land use planning, management, and sustainability of coastal resources is a foundational precept of community resilience through ecosystem preservation and restoration. Protecting these coastal resources which provide critical ecological services to the communities along the Mississippi Gulf Coast in terms of buffers against storm surge and sea level rise requires long term dependable, detailed, and proven information to make decisions that affect restoration and preservation outcomes. The National Oceans and Applications Research Center (NOARC) is focused on developing, testing, and validating the commercial applications of environmental monitoring technologies and the information they provide to address Mississippi restoration objectives while enhancing the long-term economic sustainability of this expanding geospatial information industry on the Mississippi Gulf Coast. Expansion and sustainability of this industry and its long term benefits to ecosystem restoration is currently inhibited by inconsistent means to calibrate and validate the basic data sets that underpin the derived resource management information. Scientific sampling designs to determine ecosystem restoration trends and quantified geospatial frameworks to make informed restoration investment decisions are critically dependent on calibrated and quantified data sets of known positional, spatial, spectral, and radiometric resolution. Replicable, calibrated data is the fundamental requirement for measuring spatial and temporal trends in coastal ecosystems that address long term adaptive management alternatives. This proposal addresses the fundamental requirement for quantified data and geospatial information products by Federal, State, NGO, and private organizations focused on wetland restoration and sustainability. In addition, the long term viability of this growing environmental monitoring service industry on the Mississippi Gulf Coast is also dependent on proven, demonstrable data and information product performance. The NOARC team will provide a comprehensive test range comprised of calibrated and instrumented target sites as well as highly instrumented and surveyed ecosystem reserves to Mississippi companies and universities to validate data products and derived geospatial information. The Mississippi Proving Ground will provide a unique, competitive edge to our companies and universities as they fully demonstrate and prove new monitoring technologies and information products to broader national and international markets. [e] Opportunity The market is currently exploding in low cost environmental monitoring technologies including commercial small satellites, unmanned air vehicles (UAVs), and autonomous maritime vehicles operating on and below the surface. To reduce vehicle cost, weight and power requirements, these platforms typically omit on-board calibration equipment. Therefore, the only way environmental data streams from these platforms can be validated and calibrated is through well characterized, calibrated, and instrumented ground-based test ranges. This proposal addresses this requirement by providing the means for Mississippi companies to enter the market with proven and tested information products and platforms. At the same time a well characterized, instrumented test range is aligned with RESTORE objectives focused on sustainable wetlands and resilient communities. The natural ecosystem component of this range will be used as the reference condition for conducting trend analyses on wetlands undergoing restoration and to aid in reporting long-term outcomes of restoration. In addition, the natural ecosystem test sites will be used to develop quantified sampling and monitoring techniques to determine long-term health and condition of wetland habitats including changes in areal extent, species composition, and competing land uses.	Hancock, Jr Tammam, Mobile Jackson, Harrison	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes		\$ 2,500,000.00	\$ -		
Eco Restoration	2207	11/13/2014	Bernard Bayou Island Restoration and Protection	The Harrison County Development Commission (HCDC) is requesting \$1.1 million to fund the stabilization of the eroding shoreline of the Bernard Bayou Island and restore the eroded shoreline, marsh and associated wetlands habitat. Bernard Bayou Island was created by the erosion of a small strip of land which previously connected it to a larger body of land to the east. Since the construction of the Industrial Seaway in the 1960s, this strip of land has slowly eroded due to wave action created by vessel traffic along the seaway and should be restored to its original footprint. Restoration of the island will involve the construction of riprap sills located in the northern bend of Brivard Bayou and along the north side of the island (south bank of Industrial Seaway); filling previously eroded areas with beneficial use dredged material (between riprap sills); and planting of marsh vegetation on restored (filled) area.	Harrison	Yes	Yes	10000%	No	No	No	No	No			\$ 1,100,000.00	\$ -		
Eco Restoration	3209	11/14/2014	Oyster Reef Mapping and Habitat Monitoring - Suggestions to Improve Commercial Yield	Oyster Reef Mapping and Habitat Monitoring 3C' Suggestions to Improve Commercial Yield Dr. Arne Dieerts (USM), Dr. Ian Church (USM) and Dr. Craig Hickey (UM) Coastal habitats provide ecological, cultural, and economic value. They act as critical habitat for thousands of species, including numerous threatened and endangered species, by providing shelter, spawning grounds, and food. Oysters, a commercially harvested food source in the Mississippi Sound, are subject to many natural and man-made impacts, including storms moving sand onto the reef and barge traffic running across the reefs. While scouring by surface vessels will damage the reef structure, toxic runoff alleviated over the reef can cause damage to the biota living with the reef, damaging or even destroying the natural ecosystem that allows these reefs to flourish and grow producing the seafood coveted by many. It is costly, time-consuming and labor-intensive to estimate health and shape of a single reef using conventional methods of spot sampling using small boats and oyster tongs of oyster shells on the seafloor. We propose to map one oyster reef that previously showed signs of damage, using a multibeam echo sounder, a sub-bottom profiler and a side scan sonar to establish the extent of the reef and the sub-bottom structure below and around the reef. Since Oyster growth is slow, we will collect monthly passive and active acoustic time series measurements at the reef as well as an alternate reef that is established as being healthy. Acoustic signatures of both reefs will be compared to evaluate the health status of the damaged reef. In case of natural or man-made disasters we will collect additional data to properly document the effects of these events to the reef. We propose that new culching efforts are to be directed to areas identified by sub-bottom structure analyses to be likely to sustain a positive reef after culching thus providing the hard ground necessary for young oysters to grow on. An additional spatial multibeam survey of the newly culched area after will be used to evaluate the distribution of the applied dead oyster shells on the seafloor. This high resolution bathymetry data will provide spatial coverage and thickness of this material on the seafloor by subtracting pre from post culch bathymetry, with the difference in the data showing the added oyster shells. While we recommend complete coverage of MS Oyster Reefs, it is possible that regional resource managers may wish to focus on a specific resource site and the data from that study can drive models for additional sites throughout the GoM coast. Thus the budget provided represents the aforementioned sampling regime for a single site only. This project can stand alone based on the efforts of a combined USM and UM field collection team, as well as the laboratory efforts of the USM and UM team. However, value added toxicology analyses options are also available [See Restore Project headed by Sletten, UM]. Deliverables: Year 1: Base map of oyster reef extends, based on high resolution multibeam data, side scan and sub bottom data. Suggestions for future culching sites based on these data to improve efforts of reef maintenance and expansion. Pre and post culching MBES and SSS maps over new culch sites Collect and disseminate passive acoustic data to gauge reef health Year 2 and 3: Continued monthly monitoring of reef using passive and active acoustics to measure changes in reef shape, growth and health, based on acoustic backscatter data and passive noise changes in the reef. For the passive data, the general idea is that more high pitch noise will indicate a more active and healthy reef do to a higher activity of benthic organisms in the reef making more sound.	Hancock, Jr Tammam, Mobile Jackson, Harrison	Yes	No	Yes	Yes	Yes	No	Yes	No			\$ 1,360,124.00	\$ -		

Eco Restoration	3210	11/14/2014	Seagrass Habitat Characterization Using Acoustic and Sedimentological Techniques	<p>Seagrass Habitat Characterization Using Acoustic and Sedimentological Techniques.</p> <p>Dr. Anne R. Diercks (USM), Dr. Craig Hickey (UM), Dr. Charles Church (UM), Dr. Ian Church (USM), Dr. Dawn Wallace (USM)</p> <p>Coastal habitats provide ecological, cultural, and economic value. Seagrass beds within these coastal areas provide essential habitats for a wide variety of aquatic species and buffer subaqueous sediments from erosion (Green and Short, 2003). As with many barrier islands along the Atlantic and Gulf coasts, seagrasses are found in the lee of the islands, protected from open oceanic conditions. Since the early 1970s, dramatic losses of seagrasses have occurred throughout the Gulf of Mexico (Dennison et al., 1993). Seagrass communities are exposed to a variety of environmental pressures, ranging from reduction in water clarity due to dredging, destruction from boating, and commercial fishing and man-made and natural disasters affecting the natural setting of the seagrass habitat (Orth et al., 2006). Time series mapping of seagrass beds at high spatial and long temporal resolution is important for distinguishing the effects of major disturbances from natural variation in seagrass coverage (Dekker, et al., 2005). Methodological differences (e.g., mapping potential seagrass habitat rather than existing seagrass beds) are important in explaining the dramatic decline in seagrass coverage that is apparent when recent data are compared with results of earlier surveys. Seagrass beds are important not only in terms of the plant biomass produced (much of which provides food for bacteria and microscopic organisms) but also as feeding habitats for both juvenile and adult fishes. The major prey categories for omnivorous and carnivorous fishes from seagrass habitats are crustaceans (Hindell et al., 2000). Restoration of Seagrass beds can be achieved by encouraging natural recolonization in areas that have experienced improvements in surface water quality, replacing of bottom area conducive to growth of seagrass based on their location, sediment properties and environmental conditions.</p> <p>We are proposing to acoustically characterize an existing Seagrass bed to establish the acoustic signature of the sediment environment that allow growth of seagrass beds. We will support the acoustic work with sediment cores collected in the same areas to calibrate the acoustic data and to get an understanding of the sediment sub bottom structure. Using the acoustic signature plus sediment coring, we propose to distinguish differences that have occurred in the sediment structure of seagrass fields that have disappeared and to investigate potential suitable areas in future seagrass bed sites for coastline restoration. Seagrass beds are an important ecological system that sustain larval fish and crustacean development providing the future for commercial and recreational fisheries in the MS waters. Located at strategic sites, they can slow down sediment transport within the sound, and provide a filtration function, thus stabilizing barrier islands and improving water quality. While we recommend complete coverage of all MS Seagrass habitats, it is possible that regional resource managers may wish to focus on a specific resource site and the data from that study can drive models for additional sites throughout the MS Sound. Thus the budget provided represents the aforementioned sampling regime for two sites, 1) a currently existing Seagrass Bed and 2) a known site from which seagrass has vanished. This project can stand alone based on the efforts of a combined USM and UM field collection team, as well as laboratory efforts of the USM and UM team. However, value added toxicology analyses options are available (see RESTORE Project headed by Wallace, USM and Slatery UM).</p> <p>Deliverables:</p> <p>Year 1: Base map of seagrass extends at one of the existing sites in the MS Sound, based on seafloor data, side scan and sub-bottom data. We will produce an acoustic and sedimentological site characterization of an existing seagrass bed which will include side scan, sub-bottom and sediment composition data of this site. Sediment push cores will be analyzed for grain physical sediment properties like grain size distribution, porosity, POC content. We will investigate a historic seagrass bed near ship island with the same methods as above to see how hurricanes have impacted that site and what changes have occurred in the environment. Based on sedimentology of the existing healthy seagrass bed we will provide guides to the USACE and DMR to produce proper sediment</p>	Hancock, St Tammany, Mobile	Yes	No		Yes	Yes	Yes	No	Yes	No	\$ 1,480,192.00	\$ -
Eco Restoration	3211	9/1/2015	Project Explore: Students Exploring Their Local Environment	<p>Project Explore is a pathways project with the goal of interesting students in grades 5-8 in science, technology, education and mathematics (STEM) fields through out-of-school experiences related to the impacts of the 2010 Deepwater Horizon (DWH) oil spill and the ensuing restoration efforts. Our objective is to develop and implement a model that accomplishes this goal through after-school/Saturday activities coupled with a two-week non-residential summer camp relating to natural disasters and ensuring restoration that impact students' local communities. This model will be implemented in a state with very limited informal science opportunities.</p> <p>Each year, 30 students (60 total) in grades 5-8 will be targeted to learn science relating to their local environment in an informal setting. Students will be exposed to a variety of STEM areas and careers through interaction with researchers and educators involved in the DWH restoration efforts. Proposed topics rely heavily on science, but the other areas of STEM are represented in the restoration efforts and will be part of the proposed program. Disciplinary areas include life and earth sciences, in addition to foundational concepts in science, engineering and technology, which are derived from mathematics. Students are also exposed to a variety of technologies used by scientists and engineers to address environmental issues. Through their discovery of the impact of a major disaster like the DWH oil spill on their community, students will become better enabled to think globally.</p>	Hancock, Stone, Jackson, Pearl River, Harrison, George	Yes	No		No	Yes	No	No	No	\$ 150,000.00	\$ -	
Eco Restoration	3213	11/14/2014	University and College Volunteers for Restoration Projects	<p>Community Collaborations International will deploy teams of university and college volunteers from around the country to participate in a week of service devoted to giving a boost of youthful energy to community based organizations supporting children, families, and the environment on the Gulf Coast. Community Collaborations International began working in the Gulf Coast ten years ago recruiting and organizing teams of college volunteers to assist with Hurricane Katrina recovery efforts. Since then, we have returned every year building relationships and a continuum of sustained impact in the region.</p> <p>Volunteer teams will coordinate their efforts with organizations such as the South Mississippi Land Trust, Audubon Society, Horticulture for Humanity, Gaudier Parks and Recreation Department, Mississippi Department of Marine Resources, Boys and Girls Clubs of the Gulf Coast, Gulf Islands National Seashore, Renew our Rivers, and many more. Based on prior year results, we expect 30 universities and colleges to participate resulting in between 400 and 600 volunteers primarily during the month of March. 400 volunteers each committing to a full week of service results in over 12,000 hours of much needed support for community organizations! These students have made a commitment to spend their spring break week focused on meeting the needs of Gulf Coast communities; they work hard and get the job done.</p>	Harrison	Yes	Yes		Yes	Yes	Yes	No	Yes	\$ 410,000.00	\$ 360,000.00	
Eco Restoration	3214	11/14/2014	St. Louis Bay and Tributaries, MS Comprehensive Restoration Program: Phase I	<p>The Deepwater Horizon oil spill caused direct and significant harm to Mississippi's St. Louis Bay and the Mississippi Sound. St. Louis Bay and its tributaries offer an ideal ecosystem for a water quality and quantity restoration program to demonstrate a comprehensive, integrated approach to holistic restoration which could be transferable Gulf-wide. Water quality assessments and monitoring provide a foundation for programmatic, science-based decision-making to coordinate, expand and integrate many ad hoc projects proposed by local stakeholders, or from various comprehensive plans. This effort will aggressively identify, engage and include local governmental and private stakeholders in a transparent process to identify, prioritize, permit and implement priority water quality and quantity projects while building new partnerships to leverage technical and financial resources during implementation and for long term operation and maintenance.</p> <p>This program proposes a new collaboration between Mississippi State University (MSU), the U.S. Department of Agriculture's Natural Resources Conservation Service (NRCS), Jackson State University (JSU) and the Pickering Firm, Inc. (PFI) to address the Gulf Councils water quality and water resources goals and objectives. MSU and PFI have a longstanding Memorandum of Understanding which has been used previously on complex projects that integrate research and implementation. The Gulf Councils' five restoration goals are: 1) coastal, estuarine and marine habitats, 2) fresh, estuarine and marine water quality, 3) living coastal and marine resources, 4) enhance community resilience and 5) a restored and revitalized Gulf economy. Seven objectives support these goals: 1) restore, enhance and protect habitats, 2) restore, enhance and protect water resources, 3) protect and restore living coastal and marine resources, 4) restore and enhance natural processes and shorelines, 5) promote community resilience, 6) promote natural resource stewardship and environmental education, and 7) improve science-based decision-making. JSU, PFI and NRCS provide MSU with the depth and breadth of technical and professional expertise to support this program.</p> <p>The program's geographic location and size encompassing the St. Louis Bay and tributaries was selected to meet the Councils' top priority criteria. Specifically, this holistic approach is easily scalable to address all the Councils' goals and objectives and transferable to be replicated throughout the Gulf region and:</p> <ul style="list-style-type: none"> It will significantly and measurably contribute to restoring and protecting the Gulf Coast Region's natural resources, ecosystems, fisheries, marine and wildlife habitats, beaches, and coastal wetlands yet small enough quantity specific improvements; It is large enough to substantially contribute to restoring and protecting the Gulf Coast ecosystem's natural resources, ecosystems, fisheries, marine and wildlife habitats, beaches, and coastal wetlands yet small enough quantity specific improvements; It delivers the St. Louis Bay and tributaries which Mississippi's GoCoast 2020 (2013) identified as a Coastal Bay and River Delta project site and also integrate and coordinate myriad projects from other federal or Mississippi agency plans; and It provides a forum for local government and stakeholder participation and a mechanism to leverage their resources to restore the long-term resiliency of an area and resources physically impacted by the Deepwater Horizon oil spill (e.g., providing up-front cost share and long-term operation and maintenance for specific projects). 	Hancock, Stone, Pearl River, Forest, Harrison	Yes	Yes	2000%	Yes	Yes	Yes	No	Yes	No	\$ 14,968,000.00	\$ -
Eco Restoration	3216	11/14/2014	Long term restoration, recovery, and monitoring of marine mammals and sea turtles in the Mississippi Sound	<p>MSU would implement and manage this program in partnership with JSU, NRCS and PFI. This approach ensures the application of science-based decision-making, strong community engagement and</p> <p>Long term restoration, recovery, and monitoring of marine mammals and sea turtles in the Mississippi Sound</p> <p>A proposed component in Mississippi's Strategy for RESOLVE Bucket 2, Proposal 42: Creation of a Mississippi Sound Estuarine Program (MSEP) Summary. In the aftermath of BP Deepwater Horizon (DWH) Oil Spill, larger numbers of bottlenose dolphins and sea turtles have stranded in the northern Gulf of Mexico, and many of these strandings have occurred along the coast of the Mississippi Sound. The proposed project will promote the restoration and recovery of dolphin and sea turtle populations in Mississippi waters through a systematic approach of 1) responding to dolphin and sea turtle strandings, 2) rehabilitating sick and injured dolphins and sea turtles; and 3) monitoring the recovery of wild dolphin and sea turtle populations. Representing apex predators, dolphins and sea turtles are ideal bioindicators of ecosystem health. This project will facilitate understanding of how these species have endured numerous environmental stressors in the northern Gulf of Mexico and foster their future survival in the Mississippi Sound.</p> <p>Participants: 1) Mississippi State University College of Veterinary Medicine (MSU-CVM). The College of Veterinary Medicine operates aquatic animal health diagnostic laboratories at the Delta Research and Extension Center in Stoneville, MS, and at the MSU main campus in Starkville, MS. These diagnostic laboratories serve as regional resources primarily for freshwater fish diagnostics for the Mississippi Delta and East Mississippi; they also conduct freshwater and marine aquatic animal diagnostic analyses on cases from other states. MSU-CVM has aquatic animal health scientists in pathology, bacteriology, virology, parasitology, toxicology, immunology, and pharmacology.</p> <p>2) The Coastal Research and Extension Center (CREC) in Biloxi, MS. CREC has had a close affiliation with coastal and marine issues since its origination in the early 1930s. The original mission of recreation and tourism associated with the Sea-Grant Advisory Service slowly expanded to include a Coastal Aquaculture Unit focusing on aquaculture suited to the coastal area. Shortly thereafter, the Experimental Seafood Processing Laboratory was created through a cooperative agreement with NOAA.</p> <p>3) The Institute for Marine Mammal Studies (IMMS) (Gulfcoast, MS). Since 1986, IMMS has been a leader in marine conservation research and outreach regarding endangered, threatened, and protected marine species in the northern Gulf of Mexico. IMMS played a central role in the response and rescue of these species in the aftermath of the Deepwater Horizon oil spill. In the aftermath of the oil spill, the IMMS responded to and evaluated over 150 dead dolphins and nearly 600 stranded sea turtles, representing approximately 50% of all the dead turtles observed during the spill response.</p> <p>Plan: Systematic surveys of Mississippi Sound's mainland beaches and barrier islands will be conducted to more effectively respond to stranded marine mammals and sea turtles. Locality and morphometric data along with tissue samples will be collected for health assessments. Additionally, strandings data will be analyzed to identify demographic, seasonal, and annual trends. Live stranded marine mammals and sea turtles will be transported to facilities for rehabilitation. These animals will be given a full veterinary exam, and a health plan will be developed for each animal. Recovery of wild dolphin and sea turtle populations will be monitored by transect surveys, photo identification surveys, satellite tracking, and sampling of wild sea turtle populations in the Mississippi Sound.</p> <p>Coordinating Partners: MSU-CVM is one of five colleges of veterinary medicine in Gulf Coast states (Texas A&M University, Louisiana State University, MSU, Auburn University, and University of Florida). There is potential for linkage with these CVMs for a comprehensive GOM aquatic animal health network. IMMS is part of the National Stranding Network.</p> <p>Sustainability: The proposed program will result in long-term establishment of MSU-CVM aquatic animal health diagnostics and research located at CREC with cooperative veterinary and rehabilitation facilities at IMMS. This cooperation will be modeled after the successful MSU-CVM fish health diagnostics and research program at CREC. Community engagement through education and outreach. Natural resource management and regulatory agencies tasked with systematic species-specific distribution and abundance data which could be used to evaluate the effects of the Deepwater Horizon Oil Spill.</p> <p>Marsh birds were an integral part of the Natural Resource Damage Assessment primarily because are excellent indicators of the health of Gulf Coast tidal marsh ecosystems along the Gulf of Mexico. Unfortunately, because of the limited scope of previous marsh bird monitoring and research, extrapolation of these existing data to differing geographic areas and marsh types found across the Gulf of Mexico was extremely limited. Fortunately, a regional framework for marsh bird monitoring and research has already been developed but has yet to be implemented along the Gulf of Mexico. Thus, the fundamental goal of this project is to maximize the usefulness of marsh bird monitoring data to inform and facilitate conservation and restoration efforts along the Gulf of Mexico.</p>	Harrison	Yes	No		No	Yes	No	No	No	No	\$ 16,520,879.00	\$ -
Eco Restoration	3220	11/14/2014	Development of a Gulf of Mexico-wide marsh bird conservation cooperative	<p>Natural resource management and regulatory agencies tasked with systematic species-specific distribution and abundance data which could be used to evaluate the effects of the Deepwater Horizon Oil Spill.</p> <p>Marsh birds were an integral part of the Natural Resource Damage Assessment primarily because are excellent indicators of the health of Gulf Coast tidal marsh ecosystems along the Gulf of Mexico. Unfortunately, because of the limited scope of previous marsh bird monitoring and research, extrapolation of these existing data to differing geographic areas and marsh types found across the Gulf of Mexico was extremely limited. Fortunately, a regional framework for marsh bird monitoring and research has already been developed but has yet to be implemented along the Gulf of Mexico. Thus, the fundamental goal of this project is to maximize the usefulness of marsh bird monitoring data to inform and facilitate conservation and restoration efforts along the Gulf of Mexico.</p>	Hancock, St Tammany, Mobile, Jackson, Harrison	Yes	No		No	Yes	No	No	Yes	\$ 12,500,000.00	\$ 50,000.00	

Eco Restoration	3221	11/14/2014	Application of Chemical, Sensory, and Microbial Measurements/Approaches to Determine the Restoration of Marine Fisheries and Environmental Quality in Mississippi Gulf Coast after the BP Oil Spill and Dispersants	The purpose of this proposal is to determine the effects of oil spill and/or dispersants on the quality (chemical, sensory characteristics, and microbial) of representative species of finfish (mullet) and shellfish (oysters, shrimp, and blue crab), and also on environment (seawater and sediments) in Mississippi Gulf Coast. Samples will be collected from different areas that have been exposed to oil and different areas that have not been exposed to oil along the Gulf Coast of Mississippi (in four different seasons; this will need to be repeated 5 times in different years to get accurate data). Polycyclic Aromatic Hydrocarbon (Acenaphthene, anthracene, Rouanthene, pyrene, pyrene, chrysene, fluorine and naphthalene), saturated hydrocarbons, volatile BTEX compounds, biomarker terpane and sterane compounds in seafood products (mullet, blue crab, shrimp, and oysters), seawater and sediments samples will be determined. Sensory evaluation of uncooked and/or cooked seafood will be determined. Microbiological (total count, Vibrios, E. coli, and salmonella) in seafood, seawater, and sediments will be determined. Protein and lipid compositions of seafood products will be determined. Nutrients and heavy metals in seafood, seawater and sediments samples will be determined. Salinity, turbidity, pH, and dissolved oxygen of seawater will be determined. This proposal would allow us to develop methods/approaches to determine the quality of seafood, sediments, and seawater in the event the oil spill incident happens again in the future. The outcome of this project will allow us to understand whether the Gulf Coast of Mississippi is restored from the BP oil spill and if the seafood produced in the Gulf of Mexico is safe to consume. This may increase the consumers' confidence of Gulf of Mexico seafood, generate new jobs, and improve the quality of life of the			Yes	No		No	Yes	Yes	No	No	No		\$	3,500,000.00	\$	-	
Eco Restoration	3222	11/15/2014	Gulf-wide Bird Monitoring Program	Introduction: Wetland resources and their families in Mississippi. Birds are a conspicuous and remarkable natural resource of the Gulf of Mexico, where they within a diverse array of habitats across the region. Hundreds of species and millions of individual birds are supported by habitats in and around the Gulf. Unfortunately, these coastal habitats are increasingly stressed by a variety of human demands that are often at odds with the value of these habitats as breeding, nesting, feeding and resting areas for birds. Anthropogenic stressors along with more natural disturbances can reduce the quantity and quality of habitats in sensitive coastal ecosystems. Regrettably, the conservation community continues to struggle to design and implement a large-scale, coordinated bird monitoring strategy to inform and facilitate integrated restoration and management of the Gulf of Mexico ecosystem. Mississippi State University and the U.S. Fish and Wildlife Service, in cooperation with a group of partners, have been working to develop a structured framework to identify bird monitoring objectives and priorities. This proposed effort seeks to advance an avian monitoring program by developing and communicating objectives and priorities to facilitate the design and implementation of surveys to maximize learning and improve the efficacy of restoration and management activities.	Hancock,St Tammany,Mobile Jackson,Harrison George	Yes	Yes		No	Yes	No	No	Yes	No		\$	21,400,000.00	\$	50,000.00		
Eco Restoration	3224	11/15/2014	Development of MSLandPlan, a Forest Landowner Outreach and Engagement Effort to Conserve and Protect Private Lands and Waters in Mississippi's Lower 6 Counties	INTRODUCTION The lower 6 counties in Mississippi contain 1.7 million acres of forestland, and forestland is the major land use of this region. The major watersheds in this region include the Pearl River in the west, the Pascagoula River in the east, and a series of coastal rivers and streams in between. This region supports a number threatened and endangered species in both aquatic and terrestrial environments, including the gopher tortoise and the Gulf Sturgeon. Most of the forestland in this region is owned by individuals or families, with the vast majority of landowners owning less than 500 acres. There are, on average, about 1,500 unique forest landowners per county that own 10 or more acres of forestland. The National Woodland Owners Survey revealed, again, that most private landowners have multiple objectives for their forestland. Forests as a legacy for future generations, enjoyment of scenery, and land as an investment were the top three objectives of Mississippi landowners. Landowners with larger acreages had a much greater interest in timber income than those with smaller acreages. Private landowners are essentially small businesses, but only 10% of landowners have a written management plan that helps them identify and meet their objectives. Forest management plans also recommend strategies that protect soil, water, and other valuable resources. Managing forestland without a written plan is like taking a trip without a road map. This proposed effort will develop MSLandPlan, a robust but user-friendly management plan software template available for use on both computers and mobile devices. We will educate landowners on the importance of a good management plan, and develop a plan for them. Significantly increasing the number of landowners with written management plans will help them make correct decisions for their land, preserve and improve water quality, increase income from the property, and enhance their enjoyment of the land. A key element in the planning process is the use of Best Management Practices (BMPs) which focus on reducing soil erosion and sedimentation. The Mississippi State University Extension Service and the MSU Department of Forestry will lead this effort, but will involve other partners involved in water quality and land management in the development of MSLandPlan software. The partners include, but are not limited to, the Mississippi Forestry Commission and the Mississippi Department of Environmental Quality.	Harrison	Yes	Yes		Yes	Yes	No	Yes	No	No		\$	591,000.00	\$	-		
Eco Restoration	3225	6/1/2015	Development of the MississippiSound environmental education program at the Mississippi State University Crosby Arboretum, through the MSU-ES, to foster coastal community resilience	1. INTRODUCTION This proposal seeks to establish and implement a training program for the Gulf Coast region, called MississippiSound, through the Mississippi State University Extension Service (MSU-ES), with the mission of providing training, information, and resources for the general public to foster environmentally-friendly landscape practices. The consumer and community outreach program will encourage Gulf Coast stakeholders to utilize landscape design and management methods that will reduce property stormwater runoff and leaching leading to the contamination of surface and groundwaters. The Mississippi State University Extension Service has an established delivery method for extending knowledge to the public, and a proven track record. For more than 100 years, the MSU Extension Service has provided research-based information, educational programs, and technology transfer focused on issues and needs of the people of Mississippi, enabling them to make informed decisions about their economic, social, and cultural well-being. Extension's overall purpose is to provide education that will empower people to make intelligent decisions relating to their vocations, their families, and their environment. The Extension Service believes that quality of life is affected by the reciprocal relationship between people and their environment and therefore, environmental issues are of great importance. The Crosby Arboretum, located within the Gulf Coast region, is the premier environmental education center in the state of Mississippi, dedicated to educating the public about their environment. The 104-acre interpretive site is owned by Mississippi State University and operated by the MSU Extension Service. The Arboretum's mission is to preserve, protect, and display plants native to the Pearl River Drainage Basin ecosystem, a major Mississippi watershed. The facility provides environmental and botanical research opportunities, and cultural, scientific, and recreational programs, as well as programs which provide education about the region's biological diversity. The Arboretum also maintains 700 acres of off-site natural areas in the Gulf Coast region, preserved for scientific study. Many rare, threatened, and endangered species of plants and wildlife are found within Arboretum preserves. The mission of the Crosby Arboretum supports the directives of MSU and the Extension Service. The MSU Extension Service provides research-based information, educational programs, and technology transfer focused on issues and needs of the people of Mississippi, enabling them to make informed decisions about their economic, social, and cultural well-being. Agriculture and natural resources, family and consumer education, enterprise and community resource development, and 4-H youth development are Extension's ongoing priorities. The Coastal Research and Extension Center has five Agricultural and Forestry Experiment Station units in south Mississippi. Research and Extension priorities include horticulture, beef cattle production, seafood safety, natural resource economics, and coastal ecology. The East Gulf Coastal Plain Ecoregion The lands that adjoin the Mississippi Gulf Coastal region comprise the 42 million acre East Gulf Coastal Plain Ecoregion (EGCP). This ecoregion is one of the most biologically diverse terrestrial landscape systems found in North America, and many of the plants, reptiles, amphibians and fishes occur only within this region (MDWFP, 2005). Twenty-nine endangered or threatened animal species live within these forests, which harbor at least 122 species of threatened or endangered plants, some of which occur on Crosby Arboretum MSU ES natural lands, including the gopher tortoise, and the	Pearl River	Yes	No		No	Yes	No	No	No	No		\$	590,200.00	\$	-		
Eco Restoration	3226	11/15/2014	Autonomous boat for routine monitoring of water quality (nutrients, trace metal, microbial communities and physical measurements) in Mississippi Sound	The goal of ecological restoration is to provide a productive and sustainable ecosystem that results in the increase in biodiversity and nutrient retention. In near shore marshes, plant diversity and species differences lead to carbon sequestration, changes in water quality and nutrient retention. However, such wetlands are generally either nitrogen or phosphorus limited and the availability of these essential nutrients affects plant community type and species richness. Therefore, an essential step in the restoration of Mississippi Sound is to understand the temporal aspect of water quality before and during restoration projects. Water quality indexes have been based on measurements of DIN, DIP, chlorophyll a, water clarity, and dissolved oxygen; however, because no DIP sensors are available such measurements are made on discrete samples and the availability of sending people to sea. As a result there are limited temporal observations especially on hourly to daily time scales and when weather is bad. In contrast, studies of submersed aquatic vegetation (SAV) typically focus on off-the-shelf sensors (temperature, salinity, pH, DO, turbidity, light attenuation), but lack critical information about nutrient concentrations. In a separate propose we presented the idea of using continuous fluid samplers in fixed (Eulerian) locations to monitor water quality using a system that couples standard sensor measurements with OsmoSampler systems that are specifically designed to preserve fluids for nutrients, trace metals, and microbial community structure. This provides the ultimate record at fixed points. However, for some monitoring needs there is the desire for a larger spatial coverage (or Lagrangian distribution) and the need for larger volume samples for additional measurements. To meet this need we propose to develop an autonomous surface boat that is instrumented with physical and chemical sensors and capable of collecting up to 48 (500 ml) samples that can be preserved autonomously in the field. Such autonomy exists for science-based surface craft missions (e.g., Mahacek et al., 2009; Kitts and Mas, 2009) and is well suited for operation within the shallow, but busy waters of Mississippi Sound. The benefits of an autonomous boat are many. The boat can be (1) launched and programmed by one person, who can monitor the boat locally, with others monitoring results using a web interface from their offices scattered about the state, (2) limits liability by taking the human out of the element while allowing the human to monitor obstacle avoidance sensors and other tracking and sensor systems. We have designed and fabricated a new low-cost autonomous surface vessel (ASV) that is capable of autonomous navigation, implemented via a sea-based computer that wirelessly receives ASV data and relay drive commands that are monitored by humans. Humans can intervene to adjust operational parameters specifically, we will use a Moxia iCopter powered iCopter with a cruising speed of 20 knots. This kayak will include navigation, communication, obstacle avoidance, physical and chemical sensor, and sampling systems. The science package will include a single beam sonar, CTD, multi-spectral fluorometer, nitrate analyzer, dissolved oxygen and pH sensors, turbidity, and fluid sampling systems. The fluid sample will be a iCopterCleanKit sample that is capable of collecting 48 discrete samples that can be filtered in-line and immediately preserved if desired.	Hancock,Jackson, Harrison	Yes	Yes	2000%	Yes	Yes	No	No	No	Yes		\$	530,000.00	\$	-	Proposed Research Development	

Eco Restoration	3227	11/15/2014	Integrated Assessment of Water Quality in Bay St. Louis and the Hot Spots of Pollutant Sources in the Sub-watersheds Feeding into Bay St. Louis under Different Climate Scenarios	<p>The overarching objective of this project is to develop a suite of tools and products to identify and locate sources, transport pathways, and fate of pollutants flowing into Bay St. Louis, Mississippi, assess their ecological impacts, and develop management strategies. The proposed work is a field, laboratory, remote sensing, watershed modeling, and GIS based research approach focused on quantifying the water quality deteriorating agents found in Bay St. Louis and source tracking the pollutants detected in the sub-watersheds feeding into Bay St. Louis. We will test the hypothesis that terrestrial nutrient inputs from the watersheds lead to eutrophication in Bay St. Louis, Mississippi, which tends to worsen in future because of climate change. The end result will be a Decision Support System (DSS) that will be updated with the images of Harmful Algal Blooms (HABs), sediments and colored dissolved organic matter (CDOM) in near real-time. The DSS will also include visualizations of source tracking the pollutants using digital elevation models (DEMs) and CDOM fluorescence. Additionally, the DSS will be updated time-to-time with images showing the hot-spots of pollutant sources in the watersheds in different climate scenarios.</p> <p>The first aim of this project is to investigate the water quality of Bay St. Louis by measuring the concentrations of suspended sediments, chlorophyll a, CDOM, nitrogen, phosphorous and a few other ancillary water quality parameters. The second aim is to develop a remote sensing based operational monitoring platform by utilizing data from multiple high (Landsat OLI, HICO etc.) and low (MODIS, VIIRS etc.) spatial resolution satellite sensors as well as very high spatial resolution remotely sensed data collected by unmanned aerial systems (UAS) and utilizing them for extracting improved water quality products for making the mapped images available in near real-time. The third aim is to locate the source of the pollutants and locate the hot-spots of pollutants using watershed modeling approach. The fourth aim is to develop maps detailing the classes of water and sediment yields as a response to changes in precipitation, temperature, and CO2 levels under different climate scenarios 20-30 years into the future. The final aim is to disseminate the project findings to four categories of target audience including (1) state and local water managers, (2) MSU graduate and undergraduate students, and selected middle and high school teachers, (3) the general public including the farmers, and (4) the scientific community. The final aim also includes providing the methods and products to the water managers showing the vulnerable regions where best management practices (BMP) should be implemented and the total maximum daily loads of pollutants (TMDL) should be allocated in the sub-watersheds. This research is significant because it will not only enhance the current state of knowledge in identifying the hot-spots of pollutant sources with different climate scenarios but also it will provide a continuous monitoring platform for the HABs, sediments, and dissolved materials, which will support state and coastal community efforts to manage water quality in the region. Since Bay St. Louis is similar in many ways to other coastal water environments, this research may also be applicable to other shallow estuaries. Furthermore, data generated from these efforts will address critical links between the watershed, water body and human health as they relate to future climate change.</p> <p>This is a three year project and will supplement ongoing planning activities as well as serve as decision support tool as new projects are recommended. The estimated cost is \$300,000 per year for a total cost of \$900,000.</p>		Yes	No		Yes	Yes	Yes	No	Yes	No	\$	900,000.00	\$	-
Eco Restoration	3228	11/15/2014	A Time Series Analysis of Invasive Plant Species along the Mississippi Gulf Coast using Unmanned Aerial Systems, Hyperspectral Sensors and Satellite Remote Sensing Technologies	<p>Invasive plant species are recognized as one of the greatest threats to the survival of many indigenous species. The five Gulf States together including Mississippi's coastal wetlands are affected by at least thirty species of non-indigenous invasive plant species. Dealing with this enormous environmental problem requires collaborative efforts on the part of many agencies and organizations, but it ultimately begins with detection and mapping of the non-indigenous invasive species. After mapping, a change detection analysis would further help in delineating areas where management efforts should be prioritized to contain the growth of the problematic species. Remote sensing technologies offer an opportunity to address the invasive species problem by providing timely information on the spatial distribution of any plant species, including those that could threaten the ecological balance. The overarching objective of this project is to develop a suite of tools and products to locate and delineate the spatial coverage of ten most pervasive invasive plant species that occur along the Mississippi coast and provide results from change detection analyses extracted from a time-series of geospatial products collected using remotely sensed data. The end result will be a Decision Support System (DSS) that will be updated with the images of invasive species on a monthly basis. The DSS will also include images of the hot-spots of invasive species growth in the areas that were originally dominated by indigenous species.</p> <p>The first aim is to develop a remote sensing based operational monitoring platform by utilizing data from multiple high (Landsat OLI, HICO etc.) and low (MODIS, VIIRS etc.) spatial resolution satellite sensors as well as very high spatial resolution remotely sensed data collected by unmanned aerial systems (UAS) and very high spectral resolution remotely sensed data collected by a hyperspectral system, AirSatRAGE, flown on an aircraft. The data from the UAS, and the hyperspectral data will be implemented on the data from the satellite to produce the satellite sub-model and comparing invasive species maps and the mapped images will be made available on a monthly basis. The second aim is to run a change detection analysis to delineate areas of extensive invasive plant species growth that was originally occupied by indigenous species. A trend analysis will also be carried out to locate areas where management efforts should be prioritized to contain the growth of the problematic species. The final aim is to disseminate the project findings to four categories of target audience including (1) state and local managers, (2) MSU graduate and undergraduate students, and selected middle and high school teachers, (3) the general public, and (4) the scientific community. The final aim also includes providing the methods and products to the managers showing the vulnerable regions where management efforts should be prioritized. This research is significant because it will not only enhance the current state of knowledge on the occurrence of invasive species on the Mississippi's Gulf Coast but also it will provide a continuous monitoring platform for at least ten invasive plant species, which will support state and coastal community efforts to manage wetlands in the region.</p> <p>This is a three year project and will supplement ongoing planning activities as well as serve as decision support tool as new projects are recommended. The estimated cost is \$300,000 per year for a total cost of \$900,000.</p>		Yes	No		Yes	Yes	Yes	No	Yes	No	\$	900,000.00	\$	-
Eco Restoration	3229	11/15/2014	A Stormwater Bacterial Decision Support System (SBDS) for Assisting State and Local Water Managers in Minimizing Beach Closures	<p>The northern Gulf of Mexico waters are affected by water pollution, leading to undesirable increases in disease-causing bacteria (pathogens). Bacterial contamination of surface waters are an increasing concern for state and local water managers because pathogenic bacteria can cause adverse effects on human health. An array of bacteria such as Vibrio, Mycobacteria and Enterococci are responsible for severe infections in people exposed to sea water or raw shellfish and also pathogenic to a lot of aquatic organisms in the northern Gulf of Mexico. One recent event that made news was the death of a man due to Vibrio Vulnificus infection in Ocean Springs, MS on July 14, 2014. According to the Centers for Disease Control and Prevention Mississippi had 17 reported cases of Vibrio infections, Louisiana had 52; Florida, 145; and Alabama, 20 in 2012 alone. Since it's difficult, time-consuming, and expensive to test directly for the presence of a large variety of pathogens, studies conducted by EPA suggest that the best indicators of health risk from recreational water contact in fresh water are E. coli and enterococci and for salt water, enterococci are the best. The overarching objective of this project is to develop a suite of tools and products to identify and locate sources, transport pathways, and fate of enterococci flowing into Bay St. Louis, Mississippi from storm runoff. The proposed work is a field, laboratory, remote sensing, watershed modeling, and GIS based research approach focused on quantifying the suspended sediments and colored dissolved organic matter (CDOM) found in Bay St. Louis, deriving the enterococci concentrations from the correlations of sediments and CDOM with enterococci by accounting for the spatial distribution, intensity and amount of rainfall in the subwatersheds, and source-tracking the pollutants detected in the sub-watersheds feeding into Bay St. Louis. The end result will be a Decision Support System (DSS) that will be updated with the images of bacterial contaminants, sediments and colored dissolved organic matter (CDOM) in near real-time. The DSS will also include visualizations of source-tracking the bacterial contaminants using digital elevation models (DEMs) and CDOM fluorescence.</p> <p>The first aim of this project is to investigate the water quality of Bay St. Louis by measuring the concentrations of bacterial contaminants, suspended sediments, CDOM and a few other ancillary water quality parameters. The second aim is to develop a remote sensing based operational monitoring platform by utilizing data from multiple high (Landsat OLI, HICO etc.) and low (MODIS, VIIRS etc.) resolution satellite sensors as well as very high resolution remotely sensed data collected by unmanned aerial systems (UAS) and utilizing them for extracting improved products for mapping suspended sediments and CDOM, and making the mapped images available in near real-time. The third aim is to apply the Soil and Water Assessment Tool (SWAT) microbial sub-model and compare the model-simulated bacterial concentrations with the monthly measured bacterial concentrations at the outlet of the watershed and to track the source of the pollutants and locate the hot-spots of pollutant sources using watershed modeling and CDOM fluorescence. The fourth aim is to develop maps detailing the classes of water and sediment yields and deriving correlations of suspended sediments and CDOM with enterococci so that enterococci concentrations can be estimated from suspended sediment and CDOM concentrations by accounting for the spatial distribution, intensity and amount of rainfall in the subwatersheds. The final aim is to disseminate the project findings to four categories of target audience including (1) state and local water managers, (2) MSU graduate and undergraduate students, and selected middle and high school teachers, (3) the general public including the farmers, and (4) the scientific community. This effort will help watershed managers to implement best management practices for improvement of water quality as well as in minimizing beach closures. Since Bay St. Louis is similar in many ways to other coastal water environments, this research may also be applicable to other shallow estuaries.</p> <p>This is a three year project and will supplement ongoing planning activities as well as serve as decision support tool as new projects are recommended. The estimated cost is \$300,000 per year for a total cost of \$900,000.</p>		Yes	No		Yes	Yes	Yes	No	Yes	No	\$	900,000.00	\$	-
Eco Restoration	3230	11/16/2014	Developing Social Indicators to Guide and Evaluate Coastal Restoration and Protection Projects and Activities	<p>Establishing a Regional Coastal Land Grant University Initiative: A Coordinated, Multi-state Approach to Integrated Engagement, Research, Technology Transfer, Education and Outreach. Objectives of this project are:</p> <p>1. Understanding Stakeholder Beliefs and Perceptions: The First Step toward Effective Engagement, Awareness, Outreach, and Policy Development</p> <p>To formulate effective engagement, outreach and educational programs requires an understanding of the underlying beliefs and values of various target audiences. Every individual, every community and every culture has a set of beliefs and values that guide decision-making. Through the use of social science survey instruments, the underlying beliefs and values of selected target audiences will be surveyed at the local and regional scales to serve as a basis for effective engagement, technology transfer, education and outreach through the expanded Coastal REACH Program and to serve as a reference to gauge the effectiveness of these efforts. This information should also be very useful to the RESTORE Council as it considers project selection and evaluation.</p> <p>2. Developing Social Indicators to Guide and Evaluate Coastal Restoration and Protection Projects and Activities</p> <p>Social indicators are measures that describe the context, capacity, skills, knowledge, values, beliefs, and behaviors of individuals, households, organizations, and communities at various geographic scales. Social indicators are typically used to assess current conditions or attainment of social goals related to a variety of applications. Building upon Project 1 (described above), this project will identify and define social indicators that can be used to guide and incrementally evaluate habitat and water quality restoration and protection projects developed to implement the RESTORE Council's Comprehensive Plan. The indicators can also be leveraged to serve as a common reference to evaluate the success of individual coastal watershed restoration and protection projects.</p> <p>This foundational project will be designed to support and evaluate many of the activities and projects facilitated by the RESTORE Council by addressing the societal dimensions inherent in the Council's Comprehensive Plan. A wide range of questions exist that, if answered and monitored, could help the RESTORE Council achieve the success that it desires, such as: What constitutes project success from a societal standpoint? What expectations do different types of stakeholders have? What types of projects are desired geographically? What information is needed to inform stakeholders and where is it needed? How effective are education and outreach activities? What can be done to improve these efforts? What are stakeholders saying through social media? Starting with analysis of the input generated through local stakeholder meetings facilitated by RESTORE Council members that influenced the Council's approach, to developing social metrics, to conducting baseline assessments, through incremental monitoring as projects are conceptualized, implemented, and completed; the objectives of this project could provide great benefit during planning, implementation and evaluation of many, if not most, of RESTORE Council projects and activities.</p> <p>This project was created to offer significant advantages to the RESTORE Council to assist in implementation of its Comprehensive Plan. This concept:</p> <p>1. Can support all five of the RESTORE Council's goals and other engagement, research, technology transfer, education and outreach needs;</p>	Hancock, Harrison, Jackson	Yes	No		Yes	Yes	No	Yes	Yes	Yes	\$	1,200,000.00	\$	-

Eco Restoration	3231	11/16/2014	Regional Coastal Land Grant University and Extension Initiative: Disseminating RESTORE Council-facilitated Coastal Restoration and Protection Projects, Activities, Outputs and Outcomes through Annual State-wide Conferences, Gulf-wide Summits and Extension	Establishing a Regional Coastal Land Grant University Initiative: A Coordinated, Multi-state Approach to Integrated Engagement, Research, Technology Transfer, Education and Outreach. Objectives of this project concept are: 1. Establishing a structure and processes for regional collaboration among Gulf of Mexico land grant universities and their coastal Extension programs to foster a consistent Gulf-wide approach that leverages Extension activities and capabilities to support the engagement, technology transfer, education, outreach and extension priorities of the RESTORE Council's Comprehensive Plan. 2. Disseminating RESTORE Council-facilitated coastal restoration and protection projects, activities, outputs, and outcomes through annual state-wide conferences, Gulf-wide summits, and Extension Land Grant Universities. Land Grant Universities (LGUs) are uniquely positioned to assist each coastal state in a variety of ways 3C" from conducting research ranging from basic discovery to on-the-ground applications of the science of soil conservation, water quality, habitat and ecosystem dynamics, human behavior, and other applications. LGUs in each coastal state have a wide range and depth of expertise in these areas, and are a highly trusted source of objective research-based information. Researchers, Extension specialists and educators put the science into practice by engaging and educating agricultural and business interests, local governments, and urban and urbanizing communities, conducting applied research, and understanding economic drivers that lead to decision making. In addition, faculty in LGUs regularly collaborate on multi-state research and extension education projects. Extension Service: The Smith-Lever Act of 1914 established the Cooperative Extension System, a publicly funded, informal educational system that links the U.S. Department of Agriculture, the land grant university system, and individual counties. Extension, as the off-campus educational arm of land grant universities, has a large footprint in each state with offices in all or most counties and trained staff to provide community education and outreach in multiple disciplines. Extension's overall purpose is education. Its unique interdisciplinary perspective enables the organization to make a real difference through the provision of research-based information, educational programs, and technology transfer focused on issues and needs of the citizenry of each state. Extension also hosts customer-friendly websites loaded with information sheets, publications, reports and other outreach materials designed for its stakeholders. Extension is organized regionally; however, the Extension structure on the Gulf coast is separated into two regions. Objective 1: Establishing processes for regional collaboration among Gulf of Mexico land grant universities and Extension programs. Objective 1 is a foundational component that establishes processes, through existing land grant university infrastructure, that leverages participating coastal Extension and other programs to provide a consistent, coordinated, multi-state approach that delivers effective engagement, research, technology transfer, education, outreach and extension to support implementation of the RESTORE Council's Comprehensive Plan. It is envisioned that the successful implementation of this objective will foster 1) the development of integrated, multi-state, Gulf-wide restoration and protection projects and activities that leverage the significant resources and capacity of coastal land grant universities and Extension, and 2) serve as the platform upon which to implement Objective 2 of this proposal (below). Objective 2: Disseminating RESTORE Council-facilitated coastal restoration and protection projects, activities, outputs, and outcomes through annual state-wide conferences, Gulf-wide summits, and Extension.	Hancock, Harrison, Jackson	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	\$	-	\$	-	
Eco Restoration	3232	11/16/2014	Coastal Land Grant University Initiative: Coastal Storm Water and Waste Water Workshops and On-line Management Toolboxes to Advance Effective Storm Water and Waste Water Management along the Gulf Coast and Reduce Nutrient, Pathogen and Sediment Loadings	Land Grant Universities (LGUs) are uniquely positioned to assist each coastal state in a variety of ways 3C" from conducting research ranging from basic discovery to on-the-ground applications of the science of soil conservation, water quality, habitat and ecosystem dynamics, human behavior, and other applications. LGUs in each coastal state have a wide range and depth of expertise in these areas, and are a highly trusted source of objective research-based information. Researchers, Extension specialists and educators put the science into practice by engaging and educating agricultural and business interests, local governments, and urban and urbanizing communities, conducting applied research, and understanding economic drivers that lead to decision making. In addition, faculty in LGUs regularly collaborate on multi-state research and extension education projects. Coastal Storm Water and Waste Water Workshops and On-line Management Toolboxes to Advance Effective Storm Water and Waste Water Management along the Gulf Coast and Reduce Nutrient, Pathogen and Sediment Loadings to the Gulf: Pollution caused by storm water continues to be a problem in urban coastal watersheds evidenced by the constant recurrence of beach closures and/or advisories due to high pathogen levels after heavy rain events and in agricultural coastal watersheds evidenced by the existence of nutrient, pathogen and sediment impairments. Expanding economic development along the coast is also challenging the capacities of state and local storm water programs and resources. This project is designed for Extension, Mississippi State University's MSU Coastal REACH Program, and the Mississippi Water Resources Research Institute (MWRRI) to work with state and local agencies/entities administering coastal storm water programs to increase their engagement, technology transfer, education and outreach capacity and effectiveness through targeted workshops that focus on effective storm water management practices as well as the benefits of various storm water ordinance options available to local communities. In coastal watersheds, numerous TMDLs have been developed for impaired waters that identify specific nutrient and pathogen load reductions from both point and nonpoint sources needed for the receiving streams to meet their designated uses. States are also being encouraged by EPA to make progress on the development of numeric nutrient criteria. Waste water treatment in coastal watersheds uses a variety of treatment systems 3E" from facilities to treatment systems. The reduction of nutrient and pathogen levels in effluents from these systems can be costly at every level. This project is designed for Extension, MSU's Coastal REACH Program, and MWRRI to evaluate the preponderance of system type geographically and status of water quality in coastal watersheds, identify the range, effectiveness, and costs of appropriate treatment options available to reduce nutrient and pathogen loadings in targeted watersheds; through workshops provide utility officials, operators, consultants, and contractors the knowledge to make decisions that maximize environmental and economic benefits; and establish a network for the sharing of information among coastal wastewater interests. This project will require coordination with state environmental agencies and waste water treatment interests. A component of this project includes the development and maintenance of a web-based Coastal Storm Water and Waste Water Management Toolboxes as an extension of the workshops. Initial implementation of this project would focus on coastal Mississippi. The project would then be expanded to the other states through the Coastal Land Grant University Initiative and funding proposals for the expansion submitted to each participating state. This project concept was created to offer significant advantages to the RESTORE Council to assist in implementation of its Comprehensive Plan. This concept:	Hancock, Harrison, Pearl River, Stone, George	Yes	No		Yes	Yes	No	No	No	Yes	No	\$	450,000.00	\$	-		
Eco Restoration	3236	11/17/2014	Community-based Environmental Planning and Design Assistance for Living Shorelines and Tidal Marsh Restoration.	Community-based Environmental Planning and Design Assistance for Living Shorelines and Tidal Marsh Restoration. The Gulf Coast Community Design Studio (GCCDS) was established on the Mississippi Gulf Coast in 2005 to work in communities impacted by Hurricane Katrina and has evolved from disaster recovery work to addressing long-term issues of affordable housing, healthy communities and resilient landscapes and infrastructure. The GCCDS is a research and professional service program of Mississippi State University College of Architecture, Art and Design. Located five hours from the main campus the GCCDS operates with a full-time staff of architects, landscape architects and planners and always works in close collaboration with multiple non-profit, municipal and professional partners. The work of the GCCDS includes: 1) community-based housing design, 2) storm water and tidal ecology, 3) flood resilient buildings and landscape, and 4) public-driven decision making. The GCCDS operates with around \$600,000 annual grant and contract income with national funding partners including HUD, Department of Energy, Small Business Administration, the National Endowment for the Arts, and the Department of Homeland Security, along with many local and regional partners. For the past three years the design studio has been working in partnership with other Gulf Coast planning agencies with the support of HUD's Sustainable Communities Initiative to produce Plan For Opportunity, a regional plan for a more resilient and sustainable Gulf Coast. Recently, the GCCDS was part of one of ten national design teams selected by HUD to participate in Rebuild By Design, in which teams worked with communities in the North East impacted by Super Storm Sandy to design more resilient future cities. The Gulf Coast Community Design Studio is well experienced in community-based restoration projects. Since 2010 the Gulf Coast Community Design Studio has been working in partnership with several other organizations to restore Bayou Auguste, an inner-city Bayou that connects East Biloxi to the Back Bay. The GCCDS is the lead organization and brought together five partners to work together on the restoration project: The Land Trust for the Mississippi Coastal Plain, The City of Biloxi, Biloxi Public Schools, the Biloxi Housing Authority, and a local environmental science firm called Cypress Environmental. For the past year the Gulf Coast Community Design Studio has been doing a Watershed Implementation Plan for Rotten Bayou in Hancock and Harrison County. The planning activities include extensive community engagement and professional workshops as well as designing and installing best practices. The plan is funded by the Mississippi Department of Environmental Quality to the Land Trust for the Mississippi Coastal Plain. In addition to Bayou Auguste and Rotten Bayou, the GCCDS is designing a wetland nature park in Moss Point, is working with The Nature Conservancy on a living shoreline and oyster break-water in Biloxi, and with funding from the Surdna Foundation is doing community-based storm-water planning in Biloxi and Gulfport. As a program of Mississippi State University, GCCDS works through the Office of Sponsored Programs, is experienced at grant funded work and has the ability to adapt to the needs of the project. In the years immediately following Hurricane Katrina, when HUD funds were administered through Mississippi Development Authority, MDA recognized the benefit of having the Gulf Coast Community Design Studio on contract to be able to provide professional services as needed to many of the home building organizations. GCCDS assisted five non-profit building organizations and provided house designs for over 300 house projects. By having an independent contract for professional services GCCDS was able to establish a high standard of quality and sustain effective homeowner involvement from the first house to the last. At the same time because of the efficiency of working on multiple projects GCCDS was able to manage the work to meet the tight budgets and demanding schedules.	Hancock, Harrison, Jackson	Yes	Yes		Yes	Yes	No	No	No	Yes	No	\$	200,000.00	\$	-		
Eco Restoration	3237	11/17/2014	Job Training for Living Shorelines and Tidal Marsh Restoration.	Job Training for Living Shorelines and Tidal Marsh Restoration. A benefit of the RESTORE funds will be creating a stronger demand for skilled workers to install living shorelines and do work to restore tidal marshes. The skills for such green jobs combine construction and landscaping skills along with a sufficient knowledge of tidal ecology to be able to understand the end goals of a restoration project. The outdoor work environment is demanding and requires good work habits to be safe and productive. What is more, such projects are interesting to the general public and have the potential to encourage people to take better care of the environment. Therefore, the project installers often have opportunity to engage with people on site to explain the project. There is growing interest with private property owners to apply best practices to water front property and instead of rebuilding bulkheads to use more resilient and ecologically beneficial shoreline improvements. So the workers on site should understand the project and be able to explain the benefits of the project to curious site visitors. There will be a need for job training for living shorelines and tidal marsh restoration. The RESTORE funds for restoration projects can be leveraged to pay for such job training as a way to build capacity for future restoration projects. Many of the jobs created by such projects have pay comparable to building construction jobs and, like building construction, are job skills that are best gained by hands on learning. The RESTORE funds will have a long-term impact on such emerging green jobs if training programs are part of the community benefits. Partnership The proposal is submitted by the Gulf Coast Community Design Studio in partnership with Moore Community House's Women in Construction Program. The Gulf Coast Community Design Studio (GCCDS) was established on the Mississippi Gulf Coast in 2005 to work in communities impacted by Hurricane Katrina and has evolved from disaster recovery work to addressing long-term issues of affordable housing, healthy communities and resilient landscapes and infrastructure. The GCCDS is a research and professional service program of Mississippi State University College of Architecture, Art and Design. Located five hours from the main campus the GCCDS operates with a full-time staff of architects, landscape architects and planners and always works in close collaboration with multiple non-profit, municipal and professional partners. The work of the GCCDS includes: 1) community-based housing design, 2) storm water and tidal ecology, 3) flood resilient buildings and landscape, and 4) public-driven decision making. The GCCDS operates with around \$600,000 annual grant and contract income with national funding partners including HUD, Department of Energy, Small Business Administration, the National Endowment for the Arts, and the Department of Homeland Security, along with many local and regional partners. For the past three years the design studio has been working in partnership with other Gulf Coast planning agencies with the support of HUD's Sustainable Communities Initiative to produce Plan For Opportunity, a regional plan for a more resilient and sustainable Gulf Coast. Recently, the GCCDS was part of one of ten national design teams selected by HUD to participate in Rebuild By Design, in which teams worked with communities in the North East impacted by Super Storm Sandy to design more resilient future cities.	Hancock, Harrison, Jackson	Yes	Yes		Yes	Yes	No	No	No	Yes	Yes	\$	90,000.00	\$	-	Curriculum development	

Eco Restoration	3289	11/17/2014	Inner-City Tidal Stream Restoration	<p>Inner-City Tidal Stream Restoration</p> <p>Scope</p> <p>Much of the tidal habitat along the Mississippi Gulf Coast is distributed in small waterways that flow through inner-city neighborhoods. A healthy inner-city tidal stream has four critical functions: nursery habitat for marine life, flood-way for tidal storms, discharge and treatment for storm water, and convenient public access to natural environments. Unfortunately, most of the inner-city tidal streams are seriously impaired, have been modified and degraded over time and are not providing the ecological services that these four functions support. Many of them have been reduced to drainage channels, thus only functioning to discharge storm water "at" and often not doing that well. Restoring inner-city tidal streams to provide all four of the critical functions not only creates important tidal marsh habitat, it improves storm water management and flood mitigation, and if done with good community involvement, it increases environmental stewardship. Successful inner-city restoration projects show that bringing nature into neighborhoods helps people see the value of protecting natural environments not only close to home but in larger, wider places away from our cities.</p> <p>Partnership</p> <p>The proposal is submitted by the Gulf Coast Community Design Studio.</p> <p>The Gulf Coast Community Design Studio (GCCDS) was established on the Mississippi Gulf Coast in 2005 to work in communities impacted by Hurricane Katrina and has evolved from disaster recovery work to addressing long-term issues of affordable housing, healthy communities and resilient landscapes and infrastructure. The GCCDS is a research and professional service program of Mississippi State University College of Architecture, Art and Design. Located five hours from the main campus the GCCDS operates with a full-time staff of architects, landscape architects and planners and always works in close collaboration with multiple non-profit, municipal and professional partners. The work of the GCCDS includes: 1) community-based housing design, 2) storm water and tidal ecology, 3) flood resilient buildings and landscape, and 4) public-driven decision making. The GCCDS operates with around \$600,000 annual grant and contract income with national/funding partners including HUD, Department of Energy, Small Business Administration, the National Endowment for the Arts, and the Department of Homeland Security, along with many local and regional partners. For the past three years the design studio has been working in partnership with other Gulf Coast planning agencies with the support of HUD's Sustainable Communities Initiative to produce Plan For Opportunity, a regional plan for a more resilient and sustainable Gulf Coast. Recently, the GCCDS was part of one of ten national design teams selected by HUD to participate in Rebuild By Design, in which teams worked with communities in the North East impacted by Super Storm Sandy to design more resilient future cities.</p>	Hancock, Harrison, Jackson	Yes	Yes	Yes	Yes	Yes	No	Yes	No		\$	90,000.00	\$	-
Eco Restoration	3240	11/14/2014	Women in Construction Program	<p>Since 2010 the Gulf Coast Community Design Studio has been working in partnership with several other organizations to restore Bayou LaPlatte, an inner-city bayou that connects East Bluff to the Organizational Overview: Moore Community House (MCH) was founded in 1924 to serve the children of migrant workers in the seasonal fishing industry. Today MCH responds to the needs of low-income women and young children in east Bluff through two programs that research shows make the most strategic and positive difference in moving a low-income family closer to self-sufficiency: quality affordable early childhood education and job training that leads to higher paying employment. Through the Women in Construction Program (WinC), MCH creates a pathway for low-income women to higher paying jobs in the construction industry.</p> <p>Women make up nearly half of the workforce in Mississippi (MS) but women earn less than men at every income and education level, and in every profession. Women are clustered in low paying jobs, making up 80% of minimum wage workers. MS has the highest rate of single mother headed families, mothers who bear financial responsibility for children. Minimum wage leaves a family of 2 (mom and child) below the federal poverty level. Construction jobs are the only ones in MS where women earn the same wages as men, and these jobs pay an hourly wage identified by the MS Economic Policy Center as a self sufficiency wage. Thus, WinC offers a pathway for women to family economic security.</p> <p>The mission of WinC is to create a climate across the Gulf Coast enabling women to pursue careers which will allow them to earn wages to promote self sufficiency within the construction field. Besides helping provide well-paying jobs to the region's low-income women, it helps meet industry demands for a trained workforce. While the construction trades offer careers that provide self-sufficiency wages and good benefits, WinC is the only job training program in the region that is tailored to prepare women for this work. At this point and time it is critical to maintain momentum by expanding programming, reaching more women, and strengthen the community towards economic and ecological recovery.</p> <p>Since inception of the program, WinC has graduated 22 classes totaling 220 plus women in the fields of general construction, welding, green job training, and disaster relief and recovery. Of the 220 plus women who have graduated the program, 75% of these individuals have gained employment. Graduates have gained living wage jobs in apprenticeship and non-traditional occupations in trades such as, welding, shipfitting, habitat restoration, and construction management, earning from \$14 to \$28 an hour. WinC is feminizing the face of construction on the Gulf Coast one well-trained woman at a time. Qualitative data is used to assess impact that improves socioeconomic wellbeing. Participants have made cross cultural bonds, left abusive relationships, gained GEDs, housing, improved upon health/wellness, and made huge strides that improve their wellbeing and quality of life.</p> <p>Proposed action: Moore Community House seeks RESTORE funds of \$1,500,000 for Women in Construction Program to recruit, train, and place women into jobs created by RESTORE projects; and to improve the outreach, training, employment, and retention of women in nontraditional occupations; as well as train low-income women in construction trades and in skills required in current and upcoming industries. By using innovative techniques, this program will expose women to nontraditional career pathways that meets the demands of future ecosystem restoration projects along the Gulf Coast through upcoming RESTORE opportunities.</p> <p>The goal of the proposed program is to place women into employment focusing on skills such as living shoreline, marsh creation and environmental recreation construction while increasing capacity Objective: Use a time-series of satellite imagery to map landuse/landcover changes on the Mississippi Gulf Coast from the 1940s to the present.</p>	Mobile, Jackson, George, Hancock, St one, St Tammany, Pearl River, Harrison	Yes	No	Yes	Yes	No	No	No	Yes		\$	1,500,000.00	\$	250,000.00
Eco Restoration	4247	11/20/2014	Historic land use and land cover information and change analysis using satellite remote sensing	<p>Background: Quantifying the changes in the land use and land cover (LULC) of an area are an important part in understanding the natural conditions that existed in the past and how those conditions have been altered and/or stressed. Mapping changes in LULC helps in understanding how the landscape has changed through time to reach its current state and how those changes have impacted the services provided by an ecosystem. These LULC change data can be used to formulate goals and strategies for restoration of the natural and environmental conditions of an area and provide important benchmarks on which to measure progress in restoration.</p> <p>The LULC changes along the Mississippi Gulf Coast have altered the coastal ecosystem on land and in the Mississippi Sound Estuary. These changes on the Gulf Coast include the; development for residential housing, creation of beaches through re-nourishment, development of the tourist and gaming industry and creation of the transportation and energy infrastructure. The transportation infrastructure includes roads and bridges onshore as well as the ports, harbors and shipping channels in the Mississippi Sound. It is much easier to identify and quantify the current LULC than it is to identify LULC in the historic past.</p> <p>Due to the lack of comprehensive information from satellite remote sensing, it is difficult to obtain a synoptic assessment of LULC for the Mississippi Gulf Coast prior to 1972. Since 1972 satellite imagery from Landsat program has provided a reliable source of satellite remotely sensed data needed to image the entire gulf coast. Prior to 1972, aerial photographs are the only source of data to extend our analysis back into the 1940s, but these data are more difficult to input and to analyze, especially when the study area is large.</p> <p>Our research institute recently carried out study very similar to the one proposed. It used Landsat imagery of 1973 (MSS), 1984 (TM), 1999 (ETM) and 2014 (OLI) and produced 4 classified images and low change detection images along with the tables quantifying the change. This was done as a test case. The outputs as shown in the attached figure and table show the level and types of information that can be extracted from such study.</p> <p>We also explored the possibility of using aerial photos to extend the timeline into 1940s. Using two sets of photographs acquired in 1942 and 1952 we did a similar study. That result is also shown in a separate figure. It is strongly believed that a rigorous study as proposed will provide more useful information that will help the restoration activities in the gulf coast.</p> <p>Methods:</p> <p>The Landsat satellite series has provided remotely sensed data, free of charge, 1972 with the launch of the first satellite. The Multi-Spectral Scanner (MSS) sensor has a ground resolution of 80x80 meters. The follow on Landsat satellites carried the Thematic Mapper (TM) with a ground resolution 30x30 meters. Imagery from the TM sensor is available from 1982 to present, allowing remote sensing scientists the ability to map LULC for the entire Mississippi Gulf Coast. In 1998, with the launch of Landsat 7, the ability to map LULC at 15 meter ground resolution is available using imagery that is pan-sharpened using the higher resolution panchromatic images. The newest Landsat satellite, Landsat 8, carries the Optical Land Imagery (OLI) sensor that will be providing high quality data for many years in the future. With the large footprint of Landsat image frames, the Mississippi gulf coast can be mapped using only 2 images.</p>		Yes	No	Yes	No	No	No	No		\$	25,000.00	\$	-	
Eco Restoration	4248	11/25/2014	Point Aux Chenes Marsh Shoreline Protection	<p>The area of the Grand Bay National Estuarine Research and Reserve (NERR) around Point aux Chenes Bay has Southwest facing shoreline against the Mississippi Sound which needs protection from wave action. Every time I visit in my kayak the area has receded some, especially the eastern point of the entrance to Bayou Cumbest. Rock jetties like they have used in Louisiana at Fourchon or any type of barriers to help reduce wave action could do a lot to help prevent these Southern shorelines from receding. I have written a blog post regarding the erosion I have seen in this area. It can be viewed here: https://samurayfishop.com/2017/01/02/support-project-4248-protect-point-aux-chenes-bay-shoreline/</p> <p>Historically, Grand Batture Island provided erosion protections for the Grand Bay NERR, and specifically Point aux Chenes Bay. Over time, Grand Batture was eroded into an island chain, and, in 1969, Hurricane Camille reduced Grand Batture to nothing more than fragmented shoals. This effectively removed any barrier for coastal erosion in Point aux Chenes Bay and accelerated the rate at which land has eroded within the Grand Bay NERR.</p> <p>There is evidence to support this erosion over the years in a study published in 2007. This study can be viewed at the following link: http://grandbayners.org/wp-content/uploads/2010/12/Grand-Bay-National-Estuarine-Research-Reserve-Site-Profile-Final-Draft-01Oct2007.pdf</p> <p>Another study titled <i>Impacts of historic morphology and sea level rise on tidal hydrodynamics in a microtidal estuary (Grand Bay, Mississippi)</i> which was published in Volume 111, Part B of <i>Continental Shelf Research</i>, December 2015, supports the fact that erosion has progressively increased in the Grand Bay NERR due to a lack of a tidal barrier. This study can be found here: http://www.sciencedirect.com/science/article/pii/S0278434115300212</p> <p>Finally, the United States Geological Survey provided a time lapse video showing the effects of this erosion. This time lapse video is compiled of shots from a 5 month period. It gives a glaring example of how fast the coastal erosion is taking place in Point aux Chenes Bay. The video can be found here: https://twitter.com/Videos/88748584477192152?embed_source=facebook</p> <p>This coastal erosion not only affects the amount of viable marshland within the Grand Bay NERR. It also affects some significant archaeological sites within the NERR. Indian mounds made of oyster shells are located throughout the NERR. Several of these have been taken away by wave action, and more are in danger of being washed away as well.</p> <p>Finally, this coastal erosion is allowing salinity intrusion into the Bay. This is slowly changing the Bay's low salinity ecosystem to a higher salinity. This can eventually alter species of marine life that call the Bay home.</p> <p>Please consider this proposal for RESTORE funding. We can help protect this fragile, culturally significant ecosystem from further loss.</p>	Jackson	Yes	No	No	No	No	No	Yes	No		\$	-	\$	-

Eco Restoration	4249	11/26/2014	Evaluating the Impact of Upland Land Use Land Cover Change on Water Quality of the Mississippi Sound Estuary	<p>Objective: Develop a decision support tool to evaluate the impacts of upland land use land cover (LULC) change on coastal water quality and provide analytical tools to help select the most suitable areas for restoration and as sites for monitoring the progress of the restoration.</p> <p>Background: With the development of the gaming and tourist industry, Mississippi's Gulf coast has experienced rapid growth in population and economic activity in the past several years. The population of the coastal counties in Mississippi has been increasing and continues to increase, resulting in changes to the land use and the land cover on the coast and in the upland areas. According to new U.S. Census population estimates the Mississippi Gulf coast has three of the top 10 fastest growing cities in the state from 2012 to 2013. In response to this rapid growth in coastal population and economy, the Mississippi Department of Marine Resources (DMR) as the lead agency for the State's Coastal Management Program, developed the Comprehensive Resource Management Plan (CRMP). The CRMP seeks to balance natural resource protection and economic development through cooperation among local, state, and federal agencies and the private sector.</p> <p>Land use/land cover and water quality are unequivocally linked. Change in the upland land use and/or land cover can impact water quality in the coastal areas. Coastal waters receive runoff from surrounding watersheds that drain these upland areas into the coastal estuary. Changes in the LULC of the upland portions of coastal watersheds can produce increased amounts of nutrients, sediment, and other pollutants. Proper understanding of these complex processes will result in better decisions and make the restore process more sustainable. This understanding will play an important role in coastal restoration by helping decision makers select the most suitable areas along the coast to restore and/or purchase and to model and monitor the effect of the restoration activity. The modeling part of the decision support tool will allow decision makers to ask, "What if...?" questions about a part of a watershed.</p> <p>Project Description: The proposed tool will develop a decision support system (DSS) (Figure 1) by integrating remote sensing and geospatial analysis with existing and validated numerical watershed models to analyze potential restoration decisions and provide possible outcome scenarios. The DSS will integrate geospatial data characterizing the drainage network, current and/or past LULC, and the EPA's coupled watershed and water quality model Better Assessment Science Integrating point & Non-point Sources (BASINS), which has been developed and tested by the EPA. The interface to the model and the DSS will be in a web mapping service created as part of the project. The web mapping service will be developed inside a Geographic Information System (GIS) and will allow users to evaluate potential development projects through a web portal. The integrated models will accept user input for a selected area, run the scenario, and present the results in a geographic format.</p> <p>The goal is to evaluate the potential changes in nutrient and pollution concentrations into the coastal environment by simulating the entire path of nutrients and pollutants from watershed to the drainage network and to estimate the impact on coastal water quality. This system will provide a tool for decision-maker to evaluate the water quality in the Mississippi Sound estuary (Figure 2), and analyze the impact of upland land use and land cover change. The BASIN model will quantify the Total Maximum Daily Loads (TMDLs) for nutrient and sediment management, and provide information</p>	Hancock,Stone,St Tammany,Mobile Jackson,Pearl River,Washingto n,Harrison,Georg e	Yes	No	No	No	Yes	No	No	No	No	No	No	No	\$	300,000.00	\$	-	Evaluating and monitoring
Eco Restoration	4257	12/9/2014	Habitat Mapping the Waters of Mississippi Sound	<p>Benthic Mapping of the MS Sound. This project proposes to comprehensively map the Mississippi Sound using Multibeam Echo Sounders (MBES) augmented with Airborne Lidar Bathymetry (ALB) system. The underlying purpose of the project is to establish a baseline benthic habitat map of the Sound, however, the data have numerous additional uses. The data will provide measurements of pelagic biomass over various habitats and suitability of seafloor substrate to support existing or future reefs. The resulting Digital Elevation Model provides the essential boundary layer for dynamic modeling of the Sound to enhance, circulation, sediment transport, and storm surge/coastal inundation simulations. Revisit surveys to key areas can assess habitat response to natural or anthropogenic stresses, siltation, reef material subsidence, and sea level rise.</p> <p>The gold standard for obtaining high precision, hydrographic measurements is 100% coverage (insonification) of the sea floor using acoustic MBES. Obtaining 100% coverage of Mississippi Sound using MBES is an extensive project. Multibeam sonar covers a swath of the seabed out to a width of approximately 5 times the water depth. Figure 1 outlines the areas of the Mississippi Sound bounded by a depth contour of approximately 2 meters (black contour line). The average depth throughout the Mississippi Sound is less than four meters. Using the equipment currently owned by the University of Southern Mississippi, a maximum line spacing of 10 meters is required to obtain 100% coverage. Due to declining returns in shallow water and safety of navigation, a minimum survey depth of approximately 2 meters is recommended. A polygon of survey extent based on the 2 meter contour and a line spacing recommendation of 10 meters, an estimate of survey time can be established.</p> <p>Planning the lines in a north-south orientation would allow for efficient data collection and manageable data files. The average width of Mississippi Sound is approximately 6 Nautical Miles (Nm), and with an average survey speed of 6 knots, each line of data collection will take approximately 1 hour to complete. If a line spacing of 10 meters is utilized from the Mississippi/Louisiana border to the Mississippi/Alabama border, a distance of approximately 120 km or 120,000 meters, a line count of approximately 12,000 lines can be then be assumed. 12,000 lines each at a length of 6 Nm, equates to 72,000 Nm of survey lines. Completing all lines would require 12,000 hours.</p> <p>Other factors that need to be considered in a time estimate are transit times, turns between lines, time to obtain sound speed profiles, and time to take bottom samples. At a minimum, an additional 25% should be added to the initial line estimate, for a total of approximately 15,000 hours.</p> <p>Completion time estimates based on single vessel operations show a projected completion time of 10 years, based on successfully collecting data 188 days per year. The time scales vary accordingly with addition of multiple vessels. Operational days per year will heavily depend on weather and equipment functionality and are difficult to estimate. This proposal recommends an upgrade to existing equipment to increase the efficiency of data collection to reduce the collection time to 5 years.</p> <p>Additionally, ALB systems provide an efficient method for collecting data useful in delineating benthic habitats in shallow water. The Coastal Zone Mapping and Imaging Lidar (CZML) was specifically</p>	Hancock,St Tammany,Mobile Jackson,Harrison	Yes	Yes	1000%	Yes	Yes	Yes	No	Yes	Yes	Yes	\$	4,515,000.00	\$	-			
Eco Restoration	4258	12/10/2014	Remediation of Oil Spills and Gas Releases by Biochar Activated at Low-Temperatures	<p>I.Introduction Biochar has emerged as a promising sorbent for recovery or containment of marine crude oil spills (Nguyen and Pignatello, 2013). Biochar is porous, and has a bulk density lower than that of seawater so that biochar particles float on seawater. Biochar contains pores with hydrophobic internal surfaces that are wetted much faster by organic compounds rather than water (Gray et al., 2014). This difference is particularly noticeable when the biochar is produced from pyrolysis at low temperatures (e.g., 370°C). Thus, the spilled oil can effectively fill the pores of biochar particles while water cannot. Biochar can also adsorb the dissolved oil species and remediate the contaminated seawater. Biomass is abundant in the Gulf region and biochar is usually a byproduct in biofuel production. It is therefore relatively inexpensive compared to other synthetic absorbents. Moreover, the spent biochar can be burned directly along with the absorbed oil in controlled environments for energy production. That is, there is no need to separate the absorbed oil from the biochar for their end use, and the energies of both biochar and oil can be recovered. As results of these advantages, biochar is likely a cost-effective absorbent for remediating spilled oil.</p> <p>II.Necessity for Activation and Newly discovered Method Adsorption is a major technology for the remediation of spilled oil and contaminated water. Sorbent's adsorption capacity and ultimate fate are a major cost factor for this technology. Adsorption capacity, in turn, depends mainly on the sorbent's internal pore volume and surface area. Nguyen and Pignatello (2013) reported that biochar from hardwood has a lower adsorption capacity than those of many synthetic absorbents. Thus, internal pore volume of biochar has to be increased. CO₂ and water are usually used to burn a fraction of carbon in generating larger pore volume during activated carbon production. Such physical absorption usually employs a temperature in the range of 600K-1200°C, signifying the energy intensity required for such activation process. Recently, the Sustainable Energy and Environment (SEE) group at the University of Mississippi (UM) developed a family of new methods for biochar activation that was conducted in the temperature range 60-70°C. The energy throughput for the activation is much lower than the traditional methods. SEE is able to achieve a 16-fold increase in internal surface area, from 12.9 to 189.0 m²/g. This activation approach is simple and requires agents that are readily available everywhere. Moreover, SEE's low-temperature activation methods remove significant amount of exchangeable mineral components, which further enhance the hydrophobicity of the biochar's internal surfaces. Considering these benefits of energy consumption and those mentioned in the last section, the cost for such oil-adsorption concept is likely to be highly competitive to the current remediation methods.</p> <p>III.Proposed Work The proposed work will include the following tasks. 1.BEE group will produce biochars from typical readily available biomasses in the Gulf States including rice husk, rice straw, switch grass, and hardwood under different conditions in our Combustion Lab. 2.BEE group will activate and characterize the biochars by using our novel activation and analytical methods. 3.BEE will optimize the variables for pyrolysis and treatments.</p>	Hancock,Harrison Jackson	Yes	No	Yes	Yes	Yes	No	Yes	Yes	Yes	\$	300,000.00	\$	-	develop product and create industry in MS			
Eco Restoration	4266	12/19/2014	Tourist Corridor and Gateway Beautification Pedestrian Areas	<p>1.A more attractive appearance, tourist friendly public amenities and coordinating tourist information signage is needed in order to maximize the effectiveness of programs and marketing that generates trial to our destination. 2.According to a recent visitor perception study, the beauty of the area is an attribute that drives visitor satisfaction. Of those that were not satisfied with their visit, 36% noted cleanliness and the perception of Katrina recovery issues as a major reason. 3.This research also shows that one of the reasons cited for not visiting the Ms Gulf Coast is lack of a variety of things to do. With over 600 visitor amenities, attractions and activities available, it is clear that we need to improve our communication of tourism offerings. 4.Improving visitor signage will increase awareness of tourism offerings and increase length of stay and therefore economic impact. 5.A recent study in a competing market indicated that 20% of their visitors pass through one or all of our Coastal counties on their way to their market, however there is very little directional signage on the major byways appealing to visitors. 6.Improving the visitor experience will generate return visits and invaluable word of mouth advertising for our destination, especially in this age of social media when personal experiences and endorsements are the most trusted source of information for travelers. 7.Harrison and Hancock County already have fully developed plans with costs that include tourist friendly areas, signage, parking, amenities and more that would make Beach Boulevard and Hancock County waterfront and beach areas a true visitor destination. These plans could easily be expanded and coordinated for Jackson County tourist areas. Managing these plans as one project with inter-local agreements and cooperation between municipalities will enhance and strengthen our destination marketing as one Mississippi Gulf Coast. 8.Several parts of the plan have already been funded and are expected to be completed this year including way-finding signage coordinated with a tourism entity directory. 9.Additional jobs will be created to complete construction and installation of the new facilities and enhancements as well as potential permanent jobs necessary to provide ongoing maintenance.</p> <p>Required Funding: Complete pedestrian areas used for walking, biking, jogging, etc. along the beach via continuation of concrete boardwalk where missing - \$9,600,000</p>	Hancock,Harrison Jackson	Yes	Yes	5000%	Yes	No	No	No	Yes	Yes	\$	9,600,000.00	\$	-				
Eco Restoration	4271	12/22/2014	Restoration of La Pointe Krebs House	<p>1.Biases with historic districts was the second highest ranked destination attraction cited by travelers in a recent visitor perception survey. Beaches was number one. 2.Investments that broaden visitor experience could help to increase length of stay. This research indicates that the average length of stay for visitors along the Gulf Coast is 2.8 nights compared to 3.4 nights nationally. Reducing the national average length of stay could increase visitor spending by \$360 million annually. 3.A recent trend in the travel industry is that visitors are seeking authentic experiences such as nature, history and those that provide educational opportunities. The Mississippi Gulf Coast has a rich history and culture so is in an excellent position to take advantage of this trend. 4.The La Pointe Krebs House is the oldest standing structure in the State of Mississippi and possibly in the Mississippi Valley and is a valuable historical asset. Hurricane Katrina caused extensive damage to the house and museum and they have been closed to the public since that time. 5.\$663,776 has been spent to date on the restoration of the structures funded with grants, donations and by Jackson County. Jackson County budgets \$50,000 per year for upkeep and maintenance of the site. The La Pointe Krebs Foundation supports ongoing operation of the site through fundraising. 6.Required funding 1.\$1,202,256 is the remaining funding that would be required to restore the property, museum, artifacts and grounds. 2.Project attributes 1.Sustainable 2.Coast-wide industry impact 3.Generates additional State and local tax revenue 4.Community partner investment</p>	Jackson	Yes	Yes	10000%	No	No	No	No	Yes	No	\$	1,900,000.00	\$	700,000.00				

Eco Restoration	4274	3/1/2015	Gautier Town Commons Park Project	<p>The Gautier Town Center Project, located in Gautier's central business district just 13 miles from the Alabama state line, consists of two master-planned phases including a construction component for the 32-acre Town Commons Park which will be centered around spring-fed tributaries, and a public infrastructure component including roadways and lighting that will facilitate the construction of off-campus housing for the adjacent Mississippi Gulf Coast Community College (MGCCC) and mixed-use commercial buildings. While these two projects are directly linked, this Project Description focuses on the Town Commons Park component and a separate Project Description outlines the City's plans for the transportation network component.</p> <p>The overall purpose of the project is to enhance the livability of the community. The City of Gautier is one of the few cities on the Mississippi Gulf Coast that lacks a traditional downtown. This project will create a unique natural setting urban park adjacent to the City's major commercial district to serve as an anchor for the newly defined Town Center area. Hurricane Katrina recovery dollars previously funded a nearly multi-use pathway, landscaping, decorative lighting and a 42x42" sculpture depicting the City's theme of "Nature's Playground". The purpose of that streetscape project was to create a downtown feel for the area which is bordered by civic buildings, the Mississippi Gulf Coast Community College, and Singing River Mall. The City plans to continue the revitalization of this area by creating a large park behind the mall on a 32-acre parcel which was purchased with funding from the Coastal Impact Assistance Program and Title Loans. The master plan for this park includes festival lawns, an outdoor amphitheater, and bicycle paths/boardwalks along the spring-fed tributaries that feed the Pascagoula River. The tributaries are currently threatened by commercial encroachment, environmental pollutants, and invasive species. The Town Commons Park will restore the ecological beauty of what otherwise would be considered "at-risk" property.</p> <p>The City is poised to implement the construction of amenities at the Town Commons. The new owners of the adjacent Singing River Mall have just begun a \$90 million re-development project that will create a new open-air mall that will attract national retailers. Right-of-way has been donated for a planned roadway that will facilitate construction of off-campus housing and mixed-use commercial cottages in the area near the park and mall. The Town Commons project will establish a social and cultural center for the community and significantly enhance the quality of life enjoyed by people living in central Jackson County.</p>	Jackson	Yes	Yes	1000%	No	No	No	No	Yes	No		\$ 3,500,000.00	\$	paired with ID
Eco Restoration	4275	12/6/2014	Nature-based Tourism Program	<p>The main focus of this project will be to form a collaborative effort in the development of a Task Force to sustain and promote the MS Gulf Coast National Heritage Area (MSGCNHA) as a premier destination for Nature-Based Tourism opportunities. This project will identify opportunities approved as part of the MSGCNHA Management Plan which has a mission to promote the understanding of, conserve, and enhance the heritage resources located within the six counties of the MS Gulf Coast by sharing the area's nationally significant story with residents and visitors through activities and partnerships that celebrate the area's unique history, people, traditions, and landscape. The MSGCNHA is a partnership of communities, governmental agencies, natural resource managers, nonprofit organizations, academic institutions, the tourism industry, and nature-based businesses along with countless others who value the region's rich cultural and environmental diversity, history, natural beauty, and traditions. These partnerships enhance, conserve, promote and provide connectivity among the MS Gulf Coast's many heritage resources. These resources provide heritage tourists with authentic experiences reflective of the MS Gulf Coast National Heritage Area's overall mission and Management Plan.</p> <p>The MS Gulf Coast National Heritage Area plan explores methods which would serve to make natural areas and living traditions economically beneficial and available to the public directory to business owners and practitioners of traditions and indirectly to the area as a whole. Economic benefits come directly from fees for tours, food and lodging, transportation, lessons, music, re-enactments, and heritage based products such as crafts, music, posters, publication, and art. There are also indirect benefits through the impact of heritage tourism on the local economy in terms of support services.</p> <p>One of the many strengths the Mississippi Gulf Coast offers is the large amount of undeveloped area within it which is available for recreation purposes. The Task Force will identify businesses that will allow residents and visitors to experience these extensive natural areas. Available experiences range from chartered fishing trips in the MS Sound, canoe trips on the area's many inland waterways, or a beautiful bike ride on our scenic Mississippi Coastal Heritage Trail.</p> <p>The Task Force will work with local groups and businesses to explore ways to expand the availability of nature-based tours. These types of activities provide the authentic experiences that heritage tourists seek. This Program will build upon existing nature-based tours such as paddling on the Pascagoula River, the largest impeded river system in the lower 48 states, and guided excursions to the barrier islands of the MS Sound.</p> <p>The key to developing a successful Nature-Based Tourism Program is to build upon existing publicly accessible heritage resources that focus on Mississippi Gulf Coast heritage and traditional practices. This will be accomplished in two Phases: Phase 1: Funding allocated to MS Gulf Coast National Heritage Area to conduct the necessary research to develop a plan to grow Nature-Based Tourism. Phase 2: On-going funding allocated to implement the Nature-Based Tourism plan in partnership with businesses, conservation and nature-based interests, and local decision makers.</p>	Hancock, Jackson	Yes	No		Yes	No	No	No	Yes	Yes		\$ 6,000,000.00	\$ 1,000,000.00	
Eco Restoration	4276	12/27/2014	Mississippi Coastal Heritage Restoration, Education, & Preservation Trail	<p>Funding is requested to establish the Mississippi Coastal Heritage Trail (MCHT), a 200-mile multi-use pathway linking coastal communities from Grand Bay National Estuarine Research Reserve to NASA's Infinity Science Center. While increasing public understanding and providing public access to natural resource interpretive sites, waterways, islands, and forests, this Trail will also provide an opportunity to educate community members and visitors about the effects of the Deep Water Horizon Oil Spill on Gulf Coast communities. MCHT will serve as an educational tool to teach about the interaction between humans and the marine environment as well as a pedestrian/bikeway stretching across the historic and culturally rich Mississippi Gulf Coast. The MCHT will serve as the backbone of the physical network of cultural, historical and natural places where residents and visitors alike can connect with these places.</p> <p>Heritage Trails Partnership of the Mississippi Gulf Coast (HTP), highly supported by the National Park Service, is working to reconnect residents and visitors to the coastal ecosystems that surround them through recreational trails and conservation education projects.</p> <p>HTP is creatively fostering connections to education and tourism growth through trails and greenways while safe guarding the quality of coastal destinations. HTP has rallied all communities along the Mississippi Gulf Coast in a dialogue about creating a network made up of blueways and greenways where one did not exist. HTP's diverse Board of Directors, including community leaders of conservation, business, planning and health organizations, now leads the effort to create the Mississippi Coastal Heritage Trail (MCHT), recognized by the U.S. Department of Interior through the America's Great Outdoors Initiative. HTP has become a vibrant instrument for information exchange and building of interagency trust, related to trail projects, for the benefit of all coastal communities.</p>	Hancock, Harrison, Jackson	Yes	Yes	7800%	Yes	Yes	Yes	Yes	Yes	Yes		\$ 25,775,000.00	\$	
Eco Restoration	4277	12/29/2014	Highway 603 Corridor	<p>Water quality is a tremendous factor in the growth of a community, impacting economic stability through tourism, property values, as well as access to recreation and locally-harvested food. Although water quality in the Gulf of Mexico is affected by many large water bodies, small scale improvements may have a positive effect on both the Gulf and within the local community by providing access to natural spaces and improving sites for fishing and swimming as well as increasing community resilience.</p> <p>Highway 603 is a major corridor to the community with high traffic speeds, long frontages, and loosely planned infrastructure. The low elevation of the roadway and its proximity to multiple water crossings causes multiple environmental and community resilience problems: poor water quality due to non-point source runoff, persistent flooding, low density land use, and ditches that occupy a large percentage of the right-of-way rendering alternative transportation path construction impossible.</p> <p>This project will analyze areas where improvements may positively impact water quality and community resilience along the Jourdan River and tributary waterways: Breath Bayou, Bayou LaCros, Four Dollar Bayou, Edwards Bayou, and Bayou Tala. The project will set up a water sampling program to determine current issues such as: sewer concerns and effluent overflow, roadway and impervious surface runoff, or over-fertilization of lawns.</p> <p>This project will identify areas to address the problems identified: conserve lands in perpetuity, restore landscape filters for sediments and pathogens, intercept runoff, provide access to water and the natural environment, and connect with alternative transportation pathways. Water quality monitoring will also be performed after improvements to measure the changes, as well as the number of days the road is flooded per year.</p>	Hancock	Yes	Yes		Yes	Yes	Yes	No	Yes	No		\$ 570,000.00	\$ 20,000.00	
Eco Restoration	4278	12/29/2014	Restoring the Ditch	<p>A partly channelized ditch supplies a large amount of runoff into the Mississippi Sound and causes persistent beach closures in a very popular beach area. Although there is a low forested area adjacent to the drainage way, it provides limited ecological services for improving water quality. The geometry of the ditch is straight and direct, and it has steep sides, contributing sediment from erosion of the banks, and reducing the potential for settling and filtration during rain events. The extent of this mini-watershed extends past Central Avenue and the railroad tracks.</p> <p>Initially, the water quality (and quantity) will be monitored to determine the problem: is it animal waste, sewer issues, or other bacterial sources? We will work with the City of Bay St Louis Public Works and REACH, a program of Mississippi State University, to set up a water sampling program.</p> <p>The proposed project will then address the specific problems identified. Actions may include: repair lift stations, enlarge drainage space, introduce settling areas for sediment, and repair stormwater drains to filter other undesirable contents. Water quality monitoring will also be performed after improvements to measure the changes. The outfall is located in proximity to MDEQ Hancock County Sampling Station 04 (EPA-MS356172), which is frequently listed as water Contact Advisory as a result of high bacterial pathogen indicator levels.</p>	Hancock	Yes	Yes		Yes	Yes	Yes	No	Yes	No		\$ 350,000.00	\$ 20,000.00	
Eco Restoration	4279	12/29/2014	Vacation Lane Restoration	<p>A low wetland area consisting of forested lots which led to the Mississippi Sound was damaged during Hurricane Katrina. This area now provides limited ecological services for improving water quality and frequent beach closures. Current development pressures are low, but little has been done to replant fragmented wetlands or remove impervious surfaces. Outfall is located in proximity to MDEQ Hancock County Sampling Station 03 (EPA-MS349393) which is often listed as water Contact Advisory as a result of probable high bacteria levels. Because of the habitat damage, the wetland area and the lack of a healthy forest have decreased the protective aspects for community resilience for this site, for both incoming and outgoing flows of water.</p> <p>The first step will be to monitor the water quality (and quantity), to determine the problem: is it animal waste, sewer issues, or other bacteria sources? We will work with the City of Waveland Public Works, and REACH, a program of Mississippi State University, to set up a water sampling program.</p> <p>The proposed project will take action to address specific problems identified through: repair of lift stations, enlarging drainage space, removing construction debris and abandoned slabs, introducing settling areas for sediment, and replanting stormwater drains to filter undesirable contents. Water quality monitoring will be performed after improvements to measure changes.</p>	Hancock	Yes	Yes		No	Yes	Yes	No	Yes	No		\$ 320,000.00	\$ 20,000.00	
Eco Restoration	4283	1/5/2015	Tourist Corridor and Gateway Beautification Exposed Storm Water Outfalls	<p>Supporting facts</p> <ol style="list-style-type: none"> 1. A more attractive appearance, tourist friendly public amenities and coordinating tourist information signage is needed in order to maximize the effectiveness of programs and marketing that generates trial to our destination. 2. According to a recent visitor generation study, the beauty of the area is an attribute that drives visitor satisfaction. Of those that were not satisfied with their visit, 36% noted cleanliness and the perception of Katrina recovery issues as a major reason. 3. Improving the visitor experience will generate return visits and invaluable word of mouth advertising for our destination, especially in this age of social media when personal experiences and endorsements are the most trusted source of information for travelers. 4. Harrison and Hancock County already have fully developed plans with costs that include tourist friendly areas, signage, parking, amenities and more that would make Beach Boulevard and Hancock County waterfront and beach areas a true visitor destination. These plans could easily be expanded and coordinated for Jackson County tourist areas. Managing these plans as one project with inter-local agreements and cooperation between municipalities will enhance and strengthen our destination marketing as one Mississippi Gulf Coast. 5. Jobs will be created to complete construction and installation of the new facilities and enhancements as well as potential permanent jobs necessary to provide ongoing maintenance. <p>Required funding:</p> <p>Protection of exposed storm water outfalls on the beach which are currently unattractive to visitors and are maintenance issues - \$5,000,000</p>	Hancock, Harrison, Jackson	Yes	Yes	10000%	No	No	No	No	Yes	No		\$ 5,000,000.00	\$	

Eco Restoration	4284	1/5/2015	Tourist Corridor and Gateway Beautification Veterans Avenue Pier	<p>Supporting facts</p> <p>1.A more attractive appearance, tourist friendly public amenities and coordinating tourist information signage is needed in order to maximize the effectiveness of programs and marketing that generates trial to our destination.</p> <p>2.According to a recent visitor perception study, the beauty of the area is an attribute that drives visitor satisfaction. Of those that were not satisfied with their visit, 36% noted cleanliness and the perception of Katrina recovery issues as a major reason.</p> <p>3.This research also shows that one of the reasons cited for not visiting the Ms Gulf Coast is lack of a variety of things to do. With over 600 visitor amenities, attractions and activities available, it is clear that we need to improve our communication of tourism offerings.</p> <p>4.Improving the visitor experience will generate return visits and invaluable word of mouth advertising for our destination, especially in this age of social media when personal experiences and endorsements are the most trusted source of information for travelers.</p> <p>5.Additional jobs will be created to complete construction and installation of the new facilities and enhancements as well as potential permanent jobs necessary to provide ongoing maintenance.</p> <p>Required funding Repair Katrina damaged Veterans Avenue pier which had been a major beach amenity - \$1,000,000</p>	Harrison	Yes	Yes	10000%	No	No	No	No	Yes	No	\$ 1,000,000.00	\$ -	
Eco Restoration	4285	1/5/2015	Tourist Corridor and Gateway Beautification Enhance Aquatic Habitat	<p>Supporting facts</p> <p>1.A more attractive appearance, tourist friendly public amenities and coordinating tourist information signage is needed in order to maximize the effectiveness of programs and marketing that generates trial to our destination.</p> <p>2.Research shows that one of the reasons cited for not visiting the Ms Gulf Coast is lack of a variety of things to do. With over 600 visitor amenities, attractions and activities available, it is clear that we need to improve our communication of tourism offerings.</p> <p>3.Improving the visitor experience will generate return visits and invaluable word of mouth advertising for our destination, especially in this age of social media when personal experiences and endorsements are the most trusted source of information for travelers.</p> <p>4.Harrison and Hancock County already have fully developed plans with costs that include tourist friendly areas, signage, parking, amenities and more that would make Beach Boulevard and Hancock County waterfront and beach areas a true visitor destination. These plans could easily be expanded and coordinated for Jackson County tourist areas. Managing these plans as one project with inter-local agreements and cooperation between municipalities will enhance and strengthen our destination marketing as one Mississippi Gulf Coast.</p> <p>5.Additional jobs will be created to complete construction and installation of the new facilities and enhancements as well as potential permanent jobs necessary to provide ongoing maintenance.</p> <p>Required funding Enhance aquatic habitat around existing piers to promote fishing, crabbing and other recreational activities for tourists - \$1,750,000</p>	Harrison,Hancock Jackson	Yes	No		Yes	No	Yes	No	Yes	No	\$ 1,750,000.00	\$ -	
Eco Restoration	4286	1/5/2015	Tourist Corridor and Gateway Beautification Beach Parking and Parking Area Pavilions	<p>Supporting facts</p> <p>1.A more attractive appearance, tourist friendly public amenities and coordinating tourist information signage is needed in order to maximize the effectiveness of programs and marketing that generates trial to our destination.</p> <p>2.According to a recent visitor perception study, the beauty of the area is an attribute that drives visitor satisfaction. Of those that were not satisfied with their visit, 36% noted cleanliness and the perception of Katrina recovery issues as a major reason.</p> <p>3.This research also shows that one of the reasons cited for not visiting the Ms Gulf Coast is lack of a variety of things to do. With over 600 visitor amenities, attractions and activities available, it is clear that we need to improve our communication of tourism offerings.</p> <p>4.Improving the visitor experience will generate return visits and invaluable word of mouth advertising for our destination, especially in this age of social media when personal experiences and endorsements are the most trusted source of information for travelers.</p> <p>5.Harrison and Hancock County already have fully developed plans with costs that include tourist friendly areas, signage, parking, amenities and more that would make Beach Boulevard and Hancock County waterfront and beach areas a true visitor destination. These plans could easily be expanded and coordinated for Jackson County tourist areas. Managing these plans as one project with inter-local agreements and cooperation between municipalities will enhance and strengthen our destination marketing as one Mississippi Gulf Coast.</p> <p>6.Additional jobs will be created to complete construction and installation of the new facilities and enhancements as well as potential permanent jobs necessary to provide ongoing maintenance.</p> <p>Required funding Construct additional beach parking areas with shaded pavilions to provide access to and ease of use of the beach and beach amenities - \$7,500,000</p>	Hancock,Harrison Jackson	Yes	Yes	10000%	No	No	No	No	Yes	No	\$ 7,500,000.00	\$ -	
Eco Restoration	4287	1/5/2015	Tourist Corridor and Gateway Beautification Beach Event Pavilions	<p>Supporting facts</p> <p>1.A more attractive appearance, tourist friendly public amenities and coordinating tourist information signage is needed in order to maximize the effectiveness of programs and marketing that generates trial to our destination.</p> <p>2.According to a recent visitor perception study, the beauty of the area is an attribute that drives visitor satisfaction. Of those that were not satisfied with their visit, 36% noted cleanliness and the perception of Katrina recovery issues as a major reason.</p> <p>3.A recent study in a competing market indicated that 20% of their visitors pass through one or all of our Coastal counties on their way to their market, however there is very little directional signage on the major by-way appealing to visitors.</p> <p>4.Improving the visitor experience will generate return visits and invaluable word of mouth advertising for our destination, especially in this age of social media when personal experiences and endorsements are the most trusted source of information for travelers.</p> <p>5.Additional jobs will be created to complete construction and installation of the new facilities and enhancements as well as potential permanent jobs necessary to provide ongoing maintenance.</p> <p>Required funding Construct various sized beach pavilions for group gatherings, entertainment events and beach amenities - \$2,700,000</p>	Hancock,Harrison Jackson	Yes	Yes	10000%	No	No	No	No	Yes	No	\$ 2,700,000.00	\$ -	
Eco Restoration	4288	1/5/2015	Tourist Corridor and Gateway Beautification Comfort Stations	<p>Supporting facts</p> <p>1.A more attractive appearance, tourist friendly public amenities and coordinating tourist information signage is needed in order to maximize the effectiveness of programs and marketing that generates trial to our destination.</p> <p>2.According to a recent visitor perception study, the beauty of the area is an attribute that drives visitor satisfaction. Of those that were not satisfied with their visit, 36% noted cleanliness and the perception of Katrina recovery issues as a major reason.</p> <p>3.Improving the visitor experience will generate return visits and invaluable word of mouth advertising for our destination, especially in this age of social media when personal experiences and endorsements are the most trusted source of information for travelers.</p> <p>4. Additional jobs will be created to complete construction and installation of the new facilities and enhancements as well as potential permanent jobs necessary to provide ongoing maintenance.</p> <p>Required funding Construct additional and repair existing comfort stations along the beach - \$10,250,000</p>	Hancock,Harrison Jackson	Yes	Yes	10000%	No	No	No	No	Yes	No	\$ 10,250,000.00	\$ -	
Eco Restoration	4289	1/5/2015	Tourist Corridor and Gateway Beautification Signage and Landscaping	<p>Supporting facts</p> <p>1.A more attractive appearance, tourist friendly public amenities and coordinating tourist information signage is needed in order to maximize the effectiveness of programs and marketing that generates trial to our destination.</p> <p>2.According to a recent visitor perception study, the beauty of the area is an attribute that drives visitor satisfaction. Of those that were not satisfied with their visit, 36% noted cleanliness and the perception of Katrina recovery issues as a major reason.</p> <p>3.This research also shows that one of the reasons cited for not visiting the Ms Gulf Coast is lack of a variety of things to do. With over 600 visitor amenities, attractions and activities available, it is clear that we need to improve our communication of tourism offerings.</p> <p>4.Improving visitor signage will increase awareness of tourism offerings and increase length of stay and therefore economic impact.</p> <p>5.A recent study in a competing market indicated that 20% of their visitors pass through one or all of our Coastal counties on their way to their market, however there is very little directional signage on the major by-way appealing to visitors.</p> <p>6.Improving the visitor experience will generate return visits and invaluable word of mouth advertising for our destination, especially in this age of social media when personal experiences and endorsements are the most trusted source of information for travelers.</p> <p>7.Harrison and Hancock County already have fully developed plans with costs that include tourist friendly areas, signage, parking, amenities and more that would make Beach Boulevard and Hancock County waterfront and beach areas a true visitor destination. These plans could easily be expanded and coordinated for Jackson County tourist areas. Managing these plans as one project with inter-local agreements and cooperation between municipalities will enhance and strengthen our destination marketing as one Mississippi Gulf Coast.</p> <p>8.Several parts of the plan have already been funded and are expected to be completed this year including way finding signage coordinated with a tourism entity directory.</p> <p>9.Additional jobs will be created to complete construction and installation of the new facilities and enhancements as well as potential permanent jobs necessary to provide ongoing maintenance.</p> <p>Required funding Major gateway signage and landscaping at MDOF approved and permitted locations on I10 and at selected Highway 90 intersections (20 locations x 2 exits) - \$600,000</p>	Hancock,Harrison Jackson	Yes	Yes	10000%	No	No	No	No	Yes	No	\$ 600,000.00	\$ 60,000.00	

Eco Restoration	4290	1/1/2015	Tourist Corridor and Gateway Beautification Wayfinding signage and mobile app	<p>Supporting facts</p> <p>1.A more attractive appearance, tourist friendly public amenities and coordinating tourist information signage is needed in order to maximize the effectiveness of programs and marketing that generates trial to our destination.</p> <p>2.According to a recent visitor perception study, the beauty of the area is an attribute that drives visitor satisfaction. Of those that were not satisfied with their visit, 36% noted cleanliness and the perception of Katrina recovery issues as a major reason.</p> <p>3.This research also shows that one of the reasons cited for not visiting the Ms Gulf Coast is lack of a variety of things to do. With over 600 visitor amenities, attractions and activities available, it is clear that we need to improve our communication of tourism offerings.</p> <p>4.Improving visitor signage will increase awareness of tourism offerings and increase length of stay and therefore economic impact.</p> <p>5.A recent study in a competing market indicated that 20% of their visitors pass through one or all of our Coastal counties on their way to their market, however there is very little directional signage on the major byways appealing to visitors.</p> <p>6.Improving the visitor experience will generate return visits and invaluable word of mouth advertising for our destination, especially in this age of social media when personal experiences and endorsements are the most trusted source of information for travelers.</p> <p>7.Harrison and Hancock County already have fully developed plans with costs that include tourist friendly areas, signage, parking, amenities and more that would make Beach Boulevard and Hancock County waterfront and beach areas a true visitor destination. These plans could easily be expanded and coordinated for Jackson County tourist areas. Managing these plans as one project with inter-local agreements and cooperation between municipalities will enhance and strengthen our destination marketing as one Mississippi Gulf Coast.</p> <p>8.Several parts of the plan have already been funded and are expected to be completed this year including way finding signage coordinated with a tourism entry directory.</p> <p>9.Additional jobs will be created to complete construction and installation of the new facilities and enhancements as well as potential permanent jobs necessary to provide ongoing maintenance.</p> <p>Required Funding: Continue and implement additional tourist way-finding and informational signage along Highway 90 and downtown areas, as well as historical and cultural markers and k&stoyr boards&#247;cluding a mobile app to supplement the printed brochure - \$750,000</p>	Hancock,Harrison Jackson	Yes	Yes	50000	No	No	No	No	Yes	No		\$ 825,000.00	\$ 75,000.00	
Eco Restoration	4297	1/8/2015	Gulfport Downtown Tourist Destination/Alley Streetscape - The Half Street Alley Project	<p>Gulfport Downtown Tourist Destination/Alley Streetscape Project i.e. &#247;Half Street Alley Project&#247;</p> <p>In the tradition of Printers Alley in Nashville, Pirates Alley and Exchange Place in New Orleans, and the Alley Station in Montgomery, AL, Gulfport, MS is seeking to develop the downtown alley between 26th Avenue and 27th Avenue into a true outdoor public entertainment and arts destination. Currently used for utility and waste removal purposes, the alley has received a design study by Tom McColloway of the firm Mahan Rykiel Design, Baltimore, MD and Randy Wilson of Community Design Solutions, Columbia, SC, the nation&#247;s leading &#247;New Urbanism&#247;Alley Redevelopment designers. The team has repurposed and designed alleys in New York City, Austin, TX, Seattle, Portland, Chicago, and Atlanta and are now focused on opportunity in Gulfport, MS. Their assessment is that the location in Historic Downtown Gulfport will have a transformational effect on the heart of the entertainment district, creating a safe, attractive and highly desirable appeal to the character of downtown. Major design queues will be to streetscape the surface with new brick pavers, drainage systems, arched signage at each entrance, various and eclectic lighting treatments, creative and unique art installations and displays, bamboo planters, benches and seating areas and dedicated areas for the restaurants&#247; outdoor dining areas. Also, to address a balance of utility and desirability/sanitation, the current 40 yard compact in the alley will be replaced with a small dumpster corral that will attractively fence off four 2-yard size dumpsters that will be on casters providing ease of access for waste removal. The corral will contain on a daily basis. Based on recommendations and having the endorsement of the local Director of the Department of Health, the corral area will be against one of the alley walls, fenced off on a concrete pad with sewer drainage and hot and cold water for safe clean up and maintenance of the area.</p> <p>This new attraction will directly increase traffic in this pedestrian friendly area to 6 locally owned restaurants that will have back door and/or courtyard access to the newly transformed &#247;Half Street Alley. The Gulfport Main Street Director will be responsible for providing outdoor dining area events, public art displays, poetry readings and musical entertainment. It will also allow for the development of new small businesses in our downtown area by creating a new synergy of art and entertainment. Currently, the alley is an eyesore, a health and safety hazard, and quite possibly the worst maintained area in all of Downtown Gulfport. With the development of &#247;Half Street Alley&#247;not only will we correct and clean up a blighted area, we will create a destination that young and old will be able to visit to view public art contests, eat, drink, be entertained and most importantly, be proud of the continued growth and rebirth of Downtown Gulfport.</p> <p>To accomplish the transformation of the alley, Gulfport has dedicated approximately \$117,000 from CDBG monies from the Mississippi Development Authority to the above ground alley project which would include lighting, street pavers, electrical. To complete the project, we are seeking an additional \$350,000 to replace the aging sewer infrastructure that runs the length of the alley, engineering costs, concrete replacement and other infrastructure needs. This funding would complete all the necessary below ground infrastructure in order to complete the project properly the first time.</p> <p>Currently, there are 33 locally owned restaurants and entertainment establishments that are all and small businesses that have opened or renovated and reopened since Hurricane Katrina. The City has used over \$10 Million in CDBG for one of the nation&#247;s largest streetscape and facade grant projects resulting in a resurgence and rebirth of Downtown Gulfport. The &#247;Half Street Alley&#247;Project is the project that will differentiate Downtown Gulfport from any other along the coast, offering a true destination that attracts more patrons to our small businesses, improves a currently depressed area and creates a vibrant public space tourists and locals alike will be drawn to.</p>	Harrison	Yes	Yes	50000	Yes	Yes	No	Yes	Yes	Yes		\$ 1,500,000.00	\$ 317,000.00	
Eco Restoration	4298	1/8/2015	ONE COAST Scenic Byways and Relocation Campaign	<p>It is recommended that \$2,019,250 in Restore Act Funds be utilized to launch a ONE COAST Scenic Byways and Relocation Campaign to drive tourism and real estate sales.</p> <p>A decade in the making, Beach Boulevard in Hancock County, is the only shoreline along the MS Gulf Coast that has received the designation as a Mississippi Scenic Byway. The vision for a scenic byway did not stop at the 13 miles of shoreline in Hancock County. The 30 miles in and around NASA&#247;s Stennis Space Center buffer zone, an untouched natural green space that can never be developed, is now part of the Byways to Space. The buffer zone—a natural haven for birding, fishing, hiking, camping and exploring—is not only a national asset for homeland security and defense, but also for the emerging new eco-tourism product of the Mississippi Gulf Coast.</p> <p>Work is underway now to connect the beach boulevard by way to the rest of the Gulf Coast by naming Highway 90 in Harrison and Jackson counties as Scenic Byways, to celebrate the 100th Year Anniversary of the Old Spanish Trail. During 2015, the byway will extend into Harrison County up to Debus Road. There is interest from Jackson County leaders to extend the byway there and in Biloxi, segmentation may be required to carve out the Casino Districts.</p> <p>A Mississippi Scenic Byway designation can benefit a community in several interrelated ways: Resource protection; Community recognition as a source of pride; Economic development/tourism through visitor kiosks, vista spots to serve tourists; Community visitation to address roadway corridors and land use issues; Partnering by bringing individuals, land owners, the public and private sector to partner for betterment of the community; Access to federal and state grants, trusts, loans and assistance programs for safety improvements, facilities, improvements to access areas, protecting historical and cultural resources.</p> <p>The mission of the Mississippi Coast&#247;s two new scenic byways is to preserve, enhance, protect and promote the natural, historic and cultural tourism intrinsic value of 62 miles of scenic roadways for the enjoyment and education of the American public. The goal of the scenic byways programs is to introduce the Byways to Space and the Beach Boulevard Scenic Byways to the public by:</p> <ul style="list-style-type: none"> &#247;C&#247;aking advantage of the INFINITY Science Center, a Mississippi Tier I tourist attraction that opened in mid April 2012 that has a focus on the science of land, sea, and outer space. &#247;C&#247;aring the Byways to Space and the Beach Boulevard Scenic Byways, and the intrinsic resources along these byways, as an &#247;ecotour&#247; laboratory&#247;where people can have a hands-on experience with what they have learned about inside the INFINITY Science Center. &#247;C&#247;providing electronic and static information to the public to plan their visit to the byways, to actually guide the public around the byways, and to provide visitor information at various locations on the many intrinsic resources located along the byways. &#247;C&#247;involving the public in the potential expansion of the byways to provide more of a seamless visitor experience. <p>Promoting the cultural and heritage tourism of the area is the catalyst needed to increase visitation, new business income, tax revenue and jobs for the region, using the INFINITY Science Center as the mechanism to draw the estimated 300,000 annual visitors off the Interstate and into the communities surrounding the Center. Connecting the Scenic Byways to Space to the Beach Boulevard Byway will draw the visitors from the Interstate into the cities of Waveland and Bay St. Louis and ultimately across the Coast as a preferred tourism route, thereby generating tourism activity throughout the</p>	Hancock,Harrison Jackson	Yes	Yes	50000	Yes	Yes	Yes	Yes	Yes	Yes		\$ 2,019,250.00	\$ -	
Eco Restoration	4301	1/9/2015	Sanitary Sewer Improvements Ocean Springs	<p>The project consists of renovating five sanitary sewer pump stations. The work includes raising the top of the wet well and site elevations to eliminate potential pump station flooding, reworking piping to reduce the risk of possible physical damage from adjacent traffic which would cause sewage spills, elevating pump station control panels to eliminate repetitive loss and replacement due to flooding, installing secure lockable wet well and valve pit covers to improve safety and security, and drainage improvements to correct erosion and flooding issues at the sites. The improvements will reduce potential damage to the natural environment including nearby drainage ways and wetlands, reduce hazards to health and safety due to sewer overflows, sewer spills and provide improved security of the facilities.</p>	Jackson	Yes	Yes	25000000	No	No	No	No	No		\$ 300,000.00	\$ -		
Eco Restoration	4303	1/20/2015	Project Management in Support of MS RESTORE and NFWF Projects	<p>Just as an integrated ecosystem monitoring and modeling network is critical to understanding the interconnected Gulf ecosystem, it is also critical to design, develop, and implement this network as a Comprehensive Integrated Project. A detail Project Management Plan will be prepared from all the individual proposals. Project Management Principles and Procedures are an ideal way to ensure that the execution of this science based system is successful and serves the needs of the resource management, regulatory and emergency response community (hereinafter referred to as decision makers). The project will follow a modified spiral development approach, where each proposal will represent a spiral. Figure 1 in the following attachment, highlights the complexity due to the number of organization performing research and implementation of funded projects in the Gulf. A large effort of coordination between all developing organizations will be required to minimize unwanted duplication. Table 1 in the following attachment, provides the basis for the starting requirements for the observing system, and forms the project management basis for all further actions. A Requirements Traceability Matrix (RTM) will be established and maintained throughout the design, development, testing, and implementation phase of each spiral.</p> <p>A key component of the Project Management Plan will be defining how the large amount of data being collected will be managed, and what information products derived from those data are needed by decision makers. Deep Water Horizon once again highlighted the need for a better understanding of the environment and ecosystem making up the Gulf of Mexico region. Many agencies, at all levels of government, universities, NGOs, and industry are more involved in understanding the complex environment of the Gulf. Resources from the penalties from the oil spill are being provided to NFWF, NAC, and the RESTORE Act and other for the restoration of the Gulf. These programs will generate large amounts of environmental data and information. These funding sources will direct how these data and information are to be managed. Each recipient of funding will be required to manage their data in accordance with the funder&#247;s policy. Working with NOAA and Restoration Council funders, plan to develop a Data Management Policy and Procedures for managing all these collected data. All data collected under these funding initiatives have to be open and free to the public. These data have to be discoverable and accessible to users. These data have to be preserved for future generations. This Project Management Plan will define all the Data Policies and Procedures needed for all these data types collected. It will be the responsibility for each of the funded proposals to actual process these data to the Project Management Plan direction.</p> <p>As part of the Project Management Plan, project personnel will interact with NOAA, the EPA, the MS-DEQ and MS-DNR to ascertain what information products, or decision support tools, would be most useful to them from the subproject monitoring data in the Gulf of Mexico. Where possible with existing resources these tools will be developed. If more resources are required, the development of these tools will be recommended for future funding.</p>	Hancock,St Tammany,Mobile Jackson,Harrison	Yes	No		Yes	Yes	Yes	No	Yes	No		\$ 2,000,000.00	\$ -	monitoring and Data Synthesis

Eco Restoration	4306	1/26/2015	Escatawpa River Hydrologic Restoration Study	<p>The health and productivity of the Northern Gulf of Mexico's estuarine and coastal ecosystems and habitats is tied to salinity levels and their inland extent. Salinity levels are inextricably linked to the timing, duration, volume and location of freshwater inflows from innumerable rivers, streams and bays. Mississippi's main coastal rivers such as the Pascagoula and Escatawpa collect and transport large volumes of rainfall, sediment and nutrients from a fairly flat landscape into bays or estuaries and on into the Mississippi Sound where fresh, estuarine and Gulf waters intermingle. As they near the coastal interface, rivers often meander through flat, marshy landscapes with numerous secondary and abandoned channels, oxbows and large areas of off-channel wetlands. The coastal savannas and estuarine marshes of Mississippi Grand Bay represent the historic deltaic environments the Pascagoula and Escatawpa Rivers formed when the Escatawpa River flowed directly into the Mississippi Sound near the border of Mississippi and Alabama in east Jackson County, Mississippi. At some point before 1850, the Escatawpa River channel shifted to what it flows directly into the Pascagoula River and not Grand Bay. The Pascagoula River outlet also shifted westward which severely limited the inflow of freshwater, nutrients, and sediments into Grand Bay. The construction of bridges for railroads and highways also altered historic sheet flow and surface water flows and contributed to the loss of historic freshwater flows into Grand Bay. Many of the bays flowing into Grand Bay have also been modified by development and conversion for commercial, residential, industrial, or recreational purposes.</p> <p>Much of the Grand Bay's unique ecosystem is protected and managed as public lands including a National Estuarine Research Reserve (NERR) (18,000 acres) and a National Wildlife Refuge (NWR) (22,000 acres when completed). The Mississippi Department of Marine Resources also has two Gulf Environmental Management Sites (GEMS) in the Grand Bay watershed: 1) the 2,820-acre Escatawpa River Marsh Preserve and 2) the 26,900-acre Grand Bay Savanna Preserve. Most plants and animals found in these estuarine ecosystems can only tolerate a specific salinity range. Generally, animals can quickly move or migrate to find water with the appropriate salinity. However, plants cannot adapt as quickly and will die and be replaced with more resilient plants if there are long-term salinity changes. Precipitation, or the delivery of the primary factor influencing salinity levels. Similarly, habitats change with salinity levels. Moving upstream or inland from the coast the tidal influence wanes allowing tidal freshwater marshes and swamps to form. Water levels in these transitional habitats vary from tidal fluctuation and from freshwater inflow. The habitats may be dry for prolonged periods of time during droughts and totally submerged for weeks at a time during floods.</p> <p>Accordingly, alterations in the location and volume of freshwater inflow can severely disrupt Grand Bay's unique coastal ecosystems and habitats. In addition, Global Climate Change/Variation projections predict even less freshwater inflow because of less precipitation and higher temperatures with increased evapotranspiration throughout Grand Bay's watershed. A diversion project to return a portion of the Escatawpa River's flow to Grand Bay may be critical to ensure Grand Bay's ability to provide long-term ecosystem services. Still, any freshwater diversion may deliver excess sediment and nutrients into Grand Bay which could cause algal blooms, lower light attenuation, and eutrophication. The Mississippi Coastal Improvements Program (2009) proposed developing a 3D-Cas refined hydrodynamic model for the area, inputting biological, water quality, and physical data into the model to evaluate a variety of freshwater diversion scenarios. The modeling effort needs to be conducted in conjunction with interviews and public workshops to gather community information. If feasible, a freshwater diversion project may serve to enhance the area's wildlife resources. The need for freshwater diversion at the Grand Bay savanna and marshes would help restore the predominant wet pine savanna habitat.</p>	Jackson	Yes	No	No	No	No	Yes	No	Yes	No	\$	3,500,000.00	\$	-	-
Eco Restoration	4310	1/27/2015	Jackson County Shoreline Protection Program	<p>The purpose of this project is to qualitatively and quantitatively study the sand beaches and natural shorelines within Jackson County. Erosion of the beach and shorelines through natural accretion and storm activity requires continuous maintenance and replenishment efforts to sustain the coastline. The goals of the study are as follows:</p> <ol style="list-style-type: none"> 1. Develop baseline data to accurately quantify and qualify the sand beach shorelines. 2. Develop numerical models to simulate beach and shoreline erosion for high and low frequency storm events. 3. Develop strategies to control erosion of the sand beaches. 4. Investigate beaching shorelines and determine those that are the most suitable for this environment. 5. Develop a Management, Operations, and Maintenance Program for the sand beaches. 6. Develop and investigate an offshore dredging replenishment program. <p>The County's beaches and shorelines face loss of sand and sediment. Stabilization of the beaches and shorelines will significantly reduce maintenance costs. A well-established coastline will provide protection during storm events and promotes tourism, while maintaining wildlife habitat.</p>	Jackson	Yes	Yes	No	No	No	No	No	Yes	No	\$	500,000.00	\$	-	-
Eco Restoration	4311	1/28/2015	Spring Lake Dam Replacement	<p>The Jackson County Board of Supervisors is proposing the replacement of the current Spring Lake Dam situated in a residential/agricultural area north of the Vanceaw Community. Spring Lake is approximately 67.8 acres in area at normal pool. This lake was created by a man-made dam constructed across the reach of Little Creek. Spring Lake Drive is located on the crest of the dam which forms the embankment for the downstream boundary of the lake.</p> <p>Over recent years, the dam has failed resulting in the loss of Spring Lake Drive and a severely decreased pool elevation for the lake, as well as the loss of access across the dam. Continued deterioration of the dam is eminent.</p> <p>The purpose of this project is to restore the Spring Lake Dam to beach conditions. Restoration will reestablish access across the dam and allow the lake to fill to the normal design pool elevation. The proposed dam structure will be reconstructed in accordance with established requirements for earth dams as indicated by the Mississippi Department of Environmental Quality. In addition to providing safe access and creating a structurally sound dam, this will provide recreational and fishing activities to the local residents.</p>	Jackson	Yes	Yes	10000%	No	No	No	No	No	No	\$	3,125,000.00	\$	-	-
Eco Restoration	4316	2/19/2015	Bay St Louis stream restoration, canal dredging project and Removal of Derelict Boat Houses and Piers Project	<p>Bay St Louis has over 27 miles of waterways inside the city limits. The waterways include natural streams and a system of canals that connect to the Jordan River and Bayou Lafourche. The entire system is in great need of maintenance dredging and debris removal to ensure the desired amount of sediment and debris is removed to ensure the flow of water. The entire system would have multiple benefits that would include but not be limited to improving water quality, flood prevention with better drainage/runoff, navigation, recreational safety and useful byproduct (sediment removed could serve as marsh replenishment material).</p> <p>BSL proposes to remove the numerous derelict boat houses and damaged piers/pillings from along the water front on Beach Blvd. These structures pose a navigational danger to boaters, fisherman and recreationalists which frequent the water front.</p>	Hancock	Yes	Yes	No	No	No	No	No	Yes	No	\$	15,000,000.00	\$	-	-
Eco Restoration	4321	3/4/2015	Deer Island Coastal Preserve Acquisition	<p>This project would locate willing sellers of the Deer Island Coastal Preserve, purchase the land and preserve it as part of the Coastal Preserve program, and manage it for the benefit of future generations. From the DMR website: The primary boundary of this 674-acre preserve follows the beach along the island. This island in the Gulf has white beaches and tall pines in the interior with marshes to the east. This area contains a mosaic of elevation zones within a dike area. The southern border consists of a narrow natural beach/dune; a 1.3 m wide band of smooth cordgrass (<i>Spartina alterniflora</i>) lies between the dune and beach. The remaining three sides consist of a 3.5 m high levee, formed from the excavation of channels through the marsh. This levee has been breached in at least three locations, which allows hydraulic exchange with the canals and the sound. This unique location provides excellent feeding, resting, and wintering habitat for numerous types of migratory bird species, such as the Brown Pelican and cormorants. - See more at: http://www.dmr.state.ms.us/index.php/mississippi-gems/211-deer-islandshash.MDM218U.dpf</p>	Harrison	Yes	No	No	No	No	No	No	No	No	\$	23,820.00	\$	-	-
Eco Restoration	4322	3/4/2015	Wolf River Coastal Preserve Acquisition	<p>This program will identify willing sellers within the Wolf River Coastal Preserve, acquire the land, and preserve and monitor it for future generations. From the DMR website: The primary boundary of this 2,426-acre preserve contains the non-forested marsh along the Wolf River from Grassy Point to where the marsh ends in Section 37. The mid-section of the Wolf River contains expansive tidal freshwater marsh, dominated by sawgrass (<i>Cladium jamaicense</i>). This unique location provides excellent feeding, resting, and wintering habitat for numerous types of migratory bird species, such as the Brown Pelican, White Pelican, Osprey, and cormorants. The Wolf River is used privately by landowners, boaters, and anglers that come into the area on occasional and seasonal basis for fishing and waterfowl hunting. Lands within this Coastal Preserve are either privately, locally, state or federally owned and intergovernmental and private cooperation is essential to manage the unique ecosystem surrounding the Wolf River Marsh. However, much of this property is considered tidal wetlands and is already owned by the state. Development of the surrounding lands causes a threat to the marsh. This is a large extent of estuarine marsh that is expected to include the following estuarine communities: estuarine subtidal 1) large tidal creek 2) muddy sand embayment; and estuarine intertidal 1) mesohaline marsh 2) oligohaline marsh. - See more at: http://www.dmr.state.ms.us/index.php/mississippi-gems/234-wolf-rivermarsh.Dy5aUqC.dpf</p>	Harrison	Yes	No	No	No	No	No	No	No	No	\$	798,680.00	\$	-	-
Eco Restoration	4323	3/4/2015	Biloxi River Marsh Coastal Preserve Acquisition	<p>The project will locate willing sellers within the Biloxi River Marsh Coastal Preserve, acquire the land, and preserve and monitor it in the name of the State for future generations. From the DMR website: he primary boundary of this 4,020-acre preserve follows the edge of the marsh along the Biloxi River, Tchoutacabouffa River, Bernard Bayou, and includes the portions of marsh that is non-forested. This unique location provides excellent feeding, resting, and wintering habitat for numerous types of migratory bird species, such as the Brown Pelican, White Pelican, Osprey and cormorants. This area is also known to be an Osprey rookery. - See more at: http://www.dmr.state.ms.us/index.php/mississippi-gems/207-biloxi-river-marshshash.17h3t2.dpf</p>	Harrison	Yes	No	No	No	No	No	No	No	No	\$	2,201,470.00	\$	-	-
Eco Restoration	4324	3/4/2015	Bayou Portage Coastal Preserve Acquisition	<p>This project will locate willing sellers within the Bayou Portage Preserve, acquire the land and preserve and monitor it for future generations. From the DMR website: The primary boundary of this 1,237-acre preserve follows the edge of this estuarine marsh located along Bayou Portage. This is an estuarine marsh that is expected to include the following ecological communities: estuarine subtidal 1) muddy sand embayment 2) small tidal creek; estuarine intertidal 1) mesohaline marsh 2) oligohaline marsh. - See more at: http://www.dmr.state.ms.us/index.php/mississippi-gems/205-bayou-portagehsh.1p7e2h.dpf</p>	Harrison	Yes	No	No	No	No	No	No	No	\$	264,600.00	\$	-	-	
Eco Restoration	4325	3/4/2015	Biloxi Bay Islands Coastal Preserve Acquisition	<p>This project would locate willing sellers of the Biloxi Bay Island Coastal Preserve, acquire the land, and preserve and monitor it in the name of the State for future generations.</p>	Harrison	Yes	No	No	No	No	No	No	No	\$	350,000.00	\$	-	-	
Eco Restoration	4326	3/4/2015	Hancock County Marsh Coastal Preserve Acquisition	<p>This project will locate willing sellers within the Hancock County Marsh Coastal Preserve, acquire the land and preserve and monitor it for future generations. From the DMR website: his is the second largest continuous marsh area in the state. The boundary of this 13,930-acre preserve includes all of the adjoining marshlands bordering the Mississippi Sound from the Pearl River to Point Clear. This saline marsh area includes a historically significant captured relic barrier island (Campbell Island) and an Indian shell midden (Cedar Island) over 1600 years old. The Hancock County Marshes are part of an estuarine system bordering the Mississippi Sound from the Pearl River to Point Clear. Included within the marshes are several low ridges and small hummocks that are above mean high tide. Most important of these areas are Point Clear island and Campbell Island, which are sandy areas with characteristics similar to the barrier islands. The islands of this marsh support several rare plant species including one of the rare shrubs in the United States, the tiny-leaved buckhorn (<i>Sagittaria minoriflora</i>), found on the shell midden. The marsh area is also well known for an abundance of waterfowl. - See more at: http://www.dmr.state.ms.us/index.php/mississippi-gems/217-hancock-county-marshshash.12VHHq.dpf</p>	Hancock	Yes	No	No	No	No	No	No	No	No	\$	4,488,340.00	\$	-	-
Eco Restoration	4327	3/4/2015	Jourdan River Coastal Preserve Acquisition	<p>This project will locate willing sellers within the Jourdan River Preserve, acquire the land and preserve and monitor it for future generations. From the DMR website: The primary boundary of this 6,423-acre preserve contains open saline marsh from the mouth of the Jourdan River to where the area becomes forested. The upper Jourdan River is tidal freshwater with adjacent cypress/gum swamp. The swamp occurs as narrow bands and expanded areas scattered along the river. - See more at: http://www.dmr.state.ms.us/index.php/mississippi-gems/246-jourdan-rivermarsh.NNNWU24.dpf</p>	Hancock	Yes	No	No	No	No	No	No	No	No	\$	9,340.00	\$	-	-
Eco Restoration	4328	3/4/2015	Grand Bayou Coastal Preserve Acquisition	<p>This project will locate willing sellers within the Grand Bayou Preserve, acquire the land and preserve and monitor it for future generations. From the DMR website: The primary boundary of this 565-acre preserve follows the edge of the open brackish marsh. This mesohaline marsh-bayou system contains a mosaic of elevation zones and represents a largely "flat" area with only local freshwater runoff, except for possible runoff from the Jackson marsh area to the north. This system is unique in that the narrow bayou (5-10 m wide) is flanked by a small (1-2 m) levee that is covered with groundsel bush (<i>Baccharis angustifolia</i>) with a narrow band of smooth cordgrass (<i>Spartina alterniflora</i>) near the water's edge. - See more at: http://www.dmr.state.ms.us/index.php/mississippi-gems/234-grand-bayouhsh.4979e65.dpf</p>	Hancock	Yes	No	No	No	No	No	No	No	No	\$	18,000.00	\$	-	-
Eco Restoration	4329	3/5/2015	Neotropical Migratory Songbird Preserves for the Mississippi Coast	<p>The Mississippi Gulf Coast is an important habitat for trans-Gulf neotropical migratory songbirds. The habitats immediately along the Mississippi Sound are the first terrestrial habitats the birds reach flying north in the spring and the last terrestrial habitats they see when flying south in the fall. Restoration of maritime forests with a plethora of fruit-producing and insect-bearing species would provide important food resources for migrating songbirds.</p>	Harrison, Jackson, Hancock, St Tammany, Mobile	Yes	No	No	Yes	No	No	No	Yes	No	\$	250,000.00	\$	-	-

Eco Restoration	4312	3/3/2015	Biloxi Flats - Tchoutacabouffa River/Touachanie Creek Watershed & Gulf Coastal Plain Savanna Restoration - De Soto National Forest	<p>The southeast corner of De Soto National Forest encompasses part of Harrison and Jackson counties in southern Mississippi. This area of the Forest contains the headwaters of the Tchoutacabouffa River/Touachanie Creek Watershed. This watershed drains into the Back Bay of Biloxi and is a vital part of the Mississippi Gulf Coast, influencing both water quality and coastal plain wildlife habitat.</p> <p>Within the Tchoutacabouffa River Watershed there is an area now known as Biloxi Flats. Biloxi Flats encompasses 2,500 acres of coastal plain savanna in need of restoration. Bayou Billie drains a significant portion of Biloxi Flats. This area once contained suitable Mississippi sandhill crane habitat, as evidenced by records of crane sightings and nests on National Forest land. Habitat on the nearby MS Sandhill Crane Refuge is well maintained by the US Fish and Wildlife Service, but the dense pine woods now found in the Biloxi Flats area are unacceptable nesting, roosting, and feeding habitat for cranes. Fire suppression, pine plantations in low areas, draining of land and nearby development have changed the historic vegetation structure. Stands of pine trees and thick underbrush now occupy what was once open gulf coastal plain savanna.</p> <p>Restoration of coastal plain savanna will promote recovery efforts for this species and provide habitat for many plants and animals (e.g. orchids, pollinators, crayfish) that depend on the existence of this ecosystem type. Ecosystem restoration work will also ensure consistent management across the landscape by aligning the Forest Service with the US Fish and Wildlife Service as both agencies work toward restoring and maintaining the connectivity of habitat utilized by the Mississippi sandhill crane.</p> <p>Longleaf pine rises in Biloxi Flats will also be restored and maintained in healthy condition to complement the savanna. Pitcher plant bogs and flats will be restored throughout Biloxi Flats and the rest of the Tchoutacabouffa River/Touachanie Creek Watershed as funding allows. Restoration, thinning, and prescribed burning are part of the short and long term management plans for the entire watershed.</p> <p>Installation of interpretive signage and significant trail improvements will be completed in the Tchoutacabouffa River/Touachanie Creek Watershed to educate the public on the principles and practices of ecosystem restoration and provide better opportunities for recreation. Signage will also educate forest users about sensitive plant and animal species as well as threats to ecosystem health.</p>	Jackson/Harrison	Yes	No	No	No	Yes	No	Yes	Yes	No	No	\$	3,038,000.00	\$	-	-
Eco Restoration	4336	3/9/2015	Stabilize Downcutting Streams in the Upper Jourdan River watershed	<p>The main streams that make up the upper Jourdan River watershed are continuously downcutting. This is certainly true of Hickory Creek and White Cypress Creek. It no doubt applies to Catahoula Creek, but I have no personal knowledge of this one.</p> <p>This means that each stream has a headcut that is working it's way upstream and is converting a stable e type stream that is connected to its floodplain to an entrenched one that gobbles up soil during floods, as it disconnects from its floodplain. Moreover, every stream and drain that goes into them also necessarily exhibits the same phenomenon as it cuts down at the same rate.</p> <p>The resulting soil loss ripples through the entire watershed and into the Mississippi Sound. Inland, wetlands (floodplains) are lost and hydrology of surrounding soils is altered. Vegetation is lost. All the streams mentioned have county road crossings that will be threatened in the not too distant future.</p> <p>In the marine environment, the extra siltation affects oyster beds and grass beds, thereby taking a toll on the fishery and oyster resource. It was interesting to note that one the tables in the breakout session of the marine resource meeting in Bay St. Louis on Feb. 18 had prepared around it was fish Bay St. Louis. They complained their fishing spots getting silted up. At that same meeting oysters came up at table after table as a key cultural resource for the Mississippi Gulf Coast.</p> <p>I would advocate a project, assuming landowner cooperation, to stop head cuts in the affected streams, as well as possibly add grade control structures along the way. Although it's possible to spend a lot of money doing this, it need not be the case. There are techniques involving concrete rubble and ground stabilization cloth that have been shown to be effective.</p>	Hancock	Yes	No	No	Yes	Yes	No	Yes	No	No	\$	-	\$	-	-	
Eco Restoration	4337	3/11/2015	Back Bay Biloxi Shoreline and Habitat Restoration	Project will restore shoreline area, ensuring growth of emergent plants including Spartina, Juncus, and other grasses and trees that have been lost to erosion. Several acres will receive remediation and land will be extended to include a narrow beach that has been lost due to increased force of wave action. The select means of restoration will improve conditions for more than a dozen endangered species in the area as shown in this proposal.	Harrison	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	\$	-	\$	-		
Eco Restoration	4339	3/12/2015	West Harrison Water & Sewer District Water Connection Project Phase 1	Project consists of installation of associated water distribution system and residential connections to provide potable water service to approximately 1,000 new water customers. Phase 1 would consist of installation of approximately 64,000 LF of 8" PVC water line, fire hydrants and associated valves, fittings and meters for residential connections. This project will connect to an existing water transmission system installed as part of the Gulf Region Program and provide much needed customer base to begin utilization of the Gulf Region W-13 Water Project.	Harrison	Yes	Yes	Yes	No	No	No	No	No	\$	7,608,000.00	\$	-	-		
Eco Restoration	4342	3/25/2015	Creation and Maintenance of Nearshore Tidal Marsh Land	<p>This project will serve to restore and maintain eroded onshore and nearshore tidal salt marsh within Jackson County by creating new habitat with naturally occurring sediments dredged from area navigation channels.</p> <p>The goal of the project is to develop 10 beneficial use sites within Jackson County that will restore existing eroded salt marsh areas. The proposed beneficial use sites are as follows:</p> <ol style="list-style-type: none"> 1. West Pascagoula River Delta 2. Gulf Park Estates 3. Bangs Lake <p>The marshes within these areas have degraded to open water from a combination of factors including lack of natural freshwater and sediment input. Restoration of these areas through beneficial use sites recreates the marsh habitat that provides ecosystem improvements for grasses and wildlife. The created habitat further serves to protect and maintain shoreline during adverse weather events.</p>	Jackson	Yes	No	No	No	No	No	No	No	No	\$	2,775,000.00	\$	-	-	
Eco Restoration	4343	7/24/2015	West Jackson County Constructed Wetlands Restoration Project	<p>The West Jackson County Constructed Wetlands Treatment System was established in 1990 to treat the centralized wastewater collected in western Jackson County, Mississippi. As wastewater passes through multiple cells of wetland vegetation, excess nutrients, heavy metals, and other environmentally harmful contaminants are removed from it prior to release into Catagoula Bayou. In addition to wastewater treatment, the wetlands are a favored habitat for a variety of wildlife and serves as a complementary habitat to the adjacent MS Sandhill Crane National Wildlife Refuge. Due to the concentration of birds in these wetlands, we formed an agreement with the National Audubon Society to open the facility for avian observation and counting every Thursday. For the last several years, the wetland vegetation has been decimated by the invasive apple snail. Apple snails are a serious threat to freshwater wetlands and estuarine wetlands, with severe damage documented along the Gulf of Mexico coast. Consumption of wetland vegetation by the apple snail has led to drastic reductions in the wastewater treatment efficiency and wildlife habitat. The main objectives of this proposal are to restore the functionality and habitat provided by this treatment wetland through eradication of the apple snails and restoring of vegetation. The Jackson County Utility Authority has begun efforts to remove apple snails under monitoring by the MS Departments of Environmental Quality and Marine Resources. However, limited resources have hampered these efforts. We would like to expand upon these activities by researching and implementing the best methods for removing apple snails, followed by replanting of the wetland vegetation using peer-reviewed methods to maximize habitat and water treatment. Throughout all steps in this project, water quality, percent coverage of vegetation, and snail abundance will be quantified to determine the benefits of restoring this wetland. We will also implement outreach activities by using this site as a demonstration and education project that will be open to the public, for guided tours, on select days. The expected outcomes from this project are preservation and restoration of wetland habitat, increased wastewater treatment efficiency, improved water quality, significant contributions to knowledge base for the control of apple snails, and workforce development through hiring and training of new employees to address this problem and funding graduate research.</p>	Jackson	Yes	Yes	6200%	Yes	Yes	No	Yes	No	Yes	No	\$	650,000.00	\$	-	-
Eco Restoration	4345	4/10/2015	Hancock County Utility Authority - Bayou LaCroix Road Sewer Collection	This project would be to install a Lift Station, Force Main and Connector Lines for this subdivision which has septic tanks that overflow back into Bayou La Croix waterway. The force main will be directly into an existing Lift Station which will take the wastewater to the Northern Regional Wastewater Treatment Plant. The HCUA Board of Directors has prioritized this project as Number 2.	Hancock	Yes	Yes	Yes	No	No	No	Yes	No	\$	1,200,000.00	\$	-	-		
Eco Restoration	4346	4/10/2015	Hancock County Utility Authority - Atlantic Street Area Sewer Collection System Installation	This area North of Highway 90 and South of Highway 603/43 does not have a Sewer Collection System installed. There are approximately 75-100 homes in that area that are discharging into the ditches and the bayous which eventually lead to the Gulf. The HCUA Board of Directors has prioritized this project as Number 3.	Hancock	Yes	Yes	Yes	No	No	No	No	\$	3,000,000.00	\$	-	-			
Eco Restoration	4347	4/10/2015	Hancock County Utility Authority - Springwood Sewer Collection System	Area South of Highway 90 West of Bayside Park Community that needs a Sewer Collection System installed to connect 75-100 homes now on septic tanks dumping into ditches and into local bayous. Wastewater can be sent to a lift station already in place and then onto the Southern Regional Wastewater Treatment Plant. The HCUA Board of Directors prioritized this project as Number 4.	Hancock	Yes	Yes	Yes	No	No	No	No	\$	2,000,000.00	\$	-	-			
Eco Restoration	4350	4/14/2015	Restoration of Deer Island with Beneficial Use of Dredged material	Please see Attached Proposal	Harrison	Yes	No	No	No	Yes	No	Yes	No	\$	3,000,000.00	\$	-	-		
Eco Restoration	4352	4/17/2015	Hancock County Marshes Coastal Preserve Wetlands Restoration	<p>Hancock County Marshes Coastal Preserve Wetlands Restoration (estimated budget \$3,862,500): Hancock County Marshes Preserve contains the second largest contiguous marsh area in Mississippi. It supports a mosaic of habitat types including salt and brackish marsh, vic barrier islands, and forested riverine wetlands. In cooperation with the Mississippi Department of Marine Resources (DMR), this project will restore a natural hydrology to 450 acres of marsh habitat impacted by extensive mosquito ditches constructed in the 1950s. The ditches disrupt natural flow from the marsh system to Bayou Bay reducing the habitat value of both of these important systems. Restoration strategies for this project include backfilling ditches using silt/acetic material or clean fill, placing ditch blocks in strategic locations, and installing culverts. Restored areas will be planted with native vegetation to restore their habitat values. The Preserve has several existing programs that will be used to provide opportunities for community engagement and hands-on stewardship activities in cooperation with partners, such as the Preserve Program.</p>	Hancock	Yes	No	No	No	No	No	No	No	No	\$	3,862,500.00	\$	-	-	
Eco Restoration	4353	4/17/2015	Wolf River Preserve Restoration	<p>Wolf River Preserve (estimated budget: \$451,500): Wolf River Preserve is a 1,246-acre area protected by the DMR that contains expansive tidal freshwater and brackish marsh along the lower Wolf River, DeLisle Bayou, and Bayou Portage. DMR has identified the need to restore a natural hydrology to much of the Preserve, which is affected by unused logging roads and other barriers to natural sheet flow. This project will restore natural stream function and freshwater flow to 400 acres of estuarine and freshwater wetlands impacted by now defunct logging roads, in cooperation with the DMR. Restoration strategies include installing culverts at appropriate elevations to restore natural stream flow, installing low water crossings or removing unused logging roads to restore natural sheet flow across coastal plant communities, and replanting restored areas with native wetland vegetation. Stewardship activities will be developed with the DMR and the Mississippi Wildlife Federation to host volunteers from the Mississippi Habitat Stewardship Program.</p>	Harrison	Yes	Yes	No	Yes	No	No	No	No	No	\$	451,500.00	\$	-	-	
Eco Restoration	4354	4/20/2015	Hancock County Utility Authority - Kilm / DeLisle Phase 1	This project will be to install a collection system in the designated area to connect approximately 200 homes that use septic tanks. These tanks are close to creeks, streams and bayous that empty into the Bay of St. Louis and eventually the Gulf of Mexico. A lift station is already in place to accept the wastewater from this area and it will then be transported to the Northern Regional Wastewater Treatment Plant for proper treatment. The HCUA Board of Directors prioritized this project as Number 4.	Hancock	Yes	Yes	Yes	No	No	No	No	No	\$	4,500,000.00	\$	-	-		
Eco Restoration	4355	4/20/2015	Hancock County Utility Authority - Kilm / DeLisle Phase 2	This project area includes the disconnection of approximately 100 septic tanks. A collection system is included to connect all houses from which, at this point, the run off from the septic tanks enters into the creeks, streams and bayous that eventually make their way out to the Bay of St. Louis and ultimately into the Gulf of Mexico. The HCUA Board of Directors prioritized this project as Number 5.	Hancock	Yes	Yes	Yes	No	No	No	No	No	\$	2,500,000.00	\$	-	-		
Eco Restoration	4357	4/28/2015	SRF Loan Retirement	In March of 2000, the Hancock County Water and Sewer District authorized an SRF loan with the Mississippi Department of Environmental Quality for a sewer project in Bayside Park and along the North side of HWY 90. The initial value of the loan was approximately \$7,355,000. This project added approximately 1,500 new customers to the service area of the Hancock County Water and Sewer District. As a result of Hurricane Katrina, the economic recession and the BP oil spill in 2010, this area has lost a significant number of customers and has caused the District to experience much lower revenues being generated in the past 10 years.	Hancock	Yes	Yes	10000%	Yes	No	No	No	No	\$	7,741,758.00	\$	-	-		

Eco Restoration	4359	4/29/2015	Moored Observations in the Mississippi Bight: Environmental Monitoring System	<p>The Central Gulf of Mexico Ocean Observing System (CeMOOS) was implemented in order to address a gap in operational ocean observations on the continental shelf in the central Gulf of Mexico. This is a very dynamic region where riverine input, dominated by the Mississippi River but also influenced by other rivers such as those discharged through Mobile Bay, has a major influence on oceanographic processes. Seasonal hypoxia has occurred since at least the 1950s (Brunner et al., 2005), and it was observed in each of the 5 years of a project headed by the PI and funded by the Northern Gulf Institute.</p> <p>In December of 2004 CeMOOS began operations when a 3 m discus buoy, with satellite data telemetry, was deployed at a location south of Horn Island near the 20 m isobath. This buoy was damaged during hurricane Katrina in August 2005, but despite being dragged by strong waves and currents over a path of some 15 km, the buoy survived the storm and provided crucial information on winds and waves (Bender et al., 2010a; Howden et al., 2007). This was a striking example of the value of high frequency, real-time data that a mooring can provide. Recently the elements of a seafloor package have been ordered that will give monitoring information on the seafloor temperature, salinity and dissolved oxygen, which will be acoustically telemetered to the buoy, greatly enhancing the observing system.</p> <p>The two 3-m discus buoy systems (they are rotated in and out) are aging and no funds have been able to be acquired to modernize their data logging and telemetry systems. Despite the value of this observing system, funding pressures have decreased the operating budget for the buoy and there is some danger of losing funding altogether.</p> <p>The purpose of this project is to modernize the buoy system and fully fund operation and maintenance of the buoy and its components, to continue to operate the buoy to provide scientists and decision makers with real-time data that can be used to address a range of questions. Buoy data can be used to inform scientists and marine resource managers what surface meteorological conditions are like, how strong and in what direction currents are flowing, when hypoxia has begun to form, how long hypoxia lasts, is the coastal ocean being affected by ocean acidification, as well as a helping to answer while host of other questions.</p> <p>Collaborators with other projects will add to overall understanding. Mississippi coastal resource managers (e.g., DEQ and DMR) will be surveyed to see if information products can be tailored to meet their needs.</p> <p>The location of the buoy mooring is at 34.0423N, 88.6473W. The seafloor mooring will be placed at the edge of the watch circle of the mooring chain. The Central Gulf of Mexico Ocean Observing System buoy system will be modernized, missing instrument inventory will be replaced, and a second seafloor mooring will be purchased to rotate with the first. This will ensure the continuation of high quality data.</p> <p>One of the main results of this project will be the continuation of near real-time, quality controlled data available for scientists, resource managers (including those monitoring restoration projects), emergency response managers, marine operations managers, and the general public. These data will be served on the CeMOOS website (www.ceingos.org), the CeMOOS Data Portal (data.ceingos.org), and through the National Data Buoy Center (www.ndbc.noaa.gov).</p>	Hancock	Yes	Yes	15000	Yes	Yes	Yes	No	Yes	No		\$	340,180.00	\$	-	
Eco Restoration	4360	5/12/2015	Devils Elbow Stream Restoration and Beneficial Use	<p>Hancock County proposes to complete a project at Devils Elbow, an oxbow of Rotten Bayou, in Diamondhead MS to completely restore the stream. Accelerated sedimentation, due to a lack of upland Best Management Practices, has reduced the water quality and made the waterway no longer navigable. The applicants propose to remove approximately 36,000 cubic yards of material from the project site. The proposed dredge area is 1,360 feet in length by 200 feet in width with existing depths ranging between 0 to -11 feet below Mean Low Water (MLW). The area would be dredged to a maximum depth of 4 feet below MLW in order to align with natural channel depths upstream and downstream of the accumulated sediment.</p> <p>The applicants intend to utilize a beneficial use site for dredged material disposal if one becomes available. The applicants do not propose compensatory mitigation because the project is intended to restore historic flows and improve water quality.</p> <p>The applicant has received all applicable permits and authorizations from the Department of Marine and the United States Corps of Engineers to complete the project.</p>	Hancock	Yes	No		No	No	No	No	No	Yes	No		\$	2,000,000.00	\$	-
Eco Restoration	4361	5/14/2015	Shoreline Park Stream Restoration and Beneficial Use	<p>Hancock County proposes to complete a project in the shoreline park community to restore the natural habitat and flow of the waterways within shoreline park. Accelerated sedimentation, due to a lack of upland Best Management Practices, has reduced the water quality and made the waterway no longer navigable. The area would be dredged in order to align with natural channel depths upstream and downstream of the accumulated sediment. The applicants intend to utilize a beneficial use site for dredged material disposal if one becomes available. The applicants do not propose compensatory mitigation because the project is intended to restore historic flows and improve water quality.</p>	Hancock	Yes	No		No	No	No	No	Yes	No		\$	6,000,000.00	\$	-	
Eco Restoration	4362	5/14/2015	Isouard River Shores Stream Restoration and Beneficial Use	<p>Hancock County proposes to complete a project in the shoreline park community to restore the natural habitat and flow of the waterways within the community. Accelerated sedimentation, due to a lack of upland Best Management Practices, has reduced the water quality and made the waterway no longer navigable. The area would be dredged in order to align with natural channel depths upstream and downstream of the accumulated sediment. The applicants intend to utilize a beneficial use site for dredged material disposal if one becomes available. The applicants do not propose compensatory mitigation because the project is intended to restore historic flows and improve water quality.</p>	Hancock	Yes	No		No	No	No	No	No	No		\$	1,000,000.00	\$	-	
Eco Restoration	4363	5/14/2015	Bayou Phillip Stream Restoration and Beneficial Use	<p>Hancock County proposes to complete a project in Bayou Phillips and the adjoining streams restore the natural habitat and flow of the waterways. Accelerated sedimentation, due to a lack of upland Best Management Practices, has reduced the water quality and made the waterway no longer navigable. The area would be dredged in order to align with natural channel depths upstream and downstream of the accumulated sediment. The applicants intend to utilize a beneficial use site for dredged material disposal if one becomes available. The applicants do not propose compensatory mitigation because the project is intended to restore historic flows and improve water quality.</p>	Hancock	Yes	No		No	No	No	No	No	No		\$	2,000,000.00	\$	-	
Eco Restoration	4364	5/14/2015	Bayou Lacroix	<p>Hancock County proposes to complete a project in Bayou Lacroix to restore the natural habitat and flow of the waterway. Accelerated sedimentation, due to a lack of upland Best Management Practices, has reduced the water quality and made the waterway no longer navigable. The area would be dredged in order to align with natural channel depths upstream and downstream of the accumulated sediment. The applicants intend to utilize a beneficial use site for dredged material disposal if one becomes available. The applicants do not propose compensatory mitigation because the project is intended to restore historic flows and improve water quality.</p>	Hancock	Yes	No		No	No	No	No	No	No		\$	1,500,000.00	\$	-	
Eco Restoration	4367	5/19/2015	Restoration Plan for the Henderson Point Property	<p>This restoration plan has two components. First, the terrestrial portion of the property will be restored to its historic, natural use by removing concrete and miscellaneous debris from the property. Invasive species will be removed, and an invasive species management plan will be implemented. This will allow native vegetation to proliferate and grow on the property. The second component is to stabilize the shoreline and reduce shoreline erosion through the construction of several breakwaters along the western shore of the property. These breakwater structures will be constructed with recycled concrete removed from the property. They will also create habitat for oysters, crabs, and fish.</p>	Harrison	Yes	No		No	Yes	No	No	No	Yes	No		\$	600,000.00	\$	-
Eco Restoration	4368	5/25/2015	Hancock County Sand Beach Screening Project	<p>This project will consist of deep screening (14") of beach sand in Hancock County. Approximately 6.5 miles of sand beach undergoes extensive maintenance and re-nourishment projects just frequently. These projects add debris, shells, rocks, etc. to the beach system which require constant maintenance to remove from the surface of the beach. Deep screening, similar to projects in other areas of the Gulf South following the BP Oil Spill, will insure the smaller (screen size 1/4"), broken shells and rocks will be adequately removed from the system providing a much cleaner, safer sand beach for public use.</p>	Hancock	Yes	Yes		No	No	No	No	Yes	No		\$	3,000,000.00	\$	-	
Eco Restoration	4369	5/25/2015	Hancock County Sand Beach Shoreline Protection Project	<p>The Hancock County Beach system approximately 15' of shoreline loss per year. This displacement of sand, puts the concrete seawall at risk as well as reduces the sand beach area allowed for public use. Previous reports provided by the Mississippi Department of Environmental Quality suggest approximately 75% of the shoreline loss is due to tidal influences and wave action removing the sand from the shoreline and displacing the material in the near shore system. A shoreline protection project would consist of a multitude of breakwaters or wind screens in certain areas that experience the most dramatic shoreline erosion.</p>	Hancock	Yes	No		Yes	No	No	No	Yes	No		\$	1,500,000.00	\$	-	
Eco Restoration	4370	5/28/2015	USM Gulf Park Beachfront Pier Restoration	<p>The University of Southern Mississippi's Gulf Park campus is the state's only beachfront campus. This campus had a fishing/recreational pier extending out into the Gulf of Mexico for many years. The pier offered academic, research and recreational opportunities for students, faculty, and staff as well as local residents and tourists. Over time and as a result of storms and other harsh events, the pier eventually was overcome by the elements of nature. The purpose of this proposed project is to reconstruct this pier and once again offer the direct Gulf access that had been in place for the above mentioned Mississippi residents and other stakeholders for many years. Also, with USM's growth in the areas of marine and coastal science, this pier will be a critical academic and research resource for Mississippi's premier university marine-related programs.</p>	Harrison	Yes	Yes		No	No	No	No	Yes	Yes		\$	1,500,000.00	\$	50,000.00	
Eco Restoration	5370	6/4/2015	Hancock County Sand Beach Drainage Modifications	<p>The Hancock County Sand Beach Drainage Modifications Project will consist of installation of new drainage structures to include but not limited to trench drains, concrete pipe culverts, junction boxes, covered drainage channels, drainage diversion structures, grading of sand beach areas and adjustment of existing vegetative dune systems.</p> <p>The county utilizes a full time beach maintenance crew as well as a maintenance contractor to provide the needed services to manage the drainage systems along the sand beach. There are currently approximately 39 drainage channels/culverts which are aesthetically displeasing to beach visitors and can pose dangerous conditions due to scour and damaged caused by storm surge. The proposed drainage modifications will assist in controlling beach erosion and provide significant cost savings to the County through reduced maintenance costs.</p>	Hancock	Yes	Yes	85000	Yes	No	No	No	Yes	No		\$	2,500,000.00	\$	-	
Eco Restoration	5371	6/25/2015	Visitor and Artist Education Retreat	<p>The project will create an experience for visitors and students to study artists and the inspiration that comes from the natural landscapes of the Gulf Coast. This includes providing a setting and accommodations for artists and visitors to experience the landscape of the Gulf Coast, restoring the natural landscapes that have been damaged by the most significant natural disaster in the U.S. and other calamities, restoring and creating physical components of the cultural landscape that enhance comprehension of the influence of climate and ecology, providing educational opportunities about natural landscapes and cultural resources, and providing access to natural landscapes and cultural resources to artists, visitors and students. Gulf Coast landscapes serving as inspiration for the programs will be the maritime Live Oak forest, the beach landscape the Schooner Pier Complex, and Deer Island. The maritime forest area east of the Dr-Or Keefe Museum of Art will be evaluated for health and structural stability. Damaged and unstable trees will be repaired. The beach landscape east of the Schooner Pier to the Biloxi Bay Chamber of Commerce will be restored to its natural condition through the establishment of sand dunes, intermittent salt marshes, and open beach areas. The erosion of Deer Island will be stopped and land mass regenerated. Erosion protection and accretion of sand and building of land mass at Deer Island will be accomplished by the restoration of the oyster reefs on the north side of the island. The establishment of breakwaters and salt marshes for sand accretion on the south side of the island will protect the existing beach and enhance land mass regeneration through the restoration of salt marshes. The Live oak and oak groves on the island will be evaluated, invasive trees will be removed, and the remaining trees will be managed for best health. The old roadway down the center of the island will be repaired and made suitable for visitor access. Additional tree species will be planted on the island to provide biodiversity in the forests and to establish varied habitats for the island's animals. An island management plan will be implemented to accommodate visitors walking through the landscape. Eight wooden skiffs and ten catboats will provide a cultural experience for artists and visitors. Storage will be built to house the boats in a location that will provide safe and easy access to the Schooner Pier Complex launch areas. Educational experiences will be supported with screen art studios both on Deer Island and along the edges of the maritime forest across from Deer Island. The island studios will be within the Live oak groves, at oyster point, within the old slash pine forest, at the Grand Bayou tidal stream, and along the edge of the vast black needles salt marsh and will be of a sea-sway nature that can be reassembled after tropical storms. Two boats equipped as art studios with drawing boards will provide island access and views to the island landscapes, the mainland development, and bridges. These boats will also provide access to the Back Bay and Davis Bayou in Ocean Springs. Four 12-passenger vans and two 30-passenger buses will provide trips to study art and artists along the Gulf Coast and New Orleans, as well as boat building facilities and repair yards on the Back Bay of Biloxi.</p>	Harrison	Yes	Yes	10000	Yes	Yes	No	No	No	Yes	No		\$	11,000,000.00	\$	-
Eco Restoration	5372	6/30/2015	Colonial Estates Sewer System	<p>The immediate health need of Colonial Estates Subdivision is to eliminate the septic tank systems present in the area. The septic systems are old and failing. The soil type and ground water elevation are not favorable to the property operation of septic systems. Additional development of the area is prohibited due to the lack of a sanitary sewer system.</p> <p>The proposed sanitary sewer system for Colonial Estates will service approximately 40 existing home sites that are currently on septic tank systems. The proposed system will have the capacity to serve the 225 developable lots in the immediate area and an additional 250 developable lots adjacent to Colonial Estates.</p> <p>The proposed system will consist of 16,250 feet of gravity sewer main, a pump station and 3,000 feet of sewer force main.</p>	Jackson	Yes	Yes		No	No	No	No	No	No		\$	2,300,000.00	\$	-	
Eco Restoration	5377	7/3/2015	Habitat Restoration Stewardship Fund	<p>Habitat restoration in coastal Mississippi has lagged behind habitat restoration in other states, even when some grants for habitat restorations were available because of the lack of start-up funding or the lack of matching funding for habitat restoration grants. The Mississippi Department of Environmental Quality, Office of Restoration, on an annual basis for a period of 20 years that can be used to leverage existing funding sources to implement on-the-ground habitat restoration. These habitat restoration techniques may include, but are not limited to, invasive species control, prescribed burning, fuel reduction, hydrologic restoration, and native species planting. The funding could be available on a competitive basis and would be available to both federal, state and local government landowners and private landowners. Requiring that these funds be matched at least dollar-for-dollar level would double the amount of money available for habitat restoration by leveraging funds and effort from a variety of sources including federal, state and local government agencies, non-profit organizations and private businesses. Many of the currently missed funding opportunities are from federal sources; using a small group of federal and state agency representative and non-governmental organization representatives to rank the projects annually would encourage cross-communication and cooperation in leveraging their resources to better restore habitats on the Mississippi Gulf Coast. Having the flexibility in a funding stream to engage on-going efforts and new funding streams would allow the state of Mississippi to make maximum use of available resources. The benefits of a long-running habitat restoration stewardship fund include leveraging of existing resources, development of new habitat restoration resources, better planning for habitat restoration, improved coastal habitats, better protected keystone and rare species, cleaner soil and water resources, enhanced resilience to disturbances, and more jobs for local communities.</p>	Hancock, Harrison, Jackson, plus others as appropriate	Yes	No		Yes	Yes	Yes	No	Yes	No		\$	20,000,000.00	\$	20,000,000.00	

Eco Restoration	5379	7/13/2015	East Mississippi Artificial and Oyster Reef Expansion and Enhancement	Anglers and conservation organizations working with the TRP to identify projects to help restore and sustain fisheries along Mississippi's coast stated areas in eastern Mississippi are lacking in artificial reefs and the natural reefs in the area have been diminished by decades of oyster harvest. Areas in Pascagoula Bay and adjacent waters suitable for oyster production after placement of reefing materials would have to be identified. Placement of 30 acres in all of reefing materials including limestone, crushed concrete and recycled oyster shells would follow the identification of suitable reefing areas. Additional funding should be set aside for maintenance and monitoring of reefs over the next two decades.		Yes	No		Yes	No	Yes	No	Yes	No	\$	6.00	\$	-	
Eco Restoration	5380	7/13/2015	Reef Fish Barotrauma Reduction, Education and Outreach Program	Reef fish such as snapper, grouper, amberjack and sometimes red drum caught in waters deeper than 30 feet can suffer from barotrauma. Restrictive seasons, creel limits and size limits are forcing the release of reef fish and untagged species caught by anglers out of season. Barotrauma reduction devices allow the fish to be returned back to the depth from which it was caught without puncturing the skin or swim bladder. Research facilities and anglers in the Gulf have been experimenting with the use of barotrauma reduction devices recently and have determined they are an effective way to return fish to the depth from which they were caught increasing survival rates can possibly lead to more consistent recreational catches and help improve stock sizes. An education and outreach initiative should be coordinated by the Mississippi Department of Marine Resources along with other appropriate state agencies and research institutions as well as conservation and industry groups such as the Coastal Conservation Association and American Sportfishing Association and local retailers. Printed materials, videos and workshops should be targeted towards anglers and charter captains and efforts should be made to provide reduction devices to anglers and captains.		Yes	No		Yes	No	Yes	No	Yes	No	\$	1.00	\$	-	
Eco Restoration	5381	7/13/2015	Offshore Artificial Reef Creation, Monitoring and Rehabilitation	Mississippi Recreational fishing groups have been successful in securing materials suitable for construction of productive reefs that can increase fisheries habitat as well as access for anglers. Funds have historically been unavailable for monitoring and reef maintenance and reef materials. The offshore artificial reef creation monitoring and rehabilitation program would provide the funds needed to monitor and enhance existing reefs as well as identify additional locations for reef construction in areas most suitable for reef habitat and where fisheries production can be maximized.		Yes	No		Yes	No	Yes	No	Yes	No	\$	25.00	\$	-	
Eco Restoration	5382	7/24/2015	Long Beach Interceptor - Phase 1	This project would eliminate the Long Beach Industrial Park wastewater treatment facility by connecting it to the existing Johnson Road pump station. The existing Johnson Road Pump Station would be upgraded to accommodate the additional flows and a new force main and gravity sewer would be constructed to transport the flows to the newly constructed 5-12 sewer system located on Mergue Avenue for transport to the existing Long Beach-Pass Christian WWTF. The project would eliminate an existing discharge and would provide for a higher quality of treatment at the HCUA's LB-PC WWTF. Furthermore, the connection to the sewer system on Mergue Avenue would take advantage of the new sewer system installed through CDBG funds provided after Hurricane Katrina. This system was sized for future growth, but will receive minimal flows until that growth occurs. Finally, the connection to the new sewer system will enable HCUA to eliminate an estimated 17,000' of 24-inch concrete force main that has deteriorated due to failure of the concrete lining over years of service. These failures have resulted in raw sewage bypasses requiring costly repairs in addition to discharges of raw wastewater during the repair process.	Harrison	Yes	Yes	100000	No	No	No	No	No	No	\$	3,000,000.00	\$	-	
Eco Restoration	5388	8/30/2015	Developing Grassroots Ideas for the Purpose of Building a Sustainable Economic Engine by Finding Innovative Ways of Restoring Gulf Coast Industry and Reinventing an Existing and New Business Development	Executive Summary The proposed plan outlines a multi-faceted approach to developing a Community-based High Technology Laboratory capable of producing an i&Economic EngineResulting in innovative approaches to developing for-profit businesses and industry, future products to capture retail trends, and innovations in green technologies in order to produce sustained economic and community development in targeted improvement regions. The Coastal Cities and Counties at the epicenter of the effects of natural disasters and economic and community development in the State of Mississippi. Hancock, Harrison, Jackson Counties in Mississippi are parts of the coastal region which severely suffers from challenges in business development, economic disparities, poor school systems and inadequate predictable measures for warning evacuees and responders during disaster events. A multi-faceted approach capable while creating effective i&Economic Engine, needed to stimulate job creation in the targeted region. This engine has to be strong enough to i&Economic Engine consistent level of development while creating tools that will produce short-term, mid-term and long-term results. The Transocean and BP settlements can be effective i&Economic Engine in order to have create the flexibility to assess outcomes and effectively change course to achieve set objectives capable of sustaining effective economic growth. We believe the goal in the Coastal region should be to create a viable, productive and growing economy capable of maximizing its rich assets. The Living Word High Technology Renewable Energy and Business Development Incubator (HTREBDI) can be the catalyst needed utilizing SBS Laboratories to effectively i&Economic Engine and community development in the Coastal region.	George Jackson, S tone-Hancock, Pa ar, River, Mobile, St Tammany	Yes	Yes	25000	Yes	Yes	Yes	Yes	Yes	Yes	\$	10.00	\$	-	
Eco Restoration	5392	9/1/2015	Point Cadet Waterfront Boardwalk, Marina and Small Craft Harbor Expansion and Tricentennial Park Improvements	Through implementation of this comprehensive project to improve public access and balance public-private development along Point Cadet's southern waterfront from the Bilow-Ocean Springs Bridge to the Bilow Small Craft Harbor in downtown Bilow, the general public of the State of Mississippi, the City of Bilow and private developers will benefit. The project includes upgrading the existing Point Cadet Marina and expanding it west and constructing an ADA-compliant public boardwalk with amenities that will meander along the waterfront to the Bilow Schooner Pier Complex, where a lighted crosswalk will provide safe pedestrian access across Highway 90 to Tricentennial Park and the Oh-Or' Keefe Museum. In the same area, the public boardwalk will connect with the existing sidewalk walkway to provide pedestrian access to the Bilow Small Craft Harbor in downtown Bilow, which also will be expanded and upgraded to support growth of the charter boat industry and expansion of sports fishing tournaments and other water-dependent activities that will benefit the local and state economy. The Point Cadet Marina upgrade and expansion component will provide new slips to meet market demand to accommodate 75-foot and larger recreational and sports-fishing yachts owned/operated by Mississippi Coast residents and interstate Waterway visiting boaters. Removal of marina sediment will restore boater safety and will accommodate deeper draft, large recreational boats. The project involves reconfiguring and upgrading finger piers and existing boat slips, constructing new boat slips and finger piers to the west and installing a new breakwater to increase the resiliency of shoreline improvements and the expanded marina by protecting them from wave action and storm surge. The public boardwalk, which will include open-air pavilions, lighting, educational signage and a northern looking area to support the State's shuttle service to Deer Island, will be constructed to support public enjoyment of the waterfront and expand family-oriented activities and to provide small business development opportunities. The public waterfront area due south of the Bilow-Ocean Springs Bridge enjoyed considerable public use for a wide variety of family-oriented activities prior to Hurricane Katrina, including fishing tournaments, festivals, concerts, educational programs, observing marine life and shore birds, and just generally appreciating nature. Since 2005, the State fishing pier and shoreline boardwalks have not been replaced and the area poses safety hazards to the few who attempt to access the waterfront to fish or to enjoy the view. Through this project, the City of Bilow will restore safe access through construction of the ADA-compliant boardwalk that will include amenities to support a variety of public waterfront uses. Low-profile, all-weather signage will be installed to educate the public about native marine species, native and migrating bird species and restoration of other natural resources including nearby Deer Island. Existing surface parking north of the Point Cadet Marina will support increased public usage in the project area; a portion of the parking area will be restricted to support educational and research vessel staff and operations. The existing green space between the parking area and the new boardwalk will be enhanced as an open space for special events and the public's daily enjoyment. Through the boardwalk, the waterfront park will connect to the Point Cadet Marina and the Bilow Small Craft Harbor, expanding opportunity for small business growth through boat rentals and tours and special events such as boat shows and festivals. Redevelopment of the Point Cadet project area will spur revitalization of this unique waterfront resource that affords unobstructed viewing of Deer Island and the Mississippi Sound, offers direct boat access to navigational channels and vehicular access to Highway 90, and is in close proximity to the Tricentennial Park and Oh-Or' Keefe Museum. In addition to installing a crosswalk to provide pedestrian access across Highway 90, Tricentennial Park improvements will include uniform landscaping, lighting, irrigation and walkways, educational signage and kiosk exhibits and rebuilding a berm to support a band-shell/gazebo for outdoor concerts and other activities. Additional parking spaces will be installed on the northeast portion of the site and the southeast section will be restored as a wetlands garden area with interpretive signage identifying the benefits provided by wetlands in Coastal Mississippi. Bilow Small Craft Harbor improvements will reconfigure and expand the area to allow all Bilow-based charter boats to berth together in one central harbor located on the Bilow Historic Channel with improvements that will include uniform landscaping, lighting, irrigation and walkways, additional parking on the northeast portion of the site, interpretive signage, relocation of the Bilow Tricentennial mosaic mural to the park, and rebuilding a berm to support a band-shell/gazebo for outdoor concerts and other activities. Before development of Highway 90, the southeast portion of the site was tidally-influenced and will be restored as a wetlands garden area with interpretive signage identifying the benefits of restoring and/or preserving wetlands in Coastal Mississippi. A pedestrian crosswalk across Highway 90 will be installed to provide public access to connect the park with the Sand Beach and Schooner Pier Complex.	Harrison	Yes	Yes	80000	Yes	Yes	Yes	Yes	Yes	No	\$	35,000,000.00	\$	-	
Eco Restoration	5395	9/1/2015	Tricentennial Park Public Improvements	Tricentennial Park, located on the north side of Highway 90 in East Bilow, was purchased to preserve public access to valuable waterfront property that boasted the restored, Historic Tulio Tolandano Manor and some of Bilow's finest old live oak trees. Damage from Hurricane Katrina destroyed the Manor and its outbuildings, but many of the oaks survived and the site continues to serve a public purpose by preserving unobstructed views of the Mississippi Sound. Through this project, the City seeks to improve the eight acre site to complement activities of the Oh-Or' Keefe Museum of Art (located on the west side of the site) to provide pedestrian access across Highway 90 via a crosswalk to connect the park with the Sand Beach and Schooner Pier Complex, to restore a wetlands area on the southeast portion, and to enhance recreational opportunities on the park's east side. Improvements will include uniform landscaping, lighting, irrigation and walkways, additional parking on the northeast portion of the site, interpretive signage, relocation of the Bilow Tricentennial mosaic mural to the park, and rebuilding a berm to support a band-shell/gazebo for outdoor concerts and other activities. Before development of Highway 90, the southeast portion of the site was tidally-influenced and will be restored as a wetlands garden area with interpretive signage identifying the benefits of restoring and/or preserving wetlands in Coastal Mississippi. A pedestrian crosswalk across Highway 90 will be installed to provide public access to connect the park with the Sand Beach and Schooner Pier Complex. Benefits derived from implementation of this project include, but are not limited to, improved public access to a public park with magnificent views of the Mississippi Sound and Deer Island; expanded public recreational park space for picnics and other leisure activities; restored wetlands and improved water quality to support marine species and public recreational uses. Benefits also include expanded educational opportunities through signage and displays to educate the public about the value of the Coast's natural resources and habitats. Increased visitation to the park as a result of project implementation is anticipated to have regional economic benefits, such as job creation and increased sales tax collections, by stimulating redevelopment in East Bilow. Match for the project, valued at an estimated \$90,000, will be provided by the Oh-Or' Keefe Museum of Art in the form of in-kind services contributed for architectural and landscape plans; in-kind labor provided by the Harrison County Public Works Department; and donation of LED lighting fixtures and installation services provided by Mississippi Power Company.	Harrison	Yes	Yes	40000	Yes	Yes	No	Yes	Yes	No	\$	840,000.00	\$	90,000.00	
Eco Restoration	5399	9/2/2015	Point Cadet Revitalization from Highway 90 Bridge to I-110 Corridor along the Back Bay of Bilow	This comprehensive project will revitalize waterfront areas of East Bilow from the Highway 90 Bridge north and west to the I-110 Corridor through multi-use improvements to enhance and restore natural resources, create jobs, support the seafood and maritime industries, and expand family-oriented attractions to extend visitors' stay on the Mississippi Gulf Coast. Throughout the project area, the City will provide safe, convenient public access to the shoreline and will enhance traditional working waterfront activities with a variety of land uses that showcase local seafood through shopping, dining, entertainment, and educational venues. RESTORE grant funds will be used as part of a public investment strategy to yield a long-term increase in value by revitalizing the Back Bay shoreline east of the I-110 Corridor and adjoining Old Bilow neighborhoods by enhancing public access to the waterfront and revitalizing the seafood industry through public improvements that will include expanded commercial dock space and supportive landside amenities. The project will include incentives to diversify the regional seafood industry through development of such things as a soft-shell crab aquaculture program. Redevelopment of the project area, as well as of the local seafood industry, has been particularly slow following its devastation by Hurricane Katrina. The Back Bay Festival Marketplace and recreational marina component of the overall project will be located at the site of the Sherman Canaan Fishing Dock, which includes approximately 15 City-owned acres at the north end of Lee Street. This public waterfront area will be reconfigured to offer a marina with recreational boat slips for temporary and long-term rental (for private and for-hire vessels); venues for retail shops and restaurants; a sailing school; and space for Mississippi Department of Marine Resources boating safety lessons and boating storage/operation. The market place will include an open-air kitchen area to showcase local seafood and to educate the public about seafood cooking methods and opening oysters, as well as facilities for workforce training in culinary arts that focuses on Gulf seafood and locally-grown/raised products. Shrimping boats currently berthed at the Sherman Canaan Fishing Dock will be relocated east to a new commercial marina that will be constructed on previously-developed property to be acquired by the City in the vicinity of Oak Street. This new marina will improve commercial boat access to Gulf channels and will offer landside improvements such as convenient off-loading areas, boat building and repair areas, marine services and net repair areas. Pedestrian walkways will link these two activity hubs to each other and to other points of interest in the project area, including the National Register, City-owned Old Brick House and the Bayou Auguste Restoration Project, which involved a local, state and federal partnership effort to convert a neglected urban bayou into a beautiful 12-acre park. The Pine Street Waterfront Access Road and Maritime Commerce Corridor will extend and improve Pine Street from 5th Street south to Highway 90, concurrent with implementation of the City project to extend Back Bay Boulevard from Oak Street southward to 5th Street with funding assistance provided through the Mississippi Development Authority's Economic Development Highway Program. The improved Pine Street will be a four-lane, divided boulevard for greater safety and aesthetic appeal. Debris removal, storm-resilient shoreline stabilization measures and pedestrian access improvements along public waterfront property from the Bilow Fishing Bridge south to and under the Highway	Harrison	Yes	Yes	80000	Yes	Yes	Yes	Yes	Yes	Yes	\$	35,000,000.00	\$	-	

Eco Restoration	5401	9/2/2015	Point Cadet Sunrise Park: Biloxi Tip of Peninsula Public Access and Shoreline Stabilization Improvement Project	<p>The City of Biloxi is requesting funding support to remove marine debris and to restore the shoreline of Point Cadet from the Biloxi-Ocean Springs Bridge north to the Biloxi Fishing Bridge. Debris removal, storm-resilient shoreline stabilization measures and pedestrian access improvements along the City-owned waterfront property will expand public opportunity to access a unique area where the Mississippi Sound merges with the waters of the Back Bay of Biloxi. The project will enhance preservation of undeveloped shoreline for the benefit of the public as well as for marine and bird species. In addition, low impact all-weather educational signage will expand opportunities to learn about habitat supported by tidally-impacted areas and to encourage long-term stewardship of Coastal natural resources.</p> <p>The project includes extending the small sand beach on the shore east of the Maritime and Seafood Industry Museum; incorporating the use of the seawall in improving pedestrian access; improving the safety and security of the walkway under the Biloxi-Ocean Springs Bridge; and constructing a small pier for fishing and crabbing. Upland improvements to be built near the MSM include a shoofly around a mature live oak tree; a gaebao; a fountain; a foundation for the Golden Fisherman statue; and a wooden boat-building and training demonstration site.</p> <p>Those who attend the many activities hosted at the MSM and/or Biloxi Waterfront Park frequently are tempted to walk along the shoreline north of the Park's splash pad to access the nearby Biloxi Fishing Bridge. Hurricane debris, litter, unchecked growth of a well-defined, level walkway make that should be an enjoyable nature walk into a hazardous experience. Project implementation will address this problem by providing ADA-compliant pedestrian connectivity along the shoreline of the project area.</p> <p>In addition to the general public, others who will benefit specifically from project implementation are shoreline and wade fishermen, throwers of cast nets and those who enjoy non-motorized water activities such as kayaking, canoeing, and paddle boarding. Participants in the MSM's numerous educational activities and summer camps for children also will benefit from expanded on-site marine-related programming. Marine species and native and migratory shore birds also will benefit from project implementation through replacement of invasive, non-native plants with native plant species appropriate to the shoreline environment.</p> <p>The project complies with the Mississippi Coastal Program in terms of restoring wetlands and marine/shoreline habitats, improving management of stormwater runoff into a public water body and addressing shoreline erosion. Not only will the project provide expanded access to the waterfront and improvements to enhance public enjoyment of the waterfront, but the safety of those who visit the project area will be greatly improved through the removal of hazardous debris. The project's location between City-owned recreational amenities will allow expanded public access to the shoreline without requiring the construction of additional surface parking.</p> <p>As a part of this project, architectural and engineering planning and design for Phase II of the project will begin. Phase II includes building a longer pier for fishing and dock space for a schooner; dredging at the end of the pier to provide an access channel to the main navigation channel; and clearing all marine debris in the new access channel.</p>	Harrison	Yes	Yes	6000%	No	Yes	Yes	No	Yes	No		\$	500,000.00	\$	25,000.00		
Eco Restoration	5420	10/2/2015	Gulf Coast Broadband Project	<p>The Mississippi Gulf Coast is in need of ultra-high-speed, fiber-optic, broadband infrastructure for Internet service that has sufficient scope, flexibility, availability and affordability, for all of its citizens, governments, and private businesses and industries to be able compete in regional, national and international markets for the creation and retention of new jobs, technologies, businesses, and industries and for the expansion and retention of equal opportunities for all citizens to enjoy a more prosperous, just, dignified and fulfilling life.</p> <p>The experience of many states and communities around the nation has been that large corporate providers of data transmission facilities do not have sufficient monetary incentive to bring affordable and ubiquitous, ultra-high-speed broadband Internet service to them unless there are significant public efforts and incentives to bring that technology to a proximity to all homes, businesses and public places that will make the final connectivity and service to all homes, businesses and public places by retail public and private service providers accessible and economically viable to the retail public and private service providers, affordable to the end users, and competitive in regional, national and world markets.</p> <p>The Cities of Biloxi and Gulfport established a unified effort to promote development of a minimum 1 Giga Ultra High Speed Internet connectivity via a Fiber Optic Ring encompassing the entire Mississippi Gulf Coast. Subsequently, as of October 2016, eight other coastal cities and two of the three coastal counties have joined with Biloxi and Gulfport to form the Gulf Coast Broadband Initiative. With RESTORE funding assistance, the Fiber Ring will be implemented and administered by the GCB, thereby providing to all area residents and businesses an affordable, ubiquitous and timely ultra-high-speed broadband Internet service. It will be delivered from the Fiber Ring to all end users by competitive licensing with private Internet Service Providers.</p> <p>The Gulf Coast Broadband Initiative has been created through an interlocal governmental cooperation agreement and is a separate legal and administrative organization with the authority to acquire any interest in real and personal property necessary to create and maintain the regional fiber optic ring in all of its parts.</p> <p>In order to eliminate the digital divide and create equal opportunity for all residents and businesses to enjoy reasonably affordable access and use of ultra-high-speed Internet service, the Initiative may contract with for-profit and non-profit business and social service entities and engage in all other legal activities to assist in making ultra-high-speed Internet service accessible and affordable to all residents and businesses in the entire territory.</p> <p>To the fullest extent authorized by law, the Initiative will operate as a public utility and will be governed by the participating parties of the interlocal governmental cooperation agreement. The Gulf Coast Broadband Initiative is intended ultimately to include and serve all of Mississippi's coastal cities and counties who choose to join the Initiative (10 cities and two counties have joined thus far) and to benefit all those living or doing business in this region.</p> <p>In addition to its numerous other benefits, improving access to ultra-high-speed Internet service will support improved management of public lands and water bodies, as well as improve regulatory compliance monitoring in the participating cities and counties. Through the use of Internet sensors in drones, satellites and other devices, access to the new ultra-high-speed Internet service will</p>	Harrison	Yes	Yes	8500%	Yes	Yes	Yes	Yes	Yes	Yes	Yes	agriculture	\$	15,000,000.00	\$	-	
Eco Restoration	5422	10/6/2015	Coordinated Strategy for Sea Turtle Recovery in the Gulf	<p>NFWF and its partners, including managers from all five Gulf States, USFWS, NOAA, and NPS, as well as NGOs and science institutions, propose to restore Gulf populations of sea turtles through the following 3 strategies. This work builds on \$3.8M in previous investments NFWF has made to bolster Gulf sea turtle populations since June 2010.</p> <p>1) Bycatch Reduction - This two-part strategy is projected to save the reproductive equivalent of a minimum of 3,000 nesting females over five years: a) NFWF will provide free vouchers for 7,000 Turtle Excluder Devices (TEDs) to LA and AL fishermen to cover 100% of this fishery, and work with state managers to offer training and assistance on TED installation, and inspections and usability follow-up testing. b) NFWF will convene state and federal agents to standardize enforcement, data collection and reporting processes to create a Gulf-wide database; invest in the capacity of states to enforce the use of TEDs; and evaluate the results of increased enforcement.</p> <p>2) Nesting Beach Restoration - This three-part strategy is projected to save the reproductive equivalent of 2,400 nesting females over five years: a) Predator Control: NFWF will establish a fund to invest \$100,000 annually in predation reduction efforts on high density nesting beaches in FL and AL to maintain predation levels at or below 30% in perpetuity. b) Light Pollution Reduction: NFWF and the Sea Turtle Conservancy (STC) will minimize light pollution on 600 of the highest priority public and private properties along high density nesting beaches, and train county code enforcement staff to address lighting problems. c) Habitat Protection: NFWF and USFWS will protect 2.5 miles of priority nesting habitat (1,300 nests annually) within Archie Carr and Hobe Sound NWRs. NFWF, STC and U of FL will also pilot a new conservation easement to [strengthen protection of] existing nesting habitat on developed properties.</p> <p>3) Critical Gaps in Science/Management - NFWF will mobilize scientists to address two critical research gaps that impact turtle recovery efforts: a) coordination of a 5-year study to identify priority habitats in the Gulf and to identify overlapping threats; and b) a pilot program to test new methods for turtle-friendly beach nourishment.</p>		Yes	No		No	Yes	No	No	No	No		\$	58,600,000.00	\$	-		
Eco Restoration	5423	10/23/2015	Mississippi Oysters Aquaculture Revolving Loan Program	<p>Title: Mississippi Oyster Aquaculture Revolving Loan Program</p> <p>Eligibility of Activity: This activity complies with the following two eligible activities: 1) Mitigation of damage to fish, wildlife and natural resources 2) Workforce development and job creation</p> <p>Introduction: Oysters support a robust commercial fishery, improve water quality, and provide habitat for a number of economically and ecologically important fish species. As a result of the Deepwater Horizon oil spill and related anthropogenic activities (such as river releases) the estimated number of oysters that were lost (direct death and subsequent reproductive loss) at a minimum, was four billion oysters. Gulf wide over three generations of oysters (seven years).</p> <p>Through an extensive planning effort in Mississippi in 2015, the Governor's Oyster Council created goals of increasing oyster harvests and creating new job and business opportunities. The establishment of a finance program could facilitate positive change for the oyster industry and the resource. Such finance programs have been instituted in other parts of the country where a revolving loan program is initiated that required little to no collateral, requires owner equity (i.e., investment of 10%), and allows loans to be used for the purchase of oyster shell and aquaculture specific equipment. These loan programs help initiate a boost to the industry in a particular sector (i.e., aquaculture) and provide opportunities for previously disadvantaged communities to engage, diversify income streams, and enhance economic development.</p> <p>Oyster aquaculture business startup expenses can run from \$5,000 to more than \$100,000 depending on the scope of the enterprise. Obtaining a loan from traditional commercial lenders for aquaculture business projects can be challenging for small enterprises and individuals considering the two to three-year growing period between oyster planting and growth to market size, as well as the lack of available business equity and collateral security. Mississippi's aquaculture loan program will require all principal payments return to a revolving fund to support future rounds of funding. The MDNR will partner with a credible lending institution to evaluate the credit worthiness of the prospective borrower(s), as well as the viability of the proposed production and business plan (including the financial projections) that are required to be submitted with the application for assistance.</p> <p>Location: Mississippi Gulf Coast</p> <p>Purpose: The Mississippi Oyster Revolving Loan Program would provide affordable financing to oystermen and other parties who want to start or expand commercial oyster aquaculture operations in Mississippi.</p>	St Tammany	Yes	No		Yes	No	Yes	Yes	No	Yes		\$	1,000,000.00	\$	-		

Eco Restoration	5424	10/28/2015	Graveline Bayou Land Protection	<p>The Land Trust for the Mississippi Coastal Plain (LTMCP) is an accredited Land Trust dedicated to the conservation, promotion, and protection of open spaces and green places of ecological, cultural or scenic significance in the counties of the Mississippi Coastal Plain.</p> <p>For Graveline Bayou, the Cumbeet, Whitehead, and Mahoney properties in Jackson County, when combined, present an ideal opportunity to conserve large tracts of land under heavy development pressure. In addition, the Mahoney property offers a chance to provide access to passive activities such as canoe and kayak access for exploration of the Graveline Bayou and Bay area. These properties can be purchased as a group or individually with the Cumbeet properties being LTMCP's first priority. These landowners are supportive of LTMCP's need to seek funding for potential acquisition.</p> <p>These parcels are located in the Graveline Bayou watershed in Jackson County, MS. This watershed is located in the East Gulf Coastal Plain ecoregion of the southeastern U.S. and is part of the Mississippi Coastal Basin and Streams. Native vegetation in this area includes those species found in palustrine forested wetlands, estuarine emergent wetlands, palustrine scrub/shrub wetlands, upland scrub/shrub, and evergreen forested uplands. The property is adjacent to conservation lands held by Coastal Preserves and are within their acquisition boundary.</p> <p>Ecological Value:</p> <ul style="list-style-type: none"> • Protects properties as a buffer area for storm surge by providing dispersal and displacement in the event of flooding waters. These flooding waters have a natural function of turnover and flushing of coastal wetlands. The open spaces protected create an offset to protect community infrastructure. • Protects grasslands that are important for removal of nutrients from the water column to provide cleaner and healthier water for all wildlife. • Protects emergent vegetation and wetlands below the surface that provides values required for wildlife to rest, rest, breed and feed. • Provides critical wintering and migratory stop-over sites for trans-hemispheric migratory bird populations. • Provides critical stop-over sites for neo-tropical migratory bird populations; • Supports the fishing community which is critical to the long-term survival of the industry and culture of the Gulf Coast by protecting areas that are important to the fishing and shell fishing industries. These areas are the fin and shellfish breeding factories of our Gulf of Mexico. • Creates open spaces that will provide areas for people to witness and learn about their natural environment. • Creates open spaces that provide opportunities for low impact recreational activity such as observation of birds, wildlife, fishing, net-casting and kayaking. • Provides a runoff buffer for sediment that, if allowed to enter the bay directly, will sit waterways used for recreation and as wildlife habitat. 	Jackson	Yes	No	No	No	No	No	No	No	Yes	No	No	\$	-	\$	-	Land Acquisition
Eco Restoration	5425	10/28/2015	Black Creek Land Protection	<p>The Land Trust for the Mississippi Coastal Plain (LTMCP) is an accredited Land Trust dedicated to the conservation, promotion, and protection of open spaces and green places of ecological, cultural or scenic significance in the counties of the Mississippi Coastal Plain. LTMCP utilizes both fee simple and conservation easement tools in conserving land for the benefit of habitats, species, and recreation.</p> <p>This parcel of interest encompasses the Black Creek, a coastal blackwater stream that feeds into the Pascagoula River. This large parcel is a good corridor between DeSoto National Forest lands and the Red Creek and Pascagoula Wildlife Management Area (WMA) managed by the MS Wildlife Fisheries and Parks Department. The Black Creek is the only designated National Wild and Scenic River in Mississippi. The parcel encompasses an even distribution of uplands and wetlands, and about six miles of the Black River winds through the middle of the property. Conservation of this parcel would include buffering along the Black Creek, associated wetlands, and numerous ponds and sloughs connecting to land already protected by the WMA.</p> <p>Protection of these upstream lands helps to reduce erosion issues by providing riparian buffers. Many of the perturbations in these sub-basins of the Pascagoula River watershed have cumulative effects downriver and into the Mississippi Sound where water quality issues are concentrated.</p>	Jackson, George	Yes	No	No	No	No	No	No	No	No	No	\$	-	\$	-	Land Acquisition	
Eco Restoration	5426	10/28/2015	Black & Red Creek Land Protection	<p>The Land Trust for the Mississippi Coastal Plain (LTMCP) is an accredited Land Trust dedicated to the conservation, promotion, and protection of open spaces and green places of ecological, cultural or scenic significance in the counties of the Mississippi Coastal Plain. LTMCP utilizes both fee simple and conservation easement tools in conserving land for the benefit of habitats, species, and recreation.</p> <p>This parcel of interest for protection is bordered by Black Creek on its eastern edge, which allows 15,785 feet (3 miles) of riverfront buffer along this National Wild and Scenic River habitat "C" one of the only designated in Mississippi. Along the river is bordered by Red Creek which provides an additional 7,500 feet (1.4 miles) of riverfront buffer. The property encompasses upland and wetland habitats, with some agricultural development in the upland areas. This large parcel would provide continuity between conserved lands directly adjacent including Pascagoula Wildlife Management Area (WMA), School lands, and The Nature Conservancy lands.</p> <p>Protection of these upstream lands helps to reduce erosion issues by providing riparian buffers. Many of the perturbations in these sub-basins of the Pascagoula River watershed have cumulative effects downriver and into the Mississippi Sound where water quality issues are concentrated.</p>	Jackson	Yes	No	No	No	No	No	No	No	No	\$	-	\$	-	Land Acquisition		
Eco Restoration	5427	10/28/2015	Maples Bend Land Protection	<p>The Land Trust for the Mississippi Coastal Plain (LTMCP) is an accredited Land Trust dedicated to the conservation, promotion, and protection of open spaces and green places of ecological, cultural or scenic significance in the counties of the Mississippi Coastal Plain. LTMCP utilizes both fee simple and conservation easement tools in conserving land for the benefit of habitats, species, and recreation.</p> <p>Maples Bend parcel has 15,575 feet (2.9 miles) of riverfront buffer along Red Creek and connects to DeSoto National Forest and the Red Creek Wetlands Management Area (WMA) providing continuity in management. The land is mostly hardwood forest with wetland and riparian habitats and some agricultural development. Protection of these upstream lands helps to reduce erosion issues by providing riparian buffers. Many of the perturbations in these sub-basins of the Pascagoula River watershed have cumulative effects downriver and into the Mississippi Sound where water quality issues are concentrated.</p>	George	Yes	No	No	No	No	No	No	No	No	\$	-	\$	-	Land Acquisition		
Eco Restoration	5428	10/28/2015	Wolf River Land Protection	<p>The Land Trust for the Mississippi Coastal Plain (LTMCP) is an accredited Land Trust dedicated to the conservation, promotion, and protection of open spaces and green places of ecological, cultural or scenic significance in the counties of the Mississippi Coastal Plain. LTMCP utilizes both fee simple and conservation easement tools in conserving land for the benefit of habitats, species, and recreation.</p> <p>The parcels of interest are the only remaining parcels on the Wolf River that are not in easement or ownership for preservation. There is approximately 6,500 feet of the Wolf River bordering the southern portion of the parcel and offers continuity with the Baleslee Preserve, directly across the River. There is potential for restoration on the property to allow more natural hydrologic flow through the wetlands into the Wolf River. The 200-acre property has multiple habitats including bottomland hardwood forest, long leaf pine, wetlands, riparian buffer with natural beach beds, and two lakes encompassing a total of 8.5 acres.</p> <p>This area is part of the larger Wolf River watershed (235,052 acres), which is rich in cultural history and nature-based recreational activities. The Wolf River Watershed Implementation Plan (WIP), funded by Section 219 grants from Mississippi Department of Environmental Quality (MDQ), highlights the importance of land acquisitions along the River for protecting water quality in the larger watershed. The WIP indicates that conservation easement and buffer zone establishment is important for the overall health of the watershed and river system. Over 5,000 acres of land and frontages abutting the River have been placed under easement. This property would be a significant addition to the currently protected land. The Wolf River-Big Creek Subwatershed has a high environmental resource value score according to the WIP. It contains a high number of endangered species, moderate bottomland hardwood forests, and is of high importance as a recreation stream area. Major threats to river are potential water quality concerns (fecal coliform "C" 2001 TMDL) and high erosion rates which can be ameliorated with acquisition of riparian buffers where BMPs can be implemented.</p> <p>The Wolf River Conservation Society, a local, grassroots organization dedicated to the preservation, conservation, management, and protection of the Wolf River and its watershed, is an important partner in this proposal. The Wolf River is also part of the State of Mississippi's Scenic Streams Stewardship Program, a voluntary program designed to encourage conservation and stewardship by riparian landowners, and the Water Trails of the Wolf River encourage primitive boating activities, such as kayaking and canoeing, along the River.</p>	Harrison	Yes	No	No	No	No	No	No	No	No	\$	-	\$	-	Land Acquisition		
Eco Restoration	5429	10/28/2015	Seapoint Land Protection	<p>The Land Trust for the Mississippi Coastal Plain (LTMCP) is an accredited Land Trust dedicated to the conservation, promotion, and protection of open spaces and green places of ecological, cultural or scenic significance in the counties of the Mississippi Coastal Plain. LTMCP utilizes both fee simple and conservation easement tools in conserving land for the benefit of habitats, species, and recreation.</p> <p>The Seapoint parcel of interest is an isthmus that extends into the Back Bay of Biloxi and is on the westernmost point of Lovers Lane. It is located at the mouth of Old Fort Bayou. To the east is an existing residential area that is slowly rebuilding since hurricane Katrina. Currently, the property is primarily undeveloped forested uplands, wetlands, and estuarine marsh. The site was formerly a homestead destroyed in a hurricane in the 1920s. The area was platted and investigated for a subdivision development in the 1990s, but was not developed. The property is significant because it is a mature maritime forest system along a designated blueway (Old Fort Bayou blueway) and within the acquisition boundary of the Mississippi Coastal Preserve System. The tidal marsh is also in good condition and is a haven for many wildlife species.</p> <p>Ecological Value:</p> <ul style="list-style-type: none"> • The area is mostly flat and has areas of mixed pine/hardwood forest surrounded by tidal marsh. Most of the marsh systems are open to tidal influence. The site floods not only in significant storms but also at high tide. • The tidal marsh within the property appears to be healthy with many tidal inlets allowing for unimpeded tidal flushing in a regular tide. • Approximately half of the property (approximately 18.7 acres +/-) was considered wetlands per a wetlands delineation performed in 1999. • Many plant species include slash pine, longleaf pine, live oak, water oak, and magnolia. Grounds/bush, yaupon, palmetto, and wax myrtle are the primary shrub species. Vines such as blackberry and smilax are also present. • This property is primarily a wildlife refuge. Signs of small mammals such as raccoon and marsh rabbit are abundant. Alligator signs have also been noted. The forested area is likely home to a Great Blue Heron nest and Red Headed Woodpeckers have been observed feeding there as well. The site is an excellent habitat for migrating and residential (non-migratory) birds. • Pieces of special concern that occur within 2 miles of the site are: Mississippi Diamondback Terrapin, Gulf Salt Marsh Snake, Southern Red Cedar, Saltmarsh Topminnow, Kemp's Ridley Sea Turtle, and Gulf Sturgeon. • The Mississippi National Heritage Program Coordinator recommended that this property would benefit from conservation as it is composed of multiple important habitat types and known occurrences of the species listed above. • The area has been documented as a nesting area for the Mississippi Diamondback Terrapin. 	Jackson	Yes	No	No	No	No	No	No	No	No	\$	-	\$	-	Land Acquisition		

Eco Restoration	5430	10/28/2015	Tchoutacabouffa Land Protection	<p>The Land Trust for the Mississippi Coastal Plain (LTMCP) is an accredited Land Trust dedicated to the conservation, promotion, and protection of open spaces and green places of ecological, cultural or scenic significance in the counties of the Mississippi Coastal Plain. LTMCP utilizes both fee simple and conservation easement tools in conserving land for the benefit of habitats, species, and recreation.</p> <p>The Tchoutacabouffa River watershed includes a fast-growing business corridor as well as rural landscapes that are quickly converting into suburban residential homes along the river. The parcels of interest are located in the lower watershed in the Cypress Creek sub-basin (24,150+ acres) about two miles from the mouth of the river where it flows into Bayou de Blaux. These parcels straddle the Tchoutacabouffa River, with 4,685 feet (0.89 mile) of river front buffer. The southern half of the larger parcel and entirety of the smaller parcel is comprised of tidal salt marsh habitat, essential for migratory bird species, juvenile fishes, and crustaceans. This area is directly connected to the current Department of Marine Resources (DMR) Coastal Preserve, and would provide connection between parcels that are currently protected by the DMR Coastal Preserve Program. There is a large threat of development as the parcels are located near an exit off Interstate-10 and currently to the east and north there is an RV park and suburban neighborhood.</p> <p>The Tchoutacabouffa River Watershed Partnership Action Plan has worked for many years to develop and implement actions along the river. The lower watershed is the primary area of action for the Plan. Preserving riparian buffers and wetlands are important actions identified in the watershed plan to leave a healthier, safer, and more beautiful Tchoutacabouffa River.</p> <p>Ecological Significance: I&CProtects emergent vegetation and subsurface vegetation that provides values required for wildlife to nest, rest, breed, and forage I&CProvides critical wintering and migratory stop-over sites for migratory birds I&CProtects near by developed properties as a buffer area for storm surge by providing dispersal and displacement in a flooding event. These flood events have a natural function of turnover and flushing of coastal wetlands. The protected open spaces create an offset to protect community infrastructure I&CCreates open spaces that provide opportunities for low impact recreational activity, such as bird watching and other wildlife observation, fishing, net-casting, and kayaking.</p>	Harrison	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	\$	-	\$	-	Land Acquisition
Eco Restoration	5431	10/28/2015	Bayou Talla Land Protection	<p>The Land Trust for the Mississippi Coastal Plain (LTMCP) is an accredited Land Trust dedicated to the conservation, promotion, and protection of open spaces and green places of ecological, cultural or scenic significance in the counties of the Mississippi Coastal Plain. LTMCP utilizes both fee simple and conservation easement tools in conserving land for the benefit of habitats, species, and recreation.</p> <p>Bayou Talla is an arm of Old Fort Bayou in the Davis Bayou-Biloxi Bay watershed. The parcel of interest borders Bayou Talla on the eastern border with 7,245 feet (1.37 miles) of access to Talla Bayou. The property contains tidal marsh habitat, wetlands, and adjacent pine forest uplands. This area has a high risk of development with the Twin Bayou subdivision adjacent to east. If protected this area could provide greenspace and passive recreational activities for the community. Old Fort Bayou Blueway would be expanded to include this Bayou for further passive recreational activities. This area is in the acquisition boundary of the Department of Marine Resources Coastal Preserve Program and is near a few other parcels that are already protected. To the south is the Gulf Island National Seashore mainland site and these land further connect to the bigger picture of protected lands in Jackson County (National Wildlife Refuge, Grand Bay NERR, and Deer Island Coastal Preserve).</p> <p>The Land Trust for the Mississippi Coastal Plain (LTMCP) is an accredited Land Trust dedicated to the conservation, promotion, and protection of open spaces and green places of ecological, cultural or scenic significance in the counties of the Mississippi Coastal Plain. LTMCP utilizes both fee simple and conservation easement tools in conserving land for the benefit of habitats, species, and recreation.</p> <p>The Graveline Bay and Bayou area contains many diverse, connected habitats starting upland with pine flatwoods that are buffered by adjacent salt marsh, brackish marsh, and natural sand beach. The parcels of interest are located in the acquisition boundary of the DMR Graveline Bay Coastal Preserve area highlighting the priority of these parcels for procurement. Graveline Bayou is an integral corridor to other protected areas in Jackson County such as the Grand Bay National Estuarine Research Reserve/National Wildlife Refuge (NERR/NWRF), Mississippi Sandhill Crane NWR, and Passagula River Coastal Preserve and Wildlife Management Area. This area has many passive recreational activities, including the Graveline Bayou Blueway Kayak and Canoe trail, and is also being monitored by Audubon Mississippi Coastal Bird Survey through funding from the first Round of NFWF GEBF funding further emphasizing the importance of this coastal habitat.</p> <p>Specifically, the two parcels of interest are located south of the mouth of Graveline Bayou. The two parcels contain 90% tidal saltmarsh, dissected by three small branches of tidal creek. The natural sand beach, only one of a few remaining along the Mississippi coastline, forms the southeast boundary of the property and is about 0.6 mile long. The sand beach and tidal marsh are separated by a narrow strip of dune.</p> <p>These parcels are one of the fastest eroding shorelines on the Mississippi coast, having regressed 210 meters inland since 1850, a rate of over 1m per year. These parcels alone have lost nearly 20 acres in the last 20 years. This site has potential for restoration projects. This specific habitat is utilized by many important species, some threatened and endangered.</p> <p>I&CShorebirds: I&C important beach-nesting species have been observed at Graveline Beach including least terns and royal terns I&COther Birds: I&C 152 species of birds have been catalogued in and around these parcels, making it one of the most bird-rich sites on the coast. 9 of 10 I&C species of concern identified by Audubon Mississippi are found on the parcels. I&CSEA Loggerhead sea turtle attempted to nest I&CNesting diamondback terrapins have been monitored on the beach</p> <p>Threats to the habitats include land loss, incompatible human use (off-road vehicles), direct effects from oiling and clean-up efforts during the oil spill, and dredging operations. The Graveline Coastal Preserve and associated natural beach are arguably the most ecologically diverse and valuable tidal lands found on the Mississippi Coast between Grand Bay NERR and Hancock County Marsh.</p>	Jackson	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	\$	-	\$	-	Land Acquisition
Eco Restoration	5432	10/28/2015	Graveline Natural Beach Land Protection	<p>The Land Trust for the Mississippi Coastal Plain (LTMCP) is an accredited Land Trust dedicated to the conservation, promotion, and protection of open spaces and green places of ecological, cultural or scenic significance in the counties of the Mississippi Coastal Plain. LTMCP utilizes both fee simple and conservation easement tools in conserving land for the benefit of habitats, species, and recreation.</p> <p>The Graveline Bay and Bayou area contains many diverse, connected habitats starting upland with pine flatwoods that are buffered by adjacent salt marsh, brackish marsh, and natural sand beach. The parcels of interest are located in the acquisition boundary of the DMR Graveline Bay Coastal Preserve area highlighting the priority of these parcels for procurement. Graveline Bayou is an integral corridor to other protected areas in Jackson County such as the Grand Bay National Estuarine Research Reserve/National Wildlife Refuge (NERR/NWRF), Mississippi Sandhill Crane NWR, and Passagula River Coastal Preserve and Wildlife Management Area. This area has many passive recreational activities, including the Graveline Bayou Blueway Kayak and Canoe trail, and is also being monitored by Audubon Mississippi Coastal Bird Survey through funding from the first Round of NFWF GEBF funding further emphasizing the importance of this coastal habitat.</p> <p>Specifically, the two parcels of interest are located south of the mouth of Graveline Bayou. The two parcels contain 90% tidal saltmarsh, dissected by three small branches of tidal creek. The natural sand beach, only one of a few remaining along the Mississippi coastline, forms the southeast boundary of the property and is about 0.6 mile long. The sand beach and tidal marsh are separated by a narrow strip of dune.</p> <p>These parcels are one of the fastest eroding shorelines on the Mississippi coast, having regressed 210 meters inland since 1850, a rate of over 1m per year. These parcels alone have lost nearly 20 acres in the last 20 years. This site has potential for restoration projects. This specific habitat is utilized by many important species, some threatened and endangered.</p> <p>I&CShorebirds: I&C important beach-nesting species have been observed at Graveline Beach including least terns and royal terns I&COther Birds: I&C 152 species of birds have been catalogued in and around these parcels, making it one of the most bird-rich sites on the coast. 9 of 10 I&C species of concern identified by Audubon Mississippi are found on the parcels. I&CSEA Loggerhead sea turtle attempted to nest I&CNesting diamondback terrapins have been monitored on the beach</p> <p>Threats to the habitats include land loss, incompatible human use (off-road vehicles), direct effects from oiling and clean-up efforts during the oil spill, and dredging operations. The Graveline Coastal Preserve and associated natural beach are arguably the most ecologically diverse and valuable tidal lands found on the Mississippi Coast between Grand Bay NERR and Hancock County Marsh.</p>	Jackson	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	\$	-	\$	-	Land Acquisition
Eco Restoration	5433	10/28/2015	Magnolia Branch Land Protection	<p>The Land Trust for the Mississippi Coastal Plain (LTMCP) is an accredited Land Trust dedicated to the conservation, promotion, and protection of open spaces and green places of ecological, cultural or scenic significance in the counties of the Mississippi Coastal Plain. LTMCP utilizes both fee simple and conservation easement tools in conserving land for the benefit of habitats, species, and recreation.</p> <p>This parcel of interest an important coastal stream located in the St. Louis Bay watershed. This coastal stream is identified for Conservation Action Planning with the Round 1 NFWF GEBF monies. This project would complement this planning effort and protect important stream buffer lands and marsh to filter run-off into Saint Louis Bay. Native vegetation in this area includes those species found in pine forested wetlands, forested uplands, and forested hardwood wetlands. In 2003, this area was identified by the Hancock County Greenway/Blueway Committee as a prime ecotourism development site and conservation easements were being pursued. After Katrina, there were no longer any structures on the properties thus allowing for the possibility of acquisition.</p> <p>Ecological Value: I&CCreates open spaces that will provide areas for people to witness and learn about their natural environment. I&CCreates open spaces that provide opportunities for low impact recreational activity such as observation of birds, wildlife, fishing, net-casting and kayaking. I&CProtects properties as a buffer area for storm surge by providing dispersal and displacement in the event of flooding waters. These flooding waters have a natural function of turnover and flushing of coastal wetlands. The open spaces protected create an offset to protect community infrastructure. I&CProtects emergent vegetation and vegetation below the surface that provides values required for wildlife to nest, rest, breed and feed. I&CProtects areas that provide clean water for our natural resources further down the watershed. I&CProvides critical wintering and migratory stop-over sites for trans-hemispheric migratory bird populations. I&CProvides critical stop-over sites for neo-tropical migratory bird populations; I&CSupports the fishing community which is critical to the long-term survival of the industry and culture of the Gulf Coast by protecting areas that are important to the fishing and shell fishing industries.</p>	Hancock	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	\$	-	\$	-	Land Acquisition
Eco Restoration	5434	10/28/2015	Sand Bayou Land Protection	<p>The Land Trust for the Mississippi Coastal Plain (LTMCP) is an accredited Land Trust dedicated to the conservation, promotion, and protection of open spaces and green places of ecological, cultural or scenic significance in the counties of the Mississippi Coastal Plain. LTMCP utilizes both fee simple and conservation easement tools in conserving land for the benefit of habitats, species, and recreation.</p> <p>These parcels are 132.85 acres located on South Beach, Hancock County in Mississippi, and are tidally influenced marsh with 115 acres being wetlands excluding open waters. This tidal stream flows directly into the Mississippi sound and was heavily oiled during the 2010 BP oil spill incident. Protection of this bayou would provide continuity with Coastal Preserve land and Buccaneer State Park to the west as well as Hancock County marsh Coastal Preserve to the west.</p> <p>Ecological Value: I&CCreates open spaces that will provide areas for people to witness and learn about their natural environment. I&CCreates open spaces that provide opportunities for low impact recreational activity such as observation of birds, wildlife, fishing, net-casting and kayaking. I&CProtects emergent vegetation and vegetation below the surface that provides values required for wildlife to nest, rest, breed and feed. I&CProvides critical wintering and migratory stop-over sites for trans-hemispheric migratory bird populations. I&CProvides critical stop-over sites for neo-tropical migratory bird populations; I&CProtects properties as a buffer area for storm surge by providing dispersal and displacement in the event of flooding waters. These flooding waters have a natural function of turnover and flushing of coastal wetlands. The open spaces protected create an offset to protect community infrastructure.</p>	Hancock	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	\$	-	\$	-	Land Acquisition
Eco Restoration	5435	10/28/2015	Bluff Creek Land Protection	<p>The Land Trust for the Mississippi Coastal Plain (LTMCP) is an accredited Land Trust dedicated to the conservation, promotion, and protection of open spaces and green places of ecological, cultural or scenic significance in the counties of the Mississippi Coastal Plain. LTMCP utilizes both fee simple and conservation easement tools in conserving land for the benefit of habitats, species, and recreation.</p> <p>The Bluff Creek parcel encompasses an area of approximately 39.14 acres located at the end of Jericho Road in Vancleave, Mississippi. It consists of a variety of upland and wetland habitats, including mixed forested uplands and wetlands, pine savanna, bottomland hardwoods, forested wetlands, exposed/inundated depressions, freshwater marsh and a few small ponds. The site provides valuable habitat for a wide variety of plants and animals native to Mississippi, as well as migratory birds and fish. Wetlands on the site improve water quality by filtering out contaminants, and help reduce flooding through stormwater attenuation. The small ponded areas on-site also provide conditions favorable for the Mississippi dusky gopher frog and tortoise frog. A U.S. Fish and Wildlife Biologist has obtained the owner's permission to study the Mississippi dusky gopher frog in ponds on the site. In addition, the property provides access to Bluff Creek and scenic landscapes, making it desirable for recreational use.</p>	Jackson	Yes	No	No	No	No	No	No	Yes	No	No	No	No	No	No	\$	-	\$	-	Land Acquisition

Eco Restoration	5436	10/28/2015	Brickyard Bayou - Pascagoula Land Protection	<p>The Land Trust for the Mississippi Coastal Plain (LTMCP) is an accredited Land Trust dedicated to the conservation, promotion, and protection of open spaces and green places of ecological, cultural or scenic significance in the counties of the Mississippi Coastal Plain. LTMCP utilizes both fee simple and conservation easement tools in conserving land for the benefit of habitats, species, and recreation.</p> <p>The Brickyard Bayou property consists of approximately 75.54 acres located along the Pascagoula River in Jackson County, MS. These parcels are adjacent to a 127.8 acre Mississippi Department of Wildlife conservation site which is itself adjacent to 51 Land Trust parcels and the Department of Marine Resources conservation sites of 68.64 and 125.75 acres, respectively. Native vegetation in this area includes species found in palustrine forested wetlands, estuarine emergent wetlands, palustrine scrub/shrub wetlands, upland scrub/shrub, and mixed forested uplands.</p> <p>Ecological Value: IECProvides valuable habitat for a wide variety of plants and animals native to Mississippi, as well as migratory birds. IECWetlands on the site improve water quality by filtering out contaminants, reduce saltwater intrusion, act as a buffer against storm surges, and help reduce flooding through stormwater attenuation. IECProtects properties as a buffer area for storm surge by providing dispersal and displacement in the event of flooding waters. These flooding waters have a natural function of turnover and flushing of coastal wetlands. The open spaces protected create an offset to protect community infrastructure. IECProtects grasslands that are important for removal of nutrients from the water column to provide cleaner and healthier water for all wildlife. IECProvides critical wintering and migratory stop-over sites for trans-hemispheric migratory bird populations. IECCritical stop-over sites for neo-tropical migratory bird populations; IECSupports the fishing community which is critical to the long-term survival of the industry and culture of the Gulf Coast by protecting areas that are important to the fishing and shell fishing industries. These areas are the fin and shellfish breeding factories of our Gulf of Mexico. IECCreates open spaces that will provide areas for people to witness and learn about their natural environment. IECThe property also provides access to Pascagoula River, scenic landscapes, and open spaces that make it desirable for recreational use, providing opportunities for low impact recreational activity such as observation of birds, wildlife, fishing, net-casting and kayaking.</p>	Jackson	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	\$	-	\$	-	-	Land Acquisition	
Eco Restoration	5437	10/28/2015	Frank Griffin Road Land Protection	<p>The Land Trust for the Mississippi Coastal Plain (LTMCP) is an accredited Land Trust dedicated to the conservation, promotion, and protection of open spaces and green places of ecological, cultural or scenic significance in the counties of the Mississippi Coastal Plain. LTMCP utilizes both fee simple and conservation easement tools in conserving land for the benefit of habitats, species, and recreation.</p> <p>This parcel is located along the Pascagoula River, just south of Brickyard Bayou, in Jackson County, Mississippi, and is part of the Pascagoula River Basin. This is the second largest basin in Mississippi, draining into the Gulf of Mexico. This property is across the river from a Land Trust and Department of Marine Resources conservation site. Native vegetation in this area includes species found in palustrine forested wetlands, estuarine emergent wetlands, palustrine scrub/shrub wetlands, upland scrub/shrub, and mixed forested uplands.</p> <p>Ecological Significance: IECProvides valuable habitat for a wide variety of plants and animals native to Mississippi, as well as migratory birds. IECWetlands on the site improve water quality by filtering out contaminants, reduce saltwater intrusion, act as a buffer against storm surges, and help reduce flooding through stormwater attenuation. IECProtects near-by developed properties as a buffer area for storm surge by providing dispersal and displacement in a flooding event. These flood events have a natural function of turnover and flushing of coastal wetlands. The protected open spaces create an offset to protect community infrastructure. IECProtects grasslands that are important for removal of foreign nutrients from the water column, which promotes cleaner and healthier water for all wildlife and surrounding communities. IECProvides critical wintering and migratory stop-over sites for migratory birds. IECCreates open spaces that will provide areas for people to witness and learn about their natural environment. IECSupports the fishing community, which is critical to the long-term survival of the industry and culture of the Gulf Coast by protecting areas that are important to the fishing and shell fishing industries. These areas are the fin and shellfish breeding factories of our Gulf of Mexico. IECProvides access to the Pascagoula River, scenic landscapes, and open spaces that make it desirable for low impact recreational use, such as bird watching, wildlife observation, fishing, net-casting, and kayaking.</p>	Jackson	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	\$	-	\$	-	-	Land Acquisition	
Eco Restoration	5438	10/28/2015	Bell Fountaine Land Protection	<p>The Land Trust for the Mississippi Coastal Plain (LTMCP) is an accredited Land Trust dedicated to the conservation, promotion, and protection of open spaces and green places of ecological, cultural or scenic significance in the counties of the Mississippi Coastal Plain. LTMCP utilizes both fee simple and conservation easement tools in conserving land for the benefit of habitats, species, and recreation.</p> <p>These parcels are located along Graveline Bay in Jackson County, Mississippi, and are part of the Graveline Bayou watershed. This watershed is located in the East Gulf Coastal Plain ecoregion of the southeastern United States, and is part of the Mississippi Coastal Basin and Streams. Native vegetation in this area includes species found in palustrine forested wetlands, estuarine and evergreen forested wetlands, palustrine scrub/shrub wetlands, upland scrub/shrub, and evergreen forested uplands.</p> <p>Ecological Significance: IECProtects near-by developed properties as a buffer area for storm surge by providing dispersal and displacement in a flooding event. These flood events have a natural function of turnover and flushing of coastal wetlands. The protected open spaces create an offset to protect community infrastructure. IECProtects grasslands that are important for removal of foreign nutrients from the water column, which promotes cleaner and healthier water for all wildlife and surrounding communities. IECProtects emergent vegetation and subsurface vegetation that provides values required for wildlife to nest, rest, breed, and forage. IECProvides critical wintering and migratory stop-over sites for migratory birds. IECProvides a runoff buffer for sediment that, if allowed to enter the bay directly, will silt waterways used for recreation and as habitat for wildlife. IECCreates open spaces that will provide areas for people to witness and learn about their natural environment. IECCreates open spaces that provide opportunities for low impact recreational activity, such as bird watching and other wildlife observation, fishing, net-casting, and kayaking.</p>	Jackson	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	\$	-	\$	-	-	Land Acquisition	
Eco Restoration	5439	10/29/2015	Shearwater Land Protection	<p>The Land Trust for the Mississippi Coastal Plain (LTMCP) is an accredited Land Trust dedicated to the conservation, promotion, and protection of open spaces and green places of ecological, cultural or scenic significance in the counties of the Mississippi Coastal Plain. LTMCP utilizes both fee simple and conservation easement tools in conserving land for the benefit of habitats, species, and recreation.</p> <p>These two parcels are located along the entrance into the Back Bay of Biloxi in Ocean Springs, Mississippi. These parcels are currently undeveloped tidal marsh and scrub/shrub wetlands adjacent to residential developed properties. The Cockerel parcel has belonged to the Anderson family since the 1918, and is historically significant to the community. The Ocean Springs property lies adjacent to essential white egret and blue heron nesting areas.</p> <p>Ecological Significance: IECCreates open spaces that will provide areas for people to witness and learn about their natural environment. IECCreates open spaces that provide opportunities for low impact recreational activity, such as bird watching and other wildlife observation. IECProtects emergent vegetation and subsurface vegetation that provides values required for wildlife to nest, rest, breed, and forage. IECProvides critical wintering and migratory stop-over sites for migratory birds. IECProtects near-by developed properties as a buffer area for storm surge by providing dispersal and displacement in a flooding event. These flood events have a natural function of turnover and flushing of coastal wetlands. The protected open spaces create an offset to protect community infrastructure.</p>	Jackson	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	\$	-	\$	-	-	Land Acquisition	
Eco Restoration	5440	10/29/2015	Old Fort Bayou Land Protection	<p>The Land Trust for the Mississippi Coastal Plain (LTMCP) is an accredited Land Trust dedicated to the conservation, promotion, and protection of open spaces and green places of ecological, cultural or scenic significance in the counties of the Mississippi Coastal Plain. LTMCP utilizes both fee simple and conservation easement tools in conserving land for the benefit of habitats, species, and recreation.</p> <p>This parcel is located along Old Fort Bayou in Jackson County, Mississippi. It is currently undeveloped scrub/shrub wetlands. This property could aid as a put-in and take out point for those who kayak and fish in Old Fort Bayou, as there is no such place that serves this function in this area along the waterway. These parcels are part of the Old Fort Bayou watershed, located in the East Gulf Coastal Plain ecoregion of the southeastern United States, and is part of the Mississippi Coastal Basin and Streams. Native vegetation in this area includes species found in palustrine forested wetlands, estuarine emergent wetlands, palustrine scrub/shrub wetlands, upland scrub/shrub, and mixed forested uplands.</p> <p>Ecological Significance: IECProtects emergent vegetation and subsurface vegetation that provides values required for wildlife to nest, rest, breed, and forage. IECProvides critical wintering and migratory stop-over sites for migratory birds. IECProvides a runoff buffer for sediment that, if allowed to enter the bay directly, will silt waterways used for recreation and as habitat for wildlife. IECCreates open spaces that will provide areas for people to witness and learn about their natural environment. IECCreates open spaces that provide opportunities for low impact recreational activity, such as bird watching and other wildlife observation, fishing, net-casting, and kayaking. IECProtects near-by developed properties as a buffer area for storm surge by providing dispersal and displacement in a flooding event. These flood events have a natural function of turnover and flushing of coastal wetlands. The protected open spaces create an offset to protect community infrastructure.</p>	Jackson	Yes	No	No	No	No	No	No	Yes	No	No	No	No	No	No	No	\$	-	\$	-	-	Land Acquisition

Eco Restoration	5441	10/29/2015	Turkey Creek Greenway Land Protection	<p>The Land Trust for the Mississippi Coastal Plain (LTMCP) priority for this County is the Turkey Creek Watershed. LTMCP has been working with the citizens since 2003 when facilitated meetings were held to determine problems surrounding and the need to protect the Turkey Creek Watershed.</p> <p>The Turkey Creek Community has identified a greenway to buffer the creek as the number one project they desire. Acquisition of the proposed lands would further progress the development of the greenway and thus greatly improve the community's resilience and address many of the issues currently having a negative impact on their quality of life.</p> <p>When the acreage is in conservation, these acquisitions help reduce the opportunity for additional impervious surfaces which have increased greatly in this watershed thus increasing community resilience.</p> <p>Turkey Creek has been identified for the "Coastal streams" Conservation Action Planning Project funded under National Fish and Wildlife Federation (NFWF) Gulf Environmental Benefit Fund (GEBF). These riparian buffers will most likely be strategic outcomes/actions that come from this plan.</p> <p>Specific property examples include Bailey (556.70 acres), Canal Lands (218.5 acres), and Canal Road (1043 acres). There are other properties also along this greenway that would also add to this riparian buffer.</p> <p>Ecological Value: I&CProtects properties as a buffer area for storm surge by providing dispersal and displacement in the event of flooding waters. These flooding waters have a natural function of turnover and flushing of coastal wetlands. The open spaces protected create an offset to protect community infrastructure. I&CProtects emergent vegetation and vegetation below the surface that provides values required for wildlife to nest, rest, breed and feed. I&CProvides critical wintering and migratory stop-over sites for trans-hemispheric migratory bird populations. I&CProvides critical stop-over sites for neo-tropical migratory bird populations; I&CCreates open spaces that will provide areas for people to witness and learn about their natural environment. I&CCreates open spaces that provide opportunities for low impact recreational activity such as observation of birds, wildlife, fishing, net-casting and kayaking. I&CProvides a runoff buffer for sediment that, if allowed to enter the bay directly, will silt waterways used for recreation and as a wildlife habitat.</p>	Harrison	Yes	No	No	No	No	No	No	No	Yes	No	\$	-	\$	-	Land Acquisition
Eco Restoration	5442	10/29/2015	Tchoutacabouffa Land Protection 2	<p>The Land Trust for the Mississippi Coastal Plain (LTMCP) is an accredited Land Trust dedicated to the conservation, promotion, and protection of open spaces and green places of ecological, cultural or scenic significance in the counties of the Mississippi Coastal Plain. LTMCP utilizes both fee simple and conservation easement tools in conserving land for the benefit of habitats, species, and recreation.</p> <p>This property is located along the Tchoutacabouffa River in Harrison County, Mississippi. This property is located along a portion of the Tchoutacabouffa River known as a foraging ground for white pelicans and as essential habitat for many species of migratory birds. This parcel is within the acquisition boundary of the State's Coastal Preserve Program and would help to further buffer this riparian habitat and provide connectivity to other protected lands.</p> <p>Ecological Significance: I&CProtects emergent vegetation and subsurface vegetation that provides values required for wildlife to nest, rest, breed, and forage. I&CProvides critical wintering and migratory stop-over sites for migratory birds. I&CProtects near-by developed properties as a buffer area for storm surge by providing dispersal and displacement in a flooding event. These flood events have a natural function of turnover and flushing of coastal wetlands. The protected open spaces create an offset to protect community infrastructure. I&CCreates open spaces that will provide areas for people to witness and learn about their natural environment. I&CCreates open spaces that provide opportunities for low impact recreational activity, such as bird watching and other wildlife observation, fishing, and kayaking.</p>	Harrison	Yes	No	No	No	No	No	No	No	No	\$	-	\$	-	Land Acquisition	
Eco Restoration	5443	10/29/2015	Dobson Road Land Protection	<p>The Land Trust for the Mississippi Coastal Plain (LTMCP) is an accredited Land Trust dedicated to the conservation, promotion, and protection of open spaces and green places of ecological, cultural or scenic significance in the counties of the Mississippi Coastal Plain. LTMCP utilizes both fee simple and conservation easement tools in conserving land for the benefit of habitats, species, and recreation.</p> <p>This property is located along the Tchoutacabouffa River in Harrison County, Mississippi and is essential habitat for many species of migratory birds. Riparian buffers along this corridor will help water quality for the watershed and receiving waters of Back Bay Biloxi.</p> <p>Ecological Significance: I&CProtects emergent vegetation and subsurface vegetation that provides values required for wildlife to nest, rest, breed, and forage. I&CProvides critical wintering and migratory stop-over sites for migratory birds. I&CProtects near-by developed properties as a buffer area for storm surge by providing dispersal and displacement in a flooding event. These flood events have a natural function of turnover and flushing of coastal wetlands. The protected open spaces create an offset to protect community infrastructure. I&CCreates open spaces that will provide areas for people to witness and learn about their natural environment. I&CCreates open spaces that provide opportunities for low impact recreational activity, such as bird watching and other wildlife observation, fishing, net-casting, and kayaking.</p>	Harrison	Yes	No	No	No	No	No	No	No	\$	-	\$	-	Land Acquisition		
Eco Restoration	5444	10/29/2015	Delisle Bayou Land Protection	<p>The Land Trust for the Mississippi Coastal Plain (LTMCP) is an accredited Land Trust dedicated to the conservation, promotion, and protection of open spaces and green places of ecological, cultural or scenic significance in the counties of the Mississippi Coastal Plain. LTMCP utilizes both fee simple and conservation easement tools in conserving land for the benefit of habitats, species, and recreation.</p> <p>This parcel is located along Delisle Bayou in Harrison County, Mississippi and is part of the Delisle watershed. This parcel encompasses a significant oak grove that is home to several 800-year old live oak trees, as well as waterfront acreage to Delisle Bayou. Protection of this parcel would be essential in maintaining green-space within the surrounding community. This property would also serve as an outdoor classroom for nearby schools.</p> <p>Ecological Significance: I&CHistorically significant in protection of 800-year old live oaks and habitats. I&CCreates open spaces that will provide areas for people to witness and learn about their natural environment. I&CCreates open spaces that provide opportunities for low impact recreational activity, such as bird watching and other wildlife observation, fishing, net-casting, and kayaking. I&CProtects emergent vegetation and subsurface vegetation that provides values required for wildlife to nest, rest, breed, and forage. I&CProvides critical wintering and migratory stop-over sites for migratory birds. I&CProtects near-by developed properties as a buffer area for storm surge by providing dispersal and displacement in a flooding event. These flood events have a natural function of turnover and flushing of coastal wetlands. The protected open spaces create an offset to protect community infrastructure.</p>	Harrison	Yes	No	No	Yes	No	No	No	Yes	No	\$	-	\$	-	Land Acquisition	
Eco Restoration	5445	10/29/2015	North Beach Land Protection	<p>The Land Trust for the Mississippi Coastal Plain (LTMCP) is an accredited Land Trust dedicated to the conservation, promotion, and protection of open spaces and green places of ecological, cultural or scenic significance in the counties of the Mississippi Coastal Plain. LTMCP utilizes both fee simple and conservation easement tools in conserving land for the benefit of habitats, species, and recreation.</p> <p>These parcels are located along the transition area of Jourdan River into the St. Louis Bay in Mississippi. The area is tidally influenced. Native vegetation founded on the parcels are those found in pine forested wetlands and tidal marsh. There is a county owned boat launch in the area making it ideal for kayak/canoe launching. The Hancock County Greenway/Blueway Committee has this area as a conservation priority area for ecosystem utilization.</p> <p>Ecological Value: I&CCreates open spaces that will provide areas for people to witness and learn about their natural environment. I&CCreates open spaces that provide opportunities for low impact recreational activity such as observation of birds, wildlife, fishing, net-casting and kayaking. I&CProtects areas that provide clean water for our natural resources further down the watershed.</p>	Hancock	Yes	No	No	No	No	No	No	No	No	\$	-	\$	-	Land Acquisition	
Eco Restoration	5446	10/29/2015	Anisley Area Land Protection	<p>The Land Trust for the Mississippi Coastal Plain (LTMCP) is an accredited Land Trust dedicated to the conservation, promotion, and protection of open spaces and green places of ecological, cultural or scenic significance in the counties of the Mississippi Coastal Plain. LTMCP utilizes both fee simple and conservation easement tools in conserving land for the benefit of habitats, species, and recreation.</p> <p>These parcels are part of the Campbell Bayou-Bayou Caddy watershed. The watershed is located in the East Gulf Coastal Plain ecoregion of the southeastern U.S. and is part of the Mississippi Coastal Basin and Streams. Native vegetation in this area includes those species found in palustrine forested wetlands, estuarine emergent wetlands, palustrine scrub/shrub wetlands, upland scrub/shrub, and evergreen forested uplands. This whole area has large tracts of protected lands of which this parcel could add to and provide further protected areas for marsh migration and storm buffering.</p> <p>Ecological Value: I&CA large contiguous area has been identified as Section 404 wetlands within the property boundaries. Wetlands on the site improve water quality by filtering out contaminants, reduce saltwater intrusion, act as a buffer against storm surges, and help reduce flooding through stormwater attenuation. I&CThree plant communities have been identified: pine forest wetland, forested upland, and forested hardwood wetland. I&CProtects grasslands that are important for removal of nutrients from the water column to provide cleaner and healthier water for all wildlife. I&CProvides critical wintering and migratory stop-over sites for trans-hemispheric migratory bird populations. I&CProvides critical stop-over sites for neo-tropical migratory bird populations; I&CCreates open spaces that will provide areas for people to witness and learn about their natural environment. I&CAn intermittent stream, totaling approximately 1,700 linear feet is present.</p>	Hancock	Yes	No	No	No	No	No	No	No	No	\$	-	\$	-	Land Acquisition	

Eco Restoration	5447	10/29/2015	Cedar Point Land Protection	<p>The Land Trust for the Mississippi Coastal Plain (LT MCP) is an accredited Land Trust dedicated to the conservation, promotion, and protection of open spaces and green places of ecological, cultural or scenic significance in the counties of the Mississippi Coastal Plain. LT MCP utilizes both fee simple and conservation easement tools in conserving land for the benefit of habitats, species, and recreation.</p> <p>This property located along the North Beach adjacent to the Bay of St. Louis in Hancock County, Mississippi. This property is part of the Saint Louis Bay watershed, located in the East Gulf Coastal Plain ecoregion of the southeastern United States, and is part of the Mississippi Coastal Basin and Streams. This property is essential in maintaining blueways and greenways in Hancock County. Conceptual drawings for a potential greenspace for visitors been developed in which sustainable construction techniques would be utilized to allow wildlife and native species to remain undisturbed and enjoyed by visitors (e.g. marsh path boardwalk, pavilions, look-out tower).</p> <p>Ecological Significance: 1. Creates open spaces that will provide areas for people to witness and learn about their natural environment. 2. Creates open spaces that provide opportunities for low impact recreational activity such as bird watching and other wildlife observation, fishing, net-casting, and kayaking. 3. Protects emergent vegetation and subsurface vegetation that provides values required for wildlife to nest, rest, breed, and forage. 4. Provides critical wintering and migratory stop-over sites for migratory birds. 5. Protects near by developed properties as a buffer area for storm surge by providing dispersal and displacement in a flooding event. These flood events have a natural function of turnover and flushing of coastal wetlands. The protected open spaces create an offset to protect community infrastructure.</p>	Hancock	Yes	No		No	No	No	No	No	No	Yes	No		\$	-	\$	-	Land Acquisition
Eco Restoration	5448	11/6/2015	Henderson Point Property Restoration and Living Shoreline	<p>The Henderson Point property was donated to the Land Trust for the Mississippi Coastal Plain (LT MCP) in 2013. This property currently has concrete debris, timber, and buildings throughout most of its footprint. The LT MCP intends to remove the concrete debris and restore this property to its native and natural state. This restoration effort will include planting native vegetation, removing invasive species, and recycling the concrete debris in order to stabilize the shoreline with a breakerwater structure along the property's western border. This shoreline improvement project is intended to enhance the waterfront through ecological friendly manner, while decreasing erosive forces on the property.</p> <p>For the Henderson Point property, there are two objectives to the restoration plan. The first objective is to restore historic, natural land use through removal of concrete debris, buildings, an old bulkhead, electrical wiring, and timber. Once the property is cleared of anthropogenic materials, it will be graded, and native vegetation can either be physically planted or allowed to naturally infiltrate and grow on the property. Any invasive species on the property will be removed, and an invasive species monitoring plan should be established to ensure growth of native species.</p> <p>The second objective is to reduce shoreline erosion through creation of a living shoreline. The LT MCP intends to use material currently on the property (crushed concrete debris) for this breakerwater, which will assist in the first steps in enhancing the terrestrial portion of the property to its historic, natural state. With the implementation of this living shoreline, sediment is expected to accumulate and native wetland vegetation should begin to grow along the shoreline. A monitoring plan should be established to track any settlement along the breakerwater structures, shoreline erosion and/or accretion, vegetation species, oyster settlement on the breakwaters, and any other aquatic species associated with the construction of the breakwaters.</p> <p>By implementing these objectives the following outcomes will be achieved: 1. Maintain natural coastal processes and shoreline dynamics. 2. Create or preserve habitats for native species of aquatic and terrestrial flora and fauna. 3. Provide access for aquatic and terrestrial organisms. 4. Provide economical means of facilitating sediment accumulation, potentially resulting in formation of new land. 5. Trap and retain runoff and pollutants.</p>	Harrison	Yes	No		No	No	No	No	No	No	No			\$	600,000.00	\$	-	
Eco Restoration	5449	11/9/2015	Reilly Road Land Acquisition	<p>The Land Trust for the Mississippi Coastal Plain (LT MCP) is an accredited Land Trust dedicated to the conservation, promotion, and protection of open spaces and green places of ecological, cultural or scenic significance in the counties of the Mississippi Coastal Plain. LT MCP utilizes both fee simple and conservation easement tools in conserving land for the benefit of habitats, species, and recreation.</p> <p>This 40 acre property is in the Old Fort Bayou subwatershed and contains remnants of long leaf pine habitat. A majority of the property is wetland and is adjacent to a tract of land protected by the LT MCP.</p>	Jackson	Yes	No		No	No	No	No	No	No			\$	-	\$	-	Land Acquisition	
Eco Restoration	5450	11/11/2015	Longleaf Pine / Water Quality Restoration Project	<p>A project that would look to restore/enhance and protect longleaf pine and bottomland hardwood habitat in the six coastal counties of Mississippi. The restoration and/or enhancement efforts would improve water quality and habitat for many species of wildlife including some listed and threatened and/or endangered.</p>	Pearl River, Stone, George, Hancock, Harrison and Jackson	Yes	No		No	Yes	Yes	No	Yes	No			\$	-	\$	-	Land Acquisition	
Eco Restoration	5451	11/23/2015	Markham Drive Land Protection	<p>The Land Trust for the Mississippi Coastal Plain (LT MCP) is an accredited Land Trust dedicated to the conservation, promotion, and protection of open spaces and green places of ecological, cultural or scenic significance in the counties of the Mississippi Coastal Plain. LT MCP utilizes both fee simple and conservation easement tools in conserving land for the benefit of habitats, species, and recreation.</p> <p>The Markham Drive Property is located in Long Beach, MS. The property is under threat of development of an RV park. The area is currently greenspace that the neighboring residents enjoy for wildlife habitat. This tract of land is of significance to the entire Gulf Coast as one of the only remaining undeveloped tracts of mixed pine-hardwood forest land that extends from the beach to the railroad track between St. Louis Bay and Biloxi Bay. It is the landing and take off place for migrant birds that journey across the Gulf of Mexico. It is winter home to many warblers, flycatchers, and hawks. There is documentation of 77 species of birds utilizing the habitat (47 species of migratory birds and 30 resident species). There is also a variety of native plants, mammals, amphibians, and reptiles. This tract of land is significant locally to the residents of Markham and Marcie Drive as a buffer from Hwy 90. Development of this land would further exacerbate current flooding issues and the current 12.5 acres of land (4.5 acres of wetland) act as a buffer for flood management. This land could be part of the Long Beach Strategic Plan for taking/walking trail.</p>	Hancock, Harrison and Jackson	Yes	No		No	No	No	No	No	No			\$	-	\$	-	Land Acquisition	
Eco Restoration	5453	12/11/2015	GoCoast Trust Fund	<p>The proposed project will fund a perpetual GoCoast Trust Fund that will provide: (1) debt and equity financing of qualified private and public projects that will repay loans with interest and yield a return on equity investments; (2) grants to public agencies for urgent public projects that do not generate revenue directly, especially eco-restoration projects. The Trust Fund will provide a long-term, economically-sound framework to stimulate regional economic recovery and growth that serves long-term public interests, and it will have the flexibility to adjust to market-driven changes in the regional, national and world economies.</p> <p>The GoCoast Trust Fund will be governed by a three-member Board of Trustees, composed of one resident from each of Hancock, Harrison and Jackson counties. The Governor shall appoint the trustees, subject to the approval of the Mississippi Senate and House of Representatives, for four-year terms, coterminous with the Governor. All actions of the Board of Trustees must be by unanimous vote of the Trustees. Operating expenses of the Trust may be funded from Trust Fund income and any public or private grants obtained by the Trust.</p> <p>On or before September 1st of each year, the Trustees shall submit to the Governor, the Legislature, and MD&J (1) a plan of investments for the next state fiscal year itemizing all proposed investments and projects for the next fiscal year; (2) financial statements of the Trust for the previous year; and (3) financial statements projected for the next five years. Prior to submitting each Plan of Investments, the Board of Trustees must submit the Plan to all state Senators and state Representatives representing any part of the three Coast counties. If a majority of Senators and Representatives submit an objection (in writing) to any specific project in the Plan, then that project shall be deleted from the list of projects that may be funded by the Trust in that fiscal year.</p> <p>The Trust will operate in the nature of a public investment bank to fund projects that address economic development; infrastructure; eco-restoration; research and education; seafood; tourism; or workforce development. Priority will be given to projects that stimulate and accelerate long-term, regional economic recovery and growth; job production; tax base expansion; and quality of life for Mississippi Gulf Coast residents. Selection must be based on projects that, without GoCoast Trust assistance, otherwise would likely not go forward within a strategic timeline and scope of development according to the long-term strategic plan adopted by the Board of Trustees. The operating office of the Trust shall be located within the three Coast counties.</p> <p>Preference will be given to projects that leverage financing from private sources and other public sources, including state and federal grants and incentive programs, such as New Market Tax Credits, Tax Increment Financing, Mississippi Tourism Rebate Program, Public Improvement Districts, Business Improvement Districts, and Community Development Financial Institutions, like the Gulf Coast Renaissance Corporation.</p> <p>Each project will demonstrate it has an economically sound basis for repaying the investment and, where feasible, yielding an appropriate return on investment. Although lending and investment criteria will be designed to perpetuate and grow the Trust Fund, the Board of Trustees will have the flexibility to set terms that may be less than market rate in order to incent timely, qualified projects that make long-term, systemic improvements to the regional economy and quality of life.</p>	Hancock, Harrison and Jackson	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes			\$	100,000,000.00	\$	-	
Eco Restoration	5464	1/25/2016	Highway Connectivity Project for City of Moss Point	<p>A project to provide ease of transportation, accessibility and safety along the Interstate 10, Highway 63 and Highway 613 corridors from Old Saranac Road north of I-10 to McInnis Avenue and Grierson Street south of I-10.</p> <ol style="list-style-type: none"> Interchange improvements and extension of service roads along with service road improvements along the I-10 and Hwy. 63 and 613 corridors. Transform the Pascagoula Street/River Road/Griffin Street/Dantzer Street corridor into a major improved connector between Hwy-90 and Hwy-613, with widening, turning lanes, improved drainage, resurfacing, lighting, etc. Widening and improvements along Grierson & McInnis Ave. from Hwy-63 to Main St. (Once Hwy. 90) to create greater access and increased flow to downtown from the east. Also include a stop light and cross walk at McInnis & Main and straightening and widening of McInnis in front of City Hall with added parallel parking. Turning lanes and a traffic light at Hwy-613 and Dutch Bayou Road to create a new main entrance and exit at the Pelican Landing Conference Center, at the intersection. Extend Audubon Way eastward across Main Street to Morris, creating a new intersection and creating commercial development opportunities. 	Jackson	Yes	Yes		Yes	Yes	No	Yes	Yes	Yes			\$	-	\$	-		
Eco Restoration	5465	2/16/2016	Computerized RESTORE	<p>Developing Working Proposals to hire University Researchers and Marketers to address the RESTORE act and present the proposal 100% into dimensional sections for fundamental learners comprehensive training and developmental studies in progress.</p> <p>Each University Researcher that provide a biographical sketch, resume, CV etc. will be assessed to his or hers RESTORE ACT decision making teams. There will be implementation of US Military and international interventions and redesign RESTORE Workforce Innovation Training and Development.</p>		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes			\$	18,000,000.00	\$	-		
Eco Restoration	5475	4/14/2016	Bay St. Louis Public Beach Access	<p>Bay St. Louis proposes to construct public access to the public beach at Carroll Ave and Ulman Ave. These access points will be ADA accessible and consist of concrete walkway, timber decking, timber ramp, galvanized steel support structure, lighting, benches, etc. These access points will provide more access for public use of beach for recreational functions.</p>	Hancock	Yes	Yes		Yes	Yes	No	No	Yes	No			\$	500,000.00	\$	-		
Eco Restoration	5476	4/20/2016	Horn Island	<p>As part of the Gulf Islands National Seashore all available acres on Horn Island needs to be purchased to preserve the natural importance of untouched sand, dunes dotted with sea oats, tall pines on small groves, and a few inland lagoons. This magnificent island is the result of a marvelously rich ecosystem that serves as home and nursery for an enormous array of sea life. It is home to varied wildlife including alligators, ospreys, pelicans, ducks, tern, herons, and other migratory birds. The Sound and the Gulf host innumerable species of sea life. The island is undeveloped, and is a favorite boating destination for those living on the Mississippi Gulf Coast.</p>		Yes	No		No	Yes	Yes	No	Yes	No			\$	2,850,000.00	\$	-		

Eco Restoration	5477	4/24/2016	Les Arbres	All land that is for sale that has been designated as part of Gulf Islands National Seashore needs to be purchased to protect the natural state of the preserve. This land has live oaks and pine trees and is adjacent to a saltwater marsh, offering a tranquil setting for migratory bird watching and picnicking. Ocean Springs is a tourist haven, a beautiful, resource-rich area favored by history.	Jackson	Yes	No		Yes	No	No	No	Yes	No		\$ 435,000.00	\$ -	
Eco Restoration	5478	4/24/2016	Fort Bayou & Highway 57	Fort Bayou is a beautiful, meandering waterway in Jackson County, Mississippi. Its origins (headwaters) begin in the longleaf pine swamps south of Vancleave. The bayou continues through many important natural areas, including the Sandhill Crane Wildlife Refuge, The Nature Conservancy's Old Fort Bayou mitigation property, the Land Trust's Twelve Oaks Conservation Park, and Mississippi's Old Fort Bayou Coastal Preserve, deepening and widening toward its mouth at Biloxi Bay in Ocean Springs. Due to the importance this waterway plays to the health of the Gulf of Mexico, all available land adjacent to the Old Fort Bayou and its tributaries need to be purchased and preserved in its natural conditions.	Jackson	Yes	No		Yes	No	No	No	No	No		\$ 2,800,000.00	\$ -	
Eco Restoration	5479	7/15/2016	Ways to augment oyster restoration with special products	To jumpstart oyster production off the coast of Mississippi by introducing seeded eyed larvae. These eyed larvae would come from Mississippi brood stock and produced at a Mississippi hatchery. The oyster larvae would be seeded on substrate and the project would benefit the state of Mississippi by jump starting the number of oysters in beds being created. The young oysters being put on the substrate would spawn naturally and release their larvae into the beds being created.	Harrison,Hancock Jackson	Yes	No		Yes	No	Yes	No	No	No		\$ 500.00	\$ -	
Eco Restoration	5480	4/29/2016	Oyster Restoration through Aquaculture Aqua Green	In Mississippi and throughout the Gulf of Mexico, the oyster fishery serves as an integral part of the economy and heritage of coastal communities. Events over the past decade such as Hurricane Katrina and numerous anthropogenic events (e.g., spillway openings, oil spill, etc.) have, however, impacted these resources in Mississippi and caused significant reductions in oyster landings and the amount of viable oyster reef habitat present. Identified as a priority by the Governor's Oyster Council (Council), USM proposes to continue its research and development in the production of eastern oyster larvae in an artificial seawater, recirculating aquaculture system to incrementally scale up larval production to provide a consistent supply of healthy oyster larvae for purposes of restoration and economic development. This supply of larvae will directly support: (a) restoration of the State's public reefs and expansion of private leases to increase annual oyster harvest numbers; (b) creation of living shorelines and reestablishment of natural non-harvest reefs for shoreline stabilization/marsh restoration, fishing habitat, and water quality enhancement; and (c) off-bottom culture (aka oyster farming) for expansion of the State's commercial oyster fishery. To support these restoration objectives and achieve the State's goal of ten billion eyed oyster larvae annually, acquisition of the Aqua Green aquaculture facility in Perinton, MS, and retrofitting/expansion of systems there is necessary to provide a platform for this large-scale larval production. Aqua Green was identified by the Council's Hatchery Sub-Committee as the recommended hatchery to support Mississippi's oyster restoration because of its inland location out of harm's way from tropical storms and its ability to be operational in a short period of time.	Stone	Yes	Yes	77000	Yes	Yes	Yes	Yes	Yes	Yes		\$ 13,000,000.00	\$ -	
Eco Restoration	5481	5/4/2016	Wastewater Containment Pond Mitigation	SRHS built and operates a medical clinic in Hurley, MS, prior to the installation of a community water and wastewater treatment facility that required that we build a sewage lagoon for the clinic's waste water. With the implementation of the recently installed new wastewater treatment system, SRHS has subsequently been required by MDEQ to be into that system, to decommission the existing sewage lagoon, and restore the property to its natural state. The cost for that mitigation will be SRHS \$200,000 as per the attached proposal by FCK&E Engineering, dated March 23, 2016. While SRHS feels that it should be the Jackson County Utility Authority's responsibility to mitigate the treatment facility, as SRHS is a public entity, solely owned by Jackson County, and the JCUA has already accepted responsibility for mitigation of the Jackson County School System sewage lagoons in the area. MDEQ has placed the mitigation burden on SRHS and has given us until December 31, 2016 to complete the work. SRHS is seeking funding through Restore, for that project.	Jackson	Yes	Yes		Yes	No	No	No	No	No	mitigation	\$ 389,500.00	\$ -	
Eco Restoration	5482	5/4/2016	USM Ocean Enterprise at the Mississippi Aquarium	Background The maritime & Blue Economy is the largest sector of Mississippi economic activity and includes shipbuilding, shipping (and related), fishing, tourism, defense (and related), and construction activities among many others. New and very large investments are being made to capitalize on this growth potential. We propose to centralize the connections between this massively important state investment with the investments the University has made in marine and fisheries research, business and entrepreneurship; construction; and trade, transportation and logistics. Need Given the magnitude of the investments made by both the state and the University, there is not a centrally located access node to intersect needs of economic development with the intellectual capacity of the University. The nation is full of examples where critical mass has been reached by providing facilities at the nexus of industry, academia and agencies; clearly, these intersections create new and exciting opportunities and push the boundary of innovation. The State of Mississippi needs such a place, and we propose a state-of-the-art facility called The University of Southern Mississippi Ocean Enterprise to be located adjacent to the Mississippi Aquarium in the heart of Mississippi's Blue Economic Development of Gulfport. Opportunity Through Ocean Enterprise, USM will develop and concentrate expertise in the areas of marine research, economic development, entrepreneurship, trade, logistics and transportation. We will place world leaders in research and education in the facility, and give them access to state and federal partners and to leaders in economic development and private industry. In the facility will be research and education spaces for training tomorrow's leaders, collaborative spaces to solve the regions most critical problems and community spaces to bring all of the citizenry to the table.	Harrison	Yes	Yes	2800000000	Yes	Yes	No	Yes	Yes	Yes		\$ 28,000,000.00	\$ -	
Eco Restoration	5485	6/1/2016	Restore the Coastal Tree Canopy Strategies & Storm Preparedness and Mitigation	Restore the Tree Canopy will work with every city and county in the three coastal counties to identify perpetual public green spaces and enhance those spaces with trees varieties that are sustainable. This project can also work with previously approved RESTORE project to ensure that urban forestry is site development. The sites that we work with will be identified by either the city or approved restore project locations such as the conservation green ways or other projects approved. This project will help make-up for or mitigate the natural resources of trees that support habitats of all kinds including native birds, reptiles, and other species. Plus matched and enhance economic benefits. The project will include benefits for people and wildlife. The results will be a series of arborvitae creating a linear coastal green spaces for benefits such as eco-tourism recreation, clean air and water, storm water management, shade, increase property value and many other related benefits. Restore the Tree Canopy Strategies Habitat, Water Quality, Community Resilience Submitted by Donna Yowell, Executive Director of the Mississippi Urban Forest Council 601.672.0755 Restore the Canopy Strategies is a project that meets all five of the overarching framework goals of Restore the Gulf. This project will focus on collaborative and sustainable tree planting strategies and activities for local government, citizens, and NGOs. The project will include ways the community and individuals can actively participate, building knowledge, resilience, conservation activities, and ownership. Communities will learn the benefits of connectivity, to a healthy Gulf, based on actions within their own community. Stakeholder engagement and wide spread collaboration would be another focus. Trees have proven their natural capital to tourism and community economic enhancement, as well. Restore the Canopy is comprehensive in being a Mississippi coast wide project and will cover all three coastal counties with a recommendation to include the other 3 counties in the lower tier of Mississippi. The project will include all cities and counties officials plus local civic groups such as chambers, youth groups, and all other civic groups. This would be a landscape level restoration effort along coastal streams, targeted shore lines, and watersheds; implementing a strong green component and collaboration for involvement. "Facilitate community based efforts to increase the awareness of the importance of coastal resources and the best management practices to support conservation and renewal of the valuable assets. "Restore water quality "Restore ecosystems.	George,Harrison,Jackson,Stone,Ja Hancock,Harrison, Jackson and Hancock,Pearl River,Mobile,St Tammany	Yes	Yes	80000	Yes	Yes	No	Yes	Yes	Yes		\$ 450,000.00	\$ -	
Eco Restoration	5486	6/1/2016	Singing River Hospital Storm Drain Replacement	One of our primary acute care facilities, Singing River Hospital, located at 2809 Denny Avenue, Passagnola, MS, has storm drains located around the facility, on our campus, that are collapsing due to age and deterioration. The old drains, made of ceramic tile, were installed so long ago that we have no surviving records showing the original installation dates. Video images taken inside the drains show blockages from cracked, broken and collapsing sections of the tile components. Blocked drains during significant rain, tropical storm or hurricane events subject the ground floors of the facility to flooding as a direct result of the inability of the storm drains to carry off water accumulating on the campus grounds, that also impede or block access to our Emergency Department and other entrances needed to carry our our mission as first-responders during severe weather events. Singing River Health System is requesting funding to replace the existing storm drains.	Jackson	Yes	Yes	100000	Yes	No	No	No	Yes	No	healthcare	\$ 500,000.00	\$ -	
Eco Restoration	5488	6/15/2016	Pearl River stream flow monitoring	The lower Pearl River system is a rich and diverse ecological system that is home to a variety of aquatic and terrestrial species, including several of the endangered species list such as the Gulf Sturgeon. The hydrologic system is a braided system of major and minor channels and it is heavily influenced by several man-made structures including a canal with two low-water sills and three lock systems on the west Pearl River, and a low-water weir on the east Pearl River, all of which have altered the natural flow characteristics of the system. Most of the flow comes from the Pearl River itself, which drains more than 6,700 square miles above Bogalusa, LA. Additional inflows from the East and West Hobolochitto Rivers in Mississippi and Bogue Chitto in Louisiana contribute some flows. Heavy precipitation events in the coastal region of these tributaries can be primary contributors to the flow in the region. In these instances, the hydrologic flow models generally used for forecasting are not nearly as accurate since they are developed with flows from the Pearl River being the major contributor. The transfer of ownership and possible removal of the canal, locks, and sills are the subject of ongoing discussions between federal, state, and local agencies. Some hydrologic and biologic data are currently being collected in the system, but none of those currently being collected integrates the cumulative streamflow of the system. Additionally, data are not currently being aggregated and housed in one central location to facilitate ease of access. Furthermore, little to no comprehensive background data, streamflow or water quality, exist to document changes to either flow patterns, suspended-sediment transport, or water quality of the area. The purpose of this project is to collect water level, velocity, and instantaneous discharge data and use these data to compute the flows from the Pearl River at U.S. Highway 90 in Hancock County, MS. Instrumentation will be installed on the bridges over the east and west Pearl River channels to collect stage and velocity data to compute the instantaneous discharge in the channels. Discrete stream flow measurements will be collected at the 5 bridges on the lower Pearl River to determine the flow characteristics of the channels. The computed discharge data will be filtered using a tidal filter to compute the daily flows in the river at the U.S. Highway 90 crossing. Additionally, stage and velocity data will be collected at the CSX Railroad bridge crossing at the mouth of the river to compute the flows through that channel to augment the collection of water quality data at that location. These data will allow the impact of the flows from the tidal fluctuations on the distribution of the headwater flows to be analyzed. The cost to obtain the equipment needed for the collection of time-series data at two locations, and add a velocity sensor at the third, is \$75,000. Data will be collected for 5 years, at \$70,000 per year, which will allow for the data to be used in statistical computations as needed. Additionally, and of significant importance, the installation of the monitoring equipment at the U.S. Highway 90 crossing is expected to significantly improve the ability to forecast flood events on the lower Pearl River.	St Tammany,Hancock,OK,Orleans	Yes	Yes	20000	No	Yes	Yes	No	No	No		\$ 425,000.00	\$ -	

	Eco Restoration	5489	6/21/2016	Clermont Harbor Acquisition and Restoration	Clermont Harbor once featured a stately resort in western Hancock County built in 1915, with paddleboats, a dance pavilion, gates to the community, a pier and boat harbor. It was heavily damaged by the 1915 hurricane, then rebuilt, and finally burned in 1946. Since Hurricane Katrina, many of the homeowners surrounding the Harbor have not returned, leaving a large swath of land undeveloped. Renew Our Rivers efforts to clear hurricane debris from the last fifty years have been an important step toward improving water quality. The harbor connects to the Mississippi Sound through large culverts, instead of the open channel for boats that is once sported. However, it still acts as a marine nursery for fish and shellfish. Restoration of the marsh edge, buffer plantings to filter stormwater, and reforestation of the site will improve the marine and human habitat along its edge. The project request is for acquisition and permanent conservation of adjacent lands, from willing owners. Those lands will be made accessible for public access to the waterway, and will support nature-based tourism with low-impact improvements including: recreational trails, a pavilion, interpretive signage, restoration of the Clermont Harbor pillars, and a kayak launch.	Hancock	Yes	Yes			No	Yes	Yes	No	Yes	No		\$ 250,000.00	\$ -	
	Eco Restoration	5490	6/24/2016	Land Acquisition for expansion of Grand Bay National Wildlife Refuge and National Estuarine Research Reserve	This effort seeks to permanently protect lands identified by the U. S. Fish and Wildlife Service and the State of Mississippi as critical for acquisition and long-term management by the Grand Bay National Wildlife Refuge (NWR) and Grand Bay National Estuarine Research Reserve (NERR). This project will add approximately 1,886 acres to the nearly 28,000 acres currently owned by the U. S. Fish and Wildlife Service and the State of Mississippi. It will add critical habitat lands and permanent protection, and improved management of coastal wetlands, and adjacent upland areas. The Grand Bay NWR/NERR protect one of the last expanses of wet pine savanna habitat in the country. Due to fire suppression and conversion to pine plantation, less than 5% of the original acreage of this habitat system remains - making it one of the most endangered ecosystems in the country. Because of the great biological significance of this area, it is important to continue to expand the protection of both core and buffer areas, while enhancing management capabilities. The targeted 1,886 +/- acres consists of wet pine savanna, maritime forest, tidal and non-tidal wetlands, salt marshes, salt pannes, bays and bayous. Federally threatened and endangered species that occur at the Grand Bay Refuge/ NERR include the gopher tortoise, sandhill crane, and the manatee. Also, a number of migratory species utilize the habitats provided on this acreage for portions of the life cycle, including ibis, Marlin and Sawfishes, Bats, Flowers, Sandpipers and Phalaropes, and Gulls and Terns, along with many different neo-tropical species. This acreage also provides salt marsh/ estuarine habitats for many aquatic species occurring in the Gulf of Mexico. In addition to protecting critical habitat and ecosystems, expanding the footprint of the Grand Bay NWR/NERR will also expand public recreational access, research, education, and training opportunities in this unique coastal environment. The Conservation Fund has initiated due diligence with financial assistance from the Knobloch Family Foundation, is in discussions with the landowner regarding acquisition of these tracts, and anticipates that the project could be completed immediately, pending availability of funds.	Jackson	Yes	No		No	Yes	No	No	Yes	No			\$ 2,000,000.00	\$ -	
	Eco Restoration	5491	6/24/2016	Land Acquisition- Jourdan River Coastal Preserve	This effort seeks to permanently protect lands adjacent to the existing Jourdan River Coastal Preserve, which is owned by the State of Mississippi and managed by the Mississippi Department of Marine Resources (DMR). The project would add approximately 1,472 acres to the 573 acres currently owned by the State of Mississippi, and managed by DMR, comprising the Jourdan River Coastal Preserve unit. It will add critical coastal frontage to the Jourdan River Coastal Preserve, along the Bay of St. Louis and the Jourdan River, for permanent protection, as well as improved management of coastal wetlands, and adjacent upland areas. The targeted 1,472 +/- acre ownership lies within the 6,290 acre Coastal Preserve boundary in Hancock County, and directly adjacent to 573 acres currently owned by the State of Mississippi. The unit consists of open saline marshes containing saltgrass, needle rush, and cordgrass; maritime forests; and tidal brackish marsh. Mottled ducks and scarlet kingfishers are found commonly within the Preserve. The area is also a feeding, nesting, and overwintering ground for a variety of other wetland-dependent migratory birds. In addition, these wetlands also support many aquatic species occurring in the Gulf of Mexico, across its intact salt marsh and shoreline habitats. Boaters and anglers utilize this area for fishing and seasonal waterfowl hunting. The Conservation Fund is in discussions with the landowner regarding acquisition of these tracts, and anticipates that the project could be completed immediately, pending availability of funds.	Hancock,Harrison Harrison,Hancock	Yes	No		No	No	No	No	Yes	No			\$ 2,000,000.00	\$ -	
	Eco Restoration	5492	7/5/2016	Pasagoula Clinic Exterior Hardening	Singing River Health System owns and operates a medical clinic in Pasagoula, in Jackson County, adjacent to Singing River Hospital. SRHS is requesting funds to harden the exterior of our medical facility, including hurricane shutters, roof, generator, fuel tanks and necessary electrical switch gear, to the current FEMA standards for wind impact and lift at that geographic location. That location is not subject to flooding. Currently, that clinic is shut down and boarded up 24 hours in advance of landfall of a hurricane. Hardening the facility will allow us to fully staff the facility during and after severe weather events to provide faster access to emergency and routine medical care during and after a severe weather event or other local disaster, and more importantly, to act as a fail-back facility in the event of the loss of our Emergency Department at Singing River Hospital. Continued operation of that facility during and after a disaster would also help alleviate the surge of residents seeking emergency and other care at our Emergency Departments at Singing River and Ocean Springs hospitals that always occur post-disaster. The estimated cost of hardening the facility is \$900,000.00.	Jackson	Yes	Yes	100000	Yes	No	No	No	Yes	No	Healthcare		\$ 900,000.00	\$ -	
	Eco Restoration	5494	7/6/2016	SRHS Infrastructure	Portions of the environmental infrastructure of our two hospitals are in excess of 40 years old and are failing. Other environmental utilities such as water utilization, electrical switch gear, and lighting for both acute care hospitals as well as our clinics are using technology that is costing hundreds of thousands of dollars a year more than their modern, energy and resource efficient counterparts. SRHS is proposing to replace failing components such as the SRH cooling tower and electrical switch gear, as well as the inefficient lighting, components of the OSH chiller, OSH boiler plant, and several air handler units at SRH, with modern counterparts that will save SRHS approximately \$400,000 a year in operating expense. The cost of the project is estimated at \$7,800,000.00, with an ROI of less than 20 years and a projected life in excess of 30, producing a net return on investment in excess of the cost of the project. SRHS is seeking capital funds for this project.	Jackson	Yes	Yes	100000	Yes	Yes	No	No	Yes	Yes	Healthcare		\$ 7,800,000.00	\$ -	
	Eco Restoration	5504	8/1/2016	Grand Bay NWR & Mississippi Sandhill Crane NWR Restoration Project	This proposal consists of habitat restoration and enhancement work on Mississippi Sandhill Crane National Wildlife Refuge (NWR) and Grand Bay NWR, which are part of the Gulf Coast Refuge Complex. The refuge contain a wide diversity of habitats including important pine-savanna systems. This project will consist of three components: (1) Pine-savanna restoration at Grand Bay NWR, (2) Aerial waterfowl surveys over Grand Bay NWR and other areas of the Mississippi coast, and (3) Enhancement of waterbird habitat at Mississippi Sandhill Crane NWR. The pine savanna restoration work on Grand Bay NWR will include prescribed burning, invasive and exotic species control, and mechanical treatments. Restoration activities will be monitored to ensure that desired results are achieved. The second component of this project includes biannual aerial waterfowl surveys with the goal of assessing waterfowl populations on Grand Bay NWR and other areas of the Mississippi coast. The third component of the project will include enhancement of wetland habitat on Mississippi Sandhill Crane NWR. Ducks Unlimited will construct one moist soil impoundment on former wastewater sprayfields to benefit waterfowl, waterbirds, shorebirds, cranes, and other priority species. The project includes invasive species control and native grass planting on approximately 300 acres of sprayfields surrounding the impoundments to restore savanna habitat.	Jackson	Yes	No		No	Yes	No	No	Yes	No			\$ 2,902,772.00	\$ 17,775.00	
	Eco Restoration	5507	8/16/2016	Mississippi Gulf Coast Region Utility Board Restore Plan	In the attached plan you will find recommended turnkey projects for five South Mississippi counties: Hancock, Harrison, Jackson, Pearl River and Stone. These are projects that can have significant environmental impacts on the region. Each can be accomplished within a budgetary range of \$500,000 to \$5 million. Any approved project will enhance waterways and in many cases directly enhance the quality of oyster habitats throughout the region. The Mississippi Gulf Coast Region Utility Board adopted a strategy to work together as a region, understanding what is good for one, is good for all. The objective of the attached plan is not to seek approval of every submitted project, but rather approval of one project at a time if necessary. Over a 15 year period one can only imagine the accumulative effect, the significant environmental impact this strategy holds for South Mississippi.		Yes	Yes	50000	Yes	No	Yes	No	Yes	Yes		\$ 500,000.00	\$ -		
	Eco Restoration	5508	8/17/2016	Keegan Bayou Waste Water Treatment Plant Improvements for the Collection and Treatment of Seafood Industry Discharge	As part of the comprehensive public and private effort to improve water quality in the Back Bay of Biloxi before it reaches the Gulf of Mexico, the City of Biloxi is requesting RESTORE funding to retrofit seafood processing byproduct discharge and treat it at the Keegan Bayou Waste Water Treatment Plant. This project will result in benefits to the public by preserving existing levels of business and supporting expansion of the local seafood industry operating on the Back Bay while significantly enhancing water quality through more efficient collection and treatment of industrial discharge. The proposed discharge collection and treatment improvements will provide a well-coordinated system to more expeditiously improve Back Bay water quality by exceeding National Pollutant Discharge Elimination System permit requirements for existing processors while allowing the cost-effective growth of Biloxi's seafood industry. This project complements the City of Biloxi's RESTORE Project #5399, Back Bay of Biloxi Festival Marketplace and Marina, which requests funding to revitalize the seafood industry through public improvements that include expanded commercial dock space and supportive land-use amenities. Project #5399 also includes incentives to diversify the regional seafood industry through development of such things as a soft-shell crab aquaculture program in partnership with the Mississippi Department of Marine Resources. The two projects will be coordinated to enhance traditional working waterfront activities on the Back Bay with a variety of land uses that showcase Biloxi's rich cultural history as the former Seafood Capital of the World through shopping, dining, entertainment, and educational venues. These authentic, family-oriented activities will help grow the regional tourism industry in concert with activities to revitalize the seafood industry. The two RESTORE projects also will work together to meet federal and state water-related public health goals of the Clean Water Act to support present and future most beneficial uses for the propagation and growth of aquatic life as well as public water supply and public recreational uses. Implementation of both projects will have significant near-term as well as long-term positive impact upon Back Bay water quality, wetlands conservation and recreational safety and appeal. In collaboration with the Harrison County Utility Authority and the Mississippi Department of Environmental Quality, the City of Biloxi will design the discharge collection and treatment project to address projected levels of increased discharge from anticipated seafood industry expansion. Best management practices will be used throughout project implementation and operation.	Harrison	Yes	Yes	100000	Yes	Yes	Yes	Yes	Yes	Yes			\$ 25,000,000.00	\$ -	
	Eco Restoration	5509	9/8/2016	Sanitary Sewer System Rehabilitation Project	Need for Project: Significantly reduce I/I; consolidate facilities, reduce operating costs, reduce sanitary sewer overflows. Scope of Work: Installation of 40,000 LF of new 12" and smaller SDR 26 PVC gravity sewer system and abandonment of 40,000 LF of existing 50+ yr old clay pipe sewer system; installation of 25,000 LF of CIPP lining in 12" and smaller 50+ yr old clay and concrete pipe sewer system; 40,000 LF of 4" sanitary sewer service lines to replace existing 50+ yr old bituminous wood fibre pipes and clay pipes; 4000 LF of new 12" force main pipe to replace 50+ yr old pipe; 150 new gravity sewer manholes; interior lining of 100 existing gravity sewer manholes; 200-point repairs of existing gravity sewer system; consolidation of pump facilities with construction of a single new sewer lift station to allow abandonment of six existing small sewer lift stations. Project Benefits: Significantly reducing I/I Reduce operating cost by reducing electrical costs associated with pumping, reducing wastewater treatment costs, reducing spot repair costs, reducing repairs associated with root intrusion, reduce root intrusion chemical costs; reduce maintenance cost by reducing # of pump station overflows; reduce sanitary sewer overflows that harm the sensitive coastal environment and damage the ecosystem, reduce raw sewage dumps to drainageways that discharge to coastal beach areas and cause health hazards for residents and vacationers enjoying recreational activities along the coast line, reduce raw sewage dumps to the streams and discharge to Gulf waters damaging fishing and shellfish industry.	Jackson County	Yes	Yes	100000	Yes	No	Yes	No	Yes	No			\$ 15,745,027.00	\$ 1,574,502.70	
	Eco Restoration	5510	9/22/2016	City of Ocean Springs Sewer Improvements Project	The City of Ocean Springs proposes to complete a major citywide sewer rehabilitation project. The existing system was constructed in the 1950's and 1960's utilizing clay pipe. The system has experienced multiple failures which leads to malfunctions and reduced capacity. Sewer pipe has collapsed a several locations within the last year and the city has conducted local repairs as needed which depletes the city's limited public works budget. Buried heavy rain sewers the existing system overflows at several locations around the city resulting in discharges of sewage to surface ditches and drainage ways that ultimately discharge to the Back Bay of Biloxi, Fort Bayou and the Mississippi Sound along Front and East Beach. A total of 35 major pump stations and 14 minor pump stations will be upgraded. Approximately 60,000 linear feet of 8" pipe, and 20,000 linear feet of 12" pipe will be replaced. The City plans to rehabilitate approximately 30,000 linear feet of 8" pipe and 15,000 linear feet of 12" pipe with a cured in place pipe lining (CIPP). Cured in place pipe is a trenchless (no-dig) pipeline rehabilitation process involving a flexible liner tube and liquid resin combination. The City plans to replace 417 manholes. Several pump station control panels will be replaced and numerous meter upgrades will be completed. There will be professional inspections and tests conducted to insure quality and construction according to the City of Ocean Springs standards. The improvements to the sewer system will reduce potential damage to the natural environment including nearby drainage ways and wetlands, reduce hazards to human health and safety due to sewer overflows, sewer spills and provide improved security of the facilities. This would help to improve water quality on the Gulf Coast for recreation with reduced beach advisories, improve water quality for sea life in the bays and estuaries of the Mississippi Sound, improve habitat for species that inhabit the wetlands along the coast and improve water quality for the fish nurseries and oyster reefs. A healthy environment is also beneficial to the fishing and oyster industries preserving or creating jobs in those industries.	Jackson County	Yes	Yes		No	No	No	No	No	No			\$ 30,000,000.00	\$ -	

Eco Restoration	5514	9/28/2016	Poplarville Inactive Lagoon Closure	The lagoon was de-activated a few years ago but has not been properly closed. The lagoon is near an active stream that is a tributary to the Pearl River and to the gulf. Proper closure of the lagoon would eliminate the chance of leakage into the nearby stream. We estimate the cost of closure to be approximately \$600,000. We would be willing to share in the cost of the closure. We could contribute 10% to the closure.		Yes	No		No	No	No	No	No	No	No	No	No	\$	600,000.00	\$	60,000.00		
Eco Restoration	5515	10/5/2016	SP-12: Modifications to Munge Avenue & Red Creek Pump Stations and Connection of Long Beach Industrial Park	The Johnson Road pump station conveys all waste water from the City of Long Beach through 23,200 feet of 24-inch concrete-lined force main to the Long Beach/Pass Christian Wastewater Treatment Facility (LBPC WWTF) located in Pass Christian. This force main was installed in the 1990s from key pump stations within Long Beach to the Johnson Road pump station and on to the LBPC WWTF. Since May 2014, there have been ten (10) bypasses at this pump station releasing an estimated 500,000 gallons of sewage/rainwater due to system limitations and excessive flows. An additional bypass occurred on the force main along Munge Avenue in August of 2015 releasing an estimated 800 gallons of raw sewage from an air release valve. These bypasses ultimately drain into waters leading to Bay St. Louis. The force main associated with this system has been repaired on numerous occasions and has experienced failures that have resulted in spills of untreated wastewater until emergency repairs corrected the failure. Investigation of these failures have shown severe deterioration of the concrete liner raising legitimate concerns about the integrity of the pipe. This project would abandon the existing 24-inch force main from Johnson Road to the LBPC WWTF by re-routing flow to HCUA's newly constructed S12 system located along Munge Avenue. Furthermore, the proposed project would eliminate the existing Long Beach Industrial Park Wastewater Treatment Facility (currently permitted to discharge 600,000 gallons/day into a tributary of Johnson Bayou) by redirecting flows in the industrial park into the system to be constructed from the Johnson Road pump station. The project is proposed to be constructed in two phases: Phase 1 would reduce the flows to the Johnson Road pump station by redirecting flows from the Alverado and Wisteria pump stations to the HCUA's Red Creek pump station and redirecting the remaining flows from the Johnson Road pump station to the HCUA's Munge Avenue pump station. This project will include modifications to the pumps at the Alverado and Wisteria pump stations and installation of approximately 12,850 linear feet of 12-inch force main from the Alverado pump station and approximately 285 linear feet of 6-inch force main from the Wisteria pump station to connect into the Red Creek pump station. Rerouting remaining flows from the Johnson Road pump station to the Munge Avenue pump station will include rehab/modification of the Johnson Road pump station, rehab/modification to the Munge Avenue station to adjust for increased flows, and installation of approximately 9,000 linear feet of 18-inch force main. The existing force main to be taken out of service will be disconnected and abandoned in place. Phase 2 will reroute flows from the existing Long Beach Industrial Park treatment facility to the Munge Avenue pump station. A 450 GPM pump station will be constructed near the existing treatment facility and approximately 2,400 linear feet of 8-inch force main will be installed from the new pump station to connect to the 18-inch force main installed in Phase 1. Phase 2 would include the decommissioning of the existing treatment facility. If necessary, HCUA is prepared to assist in this project through contribution of funds (either other grants funds or HCUA funds) and in-house contributions.		Yes	Yes	10000%	No	No	No	No	No	No	No	No	No	No	\$	3,149,459.00	\$	-	
Eco Restoration	5516	10/5/2016	SP-13: Repair/Replace Price Bros. Pipe & Nicholson Pump Station Rehabilitation	Flows from the City of Long Beach are delivered to Harrison County Utility Authority (HCUA) pump stations and transported through concrete-lined force mains to an HCUA pump station on Johnson Road for conveyance to the Long Beach/Pass Christian Wastewater Treatment Facility in Pass Christian. These force mains were installed in the 1990s and have been repaired on numerous occasions and have experienced failures that have resulted in spills of untreated wastewater until emergency repairs corrected the failure. Investigation of these failures have shown severe deterioration of the concrete liner raising legitimate concerns about the integrity of the pipe. The primary HCUA pump station upstream of Johnson Road pump station is located on Nicholson Avenue. Since March 2014, there have been three (3) bypasses at this pump station causing overflows of sewage/rainwater to the adjacent drainage ditch due to system limitations and excessive flows. An additional release of sewage occurred on the force main along Pineville Road, apparently a result of pipe failure. These bypasses ultimately drain into waters leading directly to the beach along U.S. Highway 90. The proposed project includes the replacement of two segments of the existing force main that generally convey sewage from the Nicholson Avenue pump station (serving the City of Long Beach) to the Long Beach/Pass Christian WWTF. Approximately 10,700 linear feet of 18-inch force main will be replaced along Nicholson Avenue, Allen Road and Pineville Road. Approximately 4,500 linear feet of 24-inch force main will be replaced along Beeline Road and Johnson Road. The project also includes the rehabilitation of the Nicholson Avenue pump station. The corrosion and cracking in the concrete structure of the wet well will be repaired and then lining will be installed. The existing piping from the pump connection through the valve box to the force main leaving the pump station site will also be replaced. Implementation of this project should improve water quality through the elimination of bypasses/overflows through the repair, replacement and upgrade of the existing facilities. If necessary, HCUA is prepared to assist in this project through contribution of funds (either other grant funds or HCUA funds) and in-house contributions.		Yes	Yes	10000%	No	No	No	No	No	No	No	No	No	\$	2,392,350.00	\$	-		
Eco Restoration	5517	10/15/2016	Purchase property or conservation easement on 3 parcels west of Lake Mars pier in Jackson County to protect bird and turtle habitat	We do an Audubon Coastal Bird Survey at Lake Mars pier. The property west of the pier is vandalized by trucks and trailers. Last weekend there was a small truck 1/3 submerged in mud and another large truck trying to get it out. They said they had been there 3 days. These parcels are all owned by the same person. You can see them on this map: http://www.co.jackson.ms.us/services/webmapping.php Click on "Jackson County web mapping beta" Use the "s" symbol. Click into "Fontainebleau" and keep clicking until you are on Beachview/Lake Mars Road. Only the parcel directly around the pier is owned by Jackson County. The other three, to the west, are the ones that need protection. Audubon Coastal Bird Survey also has a Graveline site. There, vandals started a fire and burned the marsh. So someone convinced some entity to build a concrete wall. It keeps the trucks out, and now there are turtles nesting. PLEASE USE THE URL ABOVE to find these parcels. I have been thrown out of the mapping tool on the next page and don't want to risk losing what I have written again.	Jackson	Yes	No		No	No	No	No	No	No	No	No	No	\$	-	\$	-		
Eco Restoration	5518	12/9/2016	Provide Daily Ocean-Weather reports to local news channel and Harbor Masters along the Mississippi coast.	a)The project will provide daily graphic display of Ocean and atmospheric conditions in the Mississippi sound and shelf to the local harbor masters and coastal managers and the public. Ocean-weather includes winds, ocean currents, water quality and clarity (diver's visibility), ocean temperature, water turbidity, and additional ocean conditions at a spatial and temporal resolution not presently available on a daily time schedule. Visual products from these data would be provided from now-cast oceanographic models and satellite imagery on daily bases that can be made public through the University of Southern Mississippi (USM) Ocean Weather Laboratory. Harbor Masters require daily updates to the local ocean conditions so that ships operations can be performed accurately and safely. This capability will enhance the coastal operations for safety and commercial applications and support the growth of port activity along the coast. b)Local coastal community will be provided with local ocean-weather conditions for the Mississippi coastal waters to support commercial utilities such as fisheries, recreational boating, beach conditions, water clarity and turbidity plumes swimming and diving purposes. Ocean-weather products will be a major extension of the local weather conditions reported on the television news. Conditions will be reported daily on websites and sent to daily television news. The public will be informed of local ocean conditions, so they can take advantage of present research capability at USM. Public awareness of ocean conditions will increase ocean activities along the Mississippi coastal waters. This capability will provide both improved safety on ocean conditions and improve occupation and activities on our coastlines. Areas for recreation fishing, boating, diving etc, will be improved. Local water quality will be reported to the Mississippi Department of Environmental Quality and Department of Marine Resources, so they can inform the news and public about water safety conditions along the coast. Unsafe conditions could be related to public safety for beach users and fisherman include harmful algal blooms or contaminated waters. The Ocean Weather Laboratory at the USM will assemble satellite products and model products to provide a unique capability for visualization of ocean activity in the Mississippi Sound, Shelf and offshore waters. These ocean-weather conditions will provide the public a new capability for monitoring and overseeing our coast and provide improved safety and public health response and management operations. These ocean weather data can be used to support the coast guard for tracking movement of debris and support search and rescue in the Miss sound and shelf.	Hancock,It Tammany,Mobile Jackson,Pearl River,Harrison	Yes	Yes	1000%	No	Yes	No	Yes	Yes	No				\$	200,000.00	\$	-		
Eco Restoration	5525	1/1/2018	Nature Tourism Proposal for the Mississippi Gulf Coast Region: A project and budget plan based on the 2016 process and strategy document.	Tourism and business leaders have realized the necessity of creating an environment of conservation and protection of Mississippi's coastal resources in the wake of the Deepwater Horizon Oil Spill in the Gulf of Mexico. A great deal of planning has taken place since 2010 to celebrate the natural beauty and wonder of the Mississippi Gulf Coast. There is an area of opportunity in this region that is a most promising method to protect natural resources and promote environmental stewardship while stimulating new economic development. Across the world, nature tourism is recognized as a significant effort to provide responsible travel to natural areas and promote conservation. Nature tourists are looking for original and authentic experiences to high-quality environments with historical and cultural significance. These travelers are more likely to be well educated and travel often in multi-generational groups with extended families. They are seeking safe, well-connected communities that place emphasis on environmental and culturally responsible travel with low visitor impact to natural areas. The Final GoCoast 2020 Report, commissioned by the Executive Order of Governor Phil Bryant, included focus of 46Coast TourismItto be a substantial initiative for recovery, restoration, tourism, and economic development. In response to the worthwhile efforts of the GoCoast 2020 Final Report, a Nature Tourism Task Force was created and adopted the 46Coast TourismItto be a substantial initiative for recovery, restoration, tourism, and economic development. In 2015, with funding from the National Parks Service, the MGCNHA reinvigorated the Nature-based Tourism Task Force of nineteen (15) Gulf Coast leaders, with assistance from the contracted team of Allen Engineering and Science, Gulf Regional Planning Commission, and the Heritage Trails Partnerships. This year-long consultation culminated in the recommendations depicted in the 2016 NBT Plan for Coastal Mississippi (NBT Plan). Accepting the charge to implement a nature-based tourism plan, this Mississippi Gulf Coast National Heritage Area - Nature Tourism Proposal for the Mississippi Gulf Coast Region outlines the framework to manage, operate, plan, market, and implement the recommendations with a budget of \$10 million over the next five years. This proposal outlines management and administration, operations, planning, marketing, and implementation. Management and Administration: The MGCNHA will provide general management, oversight, and coordination of day to day operations for the nature-based tourism program. It will provide leadership to local officials and partners to implement the NBT Plan. Six (6) Area Managers will be chosen by each of the six coast counties to serve as liaisons to ensure that initiatives and priorities for each of the counties are being carried out with consistency, and that established goals are being met. Operations: The MGCNHA will implement the recommendations outlined in the NBT Plan, as they are aligned with the mission of the MGCNHA to conserve, enhance, and promote understanding of the heritage resources in the six counties of the MS Gulf Coast. Office and travel related expenses are included in the proposal. Planning: Years of collaboration between a diverse group of stakeholders, including tourism professionals, small business owners, natural resource experts, Chambers of Commerce, and NGOs in Mississippi culminated in the 2016 Nature-Based Tourism Plan for Coastal Mississippi developed for the six coastal counties. A successful program will benefit the ecological and economic health of South Mississippi, as well as provide a framework for development in the Mississippi Hills and Mississippi Delta National Heritage Areas.	George,Harrison, Pearl River,Jackson,It to Hancock	Yes	Yes	1000%	Yes	Yes	No	Yes	Yes	Yes				\$	10,000,000.00	\$	-		
Eco Restoration	5526	12/10/2016	Magnolia Bayou Acquisition and preservation/research center	Magnolia bayou is an approximately 87 acre bayou and stream that feeds into the Bay Saint Louis Bay. It sits just behind the Froggels and to the east of Dumbur street off of Highway 90. It is relatively undisturbed with homes surrounding the bayou. Hancock County does not have much in the way of environmental education centers, and this site can be the perfect location for it. There is a cleared tract of land that sits just off the service road that could serve as the parking lot and educational building location. The educational center will offer classes on the natural environment in Hancock county, tours of the bayou, educational outreach to local schools and groups, etc. This will help bring eco-tourism to Hancock County, start a grassroots educational program with the local youth to teach them how to be environmentally conscious from a young age, and to preserve a very important piece of Hancock County for years to come. This project is flexible, but the important part is protecting this land from any future developments and to utilize it to educate our youth. If there are any questions about this proposal please don't hesitate to contact me! Thank you so much for including me in this proposal.	Hancock	Yes	Yes		Yes	Yes	No	Yes	Yes					\$	-	\$	-	Land Acquisition	

Eco Restoration	5528	1/20/2017	BAYOU CASOTTE INDUSTRIAL PARK REDUCTION OF ENVIRONMENTAL IMPACTS THROUGH NATURAL BARRIERS	<p>This project proposes the restoration of the wetlands near the Bayou Casotte Industrial Parkway using plants that also act as natural noise abatement structures. By restoring the ecosystem, the community issues of dust, noise, and odor can be greatly reduced. Some of the value and benefits of wetlands include: flood control, storm buffer, and wind buffer. This project proposes increasing the value/benefit of the wetlands by carefully selecting vegetation that also serves as natural noise abatement structures.</p> <p>The Port of Pascagoula has two harbors: the Bayou Casotte Harbor and the Pascagoula River Harbor. The Port is zoned for industrial and special uses. The Port of Pascagoula, Bayou Casotte Harbor (Industrial Park), is located in Jackson County, Mississippi, in the southeastern-most portion of the state in the Gulf of Mexico. It is positioned south of the juncture of Interstate 10 and Mississippi Highway 63. The community east of Bayou Casotte is surrounded by industrial activities nearshore and open water offshore. This community was one of the many communities on the Gulf Coast flooded by Hurricane Katrina. Current sources of pollution include existing industrial and shipping activities that are active year-round. In the Pascagoula Harbor, sources of those activities include the Port of Pascagoula, Signal International, Chevron, Mississippi Phosphates Corporation, Vt Halter Marine, NOAA, Gulf LNG Energy, and the USCG.</p> <p>In January 2014, a meeting was held to begin the process of collaboration among MDEQ, local government, and local industries to resolve issues raised on numerous occasions by residents living in the Metochesville Community. The issues are: 1) dust (particulate matter); 2) noise; and 3) odor. The community also raised concerns/complaints about the removal of wetlands between the community and the nearest industry that prevented a percentage of the dust from reaching the community.</p> <p>Since 2014, MDEQ has responded to numerous complaints from the Bayou Casotte community. In the Fall of 2014, local industry from Bayou Casotte Industrial Park installed community air monitors to evaluate the community concerns about Sulfur Dioxide odors. In late 2016, the Mississippi Department of Environmental Quality (MDEQ) collected three ambient air samples in the Cherokee neighborhood located in Pascagoula, MS in response to concerns as expressed by some members of the neighborhood about possible exposure to pollutants being emitted from the neighboring industrial complex. The increased number of complaints and concerns about air pollution are in part due to the loss of the wetlands that served as a buffer between the community and the industrial park.</p>	Jackson	Yes	Yes		No	No	No	No	No	No	No	No	No	\$	-	\$	-	
Eco Restoration	5530	1/9/2017	Removal of Derelict Boat Houses and Piers	<p>BSI proposes to remove the numerous derelict boat houses and damaged piers/pilings from along the water front on Beach Blvd. These structures pose a navigational danger to boaters, fisherman and recreationalists which frequent the water front.</p>	Hancock	Yes	Yes		Yes	No	No	No	Yes	No			\$	1,000,000.00	\$	-		
Eco Restoration	5535	1/2/2017	Land Between the Creeks - land acquisition	<p>The Land Between the Creeks (LBTC) is a multi-property land acquisition opportunity in partnership with The Trust for Public Lands to permanently protect a critically important 2,320-acre site along the Pascagoula River corridor near the confluence of Red Creek and Black Creek in Jackson County, Mississippi. The Pascagoula is the largest unmodified river in the lower 48 states and is a state-designated Scenic Stewardship Stream and designated national blueway. Since 1974, government, landowners and NGO partners have collaborated to protect an 85-mile forested corridor of 72,000 acres of conservation lands along the river. If funded, this project will add 2,320 acres of well-managed working forests bordering state-designated Scenic Stewardship Streams Red and Black Creeks (major tributaries of the Pascagoula).</p> <p>The LBTC properties feature gently sloping, fire-managed pine uplands (including longleaf), pitcher plant flats, a 135 acre perennially flooded Cypress/Tupelo lake which boasts a multi-species rookery, and extensive bottomland hardwoods along Red and Black Creeks. The LBTC properties are one of the largest blocks of fire-maintained uplands along the protected Pascagoula River corridor. These diverse habitats benefit a number of important game and non-game species of concern.</p> <p>Once acquired, the LBTC properties would be owned by the State of Mississippi and managed as part of the Pascagoula River Wildlife Management Area. LBTC properties share approximately 7 miles of boundary on two sides with the Pascagoula River WMA. Acquisition of LBTC properties will provide needed recreational access to difficult to access segments of Red Creek and Black Creek as well as the state Pascagoula Wildlife Management Area's Big Swamp area.</p>	Jackson	Yes	No		No	Yes	No	No	Yes	No			\$	-	\$	-		Land Acquisition
Eco Restoration	5536	3/6/2017	Gulf of Mexico Citizen Scientist Initiative: Development of a Mobile App for Marine Assessment (MAMA)	<p>Introduction</p> <p>Advances in mobile phone technology have made it possible for citizens to contribute valuable data for ecological monitoring and scientific investigation. Citizen Scientist initiatives harness the massive numbers of people who are sportsmen and women, amateur naturalists and even the casual observer of nature, to submit observations and data that accumulate in a parallel database. These initiatives have broadened opportunities for public participation in science and have served to democratize scientific progress for the average citizen. Thanks to the internet and smart phones, data can be acquired, uploaded, evaluated, and accessed with amazing rapidity. Worldwide access to these data has served to encourage public participation in biological monitoring and has provided unprecedented opportunities for collaboration among scientists.</p> <p>There is a long history of citizen scientist involvement in biological research. Arguably, the earliest example of this involvement is the Audubon Society Christmas Bird Count that provided information to establish bird migratory patterns in the U.S. Other more recent citizen scientist initiatives include the Great Backyard Bird Count, NestWatch, the Zomba Project, Wildlife Health Event Reporter and MERCCURI (a bacterial diversity project). Citizen scientist volunteers are being successfully employed around the world to generate databases that would be logistically impossible and prohibitively expensive for most research project budgets.</p> <p>In the Gulf of Mexico Citizen Scientist Initiative (GMCSCI) proposal we will recruit and train citizen scientists in the use of a mobile phone app for marine assessment (MAMA) that will be developed. MAMA will allow Gulf Coast citizens and visitors to 1) upload photos, measurements, GPS location and other data regarding specimens they have captured, observed, and identified; 2) submit photos of endangered/unusual specimens of fish and other marine creatures for identification; 3) track the abundance and health of fish species of interest seasonally and regionally; 4) document invasive species in Gulf waters, and 5) monitor changes in the health of coastal ecosystems and shoreline erosional changes. The curated long-term data set would be available to researchers and resource managers for scientific management. A database of this type can be an invaluable resource for assessing changes in the health of Gulf of Mexico ecosystems.</p> <p>Benefits of the Gulf of Mexico Citizen Scientist Initiative</p> <p>1) Long-term data acquisition: A particularly valuable aspect of citizen scientist initiatives is the potential for long-term data acquisition. Data sets longer than a few years are rare in ecology and are sorely needed, particularly in marine systems. Once the mobile phone app is developed and distributed, we envision an <i>infinite</i> citizen scientists collecting data for multiple years.</p> <p>2) Coastal resident (and beyond) involvement: The GMCSCI will recruit coastal residents as well as any other interested parties, that may act as <i>sentinels</i> to document and monitor changes in coastal populations of marine organisms. We firmly believe there is an untapped wealth of volunteers in Mississippi that would be glad to assist in this regard and, in particular, many individuals retired from academia and professional careers that would love to be involved. However, all interested parties, young and old alike, would be encouraged to participate.</p>	Hancock/Pearl River	Yes	Yes		Yes	Yes	Yes	No	Yes	No			\$	1,711,190.00	\$	-		Monitoring
Eco Restoration	5540	6/1/2017	Tourism Marketing Strategies	<p>This project's scope would be to develop a tourism marketing strategy that would include the creation of an interactive website and attractive brochure/other marketing materials for placement at key locations to highlight the City's unique tourist attractions, lodging opportunities, retail areas, restaurants and other amenities. This informational packet would include a map showing directions to each location. It is anticipated that kiosks could be strategically placed that would aid tourists in finding their desired destinations and to inform of other points of interest. The City does not have a chamber of commerce to help with such items.</p>	Jackson	Yes	Yes	25000	Yes	Yes	No	Yes	Yes	Yes			\$	100,000.00	\$	-		
Eco Restoration	5541	6/1/2017	Shepard State Park Recreational and Ecological Enhancement	<p>The City of Gautier has assumed the daily operations and management of this 395-acre park, which is located south of U.S. 90 along Graveline Road. Currently, the park consists of eight miles of trails, with a mix of developed and primitive camp sites throughout. In addition, the park has disc golf and a premier outdoor archery range with 28 lanes. The City has increased the utilization of the park by the addition of these amenities and has hosted national archery tournaments, bringing tourists from all over the United States to participate, as well as state high school archery teams and Senior Olympics tournaments. SEC college archery has also expressed interest in using the facility for its conference championship. The facility is one of few within the state of Mississippi and is unique to the state due to its surroundings. The City is already home to the Mississippi Sandhill Crane National Wildlife Refuge and offers birding and wildlife eco-tours of its swamps and bayous, resulting in eco-tourism visitors from all 50 states and numerous other countries each year. The City seeks to add amenities and upgrades as set forth below to Shepard State Park to further enhance, capitalize on and increase the number of tourists for its eco-tourism attractions.</p> <p>The City plans to expand the recreational opportunities available at Shepard State Park to assist in developing this pristine park into one of the south's premier nature destinations. Expansion of the existing nature trails will be implemented to reach additional areas of the park. Shepard State Park is home to a variety of wildlife native to the coastal area, such as great white egret, pelicans, eagles and osprey. Additionally, other woodland creatures reside in the area, including deer, wild rabbits, opossums, foxes, raccoons and more. In the surrounding bayous, visitors can see turtles, alligators, wild geese, and a wide variety of fish. Strategically placed resting areas and observation decks will be constructed for creating an environment for optimal opportunities to monitor the wildlife and bird watch, as the park is listed on the Mississippi Coastal Birding Trail.</p> <p>The existing road network throughout the park is in need of repairs. The City is proposing to complete such repairs, clear underbrush and remove invasive species of vegetation. Furthermore, new water and sewer lines will be placed to upgrade and expand sites within the park with such amenities to support additional restrooms, pavilions and playground areas. Power lines and park friendly lighting will be installed to delineate the appropriate pathways for visitors throughout.</p> <p>Due to the age of the park, many upgrades are needed, and this project would include walking trail upgrades, including new foot bridges in low-lying areas prone to flooding, trail clearing, a rehabilitated small boat launch and fishing pier, updated and repaired grills, fire pits and picnic tables at RV sites, an amenities building with laundry facilities and recreational game tables, educational plaques for the trails, fire pits, an outdoor classroom, a natural playground, traditional playground equipment, kayak launches, a lodge to accommodate guests and overnight studies in conjunction with the outdoor classroom, a new bathroom and bathroom renovations. The City envisions that the lodge will be utilized by educational institutions, including the Mississippi Gulf Coast Community College's Jackson County campus located within the City, and other educational institutions utilizing the premier archery range as part of their sports curriculum. Mississippi Wildlife Rescue has also expressed interest in utilizing Shepard State Park as a research and rehabilitation site. Additionally, the City has recently acquired a historic two-story log cabin, The Wilson House, and is relocating the house to the entrance of Shepard State Park to serve as a welcome center, visitor's center and general store for park visitors/campers. That project is currently underway. The park also has another large home on adjacent land that is in need of repair. The City has plans to upgrade this house for community meetings and small events. The City plans to leverage TideLines, Recreational Trail Program and Land Trust for the Mississippi Coastal Plains funds and other available funding opportunities to complete some of the amenities in its long-term plan stated above. This project would promote long-term economic growth and increase economic development through eco-tourism and recreational opportunities that are unique to the coastal area. The City already has an established eco-tourism base, and these additions would encourage these tourists from all over the United States and other countries to stay and play in the Coastal region of our state, particularly in Gautier, Mississippi. Gautier is unique to have an almost 400-acre park within its City limits.</p>	Jackson	Yes	Yes	50000	Yes	Yes	Yes	Yes	Yes	Yes			\$	9,000,000.00	\$	-		

Eco Restoration	5542	6/1/2017	Gautier Town Center (The Commons Park)	<p>The City of Gautier's Town Center is located in the Central Business district, and plans are currently being developed for revitalizing the property of the old Siding River Mall into a major retail development for the City, Jackson County and the outlying areas. The proposed development being considered would include an open air mall, box stores and national tenants to attract interstate commerce. Jackson County does not contain a mall; however, there was one within the City of Gautier prior to the IP oil spill. It has since been torn down and suffered greatly as a result of the oil spill.</p> <p>The Gautier Town Center Project is located in Gautier's central business district. The Town Center is anchored by municipal buildings, commercial strip centers, MGCCC, and the mall project. Due to Gautier being situated along Highway 90 and being a key young city, it has no downtown area. Furthermore, Gautier is home to a Waste Pro home office, and a transfer station is proposed along Beasley Road, which is a dead end road that currently provides the only ingress/egress for a landfill. Waste Pro, municipal buildings, residential neighborhoods and heavy commercial uses. Therefore, the Town Center Project includes a network of roadways to facilitate the new town center commercial development and provide a connector from Gautier-Venice Road to Beasley Road. The Gautier Town Center Project incorporates 0.5 miles of roadway and 1 mile of multi-use pathway to link together retail, residential and recreational areas. It will also provide the transportation infrastructure necessary to accommodate the industrial type development nearby.</p> <p>The City has approximately 33 acres of property immediately north of the Town Center. The City has leveraged funds from both Tidelands and the Coastal Impact Assistance Program to acquire the property necessary for the Commons Park and to provide initial transportation infrastructure, lighting, sidewalks and streetscape improvements for the planned project. The City is proposing to develop a large recreational area and public park in conjunction with the Commons development. A great portion of the property consists of wetlands. Throughout these areas, nature trails will be constructed to permit public access throughout this pristine ecological area. Small pavilions and tree houses will be placed along these trails to provide resting areas and opportunities to view the wildlife. Educational plaques depicting the wildlife and various species of plant life will be strategically placed throughout the nature trails explaining the wildlife habitat and ecological area.</p> <p>The center portion of the park will consist of a Great Lawn and festival grounds that will be a focal point for large crowd gatherings. The City of Gautier has an annual Mullet and Music Festival, which is held in conjunction with Cruisíná the Coast. The City of Gautier anticipates becoming an official stop for Cruisíná the Coast in the near future and is already an event destination. The Mullet and Music Festival and Cruisíná the Coast brings thousands of people from throughout the country to the coastal area, resulting in substantial revenue for the coast region and the state as a whole. These annual events are unique to the Mississippi Gulf Coast and Gautier. To the west end of the lawn, there will be a large open pavilion that will be designated for special events such as festivals, family reunions, and so on. An amphitheater is proposed for the east end of the lawn and would be utilized as an outdoor entertainment venue. Positioned along the south edge of the lawn, there will be a multiuse football/soccer field, restrooms, pickleball courts, and a musical playground area. The multiuse football/soccer field would also be utilized as a vendor's site and festival grounds to support special events. In addition, the property currently has a small lake, which will be expanded and enhanced. The Great Lawn and a portion of roadway and trails are strategically positioned as such to provide immediate access to the small lake. Enhancements for the lake would include adding benches and a musical water feature to create a serene recreational area for visitors.</p>	Jackson	Yes	Yes	8000%	Yes	Yes	No	Yes	Yes	Yes	\$ 15,000,000.00	\$ -
Eco Restoration	5543	6/1/2017	Graveline Bayou Inlet Restoration	<p>Graveline Bayou is a relatively an undisturbed estuary in South Mississippi that supports salt and brackish marsh areas, along with several oyster beds throughout this estuarine bay and bayou. Furthermore, it supports an abundance of wildlife that makes this area an excellent location for fishing and birdwatching.</p> <p>As development materialized further inland, erosion has attributed to much loss of wetlands, other native vegetation along the shoreline and muddy/hand beach areas at the inlet. This narrowed inlet aided in a full self-scor of the channel and loss of the near shore area of navigation. With the ongoing erosion of this inlet, water velocities are diminished and it is not able to adequately keep the navigational channel cleared of sediment, thus resulting a change of course, degrading coastal habitat and the need for more maintenance dredging to support marine use of waterway.</p> <p>The scope of this project would be to restore the inlet to a prior year boundary that would be conducive to achieving similar ecological benefits once met prior to the inlet eroding. It would be the intent to establish a protective jetty around the designed boundary of both sides of the inlet to re-establish the original width. The jetty, which would be comprised of local material dredged from the near shore or inland areas of this Bayou. The jetty would incorporate native vegetation and, if necessary, a portion would be hardened to ensure stability of structure to withstand the regular impact from tidal flows and storm surge.</p> <p>Once the jetty was constructed and fortified, the interior area of the re-established boundary would be utilized as a Beneficial Use Disposal Site for placement of suitable dredge spoils for the purpose of replacing this eroded shoreline. Ideally, as continued maintenance dredge materializes within the area, said dredge spoils if deemed suitable could be placed within this Beneficial Use Site. Such action would yield lower dredge costs due to proximity of dredge disposal site and would permit government agencies more opportunities to dredge needed bayous for the purpose of flood minimization and enhanced recreational access.</p> <p>Upon completion of the proposed Beneficial Use Site, native vegetation would be planted to establish the ecological environment which once existed for expanding the native wildlife's habitat. The project benefit would be to restore this pristine estuary and bay back into a sound ecological state, re-establish the lost habitat area and to minimize the required maintenance dredging in the near shore waters which is vital to support the discharge of this watershed and navigable access.</p>	Jackson	Yes	Yes		Yes	No	Yes	No	Yes	No	\$ 6,000,000.00	\$ -
Eco Restoration	5544	3/10/2017	Bayou Cassotte Barrier	<p>Project would add natural vegetation along two roadway areas along the east side of Pascagoula to form a natural vegetative barrier to minimize impacts from noise, odors, and other elements common to more heavily industrialized areas. Numerous industrial sites are located east of Bayou Cassotte Parkway, and residential lots are immediately located west. Plants would improve the quality of life of the residents while not reducing the positive economic impact to the workforce of Mississippi found in the businesses to the east. Maps showing five segments of the proposed project are attached.</p>	Jackson	Yes	No		No	No	No	No	No	\$ 1,179,475.00	\$ -	
Eco Restoration	5546	3/10/2017	Waveland downtown elevated Boardwalk/Marina/Boatwharf	<p>Coleman Ave in Waveland is the historic downtown area of Waveland and is where City Hall was located prior to Hurricane Katrina and has been rebuilt at the very same location. Since adopting the FEMA Digital Flood Rate Maps in Oct 2009, the flood elevations has drastically changed with the new elevations requiring businesses to elevate businesses up to 21 feet above ground. These requirements have caused businesses not to rebuild and development is at a standstill and has been since 2009. The concept of a boardwalk would alleviate the elevation issues by elevating the businesses on the boardwalk with a walkable space and seating as well as taking care of the ADA issues at same time and creating a destination spot in Waveland.</p>	hancock	Yes	Yes	500%	Yes	No	No	Yes	Yes	No	\$ 10,000,000.00	\$ -
Eco Restoration	5549	5/1/2017	Old St Martin Wastewater System Rehabilitation and Replacement Project	<p>Construct a new 70,000 LF gravity sewer collection and 60,000 LF of forced in place gravity sewer system to replace old dilapidated sewer system of clay sewer pipe, brick manholes and unreliable pressurized residential grinder system (800 units). New collection system will be highly reliable system of modern materials of construction with fail-safe systems to prevent sanitary sewer overflows at old collection manholes and at unviable residential grinder stations subjected to clogging and failure of numerous electrical components. Sanitary sewer overflows in the Old St Martin area can inject harmful bacteria and viruses that damage the coastal environment including oyster bed reefs, fish and other marine life. These bacteria and viruses can also find their way back into humans by ingestion. Fears of virus mutation in marine life and potential for transmission back to humans.</p>	Jackson	Yes	Yes	10000%	Yes	No	Yes	Yes	No	\$ 10,000,000.00	\$ 1,000,000.00	
Eco Restoration	5550	5/1/2017	Cherokee Urban Forestry Project Proposal	<p>"Cherokee Estates is a neighborhood in Pascagoula, MS located immediately next to Bayou Cassotte and a lot of heavy industry. This includes a Chevron Refinery, First Chemical, MS Phosphates, Halter Marine, etc. This creates a lot of air pollution and dust. The residents of Cherokee have complained to industry, EPA, MDEQ and the City of Pascagoula. One partial solution would be replanting a line of trees that were removed to widen a road. These trees were tall and dense enough to catch some of the noise, air pollution, and dust. The State of Mississippi, EPA, MDEQ, Jackson County and the City of Pascagoula would all like to see some improvement". Howard page, Steps Organization</p> <p>Need: Trees provide buffers from sound, air pollution, soil pollution, storm water run-off and trees have a large capacity to enhance property values and create quality places to live. This area is in dire need of a living buffer that offers eco-system services.</p> <p>This project will plant a tree buffer and be used as an educational tool to demonstrate how to use trees for the maximum benefits. This is an excellent location to demonstrate upland land management and how it can benefit downstream for healthier gulf habitats. This area is receiving a lot of public attention and provides an opportunity to demonstrate tree benefits and using trees to address upland watershed issues and how trees directly impact gulf health. We will combine planting trees with providing education in the community about the connections. This project will focus on how land owners, home and business owners can get involved in their community health by planting the right tree in the right place in this area we will inventory plantable spaces and plant the correct tree species for climate, soils and buffer benefits.</p> <p>Project: This project will be a challenge in that the development damage is significant enough to warrant a variety of practices with trees being a most beneficial aspect of redevelopment for this area. We will use aerial maps, GIS for inventory of plantable spaces, develop a best species list for small, median and large trees and provide planting and tree maintenance workshops to residents plus invite the general public to attend the workshops. We will plant to majority of plantable spaces. Once the tree buffer has been established it will provide a model for generations to come and for new development to learn from as well. The tree buffer will consist of any public lands and private lands surrounding the issue. Private landowners will be offered trees for them to plant if adjacent to the project area.</p> <p>Deliverables: Deliverables will include a linear green space of trees serving as a buffer from pollution and storm water run-off. An education brochure will be developed to highlight the species and placement plus the eco services the trees provide. We will use the i-Tree program to calculate a monetary value on these services. We will include outreach with educational documents highlighting plan features, workshops, media outlets, and through the partners in the area, local government, industry and state agencies.</p> <p>Activities: This project qualifies for both education and outreach based because it will demonstrate ways to use trees to mitigate negative impacts of development. In the process of design and planting this site a series of education events will be included.</p> <p>The focus groups will include: Cherokee Citizens Group, industry, contractors, local leadership, other NGO's.</p> <ol style="list-style-type: none"> Develop a local team made up of local government, state and federal agencies, arborist, citizens and others. Inventory plantable spaces (public and private) and develop tree species lists. Conduct educational workshops and planning forums Implement tree planting in stages, implement BMP's and other strategies. 	Jackson	Yes	No		No	Yes	No	No	No	No	\$ 100,000.00	\$ -
Eco Restoration	5551	5/1/2017	Pollinator Health for Food, Wildlife and People- Public and Private Lands Environmental Education	<p>Pollinator Health in Urban and Rural Communities</p> <p>Pollinator health is about our social and economic impacts and how all citizens can play a role in its success. Many times research on environmental projects do not have the opportunity to be applied on the ground in a variety of venues with nontraditional audiences. So, if research does impact citizens of all walks, it can result in a greater success rate for the mission and when data and knowledge is disseminated in a unique way it supports fulfilling its true potential or establish greater spans of those impacted by the benefits. This project puts research, education, BMPs, technology and education in the hands of local citizens and community leaders that can make a difference on their properties, their community public lands and specialty crop farmers. Most local citizens do not have a clue how pollinator health impacts the quality and production of their food. The MUFCC network provides a very hands-on opportunity to determine if citizens in these audiences can gain a better understanding of the role they play as pollinators can implement and why it's so important. MUFCC has many years of using research data and applying it to our cities and towns and the citizens living in and near these communities. The ultimate challenge of any research is applying that research on the ground, providing sound technology transfer, demonstrating best management practices and supporting the mission through creative partnership and collaborations. We will work through our municipal partners to conduct the workshops and implement the pollinator sites. Currently, MUFCC has 37 communities in our Bloom Town Mississippi program with every community on the coast included. All of these are willing to host a pollinator health sites. Other local partners will include local community leaders, civic groups and private producers and land owners to install 12 demonstration sites and provide a series of outreach and education venues. Through this project we will partner with the groups we currently in our network and even new collaborators to include: workshops, hands on implementation of planting, social networking, local press, newsletters, web site, and large data base contacts. Contact data base contacts: industry partners, mayors, city leaders, civic groups, chambers, parks and recreation professional, arborist, forester, landscape architects and citizens. Proposed metrics include multiple sources of information as outline in detail in the pre-proposal. Any data, surveys, charts, photo journal or other information generated as a result of this project will be public information and available for FAR or other research to use as needed.</p>	George/Harrison, Washington, Perry Forrest/Pearl River/Jackson, Mobile, St Tammany, Stone, Hancock	Yes	Yes		Yes	Yes	No	No	Yes	Yes	\$ 110,000.00	\$ 75,000.00

Eco Restoration	5552	5/11/2017	Pascagoula River Conservation Lands Forest Legacy Acquisition, Phase 2 - Griffith Tract	<p>The goal of this project is to protect in perpetuity a 1,127-acre tract from a willing landowner of bottomland hardwoods, riparian forests and adjacent upland forests in the Pascagoula River Basin in Jackson County, Mississippi. This fee acquisition of one of the remaining large forested tracts fronting the Pascagoula River will allow the MS Forestry Commission and its partner, The Nature Conservancy of Mississippi, to leverage Forest Legacy Program funds from the US Forest Service to add this key parcel to the existing protected corridor within the Pascagoula River Wildlife Management Area (WMA). The property will become a new state forest designated for coastal forest conservation and will serve as a demonstration of best practices in forest management for multiple purposes: water quality, conservation, working forestland and habitat management.</p> <p>The Pascagoula River is the largest, by volume, unmodified river in the lower 48 states. The Nature Conservancy, the Mississippi Department of Wildlife, Fisheries and Parks, the Mississippi Forestry Commission and other government and non-profit partners have been working together since 1974 to conserve an 85-mile forested corridor of public and private conservation lands along this scenic river from its headwaters to the Gulf of Mexico. Its habitat quality is directly related to extensive land conservation over decades, including over 71,000 acres along the River and over 550,000 acres of US Forest Service land in the watershed.</p> <p>The watershed harbors over 300 bird species, including neotropical migrants that use the diverse habitats found such as those on the property and surrounding Pascagoula River WMA. The subject property (called the Griffith Tract) has one mile of river frontage containing sandbars, mussel beds and riparian forests and is within U.S. Fish and Wildlife Service's designated critical habitat for the federally listed Gulf Sturgeon and the Yellow-billed Scaup Turtle. The Pascagoula is designated critical habitat for the Gulf Sturgeon. Clearcutting or site disturbance on the property, if the forests are not protected, may cause sedimentation and impact sturgeon habitat. One of the Gulf Sturgeon Recovery/Management Task Team's Gulf Sturgeon Recovery/Management Plan objective is to identify, protect, and/or acquire land or aquatic habitats on an ecosystem approach, highlighting that critical habitat areas and ecosystems that influence them are priorities for protection. Protecting 1,127 acres front the Pascagoula River directly supports that objective.</p> <p>Doppler radar studies by the University of Southern Mississippi indicate a great number of neotropical migrant birds use bottomland hardwoods and oxbow lakes in their spring/fall migration along the Pascagoula River corridor. Other species of concern such as the American Bald Eagle, Wood Stork and Louisiana Black Bear would find suitable habitat on the tract. Mussel beds with a variety of species are found here along with numerous fish species. Rare Swallow-tailed Kites, a state species of concern, are seen regularly on the tract and many nests have been recorded along the Pascagoula River in the vicinity. Other anomalous fishes such as the Alabama Shad, American Eel and Striped Bass have been documented in the project area. Protection of additional public lands in the Pascagoula River corridor will conserve habitat critical to their continued proliferation. The mature bottomland hardwood, swamp and upland forests also provide excellent habitat for game species such as white-tailed deer, turkeys, wood ducks and squirrels.</p> <p>The USFS, through a Forest Legacy Program Grant to the MFC, is providing up to 75 percent of the land costs for this fee acquisition. Other partners in the project include the Mississippi Forestry Commission, The Nature Conservancy, and the landowners.</p>	Jackson	Yes	No	No	No	No	No	No	No	Yes	No	\$	2,430,000.00	\$	1,666,949.00
Eco Restoration	5554	5/15/2017	Sewer Manhole Rehab Project	<p>Diamondhead Water and Sewer District is located in Hancock County Mississippi within the City of Diamondhead. We provide water and sewer service to approximately 4300 customers and a population of 9100. The District's certified area is located within watershed areas that drain with open ditches and nominal amounts of subsurface drainage. The discharge points for these watershed areas are tidally influenced due to the geographical location of the District's certified area. Located along the Southern Certified Area Boundary is the Northern Shoreline of the Bay of St Louis, the Western Certified Area Boundary is the East Shoreline of Roten Bayou and the Northern Certified Boundary is the Southern Shoreline of Roten Bayou and Bayou LaSalle.</p> <p>In moderate to heavy rain events, street flooding is common and the District's sewer manholes act as catch basins for the flood waters to enter and then be transported to the District's wastewater treatment plant. As a result of the sewer infrastructure being inundated with flood waters and unnecessary funds are being spent to treat the flood waters. Overflows of sewage are also a result of the excess amount of flood waters entering the sewer infrastructure resulting in costly cleanup and potential hazards to the environment.</p> <p>The scope of work for this project is to install stainless steel inserts in the tops of all sewer manholes located within the District's sewer infrastructure. A total of 1422 inserts will be installed in the tops of the sewer manholes to block flood waters from entering the sewer manholes. In addition to the inserts, repairs will be performed to properly groud and realign manhole tops, repair pipe seals, raise tops of manholes, replace manhole frames and lids, repair manhole inverts and bottoms, repair surface and coat interior of manholes.</p> <p>The benefit of this project is to significantly reduce flood waters from entering the sewer infrastructure reducing treatment cost and sewage overflows hence restoring water quality, replenishing and protecting living coastal and marine resources; restoring and conserving habitat and enhancing community resiliency.</p>	Hancock	Yes	Yes	8000%	Yes	No	No	No	No	No	No	\$	450,000.00	\$	-
Eco Restoration	5555	5/15/2017	Sewer Infrastructure Rehab Project	<p>Diamondhead Water and Sewer District is located in Hancock County Mississippi within the City of Diamondhead. We provide water and sewer service to approximately 4300 customers and a population of 9100. The District's certified area is located within watershed areas that drain with open ditches and nominal amounts of subsurface drainage. The discharge points for these watershed areas are tidally influenced due to the geographical location of the District's certified area. Located along the Southern Certified Area Boundary is the Northern Shoreline of the Bay of St Louis, the Western Certified Area Boundary is the East Shoreline of Roten Bayou and the Northern Certified Boundary is the Southern Shoreline of Roten Bayou and Bayou LaSalle.</p> <p>Forty years ago the clay sewer mains were installed in the District's certified area as the primary material for sewer mains. At the time of installation, pipe bedding standards were not as widely understood as they are today. The rigid nature of clay makes it very brittle and when unstable soil conditions are introduced, cracking will occur. Once a clay sewer pipe cracks and starts to leak the surrounding soil enters the pipe with any flow creating voids and uneven loads and eventually the pipe will collapse. The District is currently experiencing large amounts of inflow and infiltration as a result of a large portion of our infrastructure consisting of cracked and leaking 40 year old clay pipe that needs rehabilitation. The increase in I&I causes excess amounts of water into the sewer infrastructure resulting in sewage overflows, costly cleanup and potential hazards to the environment.</p> <p>The scope of work for this project is to rehabilitate 174,250 lineal feet of cracked, broken and failed clay sewer mains, point repair mains and remove roots. The rehabilitation of the clay sewer mains will consist of cured-in-place pipe (CIPP) and CCTV of all mains after rehabilitation. The District's CCTV software will need to be updated in order to complete reports necessary reports and proper documentation of the rehab improvements.</p> <p>The benefit of this project is to restore and conserve habitat, restore water quality, replenish and protect living coastal and marine resources and enhance community resiliency.</p>	Hancock/Harrison	Yes	Yes	8000%	Yes	No	No	Yes	No	No	No	\$	6,732,000.00	\$	-
Eco Restoration	5561	5/16/2017	Radio Read Water Meter Project	<p>Diamondhead Water and Sewer District is located in Hancock County Mississippi within the City of Diamondhead. We provide water and sewer service to approximately 4300 customers and a population of 9100. The District has 4,255 aging water meters, over 54 percent of the meters are older than 10 years and of the 54 percent, 73 percent are over 15 years. Due to the age of the District's meters, the District is losing revenues and unaccountable water loss.</p> <p>Aging water meters, experience a breakdown of accuracy over time. The breakdown results in less accurate water meters that leads to lost revenue because the consumption of water is not completely recorded. In an article published in Water and Waste Digest, (Dr. Hans D. Jilander, 2000) test results consistently proved that water meters' recording capability diminishes over time. The article reported the results of an analysis that included sampling of a number of meters in one zone based on age and flow; low, intermediate and fast. After the accuracy of the meters were calculated, the gallons of water going through the meters without being recorded were calculated by subtracting the average consumption from the result of the multiplication of the RAM (the Real Accuracy of Meters). An average consumption of 9,000 gallons was used in this analysis based on a typical household and historical data considering the summer peak consumption. The recorded results were as follows:</p> <p>Meters 15 Years Old 9,000 Gallons - (9,000)(0.994) = 94 Gallons per month</p> <p>Meters 20 Years Old 9,000 Gallons - (9,000)(0.990) = 90 Gallons per month</p> <p>Meters 25 Years Old 9,000 Gallons - (9,000)(0.958) = 378 Gallons per month</p> <p>Meters 30 Years Old 9,000 Gallons - (9,000)(0.814) = 1,666 Gallons per month</p> <p>Based on the data from this report and the age of the District's meters, the District is losing approximately 279,108 gallons per month and monthly water/wastewater revenue of \$ 184.38, yearly \$16,612.56.</p>	Hancock	Yes	Yes	8500%	Yes	No	No	Yes	No	Yes	No	\$	750,000.00	\$	-
Eco Restoration	5563	6/21/2017	A way to clean some of oil out of the gulf	<p>NDA (ID# 12462): Fisherman catch tar ball in three nets... rake this tar balls back into water. So instead of them raking the tar ball back into water give them some kind of storage container to put the tar balls in. to give them an incentive to do this pay them by the pound or container. This how we feel some of oil can be removed from gulf. First Entered: April 16, 2015. Date Edited: August 4, 2015</p>		Yes	No	No	No	No	No	No	No	No	\$	-	\$	-	
Eco Restoration	5565	6/21/2017	Understanding the use of Fish Aggregating Devices to enhance the conservation of tunas and protected species	<p>NDA Project (ID#12805): The Gulf of Mexico and Atlantic Ocean provide habitat for protected species such as sharks and the commercially and ecologically important tanks of bigeye and yellowfin tunas. Fish aggregating devices (FADs) are man-made floating objects consisting of a raft, synthetic netting, and plastic buoy that are deployed on the ocean to aggregate skipjack tuna for purse seine fishing vessels. FADs can be used in unlimited numbers, driving unsustainable fishing of juvenile bigeye and yellowfin tunas and contributing to fishing mortality on sharks. These species are caught incidentally when purse seine nets are set around FADs. Because most FADs are not recovered by fishing vessels, they contribute to ghost fishing and can entangle sea turtles and marine mammals also entangling in the ocean or washing ashore, adding to marine debris. FADs deployed in marine waters have been found washed ashore on the coast of Atlantic and Pacific coasts of Texas. This project would enable data to be gathered electronically on FADs deployed in commercial tuna fisheries in the Atlantic. FADs already transmit data to industry that indicates the numbers of FADs used, their locations and movement, and their fate (recovered, beached, and/or lost). The project partners, Pew and Quick Access Computing (QAC), have proven this data can be transmitted to a third party (their real time and at no additional cost to industry). In 2016, eight countries in the Western and Central Pacific Ocean began using a software system designed by QAC to implement a FAD tracking and data collection effort that is generating new knowledge on the use of thousands of FADs in that region. In the Atlantic, precise information on FADs is not required to be reported to the international fishing management body. Data gathered by this project will improve scientific understanding on the effects of FADs on the marine ecosystem in the Atlantic, where bigeye is overfished and experiencing overfishing. Analysis of the data could lead to more effective conservation for tunas and protected species, which could improve their recovery from the Gulf oil spill. Studies showed juvenile yellowfin exposed to oil developed heart defects; other species such as dolphins developed chronic adrenal gland and lung disease. QAC, a respected Australia-based software organization, will develop software to receive and manage data from FADs in the Atlantic and manuals for the system. Pew will work with international fishery managers, industry, and scientists to build the institutional arrangements to enable the system to benefit science and management. (A brief description of the proof of concept to create a FAD tracking and data gathering system in the Pacific can be viewed at http://www.pewtrusts.org/en/research-and-analysis/factsheets/2014/09/electronic-tracking-of-fish-aggregating-devices) Date Entered: December 31, 2016</p>		Yes	No	No	No	No	No	No	No	No	\$	400,000.00	\$	-	

Eco Restoration	5566	6/21/2017	Presence, Potential Sources, Behavior and Fate of Endocrine Disrupting Chemicals in Northern Gulf of Mexico Estuarine Systems	NOAA Project ID# 12881: This project will conduct the first detailed sediment, surface water, suspended organic matter, and sediment pore water assessment of northern Gulf of Mexico estuarine systems to identify the presence, potential sources, and physicochemical mechanisms controlling the behavior and fate of complex mixtures of known or suspected endocrine disrupting chemicals (EDCs) in these systems. EDCs are natural or synthetic compounds which, even at trace exposure levels, can alter early development in vertebrates and invertebrates and cause serious effects later in life or even in successive generations. Known or suspected EDCs include many compounds used in or produced during oil and gas exploration/production; some of the more recalcitrant compounds associated with raw crude oil are known/suspected EDCs. EDCs can easily pass into ecological systems and are often persistent; moreover, the consequences of exposure are markedly different from how we usually think of exposure to environmental contaminants. At the levels found in natural systems, EDCs do not destroy cells or attack DNA. Rather, they target a developing organism's chemical messengers (hormones) and the messaging network (endocrine system). Organisms living in estuaries are particularly vulnerable to the effects of EDCs, mainly because estuaries are natural sinks for contaminants transitioning from terrestrial to marine ecosystems. Estuaries are among the most productive biomes on earth; nearly 50% of the world's population lives or works in close proximity to estuaries. Consequently, estuaries are under increasing threat from both natural and anthropogenic stressors (including EDCs). Little is known about the types, behaviors, and ultimate fate of the vast number of potential EDCs entering estuaries, although it is known that some EDCs are present in these systems and that some estuarine organisms show signs of EDC exposure. Very few field-based studies have considered EDC behavior and fate in estuaries. Of these, most have considered a limited number of sampling locations, a single sampling event, or both. Moreover, most did not consider mixtures of EDCs likely to be encountered in estuaries, nor were the methods capable of detecting or quantifying EDCs at trace levels. Also, none considered sediment pore water as a partitioning phase, and none attempted to quantitatively link EDC partitioning behavior to spatiotemporal distributions of multiple EDCs within real estuarine systems. The proposed project will significantly advance our abilities to detect and quantify mixtures of EDCs at trace concentrations in complex estuarine samples and will provide the first quantitative mechanistic evidence linking the behavior of EDC mixtures (transport and partitioning) to their fate (spatiotemporal accumulation, sequestration, and reemission) as a function of dynamic estuary system conditions (hydrodynamics, water quality parameters, physicochemical conditions of partitioning phases). The results of this project will provide the first detailed, data-driven assessment of the scope of EDC contamination in northern Gulf of Mexico estuarine systems, provide a basis for examining ecological and human risks posed by EDCs in these ecosystems, and inform potential restoration actions to address these risks. Date Entered: February 3, 2017		Yes	No		No	No	No	No	No	No	No	No	No	\$ 2,000,000.00	\$ 150,000.00	
Eco Restoration	5567	6/21/2017	Estimating vital rates of loggerheads in the northern Gulf of Mexico using traditional mark-recapture and genetics	NOAA Project ID# 12861: The Western Atlantic population of loggerhead turtles (Caretta caretta) is one of the world's largest, with nesting activity that ranges from Virginia south to the Gulf Coast of Texas (NMFS and USFWS 2008). Genetic studies have divided this population into 5 Recovery Units (RUs; TEWG 2007) and 10 distinct management units (Shambin et al. 2012) with varying reproductive output by group (Hart et al. 2010; Tucker 2010; Lamont et al. 2012). Current estimates of abundance for these loggerhead subpopulations (Richards et al. 2011) were derived using nest abundance, clutch frequency and breeding interval; however for nesting groups where these data were not available, such as the northern Gulf of Mexico, estimates from other subpopulations were used. However, recent studies have highlighted differences among these subpopulations (Lamont et al. 2012; Hart et al. 2013; Hart et al. 2014), which suggests that these estimates may not be accurate. Although critical for population modeling and management, vital rates are still lacking for many nesting groups. Recent studies have highlighted the challenges to population modeling for this nesting group (Lamont et al. 2014; Hart et al. 2013). Hart et al. (2013) used satellite tracking to show that individuals in this subpopulation exhibit relatively low nesting site fidelity and make frequent long-distance movements within the entire region. Because of the intensity of effort, high costs, and increasingly difficult logistics involved in saturation tagging and due to the low site fidelity expressed by this nesting group, we propose that saturation tagging alone is not the best method to assess vital rates for this population. Again, nightly tagging of individuals is still necessary; mark-recapture data provide more than vital rates and these projects allow access to biological samples that give information on health, genetics, and foraging behavior (e.g. these individuals (Shambin et al. 2012; Vander Zanden et al. 2015)). However, we suggest that by combining genetic sampling with a shortened tagging season will provide the most accurate estimates of vital rates for this nesting group of loggerheads. Eggs sampled within a day of oviposition yield maternal genomic DNA and permit genetic tagging of individual females through microsatellite genotyping (Shambin et al. 2011). This method alleviates the need to physically intercept females makes it possible to sample across large geographic areas that would be logistically impossible to cover with night watches. Genetic tagging provides reproductive parameter data analogous to flipper tagging, permitting subpopulation wide estimates of nesting female population size, clutch frequency, and nest site fidelity in the short term. Long-term genetic tagging can address emigration and adult female annual survival with the added bonus of directly assessing recruitment through matching daughters to their mothers. The genetic tagging approach has been used to estimate vital rates for 100% of clutches sampled in the Northern Gulf of Mexico and has been used to estimate physical tagging over the entire nesting range. The objective of this study is to initiate a genetic mark-recapture project for the northern Gulf of Mexico loggerhead nesting group to determine demographics of the subpopulation. Proposed activities: 1. Hold a workshop to educate permit holders on sea turtle nesting beaches 2. Permit holders on all nesting beaches will collect one, freshly laid egg from all loggerhead nests deposited on beaches in Northwest Florida, Alabama and Mississippi beaches. 3. Each egg will be placed in a plastic baggie and frozen for storage. 4. Upon completion of the nesting season (September 30), all samples will be gathered by Dr. Shambin and transported back to his laboratory at the University of Georgia. 5. Genetic analyses will be conducted; microsatellites will be examined to identify samples by individual. Date Entered: February 3, 2017 Date Edited: February 7, 2017	Coastal	Yes	No		No	No	No	No	No	No	No	No	No	\$ 1,270,970.00	\$ -	
Eco Restoration	5568	6/21/2017	Close-Mark Recapture as a Tool for Estimation of Spawning Biomass in the Gulf of Mexico Bluefin Tuna Population	NOAA Project ID# 12905: The western Atlantic bluefin tuna (WBT) population sustained injuries from the Deepwater Horizon (DWH) oil spill since the Gulf of Mexico is its only major spawning ground and the spill occurred in one of the spawning hotspots during the peak spawning season. The DWH Damage Assessment estimated that billions of bluefin larvae were killed, in part due to documented contamination, with injury up to a million for large tunas. As part of the restoration plan, adaptive management has been prioritized, including collection of fishery independent data to better understand status and trends. Close-mark recapture (CMR) is a new method which uses next generation genetic techniques to match parents and offspring to estimate spawning abundance in situations where traditional assessment methodologies are highly uncertain. This is certainly the case for WBT. The method proceeds as follows: randomly sample juveniles and adults, use next-generation sequencing to obtain a unique genetic signature for each parent and each juvenile, and count the number of matches, or Parent-Offspring Pairs (POPs). Traditional mark-recapture population estimation methods then can estimate the number of adults in the population. Fewer POPs indicates a larger spawning population. By repeating the sampling over several years, one can obtain an updated abundance estimate, greatly improve the precision of the population estimate and estimate survival of parents when their progeny are identified over multiple years. To deal with sampling complexities in cases like WBT, it is also necessary to look for half-sibling pairs among juvenile samples. A pilot project is underway to collect samples of larval, juvenile, and adult WBT to determine the best approaches for sample collection and genetic analysis. In this study, we propose to collect the remaining number of required samples (estimated at 1300 young and 1500 adults) and conduct the full CMR by using modern reduced-representation high-throughput genotyping methods to count the number of POPs. This information will give us an accurate count of the number of individual adult WBT for the first time, helping scientists and managers to determine how to successfully rebuild this depleted population, which sustained further injury from the DWH spill. The CMR results will be incorporated in the management strategy evaluation being developed by an international team to design a more effective and efficient harvest strategy that benefits both the stock and fishery, commercial and recreational alike. This approach has already been applied for southern bluefin tuna and is in progress for Pacific bluefin tuna. Date Entered: March 10, 2017 Date Edited: March 16, 2017		Yes	No		No	No	No	No	No	No	No	\$ 350,000.00	\$ 30,000.00			
Eco Restoration	5569	6/21/2017	Targeted research to assess habitat-specific invasive lionfish distribution, interactions with native reef fishes, and effective mitigation measures	NOAA Project ID# 12910: Reef fish species injured by the DWH are in need of comprehensive monitoring, including physical habitat description, to help managers better estimate population status, rebuild injured populations, and set catch quotas consistent with recovery from the DWH oil spill. Invasive lionfish are an additional stressor to reef fishes due to increased interspecific competition and predation on juveniles, which can also reduce the ability of injured reef fish populations to rebuild. A better understanding of habitat types, distributions and abundance estimates of different life stages of reef fish species and co-occurring lionfish, and spatial overlap between reef fish species and lionfish will provide more targeted monitoring of the lionfish impact and will inform restoration activities at sites important to reef fishes recovery. This information would help to clarify changes in reef fish populations, support the development of mitigation strategies for lionfish (e.g., targeted removal at priority reef fish sites), and support adaptive management to assist recovery of injured reef fishes. With the aid of higher resolution habitat maps and video analyses, more accurate information on reef fish and lionfish habitat characteristics, abundance and distribution, and spatial overlap between reef fish species and invasive lionfish can be collected to help managers better assess the impact of lionfish on native reef fishes and guide management interventions for lionfish. Similarly, habitat mapping and video analyses can make possible comparisons of species distributions and abundances across habitats, allowing scientists to sample more precisely by habitat type, and improve the quality of information used to assess the health of reef fish populations. This project will make use of sonar technologies (e.g., side-scan, multi-beam, or splitbeam) and high-resolution underwater video-camera (e.g., towed camera or ROVs) that can be deployed from research or charter fishing vessels to survey selected natural reef habitats in the Gulf of Mexico. Sonar technologies enable remote collection of high-resolution seafloor habitat maps, with habitat distributions groundtruthed via towed camera systems or ROVs. Through the use of these technologies, this project would collect more accurate information on the physical characteristics of habitat for lionfish and for post-settlement life stages of native reef fishes. Advanced video-recording technology allows better estimation of species densities across sampled areas, and provides more accurate information on fish abundance and distribution. The data collected will be synthesized into high-resolution habitat and fish distribution maps based on species and life stages for different reef fish species. Similarly, the project would collect habitat type and abundance and distribution information on lionfish. This information will be used to understand and model the spatial overlap of lionfish with native reef fishes, which could be employed to estimate the impact of lionfish on reef fish distribution, ecology, and population dynamics. Specifically, habitat mapping and species density assessments conducted in this project would support the following: 3C) Monitoring efforts and habitat maps of lionfish that help clarify the interactions of this invasive species with reef fish species and result in more accurate estimates of fish mortality in injured reef fish, including red snapper and gag/groupers species; 3C) More rigorous, quantitative habitat and species density assessments that enable NMFS to more efficiently and effectively identify and protect EFH and MAFCs from stressors that could impede the recovery of reef fishes from the DWH oil disaster; 3C) Better estimates of reef fish populations, enhanced stock assessment, and improved certainty around fisheries quotas of reef fishes affected by the DWH oil disaster; and 3C) More effective habitat or fisheries restoration projects that enhance reef fish production. Date Entered: March 20, 2017 Date Edited: April 21, 2017		Yes	No		No	No	No	No	No	No	No	\$ -	\$ -			
Eco Restoration	5570	6/21/2017	Large-scale tagging program to understand post-release mortality, migration, and movement in highly migratory and coastal migratory fish species	NOAA Project ID# 12917: Pelagic highly migratory (HMS) and coastal migratory (CMS) fish species are important for the Gulf commercial and recreational fisheries. The DWH oil spill may have impacted these pelagic fish populations in many ways through direct oil exposure, which can alter the heart development and cardiac function of larvae and reduce swimming performance in juvenile life stages. Hence, larvae and juveniles of pelagic fish species that spawned in the area impacted by the DWH disaster may represent a loss of fitness in early life stages that could have affected year-class strength and population levels and overall species reproductive success. A decline in pelagic fish populations would require a better understanding of species responses to stressors and reduction in more clearly identified stressors (e.g., fisheries mortality) in adult spawners. Several pelagic migratory fish species are prohibited to fisheries or subjected to strong management measures and size restriction limits to allow populations to rebuild. Hence, these species are commonly released when caught by commercial and recreational fisheries. However, such approach can be inadequate without detailed knowledge of the species post-release survival. This knowledge is critical to enhance the species conservation both within the Gulf and the persistence of populations Atlantic-wide. There is still a knowledge gap for the full impact of fisheries on the survival and post-release mortality for nearly all pelagic species. Also, there are gaps in knowledge for their migration, movement, and connectivity outside the Gulf. Hence, there is a need to clarify the role of incidental fish mortality and post-release mortality, and the migratory behavior and habitat use for the non-target component of these species that are incidentally caught and commonly released from commercial and recreational pelagic fisheries in the Gulf. In turn, this information will help the restoration community: 1) better understand the impact of fisheries on the survival and post-release mortality for nearly all pelagic species; 2) prioritize strategies to reduce mortality and rebuild fish populations; and 3) advance management restoration projects to improve project results and track the overall population recovery. This project will investigate the level of post-release mortality from commercial and recreational fisheries in HMS and CMS by using pop-up satellite tags (i.e., survivorship tags) specifically developed to study species survival after release from fishing gears. Species targeted for this effort will be adult individuals of bluefin tuna, yellowfin tuna, and black drum for HMS, and mahi-mahi for CMS. Conventional pop-up satellite tags will be used to study the migration, movement, and connectivity of these species inside and outside the Gulf. The target fisheries for this project will be the commercial pelagic (PS) and recreational red- and reef (RAR) fisheries in offshore waters of the northern Gulf, from Texas to Florida, where these species are commonly caught and released. For survivorship tags, a pre-evaluation methodology (e.g., power analysis) will be used to estimate the minimum number of fish that would be needed for each species and for each fishery (i.e., red and RAR) to allow robust quantification of post-release mortality in tag and release fish. This pre-evaluation component will be used to quantify cost estimates to achieve project goals. Results of this project will address data gaps on the impact of post-release mortality in various pelagic fish species incidentally caught and released in pelagic fisheries in the Gulf, and support monitoring and adaptive management activities of relevant restoration projects (e.g., Oceanic Fish Early Restoration Project) to improve project results. The information collected will also fill data gaps in species' habitat use and migratory behavior. This information can help inform better management for these species and help advance the recovery of injured populations. Date Entered: April 14, 2017 Date Edited: April 21, 2017		Yes	No		No	No	No	No	No	No	No	\$ -	\$ -			

Eco Restoration	5571	6/21/2017	Pelagic Longline Gear and Vessel Transition Program in the Gulf of Mexico	NMMA Project ID# 12837: The Gulf of Mexico is the primary spawning ground of the western Atlantic bluefin tuna population, a stock depleted to just 55 percent of the 1970 level. The oil spill occurred at the peak of the 2010 spawning season in the bluefin's northeastern Gulf spawning hotspot. Scientists estimate that the spill degraded 10 to 30 percent or more of the bluefin's known Gulf of Mexico habitat and further study has since confirmed that the spill damaged Atlantic bluefin tuna health, particularly among the early life history stages. The Gulf of Mexico pelagic longline fishery results in harmful bycatch of bluefin tuna and approximately 80 other species, including billfish, endangered sea turtles, and depleted sharks. Government catch data from 2007-2009 indicates the fishery killed 43,245 non-target animals, including 6,009 carcharids, 5,844 dolphins, 2,747 escolar, 1,745 sharks and rays, 858 walrus, 794 billfish (marlin, sailfin, spearfin), 612 bluefin, and 160 bigeye tuna, and interacted with 137 leatherbacks and 17 loggerhead sea turtles. Actual mortality is much greater as only an average of 21% of the hooks set were observed. Based on their shared habitat preferences with bluefin tuna, it is possible that many of these species also suffered similar interactions with and injury from the spill. A voluntary pelagic longline gear and vessel transition program can help mitigate such impacts to the benefit of Gulf fishermen. The program will provide fishermen with selective alternatives to PLL, including green stick gear and swiftoft buoy gear, as well as training and financial assistance to help them learn to fish and optimize application of these gears in the Gulf of Mexico. Fishermen would also have the opportunity to retire their current PLL fishing vessels in favor of smaller, more fuel efficient boats more appropriate for use with the alternative gears. These efforts would be complemented by a strong monitoring program to record catch, effort, and economic data, as well as, ultimately, to measure the benefits of this project over time. This concept enjoys broad support from PLL fishermen, recreational anglers, and environmentalists. Project Cost: The cost of the Gulf of Mexico pelagic longline fishermen participants. The cost of a gear transition is undetermined at this time. The estimated cost for a vessel transition is approximately \$450,000 to \$550,000 per vessel. Date Entered: January 5, 2017 Date Edited: April 21, 2017	Yes	No	No	No	No	No	No	No	No	No	No	No	No	\$	-	\$	-
Eco Restoration	5572	6/21/2017	Assessing the Ecological Connectivity of Gulf Environments	NMMA Project ID# 12696: Assess the role of ecological connectivity in the Gulf including between the nearshore and offshore marine environments, for anadromous fish, and among coral reefs, and evaluate the role of nearshore habitats as nursery and foraging areas for offshore fish, water column invertebrates and turtles, of anadromous fish runs in the past and present Gulf ecosystems, and the relationships among coral reefs. a. Objectives: Identify the near-shore, freshwater, and coral reef environments that are most critical to protect and sustain populations of a variety of Gulf species that spend part or all of their life cycle in the open ocean. b. Species group/habitat: Fish, water column invertebrates and sea turtles. c. Description: It is critical to integrate the linkages between the near-shore, freshwater, and offshore environments in the design, development and monitoring of coastal and offshore habitat restoration investments. To do that studies should: 1) Identify and prioritize protected waters and nearshore environments (e.g., bays, estuaries, etc.) that contribute to maintaining populations of offshore endangered, commercial, and recreationally important species. This project should merge oceanographic and coastal biophysical, use and management information and develop a model of interactions (linkages) and produced scenarios to guide marine use and conservation planning. ii. Evaluate the potential for and impact of restoring anadromous fish runs in Gulf rivers including the potential for increasing the forage base for offshore fish. Historical accounts suggest that anadromous fish runs on Gulf rivers contributed significant amounts of forage fish to the overall Gulf ecosystem including for open ocean predators. This project has three parts: 1) Conduct historical research to verify the magnitude, location and species composition of anadromous fish runs in Gulf rivers. 2) Evaluate impediments to fish passage on Gulf tributaries with historically large fish runs and propose strategies for reducing or removing those impediments where cost-effective. 3) Propose other actions to restore historic populations of anadromous fish. iii. Study coral reef connectivity. The objective of this study element is to understand the interdependence of important mesophotic and deep coral communities and their ecological connectivity for sustaining shallow water coral reef systems. The Gulf of Mexico is an important area for mesophotic and deep-sea coral communities, especially along the edge of the continental shelf (e.g., offshore banks). This project should assess the similarities, connectivity and threats to these communities in the northern Gulf. To do that it is necessary to compile multiple sets of biophysical data for these areas, assess the ecological relationships among their species composition and with shallow water coral reef species, understand structural aspects of these communities using GIS modeling of bathymetry, terrain, assess the ecological relationship of mesophotic coral species to shallow water coral species, and assess the importance of mesophotic and deep sea corals as essential fish habitat for commercially, recreationally and ecologically important species. Outcomes of this project should include indicators of diversity, structural complexity, threats and recommendations for their conservation. Date Entered: April 26, 2017 Date Edited: April 27, 2017	Yes	No	No	No	No	No	No	No	No	No	No	No	No	\$	1,300,000.00	\$	-
Eco Restoration	5573	6/22/2017	Revision of the seagrass guidelines document a support tool for restoration of seagrass impacts in the Gulf of Mexico	NMMA Project ID#12976: The 1998 seagrass guidelines document has emerged as a foundation reference guide for use by regulatory agencies and applicants in the Gulf of Mexico (GOM) and worldwide. Frequently, regulatory guidance is quoted directly from the document. As such, it is critically important to the successful management of the GOM seagrass resource that such a decision support tool provides the best science. Now significantly out of date (over 20 years), and a revision is required. Moreover, 50% of the seagrass in the conterminous U.S. lie within the waters of the GOM, making the need for updated information in the GOM especially pressing. Since 1998, over 2,000 seagrass-related papers have been published, with 366 reporting directly on seagrass restoration. Much of this work has fundamentally changed our understanding of seagrass biology and ecology and how seagrass restoration is approached. This information needs to be synthesized and unified with the previous guidance to provide an up-to-date and state-of-the-art seagrass restoration guidance document for the GOM. For the revision, emphasis will be placed on life-cycle guidance, including addressing frequently asked questions of policy, planning, methods, monitoring, and evaluation of success. This will be achieved by revising the 1998 document structure as well as through consultation with stakeholders, including practitioners and state and federal regulatory staff throughout the GOM region. Through that consultation, the addition of instructive studies and case-studies highlighting the most relevant information will be provided throughout the text. Simultaneously, the document's organizational plan will be reviewed by key stakeholders. The core task is straightforward but also requires the most effort: namely reading, interpreting, and synthesizing the literature (both previous and new since 1998) and writing the revised document. Special assistance is requested for the genetics review. Notably, the lead author for the 1998 landmark publication is the lead author proposed here, and he has had extensive experience editing, reviewing, and writing peer-reviewed publications related to seagrass restoration and ecology. He continues to be an expert and leader in the field of seagrass ecology and restoration. His role as the lead author provides this proposed revision with a unique level of practical experience and continuity. This project deliverable will meet standards of peer review and modern delivery avenues. Peer review will be conducted by soliciting reviews of limited sections of the document from professionals and experts in the field of seagrass restoration, both nationally and internationally. The final product will be made freely available from CSMAR's website and through appropriate government websites. Promulgation of the revised decision tool will also be made through direct engagement with regulatory personnel and the public, including training seminars. A diverse plan of social media utilization (Facebook, Twitter, websites) is also proposed. Date Entered: April 27, 2017	Yes	No	No	No	No	No	No	No	No	No	No	No	\$	700,000.00	\$	-	
Eco Restoration	5574	6/22/2017	Expand monitoring and research efforts, and develop and implement a best fishing practices program at sentinel sites to enhance conservation of shallow, mid-, and deep-water coral communities in the Gulf of Mexico	NMMA Project ID#12921: Shallow, mid- and deep-water coral communities in the northern Gulf of Mexico provide critical habitats for associated fish and other marine wildlife species, and help support a productive marine ecosystem and important fisheries in the Gulf. Many of these coral species and communities, including <i>Lophelia</i> spp. and <i>Paramuricea bicuspa</i> , were exposed to oil and chemical dispersants as a consequence of the DWH oil disaster. Overall, the negative impacts of oil exposure likely increased coral mortality and reduced population and genetic connectivity to levels that might not maintain sufficient population size and genetic diversity in these coral populations, potentially slowing their recovery. Despite their recognized ecological importance, there is still a lack of understanding on what a healthy Gulf coral reef ecosystem looks like. Hence, there is the urgent need to continue monitoring and research on the health of northern Gulf coral communities and track their recovery from injuries sustained through the DWH oil disaster, which will better inform restoration activities and improve understanding on how chronic and future threats affect recovery rates and overall health of these communities, as well as impacting their resiliency. Monitoring and research of coral sentinel sites, consisting of injured and non-injured (reference sites) coral communities, can help restoration managers understand recovery rates of coral communities relative to those injuries and how their genetic diversity and connectivity are affected by chronic or emerging stressors (e.g., fishing, changes in pH). This proposed project would expand monitoring and research activities at selected coral sentinel sites at various depths across the northern Gulf of Mexico to collect needed information on the status and condition of both injured and healthy (reference) coral communities. The information collected can help to improve understanding of coral recovery, promote their long-term survival in the face of other threats, and determine the level of effectiveness of restoration measures at injured coral reefs and sites. Hence, coral populations at sentinel sites would be a control for comparative studies with other reefs injured by the DWH disaster. Within this context, the project would make use of recently developed techniques to provide better understanding of the level of genetic connectivity across reefs in the Gulf, and in particular for mesophotic and deep-water coral populations injured by the DWH disaster. Additionally, enhanced conservation of coral communities can be achieved by offering voluntary courses for fishermen in which they acquire knowledge of best fishing practices within or around ecologically sensitive coral sites. This type of program can help reduce the negative impact of fishing practices on coral communities and support their recovery. Moreover, graduation from such training courses could lead to the development of an endorsement program, allowing fishermen who have taken the course and agree to certain requirements to fish in buffer areas that would otherwise be restricted to fishing. This proposed project will develop and implement a program to train commercial (e.g., golden crab and red shrimp) and recreational (e.g., snapper and grouper) fishermen in adopting best fishing practices when navigating or fishing within or around sensitive areas for corals. The aim is that fishermen would use these best practices to reduce deleterious impacts on coral communities at different depths, although mainly in shallow and mid-water (<200 meters depth) depths. The program would consider and incorporate the techniques and technologies fishermen already use to avoid sensitive corals in order to take advantage of existing fishing knowledge. This action can potentially lead to a fishing endorsement in areas characterized by the presence of these coral communities. Date Entered: April 21, 2017 Date Edited: April 28, 2017	Yes	No	No	No	No	No	No	No	No	No	No	No	\$	-	\$	-	
Eco Restoration	5576	6/22/2017	Habitat mapping and identification of species abundance and distribution for deep water coral communities inside and outside the De Soto Canyon area to clarify genetic connectivity among populations and guide restoration priorities	NMMA Project ID# 12934: Several deep-water coral species and communities, including <i>Lophelia</i> spp. and <i>Paramuricea bicuspa</i> , were exposed to oil flowing out of the Macondo wellhead, and also to dispersant and synthetic-based drilling mud, which led to various degrees of negative impact on these deep-water coral communities in the northern Gulf of Mexico. Overall, these negative impacts could have increased deep-water coral mortality and reduced population and genetic connectivity to levels that might not maintain sufficient population size and genetic diversity in these populations, affecting the recovery of injured coral. Therefore, there is a need to clarify the role and extent of genetic connectivity among deep-water coral communities in the Gulf, which can help identify important natural corridors for larvae to maintain sufficient population size and genetic diversity in these populations. This information will allow scientists and managers to better estimate the status of coral populations, which can clarify how deep-water coral communities cope with stressors, such as the DWH disaster, and support significant fisheries species. The De Soto Canyon is a large deep-water area adjacent to the well location that, depending on the site and its distance from the Macondo wellhead, was less affected by the oil disaster. Healthy coral communities found in the canyon could be managed as a seed stock to restore injured coral populations in the impacted area if the genetic composition and dispersal pathways are compatible with restoration objectives. Detailed information on the presence and locations of deep-water coral communities in the Gulf of Mexico is scattered or limited. Due to inherent difficulties and high cost in conducting deep-sea explorations, scientists oftentimes make coarse predictions of where corals might occur on the seafloor based on models and available data. There is an urgent need for high-resolution mapping based on direct observations of coral that can increase the power of model predictions to make better management decisions in the Gulf, and particularly in the area of the De Soto Canyon. A better understanding of the extent of deep-water coral communities inside and outside the De Soto Canyon area and their species composition, abundance, and habitat characteristics is critical to prioritizing management interventions that can enhance recovery of injured corals and support their long-term survival. In this regard, there is a critical need to clarify the extent of genetic connectivity in deep-water coral populations through innovative approaches. The information collected from surveys can then be integrated into coral restoration strategies and approaches. This project will deploy identical sonar from research vessels to characterize benthic habitats for different coral communities inside and outside the De Soto Canyon area. This information will be used to develop high-resolution habitat maps and habitat suitability models for various coral communities that can advance knowledge on coral distribution and essential habitat features for these populations. Moreover, ROV and C-BASS (the latter only for mesophotic communities) will be deployed to produce high-resolution video recordings. This information will be used to provide more accurate estimates of coral communities' genetic composition, distribution, density, and habitat characteristics. Collectively, these results will provide managers with a better understanding of habitat characteristics and population connectivity in deep-water corals in the De Soto Canyon and surrounding area. In turn, this information will be of significant value to advancing the recovery of coral communities impacted by the DWH disaster by enabling resource managers to identify, prioritize and plan restoration and conservation actions for both injured and healthy deep-water corals in the northern Gulf of Mexico. Date Entered: April 11, 2017 Date Edited: May 2, 2017	Yes	No	No	No	No	No	No	No	No	No	No	No	\$	-	\$	-	

Eco Restoration	5577	6/22/2017	Quantify the efficacy of fish descender devices on reducing discard mortality in red snapper and other reef fishes	NOAA Project ID#12909: Red snapper and reef fishes are susceptible to barotrauma when caught and brought to the surface, and mortality caused by barotrauma hinders rebuilding of overfished red snapper populations and could deter recovery from DWH impacts. Preliminary studies have demonstrated that recompression devices have great potential to increase fish survival from barotrauma related injuries. Initial information indicates that devices utilizing pressure activated release once a certain depth is reached by the device (i.e., SeaQuilizer) are considered the most promising from scientists and the most reliable from the majority of fishermen. Though recompression devices are promising, detailed information on their real-world applicability has yet to be determined, especially for specific species. This project will make use of SeaQuilizer fish descender devices in a sample of charter for-hire fisheries across the Gulf to study the effects of barotrauma on released red snapper and reef fishes, and to quantify the reduction in fish mortality obtained in different species and environmental conditions by employing conventional or acoustic tags to estimate immediate and delayed mortality of fish after return-to-depth versus surface release. An integral component of this project will be the use of instruments for geospatial verification of fishing activity installed onboard participating fishing vessels to efficiently track their fishing effort and spatiotemporal distribution while actively fishing and releasing fish. The information collected through this technology will help to provide more accurate estimates of fishing effort within the study area for the entire project duration so that the benefits of using fish descender devices for for-hire reef fish fisheries across the Gulf of Mexico can be better modeled and quantified. This project will also help determine best practices for anglers using fish descender devices on specific species through active involvement of for-hire fishermen. This stakeholder engagement will guide subsequent outreach efforts to increase descender device acceptance and use among fishermen. Stakeholders will define species-specific needs and will assist in development of best release practices for these species. This is especially important for those species affected by the DWH oil disaster, potentially offsetting DWH impacts by allowing these populations to recover at a faster rate than if these devices went untested and unused. The NMFS Southeast Fisheries Science Center has offered to provide technical guidance during various phases of the project, from the identification of best use of fish descender devices to the collection of information and data needed to advance fishery management of red snapper and reef fish. This assistance will help ensure that the data generated are of maximum value to fishery assessments and fisheries management decisions. Results of this research project will add to the state of knowledge regarding methods ensuring highest post-release survivability for reef fish species. Data derived from this study will help managers determine tools that can aid the recovery of red snapper and reef fish populations impacted by DWH oil disaster and that are suitable for wider use in Gulf of Mexico fisheries. These data will also increase the accuracy of discard mortality estimates across the Gulf and improve annual catch calculations. Date Entered: March 29, 2017 Date Edited: May 2, 2017		Yes	No														\$	-	\$	-
Eco Restoration	5578	6/22/2017	Anthropogenic and Biological soundscape assessment of the Mississippi Sound using passive acoustics	NOAA Project ID#13023: Passive acoustics is a very versatile tool in studying both anthropogenic (boat traffic, dredging, etc.) and biological (fish, marine mammal, invertebrate) sound sources. Long term recorders can be deployed with oceanographic sensors for up to several months at various locations within the MS Sound to assess the presence, temporal and spatial distribution, and interactions of both types of sound sources while also monitoring basic oceanographic properties such as temperature, salinity, and light. Post-recording detection algorithm analyses can identify soniferous fish and invertebrate species, as well as marine mammals, inhabiting the coastal waters of Mississippi in order to provide more information on temporal or spatial habitat range variability. Some soniferous fishes in Mississippi waters are also an important commercial stock. Assessing their distribution and potential changes in temporal or spatial habitat usage can directly affect management and restoration decisions. Marine mammals specifically are a sentinel species, reflecting the overall health of the coastal ecosystem, and were greatly affected by the oil spill. Being able to manage impacts to their survival or habitat are vital to the health of the Gulf of Mexico. Documenting overlap of oceanographic water properties (i.e., river outflow characteristics) and marine mammal distribution offers another piece of missing information about the impact of freshwater outflow on dolphin distribution and habitat range. Date Entered: May 3, 2017	Harrison, Hancock, Jackson	Yes	No													\$	60,000.00	\$	-	
Eco Restoration	5579	6/22/2017	Model open-ocean marine mammal habitats to guide their protection and conservation	NOAA Project ID#13030: Detailed scientific data are lacking for many species of offshore marine mammals in the Gulf of Mexico, so restoration activities will require an incremental approach including initial data collection and monitoring that will vary by species and stock. To identify priority threats there is an additional need for population monitoring, and spatial habitat definition. Population assessment, monitoring and habitat characterization is needed for offshore marine mammal populations due to the substantial gaps in our understanding of these difficult to study species. The detailed offshore distribution of most offshore marine mammal species is poorly understood. A better understanding of offshore marine mammal prey dynamics is also needed. To address these limitations, all existing data on offshore marine mammals will be used to construct models of their distribution and habitat. These models will be refined and validated against data collection. Additional data collection may involve visual, acoustic, tagging and other methods. Areas of overlap between critical marine mammal habitat and potential injury from anthropogenic activities will be selected as the focus for zones of study. Population monitoring and habitat modeling are further required to assess the effectiveness of restoration strategies. Date Entered: May 2, 2017 Date Edited: May 3, 2017		Yes	No														\$	5,000,000.00	\$	450,000.00
Eco Restoration	5580	6/22/2017	Resource mapping of marine habitats important to GOM sea turtles which were affected by the Deepwater Horizon Oil spill	NOAA Project ID#13038: Sea turtles are highly migratory species with complex life cycles. They use a variety of marine habitats that range from the surface-ocean to sea floor ecosystems. The Deepwater Horizon (DWH) oil spill damaged or destroyed critical habitat for several species of sea turtles. The habitat and benefit focus on two habitats that are of critical importance to sea turtle conservation: 1) Sargassum drift habitats of juvenile sea turtles and 2) the deep-benthic and hardbottom (mesophotic reef) habitats used by juvenile and adult loggerheads. Specific project objectives are outlined below; those specific to surface-pelagic studies are preceded by [SP] and objectives specific to WS benthic habitat studies are preceded by [BH]. [SP] Identify and monitor sea turtle habitat within the Gulf of Mexico as part of a regional, collaborative monitoring program. [SP] Monitor juvenile sea turtle occurrence, density, and seasonality within regional sites using on-water transect techniques. [SP] Link Sargassum habitat extents with measured juvenile sea turtle densities (from captures and transects). [SP] Validate Sargassum habitat estimates using satellite imagery and field observations. [SP] Investigate usage of surface-pelagic habitats by sea turtles during fall, winter, and spring through a temporal expansion of survey effort. [SP] Understand the threat of marine debris to surface-pelagic turtles through an examination of diet samples and by developing a method for quantifying debris found within surveyed habitat. [SP] Assemble remotely sensed observations to produce a spatiotemporal representation of surface-pelagic habitat in the Gulf of Mexico. [SP] Map the estimated abundance and distribution of surface-pelagic juvenile turtles in the Gulf of Mexico based on the occurrence of surface-pelagic habitat and the behavior and movements of observed and telemetered turtles. [BH] Describe the distribution, habitat use, and foraging behavior of loggerheads on the WS within the eastern Gulf of Mexico. [BH] Identify the isotopic signature of the WS loggerhead residence area based on ratios of carbon, nitrogen and sulfur stable isotopes of skin and scute samples. [BH] Use new data, existing datasets, and density estimates (from vessel and aerial transects) to describe potential intersections between sea turtles and anthropogenic threats within the Gulf of Mexico (e.g., fisheries and oil spills). [BH] Characterize habitat use and movement ecology using satellite telemetry. [BH] Conduct analyses of diet and habitat use by assessing esophageal wrings, fecal samples, and stable isotope ratios of tissue samples. [BH] Develop and enhance response and rescue capabilities based on findings of the current study and existing data including Sargassum habitat forecasting, resource preparedness, and streamlined information sharing strategies. Date Entered: May 3, 2017	All Coastal	Yes	No														\$	4,524,474.00	\$	-
Eco Restoration	5581	6/22/2017	Advancements in FloridaA&M's sea turtle conservation research data collection, analyses, and communication	NOAA Project ID#13039: The response efforts and damage assessments surrounding the Deepwater Horizon Oil Spill (DWH) were challenged by limitations of conservation data and information. The DWH highlighted several opportunities to improve the collection of and access to sea turtle research and monitoring information. During the response phase, rapid access to sea turtle nesting and stranding data and information was critical. A complete assessment of damage to northern Gulf of Mexico sea turtles caused by the spill required demographic and distributional information that is available but not yet synthesized for the affected area. We propose to develop and implement a sea turtle research and monitoring data management plan for Florida. Our plan would include solutions to increase access to sea turtle research and monitoring data collected within Florida. This effort would also streamline data collection methods and identify data gaps. The proposed project would significantly enhance the data reporting, analyses, and communication of results for all of our research and monitoring efforts. This would be accomplished by using centralized database into which data would be entered via web and/or mobile data reporting tools where appropriate. Results and summaries of data would be shared with the public and our partners using novel web-based data summarization and reporting tools. We would work with our federal, state, and local sea turtle conservation partners to ensure that our data management plan is synthesized with their sea turtle data needs. For example, we would streamline the information exchange between the Florida and Federal STSN databases. Our data management plan would also focus on the timely delivery of quality controlled sea turtle data and summaries to our conservation management colleagues. This project would benefit Gulf of Mexico sea turtle conservation in several ways: 1) Online data sharing and communication of analytical results would provide conservation managers with improved access to the research and monitoring data that is essential to their work. 2) Streamlined web- and mobile-based reporting would be deployed when needed to ease data entry, reduce reporting errors, reduce the time needed for QA/QC efforts and provide researchers with more time to analyze data due to the reduction in data management tasks. 3) Using a centralized database for FloridaA&M's sea turtle data would offer a secure and efficient data storage and analysis environment. Our data management approach would be designed to allow other regions within the Gulf of Mexico and northwestern Atlantic to join or replicate our protocol. Objectives [BH] Develop and implement a secure sea turtle conservation research and monitoring data management plan for FloridaA&M's sea turtle research program. [BH] Develop online and mobile data entry applications where such tools would streamline data entry and improve data accuracy. [BH] Collaborate with the National Marine Fisheries Service to ensure that our STSN data management protocol is compatible with their regional data management efforts. [BH] Increase and expedite sea turtle data and information sharing by developing web-based reports and summarized data sets geared towards satisfying conservation management data needs. [BH] Increase data analyst activities and reduce staff data management efforts by establishing a centralized sea turtle research data environment. [BH] Establish a secure and accessible sea turtle data and information archive to house records produced by legacy research and monitoring projects. Date Entered: May 3, 2017	All Coastal	Yes	No														\$	885,156.00	\$	-
Eco Restoration	5582	6/22/2017	Reduce vessel collisions with marine mammals	NOAA Project ID#13007: This project will restore open-ocean marine mammals by reducing their collisions with vessels in the Gulf of Mexico. A program will be developed to understand the nature of marine mammal and vessel collisions and strategies to avoid them. Use of passive acoustic data, predictive modeling, and animal tagging data will inform better understanding of the causes of ship strikes and their threats to each population of marine mammals. A collaborative partnership with NOAA and the shipping industry will be developed to assess changes in vessel routing that could reduce the risk of marine mammal and vessel collisions and/or voluntary speed restrictions that would help reduce the probability of vessel collisions. Recreational boater education and awareness will be another issue addressed by this project. Bryde's whales (Balaenoptera edeni) are the only resident baleen whale species in the Gulf of Mexico (GOM), where they are extremely rare, and have a distribution restricted to the eastern Gulf of Mexico. Vessel collisions may be a major factor in their restricted distribution and small population size. Tagging data suggest that these whales have shallow nocturnal dive patterns with 80% of their nighttime spent near the surface within the draught depths of most large commercial vessels. Better understanding of how to protect Bryde's whales from vessel collisions will be one goal of this project. Date Entered: May 2, 2017 Date Edited: May 3, 2017		Yes	No														\$	5,000,000.00	\$	900,000.00
Eco Restoration	5583	6/22/2017	Reduce impacts of anthropogenic noise on marine mammals	NOAA Project ID#13022: The goal of this project is to identify the sources of ocean noise and map their relative influence as stressors of offshore marine mammals, and to propose means for noise mitigation. Ocean noise in the GOM has reached the highest levels measured at any open-ocean location, owing to anthropogenic noise from commercial activities related to oil exploration and production and commercial shipping. Calibrated passive acoustic monitoring data will be used to characterize the spectral, temporal, and spatial distribution of anthropogenic noise throughout the GOM and determine areas of overlap between high noise levels and marine mammal habitat. Long-term passive acoustic data have been collected throughout shelf, slope, and deep-ocean waters. These data will be used to make geospatial models of noise distribution and their overlap with marine mammal habitat. In addition, the source levels of individual noise sources (seismic airguns, commercial ships, oil platforms) will be measured to provide model input. Collaborative partnerships (NMFS, NOAA Sanctuaries, NGOs) will be developed to identify, test, and implement strategies to reduce noise impacts from sources of commercial shipping, and seismic exploration and extraction noise, with priority for noise reduction in areas of overlap between high noise levels and high animal densities. Date Entered: May 3, 2017 Date Edited: May 4, 2017		Yes	No														\$	5,000,000.00	\$	-
Eco Restoration	5584	6/22/2017	Reduce Marine Mammal Bycatch in Commercial Fishing Gear	NOAA Project ID#13035: Bycatch in fishery gear is a leading source of mortality for marine mammals; however annual mortality of marine mammals in the Gulf of Mexico from fisheries bycatch is not well understood. Gulf of Mexico fisheries with known or potential marine mammal bycatch include: pelagic longline, shrimp trawl, gillnet and purse seine. Bycatch in fishery gear will be addressed as a collaborative project with NOAA and the fishing industry. Offshore Gulf of Mexico stocks that are known to be impacted include spotted dolphins, as well as shelf and three stocks of coastal bottlenose dolphins. Expanded and enhanced fisheries observer coverage will be implemented to better understand the circumstances that lead to capture bycatch that would be addressed. A strategy will be developed to address marine mammal bycatch in commercial fisheries, including potential modifications to fishing hardware and methods. Date Entered: May 4, 2017 Date Edited: May 4, 2017		Yes	No														\$	3,000,000.00	\$	-

Eco Restoration	5585	6/23/2017	Passive Acoustic Monitoring for Open-Ocean Marine Mammal Restoration in the Gulf of Mexico	NOAA Project ID#13034: An array of five passive acoustic monitoring recorders have been deployed continuously since 2010 in the Gulf of Mexico, in response to the Deepwater Horizon oil spill. These instruments allow monitoring of marine mammal populations for a variety of species (e.g. sperm whales, beaked whales, dolphins, Bryde's whales). Our proposed project would extend the temporal sampling and expand the spatial coverage of passive acoustic monitoring to include the entire GOM, to allow monitoring for marine mammal restoration efforts including habitat modeling and the study of impact assessment from anthropogenic noise and vessel collisions. Current long-term Passive Acoustic Monitoring (PAM) efforts in the Gulf of Mexico consist of five sites that were designed for damage assessment following the Deepwater Horizon oil spill. These sites have been operating continuously since summer 2010, and are collecting data using High-Frequency Acoustic Recording Packages (HFARPs). The High-Frequency Acoustic Recording Package is uniquely capable of collecting continuous broadband acoustic data suitable for marine mammal density estimation for the full range of species. No other autonomous acoustic monitoring hardware is available that can match the HFARPs' capabilities for bandwidth and deployment duration. Likewise, the Scripps Institution of Oceanography has unique capabilities for collecting, processing and analyzing large acoustic data sets for marine mammal calls. Our project partners, University of St. Andrews Centre for Research into Ecological and Environmental Modelling (CREEM) have world-leading capabilities to produce density estimates from long-term passive acoustic monitoring datasets. Together, we have been working with NMFS SEFSC to use these density estimates as part of a habitat model, integrating both visual and acoustic data into the final model. Our vision for this project is to create a passive acoustic monitoring network that includes sensor coverage for the entire Gulf of Mexico. The rationale for this plan is to allow robust estimates of marine mammal populations, sufficient spatial coverage for habitat modeling, and detailed models of soundscapes and directionality information. Density estimation using passive acoustic data requires supplemental information on animal sound production rates (use rate), source levels and behavior. We have been working to develop density estimates for deep diving cetaceans, dolphins, and Bryde's whales in the Gulf of Mexico. As a component of the overall project, we propose to collect data on animal diving and vocal behavior using suction-cup attached acoustic recording tags, in addition to constructing acoustic tracking arrays. These data will provide the supplementary information (detection duration, call production rates) needed to expand the range of species that are amenable to density estimation. Date Entered: May 5, 2017	Yes	No	No	No	Yes	No	No	No	No	No	No	\$ 5,000,000.00	\$ -	
Eco Restoration	5586	6/23/2017	Gulf of Mexico Dolphin Identification System (GoMIDIS)	NOAA Project ID#13042: The Deepwater Horizon (DWH) oil spill and a prolonged Unusual Mortality Event (UME) in the northern Gulf of Mexico made it exceedingly clear that knowledge of bottlenose dolphins in much of the region is insufficient to be able to provide optimal protection as mandated under the Marine Mammal Protection Act. Stock abundance have been largely assigned arbitrarily for management purposes based on geography rather than on dolphin biology. Abundance estimates are out of date for many putative Gulf stocks and are unusable for stock assessments. In the absence of ranging information, it was difficult for managers to assign specific mortalities or health conditions during the DWH and UMEs to specific stocks. These shortfalls complicated efforts to assess the impacts of large scale environmental or mortality events, and inadequate baselines currently exist for accurately evaluating recovery or preparing for future large-scale events. A concerted effort has been made since 2012 to rectify some of these issues by developing a collaborative tool to combine dolphin photographic identification catalogs from around the Gulf. Utilizing the OBIS-SEAMAP photo identification application as an end product, the Gulf of Mexico Dolphin Identification System (GoMIDIS) is a Gulf-wide effort to compile available photo-ID catalog images and data from collaborating researchers to document movements of dolphins, through web-based comparisons of regional catalogs. It is a central repository and archival location for identification photos and associated metadata, providing the basis for detecting large-scale movements of individual dolphins among the relatively limited study areas of the individual investigators. To better assist managers with decision-making, collaborators will be asked for additional information. By incorporating data on adverse human interactions, areas of NOAA concern can be better identified, for increased law enforcement or education. A communication gap bet between the stranding network and photo-ID programs can be bridged by building a platform utilizing a cloud system to make GoMIDIS more "real-time," facilitating access and dissemination of stranding data in a more timely, efficient manner to all interested parties. Priority areas for the stranding network among compiled photo-ID catalogs will expeditiously provide vital information to identify where management actions might be required. Incorporation of a new system for automating the film matching process will expedite the process. Date Entered: May 6, 2017	Yes	No	No	No	No	No	No	No	No	No	No	No	\$ 600,000.00	\$ -
Eco Restoration	5587	6/23/2017	Health, contaminant concentrations, ranging, and dive patterns of dolphins inhabiting the West Florida and Mississippi-Alabama Shelves	NOAA Project ID# 13042: Many questions remain regarding the environmental effects of the Deepwater Horizon oil spill (DWH) petroleum/dispersant system on Gulf ecosystems. Cetaceans, as top predators, are an important component of Gulf of Mexico (GOM) ecosystems and can act as sentinel species for ocean health. However, outside of research in bays, sounds, estuaries and associated coastal waters, where they were found to have serious health conditions consistent with exposure to petroleum products, dolphins have received very little research attention with regards to the impacts of the DWH petroleum/dispersant system (PDS). The West Florida Shelf (WFS) and Mississippi-Alabama Shelf (MAS) occupy much of the eastern GOM. Two cetacean species regularly inhabit these shelves, bottlenose dolphins (Tursiops truncatus) and sperm whales (Phocoena phocaena). Based on the documented distribution of these animals, the WFS and MAS are important habitat, and their year-round occurrence, individuals or populations of these species were likely exposed to PDS, and they could be exposed to future spills as well. Accurate assessment of the potential impacts of exposure, as well as the ability to monitor recovery, requires detailed knowledge of the ecology and health of these animals. Unfortunately, little is known about shelf dolphins. The proposed research will be the first ever systematic tagging, tracking, and health assessments of dolphins in GOM shelf waters. The overarching goal is to apply existing and developing tools and approaches to address gaps in existing knowledge of the effects of exposure to PDS for shelf dolphins. The specific objectives for the proposed research include: 1) Improve understanding of stock structure through tagging, tracking, and genetic sampling; 2) Establish baseline data on environmental contaminant concentrations in dolphin tissues; 3) Obtain baseline dolphin health data; 4) Evaluate potential relationships between lung disease and respiration and diving patterns; and 5) Develop and refine tools for remote dolphin health assessment. The proposed project will apply a suite of tested and new tools under the novel situation of the deep water of the WFS to meet these objectives. The project will involve capture-release health assessments, tagging with satellite-linked, time-depth recording transmitters, and biopsy dart sampling. Date Entered: May 6, 2017	Yes	No	No	No	No	No	No	No	No	No	No	\$ 5,000,000.00	\$ -	
Eco Restoration	5588	6/23/2017	Migratory Species Studies	NOAA Project ID#12967: Expand Gulf of Mexico Migratory Species Pathways Mapping and Conservation Project with emphasis on migratory connectivity modeling, threats assessment, and the identification of habitat restoration needs including pelagic Gulf of Mexico species such as Gulf of Mexico Turtles, Marine Mammals, and the Gulf of Mexico Oceanic Anemonefish. Description: Migratory species rely on multiple habitats to complete their life cycles. This project should: 1) Assess the threats to species while migrating (along their pathways) in the Gulf of Mexico; 2) Develop an optimized habitat portfolio using GIS and migratory connectivity models that identify the essential habitats to maintain migratory species populations throughout their life cycle and to guide habitat conservation and protection; 3) Support technological advancement in the development of biological tracking and oceanographic monitoring networks, such as acoustic monitoring networks, gliders including the development of migratory movement tracking networks and infrastructure across the Gulf. To do that it should fund: current or new establishment of scientific and management networks of practitioners assessing the movements of marine organisms (e.g., ITAG network of acoustic telemetry) and synthesis of a collaborative strategy for a Gulf of Mexico Animal Tracking Network. The project continues work previously completed and published by The Nature Conservancy to map the migration routes of 26 bird, fish, marine mammal and turtle species in the Gulf of Mexico (Brenner et al. 2016). We believe that this research revealed the great importance of species migration to the Gulf ecosystem as well as the importance of continuing to compile and analyze migratory pathways as an important decision-making tool for Gulf restoration. This project would accomplish the next phase of this work with particular emphasis on threat assessment and identification of the most critical migratory pathways for protection for their habitats. (Brenner, J., C. Vogels, and D. Muelman, 2016 Migratory Species in the Gulf of Mexico Large Marine Ecosystem: Pathways, Threats, and Conservation. The Nature Conservancy, Arlington, VA. 93 pp.) Date Entered: April 26, 2017 Date Edited: May 7, 2017	Yes	No	No	Yes	No	No	No	No	No	No	No	\$ 1,200,000.00	\$ 250,000.00	
Eco Restoration	5589	6/23/2017	Development of a tool for tagging free-swimming small cetaceans	NOAA Project ID# 13045: There is a strong need to learn about the ranging and dive patterns of small cetaceans in the Gulf of Mexico waters. Satellite-linked telemetry has advanced greatly in recent decades, to the point where small tags can reliably provide such data for periods of months, with little risk to the animals. The limiting factor for collecting the needed information is acquiring the animals for tagging. In shallow inshore waters, capture-release techniques exist for accessing small groups of bottlenose dolphins for such tagging. However, in deeper offshore waters, capture opportunities are limited to hoop-netting individual small cetaceans. There is a strong need for a technique that would allow safe deployment of satellite-linked transmitters without needing to capture the dolphins. It would be very desirable to develop a technique for attaching standard satellite-linked tags to small cetaceans that ride below the bow of small vessels. Preliminary designs have been developed, but production and testing are required. Date Entered: May 7, 2017	Yes	No	No	No	No	No	No	No	No	No	No	\$ 285,000.00	\$ -	
Eco Restoration	5590	6/23/2017	Next-generation Gulf sturgeon Conservation: Using genomics and epigenetics to identify fine-scale diversity and local adaptation.	NOAA Project ID#13051: Using neutral markers, Gulf sturgeon (Acipenser oxyrinchus desotoi) are differentiated into four populations with low gene flow. However, fine-scale structure, detected using single nucleotide polymorphisms (SNPs), can influence inbreeding/outbreeding, population demography, and recruitment. Thousands of SNPs can be sequenced, increasing the power and accuracy of identifying genetic differentiation, gene flow, effective population size, and bottlenecks. Thus, investigation of fine-scale diversity through SNPs and epigenetics is warranted. Adaptive SNPs, identified as outliers of neutrality and under selection, provide insight into fitness effects and local adaptation. Understanding the gene regions that are adaptive can be used to identify evolutionarily significant units, aiding adaptive management. The proposed study can inform management of adaptation to resources and the response of populations to impacts, such as oil spills, nitrification, and climate change. Epigenetics, the study of changes in an organism due to modified expression instead of changes to the genome, can also be used to detect local adaptation and population differentiation. Methylation is the most commonly studied epigenetic marker in natural populations. Like SNPs, methylation markers can be identified as outliers. Through the combination of SNPs and methylation, we can better understand how Gulf sturgeon populations are adapted to rivers varying in flow patterns, levels of contaminants, food, etc. The main goal of this proposal is to identify undiscovered molecular diversity. To obtain this goal, we propose to: 1) Perform a genome scan of Gulf sturgeon to identify neutral and adaptive SNPs, and 2) Identify patterns of differential methylation using epigenetic markers. Samples will be taken from sturgeons across their distribution. DNA will be extracted and epigenetic genotyping by sequencing, a next-generation sequencing method, will be performed to identify SNPs and methylation simultaneously. If adequate Gulf sturgeon samples cannot be obtained in some locations, environmental DNA samples will be taken and using highly sensitive digital PCR equipment, genetic analysis can be performed. This project will provide baseline genome-level data to improve genetic estimates and will inform managers of local adaptation, impacts due to episodic events and to chronic stressors. These data are paramount to identifying management priorities and successful conservation strategies. Date Entered: May 8, 2017	Yes	No	No	No	No	No	No	No	No	No	No	\$ 574,190.00	\$ -	
Eco Restoration	5591	6/23/2017	Centralized Database for Marine Turtle Flipper and PIT Tags	NOAA Project ID#13055: Objectives: 3EC Maintain the Cooperative Marine Turtle Tagging Program (CMTTP) 3EC initiate and maintain an online comprehensive inventory of PIT tags Many programs supporting the management and conservation of sea turtle populations in the Gulf of Mexico and northwest Atlantic waters rely on tagging sea turtles with flipper tags and/or PIT (passive integrated transponder) tags. These tagging efforts are worthwhile if recovered tags cannot be matched with data from the original tagger. Almost all flipper tags in the Gulf of Mexico and northwest Atlantic waters are issued through the Cooperative Marine Turtle Tagging Program (CMTTP), which was established by the National Marine Fisheries Service (NMFS) to provide a centralized tag database for management purposes (NMFS reserves the right to access the CMTTP database) and to prevent loss of data and duplication of identification codes. In April 1999, the management of the CMTTP was transferred from the Miami Fisheries Science Center to the Southeast Fisheries Science Center to the Southeast Fisheries Research (SEFRC) at the University of Florida. In recent years, 127 organizations have received flipper tags from the CMTTP. About 10,000 tags are distributed each year. For example, 13,750 flipper tags and 82 tag applicators were distributed in 2016. All flipper tags have a University of Florida return address. The centralized flipper tag database now has 139,680 entries. The use of PIT tags is increasing because of their extremely low loss rate (approaching zero) compared with loss of flipper tags. However, coordinating data from PIT tags is a greater challenge than flipper tags because PIT tags, unlike flipper tags, do not have a return address and are not distributed in numerical sequence. An online comprehensive inventory of PIT tags is needed so that if a turtle with a PIT tag is found, the group that tagged the turtle can be identified and data exchanged. When PIT tag data are submitted to the CMTTP, they are entered into a PIT tag database. That database now has 55,640 entries, but this is a fraction of the PIT tags inserted into turtles. There is still a need for a PIT tag database that lists PIT tag codes with the contact information for the tag originators. The CMTTP is the contact for unscrambling encrypted PIT tags within NMFS. We are submitting this idea proposal to maintain the Cooperative Marine Turtle Tagging program and to initiate and maintain an online comprehensive inventory of PIT tags. We have submitted a 3 year estimated budget. Date Entered: May 10, 2017	Yes	Yes	No	Yes	No	No	No	No	No	No	No	\$ 624,080.00	\$ 51,000.00	

Eco Restoration	5592	6/23/2017	Restoration in Place Strategy for the Deep-sea Soft-Bottom Benthos: Long-term Monitoring to Support Restoration Efforts	NOAA Project ID#13059: The Deepwater Horizon (DWH) incident in the northern Gulf of Mexico (GOM) occurred on April 20, 2010 at a water depth of 1525 meters, in Mississippi Canyon Block 252, releasing an estimated 3.19 million barrels of oil over the following 87 days. As part of the Natural Resource Damage Assessment (NRDA) process, a study comprising three field surveys (2010, 2011, and 2014) was conducted to identify effects of the spill on the deep-sea soft-bottom benthos and sediment quality. Results revealed a zone of adverse to moderate impacts on biodiversity linked to the DWH wellhead that persisted through 2014. Thus, an obvious restoration goal for the deep sea is to return biodiversity and key benthic attributes to normal reference-range conditions. It is hypothesized that burial of the damaged habitat by natural deposition processes will cap the damaged sediment and restore the benthos to background conditions. The obvious question is how much sediment is needed to cap the DWH contamination, and long will this take? Based on the NRDA studies, 65% of the benthos is within the top 10 cm of sediment. A recent examination of deep-sea sediments in the area of the 1979 Itoc spill, found 4 cm of fresh sediment on top of the damaged sediment. Using this rate, it is hypothesized that it will take another 65 years to have a total of 10 cm at the Itoc site, which implies it takes about 100 years for deep-sea sediments to recover naturally. Thus, the restoration strategy for deep-sea soft-bottom benthos must be a long-term study to monitor the recovery rate and verify that the sediment is being deposited. Now is the time to begin planning and design projects for the open ocean and deep-sea benthos, because the damage assessment and Program Restoration (DARR) report is complete and the Open Ocean Restoration activities are being developed. However, two challenges exist: (1) rates of change in the deep sea are very slow, and (2) we know very little about temporal dynamics in the deep sea of Gulf of Mexico. Until we understand basic temporal dynamics, it will be difficult, if not impossible, to ascertain if change is a result of recovery, seasonal variability, or year-to-year variability. Thus, the proposed strategy includes both a long-term monitoring strategy to measure impacts on biodiversity (using GOMR) funded cruises, where analyses of the benthic samples were not funded. The long-term monitoring study would include sampling 34 NRDA stations biannually (every 2 years) until recovery occurs (or for the length of the RESTORE program, which would be 15 years). The 34 stations would be 14 moderately to severely impacted sites, and 14 non-impacted sites. The temporal dynamics experiment would entail quarterly sampling over two years at six stations. Quarterly sampling is necessary to identify if seasonality exists, and a two-year cycle is required to confirm that the patterns are repeatable. Three stations in the heavily impacted zone and three stations from non-impacted zone would be sampled in order to determine if recovery based on whether spatial differences between treatments are distinguishable from natural temporal dynamics. The analysis of archived GOMR samples will extend the NRDA time series and act as a segue to RESTORE funded monitoring. The GOMR project was funded to perform the benthic analyses at the Itoc oil spill site, but additional samples were collected in the northern GOM near the DWH spill site. For all three studies, the independent variables to be measured include: benthic macrofauna (taxa richness and total faunal abundance), benthic meiofauna (taxa richness, total faunal abundance). Date Entered: May 10, 2017	Yes	No	No	No	Yes	No	No	Yes	No	No	\$ 52,000,000.00	\$ -	-
Eco Restoration	5594	6/23/2017	Monitoring Brydeid™ whales in near real time from autonomous platforms to reduce anthropogenic threats	NOAA Project ID#13063: The Gulf of Mexico is home to a resident population of Brydeid™ whales that currently numbers less than 40 individuals and is being considered for listing as an endangered species. Gulf of Mexico Brydeid™ whales are subject to a number of anthropogenic threats, including ship strikes and the adverse effects of oil and oil dispersant exposure during oil spills. Effective mitigation of these threats will require a better understanding of their distribution in the northeastern Gulf of Mexico, and a means to assess their occurrence in near real time. The Woods Hole Oceanographic Institution (WHOI) has developed technology to detect, classify, and report the sounds of marine mammals in near real time from a variety of autonomous platforms, including Slocum gliders, wave gliders, and moored buoys [Baumgartner and Mussoline 2011, Baumgartner et al. 2013, Baumgartner et al. 2014]. Since 2012, this technology has been used extensively on the U.S. and Canadian east coasts and in the U.S. Arctic to monitor and study marine mammals. Recent evaluations suggest that analysis-verified detections from these platforms are nearly 100% accurate when estimating the presence of baleen whales in near real time. Detection data are immediately available on the publicly accessible robots4whales.who.edu website, as well as by text, email, and Airtel (@Robots4Whales). WHOI and NOAA are working closely with the U.S. Coast Guard to distribute these data via the Whale Alert app (www.whalealert.org). Coast Guard C-130V software, and Airtel 5 so that mariners have access to the real-time information. The objective of this project is to (1) demonstrate and evaluate near real-time detection of Brydeid™ whales from mobile autonomous platforms and (2) characterize the distribution and habitat of Gulf of Mexico Brydeid™ whales using acoustic detections from these platforms. The project seeks to use Slocum and/or wave gliders equipped with the WHOI-built near real-time acoustic monitoring system to survey the outer shelf and continental slope (100-2000 m) of the northeastern Gulf of Mexico during 2018-2019. Two surveys will be conducted per year, with each survey lasting 3-4 months, to address Gulf of Mexico Brydeid™ whales in near real-time. In addition, we will restricted to detection data from the vehicles to facilitate detection of other species after platform recovery. Detection data will be manually verified in near real time and distributed to the public and numerous stakeholders (including scientists, federal and state protected resource managers, Coast Guard, and the shipping industry) via robots4whales.who.edu, text, email, Twitter, and the Whale Alert app. After recovery of a vehicle, the recorded audio will be manually reviewed for Brydeid™ whale calls, and the results of this review will be compared to the detections made in near real time to measure the accuracy of the near real-time occurrence estimates. Additionally, associations between Brydeid™ whale acoustic detections and observations of remotely sensed sea surface temperature, surface chlorophyll, depth, and depth gradient will be statistically examined to characterize the species' habitat in the northeastern Gulf of Mexico. If of interest, the WHOI system can be expanded to include near real-time detection of endangered sperm whales with modest development funding. References: Baumgartner, M.F., and E. Mussoline. 2011. A generalized baleen whale call detection and classification system. Journal of the Acoustical Society of America 129:2889-2902. Baumgartner, M.F., D.M. Fratantoni, T.P. Hurst, M.W. Brown, T.V.N. Cole, S.M. Van Parijs, and M. Johnson. 2013. Real-time reporting of baleen whale passive acoustic detections from ocean gliders. Journal of the Acoustical Society of America 134:1814-1823. Baumgartner, M.F., K.M. Stafford, P. Winsor, H. Staszewicz, and D.M. Fratantoni. 2014. Glider-based passive acoustic monitoring in the Arctic. Marine Technology Society Journal 40(5):140-51. Date Entered: May 10, 2017	Yes	Yes	No	No	No	No	No	No	No	No	\$ 750,000.00	\$ -	-
Eco Restoration	5595	6/23/2017	Comprehensive sea turtle restoration: An assessment of pier-based by-catch in Mississippi	NOAA Project ID#13077: Following the DWH oil spill, Mississippi has seen large numbers of stranded and incidentally pier-captured Kempid™ ridley sea turtles, an endangered species. The nearshore waters of MS are used as developmental habitat, but there is still knowledge gaps. It is unknown how these waters contribute to the long-term trajectory of the species. IMMS has rehabilitated over 900 Kempid™ ridley™ turtles since 2010, most of which were incidentally pier captured, and 25-35 cm (2-5 years old). The impact of pier-based fisheries on sea turtle populations has previously been underestimated and unrecognized, indicating a serious knowledge gap, which hampers management decisions. 1) Survey, outreach, admit turtles for rehabilitation - IMMS rescues and rehabilitates incidentally pier-captured turtles by working with the fishing community and managers to provide veterinary care to the turtles before returning them to the MS Sound. These efforts will continue in order to maintain and improve the reporting of stranded and incidentally captured sea turtles, thus providing a more robust dataset and decreasing impacts to sea turtle populations. NOAA estimates that 5% of incidentally captured turtles admitted to rehabilitation in IMMS die, compared to ~44% of turtles that are released on site or have escaped from anglers. Therefore efforts to engage the public and maintain a 24-hour response to these turtles is needed. We will work with the angling community to gauge changes in turtle-fisheries interactions change over time, how to best reach anglers, and how to mitigate turtle injuries. 2) Rehabilitation - By rehabilitating stranded, and incidentally pier-captured, sea turtles we will take steps to mitigate possible damage, improve survival, and increase the success of this species' restoration. In MS, the majority of individuals are juveniles, and of greater conservation value as they are closer to reproductive age than are younger age classes. Most conservation efforts have focused on hatchling survival and mitigating interactions with some commercial fisheries. However the rehabilitation of incidentally captured Kempid™ ridley™ represents an opportunity to decrease mortality therefore improving the long-term recovery of this species. Furthermore, incidentally caught turtles allow us to gauge population health. 3) Estimate the success of rehabilitation efforts - Rehabilitated turtles will be tagged prior to release. Animals that are of sufficient size and taggable will be flipper and PIT tagged. A sub-set of these turtles will be tagged with satellite transmitters to acquire their location in relation to environmental conditions (depth, salinity, temperature, etc.). We also propose to begin using acoustic tags, as they are less expensive, transmit longer, and can be applied to smaller turtles, increasing the data obtained for habitat use and survival estimation. This is especially important when considering that since 2009, the annual number of nest laid has become increasingly variable. IMMSAC™ program of collecting information from turtles admitted for rehabilitation and other projects has provided data regarding the health, habitat usage, and ecology of sea turtles in MS waters. What is unknown is if the turtles interacting with fisheries are random members of the entire population, or a subset of the larger population. We propose to use fishery independent methods to sample sea turtles from the MS waters. Captured turtles will have blood drawn, morphometrics taken, and be tagged prior to release. This health assessment will provide a data set that can be directly compared with other regional studies. Tagging data collected will be compared with data from rehabilitated turtles to identify the factors that lead to human-sea turtle interaction, and the restoration of this species. Date Entered: May 11, 2017	Yes	No	No	No	No	No	No	No	No	No	\$ 5,000,000.00	\$ -	-
Eco Restoration	5596	6/23/2017	Unified Gulf of Mexico Benthic Habitat Map	NOAA Project ID#13073: Habitat maps of varying quality and coverage exist in different federal, state, industry, and academic repositories, yet habitat mapping coverage in the Gulf of Mexico 40° particularly of deepwater areas is far from complete. Traditional acoustic mapping techniques (e.g., multibeam and sidescan sonar, LIDAR, other remote sensing, groundtruthing, and other direct benthic data collection and processing methods) have been deployed sporadically and opportunistically in the Gulf of Mexico, due in large part to their high cost. DWH injury assessment and restoration have created a new urgency for, and new partnerships around habitat mapping. This project will bring together an inventory of existing data, and establish a community through which we can share, reprocess, digitize and modernize this information in support of a single baseline map to serve as source information for activities to come (including a collaborative partnership or community of practice for data sharing and prioritization of future habitat mapping efforts). Date Entered: May 11, 2017	Yes	Yes	No	No	No	No	No	No	No	\$ 500,000.00	\$ -	-	
Eco Restoration	5597	6/23/2017	The complete picture using high resolution digital imagery	NOAA Project ID#13084: High resolution digital imagery has the ability to fill data gaps and research needs in a wide variety of subject areas in a very quick and efficient way. In the past 9 months, 3 surveys have been carried out in the New York offshore planning area, an area covering 48,000 km ² . Two of those surveys have complete datasets georeferenced and partially available to view through a publicly available web portal (https://remote.normandeau.com/nys_public_data.php). Information in the public view includes locations of over 15,000 birds, their flight height and direction of travel when flying, and locations and direction of travel of over 2000 marine mammals, 600 turtles, 2000 large bony fish, 900 cartilaginous fish, and nearly 7000 fish shoals. All are mapped and information is available to be filtered by species, making it possible to associate species presence with sea depth and other important covariates. Jelly fish are visible in the imagery, and also collected and mapped are images of boating traffic. In the fall survey, active gill net, trawler, commercial shell fishing, and recreational vessels were identified and mapped. Although these are not available in the public view, they contribute a key piece of the puzzle of what is where and why. These kinds of data are exactly what are needed in the Gulf of Mexico, to form a complete picture of how the Gulf is being used. Data collected now can be used to monitor the future success or failure of the many projects that are currently targeted to improve the overall health of the ecosystem and maintain and increase the diversity and density of animals using the Gulf of Mexico. This is the basis of this project idea. A BOEM study completed in 2013 (https://www.boem.gov/SPS/5/3272.pdf) found that turtle densities were under-recorded by between 4x and 10x when data were collected by visual methods using low altitude aircraft or boats. Primary reasons for this were repulsion from the survey vessel (i.e., the animals dove), and opacity of the water columns from an oblique view (boat observers can't see down). The behavior of marine mammals is also influenced by vessel traffic. The same study found that estimated densities of dolphins were potentially inflated by attraction to the boat survey vessel. The camera technology available today provides massive megapixel sensors and allows for ultra high resolution, revolutionizing imagery as an efficient data collection method. The recent New York study is identifying over 90% of birds to species, and even finding flight heights for around 70% of flying birds (https://remote.normandeau.com/nys_public_data.php). Marine mammals are also identified to species. Marine mammals are also identified with success, influenced primarily by surface depth obscuring important diagnostic features of similar species (i.e., beaked whales). It takes 9 days to collect data across the New York offshore planning area (https://remote.normandeau.com/nys_overview.php). Vast areas of the Gulf of Mexico could be essential, very detailed data collected very quickly and efficiently. The use of high altitude (2360 feet) and high resolution (1.5 cm or better) allows detailed surveys to be provided across state and federal borders, with results highlighting patterns across the entire Gulf of Mexico. Using zigzag transect design and stopping at strategic coastal airport locations en route, the entire area from Florida to Texas could be relatively easily and quickly surveyed depending on the percent coverage deemed appropriate. Multiple seasonal surveys in a year would allow observation of variations in interseasonal and interannual density, diversity and distribution as well as identifying hotspots of foraging activity, prey locations, and anthropogenic use. The method would provide much needed data in places where data are not only sparse but frequently absent. Date Entered: May 11, 2017	Yes	Yes	No	Yes	No	No	No	No	No	No	\$ 5,000,000.00	\$ -	-

Eco Restoration	5599	6/23/2017	Informing deep-benthic and mesophotic habitat restoration by characterizing baseline coral microbiomes	NOAA Project ID#13094: The human microbiome project has made it mainstream news that our microbes are a critical part of our biology linked to nutrition, physical and mental health. Corals also have many associated microbes that are an integral part of their biology. It is critical to have a baseline for Gulf of Mexico (GOM) coral microbiomes in order to improve understanding of mesophotic and deep-sea communities to address critical uncertainties, inform management, and ensure resiliency. Microbes are the most quickly-adaptable part of coral, responding to environmental changes and stressors long before effects are visible. Having available baselines will provide the necessary benchmark against which future samples can be compared, allowing detection of impacts and providing a guideline for restoration. These coral-associated microbiomes are sensitive indicators of coral health and without knowing what a healthy microbiome looks like, it is impossible know if you have restored back to the healthy state or instead created a shifted baseline of life but not fully functioning life. Currently, the only baseline microbiome data available for deep-sea corals in GOM are for <i>Lophelia pertusa</i> (Kellogg et al., 2009, DOI: 10.1128/AEM.02357-08; Kellogg et al., 2017, doi: 10.3389/fmicb.2017.00796). Flocculent material associated with Deepwater Horizon impacted octorals impacted was examined (Simster et al., 2015, DOI: 10.1016/j.dsr.2015.01.010), but the closest comparisons available for healthy baseline microbiomes for octoral species come from outside the GOM and may have regional differences that make them less useful for determining local impacts (Gray et al., 2011, DOI: 10.1111/1365-0412.020323; Lawler et al., 2016, DOI: 10.3389/fmicb.2016.00458; Kellogg et al., 2016, DOI: 10.7717/peerj.2529). New microbiome data would be made available to the larger restoration, management, and research community via NCBI's Sequence Read Archive, an internationally recognized public data repository maintained by the US Federal Government. The proposed project would require a ship and remotely-operated vehicle (ROV) for proper collections. Samples would be collected on land, microbiomes would be cultured using Illumina MiSeq. To reduce expenses and simplify collection, this project could be combined with studies that require coral samples such as population genetics/connectivity, coral health assays, coral age/growth rate, or restoration. This could include sharing ship/ROV time and coral samples to maximize the information gathered per collection. Target areas for sampling include areas impacted by the oil spill and control sites. Mesophotic sites: Alabama Alps, Roughtongue Reef, Yellowtail reef, Coral Trees and Madison Swanson South. Deep sites: Green Canyon (GC852), Mustang Canyon (MC297, MC344, MC203), Viscosa Knoll (VK826), and West Florida Slope. Date Entered: May 12, 2017		Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	\$ 5,029,000.00	\$ -		
Eco Restoration	5600	6/23/2017	Species-wide population analysis of Gulf sturgeon to support restoration planning and design	NOAA Project ID#13104: Multiple researchers and agencies have conducted sporadic capture/recapture sampling on the seven natal populations of Gulf sturgeon. These efforts have normally been basin-specific, and resulted in basin-specific, short-term estimates of local populations. In recent years, efforts have been made to safeguard and gather the different data sets to prevent data from disappearing when researchers move or retire. However, there has not been an effort to collate, validate, and analyze data from multiple river systems in one analysis framework. Thus, basic information, such as how many Gulf sturgeon have ever been tagged or recaptured, is unknown, much less more advanced demographic data that could be useful for inter-basin comparisons. This project proposes to work with all existing data sets from current and past Gulf sturgeon researchers to create a coherent, consistent species-wide database, and then analyze that dataset within a multi-state spatial capture-recapture (MS SCR) framework. This would be accomplished within the framework of the Gulf Sturgeon Working Group, a researcher-driven collaborative of researchers and administrators. By working within the existing group, which includes all organizations currently working with Gulf Sturgeon, we will ensure access to existing data, and dissemination of collated data, model structure, and results to all interested parties. Existing data and analyses have suggested that the western populations of Gulf sturgeon have lower recruitment and survival. By working in a species-wide MS SCR modeling environment with environmental covariates, we would be able to verify lower survival, and partition the differences in survival among size classes and years, thus suggesting starting points for hypotheses about the differing mortality that may be amenable to remediation, leading to restoration. Date Entered: May 12, 2017	Hancock, Jackson	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	\$ 750,000.00	\$ -		
Eco Restoration	5601	6/23/2017	2018/19 update of NDA mesophotic reef ROV studies	NOAA Project ID#13121: In 2010, 2011 and 2014, USGS WARR researchers conducted ROV cruises at a series of mesophotic reefs along the NE Gulf shelf edge, from Louisiana to Florida. Changes in fish and invertebrate communities were documented post-Deep Water Horizon, compared to ROV footage obtained at the same reefs before 1997 and 2003. This data was the basis of the POA&P Mesophotic reef section. In 2011 and 2014, detailed images were made of individual corals denoted with anchored markers. It would be necessary, in order to design restoration efforts for mesophotic reefs, to revisit the same sites in 2018/19, to document any changes in fish and invertebrate fauna and density, and compare to control to the 2011, 2013, and 2014 data. If the reefs are recovering on their own, then active restoration will not have to be undertaken, necessitating only continued monitoring of the system. If, on the other hand, revisiting the sites shows that some components of the ecosystem are not returning on their own, then restoration targets will be able to be set, and plans for active restoration made. Date Entered: May 12, 2017		Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	\$ 3,821,000.00	\$ -		
Eco Restoration	5602	6/23/2017	Gulf-wide Investigation of Juvenile Gulf Sturgeon Dynamics and Estuarine Habitat Use	NOAA Project ID#13035: A multitude of restoration projects have been proposed within the footprint of estuarine critical habitat for the federally protected Gulf Sturgeon (GS), thereby triggering regulatory provisions of the Endangered Species Act (ESA) for estuarine habitat. It is essential to understand the spawning habitat for GS, including the spatial and temporal variability of spawning habitat use, or the degree of preference for mesohabitats such as oyster reefs, seagrass beds, or mud flats. This information is critical for guiding projects through the federal regulatory process, and for determining effective strategies for estuarine restoration to benefit the GS. Also unknown are patterns of recruitment, growth, and survival of juvenile GS, yet this information is fundamental to quantifying the success of Gulf-wide restoration efforts. Following an approach recently demonstrated in the Apalachicola River system, we propose to conduct a multi-year assessment of 1) the spatiotemporal trends in estuarine habitat use by juvenile GS via sonic telemetry and habitat mapping, and 2) trends in Age-1 juvenile sturgeon recruitment, growth, genetics, and survival using proven fisheries techniques across the following 5 GS populations and estuaries: Pearl, Pascagoula, Escambia, Apalachicola, and Suwannee. Most importantly, this project will provide the data necessary to evaluate the impact of restoration projects proposed within the critical estuarine habitat of GS. Also of great importance, this project will establish the necessary baseline for determining whether restoration projects succeed at increasing the production of Gulf Sturgeon, and/or improving the growth rates and survival of juvenile GS in populations affected by the Gulf Oil Spill: the ability to directly measure the effect of restoration projects is critical. This project will also reveal the effective number of spawning adults that successfully contribute to the next generation. This metric will be used to evaluate the net cost of restoration activities like restoration projects. This project will be coordinated by a multi-agency USFWS team. This information is essential to guiding cooperative partnership with state, federal, and academic institutions across the northern Gulf of Mexico. The project will leverage the resources of existing projects involving passive telemetry arrays, such as those currently deployed in Lake Pontchartrain and the Pearl River system. Funding for this project will provide the resources and will yield the knowledge and commitments necessary to continue monitoring juvenile GS in these systems into the future, thereby achieving the ultimate goal of assessing effects attributable to Gulf-wide restoration efforts over the long term. Furthermore, the project will greatly advance our understanding of juvenile GS genetics and environmental relationships within estuarine habitats, a key objective for recovery of this federally-protected, iconic species. Date Entered: May 5, 2017 Date Edited: May 12, 2017	St. Tammany Parish, Jackson County, Santa Rosa County, Gulf County, Dixie County	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	\$ 1,150,000.00	\$ 100,000.00	
Eco Restoration	5603	6/23/2017	Characterizing Gulf Sturgeon Spawning Habitat and Habitat Use in the Pearl and Pascagoula River Systems	NOAA Project ID#13101: Information on the location and extent of spawning habitat, and patterns of accessibility and use of this habitat by adult Gulf Sturgeon is extremely limited for the Pearl and Pascagoula River systems, where populations are believed to comprise only a few hundred remaining individuals. This critical information deficit impedes our ability to identify restoration projects that target spawning habitat with active manipulation or protection approaches. In the Pearl system, 2 low-head dams (i.e., sills) impede access to upstream reaches thought to contain the necessary hard-bottom substrates suitable for sturgeon spawning. Removal of these barriers is THE highest priority for Gulf Sturgeon restoration, yet knowledge of where adult fish will go to spawn once the barriers are removed is lacking. Identifying spawning habitat in the Pearl system is not only important to monitoring the success of dam removal, but this information is essential to guiding regulatory actions and species recovery within this basin. In the Pascagoula River, this knowledge gap is likewise essential to Gulf Sturgeon restoration planning and implementation. We propose to use methods developed and demonstrated by this author to map and characterize potential sturgeon spawning habitat throughout the entire navigable, upstream portions of both the Pearl and Pascagoula rivers and associated tributaries (Krauer et al., 2012; Litt and Krauer 2016). Once identified, passive telemetry arrays will be established to investigate patterns of adult fish access and utilization of these habitats. To confirm spawning, high use areas will be targeted for the collection of eggs using methods proven to be effective for Gulf Sturgeon. This study will result in maps that quantify the extent of available habitat for spawning in both river systems. This much-needed information will directly inform future threats assessments and decisions associated with restoration or protection of these habitats. The importance of recovering the Pearl and Pascagoula populations to overall species recovery cannot be overstated; the 2 populations are genetically distinct from those to the east, occupy different estuarine and marine habitats, exhibit behaviors and seasonal migratory patterns that are unique, and are faced with different threats. Given the high priority assigned to spawning habitat restoration, this project represents a fundamental first step toward achieving the overarching goal of improving the status of Gulf Sturgeon in the two populations most likely to have been affected by the Gulf Oil Spill. Date Entered: May 12, 2017	Washington Parish, George County	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	\$ 350,000.00	\$ 20,000.00	
Eco Restoration	5604	6/23/2017	Microscale landers on mesophotic reefs	NOAA Project ID#13123: Documenting fish and invertebrate communities on mesophotic reefs using traditional oceanographic ROV's and research vessels, while successful, is an expensive undertaking. Doing so using deep diving techniques adds a large degree of personnel risk. There may, however, be a faster, cheaper, smaller methodology that may yield comparable results with much lower cost and less risk. Several recent convergences in technology have created the possibility of creating small, easily deployable mini-observatories that would detect telemetred marine life, while recording visual, audio, and physical data over a period of time before being recovered, at a relatively low cost. Venco Amaris builds an acoustic telemetry receiver with a built in acoustic release (VR2AR). Meanwhile, multiple sources, such as the Babson PI Foundation, produce microcomputers which would be adaptable to the requirements of an ocean observatory. Mated together (embedding a small Babson PI camera, and sensors into a float around the VR2AR), would create a miniaturized, highly flexible, reusable ocean observatory capable of 500 m deployment, able to be hand launched and recovered from small craft, at a cost of around \$6000 each. By keeping the cost low, it would be possible to deploy landers in an array, greatly increasing the amount of data collected and increasing redundancy. Sport fishing charter boats are now capable of handling most wave conditions at speeds over 60 knots. By utilizing fast, stable charter boats, micro-rovs, and hand launchable and recoverable micro-observatories, researchers could instrument many more mesophotic reefs at much lower costs. By designing the micro-landers around an open-source architecture system, incorporating a standard power package, open-source software, and easily sourced hardware, individual researchers could add whatever sensors they needed to their landers. Working in conjunction with the University of Florida Department of Computer and Electrical Engineering M&T Center, USGS would design, create and test a basic observatory system, with add-on potential for use by other researchers. By deploying many small multi-sensor landers on mesophotic reefs, we would be able to monitor recovery at longer time scales over larger areas than can be accomplished via ROV missions, at lower cost and with more flexibility. Date Entered: May 12, 2017		Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	\$ 2,250,000.00	\$ -	
Eco Restoration	5606	6/23/2017	Acoustic telemetry array to support tracking of Gulf sturgeon, sea turtles, marine mammals, and fish species in the Northeast Gulf of Mexico	NOAA Project ID#13105: Multiple researchers and agencies are conducting acoustic telemetry studies on Gulf sturgeon. Within the framework of the Gulf Sturgeon Working Group, researchers have standardized telemetry equipment, and established a coordinated set of passive receivers that monitor entry and exit from natal rivers. Concurrently, there is a Gulf-wide collaborative multi-species telemetry group (ITAG) to share acoustic receiver data, and encourage collaboration in receiver array distribution and deployment. Several areas across the Southeastern Gulf have established receiver arrays, and more arrays are being established over time. However, across the Northeastern Gulf, there is a large gap in offshore coverage between the Tampa Bay region and Lake Pontchartrain. We propose to work with state, university, and federal agencies and researchers to increase and augment acoustic receiver coverage until there is a seamless series of receiver arrays from the Dry Tortugas to the Mississippi River. Such an array would be valuable not only for Gulf sturgeon researchers, but also sea turtles, sharks, marine mammals, and fish researchers. Large-scale acoustic receiver arrays exist along the Atlantic and Pacific coasts of North America and around Australia. NOAA funding created a dispersed array of receivers along the Tampa Bay region, Florida key, FL in 2010 and 2011, so there is empirical knowledge as to field-tested deployment methods and results in this region. These large-scale arrays and collaborative networks have enabled new discoveries about movements of marine animals. By working within the established collaborative group, and with the existing arrays, we would facilitate communication of data, and interactive planning of projects. By working with many researchers across large areas, we would facilitate multi-species spatial analysis, examining animals habitat use across a wide range of environmental variation. Large-scale data acoustic tracking data would be able to inform the scale and success of restoration planning and design efforts from Louisiana to Florida. Date Entered: May 12, 2017		Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	\$ 1,500,000.00	\$ -	
Eco Restoration	5607	6/23/2017	Science exchange for sea turtle research and management	NOAA Project ID#13096: We propose a biennial science exchange for researchers and managers working with sea turtles in the Gulf of Mexico. The objectives of the project are to: 1) Provide a venue for exchange of scientific approaches to restoration, monitoring and management of all species of sea turtles in the Gulf of Mexico. 2) Promote collaborative interactions and synergies among researchers receiving restoration funds earmarked for sea turtles. As settlement funds will be allocated over a 15-year period, we propose to gather the Gulf of Mexico sea turtle community every other year during the duration of the settlement period. This will help the community evaluate the status of monitoring and adaptive management in order to help determine if restoration objectives are being met, as outlined in the Final POA&P. The format of the science exchange will be a traditional scientific meeting in which presentations will be held in time, and longer sessions devoted to discussion and group interactions. Registered participants will be asked to give 5-minute lightning talks highlighting progress on their restoration projects, followed by 10-minute question and answer periods. Longer blocks of time will be devoted to facilitated group discussions so that the community can identify continued priorities, pinpoint gaps in restoration activities, and target future goals with a comprehensive vision. The budget will provide funds for 40-day-in-duration within a three-year period, with the idea of biennial meetings will continue into the future. The location would rotate among the Gulf states. Meals will be provided in a community setting to promote interactions and networking among participants. Groups with active sea turtle restoration funding would be encouraged to participate and supported under the project, while any other attendees would be welcome. Date Entered: May 12, 2017		Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	\$ 250,000.00	\$ -	Meeting info exchange no restoration

	Eco Restoration	5608	6/23/2017	Turtle connections: Gulf-wide sea turtle nesting beach and foraging area connectivity	NOAA Project ID#13093: Sea turtle monitoring is biased toward nesting aggregations. Whereas this approach provides valuable information about sea turtle nesting populations, it does not address the foraging locations, which is where sea turtles spend the majority of their time. The programmatic restoration plan highlights the need for robust monitoring both to track restoration projects and address critical information gaps such as spatiotemporal distribution and movements. We propose a Gulf-wide effort to enhance foraging area monitoring by sampling sea turtles at the nesting beach and using intrinsic markers to determine foraging area origin. This effort can permit long-term tracking of foraging area abundance trends without having to monitor the in-water populations directly. Identifying origins can also help identify the spatial overlap between foraging area hotspots and stressors such as commercial fisheries. Tissue samples collected from nesting females with a non-invasive protocol will be analyzed for stable isotopes that are biological markers that can be used to reveal information about the habitats used by organisms without having to observe them directly. The most commonly used isotopes in marine studies are carbon and nitrogen. Both of these elements are incorporated by primary producers at the base of the food web and are then transferred through trophic levels. Because of baseline differences in the isotope signals from different regions in the ocean, stable isotope concentrations can reflect location and can be used for tracking marine animal movements. A stable isotope approach to determining origin has been validated in a number of sea turtle populations around the world, and in the Gulf of Mexico (GoM), spatial patterns in the stable isotope composition of loggerhead tissues have been mapped using an isotopic landscape, or isoscape, approach. The method was validated in the GoM to be able to assign nesting loggerheads to a foraging area origin with high accuracy. This stable isotope analysis will be a very powerful tool to effectively determine geographic origin for large numbers of untracked nesting sea turtles in the GoM. The proposed project addresses the need for restoration information, migration patterns, and habitat use highlighted in the programmatic restoration plan. In order to obtain samples from satellite-tracked or in-water turtles by working with various teams that are currently deploying satellite telemetry units. The isotope data will be mapped and interpolated in a geospatial framework to develop new isoscapes for green turtles and Kemp's ridleys using a similar protocol that was used for the loggerhead isoscape. 2. Long term nesting beach monitoring: We propose long term sample collection in conjunction with nest beach monitoring programs already in operation for the three species. Skin samples will be collected on an annual basis for each of the three species, and foraging area origin will be determined with the isoscapes from the previous step. The estimated budget will provide three years of project support, but monitoring should be continued for a minimum of ten years in order to examine any trends that may occur as a result of Gulf-wide restoration efforts and highlight geographic regions of high use that may coincide with anthropogenic activities. Date Entered: May 12, 2017	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	\$ 1,023,000.00	\$	
	Eco Restoration	5609	6/23/2017	Assessing recovery rates of deepwater organisms in the northern Gulf of Mexico through multiple examinations of species assemblages, community structures, distributions, trophic relationships and interannual variability in abundances.	NOAA Project ID#13151: The Deep Water Horizon (DWH) exploratory well was located in the northern Gulf of Mexico 65 km off the shore of Louisiana in approximately 1,600 m water depth. This region, while relatively close to shore, is not easily sampled due to the water depth and the resultant requirements for the sampling equipment and ships. These difficulties have resulted in infrequent sampling efforts in these deepwater habitats especially in the context of fisheries independent surveys. Thus, when the DWH accident occurred there was a paucity of information relative to the affected communities, particularly in regards to time-series information that would have been useful for analysis of impacts to deepwater organisms. In an attempt to characterize the population dynamics and ecology of deepwater ecosystems in the northern Gulf of Mexico, we propose a survey that will deploy a suite of gear types at randomly selected sites between depths of 200-34' 2000 m. As this project aims to examine all biological components of these poorly known and infrequently sampled habitats, we propose to deploy multiple gear types to collect information from the surface to the seafloor. Selected gear types will include trawls, longlines, traps, video arrays, water samples, acoustic and sediment grabs. All captured specimens will be identified to the lowest possible taxa, enumerated and measured. Specimens and water samples will be retained for life history, diet, genetic, environmental DNA, and toxicology analyses. In addition to randomly sampled locations, transects will be run in eight cardinal directions (i.e. N, NE, E, SE, S, SW, W and NW) from the location of the DWH spill site in an effort to determine long-term spatial impacts of the event on deepwater ecosystems. To meet this goal, an index of biotic integrity will be developed to assess the influence of the DWH oil spill (e.g. waterborne oil in Mexico) and to compare impacted locations at and in proximity to the DWH wellhead along the transect lines. Metrics will include categories such as abundance, biomass, trophic composition, diversity of invertebrates and fishes, and habitat mapping characterization and quality. An index of biotic integrity will be calculated for each sampling location that will quantify the degree of site-specific impacts and allow for tracking of recovery rates for each site. Date Entered: May 12, 2017	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	\$ 18,000,000.00	\$		
	Eco Restoration	5610	6/23/2017	Restoration and assessment of post-disturbance recovery for deep water coral habitats	NOAA Project ID#13152: Deep-water corals (DWC) occur throughout the Gulf of Mexico at depths > 50 m [1,2]. Benthic communities are distinct between shelf edge (80-100m; dense octocorals, black corals and sponges, with occasional stony corals), slope (1-300m; including stony coral <i>Lophelia pertusa</i> thickets and reefs; fig 1), and bathyal (2000m; actino- and black corals) habitats. Corals and sponges provide important habitat for diverse taxa, some of which are economically valuable [3]. DWC communities have low growth and slow recovery potential [3]. The 86 "footprint" of the DWH spill covered a large swath of the northern GOM, including several known areas of deep-water coral habitat, for ~90 days [4]. Post-spill surveys of some sites showed oil damage (Fig 2) to octocoral species at bathyal [5,3], and shelf edge depths [7,8], but the slope-depth <i>Lophelia</i> ecosystem located between these two sites, did not appear to be impacted [5]. Proposed activities at 6 study sites (Fig. 3-1). Survey DWC communities in three 2 habitat types: from oil-contaminated areas to describe oil distribution and population densities of dominant coral and sponge species; b) benthic and fish community structure; c) human impacts 2. Collect samples to assess health, reproductive strategy and population genetic structure of dominant DWC. 3. Evaluate habitat enhancement as restoration tool, by measuring coral recruitment and community succession on replicated carbonate transplant units. These will be deployed using elevators and placed near the reef using divers or ROVs. 4. Corals will be collected in insulated bins, fragmented and re-deployed on transplant units near reef habitat (using divers or ROVs) to assess their value as restoration tools for DWC habitats. Restoration outcomes: In accordance with recommended phased approach and intent to enhance conservation and management of deep benthic resources, we propose initial assessment and feasibility study comparing current status of oil-exposed vs unexposed communities in 3 depth habitats and evaluating benefits of artificial hard substrates to enhance recruitment/recovery potential. This information is pre-requisite to determine potential benefits of conventional reef restoration approaches. Results will also create tools for effective management (placement of MPAs, regulation of commercial and recreational activities) as predictive models for DWC/sponge distributions, larval dispersal and vulnerability assessment. Date Entered: May 13, 2017	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	\$ 2,950,000.00	\$		
	Eco Restoration	5611	6/23/2017	An acoustic stranding alert system for the Gulf Coast	NOAA Project ID#13064: Marine mammal strandings occur regularly in the Gulf of Mexico, but stranding rates increased substantially after the Deep Water Horizon (DWH) oil spill. Post-DWH, stranded odontocetes (toothed whales and dolphins) were in poor health and often presented with adrenal and lung disease, consistent with exposure to DWH petroleum products (Schwacke et al. 2014, Venn-Watson et al. 2015). Restoration of odontocete populations in the Gulf of Mexico could bring significant benefits from an improved response to strandings. The Woods Hole Oceanographic Institution (WHOI) is developing an odontocete stranding alert system based on the digital acoustic monitoring (DOMON) instrument that detects, classifies, and reports the sounds of marine mammals in real time (Baumgartner and Musolinio 2011, Baumgartner et al. 2013, 2014). WHOI's DOMON instrument has been implemented at acoustically quiet moored buoys, which have been used successfully since 2013 to detect the presence of baleen whales in near real time (see below for current buoy locations). The system is now being adapted to detect the whistles of odontocetes with NOAA Sea Grant support (proposal pending), an odontocete acoustic detection buoy will be tested in Wellfleet (Cape Cod), Massachusetts during 2018 as an early warning system for stranding events. A near-complete Sea Grant-funded WHOI study is demonstrating that whistles recorded just outside of Wellfleet Harbor occur reliably prior to mass strandings. Using advance warning from a near real-time acoustic detection system, animal rescue teams can significantly decrease response times and improve health outcomes by either 1) preventing animals from stranding (i.e., heading back to sea) or 2) ministering more quickly to recently beached animals. The objective of this proposal is to field, test and evaluate two odontocete stranding alert systems on the Gulf Coast. Exact locations of the proposed systems are to be determined in consultation with local stranding networks, but known or recent stranding hotspots (e.g., Hog Island, near Everglades City, FL) are likely candidates. Near real time detection information from the buoys will be manually reviewed, and odontocete presence information will be publicly accessible at robotswhales.whoi.edu. Stranding networks and the NOAA Southeast Regional stranding coordinator and staff will be alerted to the presence of odontocetes automatically by text message and email immediately after detection. Members of the stranding network will evaluate the efficacy of the early warning system by comparing outcomes before and after installation of the acoustic monitoring buoys. References: Baumgartner, M.F. and S.R. Musolinio. 2011. A generalized baleen whale oil detection and classification system. <i>Journal of the Acoustical Society of America</i> 129:2899-2902. Baumgartner, M.F., D.M. Fratantonio, T.P. Hurst, M.W. Brown, T.V.N. Cole, S.M. Van Parijs, and M. Johnson. 2013. Real-time reporting of baleen whale passive acoustic detections from ocean gliders. <i>Journal of the Acoustical Society of America</i> 134:1814-1823. Baumgartner, M.F., K.M. Stafford, P. Winsor, H. Staszewicz, and D.M. Fratantonio. 2014. Glider-based passive acoustic monitoring in the Arctic. <i>Marine Technology Society Journal</i> 48(5):5-11. Schwacke, L.H. et al. 2014. Health of common bottlenose dolphins (<i>Tursiops truncatus</i>) in Barataria Bay, Louisiana, following the Deepwater Horizon oil spill. <i>Environmental Science & Technology</i> 48:93-103. Venn-Watson, S. et al. 2015. Adrenal gland and lung lesions in Gulf of Mexico common bottlenose dolphins (<i>Tursiops truncatus</i>) found dead following the Deepwater Horizon oil spill. <i>PLoS ONE</i> 10(5):e0126538. Date Entered: May 10, 2017 Date Edited: May 13, 2017	Yes	No	No	No	Yes	No	No	No	No	No	No	No	No	No	No	No	\$ 900,000.00	\$	
	Eco Restoration	5612	6/23/2017	Expanding seabird observer placements in support of the Gulf of Mexico Marine Assessment Program for Protected Species (GoMMAPPS)	NOAA Project ID#13263: Executive summary: A modest funding request of \$72k to the Gulf of Mexico Marine Assessment Program for Protected Species (GoMMAPPS) is requested to more than double spatial and temporal coverage in year 1 of this inter-agency program to better inform restoration actions and decisions for at least 25 injured seabirds listed as 34GoFFshoreSEB Table 4.7-3 of the Final Programmatic Damage Assessment and Restoration Plan (PDAR). Supplemental funding would increase total days surveyed from 90 to 190 in the first full program year, and would be leveraged with up to ~200K already granted annually for 3 years from Bureau of Ocean Management (BOEM) to the GoMMAPPS component for vessel-based seabird sweeps. Proposed work conforms to all protocols and requirements under a GoMMAPPS Seabird Science Plan, and the interagency agreement established between BOEM and U.S. Fish & Wildlife Service (USFWS). Data collected will be used by BOEM to inform NEPA analyses, Exploration Plans (EPs), Development Operations Coordination Document (DOCDs), oil spill risk assessment (OSRA) models, and by the USFWS for Section 7 consultations and planning of O&G activities in the Outer Continental Shelf (OCS) to reduce or mitigate associated impacts to offshore seabirds. Supplemental funding for seabird observers is requested for GoMMAPPS program year 1 only, after which time the principal investigators will re-evaluate (and likely scale back) the scope of seabird observer placement during program years 2 and 3. Background: The Gulf of Mexico (GoM) region is critically important in affording breeding, staging, and wintering habitats for North America's migratory avian resources. Despite the numbers of energy-related platforms and cumulative level of oil and gas activity in the northern GoM region exceeding all other Bureau of Ocean Energy Management regions combined, limited information is still available about the species composition, distribution, and abundance of birds (offshore seabirds, particularly far offshore seabirds). Consequently, such information is important for assisting the science foundation and regulatory decision-making by Department of interior agencies (BOEM, USFWS, U.S. Geological Survey) in relation to offshore resource extraction in an effort to mitigate potential effects to avian resources. Upon completion, the GoMMAPPS Seabird Project is anticipated to be the most spatially and temporally extensive avian research effort in the northern GoM, and is intended to document avian distribution, abundance, and diversity to better inform regulatory decisions that influence conservation of migratory birds. Date Entered: May 14, 2017	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	\$ 72,436.00	\$ 45,800.00	
	Eco Restoration	5613	6/23/2017	Adaptive management approach to diadromous open-ocean fishes restoration	NOAA Project ID#13196: Many open ocean fishes use freshwater rivers during their life history. This connectivity makes these fishes important to open ocean, coastal and inland ecosystems. Notable examples of these species include Alabama Shad, Striped Bass, Gulf Sturgeon, and American Eel. Many of these species have populations at a fraction of historic levels or are imperiled due to freshwater habitat limitations, habitat fragmentation, and barriers to migration. 1) Unavailable or limited for spawning life stages 2) available but environmental conditions exceed physiological tolerances 3) unavailable due to in stream barriers 4) unavailable due to in stream barriers and environmental conditions exceed physiological tolerances The 4 hypotheses represent structural uncertainty in how habitat influences diadromous fish populations and the best restoration actions identified depend on the hypothesis with the most evidentiary weight. Adaptive management (AM) is a decision making approach that can be used to resolve structural uncertainty by iteratively applying management by hypotheses and updating evidentiary weight using Bayesian updating to adapt decisions given learning are rare. Therefore the goal of this study is to develop an AM framework for diadromous fish restoration. The Pearl and Pascagoula River systems will be used to develop the AM approach due to the importance of these rivers to a number of species and proposed restoration projects. A significant component to any AM framework is the development of models that will predict the outcome of potential restoration actions for competing hypotheses and couple to monitoring data such that uncertainty around competing hypotheses can be reduced (i.e., learning). The objectives of this project are to: Object 1e: 1) Develop an adaptive management framework to evaluate restoration options for diadromous fish population restoration in the Pearl and Pascagoula River systems 2) Identify restoration objectives and actions, additional hypotheses representing key uncertainties, and monitoring designs. Objective 2: Develop models to predict the likely population response to restoration actions accounting for structural uncertainty. In the context of the 4 hypotheses previous identified models need to be developed that predict habitat use and physiological tolerance. Therefore, we will develop models that predict habitat use and of Gulf Sturgeon and diadromous fishes through three elements and structures: 1) habitat use (P. Allen and B. Prachel), as well as movements and genetics studies (M. Anders, M. Peterson, C. Gonzalez, A. Kester). Bioenergetics models will be developed to predict the likelihood of restoration actions to produce the environmental conditions (e.g., temperature, dissolved oxygen and salinity) within physiological tolerances. A bioenergetics model will be created based on physiological and movement studies by P. Allen and B. Prachel as well as existing capture recapture data when available for Gulf Sturgeon as a model species due to the focused efforts on this species. Together these models will be used to predict habitat use, limitations, and likely outcomes of restoration actions. These predicted outcomes will then be used to identify optimal restoration actions and their population responses (i.e., monitoring responses) in order to make more informed restoration decisions to update understanding of the system and to make more beneficial restoration and monitoring actions. Objectives: Identify key uncertainties, potential restoration alternatives and optimal restoration actions given restoration objectives. Outcomes: Identify most beneficial restoration and monitoring actions. Benefits: Ecosystem health, robust fisheries, energy transfer between ecosystems Date Entered: May 15, 2017	Stone County, Washington Parish, Greene County	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	\$ 500,000.00	\$		

Eco Restoration	5614	6/23/2017	Connectivity Patterns of Blue Crabs in the Gulf of Mexico: Defining Stock Boundaries of a Migratory Species to Inform Restoration, Assessment, and Management	NOAA Project ID#13197: Blue crabs support a valuable fishery in the Gulf of Mexico (GoM), worth over \$73 million in 2015. Despite active management, many states have seen declines in harvest in recent years, which could be indicative of declines in spawning stock abundance, larval abundance, and/or postlarval recruitment. Blue crabs have a migratory life cycle, inhabiting different estuarine and offshore habitats at different life history stages. These migrations result in both spawning females and larvae occurring offshore in large numbers, dispersing long distances, and crossing management boundaries. Management, assessment, and restoration strategies are most effective at a geographic scale that matches the geographic scale and boundaries of the stock. The modern stock concept describes units of a population that can be considered homogeneous for management purposes, and can inform the scale of stock assessments and management/restoration actions. In the GoM, stock identification for blue crabs has only recently been undertaken. Difficulties in assessing stock structure and boundaries have arisen due to a lack of information on connectivity patterns and unclear and often conflicting population genetic information. Understanding how physical and biological factors influence connectivity is necessary for marine fisheries management and restoration, especially in the face of environmental stressors such as climate change and oil spills. This is especially critical for species with migratory life cycles, such as blue crabs, whose offshore distribution of spawning females and larvae results in a high probability of encountering offshore in large numbers, dispersing long distances, and crossing management boundaries. The goal of this research program is to fill this knowledge gap by developing a science-based understanding of connectivity patterns and stock boundaries will allow managers to develop stock management, assessment, and restoration plans for this species. The overarching objective of this study is to transform our understanding of connectivity patterns and stock structure of blue crabs in the GoM. We will work closely with managers to accomplish the following objectives: (1) To map the distribution of spawning females and larvae in offshore waters, assess reproductive output and fate by reproductive potential, and identify important spawning and nursery habitats. (2) To estimate interannual variability in transport of blue crab larvae between spawning grounds and estuary mouths and estimate Gulf-wide connectivity patterns by applying a Gulf-wide larval transport model. The three-dimensional larval transport model will integrate results of trawl and plankton studies with results from previous mark-recapture studies to estimate transport and connectivity in ten years of model simulations. (3) To synthesize observations, model predictions, and recent genetic information to provide integrated and actionable results for state and federal fisheries managers in the Gulf region. By including fisheries managers in this research, responding to their information needs, and directly disseminating integrated results to them, this research will support improved future stock assessments, management decisions, and restoration plans while promoting a better understanding of the stock structure of this ecologically and economically important species. Date Entered: May 15, 2017	Yes	No	No	No	No	No	No	No	No	No	No	No	No	\$	1,000,000.00	\$			
Eco Restoration	5615	6/23/2017	Unmanned Underwater Vehicles - U.S. Navy NDAAs Collaboration	NOAA Project ID#13128: Restoration efforts for mesophotic and deep benthic communities will rely on accurate maps of deep coral sites. Due to the depths involved, acoustic bathymetric mapping from surface vessels is not possible at a resolution sufficient to confirm coral presence. The use of Unmanned Underwater Vehicles (UUV's) is needed to obtain the sub-meter resolution required. Many projects in the mesophotic and deep benthic sector will employ UUV's explicitly for the purpose of high resolution mapping of known and suspected coral sites. Creating a centralized pool of multiple UUV assets with supporting infrastructure and expertise will provide: (1) an economy of scale to reduce costs and (2) standardization of data resolution, mapping and processing protocols, and gear configurations which will allow significantly more effective coordination between projects. The National Unmanned Systems Shared Resource Center (NUSSRC) is located in Panama City, FL. The NUSSRC operates a fleet of 13 vehicles with depths capabilities to 600m and through Memorandums of Agreement/Understanding (MOA/MOUs) has unrestricted access to vehicles with depth capabilities to 600m. Available sensor packages include sidescan sonar (SS), multibeam sonar (MBS), synthetic aperture sonar (SAS), visual and oceanographic. Existing contracts and relationships with vendors allow rapid acquisition of sensors and/or vehicles to meet nearly all demands foreseeable in mesophotic and deep benthic community research and restoration. NUSSRC offers a complete turn key solution to the need for high resolution mapping of deep benthic environments. For example, on-scale seafloor SAS mapping could allow monitoring of coral growth rates on restorable tracts thus obviating the need for expensive ROV surveys. The use of NUSSRC assets will be offered to all NDAAs-funded mesophotic and deep benthic projects. NUSSRC's location in a coastal city on the central Gulf of Mexico will enable rapid and economical deployment to any Gulf Coast port deploying NDAAs missions. It is anticipated many NDAAs-funded restoration activities will have similar deep water mapping requirements. The most logical and parsimonious solution to these needs is a centralized asset pool. The economy of scale, standardization of mapping and turn-key synchronicity of all operational and analytical functions provided by NUSSRC makes it an excellent choice for this asset pool. This project idea is based upon NUSSRC providing 300 days at sea per year with 100m, 600m or 1000m depth-rated vehicles, 10 days at sea per year with 6000m depth-rated vehicles, launch and recovery equipment, and sufficient fully qualified personnel to provide 24 hour operations. NUSSRC will also provide at sea first order data processing of sufficient quality to select next day ROV dive sites and shore-based final data processing. Clear deliverables and performance metrics are easily described for this project. Fully processed maps and imagery will be the primary deliverables. Performance metrics will be the area mapped (total area and area per pix time), the number of missions conducted annually, and the response rate to eligible mapping requests. Date Entered: May 12, 2017 Date Edited: May 15, 2017	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No	\$	9,320,000.00	\$		Mapping
Eco Restoration	5616	6/23/2017	Effects of hypoxia on plankton distributions and pelagic food web dynamics in the northern Gulf of Mexico: Obtaining reference points for restoration initiatives on fish populations	NOAA Project ID# 13204: Justification- Numerous large-scale restoration projects have been proposed in the northern Gulf of Mexico (nGoM), many of which may alter physical processes in coastal waters (e.g., discharge rates, nutrient inputs) affecting biological processes (e.g., planktonic food webs, fisheries recruitment dynamics). Regarding fisheries, natural variation in the biological environment across a wide range of spatiotemporal scales can directly affect the survival of planktonic larval fishes (the most vulnerable life stage), subsequently influencing stock recruitment and population sustainability. However, the degree to which these processes affect larval fish mortality remains poorly understood. Historically, biological sampling of lower trophic levels (i.e., plankton) has been performed at relatively coarse scales (e.g. 10-20 m vertically, 100s of meters horizontally), which has limited our ability to quantify the relative importance of the different causes of variation in larval fish survivorship, and account for this variability in effective monitoring of restoration plans. The Open Ocean Trawl Implementation Group has stated that the initial priorities for the restoration of fish and water column invertebrates involve careful data gaps and information needs. Effective restoration plans require a clear understanding of natural variation in ecosystem processes, resources, and stressors that affect the target species or habitats. Inadequate understanding of the impacts of environmental variation leads to uncertainties in the reference point state of the system, which is needed to evaluate restoration initiatives. Approach: Here we propose combining high-resolution field sampling (in situ imaging), lab experiments, and modeling to assess the effects of hypoxia on three poorly understood aspects of plankton ecology that have a substantial impact on fisheries production: (1) habitat use and spatial distribution of larval fish, their prey, and their planktonic predators, (2) predatory impact of gelatinous zooplankton on fish larvae, and (3) larval fish growth and condition. We hypothesize that hypoxia will affect predator-prey interactions by limiting the distributions of plankton (vertical and horizontal), consequently increasing encounter rates between larval fishes and their zooplankton predators (i.e., gelatinous zooplankton). Thus, we anticipate a negative impact on larval fish survivorship due to hypoxia-driven increased predation rates, not positive impact on growth and condition. Lower metabolic budgets (e.g., gelatinous zooplankton). Our focus on hypoxia (an anthropogenic perturbation) allows for a comparative approach to examine the impact of environmental stressors on food web dynamics, habitat quality and quantity, and the monitoring of impacts related to coastal restoration efforts. Lastly, relatively small changes in larval fish mortality rates can have large repercussions for recruitment success; therefore, our emphasis on the biological and physical drivers of larval fish survival is directly related to the factors governing strong recruitment success in fish. Our project deliverables will directly benefit our understanding of the nGoM ecosystem, which will lead to an understanding of processes tied to population variability of key fish species (e.g., Red Snapper, Spanish Macrrel, Atlantic Bumper). We will also develop ecosystem-based management metrics through static and dynamic scenario analyses, in which scenarios will be used to elucidate changes in the production of all functional groups to varying intensity levels of hypoxia. Our proposed work directly benefits practitioners by improving our understanding of the underlying variability in ecosystem processes. Date Entered: May 15, 2017	Yes	No	No	No	No	No	No	No	No	No	No	No	No	\$	2,500,000.00	\$			
Eco Restoration	5617	6/23/2017	A multi-tiered approach to restoring Gulf Sturgeon and anadromous open ocean fishes	NOAA Project ID#13222: Successful restoration of Gulf Sturgeon populations requires knowing more about the movements and habitat use of juvenile sturgeon to make sure the right habitats are selected for conservation and restoration activities. Juvenile sturgeon are especially important for increasing populations because mortality during this portion of life can be very high, thus increasing survival is the most direct strategy for rapid population recovery. We propose to direct restoration activities on Gulf Sturgeon through addressing three research questions: 1) How, when, and where do juvenile Gulf Sturgeon move? 2) What limits Gulf Sturgeon populations, particularly juveniles? and 3) What conservation and restoration actions can be done to increase Gulf Sturgeon populations? Question 1: How, when, and where do juvenile Gulf Sturgeon move? Juvenile sturgeon are notoriously difficult to track and catch through traditional fisheries techniques because of their small size and cryptic habitat use. However, through using state-of-the-art trace element chemistry, we can determine the kinds of habitats juvenile sturgeon use through collecting fin samples from juveniles to adults, without harming fish. Sturgeon fins are analogous to the skeloblast board in an airplane by recording the water chemistry of the surrounding water as fish grow. Moreover, sturgeon fins form rings on them, like rings of trees, that let us determine their age. In combining the rings in the fins with the chemistry information, we can figure out when a fish fed and moved at any age. Because juvenile fish grow more than adults, these techniques are especially useful for reconstructing movement and habitat information for juveniles when relatively large amounts of fin tissue are grown quickly. Preliminary studies have shown that the water chemistry is different within the Pearl River system and likely between river systems. Further, studies in our laboratories have shown the usefulness of this technique in Gulf Sturgeon. Therefore, determining fin chemistry is useful for assessing movements and habitat selection. We will use new and archived sturgeon fins collected in these rivers in collaboration with the US Fish and Wildlife Service, University of Southern Mississippi Gulf Coast Research Laboratory, and the US Army Corps of Engineers to determine how, when, and where juvenile sturgeon move. Question 2: What limits Gulf Sturgeon populations, particularly juveniles? Sometimes good habitats for Gulf Sturgeon are blocked by dams or other barriers creating limited access to places that could help juvenile sturgeon thrive. Through identifying these habitats through a suite of physical conditions in the rivers such as water salinity, substrate type, and water flow, we can pinpoint actual locations where juvenile Gulf Sturgeon could be, and potentially are, living. We will use a combination of physiological tolerance experiments, habitat measurements from known points of juvenile Gulf Sturgeon presence, and hydrologic and species distribution modeling to determine where in the Pearl and Pascagoula rivers juvenile Gulf Sturgeon may be living. This information can be used to prioritize efforts to protect and conserve Gulf Sturgeon critical habitat and identify important conditions for restoration. Question 3: What conservation and restoration actions can be done to increase Gulf Sturgeon populations? Juvenile Gulf Sturgeon may not be found at all locations meeting their habitat requirements. This can happen for a variety of reasons including watershed alterations or barriers to movement that make a site less desirable or inaccessible. We will use information generated in addressing questions 1 and 2 to come up with a prioritized list of restoration actions including mapped locations where possible, that can be used for determining future resource allocations. We will also use data generated in this project to help generate and test hypotheses as part of an adaptive management plan. Date Entered: May 15, 2017	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	\$	1,000,000.00	\$	60,000.00	Marion County, Greene County, Perry County, Washington Parish	
Eco Restoration	5619	6/27/2017	Phase II Land Acquisition for expansion of Grand Bay NWR, NERR, Grand Bay Preserve, and Graveline Bay Preserve	This effort seeks to permanently protect lands identified by the US Fish and Wildlife Service and the State of Mississippi as critical for acquisition and long-term management at both Grand Bay and Graveline Bay. This project will add approximately 1,679 acres to the 20,000+ acres currently owned and managed by the USFWS and the State of Mississippi at Grand Bay and Graveline Bay. This acquisition will add critical coastal lands to the Grand Bay NWR/NERR/Preserve and the Graveline Bay Preserve for permanent protection and improved management of coastal wetlands, as well as important adjacent upland areas. The Grand Bay NWR/NERR/Preserve protects one of the last expanses of wet pine savanna habitat in the country. Due to fire suppression and conversion to pine plantation, less than 5% of the original remains, making it one of the most endangered ecosystems in the country. Because of the great biological significance of this area, we are proposing to acquire additional lands to continue to expand the protection of both core and buffer areas, while enhancing management capabilities. The Graveline Bay parcels include several areas of true uplands that could be lost to residential or commercial development. The targeted 1,679 +/- acres consists of wet pine savanna, maritime forest, tidal and non-tidal wetlands, salt marshes, salt pannes, bays and bayous. Federally threatened and endangered species that occur at the Grand Bay and Graveline Bay include the gopher tortoise, sandhill crane, and the muskrat. Also, numerous migratory species utilize the habitats provided on this acreage for portions of the life cycle, including Ibis, Martins and Swallows, Rails, Plovers, Sandpipers and Phalaropes, and Gulls and Terns, along with many different neotropical species. This acreage also provides salt marsh/estuarine habitats for many aquatic species occurring in the Gulf of Mexico. In addition to protecting critical habitat and ecosystems, expanding the footprint of protected lands at Grand Bay and Graveline Bay will support educational, research, and training opportunities in this unique coastal environment. The Grand Bay and Graveline Bay Conservation Fund is in discussions with the landowner regarding acquisition of these tracts and anticipates that the project could be completed immediately, pending availability of funds.	Yes	No	No	No	Yes	No	No	No	Yes	No	No	No	\$	4,905,000.00	\$		Land Acquisition		

Eco Restoration	5621	7/3/2017	Long term acoustic monitoring of colonial waterbirds and shorebirds	<p>NOAA Project ID#13225: Colonial waterbirds, including several listed species and species of local and regional concern, nest in large colonies along the shorelines and islands of the entire Gulf coast. These colonies are typically established within proximity to good foraging sites in suitable nesting substrate (trees, shrubs, ground) that are not excessively disturbed and provide protection from, or absence of, predators. Threats to these colonies include human disturbance, overcrowding, nesting habitat degradation, and depredation. Changes in water levels and water chemistry due to climate change presents and additional consideration when managing and protecting colonies. Colony collapse can occur if foraging sites collapse which is often tied directly to water levels at critical rearing stages. Water levels can also affect colony access by humans and by predators. Typical surveys are expensive due to the human resource needs and aerial survey needs. While these surveys are necessary, they provide snapshots of colony activity and do not provide accurate timing of events over long (decades) monitoring periods. Particularly in light of climate change, slight changes in the timing of nesting and fledging could have profound population effects over the long term. Acoustic monitoring of colonies provides a cost-effective, continuous (24 h) record of all colony activities. Acoustic cues can pinpoint episodic events such as colony predators (not all of which occur during observable, daylight hours) and natural or human disturbance, or it can provide timing information on arrival, colony establishment, chick feeding, and abandonment. Additionally, there have been several studies that have demonstrated that colony abundance can be correlated to acoustic activity. We recommend establishing a long term acoustic monitoring program in each of the Gulf States that will be supported ongoing surveys to better establish strong correlations between traditional survey methods and acoustic methods. The program can be modified as necessary to include additional colonies, areas that are under-surveyed, or areas that are part of a restoration program. A minimum of four colonies (two trees/shrub nesting and two open/ground nesting) in 3 to 5 different acoustic receiver areas prior to deployment of acoustic receivers and nesting arrays. Recording will be continuous until collection after nesting season. At least four sites will be equipped with PAM3-C software such that near real-time data will be sent to a web-based user portal where events can be monitored. Acoustic data will be processed for ambient sound levels, spectral content, episodic acoustic events over the average ambient levels and vocal behavior. Environmental data, survey data, and acoustic data will be processed for timing of nesting events and as a whole picture of the Gulf Coast. We propose an initial 5-year, 15-state, 20-site program. This long term approach provides for continuous monitoring and increases sampling effort during nesting seasons throughout the Gulf Coast. Date Entered: May 15, 2017</p>	Escambia, Hillsborough, Charlotte, Lee, Collier, Monroe, Mobile, Baldwin, Hancock, Harrison, Cameron, Terrebonne, Lafourche, Plaquemines, Kenedy, San Patricio, Aransas, Galveston, Refugio, Chambers, Jefferson	Yes	Yes	No	Yes	No	No	No	No	No	\$	580,000.00	\$	-
Eco Restoration	5622	7/3/2017	Acoustic diversity assessment of offshore sand shoal habitat utilization by fishes and invertebrates and the consequences of its use in nearshore restoration using sand placement	<p>NOAA Project ID# 13232: Much of the sand used for projects are sourced from finite, natural sand shoals in the OCS. Sand shoal habitat has been identified as potentially important fish and invertebrate habitat, and as such, BOEM and other federal agencies have invested in extensive baseline ecological studies of several sand shoal sources. Acoustic tagging, trawling, camera surveys and other traditional survey methods, while highly valuable, provide only periodic or episodic information on the species or habitat (Jarvis et al. 2016). Passive acoustic monitoring has proven to be a successful, cost-effective method of monitoring vocal species and enhancing the long-term understanding of species and habitat use (Bourdree 2006, Zimmer 2011). However, acoustic surveys and acoustic habitat characterization have focused on species presence/absence and ambient sound level characterization rather than the assessment of the ecosystem as whole (Pijanowski et al. 2011). Through this more holistic perspective, ecologists can assess how ecosystems, and their concomitant acoustic signatures, change due to disturbance. Objectives: This study seeks to further develop and apply acoustic diversity indices as a tool to monitor the long-term baseline and recovery of offshore sand sources where acoustic activity and variability can be correlated to a statistically significant level with marine ecosystem health. Therefore, a logical next step in developing goals in soundscape management is to adapt and apply novel tools for assessing acoustic biodiversity within existing data collection initiatives. This proposed study will deliver novel, adapted analytical tools that provide an assessment of acoustic diversity in local and regional soundscapes to enhance the ability to detect changes in marine sand shoal ecosystems using acoustic data. Data will be collected through the deployment of sensor arrays across selected sand shoal ecosystems specifically about human-disturbance gradients. To establish how shoal soundscapes vary across space, time, and disturbance, a suite of over three-dozen soundscapes metrics will be applied to the acoustic dataset. The utility of each of these metrics and the determination of optimal monitoring schemes will be established by validating the results with traditional metrics, and through several short-term deployments with a progressive assessment of acoustic parameters, timing and levels of arrival metrics, and levels of arrival metrics, for identifying the key indicators that ecosystems will provide researchers and natural resource managers with critical information about animal activity, ecosystem dynamics, and disturbance impacts. Development of these monitoring regimes for selected ecosystems will provide a standardized assessment method and monitoring tool that can be applicable across BOEM MMP regions. This is a critical consideration because marine-based projects often suffer from comparatively high access costs. Date Entered: May 15, 2017</p>	Harrison, Jackson	Yes	Yes	No	Yes	No	No	No	No	\$	1,500,000.00	\$	-	
Eco Restoration	5623	7/3/2017	Monitoring the effects of restoration activities on Gulf of Mexico bay, sound and estuary common bottlenose dolphins using index sites	<p>NOAA Project ID#13238: Cetacean stocks in all Gulf of Mexico (GoMx) habitats (bays, sounds, and estuaries (BSE), coastal, continental shelf, and oceanic) were injured by the DWH oil spill. Common bottlenose dolphin stocks inhabiting BSE waters impacted by oil were found to have reduced survival and reproductive rates, and suffered negative health effects. As a result, these stocks were predicted to have population declines ranging from 21% to 62%. To monitor recovery and the effectiveness of restoration efforts, and to target adaptive management efforts, similar studies at four BSE index sites are proposed over the period of restoration. The index sites would be selected to include sites with differing levels of oiling ranging from heavily oiled to no oil for comparison, and include sites expected to be targets of restoration efforts. The study techniques proposed are well established and were used successfully in the DWH NRD: capture-recapture photo-identification (photo-ID), biopsy sampling, and capture-release health assessments. At each index site, a complete suite of similar studies would be conducted every 3 years for 12 years (6 replicate studies/site) with each consisting of: (1) A series of capture-recapture surveys to monitor and measure survival rates; (2) Pregnancy of individuals would be evaluated during health assessments and by biopsy sampling of free-ranging dolphins. Reproductive success would be measured by follow-on photo-ID surveys during the next 12 months; (3) Health assessments would monitor among others weight, adrenal status (corticosterone/sulfocortisol), and lung condition to follow changes in health impacts documented from DWH. These studies would benefit the injured stocks by evaluating the success of restoration and potentially retargeting/changing restoration techniques. The work would be a large collaborative effort with Federal and State partners most of who were involved in the DWH NRD and have experience with these techniques. A comprehensive report compiling results from all aspects of the studies from each index site would be prepared after each replicate as well as a final report at the conclusion of all the replicates. Results will be compared to effects documented during and just after the spill to evaluate changes in status as restoration occurs. Date Entered: May 15, 2017</p>		Yes	No	No	No	No	No	No	\$	24,000,000.00	\$	-		
Eco Restoration	5624	7/6/2017	Bycatch Mitigation	<p>NOAA Project ID#13241: This idea is proposed under the Open Ocean TIG restoration project. It is a project that will support restoration through reducing bycatch and bycatch mortality of billfish and sea turtles. The long term goal of this project is to replenish these marine resources, expand to other marine resources, and at the same time enhance recreational opportunities. To achieve this goal the project aims to: 1. use bycatch mitigation strategies and safe-handling measures of billfish that have been identified (such as circle hooks); 2. use bycatch mitigation measures that either prevent capture or promote escape in commercial fisheries using gillnets, longlines, and purse seine gears; and 3. implement safe-handling measures to increase survivability post-capture (such as Turtle Excluder devices for turtles). This project is innovative in nature as it aims to use outcomes and information from two existing projects: a recent inventory conducted of best available science on bycatch mitigation measures across taxa for gears through the review of gear and fishing practice modifications and post-capture release procedures to determine effectiveness in reducing bycatch and increasing post-capture survivability of marine species; and b. an inventory of existing data collection programs in ECAT fisheries of the Caribbean/Central America States and to improve data reporting in artisanal fisheries in the region. This information will increase the success of the project, reduce collateral damage from implementation, and build from benefits that may be used in a number of species. Date Entered: May 15, 2017</p>		Yes	No	No	No	No	No	No	\$	-	\$	-		
Eco Restoration	5625	7/6/2017	Improved and/or Expanded Assessments of Trans-Boundary Marine Mammal Stocks	<p>NOAA Project ID#13240: Many marine mammal stocks that occur in U.S. waters also range or migrate into international waters of Mexico, Cuba, and the Caribbean. Assessing trans-boundary marine mammal stocks is particularly challenging because they can be distributed widely and be taken (disturbed, injured, or killed) by fisheries, energy development, vessel strikes, and/or other human activities throughout their range. Assessment of total abundance for such stocks can require substantial survey capacity, and assessment of fishery interactions and other types of takes of such stocks requires the exchange of information with foreign or international organizations and/or governmental agencies. Complete assessment of trans-boundary stocks that were injured as a result of the Deepwater Horizon spill is essential for their recovery and restoration. Priority should be given to those stocks that are endangered or threatened, hunted, or known to interact significantly with fisheries or other human activities in international or foreign waters. Date Entered: May 15, 2017</p>		Yes	No	No	Yes	No	No	No	\$	-	\$	-		
Eco Restoration	5626	7/6/2017	Filling the southern Gulf of Mexico gap: assessments of marine mammal and seabird distribution, abundance and habitats on a Gulf-wide scale for effective monitoring of restoration impacts	<p>NOAA Project ID#13236: The Gulf of Mexico (GoMx) is a Large Marine Ecosystem comprised of the exclusive economic zones of the U.S. in the north, and Mexico and Cuba in the south. The oceanic GoMx (>200m deep) is inhabited by a variety of seabird species and 21 species of cetaceans, including the ESA-listed sperm whale and the GoMx Bryde's whale (ESA status under review), and most cetacean species were significantly impacted by the Deepwater Horizon (DWH) oil spill. Oceanic cetacean assessments have been conducted primarily in the U.S. GoMx but little is known about the distributions, abundance, and stock structure of cetaceans and seabirds in the southern GoMx. For example, the stock structure of GoMx oceanic cetaceans is assumed to comprise one GoMx-wide stock per species, but this assumption has not been tested. Most of these species have distributions that cover the entire GoMx and are impacted by anthropogenic stressors on a GoMx-wide scale. The lack of information from the southern GoMx (60% of GoMx waters) is a significant data gap that makes it difficult to distinguish trends in abundance from changes in the distributions of cetaceans and seabirds. To effectively assess and monitor the impacts of restoration activities on GoMx oceanic cetaceans and seabirds injured by the DWH oil spill, concurrent surveys in both the northern and southern waters must be conducted. Therefore, multi-year seasonal GoMx-wide assessments in oceanic waters are proposed and consist of summer and winter southern GoMx surveys that include visual cetacean and seabird transect surveys, acoustic transect surveys, cetacean biopsy sampling for stock structure analyses, and hydrographic sampling; and the strategic deployment of acoustic moorings to better understand the year-round occurrence of cetaceans including Bryde's whales, sperm whales, and beaked whales. Four southern GoMx ship surveys would be conducted in conjunction with similar NMFS northern GoMx ship surveys. Year 1 would consist of a winter and summer survey, followed by either winter or summer surveys in Years 2 and 3. The end-products would be GoMx-wide seasonal species abundance estimates, trends in abundance for high density species, and spatially explicit habitat maps of density for cetacean and seabird species for the oceanic GoMx that can be evaluated for changes to assess and monitor recovery and restoration. These are all well-established methodologies that have successfully been used in U.S. waters and elsewhere. Date Entered: May 15, 2017</p>		Yes	No	No	No	No	No	No	\$	11,000,000.00	\$	3,600,000.00		
Eco Restoration	5627	7/6/2017	Mapping species distributions and bycatch hotspots using a comprehensive survey database and geostatistical models	<p>NOAA Project ID#13199: As part of a Florida RESTORE Act Centers of Excellence Program (FLACEP) project, researchers at the University of Miami (UM) compiled a comprehensive survey database including nearly all fishery dependent and independent sources of information on the distribution, density and size-frequency of fish and other species in the Gulf of Mexico (GoM), along with corresponding environmental data. The UM team, along with collaborators at NOAA Fisheries, applied geostatistical modeling techniques to generate seasonal maps for many species. Life stages and functional groups, primarily for use as inputs to ecosystem simulation models and to improve monitoring survey design. The proposed project will build on this work to generate predictive maps that will allow fishers to focus their effort on times and places that have high catch rates of target species and life stages while avoiding areas with high bycatch of undesired individuals, spawning fish, or otherwise protected species. Hotspots of each species and biological and physical conditions cause a species or life stage to be concentrated in an area with unrefined benthic habitat, eddies or frontal zones where prey species are concentrated, spawning aggregation sites, or migration corridors. The project will develop improved metrics of the physical environment including ocean heat content and distance to fronts inferred from satellite data. Applying geostatistical models to the data from the comprehensive survey database will increase the sample size and precision of estimates of the spatial distribution and the environmental conditions that influence these distributions. We will apply multivariate models to the distributions of many species are correlated with each other based on similar habitat preferences or predator/prey interactions. This project will primarily focus on species that are of interest to pelagic and bottom longline fishers and are priorities for restoration, including juveniles and adults of billfish, swordfish, tunas and reef fishes, as well as prohibited species such as sea turtles and sea birds. Also, although many broodstock-spawning species in the GoM aggregate to spawn, the locations of spawning aggregations and the geomorphological or environmental conditions that favor spawning aggregations are not well known. Thus, we will map the locations of high densities of spawners of species for which the identification of spawning aggregation sites has been identified as a priority by the Gulf of Mexico Fishery Management Council, including gag, Goliath, yellowedge, and black grouper. For predictions of bycatch hotspots to be useful to help fishers avoid bycatch, the models must have a high predictive accuracy. Thus, we will evaluate how bycatch rates vary across time and space, and how well they are predicted by environmental data. We will use the historical data to estimate how total bycatch could have been reduced if fishers had avoided areas predicted to have high bycatch according to our predictive models. This will allow us to determine whether and to what extent fishers could reduce bycatch either by avoiding areas that the model predicts will have high bycatch, or simply by moving when they encounter high bycatch rates. To evaluate whether improved data sources would allow for more sophisticated methods to avoid bycatch, we will use a Bayesian simulation developed by NOAA Fisheries to simulate increased bycatch and avoid bycatch avoidance scenarios. Because this project focuses on synthesizing existing biological and physical data, we will be able to produce useful maps fairly quickly, and also identify species, life stages and regions for which data are lacking. We will be able to test whether current data are sufficient to make useful predictions about bycatch, and also make recommendations for future data collection to improve bycatch mitigation. Date Entered: May 15, 2017</p>		Yes	No	No	No	No	No	No	\$	1,500,000.00	\$	-		

Eco Restoration	5628	7/6/2017	Using unmanned aerial systems (UAS, AKA drones) to assess and monitor the health of individual Bryde's whales and sperm whales in the northern Gulf of Mexico	NOAA Project ID#13184: Large whales in the Gulf of Mexico (GoM) are vulnerable to a number of direct threats including ship strikes, entanglement in fishing gear, and catastrophic events, such as a Deepwater Horizon (DWH) oil spill. They are also susceptible to more insidious threats such as harmful algal blooms, lack of available food, and long-term accumulation of anthropogenic pollutants. Small populations are particularly vulnerable to these threats. The resident GoM Bryde's whales and sperm whales are critically endangered (IUCN) and the GoM sperm whale abundance is only 76% of its historical level. Sustaining and recovering these populations demands monitoring and maintaining the health of individuals. However, monitoring the health of whales is difficult, expensive, and dangerous. This project employs unmanned aerial systems (UAS) for remote and non-invasive health assessment of the two large whales in the GoM by quantifying body condition and analyzing microbial communities in exhaled respiratory condensate, or sputum. The project also provides standardized protocols and workflows for a portable, easily deployable remote health assessment toolbox for monitoring and adaptive management of other cetaceans. Using a custom unmanned hexacopter (Aerial Imaging System) launched from a research vessel, we will collect high-resolution aerial photographs and blow samples of whales during two seasons every year (3-4 weeks each) for four years (2018 to 2021). High-resolution photographs collected at a known altitude will be analyzed to accurately quantify body condition parameters (i.e., girth) and examine animals for key indicators of health (Miller et al. 2011; Miller et al. 2012; Durban et al. 2016). Photogrammetric analyses will follow methods and standards developed by NOAA (Durban et al. 2015). Our goal is to collect measurements and samples for 15-20 animals per year from each species. The respiratory tract is a common site of infection in marine mammals. Analyses of exhaled humpback whale blow collected using UAS obtained enough DNA for microbiome analysis (Aprigli et al. In Prep.). This project will use UAS to collect respiratory blow samples for microbiome analysis (Aprigli et al. In Prep.). (1) Identifying bacterial constituents in the blow of only 76% of a ribosomal RNA barcode gene (Aprigli et al. 2015), and (2) a meta-genomic approach to detect all bacteria - including protists, bacteria and DNA viruses (Nakamura et al. 2009). Variation in respiratory microbiome community will be compared between individuals, species, seasons, and body condition (similar to Aprigli et al. 2014). Potential pathogen data will be examined using a custom database developed by Aprigli et al. (Aprigli et al. 2013; Gupta et al. 2014). The PI on this proposal have employed these methods to collect similar data from blue whales, right whales, and humpback whales. Because of the low abundance of GoM Bryde's whales, we will first test for disturbance before attempting to collect blows. Photo identification will be conducted to avoid repeated sampling of the same animals in a season. This proactive project fills essential gaps in methods and establishes monitoring protocols for the Natural Resource Damage Assessment (NRDA) process. It also directly contributes to increasing marine mammal survival through better understanding of causes of stress and death as well as early detection and interventions to improve the health of individuals and natural threats. The stated goal of the Open Ocean Trustee Implementation Group. Furthermore, it meets the explicit priorities of the Group to: 1) Replenish and Protect Living Coastal and Marine Resources, and 2) Provide for Monitoring, Adaptive Management, and Administrative Oversight to Support Restoration Implementation Bibliography Removed For Length Considerations - Available On Request. Date Entered: May 14, 2017. Date Edited: May 15, 2017	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	\$	1,791,063.00	\$	-
Eco Restoration	5631	7/6/2017	Designation of DeSoto and Mississippi Canyons as Marine Protected Areas	NOAA Project ID#13053: DeSoto and Mississippi Canyons provide important habitat for Bryde's whales and sperm whales, respectively, as well as for other oceanic marine mammals and deep-sea coral communities. The northern Gulf of Mexico stock of Bryde's whales inhabits DeSoto Canyon and adjacent continental slope waters extending east and south of the Canyon, and Bryde's whales are the only regularly occurring baleen whale in the Gulf of Mexico and Wilcox 2014, Rose et al. 2016). The northern Gulf of Mexico stock of sperm whales also represents a distinct stock in the Gulf. Sperm whales are found throughout offshore waters of the Gulf, but the Mississippi Canyon represents an important feeding area (Jochens et al. 2008). Both species of large whales were impacted by the Deepwater Horizon (DWH) oil spill, with estimates of 17 percent of the Bryde's whale population killed and 6 percent of the sperm whale population killed (DWH MMTQ 2015). Mississippi Canyon was subject to intense and prolonged oiling below and on the surface during the spill (Stout et al. 2015). DeSoto Canyon was heavily contaminated but also experienced oiling at the surface and seafloor (Brooks et al. 2015). Other marine mammals found regularly or occasionally in these areas include Atlantic spotted dolphins, Blainville's beaked whales, Cuvier's beaked whales, Gervais' beaked whales, dwarf and pygmy sperm whales, oceanic and continental shelf stocks of bottlenose dolphins, pantropical spotted dolphins, Risso's dolphins, rough-toothed dolphins, short-finned pilot whales, spinner dolphins, and striped dolphins (Waring et al. 2013). Less is known about the distribution of other oceanic marine mammals within these areas, such as Cymodeutera dolphins, Fraser's dolphins, humpback whales, false killer whales, melaleuca whales, and pygmy killer whales. The designation of marine protected areas within the DWH Trustee's area as a mechanism for addressing key threats to mesopelagic and deep benthic communities (POBAR/PEIS Sect on 5.5.1.3). However, no information was provided in the POBAR/PEIS on what specific areas in the Gulf the Trustee might be considering for such designation. The Commission believes that areas that provide protection for multiple species, including marine mammals, should be priorities for designating marine protected areas for sperm whales, Bryde's whales, and other marine mammal species that occur in these areas of the Gulf of Mexico. http://seamap.gov/duke/models/Duke-EC-GOM-2015/ References: Brooks, G.R., et al. 2015. Sedimentation pulse in the NE Gulf of Mexico following the 2010 DWH blowout. PLoS ONE 10(7):e0132341. DWH MMTQ (Marine Mammal Injury Quantification Team). 2015. Models and analyses for the quantification of injury to Gulf of Mexico cetaceans from the Deepwater Horizon oil spill. DWH Marine Mammal Injury Technical Working Group Report to the U.S. Endangered Species Act. This is a 2008 sperm whale stock assessment for the Gulf of Mexico. Synthesis of the 2008 stock assessment. Gulf of Mexico OCS Region, New Orleans, Louisiana. OCS Study MMS 2008-006, 323 pp. Rose, P.E., and L.A. Wilcox. 2014. Genetic evidence reveals a unique lineage of Bryde's whales in the northern Gulf of Mexico. Endangered Species Research 25:194-204. Rose, P.E., et al. 2016. Status Review of Bryde's Whales (Balainoptera edeni) in the Gulf of Mexico under the Endangered Species Act. NOAA Technical Memorandum NMFS-FW-352, 133 pp. Stout, S.A., et al. 2015. Spill on the seafloor: Impacts of Macondo oil on the seafloor and deep-sea life following the Deepwater Horizon oil spill. (CHEM_TR.16). DWH Natural Resource Exposure NRD Technical Working Group Report. Waring, G.T., et al. (eds). 2016. U.S. Atlantic and Gulf of Mexico Marine Mammal Stock Assessments - 2015, 501 pp. Date Entered: May 9, 2017. Date Edited: May 15, 2017	Yes	No	No	No	Yes	No	No	No	No	No	No	No	No	No	No	No	\$	-	\$	-
Eco Restoration	5632	7/7/2017	Restoring Gulf of Mexico Bryde's Whales by Monitoring and Mitigating Fishery Entanglements	NOAA Project ID# 12227: The Gulf of Mexico Bryde's whale (Balainoptera edeni) is the only resident baleen whale species in the northern Gulf of Mexico (GoM) and is extremely rare, with an estimated abundance of 33 individuals (CV ± 1.07) in U.S. waters in 2009. Currently, they occur almost exclusively in the northeastern GoM in waters from 100-500m deep. In addition to their extremely low population abundance and restricted range, they exhibit a unique evolutionary lineage, low genetic diversity, and have potentially experienced a range contraction. The population is currently being evaluated for potential listing as endangered under the U.S. Endangered Species Act. This already small population was the most impacted offshore cetacean during the Deepwater Horizon oil spill in 2010 with an estimated 48% of their habitat oiled and an estimated 22% population decline as a result of the spill. Reducing the probability of the loss of any individual GoM Bryde's whale is critical to their restoration and recovery. Fishery entanglements are a major source of mortality for most baleen whales. Recent research indicates the GoM's Bryde's whale population may be at risk of fishery entanglements from the GoM's reef fish bottom longline fishery because this fishery has considerable effort, an estimated 4,533 + 964 total sets per year (range 407 to 4294), within the Bryde's whale habitat in the northeastern GoM. Further, a tagged Bryde's whale exhibited diel diving behavior with diurnal deep dives and foraging longer at or near the sea-floor. If bottom or near-bottom feeding is a normal feeding strategy for these whales, there is significant potential for gear-entanglements with the bottom longline gear. Currently, observer coverage of this fishery is relatively low (5%) and much higher levels of coverage are needed to observe extremely rare events, such as the loss of one of 33 whales. Increasing observer coverage within GoM's Bryde's whale habitat to approach 100% for bottom longline fisheries operating there could provide the necessary data to determine whether there are serious threats to them. If they do, gear modifications and gearspatial mitigation measures would be an important restoration technique to reduce anthropogenic mortalities for this species. Date Entered: May 15, 2017	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	\$	11,250,000.00	\$	-
Eco Restoration	5633	7/7/2017	Bryde's whale movements and habitat in the northeastern Gulf of Mexico	NOAA Project ID#13124: Bryde's whales occur in 100-400m water depth in the NE Gulf of Mexico (GoM). The population is certainly <100 individuals and exhibits significant genetic divergence from other Bryde's whale subspecies. The best estimate is 33 individuals (2009 survey) with an estimated loss of 7 whales from DWH oil and 3 from ship strike and gear entanglement to their extremely low population size, limited geographic range, and a variety of threats, this is the most critically endangered large whale in the world. The DWH oil spill affected large portions of the northern GoM, including what is essentially the only place GoM Bryde's whales are consistently sighted. There are concerns about the direct effects from DWH oil and dispersants on the whales and their food web as well as indirect impacts through bio-accumulation of toxics. Post-spill restoration of GoM Bryde's whales is severely limited by a lack of basic knowledge about their range, movements and behaviors. The NMFS GoM Bryde's whale status review listed the characterization of their habitat and movement patterns as high-priority goals to improve understanding of the population. Since the 1980s, Oregon State University pioneered the technique of tracking large whales by satellite. We have tracked eight species of large whale across various parts of the world's oceans, including one Bryde's whale that was tagged off southern California in 2015 and tracked for 87 days. We propose to attach 12 Argos (monitored satellite) Dive Monitoring tags to GoM Bryde's whales to develop a better understanding of their movements, distribution and foraging behavior, hopefully with NMFS vessel support. Bryde's whale tracking locations will be compared to physiographic and remotely sensed environmental characteristics to characterize their habitat. Biopsy samples (skin and blubber) will be collected simultaneously with tagging for a suite of genetic, toxicologic, and trophic studies including sex determination, genetic relatedness, polychlorinated biphenyl (PCB) bioaccumulation, stable isotopes and fatty acids. This information will dramatically improve our understanding of GoM Bryde's whale ecology and be essential to inform future restoration efforts, including mitigation measures regarding threats to the population. Date Entered: May 15, 2017	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	\$	550,000.00	\$	-
Eco Restoration	5634	7/7/2017	Gulf-wide restoration of fish and invertebrate populations through enhanced monitoring and assessment	NOAA Project ID#13365: The overarching restoration goal of this 15-year project is to facilitate the sustainability and protection of Gulf of Mexico fish and invertebrate populations through improved data collection, stock and ecosystem assessments, and management by filling data gaps that limit our ability for ecosystem restoration. Only a handful of impacted fish and invertebrate populations can be restored by reducing fishing and bycatch mortality. A more comprehensive approach is required to facilitate ecosystem-scale recovery. Accordingly, this project involves a dramatic increase in the quantity and quality of fishery-independent data for managed fish and invertebrate populations, their potential prey, and associated habitat quality and abundance throughout the Gulf of Mexico. Through collaborative expansion of the long-running Southeast Area Monitoring and Assessment Program (SEMAP), a formalized partnership among the five Gulf States, NOAA Fisheries, and the Gulf States Marine Fisheries Commission, existing SEMAP surveys will be expanded, sampling intensity will be increased, and survey design and sampling methods will be optimized. Concurrently, the collection and processing of life history data (e.g., age and growth, reproduction, genetics, trophodynamics) will be expanded significantly. In the short term, this project will increase the accuracy and reduce the variability of estimates of key population parameters that are critical for single-species stock assessment. Accordingly, data from this project will contribute to more accurate and timely assessments and implementation of management measures when required, ultimately resulting in restoration of stocks. In the long term, these data will facilitate the transition from single-species management to more holistic ecosystem-level approaches to management, while also enhancing our ability to detect population changes and impacts of restoration efforts at varying spatial scales. To address the most critical needs for assessment and management, proposed project efforts will include enhanced habitat mapping efforts, expanded monitoring of reef fish and their associated habitats, expanded monitoring of groundfish populations, expanded monitoring of plankton, expanded monitoring of large demersal and pelagic fishes, incorporation of fisheries acoustics into ongoing surveys, directed sampling and analysis of life history data, and comprehensive statistical and modeling analyses of single-species and multi-species data. Date Entered: May 15, 2017	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	\$	200,000,000.00	\$	-
Eco Restoration	5635	7/7/2017	Using sperm whales as indicators of deep-water Gulf ecosystem health and recovery	NOAA Project ID#13195: Oregon State University has used Argos (satellite-monitored) radio tags to track endangered Gulf of Mexico sperm whales (Physeter macrocephalus) since 2001 (2001-2005 BOMF funded basic studies and 2010-2013 BPNMFA funded post-DWH studies). Results from 2011 and 2013 archival tags provided high-resolution whale dive profiles, measures of foraging effort and locations. By inference from these data, prey was patchy and often near the seafloor. Since the spill, there has been a 4,000+ km2 low-use area (LUA) for tagged sperm whales, including the DWH site that correlates with contaminated sediments. One 2013-tagged whale crossed the LUA in 3 days with 95% less foraging effort than its weeks of activity outside the LUA. We believe this is related to a trophic cascade in which sperm whales do not use the LUA regularly because they commonly eat near the bottom cannot support the reduced numbers of bottom-dwelling species due to the impacts of oiled sediments. We do not believe this response suggests toxicity issues in the water column. New long-duration, dive-monitored (DM) satellite tags are the same size as tags we used to track sperm whales for >1 year, but transmit near-real-time dive and foraging summaries. DM tag deployments in 2016 on blue and fin whales produced dive and foraging data for up to 100 days of 7-800 dives/hour. We propose deploying these DM tags on sperm whales adjacent to the LUA every 5 years to determine how long it takes for the baseline number of bottom-dwelling species to recover sufficiently for sperm whales to forage there. The first two taggings will be July-August 2018 and 2023 (3 and 13 years post-spill and 5 and 10 years since our last [2013] data). This is the very first time that a long-term impact to an endangered whale has been well documented, including pre-impact (decentralized) observations, to identify the duration of habitat loss important for predicting oil-related cumulative impact. We suggest tracking whales every 5 years to document until this recovery until it is complete. During tagging, we will biopsy whales to determine sex, genetic relatedness (kinship), PCB levels from blubber (for possible bio-accumulation close to the LUA) and reproductive hormones to determine ovulating, pregnant or lactating females. Photo-identification and DNA profiling will integrate long-term individual records of Gulf sperm whales. We will collaborate with benthic scientists working to describe relevant ecological relationships (species, sediment PCBs and broader issues to understand benthic recovery). It is unclear how long it will take to observe slow sedimentation rates, suggesting that full recovery of benthic (decentralized) species may take 100 years. We seek to estimate (de)functional (LUA) recovery as demonstrated by the return of an apex predator that integrates the food web literally from bottom to top and in that process transports benthic nutrients to the surface through defecation, enhancing productivity in the photic zone. With each whale consuming 4% of its body weight/day, the hundreds of Gulf sperm whales, weighing 30 tons, are an unusually high transport mechanism for nutrients. We expect similar sperm whale post-spill home ranges as LUA females who still productive adjacent habitats. We also expect a density-dependent effect on carrying capacity with lower fecundity (calving rates). Home range and fecundity values should normalize as the LUA recovers. Summary: Tagged sperm whales appear to avoid a 4,000+ km2 area with DWH-oiled bottom sediments. By tagging 15 whales close to this area every 5 years, we will document recovery of a trophic cascade (benthic, mid-water and apex predators) in the deep-water Gulf ecosystem to better inform recovery and restoration efforts as well as identify cumulative impact issues if additional spills occur. Date Entered: May 15, 2017	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	\$	775,000.00	\$	-

Eco Restoration	5636	7/7/2017	Enhancement to the GoMAMAPS aerial surveys	<p>NOAA Project ID#13194: BOEM collects data on resources in offshore waters to inform decisions on oceanic energy activities and uses information on abundance and distribution of protected resources to address NEPA, ESA and MMPA requirements. AMAPPS in 2010, BOEM implemented the Atlantic Marine Assessment Program for Protected Species (AMAPPS) and began collecting information in the Atlantic Ocean along the East Coast with the following goals: (1) Comprehensive Assessment of Marine Mammals, Marine Turtles, and Seabird Abundance and Spatial Distribution in U.S. Waters of the western North Atlantic Ocean, 2010; (2) Collect broad-scale data over multiple years on the seasonal distribution and abundance of marine mammals (cetaceans and pinnipeds), marine turtles, and sea birds using direct aerial and shipboard surveys of coastal U.S. Atlantic Ocean waters; (3) Collect similar data at finer scales at several (~3) sites of particular interest to NOAA partners using visual and acoustic survey techniques; (4) Conduct telemetry studies within surveyed regions of marine turtles, pinnipeds and seabirds to develop correction for availability bias in the abundance survey data and collect additional data on habitat use and life-history, residence time, and frequency of use; (4) Explore alternative platforms and technologies to improve population assessment studies; (5) Assess the population size of surveyed species at regional scales; and (6) Develop models and associated tools to translate these survey data into seasonal, spatially-explicit density estimates incorporating habitat characteristics. GOMAMAPS BOEM begins a systematic sampling regimen, Gulf of Mexico Marine Assessment Program for Protected Species (GoMAMAPS) in the Gulf of Mexico starting in 2017. This type of monitoring is essential for the monitoring and adaptive management (MAM) aspect of restoration projects. Key tasks for GOMAMAPS include: (1) Conducting aerial surveys over continental shelf waters (4) Conducting ship-board surveys on the shelf and out to EEZ (4) Conducting satellite tracking of tagged animals (4) Performing genetic analyses for composition and connectivity (4) Developing explicit species density models. (https://www.boem.gov/GoMAMAPS/Proposed-Project-Historically-data-collected-from-aerial-surveys-depends-on-observers-to-locate-count-and-identify-species-of-marine-mammals-and-sea-turtles. This program proposes to include the collection of high-resolution imagery during each of the aerial surveys, these methods have proven to be more efficient than observers for counting sea turtles, birds, fish and marine mammals according to a pilot program funded by BOEM. The collection of digital images can reduce the effort required that can be reduced, and allows further opportunity for species identification among other benefits. A comparison between the two methods indicated the following: (1) The overarching conclusion of this study is that high-resolution digital aerial imaging does, indeed, represent a safe, scientifically robust, and cost-effective solution to the offshore wildlife data collection needs of BOEM and the U.S. offshore wind energy industry (4) and so to say that (4) digital methods yield more accurate density calculations (4) with the one exception for baleen whales (Norman-Koussios, Inc., 2012). Alternative image collection methods have been successfully collecting useful data on baleen whales and also assessing the difference between sighting data recorded by visual observers and digital image analysts (Koski et al. 2013). Collecting this information would fill knowledge gaps across resource types and provide data for abundance, distribution and population modeling. This information is essential for adaptive management of resources. Date Entered: May 15, 2017</p>	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	\$ 1,000,000.00	\$ -
Eco Restoration	5638	7/12/2017	Reducing Red Snapper Discards Using a Collaborative Fishermen's Quota Bank	<p>NOAA Project ID#13276: This project uses an existing Quota Bank to quantify and avoid red snapper bycatch in the commercial grouper-tilefish fishery. The Deepwater Horizon event harmed red snapper, resulting in 55-220 tons of foregone production through direct kills and in longer-term injuries, from decreased reproduction to tissue lesions. Commercial fishermen are working with managers to protect red snapper while the spill (4) impacts play out. But (4) will be difficult to rebuild this fishery without a complete accounting for bycatch in the quota system. This project provides up-to-date data about red snapper bycatch to incorporate into quota setting. Together with commercial fishermen, managers can proactively reduce red snapper killed through bycatch so the population can continue to recover from the spill. Red snapper managers lack reliable data on red snapper bycatch in the grouper-tilefish fishery, instead extrapolating from observer and self-reported data. This is problematic in light of commercial grouper-tilefish discards. Since red snapper (4) historical base was in the western Gulf, some eastern Gulf fishermen can (4) get allocation to retain their red snapper catch. Since discard mortality rates for commercial hook/line fisheries are 35-90%, this means red snapper quotas don't (4) cover all red snapper killed. In order to set quotas accurately and maintain a positive rebuilding trajectory, bycatch in the commercial grouper-tilefish fishery must be accounted for. By quantifying bycatch and discards, this project ensures these dead snapper count toward the quota and are no longer wasted catch. The PMAP specifies that quota banks (4) can help return injured natural resources and services to baseline and compensate for interim losses by reducing reef fish (4) overfishing. Reef Fish Observers (4) launched the first and only Quota Bank in the Gulf. The Quota Bank partners with the Cape Cod Fisheries Trust, in partnership with UMMS Dartmouth, proved their scallopers had minimal flounder bycatch in a newly-opened area. Permit banks in three fishing towns provide quota to cover bycatch and spatial management plans through the California Groundfish Collective. Evidence suggests Collective fishermen have less bycatch than non-participants. The Maine Coast Fishermen's Association (4) building a (4) Kariak pool (4) help fishermen avoid and account for cod catch. While quota banks are new to the Gulf, they (4) are a well-established tactic for helping fishermen address bycatch. This project uses the Quota Bank to quantify and avoid red snapper bycatch in the grouper-tilefish fishery. It provides up to 100,000 lbs of red snapper allocation to fishermen to cover bycatch, increasing participation in bycatch reduction/modification and hotspot identification, and collecting bycatch data through electronic species monitoring, electronic logbooks, effort-level data collection, and NMFS observer coverage. This is a big incentive—many grouper-tilefish fishermen see discards as a serious inefficiency they (4) eager to address. The study provides managers with accurate, timely bycatch data. By leasing quota to cover bycatch so red snapper aren't (4) discarded, incidental mortality will decrease, leaving fewer unknown variables for managers. In 2016, the Quota Bank leased nearly 60,000 pounds of red snapper to 20 fishermen in the Gulf. That (4) nearly 60,000 pounds of red snapper fished into catch shares, no longer discarded at sea. Because mortality levels are so high for commercial hook/line fisheries, if it weren't (4) for the Quota Bank, those 60,000 pounds of red snapper (4) likely would (4) die and would (4) have been covered by the quota. The Quota Bank will train participating fishermen in best practices and develop ways to address their bycatch. Date Entered: May 15, 2017</p>	Yes	No	No	No	Yes	No	No	No	No	No	No	No	No	No	\$ 8,500,000.00	\$ -
Eco Restoration	5641	7/12/2017	Marine Mammal Photo-Identification and Research	<p>NOAA Project ID#13288: Photo-identification studies are a type of capture-mark-recapture study used to detect known (marked) and unknown individuals over time to estimate population size and vital rates. They are also used to provide information on distribution, seasonal movement, habitat use, behavior, and body condition and health of individuals. Centralized large-scale, collaborative photo-identification catalogs for bottlenose dolphins and other species have been established (e.g., the Gulf of Mexico Dolphin Identification System, or GOMDIS), providing a basis for tracking movements of individual animals beyond project study sites and detecting range shifts in response to environmental changes. Existing data systems need to be assessed, refined, and expanded to facilitate upload and analysis of a large number of images and to improve data access and sharing by a diverse group of field researchers and partner organizations. Periodic workshops are needed to ensure standardized methods for image acquisition and processing are being used and revised as necessary. Multi-year studies need to be expanded to include additional study areas across the Gulf, particularly coastal and offshore areas affected by the oil spill. Further research is needed on: (1) the development of software to enable more effective and timely analysis and comparison of still and video images, (2) the potential for high-resolution aerial imaging systems to augment or replace traditional aerial and/or vessel surveys, and (3) the use of unoccupied aircraft systems (UAS) or drones to collect images of marine mammals independently or during traditional vessel surveys or other surveillance operations. Date Entered: May 15, 2017</p>	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No	\$ -	\$ -
Eco Restoration	5642	7/13/2017	Reducing Bycatch of Marine Mammals in Commercial and Recreational Fisheries	<p>NOAA Project ID#13303: Marine mammal bycatch refers to any marine mammal adversely affected as a result of being unintentionally entangled, entrapped, ensnared, or caught by nets, lines, traps, or hooks, or otherwise impacted by fishing gear. Bycatch is the greatest direct cause of marine mammal injury and death in the United States and around the world. Bycatch of marine mammals in Gulf of Mexico commercial fisheries has the potential to prevent the recovery and restoration of marine mammals that have been reduced as a result of the Deepwater Horizon oil spill, including bottlenose dolphin (all stocks), Atlantic spotted dolphins, pantropical spotted dolphins, pygmy sperm whales, Risso's dolphins, and short-finned pilot whale. Fisheries of particular concern include the merluccius purse seine, shrimp trawl, shark gillnet, pelagic longline, red fish, and charter boat/headboat fisheries. Studies are needed in the following areas: (1) The identification of measures that can be used to reduce bycatch of marine mammals in high priority Gulf of Mexico commercial and recreational fisheries while maintaining the economic viability of those fisheries. Measures to investigate and test could include, but are not limited to, alternative fishing gear and fishing methods, time-area restrictions, and removal of lost or derelict fishing gear (i.e., traps, pots, and gillnets). (2) Ways to create economic incentives for reducing marine mammal bycatch through, for example, incentive-based fishery bycatch measures. (3) The ecological effects of fishing on marine mammals, their prey species, and the Gulf of Mexico marine ecosystem. Date Entered: May 15, 2017</p>	Yes	No	No	No	Yes	No	No	No	No	No	No	No	No	No	\$ -	\$ -
Eco Restoration	5644	7/13/2017	Comprehensive assessment of the western populations of the threatened Gulf Sturgeon, <i>Acipenser oxyrinchus desotii</i> : long term residency patterns, environmental correlates of estuarine/marine	<p>NOAA Project ID#13310: The Pascagoula River is a unique river in the Gulf Sturgeon (<i>Acipenser oxyrinchus desotii</i>) range. It is the only naturally flowing river (structurally unaltered) system in the contiguous United States, making it potentially one of the most important core rivers in Mississippi and potentially the western limit of Gulf Sturgeon range. Since the Gulf Sturgeon are a Federally endangered species it is critical to understand stressors and threats to their environment. Although it is known that common spawning habitat for Gulf Sturgeon are bedrock limestone, fine sand overbank, and gravel, the locations of these types of bottom in the upper Pascagoula watershed has not been specifically identified nor tracking the fish use of these areas. This project would enhance existing acoustic array projects that are currently funded to study the Pascagoula populations of Gulf Sturgeon. The project proposed here will focus on four themes: 1) Long term movement and regional occupancy; 2) Short term, high resolution movement and occupancy in estuaries; 3) Trophic ecology via stable isotope analyses (SIA); and 4) Predict Gulf Sturgeon estuarine/marine movement patterns relative to water quality indicators (water temperature, salinity and dissolved oxygen), surface current speed and direction, and meteorological variables (wind and surface current speed and direction and rainfall). Conducting a comprehensive assessment of the western population will allow scientists and managers needed information on larger spatial and temporal scales over which to effectively manage and conserve this threatened species. The extensive data collected will also allow state and federal agencies and NOAA to more effectively assess future environmental impacts and damages. These data sets will also be extremely useful to any state and federal agency whose mission is to manage Threatened and Endangered species and be able to implement restoration actions to maximize their sustainability and success for incising Sturgeon populations. Date Entered: May 15, 2017</p>	George County	Yes	No	No	No	No	No	No	No	No	No	No	No	No	\$ 4,230,000.00	\$ -
Eco Restoration	5646	7/14/2017	A combined physical, behavioral, and demographic approach to identify Gulf Sturgeon spawning sites in the Pascagoula River: characterizing what is known to inform the unknown	<p>NOAA Project ID#13188: Western population segment Gulf Sturgeon (GS; natal to the Pearl and Pascagoula rivers) appear to be recovering at a slower rate than those in the east. Of all GS populations, the Pascagoula River population is estimated to be the smallest (about 220 adults). The U.S. Fish and Wildlife Service often uses the 3-R framework (representation, resiliency, and redundancy) of Schaffler and Stein (2000) to assess population recovery. Resiliency of a population is associated with the size and demographics that describe subpopulations (agegregated spawning) and redundancy of subpopulations to spread extinction risks. Currently, only one spawning site is known for the Pascagoula River population (no spawning sites are known for the Pearl River), located in the Bouie River (a tributary of the Pascagoula River), but other spawning sites likely occur in the Chickasawhay River. This site was roughly characterized but demonstrated differences compared with spawning sites reflective of eastern population segment GS having outcroppings of sand/clay rather than limestone. Before any restoration project begins, the crucial question of (4) What are we restoring to (4) must be asked. For the Pascagoula River GS population, spawning habitats represents a key knowledge gap in asking that question and answering it if the population is resilient and redundant. To overcome this knowledge gap and inform restoration we advance four objectives: 1) Characterize the Bouie River spawning site in terms of bottom hardness and steepness; sediment grain size, composition, and TOC; and environmental parameters. Passive acoustic telemetry receivers will be deployed upstream, downstream, and at the spawning site to determine which individuals arrive at the site, the duration, and time-of-year. Adult GS will be tagged and the number of emigrated GS that may visit the spawning site will be suggested by those tagged (4) rather than collecting eggs) to avoid removing potential recruits from the population. The combined genetic and sex data will provide data on the resiliency of the population. 4. Synthesize data from Objectives 1-3 to provide resource managers with information on redundancy of GS spawning habitat within the Pascagoula River watershed. These data can inform restoration and conservation measures that will effectively benefit GS recovery and monitor any such efforts. We anticipate any such efforts will be a collective assessment with state/federal partners. In the best scenario, the Pascagoula River population will have multiple spawning sites (redundant sub-populations) such that restoration projects could be implemented to improve habitat quality. In the worst scenario, the only spawning site for this population is in the Bouie River, and restoration efforts would focus on protecting this site. Date Entered: May 15, 2017</p>	Forrest County, Clarke County	Yes	No	No	Yes	No	No	No	No	No	No	No	No	No	\$ 1,100,000.00	\$ -

Eco Restoration	5647	7/14/2017	Informing restoration efforts in the Mississippi Sound. Quantifying Gulf Sturgeon winter foraging habitat occupancy and coastal pelagic finfish habitat use with passive acoustic technology	NOAA Project ID#13110: Mississippi Sound currently has a variety of planned, ongoing, or completed habitat restoration projects (e.g., living shorelines, island restorations, oyster reef replenishment), and compensatory restoration projects (artificial reefs). All of these are within federally designated, critical habitat for Gulf Sturgeon (GS), and habitat for important coastal pelagic finfish (black drum, red drum). These projects have the potential to alter habitat (sediment composition, water quality, macroinvertebrate abundance) important to these fish. Restoration efforts require assessment for potential impacts on these species (e.g., loss or conversion of foraging habitat), specifically for GS. Unfortunately, most of the science related to GS habitat dependency is derived from work in their eastern range, and may not be applicable to silty-bottom habitats in the west. Additionally, artificial reef projects may enhance habitat for coastal finfish, but bury GS habitat. The objectives of this project are to describe habitat-specific occupancy patterns for GS and other coastal pelagic finfish (black drum, red drum) within Mississippi Sound. In relation to restoration projects, specifically, we will (1) develop an acoustic telemetry array within restored and non-restored habitats to monitor acoustically tagged target species to determine habitat use and occupancy, (2) assess use patterns of these species in restored versus non-restored regions, and (3) provide a decision support tool to inform resource managers and restoration practitioners of the impacts each restoration effort has on habitat use by these species. The five-year revision of the Gulf Sturgeon Plan highlighted the need to identify habitat parameters for GS estuarine feeding habitats, especially of western populations (Pearl and Pascagoula Rivers), which have been slower to recover than their eastern counterparts; it also renewed consideration for GS habitat restoration. Habitat-specific occupancy patterns for GS in estuaries are lacking, particularly for juveniles and sub-adults. Therefore, we will fill knowledge gaps related to what actually constitutes suitable GS habitat by size-class. Mackerels (spanish and king) and red drum may use the same habitats as GS, but during different seasons and in different ways (prey selection). These species likely benefit from compensatory restoration more than GS, but this has not been quantified. Based on occupancy patterns of these species between restored and non-restored habitats (e.g., silty bottoms, oyster and artificial reefs, areas adjacent to living shorelines), we will determine if restoration events affected typical habitat use in the region. Because this assessment will be specific to restoration events (e.g., living shorelines), as well as to target species, the results will allow managers to tailor implementation of each restoration type could allow us to see the species present. This project will also create opportunities for scientists working with other acoustically tagged species in Mississippi Sound and north-central Gulf of Mexico. Methodology: Acoustic telemetry will be used to assess occupancy of target species in various restored and non-restored habitats in a paired-manner. Side scan sonar will assess habitats for hard bottom and relief prior to comprehensive characterization. We will examine sediment grain size, composition, and sedimentary POC concentrations and characterize macro-invertebrate composition and density within the footprints of telemetry stations. Bottom data loggers will measure environmental parameters within defined stations; these data will be correlated with the movements and habitat use of telemetered fishes. An occupancy index will be used to determine habitat use. Partners on this project have some of the required infrastructure, and are actively tagging GS and Red Drum with acoustic tags that should still be active during this project. Date Entered: May 12, 2017 Date Edited: May 15, 2017	Harrison County, Hancock County, Jackson County	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	\$ 2,585,000.00	\$	-
Eco Restoration	5648	7/14/2017	Impact of oil and gas on offshore pelagic and benthic ecosystems	NOAA Project ID#13335: Oil and gas released in offshore ecosystems can have multiple impacts on organisms in the water column and on the sea floor. Research in the Gulf since the Deepwater Horizon oil spill has revealed some of the ways that oil and gas can affect the biological communities of offshore waters, and how the carbon from oil and gas (petrocarbon) can penetrate into and travel through the food webs of offshore ecosystems. We propose two related lines of research: 1. A focused series of measurements of oil and gas impacts around natural seeps via water column and benthic sampling coupled with deployment of time-series sediment traps to capture sinking particles and aggregates, including oil snow. We will use stable and radiocarbon measurements to assess the assimilation of petrocarbon by organisms and transfer of petrocarbon through the pelagic and benthic food webs. We will use genomic approaches to characterize microbial communities and the ways they're altered by exposure to oil and gas. These measurements will be complemented by experimental work to resolve the mechanisms of oil and gas movement into the biota, and the role of biological processes in promoting the vertical sedimentation of oil and oil-derived particles. 2. Benthic surveys to track the distribution and fate of sedimented ooh both around natural seeps and in regions affected by the Deepwater Horizon spill. We will carry out photographic surveys to assess benthic megafauna community composition, density, and health. We will carry out coring surveys to assess the fate of sedimented oil, its impact on benthic organisms, and its role in supporting sedimentary microbial communities through a combination of geochemical characterization (stable and radiocarbon measurements) and laboratory experiments. The ultimate goal of this research program is to provide basic understanding of the ways that oil and gas alter the composition and function of offshore communities of microbes, phytoplankton, zooplankton, and benthic fauna. This study is timely and will provide critical insights into ecosystem responses to inform future responses to offshore drilling accidents. Date Entered: May 15, 2017		Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	\$ 8,000,000.00	\$	-	
Eco Restoration	5650	7/14/2017	Assessing recovery rates of deepwater organisms in the northern Gulf of Mexico through multigear examinations of species assemblages, community structures, distributions, trophic relationships and interannual variability in abundances.	NOAA Project ID#13342: The Deep Water Horizon (DWH) exploratory well was located in the northern Gulf of Mexico 65 km off the shore of Louisiana in approximately 1,600 m water depth. This region, which is relatively close to shore, is not easily sampled due to the sampling methods used on the oil rigs. These difficulties have resulted in frequent sampling efforts in these deepwater habitats especially in the context of fisheries independent surveys. Thus, when the DWH accident occurred there was a paucity of information relative to the affected communities, particularly in regards to time-series information that would have lent themselves to analysis of impacts to deepwater organisms. In an attempt to characterize the population dynamics and ecology of deepwater organisms in the northern Gulf of Mexico, we propose a series of gear types to randomly selected stations between depths of 200 to 2000 m. As this project aims to examine all biological components of these poorly known and infrequently sampled habitats, we propose to deploy multiple gear types to collect information from the surface to the seafloor. We would conduct the survey over 45 days using NMFS RV Southern Journey. Selected gear types will include trawls, longlines, traps, video arrays, water samplers, acoustics and sediment grabs. All captured specimens will be identified, sexed, measured and preserved. Specimens will be retained for life histories, diet, genetics, and population analysis. Water samples will be retained to conduct environmental DNA analyses. In addition to randomly sampled locations, transects will be run in eight cardinal directions (i.e. N, NE, E, SE, S, W, and NW) from the location of the DWH spill sight in an effort to determine long-term spatial impacts of the event on deepwater ecosystems. To meet this goal, three unimpacted reference sites will be selected from outside of the influence of the DWH spill (e.g., western Gulf of Mexico) and metrics will be developed and implemented to compare with impacted locations at or in proximity to the DWH wellhead along the transect lines. Metrics will include categories such as abundance, biomass, trophic composition, diversity of invertebrates and fishes, and habitat mapping characterization and quality. An index of biotic integrity will be calculated for each sampling location that will quantify the degree of site-specific impacts and allow for tracking of recovery rates for each site. Deliverables: IAC Assess spatial variability in degree of impact of DWH and provide a mechanism to quantify recovery of deep water ecosystems (trawls, longlines, traps, optical, cDNA). IAC Index of biotic integrity (trawls, longlines, traps, optical, cDNA). IAC Abundance trends (trawls, longlines, traps, optical, cDNA). IAC Species diversity of fish and invertebrates (trawls, longlines, traps, optical, cDNA). IAC Trophic relationships (diet data, DNA). IAC Biomass estimates (EK80 broadband acoustics) IAC Bathymetric mapping (multibeam) IAC Habitat ground truthing and characterization (optical, sediment grabs) Performance metrics: IAC Cruise reports IAC Annual data inventory, summarization, and project status report IAC Annual project review and improvement webinar IAC Final project report IAC Presentation of results at regional and national meetings IAC Peer review publications		Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	\$ 18,000,000.00	\$	-
Eco Restoration	5651	7/14/2017	Saturation Diving Capability - U.S. Navy / NOAA Collaboration	NOAA Project ID#13346: Considerable resources will be dedicated to restoration activities in the mesophotic and deep benthic communities affected by DWH. Projects should be planned using technologies that factor in efficiency and capabilities, not only total cost. Saturation diving will allow mesophotic and deep benthic projects to greatly expand their capabilities over unmanned systems, yet at equivalent or lower cost to more traditional ROV systems. Utilizing Saturation Divers on the bottom will provide unmatched capabilities to meet the goals outlined in Section 5.5.13 of the PDAPP, particularly the approach of placing hard ground substrate and transplanting coral for direct restoration actions. Other listed approaches such as community characterization (including genetic studies), improved understanding of foodweb dynamics and trophic connectivity would also be greatly enhanced by the superior collection capabilities offered by Saturation Divers compared to ROVs. The U.S. Navy is eager to support mesophotic and deep benthic projects with the Saturation Fly-By Diving System (SAT FADS). This system provides manned Saturation Diving capability using a mobile Saturation Diving system to conduct diving operations at depths up to 300 msw for 30 consecutive days using a 6 man dive team conducting continuous Saturation Diving operations. Efficiency is gained through unlimited bottom time and rapid relocation and deployment to multiple project sites within each 30 day Saturation Dive. Extensive communication capability provides real time video and audio transmission between divers and topside scientists to coordinate on-bottom activities. The Navy's SAT FADS system is based on the Navy Experimental Diving Unit (NEDU) in Panama City, FL, near the center of expected activities for NRDA mesophotic and deep benthic activities, making mobilization/demobilization cost effective as well. The use of SAT FADS will be offered to all NRDA-funded mesophotic and deep benthic projects. The elimination of ROV leasing costs for Saturation Diving supported projects will significantly reduce the individual cost of those projects while the enhanced capabilities of Saturation Divers over machines will greatly increase the efficiency and range of activities undertaken at depth. The program-wide savings will more than offset the SAT FADS costs. NEDU also houses the Ocean Simulation Facility (OSF), a shore based hyperbaric training and testing facility. The OSF may be used to train Navy divers on the assembly, disassembly and service of instrumentation arrays and coral restoration modules deployed by other NRDA-funded mesophotic and deep benthic restoration projects. Much like NASA's training of astronauts in their Neutral Buoyancy Lab prior to space flights, pre-deployment training of Saturation Divers and testing of equipment and procedures will greatly enhance the likelihood of mission success. The Navy is committed to working with scientists from NRDA-selected projects to maximize mission success. This project idea is based upon the Navy providing up to four 30 day Saturation Diving missions per year (consisting of 180-240 days at sea, to include pre and post mission phases) to NRDA-selected mesophotic and deep benthic community projects. NRDA will supply a vessel meeting Navy specifications for load carrying capacity, dynamic positioning capability and the provision of required services (power, berthing, meals, etc.). Saturation Divers may be conducted individually or consecutively, consecutive Saturation Divers require two weeks between each mission. Date Entered: May 13, 2017 Date Edited: May 15, 2017		Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	\$ 29,100,000.00	\$	-
Eco Restoration	5652	7/17/2017	A management strategy evaluation framework to effectively plan and monitor recovery of marine mammal shelf and oceanic populations	NOAA Project ID#13355: This project addresses the current priority of monitoring and adaptive management activities to inform restoration, including the development of tools to support restoration planning. This proposal also addresses the following PDAPP/PEIS needs: Develop effective planning and monitoring strategies; evaluate effectiveness of restoration measures/projects; develop an adaptive management framework that can be updated periodically with new data. Restoration goals identified for marine mammals (MMs) aim to restore injured populations and improve their resilience to anthropogenic and natural stressors (PDAPP/PEIS 2016). MMs are protected in US waters and managed as demographically independent stocks (MMPA 1972). Of approximately 55 Gulf of Mexico MM stocks, 22 are continental shelf and oceanic MM stocks (hereafter Sh-Oc stocks). These stocks are subject to multiple stressors (natural and anthropogenic), potentially with cumulative effects on MM populations. Because MM are long-lived with slow growing populations, inferring the effects of stressors (or restoration projects) on populations strictly based on outcomes from monitoring surveys could compromise recovery of these stocks. Creating an approach that allows the trustees to predict/estimate recovery of MM populations is essential not only to assist with planning (e.g. identify most vulnerable, high-priority stocks), but also to evaluate effectiveness of restoration in a manner that periodically incorporates new data collected in monitoring activities and allows adjusting restoration measures, if needed, following an adaptive management approach. Such a framework (or tool) should also help understand the effects of critical gaps and uncertainties associated with MM populations (or with the effects of stressors) on the ability to achieve conservation/restoration goals for MM populations. Abundance is a key metric to assess and monitor MM populations, to understand the population and the impact of stressors and, ultimately, to evaluate the performance of restoration measures (National Academy of Sciences 2016). However, MMs, especially Sh-Oc stocks, are highly mobile, which combined with the large area to be surveyed, tends to yield abundance estimates with low precision for these stocks. For example, precision of abundance estimates reported in 2015 Stock Assessment Reports for Sh-Oc stocks on an average three times lower than the NOAA recommended benchmark. Likewise, estimating mortality for these 22 Sh-Oc stocks from human activities can be challenging as stressors from offshore are rare and observer coverage to detect bycatch in fisheries is low or nonexistent. Improved data availability and quality, including increased precision of abundance estimates, can be achieved by increasing survey effort/coverage. However, maintaining high levels of monitoring for Sh-Oc stocks over decades can be cost prohibitive. Thus, a framework is needed to evaluate monitoring strategies and identify the most cost effective strategy to meet restoration goals. This project proposes to develop a Management Strategy Evaluation (MSE) modeling framework specifically for shelf and oceanic stocks that allows IAC Supporting decisions regarding allocation of resources to optimize monitoring efforts; IAC Incorporating uncertainty associated with key estimates (e.g. abundance, mortality) to examine the effect on achieving conservation/restoration objectives using performance measures; IAC Examining population level impacts of multiple stressors on Sh-Oc stocks to help prioritize mitigation measures; IAC Evaluating trade-offs of restoration measures based on performance metrics and restoration objectives for Sh-Oc stocks that can be updated as more data becomes available following an adaptive management approach. MSE, a risk assessment framework that integrates population dynamics with the management system, has been widely used in managing fisheries and marine mammals, including in the US. Date Entered: May 15, 2017		Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	\$ 200,000.00	\$	-

Eco Restoration	5653	7/17/2017	Deer Island Nesting Colony Improvements and Monitoring	NOAA Project ID#13358: Deer Island, Mississippi, functions much as a barrier island within the Mississippi Sound by providing nesting habitat for a variety of coastal birds (seabirds, shorebirds, and wading bird species). The island is composed of several habitats including dunes, tidal flats, saltmarsh, and maritime forests as well as several fresh water ponds that are used by migrating and resident species. Deer Island is used as a stopover for over 180 species during their migrations and is a critical nesting area for least terns, snowy plovers, Wilson's plovers, piping plovers, and black skimmers. These near-shore habitats are one of the highest sites of diversity in the waters of the Mississippi Gulf Coast and lead to the island being established as a Coastal Preserve managed by the Mississippi Department of Marine Resources. Following the Deep Water Horizon oil spill, restoration efforts have prioritized key habitats for impacted species through the implementation of prescribed burns, marsh and tree plantings, and dredge material disposal as part of a beneficial use program. Each of those projects are aimed at increasing the available habitat and this project intends to augment those efforts. We aim to facilitate additional production of various coastal bird species by reducing nest mortality and improving nesting habitat using predator deterrents and removal of nuisance species. Additionally, the project would provide mechanisms for monitoring the restoration of bird feeding habitats on and adjacent to Deer Island. We envision this project would be carried out with state, federal, and private partners. An restoration of coastal bird populations requires a multi-tiered approach, the following objectives are advanced: The first objective is to quantify nest predation on nesting bird colonies and advance efforts to protect nests. Nest predation activity will be monitored using game cameras. Following this baseline assessment, different predator deterrent treatments (e.g., fencing colonies with and without tpees, electric fences, nest relocation) will be tested. Performance metrics will then be quantified for different habitats and species. The second objective is to remove predators and restore nesting habitat use by species. Such recording devices have the benefit of increasing short-term visual observations. Recovery of both foraging habitat and ecosystem function will involve examining potential prey items and stool species for trophically transferred bird parasites. Parasites have been successfully used as biological indicators for protected species in other systems and offer the benefit of not having to collect or harass the final host. Additionally, by examining the intermediate hosts of bird parasites, ecosystem-level connections can be inferred that will help inform metrics regarding the efficacy of habitat restoration. Both of these metrics (parasitic recordings and parasite abundance) will be augmented with on-going bird surveys to generate a holistic view of restoration practices that can help inform restoration in other northern Gulf habitats. Date Entered: May 15, 2017		Yes	No	No	No	No	No	No	No	No	No	No	\$ 750,000.00	\$ -	
Eco Restoration	5654	7/18/2017	Comprehensive stewardship of breeding waterbirds across barrier and nearshore islands in the Gulf (Alabama & Texas)	NOAA Project ID#13354: Waterbirds were disproportionately injured during the Gulf oil spill in 2010, particularly on barrier and bay islands. We propose to restore some of the species, including Gull-billed, Least, Common, Caspian, Royal, and Sandwich Tern, Reddish Egret, Brown Pelican, American Ospreycatcher, Snowy Plover, and Wilson's Plover. National Audubon Society and partners will increase production of birds, reduce mortality, and concomitantly restore and protect habitats on which injured species rely. We will use an adaptive management framework to assess threats, implement strategies to address those threats, monitor success, and adapt both within season where appropriate, and across seasons. We will work on the four key priorities for bird restoration outlined in the PDAR: Priority 1: Restore and conserve bird nesting and foraging habitat. Objectives: At key sites, implement stewardship activities to alleviate dominant threats and improve productivity. Activities: Direct protection of nesting colonies and solitary nests. Predator control. Vegetation management. Erosion control. Outreach and education to increase community cooperation and acceptance. Expected Outcomes: Increased productivity of injured birds Priority 2: Establish or re-establish breeding colonies. Objectives: Attract colonial nesting species to new or restored islands. Activities: Social attraction techniques, including use of decoys and playback of vocalizations. Expected Outcomes: Increased number of nesting colonies of injured species. Increased probability of region-wide population persistence Priority 3: Prevent incidental bird mortality. Objectives: Reduce incidental mortality of coastal waterbirds of all species. Activities: Set up recycling for monofilament line. Educate fishers about dangers of entanglement and reduce barriers to recycling. Expected outcomes: Fishers have increased awareness and compliance with monofilament recycling. Bird mortality from entanglement reduced. Priority 4: Restore degraded data gaps. Objectives: Using the objectives of bird restoration in the Gulf of Mexico Monitoring Network, develop monitoring to fill key knowledge gaps. Activities: Develop standardized protocols for monitoring bird populations and productivity. Conduct studies to ascertain the effects of predators, habitat use, and sediment type on bird productivity. Expected Outcomes: Improved understanding of Gulf-wide population dynamics. Gain knowledge required to prioritize areas for restoration and to develop comprehensive management plans. Benefits to public: Improved management of birds nesting on bay and barrier islands will allow for better balance between species of birds, potentially reducing human-bird conflicts. Recent studies have linked the reduction in coastal birds, lead by the reduction in many of these species of waterbirds, to an explosion in populations of Menhaden, along with a decrease in oil content, quality, and economic value of this important prey species. Restoring balance to this ecosystem by restoring predatory birds will improve livelihoods for fishers and help restore fisheries. Restoring the species harmed during the spill will improve public perception of our coasts as ideal landscapes for living, working, and recreation. We will also improve access to recreation such as bird watching. Benefits to Environment: These species are important as both predators and prey in coastal environments, thus restoring populations of waterbirds will help restore balance to marine fish community structure. Furthermore, the proposed actions will provide benefits to ecosystem services by restoring native vegetation and dune structure and by removing introduced predators that prey on other native vertebrate species. They also disperse aquatic invertebrates, change benthic species composition and abundance, change sediment composition, and improve water quality. Date Entered: May 15, 2017	Harrison County, Mobile County, Jefferson Parish, Terrebonne Parish, Galveston County, Calhoun County, Cameron County	Yes	No	No	No	Yes	No	No	No	No	No	No	\$ 10,000,000.00	\$ -	
Eco Restoration	5655	7/18/2017	Maximizing restoration impacts using full annual cycle models for migratory bird populations injured in the Deepwater Horizon oil spill	NOAA Project ID#13388: Nearly 300 species of birds rely on the abundant coastal forests, barrier islands, beaches, marshes, and open water of the Gulf of Mexico (GoM) for all or part of the year. The 2010 Deepwater Horizon (DWH) oil spill caused unprecedented large-scale destruction and degradation of GoM ecosystems, including extensive and pervasive harm to numerous bird species. The Open Ocean Restoration Area addresses the repair harm to migratory populations that spend part of their lives in the GoM, including implementation of restoration activities outside of the GoM. This mission implies that restoration activities implemented outside of the GoM, but within the geographic range of the migratory species, may be the most efficient means to repair harm done to GoM populations. Yet, prioritizing restoration actions for injured populations in the GoM and breeding areas in the GoM and between wintering areas in the GoM and breeding areas in the GoM is challenging for two primary reasons. First, understanding how wintering populations are connected to breeding areas, migratory connectivity, is an essential first step toward identifying where to implement restoration actions. Second, understanding how changes or events during one season can affect populations of migratory species is challenging because processes often interact in such a manner that no single period can be understood outside the context of the entire cycle. Therefore, we propose to address this relevant data gap to inform restoration by developing full annual cycle models to understand how and why population abundances change over time and space. Specifically, these approaches can identify which seasonal vital rates contribute to population growth and this information can be used to maximize the effectiveness of restoration efforts. Given that migratory birds face seasonally and geographically specific threats, population models are a tool to identify the drivers of population dynamics and determine effective management opportunities. Integrated population models (IPMs) are a powerful framework for combining multiple data sources to improve estimation of vital rates and their contribution to population growth. Until recently, IPMs for migratory species have focused solely on population dynamics during a single stage of the annual cycle. Members of our research group recently developed a novel full annual cycle IPM that integrates seasonal demographic and environmental processes to elucidate the factors that limit and regulate migratory bird populations across the annual cycle. By integrating data collected across seasons for linked populations, this framework is able to examine the contribution of seasonal demographic processes to variation in population size. We are proposing to apply this full annual cycle IPM framework to four GoM migratory bird species injured by the DWH oil spill. The results from these models can be directly applied toward prioritizing which alternative management actions during breeding, wintering, or migratory seasons are most likely to have a positive influence on population growth of migratory bird populations injured by the DWH oil spill as outlined in the PDAR/PREIS. Here, we propose a two-year proof-of-concept for four species injured by the DWH oil spill for which the necessary data are available or currently being collected: American White Pelican, Northern Gannet, Common Loon, and Piping Plover. These species are not likely to be detected on these water surveys, but their over-winter survival and abundance has been studied for the U.S. Gulf coast. Where applicable, we would seek collaboration with groups studying these species regionally to make use of unpublished data. Date Entered: May 15, 2017		Yes	Yes	50000	No	No	No	No	No	No	No	\$ 611,689.00	\$ -		
Eco Restoration	5656	7/18/2017	Institution of a Laboratory Information Management System	NOAA Project ID#13395: This project, instituting a Biorepository Laboratory Information Management System (LIMS), addresses restoration Monitoring and Adaptive Management needs by providing infrastructure for efficiently cataloging project samples. This technological tool provides support to restoration projects, assuring quantitative and qualitative sample inventory details necessary for compliance with laboratory Quality Control and Assurance needs. A biorepository LIMS is an enterprise solution that can provide real-time inventory data to maximize agency efficiency of sample management, facilitating intra- and interagency collaboration and determining geographic gap analysis across multiple taxa (marine mammals, sea turtles, fish, coral, etc.). Simply, LIMS is a database specifically designed to manage samples in a field and laboratory setting, assigning barcoded labels that facilitate automation, tracking, database updates, queries, and reducing labeling errors, improving accuracy and longevity of samples for analysis and use in reference collections. While the launch of a LIMS would begin in the southeast region, it is configurable and web-based with the flexibility to be expanded to other regions and customized to program requirements and needs. There is a great likelihood of success in the implementation of a LIMS product, for example its current use in NOAA line offices including PFSC and NIST Marine Environmental Specimen Bank as well as other federal agencies (e.g., USDO/Idea, CDC, US Military HV research program) to successfully manage sample inventory and data analysis. As an agency enterprise solution, LIMS would replace a diverse mix of inefficient in-house desktop or antiquated solutions or databases, spreadsheet, log books, which compromise service continuity and viability of institutional reference collections. A deficiency was made apparent during the Deepwater Horizon injury investigation as a lesson learned in the management of greater than 40,000 samples tracked including associated, chain of custody, and results. Deficiencies including but not limited to restricted system capacity limits and problematic sample queries encountered a system not designed to manage the requirements associated with physical and chronological laboratory sample tracking to assure sample integrity and best practices. The institution of LIMS in support of restoration projects that have a sample management need will greatly enhance the success of the projects. Date Entered: May 15, 2017		Yes	Yes	75000	No	No	No	No	No	No	No	\$ 400,000.00	\$ -		
Eco Restoration	5657	7/18/2017	Establishment of a Gulf Sperm Whale Pelagic Ecosystem National Marine Sanctuary of significant size	NOAA Project ID#13393: A. Establishment of a Gulf Sperm Whale Pelagic Ecosystem National Marine Sanctuary of significant size This sanctuary will serve as a truly pelagic sanctuary for the remaining estimated 300 resident sperm whales in the Gulf of Mexico, providing safe haven for the Gulf's largest and most endangered marine mammal species, which is the most dependent on the full spectrum of depths and habitats in the offshore water column. Sperm whales rest at the surface, dive to and feed in depths over one mile, and are most frequently found associated with the interface between cold-core and warm-core eddies along the 1,000m isobath. B. The creation of the Sperm Whale and Pelagic Ecosystem Interpretive Center on-shore A specialized, high tech facility provided for the interpretation to the public of sperm whale life histories and population dynamics, and of the pelagic environment generally, creates the capacity to educate the American public about the complex pelagic environment that is over and over very few people are ever able to directly witness. The offshore Gulf has fueled the economy through fisheries (tuna, anchovies, shrimp, and oil and gas. People need to understand why, as well as what animals live there and how humans impact them. The depths of the Gulf are generally unknown to the public. The lives of sperm whales are extreme by any measure of comparison to other animals on earth and in the ocean. C. Design, development, and commissioning of the Gulf Sperm Whale and Pelagic Ecosystem research vessel, an offshore vessel dedicated to studying research on the pelagic environment. The study of the pelagic environment takes specialized talents and technologies, and is truly multidisciplinary. With the establishment of the Gulf Sperm Whale National Marine Sanctuary there must be a mechanism for the natural resource managers, researchers, and others to access the sanctuary and the pelagic environment of the northern Gulf. It will be necessary to invest substantial time in assessing the growth or decline of populations, health of the marine mammals (reducing and mortality and dispersion), and learn further about the life histories of the sperm whales and other marine mammals in the Gulf. D. Review of the proposed monetary allocation in the NREIA of \$24 million for the restoration of marine mammals. This allocation should be adjusted by adding an allocation of \$70 million for the sole purpose of establishing and managing the Gulf Sperm Whale National Marine Sanctuary, and adding a \$100 million endowment dedicated to sustained research, restoration, and adaptive management in the Gulf Sperm Whale National Marine Sanctuary, lasting at least the life time of an average sperm whale, bringing the total to \$214 million in funds to restore the marine mammals of the northern Gulf. Date Entered: May 15, 2017	All	Yes	Yes	5000	No	No	No	No	No	No	No	\$ 70,000,000.00	\$ 144,000,000.00		
Eco Restoration	5658	7/19/2017	Design and Initiation of an In-water Sea Turtle Monitoring Network in the Gulf of Mexico	NOAA Project ID#13405: Consistent data on estimates of abundance, population-specific vital rates, detectability, movements and connectivity, habitat use, and prey base for sea turtles in the Gulf of Mexico (GoM) are lacking. This gap in knowledge hampers understanding and management of anthropogenic impacts on these species (e.g., USDO/Idea, energy exploration/extraction, coastal development). A network of regular water surveys at multiple representative sites in the GoM will be designed and provided an understanding of connectivity and movement, which will contribute to put the impacts of anthropogenic effects on sea turtle species in context. These data are critical to the monitoring and adaptive management (MAM) component of long-term restoration assess the effectiveness both at a project and resource level for sea turtle populations in the GoM. To address these data gaps for MAM purposes, we propose to partner with state and federal agencies (NOAA, USDO/Idea, USFWS, non-governmental organizations (NGOs), and academic partners) to design and pilot an in-water monitoring network for GoM hawksbill and loggerhead turtles (hawksbill, olive, green, and loggerhead). The participating agencies are directly involved in sea turtle research and the development and implementation of management actions for sea turtles and will oversee the survey design phase of this program. This project is intended to (1) develop a statistically sound, long-term, sea turtle in-water monitoring program in the GoM, and (2) initiate in-water projects and broaden our partnerships with researchers conducting field work in the GoM. Because aerial surveys effectively estimate relative abundance for sea turtles near and offshore with comparable length >40cm, but are not appropriate for smaller turtles that are difficult to spot from an aircraft, we will focus on smaller, neritic and pelagic turtles in bays, shoals, and nearshore and offshore oceanic habitats. This project directly addresses the need for MAM activities to address data gaps and inform restoration by monitoring sea turtle distribution in the GoM in relation to threats, as well as working to standardize and integrate data set for efficient use by managers to monitor the success of combined restoration efforts. By partnering with known experts collecting data in the field and designing a standardized approach to data collection and management, this project has a high likelihood for success in informing long-term restoration monitoring needs. Date Entered: May 15, 2017		Yes	No	No	No	No	No	No	No	No	No	\$ 800,000.00	\$ -		

Eco Restoration	5660	7/19/2017	Research to Determine Gulf of Mexico Soundscapes and Effects of Sound on Marine Mammals	NOAA Project ID18332: The Gulf is one of the most heavily industrialized bodies of water in the world, with numerous sound-producing human activities, including commercial shipping, oil and gas development (including seismic studies), platform removals (including the use of explosives), coastal construction (including pile driving), and military operations and training. Excessive sound can cause disruption of important marine mammal behaviors, and risk of noise-related physiological injury. Excessive sound can also mask biologically important sounds, including communication calls between individuals of the same species. Research is needed to determine: 3C The Gulf of Mexico "soundscape" - sources of sound in the Gulf and associated sound levels and how they vary spatially and temporally. 3C. The effects of bathymetry, temperature, and other oceanographic features on sound propagation. 3C. The direct, indirect, and cumulative effects of human-caused sound on marine mammals and their prey species. Date Entered: May 15, 2017	Yes	Yes			No	Yes	No	No	No	No	No	\$	-	\$	-
Eco Restoration	5661	7/19/2017	Minimizing Effect of Human Sources of Sound on Gulf of Mexico Marine Mammals	NOAA Project ID18340: Excess sound levels have the potential to prevent the recovery and restoration of marine mammal populations that have been reduced as a result of the Deepwater Horizon oil spill, particularly sperm whales, Bryde's whales, and bottlenose dolphins. Measures have been identified for mitigating the effects of anthropogenic sources of sound from coastal construction (pile driving), oil and gas exploration and decommissioning (seismic airguns and explosives for platform removals), and military training activities (sonar and explosives), but the effectiveness of those measures has not been fully tested and verified. Reliable mitigation measures for activities that are particularly harmful or for which no measures currently exist. Mitigation should be tested for the different species and operating conditions that occur in the Gulf. Measures could include, but are not limited to, ship quieting technologies, bubble curtains and double piles (for pile driving), marine vibrosons (as an alternative to seismic airguns), and non-explosive decommissioning options (for platform removals). Also needed are effective and reliable acoustic aids (such as passive acoustic monitoring) for use in detection of marine mammals in low light or nighttime conditions. Date Entered: May 15, 2017	Yes	Yes			No	Yes	No	No	No	No	No	\$	-	\$	-
Eco Restoration	5662	7/21/2017	Mesophotic reef habitat enhancement.	NOAA Project ID18339: The 2010 Deepwater Horizon (DWH) oil spill in the Gulf of Mexico (GoM) is one of the largest industrial accidents ever to occur in US waters. Extensive decontamination activities, fisheries closures, mobilization of environmental assessment resources, and restoration efforts also make this one of the most costly accidents in US history. The DWH oil spill impacted key deep reef fish (Scorpaenidae, Serranidae, and Lutjanidae), roughnose bass, Prionotus carolinensis, and tautog, Serranus phoebe, but almost nothing is known about possible long term effects and possible recovery. In addition there are several other important commercially and recreationally valuable species that were also affected (and snappers, vermilion snappers, greater amberjack, gag, and scump) that reside on these deep water mesophotic reefs that are close (50 to 100 km) to the DWH spill site. The primary objectives of this project will be to enhance and restore deep water reef fishes by substantially increasing reef habitat through a large artificial reef deployment program, and provide a robust assessment of the effectiveness of this habitat enhancement effort. One of the most promising approaches to mitigate the reduction in reef fishes caused by the DWH oil spill event is to increase habitat for ecologically and commercially important reef fish species through an extensive and effective artificial reef program. Such habitat enhancement may also increase the resilience of these valuable resources to future disturbances. On the MS-AI continental shelf there has been an extensive artificial reef enhancement program that has been tremendously successful, but there have been few attempts at such enhancements of deeper water mesophotic reef habitats. This project will make a restore effort of such mesophotic reef habitats by adding an unprecedented number (504) of large-sized, long-lasting artificial reefs (4x4x30m-25 ft. tall pyramid reefs) to the Florida shelf zone in the northeast Gulf of Mexico, adjacent to the DWH spill site. Artificial reef placement, particular distance between reefs can have profound influence on the effectiveness of any given artificial reef program. Therefore the habitat enhancement of this project will be tightly coupled with quantification of the effects of reef spacing on a number of critical metrics including natural and fishing related mortality, condition, growth, abundance, biomass, production, diet, and movement of several important reef fish species (e.g., roughnose bass, tautog, red snapper, vermilion snapper, greater amberjack, gag, and scump) as well as community characteristics such as species richness, evenness, and diversity. This will be accomplished through application of a wide array of proven methods, each of which have been developed and optimized for this system by the Auburn University Marine Fish Lab over the last 28 years. Methods include standardized hook-and-line and trap sampling, ROV surveys, hydroacoustic surveys, line-scale passive acoustic tracking, stomach content analysis with DNA barcoding, otolith aging techniques, genomic studies, parasitology and microbiology studies. These methods will provide a comprehensive combination of data on population and community characteristics, individual condition and growth, individual movement, and resource use, and will allow an unprecedented assessment of the effectiveness of the artificial reef deployment at different levels of reef spacing. Most importantly, this project will provide stable reef habitat for increased production of important mesophotic reef fish species. We will use a combination of field and laboratory studies to examine spatial and temporal patterns in population level (age, growth, sex ratio, and genetic population structure), individual level (toxicopathic lesions and pathogens), and molecular level (genomic expression) impacts along a gradient of exposure to polycyclic aromatic hydrocarbons (PAH). Date Entered: May 15, 2017	Yes	Yes			No	Yes	No	No	No	No	No	\$	9,700,000.00	\$	-
Eco Restoration	5663	7/21/2017	Restoration of Mesophotic and Deep Sea Reefs using novel methods, and maximum cost efficiency	NOAA Project ID18345: Deep sea and mesophotic reefs were negatively impacted by the DWH spill. Restoring populations of corals, and other important fish habitat structure-forming benthic fauna is a major restoration goal in the deep sea. Reef restoration in the deep sea has been attempted in tropical (low-latitude) reefs with limited success. Coral restoration in the deep sea, or mesophotic zones presents even greater challenges, and potential costs, because of the inaccessibility and equipment required to work in the 50-1,000 meter seafloor. In order to overcome these challenges, and maximize the potential impact of restoration costs, new technologies need to be developed and implemented, from site identification and transplanting, to logistics and monitoring. Innovative and novel artificial reef structures, which are non-toxic and can capture and protect thousands of corals within a week ship time. The artificial reef structures used in Coramyl are not prone to corrosion, and can provide means of deploying coral transplants efficiently and successfully in large numbers. Structures are resistant to currents, and are less likely to snag fishing gear than other artificial reef structures. Structures are seeded with coral transplants, and are lowered to the seafloor using a small crane. Project scope includes the restoration of populations of corals which were impacted by DWH spill over areas with specially sensitive and valuable fish populations. Please contact for more details and methods. Date Entered: May 15, 2017	Yes	Yes			No	Yes	No	No	No	No	No	\$	3,260,000.00	\$	-
Eco Restoration	5664	7/21/2017	Gulf of Mexico Pelagic Ecosystem Technical Advisory Group	NOAA Project ID18344: We propose to create a technical group focusing on the Gulf of Mexico pelagic ecosystem. The new technical group will be charged with the development of a draft ecosystem management plan to restore, enhance and manage shared (between US, Mexico and Cuba) pelagic resources within the Gulf of Mexico Ecosystem. The group will provide the management plan as an input to the technical advisory processes of the International Commission for the Conservation of Atlantic Tunas, the Convention on the Conservation of Migratory Species of Wild Animals, Inter-American Convention (IAC) for the Protection and Conservation of Sea Turtles, the International Whaling Commission and the US Gulf of Mexico EIA process. The technical group will focus on the use of advanced population modelling and simulation to assess the effectiveness of current management measures aimed at restoring highly migratory resources in the Gulf of Mexico and will work closely with the different international conventions to define which management strategies are currently in use and which alternative strategies may be proposed. The group will also evaluate the active restoration projects funded by the Gulf restoration project. Date Entered: May 13, 2017 Date Edited May 15, 2017	Yes	No			No	No	No	No	No	No	No	\$	2,000,000.00	\$	-
Eco Restoration	5665	7/21/2017	Assessment of northern Gulf of Mexico open small cetacean health, habitat use, and movement patterns	NOAA Project ID18331: In the northern Gulf of Mexico (nGoM), numerous studies have been conducted on common bottlenose dolphin resident to bays, sounds, and estuaries (BSEs) to understand the stressors, including biotoxins, pollutants, and fishery interactions, that affect population health. Although these studies are providing valuable information on the health and stressors that affect BSE dolphins, little is known about the stock structure and effects of stressors on small cetaceans that reside in coastal, continental shelf, and open ocean waters of the nGoM. NMFS manages for one species of small cetacean in nGoM coastal waters (bottlenose dolphins) and an additional 7 species in continental shelf waters. The DWH Programmatic Damage Assessment and Restoration Plan estimated declines of 38% and 43% for Northern Coastal Stock of bottlenose dolphins and all continental shelf small cetacean stocks, respectively, and that these stocks are a priority for management and conservation efforts. Collection and analysis of health data to understand the current and emerging stressors for these stocks/species as well as to develop a better understanding of habitat use and movement patterns is necessary for refinement of management plans and to design effective conservation strategies. The objectives of this project are: (1) to conduct veterinary assessments on nGoM coastal and continental shelf small cetaceans to collect data that will help to identify potential disease issues and associated risk factors, and to establish current population health baselines; and (2) to deploy satellite tags on nGoM coastal and continental shelf small cetaceans to collect data on habitat use and movement patterns. Health assessments and satellite telemetry are useful tools in identifying the impact and geographic scope of stressors on marine mammals. In the nGoM, health assessments and satellite telemetry of small cetaceans have been limited to shallow waters where animals can be temporarily captured and restrained in shallow waters; however, alternative approaches could be developed to conduct similar sampling in deeper waters. For example, hoop netting allows for capture of individual dolphins in deeper waters while the animal is engaged in low riding behavior. The Kickercherk stands on an extended pupit attached to the bow of the research vessel and places the hoop net in front of the animal as it is about to surface. Once the animal is caught in the net, it is maneuvered to the research vessel for health assessment and satellite tag attachment. The geographic focus would be the coastal waters of the Florida Panhandle, Alabama, and eastern Mississippi in which spotted dolphins and bottlenose dolphins are known to frequent. The specific stocks targeted for this project would be the Northern Coastal Stock of bottlenose dolphins and the Northern Gulf of Mexico Stock of Atlantic spotted dolphins. The coastal waters of the Florida Panhandle are one of the few regions in the nGoM in which these 2 stocks are observed and low-ride routinely, which allows for them to be safely captured, assessed, and satellite tagged using hoop net methodology. Approximately 10-15 dolphins could be sampled per 2-week sampling period, and 2 sampling periods per year (1 in spring and 1 in fall), every other year across a 5-year period would be optimal (i.e. 6 captures total and 60-90 dolphins assessed). This project will be the first to collect data on small cetacean health and movement patterns in the coastal and shelf waters of the nGoM. These data will be used for assessing impacts of current and emerging stressors on small cetaceans in nGoM open waters and refine restoration strategies for these stocks/species. This project will also refine methods to safely capture, assess, and tag small cetaceans in open water environments, which can then be applied to other nGoM sites, including the Western Coastal Stock of bottlenose dolphin, distributed across the Louisiana and Texas coasts. Date Entered: May 15, 2017	Yes	No			No	No	No	No	No	No	No	\$	2,000,000.00	\$	-
Eco Restoration	5666	7/21/2017	Gulf of Mexico Deep Water Column Monitoring Program	NOAA Project ID18363: The Deepwater Horizon Oil Spill (DWHOS) highlighted the lack of baseline data for deep-ocean ecosystems in the Gulf of Mexico (GoM). Of the GoM open ocean habitats, the deep water column is by far the largest affected by the DWHOS. Long-term monitoring of the diversity and abundance of the pelagic fauna (0-1500 m) of the open GoM, including oceanic fish larvae and the microbial flora, is essential for evaluating impacts of natural and anthropogenic events. We propose multi-year expansion of knowledge as a restoration tool. Research as restoration 3C: an approach with precedence, enacted after the Exxon Valdez oil spill and pursued subsequent to the DWHOS event. A 3-year (to start) sampling and analysis project that follows the methods developed during an intensive NOAA NRD program in 2010-11 (ONSAP) and continued during 2015-2017 (DEEPEND Consortium) is envisioned. Analyses of these time series have revealed that the abundance of pelagic fishes decreased nearly an order of magnitude between 2011 and 2016. This substantial change was not obvious shortly after the spill and supports the importance of a long-term approach. Time-series investigations are known to be critical for assessment of ecosystem variables and recovery. We propose an integrated program that includes discrete-depth sampling and water collections simultaneously with acoustical sensing. With respect to surveys of economically important fishes (e.g., billfishes, tunas, dolphinfishes, swordfish), continuation of a long-term epipelagic survey of ichthyoplankton conducted during the primary spawning periods of many taxa is essential. Epipelagic and deep pelagic surveys can be merged logistically and provide insight on the vertical coupling in pelagic communities found from the surface to 1000 m. Remote sensing information and physical modeling will be used to direct the locations of sea-sensing. We suggest that identical sampling procedures and gear used in prior surveys be adopted for future monitoring to eliminate methodological bias. In addition, a focus will be given on the continental shelf break/slope of the GoM, a region of enhanced benthopelagic coupling (e.g., sonic scattering layers intersecting benthic habitats) as well as primary foraging grounds for marine mammals and seabirds. It is also the transition area for material and energy from the continental shelf domain to the oceanic domain. The rationale for the project stems from the recent discovery that over half of fish species in the Gulf spend all or part of their lives in the open ocean. In terms of total GoM fish abundance, deep pelagic fishes are the most numerous. Endangered toothed whales, seabirds, and epipelagic game fishes rely on deep pelagic fishes, squid, and shrimp as prey. Further, the transfer of energy through open ocean food webs is higher than typically assumed, suggesting a much greater role for deep-pelagic animals in oceanic ecosystems. In short, the deep-ocean is a key component of the Gulf open ocean ecosystem. A key element of the proposed project is to help inform restoration planning, implementation and evaluation. We suggest using ecosystem modeling approaches to achieve this result. The project suggested here has been endorsed by the principals at NOAA who supported the initial NRD surveys and utilized these data in the NRD. This restoration project aligns with Water Column Fish and Invertebrates, Mesophotic and Deep Reef Communities, Marine Mammals, Birds, and Monitoring and Adaptive Management. Date Entered: May 15, 2017	Yes	No			No	Yes	No	No	No	No	No	\$	6,900,000.00	\$	-

Eco Restoration	5667	7/31/2017	Impact of water quality conditions on submerged aquatic vegetation foraging resources for the northeastern Gulf of Mexico's injured bird, marine mammal, and fish populations	NOAA Project ID#13452: The proposed activities directly address the NMDA and Open Ocean TIG goals of protecting and restoring habitats on which the Gulf of Mexico's injured birds rely (PDARP section 5.1.2.1). Submerged aquatic vegetation (SAV) beds are critical habitats that constitute an important food source for regional and migratory bird populations. These activities also support the needs of several other restoration types, as SAV beds are an important habitat and foraging resource for dolphins, manatees, sea turtles, and local fish populations. Unfortunately, dramatic declines in seagrass coverage have occurred across the northeast coast of the Gulf of Mexico since the mid-1900s. Some SAV populations have stabilized and even begun to recover in recent years, but the reasons for these improving trends are not well understood. This project advances our understanding of the factors affecting SAV distribution and abundance in coastal habitats encompassing the Mississippi and Florida areas of the Gulf Island National Seashore (GIS), and extends those insights across critical habitats along the Florida panhandle (St. George's Sound and Choctawhatchee, St. Andrews, Perdido, St. Josephs, and Apalachicola Bays). Declines in SAV community health and productivity across this region have been linked to a combination of water-quality factors, including excess nutrients from nonpoint and point source pollution and increases in sedimentation and turbidity from surface runoff. Targeted monitoring will better quantify the contributions from major sources of nutrients and turbidity (wastewater treatment plants, as well as the inflows: SAV abundance is also negatively affected by dredging, boat traffic, and shoreline modifications (e.g. bulkheads and groins). Better information on nutrient and sediment inflows will help to elucidate the relative importance of water quality conditions, other anthropogenic factors such as shoreline hard dening, and natural sources of environmental variability. Hydrodynamic models will be used to examine how these factors influence SAV distribution and abundance. Multivariate statistical analyses will provide adaptive management and line guidance to support adaptive management of the region's SAV habitats. Inaugural efforts across these systems generates regional insights while building site-specific knowledge to support local restoration projects. Monthly data collection at several locations in the GIS will build on existing monitoring programs and include measurements of temperature, salinity, dissolved oxygen, pH, light attenuation, turbidity, water column nutrient and sediment concentrations, and SAV cover and epiphyte loads. Light sensors and water quality sensors will be deployed at locations not currently monitored. Monthly water quality measurements and biannual seagrass productivity surveys will also be conducted at sentinel sites in St. George's Sound and Choctawhatchee, St. Andrews, Perdido, St. Josephs, and Apalachicola Bays and will also complement existing monitoring programs. Findings can help improve restoration outcomes in numerous ways. For example, this information can help reduce failure of expensive SAV restoration efforts by identifying optimal sites based on factors such as light attenuation, water quality conditions, and shoreline characteristics. Local nutrient sources of greatest impact can be prioritized for reductions. Information on nonpoint source inputs can inform placement of living shorelines. Costs include sample collection and processing, data management and analysis, report writing, and facilitated meetings to support knowledge transfer among scientists and managers. Date Entered: May 15, 2017	Jackson County, Escambia County, Santa Rosa County, Franklin County, Walton County, Bay County	Yes	No	No	No	Yes	No	No	No	No	No	No	\$	600,000.00	\$	-
Eco Restoration	5668	7/24/2017	Genetic and chemical indicators of population health, recovery, and resilience in the Gulf of Mexico	NOAA Project ID#13450: The primary goal of this project is to continue monitoring population health of water column fish and invertebrate communities from the open ocean (0-1500 m) on both short (generational) and long (evolutionary) timescales, using genetic and analytical chemical methods. This information is critical for understanding the recovery, resilience and long-term consequences of the DWHOS on key deep-pelagic species. Genetic diversity is often used as a proxy to measure population health. This measure is primarily tied to an organism's ability to survive and adapt to a changing environment. Genetic diversity can be reduced by rapid declines in population sizes following a major disturbance event. Low genetic diversity has severe consequences within a population, such as increased extinction risks and reduced recovery rates. A second metric often used to infer population, and ultimately ecosystem, health is Metapopulation connectivity, or the amount of genetic information shared between populations. For this reason, determining how genetic diversity is shared and exchanged within and among populations in the GoM has huge implications for the recovery and resilience of a species and the ecosystem. Alongside estimates of genetic diversity and connectivity, chemical analysis of deep-pelagic fauna can be measured to assess the persistence of oil-derived hydrocarbons in the environment and their potential impacts on the community. Within crude oil mixtures, PAHs (polycyclic aromatic hydrocarbons) are highly soluble in water and are relatively easy taken up by exposed biota. PAHs in the water can cause lethal and sublethal effects (e.g. endocrine disruptions) and can inhibit reproduction (damage) to marine organisms via ingestion and/or absorption through the skin. We propose conducting a robust ten-year time series analysis that characterizes changes in genetic diversity, connectivity, and PAH exposure in deep-pelagic GoM communities. Over the past 7 years we have collected and analyzed samples of invertebrate and fish from before DWHOS, immediately following the spill (DWHOS cruises 2010-11, and 5 7 years post spill DEEPEND cruises 2013-17). To date, we have four several intriguing results: 1) a general increase in genetic diversity from 2013-16, suggesting possible species' recovery following the DWHOS 2) GoM populations have unique genetic diversity, suggesting possible local resilience 3) genetic connectivity may be linked to life history, suggesting recovery and resilience potential may be predictable 4) elevated PAHs in deep-sea fishes following the DWHOS suggesting higher intake rates compared to clearance rates 5) a recovery to baseline levels in 2015-2016 in only some taxa groups (topoalp 6) continue high PAH levels in eggs, potentially affecting the long-term stability of the deep-pelagic community. We propose a continued 3-year program that builds upon our genetic and PAH datasets collected over the past seven years. First, we will continue to monitor genetic diversity and PAHs across select crustacean and fish taxa, as a measure of population health. We will use established methods implemented during the DEEPEND project, but also integrate new applications that will test for genomic signatures of population reduction or expansion and persistence in the pelagic biota. Recovery and resilience will be measured by estimating genetic connectivity within and among populations in the GoM, capitalizing on previous and future sampling expeditions. A key element of the proposed project is tight linkage with NOAA to help inform restoration planning, implementation and evaluation. We suggest integrating the genetic diversity estimates into population/ecosystem modeling approaches, which has rarely been used in these applications. The restoration topics with which the suggested project align include Water Column Fish and Invertebrates, and Mesophotic and Deep Reef Communities. Date Entered: May 15, 2017 Date Edited: May 16, 2017		Yes	No	No	Yes	No	No	No	No	No	No	\$	2,400,000.00	\$	-	
Eco Restoration	5669	7/24/2017	Gulf of Mexico Open Ocean Tropic Ecology Program	NOAA Project ID#13437: The objective of this project is to examine in detail the trophic connections of fishes, cephalopods, and crustaceans (nekton, collectively) inhabiting the ep-, meso-, and bathypelagic regions of the GoM using stable isotopes, fatty acid and metabarcoding analyses. The specific goal of this study is to use natural dietary tracers and metabarcoding analysis to examine the trophic ecology of meso- and bathypelagic nekton and to elucidate vertical food web structure (0 to 1500 m depth) patterns in order to quantify trophic connectivity in the northern GoM. Stable isotopes, fatty acid, and metabarcoding analyses have been used successfully to examine food web structure in many systems. In this study samples collected during previous sampling efforts (NMDA Offshore Sampling and Analysis Program and DEEPEND, www.deependconsortium.org) as well as proposed sampling efforts (please see Gulf of Mexico Deep Water Column Monitoring Program project suggestion) will be analyzed for stable isotopes of carbon (¹³ C) and nitrogen (¹⁵ N) to evaluate food web structure, examine flow of organic matter and determine trophic relationships of target organisms collected in the GoM. Analysis of polyunsaturated fatty acids (PUFA) will serve as indicators of dietary sources, allow for the reconstruction of dietary histories, and provide additional data that may not have been elucidated through previous stomach content or stable isotope analyses. Because gut contents of many deep-sea taxa are difficult to due to mastication, metabarcoding, which allows for the identification of prey taxa by their DNA sequences, will be used to identify stomach contents of deep-sea crustaceans and cephalopods. Additionally, we propose to incorporate tissue analyses from upper level predators (large fishes, sharks, mammals) already collected in the GoM from colleagues over a similar spatial and temporal period. Bayesian mixing models (e.g. mixSIAR) designed for stable isotope and fatty acid data will be used to estimate prey contributions to predators. All trophic analyses will be focused on key 40-model species/sexes which will include both vertebrate migratory and non-migratory fish and invertebrate species with multiple feeding strategies. By examining stable isotopes, fatty acids, and gut contents of migrating and non-migrating fauna this project will shed light on the nature of energy and carbon transfer across vertical ocean zones and describe trophic connectivity in the region of the GoM where the DWHOS occurred. Results of this study will provide important information on the role of different migratory and non-migratory prey types to predators in the GoM allowing researchers to identify species or taxonomic groups that may serve as keystone or between functional groups or on commercially valuable fisheries stocks, sea birds, and protected oceanic cetaceans, all of which rely on deep-pelagic nekton as prey. The detailed elucidation of feeding dynamics within the major taxa of nekton will allow for multidisciplinary studies based on the larger-scale distribution of biomass. Finally, by describing vertical and horizontal patterns in the trophic structure of deep-pelagic nekton this project will provide baseline trophic data that can be used to inform spatially explicit ecosystem models that will provide insight into the structure and functioning of the northern GoM pelagic ecosystem. Date Entered: May 15, 2017 Date Edited: May 16, 2017		Yes	No	No	Yes	No	No	No	No	No	\$	475,000.00	\$	-		
Eco Restoration	5670	7/24/2017	Establish Passive Acoustic Task Force and Monitoring Network in the Gulf of Mexico for Cross-taxa Restoration through Noise Mitigation and for Fish and Marine Mammal Restoration Monitoring	NOAA Project ID#13295: The DWH oil spill injured many species of marine mammals, sea turtles, fish, and corals in the Gulf of Mexico (GOM). All of these species use sound for important life functions. Ambient noise in the GOM is rising due to commercial shipping, pile driving, and oil and gas seismic surveys, and increasing noise levels impact species' survival and degrade critical habitat. Noise mitigation can be an effective restoration technique. It requires passive acoustic monitoring (PAM) for baseline noise characterization to design effective noise mitigation projects and ongoing noise monitoring to evaluate effectiveness of implemented projects. PAM also provides data that can be used to monitor cetacean and soniferous fish distributions, seasonal movements, and densities. Recent advances have produced trend estimates at finer temporal resolution than possible for standard survey methodologies (Taylor et al 2016; Sievegard et al 2015), providing trends in density or abundance of marine mammals at the scales needed to evaluate the effectiveness of restoration efforts. This project intends to restore the acoustic habitat of marine mammals, sea turtles, fish, and invertebrates of the GOM. Additionally, the project allows for monitoring of these organisms to assess the efficacy of this and other restoration projects. To monitor noise and marine mammal and fish population densities for baseline levels and changes due to restoration activities, we will develop a GOM PAM task force and a soundscape monitoring strategy to determine priority species and habitats for population monitoring of restoration activities and for noise-reduction. The goal is to 1) keep quiet areas quiet and reduce noise in priority habitats, and 2) collect and analyze calibrated PAM data for baseline conditions and adaptive management to achieve these goals. The task force will assess current PAM data availability, determine temporal, spatial and taxa-based data gaps to be filled, and develop fixed-instrument PAM survey design and standards, including documentation of protocols for equipment and analytical methods to ensure comparability of data collection and analysis across GOM PAM projects. Based on these task force assessments, this project will implement data collection at a network of long-term PAM monitoring sites for restoration monitoring. Implement data collection from movable PAM arrays for short-duration, high-resolution studies of noise or restoration activity effects, and implement focused surveys/studies to obtain acoustic behavior parameters needed to estimate density (e.g., fish and dolphin species classification, acoustic tracking, behavioral tagging studies). A project-level clearinghouse for ongoing PAM projects and a data archive for raw acoustic recordings and metadata will be developed and coordinated across research groups and taxa. Data will be collected at long-term monitoring sites throughout the restoration period, while focused movable arrays and behavioral studies will be implemented as needed to answer restoration project questions. PAM data analyses will characterize diel, seasonal, and interannual changes in the soundscape; produce dynamic maps of ocean noise and hotspots in biotic sound production; characterize changes in noise levels from anthropogenic sources over the restoration period; characterize the seasonal distribution of marine mammals and soniferous fish, and estimate trends in density of marine mammals over the restoration period to evaluate mitigation effectiveness. Further, the task force will use results from baseline soundscape monitoring and analyses to identify priority habitats for noise reduction and major noise sources to be mitigated. This information will be used to guide and monitor effectiveness of separate noise mitigation projects, such as the 40Reduction of Anthropogenic Noise to Restore Injuries to Gulf of Mexico Marine Mammals, Fish, and Invertebrates/Project idea. Date Entered: May 15, 2017 Date Edited: May 16, 2017		Yes	No	No	No	No	No	No	No	No	No	\$	25,000,000.00	\$	-	
Eco Restoration	5671	7/24/2017	Reduction of Anthropogenic Noise to Restore Injuries to Gulf of Mexico Marine Mammals, Fish, and Invertebrates	NOAA Project ID#13292: The DWH oil spill injured many species of marine mammals, sea turtles, fish, invertebrates, and corals in the Gulf of Mexico. All of these taxa use sound for important life functions. Ambient noise levels in the oceans are rising as human activities like commercial shipping, pile driving, and oil and gas seismic surveys become more pervasive. Increasing noise levels impact these species' survival and degrade critical habitat. Quieter technologies exist for all these major noise sources and noise reduction mitigation can be an effective restoration technique. Collaborative task forces of resource managers and industrial stakeholders are needed to determine, implement, and monitor the most effective noise mitigation techniques. This project will develop three collaborative noise mitigation task forces to test and incentivize the adoption of noise reduction technologies in the Gulf of Mexico: 1) a geological and geophysical task force for seismic survey noise-reducing technologies; 2) a commercial shipping noise mitigation task force for shipping noise reduction; and 3) a marine construction task force for pile-driving noise reduction technologies. Noise-reducing seismic technologies could include marine vibroseis, low frequency acoustic sources, deep-towed acoustic/geophysical systems, low-frequency passive seismic methods, and fiber optic receivers allowing smaller sources. Ship noise-reducing technologies could include Green Marine noise mitigation recommendations including frequent hull cleaning and propeller maintenance, determining cavitation inception speeds; adapting quieting technologies during new construction or by retrofitting; measuring vessel noise and mitigating noisier vessels; initiating research to understand habitat locations and ship routing options; and establishing listening stations for vessels to measure noise levels. Noise-reducing pile-driving technologies could include double-walled piles, zero vibration/low vibration piles, and hydrodynamic dampers. Project funding will cover task force development, studies to determine most effective mitigation strategies, and funding to incentivize adoption of best mitigation technologies. While this project could focus on the DWH oil spill region, anthropogenic noise is pervasive throughout the Gulf of Mexico, and Gulf-wide noise mitigation could also improve recovery for wide-ranging oceanic Gulf of Mexico cetaceans that were impacted by the oil spill. Date Entered: May 15, 2017 Date Edited: May 16, 2017		Yes	No	No	No	No	No	No	No	No	\$	10,000,000.00	\$	-		

5672	7/24/2017	Adaptive management for sustainable fisheries and ecosystem restoration in the Gulf of Mexico.	<p>NOAA Project ID#13257: Conventional single-species stock assessments determine if a fish stock is experiencing excessive fishing mortality (known as overfishing), if the stock has been reduced to low abundance (known as overfished), and forecast a sustainable fishing mortality rate. A sustainable harvest policy is prescribed by combining this rate with a forecast of fish abundance. However, projections from single-species assessments may not adequately capture uncertainty when, for instance, targeted species are co-caught by fishing gear and interact strongly, as in a reef fish assemblage. These shortcomings may be significant impediments to effective management of depleted and recovering stocks. In order to improve management decisions targeting long-term sustainability of ecosystems and fisheries in the Gulf of Mexico, we propose to develop decision support tools that are rooted in decision theory, structured decision making (SDM) and adaptive resource management (ARM) in particular. SDM (note that ARM is a special case of SDM for dynamic decisions, with scientific uncertainty) includes at least five components: management objectives, potential management actions, model of system behavior (which project consequences of management actions on the system), a monitoring program to monitor the system state and finally an optimization method to identify decision that are optimal relative to the management objectives (e.g., Martin et al. 2011). We propose a SDM/ARM framework to assist managers with identification of optimal harvest policies that balance competing management, ecological sustainability and impact on ecosystems. We will consider multiple fish populations, management actions, and decision support tool in a simulation environment using management strategy evaluation (MSE). This process will also inform data collection programs and may help end users (i.e., natural resource managers from FWC and NOAA) prioritize research to fill critical data gaps and characterize the key sources of error associated with monitoring. Specifically we would discuss how to reduce errors associated with imperfect detection and spatial autocorrelation. Our approach will require a multi-disciplinary effort to engage stakeholders, and will require elicitation of socio-economic values associated with the consequences of potential management actions. Therefore, we propose to include a human dimension component to our project. We would apply concepts of behavioral economics to gain insights into stakeholder "behavior" and to help improve the effectiveness of outreach programs. This could in turn increase voluntary fisheries-related actions to increase fish biomass. Additionally, Co-Dr. Luz Barrios will serve as the primary interface with the Gulf of Mexico Fishery Management Council, ensuring this research is aligned with the current needs of the council. This research meets the criteria for being appropriate under the Oil Pollution Act of 1990 (OPA) as it is intended to help return injured natural resources and services to baseline by supporting the development of methods which will result in increasing biomass of injured fish species (Deepwater Horizon NRDA Trustee 2016). This research will explicitly aim to reduce overfishing and bycatch of reef fishes while simultaneously achieving higher catches in the medium and long term compared to the status quo. Date Entered: May 15, 2017 Date Edited: May 16, 2017</p>	Yes	Yes	No	Yes	No	No	No	No	No	\$ 1,800,000.00	\$
5673	7/24/2017	Gulf of Mexico survey of fishing pier related sea turtle interactions	<p>NOAA Project ID#13466: This restoration project focuses on reducing bycatch of sea turtles in pier-based recreational fisheries. We propose to implement multi-year angler surveys on fishing piers in the Gulf of Mexico, including education/outreach to rec-anglers. This project could be scaled to other states, or implemented in multiple states throughout the GOM. NOAA has developed a suite of pier survey forms for national implementation. The forms are currently undergoing approval by DMR under the Paper Reduction Act. We propose to use existing forms, once PRA is complete, to initiate implementation of this survey. Each pier would also be characterized, and local stranding networks would collect specific data on the nature of sea turtle captures when they occur, for comparison to the survey data. Survey results and turtle incidental capture data, would help shape the development, testing, and voluntary implementation of mitigation measures to reduce sea turtle bycatch at fishing piers. Education can help reduce mortalities and include outreach efforts would include providing anglers with stranding responder contact information, monitoring best practices, and development of an app that can report incidental captures and strandings, provide instructions on what to do if you catch a turtle, the hotline number for the closest stranding responder, and a way to report the interaction. Background: Sea turtle incidental capture by recreational anglers is on the rise nationwide (STSSN). Since 2010, 1,094 sea turtles, primarily juvenile Kemp's ridley, were incidentally caught in Mississippi along a 1,000 mile stretch of coast. A pilot survey to collect data on sea turtle interactions was conducted in 2013. Anglers were asked questions about fishing practices, turtle observations and captures. Outreach was a key component of the project and was conducted at the end of each survey. The MS STSSN also collected data (date, gear type, outcome) on every sea turtle incidental capture for comparison between angler practices and turtle interactions. Preliminary results yielded a high willingness to participate and valuable information was obtained. During and after the survey period, we reported incidental captures, which could possibly be attributed to reported captures, which could possibly be attributed to our outreach efforts. Success could be measured by a decrease in stranded turtles with fishing gear, successful rehab & release, and implementation of mitigation measures. Date Entered: May 16, 2017</p>	Yes	Yes	No	Yes	No	No	No	No	\$ 400,000.00	\$	
5674	7/24/2017	Temporal dynamics of eukaryotic plankton diversity at northern GOM deep benthic coral communities	<p>NOAA Project ID#13383: The Deepwater Horizon oil spill in 2010 caused injury to the entire ecosystem in the northern Gulf of Mexico. Despite playing important ecological roles, the small (less than 2 mm), cryptic eukaryotic species that make up the plankton remain a poorly documented component of marine ecosystems (Lay & Knowlton 2016), especially in the deep Gulf of Mexico (GOM). Long term time-series datasets have shown that plankton are sensitive indicators of environmental change, often having a non-linear response that can amplify otherwise subtle environmental disturbances (Hays et al., 2005). As such, establishment of biological baselines are necessary in order to quantify changes in biodiversity over time and to predict the impacts community shifts may have on sensitive deep benthic communities. In the last high-throughput sequencing (HTS) metabarcoding improved our understanding of microscopic eukaryotic diversity, including unicellular and small multicellular species: groups that have been challenging for taxonomists due to lack of diagnostic features and an inability to be cultured. Importantly, such approaches have been used to document environmental impacts to shallow water benthic microbial eukaryotic communities following the Deepwater Horizon oil spill (Bik et al., 2012). We propose to sample benthic planktonic communities monthly using instrumented moorings or benthic landers, and use metabarcoding techniques and high-throughput sequencing (HTS) to characterize biodiversity. To assess deep sea coral larval supply, and to identify key planktonic contributors to carbon export from surface waters that sustain sensitive benthic communities. Environmental DNA will be screened for target select GOM eukaryotic plankton (e.g. protists, foraminifera, zooplankton, coral larvae, fishes), using taxon-selective amplicon libraries and HTS sequencing (illumina) following molecular methods utilized in the TaraOceans project (De Vargas et al., 2013 and Fortin et al., 2012). Amplicon libraries will also be created for several mitochondrial genes that are likely to provide increased taxonomic resolution for mesozooplankton. Comparable sequence data will be generated for taxa known from these habitats from previously collected vouchered specimens, creating barcode libraries that will allow for comparisons to the marine barcode of life database (MarBOL, http://www.marinebarcoding.org) and will be made publicly available. Seasonal water sampling using an ROV or AUV at deep coral habitats will complement the temporal benthic eDNA sampling, allowing for freshly preserved samples for both visual species identifications and metabarcoding. Additionally, repeated plankton tows or sampling with an AUV after filtering through a 100 µm surface, and below thermocline and pycnocline depths (e.g. surface, and below thermocline and pycnocline) determined by water column temperature profiles using a CTD. The cost of this research could be reduced considerably (by upwards of \$4,000,000) by sharing ship and ROV/AUV time with complementary studies of deep coral habitats, such as assays of coral microbiomes and health, hydrodynamics, nutrient dynamics, and restoration. Date Entered: May 15, 2017 Date Edited: May 16, 2017</p>	Yes	Yes	No	No	No	No	No	No	\$ 5,121,868.00	\$	
5675	7/24/2017	Restore Gulf of Mexico Ecosystem Injuries by Protecting Open Ocean Habitat	<p>NOAA Project ID#13302: The Deepwater Horizon oil spill was the largest man-made disaster ever and will have long-lasting impacts on the Gulf of Mexico ecosystem, including marine mammals, sea turtles, and pelagic and benthic fish and invertebrates. Large-scale ecosystem impacts require large-scale restoration efforts. The most effective method for improving damaged ecosystems is by setting aside and protecting habitat from anthropogenic impacts. This restoration idea is to set aside large (thousands of square kilometer) regions in the Gulf of Mexico to protect and enhance recovery of all impacted taxa by protecting the ecosystem from all anthropogenic activities, for example by creating marine protected areas or similar habitat protections. Priority habitats to protect might include the only known Bryde's whale habitat of the northeastern Gulf of Mexico, the productive foraging habitat of sperm whales near the Mississippi Canyon, the potential calving habitat of sperm whales off the Dry Tortugas, expanding the area of the reef ecosystem habitat protections of the Flower Garden Banks sanctuary, or creating similar habitat protections for deep coral reefs throughout the northern Gulf of Mexico. Ecosystem damage at never-before seen spatial scales requires ecosystem protection at similarly large scales and must be included as part of the restoration projects to encourage ecosystem recovery. Date Entered: May 15, 2017 Date Edited: May 16, 2017</p>	Yes	No	No	No	No	No	No	No	\$ 10,000,000.00	\$	
5676	7/24/2017	Deer Island IV, Habitat Restoration Project, Deer Island Multi Asset Restoration Project Area	<p>NOAA Project ID#13140: >>Overview: The goal of this project is to offset Mississippi's ongoing 200-acre/year coastal habitat losses. The objective is to extend current assets of Deer Island eastward onto the Idle Little Deer Island (IDL) to protect coastal communities, estuarine function, ecologically/commercially important species and overall esthetic, habitat and recreation values. These assets, which include island habitats, linear sand borrow area and the Katrina Key artificial reef, currently work in concert to increase resiliency of the overall resource. According to NOAA charts, Idle Little Deer Island (IDL) covers over 3000 acres at minus 3 feet. This NOAA Chart data will be updated with via new bathymetric survey so that restoration concepts can be refined enough to begin public outreach prior to beginning a permit application process. >>Setting: Deer Island is the largest of Mississippi's two "mainland remnant" islands. Unlike the sand barriers of the Gulf Islands National Seashore several miles to the south, both Deer Island and Round Island (about 15 miles to the west) are stable structures that have responded to sea level rise with consistent erosional losses. Deer Island measured over 800 acres in 1850 and had shrunk to about 400 acres prior to the initiation of restoration efforts 2001. >>Project background: Since 2001, the USACE Mobile District and NMMA have worked collaboratively on Deer Island to restore the footprint to approx. 700 acres. However, a significant restoration opportunity for Deer Island has yet to be initiated. A large sand shoal (Idle Little Deer Island) extends eastward of the current island. This area still had emergent land until a couple of decades ago and based upon local historic sea level rise rates, measured 1000 acres or more within the last 500 years. This lost habitat can be readily restored as a result of Mississippi's restoration experience and success in this type of setting. The State of Mississippi has extensive success with restoration in this shallow shoal settings recently completing 220 acres of new island and marsh habitat on a similar shoal north of Round Island. Funded by NFWF, this project captured 9.3 million cubic yards of high quality, new-cut dredged material that was otherwise destined for ocean disposal. Also, two 46 acre beneficial use / marsh restoration projects established along the northeast shore of Deer Island are nearing completion. >>Project Detail: (1) Depending upon public/agency/scientific/technical consensus. Build approximately 300 to 1000 acres of new emergent coastal habitat (island) with a similar distribution of habitats and elevations to that currently extant on Deer Island. This includes salt beach dunes, coastal maritime and savanna forest, coastal scrub-shrub, tidal flats and marshes, etc. This emergent portion may incorporate some beneficial use of dredged material in order to obtain optimum material for marsh creation. (2) Include up to a 12,000 foot extension of the Katrina Key artificial reef which is currently about 4,000 feet long and visible about 4,000 feet southwest of eastern Deer Island (visible on the project map in this submittal - blue marker). (3) Extend the parallel linear sand borrow area used for the initial MCFP project in 2011 (also visible in this submittal - blue marker) eastward to provide optimal sand quality for the emergent portion of the project as well as providing wave energy modification to help ensure long term stability. Note: USACE Mobile District has noted that the combination of offshore living shorelines/breakwater and parallel linear borrow trench has significantly added to the protection of the current Deer Island from wind/wave driven erosion. (4) Oyster reefs and sea grass areas could also be developed because the project will provide significant energy reduction on large, unaltered areas of the shoal. Date Entered: May 12, 2017 Date Edited: May 16, 2017</p>	Jackson County	Yes	No	No	Yes	No	No	No	No	\$ 50,000,000.00	\$
5677	7/25/2017	Sea turtle and mammal mortality locations	<p>NOAA Project ID#13477: This project will increase sea turtle survival through enhanced mortality investigation and early detection of and response to anthropogenic threats. Strandings are often the only early warning indicator for at-sea mortality of sea turtles, and can be used to help identify mortality sources (ex. fisheries interactions & vessel strikes). However, documented strandings only represent a percentage of sea mortality, because many factors influence whether or not a carcass will strand and be reported. These factors include: time of year, geographic location, decomposition rate and oceanographic conditions. We propose to deploy effigies, which closely mimic drift characteristics of sea turtle carcasses, in federal and state waters at ~30 locations from Texas-Florida to determine the percent of carcasses that actually strand on GOM beaches during March-July which is peak stranding season in the Gulf. Deployments will occur in areas with documented sea turtle occurrence and in areas of higher potential mortality sources (i.e. ship traffic). Effigies will be deployed twice a month for five months. This project is scalable by location & duration. This methodology is successfully being used in Mississippi (Early Restoration), and expansion to other regions of the GOM is recommended. Existing ocean models are fairly adequate on a large scale, but models show major discrepancies when used to backcast small objects such as sea turtles at fine scales. The effigies are required to provide invaluable data specifically on the behavior of sea turtle carcasses in the GOM, and will be directly used for interpretation of strandings, measurement of recovery, and new data available to the ocean modeling community to further ground truth and modify ocean models. We will also develop a web based portal that can be used by Stranding Networks, managers and enforcement to input stranding data and to provide real time back cast model outcomes. If a spike in strandings is observed, the probable area of the mortality as determined by the back casting model can be used to help direct the efforts of the NOAA Gear Monitoring teams and state fishery management. Success will be determined by a reduction in strandings, use of program and feedback from users. This carcass drift work is focused on sea turtles, but the program could be modified to include marine mammals. Date Entered: May 16, 2017</p>	numerous	Yes	No	No	Yes	No	No	No	No	\$ 375,000.00	\$

Eco Restoration	5678	7/25/2017	Reducing Sea Turtle and Fish Bycatch in the Southeast Offshore Shrimp Fishery through Development and Implementation of Turtle Excluder Devices (TED) Designed to Exclude Small Turtles	NOAA Project ID#13476: This project addresses PDARR approaches: 1) Reduce sea turtle bycatch in commercial fisheries through identification and implementation of conservation measures; 2) Reduce bycatch through enhanced training and outreach to the fishing community; 3) Reduce known sources of mortality to fish populations that occur in open ocean habitat; 4) Reduce bycatch through enhanced training and outreach to the fishing community; 5) Implement reduced bar spacing TEDs designed to exclude small sea turtles in the Southeast offshore shrimp fishery and foreign shrimp fisheries occurring in the Caribbean Sea and Atlantic that import wild caught shrimp to the U.S. This would be done in three phases: cooperative target catch retention/sea turtle exclusion evaluations, domestic fishery implementation through financial incentives, and foreign fishery technology transfer. This project will contribute to the restoration of both sea turtle and fish populations through reducing primary threats and known sources of mortality. Under current southeast shrimp fishery regulations, the minimum spacing between deflectors bars must exceed 480cm. However, federal observers have documented Kemp's ridley and green turtles captured in trawls after passing through TED grids. Size distribution data for these turtles indicates that TED bar spacing needs to be reduced to approximately 2.58m to protect turtles of this size. A limited SA and GOM study comparing performance of 2.58m and 480cm spacing TEDs reported 93% bycatch reduction rates for incidentally caught Atlantic sharpnose sharks and 70% for mixed species of skates/rays. The conservation benefit of this project has the potential to significantly contribute to the restoration of sea turtle and fish populations with a high likelihood of success. Sea turtle restoration success will be measured through (1) documenting changes in sea turtle take rates and reduced bar spacing TED use by utilizing expanded NMFS observer coverage and the NMFS GMT and (2) measuring improvements of sea turtle exclusion rates through NMFS Small Turtle TED Testing. Fishery restoration success will be measured by documenting changes in bycatch catch rates with expanded coverage of the NMFS Observer Program, and reduced bar spacing TED use by NMFS GMT fishery monitoring. Fishery restoration will be measured by adding survey questions to existing Federal Shrimp Permit Survey, and documenting reduced bar spacing TED use. Date Entered: May 16, 2017	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	\$ 12,000,000.00	\$	-	-		
Eco Restoration	5679	7/25/2017	Direct Restoration of Deep Sea Coral Habitats with Artificial Substrates	NOAA Project ID#13475: Deep sea corals provide a number of ecosystem services for the Gulf of Mexico and are inextricably linked to the broader Gulf ecosystem. They provide habitat for a diverse community, including shelter from predators and breeding grounds for mobile fish and squid species. They are also responsible for significant amounts of carbon sequestration and the remineralization of nutrients. These nutrients can then be upwelled into the surface waters, or transferred via interactions with diel vertical migrators, and fuel the productivity of offshore planktonic communities. Therefore, the loss of deep sea corals can have repercussions for the entire Gulf of Mexico large marine ecosystem. There were four primary sites of impact to the deep sea corals of the Gulf of Mexico. These are found within a radius of approximately 25 km from the Deepwater Horizon, and are dominated by the octocoral species, <i>Paramaria bicaya</i> . Direct restoration of these communities would be the most rapid and effective way to replace their ecosystem function and services. Placement of appropriate substrata for the establishment of new populations in pathways of connectivity would be an effective means to achieve these restoration goals. Deep sea octocorals rely on hard substrata with sufficient biomass for settlement and successful metamorphosis. Hard substrata that have been colonized by deep-sea corals in the area include natural autogenic carbonates, shipwrecks, and oil drilling infrastructure. The most significant populations of <i>P. bicaya</i> are found on near-vertical carbonates and granite substrata. The best strategy for placement of artificial substrata would be to mimic the habitat where the most abundant known populations are present. Therefore, we propose to use structures similar to the concrete <i>Streblospio</i> ballast that have been successfully employed for coral restoration in shallow waters. These are spherical, reinforced concrete structures with holes placed in them, similar in appearance to a large white ball. These would be placed in areas near existing populations that can serve as a source of propagules for the establishment of these restored communities, and along existing pathways of connectivity, as determined by other Restoration work. The areas of seafloor selected for deployment will be surveyed prior to placement to ensure that they do not contain sensitive habitats that could be disturbed by this placement. Individual reef balls would be lowered to the seafloor on a wire and released just over the seafloor to minimize disturbance. There would be 4-5 structures placed at each site. One of these per site will be instrumented with oceanographic sensors, in collaboration with other restoration projects. These will be monitored for colonization by organisms with an ROV on a regular basis. This ship time would be best utilized by combining this study with additional studies that would occur at the same sites and use similar submersible assets. In the first year of the study, only 2-3 of these would be deployed very close to a large population of <i>P. bicaya</i> as a pilot study. We know that colonization of metal structures takes at least 6-7 years based on surveys of oil rigs and platforms of known age, but the concrete carbonates should be colonized earlier. We can also decrease the time to colonization by insulating the structures in natural seawater in order to begin the process of biofilm growth. If coral colonization is revealed in the first 1-2 years of deployment, then this project could be scaled up to additional sites, as determined by other genetic connectivity and predictive habitat modeling studies. Date Entered: May 16, 2017	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	\$ 20,000,000.00	\$	-	-
Eco Restoration	5680	7/25/2017	Monitoring Sea Turtle abundance and distribution	NOAA Project ID#13478: This project will provide fundamental data for monitoring the in-water population of sea turtles in the GOM to inform adaptive management within the restoration process, as well as to directly address PDARR Approach 1: Reduce Sea Turtle Bycatch in Commercial Fisheries through Identification and Implementation of Conservation Measures. The goal of this project is to develop an optical/acoustic shrimp trawl as a tool to conduct seasonal monitoring of sea turtles from near shore to the continental shelf in the GOM. The gear would employ a digital camera and a high-frequency acoustic camera mounted in a shrimp trawl with a TED. The system will be used to conduct stratified, random fishery-independent surveys to determine sea turtle species, abundance and distribution. Survey data will be used to monitor population recovery as the result of various restoration approaches. Resultant data will identify turtle hotspots to direct a fishery from the densest concentrations of turtles to reduce interactions. The project benefits will be to: (1) Address critical information gaps helping to inform the temporal and spatial implementation of future restoration projects; abundance estimates and adult load management within the restoration process; (2) Survey data could be combined with fishery observations to determine the densest concentrations of turtles to reduce bycatch. The likelihood of success is high given that a preliminary 2013 evaluation of the system by the SEFSC MS Labs successfully demonstrated the feasibility of this technique for imaging turtles within a trawl. Date Entered: May 16, 2017	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	\$ 50,000,000.00	\$	-	-	
Eco Restoration	5681	7/25/2017	Fragmentation and transplantation of deep-sea corals	NOAA Project ID#13474: This proposal describes the most direct form of restoration for deep-sea corals, fragmentation and transplantation of coral colonies. There were four impacted sites, with approximately 200 coral colonies affected by the spill. It would be attempted before any other methods, and since this has not been attempted before, a pilot study is required to see if this method will be an effective strategy. The pilot study will be conducted to ensure that the result of this project is a net gain of coral structure rather than a loss due to smaller colony sizes and increased mortality. Initially, two different large populations will be targeted as a source of the corals. One branch will be trimmed from each of six large colonies using custom coral cutters on an ROV manipulator and transported to the surface in insulated bioboxes. Source colonies will be marked with a physical marker and will be carefully imaged before and after sampling. From previous work, we know that careful sampling of branches from <i>P. bicaya</i> does not harm the source colony, but we will monitor these colonies to document our impact. On the surface, the base of the fragments will be placed inside a small length of tubing and this will be mounted on a larger platform for deployment. There are two options: either onto a rack that can be easily mounted on the artificial substrata (if this restoration strategy is also selected), or onto a larger concrete block that can still be picked up and deployed from an ROV. Three of the colonies will be returned to the site they were collected from and three will be placed at the other collection site (reciprocal transplant design). Large physical markers will be placed along with them so they are easily relocated. Transplanted colonies will be monitored using up-close imagery during annual ROV cruises to evaluate their progress. These cruises will be planned and carried out in collaboration with other Restoration projects. In order to maximize the efficiency of these operations, costs include annual ROV cruises to evaluate the progress of the corals. These could be combined with other projects and reduce the total cost. Date Entered: May 16, 2017	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	\$ 15,000,000.00	\$	-	-
Eco Restoration	5682	7/26/2017	Exploratory cruises to locate new sites of deep-sea coral abundance	NOAA Project ID#13473: <i>Paramaria bicaya</i> is a deep-sea octocoral that has a broad distribution. It was the most common species among those that showed clear impacts from the Deepwater Horizon oil spill. The first deepwater coral site to show these impacts was found in Lease Block Mississippi Canyon 294 in November 2010. Since then, 3 more sites were found to be impacted, with damage documented to those populations to varying degrees. During the search for these communities, other <i>P. bicaya</i> populations were discovered. Most of the sites in the immediate vicinity (< 25 nautical miles) of the Deepwater Horizon contained relatively small populations of <i>P. bicaya</i> , on the order of 100 colonies or less. A larger population was first observed in 2009 along the northern end of the Florida Escarpment, just to the south of the opening to the DeSoto Canyon, and then was further explored in subsequent cruises. One other population of 50-100 <i>P. bicaya</i> colonies is known from Green Canyon 852, much further to the west. In order to properly conduct direct restoration actions that would help to replenish the impacted populations and restore their ecosystem function, or conduct compensatory restoration in the form of protections for significant existing and healthy populations, a more complete assessment of the existing population structure of this species in the Gulf of Mexico is required. The sites listed above are certainly not the only places that <i>P. bicaya</i> exists in the Gulf of Mexico. In this proposal, we describe a plan to discover additional <i>P. bicaya</i> sites and to assess the size and population structure at these locations. There are two ways to predict new sites of <i>P. bicaya</i> populations, through predictive habitat modeling and This will help to suggest areas that fit what we know of <i>P. bicaya</i> 's niche in the Gulf of Mexico. These models will not be followed blindly, but their quantitative assessment of habitat suitability will be used to select the most probably sites from our long list of potential sites based on more qualitative assessments of depth, hard substrata, and bathymetry that have been used over the years to discover all of the deep-sea coral sites known so far from the Gulf. Once sites are selected, two cruises will be carried out to ground truth these locations. First, we will conduct preliminary surveys using the ALV Sentry on a cruise of approximately 30 days. Targets will be selected for high-resolution (< 50 cm scale resolution) bathymetry from the Sentry ALV obtained at a height of 20 m above the seafloor. Then, the most high-probability targets will be selected for photo surveys at a height of 5 m above the seafloor. If these specific targets within each site are fairly large, this will consist of parallel transects with closely spaced but non-overlapping lines and images. If it is a small area (< 50 m on a side), then the entire area will be photographed with overlapping photos to ensure complete coverage of the target. All of photos will be analyzed and any visible coral colonies will be scored. Corals will be identified to the lowest possible taxonomic level. Any sites with <i>P. bicaya</i> colonies or octocoral colonies of unresolved identification will be visited on the next cruise with an ROV. This cruise will also be approximately 30 days and will utilize an large scientific ROV with precise navigation, a 7-function manipulator, and high resolution cameras set up in stereo mode for scale. This will provide the direct ground-truth of <i>P. bicaya</i> presence and abundance for all of the downstream studies to be conducted. Funds are estimated for 1 cruise per year for 5 years at approximately \$5M per cruise. Date Entered: May 16, 2017	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	\$ 15,000,000.00	\$	-	-
Eco Restoration	5683	7/26/2017	Supporting Protection and Management of Deep Benthic Communities by Understanding Coral Population Connectivity	NOAA Project ID#13472: This project addresses the fundamental question: To what degree are populations of deepwater corals connected throughout the Gulf of Mexico? With continued anthropogenic threats, there is an urgent need to make decisions that will lead to the effective management and conservation of vulnerable marine ecosystems. In the Gulf of Mexico (GoM), deepwater corals play a foundational role by generating habitat for diverse and abundant invertebrate and fish communities, including refuge, foraging and breeding grounds for commercially valuable fisheries. As such, the GoM Fishery Management Council is currently designating some of these sites as Habitat Areas of Particular Concern within the Flower Garden Banks NMS has proposed an expansion to encompass additional deepwater coral sites. These management activities align well with restoration goals: The establishment and management of protected areas is one of the key restoration approaches for deep benthic communities impacted by human disturbances (PDARR, 2016). To help guide management activities, this project aims to address critical gaps in our understanding of population connectivity patterns in habitat-forming deepwater corals in the GoM, including species directly impacted by the Deepwater Horizon oil spill. Knowledge of the factors that promote or impede the connectivity of discrete deepwater benthic communities is essential to ensure their resilience and sustainability. The most effective way to estimate connectivity patterns in deepwater populations is through population genomic approaches, which reveal patterns of dispersal in virtually any species. The project objectives are to: 1) Define spatial scales of coral population genetic structure; 2) Infer the relative rate and directionality of genetic exchange among coral populations to reveal source/sink populations; To achieve these objectives, this project would quantify population connectivity in deepwater coral species through the integration of ROV field sampling and state-of-the-art population genomic analyses. This project explicitly links basic research that would enhance the understanding of GoM ecosystems with concrete restoration and conservation initiatives to ensure recovery of degraded deepwater benthic communities. A handful of studies have investigated the patterns of gene flow among populations of deepwater corals on the upper continental slope (550-1000 m) in the northern GoM (Morison et al. 2011; Quattrini et al. 2015; Cardoso et al. 2016; Ruiz-Ramos et al. 2016). However, the degree of connectivity among populations outside of this depth range in the GoM is unknown. Herrera and Quattrini have a proposal that has been supported by the NOAA RESTORE Act to conduct a smaller-scale connectivity study focusing on 6 known populations of two deepwater coral species that occur at two depth ranges: <i>Callogorgia delta</i> (upper continental slope 400-1100 m) and the spill-impacted <i>Paramaria bicaya</i> (lower continental slope 1000-1400 m). This will provide preliminary data on the connectivity of these species, but does not include all known sites, or sites that have yet to be discovered through other restoration mapping and exploratory work. Under-sampling populations can generate bias in the estimates of genetic connectivity in wide-ranging species (Koen et al. 2013). This project aims to significantly expand the scope of that study by studying all known and soon-to-be-discovered populations of these coral species in the GoM. This augmented effort is essential to gain a comprehensive understanding of the connectivity networks among deepwater benthic communities in the GoM, which will provide the information necessary to focus conservation efforts on the most important sites for maintaining existing populations of these species and contributing to the restoration of the <i>P. bicaya</i> populations that were impacted during the spill. Date Entered: May 16, 2017	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	\$	-	\$	-

Eco Restoration	5684	7/26/2017	Estimated bycatch of protected species (marine mammals and sea turtles) in menhaden purse seine hauls.	<p>NDAA Project ID#13471: This project addresses sea turtle PDARP approach: "Reduce sea turtle bycatch in commercial fisheries through identification and implementation of conservation measures- Technique 3: Expand existing or develop new observer programs and enhance analytical capacity within the program, as well as the marine mammal PDARP approach: "Reduce commercial fishery bycatch through collaborative partnerships." Menhaden purse seine hauls have been documented by catch marine mammals and sea turtles. There is no reliable assessment of the abundance, size, frequency of bycatch for the fleet at sea. Safety considerations prevent placing observers on haulback vessels. The project will use Unmanned Aerial Vehicles (UAV) (e.g., helicopters) to videotape bycatch of protected species and large fish in Gulf of Mexico menhaden purse seine hauls. A fishery independent vessel would track the menhaden fleet and randomly fly a UAV camera to videotape numbers, size, and potential sex of marine mammals, sea turtles, and large fish (e.g., jacks, shark) and other protected species caught during haulback at sea during in randomly selected purse catches. This is a one year proof of concept pilot project. Bycatch data for species composition, frequency-of-occurrence, abundance, and size will be analyzed and reported for the fishery. Data could help to inform fishery restoration (e.g., estimated bycatch reduction credit caused by another proposed project intended to reduce bycatch and restore ecosystem function by reducing total landings by 20% over 5 years). Project benefits include: (1) Measure bycatch reduction and total protected species bycatch for restoring injured populations of sea turtles, marine mammals, and fishes. This project to expand fishery observer capability, particularly given the difficulty of obtaining observer data using traditional methods, through new technological approaches has a high likelihood for success given the proven use of UAV low copters to accurately document sea turtles and marine mammals in other projects. Date Entered: May 16, 2017</p>	Yes	No													\$ 800,000.00	\$ -			
Eco Restoration	5685	7/26/2017	Monitoring Sea Turtle Encounter Rates with the Commercial Shrimp Trawl Fishery	<p>NDAA Project ID#13489: This project will provide fundamental data for monitoring the in-water population of sea turtles in the GOM to inform adaptive management within the restoration process, as well as to directly address PDARP Approach 1: Reduce Sea Turtle Bycatch in Commercial Fisheries through Identification and Implementation of Conservation Measures. The goal of this project is to develop an optical/acoustic shrimp trawl as a tool to conduct seasonal monitoring of sea turtles from near shore to the continental shelf in the GOM that is directed by time and location by the active shrimp trawl fishery. The gear would employ a digital camera and a high-frequency acoustic camera mounted in a shrimp trawl with a TED. The system will improve the accuracy and precision of the estimated rate of sea turtle interactions in the SE shrimp trawl fishery. Resultant data will provide a better assessment of the impact of the fishery on existing populations, identify turtle hotspots/avoidance areas from the densest concentrations of turtles to reduce interactions, and provide important information on TED efficacy as it relates to different turtle age classes, informing TED design refinements to improve exclusion of all turtle sizes. The project benefits will be to: (1) Address critical information gaps helping to inform the temporal and spatial implementation of future restoration projects, abundance estimates would allow monitoring and adaptive management within the restoration process. (2) Knowledge of the abundance, distribution and depth of sea turtles obtained by this fishery-dependent directed sampling will improve accuracy and precision of the estimated rate of sea turtle interactions in the shrimp fishery, providing a better assessment of the impact of the fishery on existing turtle populations. (3) Reduce sea turtle bycatch in commercial fisheries by improving TED exclusion rates for all species and age classes of turtles. The survey will could prevent fishery overlaps with the densest concentrations of turtles to reduce bycatch. The likelihood of success is high given that a preliminary 2013 evaluation of the system by the SEFAC MS Labs successfully demonstrated the feasibility of this technique for imaging sea turtles within a trawl. Date Entered: May 16, 2017</p>	Yes	No														\$ 28,300,000.00	\$ -		
Eco Restoration	5686	7/26/2017	Reducing Protected Species Bycatch in Gulf of Mexico and SE Atlantic Fisheries: Gillnet, Pot/Trap, and Trawl Fisheries	<p>NDAA Project ID#13491: This project addresses PDARP approaches: Reduce sea turtle bycatch in commercial fisheries through identification and implementation of conservation measures-Reduce bycatch through enhanced training and outreach to the fishing community and Reduce known sources of mortality for fish populations that occur in open ocean habitat-Reduce project reduces primary threats and known sources of mortality for sea turtles and fish. There is potential for sea turtle interactions with GOM gear types: wing nets, bait shrimp and fish trawls, gillnets, and crab traps, yet little is known about interaction rates. This project would identify potential measures such as gear and fishing practice modifications and/or temporal and spatial fishery management measures to reduce sea turtle interactions. This will increase the health of fisheries by providing fishing communities with methods and incentives to reduce impacts to fishery resources. The Harvesting Systems Unit has significant experience in the development and evaluation of gear/methods for reducing fisheries bycatch (e.g., TEDs, BRDs, circle hooks, weak hooks). This expertise will be directed to other fisheries which impact GOM populations. The project will develop solutions for bycatch with a multi-phased approach: (1) Fishery Characterization: a comprehensive study of fishing operations and gear and assessment of interaction rates for each fishery. (2) Development of Gear Modifications/Changes in Fishing Tactics: Fishery-dependent and independent studies of gear effects on target catch and sea turtle catch rates, and (3) Gear Incentives, Fishery Outreach and Management Strategy Development: a comprehensive fishery outreach program including gear use incentives for new fishing methods to reduce sea turtle bycatch. The project will require coordination and collaboration with State and Federal managers, fisheries officers, commercial fishing associations, and academic research partners. Success will be measured by documenting changes in sea turtle bycatch rates in targeted fisheries, documenting modified gear uptake, and measuring improvements of sea turtle TED exclusion rates of investigated trawl fisheries. Fish restoration will be measured by documenting conservation gear use through GMT fishery monitoring and continued engagement with the industry by cooperative gear performance monitoring/evaluations/surveys to obtain feedback on new gear and/or methodologies that encourage participatory innovation. Date Entered: May 16, 2017</p>	Yes	No														\$ 15,200,000.00	\$ -		
Eco Restoration	5687	7/28/2017	Establishing and monitoring sentinel sites for Gulf of Mexico Coralline Mesophotic and Deep Benthic Communities	<p>NDAA Project ID#13150: Establishing and monitoring sentinel sites is an important Restore Act objective related to assessing long-term effects of the BP oil spill. With regards to Open Ocean Restoration objectives, coralline mesophotic and deep benthic habitats are essential fish habitats for sustaining population vigor for numerous NOAA management species (e.g., groupers and snappers) and those habitats have been identified as principle objectives for the Open Ocean Restoration. Establishing long-term sentinel sites will be based on locations for past study sites (e.g., NOAA FISH RESOURCES EXPLORER projects, 2017; FISH RESOURCES EXPLORER projects, 2017; Silver et al. 2012; Silver et al. 2012; Silver et al. 2012) and from sites assessed during NOAA/NMFS/SEFSC reef fish surveys (video footage, bottom mapping, species diversity). Sentinel sites will be located along the entire Gulf of Mexico outer continental shelf/slope and based on proximity to the BP oil spill location (flanking sites) and the distribution of known coralline deep benthic habitats (areas with more coralline habitat will be proportionally allocated more study sites, also based on sea day allocation). A Remotely Operated Vehicle (ROV) will be used to visually assess habitat characteristics, when possible established abundance assessment methods will be used (e.g., fish MinCOU, NOAA/NMFS/SEFSC/Mississippi Laboratories Reef Fish Unit). Past studies that utilized ROVs (e.g., Streich et al. 2017) have established important experimental protocols applicable to the sentinel site proposal. Utilizing a ROV has several advantages: broader areal coverage, no habitat damage, articulating robotic clamps for collecting sessile fauna, accessory components provide detailed fine-scale mapping. The proposed project provides an assessment metric for BP oil spill recovery and future episodic events. Project supports FRES Comprehensive Restoration Plan Section 5, Restoring Natural Resources; 5.6, Alternative A, Comprehensive Integrated Ecosystem Restoration (Preferred Alternat (v), p 5-20); 5.5.2, Restoration Type: Wetlands, Coastal, and Nearshore Habitats; Key Aspects of the Injury that Informed Restoration Planning; Fish and Invertebrates section (p 5-22). Date Entered: May 13, 2017 Date Edited: May 17, 2017</p>	Yes	Yes															\$ 2,712,840.00	\$ -	
Eco Restoration	5688	7/28/2017	Restoration of Gulf of Mexico pelagic and broad scale fisheries: addressing movement ecology data needs	<p>NDAA Project ID#13172: This project will use multiple tracking technologies, as well as the Integrated Tracking of Aquatic Animals in the Gulf of Mexico network (ITAG-n) and research group (ITAG-r) to collect important data, difficult or impossible to assess with traditional capture-based methods. The focal species will be: yellowfin tuna (<i>Thunnus albacares</i>), greater amberjack (<i>Seriola lalandi</i>), cobia (<i>Rachycentron canadum</i>), and red drum (<i>Sciaenops ocellatus</i>), gag grouper (<i>Micropterus micropops</i>) and red snapper (<i>Lutjanus campechanus</i>). The DWH oil spill occurred in the northern GOM during the spring and summer of 2010, which would overlap in space and time with either the spawning or early life stages of these species. This is of special concern with water column pelagic spawners, as where and when they reproduce (i.e., spawn) and consequent dispersal dynamics affect offspring survival in ways not seen in most terrestrial species. In addition, larval cardio-toxicity is documented for several of these species, resulting in heart-related abnormalities that could impact long-term stock productivity, especially in stocks already highly impacted by fishing and anthropogenic stressors. All focal species support important fisheries and are considered overfished, have decreasing landings or stock assessment scientists or fishermen are concerned about the stocks' health. Specific concerns associated with the focal species include: (1) yellowfin tuna landings are decreasing and deepwater oil rigs may change natural migratory behavior and spawning site selection and consequently reproductive success; (2) the greater amberjack stock is overfished and not rebuilding as expected, and there is a need to better understand how artificial reefs affect spawning site selection and fidelity; (3) the recent cobia stock assessment was inconclusive due to an incomplete understanding of stock structure and connectivity and fishermen are expressing concern as low catch levels; (4) red drum were affected locally by the oil spill demonstrating anemia and presumed decreased fitness and impaired reproduction but we do not have the needed understanding of spawning migrations and connectivity to assess how this would impact the Gulfwide stock; and (5) both gag grouper and red snapper are assumed to have been impacted by the DWH oil spill and increased lesions were observed in adult red snapper but estimates of abundance and measures of recovery are hampered for both species due to a lack of movement data and cryptic mortality which may vary with habitat type, depth, and sea. This study will work closely with fishermen and integrate a series of Gulf-wide tracking projects that focus on evaluating depredation/release mortality and the effect of habitat (natural and artificial) on migratory behavior and spawning site selection. Data on migratory behavior is needed to distinguish between decreases in landings due to changes in catchability associated with changed movement behavior versus lower abundance due to the oil spill and overfishing. We propose to use multiple tagging approaches: pop-up satellite tags, archival implant tags, and acoustic telemetry tags, drawing on both the benefits of large scale tracking and the higher resolution data obtained through acoustic and archival tags. Data from this project will provide critical information needed to assess the effects of the DWH oil disaster and to predict stock resilience to spatial disturbances in the future. This in turn will support the adaptive management of NORA Fisheries projects. Date Entered: May 14, 2017 Date Edited: May 17, 2017</p>	Yes	Yes															\$ 5,000,000.00	\$ -	
Eco Restoration	5689	7/28/2017	Integrative Data Infrastructure for Gulf of Mexico Mesophotic and Deep-Benthic Habitat Assessment and Restoration	<p>NDAA Project ID#13387: OBJECTIVES: 3&C Build, enhance, and expand upon existing federal data management infrastructure for mapping, video analysis, and habitat suitability modeling of deep-sea corals to better support understanding and restoration of mesophotic and deep-benthic biogenic habitats. 3&C Support the collection and analysis of new information from Gulf restoration studies and provide tools to guide and help coordinate deepwater surveys and restoration efforts. RATIONALE: Mesophotic and deep-sea coral habitats represent rare, valuable, and vulnerable communities in the Gulf of Mexico. Both mesophotic (50-150 m) and deep-sea coral (1500-1800 m) habitats were damaged during the DWH oil spill and will be a focus of restoration activities. NOAA's Deep Sea Coral Research & Technology Program is Congressionally mandated inter-agency effort to identify existing research on, and known locations of, deep-sea corals, map locations of deep-sea corals and sponges and on-line map portal (https://deepseacorals.noaa.gov/). The proposed activities support both objectives of the PDARP through data analysis, advanced habitat suitability modeling, and management of relevant data. (1) Protect and manage mesophotic and deep benthic coral communities 3&C The first priority is to understand the current and potential distribution of these communities. (2) Place hard ground substrate and transplant coral 3&C The success of these restoration efforts will depend upon an understanding of the habitat and environmental factors that determine where such restoration activities are most likely to succeed. KEY ACTIONS AND DELIVERABLES: 3&C Establish a Gulf of Mexico Mesophotic and Deep-Benthic Analysis & Data Management Team 3&C Initial focus on Corals and Sponges and associated environmental data layers 3&C Build capacity and supporting data management framework for image & video analysis of new and pre-existing benthic surveys 3&C Including image capture, analysis, and display of density, diversity, presence and absence measures for mesophotic and deep-sea corals and sponges 3&C Develop a DISC Research Clearing House (or link to relevant existing clearing houses) with bibliographies, reports, and data summaries 3&C Enhance the capacity of the Deep Sea Coral and Sponge Database (https://deepseacorals.noaa.gov/) to include new databases to include bibliographies, reports, and data summaries 3&C Develop and support restoration planning and monitoring. 3&C Develop a state-of-the-art display for data visualization and analysis (DISCRTP Map-Portal v.2), including interactive graphics and quality assurance tools. This would build on existing data infrastructure to integrate both biological (presence & absence data for coral and sponge taxa) and habitat/environmental data (multibeam mapping layers, habitat suitability modeling, oceanographic conditions). 3&C Establish or enhance interoperability with key NOAA data systems and supporting Gulf science and restoration, including NCEM's Ocean Archive System and Office of Response and Restoration's DWHs system. 3&C Advanced habitat suitability modeling for key taxa of restoration interest (e.g., <i>Sclerites exserta</i> - Etnoyer et al. 2016, Silva et al. 2013) and deep benthic habitats (e.g., <i>Paramunnia</i> spp - White et al. 2012, Fisher et al. 2014). 3&C Develop additional tools to support restoration or Animal Identification guides or Data visualization tools through online map portals to package relevant habitat models and data. 3&C Provide climatological values from the World Ocean Atlas or existing models (e.g., ROM, AEC, NCOM) or provide multi-beam or bathymetric digital elevation models (DEMs) Date Entered: May 15, 2017 Date Edited: May 17, 2017</p>	Yes	Yes															\$ 10,000,000.00	\$ -	

Eco Restoration	5690	7/28/2017	Establish additional deep water coral sentinel species and use as part of a gulf-wide monitoring network, to monitor coral health in protected areas, or to monitor direct coral transplant projects, and/or as tools to detect and quantify	<p>NOAA Project ID# 13497: In the aftermath of the DWH spill, several communities of deep water corals were discovered that had been impacted by the spill. Initial identification and quantification of the impact was difficult because of the lack of background data on undisturbed deep coral communities. Predicting recovery is also hampered by the lack of data on normal deep water coral recovery patterns and rates. However, an intensive effort aimed primarily at two Paramuricea species has proven the efficacy of using high resolution imaging techniques to document and quantify both impact and recovery of octocorals with this type of growth form. Flarer octocorals (including the taxa Calcaconia, Holaxonia, and Scleraxonia in particular) are excellent sentinel organisms because their morphology allows quantification of impact, they are normally very long lived, their skeleton is normally completely covered with living tissue, their exposed tissues interact directly with ambient water for their nutrition and respiratory needs, and since they are attached, damaged or killed colonies remain in place providing a record of deleterious impact that can persist after the affecting agent has dissipated or if no residue is left on the seafloor. The research following the DWH spill, particularly the data from non-impacted communities, has provided sufficient baseline data to establish Paramuricea bicaaya and Paramuricea sp. xxx as robust sentinel species for detection of anthropogenic impact. However, to date we have only established monitoring sites in a relatively small area of the GOM and these two Paramuricea species are only present between about 300 and 500 m depth. We propose to expand the use of these types of corals to include additional robust sentinel species and monitor other depths and regions of the GOM. In addition to providing robust sentinels for anthropogenic impact at the specific locations chosen for monitoring, this effort will provide the background data needed to use additional coral species across a wide depth range to detect and quantify potential future impacts in other locations and to assess success of restoration efforts with respect to recovery, natural mortality and growth rates. The costs of effort, including the number of sites established, their depths, whether they are currently well known or require additional research, are known to allow immediate work, and the frequency of monitoring. Discovery of a new site, including confirmation of the presence of corals in a specific area and depth range averages about 4 days of AUV operations at depths of about 1200m. Establishing a monitoring site, at a known location with over 50 individual colonies to be monitored will take about 2 days of ROV operations. Repeat monitoring of an established site can be accomplished with as few as 1 ROV operation. A minimum effort to expand the number of known sites with appropriate sentinel species and establish additional depth ranges would require a minimum of 1 month of AUV operations with a Sentry type of AUV (approximately \$1million), followed by one month of ROV operations (approximately \$1.5million) to establish the sites and acquire images to initiate the monitoring. A smaller effort aimed at only known sites would not need AUV operations. Repeat visits every 2-3 years (or when needed), could be accomplished with about 3 weeks of ROV time each (approximately \$1.2million). All ROV time should be used collaboratively for other kinds of sampling of coral and associated communities. Other costs associated with the data acquisition, processing and analysis specific to this project would be approximately \$400K /yr during establishment of a total of about 10 new sites and monitoring of 6 established sites which would decrease to about \$300K/yr associated with ongoing monitoring. Additional sites, geographic areas, or intensity within a given area would require additional support. Date Entered: May 17, 2017 Date Edited: May 18, 2017</p>	Yes	Yes	No	No	No	No	No	No	No	No	No	\$ 4,000,000.00	\$	
Eco Restoration	5691	7/28/2017	A demonstration project to reduce bluefin and sea turtle bycatch increasing the set depth in the Gulf of Mexico (GOM) pelagic longline fishery.	<p>NOAA Project ID#13498: The proposed project will restore of both bluefin tuna and sea turtles through the reduction on bycatch in the pelagic longline fishery. The GOM has become an area of concern due to the bycatch mortality of spawning bluefin tuna in the directed yellowfin tuna longline fishery. As a result there have been several management measures to mitigate the bycatch of bluefin, including the required use of weak hooks in 2011 and the implementation of Individual Bluefin Quotas (IBQ) in 2015. Research conducted by NOAA Fisheries in 2012 shows that setting longlines deeper than typically fished can reduce bluefin interactions with longline gear and likely increase the catch of targeted yellowfin tuna. During the study researchers deployed hook timer and temperature/depth recorders (TDRs) on the longline to determine when and at what depth yellowfin and bluefin become hooked on the longline. Researchers also deployed satellite (PSAT) tags on both yellowfin and bluefin to learn about water column utilization during the daylight period (the period when tuna are caught on longlines). TDR data showed that 70% of fishing effort occurred between 40 and 120m in depth (primary fishing zone). Results also showed a strong correlation between the proportion of time spent in the primary fishing zone (from PSAT data) and depth. PSAT data also showed that bluefin spend a higher portion of daylight time in the primary fishing zone (near the thermocline) than do yellowfin. Results suggest that sets deployed greater than 110m have the potential to reduce the bluefin interactions while potentially increasing yellowfin catch. Research in other fisheries has also shown that deeper setting of longline gear also can reduce sea turtle bycatch. Based on these results we propose to conduct a demonstration project within the GOM pelagic longline fishery to contrast vessels to compare alternate sets between their normal fishing depth and sets at greater depth. If the indications from the previous research are accurate, fishers industry wide will be incentivized to fish PUL gear at greater depths due to the increase in yellowfin tuna catch. Results of the demonstration project will be decimated to the fishery through a series of workshops throughout the GOM longline fishery. The project will be monitored by observers on the project vessels. Dissemination of project results will prompt changes in general fishing practices GOM wide, which will be monitored through the mandatory observer program. Date Entered: May 17, 2017 Date Edited: May 18, 2017</p>	Yes	No	No	Yes	No	No	No	No	No	No	\$ 2,500,000.00	\$		
Eco Restoration	5692	7/28/2017	Predictive habitat modeling for Paramuricea bicaaya	<p>The Deepwater Horizon oil spill released an unprecedented quantity of oil directly into the deep sea, and also resulted in the introduction of large amounts of dispersants and drilling sediments into the northern Gulf of Mexico (Carnill et al. 2011, Barron 2012). Subsequent research has uncovered extensive damage to deep-sea habitats, most notably to cold-water coral communities dominated by Paramuricea species. Paramuricea is an ecologically important genus in the deep Gulf of Mexico, providing critical three-dimensional habitat structures for a large number of associated species. Following the spill, Paramuricea colonies in the vicinity of the Macondo wellhead were found to be covered with a brown flocculent material containing Macondo-fingerprinted oil, and exhibited signs of stress and mortality including excess mucus production, tissue sloughing, and hydroid colonization (White et al. 2012, Fisher et al. 2014). Based on the severity of the damage to these long-lived and slow-growing corals, there is an urgent need to develop a comprehensive restoration plan to ensure the future of these communities throughout the northern Gulf of Mexico. One of the foremost obstacles to designing a comprehensive restoration plan for Paramuricea is the extreme paucity of baseline observational data. Therefore, we propose to integrate species distribution models, an exploratory cruise, and a comprehensive population genetic analysis to more fully characterize the distribution and connectivity of Paramuricea communities throughout the northern Gulf of Mexico. Species distribution models statistically relate species occurrence patterns with specific environmental factors and predict suitable habitat and quantify niche space (e.g. Geographical Information Systems). The ability of these models to predict novel distributions in unsurveyed areas will be used during an exploratory cruise to guide the discovery of new, unexplored communities that are ideal candidates for protection. At each new Paramuricea site discovered, benthic surveys will be conducted, monitoring sites will be established, and genetic samples will be collected to analyze the population structure of Paramuricea within the Gulf of Mexico. Model results, field observations, and genetic data will be incorporated into a spatially explicit restoration plan that includes the design of effective marine protected areas. In addition, these results will provide important insights into the magnitude of the initial damage caused to these communities by the Deepwater Horizon oil spill, and will help identify and prioritize sites for future research and remediation efforts. Costs for this project do not include ship time for validation, which would fall under other proposed projects. Salary for a biogeographer and support to integrate new datasets are included. Date Entered: May 17, 2017 Date Edited: May 18, 2017</p>	Yes	No	No	No	No	No	No	No	No	No	\$ 1,000,000.00	\$		
Eco Restoration	5693	7/31/2017	Fishfish Restoration through Development and Socialized Implementation of Bycatch Reduction Devices (BRD) in the Gulf of Mexico Commercial Shrimp Trawl Fishery	<p>NOAA Project ID#13503: This project will contribute to the restoration of various species of finfish by reducing sources of mortality in the commercial shrimp trawl fishery in the open ocean restoration area throughout the Gulf of Mexico (GOM). Through cooperative research, innovative Bycatch Reduction Devices (BRD) and BRD combinations will be developed and federally certified. Fishers will then be provided economic incentives to use new BRDs or BRD combinations for the project period. While one BRD is currently required in these fisheries, further reducing finfish bycatch with the use of BRD combinations will assist restoration of fish populations in the GOM. Recent collaborative testing in North Carolina identified several new BRD combinations that exceeded 40% reduction of finfish bycatch relative to a control (standard 4-inch bar spacing TED, fisheye BRD, and a 1 Åi Åkæ codend). These reduction rates exceed currently accepted standards set by state and federal fishery managers. Transferring this technology to the GOM shrimp fishery could prove invaluable to the restoration of numerous fish stocks impacted by the DWH oil spill. Additionally, shrimp loss associated with the use of the BRD combinations evaluated was minimal, which should facilitate industry acceptance of the gear in the Gulf. Collaborators for this project will include the gear monitoring team (GMT ÅC ÅHSU), NMFS-SEFSC observers (Galveston, TX), Sea Grant, and commercial fishing organizations and industry representatives. There will be two primary components of this project including independent proof of concept testing and commercial comparative testing aboard federally permitted GOM shrimp trawl vessels. Simultaneous, monetary incentives to implement new BRDs will be offered to a portion (20%) of the federally permitted fleet. This project will occur in the open ocean restoration area throughout the GOM. Collectively, this project will facilitate increased communication among GOM fishermen and gear researchers concerning BRD performance (design, usability, functionality). This feedback mechanism will allow for adaptive project management and refinement of BRD designs through an iterative process focusing on regional performance and functionality. Date Entered: May 18, 2017</p>	Yes	Yes	No	No	No	No	No	No	No	No	\$ 6,500,000.00	\$		
Eco Restoration	5694	7/31/2017	Monitoring survival of post hooking events in reef fish encountered in the recreational fishery using barbed and barbless circle hooks.	<p>NOAA Project ID#13504: This project will contribute to the restoration of open ocean reef fish populations by reducing post hooking mortality. Post hooking mortality in recreational fisheries is one of the largest deterrents of larger quotas and fishing season days in the GOM reef fish fishery. Numerous stock assessments from New England to the West Pacific Islands have indicated the need to reduce post hooking mortality in recreational fisheries due to stress inflicted while dehooking and releasing undesired fish. Barbless hooks have been demonstrated to reduce handling time through ease of removing the hook, thereby decreasing associated mortality (Cooke et al., 2001; Castanilla 2005). Significant mortality factors were: use of natural bait, removing hooks from deeply hooked fish, use of J-hooks (vs circle hooks), deeper depth of capture, warm water temperatures, and extended playing and handling times. Barbless hooks had marginally higher mortality than barbless hooks (Bartholomew A., Bohmack J 2005) The goal of this project will be to compare the post hooking mortality of reef fish caught using barbed and barbless circle hooks by monitoring acoustically tagged fish. The year one pilot study will be conducted on two study-site reefs. Acoustic receivers will be placed at each reef to ensure complete coverage and to monitor movement and survival of tagged fish. We will fish during the closure of the red snapper fishery to help minimize additional fishing pressure on our study area. The fishing effort will consist of two fishermen fishing with a two hook (top and bottom) drop rig. Each fisherman will fish alternating hook locations i.e. one rig top hook barbless and bottom hook barbed while the other rig being top hook barbed and bottom hook barbless. We will place acoustic tags into an equal number of fish for each hook type. Reef sites will be located in 30 meters to balance the need for cooler bottom temperatures and the need for shallower water to combat barotrauma. As depth of water increases the risk of mortality, fish will be released by means of a fish descender. A go pro camera mounted to the fish descender will be used to record the immediate release of the fish. The acoustic receivers will be programmed to record data for approximately 40 days. After the first year, we will expand our coverage area and fishing effort. Outreach with the recreational fishing sector must be done on continual basis after year two, and will take two to three personnel each year to accomplish this task. Outreach should be done with but not limited to fishing clubs, schools, fishing tournaments, outdoor writers, fishery councils, fishery commissions, and law enforcement groups. One of the greatest benefits of using barbless circle hooks is that individual animals should be able to rid themselves of the barbless circle hook more quickly and easily should they break off or be released by cutting the line as close as possible. (IFPC, NMFS, NOAA). Given the advantages of using barbless circle hooks, this technology has significant benefits for interactions with protected species, i.e. sea turtles, marine mammals, and sea birds, and could potentially expand to other fisheries where these interactions might occur. Date Entered: May 18, 2017</p>	Yes	Yes	No	No	No	No	No	No	No	No	\$ 6,800,000.00	\$		
Eco Restoration	5695	7/31/2017	Outreach, Implementation and Assessment: Using Descending Devices to Reduce Post-release Mortality of Reef Fishes in the Gulf of Mexico Recreational Fishery	<p>NOAA Project ID# 13511: This proposed project will provide descending devices to recreational anglers (private and for-hire) and conduct educational outreach on best practices and the proper use of these devices throughout the Gulf of Mexico. In addition, the Southeast Region Heatboat Survey (SRHS) will implement a monitoring and fish tag/recapture program on heatboats participating in the survey. This project will provide information on the efficacy of these devices and improve post-release mortality in the Gulf of Mexico heatboat fishery. Recreational angling for species with high release mortality, including red snapper, gag grouper, vermilion snapper, red grouper, as well as strictly regulated species such as gaggit grouper, speckled hind, Warsaw grouper and Nassau grouper, will be the focus of this program. Additionally, the effectiveness of descending devices on reducing dolphin depredation will be evaluated. In order to raise public awareness on the problem of fish barotrauma and the benefits of using descending devices, outreach will be conducted at boat shows, fishing tournaments, fishing clubs, and civic events from Ft. TX, TX. Outreach will include distributing educational DVD's:ÅkæDownscope: Saving Snapper and Grouper from BarotraumaÅkæand descending devices to anglers that may otherwise not obtain or purchase these items. The implementation and monitoring component of this project incorporates a design that includes the SRHS electronic logbook (eLog) system, SRHS dockside sampling and at-sea observers. In addition to utilizing existing SRHS infrastructure and capabilities, the addition of at-sea observers will provide ÅkæCÅk total number of fish discarded ÅkCÅk lengths of fish from a subsample of fish that are discarded. Fish descended on devices ÅkCÅk the ability to tag a subsample of fish descended and fish not descended, for subsequent analysis of recapture rates. Partners in this project include Sea Grant, Gulf States Marine Fisheries Commission, recreational fishing associations, and state agencies. This collaboration ensures regional coverage and makes this project well-suited for promoting best practices and the proper use of descending devices, along with monitoring and evaluating the impacts on reducing post-release mortality and improving post-release mortality estimates. Date Entered: May 18, 2017 Date Edited: May 19, 2017</p>	Yes	Yes	No	No	No	No	No	No	No	No	\$ 4,550,000.00	\$		

Eco Restoration	5696	7/31/2017	Observing protected species interactions in Gulf of Mexico recreational fisheries	NOAA Project ID#13512: Interactions between protected species such as sea turtles and marine mammals have been documented, but levels are largely unknown. This project proposes to put fishery observers on the recreational for-hire sector (headboats and large charter vessels) to observe incidental capture of sea turtles, as well as marine mammals, sea birds, and non-target fishes. This project addresses the PDAAP "Turtle restoration approach" "Reduce sea turtle bycatch in recreational fisheries through development and implementation of conservation measures" and PDAAP marine mammal restoration approach "Reduce injury and mortality of bottie nose dolphins from hook-and-line fisheries. The project will also address Recreational Monitoring and scientific support for adaptive management" by providing information about threats to sea turtles and bottlenose dolphins. The project objective is to conduct systematic surveys of recreational fisheries to understand the scale, scope and frequency of hook-and-line interactions with protected species. We plan to quantify the level of bycatch seen in the Gulf of Mexico recreational fishery sector, documenting spatial and temporal bycatch patterns, gear characteristics, and other potential contributing factors. This information collection will be used to focus outreach and voluntary conservation measures within the recreational fishing community. Observers will be deployed throughout the Gulf of Mexico from western Florida through Texas during the spring and summer seasons for 5-7 years. Observers will be contracted to collect data for gear ports with multiple for-hire vessels or vessels that fish daily to enhance the likelihood for success and ensure logistical feasibility will not be a limitation (e.g., lodging and proximity to large metropolitan area). Contracted vessels operating in areas of high private vessel density could be a secondary priority and serve as a proxy for private boat bycatch rates in those areas. Project deliverables include (1) minimum estimates of interaction rates of sea turtles, marine mammals, and sea birds in the for-hire sector; (2) bycatch hotspot maps; and (3) an analysis of gear characteristics to identify patterns in bycatch. This project budget is scalable depending on the total extent and number of years of desired coverage. (Proposed budget is \$2,300,000 for 5 years of coverage - \$3,200,000 for 7 years, less than 5 years is optional). Date Entered: May 18, 2017. Date Edited: May 19, 2017	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	\$ 2,300,000.00	\$ -	
Eco Restoration	5697	7/31/2017	Reduction of Marine Mammal Fishery Interactions through Demonstration and Implementation of Better Materials for Constructing Trawl Components	NOAA Project ID# 13513: This project is designed to decrease interactions of marine mammals with commercial shrimp trawling gear. Dolphins are occasionally captured in shrimp trawls or entangled in the laylines of ground fish in the trawl, with hundreds of mortalities estimated per year in the Gulf of Mexico shrimp otter trawl fishery. Further, such predation results in extensive trawl damage, creating hours of work to repair the nets and these interactions have resulted in dolphins being injured or killed by fishers out of frustration. The majority of shrimp nets used in the GOM shrimp fishery are made from standard polyethylene webbing. In recent years, material such as Dyneema and Spectra have been introduced into the fishery but have yet to gain widespread use. NOAA Fisheries research suggest that these stronger materials sustain fewer dolphin bite holes compared to polyethylene nets. However, shrimp fishers are unlikely to make the investment to adopt these new net materials unless they know that comparable catch rates can be achieved. This project will compare and quantify target catch rates and dolphin bite damage between polyethylene netting (control) and stronger netting (experimental) aboard commercial trawlers rigged to pull two nets. Additionally, the project will determine the optimal material and fishing configuration for trawl laylines to reduce dolphin entanglement. A comparison of different layline materials will be conducted to determine if increasing line stiffness will decrease the likelihood of marine mammal entanglement. Drones, optical cameras, and acoustic cameras (DISCONARCS) will be used to observe which materials have fewer dolphin interactions. This project will consist of four different objectives - 8K Compare the finfish bycatch and shrimp catch rates of Dyneema nets to identical nets made from polyethylene webbing. 8C Compare the amount of dolphin interactions, by counting number of dolphin bite holes for identical Dyneema and Polyethylene nets. 8D Compare dolphin interaction rates between laylines made from different materials using drones, optical cameras, and acoustic cameras. 8E Outreach, distribution, and monetary incentives to fishers to use improved fishing gear. Once gear evaluations complete the gear that demonstrates the least dolphin interactions will be promoted to the fishery. Improved laylines or trawls will be given away to a limited number of fishers along with monetary incentives with the requirement of either observer coverage or reporting. Additionally, to ensure fishers are using the gear, NWS GOMT will conduct at sea monitoring of the gear. Once fishers become aware of the benefits of these materials, dolphin/fishermen conflicts should diminish resulting in fewer dolphin mortalities in shrimp trawling gear. Additional outreach will be conducted at workshops for upcoming TED regulations where these new materials will be promoted. Date Entered: May 18, 2017. Date Edited: May 19, 2017	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	\$ 4,000,000.00	\$ -
Eco Restoration	5698	7/31/2017	Life history, trophic dynamics, habitat utilization, trends in abundance, discard and bycatch reduction of large pelagic fishes in the northern Gulf of Mexico	NOAA ID# 13522: We propose a comprehensive sampling program for highly migratory species (tunas and billfish) and large pelagic species (snackercr and dolphin fish). Sampling would include a fishery-independent monitoring survey, at-sea observer coverage surveys, at-sea observer coverage sampling, and 45-day dock-side hauls/longlines will be conducted in the northern Gulf of Mexico during the spring and fall of each year. The sampling universe will be defined as waters extending from the 200 m isobath to the furthest extent of the EEZ. Fifteen days of survey operations will be conducted in each of three regions biannually. A stratified random sampling design will be employed based on factors known to cause the patchy distribution of pelagic fishes (e.g., areas of localized high primary productivity and epimeral oceanographic features). Up to four longlines sets will be conducted each day for a total of 40 stations per region or 120 stations per cruise. Data collected during surveys will be used to assess trends in abundance, hook selectivity, effects of soak time/temperature/depth on mortality rates, movement patterns, abiotic factors driving distribution and abundance, species assemblages, relative abundance and habitat preferences. Biological samples will be taken for age and growth studies, otolith micro-constituent analysis, reproductive studies, otolith studies and genetic analysis. Additionally, we will deploy 100 pop-up satellite tags on selected species each year to further examine movement patterns, residency times and habitat use of pelagic fishes. There is currently no fisheries independent data to monitor trends in abundance of pelagic fishes. This study would provide these much needed data and allow for enhanced monitoring of recovery rates of pelagic fishes. Deliverables include: Indices of abundance, identification of fishing related sources of mortality (at-vessel and post release), information of impacts such as gear selectivity and effects of soak time, temperature and depth on mortality rates, knowledge of these impacts will help monitor reductions in mortality and assess the in the recovery rates of impacted populations. Identification of habitat (e.g. spawning grounds), movement and distribution patterns will assist in the recovery process. Biological samples will be used to determine length and age composition, calculate growth curves, estimate maturity and fecundity, estimate natural mortality, identify natal origin and examine food habitats and trophic dynamics. Performance metrics include: cruise reports, annual progress reports and the HMS Annual Stock Assessment and Fisheries Evaluation Report. The project will also include: Presentations, as well as through presentations at scientific meetings and peer reviewed publications. The proposed project directly addresses three Programmatic Trustee Goals for Fish and Water Column Invertebrates, as listed in the PDAAP, specifically, 1) Replenish and Protect Living Coastal and Marine resources, 2) Provide and Enhance Recreational Opportunities, and 3) Provide for Monitoring, Adaptive Management, and Administrative Oversight to Support Restoration Implementation. Date Entered: May 19, 2017	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	\$ 35,000,000.00	\$ -
Eco Restoration	5699	8/1/2017	Improving restoration for highly migratory species in the Gulf of Mexico: applying innovative technologies to inform stock assessment and establish monitoring	NOAA Project ID#13523: Our project will apply innovative molecular technologies to highly migratory species such as tunas and billfishes to 1) fill significant information gaps in stock assessments thus reducing mortality through enhanced management and 2) develop robust monitoring techniques allowing a rigorous application of the MAM approach to the restoration effort. In order to develop a viable restoration process we must establish baseline data (i.e., indices of abundance) for target species. Restoration actions can then be monitored against these baseline data and adapted as needed. Highly migratory species are inherently difficult to monitor due to their behavior and ecology, thus baseline abundance data for many of these species in the Gulf of Mexico are lacking. As an alternative to fishery dependent data, multi-year surveys of chloroplast abundance can be used to track temporal changes in adult biomass. We propose to implement innovative molecular techniques in order to identify larvae of highly migratory species (i.e., tunas and billfishes) and develop larval indices for the Gulf of Mexico. We will process older (1982 to 2008) formalin preserved SEAMAP samples by implementing and expanding upon methods that were developed by the Alaska Fisheries Science Center at the Alaska Bay Laboratory. To process more recent (2009 to present) ethanol preserved SEAMAP samples, we will use high resolution melting analysis (HRMA) combined with a fast, minimally invasive DNA isolation protocol. The application of these innovative molecular techniques to process existing samples is a cost effective way to develop fishery independent indices of abundance for several highly migratory species, providing an efficient alternative to costly surveys of adult fishes. This project will also serve as an investment in the improvement of future processing. This project will also have direct applications to the restoration. By developing novel larval indices, this project will aid in the reduction of mortality of highly migratory species by enhancing stock assessments, and will create a historical record against which the restoration of highly migratory species can be robustly monitored and assessed. This project will also allow a more rigorous application of the MAM approach to the restoration effort. We expect this project to advance the utilization of monitoring techniques that can be used to assess future vulnerability to anthropogenic environmental perturbations and to enhance regional restoration efforts. This project meets several restoration goals including: (1) Reduce mortality among Highly Migratory Species and other oceanic fishes and (2) Develop Monitoring and Adaptive Management techniques. Date Entered: May 19, 2017	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	\$ 5,000,000.00	\$ -
Eco Restoration	5700	8/1/2017	Open Ocean Deepwater Fauna of the Northern Gulf of Mexico: Assessment of Intermediate Trophic Level Fishes and Invertebrates	NOAA Project ID#13524: The project assesses the relative abundance and distribution of Gulf of Mexico outer-continental shelf and deep ocean fishes and invertebrates, specifically intermediate trophic level fauna (typically mesopelagic species) that constitute the prey base for various species addressed by NOAA/NMFS management objectives (e.g., cetaceans, sea turtles, billfishes, tunas, coastal migratory species, sea birds). The proposed project is a scientific data gap addressing open-ocean ecosystem modeling for intermediate and high trophic level species; currently there are on-going projects addressing mesotrophic nekton and high trophic level predators (e.g., cetaceans), however, intermediate trophic level species that are the predator/prey link are not research objectives. DWH injury is demonstrated by overlap between the DWH oil spill and intermediate fauna distributions (fishery independent surveys NOAA/NMFS/ Mississippi Laboratories (MSL): http://go.mfrc.noaa.gov/nfr/mfrc72d.pdf). The likelihood of success is high considering MSL has an extensive history of outer-continental shelf and deep ocean faunal assessments (bottom and mid-water trawling), and is well-served for scientific, vessel, gear and IT specialists. Mid-water trawling for intermediate trophic level fauna will be conducted both on the continental shelf and in deep ocean and will include, in part, areas with high trophic level species that prey on intermediate trophic level fauna. Bluefin Tuna spawning and large cetacean aggregation area (B_C attached chart); the area of DWH surface oiling overlaps the proposed survey area. The annual project satisfies a Restoration objective for sentinel sight monitoring since population dynamics of the intermediate trophic level fauna can be used as a metric for assessing effects of future episodic oil spill events and for Gulf of Mexico ecosystem management related to the causes of population changes for high trophic level species. The survey also provides numerous sampling opportunities for trophic level stable isotope analysis and biological tissue sampling related to the residual effects of the DWH oil spill. There are several applicable sections of the PDAAP/PRIS Comprehensive Restoration Plan Section 3, of particular importance is Restoring Natural Resources, Alternative A, Comprehensive Integrated Ecosystem Restoration (5.3), fish and invertebrates (5.2.2), mesopelagic communities (5.3.1), sea turtles (5.0.4, 6), cetaceans (5.0.5, 3) and sea birds (5.0, 1.1). Date Entered: May 19, 2017	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	\$ 3,401,120.00	\$ -
Eco Restoration	5701	8/1/2017	Resiliency of fishes to changes in food web following Deepwater Horizon oil spill	NOAA Project ID# 13525: We propose to conduct a life history review and resiliency analysis for economically important Gulf of Mexico (GOM) teleost species including the shelf and offshore teleost species (PDAAP Table 4.9-9) to determine the impacts from Deepwater Horizon oil spill (DWH). The review of the life history information would focus on age, growth, natural mortality, reproductive parameters, and diet, since these parameters would most likely be affected by changes to the food web provided direct and indirect mortalities following the DWH. In addition to the literature review, the collection of biological samples (otoliths, stomachs, reproductive and muscle tissues) will support standard life history research, as well as, conduct analysis of stable isotopes (determine trophic level), model species-specific bioenergetics (aid in predator-prey interactions), and monitor the species population stability and recovery. Of the five shelf and offshore teleost species (PDAAP Table 4.4-8), three examples of species from the genera Seriola spp. (4 species GOM), Centropristis spp. (1 species GOM), and Thunnus spp. (7 species global distribution). There are limited published research on S. fasciata, S. rivoliana, S. zonata, and C. hippurus, thus, conducting a review of literature and even collecting biological samples may be difficult and possibly ineffective. Therefore, we propose to gather historical fishing conditions, landings, size composition and epimeral environmental evidence available from difficult to obtain reports, interviews, films, and particularly newspaper articles. This historical information on abundance and environmental perturbations such as algal blooms, weather and upwelling events, and particularly mesopelagic induced fish kills, and seismic events. In addition, for these species, novel approaches are needed for collecting biological samples, since past and current sampling programs have not produced substantial information. Novel approaches would include carcass collections, observers on recreational vessels, and fishery independent surveys specifically targeting these pelagic species. This proposal's success requires the cooperation from state and federal fishery dependent sampling programs and fishery independent surveys, and new sampling schemes and surveys. Date Entered: May 19, 2017	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	\$ 20,000,000.00	\$ -
Eco Restoration	5702	8/1/2017	Improving restoration through an integrative approach toward the understanding of trophodynamics in the northern Gulf of Mexico	NOAA Project ID#13527: The proposed project aims to apply an integrative approach, using a combination of traditional (e.g., numerical and volumetric) quantification of stomach content through visual identification methods) and novel approaches (e.g., genetic identification of stomach contents, compound specific isotopic analyses), to improve our understanding of trophodynamics in the northern Gulf of Mexico. Project efforts will maximize cost-effective sampling by collecting samples from on-site monitoring and assessment programs (SEAMAP). Project results will then be incorporated into new and existing ecosystem models and trophic guilds, as well as assess ecosystem-level impacts of various management alternatives and environmental perturbations (e.g., red tide, hypoxia, oil spills). At the outset of the project, all existing trophodynamics data for the northern Gulf of Mexico will be compiled. Depending on the quantity of data available for a given species, visual history data, and analysis will include species accumulation curves to assess how many species are being collected, composition has been characterized, as well as additional analyses to assess the temporal and spatial stability of the relative importance of key prey taxa. Results from these analyses will be used to prioritize the subsequent collection and processing of stomach contents. Stomach contents will primarily be collected opportunistically through ongoing SEAMAP research surveys. The vast majority of samples come from summer and fall groundfish trawl surveys, which captures several hundred species of fish annually. Additional samples, primarily of managed fish, will be obtained from longline and vertical longline surveys, although focused sampling efforts may be required for certain taxa and/or life history stages. A subset of stomach contents will be processed using traditional visual-based identification techniques. Supplemental and support of stomach content analyses is proposed through the use of compound specific isotopic analyses. This approach provides greater precision in determining trophic level and likely enable the identification of baal resource (e.g., phytoplanktonic vs. benthic). Diet data will be integrated into existing models (i.e., in the eastern Gulf of Mexico, Adams) and used to develop new models (i.e., in the western Gulf of Mexico). The proposed research herein will focus on filling significant information gaps in determining food web structure and dynamics, trophic linkages, and predator-prey relationships in order to develop ecosystem models to enhance stock and community assessments, therefore, aiding in the MAM approach to the restoration effort. Date Entered: May 19, 2017	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	\$ 2,000,000.00	\$ -

Eco Restoration	5703	8/1/2017	Modeling the impacts of anthropogenic stressors on injured large whales populations.	NOAA Project ID#13345: Sperm whales and Bryde's whales in the Gulf of Mexico were injured during the Deepwater Horizon event. Both species are also exposed to a suite of anthropogenic stressors including noise, shipping traffic, and interactions with commercial fisheries. Reducing the impacts of these stressors will be key to effective restoration. Information on both acute and chronic exposure to stressors and how they influence population dynamics and species recovery is a key data gap needed for adaptive management and selection of most effective restoration techniques. The Population Consequences of Disturbance (PCoD) model is an effective impact assessment framework for evaluating the effects of acute and chronic impacts of noise and other stressors on marine mammal populations. Key parameters for the PCoD model include 1) stage-specific survival rates, 2) maturation and reproductive rates, 3) metrics of disturbance caused by anthropogenic stressors, and 4) metrics of the bioenergetic cost of disturbance response. To develop an accurate PCoD model, directed studies to measure these key demographic population parameters are needed for sperm whales and Bryde's whales in the Gulf of Mexico as these populations are distinct from other global populations and have unique features that may limit the relevance of population parameters derived from other regions. This project includes a series of large vessel cruises to collect data to estimate these key parameters. Photo-identification capture-recapture studies will be conducted to estimate survival rates. Biopsy samples will be collected from animals to collect tissues to measure pregnancy hormones, stress hormones, fatty acid profiles, and other parameters. Photogrammetry from unmanned aerial systems will be used to derive visual metrics of animal health. Finally, animal-borne telemetry tags will be deployed to measure feeding behaviors, dive profiles, and swimming energetics. Data collection, model parameterization and implementation, and the elicitation of expert opinion would be guided by a working group including experts in large whale health, population biology, and model implementation. The outcome of this project will be a well-parameterized model that can provide a quantitative basis for planning restoration projects and environmental impact assessments and improve the capability to restore these injured species by identifying key stressors that limit population growth and recovery. Date Entered: May 19, 2017	Yes	No	No	No	No	No	No	No	No	No	No	No	\$ 4,500,000.00	\$ -	-		
Eco Restoration	5704	8/1/2017	Broad-scale Habitat Mapping and Monitoring of the Northern Gulf of Mexico	NOAA Project ID#13328: Primary objectives are to map and characterize habitats of the U.S. Gulf of Mexico (GOM) from the continental shelf break shoreward to less than 10m depth as well as determining species associations and community structures. Modern technology supported by statistically-based geospatial analysis will be used to supply cost-effective descriptions of bathymetry and habitat data in U.S. GOM from depths of 500m and shallower. An estimated 10-15% of the U.S. waters will be mapped to 500m depth by strip transects spaced approximately every 10km throughout the GOM. Little of the GOM has been mapped with enough resolution to accurately locate and quantify the hard/live bottom habitats as well as artificial reefs. Accurate and comprehensive habitat maps are essential for ecosystem-based fisheries management and marine spatial planning. This project intends to expand upon recent efforts to catalog and prioritize mapping in the GOM with at-sea mapping and sampling to fill data gaps and provide region-wide assumptions about fisheries habitat, species associations, and community structure. In response to the DWH oil spill, the Trustees determined that injuries to reef fish communities occurred, but were not quantified (PDMRP 5.5.6.4). Enhanced fishery-independent data collection methods, such as increased spatial and temporal efforts for fishery-independent surveys are recommended as part of the Monitoring Plan. It is also noted that 30-habitat associations could improve restoration outcomes and that 30-minification that increases our understanding of densities of organisms in geography over time, ecosystem functioning and trophic relationships can be used to inform restoration project planning, design, and evaluation. This project intends to bridge gaps in knowledge on the distribution of offshore habitats and their species associations. Community structure information will be critical in expanding ongoing and future fisheries-independent surveys to allow for pre- and post-stratification. By refining surveys by habitat, variance will be greatly reduced for indices of abundance and lead to more accurate stock assessments. A suite of advanced remote sensing techniques will be utilized, including towed and AUV-mounted side scan and synthetic aperture sonar, multibeam echosounders, ROVs, and other optical sensors. Mapping in the GOM has increased in the last decade; however, there has not been a unified large scale effort across the entire depth range of the continental shelf. This project intends to: 1) expand upon current and previous mapping efforts from nearshore to 500m throughout the U.S. Gulf, 2) characterize essential habitats for benthic organisms and their habitat associations, 3) quantify and characterize estimates of hard bottom and artificial reef habitats. Imagery will be used to produce classifications which will be scalable to the Coastal and Marine Ecological Classification Standard (CMCES). In all cases of surface and subsurface mapping, care will be taken to avoid duplication of previous efforts. Deliverables will include completed high resolution habitat maps and GIS products, scalable habitat estimations by region, geospatial imagery, species/community structure information, and an online data portal to access and download data products. Initial site-specific monitoring and adaptive management strategies and provide more accurate information on landscape-scale habitat variability and connectivity as well as connectivity throughout the GOM. Stock assessments with detailed information regarding amount, distribution, and contributions of various types benthic habitat will reduce uncertainty as well as allow for more efficient and accurate population surveys. Baseline information will allow for pre- and post- analyses of habitat change due to events such as hurricanes, contaminant spills, coastal erosion, and restoration activities as well as informing decision-making processes of the latest research findings. Date Entered: May 19, 2017 Date Edited: May 23, 2017	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No	\$ 20,000,000.00	\$ -	-
Eco Restoration	5705	8/1/2017	Region-wide bottlenose dolphin health assessment program	NOAA Project ID#13391: Coastal and Bay, Sound and Estuary (BSE) populations of bottlenose dolphins in the Gulf of Mexico (GOM) are at risk from natural and man-made threats, such as biotoxins, pollution runoff, increased freshwater exposure, that can cause illness and death and limit recovery. This project aims to develop and implement a health assessment program to identify risks for illness and death for these dolphin stocks and mitigate potential impacts. This project will coordinate with federal and state agencies to identify new capabilities that need to be developed by the marine mammal health assessment community to help identify causes of illness and death in free-ranging coastal and BSE bottlenose dolphins and identify knowledge gaps. Specifically, this project will develop and implement a bottlenose dolphin health intervention program that includes: 1) identify and characterize essential habitats for benthic organisms and their habitat associations, 2) quantify and characterize estimates of hard bottom and artificial reef habitats. Imagery will be used to produce classifications which will be scalable to the Coastal and Marine Ecological Classification Standard (CMCES). In all cases of surface and subsurface mapping, care will be taken to avoid duplication of previous efforts. Deliverables will include completed high resolution habitat maps and GIS products, scalable habitat estimations by region, geospatial imagery, species/community structure information, and an online data portal to access and download data products. Initial site-specific monitoring and adaptive management strategies and provide more accurate information on landscape-scale habitat variability and connectivity as well as connectivity throughout the GOM. Stock assessments with detailed information regarding amount, distribution, and contributions of various types benthic habitat will reduce uncertainty as well as allow for more efficient and accurate population surveys. Baseline information will allow for pre- and post- analyses of habitat change due to events such as hurricanes, contaminant spills, coastal erosion, and restoration activities as well as informing decision-making processes of the latest research findings. Date Entered: May 19, 2017 Date Edited: May 23, 2017	Yes	No	No	No	No	No	No	No	No	No	No	No	No	\$ -	\$ -	-	
Eco Restoration	5706	8/1/2017	Marine Mammal Conservation Medicine and Health Assessment Program	NOAA Project ID#13393: Marine mammal populations in the Gulf of Mexico (GOM) are at risk from natural and man-made threats that can cause illness and death and limit recovery. This project would develop and implement a region-wide marine mammal conservation medicine and health assessment program to identify risks for illness and death for these species and mitigate potential impacts. This project will coordinate with federal and state agencies to identify new capabilities that need to be developed by the marine mammal health assessment community to help identify causes of illness and death in both stranded and free-ranging marine mammals and identify knowledge gaps. Specifically, this project will develop a working group to identify GOM specific risks for illness and death, including possible impacts from natural (e.g., biotoxins, toxoplasmosis, biotoxins, etc.) and man-made threats (chemical and oil spills, etc.), and assess and implement future health intervention techniques, such as vaccination against common outbreak causing diseases (e.g., morbilliviruses), development of rapid point-of-care tools, and improved real-time diagnostic capabilities (such as remotely deployed electrocardiogram (ECG) tags to detect heart abnormalities and/or tools/tags for remotely collecting blood for diagnostic). Additionally, this project will establish regular training sessions and workshops to train the MMNH and health assessment researchers in advanced health monitoring techniques and capabilities, and disseminate information about causes of illness and death and new health monitoring techniques in marine mammals with GOM partners. Lastly, this project will develop and implement a study plan for region-wide live capture/release health assessments of free-ranging cetaceans, including pelagic species using special offshore capture techniques (hoop-netting), by establishing both case and control study sites to evaluate population level health changes over time and emergence of new threats and diseases. By identifying, monitoring, and mitigating natural and man-made threats to marine mammals this project could minimize the number of animals that become ill or die due to these threats and lead to increased recovery of coastal and BSE bottlenose dolphins. Date Entered: May 22, 2017	Yes	No	No	No	No	No	No	No	No	No	No	No	No	\$ -	\$ -	-	
Eco Restoration	5710	8/1/2017	Removal of derelict fishing gear around popular shore-fishing sites (piers and jetties)	NOAA Project ID#13369: Through this project, NOAA intends to recover submerged derelict/abandoned fishing gear from popular (and heavily used) shore-based fishing locations. Derelict gear, particular monofilament fishing line, that is accidentally or intentionally left in the environment by recreational fishers is a persistent threat to sea turtles. This is the most commonly documented marine debris found on stranded sea turtles in the GOM. This abandoned/lost fishing gear significantly contributes to entanglement of sea turtles and tends to accumulate around areas used for shoreline fishing. Project locations would be selected and prioritized based on intensity of use for recreational fishing, known co-location with sea turtles (e.g., foraging areas), and frequency of entanglement/ingestion-related strandings. This project could potentially also benefit marine mammals. This project could be scaled based on available funds. Estimated 75k/job. Date Entered: May 23, 2017	Yes	No	No	Yes	No	No	No	No	No	No	No	No	\$ 225,000.00	\$ -	-		
Eco Restoration	5711	8/2/2017	Marine Mammal Disaster Response Program for the Gulf of Mexico	NOAA Project ID#13306: This project aims to develop new and enhance pre-existing technical and infrastructure capabilities within the Gulf of Mexico (GOM) region to respond to marine mammal disasters from natural and anthropogenic causes. First, an information-gathering and coordination phase will be conducted, working with federal and state agencies to determine existing and identify new capabilities to be developed by the stranding network and its partners to identify impacts of disasters on marine mammals and improve rapid response to those threats. Phase 2 will involve developing new partnerships and enhancing existing ones to address gaps identified in Phase 1. Both Phase 1 and 2 will involve development of guidance documents, including response plans and standardized response protocols. Phase 3 will be to train the stranding network through workshops in the new standardized response techniques and capabilities. The stranding network will also receive information about newly identified threats and the efficacy of various response options to those threats. Finally, in Phase 4 we will work with partners to disseminate resources throughout the GOM states related to the standardized response techniques and capabilities, and continue the coordination with those partners. Specifically, the project is the development of an overarching disaster response program, focused on improving effective and efficient responses to marine mammal stranding and health events or disasters. This program would be implemented across the GOM, and benefit all stocks of marine mammals by increasing and improving the effectiveness of marine mammal response during a disaster in the GOM. One focus of the work would be on planning and preparedness for future oil spills, identifying vulnerability and response planning needs for spills of different types of products, different quantities of products, and different locations, such as those in the far offshore environment. Once needs were identified, the second focus would be on developing a response plan to inform and guide the marine mammal stranding network and response partners, and integration of these plans and protocol documents into existing efforts such as Area and Regional Contingency Plans. Not limited to oil spills, we also envision the need for responses to mitigate impacts to marine mammals from natural disasters such as hurricanes, freshwater inundation events, harmful algal blooms, and other types of natural and anthropogenic risks that may be identified in Phase 1 and 2 of outreach and communication with our partners. As response plans are developed, we will implement the necessary training, including drills and exercises, to fully test the plans and their iterative improvements as needed. The plans, partnerships, protocols, training and drills developed in this disaster response program will lead to a more timely and effective responses to marine mammals following a disaster, which will improve survivorship of animals during and following these events. Date Entered: May 22, 2017	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	\$ -	\$ -	-	
Eco Restoration	5712	8/2/2017	Mitigating vessel strike mortality through the identification of vessel interaction hot spots	NOAA Project ID#13612: Vessel collisions are a leading source of anthropogenic mortality for many marine mammal species. Unfortunately, a large portion of vessel strike mortalities go undetected or unreported when they occur in remote areas or when carcasses drift out to sea. This stranding records are minimum estimates of ship strike occurrences (Sivler & Silber 2004). By identifying "hot spot" areas where vessel collisions are most likely to occur and implementing mitigation measures in those locations, the likelihood of interactions between vessels and marine mammals could be reduced at the source. The goal of this project is to conduct a risk assessment to identify interaction hot spots to target mitigation and restoration efforts. The risk assessment will utilize previously developed characterisation data and marine mammal distribution and incorporate spatial and temporal factors. The risk assessment will also consider species' specific vessel avoidance behaviors to identify sensitive, more vulnerable species at greater risk of vessel strike. As hot spots are identified through the risk assessment exercise, mitigation measures can be implemented to help reduce the risk of vessel collisions in these areas. The identification of these areas may also need to be reevaluated as updated data becomes readily available to incorporate into the risk assessment. This project will increase the survivorship of marine mammals by identifying offshore habitats by proactively planning, implementing, and managing mitigation measures to reduce the likelihood of a vessel interaction in a high priority location. Date Entered: May 22, 2017	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	\$ 300,000.00	\$ -	-	
Eco Restoration	5713	8/2/2017	Develop standardized protocols to characterize vessel collisions with marine mammals	NOAA Project ID#13618: Health assessments, necropsies, and photo-identification body condition data can help to identify health threats to marine mammals and provide links to potential environmental and anthropogenic stressors. However, the type of information collected varies among research groups and stranding networks between animals and locations, it is difficult to make general, region-wide comparisons among cases. The goal of this project is to develop a standard protocol to develop a standard protocol to identify, characterize, and document vessel collisions with marine mammals. Standardized data collection of wound characteristics (i.e. depth, length, location, etc.) will help to identify information about the propeller, vessel type, and vessel speed that interacted with the animal. This project will support consistency, efficiency, and coordination of data collection and analysis of vessel strike animals in the coastal and offshore waters of the Gulf of Mexico. This project will increase marine mammal survival through an increased understanding of the nature of interactions between vessels and marine mammals that will augment mitigation and restoration techniques. Date Entered: May 22, 2017	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	\$ 600,000.00	\$ -	-	

5714	8/2/2017	Increase access to health information from stranded marine mammals by supporting regional databases	NMMA Project ID#13620: The Marine Mammal Stranding Network plays a critical role in diagnosing illness and cause of death in stranded marine mammals to better understand population health. This includes identifying evidence of human interaction, outbreaks of diseases, and new and emerging threats impacting marine mammals. Currently, the only stranding data available in a regional or national database are the Alcatraz data, that describe the basic occurrence information of the Alcatraz whale, when and where Alcatraz whales strand, but not the cause of stranding or death. More detailed health level aspects of a stranding case are typically held at each stranding organization's individual facility, in a variety of formats including individual facility databases. These data are more useful if they are available to managers and marine mammal health experts to evaluate patterns across areas/regions, determine emerging or ongoing threats, and develop potential mitigation measures or interventions. Thus, it is important to develop and maintain regional databases and manage marine mammal health data and make it readily accessible for those who may need to use it. There is currently a pilot database (GulfMAP) developed under the NOAA Gulf Environment Benefit Fund in partnership with NOAA to house and visualize marine mammal health data from the Gulf of Mexico; however, there are limited fields currently programmed in the database and few funds to support the database long term. This project would increase access to information from stranded marine mammals by supporting regional databases (such as the GulfMAP) and personnel to enter, QA/QC data, and maintain databases. These data could be used to provide a better long-term understanding of the causes of marine mammal illness and death in the Gulf of Mexico to mitigate natural and anthropogenic threats. Date Entered: May 22, 2017	Yes	Yes	Yes	No	No	No	No	No	No	No	No	\$	-	\$	-
5715	8/2/2017	Reduce vessel collisions through research and monitoring to spatially identify interaction hot spots	NMMA Project ID#13617: Physical examination of marine mammals through live capture and release health assessments, necropsies of stranded animals, or photo-identification body condition data can help to identify threats to marine mammals and provide links to potential natural and anthropogenic stressors. Vessel interactions are a type of anthropogenic stressor that can often be recognized on marine mammals from physical examination. Typically, interactions will result in serious injury or mortality due to either penetrating injuries from propeller cuts (the severity of which depends on the species, the individual, the location of the cut, and the depth of penetration) or from blunt force trauma from colliding with the hull of a vessel (leading to bone fractures, organ damage, and/or internal hemorrhaging) (Anderson et al. 2008). Vessel interactions are more likely to occur in areas where marine mammal distribution patterns overlap with high vessel traffic densities. This project focuses on an alternative method to identify vessel interaction hot spots. The goal is to analyze strandings, health assessments, and photo-identification data to spatially identify areas where cases of boat strike animals tend to be more prevalent and congregated. This analysis will not only help identify a specific hot spot and/or type of habitat vessel collisions are more likely to occur, but also quantify the number or percentage of animals with evidence of vessel collision injuries. This project serves as a baseline of pre- and post-restoration efforts in the locality of strandings data, health assessments, and photo-identification can be identified for the past 5 years and reevaluated after mitigation efforts have been implemented, such that this project is intended to be a multi-year effort continually being updated. Continual data entry, maintenance, and analysis of a region-wide boat strike database will help to keep this effort updated, such that vessel collision hot spots may be newly identified, modified, or eliminated. This project will enhance marine mammal survivorship by further understanding specific locations or habitats where vessel collisions occur and proactively implementing mitigation measures to reduce the likelihood of an interaction. Date Entered: May 22, 2017	Yes	Yes	Yes	No	No	No	No	No	No	No	No	\$	450,000.00	\$	-
5716	8/2/2017	Socioeconomic impact analysis of potential marine protected area implementation	NMMA Project ID#13544: This project will support socioeconomic analyses necessary to evaluate the impact of the establishment and implementation of proposed or potential marine protected areas in the northern Gulf of Mexico. These include the expansion of the Flower Garden Banks NMS and Mesophotic/Deepwater Habitat Areas of Particular Concern (HAPC). Date Entered: May 19, 2017 Date Edited: May 22, 2017	Yes	No	Yes	No	No	No	No	No	No	No	\$	500,000.00	\$	-	
5717	8/2/2017	Improve the ability of stranding network partners to detect and rescue free-swimming marine mammals that are entangled, entrapped, or out of habitat	NMMA Project ID#13613: Marine mammals can become entangled with gear from commercial and recreational fishing, as well as from marine debris. In the absence of intervention, untreated wounds resulting from such entanglements can lead to serious injuries including massive blood loss, infections, impaired mobility, and death (PDMAP). Animals entrapped (e.g., due to live construction net of habitat, or displaced by severe weather or oceanographic events (e.g., hurricanes) may also need intervention, if they cannot return to suitable habitat on their own and/or when their health is compromised (PDMAP). This project aims to develop new and enhance pre-existing infrastructure capabilities within the Gulf of Mexico (GOM) region to respond to marine mammals that are entangled, entrapped, or out of habitat. It will involve coordination with federal, state, and marine mammal stranding networks (NMMS) agencies to develop standardized protocols and identify training, support, equipment, and/or other resources that are necessary to establish rapid response teams (rescue personnel and vets) and equipment around the GOM for interventions on entangled, entrapped, or out of habitat marine mammals. Region specific standard operating procedures and protocols for these types of animals will allow for region-wide consistency in response, as well as the ability to respond rapidly to these events, thus enhancing survivability. The focus will be to identify, train, and support rapid response team members for entangled, entrapped or out of habitat animals to ensure timely response. This includes a rapid response team training workshop that covers all aspects of a live animal intervention (net handling, animal handling, boat maneuvering around nets, tagging, tracking of tagged animals) and travel support for NMMS partners to attend dolphin live capture/release health assessments for training in the animal capture and handling techniques. Additionally, this project will purchase equipment, including catch boat and netting, to be staged strategically throughout the GOM (2-3 locations). There will also be funding, including vessel and personnel support, for pre-capture photo-ID monitoring of entangled, entrapped, or out of habitat animals to monitor animal condition, determine extent of injury/entanglement, and ensure animals can be located on day of rescue. This project will also support the development of boat based disentanglement tools and techniques, to increase opportunities for intervention when a net capture and disentanglement used (e.g., animal used to help in water too deep to safely capture). Also included in this project are satellite and VHF monitoring equipment that will be used to monitor and track animals that will be applied as appropriate and support for post release tracking efforts (personnel and vessel). Improved post-release tracking is critical for understanding the survival of disentangled or relocated animals and for informing future intervention/release decisions. Date Entered: May 22, 2017	Yes	Yes	Yes	No	No	No	No	No	No	No	\$	-	\$	-	
5718	8/4/2017	Expanding Observer Coverage to Unobserved Sectors of the Non-Shrimp Trawl Fisheries	NMMA Project ID#13628: Additional observer coverage is needed throughout the Gulf on non-shrimp trawls (e.g., Sheepshead/black drum trawls in LA, blue crab trawl fishery, Alcatraz foodfish trawl fishery, etc.). While these trawl fisheries are small, sometimes only a handful of boats, they do not use TEDs and we have no information on sea turtle takes. The goal of the project is to gather additional information on sea turtle interactions in currently under or un-observed trawl fisheries and develop and implement new conservation measures if necessary to reduce sea turtle bycatch and mortality. The project costs are reflective of a 3-year program to identify the non-shrimp trawl fisheries, initiate observer programs, and observe the fisheries. After the 3-year period the data would be evaluated to determine the need for an ongoing observer program. Key Restoration linkages: reduce sea turtle bycatch in commercial fisheries through development and implementation of conservation measures; Monitoring and adaptive management activities to address relevant data gaps to inform restoration. Date Entered: May 22, 2017	Yes	Yes	Yes	No	No	No	No	No	No	No	\$	500,000.00	\$	-	
5719	8/4/2017	Provide 2.5M Bar Spacing TED Grids to Non-Skimmer Trawl Operators	NMMA Project ID#13632: There is currently a proposed rule to require skimmer trawls to use TED grids with smaller bar spacing under an upcoming rule. However, non-skimmer trawls fishing for shrimp in the Gulf of Mexico are required to use grids with 4M bar spacing. An examination of sea turtle sizes in the coastal waters where those shrimp trawls operate show that sea turtles small enough to slip between the 4M spacing of the current grids may occur in these areas. Providing 2.5M bar spacing grids to non-skimmer trawl fishery will be voluntary. These grids have the potential to save sea turtles and it provides a cost savings to trawlers who need to replace their old grids. Key Restoration linkages: reduce sea turtle bycatch in commercial fisheries through implementation of conservation measures. Date Entered: May 22, 2017	Yes	Yes	Yes	No	No	No	No	No	No	\$	500,000.00	\$	-		
5720	8/4/2017	Derelict fishing gear (including boat anchor lines) clean-up at popular nearshore artificial reef fishing sites.	NMMA Project ID#13623: Recovery of submerged gear that presents an entanglement/ingestion hazard. Locations would be selected and prioritized based on intensity of use for recreational fishing, known on location with sea turtles (e.g., foraging areas), and frequency of entanglement/ingestion-related strandings. The issue of sea turtle entanglements on derelict recreational fishing gear at artificial reef sites is one we have become increasingly aware of, and has the potential to be a significant source of sea turtle mortality (see NOAA Technical Memorandum NMFS-SPO-15, January 2013). This project could potentially also benefit marine mammals. Key Restoration linkages: Gear that is accidentally or intentionally left in the environment by recreational fishers is a persistent threat to sea turtles and is the form of marine debris that most often causes sea turtle stranding in the GOMX. This gear significantly contributes to sea turtle bycatch resulting from recreational fishing and tends to accumulate on artificial reefs targeted as recreational fishing sites. Date Entered: May 22, 2017	Yes	No	Yes	No	No	No	No	No	No	\$	250,000.00	\$	-		
5721	8/4/2017	DWH Long-term Planning Action Analysis: Ocean Use Mapping	NMMA Project ID#13615: Conduct participatory workshops with regional ocean experts to capture community perspectives about ocean space and to create maps of past and current ocean uses across three distinct sectors: non-consumptive, fishing and industrial/military. Develop GIS data, map and analytical products, and web-based interactive viewers to guide NRD efforts. Benefits: 1. Provides critical information about ocean uses to help guide and prioritize future emergency response and cleanup activities in order to minimize impacts and injuries to users. 2. Captures wide range of community perspective about ocean space (i.e. how it is used, governed and managed) to complement other mapping approaches designed to document physical ocean features (topography, e.g. species distribution, biodiversity indicators, ecosystem health) 3. Provides a more complete baseline of human uses for future oil spill assessments related to lost use compensation and restoration. 4. Provides a unique and comprehensive planning resource to identify, design, prioritize and evaluate restoration projects for the efficient use of recovered funds aimed at replacing lost uses and values. 5. Provides a long-term information resource to inform broader coastal planning and management priorities that take into account current and emerging ocean uses of the ecosystem, including investment in future recreational opportunities. 6. Provides, for the first time, a comprehensive linkage between ecosystem features, functions and services and the ocean uses they support. 7. Provides the baseline data to explore linkages between existing ocean uses and documented economic values of coastal activities. Products: 1. Spatial GIS data on each ocean use and sector. 2. Analytical products illustrating patterns in ocean use, including identification of existing ocean uses at risk from spills or response activities. 3. Interactive online viewer allowing remote visualization and analysis of GIS data. Desired Outcomes: strengthened and more efficient planning for emergency response, assessment and restoration. 3- Interactive helix: mapping product utilizable by multiple planning agencies 4- Useful mechanism for integration with existing resources 4- Planning product utilizable across sectors and uses. Date Entered: May 22, 2017	Yes	Yes	Yes	No	Yes	No	No	No	No	No	\$	3,000,000.00	\$	-	
5722	8/4/2017	Develop and implement tools and techniques to identify possible mass stranding situations before they occur and to avert animals from mass stranding	NMMA Project ID#13614: Mass strandings of pelagic offshore marine mammal species (e.g., short finned pilot whales, false killer whales, rough-toothed dolphins, offshore bottlenose dolphins) occur on an annual or biannual basis in the Gulf of Mexico (GOM). Responses to these events have been hampered in the past by a lack of early warning of pelagic marine mammal species coming near-shore and effective hauling techniques to prevent animals from stranding. This project aims to develop and implement tools and techniques to identify possible marine mammal mass stranding situations before they occur and to avert animals from mass stranding. This project will coordinate with federal and state agencies to identify what standardized protocols, training, support, data collection and analysis, equipment, and/or other resources are necessary for each state to improve existing marine mammal mass stranding network coverage and capabilities (i.e., conduct a gap analysis). Additionally, this project will collaborate with NOAA on deploying more passive acoustic monitoring systems (PAMS) to increase monitoring density in real time of offshore marine mammal species occurrence on the continental shelf or in-shore prior to mass stranding events. Lastly, this project will develop rapid response and intervention techniques to respond to marine mammal mass strandings. Specifically, this project will develop real time warnings of the presence of offshore marine mammal species that are out of habitat by deploying PAMS in specific hot spots around the GOM. This project will develop and improve upon existing techniques to herd/haul species prior to mass stranding. Additionally, priority equipment will be identified and purchased for rapid response (assessment, mitigation, intervention, and response) to mass stranding events. By preventing or mitigating mass stranding events of offshore marine mammals this project may aid in minimizing the number of animals that die or re-strand during these events leading to increased recovery of offshore marine mammal species. Date Entered: May 22, 2017	Yes	Yes	Yes	No	No	No	No	No	No	No	\$	-	\$	-	
5723	8/10/2017	Enhanced Observer Coverage in the Gulf of Mexico Reef Fish Fishery	NMMA Project ID#13636: The Gulf of Mexico Reef Fish Fishery consists of approximately 800 federally permitted vessels, approximately 65 use longline gear and the remainder use vertical line (bandit reel-electric or hydraulic, and handline). In recent years (i.e., 2013-2015), the Gulf reef fish fishery observer program has observed on average approximately 4% of total sea days, all gear types combined. The current practice is to augment coverage in the vertical line component of the Gulf reef fish fishery at least once every three years, thus coverage in vertical line augmented coverage years are only approximately 2%. In years with augmented coverage in the vertical line component, funding for bottom longline coverage is reduced. This project will allow us to improve coverage levels in the vertical line component of the Gulf reef fish fishery annually to better understand and manage sea turtle impacts. This proposal would increase observer coverage for the vertical line component of the fishery by 10 to 200 sea days per year (SDY) from the 200 SDY total. Key Restoration linkages: reduce sea turtle bycatch in commercial fisheries through implementation of conservation measures; Monitoring and adaptive management activities to address relevant data gaps to inform restoration also to ensure current conservation measures are followed. This project will also allow NMFS to better apply conservation measures to different sectors of the fishery (i.e. vertical line vs longline). Date Entered: May 22, 2017	Yes	No	Yes	No	No	No	No	No	No	No	\$	900,000.00	\$	-	

Eco Restoration	5724	8/10/2017	Address gaps and enhance capacity in the current capabilities of the marine mammal stranding network throughout the Gulf of Mexico to improve timeliness of response and diagnosis of illness and cause of death	NOAA Project ID#13611: The Marine Mammal Stranding Network (MMSN) was formalized by the 1992 Amendments to the Marine Mammal Protection Act (MMPA) and volunteer MMSNs exist throughout all coastal states to respond to marine mammal strandings. For cetaceans in the Gulf of Mexico (GOM), 15 MMSN organizations/facilities are currently authorized under the MMPA to respond to live or dead stranded marine mammals. However, due to disparate levels of training, funding, and resources, MMSN organizations have different capabilities and increasing existing capacity and expanding networks to additional areas would help fill gaps in capabilities and coverage along the GOM coastline. On average, there are approximately 400 cetacean strandings along the U.S. Coast of the GOM each year. This project aims to address gaps and enhance capacity in the current capabilities of the MMSN throughout the GOM to improve timeliness of response and improve diagnosis of illness and cause of death in marine mammals to better understand population health. Initially, this project will coordinate with federal and state agencies to identify what standardized protocols, training, support, data collection and analysis, equipment, and/or other resources are necessary for each region to improve existing MMSN coverage and capabilities (i.e., conduct a gap analysis). After gaps are identified, the project will develop new partnerships, improve existing partnerships, and support resources and personnel to improve stranding response and data collection. It will focus on improving the capabilities and capacity for MMSN partners and to support "rescue" activities, as well as respond to unusual or emergency events (e.g., mass strandings/killshots and mortality events). In addition, there will be an emphasis on improving stranding response in remote locations or locations with limited response capabilities. The identification and development of federal, state and local partnerships will facilitate access to resources (e.g., landing sites for dead floating whales, disposal of carcasses, towing). The project will also place emphasis on improving triage capabilities for live stranded animals (including mass strandings), such as live animal transport and increase animal survival. Additionally, development of region-wide standards and protocols, and implementing training, will improve data consistency and address how MMSN partners can support restoration efforts. As part of these efforts, a forensic toolkit will be created to identify and document human-related injuries and deaths in marine mammals, which could lead to possible mitigation measures for management. The project will also support the MMSN to archive, analyze, and track samples collected from live animals, which will improve diagnosis of illness and cause of death (may include banding, organizational system, information management protocols, etc.). It may also increase capacity for the MMSN to conduct active surveillance to enhance detection of live and dead stranded, injured, or entangled marine mammals and for improved mortality estimates (e.g., boat surveys, beach surveys). This project will establish regular training sessions and workshops to maintain the MMSN's capabilities over time and through personnel turnover, as well as share information across the network about new threats and the efficacy of various response actions to those threats. Addressing gaps and enhancing capacity in the current capabilities of MMSN will serve to improve timeliness of response and diagnosis of illness and cause of death in the GOM region. This project is anticipated to have positive impacts on the survival of many marine mammal species in the GOM, but in particular on coastal and estuarine species of bottlenose dolphins. Other offshore species that are subject to mass strandings or die-offs may also benefit, such as short-finned pilot whales and rough-toothed dolphins. Date Entered: May 22, 2017	Yes	Yes		No	No	No	No	No	No	No	No	No	\$	-	\$	-
Eco Restoration	5725	8/10/2017	Develop rapid response techniques and advanced technologies to enable rapid assessment of deep-sea coral community ecology.	NOAA Project ID#13547: Deep-sea sediment fauna (infauna) represent important components of benthic biodiversity, and provide essential ecosystem functions including sediment bioturbation, organic matter decomposition, and energy transfer. However, due to their sedentary lifestyles and low mobility, infauna are vulnerable to disturbance, including hydrocarbon contamination and organic enrichment. Impacts associated with contaminants from the DWH spill resulted in changes in infaunal composition, diversity, and abundance. While these data represent a useful baseline for tracking post-spill changes, the long-term response of these deep-sea communities remains unclear. Sediment community assessments have traditionally used taxonomic methods for identification of fauna and diversity estimation. However, these methods are time intensive. Recent advances in high-throughput environmental sequencing have enabled assessment of a wide range of metazoan taxa present in deep-sea sediments using molecular methods. Environmental sequencing has been successfully used to assess biodiversity and genetic connectivity of deep-sea and coastal sediment communities, and characterize pre- and post-spill beach sites affected by heavy oiling during the DWH spill. Environmental sequencing may elucidate connectivity among GOM habitats, potentially identifying critical habitats for biodiversity maintenance, which is important for successful recovery of impacted communities. Comparison between DNA-based data sets and taxonomic results will provide quantitative metrics to ground-truth the utility of molecular analysis in future rapid assessments. This type of DNA-based method will be useful for understanding the effectiveness of restoration efforts by providing rapid qualitative and quantitative assessments of infaunal communities with food (Chapman et al. 2014). Interactions between gear and fishermen frustrate and even prevent. Sediment cores will be collected adjacent to deep-sea corals (healthy and impacted sites) and sediment fractions will undergo standard meiofaunal extraction procedures for both taxonomic and environmental sequencing. Environmental DNA will be obtained from the extract, followed by amplification and sequencing on the Illumina MiSeq platform. This methodology has been extensively tested and validated for high-throughput environmental DNA sequencing. Procedural and analytical workflow will be carried out using the appropriate software and high-quality bioinformatics workflows. Data collected will represent a combination of high-throughput sequencing methods and traditional taxonomic approaches, providing valuable information from which to track the recovery of impacted deep-sea coral infaunal communities, guide long-term monitoring programs of deep-sea environments, and help inform the development of future restoration plans. Samples collected will be processed for environmental analysis to provide baseline assessments, to identify changes in their community structure, and to assess species-specific responses to oil spills versus other types of disturbance. This research will provide the data required for impact assessments and to measure the success of mitigations developed through adaptive management for the protection of natural resources. The cost of this effort is a function of the number of sites examined and temporal frequency of collections. Initially, this work will investigate 3 impacted and 3 healthy deep-sea coral environments where baseline information is available for 5 years. Other costs will include expenses for sample processing, information management, and analysis. Additional funding would allow this work to include additional monitoring sites, including areas adjacent to coral transplants and within protected areas, which would require additional support. An ROV is required, but ship/ROV operations can be conducted in concert with other studies examining these environments. Costs, including ship time: \$11M/5yrs. Date Entered: May 22, 2017	Yes	Yes		No	Yes	No	No	No	No	No	No	\$	11,000,000.00	\$	-	
Eco Restoration	5726	8/10/2017	Sea Turtle Nesting Beach Coordinator	NOAA Project ID#13603: The project would establish and fund a Coordinator position to coordinate sea turtle conservation and monitoring activities on nesting beaches throughout the Gulf of Mexico. This would be accomplished in close coordination with the relevant states as well as DOI entities. The responsibilities of this position would include coordination with the states regarding annual nesting survey efforts, survey needs, and data archival/availability, coordination of lighting assessments/needs, development of training materials, assessment of data gaps and development/implementation of plans to fill data gaps (e.g., hatchling orientation assessments), and development of best practices and protocols. This position will result in a better coordinated Gulf-wide program to enhance sea turtle hatching production and restore and conserve nesting beach habitat. This enhanced coordination of nesting beach surveys across the states and development of best practices, combined with gap assessments and focused approaches to fill gaps will result in more effective protection of nesting sea turtles, nests, and hatchlings, as well as integrated information across the Gulf to inform restoration needs and adaptive management. Estimated cost is 175k per year, estimated for purposes of this submission for a 5-year period. Date Entered: May 22, 2017	Yes	No		No	No	No	No	No	No	No	\$	875,000.00	\$	-		
Eco Restoration	5727	8/10/2017	Reduce Harm to Dolphins by Determining Scope of Hook and Line Fishing Gear Interactions and Fishermen Attitudes	NOAA Project ID#13604: Fishing interactions between hook-and-line (rod and reel) gear and bottlenose dolphins occur throughout the Gulf and are increasing (Powell & Wells 2011; Shippee et al. 2011). Rod and reel gear is used by either for-hire fishing vessels (e.g., charter and head boats) or anglers. Dolphin interactions with the gear largely result from dolphins taking the bait or catch directly off a hook (e.g., depredation) or eating discarded fish (e.g., scavenging) (Powell & Wells 2011; Read 2008; Zollett & Read 2006). These behaviors are likely propagated by illegal feeding of wild dolphins which is the animals' rapid association with food (Chapman et al. 2014). Interactions may result in lost or damaged gear and fishermen frustration and even prevent. For dolphins, it may cause lethal injuries from fishing gear entanglements or ingestions, and related mortalities (e.g., fisher retaliation by shooting). Based on Gulf stranding data records from 2002-2015, 97 bottlenose dolphins stranded with hook-and-line gear attached (NOAA National Marine Mammal Health and Stranding Response Database unpublished data; accessed 2 May 2016). Stranding numbers may be up to three higher because only a portion of animals are detected and reported (Pelletier et al. 2012; Wells et al. 2013; Williams et al. 2013). There have also been federally investigated and prosecuted cases of fishermen retaliating against dolphins out of frustration for the dolphin's depredation behaviors (Val 2016; Department of Justice 2007). Therefore, this project will reduce lethal impacts to dolphins from hook-and-line fishing related interactions known to occur within Gulf waters by: (1) Conducting systematic surveys to determine the magnitude and extent of dolphin and hook-and-line gear interactions and characterize the nature of these interactions (e.g., mapping fishery effort distribution, identifying factors leading to dolphin gear interactions, detecting hot-spots, etc.). (2) Conducting social science studies (e.g., surveys, focus groups, interviews) to characterize fishermen's attitudes and perceptions towards dolphins and fishing gear interactions, their likelihood to take various actions (both preventative and retaliatory) and their responses to various outreach messages and approaches. This project will survey anglers and for-hire boat captains/owners and their patrons. It will include fishermen fishing from both near and piers, fishing in a variety of habitats (i.e., coastal and estuarine), and targeting various fish species using different gear configurations in all coastal Gulf state waters. Project results will help identify what gear factors may increase the likelihood of interactions, the frequency of dolphin and gear interactions and approximate risk of lethal injury from interactions, and whether there are hot spot areas where interactions are more likely to occur. We will then work with stakeholders to identify, develop, and evaluate conservation measures to reduce interactions (e.g., potential gear or fishing practice modifications, safe and effective deterrence techniques, etc.). This project will enhance survivorship and resiliency of bottlenose dolphins by reducing lethal impacts resulting from fishing interactions between dolphins and rod and reel fishing gear. Repeating systematic surveys, social science studies and evaluating stranding data may be used for project monitoring. Date Entered: May 22, 2017	Yes	Yes		No	No	No	No	No	No	No	\$	1,200,000.00	\$	-		
Eco Restoration	5728	8/10/2017	Documenting temporal change in deep-sea coral sediment community structure and function in order to track long-term responses to natural and anthropogenic disturbance and inform future restoration activities	NOAA Project ID#13555: Benthic fauna provide essential ecosystem services, including nutrient cycling, biomass production, and sediment bioturbation, and a loss of benthic biodiversity has been correlated with an exponential decline in ecosystem services. Sediment macro- and meiofauna (infauna) represent important indicators of natural and anthropogenic disturbance primarily due to their sedentary lifestyle and their rapid response to change; thus, examining these communities has proven useful in impact assessments of coastal and deep-sea communities. For example, in the wake of the DWH oil spill, immediate impacts were detected in benthic communities including sediments adjacent to deep-sea corals. Annual collections of sediment adjacent to the impacted corals are tracking changes in these communities with time since the spill (2010-2016). While long-term impacts to these habitats are unknown, recovery rates are predicted to be slow with DWH derived contaminants remaining in biologically active sediments for many years. Coral-associated sediments contain benthic communities that differ from other soft sediments in the GOM, and thus recovery trajectories at these locations may differ as well, making regional generalizations inaccurate. Without the knowledge of the natural trajectory for recovery of communities, we will be unable to apply remediation tactics to restore these habitats. This research will characterize infaunal community structure at several deep-sea coral sites. Sediment cores will be collected adjacent to corals to assess infaunal abundance, diversity, evenness, and composition in ecosystems affected by different stressors. Sediment also will be processed for total organic carbon and nitrogen, hydrocarbon and metal concentrations, particle size analyses and redox conditions. Similarities and differences in benthic communities will be examined using non-metric multidimensional scaling, pairwise comparisons will be made between sites in order to estimate the percent community dissimilarity (variability) and the taxa responsible for differences among coral sites. RELATE and DISTLM multivariate statistics will be used to analyze and model the relationship between the infaunal assemblage data and the environmental variables. This work will provide traditional taxonomic data that is comparable to existing datasets available at impacted and non-impacted deep-sea coral sites, and regionally for northern GOM soft-sediments, and natural hydrocarbon seeps including the environmental parameters for these habitats. This work also links to proposed research examining the environmental sequencing of sediment communities entitled: Develop rapid response techniques and advanced technologies to enable rapid assessment of deep-sea coral community ecology (USOS-Dempoulois). These comparisons will quantify community changes since the spill, estimate resilience, and determine whether these systems have recovered to comparable community structures near healthy reference areas. Assessing the community composition and biodiversity at selected deep-sea coral sites will provide baseline data for community response to restoration efforts for future restoration projects. The cost of this effort is directly related to the number of sites examined and temporal frequency of collections. Initially, this work will investigate 3 impacted and 3 healthy deep-sea coral environments where baseline information exists, on 1 cruise/year for 5 years. Other costs will include expenses for sample processing and data analysis. Additional funding would allow this work to include additional monitoring sites, including areas adjacent to coral transplants and within protected areas, which would require additional support. An ROV is required, but ship/ROV operations can be conducted in concert with other studies examining these environments. Costs, including ship time: \$10M total for 5 years. Date Entered: May 22, 2017	Yes	Yes		No	Yes	No	No	No	No	No	\$	10,000,000.00	\$	-		
Eco Restoration	5730	8/16/2017	40 Meters and Landward: Assessment, Monitoring, and Adaptive Management for Gulf of Mexico Coastal Ocean, Estuarine, and Riparian Habitat	NOAA Project ID#13558: This project uses novel satellite technology to provide classified habitat shoreward of approximately 40 meters water depth across the Gulf of Mexico. Because satellites pass over any location regularly, this unique project will create a time series of spatial habitat data thus allowing rapid identification of where and when change occurs. Such data are invaluable for effective, targeted restoration planning, project monitoring, and observing how the region responds to a variety of pressures. Many open ocean fish, invertebrates, marine mammals, and turtles are dependent on both nearshore and estuarine habitats. Indeed, such data are essential for restoration planning discussions leading to the DWHAR but the linkages between offshore and nearshore or estuarine habitats. This is because the most viable and pragmatic - open ocean restoration often has a nearshore or estuarine focus. However, nearshore and estuarine habitats were also injured by the Deepwater Horizon oil spill and are further degraded by channelization, energy development, subsidence, and sea level rise. These processes will present challenges into the foreseeable future. Mitigating such losses - or even reversing them - would be most effectively achieved if one understands how and where changes to most rapidly advance satellites allow us the capability to rapidly collect bathymetric and categorical habitat data to water depths as deep as forty meters. This capability means that broadscale maps of habitat and bathymetry covering large swaths of the continental shelves can be developed quickly and efficiently. Further, repeated satellite passes over any given area allow one to measure habitat and landform change through time. These techniques offer distinct advantages in coverage and speed over the piecemeal approaches deployed today that use aircraft, sidescan and multibeam sonars. The work will provide refined habitat data for the Gulf of Mexico, support improvements in current models that all rely on bathymetric data, and offer a means to monitor change in critical habitat from 40 meters to in-land terrestrial environments across the Gulf of Mexico. This project will use recent developments in satellites and classification analyses to provide habitat-categorized maps of the coastal zone (inshore of the riparian out to a water depth of 40m depending on water quality). The satellite-derived time-series of habitat data will be examined to identify those areas that are stable and those that are undergoing rapid change in elevation of habitat type. The information will be useful for states planning geoengineering, restoration personnel preparing for marsh and wetlands projects, and biologists interested in the habitats of fishes, cetaceans, and turtles. Date Entered: May 22, 2017	Yes	No		No	Yes	No	No	No	No	No	\$	5,000,000.00	\$	-		

	Eco Restoration	5731	8/16/2017	Enhance knowledge of large whales species in offshore waters of the Gulf of Mexico	NOAA Project ID183659: There is still much to learn about large whale species such as sperm whales and Bryde's whales in the offshore waters of the Gulf of Mexico. Information about their distribution, movement patterns, habitat use, feeding patterns, and population demography is still limited. Enhanced understanding of this information can help to evaluate species' co-occurrence with human-related activities and assess the impacts of these activities on the species. A large effort to collect this type of information will be conducted through GoMAPPs. However, GoMAPPs is projected to collect data for three years. This goal of this project is to augment GoMAPPs and continue data collection of large whale species in the offshore waters of the Gulf of Mexico. Due to the life history patterns of these large whale species, it often takes many years to be able to distinguish changes in their population status. This continued data collection is particularly important since sperm whales and Bryde's whales were two species that experienced high mortality rates after the DWH oil spill. It is crucial to the survivorship of these species to continue research efforts beyond the scope of GoMAPPs and continue to monitor their population status, particularly due to the high amount of anthropogenic activities occurring in the Gulf of Mexico. Date Entered: May 22, 2017	Yes	No	No	No	No	No	No	No	No	No	No	No	No	\$	-	\$	-			
	Eco Restoration	5732	8/16/2017	Restore the Gulf of Mexico Brydeid TM Whales by reducing the probability of lethal vessel strikes	NOAA Project ID183663: Brydeid TM whales in the northern Gulf of Mexico are an extremely small, isolated population with fewer than 50 individuals confined primarily to the northeastern Gulf. They were injured by the DWH oil spill with 48% of their known habitat impacted by surface oil. Due to the small population size and high injury due to the spill, restoration actions to protect Gulf of Mexico Brydeid TM whales are urgently needed. One of the primary sources of mortality is a behavioral data collected from a telemetry data deployed in 2013 demonstrating that these whales frequently occur in near surface waters and are vulnerable to ship strikes, particularly during night-time hours. In addition, it is probable that noise resulting from the transit of large vessels can result in behavioral changes or other disturbances that can influence behavior and population dynamics. In this project, we propose to evaluate the level of risk of vessel strikes on the Brydeid TM whale habitat and evaluate potential strategies to reduce vessel strike risk. Spatial habitat and vessel strike data, including AIS data, are currently collected and will be analyzed to evaluate vessel classes, speeds, and traffic patterns and the degree of overlap with Brydeid TM whales to identify high risk areas. This information can then be used to identify possible alternative vessel routes that could be evaluated to determine if it is possible to reduce risk to whales while maintaining safety of navigation. Similar projects have been successfully conducted to reduce risks to North Atlantic right whales and blue whales. Reduced vessel speed decreases the mortality rate of vessel strikes when they do occur. Mortality rates for North Atlantic right whales are reduced when large commercial vessels travel at speeds less than 10 knots. Thus, we propose to evaluate current vessel speeds and identify regions of highest risk to Gulf of Mexico Brydeid TM whales. We will build upon existing and anticipated data collected on the spatial distribution and habitat requirements of these whales. This project will evaluate the risk of vessel strikes and explore alternative strategies to reduce vessel strikes to support restoration. Date Entered: May 22, 2017	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	\$	500,000.00	\$	-	
	Eco Restoration	5733	8/16/2017	Age Dating and Growth Rates of Deepwater and Mesophytic Corals	NOAA Project ID183568: This plan addresses aging of deepwater and mesophytic corals to assess injuries to natural resources stemming from the May 2010 Macondo Well blowout that led to the Deepwater Horizon oil spill. Targeted reefs included Alabama Alps Reef and Roughtongue Reef, both large high-relief platform reefs within the Pinnacles reef tract, northeastern Gulf of Mexico (NCGM), Yellowtail Reef, a lower relief Pinnacles trend reef near Roughtongue Reef, as well as Coral Trees Reef (CTR) located on the West Florida shelf edge, and Madison-Swanos South Ridge (MSR). Information on growth rates and life spans of mesophytic deep-sea (> 65 m) and deepwater corals is important for understanding the vulnerability of these organisms to both natural and anthropogenic perturbations, as well as the likely duration of any observed adverse impacts. Results from Prouty et al. (2011) indicate that deep-sea black coral Leiopathes sp. have been growing continuously for at least the last two millennia, and results from Prouty et al. (2016) suggest continuous life spans of over 600 years are possible for the deep-sea octocoral Paramuricea sp. These demonstrated slow growth rates of deep-sea corals suggest that it may take centuries for certain deep-sea coral species to recover from negative impacts. However, there are no published data for growth rates or ages for azooxanthellate gorgonian mesophytic corals from the Gulf of Mexico. Therefore, information on growth rates and life spans is essential for understanding the life history and ecology of these habitat-forming corals. Gorgonian octocorals such as Paramuricea rely on a surface-derived food source (i.e., particulate organic carbon) rather than sedimentary or dissolved organic carbon (Druffel et al., 1995; Roark et al., 2006). As a result, the 14C-derived age estimates of gorgonian corals are assumed to be unaffected by feeding upwelling currents and nutrient inputs from the ocean. These organisms acquire their carbon from surface-water or gaseous matter after rapid transport to depth (Roark et al., 2009). Therefore, robust 14C-derived chronologies and known surface ocean 14C reservoir age constraints in the Gulf of Mexico provide reliable calendar ages for the collection of gorgonian mesophytic corals. The objective of this analysis plan is to use both Alabamabomb and radiocarbon over the last approximately 60 years and conventional 14C ages (based on the known radioactive decay rate) calibrated with reservoir corrections to calculate calendar ages, as well as growth rates for mesophytic corals collected in the northeastern Gulf of Mexico. Specifically, the objective is to assess coral ages of mesophytic gorgonian octocorals in genera Hippogorgia, Swiftia, Bedyce, and Paramuricea and mesophytic black corals in genera Siphonaphys and Antipathes. The methodology for preparing, radiocarbon dating, and determining age and growth rates for the coral samples is described in detail in Prouty et al. (2011, 2016). Samples to be analyzed will include samples collected in the Gulf of Mexico during the 2011-2016 period. Samples will be prepared from the base (trunk) of each coral specimen. A transect across this disc will be sampled and analyzed to include polyp, tissue layer, center (inner), middle and outer portions across the radial transects. Therefore, when sufficient skeletal material is present, each coral specimen will yield approximately 5 radiocarbon measurements. This information will aid in the calculation of maximum age and growth rates of a particular coral specimen. In addition, tips and polyps will be analyzed in order to capture the radiocarbon ages in the most growth accreted material. Each subsample of skeletal and tissue material will be prepared for Accelerator Mass Spectrometry (AMS) radiocarbon [14C] dating at the Keck Carbon Cycle AMS laboratory at UC Irvine (KCCAMS). Samples will be pretreated with a deionized (DI) water rinse three times and a Date Entered: May 22, 2017	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	\$	70,000.00	\$	-	
	Eco Restoration	5734	8/16/2017	Dolphin Conservation Mobile Education/ Outreach Exhibit	NOAA Project ID183570: This project involves developing a mobile outreach and education exhibit that would travel throughout the Gulf States to educate residents and visitors about dolphin conservation issues. The audience includes recreational fisherman, beach-goers, motorized and non-motorized recreational vessel operators, and the general public. By educating these audiences and distributing outreach materials at fishing piers, marinas, and events, this project will - Reduce injury and mortality to bottlenose dolphins from hook-and-line fishing gear by educating fishermen about ways to avoid interactions with dolphins while fishing and provide them with Dolphin Friendly Fishing Tips - Increase bottlenose dolphin survival through better understanding of cause of illness and death as well as early detection and intervention of anthropogenic and natural threats because this audience would know how to help a stranded, injured or entangled marine mammal and to report these animals to the appropriate stranding network immediately. - Reduce injury, harm, and mortality to bottlenose dolphins by reducing illegal feeding and harassment activities because audiences will better understand the harm and consequence of these activities. They will learn how to recognize dolphin behaviors that are signs of harassment and also how to responsibly view dolphins in the wild. - Reduce injury and mortality of marine mammals from vessel collisions by educating mariners about marine mammal viewing guidelines and precautions they can take to avoid vessel strikes. A large van would be purchased and wrapped with colorful, eye-catching dolphin graphics and bold educational messages. Not only would this attract people during outreach but the wrap would also serve as a rolling billboard that the budget includes the potential to reach thousands when traveling throughout the Gulf States. The inside of the van would be custom wrapped illustrating and educating audiences about the topics above. The budget includes funds to purchase and customize the vehicle, as well as funds for salary of an educator/driver, fuel, per diem (food/lodging), outreach materials, and insurance & maintenance of the vehicle for at least 3 years. Date Entered: May 22, 2017	Yes	Yes	No	Yes	No	No	No	No	No	No	No	No	No	No	No	\$	500,000.00	\$	-	
	Eco Restoration	5735	8/16/2017	Marine Mammal Conservation Print Ads in Tourism & Trade Magazines	NOAA Project ID183575: Print ads in tourism magazines can sometimes be effective in reaching large audiences with the desire to interact with marine mammal in the wild. Unfortunately, magazines offering discounted or promo ad space usually means small ads in the back matter that will likely be overlooked. This project includes funding a contract with a marketing agency to produce and coordinate full or half page color ads with premium locations within the tourism and trade magazine that are widely distributed throughout Texas, Louisiana, Mississippi, Alabama, and Florida. Large colorful ads would attract readers and ensure these important messages are conveyed to target audiences. By choosing tourism and specific trade magazines to reach target audiences, the project will - Reduce injury and mortality to bottlenose dolphins from hook-and-line fishing gear by educating fishermen about ways to avoid interactions with dolphins while fishing and provide them with Dolphin Friendly Fishing Tips - Increase bottlenose dolphin survival through better understanding of cause of illness and death as well as early detection and intervention of anthropogenic and natural threats because this audience would know how to help a stranded, injured or entangled marine mammal and to report these animals to the appropriate stranding network immediately. - Reduce injury, harm, and mortality to bottlenose dolphins by reducing illegal feeding and harassment activities because audiences will better understand the harm and consequence of these activities. They will learn how to recognize dolphin behaviors that are signs of harassment and also how to responsibly view dolphins in the wild. - Reduce injury and mortality of marine mammals from vessel collisions by educating mariners about marine mammal viewing guidelines and precautions they can take to avoid vessel strikes. Date Entered: May 22, 2017	Yes	Yes	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	\$	500,000.00	\$	-
	Eco Restoration	5736	8/16/2017	Protect Wild Dolphin Billboards	NOAA Project ID183574: This project will reduce injury, harm, and mortality to bottlenose dolphins by reducing illegal feeding and harassment activities because residents and visitors would become aware that these activities are harmful and illegal. Billboards would be used to reach large audiences with important educational messages on highly traveled roads taken by residents and visitors to coastal areas throughout Texas, Louisiana, Mississippi, Alabama, and Florida. Billboard advertisements have the largest impact on the greatest number of people and are the most cost effective method for reaching target audiences. This project includes design, print, install, and rent for media space for billboards. Billboard would convey brief but important educational messages and images about the harm in illegally feeding and harassing wild dolphins. Locations of 20 billboards will be determined by traffic patterns and distance to popular coastal area where illegal feeding and harassment has been known to occur. Billboards will be maintained in these 20 locations for 2 years to ensure constant and consistent educational messaging in a cost effective manner. Date Entered: May 22, 2017	Yes	Yes	No	Yes	No	No	No	No	No	No	No	No	No	No	No	\$	530,000.00	\$	-	
	Eco Restoration	5737	8/16/2017	Printing and Distribution of Marine Mammal Conservation Outreach Materials & Signs	NOAA Project ID183572: Partners currently assist NOAA Fisheries with the distribution of dolphin conservation outreach materials and signs installation throughout the Gulf States. While these efforts are appreciated, outreach is inconsistent and often opportunistic, therefore lacking in many areas. This project would fund a full-time educator (2 years) to implement a thorough distribution plan and coordinate the installation of 800 dolphin conservation signs throughout Texas, Louisiana, Mississippi, Alabama, and Florida. The educator would document all distribution efforts and plot the installation of all signs on a map. By distributing outreach materials at fishing piers, marinas, businesses, tourism & education centers and at events, and by installing signs on waterways, piers, docks, and in marinas, this project will - Reduce injury and mortality to bottlenose dolphins from hook-and-line fishing gear by educating fishermen about ways to avoid interactions with dolphins while fishing and provide them with Dolphin Friendly Fishing Tips - Increase bottlenose dolphin survival through better understanding of cause of illness and death as well as early detection and intervention of anthropogenic and natural threats by informing audiences about how to help a stranded, injured or entangled marine mammal and to report these animals to the appropriate stranding network immediately. - Reduce injury, harm, and mortality to bottlenose dolphins by reducing illegal feeding and harassment activities because audiences will better understand the harm and consequence of these activities. They will learn how to recognize dolphin behaviors that are signs of harassment and also how to responsibly view dolphins in the wild. - Reduce injury and mortality of marine mammals from vessel collisions by educating mariners about marine mammal viewing guidelines and precautions they can take to avoid vessel strikes. Outreach materials include: (pdf of these materials: http://sero.nmfs.noaa.gov/protected_resources/outreach_and_education/index.html) - Protect Dolphins brochures - Southeast U.S. Marine Mammal and Sea Turtle Viewing Guidelines brochures - Marine Mammal Viewing Guidelines - How to Help a Stranded Marine Mammal cards - Dolphin Viewing Guidelines stickers - How Can You Help a Stranded Marine Mammal? Southeast U.S. Marine Mammal Stranding Network brochures - Dolphin & Whale 911 App/SEE & ID Dolphins & Whales App cards - Dolphin Friendly Fishing and Viewing Tips/Don't Feed Wild Dolphins cards - Cast with Care cards and stickers signs include: (pdf of these signs: http://sero.nmfs.noaa.gov/protected_resources/section_7/protected_species_educational_signs/index.html) - Save Sea Turtles and Dolphins - Help Stranded Marine Mammals - Protect Wild Dolphin (Harassment) - Don't Feed Wild Dolphins - Dolphin Friendly Fishing Tips. Date Entered: May 22, 2017	Yes	Yes	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	\$	275,000.00	\$	-
	Eco Restoration	5738	8/16/2017	Marine Mammal Aerial Outreach Banners	NOAA Project ID183571: The use of aerial banners (small plane pulling long banner) to relay important educational messages to target audiences has proven an effective outreach tool; banners can be used to educate beach-goers and motorized & non-motorized (jet skis, surfers, paddle boarders, etc.) vessel operators about presence of marine mammals and laws protecting them in the Southeast U.S. This project will reduce injury, harm, and mortality to bottlenose dolphins by reducing illegal feeding and harassment activities because target audiences will become aware that these activities are harmful and illegal. The project may also reduce injury and mortality of marine mammals from vessel collisions by making vessel operators aware of the presence of whales and way to avoid vessel strikes. A banner with the message "Don't Feed Wild Dolphins, It's Illegal" has been flown over areas where this harmful and illegal dolphin interaction is known to occur but also in areas where there are large numbers of tourists. These 300,000+ have reached over 300,000+ people during some flight times; this is common during spring break and other peak seasons. Banners have also been used when whales are seen close to shore and in areas where there are large numbers of motorized or non-motorized vessels near whales; the banners have made vessel operators aware of the presence of the whale(s) to avoid vessel strikes and harassment. This project involves flying aerial outreach banners in 10 coastal areas throughout Texas, Louisiana, Mississippi, Alabama, and Florida where illegal feeding and harassment activities are known to occur. The customized banners will educate people below to make them aware that these activities are harmful and illegal. Banners will be flown on 30 days each year per location, season, historic tourism numbers, and events will be considered when choosing which days the banners are flown. Banners would also be flown at times when other marine mammals (i.e. orcas, Brydeid TM whales) are seen within practical flight distance from shore and in areas where vessels are near to inform those vessel operators of the presence of whales and tips on how to avoid them. May 22, 2017	Yes	Yes	No	Yes	No	No	No	No	No	No	No	No	No	No	No	\$	180,000.00	\$	-	

Eco Restoration	5739	8/16/2017	Reduce Bycatch of Dolphins in Shrimp Trawls through Characterization of Risk Factors	<p>NOAA Project ID#13379: Bycatch in fishing gear is a leading source of mortality among marine mammals and one of the main threats identified for bottlenose dolphins in the Gulf of Mexico (Phillips & Rose 2014; Read et al. 2006). Dolphins are captured in shrimp trawls or entangled in the lay line, with hundreds of mortalities estimated per year in the Gulf of Mexico otter trawl portion of the fishery (Soldvilla et al. 2015, 2016). Dolphins often interact with gear by directly pulling out and feeding on fish from the shrimp trawl net, foraging within the trawl net itself, and rubbing on and foraging around the lay line. For fishermen, interactions may cause frustration over potential lost catch and damaged gear. For dolphins, interactions may cause entanglement/capture in the trawl and layline, and potential retaliation by fishermen (Vail 2016; DOI 2013). The nature of dolphin-trawl interactions may vary based on several factors, including gear type (e.g. otter vs skimmer trawl), gear configurations and fishing practices, location, and dolphin behavior. Therefore, identifying factors that increase the risk of dolphin entanglement/capture is crucial to informing conservation measures that will reduce related interactions and bycatch in the gear (Soldvilla et al. 2015; Hataway & Foster 2015). This project will conduct research to: (1) fully characterize the risk factors of dolphin entanglements/captures in both skimmer and otter trawls and other sources of interactions (e.g. fishermen retaliation); and (2) explore ways to reduce these risk factors (i.e. depredating pilfer fish from trawl nets). This project will collaborate with commercial fishermen by four otter trawl vessels from different ports to document and characterize dolphin interactions with the gear in various locations. Underwater imaging devices (e.g. DICSON, ARIS) will be used to image bottlenose dolphin interactions with the gear, along with detailed observations of dolphin behavior including nu. number of animals observed per tow, when the animals appear during the fishing process, and if possible, the individual dolphin identities. Based on identified risk factors and types of interactions observed, conservation and implementation strategies will be developed. This project will enhance survivorship and resiliency of bottlenose dolphins by identifying, evaluating, and implementing conservation measures to reduce dolphin bycatch and related mortalities. Date Entered: May 22, 2017</p>	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	\$ 550,000.00	\$	-
Eco Restoration	5740	8/16/2017	Improve Bycatch Reduction by Enhancing and Expanding the Gulf of Mexico Shrimp Trawl Fishery Observer Program	<p>NOAA Project ID#13382: Mean annual bycatch mortality estimates in the Gulf of Mexico portion of the shrimp otter trawl fishery indicate hundreds of dolphins are killed per year (Soldvilla et al. 2015, 2016). Estimates of mortality exceed 10% of sustainable levels for some coastal stocks of bottlenose dolphins and could be above sustainable levels for some estuarine stocks. Observer data is crucial to accurately determine the magnitude of dolphin bycatch in the shrimp trawl fishery and inform efforts to identify, evaluate, and implement ways to reduce bycatch. However, existing bycatch mortality estimate results are subject to numerous data limitations and biases (Soldvilla et al. 2015, 2016). In particular, for estuarine waters where mortalities may exceed sustainable levels, estimates are based on bycatch rates from coastal nearshore waters because of extremely limited observer coverage in estuarine waters. Shrimp fishery interactions with dolphins in estuarine waters have been documented, and this source of mortality needs to be accurately estimated to effectively monitor any restoration conservation measures to reduce bycatch. Further, critical information is needed to understand the shrimp trawl effort distribution in inshore waters as it relates to estuarine stocks of bottlenose dolphins. Therefore, this project will develop the information needed to reduce the bycatch of bottlenose dolphins in the shrimp fishery by enhancing: (1) observer coverage of both the skimmer and otter trawl portions of the fishery, and (2) observer data collection protocols. Specifically, observer coverage will be increased in inshore state waters of Alabama, Louisiana, Mississippi, and Texas, including non-federally permitted vessels and skimmer trawls (e.g. expand federal coverage into state waters, implement new program consistent with federal program, etc.). This will provide information on bycatch rates, estimate the distribution of fishery effort as it relates to estuarine stocks, and characterize patterns between dolphin interactions and spatiotemporal fishery distribution and gear type usage. Observer data collection protocols will also be enhanced by collecting: (1) genetic and photographic samples of bycaught animals and retaining the carcasses for necropsy to improve species identification; and (2) additional information on trawl gear materials and configurations that may contribute to dolphin-gear interactions (e.g. lay line, turtle excluder device descriptions) (Soldvilla et al. 2015, 2016). This project will enhance survivorship and resiliency of bottlenose dolphins by reducing critical uncertainties and providing information needed to plan and implement restoration projects to reduce lethal dolphin bycatch in shrimp trawl gear. The observer program is also a critical tool for directly monitoring and adaptively managing bycatch reduction solutions. Date Entered: May 22, 2017</p>	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	\$ 14,000,000.00	\$	-
Eco Restoration	5741	8/17/2017	Enhanced Observer Coverage in the GOM and South Atlantic Shrimp Fisheries and Expanding Observer Coverage to Unobserved Sectors of the Fisheries	<p>NOAA Project ID#13360: The Sea Turtle Early Restoration Project provides enhanced observer coverage in the shrimp otter trawl fishery by adding 300 observer sea days per year. In 2017 the project was implemented and in 5 months time, observations of turtle interactions increased 150%. Information from these interactions is critical to understanding effectiveness of TEDs. Additional observer coverage is needed on other trawl and on non-otter trawls (e.g. bait boats, inshore skimmers, etc.) to better understand the frequency and location of sea turtle interactions with trawl gear. The goal of the project is to gather additional information on sea turtle interactions in currently under or un-observed sectors of the fishery for a minimum of 3 years. Date Entered: May 22, 2017</p>	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	\$ 2,340,000.00	\$	-	
Eco Restoration	5742	8/17/2017	Evaluate and Implement Trap Pot Gear Modifications to Reduce Dolphin Bycatch	<p>NOAA Project ID#13398: Bycatch in fishing gear is a leading source of mortality among marine mammals and one of the main threats identified for bottlenose dolphins in the Gulf of Mexico (Phillips & Rose 2014; Read et al. 2006). Fishing with trap pot gear is ubiquitous in all Gulf coastal state waters, and entanglements of bottlenose dolphins in trap pot gear are documented within each state. Based on stranding data records from 2000-2015 in the Gulf, 13 bottlenose dolphins stranded with trap pot gear attached (NOAA National Marine Mammal Health and Stranding Response Database; unpublished data; accessed 2 May 2016). Stranding numbers may be up to three times higher because only a portion of animals that strand are detected and recovered (Pelhier et al. 2012; Wells et al. 2015; Williams et al. 2011). Dolphins are known to become entangled in the buoy line of the trap pots when foraging (e.g. pot-topping to get at bait inside) and around the pots, tugging on the buoy lines, and swimming in close proximity to the pots. Existing information on the specific bycatch mechanisms in the pot's buoy lines from these interactions include trap pot gear modifications (e.g. modified bait wells, stiffer buoy lines) and fishery practice changes (e.g. modifying buoy line lengths and bait type) (Noke & Odell 2002; McFee et al. 2006; McFee et al. 2007; Haymans 2005). Therefore, this project will reduce dolphin bycatch in trap pots by conducting research to: (1) characterize and understand trap pot gear use, modifications, and performance in different geographic regions and states in the Gulf; and (2) examine the feasibility and effectiveness of fishery practice modifications in collaboration with fishermen. The project will evaluate the feasibility of the specific trap pot gear modifications and its potential impact on fishing practices, gear performance and costs, as well as considering its performance in various environmental conditions and geographic areas. Potential effectiveness of reducing dolphin interactions/entanglements will be evaluated by observing whether any dolphin interactions and/or entanglements were documented with the gear (control and experimental) and at what frequency. The gear modifications and/or fishery practice changes that demonstrate the most bycatch reduction potential while being operationally feasible will be promoted to the fishery. Voluntary adoption of any gear modifications and fishery practice changes would be monetarily incentivized. This project will enhance survivorship and resiliency of bottlenose dolphins by identifying, evaluating, and implementing conservation measures to reduce dolphin bycatch in trap pot gear. Date Entered: May 22, 2017</p>	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	\$ 400,000.00	\$	-
Eco Restoration	5743	8/17/2017	Sea turtle restoration through soak time reduction in the eastern Gulf of Mexico bottom longline reef fish fishery	<p>NOAA Project ID#13492: This project addresses PDARR approach: i) Reduce sea turtle bycatch in commercial fisheries through identification and implementation of conservation measures. ii) The project will restore sea turtles by accelerating gear soak time reductions in the eastern Gulf of Mexico bottom longline (BL) reef fish fishery. Benefits include: (1) Restoration of injured fish species that occur in open ocean areas throughout the Gulf of Mexico; (2) Increase in health of fisheries by providing fishing communities with methodologies and incentives to reduce impacts to fishery resources; (3) Restoration of sea turtles in open ocean areas throughout the GOM. The bycatch of non-target species, including sea turtles in the BL fishery is of particular concern. To address sea turtle mortality in the fishery, NOAA Fisheries has implemented a time area closure and hook number limitations on the fishery. The hook number restriction (750) minimizes the amount of time needed to set and haul the gear, limiting the hook soak time and decreasing the likelihood that captured sea turtles will drown. Research conducted by the NOAA Fisheries, Harvesting Systems Unit in the BL fishery shows that reducing the hook soak times not only has the potential to reduce sea turtle mortality, but may also reduce turtle catch rate (Foster et al. 2017 in review). The current soak times in the fishery are much longer than needed to effectively harvest the targeted grouper. A reduction in soak time will give the fishers opportunities to make additional sets per day and therefore increase their effectiveness at harvesting grouper while restoring loggerhead sea turtle populations. We propose to financially compensate vessels to reduce the number of hooks deployed to 400 per set. In addition, there will be a time limit placed on the setting and hauling process. We estimate that a mean soak time of 55 minutes (50% less than the standard) can be achievable with this approach. Vessels will be compensated on a per-set basis for sets that meet the soak time threshold. Fishery observers or video monitoring systems will be placed on participating vessels to monitor and validate compensable sets. Observers will document the catch of target and bycatch species during the compensated sets. These catch rates will be compared to the general fishery during mandatory observer coverage for monitoring of the project and adaptive management. Date Entered: May 16, 2017 Date Edited: May 22, 2017</p>	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	\$ 10,600,000.00	\$	-
Eco Restoration	5744	8/17/2017	Systematic Observer Coverage of the Menhaden Fishery to Improve Bycatch Reduction Efforts	<p>NOAA Project ID#13392: Bycatch in fishing gear is a leading source of mortality among marine mammals and one of the main threats identified for bottlenose dolphins in the Gulf of Mexico (Phillips & Rose 2014; Read et al. 2006). Although there is currently no systematic observer coverage of the Gulf of Mexico menhaden purse seine fishery, historic and recent bycatch events of bottlenose dolphins have been reported. An observer program operating between 1992 and 1995 in the Gulf of Mexico, estimated as many as 172 dolphins were caught with up to 57 animals killed (Waring et al. 2015). A pilot observer program in 2011, documented three bycaught dolphins (Waring et al. 2015). Finally, fishermen reported 13 dolphin mortalities in their gear between 2000 and 2013 (Waring et al. 2015). A systematic observer program is crucial to determine statistically reliable estimates of bottlenose dolphin bycatch in the fishery and by dolphin stock. It will also characterize patterns of marine mammal interactions, spatio-temporal fishery distribution, and gear type usage. The menhaden fishery operates mainly in coastal and state waters of the Gulf, with the majority of effort occurring off Louisiana and Mississippi. The fishery operations are challenging to systematically observe with traditional observer coverage and in the way needed to statistically estimate serious injury and mortality of marine mammals incidental to the fishery. Therefore, this project will develop, conduct, and implement systematic observer coverage of the menhaden purse seine fishery in a manner that overcomes the challenges with traditional observer coverage. This may include using alternative observer techniques combined with exploring the use of innovative technologies (e.g. drones, aerial observer in fishery spotter plane, etc.) to enhance observer coverage efforts. This project will enhance survivorship and resiliency of bottlenose dolphins by reducing critical uncertainties and providing information needed to plan and implement restoration projects to reduce dolphin bycatch in menhaden purse seine gear. Conducting a systematic observer program is also a critical tool for directly monitoring and adaptively managing bycatch reduction solutions. Date Entered: May 22, 2017</p>	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	\$ 2,500,000.00	\$	-
Eco Restoration	5745	8/17/2017	Broad Scale Aerial Survey to Monitor Sea Turtle Trends in the Gulf of Mexico	<p>NOAA Project ID#13607: This project would entail broad-scale aerial surveys of the Gulf of Mexico to monitor long-term trends in abundance of large juvenile and adult loggerheads, Kemp's ridley, and leatherback turtles. The survey would incorporate recommended survey design/methodologies from the recently convened NOAA in-water workshop. Survey methodologies would be specifically designed and implemented to ensure a robust sample design that would yield long-term trend data. This project would contribute to establishing statistically rigorous and biologically meaningful baseline abundance data and would allow for long-term monitoring of trends in abundance over time. The project would be part of a broader in-water monitoring program and would provide information not only on trends in abundance, but on distribution to help inform restoration planning and monitoring. The cost is estimated as 1M/survey year, total costs will be dependent of survey design and survey frequency. For purposes of this submission, three survey years are initially anticipated. This project could also benefit marine mammals. Date Entered: May 22, 2017</p>	Yes	No	No	No	Yes	No	No	No	No	No	No	No	No	No	No	\$ 3,000,000.00	\$	-
Eco Restoration	5747	8/17/2017	High Resolution Multibeam Mapping and Groundtruthing of Mesophotic and Deepwater Corals in Northern GOM	<p>NOAA Project ID#13683: Multibeam mapping and groundtruthing of seafloor features are critical steps in understanding and protecting biological resources in the marine habitat. These data are crucial for managers and agencies to take steps to delineate areas for protection. Federal agencies and partners, primarily National Marine Fisheries Service, Gulf of Mexico Fisheries Management Service, Bureau of Ocean Energy Management, and National Marine Sanctuaries will utilize these data for future management actions. Potential sanctuary expansion boundaries, habitat maps, assessment of HAPC and BODMs No-Activity Zones are examples of uses of these high resolution products. While the FGBNMS has invested extensive resources over the last 20 years to map and groundtruth locations in the northwestern Gulf of Mexico, there are significant mesophotic and deepwater coral sites in the northern Gulf of Mexico lacking in multibeam coverage, and subsequent groundtruthing. As part of the groundtruthing activities, there is a need to define high density coral coverage for different depths 34" this term is used consistently in management and science applications, but is rarely defined. In regards to this, it will be valuable to have knowledgeable experts in the areas of spatial applications, and general familiarity with the biology in these depth ranges. There may be a need to develop this capacity. The OWN habitat restoration would consider partnering in and providing funding support to obtain full coverage of multibeam bathymetry of areas of interest, as well as support to conduct groundtruthing surveys to discern the biological resources within these areas, including defining "high density" terminology, and developing expertise capacity for key biology. These areas include the full extent of the areas encompassed by the five alternatives evaluated in the 2016 DEIS for sanctuary expansion of the FGBNMS, the full extent of the areas considered in the Gulf of Mexico Fisheries Management Council's potential No-Activity Zones, the full extent of BODM No-Activity Zones, the full extent of HAPC No-Activity Zones, and No-Activity Zones, and large blocks, topographic features, or seismic anomalies identified in various OCS leasing stipulations as triggers for biological review and setback. Date Entered: May 22, 2017 Date Edited: May 23, 2017</p>	Yes	Yes	No	Yes	No	No	No	No	No	No	No	No	No	No	No	\$ 5,000,000.00	\$	-

Eco Restoration	5748	8/17/2017	Open Ocean Deepwater Fauna of the Northern Gulf of Mexico: Assessment of Intermediate Trophic Level Fishes and Invertebrates	NOAA Project ID#183696: The project assesses the relative abundance and distribution of Gulf of Mexico outer-continental shelf and deep ocean fishes and invertebrates, specifically intermediate trophic level fauna (typically mesopelagic species) that constitute the prey base for various species addressed by NOAA/NMFS management objectives (e.g., cetaceans, sea turtles, billfishes, tunas, coastal migratory species, sea birds). The proposed project fills a scientific data gap addressing open-ocean ecosystem modeling for intermediate and high trophic level species; currently there are on-going projects addressing mesotrophic nekton and high trophic level predators (e.g., cetaceans), however, intermediate trophic level species that are the predator/prey link are not research objectives. DWH injury is demonstrated by overlap between the DWH oil spill and intermediate fauna distributions (fishery independent surveys NOAA/NMFS/ Mississippi Laboratories [MSL]; http://go.mfs.noaa.gov/infocenter/2016/07242016). The likelihood of success is high considering MSL has an extensive history of outer-continental shelf and deep ocean faunal assessments (bottom and mid-water trawling), and is well-staffed for scientific, vessel, gear and IT specialists. Mid-water trawling for intermediate trophic level fauna will be conducted both on the continental shelf and in deep ocean and will include, in part, areas with high trophic level species that prey on intermediate trophic level fauna. Bluefin Tuna spawning and large cetacean aggregation areas (B, C, attached chart); the area of DWH surface oiling overlap; the proposed survey area. The annual project is a restoration objective for sentinel sight monitoring of size population structure of the intermediate trophic level fauna can be used as a metric for assessing effects of future episodic oil spill events and for Gulf of Mexico ecosystem management related to the causes of population changes for high trophic level species. The survey also provides numerous sampling opportunities for trophic level stable isotope analysis and biological tissue sampling related to the residual effects of the DWH oil spill. There are several applicable sections of the NOAA/NMFS Comprehensive Restoration Plan Section 5, of particular importance is Restoring Natural Resources, Alternative A Comprehensive Integrated Ecosystem Restoration (5.3), fish and invertebrates (5.5.2), mesopelagic communities (5.5.1.3), sea turtles (5.D.4.6), cetaceans (5.D.5.3.1), and sea birds (5.D.6.1.1). Date Entered: May 24, 2017 Date Edited: May 26, 2017		Yes	No														\$	6,802,240.00	\$	-	
Eco Restoration	5749	10/12/2017	Understanding the oyster larva transportation system in the western Mississippi Sound	Please see attached Oyster restoration is dependent upon putting oysters in locations that 1) provide a suitable environment and 2) receive viable larvae from 30° upstream reefs and provide viable larvae to 30° downstream reefs. There is a notion that Bay St. Louis reefs provide larvae for much of Mississippi's harvestable reefs but this has yet to be confirmed. The objective of this project is to understand the larval transportation network in the western Mississippi Sound. This objective will be met through two tasks: 1) determining the locations of oyster reefs in Bay St. Louis and 2) modeling the larval transportation system using a hydrodynamic model.		Yes	No				Yes	No								\$	-	\$	-		
Eco Restoration	5750	10/16/2017	MDMR Remote Setting Facility	The oyster industry is an integral part of the Mississippi Gulf Coast 34° its economy, its history and its culture. The oyster industry has suffered greatly because of several natural and man-made disasters since 2005, including Hurricane Katrina, the BP Oil Spill and three separate openings of the Bonnet Carré Spillway (2008, 2011 and 2016). In 2014, oyster fishermen in Mississippi harvested nearly 500,000 sacks of oysters. In 2012, there were no sacks harvested, and in 2016, about 40,000 sacks were harvested. Gov. Phil Bryant created the Governor's Oyster Council on Restoration and Resiliency in 2015 to address the problems this industry faces and to come up with solutions. One of those solutions is a remote setting facility. The Mississippi Department of Marine Resources (MDMR) is proposing to construct, operate, and maintain a large-scale remote setting facility at the Port of Gulfport. This facility would assist in increasing the production of the natural oyster reefs along the Mississippi Gulf Coast. The proposed funding would allow for the planning, construction, operations, and monitoring activities that will be conducted to evaluate and document restoration effectiveness. If awarded, the MDMR has the resources, procedures and personnel to implement MDMR manage and operate a large-scale remote set operation to help increase the production of the natural reefs. The proposed facility would allow MDMR to produce oyster larvae after it attaches on cultch material introduced into the MS Sound and monitor the health and growth of those oysters. Remote setting is a method of producing oysters that differs from natural oyster spat by setting hatchery-reared larvae onto cultch (hard material for oyster larvae to attach usually shell, crushed concrete or limestone) at a remote location from the hatchery, spat are then planted on bottom or off-bottom. Remote setting has been successfully implemented for the production of oysters along the Pacific coast and the Chesapeake Bay area of the United States. Remote setting was developed in the Pacific in response to low natural oyster production as a result of over harvesting, pollution, disease and predation (Jones and Jones 1983, Henderson 1983). Initially, the Pacific coast oyster industry depended on imported seed, which became an unreliable source; however, with the development of hatcheries along the Pacific coast, remote setting continued to develop and thrived (Henderson 1983). In the Chesapeake Bay Area, remote setting developed in an effort to increase oyster production and to utilize disease-resistant larvae produced by hatcheries (Congrove et al. 2009). In Mississippi, the oyster industry relies primarily on planting cultch and naturally produced oyster larvae (wild larvae) to set on the material to produce market oysters. According to the Strategic Framework for Oyster Restoration Activities, Oyster reefs provide a broad variety of ecosystem services, including water quality improvement, shoreline stabilization (and associated habitat protection), carbon burial, habitat provisioning for fish and mobile invertebrates (including commercially and recreationally important species), habitat for epibenthic fauna, diversification of the landscape, and oyster production for commercial and recreational harvest. Because of their reef-building capabilities, oysters are commonly referred to as natural ecosystem engineers. The complex habitat formed by oysters enhances the recruitment and growth of economically valuable and ecologically important finfish and crustaceans, thereby increasing these species' productivity. Oysters filter sediments, phytoplankton, and detrital particles from the water column, potentially reducing turbidity and improving water quality. Oyster reefs also promote bacterially mediated denitrification, thereby counteracting nitrogen loading. By filtering water and enhancing light penetration, oysters promote other valuable estuarine habitats such as submerged aquatic vegetation. Nearshore oyster reefs can reduce erosion and stabilize coastal shorelines through sediment trapping and accretion, and by adding hard substrate adjacent to marsh edges. Intertidal oyster beds provide foraging sites at low tide, when the shellfish are accessible, to shorebirds such as the American oystercatcher. Although native oyster reefs have declined in many regions, the Gulf of Mexico oyster reefs are among the most productive in the world, with subtidal reefs supporting a robust oyster fishery. In 2015, the Gulf States produced 53 percent of the total U.S. oyster landings, with a dockside value of \$99.3 million. The eastern oyster also has cultural and historical importance to the GDM region. Oysters, along with other mollusks, have been an important food	Harrison	Yes	No		Yes	Yes											\$	9,360,000.00	\$	-	
Eco Restoration	5752	11/20/2017	Navigation Security in Mississippi Gulf Coast Working Waterfronts	Location: Port of Gulfport, Port of Pascagoula, Port Bienville, and navigation approaches State: Mississippi Counties: Harrison, Jackson, Hancock Basin: Mississippi Sound Latitude: 30.367420; Longitude: (-89.092819) Project Size: approximately 1000 acres of tidally influenced bottom land at each port Affected Area: approximately 1000 acres of tidally influenced bottom land at each port Project Background and Scope As the Port of Gulfport operates in the decade following Panama Canal expansion, it faces increasing competition for large container vessel accommodation and increasing demands for more efficient intermodal transportation. These challenges underscore the need for: > Strategic and cost-effective access channel and turning basin measurement and maintenance, > Cost-effective environmental monitoring especially during port expansion projects. Rapid survey responses to weather-related events that impact port readiness resulting from shoaling, sediment redistribution, and marine debris deposition. Effective and responsive capabilities to address these issues are needed to remain relevant in a dynamic competition for container cargo traffic as well as port maintenance funding and cargo fees. The project will focus on testing autonomous surface vehicles with integrated instrumentation for measuring channel clearance, bathymetry, and hazards to navigation security. With port management personnel, new concepts of operation will be developed and tested for providing responsive measures to ensure port accessibility. The expanded operation of this project is an operational service employed for Gulf Coast ports and harbors. One additional outcome of this project addresses beneficial use of dredged materials. Techniques and capabilities delivered during this project can be used to determine dredging priorities on a geographic basis with associated volume measurements of material to be dredged and relocated for restoration activities.	Harrison	Yes	No		Yes	No										Resilient	\$	11.00	\$	-	
Eco Restoration	5753	12/19/2017	Synoptic Monitoring of Wetland and Barrier Island Restoration Efforts to Inform Adaptive Management Decisions	Background: In coastal Mississippi, we have many restoration and conservation projects underway in the aftermath of the Deepwater Horizon spill. Additional projects are being planned from other sources in concert with future projects from RESTORE, NRD, and NFWF authorities. Cumulatively, these projects will influence coastal Mississippi for decades. A systematic monitoring effort, conducted on project as well as coastal watershed scales is recommended here to evaluate short-term performance of site-specific projects and examine long-term trends at watershed and ecosystems scales. Rationale: Ideally, a basic monitoring plan includes data collection and analysis over three stages of a project (Yepson, Moody and Schuster, 2016). These include: (1) Baseline Monitoring: determining the pre-construction condition of the site against which all future monitoring and analysis will be compared; (2) As-built configuration: initial survey of completed project to validate final configuration against design and engineering requirements; and (3) Long-term performance monitoring: periodic monitoring that compares the condition of the project site to the baseline. These longer-term measurements are needed to determine progress toward the restoration targets and inform adaptive management strategies that allow Mississippi program officials to evaluate outcomes and reconsider restoration approaches (Patten, 2006). This effort requires consistent data management and controls for multiple years of data collection, analysis, and presentation (Gundersen, Coates, and Garmestani, 2016). An interactive atlas of baseline measurements, maps, and information products precisely geo-registered and compiled at consistent scales will be the resultant outcome of each year's monitoring elements. Approach: The following technical themes will be common to this monitoring effort: 1. Project requirements and restoration targets were validated during previous DMR Tidelands projects 2. Technical approach to monitoring, data acquisition and geo-spatial scales previously validated in Tidelands projects. 3. Best available space-to-seafloor environmental technologies previously demonstrated. 4. Cost-effective monitoring activities will be implemented with unmanned environmental systems, both airborne and maritime, for conducting non-intrusive, precision measurements acquired on-demand according to spatial and temporal sampling needs. 5. Synoptic monitoring efforts and resulting measurements will be precisely geo-referenced using dynamically positioned control with RTK GPS systems (+/- 2 cm). 6. Geo-spatial framework for monitoring efforts previously developed and validated during DMR Tidelands projects 7. Cumulative, time-series, analyses over project sites will be developed at precision scales. Composite map products produced at sub-meter scales and verified with data collected at centimeter scales will form the basis for determining trajectory of restoration targets for each project site. Fall and Spring monitoring missions are anticipated for each project site for a period of 5 years with contingency for measurements following storm-related events.	Hancock, Harrison, Jackson, Counties	Yes	No		No	No											\$	10.75	\$	-	
Eco Restoration	5755	1/9/2018	Reforestation of coastal areas	Many coastal areas have lost native vegetation that creates vital habitat and stabilizes the shoreline. The long leaf pine was historically located in many areas along our coast and has been lost in recent years. I suggest a project to identify and reforest these areas (Batt Island, Deer Island, Point a la Paille, etc.)		Yes	No													\$	-	\$	-		
Eco Restoration	5756	1/18/2018	East McHenry Road Restoration and Improvements (Final Phase)	East McHenry road is a narrow gravel road that runs east to west from Hwy 15 through DeSoto National Forest to Hwy 49 in the southern part of Stone County, near the Harrison County Line. Several roads head south into Harrison County from East McHenry road. In 2014, the county received a FRAP grant for the first phase of improvement which will replace one low weight bridge and widen and repave 1.3 miles of the road. In 2015, a second FRAP grant was secured for 3 more bridges and 2.3 miles of road. The last portion of the project is 2.53 miles with one bridge. Currently, Stone County has no funding for this portion. If funded, Stone county will have a continuous paved road making traveling safer. The USFS as well as private sector timber growers will benefit from a paved route to the mill with no low weight bridges. The USFS has identified a colony of endangered Quill Wart down stream from several bridges on the second phase. By paving and grassing, the silt from the gravel/land roads will no longer impact the streams nor impact the quill wart. In general, this project improves economy, hydrology, and environment.	Stone	Yes	Yes	100000	Yes	No											\$	3,140,000.00	\$	-	
Eco Restoration	5758	1/24/2018	non-destructive removal of oil/gas infrastructure	NOAA Project ID#13746: Rather than exploding obsolete oil and gas infrastructure, with the concomitant death of fish, turtles, etc, these structures can be cut and either left in place or removed. It is more costly than blowing up rigs but it has the direct restoration benefit that the fish that would otherwise have been killed are not killed. Date entered 10/12/2017		Yes	No													\$	-	\$	-		

Eco Restoration	5759	1/24/2018	Ecosystem restoration by decreasing gulf menhaden catch and effort	<p>NDAA Project ID# 13491: The Gulf menhaden is a forage for a wide diversity of fish, bird, and marine mammal populations that inhabit the Gulf of Mexico, its estuaries, wetlands and tributaries. Annually, the purse seine fishery targeting this species removes about 1 billion pounds (450,000 metric tons, mt) of living biomass from the ecosystem. While that biomass is dominated by gulf menhaden, substantial quantities of commercially, recreationally, and ecologically important species are also extracted as bycatch. In addition, deleterious fishery interactions with protected species occur, such as with bottlenose dolphins and sea turtles. Hundreds of billions of larval menhaden (and relatives) were likely killed as a result of the DWH oil spill (PDARP 2017). This project seeks to produce ecosystem benefits via a short-term, voluntary, company-specific quota program for a specified period. Proposed is a 2018-2019 pilot program. The fleet's future expected annual landings beyond 300,000 metric tons for a 5-yr period, which would represent about a 53% decrease in pre-oil spill (i.e., 2005-2009) landings. This initial offer would total \$75M for: (1) the two menhaden reduction companies to hold themselves to a 5-yr voluntary total allowable catch (TAC) of 300,000 metric tons; and (2) development and implementation of a multi-species/fishery monitoring and assessment program with which to quantify impacts. Compensation would be allocated between the two companies (Omega Protein and Daybrook) based on their 2005-2009 landings. The compensation would offset significant profits to current operators, as the companies would not have operating costs for that portion of the 'landings' beyond the 300,000 mt TAC. Taken together, the diversity of living resources and fisheries that are predicted to benefit, and the magnitude of those benefits, this action may be a viable, cost-effective and potentially transformative opportunity to implement ecosystem restoration in the Gulf of Mexico. Project benefits include (1) restoring the ecosystem-level prey base for multiple injured taxa, including marine mammals, sea turtles, sea birds, and fish; (2) enhancing restoration of marine mammals by ensuring sufficient availability of food resources (e.g., damage assessment data indicates low body-weights of Florida Bay bottlenose dolphins after the spill); (3) reducing bycatch of sea turtles, marine mammals, and non-targeted fishes; and (4) enhancing recreational and commercial fishing opportunities by allowing other fish species and fisheries to indirectly benefit from the increased availability of forage fish that will allow for their faster growth and greater total reproduction (e.g., red drum, king mackerel, and several reef fishes). Project impacts are quantified through analysis of data routinely collected in fishery-independent and fishery-dependent surveys conducted by state and federal scientists that includes of recruitment, cohort strength, reproduction and body condition of multiple taxa will increase after project implementation, as rates commensurate with that taxa's life history. Date entered: 5/16/2017</p>		Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	\$ 75,000,000.00	\$ -	
Eco Restoration	5761	1/26/2018	County Wide Paving Project	Stone county has a lot of public roads that are still unpaved. The gravel is a constant maintenance issue. We also have deteriorating "older" asphalt roads that need to be repaved. A general repaving project would help us catch up on some roads that otherwise will not have funds to pave.	Stone	Yes	Yes	200000	No	No	No	No	No	Yes	No	No	No	No	No	No	\$ 1,000,000.00	\$ -		
Eco Restoration	5762	2/9/2018	Pilot Study SAV Mitigation	Compton Engineering has encountered several projects where submerged aquatic vegetation is present and impacts need to be mitigated for. Two projects, evaluate success and prepare a guidance document for the Back Bay of Biloxi to located suitable habitat that is devoid of SAV, harvest mature eelgrass plants, plant test plots and monitor for one to two years, complete success and prepare a guidance document for other SAV mitigation projects.	Jackson	Yes	No		No	No	No	No	No	No	No	No	No	No	No	No	\$ 250,000.00	\$ -		
Eco Restoration	5764	2/23/2018	Helena Utility District Sanitary Sewer and Water System Expansion	<p>The Helena community is located in southeast Jackson County, Mississippi and currently consists of approximately 650 homes. The area has historically high-groundwater and low permeability soils. This combination of conditions has led to a septic system failure rate estimated at 98 percent. Expansion of the existing Helena Utility District sanitary sewer collection system would serve to prevent further pollution from failed septic systems. Additionally, due to the high contamination levels in the near surface water aquifer, water distribution system expansion is necessary to provide potable water to the Helena Citizens who are currently utilizing private wells as their sole potable water source.</p> <p>The Helena Utility District was formed in 2006 and consists of approximately 290 customers connected to a low pressure sewer system and 500 customers connected a potable water distribution system. This proposed project will include expansion of the existing Helena Utility District sanitary sewer collection and potable water distribution systems to connect to the remaining 360 homes that currently utilize individual septic systems for wastewater treatment and private groundwater wells as their sole water source. The proposed wastewater system extension will include construction of low pressure sewer piping, service piping, and grinder pumps at each residence to be served. The potable water distribution system extension will include construction of distribution pipes, hydrants, and water service lines. When completed, the project will provide service to the remaining residents with a fully automated individual wastewater collection pumping system, potable water service, and fire protection. Benefits achieved will include an improved community environment, a reduction in contamination of surrounding surface water (Black Creek and subsequent receiving streams including the Satatapa and Pascagoula Rivers) and groundwater, quality potable water source regulated by the Mississippi Department of Health, and an increase in public safety with the extension of fire protection.</p>	Jackson	Yes	Yes	100000	No	No	No	No	No	No	No	No	No	No	No	No	\$ 10,000,000.00	\$ -		
Eco Restoration	5765	2/25/2018	Mississippi Oyster Shell Recycling Program	<p>The Mississippi Commercial Fisheries United, Inc. proposes for funding an oyster shell recycling program that engages Mississippi restaurants, oyster processors, and the general public to establish a recycling program that provides free oyster shell pickup, training, and drop-off locations to recycling otherwise discarded oyster shells. Oyster shells are the preferred cultch material for oyster reef restoration but due to their limited supply has been minimally in recent restoration efforts. Alternative cultch materials have thus far proven to be largely ineffective at restoring oyster reefs in the Mississippi Sound.</p> <p>Funds for this project would include the procurement and management for necessary collection materials, transportation vehicles, employees, land for shell staging, and heavy equipment for shell sanitation. Similar successful projects have been implemented in other Gulf States such as Alabama, Louisiana, and Texas. The Mississippi Commercial Fisheries United, Inc. launched a successful pilot oyster shell recycling effort in 2017 that focused on collecting oyster shells at a local seafood festival, nearly 2,000 lbs of oyster shells were collected in one day. A detailed project proposal and estimated project budget for the proposed Mississippi Oyster Shell Recycling Program included as an attachment.</p>	George,Harrison,Jackson,Hancock,Mobile,Stammy,Stone,Pearl River	Yes	Yes		Yes	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	\$ 300,000.00	\$ 50,000.00	
Eco Restoration	5766	2/25/2018	Reef Fish Community Permit/ Quota Bank	<p>The Mississippi Commercial Fisheries United, Inc. proposes for funding a Mississippi Reef Fish Community Permit/ Quota Bank. Mississippi is the most under served state in the commercial Gulf reef fish fishery. Mississippi has the least amount of Gulf reef fish permit holders and individual fishing quota shareholders. This project would help to increase commercial access to reef fish species such as red snapper, a variety of groupers, a variety of snappers, and various other fish species that require a federal Gulf reef fish permit to harvest commercially. This program would also help to reduce dead discards in the reef fish fishery by providing the needed quota to harvest fish that would otherwise have to be discarded at sea.</p> <p>This project would greatly benefit Mississippi's coastal economy by increasing access and landings for several species of reef fish. Mississippi's commercial fishermen, seafood dealers, seafood markets, and restaurants would all benefit from this project. Similar programs have been implemented across the Nation to provide community protections for limited access commercial fisheries. Visit www.catchinvest.com to learn more about permit and quota bank work. The need to diversify the income of seafood industry members is greatly needed due to the severe decline in revenues generated from the local oyster and shrimp industry following the BP oil spill.</p>	Hancock,Stone,Jackson,Pearl River,George	Yes	No		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	\$ 1,000,000.00	\$ 50,000.00	
Eco Restoration	5768	2/25/2018	Off-Bottom Oyster Aquaculture Advancement & Investment Program	<p>The Mississippi Commercial Fisheries United, Inc. proposes for funding a Mississippi Off-Bottom Oyster Aquaculture Advancement & Investment Program. Off-bottom oyster aquaculture has been proven successful in surrounding states and is currently pending permit approval in Mississippi territorial waters. This program would help establish a cooperative for potential off-bottom oyster farmers and investment capital to help jump start the off-bottom oyster aquaculture industry in Mississippi. The program would also help to increase Mississippi overall oyster production and provide stimulus to Mississippi's coastal economy.</p> <p>Currently, obtaining sufficient investment capital is a barrier to entry in the off-bottom oyster aquaculture industry. Preliminary estimates place the cost of entry into the industry at about \$50,000 per acre. The program proposed would give traditional oyster harvesters and oyster industry members priority to access funds that could be used to establish private off-bottom oyster farms.</p>	Hancock,Jackson,Harrison	Yes	No		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	\$ 10,000,000.00	\$ -	
Eco Restoration	5769	2/25/2018	Sea Turtle Conservation and Shrimp Trawl Vessel Electronic Monitoring Program	<p>The Mississippi Commercial Fisheries United, Inc. proposes funding for a Sea Turtle Conservation and Mississippi Shrimp Trawl Vessel Electronic Monitoring Program. This program would initially target skimmer trawl shrimping vessels that are currently not required to use Turtle Excluder Devices (TEDs) but must adhere to tow time regulations that limit the length of the tow times to 55 minutes or 75 minutes depending on the time of the year. A pending NOAA rule has been promulgated that would require skimmer trawl vessels to use TEDs has stalled. Therefore, this program proposes a viable alternative to the use of TEDs in skimmer trawls.</p> <p>This program proposes funding to establish a voluntary incentive based program for Mississippi shrimpers to implement and use electronic data loggers in the cod end of shrimp trawls. This data logger is water resistant and records water level data to determine when a net is submerged in water and for how long. This data would give an accurate representation of shrimp vessels adherence to tow times. These data logging units can transmit the recorded data via Bluetooth technology or be downloaded through hard wire. This data could be used to help inform compliance with tow time regulations and provide a viable alternative to the use of Turtle Excluder Devices. This technology could also be used in any type of shrimp trawl to help document effort and tow times in the shrimp fishery. This technology could also help provide verifiable data to provide shrimp buyers with tow time data to ensure quality production and add-value to domestically harvested shrimp. This program can also help the shrimp industry to obtain sustainability certification by verifying compliance with regulations that minimize lethal interactions with sea turtles.</p>	Hancock,Jackson,Harrison	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	No	No	\$ 750,000.00	\$ 50,000.00
Eco Restoration	5771	2/25/2018	Shrimp Industry Task Force (Advisory Panel)	<p>The Mississippi Commercial Fisheries United, Inc. proposes funding for the establishment of a Mississippi Shrimp Industry Task Force. The purpose of the task force (advisory panel) is to engage stakeholders throughout the shrimp industry to bring forth ideas and recommendations to implement sustainability projects and management measures. Mississippi currently does not have a shrimp industry task force. The task force would not have any regulatory power and would only be able to provide recommendations to the proper state and/or federal governing bodies.</p> <p>This program request funds to conduct meetings, outreach, and procure certain equipment necessary to fulfill the objectives of the task force. Funds would be used to secure meeting venues; appoint and compensate task force members for time contributions; purchase technological equipment to record and broadcast meetings; and conduct outreach to the shrimp industry and local community.</p>	Hancock,Jackson,Harrison	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	\$ 250,000.00	\$ -
Eco Restoration	5772	2/25/2018	Fin-fish Industry Task Force (Advisory Panel)	<p>The Mississippi Commercial Fisheries United, Inc. proposes funding for the establishment of a Mississippi Fin-fish Industry Task Force. The purpose of the task force (advisory panel) is to engage stakeholders throughout the fin-fish industry to bring forth ideas and recommendations to implement sustainability projects and management measures. Mississippi currently does not have a fin-fish industry task force. The task force would not have any regulatory power and would only be able to provide recommendations to the proper state and/or federal governing bodies. This task force would include representation from the recreational, commercial, and far-tire sectors that are engaged in the harvest of fin-fish species including but not limited to speckled trout, red fish, flounder, menhaden, reef fish, and tuna.</p> <p>This program request funds to conduct meetings, outreach, and procure certain equipment necessary to fulfill the objectives of the task force. Funds would be used to secure meeting venues; appoint and compensate task force members for time contributions; purchase technological equipment to record and broadcast meetings; and conduct outreach to the fin-fish fishing industry and local community.</p>	Hancock,Jackson,Harrison	Yes	No		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	No	\$ 250,000.00	\$ -
Eco Restoration	5773	2/25/2018	Oyster Industry Task Force (Advisory Panel)	<p>The Mississippi Commercial Fisheries United, Inc. proposes funding for the establishment of a Mississippi Oyster Industry Task Force. The purpose of the task force (advisory panel) is to engage stakeholders throughout the oyster industry to bring forth ideas and recommendations to implement sustainability projects and management measures. Mississippi currently does not have an oyster industry task force. The Government's 2013 bid no longer convenes due to a lack of funding. The task force would not have any regulatory power and would only be able to provide recommendations to the proper state and/or federal governing bodies.</p> <p>This program request funds to conduct meetings, outreach, and procure certain equipment necessary to fulfill the objectives of the task force. Funds would be used to secure meeting venues; appoint and compensate task force members for time contributions; purchase technological equipment to record and broadcast meetings; and conduct outreach to the oyster industry and local community.</p>	Hancock,Jackson,Harrison	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	No	\$ 250,000.00	\$ -
Eco Restoration	5774	2/25/2018	Marine Debris and Derelict Trap Removal Incentive Program	<p>The Mississippi Commercial Fisheries United, Inc. proposes the Mississippi Derelict Marine Debris and Trap Removal Incentive Program. Similar programs have proven to be successful in removing marine debris and derelict crab traps throughout the Mississippi Sound. The difference in this program and previous program is that this program proposes to utilize both commercial trappers and commercial shrimpers to remove and properly dispose of marine debris and derelict crab/lobster traps. Commercial shrimpers often encounter derelict crab traps in the inshore waters of the Mississippi Sound and lobster/lobster traps in the Gulf of Mexico. Marine debris is ongoing probably annual events in the Gulf of Mexico, including tropical storms and hurricanes.</p> <p>This program seeks to incentivize the proper disposal of marine debris and derelict traps that are incidentally caught to help reduce the overall mass of marine debris in the Gulf of Mexico and coastal waters. Additionally, trap fishermen would be engaged to help identify locations of derelict traps and also to help retrieve derelict trap or marine debris. A nominal stipend would be paid to legally licensed commercial fishermen participants to participate in the program. The program would also request fund to establish disposal sites (i.e., dumpsters and fenced areas) at locations that are convenient for the removal of marine debris and derelict traps.</p>	Hancock,Jackson,Harrison	Yes	Yes		Yes	Yes	Yes	Yes	No	No	No	No	No	No	No	No	No	No	\$ 2,000,000.00	\$ -

Eco Restoration	5775	3/1/2018	City of Lumberton Stormwater & Sewer Systems Improvements Project	The City of Lumberton, located in Pearl River and Lamar Counties, is proposing a project concerning much needed improvements to the storm water and sewer collection systems in a 65 Acre drainage basin area in the middle of the City that includes the Lumberton Schools main campus, which includes K-12 grades in various buildings. This project contains 5 distinct phases that need immediate attention to correct multiple problems including flooding and back-up/overflowing of sanitary sewage in residential areas and on the school campus/within school buildings. All of these problems (storm water & sewer) combine together in this portion of the City as well as its watershed areas which empty into Dry Branch and Red Creek. As you will see in the attached project layout map, the 5 phases of proposed work are as follows: Phase 1: 65 Acre Drainage Basin Storm Water Improvements - Removal/replacement of several existing storm water collection pipes and other underground drainage structures that are broken and/or under-sized. These existing structures have failed, causing severe damage including scouring/undermining/structural damage of numerous residential homes. Existing drainage ditches are also not sized appropriately to adequately handle storm runs. This broken storm water collection system causes flooding at various points in the Lumberton School Campus, which is at the downstream end of the drainage basin before it empties into Dry Branch. Phase 2: Drainage Channel Improvements - Improve approximately 500 Linear Feet of an existing drainage channel on the south side of the school campus that currently is under-sized and not able to adequately handle storm water run off. Neither does this channel have adequate storage capacity to handle back up flow from Dry Branch/Red Creek during flood events. This contributes to flood waters backing up onto the school campus. Phase 3: New Drainage Installation - in an effort to redirect and relieve a large portion the amount of storm water flow that comes through the school campus, install approximately 1,300 Linear Feet of new underground storm water drainage collection pipes/structures down highway 11 in that will empty into Dry Branch where it crosses highway 11. Phase 4: Re-route existing sanitary sewer lines - currently the City's sanitary sewer collection system transmits sewage through underground pipes that go directly through the school campus. In previous years during heavy rain events these pipes have backed up and overflowed on school property. While small scale measures have been attempted to reduce/eliminate this problem in years past, the problem still remains today. This phase would eliminate this route and redirect upstream sanitary sewer flow around the school's campus with the installation of new sewer mains and pump station improvements. Phase 5: Sewage Lagoon Sludge Removal - As you will see on the attached layout map, the City's 4.2 Acre aerated sewage lagoon is located not very far from the project area, further downstream along Dry Branch. The lagoon's permitted effluent flow empties into Dry Branch, which very soon afterwards empties into Red Creek. The lagoon is in major need of having its sludge removed from its main cell in order that it can once again effectively treat influent flow up to its design capacity along with any overflow that would come into it due to large seasonal rain events.	Lamar	Yes	Yes	85000	No	No	No	No	Yes	No	\$	2,050,300.00	\$	-	-	-	
Eco Restoration	5780	5/21/2018	Ocean Springs High School Aquaculture Expansion	This project will be based on the addition of two fully equipped greenhouses at Ocean Springs High School. By adding these new greenhouses, Ocean Springs High School (OSHS) will be able to increase the number of students who take aquaculture classes at OSHS, and it will also successfully maintain the program for 3-4 years. This past year, 89 students signed up to take Aquaculture. At the current size, full capacity is 36 students (18 per class) and 18 students for aquaculture 2 classes. The addition of two new greenhouses would give each class its own building. This would increase class sizes from 18 students to 25 students in each class for a total of 75 students per year. These students will be trained and graduate with work force skills in aquaculture, water quality, and any marine fisheries job that may become available. The program also focuses on eco-restoration. In the past, the program has raised, oysters, blue crabs, speckled trout, flapia and striped bass. The oysters, blue crabs and speckled trout were released in the Mississippi Sound. With the addition of the greenhouses, other species will be evaluated to be included in the program. The greenhouses are also used in collaboration with kindergarten and fourth grade students as they come to the high school and learn systems with planting and raising fish. Students then grow these plants in smaller greenhouses and eat what is grown. In addition to these greenhouses, a smaller greenhouse will be opened to the special education department. This greenhouse will be used by these students to grow vegetables and other resources to use in their classes.	Jackson	Yes	Yes	17000	No	Yes	No	No	Yes	No	\$	290,000.00	\$	-	-	-	
Eco Restoration	5783	6/20/2018	Increase marine mammal survival through the development of standardized protocols	NOAA Project ID# 13642: In the Gulf of Mexico, there are numerous diverse parties conducting marine mammal-related activities. Some of these parties include research groups conducting health assessments and stock abundance surveys, rapid response groups investigating natural and anthropogenic impacts on animals, and also laboratories performing biological, chemical, and statistical analyses on marine mammal data/samples. However, not every party involved in marine mammal-related activities has the same level of training, resources, and/or funding, such that each organization may have disparate capabilities and may be collecting and analyzing information differently. To be able to analyze data on a region-wide scale, there is a need to develop consistent and standardized protocols. This project focuses on developing tools, protocols, training, and infrastructure to support standardized and integrated data collection and analysis, region-wide. To support this effort, web portals and archival systems can be developed to facilitate rapid dissemination of information. This project idea supports planning for all parties working on marine mammal-related activities, it supports monitoring to ensure that data collected can be properly analyzed and management systems, and builds capacity through the region by enabling other parties working on marine mammal-related activities to contribute their work in a meaningful and integrated fashion. This project idea increases the survivorship and resiliency of marine mammals in the Gulf of Mexico by developing consistent and standardized protocols that will aid in the restoration, management, and monitoring of marine mammal species. Date entered: May 22, 2017		Yes	No		No	No	No	No	No	\$	-	\$	-	-	-		
Eco Restoration	5784	7/10/2018	Wolf River Land Protection	The Land Trust for the Mississippi Coastal Plain (LTMCP) is an accredited Land Trust dedicated to the conservation, promotion, and protection of open spaces and green places of ecological, cultural, or scenic significance in the counties of the Mississippi Coastal Plain. LTMCP utilizes both fee simple and conservation easement tools in conserving land for the benefit of habitats, species, and recreation. This parcel includes 10,203 feet (1.19 miles) of riverfront buffer along the Wolf River. LTMCP currently protects and manages approximately 22 miles of riverfront conservation easement surrounding this property along the Wolf River. The land is mostly hardwood forest with wetland and riparian habitats with upland pine forest. Protection of these upstream lands is vital to the water quality and erosion control downriver and into the Mississippi Sound. Ecological Value: Provides valuable habitat for a wide variety of plants and animals native to Mississippi, as well as migratory birds. &COPportunities for low impact recreational activities such as birdwatching and other wildlife observation, fishing, and kayaking. &CCreates open spaces that provide areas for people to witness and learn about their natural environment.	Hancock	Yes	No		No	No	No	No	Yes	No	\$	-	\$	-	-	Land Acquisition	
Eco Restoration	5785	7/10/2018	Turkey Creek Land Protection	The Land Trust for the Mississippi Coastal Plain (LTMCP) is an accredited Land Trust dedicated to the conservation, promotion, and protection of open spaces and green places of ecological, cultural, or scenic significance in the counties of the Mississippi Coastal Plain. LTMCP utilizes both fee simple and conservation easement tools in conserving land for the benefit of habitats, species, and recreation. This parcel consists of approximately 25 acres of forested shrub wetland that borders each side of Turkey Creek as well as approximately 13 acres of upland pine forest that has been thinned. Protection of these upstream lands is vital to the water quality and erosion control downriver and into the Mississippi Sound. LTMCP protects and manages 237 acres of land along the Turkey Creek watershed, in an effort to create a continuous corridor that buffers both sides of Turkey Creek. Ecological Value: Protects properties as a buffer area for storm surge by providing dispersal and displacement in the event of flooding waters. These flooding waters have a natural function of turnover and flushing of coastal wetlands. &CCProtects areas that provide clean water for our natural resources further down the watershed. &COProvides valuable habitat for a wide variety of plants and animals native to Mississippi, as well as migratory birds. &CCreates open spaces that provide areas for people to witness and learn about their natural environment. &CCreates open spaces that provide areas for people to witness and learn about their natural environment.	Harrison	Yes	No		No	No	No	No	Yes	No	\$	-	\$	-	-	Land Acquisition	
Eco Restoration	5786	7/10/2018	Bayou Acadian Land Protection	The Land Trust for the Mississippi Coastal Plain (LTMCP) is an accredited Land Trust dedicated to the conservation, promotion, and protection of open spaces and green places of ecological, cultural, or scenic significance in the counties of the Mississippi Coastal Plain. LTMCP utilizes both fee simple and conservation easement tools in conserving land for the benefit of habitats, species, and recreation. This parcel consists of approximately 18.10 acres of forested shrub wetland that borders the Wolf River for a total of 787 feet. The Wolf River runs through Bayou Acadian into the Bay of St. Louis. Protection of these upstream lands is vital to the water quality and erosion control downriver and into the Mississippi Sound. Ecological Value: Protects properties as a buffer area for storm surge by providing dispersal and displacement in the event of flooding waters. These flooding waters have a natural function of turnover and flushing of coastal wetlands. &CCProtects areas that provide clean water for our natural resources further down the watershed. &COProvides valuable habitat for a wide variety of plants and animals native to Mississippi, as well as migratory birds. &CCreates open spaces that provide areas for people to witness and learn about their natural environment.	Harrison	Yes	No		No	No	No	No	Yes	No	\$	-	\$	-	-	Land Acquisition	
Eco Restoration	5788	7/11/2018	Cedar Lake Island Land Protection	The Land Trust for the Mississippi Coastal Plain (LTMCP) is an accredited Land Trust dedicated to the conservation, promotion, and protection of open spaces and green places of ecological, cultural, or scenic significance in the counties of the Mississippi Coastal Plain. LTMCP utilizes both fee simple and conservation easement tools in conserving land for the benefit of habitats, species, and recreation. These parcels consist of approximately 6 acres of forested shrub wetland, and 2.89 acres of estuarine and marine wetland habitat that borders both sides of the Tchoutacabouffa River. Protection of these upstream lands is vital to the water quality and erosion control downriver and into the Mississippi Sound. LTMCP protects and manages 49.71 acres adjacent to the Cedar Lake Island Land Protection project. Ecological Value: Protects properties as a buffer area for storm surge by providing dispersal and displacement in the event of flooding waters. These flooding waters have a natural function of turnover and flushing of coastal wetlands. &CCProtects areas that provide clean water for our natural resources further down the watershed. &COProvides valuable habitat for a wide variety of plants and animals native to Mississippi, as well as migratory birds. &CCreates open spaces that provide areas for people to witness and learn about their natural environment. &CCreates open spaces that provide areas for people to witness and learn about their natural environment.	Harrison	Yes	No		No	Yes	No	No	Yes	No	\$	-	\$	-	-	Land Acquisition	
Eco Restoration	5789	7/11/2018	Ocean Springs Land Protection	The Land Trust for the Mississippi Coastal Plain (LTMCP) is an accredited Land Trust dedicated to the conservation, promotion, and protection of open spaces and green places of ecological, cultural, or scenic significance in the counties of the Mississippi Coastal Plain. LTMCP utilizes both fee simple and conservation easement tools in conserving land for the benefit of habitats, species, and recreation. This parcel consists of approximately 0.28 acres of freshwater emergent wetland, and 3.51 acres of freshwater forested wetland habitat that borders Old Fort Bayou. An intermittent stream is present on the property. Protection of these upstream lands is vital to the water quality and erosion control downriver and into the Mississippi Sound. LTMCP is also looking to acquire 63.45 acres of adjacent land to the south. These two parcels share an intermittent stream that flows into Old Fort Bayou. Ecological Value: Protects properties as a buffer area for storm surge by providing dispersal and displacement in the event of flooding waters. These flooding waters have a natural function of turnover and flushing of coastal wetlands. &CCProtects areas that provide clean water for our natural resources further down the watershed. &COProvides valuable habitat for a wide variety of plants and animals native to Mississippi, as well as migratory birds. &CCreates open spaces that provide areas for people to witness and learn about their natural environment.	Jackson	Yes	No		No	No	No	No	Yes	No	\$	-	\$	-	-	Land Acquisition	
Eco Restoration	5790	7/11/2018	Tchoutacabouffa River Land Protection	The Land Trust for the Mississippi Coastal Plain (LTMCP) is an accredited Land Trust dedicated to the conservation, promotion, and protection of open spaces and green places of ecological, cultural, or scenic significance in the counties of the Mississippi Coastal Plain. LTMCP utilizes both fee simple and conservation easement tools in conserving land for the benefit of habitats, species, and recreation. This parcel consists of approximately 26.8 acres of freshwater emergent wetland, 1.35 acres of freshwater pond, 1.38 acres of riverine habitat, and 6.8 acres of forested emergent wetland habitat. Bayou Costapa and Tuachanie Creek meet the Tchoutacabouffa River at this parcel. Also, LTMCP manages and protects a total of 206 acres directly adjacent to this property along the Tchoutacabouffa River including the Tchoutacabouffa Nature Preserve. Protection of these upstream lands is vital to the water quality and erosion control downriver and into the Mississippi Sound. With the acquisition of this parcel, LTMCP would create a corridor of conservation lands 2.1 miles long along the Tchoutacabouffa River. Ecological Value: Protects properties as a buffer area for storm surge by providing dispersal and displacement in the event of flooding waters. These flooding waters have a natural function of turnover and flushing of coastal wetlands. &CCProtects areas that provide clean water for our natural resources further down the watershed. &COProvides valuable habitat for a wide variety of plants and animals native to Mississippi, as well as migratory birds. &CCreates open spaces that provide areas for people to witness and learn about their natural environment. &CCreates a corridor 2.1 miles long along the Tchoutacabouffa River.	Harrison	Yes	No		No	Yes	No	No	No	Yes	No	\$	-	\$	-	-	Land Acquisition
Eco Restoration	5791	7/11/2018	Sandhill Crane Land Protection	The Land Trust for the Mississippi Coastal Plain (LTMCP) is an accredited Land Trust dedicated to the conservation, promotion, and protection of open spaces and green places of ecological, cultural, or scenic significance in the counties of the Mississippi Coastal Plain. LTMCP utilizes both fee simple and conservation easement tools in conserving land for the benefit of habitats, species, and recreation. This parcel consists of approximately 3 acres of freshwater forested wetland and 8.75 acres of mixed hardwood upland. LTMCP are interested in acquiring and restoring a total of approximately 188 acres of adjacent property. This block of conservation land would share a border with the Mississippi National Wildlife Refuge to the East. Ecological Value: Protects areas that provide clean water for our natural resources further down the watershed. &COProvides valuable habitat for a wide variety of plants and animals native to Mississippi, as well as migratory birds. &CCreates open spaces that provide areas for people to witness and learn about their natural environment. &CCreates open spaces that provide areas for people to witness and learn about their natural environment.	Jackson	Yes	No		No	No	No	No	Yes	No	\$	-	\$	-	-	Land Acquisition	

Eco Restoration	5792	7/11/2018	Latimer Land Protection	The Land Trust for the Mississippi Coastal Plain (LTMCP) is an accredited Land Trust dedicated to the conservation, promotion, and protection of open spaces and green places of ecological, cultural, or scenic significance in the counties of the Mississippi Coastal Plain. LTMCP utilizes both fee simple and conservation easement tools in conserving land for the benefit of habitats, species, and recreation. This parcel consists of approximately 45 acres of upland pine forest. Ecological Value Provides valuable habitat for a wide variety of plants and animals native to Mississippi, as well as migratory birds. &C(Provides opportunities for low impact recreational activities such as birdwatching and other wildlife observation)&C(Creates open spaces that provide areas for people to witness and learn about their natural environment.	Jackson	Yes	No			No	No	No	No	Yes	No		\$	-	\$	-	Land Acquisition
Eco Restoration	5794	7/13/2018	Camp Rowland	The Land Trust for the Mississippi Coastal Plain (LTMCP) is an accredited Land Trust dedicated to the conservation, promotion, and protection of open spaces and green places of ecological, cultural, or scenic significance in the counties of the Mississippi Coastal Plain. LTMCP utilizes both fee simple and conservation easement tools in conserving land for the benefit of habitats, species, and recreation. These parcels consist of 3577 acres of planted pine forest as well as bottomland hardwood with several creeks that flow into both the Ioula River as well as the Wolf River. Protection of these upstream lands is vital to the water quality and erosion control downriver and into the Mississippi sound. Ecological Value: Protects properties as a buffer area for storm surge by providing dispersal and displacement in the event of flooding waters. These flooding waters have a natural function of turnover and flushing of coastal wetlands. &C(Protects areas that provide clean water for our natural resources further down the watershed. &C(Provides valuable habitat for a wide variety of plants and animals native to Mississippi, as well as migratory birds. &C(Provides opportunities for low impact recreational activities such as birdwatching and other wildlife observation)&C(Creates open spaces that provide areas for people to witness and learn about their natural environment.	Pearl River	Yes	No			No	No	No	No	Yes	No		\$	-	\$	-	
Eco Restoration	5796	8/1/2018	Phase 2 Land Acquisition for expansion of Grand Bay National Wildlife Refuge and National Estuarine Research Reserve	This effort seeks to permanently protect lands identified by the U. S. Fish and Wildlife Service and the State of Mississippi as critical for acquisition and long-term management by the Grand Bay National Wildlife Refuge (NWR) and Grand Bay National Estuarine Research Reserve (NERR). This project will add approximately 2,665 acres to the nearly 12,000 acres currently owned by the U.S. Fish and Wildlife Service and the State of Mississippi. It will add critical coastal lands to the Grand Bay NWR/ NERR for permanent protection, and improved management of coastal wetlands, and adjacent upland areas. The Grand Bay NWR/NERR protect one of the last expanses of wet pine savanna habitat in the country. Due to fire suppression and conversion to pine plantation, less than 5% of the original acreage of this habitat system remains - making it one of the most endangered ecosystems in the country. Because of the great biological significance of this area, it is important to continue to expand the protection of both core and buffer areas, while enhancing management capabilities. The targeted 1,685 +/- acres consists of wet pine savanna, maritime forest, tidal and non-tidal wetlands, salt marshes, salt pannes, bays and bayous. Federally threatened and endangered species that occur at the Grand Bay Refuge/ NERR include the gopher tortoise, sandhill crane, and the manatee. Also, a number of migratory species utilize the habitats provided on this acreage for portions of the life cycle, including Ibis, Martins and Swallows, Ralls, Plovers, Sandpipers and Phalaropes, and Gulls and Terns, along with many different neo-tropical species. This acreage also provides salt marsh/ estuarine habitats for many aquatic species occurring in the Gulf of Mexico. In addition to protecting critical habitat and ecosystems, expanding the footprint of the Grand Bay NWR/NERR will also expand public recreational access, research, education, and training opportunities in this unique coastal environment. The Conservation Fund has initiated due diligence with financial assistance from the Knobloch Family Foundation, is in discussions with the landowner regarding acquisition of these tracts, and anticipates that the project could be completed immediately, pending availability of funds.	Jackson,Mobile	Yes	No			No	Yes	No	No	Yes	No		\$	-	\$	-	Land Acquisition
Eco Restoration	5797	8/16/2018	Chandeleur Island Holistic Ecosystem Restoration Project	The Chandeleur Islands (&C(ChandeleurIslands)) form an iconic island chain in the northern Gulf of Mexico included in the Breton National Wildlife Refuge, the second oldest refuge in the system. The Chandeleur are essential for protecting coastal erosion, including threatened and endangered species and migratory birds (protected species), and for promoting both recreational and commercial fisheries. We propose using natural coastal sediment dispersal processes as tools to restore the Chandeleurs. Wave driven currents run parallel to the Chandeleurs eroding sand from islands and transporting it to &C(sand sink)&C(orth and south of the islands (see figure 1B)). Hewes Point, a submerged sand spit, is one of these &C(sand sink)&C(that consists of sand eroded from the island chain. The sand at Hewes Point can be mechanically returned to the central part of the system, extending the island lifespan by centuries. We propose: 1- &C(Moving sand from Hewes Point and strategically placing sand reserves behind the center of the island chain (see figure 1B)). 2- &C(Mimicking a natural process by allowing shoreline erosion to slowly feed sand from the reserves to the beaches, replenishing sand lost on the beach; 3- &C(Protecting sand reserves from storms by placing them mostly below the mean water line where the destructive forces of storms are minimal). 4- &C(Along tidal passes and low areas in the dune as pathways to ensure that sand is retained within the system, maximizing the longevity of this restoration; and 5- &C(Using sediment to restore New Harbor island which is an important bird rookery. Replenishing the ChandeleurIslands depleted sand reserves will promote large scale holistic ecosystem restoration by: 1- &C(Adding longevity (centuries) to the island and seagrass beds and the fishes, sea turtles, and birds that rely upon them); 2- &C(Reserving and create additional habitat for protected species); 3- &C(Breeding sand reserves behind the islands that will provide a growing platform for marsh grasses and black mangroves, which will provide habitat for marshbirds, colonial waterbirds, shorebirds, and other wetland organisms; and 4- &C(Creating a self-sustaining system that could carry benefits for coastal communities, fisheries, and protected species over the long term (centuries). 5- &C(Barrier island restoration projects usually require regular maintenance and quickly erode (decadal).		Yes	No			Yes	No	No	No	No	No		\$	147,000,000.00	\$	-	
Eco Restoration	5798	8/16/2018	Connecting and Extending Conservation Corridors in Coastal Counties	The Land Trust for the Mississippi Coastal Plain (LTMCP) is a nationally accredited Land Trust dedicated to the conservation, promotion, and protection of open spaces and green places of ecological significance in Hancock, Harrison, Jackson, George, Stone, and Pearl River Counties of the Mississippi Coastal Plain. LTMCP utilizes both fee simple and conservation easement tools to target priority conservation lands for the benefit of coastal Mississippi habitats, species, and recreation. The goal of this project is to provide funding to purchase individual parcels of land, which may be relatively small in acreage but are located in areas that have been identified as crucial to extending corridors of existing conservation lands. The Land Trust has identified several sites that would expand key conservation corridors presently owned by LTMCP, the Mississippi Secretary of State's Office, as well as the Mississippi Department for Marine Resources. These sites can be found on the Mississippi Department of Environmental Quality's portal (www.restore.ms); project numbers 1436 Broadway Basin Land Protection, adjacent to the Pascagoula River Coastal Preserves owned by MOMB; 5798 Cedar Lake Island Land Protection, adjacent to the LTMCP Cedar Lake Island Preserve; and 5790 Tchoutacabouffa River Land Protection, adjacent to LTMCP Tchoutacabouffa Nature Preserve. Protection of these upstream lands is vital to the water quality and erosion control downriver and into the Mississippi Sound. Ecological Value: &C(Contributes to continuous corridors of conservation land. &C(Provides valuable habitat for a wide variety of native plants and wildlife, as well as migratory birds. &C(Protects upstream areas that support clean water. &C(Protects properties as a buffer area for storm surge by providing dispersal and displacement in the event of flooding waters. &C(Protects a natural function of turnover and flushing of coastal wetlands. &C(Provides opportunities for educational, low impact recreational activities such as birdwatching and other wildlife observation.	Jackson,Harrison	Yes	No			No	Yes	No	No	Yes	No		\$	-	\$	-	Land Acquisition
Eco Restoration	5799	8/8/2018	Pascagoula Tributaries Nutrient Reduction Project	The Gulf of Mexico's health and productivity is directly and significantly influenced by the quality and quantity of fresh water delivered bays and estuaries in the Mississippi Sound. In turn the quality and quantity of water in major tributaries such as the Pascagoula River is heavily influenced by land use and the condition of its tributary rivers. To make meaningful, measurable improvements to the Pascagoula River's water quality and quantity it is necessary to start in these tributary rivers and watersheds. The Pat Harrison Waterway District has the legal authority and administrative mechanisms to coordinate federal and state agency activities to improve water quality and quantity in the Pascagoula Basin and actively engage County and local governments in those efforts. In particular projects coordinated with county and city officials in the Bouie, Leaf and Chickasaw Rivers and watersheds can measurably and significantly improve the quality and quantity of water flowing into the Pascagoula River, the Pascagoula estuary and on to the Gulf of Mexico. Specific activities include but are not limited to: 1) restore natural flows by removing debris, trees, logs, sediment and foreign objects from these rivers and their tributaries; 2) restore and protect degraded river/tributary banks by implementing structural and non-structural measures; and 3) identifying and addressing nonpoint sources of nutrient loading in these rivers and their tributaries.	Jackson,George	Yes	No			Yes	Yes	No	No	Yes	No		\$	5,000,000.00	\$	-	
Eco Restoration	5800	8/9/2018	Kittiwake Coastal Conservation Area	Kittiwake Conservation has been able to identify some acreage in Pass Christian that appears suitable for coastal preservation. This property was partially used as part of the Camp Kittiwake, a church camp used into the 1950s, then partially developed as a residential subdivision, Kittiwake, and for the Kittiwake Baptist Church. The remaining 12 acres has had flow for the past 50 years. Our neighborhood group, loosely organized as Kittiwake Conservation, see the area being retained for its natural features, its vegetation and wildlife, while adjacent to the sand beach. The area presents itself as an area where local runoff can be filtered naturally prior to reaching the Sound, reducing the number of beach closures in the area after heavy rainfall. Presently, the acreage is semi-wetland forest, and the home to herons, egrets, osprey, fish, bobcat, racoon, armadillo and rabbits. This property (11.8 acres) was recently purchased by an individual in 2017, and has expressed some interest in allowing the acreage to be used as a park, a wildlife preserve, a conservation area, and appears willing to part with the land for such uses. Across US 90 is the sand beach. This area has often "dosed" due to high bacterial count, particularly after heavy rainfall. This tract of land could be used to develop a series of &C(sandwales)&C(that naturally filter the surface water of sediment and pollutants prior to reaching the Sound, and some existing underground water routes could be rerouted into the same system of swales. There are few intact land parcels available along Beach Boulevard that have not been through development, especially over the past 50 years. This is a parcel that has been neglected and allowed to become its own wildland. With minimal development it could become its own show piece of what upland areas would have looked like prior to significant development. A trail meandering through from Second Street to Beach Boulevard might be the extent of developing the area. A parking area on each end would allow the visitor to enjoy the woodland. School groups could grasp an earlier time. This woodland/park can be used as an outdoor school site exploring natural habitats, bird watching and learning about the natural filtering systems. These are just a few ideas for school, civic, scouting and tourist groups. Aside from the direct expense of acquiring the parcel, creating a parking area, a trail, trail signage, and a perimeter fence, would be the minimal expense. An architectural plan to enhance the site, creating a natural filtration system, or redirecting current drainage lines would increase the cost factor quickly. Would the City of Pass Christian take up maintenance, or the County Sand Beach Commission, or some other entity is unknown? This project could be combined with similar coastal projects nearby.	Harrison	Yes	No			No	Yes	No	No	Yes	No		\$	3,000,000.00	\$	-	Land Acquisition

Eco Restoration	5802	8/10/2018	A strategic plan for restoring environmental quality and public health in coastal watersheds affected by decentralized wastewater treatment facilities	<p>About 11% of the surface water streams in Mississippi coastal region receive fair or poor ratings indicating possible point or non-point source pollution loads into these surface streams. The Jourdan River watershed is designated as a priority watershed for improving the water quality in this region. Primary water quality concerns for the Jourdan River have been identified as faulty septic and wastewater systems, sediment from soil and stream bank erosion and nutrient enrichment. This restoration research project will evaluate the performance of current on-site wastewater treatment systems for decentralized communities in the coastal region of Mississippi where the effluent standards might be at risk. The investigation will include a comprehensive assessment of effectiveness of current wastewater treatment approaches from the surface and ground water quality and economic feasibility perspectives.</p> <p>In our previous efforts, we have identified representative sites (sensitive streams of Bayou Bacon, Bayou La Terre, and Orphan Creeks) in the watershed and evaluated the existing on-site wastewater treatment systems. A sample collection and analysis program was implemented for representative sites to measure pH, temperature, biochemical oxygen demand (BOD), total suspended solids (TSS), total nitrogen (TN) including TNK, nitrate and nitrite, and total phosphorus (TP) and fecal coliform bacteria. Established methods were used to measure these constituents from the select representative sites at designated time intervals to represent dry and wet weather and cold and hot weather conditions over seven months. These results were analyzed to determine the feasibility of on-site wastewater treatment systems and estimate nutrient loads released through effluent discharges.</p> <p>Outcomes from this project include (i) a compilation of data on current on-site, decentralized wastewater treatment facilities in the Jourdan River watershed and characterization of wastewater management practices for the coastal region; and (ii) an analysis of water quality parameters for representative sites to assess performance of on-site wastewater treatment systems.</p> <p>This study albeit based on a very limited data showed that onsite wastewater treatment and management systems in the areas surrounding the sample collection sites are probably not the major contributing sources for fecal coliform contamination in the tributaries studied. Additionally, constituents normally found in wastewater effluent were not found in high concentrations in the water samples collected from these tributaries. This indicated that the majority of the onsite wastewater treatment and management systems in the areas around the sample collection sites were functioning properly, and that alternative means of contamination should be explored. A poor correlation was also observed between the precipitation events and coliform and nutrient concentrations in the tributaries. However, the fecal coliform bacteria counts exceeded the regulatory limits in several occasions, especially, those following precipitation events. These observations suggested that a more detailed, holistic (spatial and temporal), long-term sampling program is required to determine the non-point sources contributing to the impairment of these tributaries in the Jourdan River watershed.</p> <p>Here we propose a strategic plan to assess the current water quality and their impacts on the receiving water streams and public health in coastal watersheds of Mississippi. Our preliminary results indicated a poor correlation between the precipitation events and the nutrients and fecal coliform contamination in the sensitive streams of Bayou Bacon, Bayou La Terre, and Orphan Creeks. Biweekly water sampling and data analysis for four months on these creeks did not yield any critical or concerning observations. This suggests that long term and wider range evaluation is necessary to understand the impacts of onsite or decentralized wastewater treatment facilities and other anthropogenic activities that contribute to this water impairment. We propose a three dimensional approach which consists of environmental, human (social) and technical factors to holistically assess the current state of water quality of streams impacted by numerous activities surrounding them. Lack of sufficient data on the installations of wastewater treatment facilities, the type of systems and their treatment capabilities makes the assessment of their impact on the receiving water streams a daunting task. The first step to address this issue is to conduct a survey across the communities to gather information related to the existing onsite and decentralized wastewater treatment systems and their status of operations. The second step would be to utilize in-situ remote sensing reflectance measurement methods based on a GER 1500 Spectroradiometer and Landsat 8 satellite imagery.</p>	Hancock	Yes	Yes	Yes	No	No	No	No	Yes	No	\$	500,000.00	\$	-
Eco Restoration	5803	8/10/2018	Establishment of a Coastal Reference Monitoring System (CRMS) in Mississippi	<p>NOAA Project ID# 13891: Expansion of a Coastal Reference Monitoring System (CRMS) wetland restoration network in Mississippi to inform wetland restoration success and also assist with Trustee ecosystem restoration quantification. The proposed project would build off of the existing CRMS wetland monitoring system being implemented in Louisiana. In Louisiana CRMS was designed to monitor the effectiveness of restoration actions at multiple spatial scales from individual project sites and the influence of these projects throughout the coastal zone. The LA CRMS design includes sites for swamps, habitats, along with fresh water streams, brackish and salt marshes. This project could be implemented for swamps and marsh or only swamps if needed (funding needs). The following data types are proposed record land change, hydrologic, soils and vegetation including aerial imagery, accretion and surface elevation, vegetation, soil porewater salinity, soil properties, hydrographic. Additional activities such as data management and visualization, data analysis, report cards would be built into the project as necessary and appropriate. This project would aim to build off of and leverage existing efforts in the State of Mississippi where possible. NOAA Project ID# 13891: Date: Aug 7, 2018</p>		Yes	Yes	Yes	No	No	No	No	No	\$	-	\$	-	
Eco Restoration	5804	8/10/2018	Long Beach Harbor Enhancements	<p>NOAA Project ID#13889: The Long Beach Harbor serves mainly recreational purposes. However, that recreational use is the basis for a robust business community that serves tourists, fishermen, boat owners, restaurant diners, and pedestrians. The Harbor has been repeatedly damaged by natural (Hurricane Katrina) and man-made (BP Oil Spill) disasters. The natural disasters have destroyed and damaged the harbor channel, breakwaters, and support infrastructure (gas lines, power, etc.). The BP Oil Spill damaged many boats docked in the harbor and made tenants less likely to dock in the harbor. These direct impacts drove away the secondary commercial businesses that relied on the port such as fuel docks, bait shops, restaurants, etc. Date: Aug 7, 2018</p>		Yes	Yes	Yes	No	No	No	No	No	\$	60,000,000.00	\$	-	
Eco Restoration	5806	8/10/2018	Long Beach Watershed Resiliency Project	<p>NOAA Project ID# 13886: Since 2002, the City of Long Beach has faced increasingly severe urban flooding from less severe unnamed storms and hurricanes. These repeated floods deliver a plume of untreated flood waters directly into Bay St. Louis and on to the Mississippi Sound with direct and indirect impacts to salinity levels and other unquantified water quality impacts. The City proposes a comprehensive resiliency project for a watershed project to integrate upstream and urban flood damage reduction measures to achieve measurable water quality improvements to the Mississippi Sound. The watershed covers 10,857 acres (4,566 acres in Long Beach, 1,455 acres in City of Pass Christian and the remainder in unincorporated west Harrison county). Historically, flood protection in the City of Long Beach was provided by Canal No. 1 (Johnson Canal) and Canal No. 2 (Bilbo Canal). However, despite significant restoration and enhancement of these canals in cooperation with the Natural Resources Conservation Service (Environmental Impact Statement and Watershed Plan (October 1988)) and the U.S. Army Corps of Engineers (part of the Mississippi Coastal Improvements Program) starting in the early 1990s; urban flooding has significantly increased since 2001. It is apparent that a new, holistic watershed approach is necessary to provide a long-term, sustainable solution to the watershed flooding and associated water quality impacts into Bay St. Louis. The starting point of the project will be integrating resiliency elements into the comprehensive drainage plan that the City of Long Beach has recently completed. Date: Aug 8, 2018</p>		Yes	No	Yes	No	No	No	No	No	\$	35,000,000.00	\$	-	
Eco Restoration	5808	8/10/2018	Quantifying water availability and quality from submarine discharge points into Gulf estuaries	<p>NOAA Project ID# 13883: As resource managers continue to understand the effects of water availability and quality from freshwater systems that drain to Gulf estuaries and bays, one source that is typically unaccounted for comes from submarine outflows from near-shore aquifers. The USGS has recently updated the Coastal Lowlands Aquifer System (CLAS) groundwater model which can be used to estimate groundwater flow and quantify estimated load from submarine discharges. Specifically, this project will utilize the updated CLAS model to address groundwater and groundwater/surface-water issues along the Gulf coast to: 1. develop an approximate water budget of groundwater flow from the coast; 2. evaluate subsidence related to groundwater withdrawals; 3. evaluate changes in groundwater withdrawals and effects on water budget and water levels which can be used to evaluate scenarios related to increases in GW withdrawals for public supply, industrial, and irrigation water use; 4. evaluate groundwater flow quantities and water chemistry data to estimate nutrient loads into Gulf estuaries from submarine sources (which can then provide a better understanding of Harmful Algal Bloom hotspots across the Gulf). This project could leverage an existing project by the University of Southern Mississippi that is already underway funded by a grant from the Mississippi Water Resources Institute that focuses on identification of groundwater seeps within the Mississippi Sound. Also, this project is indirectly related to the priorities of the Water Resources Priority Issues Team of the Gulf of Mexico Alliance to better understand occurrence and distribution of HAB outbreaks in nearshore areas around the Gulf. Date: Aug 6, 2018</p>		Yes	Yes	No	Yes	No	No	No	No	\$	3,000,000.00	\$	-	
Eco Restoration	5809	8/10/2018	Development of a Decision Support System to address management of nutrient and sediment loads entering bays and estuaries from Gulf watersheds.	<p>NOAA Project ID# 13877: This project will build an online Decision Support System (DSS) that will allow managers to run scenarios by altering identified sources of nutrients or sediment within Gulf watersheds to see the downstream effects of those scenarios on nutrient and sediment loads entering bays and estuaries across the Gulf. The DSS will be based on development of Total Nitrogen, Total Phosphorus, and Suspended Sediment Spatially Referenced Regression on Watershed Attributes (SPARROW) models for the entire Gulf. In addition, display of model results in the DSS can help managers target watershed areas with high nutrient loads to better locate Best Management Practice implementation. Nutrient load estimates from the models entering bays and estuaries can also be used as nutrient inputs to available hydrodynamic models to identify potential hot spots across the Gulf for Harmful Algal Bloom outbreaks. Sediment models can help locate hot spot areas for high sediment loads within Gulf watersheds, which could be important to manage wetland restoration. Date Aug 1, 2018</p>		Yes	Yes	No	Yes	No	No	No	No	\$	4,000,000.00	\$	-	
Eco Restoration	5810	8/10/2018	Restoration of Piping Plover and other overwintering shorebirds through reductions in anthropogenic stressors	<p>NOAA Project ID# 13873: The impact of habitat loss on shorebirds may be exacerbated by disturbance from human recreational use, which further reduces the amount of coastal habitat that is functionally available. This can have consequences for the condition of individual birds or for population processes, both of which should be considered in strategies to reduce conflict between shorebirds and recreational users of coastal habitat. Our objectives were to implement measures to mitigate the negative impacts from human recreational use, coastal habitat modifications to Piping Plover (<i>Charadrius melodus</i>) body condition and demography. Also applies to additional overwintering bird species. The condition of these overwintering species may influence reproductive output, through cross-seasonal effects and areas that are heavily disturbed can result in reduced reproductive output from affected individuals (Gibson et al. 2016). July 31, 2018</p>		Yes	No	Yes	No	No	No	No	No	\$	2,000,000.00	\$	-	
Eco Restoration	5812	8/10/2018	Groundwater-neutral strategies to create habitat for migratory shorebirds on private lands of the Mississippi Delta	<p>NOAA Project ID# 13868: Summary of rationale and proposed project: Nearly half of North American shorebird species (such as sandpipers and plovers) are declining, and a key factor in these declines is a loss of available habitat for migration stopover, especially in fall (July-October) when such habitat is more limited. To mitigate the impact of the Deepwater Horizon oil spill on this group of birds, we need high-quality stopover habitat for them not just on the immediate Gulf Coast, but also away from the Gulf Coast, in the MS Delta. Private lands, including aquaculture farms and former agriculture farms being managed for duck hunting, and also active agricultural fields, can provide high-quality stopover habitat for migratory shorebirds. Groundwater is an increasingly valuable and limited resource in the MS Delta, so groundwater-neutral strategies for such wildlife habitat creation are needed. We will work with private landowners to provide high-quality, groundwater-neutral stopover habitat for migratory shorebirds in the MS Delta. Goal 1: Create 600 hectares of fall habitat for migrating shorebirds on private lands in the MS Delta, which has been estimated to be necessary to support the number of birds typically migrating through our region. Goal 2: Demonstrate the viability of ground-water neutral strategies for creating shorebird habitat, including use of surface water sources, lateral pumping, water storage, and drop-fill pumping strategies. Goal 3: Engage a diverse suite of private landowners and establish the desire for long-term voluntary implementation of these practices. Estimated Cost: \$200,000 per year We have begun to build towards these goals by developing a network of partnerships with farmers and waterfowl enthusiasts throughout the Mississippi Delta, helping to assure the provision of substantial acreage of high-quality habitat for migratory shorebirds. During each of the fall 2016 and 2017 shorebird migrations, for example, we worked with landowners to create approximately 40 hectares (~100 acres) of habitat. Our on-the-ground surveys allowed us to estimate that this habitat was used each year by upwards of 10,000 migratory shorebirds, plus hundreds of wading birds, including herons, egrets, Wood Storks, and Roseate Spoonbills. In addition, we are currently pioneering a unique ground-water neutral strategy to create fall migratory shorebird habitat on a 67-acre crop field by pumping stored water from surface-water retention reservoirs, working with a corn farmer in Sunflower County, Mississippi. Our long-term goal is to assure that the entire 600-hectare target is met through provision of habitat via such partnerships with private landowners in the Mississippi Delta. July 12, 2018</p>		Yes	No	No	Yes	No	No	No	No	\$	200,000.00	\$	20,000.00	
Eco Restoration	5815	8/10/2018	RESTORE Gulf-wide stream flow study Mississippi Component - add the Pearl River to the existing project.	<p>There is an approved RESTORE Act-Funded Gulf-wide river flow study that will use a Mississippi coastal plain stream as a study site. It is currently being planned by the USGS Gulf Water Science Center in Nashville, with Rodney Knight as the principal investigator. This study needs to either focus on the Pearl River or model both the Pearl and the Pascagoula rivers with the OASIS modeling program for regulated rivers.</p> <p>The following three questions have been posed for investigation using OASIS, a powerful modeling framework: 1) How far downstream can a dam's disruption to flow be detected? 2) How sensitive are the fresh water needs of the estuary to upstream damming? 3) Can the coastal waters be so distant from a dam's influence on the river that it can't be detected?</p> <p>With the current plans to add more low head dams/weirs and a new impoundment on the Pearl River in Jackson, MS in the name of flood control, these three questions need to be answered for the Pearl before more structures are placed on it. If the best river scientists in the U.S. cannot answer these questions about the Pearl River, further damming is not justifiable.</p> <p>In a phone conversation with the USGS principal investigator, he said that there is no reason both rivers could not be investigated. The environmental data set on the Pascagoula may be a bit better than that of the Pearl, but beyond this and affordability under the budget, there isn't a reason that OASIS couldn't be developed and run for the Pearl River. It is basically a matter of hiring hydrologics Inc. to develop the program and sponsor a team of USGS scientists to apply it.</p> <p>Given the importance of the Pearl River to downstream Parishes and Counties, to the seafood industry of two states, to NASA and the Navy river warfare teams that practice in the Pearl, this research is needed for the Pearl River.</p>	Rankin, Hinds, Copiah, Simpson, Lawrence, Marion, Pearl River, Hancock, Tammany/Hancock	Yes	No	No	Yes	No	No	No	No	\$	3.00	\$	-	

Eco Restoration	5816	8/10/2018	Bottlenose Dolphin Health Assessments to Monitor Restoration Effectiveness in Mississippi	<p>Health assessments are used to identify and understand population stressors, mitigate their effects, or plan more effective conservation measures, in response to management drivers (e.g., MMPA, ESA, NOAA's Ocean and Human Health Initiative, and, more recently, for Natural Resource Damage Assessments (NDRDAs)).</p> <p>Capture/release health assessments involve large teams of researchers using multiple vessels to locate, capture, assess, and release wild bottlenose dolphins. A large net is used to encircle one or more dolphins in shallow water. The team then enters the water and once the dolphin is disentangled from the net and restrained, blood is collected and vital signs are assessed. The dolphin is then brought up onto a specially designed platform on a boat for further examination and the collection of morphometrics, diagnostics, and biological samples. Samples are processed on the boat for timeliness and quality control purposes.</p> <p>Standard morphometrics and diagnostics include a physical exam, body measurements (length and girth), ultrasound to assess reproductive status and blubber thickness, complete blood count (CBC)/blood chemistry/blood gases, serology, pathogens, endocrinology, immunology, urinalysis, skin and oral assessment, biotoxin and contaminant measures, and blowhole and genital swabs. Most of these diagnostics can only be obtained from wild dolphins through capture and brief restraint. Health assessments conducted on bottlenose dolphins in the Southeast have used standardized protocols and established laboratories for sample analysis. The pooling of available samples has resulted in the establishment of reference intervals for many health parameters, such as CBC, serum chemistry, mass:length ratio, and also baseline levels for biotoxins, persistent organic pollutants (POPs) including polychlorinated biphenyls (PCBs), polybrominated diphenyl ethers (PBDEs), and a suite of organochlorine pesticides.</p> <p>Health assessments have been conducted on bottlenose dolphin populations in various locations in the Gulf, including Sarasota Bay, Florida (1987-1992), Mississippi Sound, Mississippi (1982-1983, 2011, 2018), Matagorda Bay, Texas (1992), St. Joseph Bay, Florida (2005-2006), and Barataria Bay, Louisiana (2011, 2013, 2014, 2017, 2018). Health assessments conducted in Barataria Bay, Mississippi Sound, and Sarasota Bay were instrumental in quantifying injury associated with the Deepwater Horizon oil spill.</p> <p>There is a continued need for periodic health assessments of bottlenose dolphins in Barataria Bay, Mississippi Sound, and reference populations in Sarasota Bay to monitor the effectiveness of, and potential impacts from, restoration activities being conducted in Louisiana waters. The health assessments would follow the same protocols and procedures that have been developed and implemented previously in Gulf waters.</p> <p>The future vision is to obtain more information from remote sampling of bottlenose dolphins injured by the oil spill, including biopsy, breath, and tagging. This would minimize the need for capture/release health assessments because they represent higher risk to dolphins and to the team, and because of the difficult logistics and high costs. We also need coordinated data management, mapping, and spatial/temporal analysis to maximize the information gained from available samples.</p>	Yes	No		No	Yes	No	No	No	No	No	No	\$	-	\$	-
Eco Restoration	5817	8/10/2018	Bottlenose Dolphin Photo-Identification Studies to Monitor Restoration Effectiveness in Mississippi	<p>Photo-identification studies are a type of capture-mark-recapture study used to detect known (marked) and unknown individuals over time to estimate population size and vital rates. They are also used to provide information on distribution, seasonal movements, habitat use, behavior, and body condition and health of individuals. Information gained from multi-year photo-identification studies would be an indicator of the effectiveness of efforts to restore bottlenose dolphin populations in waters most heavily impacted by the Deepwater Horizon oil spill, including Barataria Bay, Mississippi Delta, Mississippi Sound, and adjacent coastal waters.</p> <p>Centralized large-scale, collaborative photo-identification catalogs for bottlenose dolphins and other species have been established (e.g., the Gulf of Mexico Dolphin Identification System, or GoMDIS), providing a basis for tracking movements of individual animals beyond project study sites and detecting range shifts in response to environmental changes. Existing data systems need to be assessed, refined, and expanded to facilitate upload and analysis of a large number of images and to improve data access and sharing by a diverse group of field researchers and partner organizations in Mississippi and throughout the Gulf to better determine connectivity and movements of bottlenose dolphins within and between adjacent water bodies. Periodic workshops are needed to ensure standardized methods for image acquisition and processing are being used and revised as necessary. Multi-year studies need to be expanded to include additional study areas in Mississippi and across the Gulf, particularly coastal and offshore areas affected by the oil spill. Further research is needed on: (1) the development of software to enable more effective and timely analysis and comparison of still and video images, (2) the potential for high-resolution aerial imaging systems to augment or replace traditional aerial and/or vessel surveys, and (3) the use of unoccupied aircraft systems (UASs) or drones to collect images of marine mammals independently or during traditional vessel surveys or other surveillance operations.</p> <p>Budget is variable depending on the frequency of assessments and the duration of the project. Studies are most informative for assessing recovery of these long-lived species if conducted annually for a minimum of 10-15 years.</p> <p>Entities capable of conducting such studies, or that have successfully conducted such studies in other areas of the Gulf, include the National Marine Fisheries Service Pascagoula Laboratory, the National Ocean Service Charleston Laboratory, academic institutions (e.g., the University of Houston, Eckerd College, University of Southern Mississippi, University of South Florida, University of Central Florida), and not-for-profit research organizations (e.g., Chicago Zoological Society/Mane Marine Laboratory, the Marine Mammal Foundation, and the Institute for Marine Mammal Studies in Gulfport, MS).</p> <p>Authors: This proposal was prepared by the Marine Mammal Commission, based on information compiled at the 2015 Gulf of Mexico Marine Mammal Research and Monitoring Meeting and subsequent meetings. The Marine Mammal Commission is not seeking funding for this project, nor does it anticipate receiving funds, if approved and adopted in whole or in part, by the Natural Resource Trustees, the Gulf States, the National Fish and Wildlife Foundation, the National Academy of Sciences, the Restoration Council, or any other funding entity.</p> <p>More information on GoMDIS can be obtained at: http://www.sarasotadolphin.org/introducing-gomdis-the-gulf-of-mexico-dolphin-identification-system/</p>	Yes	No		No	Yes	No	No	No	No	No	\$	-	\$	-	
Eco Restoration	5818	8/10/2018	Trees Please Gulfport: Urban Forest for Clean Waters	<p>In undeveloped areas of the coast, rain is intercepted by trees and the rest soaks into the ground, filtering out pollution. But on the developed coast, buildings, parking lots, roads, and other impervious surfaces, trees and soil no longer slow the rainfall and filter the water. The resulting stormwater instead picks up nitrogen and phosphorus pollutants. It flows rapidly into baysou, beaches, and Mississippi Sound via storm drains. The results include beach closures, oyster contamination, and fish kills.</p> <p>This project would increase urban forestry—trees and soil—in the city landscape. Trees and soil decrease polluted stormwater runoff (including oil, pet waste, and fertilizer). This increases water quality for recreation, oysters, and fish on the Mississippi Gulf Coast.</p>	Harrison	Yes	Yes		Yes	Yes	No	No	Yes	No	\$	1,000,000.00	\$	-	
Eco Restoration	5819	8/10/2018	Red Creek Nutrient/Sediment Reduction Program Stone and George Counties, Ms. Lower Pascagoula River Drainage, Miss	<p>Red Creek in George County has been suffering from water quality problems due to periodic sediment influx with rainfall events. Several sites are possible origins, but one large one exists. A 400-acre recreational riding park for All Terrain Vehicles, "K.C.O.R." on Vestry Road has been in operation for about 25 years, and the runoff from the constantly disturbed soils and mud pits on the site has been and is still reaching Red Creek through small woodland branches running into the Creek from from its south bank. Despite citizen complaints over the past 3 years, and in spite of several attempts at characterizing the source, timing, and magnitude of the sediment inputs from this site, or other sites, no definitive answers have been put forward by any person or government agency that can be used to isolate, regulate or otherwise modify or mitigate this water quality impairment from mud and sediment.</p> <p>Remote sensing, drone photography, balloon cameras, trail cameras, and or photography using airplanes could be used to document runoff events that fill Red Creek with sediment in this section of the stream in George County as well as upstream in Stone County. With such visual documentation, simultaneous testing of Red Creek water quality for sediment and nutrient components must be done so a visual/testing record of this problem can be created.</p> <p>Engagement and creative collaboration of MDEQ staff and NRCS/USDA could possibly result in discovery of the right "hook" or incentive so that these agencies can collaborate on the water quality problem in this section of Red Creek. The land is mostly forested in the vicinity, and there is almost no agricultural land use along Red Creek. There also is not a protected species like the Gulf sturgeon with habitat in Red Creek that can be used to clearly justify federal agency intervention or some kind of enhanced soil conservation practice payments. Also, the owner of the Red Creek Off Road park has been intransigent and has not, to my knowledge, voluntarily undertaken measures to reduce the sediment contribution from his land to the Creek.</p> <p>This situation is at an impasse, and has been for about 3 years. There is not enough data collected by MDEQ to confirm the water quality problem that the downstream neighbors can see; there is not a permit that proscribes Red Creek Off Road from polluting, and there is very little likelihood that USDA/NRCS can do here what it has done in the NRDA Upper Pascagoula Nutrient Reduction projects because the Gulf sturgeon was the ESA "hook" that helped get NRCS involved, and there isn't an apparent hook here through the ESA.</p> <p>Red Creek downstream of this ATV park is on the new 303(d) list for pH impairment, but not for sediment. Some of the upstream tributaries to Red Creek have been on the impaired waters list in the past, like Flint Creek. There are sand and gravel operations that may be contributing sediment to this section of the Creek, and there are a number of upstream NPDES discharge permits, including the Perkinson Campus of MGCC along with several industries in Wiggins. However, the people downstream of this ATV park in George County have seen what has happened to the Creek over the past 15 years since the park began operation and there doesn't seem to be much doubt that the ATV park is a major sediment polluter. Some residents captured bad runoff from the park's small drains with pictures two years ago, and MDEQ has copies of these.</p> <p>At the very least, MDEQ, USDA/NRCS and the Mississippi Health Department should discuss how to focus restoration funding on this problem. I'd like to be included in such a meeting, as would the Red Creek fishing camp owners downstream. If a connection or "hook" can be found to use any source of BP RESTORE, NRDA, or NPWF Restoration money to characterize this problem, or to help</p>	George	Yes	Yes	50000	No	No	No	No	Yes	No	Enforce	\$	500,000.00	\$	-
Eco Restoration	5820	8/10/2018	Lower Pascagoula Nutrient Reduction	<p>Improve water quality by reducing nutrient loads to coastal watersheds. Develop conservation plans on agricultural land and rural communities that support them to address nutrient and sediment runoff, and implement conservation practices identified in the conservation plans.</p> <p>The primary goal for this project is to improve water quality through nutrient and sediment reduction. The health of the Gulf of Mexico depends upon the health of its estuaries, and the health of those coastal waters is influenced by land uses in the watersheds of its tributaries. In the five Gulf States, over 80 percent of the acreage is private ownership (USDA-NRCS 2014), and is used for forestry and agriculture. This watershed-scale project restores water quality impacted by the DWH oil spill by reducing nutrients and the sediments carrying them into coastal waters. Runoff from cropland, pasture, grassland, forest, urban areas contributes nutrients and sediments that adversely affect the health of coastal waters of the Gulf. While agricultural lands are a contributor (and in many instances, not the leading contributors) of nutrients to coastal waters, there are opportunities to address nutrient related resource concerns at their sources across multiple landuses in the lower Pascagoula River watershed.</p> <p>USDA will provide outreach and technical assistance to voluntary participants—especially on the most vulnerable acres in the watersheds—to develop conservation plans. The project proposes to implement clusters of conservation practices within the smallest watershed practicable with the goal of making a discernible difference in water quality at the watershed level. While this targeted and concentrated approach is desired, the project proponent understands the voluntary nature of landowner participation and will strive to reach the critical sources within the watershed. The proposed conservation practices would reduce nutrient losses from the landscape, reduce nutrient loads to streams and downstream receiving waters, and reduce water quality degradation in watersheds that would provide benefits to coastal watersheds and marine resources.</p>	George	Yes	No		No	Yes	No	Yes	Yes	No	\$	2,000,000.00	\$	-	

Eco Restoration	5821	8/10/2018	Addressing Harmful Human-Dolphin Interactions in Mississippi Through Research, Education, and Enforcement	<p>Nearshore and coastal habitats throughout the Gulf of Mexico are adjacent to areas of high human population. The high degree of overlap with human activities results in concern for both bottlenose dolphins that were also affected by the Deepwater Horizon oil spill. There are documented impacts on bottlenose dolphins from recreational fishing, boating, and tourism, including mortalities, injuries and harassment/disturbance. Harmful interactions between people and dolphins have been documented throughout the Gulf of Mexico, including in Mississippi coastal waters. Such interactions can be damaging to the dolphins by altering their natural behavior, and can put both humans and dolphins at risk of illness, injury, and death. The large variety of user groups and stakeholders and multiple management jurisdictions involved in such interactions requires a coordinated effort among state and federal biologists, managers, and enforcement agencies.</p> <p>Human activities of concern for bottlenose dolphins include:</p> <p>• Recreational fisheries - Interactions stem from entanglement in or ingestion of active or discarded fishing gear, depredation on bait or catch, scavenging of released fish, habitat degradation, and provisioning of animals. They can also stem from retaliation or lethal deterrence by fishermen for depredation on bait or catch. Acute and chronic impacts include altered behavior, decreased nutritional status, injury, and mortality.</p> <p>• Boating and recreational activities - Interactions occur with recreational boaters, jet skis, dolphin and whale watching tour boats (particularly those operating irresponsibly by touching, feeding, swimming with, or harassing animals), and include boat strikes, disruption of natural behaviors, changes in group composition, association of people/boats with food if provisioning occurs, and conditioning. Long term avoidance of high-use areas can lead to localized declines in abundance or shifts in habitat use to sub-optimal habitat. Acute and chronic impacts include altered behavior, decreased nutritional status and growth rate, injury, and mortality.</p> <p>Prevention of human-dolphin interactions is key, and is based on an understanding of how and why interactions occur. Targeted research on human attitudes towards dolphins coupled with long-term, year-round behavioral studies and data from stranded animals can help provide a more complete picture of causes of interactions, interaction rates, trends over time, and potential mitigation strategies. Studies conducted to date have identified mitigation strategies that have shown some effectiveness at preventing interactions. However, long-term effectiveness requires follow-up research on the effectiveness of mitigation, consistent and targeted public education and outreach efforts, and coordinated enforcement efforts in situations where education and outreach is not sufficient at curbing harmful interactions.</p> <p>Addressing harmful human-dolphin interactions in Mississippi state waters can aid directly in the restoration of bottlenose dolphins injured by the oil spill. Effort is needed in the following areas:</p> <p>• Characterizing the scope and nature of interactions as well as driving factors throughout Gulf;</p> <p>• Conducting surveys and interviews to understand the human dimensions of interactions and factors driving harmful human interactions with dolphins;</p>		Yes	No	No	No	Yes	No	No	No	No	No	\$	-	\$	-
Eco Restoration	5822	8/10/2018	Trees Please Biloxi: Urban Forest for Clean Waters	<p>In undeveloped areas of the coast, rain is intercepted by trees and the rest soaks into the ground, filtering out pollution. But on the developed coast, buildings, parking lots, roads, and other impervious surfaces, trees and soil no longer slow the rainfall and filter the water. The resulting stormwater instead picks up nitrogen and phosphorus pollutants. It flows rapidly into baysou, beaches, Biloxi Bay, and Mississippi Sound via storm drains. The results include beach closures, oyster contamination, and fish kills.</p> <p>This project would increase urban forestry—trees and soil—in the city landscape. Trees and soil decrease polluted stormwater runoff (including oil, pet waste, and fertilizer). This increases water quality for recreation, oysters, and fish on the Mississippi Gulf Coast.</p>	Harrison/Jackson	Yes	Yes	No	Yes	No	No	Yes	No	\$	1,000,000.00	\$	-		
Eco Restoration	5824	8/10/2018	Trees Please Pascagoula: Urban Forest for Clean Waters	<p>In undeveloped areas of the coast, rain is intercepted by trees and the rest soaks into the ground, filtering out pollution. But on the developed coast, buildings, parking lots, roads, and other impervious surfaces, trees and soil no longer slow the rainfall and filter the water. The resulting stormwater instead picks up nitrogen and phosphorus pollutants. It flows rapidly into baysou, beaches, Pascagoula River, and the Mississippi Sound via storm drains. The results include beach closures, oyster contamination, and fish kills.</p> <p>This project would increase urban forestry—trees and soil—in the city landscape. Trees and soil decrease polluted stormwater runoff (including oil, pet waste, and fertilizer). This increases water quality for recreation, oysters, and fish on the Mississippi Gulf Coast.</p>	Jackson	Yes	Yes	No	Yes	No	No	Yes	No	\$	1,000,000.00	\$	-		
Eco Restoration	5825	8/10/2018	Expand and Improve Marine Mammal Stranding Response and Monitoring Capabilities in Mississippi	<p>This project requests sufficient long-term resources for the designated Marine Mammal Health and Stranding Response Program (MMHSRP) network member in Mississippi to monitor the effectiveness of restoration efforts through enhanced surveillance, response, investigation, and, where possible, recovery and rehabilitation of stranded marine mammals from populations in Mississippi nearshore and offshore waters that were directly impacted by the Deepwater Horizon (DWH) oil spill. Nearly every population of marine mammals that inhabits the nearshore and offshore waters of Mississippi suffered quantifiable injuries due to the Deepwater Horizon oil spill. Response to both live and dead stranded marine mammals and the collection of biological information from these animals is critical to obtaining an understanding of natural and human-caused factors that are either contributing to or impeding the restoration of DWH-impacted populations.</p> <p>The MMHSRP network member that has been designated by the National Marine Fisheries Service (NMFS) to conduct stranding response activities in Mississippi, in accordance with the requirements of the Marine Mammal Protection Act, is the Institute for Marine Mammal Studies (IMMS) in Gulfport, MS. IMMS has several highly-trained and experienced stranding responders on-staff, with access to technicians, veterinarians, pathologists, and other specialists as needed to provide effective medical and forensic response during and after a stranding event.</p> <p>Prior to the spill, stranding response efforts were patchy and inconsistent in many portions of the Gulf region. Response capabilities increased during the spill with funding from the Natural Resource Damage Assessment (NRDA) and IMMS instrumental in ensuring timely response and collection of biological samples from animals in Mississippi and Alabama. However, long-term, consistent funding is needed in Mississippi and across the Gulf to monitor the effectiveness of NRDA-directed restoration efforts and to provide an ongoing assessment of injuries that may continue to be associated with oil spill response or restoration activities. Institutional funding is variable but generally inadequate to provide the level of response needed. Limited expertise throughout the Gulf in marine mammal response, investigation, forensic, veterinary care, and rehabilitation underscores the need to secure resources needed to retain and recruit properly trained specialists to ensure consistent stranding response capabilities. Stranding response complements on-water observational studies of free-swimming wild animals, which provide a means to measure population vitality, births, juvenile survival, visual health indicators, and incidences of injury or harassment by human activities (e.g., vessel strikes and fisheries interactions).</p> <p>The primary objectives of this project are to 1) increase surveillance efforts to identify stranded marine mammals, 2) ensure timely response to reports or sightings of live- and dead-stranded marine animals, 3) conduct timely and thorough examinations of live- and dead-stranded animals, and 4) collect, analyze, maintain, and disseminate consistent, standardized, high quality information from stranded animals and stranding events, in coordination with other marine mammal stranding network members across the Gulf. This project also would facilitate the integration of stranding data with other biological and environmental information to highlight and understand the connections between oceanography, ecosystem processes, and marine mammal health via the Marine Mammal Health Monitoring and Analysis Platform (HealthMAP, with a Gulf-specific GulfMAP in development). Additional benefits of this project are the ability to augment the resources and response capability across networks that serve other impacted marine wildlife species, such as sea turtles and sea birds.</p> <p>Cost Estimates: Approximately \$10-15 million over 10-15 years*</p>		Yes	No	No	Yes	No	No	No	No	\$	10.00	\$	-		
Eco Restoration	5826	8/10/2018	Middle Escatawpa Nutrient Reduction	<p>Improve water quality by reducing nutrient loads to coastal watersheds. Develop conservation plans on agricultural land and rural communities that support them to address nutrient and sediment runoff, and implement conservation practices identified in the conservation plans.</p> <p>The primary goal for this project is to improve water quality through nutrient and sediment reduction. The health of the Gulf of Mexico depends upon the health of its estuaries, and the health of those coastal waters is influenced by land uses in the watersheds of its tributaries. In the five Gulf States, over 80 percent of the acreage is in private ownership (USDA-NRCS 2014) and is used for forestry and agriculture. This watershed-scale project restores water quality impacted by the DWH oil spill by reducing nutrients and the sediments carrying them into coastal waters. Runoff from cropland, pasture, grassland, forest, urban areas contributes nutrients and sediments that adversely affect the health of coastal waters of the Gulf. While agricultural lands are a contributor (and in many instances, not the leading contributors) of nutrients to coastal waters, there are opportunities to address nutrient related resource concerns at their sources across multiple landuses in the Middle Escatawpa River watershed.</p> <p>USDA will provide outreach and technical assistance to voluntary participants – especially on the most vulnerable acres in the watersheds– to develop conservation plans. The project proposes to implement clusters of conservation practices within the smallest watershed practicable with the goal of making a discernable difference in water quality at the watershed level. While this targeted and concentrated approach is desired, the project proponent understands the voluntary nature of landowner participation and will strive to reach the critical sources within the watershed. The proposed conservation practices would reduce nutrient losses from the landscape, reduce nutrient loads to streams and downstream receiving waters, and reduce water quality degradation in watersheds that would provide benefits to coastal watersheds and marine resources.</p>	Jackson,George	Yes	No	No	Yes	No	Yes	Yes	No	\$	2,000,000.00	\$	-		
Eco Restoration	5827	8/10/2018	Upper Escatawpa Nutrient Reduction	<p>Improve water quality by reducing nutrient loads to coastal watersheds. Develop conservation plans on agricultural land and rural communities that support them to address nutrient and sediment runoff, and implement conservation practices identified in the conservation plans.</p> <p>The primary goal for this project is to improve water quality through nutrient and sediment reduction. The health of the Gulf of Mexico depends upon the health of its estuaries, and the health of those coastal waters is influenced by land uses in the watersheds of its tributaries. In the five Gulf States, over 80 percent of the acreage is in private ownership (USDA-NRCS 2014) and is used for forestry and agriculture. This watershed-scale project restores water quality impacted by the DWH oil spill by reducing nutrients and the sediments carrying them into coastal waters. Runoff from cropland, pasture, grassland, forest, urban areas contributes nutrients and sediments that adversely affect the health of coastal waters of the Gulf. While agricultural lands are a contributor (and in many instances, not the leading contributors) of nutrients to coastal waters, there are opportunities to address nutrient related resource concerns at their sources across multiple landuses in the Upper Escatawpa River watershed.</p> <p>USDA will provide outreach and technical assistance to voluntary participants – especially on the most vulnerable acres in the watersheds– to develop conservation plans. The project proposes to implement clusters of conservation practices within the smallest watershed practicable with the goal of making a discernable difference in water quality at the watershed level. While this targeted and concentrated approach is desired, the project proponent understands the voluntary nature of landowner participation and will strive to reach the critical sources within the watershed. The proposed conservation practices would reduce nutrient losses from the landscape, reduce nutrient loads to streams and downstream receiving waters, and reduce water quality degradation in watersheds that would provide benefits to coastal watersheds and marine resources.</p>	George	Yes	No	No	Yes	No	Yes	Yes	No	\$	2,000,000.00	\$	-		
Eco Restoration	5828	8/10/2018	Hoblochitto Nutrient Reduction	<p>Improve water quality by reducing nutrient loads to coastal watersheds. Develop conservation plans on agricultural land and rural communities that support them to address nutrient and sediment runoff, and implement conservation practices identified in the conservation plans.</p> <p>The primary goal for this project is to improve water quality through nutrient and sediment reduction. The health of the Gulf of Mexico depends upon the health of its estuaries, and the health of those coastal waters is influenced by land uses in the watersheds of its tributaries. In the five Gulf States, over 80 percent of the acreage is in private ownership (USDA-NRCS 2014) and is used for forestry and agriculture. This watershed-scale project restores water quality impacted by the DWH oil spill by reducing nutrients and the sediments carrying them into coastal waters. Runoff from cropland, pasture, grassland, forest, urban areas contributes nutrients and sediments that adversely affect the health of coastal waters of the Gulf. While agricultural lands are a contributor (and in many instances, not the leading contributors) of nutrients to coastal waters, there are opportunities to address nutrient related resource concerns at their sources across multiple landuses in the Hoblochitto Creek watershed.</p> <p>USDA will provide outreach and technical assistance to voluntary participants – especially on the most vulnerable acres in the watersheds– to develop conservation plans. The project proposes to implement clusters of conservation practices within the smallest watershed practicable with the goal of making a discernable difference in water quality at the watershed level. While this targeted and concentrated approach is desired, the project proponent understands the voluntary nature of landowner participation and will strive to reach the critical sources within the watershed. The proposed conservation practices would reduce nutrient losses from the landscape, reduce nutrient loads to streams and downstream receiving waters, and reduce water quality degradation in watersheds that would provide benefits to coastal watersheds and marine resources.</p>	Pearl River	Yes	No	No	Yes	No	Yes	Yes	No	\$	2,000,000.00	\$	-		
Eco Restoration	5829	8/10/2018	Trees Please Bay St. Louis	<p>In undeveloped areas of the coast, rain is intercepted by trees and the rest soaks into the ground, filtering out pollution. But on the developed coast, buildings, parking lots, roads, and other impervious surfaces, trees and soil no longer slow the rainfall and filter the water. The resulting stormwater instead picks up nitrogen and phosphorus pollutants. It flows rapidly into baysou, beaches, St. Louis Bay, and Mississippi Sound via storm drains. The results include beach closures, oyster contamination, and fish kills.</p> <p>This project would increase urban forestry—trees and soil—in the city landscape. Trees and soil decrease polluted stormwater runoff (including oil, pet waste, and fertilizer). This increases water quality for recreation, oysters, and fish on the Mississippi Gulf Coast.</p>	Hancock/Harrison	Yes	Yes	No	Yes	Yes	No	No	Yes	No	\$	1,000,000.00	\$	-	

Eco Restoration	5830	8/10/2018	Bottlenose Dolphin Health Assessments to Monitor Restoration Effectiveness in Mississippi	<p>Health assessments are used to identify and understand population stressors, mitigate their effects, or plan more effective conservation measures, in response to management drivers (e.g. MMPA, ESA, NOAA's Ocean and Human Health Initiative, and, more recently, for Natural Resource Damage Assessments (NDRAs)).</p> <p>Capture/release health assessments involve large teams of researchers using multiple vessels to locate, capture, assess, and release wild bottlenose dolphins. A large net is used to encircle one or more dolphins in shallow water. The team then enters the water and once the dolphin is disentangled from the net and restrained, blood is collected and vital signs are assessed. The dolphin is then brought up onto a specially designed platform on a boat for further examination and the collection of morphometrics, diagnostics, and biological samples. Samples are processed on the boat for timeliness and quality control purposes.</p> <p>Standard morphometrics and diagnostics include a physical exam, body measurements (length and girth), ultrasound to assess reproductive status and blubber thickness, complete blood count (CBC)/blood chemistry/blood gases, serology, pathogens, endocrinology, immunology, urinalysis, skin and oral assessment, biotoxin and contaminant measures, and blowhole and genital swabs. Most of these diagnostics can only be obtained from wild dolphins through capture and brief restraint. Health assessments conducted on bottlenose dolphins in the Southeast have used standardized protocols and established laboratories for sample analysis. The use of reliable protocols and the establishment of reference intervals for many health parameters, such as CBC, serum chemistry, mass:length ratio, and also baseline levels for biotoxins, persistent organic pollutants (POPs) including polychlorinated biphenyls (PCBs), polybrominated diphenyl ethers (PBDEs), and a suite of organochlorine pesticides.</p> <p>Health assessments have been conducted on bottlenose dolphin populations in various locations in the Gulf, including Sarasota Bay, Florida (1987-Present), Mississippi Sound, Mississippi (1982-2011, 2018), Matagorda Bay, Texas (1992), St. Joseph Bay, Florida (2004-06), and Barataria Bay, Louisiana (2011, 2013, 2014, 2017, 2018). Health assessments conducted in Barataria Bay, Mississippi Sound, and Sarasota Bay were instrumental in quantifying injury associated with the Deepwater Horizon oil spill.</p> <p>There is a continued need for periodic health assessments of bottlenose dolphins in Barataria Bay, Mississippi Sound, and reference populations in Sarasota Bay to monitor the effectiveness of, and potential impacts from, restoration activities being conducted in Louisiana waters. The health assessments would follow the same protocols and procedures that have been developed and implemented previously in Gulf waters.</p> <p>The future vision is to obtain more information from remote sampling of bottlenose dolphins injured by the oil spill, including biopsy, breath, and tagging. This would minimize the need for capture/release health assessments because they represent higher risk to dolphins and to the team, and because of the difficult logistics and high costs. We also need coordinated data management, mapping, and spatial/temporal analysis to maximize the information gained from available samples.</p>	Yes	No	No	No	Yes	No	No	No	No	No	No	\$	-	\$	-
Eco Restoration	5832	8/10/2018	A comprehensive, participatory approach to enhance conservation of marine mammals and sea turtles and the sustainability of the shrimp fishery	<p>Introduction:</p> <p>The shrimp fishery is the most valuable commercial fishery in the Gulf of Mexico with major cultural and economic impact on coastal communities. Several factors (e.g., fuel prices, shrimp imports, hurricanes, DWH spill) have impacted the viability of the shrimp fishery. Demand for sustainably produced seafood is increasing in the U.S. and greatly affects the market value of seafood. A common method to evaluate fishery sustainability is the magnitude of bycatch of marine mammals (MMs) and sea turtles (ST) and efforts to avoid their bycatch. The shrimp fishery poses concerns for the conservation of MM/ST due to incidental capture (or bycatch) and reduction of MM/ST bycatch in this trawl fishery are restoration priorities (see PDAR/PEIS Sections 5.5.10 and 5.5.11; Strategic Framework for MM and ST Restoration Activities). Regulations to limit bycatch in the shrimp fishery have long been in place (e.g. Turtle Excluder Devices or TEDs) and new measures continue to be proposed. However, limited observer coverage of the shrimp fishery (less than 1% of the fishing effort in the Gulf) and gaps in the data on the demographics and health of MM/ST populations (e.g., abundance, bycatch mortality, disease) complicates the evaluation of success of bycatch mitigation measures. These knowledge gaps and deficiencies impede the effective management of bycatch reduction of MM/ST populations in the shrimp fishery comprising the recovery of these protected species and the certification of this fishery as sustainable. This 5-year project proposes a group of activities that address knowledge gaps about the demographics of MMs and the health of STs, improve fisheries awareness of the Marine Mammal Protection Act (MMPA) and Endangered Species Act (ESA) regulations pertaining to the shrimp fishery and provide new tools developed with input from stakeholders to evaluate the recovery potential of these populations under specific bycatch reduction scenarios. The use of the Management Strategy Evaluation (MSE) framework, widely used in managing fisheries and marine mammals, allows contrasting the benefits of different levels of survey effort and bycatch reduction measures to meet desired conservation and management objectives. This will be achieved through partnerships with all stakeholders (state & federal resource managers, fishing industry & community, scientists, NGOs) and an interdisciplinary approach grounded in the principle that fishermen are active participants in development of management measures rather than mere subjects-matters. Cost/effort leverage and costs, this project would be conducted in Mississippi waters, where an ongoing project involving observers on shrimp vessels is underway to estimate MM/ST bycatch rates. However, the same approach would yield similar benefits in any other Gulf state, where the shrimp fishery is an important activity.</p> <p>The primary objectives of this project are:</p> <ol style="list-style-type: none"> 1) To estimate annual abundance, trends in abundance, migration rates, and other key parameters for the MS Sound bottlenose dolphin population. These data are necessary to assess the impact of fisheries bycatch and other human-caused mortality and to evaluate the effects on this population on ongoing and planned restoration efforts in the MS Sound (e.g. water quality, enhancement of shellfish and fish habitat). 2) To characterize immunological responses of sea turtles against marine bacteria and compare these results to a baseline established in the southeastern United States to help understand the effects of natural and anthropogenic stressors on the end-ST populations in the Gulf and to evaluate recovery efforts. 3) To improve awareness of MMPA and ESA requirements in the shrimp industry and community (fishermen, wholesalers, restaurant managers, etc.) to increase/promote compliance with regulations. 4) To collect data required for the certification of the shrimp fishery as sustainable, to support efforts to increase the market value of shrimp harvested by the MS fishery. Examples include correct use of TEDs, avoidance of areas/fisheries with high MM/ST densities with high MM/ST densities. 5) To develop MM/ST management tools to evaluate cost-benefits of survey effort and potential mitigation measures in the recovery of MM/ST populations for adaptive management of MM/ST. 	Yes	No	No	Yes	Yes	No	No	No	No	No	\$	16.00	\$	-	
Eco Restoration	5833	8/13/2018	Stock structure, abundance, and habitat of common bottlenose dolphins in the Mississippi Sound region	<p>NOAA Project ID# 13905: Common bottlenose dolphins in the Mississippi Sound region were injured by the Deepwater Horizon oil spill. To effectively monitor the status and recovery of dolphins in this region, population structure needs to be assessed, and abundance periodically estimated throughout the region. Additionally, dolphin habitat use and how it varies with salinity needs to be assessed. This body of research is critical for informing restoration planning and implementation, and monitoring/evaluating restoration effectiveness. Common bottlenose dolphins are abundant (~3000 to 4000 dolphins) and widely distributed in Mississippi Sound and adjacent waters (Mississippi Sound region) including Lake Borgne, Bayou du Large, and the coastal Gulf of Mexico. Dolphins occur in a wide range of physiographic habitats in this region (e.g., barrier islands, open water, marsh, natural and man-made channels) where salinity varies both spatially and temporally from near fresh to marine. Currently, bottlenose dolphins are managed as one population in the stock. However, because of the large area and diversity of habitats, this area could likely be made up of two or more demographically-independent populations. During first 3 years of this 10-year project, remote biopsy sampling will be conducted throughout the Mississippi Sound region during winter and summer. The sampling design and sample numbers will be sufficient to allow for subsequent analysis to define the population structure. The abundance of bottlenose dolphins will be estimated from capture-recapture or transect surveys during summer and winter every 2nd (2) years to monitor trends in abundance. Monthly seasonal distribution surveys will be conducted to collect location data to model dolphin distribution with respect to physiography, and salinity, water temperature and other environmental parameters. Date: Aug 10, 2018</p>	Yes	No	No	No	No	No	No	No	No	\$	7,000,000.00	\$	-		
Eco Restoration	5834	8/13/2018	Incentivized use of small bar spacing TEDs in the otter trawl fishery of Mississippi	<p>NOAA Project ID# 13913: The aim of this project is to restore sea turtle populations in the Gulf of Mexico, particularly Kemp's ridley (Lepidochelys kempi), where small juveniles overlap with the nearshore and inshore shrimp otter trawl and skimmer fishery in Mississippi. The project will also increase the health of fisheries by providing fishing communities with methodologies and incentives to reduce impacts to fishery resources. Sea turtle restoration will be achieved through enhanced outreach and training in turtle excluder device (TED) technology specifically for the skimmer trawl fishery of Mississippi. In order to protect juvenile sea turtles that inhabit nearshore and inshore waters of the northern Gulf of Mexico, pending TED regulations for the skimmer trawl fishery will require TEDs with a maximum bar spacing of 3 inches, which is less than the current 4-inch maximum required for the otter trawl fishery. The skimmer trawl and inshore otter trawl fishery in Mississippi overlap operationally and likely encounter the same small turtles. This component of the project aims to incentivize the use of TEDs with 3 inch bar spacing in the otter trawl fishery in Mississippi. Date: Aug 10, 2018</p>	Harrison, Hancock and Jackson counties	Yes	No	No	Yes	No	No	No	No	\$	540,000.00	\$	-		
Eco Restoration	5835	8/13/2018	Enhancing the monitoring and enforcement of TEDs in coastal Mississippi	<p>NOAA Project ID# 13912: The aim of this project is to restore sea turtle populations in the Gulf of Mexico through enhancement of their protection in Mississippi coastal waters where small juveniles overlap with the nearshore and inshore shrimp otter trawl and skimmer fishery. Sea turtle restoration will be achieved through enhancing the activities of Mississippi marine enforcement directed toward TED compliance monitoring. Restoration will be achieved by maintaining TED compliance in Mississippi coastal waters at the highest level possible. Enhancement of monitoring and enforcement of TED regulations by Mississippi marine enforcement will be achieved through increased training of marine patrol officers in proper TED inspection procedures and through targeted funding for increased TED enforcement efforts at sea. Enforcement efforts will be tracked through submission of NOAA Fisheries TED Inspection forms and TED compliance data uploads to the NOAA Fisheries TED compliance database. Date: Aug 10, 2018</p>	Harrison, Hancock and Jackson counties	Yes	No	No	Yes	No	No	No	No	\$	600,000.00	\$	-		
Eco Restoration	5836	8/13/2018	Industry outreach and education on specially designed TEDs for the Mississippi skimmer trawl fishery	<p>NOAA Project ID# 13911: The aim of this project is to restore sea turtle populations in the Gulf of Mexico, particularly Kemp's ridley (Lepidochelys kempi), where small juveniles overlap with the nearshore and inshore shrimp otter trawl and skimmer trawl fisheries in Mississippi. The project will also increase the health of fisheries by providing fishing communities with methodologies and incentives to reduce impacts to fishery resources. Sea turtle restoration will be achieved through enhanced outreach and training in turtle excluder device (TED) technology specifically for the skimmer trawl fishery which will be affected by a TED requirement in 2019. NOAA Fisheries anticipates the implementation of a TED use requirement for the southeast U.S. skimmer trawl fishery in 2019. Industry outreach and education on specially designed TEDs for the skimmer fishery will be crucial to successful implementation and compliance with federal regulations. Improving compliance will reduce potential lethal sea turtle interactions with skimmer trawls in Mississippi coastal waters. Workshops will focus on skimmer trawl TED performance results by TED configuration, installation of pre-constructed TEDs, TED handling techniques, and troubleshooting TED performance problems. Date: Aug 10, 2018</p>	Harrison, Hancock and Jackson Counties	Yes	No	No	Yes	No	No	No	No	\$	50,000.00	\$	-		
Eco Restoration	5837	8/13/2018	Establishment of a TED outreach and training team for Mississippi	<p>NOAA Project ID# 13910: The aim of this project is to restore sea turtle populations in the Gulf of Mexico through enhancement of their protection in Mississippi coastal waters where small juveniles overlap with the nearshore and inshore shrimp otter trawl and skimmer trawl fishery. The project will also increase the health of fisheries by providing fishing communities with methodologies and incentives to reduce impacts to fishery resources. Sea turtle restoration will be achieved through the establishment of a core TED outreach team to provide enhanced outreach and training in Turtle Excluder Device (TED) technology to Mississippi shrimp fishers, through which TED compliance will be maintained at the highest level possible. A core TED outreach team consisting of a coordinator and a technical expert (TED specialist) will be established for the State of Mississippi. The team will provide outreach and training to Mississippi shrimp fishers on the latest advancements in TED technology and regulatory requirements. The team will work with Mississippi marine enforcement to provide training in the proper methods for inspecting TED compliance and ensuring that TED compliance information is recorded accurately for inclusion in a NOAA TED compliance database. The TED coordinator will receive training from and work closely with the NOAA Fisheries Gear Monitoring Team (GMT) to ensure that the most up to date information is provided to fishers and marine enforcement in Mississippi. Date: Aug 10, 2018</p>	Harrison, Hancock and Jackson	Yes	No	No	Yes	No	No	No	No	\$	656,000.00	\$	-		
Eco Restoration	5838	8/13/2018	Long-term Water Quality and Biological Characterization Study of Mississippi's Coastal and Nearshore Habitats	<p>NOAA Project ID# 13909: The collection and analysis of biological and water quality data as part of a long-term sampling plan can provide valuable information on background parameters and species diversity and abundance. It may also provide agencies with a better understanding of how coastal and near-shore environments are utilized by protected species, such as the piping plover, red knot, and Gulf sturgeon, as well as commercially and recreationally important species, such as shrimp and redfish, and how impacts to those environments may affect these species. Since benthic macroinvertebrates have limited mobility, communities transform in response to changes in water quality and impacts from other stressors such as hurricanes, beach restoration, and oil spills. Changes in benthic macroinvertebrate community would likely impact the Gulf sturgeon and other species relying on the food supply. To comprehensively understand potential impacts, benthic and water quality sampling stations will be established along the mainland and barrier islands targeting shorebird and Gulf sturgeon foraging areas, including the establishment of stations near stormwater outfalls. The deployed water quality arrays will collect data at regularly scheduled intervals every one to five minutes, capturing changes in water quality over time. Chemical and nutrient water quality samples will be collected during each benthic macroinvertebrate sampling event. These water quality data will be linked with benthic macroinvertebrate data collected near each array, providing an understanding of the response and recovery rate of the benthic community. Additional benthic samples will be collected closer to shore in the intertidal zone, focusing on shorebird foraging areas. Tidal pool and wrack line samples will be collected adjacent to the established intertidal benthic sampling stations. EA1 will apply for the requisite permits to collect samples. Targeted water column sampling will provide Catch-per-unit-Effort (CPUE) data that can identify cyclical patterns and critical habitats for nearshore larval and adult fish, shrimp, and crabs. Fish and shellfish species will be collected along pre-determined transects over time using trawls, net, and plankton sampling. During each sampling event, zooplankton will be collected with each tow targeting different section of the water column (bottom, mid-depth, and surface) once during the day and again at night. Comparisons between transects and over time will help determine spatial and temporal distributions of a variety of species, including where and when certain species of zooplankton are found within the water column. Water quality measurements will be collected at each station during a sampling event. The long-term dataset will provide detailed information on the distribution of larval and adult fish and shellfish that can assist with the determination of impacts to commercially and recreationally important species during an environmental disaster. During trips to the barrier islands, informal boat-based surveys for marine mammals will be performed, including collection of GPS data and photographs of dorsal fins for identification. Additionally, opportunistic sightings of stranded sea turtles and marine mammals and of live sea turtles and marine mammals from the islands will be recorded, and the data provided to interested researchers. If desired, carcasses can be salvaged and transported to research organizations to supplement data collection efforts. Estimated costs are for one year of monthly sampling. Date: Aug 10, 2018</p>	Harrison, Hancock and Jackson Counties	Yes	Yes	No	No	No	No	No	No	No	\$	2,000,000.00	\$	-	

Eco Restoration	5840	8/13/2018	Seagrass Identification and Mapping and Water Quality Monitoring in the Nearshore Waters Around the Barrier Islands of the Mississippi Sound	NOAA Project ID# 13907: Seagrass plays an important role providing habitat for various commercially and recreationally important species in the nearshore waters of the Mississippi Sound, particularly along the barrier islands. Seagrass establishment and survival is dependent upon multiple variables, including sediment type and water quality. Each of these factors can be influenced by human activity and storm events, leading to spatial and temporal changes in seagrass coverage. This project involves conducting echosounder tows paired with in-water surveys to accurately map seagrass beds and underlying substrates in the nearshore waters around the barrier islands. Transects will be created and surveyed in areas where seagrass has historically been documented. Each seagrass bed, including prop scarring and other impacted areas, will be delineated using sub-meter accurate GPS units during each survey. Accurately mapping seagrass along nearshore environments can assist agencies in establishing protected areas to reduce future impacts, as well as documenting the effects of storm events, vessel groundings, and other environmental disasters. Seagrass surveys would occur twice a year, at the beginning and end of the growing season. Water quality data logger arrays will be deployed around seagrass beds to collect data at regularly scheduled intervals, capturing changes in water quality over time. In addition, chemical and nutrient water quality samples will be collected monthly near the water quality arrays. During trips to the barrier islands, informal boat-based surveys for marine mammals including collection of GPS data and photographs of sightings of dolphins for identification. Additionally, opportunistic sightings of stranded sea turtles and marine mammals and of live sea turtles and marine mammals from the islands will be recorded, and the data provided to interested researchers. If desired, carcasses can be salvaged and transported to research organizations to supplement data collection efforts. The goal of this long-term project is to capture and analyze data in order to answer the following questions: 1) what is the extent of current seagrass coverage in the nearshore waters of the Mississippi Sound; and 2) what are the spatial and temporal water quality trends that may be impacting seagrass in nearshore waters around the barrier islands of the Mississippi Sound. Estimated cost is for 2 years of sampling. Date: Aug 10, 2018	Harrison, Jackson, and Hancock Counties	Yes	No	No	No	No	No	No	No	No	No	No	No	No	\$	550,000.00	\$	-	-	
Eco Restoration	5841	8/13/2018	Assessment of Artificial Lighting Impacts on Sea Turtles and Public Outreach on Mississippi Mainland Beaches	NOAA Project ID# 13906: Threatened and endangered sea turtles utilize the mainland beaches of Mississippi as nesting habitat. Artificial lights have been shown to reduce sea turtle nesting on otherwise suitable beaches and cause disorientation of the sea turtles' ability to find the sea. The first objective of this project is to conduct comprehensive nighttime lighting evaluations along the beaches of the Mississippi Gulf coastline, including Gulfport and Biloxi. The intent of the surveys is to evaluate all visible lights from the beach with respect to their potential effects on nesting and hatching sea turtles. Lights that are illuminated and visible from the beach will be identified and evaluated (rated with respect to their potential effects on sea turtles), based on a light's intensity, location, distance from the beach, type of fixture and other relevant factors. Recommendations will be made for corrective measures. Sub-meter accurate GPS units fitted with laser rangefinders along with digital SLR cameras will be used to precisely locate and photograph lights, enabling evaluation of their effects on sea turtles and the beach. Interactive maps will be produced showing the GPS location of each light source and the location on the beach from which they were observed. With these maps, property owners and managers will be able to click each location on the beach to bring up information about the light along with a photo of the light source. Recommendations for modifying each light to provide sufficient light for human safety and security while ensuring the light will not detrimentally affect sea turtles will be developed. We will meet with State, County, and City officials to discuss results of the comprehensive evaluation of existing lights and develop local Sea Turtle Protection Ordinances, which will include regulations addressing lighting and other activities affecting sea turtles on the beach. The second objective of the project is to provide educational outreach to patrons at beachfront casinos, resorts, and hotels. A presentation will be developed to provide the public with information on Mississippi's beach and dune ecosystem, its biota, and issues affecting the coastline. Additionally, a training program can be implemented to train City contractors to identify sea turtle crawls to avoid impacts during their normal operations (such as beach raking or concessions), as well as the appropriate organizations to contact for sea turtle and marine mammal strandings. Date: Aug 10, 2018	Jackson, Harrison, and Hancock Counties	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	\$	175,000.00	\$	-	-
Eco Restoration	5843	8/13/2018	Removal of Communications Tower from Horn Island Wilderness	NOAA Project ID# 13899: Horn Island is congressionally designated as part of the Gulf Islands Wilderness. A 139-foot communications tower is located in the approximate center of Horn Island and is easily visible from most locations on the island and surrounding waters. The tower has reached its useful life and is deteriorating rapidly and is a growing safety concern. Its presence is a significant impact to the wild primitive character and natural landscape of the island. The tower is a physical hazard to wildlife, particularly migratory bird species. In addition to the tower are guy wires and anchors, concrete slabs, a dock on the Sound side of the island, a ranger residence, fencing, solar panels, and a road from the dock to the residence in the middle of the island, down to the Gulf side shore. This project would remove the tower, guy wires and anchors, concrete slabs, and solar panels. The other items/structures will be removed as part of this project. This project will also restore approximately five acres of dune habitat in the center of Horn Island where the road currently exists. By implementing this project, the wilderness character of the entire island would be enhanced and impacted primitive landscape of the island would be restored. The tower foot print and surrounding area would be returned to a viable dune habitat. A significant safety issue would be mitigated. A significant esthetic and safety hazard to wilderness and the impacted footprint will be returned to a dynamic vegetated dune habitat. A hazard to migratory wildlife will be eliminated. Visitors seeking a wild and primitive barrier island experience will enjoy an unobstructed natural scene. Date: Aug 8, 2018	Jackson County	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	\$	450,000.00	\$	-	-
Eco Restoration	5844	8/13/2018	Marine Debris Removal from Barrier Islands	NOAA Project ID# 13893: Marine debris arrives on the islands from a range of sources, including visitors and campers on the island, mainland sources, off shore oil rigs and services, commercial and recreational fishing, as well as debris generated by hurricanes and storms. Debris will be collected from supralittoral, intertidal, and subtidal zones. Marine debris impacts are wide spread to both people and ecosystems. Debris represents a threat to a wide range of species (birds, fish, mammals) from entanglement, ingestion, transport of invasive species, and toxicity. Debris can also have impacts to humans from the aesthetic impacts of a fouled beach, to health concerns from medical or sewage based debris to impacts to vessels from fouling intakes and propellers. Marine Debris ranges in size from cigarette butts to entire sailboats. Methods to remove it will be similarly varied, from contract marine salvage crews removing large debris which may need to be dismantled in place, to crews on foot collecting and aggregating small and medium debris for transport and disposal. All island beaches will be cleaned. Success can be measured in miles cleaned, or in approximate weight of debris removed. Date: Aug 8, 2018	Jackson County	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	\$	950,000.00	\$	-	-
Eco Restoration	5846	8/13/2018	Mississippi Jourdan/Wolf Watershed Restoration	NOAA Project ID#13900: The Deepwater Horizon oil spill caused direct, significant and long-term harm to the Gulf of Mexico, the Mississippi Sound and Mississippi's Bay of St. Louis. Following clean up from the oil spill, the long-term recovery and restoration of these waterbodies depends on the health of its bays and estuaries. The health of these bays and estuaries is directly influenced by quality and quantity of water from tributary rivers. Land use in these tributary watersheds directly impacts the quality and quantity of water these tributaries provide to the Mississippi Sound and the Gulf of Mexico. The Natural Resources Conservation Service recognized this island/coastal linkage by including the Jourdan River in its Gulf of Mexico initiative. Mississippi's Bay of St. Louis and its tributaries the Jourdan and Wolf Rivers offers an ideal ecosystem for a tributary water quality and quantity restoration program. The area is large enough to measurably contribute to restoration and protecting water quality in Bay of St. Louis Bay, the Mississippi Sound and the Gulf of Mexico, yet a small enough to effectively monitor those benefits. The health and expansion of the oyster population in the Bay will be the ultimate measure of the program success. The program area blends urban, suburban, exurban and rural land uses that is fairly typical on the Gulf Coast. In addition to waterfront residential developments, cities on and near Bay of St. Louis have traditional working waterfronts that support various small shops, restaurants, commercial docks and industries vital to the local tax base and economy. The Mississippi Department of Marine Resources (DMR) Coastal Preserves Program has three (3) Gulf Ecological Management Sites (GEMS) in the Bay's estuaries: a) Jourdan River Preserve (6,423 acres), b) Bayou La Croix Preserve (3,478 acres) and c) Wolf River Preserve (2,462 acres). Part of the Hancock County Marsh GEM is also in the program area. DMR identified specific systems as a major threat to the ecological function of each of these GEMS. Over time, many of the Bayou La Croix bayous and creeks became clogged with debris which traps sediments and may disrupt estuaries salinity levels and impair water quality. Finally, in 2015 The Nature Conservancy completed Watershed Management Plans in the program area: 1) Devils Swamp-Bayou La Croix, 2) Lower Bayou La Croix, 3) Phillips Bayou, 4) Magnolia Bayou, 5) Watts Bayou, and 6) Bear Point Bayou. Moving inland, land use changes to smaller communities and more agriculture. There is an emerging tiger Bay of St. Louis Watershed Watershed management efforts in Harrison County that discharge into Bay of St. Louis. The Wolf River was Mississippi's first designated Scenic Stewardship Stream. The Wolf River Conservation Society, a non-profit organization created to conserve, manage and protect the Wolf River, has protected 2,950 acres in the Wolf River watershed. There is more residential development and agriculture in the Jourdan River watershed with documented failing septic systems and inadequate wastewater collection and treatment. The Wolf Watershed Watershed management efforts in Harrison County that discharge into Bay of St. Louis. The PHWD proposes being a liaison between Council members to integrate priority County and City governments water quality and quantity restoration areas and activities into the Council's plans. Date: Aug 8, 2018	Hancock, Harrison, Pearl River, Stone and Lamar Counties	Yes	No	No	Yes	No	No	No	No	No	No	No	No	No	No	\$	17,500,000.00	\$	-	-
Eco Restoration	5847	8/13/2018	Reduction of Marine Mammal Fishery Interactions through Demonstration and Implementation of Better Techniques and Materials for Constructive Trawl Components	NOAA Project ID# 12999: This project is designed to decrease interactions of marine mammals with commercial shrimp trawling gear. Dolphins are occasionally captured in shrimp trawls or entangled in the layline as a result of predation on gilled fish in the trawl, with hundreds of mortalities estimated per year in the Gulf of Mexico shrimp otter trawl fishery. Further, this predation results in extensive trawl damage, creating hours of work to repair the nets and these interactions have resulted in dolphins being injured or killed by fishers out of frustration. The majority of shrimp nets used in the GOM shrimp fishery are made from standard polyethylene webbing. In recent years, material such as Dyneema and Spectra have been introduced into the fishery but have yet to gain widespread use. NOAA Fisheries research suggests that these stronger materials sustain fewer dolphin bite holes compared to polyethylene nets. However, shrimp fishers are unlikely to make the investment to adopt these new net materials unless they know that comparable catch rates can be achieved. This project will compare and quantify target catch rates and dolphin bite damage between polyethylene netting (control) and stronger netting (experimental) aboard commercial towed rigged to pull two nets. Testing differing fishing configurations of the net such as comparison of trawl bib adjustments will also be evaluated. Additionally, the project will determine the optimal material and fishing configuration for trawl laylines to reduce dolphin entanglement. A comparison of different layline materials will be conducted to determine if increasing line stiffness will decrease the likelihood of marine mammal entanglement. Drones, optical cameras, and acoustic cameras (DIDSON/SANS) will be used to observe which materials have fewer dolphin interactions. This project will consist of five different objectives: 4EC Compare the finfish bycatch and shrimp catch rates of Dyneema nets to identical nets made from polyethylene webbing. 4EC Compare the amount of dolphin interactions, by counting number of dolphin bite holes for identical Dyneema and Polyethylene nets. 4EC Compare dolphin interaction rates between materials made from differing materials using drones, optical cameras, and acoustic cameras. 4EC Compare dolphin interaction rates between two bib-style trawls with different bib adjustments. 4EC Outreach, distribution, and monetary incentives to fishers to use improved fishing gear. One gear evaluation is complete the gear that demonstrates the least dolphin interactions will be promoted to the fishery. Improved laylines or trawls will be given away to a limited number of fishers along with monetary incentives with the requirement of either observer coverage or reporting. Additionally, to ensure fishers are using the gear, NMFS GEMT will conduct at sea monitoring of the gear. Once fishers become aware of the benefits of these materials, dolphin/fishermen conflicts should decline resulting in fewer dolphin mortalities in shrimp trawling gear. Additional outreach will be conducted at workshops for upcoming TED regulations where these new materials will be promoted. Date: Aug 8, 2018	Jackson, Harrison, Hancock	Yes	No	No	Yes	No	No	No	No	No	No	No	No	No	No	\$	800,000.00	\$	-	-
Eco Restoration	5848	8/14/2018	Grand Bay & Fontainebleau Habitat Restoration and Trail Enhancement Project	NOAA Project ID#13898: This project would build on the successes of previous and ongoing efforts to restore wet pine savanna habitats at Grand Bay NWR and the Fontainebleau Unit of Mississippi Sandhill Crane NWR. Historically, wet pine savannas provided habitat for cranes, grassland birds, reptiles, amphibians, migrating songbirds, and many other species of wildlife native to the Gulf coast. This fire-dependent ecosystem has degraded due to invasive species, fire suppression, and land use changes. To restore these important habitats, we desire to use restoration techniques including prescribed fire, mechanical treatment of woody vegetation, timber management, and invasive species control. The project would include a study to determine the best methods and areas for hydrological restoration at Grand Bay. Wildlife-oriented recreation is a priority of the National Wildlife Refuge System and this project would also enhance public use trails at Grand Bay NWR and the Fontainebleau Unit of Mississippi Sandhill Crane NWR. Date: Aug 8, 2018	Jackson	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	\$	6,500,000.00	\$	-	-
Eco Restoration	5849	8/14/2018	Quantification of nutrient and sediment loads into the Mississippi Sound and Mobile Bay to inform water management	NOAA Project ID# 13895: This project will be a comprehensive study of historical and current streamflow, sediment, nutrients, and other pertinent water quality data and corresponding salinity, pathogen, and HAB responses to help inform oyster management in the Mississippi Sound and Mobile Bay. We intend to gather current and historical streamflow and water quality data (circa 1980 to (1) quantify a surface water budget for freshwater entering these estuaries; (2) estimate trends in sediment and nutrient loads from point and nonpoint sources; (3) gather and analyze historical salinity data compared to historical trends in other related parameters in other estuarine systems; and (4) relate trends in nutrient or other parameters to trends in oyster mortality trends in historical pathogen, HAB, and oyster mortality responses. This project will leverage the existing Louisiana, Mississippi, Alabama Coastal Systems (LMACS) effort led by the Mississippi Department of Marine Resources. Date: Aug 7, 2018	Coastal counties in MS and AL	Yes	Yes	No	Yes	No	No	No	No	No	No	No	No	No	\$	1,500,000.00	\$	-	-	
Eco Restoration	5852	9/10/2018	Mississippi Coastal Improvement Program (MICIP) Deer Island Ecosystem Restoration Program	Scope of Work: This project will complement the existing Federal restoration projects at Deer Island by minimizing the fracturing of diversity and creation of an additional 400 acres of highly productive wetlands, beach and dune and maritime forest habitat. Planned improvements include restoration of a portion of the northern and southern shorelines of the island, and new stone trapping dikes to prevent future erosion. Project will also restore emergent coastal marsh habitat, and land use changes to restore these important habitats, we desire to use restoration techniques including feeding and nursery use as well as federally protected migratory species, project will restore critical winter habitat for Piping Plover (threatened species), and nesting habitat for raptors including Bald Eagle as well as listed sea turtles, project will also fully restore barrier island and natural hydrologic conditions to MS sound as well as historical inflows of Gulf water into the sound area. The project will also fully restore historic geomorphic features through restoration, stabilization of island elevations and shoreline profiles. Background and Cost: A feasibility study was completed in September 2009. The recommended total project, estimated to cost \$25,800,000 with an estimated Federal cost of \$16,700,000 and an estimated non-Federal cost of \$9,090,000. Of this amount, \$1,231,000 is estimated to be needed to complete PED (design phase elements) with an estimated Federal cost of \$800,000 and an estimated non-Federal cost of \$431,000. Funding Status: This project is currently unfunded. The next potential chance for funding will be from the FY 20 (October 2019) budget. Ahead of this, local non-Federal Sponsor support via a Letter of Intent will be needed. Would like to further discuss the LOI with you going forward.	Harrison	Yes	Yes	Yes	No	Yes	No	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	\$	25.00	\$	431,000.00	-

Eco Restoration	5854	10/15/2018	Lift Station Repair at Ramoneda St.	Project consists of pump station upgrades to include new pumps, internal wet well rehabilitation with new discharge pipes and valves, liner of wetwell and bypass valves installed near the valve box. This pump station is continually in a state of disrepair and undersized to handle existing demand. Also, during heavy rain falls the pumps are over worked causing periodic bypass of sanitary sewer into the nearby environment.	Hancock	Yes	Yes	10000%	Yes	Yes	No	No	Yes	No		\$	250,000.00	\$	-	
Eco Restoration	5859	11/3/2018	Mississippi Gulf Coast Near Shore Water Quality Project	This Storm Water Filtration Project is proposed to address the ongoing poor near shore water quality issues which continuously plague the Mississippi Gulf Coast. Each year, segments of our coastline have "Water Contact Advisories" posted as a result of elevated bacteria levels found within the near shore waters. These Advisories are to discourage individuals from accessing these areas and being a tourist destination, this overall perception has a negative lasting impact. Although there are several aspects of addressing this problem underway, such as upgrading sanitary sewer systems and implementing Eco-Friendly "Green" solutions, they do not fully address all of the bacteria sources contributing to these periods of elevated bacteria levels within our near shore waters. This Storm Water Filtration System technology is designed to capture the storm water run off during rain events, force through a treatment process to remove sediment and bacteria, retain the contaminants for disposal within the sanitary sewer system and return the treated storm water back into the discharging outfall. Ideally, the treatment facility should be positioned near the discharge outfall location or as close as geographically permitted to maximize the area of watershed treated. However, this technology can be placed in strategic locations based on existing conditions to treat various segments throughout a watershed. This flexibility of an adaptable design specific to existing conditions, makes for an ideal approach to treat storm water run off for clean acceptable near shore water quality. A more detailed presentation is attached with this project information.	Harrison	Yes	Yes	9500%	Yes	No	Yes	No	Yes	No		\$	12,000,000.00	\$	-	
Eco Restoration	5865	1/7/2019	Hickory Creek Headcut stabilization	Hickory Creek, along with White Cypress Creek and Catahoula Creek, make up the upper Jourdan River Watershed. They are all downcutting, each with a nick zone that migrates upstream. The one on Hickory Creek, a half mile downstream of Caesar Nease Road, will threaten the bridge and roadway in the not too distant future. The headcut is contained within the applicant's property. Hickory Creek, in its degraded state, is a serious coastal stream that is fairly small in appearance. However, it drains a large watershed upstream of the headcut, some 35 square miles. It utilizes its floodplain to accommodate the high water flows that result from heavy rainfall events. On these occasions, the stream and the floodplain together operate as one wide, forested stream. Below the nick zone, the stream is downcut enough that it loses the ability to put floodwater out onto the floodplain. When this happens, the water blows out the banks to accommodate the flow. The resulting soil and vegetation loss is staggering. The soil loss is a large contributor to the siltation problem in Bay St. Louis. Downstream of the nick zone, at some point the stream achieves a new form of stability within its canyon. Between these two areas, a length of, say, 1/4 of a mile, is a constantly moving zone of destruction. The project is to stabilize the upstream migration of that zone and stabilize it. It will involve creating grade control structures, probably three or so to stop the stream down in an orderly fashion. It will also involve woody debris removal and some bank sloping and stabilization. Incidentally all tributaries that enter the downcut streams have to downcut as well to reach grade. There are two main tributaries and one smaller one on the applicant's property that should receive similar treatment, although on a smaller scale.	Hancock	Yes	Yes		Yes	Yes	Yes	Yes	Yes	No		\$	-	\$	-	
Eco Restoration	5866	1/14/2019	Manatee Rescue and Rehabilitation Center in Mississippi	Although the West Indian manatee (Trichechus manatus) has historically ranged throughout the southeastern United States, its recovering population has resulted in an increased number of animals travelling throughout the coastal waterways of Alabama, Mississippi, and Louisiana. Still, this is a vulnerable species requiring continued monitoring as well as rescue and rehabilitation services. Unfortunately, there are no facilities equipped to conduct rescue and rehabilitation efforts in Alabama, Mississippi, or Louisiana. Instead, these states must rely on assistance from facilities and personnel from other states and rehabilitation of these and other animals. The Institute for Marine Mammal Studies is strategically located in coastal Mississippi and has a long and established history in marine mammal and sea turtle stranding response and rehabilitation. IMMS has been involved in the rescue, rehabilitation, and release of marine mammals and sea turtles since 1984, and IMMS staff and veterinarians have the necessary experience, facilities, and capabilities to conduct rescue and rehabilitation activities within this region as well as coordinating with both state and federal agencies.	Harrison, Jackson, Hancock	Yes	Yes	1000%	No	Yes	No	No	No	No	Rescue an	\$	5,000,000.00	\$	-	
Eco Restoration	5867	1/14/2019	City of Jackson Sewer Systems Improvement Project	Proposal to assist the City of Jackson, MS with major citywide sewer rehabilitation. Although the City of Jackson is currently operating under an EPA consent decree due to Clean Water Act violations incurred by the Savanna Street Wastewater Treatment Plant, raw sewage from the plant and its associated collection lines continues to flow directly into the Pearl River and its associated tributaries. In the first three quarters of 2018 alone, City of Jackson Sanitary Sewer overflowed 4.5 million gallons of untreated sewage to the Pearl River and Savanna Street WWTP released 2.65 billion gallons through prohibited bypasses. The Savanna Street WWTP is currently in significant non-compliance with its NPDES permit and in the first three months of 2018, the nitrogen and ammonia total released was 105% above permit limits. In 1996, the entire section of the Pearl River from Ross Barnett Reservoir to confluence with the Strong River was placed on the 303(d) list of impaired water bodies due to nutrients/organic enrichment and low dissolved oxygen. Recommended action in 2015 TMDL for Pearl River from Ross Barnett Reservoir to Strong River is 70% reduction of total phosphorus. In a letter to MDEQ dated April 16, 2015, MDEQ acknowledged, "that a substantial portion of the existing nutrient load is due to frequent bypasses, leaking sewer pipes and sludge deposits in the Pearl River associated with the City of Jackson wastewater treatment facility." The Pearl River is being rendered unusable by the City of Jackson. This is a health and safety, economic and environmental issue not only for the City of Jackson but also for the downstream communities in Mississippi and Louisiana. Commercial and recreational fisheries and oyster hatcheries on our Gulf Coast rely on clean, freshwater flow from the Pearl River. Nutrient laden water from the Pearl River contributes to areas of low dissolved oxygen in the Mississippi Sound and Gulf of Mexico. City of Jackson is currently under negotiations with the EPA to reduce the requirements of their consent decree due to financial hardship. Our proposal recommends monetary assistance to the City of Jackson so that they can comply with their consent decree and rehabilitate the City's WWTF and transmission system.		Yes	Yes		No	No	No	No	No	No		\$	-	\$	-	
Eco Restoration	5868	2/2/2019	Pascagoula River shoreline washout	The bank is washing away every time the river rises. Cumbest bluff residents are losing their property, one house has less than 15ft of ft. Before collapsing in the river. Something needs to be done fast	Jackson	Yes	Yes		No	No	No	No	No		\$	-	\$	-		
Eco Restoration	5869	2/4/2019	Mississippi Phosphates Superfund Site Long-Term O&M (Establish a Fund)	EPA's Superfund Program is set up such that "fund-lead" NPL sites require the State to commit to a 10% cost share on the construction of the remedy at the site. For those sites that require long-term operation and maintenance (O&M), particularly those that require the collection of leachate from closed impoundments (e.g., a gypsum stack), the State must commit to 100% of the O&M costs, typically into perpetuity. Once the remedy is in place (10% cost share to State), the site is then placed into "Operation & Function" (O&F) stage for 30 years, afterwards to O&M (see https://sempub.epa.gov/work/HQ/196829.pdf). It is estimated that the annual cost of leachate collection, treatment, and disposal at Mississippi Phosphates will be as much as \$200K-\$500K per year into perpetuity. With that in mind, a capitalized fund (out of RESTORE or BP Funds) should be set aside to address the State's obligation for long term stewardship of this Fund-Lead Site.		Yes	Yes		No	No	No	No	No	Environm	\$	100,000,000.00	\$	-		
Eco Restoration	5873	2/20/2019	Wolf River Weyerhaeuser Land Protection	The Land Trust for the Mississippi Coastal Plain (LTMCP) is an accredited Land Trust dedicated to the conservation, promotion, and protection of open spaces and green places of ecological, cultural, or scenic significance in the counties of the Mississippi Coastal Plain. LTMCP utilizes both fee simple and conservation easement tools in conserving land for the benefit of habitats, species, and recreation. The Land Trust holds a conservation easement on approximately 18 miles of the Wolf River North of I-10 in partnership with The Wolf River Conservation Society which is a non-profit corporation dedicated to conserving, managing, and protecting the Wolf River and its watershed from its headwaters in Lamar County to its termination at the Bay of St. Louis. The State of Mississippi has classified the entire length of the Wolf as a Fish & Wildlife stream to protect recreational use and the propagation and maintenance of a healthy, well-balanced population of fish and wildlife. The Wolf River is also Mississippi's first scenic stewardship stream. The goal of this project is to establish funding to purchase individual parcels of land owned by the Weyerhaeuser Company totaling 4-39,028 acres, located in areas identified as crucial to establishing complete corridors of conservation land. The Wolf River Conservation Society has identified these sites based on locations that would continue conservation corridors previously established by the State of Mississippi, North of I-10, in Harrison County that total approximately 1320 acres managed by the Mississippi Department of Wildlife, Fisheries, and Parks. Protection of these upstream lands is vital to the water quality and erosion control downriver and into the Mississippi sound. Ecological Value: Protects properties as a buffer area for storm surge by providing dispersal and displacement in the event of flooding waters. These flooding waters have a natural function of turnover and flushing of coastal wetlands. Protects areas that provide clean water for our natural resources along the Wolf River and into the Bay of Saint Louis. Provides valuable habitat for a wide variety of plants and animals native to Mississippi, as well as migratory birds. Provides opportunities for low impact recreational activities such as kayaking, birdwatching, fishing, and other wildlife observation. Adds to complete corridors of conservation land.	Harrison	Yes	No		Yes	Yes	Yes	Yes	Yes	No		\$	-	\$	-	
Eco Restoration	4248	11/25/2014	Point Aux Chenes Marsh Shoreline Protection	The area of the Grand Bay National Estuarine Research and Reserve (NERE) around Point aux Chenes Bay has Southward facing shoreline against the Mississippi Sound which needs protection from wave action. Every time I visit in my kayak the area has receded some, especially the eastern point of the entrance to Bayou Cambest. Rock jetties like they have used in Louisiana at Fourchon or any type of barriers to help reduce wave action could do a lot to help prevent these Southern shorelines from receding. I have written a blog post regarding the erosion I have seen in this area. It can be viewed here: https://samurallifeshop.com/2017/07/21/support-project-4248-protect-point-aux-chenes-bay-shoreline/ Historically, Grand Batture island provided erosion protections for the Grand Bay NERR, and specifically Point aux Chenes Bay. Over time, Grand Batture was eroded into an island chain, and, in 1969, Hurricane Camille reduced Grand Batture to nothing more than fragmented shoals. This effectively removed any barrier for coastal erosion in Point aux Chenes Bay and accelerated the rate at which land has eroded within the Grand Bay NERR. There is evidence to support this erosion over the years in a study published in 2007. This study can be viewed at the following link: http://grandbayner.org/wp-content/uploads/2010/12/Grand-Bay-National-Estuarine-Research-Reserve-Site-Profile-Final-Draft-01Oct2007.pdf Another study titled "Impacts of historic morphology and sea level rise on tidal hydrodynamics in a microtidal estuary (Grand Bay, Mississippi)" which was published in Volume 111, Part B of Continental Shelf Research, December 2015, supports the fact that erosion has progressively increased in the Grand Bay NERR due to a lack of a tidal barrier. This study can be found here: http://www.sciencedirect.com/science/article/pii/S0278434315300012 Finally, the United States Geological Survey provided a time lapse video showing the effects of this erosion. This time lapse video is compiled of shots from a 5 month period. It gives a glaring example of how fast the coastal erosion is taking place in Point aux Chenes Bay. The video can be found here: https://twitter.com/USGS/video/80744958447193192?embed_source=facebook This coastal erosion not only affects the amount of viable marshland within the Grand Bay NERR, it also affects some significant archaeological sites within the NERR. Indian mounds made of oyster shells are located throughout the NERR. Several of these have been taken away by wave action, and more are in danger of being washed away as well. Finally, this coastal erosion is allowing salinity intrusion into the Bay. This is slowly changing the Bay's low salinity ecosystem to a higher salinity. This can eventually alter species of marine life that call the Bay home. Please consider this proposal for RESTORE funding. We can help protect this fragile, culturally significant ecosystem from further loss.	Jackson	Yes	No		No	No	No	No	Yes	No		\$	-	\$	-	

	Eco Restoration	5873	2/20/2019	Wolf River Weyerhaeuser Land Protection	The Land Trust for the Mississippi Coastal Plain (LT MCP) is an accredited Land Trust dedicated to the conservation, promotion, and protection of open spaces and green places of ecological, cultural, or scenic significance in the counties of the Mississippi Coastal Plain. LT MCP utilizes both fee simple and conservation easement tools in conserving land for the benefit of habitats, species, and recreation. The Land Trust holds a conservation easement on approximately 18 miles of the Wolf River North of I10 in partnership with The Wolf River Conservation Society which is a non-profit corporation dedicated to conserving, managing, and protecting the Wolf River and its watershed from its headwaters in Lamar County to its termination at the Bay of St. Louis. The State of Mississippi has classified the entire length of the Wolf as a Fish & Wildlife stream to protect recreational use and the propagation and maintenance of a healthy, well-balanced population of fish and wildlife. The Wolf River is also Mississippi's first scenic stewardship stream. The goal of this project is to establish funding to purchase individual parcels of land owned by the Weyerhaeuser Company totaling 4-39,028 acres, located in areas identified as crucial to establishing complete corridors of conservation land. The Wolf River Conservation Society has identified these sites based on locations that would continue conservation corridors previously established by the State of Mississippi, North of I10, in Harrison County that total approximately 1320 acres managed by the Mississippi Department of Wildlife, Fisheries, and Parks. These properties are all tidally influenced, and consist of both estuarine marsh and bottom land hardwood habitats. Ecological Value: Protects properties as a buffer area for storm surge by providing dispersal and displacement in the event of flooding waters. These flooding waters have a natural function of turnover and flushing of coastal wetlands. Protects areas that provide clean water for our natural resources along the Wolf River and into the Bay of Saint Louis. Provides valuable habitat for a wide variety of plants and animals native to Mississippi, as well as migratory birds. Opportunities for low impact recreational activities such as kayaking, birdwatching, fishing, and other wildlife observation. Adds to complete corridors of conservation land.	Harrison	Yes	No		Yes	Yes	Yes	Yes	Yes	Yes	No		\$	-	\$	-	Land Acquisition
	Eco Restoration	5876	3/4/2019	Unmanned Aircraft Systems (UAS) for Disaster Relief and Response	Mississippi's first responders have a substantial need for real-time, prioritized and on-demand aerial imagery and other airborne capabilities to support natural disasters such as oil spills, hurricanes, floods and fires. Airborne imagery provides up-to-the-minute information to support critical decisions on the allocation of response personnel, equipment and capabilities to save lives in the immediate aftermath of a disaster situation. Unmanned Aircraft Systems (UAS) are capable of providing high-quality, prioritized and persistent aerial imagery for sustained periods. Today's UAS technologies can provide: - Up to 12 hours of uninterrupted, high-resolution imagery or communications relay capability in a single mission; - On-demand prioritization and re-allocation of capabilities at the direction of the on-scene commander; - Delivery of medical supplies and support to areas that are inaccessible to first responders; - Relief from aircrew limitations due to the ability to rotate crews over the duration of a single flight; and - Reduced operating costs per flight hour when compared to many manned aircraft. The routine and normalized employment of UAS to support disaster response and relief efforts provides an exponential increase in Mississippi's capability to restore services, limit damage to critical infrastructure, and to save lives.	George, Harrison, Washington, Orleans, Perry, Forrest, Pearl River, Jackson, St Tammany, Stone, Hancock, Mobile	Yes	Yes		72%	Yes	Yes	Yes	Yes	Yes	Yes		\$	3,250,000.00	\$	-	
	Eco Restoration	5877	3/14/2019	Coastal Environment Land Protection	The Land Trust for the Mississippi Coastal Plain (LT MCP) is an accredited Land Trust dedicated to the conservation, promotion, and protection of open spaces and green places of ecological, cultural, or scenic significance in the counties of the Mississippi Coastal Plain. LT MCP utilizes both fee simple and conservation easement tools in conserving land for the benefit of habitats, species, and recreation. The Land Trust holds a conservation easement on approximately 18 miles of the Wolf River North of I10 in partnership with The Wolf River Conservation Society (WRCS). WRCS is a non-profit corporation dedicated to conserving, managing, and protecting the Wolf River and its watershed from its headwaters in Lamar County to its termination at the Bay of St. Louis. The State of Mississippi has classified the entire length of the Wolf River as a Fish & Wildlife stream to protect recreational use and the propagation and maintenance of a healthy, well-balanced population of fish and wildlife. The Wolf River is also Mississippi's first scenic stewardship stream. The goal of this project is to establish funding to purchase individual parcels of land totaling 4-428.5 acres, located in areas identified as crucial to connecting continuing corridors of conservation land. The Wolf River Conservation Society has identified these sites based on locations that would expand conservation corridors previously established by the State of Mississippi, North of I10, in Harrison County which total approximately 1320 acres managed by the Mississippi Department of Wildlife, Fisheries, and Parks. These properties are all tidally influenced, and consist of both estuarine marsh and bottom land hardwood habitats. Ecological Value: Protects properties as a buffer area for storm surge by providing dispersal and displacement in the event of flooding waters. These flooding waters have a natural function of turnover and flushing of coastal wetlands. Protects areas that provide clean water for our natural resources along the Wolf River and into the Bay of Saint Louis. Provides valuable habitat for a wide variety of plants and animals native to Mississippi, as well as migratory birds. Establishes a protected nursery ecosystem for marine life. Opportunities for low impact recreational activities such as kayaking, bird watching, fishing, and other wildlife observation. Extends and connects corridors of conservation land.	Harrison	Yes	No		Yes	Yes	Yes	Yes	Yes	No		\$	-	\$	-	Land Acquisition	
New	Eco Restoration				The Land Trust for the Mississippi Coastal Plain (LT MCP) is an accredited Land Trust dedicated to the conservation, promotion, and protection of open spaces and green places of ecological, cultural, or scenic significance in the counties of the Mississippi Coastal Plain. LT MCP utilizes both fee simple and conservation easement tools in conserving land for the benefit of habitats, species, and recreation. The Land Trust holds a conservation easement on approximately 18 miles of the Wolf River North of I10 in partnership with The Wolf River Conservation Society (WRCS). WRCS is a non-profit corporation dedicated to conserving, managing, and protecting the Wolf River and its watershed from its headwaters in Lamar County to its termination at the Bay of St. Louis. The State of Mississippi has classified the entire length of the Wolf River as a Fish & Wildlife stream to protect recreational use and the propagation and maintenance of a healthy, well-balanced population of fish and wildlife. The Wolf River is also Mississippi's first scenic stewardship stream. The goal of this project is to establish funding to purchase individual parcels of land totaling 4-428.5 acres, located in areas identified as crucial to connecting continuing corridors of conservation land. The Wolf River Conservation Society has identified these sites based on locations that would expand conservation corridors previously established by the State of Mississippi, North of I10, in Harrison County which total approximately 1320 acres managed by the Mississippi Department of Wildlife, Fisheries, and Parks. These properties are all tidally influenced, and consist of both estuarine marsh and bottom land hardwood habitats. Ecological Value: Protects properties as a buffer area for storm surge by providing dispersal and displacement in the event of flooding waters. These flooding waters have a natural function of turnover and flushing of coastal wetlands. Protects areas that provide clean water for our natural resources along the Wolf River and into the Bay of Saint Louis. Provides valuable habitat for a wide variety of plants and animals native to Mississippi, as well as migratory birds. Establishes a protected nursery ecosystem for marine life. Opportunities for low impact recreational activities such as kayaking, bird watching, fishing, and other wildlife observation. Extends and connects corridors of conservation land.																Land Acquisition	
New	Eco Restoration	5877	4/16/2019	Coastal Environment Land Protection	because all the stormwater runs into marine water either directly or by way of one of several bays leading to the Back Bay. In the past few years most of the streets and the storm drainage systems on the peninsula have been or are being replaced, a situation that is positive as far as moving stormwater out of streets but will increase the stormwater impact on the bayous and back bay with more and faster moving storm water. What is more, the construction work itself has impacted the natural waterways due to increased silt running into the bayous from unpaved roads. The time for the Biloxi peninsula is right for a comprehensive community engaged stormwater management campaign that improves and creates both upstream and downstream green infrastructure. Upstream, the project will improve the quality and quantity of water that enters the storm drainage system with four related activities: 1. Environmental education with Biloxi Public School students 2. Stormwater education to residents of the Biloxi peninsula 3. Low-impact development training and design resources for developers and city staff 4. A property owners small grant program to do on-site and neighborhood-scale green infrastructure projects. Downstream, the project will improve the stormwater quality and quantity that enters the marine environment with two related activities: 1. Restoration and improvements of natural waterways that connect storm drainage to the Back Bay, especially Keegan Bayou and Bayou Auguste, which have been impacted most by the road construction work. 2. Coordination and leveraging of on-going and planned projects to bring green infrastructure planning and funds to install and maintain landscape areas Environmental education with Biloxi Public School students. For the past seven years GCCDS has developed and implemented educational outreach programs with Biloxi Junior High School, East Hancock Elementary, St. Martin High School, and with middle school students in the Gulfport School District. During the summer of 2017, GCCDS received funding through the National Marine Sanctuary Foundation in partnership with NOAA to further modify the curriculum for a summer program with the Boys and Girls Club of Hancock County. Measures of success: Over 400 students and teachers reached through direct programming with several hundred more potentially reached through exhibitions of work to parents, local leadership and the larger community. Outcome: Change of behavior for students, their families and larger community to reduce trash and pollution entering storm water drainage system. Stormwater education to residents of the Biloxi peninsula. The project will build upon the City of Biloxi's ongoing stormwater management resident outreach as well as with community workshops in conjunction with the property owners small grant program. Measure of success: outreach to all Biloxi residents through 8-Mail and other media, at least 10 community workshops. Outcome: Change of behavior for residents to make improvements on their property to reduce run off and to reduce trash and pollution entering the stormwater drainage system. Low-impact development training and design resources. GCCDS will work with the City of Biloxi to develop training and explore possible incentives to promote low-impact development. Measure of success: Low-impact development training material tailored to the Biloxi peninsula. Outcome: Economic growth with improved development. Property owners small grant program to do green infrastructure projects. Around 20% of the proposed funds will have a direct impact on citizen's quality of life by making upstream stormwater improvements in the community. At least 75 small grants between \$2000 and \$5000 will be awarded to property owners on the Biloxi peninsula who apply for assistance to do green infrastructure projects on their property or on property along the streets in partnership with the city and with other property owners in their neighborhood. With the completion of the road and stormwater infrastructure construction such projects will be a welcome compensation for enduring the inconvenience of several years of road construction and will have multiple benefits. First, the projects will	Harrison	Yes	No		Yes	Yes	Yes	Yes	Yes	No		\$	-	\$	-	Land Acquisition	
New	Eco Restoration	5878	4/17/2019	Biloxi Upstream and Downstream Storm Water Education and Community-Engaged Green Infrastructure	This project is Phase 3 of the area East of the Hancock County Area. It will be to install a sewer collection system with grinder pumps and lift stations in the designated area to connect approximately 80 homes and discontinue the use of septic tanks. These tanks are close to creeks, streams and bayous that empty out through Rotten Bayou into the Bay of St. Louis and eventually into the Gulf of Mexico. Rotten Bayou is on the EPA list of impaired waterways. The wastewater from this area will then be transported to the Northern Regional Wastewater Treatment Plant for proper treatment.	Harrison	Yes	Yes		60%	Yes	Yes	No	No	Yes		\$	2,080,000.00	\$	-		
New	Eco Restoration	5882	7/31/2019	Hancock County Utility Authority - Klin / Delisle Phase 3	Planting of native sea oats will create sand dunes along the 26 mile long man-made beach in Harrison County. Sea oats will grow for an early spring planting. The grasses, with 6-8 vigorous shoots between 10 and 16 inches in length, will be deep planted approximately 8-10 inches deep at different sites along the Sand Beach. This methodology was discovered by landscape architects on beach planting after Hurricane Katrina. This method uses a 100% survival rate as the moisture is naturally available at a depth of 8" below the sand surface. Marsh elder and wax myrtle shrubs that are native to the dunes will be spaced periodically to establish the dunes and help hold when impacted by tropical weather occurrences.	Hancock	Yes	Yes		70%	Yes	No	Yes	No	No		\$	2,529,550.00	\$	-		
New	Eco Restoration	5889	4/30/2020	Sand Dune Plantings		Harrison	Yes	No		No	No	No	No	No		\$	2,000,000.00	\$	-			

New	Eco Restoration				<p>Background: The Gulf of Mexico's forests, when healthy, reduce sediment and nutrient yields, regulate surface water flow, and improve groundwater recharge relative to other land uses (Sun et al., 2020; Loschky et al., 2023). They offer recreational opportunities, wildlife habitat for the region's economy, and are an integral, supporting part of the region's economy. The region's forests are at risk of conversion to more intensive uses (Kiepp et al., 2024), restoring native species (Brentley et al., 2018), controlling invasive species, managing for resilience against catastrophic loss (e.g., wildfire, hurricane, drought, pest, etc.), and restoring forested wetlands, floodplains and riparian areas are vital to the health of the Gulf (Vose et al., 2011).</p> <p>Proposal: This application seeks to establish a program that will enhance and maintain water quality and quantity by protecting, managing, and restoring forested ecosystems. The Program is centered on advancing the RESTORE Council's water quality and quantity goal, but benefits will accrue in all goals. The focus is on protecting and restoring forests, including urban forests, in priority watersheds in Alabama, Florida and Mississippi where the need is great, and Partners stand ready to assist and leverage investments. The Program is a scalable, science-based approach implemented on public and private lands. It involves:</p> <ul style="list-style-type: none"> •Bandowner outreach techniques that build upon and look to enhance existing tools and networks. •Ecoordinated delivery through State Forestry Agencies in Alabama, Florida, and Mississippi. •Focused recruitment of forest landowners in targeted watersheds. •Science based decision support from the USDA Forest Service Southern Research Station who will use the Soil and Water Assessment Tool (SWAT) model and other data and tools to inform priorities, assess and monitor project impacts, and inform adaptive-management decisions. •Physically using a portion of funding for an open and competitive Request for Proposals (RFP) to extend the reach of these efforts and cultivate innovation. •Targeted alignment with other federal, state, and non-federal programs as a program multiplier to conduct similar work upstream of the RESTORE coastal area. •Use of USDA practices and standards to ensure compliance with environmental and cultural resource requirements. <p>There are limited risks and uncertainties: private landowner willingness to participate can cause delays and require strategic adjustments, catastrophic events (e.g., hurricanes, wildfires) can alter the landscape and impact expected outcomes, and weather extremes (e.g., droughts, excessive rain) can delay implementation.</p> <p>Anticipated outcomes resulting in improved water quality and quantity; avoided land conversion and increased forest cover, increased forest management activities and best management practices, increased landowner understanding of forest management benefits, improved wildlife habitat, and added community resilience.</p>	Hancock, Stone, St Tammany, Mobile, Jackson, Forrest, Washington, Ison, George, Perry, Pearl River	Yes	No	No	No	Yes	No	No	No	No	No	\$ 30,000,000.00	\$ -
New	Eco Restoration	5901	4/30/2020	Enhancing Gulf Waters through Forested Watershed Restoration	<p>Priority Criteria Information</p> <p>Priority Criteria: Large-scale projects and programs that are projected to substantially contribute to restoring and protecting the natural resources, ecosystems, fisheries, marine and wildlife habitats.</p> <p>County account for nearly 50% of Mississippi's coastline and provide protection to several vital coastal roadways such as Highway 90. These beaches draw both day and overnight visitors. A 2017 study from Longwoods International found that 27% of overnight visitors and 23% of day-trippers visited the Mississippi Coast just to enjoy the beaches. For entertaining the national norm. The beaches provide many different experiences including fishing, jet-skiing, aqua cycling, and sailing for people to enjoy. Moreover, the beaches are adjacent to other amenities including continued development, casinos, shops, restaurants, bases for U.S. Armed Forces, universities, hospitals, and active ports which offer a well rounded holiday experience.</p> <p>Just as these sandy oases attract visitors, they also provide essential habitat for beach-nesting and foraging species, including colonial seabirds, solitary shorebirds, and marine turtles. These species compete for space with recreational beach visitors and negotiate with sources of disturbance including aforementioned recreational activities but also naïve actions such as children chasing birds or kite flying as well as allowing domesticated dogs off-leash which can destroy bird and turtle nests in a matter of seconds. The permitted use of personal fireworks on the beaches on July 4th can flush breeding bird species off nests, exposing eggs and chicks to the elements with an extreme heat as well as predators. The unregulated shooting of fireworks can cause possible abandonment, while also creating a dangerous environment for people attending festivities at the beach.</p> <p>Additionally, beach managers need to carefully balance efforts to clean the beach, which include the mechanized removal of trash and debris for people's enjoyment, while still providing this unique habitat essential for the health of beach-dependent species such as birds and turtles. Maintenance equipment to keep the beaches clean can crush bird eggs or buried turtle eggs. Migrating birds depend on minimal disturbance to feed to replenish fat stores to make long hemispheric journeys each spring and fall. Abating disturbance in wildlife breeding areas can lead to increased hatching success and survival of young birds and turtles. Moreover, many of Mississippi's beach-nesting species are global migrants, and it is important to stress that actions locally can have global impacts.</p> <p>Management of and tourism around beach-dependent species do not have to be mutually exclusive; however, management of these species need to exist to protect resources, especially as other land uses, including recreation exist. Both around the globe and in the United States, nature-based tourism has garnered support for wildlife and habitats, but there is also increasing documentation acknowledging the need for ongoing management to still: building upon 2015 GOMESA grant. Nature-based tourism with increased Management and Stewardship for Beach-Nesting and Foraging Species, Audubon proposes a Phase II project with a goal to support nature-based tourism and increase management capacity for beach-dependent species in Coastal Mississippi. Audubon will work towards this goal by completing the following two objectives: 1) provide wildlife management capacity and stewardship support to Mississippi's coastal counties, municipal governments, and partners and 2) implement strategies to increase nature-based tourism, with a particular focus on birding.</p> <p>The outcomes and outputs will be varied and beneficial. Outcomes include: establishment of long-term monitoring for turtles; increased monitoring for birds; increased protection for Mississippi's birds and turtles; at least 200 school students engaged and educated about coastal systems and threats; greater business community buy-in, and continued job security for two positions funded in the initial grant. Outputs include: data collected and shared with beach managers, county officials, and others to utilize, especially with accessing MMA or FEMA funds after storms; at least 50 children conservation campaign signs created; a website created for tourists and locals alike, to highlight nature-based tourism opportunities and best management actions; and a new position, Tourism Docent, created.</p> <p>Goal and Objectives: Audubon proposes a Phase II project with a goal to support nature-based tourism and increase management capacity for beach-dependent species in Coastal Mississippi. Audubon Mississippi and its</p>	Harrison, Jackson, Hancock	Yes	No	No	Yes	No	No	Yes	No	\$ 330,000.00	\$ -		
New	Eco Restoration	5902	11/30/2020	Nature-based Tourism with Increased Management and Stewardship for Beach Nesting and Foraging Species		Jackson	Yes	Yes	100%	Yes	No	No	No	No	\$ 7,370,000.00	\$ -		
New	Eco Restoration	5903	2/11/2021	Southern Bulkhead Extension at the Port of Pascagoula South Terminal	<p>The Jackson County Port Authority is proposing the extension of the sheet pile bulkhead of the Port of Pascagoula's South Terminal in the Pascagoula River Harbor to the south. The project would consist of the installation of 800 linear feet of 90 foot long sheet piles and associated tie backs, approximately 4,000 cubic yards of select fill material behind the new sheet pile bulkhead; providing a new concrete top cap along the dock edge; and the installation of a cathodic protection system to protect the bulkhead from corrosion. The extension of the sheet piling bulkhead will support deeper dredging alongside the terminal and facilitate development along the shoreline in areas that do not presently have a bulkhead. The project will support significant terminal expansion possibilities in the future. The bulkhead will provide an extended terminal interface at this location. The increased bulkhead length would increase the available space for ships to moor at the terminal to more than 200% of the current available space. The extension of the sheet pile bulkhead provides a significant long term impact to the commercial life span of the facility. The southern extension of the sheet pile bulkhead of the South Terminal would consist of several components. The estimated cost of the project is anticipated to be approximately \$7.37 million dollars. The property is under full control of the Jackson County Port Authority. The cost estimate is current as of November 2020.</p>	Jackson	Yes	Yes	100%	Yes	No	No	No	No	\$ 7,370,000.00	\$ -		
New	Eco Restoration	5904	6/3/2021	Port of Pascagoula South Terminal Extension of Bulkhead North to Terminal A	<p>The Jackson County Port Authority is proposing the extension of the sheet pile bulkhead of the Port of Pascagoula's South Terminal in the Pascagoula River Harbor to the north. The project would consist of the installation of 960 linear feet of 90 foot long sheet piles and associated tie backs, approximately 6,000 cubic yards of select fill material behind the new sheet pile bulkhead; providing a new concrete top cap along the dock edge; and the installation of a cathodic protection system to protect the bulkhead from corrosion. The extension of the sheet piling bulkhead will support deeper dredging alongside the terminal and facilitate development along the shoreline in areas that do not presently have a bulkhead. The project will support significant terminal expansion possibilities in the future. The bulkhead will provide an extended terminal interface at this location. The increased bulkhead length would increase the available space for ships to moor at the terminal to almost 250% of the current available space. The extension of the sheet pile bulkhead provides a significant long term impact to the commercial life span of the facility. The northern extension of the sheet pile bulkhead of the South Terminal would consist of several components. The estimated cost of the project is anticipated to be approximately \$8.94 million dollars. The property is under full control of the Jackson County Port Authority. The cost estimate is current as of November 2020.</p>	Jackson	Yes	Yes	100%	Yes	No	No	No	No	\$ 8,940,000.00	\$ -		
New	Eco Restoration	5984	6/4/2021	Port of Pascagoula Deep Water Access Improvements	<p>The Port of Pascagoula is a deep draft commercial harbor that has been the center of trade since the early 19th century. It is the largest port in the State of Mississippi. Five other counties are adjacent to Jackson County from the Alabama state line to the Louisiana state line. These counties have historically realized economic benefits and will be affected by any further development and use of the Port. The facilities of the port are centrally and strategically located on federal ship channels that extend to the Gulf of Mexico. The federal ship channel is maintained by the U.S. Army Corps of Engineers to an authorized depth of 42 feet. The Port is located approximately nine miles south of Interstate 10 providing additional benefits to shipping firms that require relatively easy and unobstructed access to the U.S. highway system. Primary exports and imports moving through the Port of Pascagoula include forest and paper products, general cargo, petrochemicals, crude oil, and construction aggregate. For the last decade, the Pascagoula River Harbor has averaged more than 100,000 tons of cargo per year. The Port's transportation infrastructure provides cost effective ways to transport cargo to its intended destination. Port of Pascagoula rail service connections are the CSX and Mississippi Export Railroad which connects to the Canadian National Railroad. The South Terminal is the site of the former Union Drydock Corporation grain elevator. The grain elevator facility would have been best identified as the single biggest impact player in the port, outside of the Chevron refinery, with regard to cargo volume throughput. It was the largest cargo terminal in the Pascagoula River Harbor and accounted for some of the largest ships calling that harbor. Upon completion of the project, the 55-acre marine terminal with truck and rail access could easily have that distinction again in the near future. When constructed in the 1950's, the bulkhead sheet piling lengths were directly proportional to the depths of the water rear and adjacent to the facility. However, the authorized water depths have been deepened over the last several decades. That trend is expected to continue in the future to afford larger vessels the ability of carrying more cargo in the utilization of the federal ship channels. To accommodate the projected deeper vessel operations, engineering studies have shown that modifications to this bulkhead would have to be performed. From an infrastructure improvement perspective, the project cost effectively provides the best return on investment relative to expenditures of available resources. The replacement, rehabilitation and extension of the sheet pile bulkhead provides the greatest long term impact to the commercial life span of the facility.</p>	Jackson	Yes	Yes	100%	Yes	No	No	No	No	\$ 24,220,000.00	\$ -		

New	Eco Restoration			<p>The Mississippi Sound (MSS) is home to the nation's largest bay, sound, and estuarine (BEE) population of common bottlenose dolphins (Tursiops truncatus). The MSS serves as a nursery ground for newborn dolphin calves in the spring and summer months and provides vital foraging habitat for dolphins year-round. As a top predator, dolphins are an important sentinel species for the ecosystem. In addition, the fertile waters of the MSS also support a large recreational and commercial fishing industry and an oyster industry. The MSS is heavily impacted by freshwater inputs from large watersheds such as the Mississippi River, Pearl River, and Pascagoula River. In particular, the 2019 openings of the Bonnet Carré Spillway introduced a substantial amount of freshwater from the Mississippi River into the Mississippi Sound, which is not normally exposed or connected to this riverine system. During this year, dolphin mortalities increased by more than three times over the yearly average from 2014-2018. Other large ecological disasters such as the Deepwater Horizon (DWH) oil spill, hurricanes, and algal blooms also affect dolphins. Therefore, effective management of dolphin health in the MSS is critical for the viability of this important species in the Gulf of Mexico, and it requires science-based decision making and interventions from experienced and qualified experts to manage this resource in the context of the economically vital MSS.</p> <p>To effectively and sustainably manage this vital species in the MSS over the next ten years, Mississippi State University College of Veterinary Medicine (MSU-CVM) and the Institute for Marine Mammal Studies (IMMS) have developed a comprehensive, science-based plan with the following objectives:</p> <ol style="list-style-type: none"> 1) Determine the threats to dolphin health, including human interactions, in the MSS that result in strandings and mortalities. 2) Assess the environmental threats affecting dolphins and their habitat, particularly changes to water quality and salinity, pollutants, and prey availability in the natural habitats of dolphins in the MSS. 3) Estimate the abundance and distribution of the dolphin population in the MSS using line-transect methodology for stock assessments. 4) Evaluate the degree of connectivity and boundaries of the dolphin population in the MSS using photo identification to determine habitat use, site fidelity of individuals and groups within the MSS, as well as determine their movements in response to changes, including salinity. 5) Provide education and increase outreach to build capacity in Mississippi for effective management of dolphins in the MSS. By providing outreach for K-12 students and the public, and by conducting hands-on specialized education for veterinary students and undergraduate students, MSU-CVM and IMMS will build capacity in Mississippi to enable future expertise to manage the state's coastal resources. <p>The objectives of this plan align with state and federal agency priorities. Furthermore, MSU-CVM and IMMS have experience and a track record of productivity in all the proposed activities. We anticipate that, through conducting this comprehensive set of aims from 2021-2030, the bottlenose dolphin population in the MSS will be effectively monitored and managed to establish their sustainable, long-term health. We further expect that, through the knowledge gained in this proposed program, the MSS bottlenose dolphins will be the most well-documented population in the Gulf of Mexico, and Mississippi will become a model state for effective management of its wild marine mammal stocks.</p>	Harrison	Yes	No	No	No	No	Yes	No	No	No	No	No	\$	-	\$	-
New	Eco Restoration	5986	6/4/2021	<p>Enhance conservation of bottlenose dolphins in Mississippi state waters by strengthening capacity for science-based marine mammal health and management</p>	<p>The Mississippi Sound (MSS) is home to the most critically endangered sea turtle in the world, the Kemp's ridley (Lepidochelys kempi), along with other endangered or threatened sea turtle species such as the loggerhead (Caretta caretta) and the green sea turtle (Chelonia mydas). Juvenile Kemp's ridley sea turtles utilize the MSS for development, foraging on blue crabs that are abundant in the MSS. The green sea turtle, omnivorous at the juvenile stage, forages on sea grass beds and fish prey in this area. Loggerhead sea turtles have been documented to nest on Mississippi beaches from as early as 1990 (Hogard 1991). In addition, the fertile waters of the MSS support a large recreational and commercial fishing industry as well as an oyster industry. The MSS is heavily impacted by freshwater inputs from large watersheds such as the Mississippi River, Pearl River, and Pascagoula River, by large ecological disasters such as the Deepwater Horizon (DWH) oil spill, and by natural events such as hurricanes and algal blooms. Therefore, effective management of turtle health in the MSS is critical for the viability of these important species in the Gulf of Mexico, and it requires science-based decision making and interventions from experienced and qualified experts to manage this resource in the context of the economically vital MSS.</p> <p>To manage this vital species effectively and sustainably in the MSS over the next ten years, MSU-CVM and IMMS have developed a comprehensive plan with the following objectives:</p> <ol style="list-style-type: none"> 1) Conduct stranding response/rehabilitation and implement a systematic approach to identify threats to sea turtle health, including human interactions, in the MSS. This includes providing timely response to incidentally captured, stranded, and injured turtles on the Mississippi coast and a systematic approach to determining cause of death. 2) Assess the environmental threats impacting sea turtles and their habitat, including investigating changes to noise pollution, water quality, and pollutants in the habitats of turtles in the MSS. 3) Evaluate turtle movements, distribution, and habitat utilization using satellite tagging and fecal analysis. 4) Inventory, document, and manage any sea turtle nesting activity on Mississippi mainland beaches. 5) Provide educational opportunities for students and conduct outreach to build capacity in Mississippi for management of sea turtles. Specialized, experiential education will be provided for veterinary students, as well as undergraduates and graduate students, to build expertise in Mississippi for coastal management, and outreach will be enhanced for K-12 students and the public to improve public awareness. <p>We anticipate that, through conducting this comprehensive set of aims from 2021-2030, the sea turtle population in the MSS will be effectively monitored and managed to establish their sustainable, long-term health. We further expect that, through the knowledge gained in this proposed program, the MSS turtles will be the most well-documented population in the Gulf of Mexico, and Mississippi will become a model state for effective management of its wild turtle stocks.</p>	Harrison	Yes	No	No	No	Yes	No	No	No	No	No	\$	-	\$	-
New	Eco Restoration	5987	7/16/2021	<p>Springwood Sewer Collection System</p> <p>This project would provide sanitary sewer service for the Springwood Subdivision. The project will use individual grinder systems at each residence that will discharge into a small diameter sewer collection system. A proposed sewer lift station at the corner of Oak and Kingswood will pump the sewer through a 4-inch sewer force main to the nearest lift station by Cypress Street on US Hwy 90.</p>	Hancock	Yes	Yes	No	Yes	No	Yes	No	Yes	No	\$	2,573,150.00	\$	-		
New	Eco Restoration	5988	7/20/2021	<p>Bay St. Louis Lift Station Upgrades</p> <p>The lift station will need upgrades to both pumps and the electrical system to increase capacity. These upgrades are needed to the possibility of overflows near waterways and wastewater going out into the Bay of St. Louis. Also, pipes and valves will need to be replaced.</p>	Hancock	Yes	Yes	No	Yes	No	Yes	No	Yes	No	\$	600,000.00	\$	-		
New	Eco Restoration	5989	6/4/2021	<p>NASA Wastewater Connection to HCUA</p> <p>This project consists of connecting to a force main that NASA has constructed and continuing to run that force main from the North gate of NASA Eastward to the entrance of HCUA's Northern Regional Wastewater Treatment Plant. It will consist of 5 lift stations and 7 miles of pipe. This will allow for NASA officials to shut down both the lagoons permanently and also eliminate the outfall line into the Pearl River.</p>	Hancock	Yes	Yes	100%	Yes	No	Yes	No	Yes	No	\$	10,250,000.00	\$	2,000,000.00		

1007	4/25/2012	Development and Distribution of Gear Technology to Improve Fuel Economy and Reduce Bycatch in the Gulf Shrimp Fishery	<p>(ORIGINAL 1001678) The offshore shrimp trawl fishery accounts for a significant portion of landings in the Gulf of Mexico. Due to a multitude of events (i.e. hurricanes, oil spill, imports), the fishery has seen a substantial decline in fishery effort over the past decades, but recent technological advances have begun to show promise. Fuel saving technologies are a logical avenue to assist in reducing operating expenses. A priority of information exists documenting the effect of gear technologies on fuel consumption. Cambered trawl doors are currently being utilized by some fishermen in the southeastern United States. These trawl doors have evolved significantly over the past decades, but until recently have not received much attention in the southern shrimp fishery. Evaluations of these doors have yielded promising potential to reduce fuel consumption in the shrimp fishery. Several door sizes have been evaluated, but cambered trawl doors, 50% smaller than the traditional wood or aluminum doors, are documented to have fuel savings of 25-30% during actual fishing conditions. Additionally, bycatch reduction remains a high priority issue in the southeast. Reducing incidental bycatch has been shown to improve catch quality and reduce fuel consumption. We propose to conduct a series of experiments aimed at documenting the fuel savings achieved by cambered trawl doors and continue to improve the bycatch reduction capability already in use in the fishery. More specifically we aim to: 1) Evaluate cambered door gear technology within the southeastern shrimp trawl fishery; 2) Continue to elicit industry participation in evaluating more complex bycatch reduction devices (BRDs); and 3) Conduct result demonstration and dissemination activities of the newly documented gear (doors & BRDs) to shrimp fishermen throughout the southeastern United States. Through years of experience, we have found that informal meetings are an optimal forum for information dissemination, providing less volatility from industry and allowing for an effective one-on-one exchange of ideas. As such, we will convene a series of informal meetings throughout the southeastern US to disseminate the results of this study. By continuing our research and development efforts to reduce bycatch within the shrimp trawl fisheries, commercial fishermen will become actively involved in BRD research and development and will be more accepting of those devices tested.</p>	Hancock, Harrison, Jackson	Yes	No	No	Yes	No	No	No	No	No	No	\$	1,500,000.00	\$	-	
1208	6/22/2011	Banking the Gulf Coast one bale at a time	<p>Our process is a larger scale version of what is being used in construction areas off our roadways throughout the United States. Small square hay bales are used in construction sites to prevent soil runoff. Our process uses larger X'S sized bales of hay that weigh approximately 800-1000 lbs each. To form a barrier along shorelines and marsh edges that are in need of protection from erosive wave energy, the barriers will be made from natural and alternate materials to the creation of "new" soil. This forms a more natural barrier against erosive waves when compared to metal structures that are traditionally used for erosion control. An advantage of using a 4.5 ft. soft natural barrier is the bales serve more effectively by raising the height level for natural absorption. The bales act as a natural sponge that absorbs the water to help dry out and stabilize the soil. Hay is used in many situations for erosion control with the use of blanket/mats, spraying of chopped hay and as mentioned, small square bales. Using a large round bale is a completely new approach that has never been applied.</p> <p>SF barriers will be placed along the shoreline in need of protection from erosive wave energy. When the waves approach the shore, the hay filters and traps the captured sediment. Over time the sediment build up forms a solid barrier to protect eroding shores and bank lines that will revegetate over time or purposely plant with desired vegetative species. Bales can also be injected with selective seeds or planted with native plant species to stimulate vegetation growth.</p> <p>Consider the size and weight of the hay bales that are used to build the barrier. There is a double row of bales SF long. This becomes a 80,000 lb. wall SF long by 10' wide by 2' tall. Immediately, the hay begins to absorb water and sit and weighs even more. Eventually what you have is a natural levee/dike. The collection of it is the tightly rolled hay that forms the bale covers that can be kept the straw together and prevent the hay from disintegrating.</p> <p>Construction and installation</p> <p>Construction and installation is streamlined. Very little material and equipment are needed for this process.</p> <ul style="list-style-type: none"> * Hay * 2 work boats * Pig * Forklift * Treaded post (size determined) * Work connections per (lb size) * 1 Utility vehicle (pile driver) * Wire/rope <p>Hay will be transported to a central location/block where the hay will be linked with the wire/rope. Sections will be floated by boat to the restoration location where posts have been driven in the marsh bottom.</p>	Hancock, Harrison, Jackson	Yes	No	No	Yes	No	No	No	No	No	No	No	\$	250,000.00	\$	-
1213	2/20/2013	Gulf of Mexico Fishery Management Restoration Project	<p>(ORIGINAL 1001291) At the October 20 - November 1, 2012 Gulf Council Meeting in Gulfport, Mississippi, the Gulf of Mexico Fishery Management Council (the Council) discussed data needs to prioritize for restoration activities in response to the Deepwater Horizon oil spill. The Council discussed potential impacts to important stocks, critical habitat, and humans due to lost fishing opportunities etc. The Council requires that upon settlement or through early restoration the following activities are given the highest priority: 7) increase and fund frequency and number of stock assessments; 7) Enhance and fund fishery independent surveys, both federal and state; 7) Work with NEPC and state agencies to decrease the frequency to two week waves for high profile species; 7) Develop and fund a more robust observer program; 7) Enhance/expand and fund oyster restoration projects and coastal reef fish habitat; 7) Development of and funding for data collection programs for the headboat and for live actor and a charterboat electronic data collection systems; 7) Research and fund projects on larval marine fish restoration for fish mortality; Each of these activities are critical to improving restoration efforts of federally managed fish species and associated habitat necessary to provide maximum benefit to the nation or required by the Magnuson-Stevens Fishery Conservation and Management Act.</p>	Hancock, Harrison, Jackson	Yes	No	No	No	No	No	No	No	No	No	\$	-	\$	-	
1214	7/18/2011	Gulf of Mexico Community-based Restoration Partnership	<p>(ORIGINAL 100353) The Gulf of Mexico Community-based Restoration Partnership (GCPR) is a regional multi-year partnership that was established in 2001 between the NOAA Community-based Restoration Program (CPR), the EPA Gulf of Mexico Program Gulf Ecological Management Site (GEMS) Program, and the Gulf of Mexico Foundation. The purpose of the partnership is to strengthen restoration efforts by supporting on the ground projects to restore coastal habitats, benefit the surrounding communities, and foster stewardship of the area. This successful partnership has helped to expand restoration of habitats that are critical to the sustainability of natural resources in the Gulf of Mexico, and to continue to expand public education and outreach efforts to broaden participation in restoration activities, further developing a conservation ethic at the community level. To date, the GCPR has funded 78 community-based restoration projects. These projects occurred in a number of habitat types, in total more than \$3 million has been funded by the Gulf of Mexico Foundation towards these restoration projects, of which an additional \$5.5 million has been leveraged in matching contributions from project partners. This match includes nearly 50,000 contributed volunteer hours. In total, more than 15,000 acres of coastal habitat have been restored as part of these partnership projects. A multi-tiered steering committee works effectively to guide the partnership in selecting and developing projects for funding, ensuring required permits and resources are acquired, and monitoring project progress and compliance. There is a broad diversity of groups involved in the partnership projects, including school children and other community volunteers, universities, nonprofit groups, business and industry, and cooperating organizations, such as NRE and NEMEC. Collaboration between the partners, many of which have their own public outreach programs to lead in the GCPR, will result in long-term stewardship of the restored resources and help generate a community conservation ethic. The GCPR will lead further development of the GCPR in a manner that best addresses a regional approach to restore coastal marine habitats and benefit the natural resources of the Gulf of Mexico. Our goal is to take action towards reversing the downward trend in habitat loss and increase the attention on the growing need to preserve and protect America's Gulf Coast.</p>	Hancock, Harrison, Jackson	Yes	No	No	Yes	No	No	No	No	No	No	\$	1,500,000.00	\$	500,000.00	
1215	9/26/2011	Create a Coastal Preserve Trust Fund	<p>(ORIGINAL 1001182) The State of Mississippi owns about 35,000 acres of coastal marsh and adjacent uplands. Yet, there is no dedicated source of state funding for acquisition of conservation land. Therefore, there are many federal land acquisition programs that our state cannot access for lack of matching funds. Perhaps, even more important in light of the BP disaster, there is no dedicated source of funding for management, enhancement or restoration of coastal preserve lands. Early restoration funds should be allocated to management and restoration of coastal marsh and coastal preserves.</p>	Hancock, Harrison, Jackson	Yes	No	No	No	No	No	No	No	No	No	\$	-	\$	-	
1216	9/26/2011	Allocate Funds to Seagrass Restoration	<p>(ORIGINAL 1001181) Mississippi has lost 50% of seagrass species and about 50% of historical coverage. We need a local source for seagrass restoration and a carefully designed plan to replant and protect seagrass beds in the Mississippi Sound.</p>	Hancock, Harrison, Jackson	Yes	No	No	No	No	No	No	No	No	No	\$	-	\$	-	
1221	5/23/2013	Flood Barrier for Port Bienville Industrial Park	<p>(ORIGINAL 1001584) Flood Barrier for Port Bienville Industrial Park (PBIP) is located in the southwest portion of Hancock County, MS. The port encompasses 3000 acres and is located on Bayou Maletto a tributary to the Pearl River. PBIP is home to 15 industries with an average employment of 800 people. The industries located at PBIP are a major source of employment for residents of Hancock County and Pearl River County as well as St. Tammany Parish in Louisiana. A big and long canal with a mean draft of 12' and a class 3 railroad with 15 miles of track are the primary sources of transportation of imported raw materials and export of finished products, produced and distributed by the industries. The major employers at PBIP include Calgon, DAK North America, Salsic and Polychemical International. These industries are involved in the production of critical plastics and Calgon is a major provider of refined materials to the United States Department of Defense. JUSTIFICATION: On August 29, 2005 hurricane Katrina inundated PBIP with an unprecedented tidal surge of 26 feet of water. Even though PBIP is situated on a natural ridge, the surge of water caused extensive damage to our rail and buildings and caused the relocation of whatever supplies and debris would float. The area in the vicinity of PBIP includes significant wetlands, low lying lands, and lands held in trust for their protection. Costs of replacement of rail into the millions of dollars, and restoration and relocation of existing buildings or removal. Katrina standards are extremely high as well. Significant flooding of the PBIP in the future will also likely result in displacement of supplies and debris, and will include depositing them in the nearby protected lands. Existing industries as well suffered major damage from the surge. Many were closed for periods of 2-3 months in the aftermath of Katrina causing a steep drop in production, employment, and generation of revenue. Several industries contemplated the closing of their facilities and moving elsewhere due to the damage they incurred and the lack of flood protection at PBIP. Subsequently two industries did leave PBIP. They were Union Petroleum and Eagle Brook industries. In 2008 hurricane Gustav made landfall in southeastern Louisiana as a category 2 hurricane. The flood surge was 11.7 ft. (NOAA Data Buoy #747437) in Hancock County, MS. While this storm being only a category 2 on the Saffir-Simpson scale, an extensive feasibility study was completed in March 2013. The bulk of the report focused on environmental considerations, impacts to wetlands, cultural resources, threatened species, endangered species, hazardous waste, toxic waste, and radioactive waste. The Port Bienville Industrial Park is surrounded by low lying areas, wetlands, and waterways. An integrated approach is needed to many the needs of industry with those of the adjoining and surrounding wetlands so that in the event of high water, flooding, or internal discharges and spills the entire area is protected.</p>	Hancock, Harrison, Jackson	Yes	Yes	No	Yes	No	No	No	No	No	No	No	\$	30,000,000.00	\$	-
1227	11/9/2011	Sand Replenishment/Replenishment Development Program	<p>(ORIGINAL 1001440) During the Deepwater Horizon event, large amounts of sand were removed from beaches along with oil in the three coastal counties of Mississippi. This project proposes to replenish this loss and create additional sand systems to prevent impacts from the Deepwater Horizon event and future oil spills. Sand replenishment should be created at Deer Island and other key locations along the coast to restore natural ecosystems and to replenish with marine grasses and other habitat for early stages of marine organisms.</p>	Harrison	Yes	No	No	No	No	No	No	No	No	No	\$	5,000,000.00	\$	-	
1233	9/7/2011	Inhance Aquatic Habitat around Existing Pier	<p>(ORIGINAL 1001605) There are 7 piers located along the 26 mile stretch of sand beaches in Harrison County, MS. These piers provide recreational opportunities for the residents and tourists. There are also a location where people can enjoy the view of the MS Sound and the adjacent barrier islands. In order to attract aquatic life, create fish, etc., it is proposed to plant grass and provide artificial reefs around each pier. The piers are: Porter Avenue and Cotsam Pier, Blooi Can Combs Pier, Urie, Pier, Moses Pier, and West End Pier - Gulfport and Simpson Pier - Long Beach</p>	Harrison	Yes	No	No	Yes	No	No	No	No	No	Yes	\$	1,750,000.00	\$	-	
1238	9/21/2011	Habitat Restoration and Wetland Management in the Mallin Bayou System	<p>(ORIGINAL 1001158) The Mallin Bayou System consists of 5.71 miles of 12 inter-connected channels located on the eastern side of Bay St. Louis immediately west of the City of Pass Christian, MS. Harrison County proposes to improve and manage the water quality in the Mallin Bayou System of channels for the purpose of eliminating stagnation and hypoxia, reducing nutrient concentrations and sulfide concentrations, and aiding compliance with the TMDL. The NOAA project involves the dredging of a pipeline to pump high quality bay water into Bayou Boudier during off-peak tide periods, remove obstructions, and dredge channels to the original permitted dredge depth. The pump station will be located about 5,750 ft from the north inlet of Mallin Bayou and about 5,500 ft from the south inlet at Anchor Basin. Dredged material will be placed in a disposal area to be positioned in key channel restrictions to improve water circulation. The goals are to prevent fish kills and improve larval survival rates on the Mallin Bayou System is restored to a functional estuary and contributes to the NOAA restoration efforts for the greater Gulf of Mexico ecosystem. Gannett Fleming, a global engineering company with over 95 years of experience, has been selected as the design-build firm for this project. Project tasks will include hydrodynamic modeling to the Mallin Bayou System, geotechnical analysis of the pipeline pathway, property acquisition, design engineering, permitting, construction oversight, and commissioning/start-up. The company will also provide the installed facilities for 20 years and provide environmental monitoring and reporting for verification of environmental offset credits during the anticipated Deepwater Horizon Spill 20-year loss period of the deep sea floor habitat. Following completion of design engineering an operating reserve account is to be established by NOAA and managed by Harrison County Government.</p>	Harrison	Yes	Yes	No	Yes	No	No	No	No	No	No	No	\$	30,000,000.00	\$	-
1239	9/26/2011	Jackson County Restoration/Creation and Maintenance of Nearshore Tidal Marsh Habitats	<p>(ORIGINAL 1001187) To restore and maintain eroded nearshore saltmarsh islands within the submerged West Passagora River Delta by creating new island habitat with naturally occurring sediments dredged from area navigation channels; to create a long-term dredged material disposal site; and to create a nearshore storm buffer to protect the inhabited mainland areas near Gautier.</p>	Jackson	Yes	Yes	No	No	No	No	No	No	No	No	\$	2,775,000.00	\$	-	
1243	9/26/2011	Purchase of Land Adjacent to Lake Mars	<p>(ORIGINAL 1001179) The property to the west of the Lake Mars boat camp is important for several reasons. First, it is a very environmentally sensitive area bordered by salt marsh. It has some usable high ground that could be used to expand the county's park area. This property needs to be controlled by the state or Jackson County.</p>	Jackson	Yes	No	No	No	No	No	No	No	No	No	\$	-	\$	-	

Project ID	Start Date	Project Description	Lead Agency	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Budget	Additional	
Eco Restoration 1251	11/26/2012	Ecological Restoration/Enhancement and Community Flood Reduction in Franklin Cove Watershed in Jackson County, Mississippi	Original (H111858) The Jackson County Board of Supervisors is pleased to present this proposal to request Natural Resource Damage Assessment (NRDA) funding for hydrologic modeling, hydrologic improvement, coastal habitat restoration/enhancement, assessment of an endangered species habitat, and flood reduction in select communities located in Jackson County, Mississippi. This proposal contains a proposed scope of work, scheduling, and preliminary budgetary estimates to satisfactorily achieve the goals of this watershed project. BACKGROUND The proposed project area is located along the Mississippi and Alabama border in the Gulf Coast in Jackson County, Mississippi within the Franklin Cove watershed located south of Highway 90. The CSA railroad spans through the middle of the project area and the Grand Bay National Wildlife Refuge and Grand Bay National Park are located adjacent to the project area to the south. In the latter part of the 19th century, the CSA railroad was constructed in this area resulting in the redirection of natural flood waters to the north and west to an area bounded by Highway 90 and the CSA railroad. A preliminary project and hydrologic evaluation conducted in 2008 identified that an upland ridge located to the west of Franklin Cove and abutting the CSA railroad to the south is prohibiting floodwaters from sheet flowing through the Grand Bay Savannah and marsh. Rather than floodwaters naturally flowing through the marsh, the water is directed to the area bounded by Highway 90 and the CSA railroad resulting in continuous flooding of the Pecan Grove Community in Jackson County, Mississippi. PROPOSED SCOPE OF WORK The following proposed scope of work has been generated to conduct hydrologic modeling, hydrologic improvement, coastal habitat restoration/enhancement, and flood reduction in select communities located in Jackson County, Mississippi. The ultimate result will be to reconstruct hydrologic patterns to the Grand Bay Savannah and marsh lands, restore/enhance the wetland habitat, and reduce flooding of the nearby Pecan Grove Community. It is the belief of the Board of Supervisors that improving the ecological health of the coastal marshlands and wetlands (including oyster beds) will result in this project once fully implemented. Task #1: Geophiler Tortoise Survey Ecosystems, Inc. conducted field surveys for the review area on August 22, 2012 and followed the USFWS "Standard Operating Procedure for Geophiler Tortoise Burrows Survey" (November, 2008) guidance document. Posterior transects were traversed throughout the review area to determine the presence of geophiler tortoise burrows, signs, etc. Transect work was performed in the field based on the visibility provided by the vegetation present. Signified burrows were flagged and GPS located. A 600-foot radius around each signified burrow was thoroughly traversed to identify burrows within the identified range. No geophiler tortoise individuals were sighted during field reconnaissance; however, burrows were observed within the review area and classified as old, inactive or active. It should be noted, all burrows were identified in Franklin County, Alabama and for more information, the EA-System? report should be reviewed entitled "Geophiler Tortoise Survey Report and Identification of Anticipated Permits for the Proposed Hydrologic Modification Site for Watershed Restoration in Mobile County, Alabama and Jackson County, Mississippi" dated September 13, 2012. Based on the findings of the survey, the proposed hydrologic restoration project could have the potential to affect the geophiler tortoise colony identified and surveyed. When the project construction plans are further refined, a biological assessment and effect determination should be prepared. If impacts to the geophiler tortoise colony are identified as a potential result of the proposed project, consultation with the USFWS should be conducted. Special provisions before and during any proposed land disturbing activities should be made to protect any geophiler tortoise individuals and burrows. Prior to any construction activities, all construction workers should be educated on geophiler tortoise identification, as well as establishing a minimum 25-foot radius buffer around each identified burrow. If any geophiler tortoise are cited during construction, all activities will cease and USFWS will be immediately consulted. Task #2: Environmental Assessment A thorough environmental assessment of the project area to determine the presence of jurisdictional waters of the United States, along with any other environmental factors that may be of concern will be conducted and a summary report with associated figures and maps will be prepared. Task #3: Permitting and Review Process The Jackson County Board of Supervisors anticipates multiple permits to be required during the course of this project. Permits that we require are detailed below. CWA Section 404 Wetland Permitting and Mitigation: Based on the preliminary project concept, permitting will be required through the U.S. Army Corps of Engineers, with consent and federal consistency determination issued from the Mississippi Department of Marine Resources and the project location is in the coastal zone. Section 404 of the Clean Water Act requires the protection and preservation of drinking watersheds in from the gulf three times a year. Research need to be established when the shrimp move into the estuaries. On this basis, the adult shrimp need protecting when they move up out of the gulf to spawn. As a net maker I see the happen three times a year. Letting the shrimp spawn correctly increase the juvenile release from the estuaries. Letting the eggs, larvae juvenile and adult shrimp come safely into the estuaries without being caught by the shrimp trawls. When we have maximum spawn we will have maximum juvenile release when the conditions are correct in the estuaries. This will help the ecology (example, more shrimp to feed fish etc.). Over time the shrimp population will increase and there will be more food for the whole ecology. After the migration is established then the law must be fixed in order to protect the shrimp from the nets when they are spawning. This involves changing the opening and closing of the shrimp trawls. The Marlinoweb Plan was researched twenty years ago and the shrimp are about 80 percent grown for it. The Marlinoweb Plan is the reason the shrimp spawn because it happen every year; but it is to be given to the scientific community. Thank you for opportunity to make this proposal. Let work together to save the food for the gulf ecology.	Jackson	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No	\$ 3,760,000	\$ -
Eco Restoration 1254	11/21/2013	Marinoweb plan to restore the gulf shrimp	The MS Urban Forest Council is a 30 year old nonprofit organization that works with community leadership and citizens to establish healthy tree canopies. We have the only arborium program in the state and have been certifying arboriums in MS for over 10 years. This project addresses community resilience, injury restoring canopies, economic development, tourism benefits and much more. This project has two phases: Phase I of developing arboriums along the MS Gulf Coast will include 3 arborium, one per county. The project is to scale, landscape level actively managed, no land acquisition and shovel ready. We can have trees in the ground as early as six months after approval. This project will fully develop local public green spaces into arboriums creating a network of linear green spaces. This project has multiple benefits: Community resilience, job training, eco-tourism, economic development, recreation, social and ecological benefits, water quality and storm mitigation, and other benefits. This project will be phased one on creating quality green spaces in the three coastal counties. Three sites (one per county) will be created another 10-20 existing sites will be identified as arboriums. Phase II will include developing an arborium for every coastal city (12) sites. In all, a total of 15 arboriums developed and another 15 existing sites that can qualify as an arborium will be certified. So when the project is complete there will be a minimum of 30 certified arboriums along the MS coast. Each arborium will be designed to be highly visible, the value of related water quality functions will be determined for these sites based on a tree formula. The project has four basic components: 1. The key objective is to establish healthy MS Gulf Coast Arborium in every city in the 3 counties of the Mississippi Gulf Coast, Harrison, Hancock and Jackson. 2. MUTC already has an established and working network of communities on the MS Gulf Coast through the Smart Communities and Tree City USA programs. We will work in partnership with local communities, other organizations and counties to plant perennial green spaces, and provide management training, job training, and all resources to create sustainable green spaces. There are identified green spaces on the coast that will remain forever green, identified in the Gulf Urban Forest inventory. We will combine our efforts with other local and regional partners to add the urban forestry element. We will provide training and other skills, develop a long term inventory of trees, replant the right tree in the right place, address storm preparedness and ensure long term green infrastructure and healthy tree canopies. 3. We will work with each entity, responsible for their green spaces to develop a series of strategies/activities including massive tree planting. Currently, we have 15 Tree City USA on the MS coast. These partner communities will be included in our project. We will provide resources, training and strategies, working with local communities, provide advanced long term training on tree maintenance and use of tree inventories to better manage trees and identify important environmental and social values for existing and new trees and community forests. The project will do all these activities through partnerships with local citizens, local officials, resilience, create citizen involvement, develop interactive conservation activities and ownership. Communities will learn community resilience aspects and connecting to a healthy gulf based on their actions within their own community. 4. Includes policy implementation on local and regional level as well as storm preparedness and mitigation for landscapes. Funding: This funding includes complete development of 15 arborium on the six coastal counties. Project elements include planting over 50 native species trees (1-3) inch trunk diameter, tree inventory, The Gulf of Mexico provides extraordinary goods and services to the Gulf Coast region and the entire nation, but its ability to continue to do so relies on effective restoration and management of natural resources. The Atlas is a tool to aid current and future Gulf restoration efforts and improve the ongoing management of the Gulf ecosystem. The Atlas portrays this large marine ecosystem by depicting and describing the following, which, when assessed collectively, broadly characterizes: Physical features and processes that define and drive the Gulf ecosystem. Fish and wildlife resources, emphasizing species and habitat of concern that were affected by the BP Deepwater Horizon oil disaster as well as species of commercial or other importance Systemic environmental stressors. Human uses, influences and their effects on the Gulf ecosystem	Harrison, Jackson	Yes	No	Yes	Yes	Yes	No	No	No	No	No	No	Yes	No	Yes	\$ -	\$ -
Eco Restoration 1261	12/4/2013	Mississippi Gulf Coast Arborium Trail - Coastal Arboriums for Restore Canopy and Reduce Injury	Funding: This funding includes complete development of 15 arborium on the six coastal counties. Project elements include planting over 50 native species trees (1-3) inch trunk diameter, tree inventory, The Gulf of Mexico provides extraordinary goods and services to the Gulf Coast region and the entire nation, but its ability to continue to do so relies on effective restoration and management of natural resources. The Atlas is a tool to aid current and future Gulf restoration efforts and improve the ongoing management of the Gulf ecosystem. The Atlas portrays this large marine ecosystem by depicting and describing the following, which, when assessed collectively, broadly characterizes: Physical features and processes that define and drive the Gulf ecosystem. Fish and wildlife resources, emphasizing species and habitat of concern that were affected by the BP Deepwater Horizon oil disaster as well as species of commercial or other importance Systemic environmental stressors. Human uses, influences and their effects on the Gulf ecosystem	Hancock, Harrison, Jackson	Yes	Yes	Yes	Yes	No	No	No	No	No	Yes	Yes	Yes	water qual	\$ 420,000	\$ 50,000	
Eco Restoration 1267	12/4/2013	The Gulf of Mexico Ecosystem: A Coastal and Marine Atlas	Hurricane Katrina and the BP oil spill were very damaging to the barrier islands of the Mississippi, Alabama and Florida Gulf Coast. There is a consensus developing that some restoration of the island ecosystems will be required, including replanting the vegetation, especially the trees. Nothing has been written about the seed sources of the restoration plantings. The arboreal vegetation of the barrier islands of the eastern Gulf Coast of the US consists mostly of slash pine (Pinus elliotti var. ellotti) and live oak (Quercus virginiana). During tropical storms, these islands are often inundated with sea water. After Hurricane Katrina (2005), 80% of the slash pine and 50% of the live oak were dead within a few months after the storm. There was a very little wind throw. The mortality was undoubtedly due to exposure to sea water. With these events occurring every decade or so, one might expect that natural selection would result in some genetic adaptation in these populations to temporary salt water inundation. Slash pine occurs not only on the barrier islands but well inland, far from salt water exposure. Seed sources normally found in commercial nurseries are derived from inland populations. It could be a serious error to replant the island vegetation with inland sources that are not adapted to salt water exposure. Meigen et al. (1986) compared barrier island slash pine with mainland sources and found morphological differences. Salt tolerance was not studied. Land (1973) found salt tolerances higher in slash pine than in loblolly pine. It is not a coincidence that slash pine is the only pine found on the Mississippi barrier islands. This study will seek to explore genetic differences in salt tolerances among half-sib families and populations of island and mainland slash pines, with the goal of identifying appropriate salt-tolerant seed sources to use in restoration projects. Seed will be collected from individual trees of three types of populations: 1) Barrier island slash pine, attempting to sample all barrier islands. 2) Beach populations adjacent to the island populations, i.e., populations exposed to salt water through tidal actions. 3) Mainland populations sampling south-to-north transects starting at points ranging from southeast Louisiana to northwest Florida. Seedlings will be grown for several months and then tested in replicated trials by dipping in artificial seawater. In addition, DNA samples will be tested to determine the level of genetic diversity and differentiation in these populations. Both sets of information will be utilized to recommend and develop adapted seed sources for reforesting the barrier islands and coastal wetlands. As present, seed samples have been collected and GPS-located from Cat Island (Mississippi), Deer Island (Mississippi) and northern Harrison County, Mississippi, and pilot studies on salt tolerance testing have been initiated. This study will have an important impact on the management of slash pine ecosystems throughout the Gulf Coast by providing guidance to restoration efforts. There will also be a significant educational impact, due to the involvement of cooperating university scientists and graduate students.	n/a	Yes	No	No	No	No	No	No	No	No	No	No	No	No	\$ -	\$ -	
Eco Restoration 1269	12/5/2013	Ecological Restoration of Slash Pine on the Barrier Islands and Coastal Wetlands	Eighty five percent of all sturgeon species on Earth are at risk of extinction, placing them on the International Union for the Conservation of Nature Red List of Threatened Species (Anonymous 2010). Diversifying and population declines due to human development (e.g., dams, tow water fills) and catastrophic (i.e., Hurricane Katrina, Deepwater Horizon oil spill (DWH)) are problematic to the recovery of sturgeons, many of which do not spawn annually and can live to be 100 years old. It was evident post DWH that there was a lack of existing data regionally on a number of important ecological patterns of all taxa which would allow scientists, managers, NGOs, and NRDA to assess any potential damage to the environment from the largest accidental oil spill in history (Jarrod et al. 2014). This project would partner and enhance three existing acoustic array projects that are currently funded to study the western population (Pascagoula and Pearl River populations) of Gulf sturgeon, Acipenser oxyrinchus desotoi, through equipment projects from GA-CET (Mobile) through DWHIT (Long-term) through the International Consulting (GulfNet) PI Authority expansion project, the 2014-2016 and the Pascagoula River estuary project (3 yr NOAA, ending 2014). The project proposed here will focus on four themes: 1) Long-term movement and regional occupancy; 2) Short-term, high resolution movement and occupancy in estuaries; 3) Trophic ecology via stable isotope analysis (SIA); and 4) PreDWH Gulf sturgeon estuarine/marine movement patterns relative to water quality indicators (water temperature, salinity and dissolved oxygen), surface current speed and direction, and meteorological conditions (wind and surface current speed and direction and rainfall). Conducting a comprehensive assessment of the western population will allow scientists and managers needed information on larger spatial and temporal scales over which to effectively manage and assess this threatened species. The extensive data collected will also allow state and federal agencies and NRDA to more effectively assess future environmental impacts and damage. These data sets will also be extremely useful to any state and federal agency whose mission is to manage Threatened and Endangered species in light of possible restoration activities due to DWH oil funding from RESTORE Act (NOAA/NMFS) or other venues. The USA Fisheries Ecology and ERDC laboratories jointly have extensive experience with Gulf Sturgeon (Heise et al. 2004; Ross et al. 2008; Hanyloff et al. 2012; Paterson et al. 2014) and its ecology and conservation and work closely with NOAA and USFWS on its recovery plans. Ideally, our team will become the Central Point of information and data collection on the long term and short-term occupancy (via VENUS WZW Fluorescently labeled System (VFS), movement patterns of Gulf Sturgeon, and use of federally-designated critical habitat (river, bays, nearshore areas, and barrier islands) for the entire Mississippi deltaic region.	Harrison	Yes	Yes	No	Yes	No	No	No	No	No	No	No	No	No	No	\$ 2,750,000	\$ 250,000
Eco Restoration 1277	12/16/2013	Comprehensive assessment of the western population of the threatened Gulf sturgeon, Acipenser oxyrinchus desotoi, long-term movements and occupancy patterns, short-term residency patterns, environmental correlates of estuarine/marine movement, and trophic	Eighty five percent of all sturgeon species on Earth are at risk of extinction, placing them on the International Union for the Conservation of Nature Red List of Threatened Species (Anonymous 2010). Diversifying and population declines due to human development (e.g., dams, tow water fills) and catastrophic (i.e., Hurricane Katrina, Deepwater Horizon oil spill (DWH)) are problematic to the recovery of sturgeons, many of which do not spawn annually and can live to be 100 years old. It was evident post DWH that there was a lack of existing data regionally on a number of important ecological patterns of all taxa which would allow scientists, managers, NGOs, and NRDA to assess any potential damage to the environment from the largest accidental oil spill in history (Jarrod et al. 2014). This project would partner and enhance three existing acoustic array projects that are currently funded to study the western population (Pascagoula and Pearl River populations) of Gulf sturgeon, Acipenser oxyrinchus desotoi, through equipment projects from GA-CET (Mobile) through DWHIT (Long-term) through the International Consulting (GulfNet) PI Authority expansion project, the 2014-2016 and the Pascagoula River estuary project (3 yr NOAA, ending 2014). The project proposed here will focus on four themes: 1) Long-term movement and regional occupancy; 2) Short-term, high resolution movement and occupancy in estuaries; 3) Trophic ecology via stable isotope analysis (SIA); and 4) PreDWH Gulf sturgeon estuarine/marine movement patterns relative to water quality indicators (water temperature, salinity and dissolved oxygen), surface current speed and direction, and meteorological conditions (wind and surface current speed and direction and rainfall). Conducting a comprehensive assessment of the western population will allow scientists and managers needed information on larger spatial and temporal scales over which to effectively manage and assess this threatened species. The extensive data collected will also allow state and federal agencies and NRDA to more effectively assess future environmental impacts and damage. These data sets will also be extremely useful to any state and federal agency whose mission is to manage Threatened and Endangered species in light of possible restoration activities due to DWH oil funding from RESTORE Act (NOAA/NMFS) or other venues. The USA Fisheries Ecology and ERDC laboratories jointly have extensive experience with Gulf Sturgeon (Heise et al. 2004; Ross et al. 2008; Hanyloff et al. 2012; Paterson et al. 2014) and its ecology and conservation and work closely with NOAA and USFWS on its recovery plans. Ideally, our team will become the Central Point of information and data collection on the long term and short-term occupancy (via VENUS WZW Fluorescently labeled System (VFS), movement patterns of Gulf Sturgeon, and use of federally-designated critical habitat (river, bays, nearshore areas, and barrier islands) for the entire Mississippi deltaic region.	Hancock, Harrison, Jackson	Yes	No	No	Yes	No	No	No	No	No	No	No	No	No	No	\$ 4,230,000	\$ -

Eco Restoration	1278	12/16/2013	<p>Coastal marine mammals are at higher risk of being adversely impacted by the intense human activities in these regions. Lack of basic knowledge about marine mammal (MM) populations in the MS Sound and adjacent waters precludes conservation of these populations. Species and the impacts of human-related activities such as the Deepwater Horizon oil spill in the Gulf of Mexico™, (GOM) estuaries and coastal waters, including the Mississippi Sound, the benthic dolphin (BD) is the most common marine mammal species. As a marine top predator, BDs are prone to accumulating toxic compounds (e.g., for example by consuming contaminated prey), which are transferred to their offspring via lactation at higher concentrations. New techniques in MM research coupled with the fact that BDs are long lived, top predators with a diverse diet (e.g., squid, shellfish, fish) allow them to use as a proxy indicator of marine ecosystem health (Wells et al. 2004). This year, an Unusual Mortality Event (UME) of BDs on the East coast was linked to an epizootic case of morbillivirus. The largest UME declared in U.S. history is on-going in the GOM, encompassing the coastline from the Texas/Louisiana border to Franklin County, Florida. Since 2010 more than 4 thousand dead dolphins have been recorded in the U.S. Mississippi is also only the coastal area with the highest number of strandings, so far the causes of this UME have not been identified. The DWH oil spill and the UME significantly raised awareness about the inadequacy of Gulf-wide baseline knowledge for estuarine and coastal BD populations and how it limited the assessment of the DWH oil spill impacts on marine mammals (MMC 2013). This is particularly problematic for these BD stocks, including the MS Sound stock, because of their restricted geographic range (i.e., population share-sized mortality). The failure to meet monitoring obligations mandated by the Marine Mammal Protection Act is in part due to the daunting number of management units defined for the conservation of BD populations (~30 stocks) in the GOM. Although an abundance estimate was produced for the MS Sound habitat in 2013, its BD population for 2013 for management purposes because the study area did not fully align with the geographic delineation of the MS Sound stock. Another limitation in evaluating impacts on the MS Sound BD population is the uncertainty about whether the current stock delineation is supported by genetic and/or behavioral data. Whether the MS Sound consists of genetically uniform groups is unknown. Knowledge about the behavior, residency and movement patterns of dolphins is essential even in the absence of genetic distinction among groups because discrete communities, arising from a tight social structure and high site fidelity, also require monitoring under the plans.</p> <p>The primary goal of this project is to combine abundance, behavioral and genetics data to better understand BD population structure (i.e., identify geographic boundaries of the stock) in the MS Sound, which is essential to evaluate impacts of future oil spills and Unusual Mortality Events (UMEs).</p> <p>Assigning mortality events (i.e., stranded dolphin carcasses) to the source population is critical to evaluate the significance of adverse impacts on a specific stock. Using coastal and ocean circulation modeling, we will develop a tool that allows managers to predict the likely source of stranded carcasses. In addition, these models will examine whether mortality on the MS Sound, based on the number of stranded carcasses on the coast, is under- or over-estimated due to transport by ocean currents.</p> <p>Several UMEs in the GOM, and recently on the Atlantic coast, have been attributed to microorganisms, including dolphin morbillivirus. Morbillivirus affects the central nervous system causing problems with swimming, diving and navigation and, ultimately, stranding. Dolphin populations may be more susceptible to contracting a fatal disease when experiencing stressful conditions (e.g., oil spill, scarce prey). Microbiology, the identification of bacteria and viruses by means of nucleic acid extraction and identification (sequencing), is a powerful method for describing microbial diversity on or within plants and animals. Using this approach we will attempt to characterize the microbial flora composition of dolphins with a focus on those viruses and bacteria that are known to cause disease in BDs. By comparing</p> <p>The problem: Salt marsh and oyster reef habitats support complex communities of plants and animals, that are the foundation for coastal ecosystem services. Among the more important services are nutrient removal, storm surge protection, and nursing commercially and recreationally important species. Unfortunately, salt marshes and oyster reefs are among the most vulnerable and declining of habitats. Climate change and natural events such as hurricanes and anthropogenic disturbances, such as dredging or disposal of oil, are contributing to the decline of these biological communities. Episodes of infectious diseases that emerge as a result of such natural and anthropogenic disturbances suppress or remove species from the communities and affect the health of plant and animal communities that compromise recovery and functioning of the coastal ecosystem.</p> <p>The solution: To remedy the disruption to salt marshes and oyster reefs from episodic infectious diseases following the Deepwater Horizon oil spill, we propose a multifaceted program to address important nonindigenous and indigenous pathogens, determine the roles and consequences they have for recovery and restoration of Mississippi salt marsh and oyster reef communities, and assess the threats to human health. The multidisciplinary program will elucidate the patterns and dynamics of occurrence and the infection and transmission dynamics of these emerging infectious diseases (EID). The proposed program will provide the ability to evaluate the consequences of outbreaks, assess the likelihood of emergence of coastal diseases, and provide effective management strategies for resource managers, conservationists, and public health officials.</p>	Jackson	Yes	No	No	No	Yes	No	No	No	No	No	No	No	No	\$	5,000,000.00	\$	-	
Eco Restoration	1280	12/16/2013	<p>The problem: Salt marsh and oyster reef habitats support complex communities of plants and animals, that are the foundation for coastal ecosystem services. Among the more important services are nutrient removal, storm surge protection, and nursing commercially and recreationally important species. Unfortunately, salt marshes and oyster reefs are among the most vulnerable and declining of habitats. Climate change and natural events such as hurricanes and anthropogenic disturbances, such as dredging or disposal of oil, are contributing to the decline of these biological communities. Episodes of infectious diseases that emerge as a result of such natural and anthropogenic disturbances suppress or remove species from the communities and affect the health of plant and animal communities that compromise recovery and functioning of the coastal ecosystem.</p> <p>The solution: To remedy the disruption to salt marshes and oyster reefs from episodic infectious diseases following the Deepwater Horizon oil spill, we propose a multifaceted program to address important nonindigenous and indigenous pathogens, determine the roles and consequences they have for recovery and restoration of Mississippi salt marsh and oyster reef communities, and assess the threats to human health. The multidisciplinary program will elucidate the patterns and dynamics of occurrence and the infection and transmission dynamics of these emerging infectious diseases (EID). The proposed program will provide the ability to evaluate the consequences of outbreaks, assess the likelihood of emergence of coastal diseases, and provide effective management strategies for resource managers, conservationists, and public health officials.</p>	Hancock, Harrison, Jackson	Yes	No	No	No	Yes	No	No	No	No	No	No	No	No	\$	7,944,630.00	\$	-	
Eco Restoration	1281	12/16/2013	<p>Oysters and oyster habitat are among the nearshore and estuarine habitats most susceptible to the vagaries of man. The Deepwater Horizon oil spill and its aftermath including the opening of freshwater salt marshes to salt water and the destruction of oyster reefs have had a significant impact on the Mississippi River estuary through the Gulf of Mexico region. Even prior to the spill, Deepwater Horizon oil spill in the oyster reef revitalization and restoration was significant every month post spill, this will only increase. Oysters are the dominant nearshore producers of carbonate upon which their habitat and a range of valuable ecosystem services depend. But, other carbonate producers influence soft-bottom habitats over much of the estuarine and nearshore region. Although time-honored practices are routinely used in reef restoration, rarely have they been evaluated. In addition, little attention is given to the ways in which oyster reef restoration where there is no evidence suggests carbonate production may play an important role and which may be equally sensitive to environmental assaults stemming from decisions on freshwater diversion, pollutant impact, and resource management. What has not been implemented is a rigorous and encompassing evaluation of carbonate management, comprehensive of the reef and adjacent soft-bottom region, directed both at best practices for restoration and for sustainable management.</p> <p>We propose a study that will identify a new standard in carbonate management in which investment is made based on scientific principles and in which project design results from goal-oriented application of those principles with sustainability as an underlying requirement. The challenge is not just to restabilize an oyster population, but rather to restore the sustainability of the habitat itself. The challenge involves not just an improved application of present knowledge on oyster population dynamics, but also the application of the basic principles controlling the fate of carbonate in the coastal zone. We propose to extend this project to include the salt marshes and lagoons. Most commercial species are carbonate producing organisms (e.g., chertfish) or animals dependent upon or benefiting from carbonate production. Bivalves generate a dominant habitat type (e.g., oyster reefs), yield important commercial products (e.g., oysters, clams, scallops), provide a high-value food resource to other species (i.e., crabs, fish) and are impacted by the activities of a diversity of engineering management bodies and private sector parties. Stocks are managed for commercial production. Habitats are managed for ecosystem services. Tax dollars are invested in restoration activities by federal and state agencies, and non-profit groups. Fisheries are produced in a number of strategies, including transport of seed and wild harvest of adults. The investments that seed effort result in competing uses of carbonate, jointly realized goals for management, and undesirable outcomes of management activities. The complexity of management goals and strategic options depends upon the application of sound scientific principles in a culturally active way. Implementing scientifically-based best management practices will allow this outcome to be fully realized. Our goal is to develop improved options based on the biological and geochemical principles controlling the fate of carbonate in the coastal zone and require these with the realistic of carbonate management to address the critical ecological factors the competing uses of carbonate in the coastal zone. We will include significant empirical tests of options for carbonate addition and management to provide the first rigorous information from which long term management and habitat restoration can be judged with confidence. We will also include extensive outreach designed to disseminate the scientific approach and findings of the project to the general public and not only to secondary school students but also to regulatory bodies, fishermen organizations, and management agencies to achieve improved management goals and more successful and sustainable outcomes.</p>	Hancock, Harrison, Jackson	Yes	No	No	No	Yes	No	No	No	No	No	No	No	No	\$	4,900,000.00	\$	-	
Eco Restoration	1282	12/17/2013	<p>In light of damage to salt marsh resources following the Deep oil spill, it is anticipated that substantial efforts will be focused on restoring salt marsh habitats within the northern Gulf of Mexico region. In order to track the recovery of ecosystem services and function of restored salt marshes, USMARC™/GOM Coastal Ecosystems Group (CEG) and MSU Coastal Research and Extension Center propose to conduct integrated assessments of the functional equivalence of restored and reference salt marsh habitats at various levels of trophic and landscape organization. The proposed project will assess the functional equivalence of restored and reference salt marshes compared to reference habitats found on the MS Department of Marine Resources (DMR) Coastal Preserves using an integrated approach including primary production, benthic secondary production, netton abundance, marsh bird communities, and trophic linkages assessed using stable isotope analysis (SIA). These trophic levels are important in understanding production and flow of salt marsh habitats as a nutrient and the role restoration is playing in restoring these functions. Additionally, we will be estimating a number of important water and sediment quality and quantity metrics that are vital to development of a better understanding of salt marsh function. The proposed project will address issues related to conservation, preservation, and enhancement of emergent salt marsh habitat. We will develop standardized quantitative assessment metrics that can be utilized at future created salt marsh sites in coastal Mississippi and the Gulf of Mexico region.</p> <p>SPECIFIC ACTIVITIES:</p> <p>1 Building a Geodatabase on Marsh Restoration Projects We will develop a geodatabase using GIS by compiling permits from previous coastal marsh restoration projects in Mississippi from the US Army Corps of Engineers Mobile office and the MSDMR. This database will provide information on the geographic location of restored/breached marshes, when they were built, and other related information. Such a database does not currently exist and is a critical need, not only for this particular project, but also for the broader research and resource conservation management in the Gulf of Mexico region. In order to develop an efficient experimental design that covers spatial and temporal parameters required to assess salt marsh restoration success, the information captured in the geodatabase will be used to choose a range of ages (10-15 years and <5 years of restored/breached sites) and these will be paired with adjacent natural reference sites (Breached Coastal Preserves). The study marshes will be stratified into two broad types based on the ecological processes that drive them, namely riverine-dominated (e.g., Pascagoula or Pearl River marshes) versus marine-dominated systems (e.g., Grand Bay NERR). At each site we will be looking at the temporal/spatial functionality of marsh ecosystems from a variety of perspectives outlined below.</p> <p>2 Developing Standardized Methods For Functional Assessment:</p> <ul style="list-style-type: none"> a) plants and benthic macroalgal primary production b) invertebrates and macrobenthic secondary production c) Resident netton and reproduction function d) Resident marsh birds as trophic indicators e) stable isotope Analysis and trophic linkages f) landscape configuration and habitat modeling 	Hancock, Harrison, Jackson	Yes	No	No	No	Yes	No	No	No	No	No	No	No	No	\$	8,000,000.00	\$	-	
Eco Restoration	1283	12/19/2013	<p>The Mississippi Renaissance Garden Foundation's (MRGF) Horticulture for Humanity (H4H) movement began as an environmental restoration effort in the aftermath of Hurricane Katrina. Our mission is empowering humanity through horticulture. A 1.4 acre Hillier Park Renaissance Garden (HPRG) site on Bayou Blar was leased from the City of Biloxi in 2007. The huge oak trees, mature shrubs, waterlilies and exotic garden plants of a rural retreat and family friendly learning destination, a warm culture of Park, organic garden, and restoration. H4H is now a community garden. HPRG has become the cornerstone of the MRGF efforts. Today, this all volunteer undertaking utilizes this centrally located beautiful and visible demonstration garden to support H4H educational goals.</p> <p>HPRG features labeled plants, trees, flowers and inspirational areas promoting the coastal MS landscape. It highlights plant uses such as food, environmental education, horticultural therapy and native, endangered and historical flora, as well as wildlife habitats and natural waterway uses. A small horticultural center with an office, multipurpose room, library, eco-art exhibit, gift shop, and rooms and small dining kitchen is planned for visitors of all ages and abilities to learn, work and play. It will also include a garden classroom and a plant, project and rest area. HPRG will support a community garden. HPRG will be used for 1) professional assistance to design and construct a green horticultural center utilizing solar energy; 2) irrigation system and lighting; 3) a green house with shelter, 4) two outdoor weight classrooms; 5) green health paths; 6) organic classrooms and 7) social learning.</p> <p>The MRGF assists its gardens maintained by local residents. HPRG would use NRD funds to assist those gardeners to accomplish H4H goals to 1) demonstrate that gardens are inspiring, functional, affordable, attainable and beneficial to the community; 2) visit residents, visitors and the economy; 3) increase healthy, sustainable lifestyles and community involvement; 4) distribute the seeds, plants, trees and other resources for their landscapes; 5) provide a base of operations (MRGF) for the MS Gulf Coast Horticulture for Humanity Movement. It addresses the need for the physical, emotional and spiritual needs of coastal people and injury to ecological, marine and wildlife caused by man-made or natural disasters. HPRG would be a model of its benefits and inspire development of other H4H gardens locally, statewide and nationally. NRD funding would allow the HPRG and horticultural center to become a major ecological tool in the future of the MS Gulf Coast environment, its people and its natural tourism industry.</p>	Hancock, Harrison, Jackson	Yes	No	No	No	Yes	No	No	No	No	No	No	No	No	\$	2,000,000.00	\$	-	
Eco Restoration	1286	12/20/2013	<p>Coastal streams in Mississippi flow through many miles of urban and suburban areas, longleaf pine forests, agricultural lands, ancient bottomland hardwood forests and cypress swamps and empty into a network of marshes and lakes and the Mississippi Sound. They are home to many species of wildlife, including migratory birds that winter in South America as well as several threatened and endangered species of fish, such as Gulf Striped Bass, Marine Anadromous Trout, coastal stream whitefish and others that return to the river to spawn. These rivers provide critically important spawning and post spawning habitat for Striped Bass and other species. Freshwater fish, such as Largemouth Bass, Micropterus punctulatus, Micropterus punctulatus, (species of black bass) and several other species, Lepomis spp., and crappie, Pomoxis spp., provide the driving force of the freshwater fishing activity of Gulf anglers.</p> <p>All of the coastal river systems are important and include the Pascagoula River watershed described as the least understood system in the continental United States and the closest we have at least to the lower 48 states to a natural paradise by Dr. Bailey Thomson, University of Alabama. The lower Pearl River which serves as the 116-mile boundary between Mississippi and Louisiana; and, the Coastals Streams like the Jordan, Wolf and Thoutheadcoffly Rivers and numerous bayous.</p> <p>Statement of Need The Gulf of Mexico affects important estuarine and open waters that serve as habitats for fish throughout their life cycles. Gulf Striped Bass are a recreationally and economically important throughout the coastal counties and this species occupies protected habitats. MOWP proposes to propagate Striped Bass and adjacent populations of black bass and surficial in these impacted river systems through the methods outlined below.</p> <p>Expansion of Turcoffa Fish Hatchery in Canton, will be necessary to provide advanced sized fingerlings for the coastal streams. An additional hatchery employee will be needed to address the increased workload.</p> <p>Methods: - Repopulate Fish Populations of Conservation Concern Determine relative abundance and age structure of Gulf Striped Bass populations in the Pearl, Pascagoula the Jordan, Wolf and Thoutheadcoffly Rivers. - Improve fish production capacity at Turcoffa Fish Hatchery near Canton, MS, for increased production of Gulf Striped Bass, black bass and selected sunfish. - Produce advanced fingerling black bass, and selected sunfish at to enhance populations of game fish in the coastal streams. - Monitoring and Evaluation Collect biological data on existing Gulf Striped Bass populations in coastal rivers. Collect biological data on existing Largemouth Bass, Spotted Bass and sunfish populations in coastal rivers.</p>	Hancock, Harrison, Jackson	Yes	No	No	Yes	No	No	No	No	No	No	No	No	No	No	\$	5,500,000.00	\$	-

1599	9/27/2011	Ecology Restoration	1599	9/27/2011	ORIGINAL (D01261) This project would address the need for recovery of injured animals as a result of habitat destruction from such things as oil spills and hurricanes. Sea life would include turtles, dolphins, shore birds, and fish. Ongoing studies would be conducted every 6 months for the health of Gulf of Mexico fish. The project would be a 20-year program that would last up to this purpose. There would be an education center included to form an outreach for interested students and other visitors. Training for specific areas such as bird banding would be under the direction of a veterinarian. Suggested locations include the Hancock Port and Harbor (Acan Building), near Jordan River, or near Wolf River.	Hancock	Yes	Yes	No	No	No	No	No	No	No	No	No	No	\$	\$				
1602	4/21/2011	Ecology Restoration	1602	4/21/2011	ORIGINAL (D01262) Problem Statement: Tidal wetlands bordering the Gulf of Mexico, including Federal wetlands in National Wildlife Refuge (NWR) areas, are at risk of being impacted by the oil that continues to wash ashore. A comprehensive and current determination of the current status of wetlands is needed. The project would be a 20-year program that would last up to this purpose. There would be an education center included to form an outreach for interested students and other visitors. Training for specific areas such as bird banding would be under the direction of a veterinarian. Suggested locations include the Hancock Port and Harbor (Acan Building), near Jordan River, or near Wolf River.	n/a	Yes	No	No	Yes	No	No	No	No	No	No	No	No	\$	\$	3,000,000.00	\$		
1603	4/21/2011	Ecology Restoration	1603	4/21/2011	ORIGINAL (D01263) Problem Statement: Tidal wetlands bordering the Gulf of Mexico, including Federal wetlands in National Wildlife Refuge (NWR) areas, are at risk of being impacted by the oil that continues to wash ashore. A comprehensive and current determination of the current status of wetlands is needed. The project would be a 20-year program that would last up to this purpose. There would be an education center included to form an outreach for interested students and other visitors. Training for specific areas such as bird banding would be under the direction of a veterinarian. Suggested locations include the Hancock Port and Harbor (Acan Building), near Jordan River, or near Wolf River.	n/a	Yes	Yes	No	No	No	No	No	No	No	No	No	No	\$	\$	300,000.00	\$		
1606	9/27/2011	Ecology Restoration	1606	9/27/2011	ORIGINAL (D01264) Problem Statement: Tidal wetlands bordering the Gulf of Mexico, including Federal wetlands in National Wildlife Refuge (NWR) areas, are at risk of being impacted by the oil that continues to wash ashore. A comprehensive and current determination of the current status of wetlands is needed. The project would be a 20-year program that would last up to this purpose. There would be an education center included to form an outreach for interested students and other visitors. Training for specific areas such as bird banding would be under the direction of a veterinarian. Suggested locations include the Hancock Port and Harbor (Acan Building), near Jordan River, or near Wolf River.	Hancock, Harrison, Jackson	Yes	No	No	No	No	No	No	No	No	No	No	No	\$	\$	8,500,000.00	\$		
1608	10/26/2011	Ecology Restoration	1608	10/26/2011	ORIGINAL (D01265) Problem Statement: Tidal wetlands bordering the Gulf of Mexico, including Federal wetlands in National Wildlife Refuge (NWR) areas, are at risk of being impacted by the oil that continues to wash ashore. A comprehensive and current determination of the current status of wetlands is needed. The project would be a 20-year program that would last up to this purpose. There would be an education center included to form an outreach for interested students and other visitors. Training for specific areas such as bird banding would be under the direction of a veterinarian. Suggested locations include the Hancock Port and Harbor (Acan Building), near Jordan River, or near Wolf River.		Yes	No	No	Yes	Yes	No	No	No	No	No	No	No	\$	\$	60,000,000.00	\$		
1611	11/9/2011	Ecology Restoration	1611	11/9/2011	ORIGINAL (D01266) Problem Statement: Tidal wetlands bordering the Gulf of Mexico, including Federal wetlands in National Wildlife Refuge (NWR) areas, are at risk of being impacted by the oil that continues to wash ashore. A comprehensive and current determination of the current status of wetlands is needed. The project would be a 20-year program that would last up to this purpose. There would be an education center included to form an outreach for interested students and other visitors. Training for specific areas such as bird banding would be under the direction of a veterinarian. Suggested locations include the Hancock Port and Harbor (Acan Building), near Jordan River, or near Wolf River.	Jackson	Yes	Yes	No	No	No	No	No	No	No	No	No	No	\$	\$	5,000,000.00	\$		
1612	11/21/2011	Ecology Restoration	1612	11/21/2011	ORIGINAL (D01267) Problem Statement: Tidal wetlands bordering the Gulf of Mexico, including Federal wetlands in National Wildlife Refuge (NWR) areas, are at risk of being impacted by the oil that continues to wash ashore. A comprehensive and current determination of the current status of wetlands is needed. The project would be a 20-year program that would last up to this purpose. There would be an education center included to form an outreach for interested students and other visitors. Training for specific areas such as bird banding would be under the direction of a veterinarian. Suggested locations include the Hancock Port and Harbor (Acan Building), near Jordan River, or near Wolf River.	n/a	Yes	No	No	No	No	No	No	No	No	No	No	No	\$	\$	6,500,000.00	\$		
1613	11/28/2011	Ecology Restoration	1613	11/28/2011	ORIGINAL (D01268) Problem Statement: Tidal wetlands bordering the Gulf of Mexico, including Federal wetlands in National Wildlife Refuge (NWR) areas, are at risk of being impacted by the oil that continues to wash ashore. A comprehensive and current determination of the current status of wetlands is needed. The project would be a 20-year program that would last up to this purpose. There would be an education center included to form an outreach for interested students and other visitors. Training for specific areas such as bird banding would be under the direction of a veterinarian. Suggested locations include the Hancock Port and Harbor (Acan Building), near Jordan River, or near Wolf River.	n/a	Yes	No	No	No	No	No	No	No	No	No	No	No	\$	\$		\$		
1614	12/2/2011	Ecology Restoration	1614	12/2/2011	ORIGINAL (D01269) Problem Statement: Tidal wetlands bordering the Gulf of Mexico, including Federal wetlands in National Wildlife Refuge (NWR) areas, are at risk of being impacted by the oil that continues to wash ashore. A comprehensive and current determination of the current status of wetlands is needed. The project would be a 20-year program that would last up to this purpose. There would be an education center included to form an outreach for interested students and other visitors. Training for specific areas such as bird banding would be under the direction of a veterinarian. Suggested locations include the Hancock Port and Harbor (Acan Building), near Jordan River, or near Wolf River.	Hancock, Harrison, Jackson, Madison, Pearl River, Warren, Wilcox	Yes	No	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	\$	\$	10,000,000.00	\$	300,000.00	

Eco Restoration	1611	12/9/2011	<p>ORIGINAL D011546) The Partnership for Gulf Coast Land Conservation Project The Partnership for Gulf Coast Land Conservation (PGCLC) is a new coalition of local, regional, state and national land conservation organizations devoted to enhancing and restoring the Gulf of Mexico coastal landscape. The mission of the Partnership is to work together across the Gulf of Mexico states to increase the pace, quality and permanence of voluntary land and water conservation in the coastal region. Land trusts are community-based non-profit organizations that work with landowners to permanently conserve forests, rivers, farms, ranches and other natural areas critical to a sustainable environment and healthy thriving communities. Through this project, the Partnership proposes to:</p> <ol style="list-style-type: none"> 1. Increase the effectiveness and efficiency of land trusts in the Gulf Region. 2. Develop and promote a public policy agenda which will reduce the barriers to private sector conservation efforts and increase funding for conservation and restoration. 3. Develop collaborative projects that will enable the land trust community and supporters to implement landscape scale conservation measures in the region. Collaborative projects may be built around water quality, critical habitat, or other criteria. 4. Participate in landscape scale conservation planning in collaboration with other conservation partners (insurance agencies and other non-government organizations) that priorities habitat for endangered and threatened species, improvements to water quality, connectivity to other protected lands, trust resources and important. 5. Participate in and coordinate our efforts with other on-going conservation planning and implementation activities through entities such as the Gulf of Mexico Alliance and the Gulf of Mexico Foundation and others. 	n/a	Yes	Yes		No	Yes	No	No	No	No	No	No	\$ 1,000,000	\$ -	
Eco Restoration	1616	12/19/2011	<p>ORIGINAL D011580) Through its resource and management agencies and public institutions, the State of Mississippi has developed a wealth of scientific information on its coastal waters and associated biological resources. While these data have been collected in large part by the Mississippi Department of Environmental Quality (MDEQ) and other state and federal institutions such as the University of Southern Mississippi's Gulf Coast Research Laboratory (GCRL) have historically collaborated on research endeavors. To the great benefit of the State, several monitoring and assessment programs span multiple decades and provide data necessary for evaluating long term trends in fishery stocks and associated fauna. These data are shared among state institutions to assist in maintaining proper management strategies for Mississippi marine resources. There is, however, data that are collected independently and not properly integrated and are often (or maybe) related datasets). We recommend that a small portion of restoration monies be devoted to the establishment of a Mississippi Coastal Data Integration and Management Program that would develop uniform data structures and protocols to allow the State to integrate its existing data sets and seamlessly merge future data into one centralized data storage program, with associated metadata files created to properly capture the source and structure of the data. Subsequently, various software applications can be applied to allow user-friendly data queries, which would greatly assist the Trustees as they move forward in the NREDA process to determine Deepwater Horizon impacts to Mississippi coastal resources. We propose that this program be a joint effort among GCRL, MDEQ, MDCR and other partner institution.</p>	Hancock, Harrison, Jackson	Yes	No		No	No	No	No	No	No	No	\$ 375,000	\$ -		
Eco Restoration	1619	2/7/2012	<p>ORIGINAL D011610) Description: The multi-year, interdisciplinary research project would aim to clarify questions about the role of Gulf menhaden in the ecosystem and whether and how its population and ecosystem were affected by BP Deepwater Horizon oil. The resulting models and information could improve estimates of menhaden productivity and guide fisheries management decisions that bear on recovery of menhaden from any oil-related injuries. Link to Injury Menhaden's offshore spawning and subsequent egg/larval drift into the estuaries in the northern Gulf coincided with the DWH oil spill. Menhaden and oil would have been in the estuary at the same time. Therefore, it is likely that menhaden in one or more of the historic stages was exposed to oil or chemical dispersants. Brown, peacock and other species whose diets include menhaden were injured. Benefit and Rationale: An ecosystem assessment is needed to better understand the role and productivity of menhaden in the Gulf of Mexico and to what extent that DWH may impact the future health and ecological role of a population. Gulf menhaden is a significant part of Gulf of Mexico's food web. Menhaden eggs, larvae, and young of-the-year are a major forage source for many economically important finfish. Upwards of 55 percent of the brown pelican's diet can be Gulf menhaden. The revenue generated by this fishery is of great economic importance to the Gulf of Mexico, especially in Louisiana. Recommendations made in an October 2011 stock assessment for Gulf menhaden provide an excellent starting point for the types of research needed for an ecosystem assessment. For example, the stock assessment recommendations provide the most important sources of fishery-dependent data: genetic, natural history, and tagging studies. These studies are important components of an ecosystem assessment. Other 7 The Exxon Valdez oil spill Injured Pacific herring and pink salmon in Prince William Sound but has contributed to the long term collapse of the herring population in Alaska. In Alaska, the Ecosystem Assessment (ESA) project was designed to assess the root causes of the stock collapse and elucidate the factors that diver their productivity. Between 1994 and 1999, the SEA program yielded an ecosystem level understanding of factors influencing juvenile pink salmon and Pacific herring survival in Prince William Sound. Multiple models were developed that better explained the relationships between such elements as the environment, predation and the associated food webs.</p>	n/a	Yes	No		No	No	No	No	No	No	\$ -	\$ -	No		
Eco Restoration	1623	7/27/2012	<p>ORIGINAL D011717) The TNC-MS Chapter's Freshwater Program proposes to implement controlled drainage practices to restore oxbow wetlands in the Mississippi Delta. While serving as a drainage channel, installation of an innovative surface controlled drainage strategy, low-grade weir, in the systems outflow channel would create a series of in-stream wetlands within the systems channel. These oxbow wetlands will aid in altering flow velocities of runoff entering these systems and provide the very important services of first flush capture of nonpoint source pollutants that would be eventually added to the system. These pollutants are derived from the agricultural production in the region that is ubiquitous in its use of inorganic fertilizers to increase crop yields, which in turn, often result in the delivery of high nutrient loads from the landscape to adjacent receiving waters. It is these nutrient loads, mainly nitrate, associated with these watersheds that are most deeply in the cause of coastal ecosystem degradation and eutrophication. This is no more prevalent than in the hypoxic zone off of the Mississippi coast in the Gulf of Mexico. Several thousand acres of remnant oxbow wetlands in the Mississippi Delta currently go unmanaged. These systems could significantly contribute to decreasing nitrate concentrations and loads reaching Mississippi's coastal ecosystem while also serving as critical significant surface water sources capable of providing sustainable irrigation supplies as well as needed to sustain flows. Using remote sensing data through the Light Detection and Ranging (LiDAR) software we were able to determine precise water volumes associated with water elevation levels of several remnant oxbow wetland systems. Two of the systems alone would have a combined water storage capacity of 1,500,000,000. From following implementation. Projects were initiated and realized for future projects of the kind aimed at enhancing the water quality and increasing sustainable water supply in the Delta's watersheds by using the landscape's natural features. The project is in the preliminary stages and although we have a strong consensus from the private landowners, the most important steps include securing funding for the project and potentially leveraging that funding with other interested partners. Project sites range from the northern to southern portions of the Mississippi Delta region and are dependent on the funding allocated. Funding from the Restore America's Estuaries Act would assist in enhancing critical wetland habitat to decrease the impacts to downstream water quality, with the added potential to provide data that would establish these remnant wetlands as an additional sustainable water supply that could be managed and is needed in this region's nitrogen-dependent agricultural economy. The agriculture community has been embracing the idea of restoring oxbow wetlands but alternative strategies that could be managed and is needed in this region's nitrogen-dependent agricultural economy. The agriculture community has been embracing the idea of restoring oxbow wetlands but alternative strategies that could be managed and is needed in this region's nitrogen-dependent agricultural economy. The agriculture community has been embracing the idea of restoring oxbow wetlands but alternative strategies that could be managed and is needed in this region's nitrogen-dependent agricultural economy. The agriculture community has been embracing the idea of restoring oxbow wetlands but alternative strategies that could be managed and is needed in this region's nitrogen-dependent agricultural economy.</p>	n/a	Yes	Yes		No	Yes	No	No	No	No	No	\$ 1,000,000	\$ -		
Eco Restoration	1625	10/16/2012	<p>ORIGINAL D011810) The Mississippi Department of Marine Resources (DMMR) is pleased to provide this proposal to develop an enhanced smart growth and sustainability model for the lower three coastal counties (Hancock, Harrison and Jackson Counties) and the cities and communities within these three counties utilizing the latest GIS technology and coast specific data. DMMR proposes to complement and enhance on-going DMMR/DEQ coastal restoration efforts by providing a tool for use by local governments, private interests, and the general public that will identify and highlight opportunities for continued smart growth and sustainable development in coastal Mississippi. We envision this as being a phased project, with the first phase focusing on the model development for the three lower coastal counties, and as funds are available, DMMR hopes to expand the model to include Pearl River, Stone and George Counties in the future. In summary the model will include the following: Enhancement of the existing Smart Growth and Sustainability GIS Model through the incorporation of additional existing data sets and creation of new data sets designed to provide local stakeholders with a decision making tool to assist with growth and development in Coastal Mississippi; estimated cost: \$1,750,000. Introduction: In December 2009, the Office of Coastal Management and Planning (OCMP) of the Mississippi Department of Marine Resources (DMMR) hired Eco Systems and began development of a series of tools designed to provide coastal Mississippi with the necessary resources to make informed decisions with regards to growth, development, environmental restoration, and ecology. With Smart Growth and Sustainability as the guiding principles, Eco Systems and OCMP worked to develop an internet-based Smart Growth and Sustainability Toolbox for coastal Mississippi. The primary principles of Smart Growth encourage: Development that includes a compatible mixture of land uses, A focus on compact building design to maximize density where appropriate, Creation of a range of housing opportunities and choices, Creation of walkable and pedestrian friendly neighborhoods and business districts, The creation of distinctive and attractive communities with a strong sense of place, Preservation of open space, farmland, natural beauty, and critical environmental areas, Development directed towards existing communities to take advantage of existing infrastructure and to reduce urban sprawl, A variety of transportation choices, Policies that make development decisions predictable, fair, and cost effective, and Community and stakeholder collaboration in development decisions. The Coastal Mississippi Smart Growth and Sustainability Toolbox and the GIS Smart Growth Model condensed these ten principles into five primary concepts designed to illustrate existing smart growth and sustainable developments and to encourage new developments to follow suit. These concepts include: Community Character, Transportation Choices, Resiliency and Natural Hazards, Policy in Practice, and Growing Green. The GIS Model, as it currently exists is a raster-based model that includes a number of datasets from the six coastal counties. These data sets combined, provide a tool for the user to identify areas of existing Smart Growth and Sustainability and also allow the user to identify Smart Growth and Sustainability elements that may be enhanced by projects that seek to further the goals and objectives of Smart Growth. The data sets currently incorporated into the existing model include: Public Transportation including the Coast Transit Authority (CTA) routes and stops, Areas certified for water and wastewater infrastructure through coastal utility districts and authorities, Historic and National Register Districts, Municipal, community, and county boundaries, Cultural Resources including parks, playgrounds, public areas, churches, schools, museums, etc., MDEQ designated brownfields sites, Beachfront properties, Jurisdictional wetlands, FEMA Designated Flood Zones, Land parcels and building footprints, and Government owned lands. In development of the Model, each data set was converted from vector to raster data, enhanced with buffers and assigned a value to be incorporated into a global formula to determine areas with high potential for smart growth and sustainability related development. The formula creates a ranking from 10 to 100 with 10 being the lowest ranking and 100 being the highest. The combination and layering of data sets allow for a weighted score of all areas within the six coastal counties and the formula moderates this weighted score to ensure that all areas are potentially balanced with regard to positive and negative measures of smart growth and sustainability. The expansion project, as proposed, will enhance and expand the existing model to enhance the Smart Growth aspects of the model. The proposed Model enhancement project will provide additional benefits to include: A single repository of relevant and critical GIS data housed on-line servers that will be available to local governments, businesses, individuals and others for use in future emergency and disaster recovery situations. The model will also allow for a variety of local and regional planning activities including transportation planning.</p>	Hancock, Harrison, Jackson	Yes	No		No	Yes	No	No	No	No	No	\$ 1,750,000	\$ -		
Eco Restoration	1626	10/24/2012	<p>ORIGINAL D011840) Proposed Restoration Project: The project would clarify the effects of barotrauma on red snapper and better define expected rates of discard mortality in the Gulf of Mexico. Additionally, the project will determine, through stakeholder involvement, methods and devices best fit to increase post-release survivorship of red snapper in Gulf fisheries. A detailed understanding of barotrauma and its effects on red snapper will inform efforts to help the recovery of fish populations impacted by the Deepwater Horizon (DWH) oil disaster. Link to Injury: The DWH oil disaster footprints overlapped with portions of the geographic range and spawning period of many reef fish species, including red snapper (<i>Lutjanus campechanus</i>). The eggs and larvae of red snapper and other finfish spawning at the time, in addition to adult fish, were exposed to petroleum hydrocarbons and chemical dispersants. Acute mortality of fish eggs and larvae and sublethal effects on adult fish could affect year class strength and population levels. Benefit and Rationale: Red snapper is an iconic and popular recreational and commercial fish species in the Gulf. In 2011, commercially landed red snapper had an annual value of \$1.5 billion. The recreational fishery generates millions of dollars a year. Red snapper are known to suffer from barotrauma related injuries and mortality. Barotrauma is the condition that results when fish is brought up from deep depths and the change in ambient pressure can cause possibly lethal internal injuries. Most red snapper barotrauma studies have been regional, and have not encompassed the full geographical, depth and temperature ranges in which the red snapper fishery is prosecuted. Increasing the post-release survival rate of red snapper Gulfwide would reduce the impacts of fishing and allow the population to recover from the DWH injury. Description: Red snapper are susceptible to barotrauma. Barotrauma can cause internal injury (e.g., gas bladder rupture, hemorrhaging, etc.) and positive buoyancy (i.e., floating). These injuries may not allow the fish to return to depth upon release or cause behavioral effects that can increase the risk for predation. Mortality caused by barotrauma hinders rebuilding of overfished populations of red snapper and could deter recovery from DWH impacts. Overall, fishery managers lack data on the post-release mortality of many reef fish species, including red snapper. This prevents accurate prediction of discard mortality in commercial and recreational fishery harvest estimates and stock assessments. Lack of confidence in release mortality may lead to increased management uncertainty. Accurate prediction of post-release survival is integral to setting appropriate annual catch limits of affected species in order to meet conservation goals. This project barotrauma would follow the established protocols (i.e., aave and lower, modified as necessary for red snapper, for both field (e.g., release device, etc.) and laboratory procedures (e.g., hyperbaric chambers and underwater acoustic tags). In general, these protocols focus on and characterize internal/external signs of barotrauma, physiological status, and short-term post-release mortality of the species. Stakeholder input will define their needs and will assist in development of best release practices for this species. Preliminary studies have demonstrated decompression devices have great potential to increase fish survival from barotrauma related injuries. Through promising new methods are available to fishermen (e.g., decompression device (e.g. Seaqualizer, Shallow Fish, Decender, etc.), information that their real world applicability has yet to be determined in great detail. Identifying recompression device most effective at reducing post-release mortality and determining the one best suited to anglers through active involvement with stakeholders will guide outreach efforts to increase fish acceptance and use among fishermen. This is especially important for those species protected by the DWH disaster, potentially offsetting DWH impacts by allowing these populations to recover at a faster rate than if these devices were untested and unused. Results of this research project will add to the state of knowledge regarding methods of survivorship for reef fish species. Data derived from this pilot study will help managers determine tools that can aid the recovery of red snapper populations impacted by DWH and are suitable for wide use in Gulf of Mexico fisheries. These data will also increase the accuracy of discard mortality estimations and improve annual catch calculations. This project could generate significant support and interest in the recreational fishery community. Location of Project: To be determined, but likely in multiple Gulf of Mexico locations (depending on fishermen interest)</p>	n/a	Yes	No		No	Yes	No	No	No	No	No	\$ 2,000,000	\$ -		

Eco Restoration	1796	6/2/2014	Crawfish help to maintain the ecosystem by scavenging and using algae that rob fish and plants of sunlight and oxygen. Crawfish also act as a source of food for other animals. Because crawfish are sensitive to any form of pollution, they are good indicators of water quality. There are about 400 species of crawfish in North America and the most common, the red swampy crawfish, can be found in abundance in the Mississippi River Basin. However, there are two species of crawfish which can only be found in Georgia, Green and Jackson Counties in Mississippi and Mobile County in Alabama, the dwarf crawfish and the least crawfish. Globally, <i>Naturisma</i> lists their status as vulnerable while on the State/Province Conservation list they are considered imperiled. Hope CDA request funds for the implementation of an environmental cultural stewardship program which would educate students and your occupation using the crawfish as model natural symbol.	Jackson	Yes	Yes	No	Yes	No	No	Yes	No	\$	300,000.00	\$	-	
<p>OBJECTIVE:</p> <p>1. Student Education</p> <p>a. Educate summer and afterschool program students on environmental stewardship and the importance of crawfish and other animals in maintaining the ecological balance of this river system.</p> <p>b. Provide education on the restoration site through maps and best management practices designed specifically for the project activity.</p> <p>c. Study the impact of growth and opening by increasing water transparency using solar technology as an artificial nutrient system erected at Hope CDA. Information will be shared with scientist through the <i>Naturisma</i>, <i>Citizen Science</i> Program.</p> <p>2. Student Restoration and Research Project</p> <p>a. Students will clean site and implement best management practices for the critical habitat of the crawfish and other animals and plants including but not limited to planting shade trees.</p> <p>b. Take eco tours along the Pascagoula River:</p> <p>1. Educate Public and Spur Tourism</p> <p>a. Sponsor an art contest to design/create a crawfish which could be used as a conservation symbol and site marker along the river.</p> <p>b. Strategically place markers at river sites throughout counties.</p> <p>c. Students will develop a virtual eco tour on the Hope CDA website describing actual sites marked by numbers 1-10 on the "Crawfish Restoration Trail (Tour)."</p> <p>d. A phone application or link to the Hope CDA website will be developed so that tourist can take the actual tour from markers 1-10 while being virtually guided by students through recorded video presentations about each site.</p> <p>Brochures will be provided to the Convention and Regional Visitors Bureau.</p> <p>promote Trail during the Pascagoula River Nature Festival!</p> <p>OUTCOMES</p> <p>1. Students will learn that biodiversity is a natural heritage and take responsibility for stewardship of vital natural resources.</p> <p>2. Crawfish species (least and dwarf) listed as imperiled will be elevated to secure in their conservation ranking.</p> <p>3. Tourism will be increased through the institution of the Crawfish Restoration Trail.</p>																	
Eco Restoration	1799	4/1/2014	The Crawfish Restoration Trail	Hancock	Yes	No	No	Yes	No	No	No	No	\$	5,000,000.00	\$	-	
<p>Using Shoreline LSs are primarily designed to control erosion using non-traditional materials that enhance shoreline stability while preserving natural coastal processes. Although these approaches for shoreline protection have been successful for increasing shoreline stability and improving localized biotic integrity in some areas, very few projects are monitored to evaluate long-term success. Given the novelty of LS, each project represents a unique opportunity to gain valuable information that can be used to inform future project design within an adaptive management framework. We propose a long-term, multifaceted monitoring approach for several proposed and newly constructed LS along the Mississippi coast that includes measuring physical and biological variables to determine if LS is improving shoreline stability and increasing biotic integrity compared to unaltered control sites.</p> <p>The first objective is to quantify the effects of LS on shoreline stability, soil properties, water quality, and biotic communities compared to unaltered control sites that are likely candidates for shoreline protection, but are not receiving a treatment. Physical parameters include shoreline erosion, sediment quality, and water quality. Biological parameters include infaunal, demersal, and pelagic communities, and diatom/benthic foraminiferal assemblages. The second objective in this study is to develop cost-benefit analyses for using project costs and net benefits for each site using functional values of sediment storage, nutrient retention, shoreline habitat, land values, and project costs. Comparing physical, biological, and economic benefits of LS with control sites will help to determine which LS options are cost-effective.</p> <p>A more complete understanding of the functions provided by alternative shoreline protection measures is sorely needed in Mississippi and in the larger southeastern U.S. where very little research has been done. In gauging responses of a large suite of variables, we believe that the proposed research will illuminate the strengths and weaknesses of several different approaches to shoreline protection, which will ultimately improve future decision making in this region. The LS approach will continue to be a viable option to control erosion by natural resource managers; therefore, this research will help decision makers fund or permit appropriate cost-effective LS projects in the Gulf of Mexico.</p>																	
Eco Restoration	1800	4/2/2014	Multifaceted evaluation of living shorelines in the Mississippi Sound	Hancock, Jackson, Harrison	Yes	Yes	60000	No	Yes	Yes	No	No	Yes	\$	18,000,000.00	\$	-
<p>Kemp's ridley sea turtles are a Critically Endangered species that relies heavily on the north-central Gulf of Mexico for developmental habitat for foraging juveniles and sub-adults. Since 2010, more than 800 sea turtles, mostly immature Kemp's ridley, have stranded dead along the Mississippi coast raising important questions about regional ecosystem health. Additionally, over 300 immature Kemp's ridley have been incidentally hooked at local fishing ports in Mississippi. A variety of factors are likely responsible for increased strandings including degradation of natural oyster reefs and subsequent declines in abundance of essential prey items of the species that rely on these habitats. Declined fisheries of both oyster and blue crab fisheries in recent years support this hypothesis and illuminate the importance of a healthy ecosystem for recovering populations of Kemp's ridley.</p> <p>The purpose of this project is to facilitate the recovery of Kemp's ridley habitat by 1) monitoring the effects of recently established artificial and oyster reefs in the Mississippi Sound on Kemp's ridley essential prey items, and 2) establishing programs that will enhance wild stocks of Kemp's ridley prey. These efforts will provide critical information for understanding the importance of reef habitats for developing Kemp's ridley, and their prey, will promote the restoration and recovery of Kemp's ridley prey species, and could potentially promote development of new economic opportunities associated with stock enhancement. Recent research led by NMFS has revealed that the Mississippi Sound is a vital development habitat for Kemp's ridley. Further, ongoing research examining the value of artificial reefs for prey has indicated that Kemp's ridley has indicated the importance of these areas for developing sea turtles. To promote the restoration and recovery of this endangered species, continued monitoring of its important habitat and prey and enhancement of local stocks of prey items is essential. Ultimately, this work will play an important role in both ecosystem and economic restoration of the north-central Gulf of Mexico.</p>																	
Eco Restoration	1803	4/5/2014	Property Acquisition East Pascagoula River (Fatchas Acquisition)	Jackson	Yes	Yes	No	No	No	No	No	No	\$	10,189,000.00	\$	-	
<p>Property owned by the Fatchas family has long been used as an industrial shipyard on some of the most attractive waterfront property in the City. This project proposes to acquire the property, remediate, and clear it for further development.</p>																	
Eco Restoration	1804	4/14/2014	Long term restoration, recovery, and monitoring of marine mammal and sea turtles in the north central Gulf of Mexico	Hancock, Harrison, Jackson	Yes	No	No	No	No	No	No	No	\$	16,526,879.00	\$	-	
<p>In the aftermath of BP Deepwater Horizon Oil Spill, larger numbers of bottlenose dolphins and sea turtles have stranded in the northern Gulf of Mexico, and many of these strandings have occurred along the coast of Mississippi. The Institute for Marine Mammal Studies (IMMS) has played a central role in the stranding response and rehabilitation efforts during this time. The proposed project will promote the restoration and recovery of dolphin and sea turtle populations in Mississippi waters through a systematic expansion of 3) responding to dolphin and sea turtle strandings; 2) rehabilitating sick and injured dolphins and sea turtles, and 3) monitoring the recovery of wild dolphin and sea turtle populations. Representing sperm whales, dolphins and sea turtles are ideal bioindicators of ecosystem health. This project, led by Mississippi State University (MSU), will facilitate understanding of how these species have endured numerous environmental pressures and foster their future survival, which is imperative for the restoration and recovery of the northern Gulf of Mexico.</p> <p>This project adheres to the selection criteria set forth by the National Fish and Wildlife Foundation (NFWF), to remedy harm and eliminate or reduce the risk of future harm to Gulf Coast natural resources that were impacted by the Deepwater Horizon oil spill. This project conforms to NFWF criteria as follows:</p> <p>The Mississippi Sound and adjacent waters were directly impacted by the oil spill and response activities:</p> <p>Marine mammals and sea turtles experienced direct and indirect injury resulting from the oil spill and response activities in the north-central Gulf of Mexico</p> <p>Project includes science based methodologies that produce measurable and meaningful conservation outcomes to marine mammals, sea turtles, and their habitats</p> <p>This project will help mitigate damage from the oil spill, aid in the restoration and recovery of these species, and enhance management of marine resources by state and federal agencies</p> <p>The Mississippi Sound and adjacent waters of the north central Gulf of Mexico (nGOM) provides essential habitat for several endangered and threatened species including Kemp's ridley</p>																	
Eco Restoration	1814	5/6/2014	Gulf Coast Reef Fish reproduction with Fish Management	Hancock, Jackson	Yes	Yes	Yes	Yes	No	Yes	Yes	No	\$	8,000,000.00	\$	-	
<p>This project will help reproduce the fish that were killed by the oil spill. The Gulf of Mexico has a management tool called ITQ. The commercial industry holds quotas shares of Reef fish that can be leased, fished or sold. If we can control some of the shorebirds that are willing to lease some of their quotas shares so that the fish can remain in the water to reproduce for the future.</p> <p>This will benefit the resource by allowing the fish to stay in the water and reproduce for the future. This reproduction will help restore the resource that was made sick by the oil spill and died.</p> <p>This project will not only help restore but will help give back to both the recreational fishers and commercial fishers and also the consumers of this resource by allowing the fish to remain in the water and reproduce. This is a project that will do exactly what BP said they would do and that is to restore the living marine resource to its condition before the oil spill. This project will help keep our coastal communities that depend on our living marine resource as a source of income for their business's strong.</p>																	
Eco Restoration	1815	10/16/2014	A Program to Assess and Treat Roadside Sources of Aquatic Ecosystem Degradation in Coastal Mississippi, Alabama, and Louisiana: Phase 1 - Roadside Assessments	Hancock, Harrison, Jackson,	Yes	Yes	No	Yes	No	No	No	No	\$	2,343,000.00	\$	-	
<p>The proposed five-year program would implement the specially designed Roadside Watershed Recovery Program (RWHP) to assess, develop prescriptions, treat, monitor, and disseminate information for roadside unimpaired road crossing and borrow pit assets in the approximately 17,560 square-mile (1,238,400 acre) Pearl, Pascagoula, Mobile-Tombigbee, and Alabama River basins within Mississippi, Alabama, and Louisiana (see Attachment Proposal). The primary resource area addressed by the RWHP include water quality, aquatic habitats, rare and imperiled aquatic species, invasive species, and stormwater runoff. The RWHP was developed to provide roadside maintenance and resource management end-users with ground-truthed information, methodologies and practices to improve decision making that result in the on-the-ground implementation of sustainable, long-term solutions. The program is divided into five phases that include assessments, prescriptions, treatments, monitoring, and information dissemination. Reductions in roadside-induced sedimentation, culvert crossing biological barriers, and crossing new invasive species would result in measurable water quality and aquatic habitat improvements in river basin watersheds and coastal ecosystems. Roadside issues, impacts, the program process, costs, and anticipated benefits are discussed in the Attachment Proposal.</p> <p>Phase 1 assessments identify and characterize the location, features, conditions, maintenance regimes, previous projects, natural resources, and ecosystem impacts data for the work area unimpaired road crossings, borrow pits, and crossing new invasive species. The intensive data collection, analysis, and prioritization conducted in this phase establish the technical baseline for site treatment decision making, implementing sustainable projects, measuring improvements, and facilitating future requirements. The assessment process conducts a NEPA programmatic environmental assessment, integrates resource project's resource inventories, health baseline, roadside maintenance processes and resources, collects and analyzes site-specific field data, and scores, ranks, and prioritizes sites for treatment. It is assumed that during Program Years 1 and 2 field surveys would be conducted at an estimated 2,500 unimpaired road crossings and 200 borrow pits. A Discussion of Phase 1 is presented in the Attachment Proposal.</p>																	
Eco Restoration	1816	10/16/2014	A Program to Assess and Treat Roadside Sources of Aquatic Ecosystem Degradation in Coastal Mississippi, Alabama, and Louisiana: Phase 1 - Roadside Prescriptions	Hancock, Harrison, Jackson,	Yes	Yes	No	Yes	No	No	No	No	\$	991,000.00	\$	-	
<p>The proposed five-year program would implement the specially designed Roadside Watershed Recovery Program (RWHP) to assess, develop prescriptions, treat, monitor, and disseminate information for roadside unimpaired road crossing and borrow pit assets in the approximately 17,560 square-mile (1,238,400 acre) Pearl, Pascagoula, Mobile-Tombigbee, and Alabama River basins within Mississippi, Alabama, and Louisiana (see Attachment Proposal). The primary resource area addressed by the RWHP include water quality, aquatic habitats, rare and imperiled aquatic species, invasive species, and stormwater runoff. The RWHP was developed to provide roadside maintenance and resource management end-users with ground-truthed information, methodologies and practices to improve decision making that result in the on-the-ground implementation of sustainable, long-term solutions. The program is divided into five phases that include assessments, prescriptions, treatments, monitoring, and information dissemination. Reductions in roadside-induced sedimentation, culvert crossing biological barriers, and crossing new invasive species would result in measurable water quality and aquatic habitat improvements in river basin watersheds and coastal ecosystems. Roadside issues, impacts, the program process, costs, and anticipated benefits are discussed in the Attachment Proposal.</p> <p>Phase 1 employs the findings from Phase 1 to develop prescriptions for selected high-priority unimpaired road crossing and borrow pit sites, and an overarching treatment plan for crossing new invasive species. A high-priority site is one identified as having a high potential for environmental ranking among the sites assessed for treatment. This phase establishes the technical baseline for site treatment decision making that result in the on-the-ground implementation of sustainable, long-term solutions. The program is divided into five phases that include assessments, prescriptions, treatments, monitoring, and information dissemination. Reductions in roadside-induced sedimentation, culvert crossing biological barriers, and crossing new invasive species would result in measurable water quality and aquatic habitat improvements in river basin watersheds and coastal ecosystems. Roadside issues, impacts, the program process, costs, and anticipated benefits are discussed in the Attachment Proposal.</p> <p>A discussion of Phase 1 is presented in the Attachment Proposal.</p>																	

Eco Restoration	1817	10/16/2014	A Program to Assess and Treat Roadside Sources of Aquatic Ecosystem Degradation in Coastal Mississippi, Alabama, and Louisiana-Phase II: Roadside Treatment	The proposed five-year program would implement the specially designed Roadside Watershed Recovery Program (RWFP) to assess, develop prescriptions, treat, monitor, and disseminate information for roadside upland road crossing and borrow pit assets in the approximately 17,560 square-mile (11,238,400 acre) Pearl, Pascagoula, Mobile/Tombigbee, and Alabama River Basins within Mississippi, Alabama, and Louisiana (see Attachment Proposal). The primary resource areas addressed by the RWFP include water quality, aquatic habitats, rare and imperiled aquatic species, invasive species, and stormwater runoff. The RWFP was developed to provide roadside maintenance and resource management and users with ground-truthed information, methodologies and practices to improve decision making that result in the on-the-ground implementation of sustainable, long-term solutions. The program is divided into five phases that include assessments, prescriptions, treatments, monitoring, and information dissemination. Reductions in roadside-induced sedimentation, culvert crossing biological barriers, and crossing zone invasive species would result in measurable water quality and aquatic habitat improvements in river basin watersheds and coastal ecosystems. Roadside issues, impacts, the program process, costs, and anticipated benefits are discussed in the Attachment Proposal. Phase II implements on-the-ground roadside treatment projects that produce the desired measurable improvements identified in Phase I and conceptualized in Phase II. Projects are designed and implemented applying prescription alternatives to high-priority upland road crossings, borrow pits, and crossing zone invasive species. Crossing and borrow pit projects would include contracted project designs, engineering, and construction and support of county-administered projects through technical consultation and site inspection services. Local construction companies would be used to support project design and implementation. As applicable, project activity permitting would be conducted with state and federal regulatory agencies during project design phases. For Program Years 3 through 5, there would be construction projects for an estimated 25 crossings and 10 borrow pits and invasive species treatments at an estimated 750 crossing zones. A discussion of Phase III is presented in the Attachment Proposal.	Hancock, Harrison, Jackson, 12 other additional counties	Yes	Yes	80000	No	Yes	No	No	No	No	No	\$ 7,913,000.00	\$ 0	-
Eco Restoration	1818	10/16/2014	A Program to Assess and Treat Roadside Sources of Aquatic Ecosystem Degradation in Coastal Mississippi, Alabama, and Louisiana-Phase III: Roadside Monitoring	The proposed five-year program would implement the specially designed Roadside Watershed Recovery Program (RWFP) to assess, develop prescriptions, treat, monitor, and disseminate information for roadside upland road crossing and borrow pit assets in the approximately 17,560 square-mile (11,238,400 acre) Pearl, Pascagoula, Mobile/Tombigbee, and Alabama River Basins within Mississippi, Alabama, and Louisiana (see Attachment Proposal). The primary resource areas addressed by the RWFP include water quality, aquatic habitats, rare and imperiled aquatic species, invasive species, and stormwater runoff. The RWFP was developed to provide roadside maintenance and resource management and users with ground-truthed information, methodologies and practices to improve decision making that result in the on-the-ground implementation of sustainable, long-term solutions. The program is divided into five phases that include assessments, prescriptions, treatments, monitoring, and information dissemination. Reductions in roadside-induced sedimentation, culvert crossing biological barriers, and crossing zone invasive species would result in measurable water quality and aquatic habitat improvements in river basin watersheds and coastal ecosystems. Roadside issues, impacts, the program process, costs, and anticipated benefits are discussed in the Attachment Proposal. Phase III provides comprehensive monitoring of crossings, borrow pits, and affected watersheds pre- and post-treatment to document conditions and identify changes. Collection methodologies and protocols for each monitoring activity have been developed to provide standards, procedures, criteria, and indicators for collecting information. For Program Years 3 through 5, crossing baseline monitoring would be conducted biannually at 200 selected high-priority sites, while pre- and post-project construction monitoring would be conducted at 15 sites, sediment delivery monitoring at 30 sites, and aquatic ecosystem monitoring at 15 project sites. Borrow pits monitoring would include biannual baseline monitoring at 40 high-priority pits and annual project and aquatic ecosystem monitoring at 10 project sites. An estimated 75 crossing zone invasive species sites would be inspected annually. A discussion of Phase IV is presented in the Attachment Proposal.	Hancock, Harrison, Jackson, 12 other additional counties	Yes	Yes		No	Yes	No	No	No	No	No	\$ 348,000.00	\$ 0	-
Eco Restoration	1819	10/16/2014	A Program to Assess and Treat Roadside Sources of Aquatic Ecosystem Degradation in Coastal Mississippi, Alabama, and Louisiana-Phase IV: Roadside Monitoring	The proposed five-year program would implement the specially designed Roadside Watershed Recovery Program (RWFP) to assess, develop prescriptions, treat, monitor, and disseminate information for roadside upland road crossing and borrow pit assets in the approximately 17,560 square-mile (11,238,400 acre) Pearl, Pascagoula, Mobile/Tombigbee, and Alabama River Basins within Mississippi, Alabama, and Louisiana (see Attachment Proposal). The primary resource areas addressed by the RWFP include water quality, aquatic habitats, rare and imperiled aquatic species, invasive species, and stormwater runoff. The RWFP was developed to provide roadside maintenance and resource management and users with ground-truthed information, methodologies and practices to improve decision making that result in the on-the-ground implementation of sustainable, long-term solutions. The program is divided into five phases that include assessments, prescriptions, treatments, monitoring, and information dissemination. Reductions in roadside-induced sedimentation, culvert crossing biological barriers, and crossing zone invasive species would result in measurable water quality and aquatic habitat improvements in river basin watersheds and coastal ecosystems. Roadside issues, impacts, the program process, costs, and anticipated benefits are discussed in the Attachment Proposal. Phase IV provides the means to make the extensive amount of information developed by the program available to the public and to resource stewards responsible for implementing and maintaining roadside treatment projects. The purpose is to: 1) increase citizen awareness of water resource benefits, impacts, and restoration activities and promote their active participation in watershed stewardship; 2) educate practitioners and resource managers on roadside maintenance and restoration; and 3) promote partnerships among agencies, resource managers, and other organizations in watershed-based restoration and conservation needs. The South Mississippi Watershed Recovery Initiative program website would be deployed in Program Year 1, the roadside manual would be developed in Program Year 4, and two webinars per year would be conducted during Program Years 4 and 5 for the proposed five-year funding period. Phase V is not constrained to the completion of any previous phase and can operate as needed in concurrence with the other phases. A discussion of Phase V is presented in the Attachment Proposal.	Hancock, Harrison, Jackson, 12 other additional counties	Yes	Yes		No	Yes	No	No	No	No	No	\$ 235,000.00	\$ 0	-
Eco Restoration	1822	5/13/2014	Design and construction of a replacement for the RV Tommy Murre	This document addresses the need for a mid-sized (110-120 ft) research vessel to replace the aging R/V Tommy Murre. The 98'x47' V Tommy Murre was built in 1981 and has served USM and other Gulf academic, state, and federal users faithfully since then. However, the vessel's extended service program is USM. We expect present users including ongoing survey programs such as SEAMAP to be retained on a new vessel. However, we note the dearth of vessels in this size category in the Gulf of Mexico. Other vessels of this size (e.g., the 115'x47' V Pelican built in 1980, the 115'x47' V Waterford built in 1982) are of the same vintage and offer similar constraints for use in modern in-sea research programs. Thus, we anticipate that a new vessel would attract considerably increased usage if properly designed. Included in this order range of research are programs requiring quiet technology, such as acoustics, dynamic positioning for ROV deployment and precise bathymetric sampling, modern speed and quick control for trawl gear testing, modern electronic capabilities including acoustic transmission for sea sensors and conducting cables for overboard sampling gear, etc. The vessel would position USM as a leading vessel operator in the Gulf of Mexico and provide considerably expanded capability in support of many RESTORE programs. A replacement vessel should have the following characteristics: a)Length: 110-120 ft b)Draft: 6-10 ft c)Batt technology (e.g., electric drive, etc.) to support acoustic research d)Trawl winches and hydrographic winches below deck/aboard deck to provide maximum free deck space aft e)Dynamic positioning f)Bilge pump g)Auto-trawl system h)Capable of mounting a full range of net sensors i)Dry and wet laboratories j)Berthing for minimally 10 scientists plus crew k)Rate-of-the-art internal (e.g., laboratory to wheelhouse) and external (e.g., vessel-wide satellite connectivity) communications l)Rigged stern for trawl deployment. Rigged port and starboard for overboard deployment of research gear (e.g. CTD/rosette, box corer, plankton nets) m)Conducting cable on hydrographic winch n)Maximum fuel efficiency o)Domestic day rate p)Strong-based infrastructure to support expanded gear storage and mobilization demand Annual Operation & Maintenance Cost (8 years): OCM manages its entire vessel fleet on a cost recovery basis. We anticipate usage, involved under a day-rate schedule plus fuel, to cover the costs of crew, piece out, equipment repairs, and weekly maintenance.	Jackson	Yes	Yes	100000	Yes	Yes	No	No	No	No	\$ 20.00	\$ 0	-	
Eco Restoration	1823	5/13/2014	Center for Marine Ecosystem Health	The Center for Marine Ecosystem Health will provide scientific information and technology transfer to resolve ecosystem health issues associated with increased pressure on the coastal environment from oil spills, land runoff, introduction of animal pathogens with trade, and increased population growth. The center will conduct interdisciplinary research to overcome issues related to human health, ecosystem health, and the animal health constraints to the development of marine aquaculture. The goals of the Center are: (1) To protect seafood consumers and living marine resources from zoonotic and monoinfectious agents of disease that may be introduced from aquaculture, from ship ballast water, or from imported raw seafood products. To gain an understanding of the biology and epidemiology of pathogens important to marine resources. To provide information on identification and control of natural epidemics of mortalities of marine organisms. (2) To accelerate the development of marine aquaculture through an emphasis on biosecurity, stock health, and environmental stewardship. To gain an understanding of the influence of pathogens important in marine aquaculture. To provide expertise on quarantine and establishment of Specific Pathogen Free-based marine aquaculture. To provide information and advice on disease diagnosis and control in support of marine aquaculture. (3) To evaluate and enhance the environmental health of the Gulf of Mexico through a better understanding of marine toxins, including oil related products and their mechanisms of action, and to develop interventions and remediation strategies. To provide expertise, information, and advice on environmental contaminants to industry and governmental agencies. The project will build state-of-the-art facilities and assemble a team of outstanding scientists and technical personnel from the academic, government, and private sectors to focus on the study of diseases of marine organisms, diseases of humans conveyed by the marine environment, and marine environmental health, including aquaculture contamination. The center will provide expertise to evaluate diseases in wild aquatic organisms as monitors of the health of ecosystems. Furthermore, in order to make informed corporate and regulatory decisions, a real need exists by industry and governmental agencies for data on potentially toxic environmental contaminants. Location (City, County): GCR in Ocean Springs (Jackson County). Infrastructure cost (8 years): \$6 million (3 yr). Annual Operation & Maintenance Cost (8 years): \$3 million (7 yrs). How will this leverage with other RESTORE priority areas or RESTORE funds? Implementation of this project will address the key RESTORE priority areas of restoration, mitigation of insults caused by toxins and pathogens, and economic development. The project will build capacity for federal and private funding to sustain the Center after project completion. Information relevant to Economic Development (e.g., new construction, new employment opportunities, workforce development and training, etc.). The assumption of a leadership role by Mississippi through the Center in the prevention, control, and treatment of diseases of marine organisms and enhancement of environmental health will assure a long-term economic return for industry, a stable and sustainable economic base, and an enhanced quality of life and health for all citizens along the U.S. Gulf coast. [4]	Jackson	Yes	Yes	100000	Yes	Yes	No	No	No	No	\$ 6.00	\$ 0	-	
Eco Restoration	1824	5/13/2014	Center for Marine Ecosystem Health	Provide watershed for an area affecting approximately 1/4 square miles (126 acres or 5,000,000 ft.) Area includes 200-300 Residents and Businesses. The area floods during minimal rainfall, the residents and business are blocked from exit or emergency vehicles until water recedes. Options: 1)Provide an unrestricted outlet from Bayou Yazo to Comlyne Bayou 2)Divide between Bayou Yazo and Comlyne Bayou for better water flow after rain fall. 3)Silt removal from Bayou Yazo and Comlyne Bayou for added water retard on and better water flow. 4)Add ballfield around area to direct water flow 5)Provide an unrestricted outlet from Bayou Yazo, across Legalle Avenue thru Ingalis. Access into Yazo Lake. 6)Excavate area between Community Ave, Ford Street, and Depot Street for water flow after rain fall. 7)Remove Ford Street bridge and restore Street Bridge obstructions. 8)Remove West end of Community Avenue obstruction. 9)Silt removal from Bayou Yazo for increased water retention. 10)Excavate lower harbor area for better water flow and water retention. Comlyne Bayou and Yazo Lake both empty into the Pascagoula River then into the Gulf of Mexico.	Jackson	Yes	Yes	50000	Yes	No	No	No	No	No	\$ 1,500,000.00	\$ 0	-	

Eco Restoration	1829	5/13/2014	Cumulative Impacts Assessment Tool for Ecosystem Based Management	<p>At multiple restoration projects are implemented in the northern Gulf of Mexico, there is a need to understand and quantify impacts on the ecosystem. While positive impacts are most likely, there is risk that interactions across projects may have unintended consequences for nearby, changes in water quality such as salinity and dissolved load may adversely impact desired habitat conditions. Consequently, a method that informs ecosystem based management is needed. This proposal is to develop and deploy a place-based cumulative impacts assessment tool (CIAT) for scientific assessments of synergistic interactions of multiple restoration projects. The CIAT will be built using existing technologies and data for conducting scenario analyses and simulations. The CIAT will allow managers to evaluate impacts of multiple projects on the overall quality of the ecosystem in the northern Gulf of Mexico and provide science-based assessments for adaptive management of restoration projects develop over time. Additionally, enhanced assessment techniques will be used to evaluate the stability and sustainability of individual projects during construction and post construction. The project will be a collaborative effort with engineers and scientists from Mississippi State University (MSU) and the University of Southern Mississippi (USM) and will be coordinated with state and Federal agencies conducting restoration in the northern Gulf of Mexico. Emphasis will be placed on projects in the Mississippi Sound and Lower Mississippi River.</p> <p>This proposal includes two major tasks 1) development and deployment of a cumulative impacts assessment tool (CIAT) that includes project information and simulation capabilities for assisting management and 2) enhanced observations using a variety of platforms (satellite, aerial, water borne (surface and subsurface), and field measurements) to assess project stability and sustainability. This combined approach will allow for adaptive management, incorporation and interaction with other assessments (e.g., MACTP), and provides a mechanism for public interactions.</p> <p>Recent and ongoing studies conducted by the Northern Gulf Institute (NGI) (www.NorthernGulfInstitute.org) provide a wealth of information on physical, chemical, and biological processes in the northern Gulf of Mexico. For example, NGI has established hydrodynamic models with ecological modeling capabilities for the US, Louisiana, MS and the Mississippi Sound (Cavazos and Martin, 2012; Mckelvey et al., 2012). These models provide capabilities for integrated Ecosystem Assessments (IEA) and are part of the ongoing NOAA IEA program. They are also compatible with hydrodynamic models such as ADCIRC, FVCOM, and CH3D which have been applied in the region. This approach is also directly applicable to the Gulf of Mexico Atlantic Ecosystem Integration and Assessment Priority Team. Additionally, NGI has developed and utilized Sulfis, a decision support system, for activities such as regional sediment management in Mobile Bay (McAnally and Purdie, 2011) and ecosystem management in the Mississippi Sound (McAnally et al., 2010) that can be utilized for place-based cumulative impacts assessment tool project management. The NOAA Gulf of Mexico team has adopted Sulfis for use in integrated ecosystem assessment.</p> <p>Additional information is provided as an attached document.</p>	Hancock, Harrison, Jackson	Yes	No		Yes	Yes	Yes	Yes	No	No	No	No	No	No	No	No	\$ 7,500,000.00	\$	-	
Eco Restoration	1830	5/13/2014	Crafting a mechanistic functional indicator of hypoxia and ocean warming	<p>The proposed project will contribute to a functional explanation of responses by benthic organisms to changing and interacting gradients of dissolved oxygen and temperature, stressors associated with two primary coastal health concerns, namely hypoxia and climate change. Furthermore, this research will take the next logical step toward producing a functional indicator of hypoxia for coastal estuarine ecosystems. The research questions are founded on the premise that macrobenthic population responses to organic enrichment and hypoxia should entail a number of mechanistic links to individual organisms in terms of their bioenergetic capacity to require, consume, and allocate energy. Experiments will be performed using various body sizes of several prevalent benthic polychaete taxa. In addition to acute mortality, chronic effects in terms of autecological processes, including aerobic and anaerobic respiration, trophic energetic parameters, as well as growth and degrowth rates will be quantified at various combined levels of dissolved oxygen (DO) and temperature. Information gleaned from lab experiments will be synthesized within the context of an in-situ hypoxia mass balance model (HMBM) to examine how autecological processes would interact to elicit temporal changes in biomass size distributions under alternative scenarios of DO and temperature. Model simulations will be compared to benthic samples in conjunction with continuous water quality data. In addition, incorporating parameter estimates within the HMBM will help to assess the feasibility and applicability of developing a functional indicator that can be mechanistically explained through autecological processes. An ultimate goal is to craft a model which can apprehend how effects of hypoxia and warming affect trophic transfer potential to important fisheries species, such as brown shrimp.</p> <p>Location (City, County): Ocean Springs, Jackson County Infrastructure cost (8 years): None Annual Operation & Maintenance Cost (8 years): \$2,000,000 (4 years) (factual budget depends on the amount of fall marsh restoration activity involved)</p> <p>How will this leverage with other RESTORE priority areas or non-RESTORE funds? This project addresses multiple RESTORE and GoCoast key and priority focal areas, and will complement anticipated substantial investments of RESTORE funds into understanding ecosystem consequences of hypoxia. The proposed project will interface directly with resource management agencies and NGOs, in the region in order to disseminate the findings from this project.</p> <p>Information relevant to Economic Development (e.g., new construction, new employment opportunities, workforce development and training, etc.). This project will engender many indirect economic benefits that follow from ecosystem services associated with ensuring healthy coastal ecosystems and essential fish habitat, including the promotion of sustainable seafood harvest and production, recreational fishing activities, and associated tourism.</p>	Jackson	Yes	No		No	Yes	Yes	No	No	No	No	No	No	No	No	No	\$ 2,000,000.00	\$	-	
Eco Restoration	1831	5/13/2014	Artificial reefs and hypoxia: examining linkages and effects on reef fish populations	<p>Artificial reefs are commonly built to create fish habitat in hopes of increasing fish stocks. The Mississippi DMR has created many shallow reefs with Mississippi Sound using concrete rubble and oyster shell. Further offshore, a dozen offshore reef sites (fish habitats) ranging in size from 8 to 10,000 acres have been established. Ongoing research on nearshore artificial reefs in Mississippi Sound show that the bottom, a diverse community of microbes and invertebrates, that colonizes these surfaces are not heterotrophic and have a high biological oxygen demand, yet hypoxia rarely develops on these shallow reefs due to shallow waters and high water column mixing rates. The offshore reefs are deeper (50-100') and located in a region where the water column is stratified during the summer. This stratification combined with riverine nutrient inputs leads to bottom water hypoxia. Benthos found on large offshore reefs will increase the biological oxygen demand and may contribute to hypoxia. We propose to examine the oxygen and nutrient demands of 5 rubble artificial reefs and 5 oyster reef sites over a 4 year period to determine if artificial reef sites are more susceptible to hypoxia relative to the non-reef sites. Stable isotopes of the major nitrogen species will be examined to determine the sources of dissolved nitrogen. Fish populations at each site will also be surveyed by underwater video collected by members of the Mississippi Gulf Fishing Banks who frequently dive these sites to determine effects on reef fishing capacity. Bottom hypoxia associated with artificial reefs could deter the recruitment of juvenile fishes, which seek out reef habitats after settling from the plankton. Fish early life stage will be surveyed to evaluate for fisheries production (eggs), as well as hypothesized relationships between larval supply (pelagic larvae) and settled recruits (juveniles).</p> <p>Location (City, County): Ocean Springs, Jackson County Infrastructure cost (8 years): None Annual Operation & Maintenance Cost (8 years): \$1,415,000 (4 years - \$355K/year)</p> <p>How will this leverage with other RESTORE priority areas or non-RESTORE funds? The proposed research fulfills many RESTORE/GoCoast priorities: expanding fisheries monitoring for Mississippi offshore waters, building local expertise, creating partnerships, and implementing ecosystem-based management.</p> <p>Information relevant to Economic Development (e.g., new construction, new employment opportunities, workforce development and training, etc.). Three graduate students will be trained on highly technical methods used for this project. In addition, local charter boats arranged through the Mississippi Gulf Fishing Banks organization will be employed for much of the sample collection.</p>	Jackson	Yes	No		No	Yes	Yes	No	No	No	No	No	No	No	No	No	\$ 1,415,000.00	\$	-	
Eco Restoration	1832	5/13/2014	A management strategy evaluation for assessing coastal habitats and ecosystem services in the northern Gulf of Mexico	<p>The coastal continental and island habitats in the northern Gulf of Mexico (GOM) are subject to a range of chronic and episodic impacts. In order to maintain the health of these ecologically critical habitats, while balancing the needs of stakeholders, a management framework that considers the complex social, economic, and biological tradeoffs when considering various management options is necessary. We will conduct a rapid assessment (SCEM) habitats in the northern GOM and quantify the biological, chemical, geological, and cultural status of these areas. The Coastal Ecology Group at the Gulf Coast Research Lab is uniquely positioned, because of their broad expertise, to perform this work. This multi-disciplinary investigation of the northern GOM habitats will be combined with published information to provide a comprehensive inventory of northern GOM ecosystem structure and function. Given this information, we will use management strategy evaluation (MSE) to provide decision makers a framework to understand how the implementation of alternative management strategies will affect the function of coastal ecosystems. The MSE framework will provide decision makers and stakeholders with the tools necessary for long term planning and help ensure healthy and sustainable coastal ecosystems.</p> <p>Location (City, County): Ocean Springs, Jackson County Infrastructure cost (8 years): None Annual Operation & Maintenance Cost (8 years): \$467,375 per year (8 years)</p> <p>How will this leverage with other RESTORE priority areas or non-RESTORE funds? The proposed research project fulfills multiple focal including: Seafood (eco-restoration, habitat research), Research and Education (research capacity, partnerships building, ecosystem-based management, critical habitat monitoring).</p> <p>Information relevant to Economic Development (e.g., new construction, new employment opportunities, workforce development and training, etc.). The project will train graduate students and provide information to managers and decision makers for long-term planning.</p>	Jackson	Yes	No		No	Yes	Yes	No	No	No	No	No	No	No	No	No	No	\$ 3,738,000.00	\$	-
Eco Restoration	1834	5/14/2014	Mississippi Fisheries Oceanography, Monitoring and Assessment Program (MFOMAP)	<p>Variability in the recruitment of marine fishes to adult populations is largely related to the variability encountered in vital rates (e.g., growth, mortality) during the egg and larval stages. An understanding of this natural variability (environmental "noise") will allow us to assess and predict the impacts of large perturbations (e.g., oil spills, tropical storms and hurricanes, and climate variability) on the marine fisheries resources of Mississippi. The overall goal of the Mississippi Fisheries Oceanography, Monitoring and Assessment Program (MFOMAP) is to collect long term baseline data to understand the nature of nearshore and coastal environmental factors that relate to fisheries production. The core component of this program will be monthly surveys to target the early life stages of marine fishes (eggs, larvae and juveniles) and decapods (megalopae, zoea), along with their zooplankton predators (e.g., gelatinous zooplankton) and prey (e.g., copepods). In addition, the physical environment will be characterized through field based sampling (e.g., salinity, temperature, nutrients, dissolved oxygen). The ecosystem-based, "physics-to-bio" approach will utilize advanced sampling techniques, including a multi-tier plankton environmental sampler (e.g., MOCNESS or BIONESS) and an in situ hydrographic imaging system (HIS), to characterize the abundance, distribution, and seasonality of planktonic assemblages. Specific objectives for the MFOMAP will be to: 1) provide data and support for OMR science and management goals; 2) provide guidance for fisheries recovery and restoration efforts related to Deepwater Horizon; 3) establish a regional center of expertise for fisheries oceanography and plankton research; 4) provide research opportunities and training for our next generation of marine scientists and taxonomists; and 5) enhance awareness through continued community outreach and education. This program will provide a spatial and temporal expansion to the existing NMFS long term plankton program (DAMAP) that samples federal waters. The SEAMAP plankton database is the primary data source for the federal NDA, and therefore a state component would benefit Mississippi's scientific assessments in the future.</p> <p>Location (City, County): Ocean Springs, Jackson County Infrastructure cost (8 years): \$443,750 total (10 years) Annual Operation & Maintenance Cost (8 years): \$1,415,000/year (10 years)</p> <p>How will this leverage with other RESTORE priority areas or non-RESTORE funds? The project fulfills multiple RESTORE priorities by expanding fisheries monitoring, building local expertise, creating partnerships, implementing ecosystem-based management, and conserving commercial and recreational species (along with the jobs and industries they support).</p> <p>Information relevant to Economic Development (e.g., new construction, new employment opportunities, workforce development and training, etc.). The project is labor intensive, highly technical, and therefore provides an excellent opportunity to employ and train personnel of multiple education levels. Anticipated personnel include BS- and MS-level technicians (n=4), high school and undergraduate interns (n=2), graduate students (n=2), data management support (n=1), and PhD-level researchers (1 postdoctoral associate, 2 principal investigators).</p>	Jackson	Yes	Yes	5000%	No	Yes	Yes	No	No	No	No	No	No	No	No	No	monitoring	\$ 2,055,750.00	\$	-

Eco Restoration	1847	5/28/2014	Developing aquaculture for stock enhancement of economically important marine fishes of the northcentral Gulf of Mexico	<p>Brief description of activities: The objective of the project is to develop the aquaculture and stock enhancement of marine fishes of importance to the Mississippi Gulf Coast. The project will be developed at the Thru Culture Marine Aquaculture Center (TCMAC) and will focus in 3 first phase on developing and optimizing techniques to (i) spawn and culture larvae and juveniles of selected marine species with a primary focus on red snapper and spotted seatrout, (ii) tag and release produced fish on natural and artificial habitats off the Mississippi coast, and (iii) monitor returns of released fish to the fishery. Protocols will be refined in subsequent years based on initial results in an adaptive strategy. The expected outcome is a contribution to the restoration of fisheries stock and an increase of recruitment and fishing opportunities in a stock enhancement program. As an example, the release of just 350,000 5-cm red snapper annually would permit the allowable landings by Mississippi recreational fishermen to double over 2012 recorded landings. Production of red snapper at 500,000 released fish per year is readily achieved by present day GCRC facilities. The aquaculture technologies resulting from the project will allow development of selective production of three species for the food market and creating new jobs on the Gulf Coast. The project will also investigate the feasibility of culturing new emerging species (e.g. tripletail, goldfish groupers). The technologies will be made available to private entities investing in Marine Aquaculture and the center will support the development of industries through continued research, training and consulting.</p> <p>Location (City, County): Ocean Springs, Jackson County Infrastructure cost (8 years): None Annual Operation & Maintenance Cost (8 years): \$5,000,000/yr (10 years)</p> <p>How will this leverage with other RESTORE priority areas or non-RESTORE funds? The project builds on an existing partnership between USM and MDM, partially funded by MDM, to research stock enhancement of marine species. Stock enhancement will contribute to rebuild fisheries stock and will therefore be synergistic with efforts to restore recreational and commercial fisheries.</p> <p>Information relevant to Economic Development (e.g., new construction, new employment opportunities, workforce development and training, etc.): The aquaculture technologies that will be developed will be made available to initiate industries on the Gulf Coast producing net new jobs. The center will support the development of these industries by providing consulting and training of individuals engaging in marine aquaculture. In addition, these releases can directly increase the allowable landings for the recreational fishery with concurrent significant economic effects within the tourism and fishing sectors of the coastal economy.</p>	Jackson	Yes	No			Yes	Yes	No	No	No	No	\$	50,000,000.00	\$	-
Eco Restoration	1848	5/28/2014	Gulf of Mexico tuna aquaculture program	<p>Brief description of activities: Tuna are among the most valuable fishery species in the world and are subjected to heavy fishing pressure. In fact the Atlantic bluefin tuna stocks are severely overfished and stocks are declining at an alarming rate. The Gulf of Mexico is one of only two spawning areas for Atlantic bluefin tuna and the BP oil spill coincided in time and space with their spawning and larval development on the breeding grounds. The development of aquaculture of tuna will significantly contribute to relieving fishing pressure on wild stocks and can contribute to rebuilding stocks through supplementation. Presently, tuna aquaculture is limited to the fattening of wild caught juveniles in cages. The constraints to development of aquaculture of tuna are a lack of captive broodstock spawning and larval rearing. The Gulf of Mexico tuna aquaculture program will develop the facilities and technology for the captive reproduction and spawning of yellowfin and bluefin tuna. Captive spawning yellowfin tuna have been successfully established in one facility on the Pacific Coast of Panama. We will transfer that methods to the Gulf Coast Marine Aquaculture Center. Captive broodstock will be developed and work on the production of juvenile tuna for culture and stock enhancement will ensue. Subsequent to development of a captive population of yellowfin tuna for broodstock development, we will develop a captive population of bluefin tuna and initiate research on larval rearing that will culminate in the production of juveniles for release into the wild.</p> <p>Location (City, County): Headquartered at GCRC, in Ocean Springs (Jackson County) with participants in five Gulf states. Infrastructure cost (8 years): \$5 million over 7 yrs Annual Operation & Maintenance Cost (8 years): \$2.5 million/yr (10 yrs)</p> <p>How will this leverage with other RESTORE priority areas or non-RESTORE funds? The program will incorporate the expertise and facilities of the Gulf Coast Research Lab to develop aquaculture for tuna. The program will provide for economic development through development and expansion of marine aquaculture in coastal Mississippi.</p> <p>Information relevant to Economic Development (e.g., new construction, new employment opportunities, workforce development and training, etc.): A new tuna broodstock facility will require construction and materials. Active hatcheries, research programs, and enhancement activities will add jobs to the economy and facilitate the development of a robust workforce.</p>	Jackson	Yes	Yes	100%	Yes	Yes	No	No	No	No	\$	30,000,000.00	\$	-	
Eco Restoration	1850	5/28/2014	Improving fish stock assessment and management in the Northern Gulf of Mexico using food web dynamics	<p>Brief description of activities: In the assessment and management of fish and invertebrate resources in the Gulf of Mexico (GOM), a major issue to stakeholders is how the surplus production of stocks should be allocated. In recent years, the practice of managing harvest within an ecosystem based paradigm, in addition to allocating portions of biomass to the recreational and commercial sectors, decisions must be made about how to allocate fish to ensure ecosystem function. It is only with an increased knowledge of the ecological roles of predators and prey populations, that managers can ensure vibrant, economically sustainable fisheries, as well as promote ecosystem resilience. The goal of this project is to collect and analyze the diet compositions of fish resources throughout the northern GOM. We will partner with GOM coastal resource agencies and expand fish sampling programs. The objectives of this project are to expand and explicitly implement ecosystem-based fishery management in the GOM by 1) Describing the productivity dynamics in the northern GOM from zooplankton to the highest trophic levels of fish species using isotopic, fatty acid, and stomach content analysis; 2) Identifying fish species and their multi-species fish community in the GOM; 3) Providing a comprehensive understanding of the natural resources used by managed and incidentally caught fish stocks; and 4) Directly implementing this information into stock assessment and management policy by communicating the results of the studies to industry and NGO stakeholders.</p> <p>Location (City, County): Ocean Springs, Jackson county Infrastructure cost (8 years): None Annual Operation & Maintenance Cost (8 years): \$606,933 per year for 6 years</p> <p>How will this leverage with other RESTORE priority areas or non-RESTORE funds? The proposed research project fulfills multiple resource foci by expanding fishery monitoring, building local expertise, creating partnerships, implementing ecosystem-based management, and furthering the understanding of community and ecosystem ecology.</p> <p>Information relevant to Economic Development (e.g., new construction, new employment opportunities, workforce development and training, etc.): The project will train graduate students and provide information to managers and decision makers for long-term planning.</p>	Jackson	Yes	No		No	Yes	No	No	No	No	\$	3,641,588.00	\$	-	
Eco Restoration	1852	6/3/2014	Establishment of an effective biomonitoring program to assess and protect coastal fisheries	<p>Brief description of activities: Rapid and accurate assessment of the health status of coastal fishes is a vital component of fisheries management, environmental monitoring, and eco-restoration efforts. Heavy anthropogenic contaminants from agricultural, coastal runoff and industrial release events accumulate in sediments and marine sediments, leading to increased exposure to sediment-associated species to both higher doses and longer durations than pelagic or planktonic species. Benthic fish species are reliable indicators of overall ecosystem health, and function as sentinel organisms in the event of unanticipated release events. We propose to establish a biomonitoring program that will examine key indicators of food and endocrine-disrupting contaminant exposure in two representative benthic species: southern flounder and Atlantic croaker. The Toxicology and Molecular Physiology Laboratory at GCRC is uniquely qualified to monitor validated indicators of exposure, i.e. general stress (immunocompetence, stress stored hormones), toxin and heavy metal exposure (liver histology, expression of contaminant-induced genes cyp1a and mt1), and endocrine disruption (vitellogenin, vitellogenin, expression of induced genes cyp17 and egg). Fish will be collected monthly at three stations selected to monitor Basin Bay, Davis Bay and Passacouada Bay. The fish will be assessed for evidence of anthropogenic impacts using the biomarkers listed above. Consistent monitoring of these species at the same stations over time will serve to protect and maintain healthy coastal ecosystems by: 1) Determining the natural spatial and temporal variability among exposure indicators in GOM sentinel species to aid in management decisions; 2) Establishing unimpacted baseline values to facilitate rapid analysis of impacts from future release events such as Deepwater Horizon; 3) Rapidly identifying areas that are transiently or seasonally impacted by anthropogenic impacts; and 4) Providing a mechanism for identifying unreported or unknown release events.</p> <p>Location (City, County): Ocean Springs, Jackson County Infrastructure cost (8 years): None Annual Operation & Maintenance Cost (8 years): \$136,000/year (5 years)</p> <p>How will this leverage with other RESTORE priority areas or non-RESTORE funds? This project will leverage several additional RESTORE and GoCoast priority areas by providing data that are directly applicable to seafood quality, tourism (recreational fishing), fisheries management, and healthy water resources. Data and outcomes from this program will be used to support proposals for continued funding beyond RESTORE support including federal sources, e.g. NSF, STER.</p> <p>Information relevant to Economic Development (e.g., new construction, new employment opportunities, workforce development and training, etc.): This project will employ and train highly technical laboratory staff, increasing local resources and technical expertise in the state of Mississippi.</p>	Jackson	Yes	No		No	Yes	No	No	No	No	\$	1,680,000.00	\$	-	
Eco Restoration	1853	6/3/2014	Gulf of Mexico large pelagic fishes tracking program	<p>Brief description of activities: Large pelagic fish species, such as blue marlin, sailfin, bluefin tuna, and yellowfin tuna, inhabit offshore waters of the Gulf of Mexico and often undertake extensive migrations to accommodate various life history requirements, crossing multiple management jurisdictional boundaries in the process. These species are of significant ecological and economic importance, yet management measures for sustainability of their stocks are often insufficient due to the lack of scientific data, including habitat use and migratory trends. The proposed program would use satellite tag technology as a viable scientific approach for the assessment of habitat preferences and movement patterns of large pelagic fishes, thereby enabling the integration of these data with species-specific biological factors. Use of satellite tags will aid in better defining management jurisdictions specific to each species and will provide a baseline for assessing future episodic events in the marine environment, such as Deepwater Horizon accidents, that impact these stocks.</p> <p>Location (City, County): Ocean Springs, Jackson County Infrastructure cost (8 years): \$250,000 annually for 10 years Annual Operation & Maintenance Cost (8 years): \$475,000 annually for 10 years</p> <p>How will this leverage with other RESTORE priority areas or non-RESTORE funds? The proposed program addresses multiple RESTORE and GoCoast key focus areas, including Eco-Restoration, Seafloor, and Research & Education, and pertains to specific priority items for: Seafloor Research, Fisheries, Ecosystem-based Management, and Comprehensive Observation, Monitoring and Mapping.</p> <p>Information relevant to Economic Development (e.g., new construction, new employment opportunities, workforce development and training, etc.): Informed management of natural resources will promote sustainable seafood harvest and production and recreational fishing activities and subsequently benefit associated tourism.</p>	Jackson	Yes	Yes	5000%	No	Yes	No	No	No	No	\$	7,250,000.00	\$	-	
Eco Restoration	1854	6/3/2014	Quantitative fisheries assessment program	<p>Brief description of activities: Proper fisheries management relies on quantitative assessments of exploited stocks to safeguard against overfishing and depletion of fishery resources. Maintaining the long-term productivity of fished stocks ensures a vibrant and sustainable economic base. Quantitative assessments inform management decisions to restore overfished or otherwise impacted stocks to sustainable levels, thereby creating exploitable production levels for commercial and recreational user groups. Traditional management has relied on single-species assessments utilizing data obtained from the various fishing sectors along with independently collected scientific data for target species. There is growing interest in the implementation of ecosystem-based assessments, which consider, among other things, trophic relationships, competitive interactions and environmental stressors and drivers in assessing the status of individual species and associated ecological components. This proposed program will support a combination of traditional single species assessments and the development of ecosystem-based models for highly valued stocks, such as spotted seatrout, red drum, blue crab, southern oyster and Gulf menhaden. The program will also identify and address data gaps and deficiencies in current sampling programs so that data inputs are readily available for model runs. The resulting assessments and management recommendations will provide a science-based foundation for the proper and continued management of Mississippi and associated regional fisheries to optimize the economic benefit of these resources.</p> <p>Location (City, County): Ocean Springs, Jackson County Infrastructure cost (8 years): None Annual Operation & Maintenance Cost (8 years): \$215,000 annually for 10 years</p> <p>How will this leverage with other RESTORE priority areas or non-RESTORE funds? The proposed program addresses multiple RESTORE and GoCoast key focus areas, including Eco-Restoration, Seafloor, and Research & Education, and pertains to specific priority items for: Seafloor Research, Fisheries, Ecosystem-based Management, and Comprehensive Observation, Monitoring and Mapping.</p> <p>Information relevant to Economic Development (e.g., new construction, new employment opportunities, workforce development and training, etc.): The project will lead to improved management of the state's natural resources and thereby promote enhanced seafood harvest and production, expanded recreational fishing activities, and associated tourism.</p>	Jackson	Yes	No		No	Yes	No	No	No	No	\$	2,150,000.00	\$	-	

Eco Restoration	185	6/3/2014	Brief description of activities: SSETI is a long-term experiment designed to evaluate the fate of carbonate on the outer shelf and upper slope of the Gulf of Mexico. These regions include hardgrounds and Lophelia reefs that are impacted by the BP oil spill. The program includes the longest running experiment of its kind by more than 15 years. The last retrievals were made in 2006 after 13 years on-bottom time. The program including recovery and analysis can be completed in two years time. SSETI is the single most important dataset monitoring long-term processes of carbonate destruction and preservation over a wide range of shelf and slope habitats. Results have direct implications for understanding the influence of ocean acidification, understanding the processes that result in the creation and maintenance of hardgrounds, and understanding the process of burial and carbonate preservation that provides the single most important sink for atmospheric CO2. Among SSETI sites are the most sensitive deepwater communities in the Gulf: mussel, clam, and tubeworm sites at petroleum seeps and Lophelia reefs. Recovery requires the deployment of a submersible or ROV. These technologies are available. Data analytical methods are well described in a series of papers presenting the status of SSETI after 2, 8, and 13 years. Location (City, County): Ocean Springs, Jackson, GCRH Halibut and Cedar Point Campuses Infrastructure cost (\$ years): None Annual Operation & Maintenance Cost (\$ years): \$1,500,000 over 3 years. No long-term funding is required; the project can be completed in 3 years. How will this leverage with other RESTORE priority areas or non-RESTORE funds? The project will influence a range of RESTORE programs targeting the outer shelf and upper slope by providing a long-term dataset that can underpin a range of research programs pertinent to restoration and management of deepwater petroleum-reef, hardground, and soft-bottom habitats. Because of its application in carbonate budget modeling by being the longest running taphonomic experiment in history and the only one with concurrent detailed geochemical data, the project will provide invaluable data for any project dependent upon carbonate production (i.e., oyster reef restoration, estuarine management strategy evaluations etc.) as an early section on named. Information relevant to Economic Development (e.g., new construction, new employment opportunities, workforce development and training, etc.). The project will support a number of graduate students at GCRH for a period of three years.	Jackson	Yes	No	No	No	Yes	No	No	No	No	No	\$ 1,500,000.00	\$ -
Eco Restoration	187	6/3/2014	Brief description of activities: With the exception of isolated outcrops of bedrock, coral communities on the continental slope depend upon exposures of authigenic carbonate for settlement. We will investigate the development of authigenic carbonate hardgrounds consistent with the stages in the evolution of the coral hardground community and representative of recent anthropogenic influence. These include (1) the formation of hardgrounds by natural petroleum seepage; (2) the development of habitat islands at the sediment-water interface by examining a gradient from reef affected by spilled petroleum/seepage (Mascotas MC 253 to reef upstream of the plume at MC 253), and to natural petroleum seeps at early stages of development (GC 185) and at waning stages of seepage (GC 234 & Viocka Knoll 826). Objective 1: Persistence and incorporation of petroleum/seepant within hardground and skeletal carbonate. We will compare the framework of the hardground and the skeletal debris field from petroleum/seepant affected reefs to those unaffected and to carbonate from natural petroleum seeps with respect to the retention of petroleum and seepant within the hardground and skeletal material using PRR biomarkers, and trace element analyses. Objective 2: Document the development of carbonate hardgrounds from early formation at methane/hydrocarbon seeps, through stabilization as coral community habitat, and finally degradation, burial, and loss. We analyze young authigenic carbonates from natural petroleum seeps as well as carbonates from extinct seeps that serve as habitat for coral communities. Data will include age, composition, porosity, location relative to seep activity, trace elements, attached coral framework, encrusting epifauna, and response to petroleum/seepant. Objective 3: Assess the role of local sediment pore water geochemistry in promoting or prohibiting the development and maintenance of carbonate at the sediment-water interface. We will examine the geochemical milieu to establish whether the local sediments promote precipitation or dissolution of carbonates a) at natural petroleum seeps, b) after seepage stops (and the time when coral communities thrive), and c) after exposure to petroleum/seepant. Objective 4: Development of the carbonate substrates deep reef habitat model. We will adapt our reef carbonate budget model by parameterizing it for the stages of hardground development studied and use this model to examine the titerage of carbonate production and loss over a range of present-day and expected future environmental and biological conditions and b) develop from this an improved basis for managing these deepwater habitats. Location (City, County): Ocean Springs, Jackson, GCRH Halibut and Cedar Point Campuses Infrastructure cost (\$ years): None Annual Operation & Maintenance Cost (\$ years): \$1,500,000 over 3 years. How will this leverage with other RESTORE priority areas or non-RESTORE funds? The project will influence RESTORE programs targeting the shelf and slope by providing an important dataset and modeling capability for one of the most sensitive of the deepwater communities impacted by the BP oil spill. Information relevant to Economic Development (e.g., new construction, new employment opportunities, workforce development and training, etc.). The project will support a number of graduate students at GCRH for a period of three years.	Jackson	Yes	No	No	No	Yes	No	No	No	No	No	\$ 1,500,000.00	\$ -
Eco Restoration	188	6/3/2014	Brief description of activities: Understanding the processes that determine regional biogeography, population connectivity and species recovery following catastrophic events is crucial given the increasing number of anthropogenic activities, including resource extraction, that threaten deep-sea ecosystems. Central to identifying strategic information for management and restoration is knowledge of genetic connectivity, larval transport mechanisms, possible source populations, location of spawning populations, and natural historical changes in population size. The large variety of inter-connected mechanisms that promote or impede the genetic connectivity of deep-sea species on dispersal and the long-term maintenance of species or the subsequent emergence of populations leading to speciation are key unknowns to understanding the fundamental evolutionary processes that structure both the diversity and biogeography of deep-sea fauna. Fortunately, the net results of these ecological interactions are preserved in the patterns of genetic connectives. We are targeting the red crab (Chaceon quinquedens) and the golden crab (Chaceon foveatus) for study as ecological, chemical, and biological data are available for Gulf of Mexico populations prior to the Deepwater Horizon oil spill. Assessment of population recovery in the Gulf of Mexico via population genetic connectivity will provide fundamental new insights into the genetic, taxonomic, ecological, and evolutionary aspects of deep-sea species in the Gulf of Mexico. Location (City, County): Ocean Springs, Jackson County Infrastructure cost (\$ years): None. Ship time included in yearly cost Annual Operation & Maintenance Cost (\$ years): 3 year project, \$1 million/year How will this leverage with other RESTORE priority areas or non-RESTORE funds? This project directly addresses research and education objectives concerned with population genetics and connectivity, ecosystem ecology and management, and fishery economics as Chaceon species are harvested in the GOM and along the Atlantic Coast. Partnership with the Woods Hole Oceanographic Institution and with the Florida Marine Research Institute will provide needed expertise and access to existing biological and fishery data, respectively. Information relevant to Economic Development (e.g., new construction, new employment opportunities, workforce development and training, etc.). The study will provide employment opportunities for individuals with scientific and technical backgrounds.	Jackson	No	No	No	No	Yes	Yes	No	No	No	No	\$ 3,000,000.00	\$ -
Eco Restoration	189	1/1/1900	Brief description of activities: Efforts to assess the effects of environmental stressors such as the Deepwater Horizon oil spill on populations of exploited fishes are limited by the absence of baseline reference data on affected fisheries stocks. In particular, effects of such stressors on genetic diversity and population structure are especially difficult to document because available data for most marine species are insufficient in terms of genomic coverage and temporal and spatial sampling. In this project, selected species of economic importance and differing in their life history and habitat use (Scorpaenidae dependent reef-associated species) will be surveyed in the Gulf of Mexico and regionally to establish a robust database of genetic resources and temporal and spatial patterns of genetic variation. The database will be developed and maintained over the long term to allow studying comprehensively genetic change induced by environmental stressors on local populations when they occur. Tissue and DNA databases will be created and genetic characterization will be conducted over a period of 10 years to identify patterns of genetic variation. The data will be made available for assessment of demographic effects on populations exploited by Mississippi fisheries, and to assist in the identification of appropriate genetic resources for stock enhancement and restoration programs when they are needed. For species already cultured for stock enhancement or food production, a repository of genetic resources will be initiated consisting of genetically characterized germplasm. The repository will be made available for aquaculture-based stock enhancement and domestication programs. Location (City, County): Ocean Springs, Jackson County Infrastructure cost (\$ years): None Annual Operation & Maintenance Cost (\$ years): \$1,200,000/yr (10 years) How will this leverage with other RESTORE priority areas or non-RESTORE funds? The project will contribute to the assessment and rebuilding of fisheries stocks and will therefore be synergistic with efforts to restore recreative and commercial fisheries. Information relevant to Economic Development (e.g., new construction, new employment opportunities, workforce development and training, etc.). The database developed during the project will promote sustainable management of exploited resources. The project will also support aquaculture development both for stock enhancement/restoration and for the food market.	Jackson	Yes	No	No	No	Yes	No	No	No	No	No	\$ 12,000,000.00	\$ -
Eco Restoration	180	6/3/2014	Brief description of activities: A gene-based population dynamics model, DyPopEn (Dynamic Population Genetics Engine) has been developed with funding from the NSF Biocomplexity and Ecology of Infectious Diseases programs. This model is configured to simulate the genetic structure and population dynamics of any marine species. The model simulates a population composed of multiple cohorts, each composed of multiple individuals. The age, sex, and genotype of each individual are independently simulated. The genetic structure of each cohort is defined in terms of its chromosomal complement, each chromosome bearing a series of genes, each with a series of alleles. This permits the expressed phenotype to be derived from specified genotypes and subsequently to be selected through the normal course of population dynamics. The model requires implementation of a series of population viability analysis (PVA) parameters based on transition matrices derived from a coupled larval hydrodynamic model. A carbonate budget model is also coupled to DyPopEn and responds to the simulated population dynamics ultimately responsive to population genotype. This module is pertinent to species producing carbonate such as oysters and corals. DyPopEn permits examination of the relative of management measures or population genotype, the development of disease resistance in diseased populations, and the influence of environmental change on population allele frequency and diversity. Of note, amenable to this model are questions related to the influence of fishing on maturity and growth rate of stocks, the influence of disease on oyster populations and carbonate production to sustain habitat, and the influence of freshwater inflow on genetic selection for adaptation to low salinity. This project can be adjusted to support any genetic analysis or management strategy evaluation where gene-based data are obtained or where issues of genetic bottlenecks or the influence of changes in population connectivity are posed. Location (City, County): Ocean Springs, Jackson, GCRH Halibut and Cedar Point Campuses Infrastructure cost (\$ years): None Annual Operation & Maintenance Cost (\$ years): \$150,000 per year; period is flexible according to need. How will this leverage with other RESTORE priority areas or non-RESTORE funds? The project will influence a range of RESTORE programs targeting the fisheries, ecosystem health, marine diseases, and climate change. Information relevant to Economic Development (e.g., new construction, new employment opportunities, workforce development and training, etc.). The project will support a number of graduate students at GCRH for the period of its implementation. Depending on implementation goal, the project will support sustainable management of marine resources (e.g., fish, oysters), the development of management measures to mitigate disease, and optimal management of freshwater inflow to limit freshwater mortalities. Each of these has direct economic consequences for the Gulf coast. 201	Jackson	Yes	No	No	No	Yes	Yes	No	No	No	No	\$ 150,000.00	\$ -

Ec Restoration	181	6/3/2014		<p>Brief description of activities: The primary goal of this project is to monitor the invasive rat lungworm (<i>Angiostrongylus cantonensis</i>) in coastal Mississippi. The rat lungworm has a complicated life cycle in which the nematode normally develops in the lungs of rodents, especially the Norway rat. It has a severe human health impact. The larval infective stage occurs in terrestrial or aquatic mollusks, as well as in fishes, crustaceans, and other invertebrates. This species is initially introduced by rats escaping from ships in New Orleans in the early 1980s; it is known to have spread from the Mississippi River levee and a tidal zone primate as well as horses further upriver. Infections can occur in fresh and marine waters as well as terrestrial habitats, in aquaculture ponds and in imported ornamental fishes and seafood products. In humans, the worm infects the brain rather than the lungs and causes neurological pathology and occasionally death. The nematode is probably present in coastal Mississippi, and its spread could be further exacerbated by sea level rise. We have already discussed the invasion of the parasite with Centers for Disease Control specialists in infectious disease in Atlanta and will validate and use their molecular tools presently being developed. The project will analyze, using quantitative polymerase chain reaction (qPCR), snails from the three Mississippi coastal counties. The snails will be collected seasonally, especially focusing near areas with the presence of cargo and other ships plus the Norway rat. Where infections are found, fishes and drinkings that may have been in contact with the hosts will be examined for the larvae infective to humans. We can then use these data to see if specific habitats are more susceptible to invasion and determine if remote sensing (offered to us by MSU) can detect these areas.</p> <p>The purpose of this project is not to frighten people from eating undercooked seafood products or handling mollusks but to determine the presence and intensity of infection so that public risk can be determined, evaluated, and mitigated. Ongoing results will be made available to CDC, NOAA, USFWS, MDEQ, MDMR, and Public Health agencies. An attempt will be made to determine how to reduce or eliminate local infection and to inhibit the spread of infective agents into the Mississippi area.</p> <p>Location (City, County): GCH; field sites in Jackson, Harrison and Hancock Counties</p> <p>Infrastructure cost (if years): None</p> <p>Annual Operation & Maintenance Cost (if years): \$230,000 per year for 5 years</p> <p>How will this leverage with other RESTORE priority areas or non-RESTORE funds? This project would interact with funds including RESTORE 1603(B), RESTORE 1603(C), NFWF natural resource and environmental restoration projects, BP Early Restoration, and NBSA Restoration. This project will address the key RESTORE priority areas of eco-restoration and mitigation of results caused by the invasive pathogen.</p> <p>Information relevant to Economic Development (e.g., new construction, new employment opportunities, workforce development and training, etc.): The project will require hiring people capable of collecting potential hosts, helping conduct molecular analyses, and analyzing public health risk. If infections are common, we will train public health officials regarding infections and results from our monitoring.</p>	Harrison, Jackson, Hancock	Yes	No															\$ 1,150,000.00	\$	-		
Ec Restoration	182	6/3/2014	Monitoring the rat lungworm	<p>Brief description of activities: We will seasonally monitor oysters in Mississippi for "Dermo." Although both Jackson and Hancock Counties in Mississippi have oyster reefs that have been commercially harvested, those in Jackson County have been unproductive. We hypothesize that fatal infections by the protozoan <i>Perkinsus marinus</i> (commonly referred to as <i>26C</i> or <i>Dermo</i>) is young oyster spat play a pivotal role in this lack of success, as part of a complex interplay of salinity, temperature, nutrients, predators, symbionts, and other stressors. We will test for this problem as well as provide data for ongoing oyster management by monitoring for the agent and conducting additional research. <i>Dermo</i> is an infectious agent in the common commercial oyster (<i>Crassostrea virginica</i>) in Mississippi that is known to kill or lessen the quality of the oyster product, but its role in early stages of oyster development is relatively little known. We propose to collect oysters seasonally with cooperation of DMR and evaluate the prevalence and intensity of <i>Dermo</i> infection in young spat, juvenile, and adult specimens from different Jackson County locations and compare them with infections in monitored Hancock County reefs. We will use quantitative polymerase chain reaction (qPCR) that detects precise levels of the pathogen, even at initial stages of infection. We will complement the field monitoring with laboratory and field experiments with laboratory-reared spat and wild oysters.</p> <p>We have over 40 years experience working with oyster diseases and symbionts, including conducting <i>Dermo</i> culture assays for DMR and other agencies. In addition to publishing our results, we will incorporate monitoring results in Oyster Sentinel (www.oystersentinel.org), a Website treating <i>Dermo</i> in the eastern oyster as an indicator of environmental health in the Gulf of Mexico from Texas to Florida. Results from this study will aid Eco-Restoration management for oyster reef recovery, will inform decision-making agencies involved in reef management as well as regenerating failed reefs by rearing oysters from other reefs, recommending addition of freshwater input, and other strategies.</p> <p>Location (City, County): GCH; with field sites in Jackson and Hancock County</p> <p>Infrastructure cost (if years): None</p> <p>Annual Operation & Maintenance Cost (if years): \$225,000/year for 5 years</p> <p>How will this leverage with other RESTORE priority areas or non-RESTORE funds? Successful Eco-Restoration of living coastal and marine resources requires research to understand and monitor the health of its major species; for seafood resources, this is particularly important. This project would fit objectives included in RESTORE 1603(B), RESTORE 1603(C), NFWF natural resource and environmental restoration projects, BP Early Restoration and NBSA Restoration. This project will address the key RESTORE priority areas of restoration and mitigation of seafood industries caused by stressors including pathogens.</p> <p>Information relevant to Economic Development (e.g., new construction, new employment opportunities, workforce development and training, etc.): In addition to providing information for management agencies, which will require training that we will provide, we will hire additional employees and students for field and laboratory work.</p>	Jackson	Yes	No																\$ 1,125,000.00	\$	-	
Ec Restoration	183	6/9/2014	Monitoring Dermo in Mississippi oysters	<p>Hardening the Bay of Saint Louis with oyster and clam, reintroducing grasses along the shoreline compatible with tidal hydrology and salinity, monitoring both conservation and recovery are components of this project.</p> <p>By hardening the Bay of Saint Louis with oyster and clam, water quality will be improved. Erosion as seen in slides 4 and 5 should be reduced or eliminated and monitoring stations should show anticipated accretion.</p> <p>In conclusion, the project restores the shoreline, restores water quality and enables monitoring for both conservation and restoration progress.</p> <p>By accessing an elevated boardwalk the estuary becomes a living laboratory, information stations educate and monitor bird populations, nest areas and health of various wetland plants and ultimately water quality.</p> <p>In conclusion this project stimulates public interest and support as well as education and participation in recreation information, seafood production and water quality.</p> <p>Stream restoration, sedimentation control, ditch bank restoration, habitat restoration, natural resource and monitoring conservation and recovery are the components of this project a byproduct that makes beneficial use of trapped sediment also allows public access.</p> <p>By accessing an elevated boardwalk the estuary becomes a living laboratory, information stations educate and monitor bird populations, nest areas and health of various wetland plants and ultimately water quality.</p> <p>By hardening the Bay of Saint Louis with oyster and clam water quality is improved, sea grasses will be reintroduced and erosion as seen in slides 4 and 5 should be reduced or eliminated and monitoring stations should show anticipated accretion.</p> <p>This project consist of multiple activities that stimulate public interest and support as well as education and participation in recreation restoration, seafood production and water quality.</p> <p>In conclusion, the project restores streams and drainage to its original state with the addition of sediment traps which makes beneficial use of urbanized run off. The project also has build in monitoring stations that benefit growth and the City supports and embraces this project.</p>	Hancock	Yes	No																\$ 740,500.00	\$	-	
Ec Restoration	185	6/9/2014	Diamondhead Ecosystem Restoration, Stabilization and Sustainability Project - Living Shoreline Protection and Marsh Restoration	<p>In conclusion, the project restores the shoreline, restores water quality and enables monitoring for both conservation and restoration progress.</p> <p>By accessing an elevated boardwalk the estuary becomes a living laboratory, information stations educate and monitor bird populations, nest areas and health of various wetland plants and ultimately water quality.</p> <p>In conclusion this project stimulates public interest and support as well as education and participation in recreation information, seafood production and water quality.</p> <p>Stream restoration, sedimentation control, ditch bank restoration, habitat restoration, natural resource and monitoring conservation and recovery are the components of this project a byproduct that makes beneficial use of trapped sediment also allows public access.</p> <p>By accessing an elevated boardwalk the estuary becomes a living laboratory, information stations educate and monitor bird populations, nest areas and health of various wetland plants and ultimately water quality.</p> <p>By hardening the Bay of Saint Louis with oyster and clam water quality is improved, sea grasses will be reintroduced and erosion as seen in slides 4 and 5 should be reduced or eliminated and monitoring stations should show anticipated accretion.</p> <p>This project consist of multiple activities that stimulate public interest and support as well as education and participation in recreation restoration, seafood production and water quality.</p> <p>In conclusion, the project restores streams and drainage to its original state with the addition of sediment traps which makes beneficial use of urbanized run off. The project also has build in monitoring stations that benefit growth and the City supports and embraces this project.</p>	Hancock	Yes	Yes	8000%	Yes	Yes	Yes	No	Yes	Yes										\$ 5,720,500.00	\$	-
Ec Restoration	187	6/9/2014	Diamondhead Ecosystem Restoration, Stabilization and Sustainability Project - Bird, Estuary and Nature Trail	<p>In conclusion, the project restores the shoreline, restores water quality and enables monitoring for both conservation and restoration progress.</p> <p>By accessing an elevated boardwalk the estuary becomes a living laboratory, information stations educate and monitor bird populations, nest areas and health of various wetland plants and ultimately water quality.</p> <p>By hardening the Bay of Saint Louis with oyster and clam water quality is improved, sea grasses will be reintroduced and erosion as seen in slides 4 and 5 should be reduced or eliminated and monitoring stations should show anticipated accretion.</p> <p>This project consist of multiple activities that stimulate public interest and support as well as education and participation in recreation restoration, seafood production and water quality.</p> <p>In conclusion, the project restores streams and drainage to its original state with the addition of sediment traps which makes beneficial use of urbanized run off. The project also has build in monitoring stations that benefit growth and the City supports and embraces this project.</p>	Hancock	Yes	Yes	8000%	Yes	Yes	Yes	No	Yes	Yes										\$ 5,518,500.00	\$	-
Ec Restoration	187	6/12/2014	Diamondhead Ecosystem Restoration, Stabilization and Sustainability Project	<p>This project will restore the natural hydrology of streams, bayous and drainage flowing into the Gulf through Jackson Marsh and Grand Bayou adjacent to Buccaneer State Park in Hancock County Mississippi. The Deepwater Horizon oil spill physically impacted the project area shorelines and near coastal areas. Hydrologic restoration is a prerequisite for all twelve (12) of the programmatic alternatives listed in the NBSA Draft Phase II Early Restoration Plan and Draft Early Restoration Programmatic EIS (Dec. 2013). A watershed approach to hydrologic restoration will directly benefit impacted areas and terrestrial, amphibious and aquatic wildlife species by restoring ecosystem connectivity to create migratory corridors in conjunction with three proposed downstream restoration projects: 1) Restoration of Buccaneer State Park, 2) Grand Bayou Ecological Restoration (Project 1767), and 3) Buccaneer State Park Two-Tiered Restoration (Project 1813). This project has two identified approaches to restore natural hydrology in approximately 2,734 total acres. First a mainly structural approach will identify and implement cost effective methods to better incorporate stormwater (volume and timing) into Jackson Marsh/Grand Bayou from the approximately 1,498 acres of watershed covered by Wetlands stormwater infrastructure (Map 3). This would include redesigning and retrofitting some stormwater infrastructure to adapt Green infrastructure tools and techniques to the maximum extent practicable. A collaborative approach will be used to evaluate rehabilitating and expanding Wetwood Pond and possibly adding a new retention pond on City property in Jackson Marsh headwaters (Map 2). Secondly, trash removal, dewatering and channel rehabilitation together with natural, low impact approaches will be used on the roughly 1,236 acres of Jackson Marsh (432 acres) and Grand Bayou (14 acres) including the Mud Bayou watershed (775 acres) (Map 3). This project encompasses all watersheds draining into the Gulf behind the Living Shoreline proposed in Project 1813. Also, Project 1767 addresses restoration of Grand Bayou (175 acres), Jackson Marsh (130 acres) and a portion of Mud Bayou (30 acres). All project elements would be designed to restore flows to maximize ecosystem services and create riparian and aquatic wildlife migration corridors from upland to coastal habitats.</p>	Hancock	Yes	Yes	2000%	No	No	No	No	No	No										\$ 1,750,000.00	\$	-
Ec Restoration	187A	6/21/2014	Jackson Marsh, Grand Bayou and the adjacent Gulf headwater hydrologic Restoration	<p>This project involves education, research and internship opportunities for coastal high school, college and university scholars. For those enrolled in marine education programs, this would incorporate "hands on" opportunities. During the planning process, meetings will be held with coastal high schools and institutions of higher learning along the coast to determine how to incorporate the project in curriculum and to gain project approval from state and local educational authorities. The proposal includes Harrison, Hancock and Jackson Counties.</p> <p>The project provides workforce development opportunities for low-income participants through apprenticeships. Stipends will be provided to learn the skills necessary to play an active role in the restoration and healthy sustainability of natural habitat and coastal waters. Many coastal residents still desire maritime occupations. Unfortunately, for the past several decades, such opportunities have become rare. This program would create such opportunities to learn skills that could enhance employment opportunities, our economic development, and sustain families along the coast. We should, and must provide an EQUAL OPPORTUNITY restoration, one that ensures ALL RESIDENTS a chance to benefit from the experience and knowledge gained through the recovery and restoration process.</p> <p>If restoration is to be preserved and maintained for into the future, it is imperative that our youth and young adults be educated and prepared to assume this task. Participation can begin as early as the 9th grade for students enrolled in Marine Biology or similar classes. Students enrolled in college or universities with Marine Biology classes and/or majors would also be eligible. Youth and young adults are the future stewards and keepers of our land, waters and other natural resources. Summer internships will include stipends to reward student success and provide economic relief. The component will also use the school to work transition.</p> <p>Upon project approval, Visions of Hope would like to commence formal planning as soon as possible and arrange meetings to initiate the partnership agreement process. The organization's overall role in this project would include, but is not limited to: COORDINATOR - arrange/coordinate meetings necessary for planning, implementation and monitoring; secure partnership agreements with the various educational and other entities; partner/maintain/disseminate statistical data OUTREACH - disseminate information regarding the project; aid in securing program participants EDUCATION - GED/ABE classes, money management classes</p> <p>The cost quoted below is an annual estimated projection related to Visions of Hope's planning role and basic workforce development skills only (\$250,000). This amount could change depending on meeting requirements and related costs such as transportation, lodging, food, etc. Internship/apprenticeship costs are also not included.</p>	Harrison, Jackson, Hancock	Yes	No		Yes	Yes	No	No	No	Yes									\$ 250,000.00	\$	-	

Project Number	Year	Start Date	Project Title	Description	Location	Lead	Partner	Non-Profit	State	Federal	Other	Total Cost	Funding Source	Status						
Eco Restoration	2018	8/12/2014	Project Partner - Mississippi Farm Bureau Federation*	Research Goal The overall goal of this research is to better understand how Alternative Nutrient Criteria (NMC) can impact Mississippi (MS) communities. We include agriculture, urban storm water, septic, municipal wastewater, industrial and state resources agencies as the affected sectors in these communities. For each sector, the cost of adapting to a newly proposed NMC will be estimated. For example, we propose to estimate the cost of each standard (i.e. the agricultural sector includes row crops, specialty crops, poultry, and cattle). Total costs will then be aggregated across sectors and a regional and state level economic impact analysis will follow. The NMC that is to be examined in this study has been proposed by the MS Department of Environmental Quality (MEQ) under the Environmental Protection Agency (EPA) directives. Where possible, we primarily follow the methodology for estimating costs per sector under uncertainty as described by the Florida Water Quality Coalition's 2006 study. Research Study Area The State of Mississippi (48,434 mi ²) has two major river basins with approximately 86,000 miles of streams draining directly into the Mississippi Sound and the Gulf of Mexico, the Mississippi River and the Tombigbee River (Figure 1). The basins of the Pearl and Franciska Rivers and the Coastal Streams represent 43% of the State's river and stream density into the Gulf of Mexico. The coastal Mississippi (Figure 1). Livestock production is the most important agricultural activity in these areas. Nutrient and bacteria from animal wastes often get into the streams resulting in different water quality problems along the inland water bodies and the coastal waters. This entire area has been ranked nationwide in the top ten and top twenty areas in need of protecting water quality from nutrient runoff (Louisiana, Kellogg, 2006). Mississippi State University Research Team James Barnes (PI) Assistant Extension Professor, Dept. of Agricultural Economics, Mississippi State University Matthew G. Interis (Co-PI) Assistant Professor, Dept. of Agricultural Economics, Mississippi State University	AIEM Counties	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	\$ 739,478.00	\$	-	
Eco Restoration	2007	11/9/2011	Nutrient Criteria on Mississippi Communities	The project consists of property acquisition and/or restoration. For property acquisition only, an understanding of potential restoration options would still be required to make acquisition strategic. There are several tracts of land at Grand Bay NERR/NWR that are still private inholdings. If restoration is pursued at Grand Bay, this would be important for these areas to be public ownership. Cost for acquisition is estimated to range between \$3 million and \$5 million. Cost for restoration is estimated to range between \$20 million and \$20 million.	Jackson	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	\$ 25,000,000.00	\$	-		
Eco Restoration	2008	11/9/2011	Habitat for Marsh Grass Restoration	This project consists of providing funding for the full implementation of a plant nursery to allow for state-wide marsh restoration. The Center for Plant Restoration and Coastal Plant Research (CPR) is located at the University of Southern Mississippi's Gulfport campus in Ocean Springs. The mission of the CPR is to provide expertise and assistance for the restoration of coastal wetlands, salt marshes, beach and dune vegetation, and submerged aquatic plants including sea grasses. To that end, the University operates a 1,200 square foot state-of-the-art temperature controlled greenhouse routinely growing over a dozen species of common native salt marsh and beach plants. In addition, CPR has indoor and outdoor growing facilities for propagation of four important species of submerged aquatic vegetation. For large scale restoration projects and agency partners to provide the necessary nursery and plant growing services. These project scenarios will be outlined depending on restoration needs. 1. Small scale (<100,000 plants): Requires a minimum 4,000 sq ft of heated greenhouse space and 10,000 - 20,000 sq ft of outdoor open space for final staging of plants. 2. Medium scale (100,000 to 1 million plants): Requires at a minimum 8,000 sq ft of heated greenhouse space. Additionally 5 - 15 acres of outdoor open space for final staging of plants. 3. Large scale (> 1 million plants): Requires at a minimum 16,000 sq ft of heated greenhouse space. Additionally 5 or more acres of outdoor open space should be available to final staging of plants. CPR anticipates that several uses will be established along the coastal counties in Mississippi, depending on the requirements of the restoration projects necessary. Some existing areas are available.	Hancock, Harrison, Jackson	Yes	No	No	No	No	No	No	No	Yes	Yes	Yes	\$ 5,000,000.00	\$	-	
Eco Restoration	2009	11/9/2011	Nurture for Marsh Grass Restoration	Part 1. Deviant Removal Program: Expanded cooperative effort with crab fishermen to remove deviant crab traps (beaching from log spill and associated fisheries closures and storms) during closed seasons for directed trap cleanup. An annual closed season for crab traps occurs during time deviant traps may be removed and repaired. Due to storms and man-made events, inadvertent cropping of float lines by propellers, and theft, an estimated 20% of active crab traps can become lost in the waters of the Mississippi Sound, creating navigation hazards and affecting marine resources such as the country's only estuarine turtle, the Diamondback terrapin. Resident federal fisherman continue to be enlisted to assist in the cleanup of deviant traps. Time to Complete: 6 months Part 2. Crab Trap TED (Turtle Excluder Device) Program: Essential tangible habitat in Mississippi marshes is expected to be damaged as a result of an oil spill. Terrapins can become inadvertently caught in crab traps. A grass-stalk cooperative effort between crab fisherman participants. The MOHRI will assist in the installation of turtle excluder devices (TEDs) on crab traps of volunteer commercial and recreational crab license holders at no cost to fishermen to help deter accidental catch. Crab fisherman participants would also be enlisted in the monitoring of terrapin populations through cooperative research projects. Time to Complete: several years Costs depend on extent of program and degree to which volunteers are used for the trap removal.	Jackson	Yes	No	No	No	Yes	No	No	No	Yes	Yes	Yes	\$ 500,000.00	\$	-	
Eco Restoration	2011	11/9/2011	Expansion of Real-Time Hydrological Monitoring Program	This project consists of expanding the number of hydrological monitoring stations in the Mississippi Sound utilizing current real-time technology. These stations are used as a marine management tool to aid in fishery resource monitoring and recovery from both natural (hurricanes and man-made oil spill) disasters. Currently the Mississippi Department of Marine Resources (MDMR), in cooperation with U.S. Geological Survey (USGS), operates eight real-time monitoring stations in the Mississippi Sound. A more comprehensive mosaic of stations is needed to fully monitor conditions that affect marine resource populations and their movements in Mississippi waters. Current parameters of water temperature, stage, conductivity/salinity and anticipated additions of turbidity, dissolved oxygen, pH, etc. cannot be transmitted continually; the data would be available on the MDMR website. Marine resources managers, fishermen, and the general public would have more instant information with which to make fishery decisions. Historical data would be used to correlate studies with fishery occurrences and environmental phenomenon.	Hancock, Harrison, Jackson	Yes	No	Yes	No	No	No	No	Yes	Yes	Yes	Yes	\$ 400,000.00	\$	-	
Eco Restoration	2012	11/9/2011	Gulf Islands National Seashore (GIS) Outer Bars, Horn, Ship and Cat Islands	This project would restore a total 7,000 acres on the Gulf Islands National Seashore. Hurricane Katrina and other recent storms have overwhelmed all barrier islands in the northern Gulf causing severe erosion, severely damaging or destroying facilities and resources, depositing massive amounts of debris, degrading habitats, and setting the stage for rampant infestations of noxious, invasive plant and animal species. The proposed project is based directly on a post-storm needs assessment prepared by GIS staff and management staff. It includes assessments of effects to water resources at GIS. Following Katrina, removing debris, and reconstructing buildings and docks on Cat Island, repairing/rehabilitating Davis Bayou Trails damaged by Katrina, determining changes to water quality/chemistry as a result of Katrina, restoring Davis Bayou grounds, damaged by Katrina, removal of trees, brush and debris on Horn Island, East Ship Island, West Ship Island, Pettit Bay Island grounds and Horn Island West cross over trail, assessment of effects of Katrina on the flora and landscape of GIS, assess effects on wildlife and EEI species, vegetative invasive species control, etc.	Hancock, Harrison, Jackson	Yes	Yes	No	No	No	Yes	No	Yes	Yes	Yes	Yes	\$ 8,209,000.00	\$	-	
Eco Restoration	2013	8/12/2011	Submerged Aquatic Vegetation Pilot	Measures designed to evaluate techniques for restoring submerged aquatic vegetation (SAV), an essential component of an estuarine system. Specifically, five acres of SAV in the Grand Bay National Estuary Research Reserve area that were destroyed by Hurricane Katrina will be restored using different techniques. The results will be used to guide and develop other SAV restoration projects.	Jackson	Yes	No	No	No	No	No	No	Yes	Yes	Yes	\$	\$	-		
Eco Restoration	2007	8/12/2011	Trailside Creek Ecosystem Restoration	This project consists of restoration of tidal hydrology, marsh and dunes, shoreline protection, invasive species removal and canal fills at various locations.	Jackson	Yes	No	No	No	No	No	No	Yes	Yes	Yes	\$	\$	-		
Eco Restoration	2008	8/12/2011	Bayou Cumbert Ecosystem Restoration	This project consists of restoration of tidal hydrology, marsh and dunes, shoreline protection, invasive species removal, and canal fills at various locations.	Jackson	Yes	No	No	No	No	No	Yes	Yes	Yes	\$ 4,000,000.00	\$	-			
Eco Restoration	2009	8/12/2011	Environmentally Sustainable Working Waterfronts	This project consists of financial assistance to local seafood industry entities, affected by the Deepwater Horizon event, in the development of environmentally sustainable working waterfronts through a variety of methods such as the following: Environmental planning, design, engineering, and impact statements; legal activities; public facilities upgrades or repairs such as water and sewer services, access roadways, parking, and boat ramp facilities; dredging and/or clearing of harbors and expanded commercial waterfront sites; repair and/or construction of piers, jetty (breakwaters); and other improvements deemed necessary for both short term and long term success of environmentally sustainable working waterfront projects. The proposed project would provide a basic organization for recovering seafood industry operations, making funding opportunities available to qualified applicants for the establishment of support facilities to offload and sell Gulf products directly into a public market. The intent is to consolidate, where practical, harvesting, wholesale, and retail sales and processing in safe accessible locations, to achieve a more efficient operation that will benefit all stakeholders including the harvesters, the consumers, the processors and ultimately Mississippi's marine environment.	Hancock, Harrison, Jackson	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	\$ 3,000,000.00	\$	-
Eco Restoration	2004	8/12/2011	Deer Island Levee	Restoration of marsh	Jackson	Yes	No	No	No	No	No	Yes	Yes	Yes	\$ 3,000,000.00	\$	-			
Eco Restoration	2001	8/12/2011	Marsh Pond	Creation of a marsh & open water habitat, including a wetland	Jackson	Yes	No	No	No	No	No	Yes	Yes	Yes	\$ 1,000,000.00	\$	-			
Eco Restoration	2002	8/12/2011	Hornem Bay Estates	Remove four dunes, benefit and restoration of 300 acres	Hancock	Yes	No	No	No	No	No	Yes	Yes	Yes	\$ 500,000.00	\$	-			
Eco Restoration	2003	8/12/2011	Hornem Bay Estates	This project consists of restoring 580 total acres, with 330 acres of brachist Juncea and Spartina alterniflora marsh, 100 acres of Spartina pectinata high marsh and 150 acres of invasive species Chinese tallow shrub with patches of slash pine, mixed maritime forest and oak hammocks. Prescribed fire tasks are needed to help clear this area of invasive species and storm debris. The invasive species Chinese tallow shrub will also be controlled on a regular basis, by cutting and herbicides. There are also infestations of the invasive species cogon grass and toronto grass, which would also be kept under control using herbicides. Continued monitoring would be required for wild pig, nutria, phragmites, and tallow. There would be prescribed fire for up to 250 acres and 100 acres of invasive species control.	Hancock	Yes	No	No	No	No	No	No	No	Yes	Yes	Yes	\$ 1,254,000.00	\$	-	
Eco Restoration	2004	8/12/2011	Deer Island Tract Restoration	This project consists of restoration of the tidal hydrology, marsh, and dunes, shoreline protection, invasive species removal, and canal fills at various locations.	Hancock	Yes	No	No	No	No	No	Yes	Yes	Yes	\$	\$	-			
Eco Restoration	2007	8/12/2011	Deer Island Tract Restoration	This project consists of updating survey data and boundary markings throughout the Coastal Preserves. Given the current size of the Coastal Preserves (17,000 acres) and the current cost of surveys on large undeveloped parcels (approx. \$50 per acre), the base budget for this work could exceed \$2 million dollars by the additional logistics for marine work are included. This project would renew and mark boundaries to federal standards. Project benefits would be as follows: 1. This requested budget could fund surveys of approximately 40,000 acres of current and incoming Coastal Preserves lands. Using an average parcel size of 250 acres, this would mean approximately 2,400,000 linear feet of boundary needs to be surveyed and marked. This would create employment opportunities for local surveying contractors by providing roughly 6,000 man-days of work or approximately one year of work for 25 to 40 employees of Mississippi small businesses (surveyors). 6. Many management techniques needed for maintaining the long term health of the Coastal Preserves (such as prescribed fire) require that boundaries be well established in order to avoid unintended actions on adjoining land. For example, adjoining land in structure may not benefit from the same type of burning required for ecological/habitat management, and any damage, whether real or perceived, could pose a potential liability for the State.	Hancock, Harrison, Jackson	Yes	No	No	No	No	No	No	Yes	Yes	Yes	Yes	\$ 2,250,000.00	\$	-	
Eco Restoration	2008	7/25/2011	Coastal Preserve Management Needs	This project will restore a total of 900 acres (500 acres marsh and 400 acres forested). The Danzer property was further from Katrina's core and suffered less direct wind and tidal surge damage than many of the other Coastal Preserves. However, serious long-term consequences are anticipated due to the distribution of Chinese tallow tree propagules across the site. The effort to regain control of Chinese tallow throughout the site and stem residual storm debris would be greatly aided by first conducting comprehensive prescribed burning. Restored acres that was lost to storm damage can be accomplished as part of the preparation for prescribed burning. There would be prescribed fire, 400 acres of invasive species control via spraying and cutting, 75 acres of reforestation, and monitoring.	Jackson	Yes	No	No	No	No	No	No	Yes	Yes	Yes	Yes	\$ 1,190,000.00	\$	-	
Eco Restoration	2011	7/25/2011	Danzer Restoration	This project consists of restoration of a total of 450 acres (200 marsh, 250 forested) on Deer Island. During Katrina, Deer Island lost little actual land area, but a great deal of beach, dunes and higher land. A large number of slash pine trees were killed with mortis rates approaching 100% near the east end. These trees will need to be replaced to maintain soil stability and avoid even more catastrophic erosion in the future. Advanced, high water nurseries trees such as "BRAC" must be used for this purpose. The existing marsh creation project surveyed related wet and indicates that marsh creation should be expanded to help provide additional erosion protection and estuarine habitat. Remaining natural marshes on Deer Island have some invasive species issues, primarily torpedo grass. Chinese tallow trees occur throughout the site, but not as severe infestations, and appear to have been stressed by Katrina. Therefore, the time to treat now. As with most of the other Coastal Preserve Program projects, prescribed fire is an important consideration for both ecological and financial reasons. This, as part of the project, there would be acres of marsh creation, 25 acres of brush creation/management, prescribed fire, 125 acres of invasive species control via spray and cutting, and 50 acres of reforestation.	Harrison	Yes	Yes	No	No	No	No	No	No	Yes	Yes	Yes	Yes	\$ 1,389,000.00	\$	-
Eco Restoration	2002	7/25/2011	Deer Island Restoration	The project would benefit 45 acres, all open water. This "trussmat" (cattail) may simply be the right of way for the underlying gas pipeline that has been previously addressed by small boat traffic and tidal flow. Regardless, it intersects two bayous and has significantly reduced their flow and sediment carrying capacity, resulting in a loss of navigability. It is also likely that this canal serves as a direct conduit for storm surge into the LafRance Bayou (Deer) community. It is recommended that this channel be closed and restored to its original marsh cover. Funding is also requested so that the northernmost bayou (Campbell's inside Bayou) be dredged to the west, if necessary, to re-establish navigation to the LafRance marsh and associated community. The primary task will be to plug the canal with LafRance (northern extent), both banks (indigenous), and to remove channels (indigenous). Plugs would be constructed of concrete and geomembrane-lined. Large amounts of sediment and debris, such as whole trees, soil and organic storm debris. This would require at least six plugs. This would be vegetated with storm resistant trees, shrubs and grasses similar to the adjoining channels. Reclaimed dredge material could then be pumped into the areas between the plugs with adequate elevation is established for planting marsh species. There would be 45 acres of marsh creation, 25 acres of invasive species control via spraying and cutting, 25 acres of reforestation, and monitoring.	Hancock	Yes	Yes	No	No	No	No	No	No	Yes	Yes	Yes	Yes	\$ 13,155,000.00	\$	-
Eco Restoration	2014	7/25/2011	LafRance Camp Tenacious Restoration	Currently, 30 to 40 million cubic yards of dredged sand from the Black Warrior River are staged upstream. For this project, the material would be transported to the northern Gulf coast for direct use, or be binned for future use. The material is considered valuable as a stabilizing, permeability-enhancing amendment for dredged material being incorporated into both land and marsh creation projects. This could help replace the transport of coarse grained sediments from the upper watershed of rivers draining into the northern Gulf, which is contributing to a loss of marshine lands and habitats which will have long range effects on fisheries and recreation. This material could be combined with locally obtained dredged material by greatly increasing its stability, reducing the cost of containment for marsh creation and other projects, as well as expanding the overall range of potential uses for dredged material. The material could also provide more ecologically and aesthetically suitable substrates for projects such as submerged aquatic vegetation or beach restoration. This material further leads itself to designing more natural drainage permeability characteristics for constructed uplands and wetlands.	Hancock, Harrison, Jackson	Yes	No	No	No	No	No	No	Yes	Yes	Yes	Yes	\$ 600,000,000.00	\$	-	
Eco Restoration	2005	7/25/2011	Invasive Species Program	Impact from oil associated with the Deepwater Horizon disaster may have displaced native species thereby allowing non-native or invasive species to gain a foothold. Once established these invasive species can overtake an ecosystem and displace most native species. The project would restore the native habitat and remove invasive species.	Hancock, Harrison, Jackson	Yes	No	No	No	No	No	No	Yes	Yes	Yes	\$ 1,000,000.00	\$	-		
Eco Restoration	2016	7/25/2011	Ecosystem Restoration of Gulf Coast Natural Areas - Mississippi Coastal Preserves	This project would result in the direct restoration of 3,212 acres of coastal habitat and enhance thousands of additional acres. It may include removal of some debris in preparation for the project. Invasive species control (hand removal, mechanical treatment, and herbicides) on 2,662 acres and prescribed fire tasks on 3,953 acres, would restore these Coastal Preserve Program (CPP) lands to a condition that can be maintained through routine program management. Native trees and possibly other native vegetation would be planted on 25 acres to accelerate natural recovery. Hydrological restoration via removal or replacement of ditches and culverted canals would result in natural historic sheet flow across the CPP landscape. A shoreline protection plug would significantly increase the longevity of a 50-acre marsh restoration site begun in 2003.	Hancock, Harrison, Jackson	Yes	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	\$ 7,793,440.00	\$	-	

Project ID	Year	Start Date	Title	Description	Lead	Partner	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Budget	Cost	
Eco Restoration	2016	7/23/2014	MS Living Marine Resources Restoration Network (MSLRN)	<p>A COMPREHENSIVE AND INTEGRATED OBSERVATION, MONITORING, MAPPING, AND MODELING PLAN FOR MISSISSIPPI</p> <p>Sustained, multi-disciplinary ecosystem monitoring facilitates which provide an understanding of the state of the Gulf ecosystem and how its components change over time are critically needed. Results from monitoring efforts yield baseline data that can provide early warning of potential environmental variability, perturbations, and concerns. The information can be used to prioritize issues for adaptive coastal policy and management, assess damage due to natural and man-made disasters, inform restoration projects, and evaluate long-term trends. Furthermore, ecosystem monitoring information can yield the true value of ecosystem services to the Gulf which in turn can lead to resource management and regulatory decisions that consider the effects of those decisions based on a more complete set of economic factors.</p> <p>This information is critical to resource managers and decision-makers having regulatory, management, protection, and emergency responsibilities. Over the past three decades, the Gulf of Mexico and its coastal communities have been impacted by increasing anthropogenic influences, primarily as a result of human population growth, energy extraction, and coastal development. The impact of severe storms, such as tropical cyclones, has increased as sea level rises, land subsides, and storm buffering coastal wetlands are lost. Because the Gulf supports a broad variety of interests, any of these impacts can result in a wide range of environmental and economic concerns. A fully integrated and sustained observing system that includes ecosystem, oceanographic, and biological parameters would help minimize risk to people and coastal and offshore resources (during various operations (e.g., oil and gas exploration and extraction, maritime operations, recreational boating and fishing activities)) by providing early detection of potential problems and expediting mitigation when the need arises (e.g., identify important habitat and species, assess status of indicator species). Climatological databases or monthly averages are not sufficient for making certain ecological decisions. Present technology is available to provide 24-hour real-time capability for this decision-making.</p> <p>The University of Southern Mississippi's Marine Science Department has taken the lead to develop a comprehensive and integrated observation, monitoring, mapping, and modeling plan for Mississippi's coastal areas. The integrate plan has been divided into eight cohesive sections to help explain the needs of Mississippi as it is related to the Marine Science processes affecting Mississippi waters. These eight sections areas are:</p> <ol style="list-style-type: none"> 1. Physical, Chemical and Geological Drivers of Environmental Variations, 2. Modeling and Forecasting, 3. Living Marine Resources and Ecosystem Components, 4. Indicators of Stress, 5. Habitat Characterization, 6. Measurement Archival and Data Management, 7. Outreach, and 	Mobilia, Hancock, St. Tammany, Jackson	Yes	Yes	2000%	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	\$ 49,000,000.00	\$ -
Eco Restoration	2085	7/30/2014	MS Habitat Characterization Restoration Network (MSHRN)	<p>A COMPREHENSIVE AND INTEGRATED OBSERVATION, MONITORING, MAPPING, AND MODELING PLAN FOR MISSISSIPPI</p> <p>Sustained, multi-disciplinary ecosystem monitoring facilitates which provide an understanding of the state of the Gulf ecosystem and how its components change over time are critically needed. Results from monitoring efforts yield baseline data that can provide early warning of potential environmental variability, perturbations, and concerns. The information can be used to prioritize issues for adaptive coastal policy and management, assess damage due to natural and man-made disasters, inform restoration projects, and evaluate long-term trends. Furthermore, ecosystem monitoring information can yield the true value of ecosystem services to the Gulf which in turn can lead to resource management and regulatory decisions that consider the effects of those decisions based on a more complete set of economic factors.</p> <p>This information is critical to resource managers and decision-makers having regulatory, management, protection, and emergency responsibilities. Over the past three decades, the Gulf of Mexico and its coastal communities have been impacted by increasing anthropogenic influences, primarily as a result of human population growth, energy extraction, and coastal development. The impact of severe storms, such as tropical cyclones, has increased as sea level rises, land subsides, and storm buffering coastal wetlands are lost. Because the Gulf supports a broad variety of interests, any of these impacts can result in a wide range of environmental and economic concerns. A fully integrated and sustained observing system that includes ecosystem, oceanographic, and biological parameters would help minimize risk to people and coastal and offshore resources (during various operations (e.g., oil and gas exploration and extraction, maritime operations, recreational boating and fishing activities)) by providing early detection of potential problems and expediting mitigation when the need arises (e.g., identify important habitat and species, assess status of indicator species). Climatological databases or monthly averages are not sufficient for making certain ecological decisions. Present technology is available to provide 24-hour real-time capability for this decision-making.</p> <p>The University of Southern Mississippi's Marine Science Department has taken the lead to develop a comprehensive and integrated observation, monitoring, mapping, and modeling plan for Mississippi's coastal areas. The integrate plan has been divided into eight cohesive sections to help explain the needs of Mississippi as it is related to the Marine Science processes affecting Mississippi waters. These eight sections areas are:</p> <ol style="list-style-type: none"> 1. Physical, Chemical and Geological Drivers of Environmental Variations, 2. Modeling and Forecasting, 3. Living Marine Resources and Ecosystem Components, 4. Indicators of Stress, 5. Habitat Characterization, 6. Measurement Archival and Data Management, 7. Outreach, and 	Harrison, Jackson, Hancock, Mobilia, St. Tammany	Yes	Yes	2000%	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	\$ 19,000,000.00	\$ -
Eco Restoration	2086	7/30/2014	MS Indicators of Stress Restoration Network (MSISN)	<p>A COMPREHENSIVE AND INTEGRATED OBSERVATION, MONITORING, MAPPING, AND MODELING PLAN FOR MISSISSIPPI</p> <p>Sustained, multi-disciplinary ecosystem monitoring facilitates which provide an understanding of the state of the Gulf ecosystem and how its components change over time are critically needed. Results from monitoring efforts yield baseline data that can provide early warning of potential environmental variability, perturbations, and concerns. The information can be used to prioritize issues for adaptive coastal policy and management, assess damage due to natural and man-made disasters, inform restoration projects, and evaluate long-term trends. Furthermore, ecosystem monitoring information can yield the true value of ecosystem services to the Gulf which in turn can lead to resource management and regulatory decisions that consider the effects of those decisions based on a more complete set of economic factors.</p> <p>This information is critical to resource managers and decision-makers having regulatory, management, protection, and emergency responsibilities. Over the past three decades, the Gulf of Mexico and its coastal communities have been impacted by increasing anthropogenic influences, primarily as a result of human population growth, energy extraction, and coastal development. The impact of severe storms, such as tropical cyclones, has increased as sea level rises, land subsides, and storm buffering coastal wetlands are lost. Because the Gulf supports a broad variety of interests, any of these impacts can result in a wide range of environmental and economic concerns. A fully integrated and sustained observing system that includes ecosystem, oceanographic, and biological parameters would help minimize risk to people and coastal and offshore resources (during various operations (e.g., oil and gas exploration and extraction, maritime operations, recreational boating and fishing activities)) by providing early detection of potential problems and expediting mitigation when the need arises (e.g., identify important habitat and species, assess status of indicator species). Climatological databases or monthly averages are not sufficient for making certain ecological decisions. Present technology is available to provide 24-hour real-time capability for this decision-making.</p> <p>The University of Southern Mississippi's Marine Science Department has taken the lead to develop a comprehensive and integrated observation, monitoring, mapping, and modeling plan for Mississippi's coastal areas. The integrate plan has been divided into eight cohesive sections to help explain the needs of Mississippi as it is related to the Marine Science processes affecting Mississippi waters. These eight sections areas are:</p> <ol style="list-style-type: none"> 1. Physical, Chemical and Geological Drivers of Environmental Variations, 2. Modeling and Forecasting, 3. Living Marine Resources and Ecosystem Components, 4. Indicators of Stress, 5. Habitat Characterization, 6. Measurement Archival and Data Management, 7. Outreach, and 	Hancock, St. Tammany, Mobilia, Jackson, Harrison	Yes	Yes	2000%	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	\$ 7,000,000.00	\$ -
Eco Restoration	2103	4/1/2015	Erosion Control and Sediment Management in the Coastal Zone	<p>This project would propose to implement several types of erosion control strategies in the Coastal Zone. Surface runoff caused by heavy rains carries sediment, nutrients and chemicals to our streams, rivers and eventually to the Gulf of Mexico. Erosion takes place in all locations without sufficient vegetative cover. Those locations include house sites, timberlands, crop and pasture lands, road sides, stream banks and other waterway locations, recreational sites, and abandoned properties such as houses, closed industrial sites, farms, and surface mines.</p> <p>Each site will require a different prescription to solve the erosion problem. Site locations will need to be identified and solutions recommended by trained professionals to assess the severity of the problem and to define the best, most economical solution for each site. There are several conservation practices that can be used to reduce erosion and slow down surface run off. These include the use of cover crops, vegetated field borders, grassed waterways, permeable paving, no-till crop rotations, managing crop residues, tree planting, stream bank stabilization, and the creation and renovation of water impoundments to trap sediment prior to entering our streams and rivers. Some of these water impoundments could also be used for fire protection.</p> <p>Many landowners can reduce or eliminate much of the erosion simply by changing the management practices used or implementing new ones. This will require identification and on-site education for the landowners to understand why the erosion is taking place, what practices are available to implement and how important erosion control can be for the immediate improvement in water quality for all species downstream as well as for the community's long term water quality.</p> <p>Some sites will experience unusual amounts of erosion during emergency storm events such as heavy rains, flooding and hurricanes. Often these are areas that repeatedly have erosion issues during heavy water flow. Determining a long term solution for the problem will be the overall goal, but having readily available funding for immediate repairs after these emergency events will greatly enhance the ability for landowners and business owners to diligently make a difference in the overall reduction in erosion and improvement in the water quality of their watersheds. Many emergencies cannot be predicted, but they will happen and the faster a community can respond, the less damage will result from these events.</p>	Harrison, Hancock, Jackson	Yes	No	No	No	Yes	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	\$ 9,000,000.00	\$ -
Eco Restoration	2104	4/1/2015	Conservation Demonstration Working Farm	<p>Thanks to numerous conservation innovation practices, as stewards of the land we are doing a much better job than in the past. As urban sprawl and demands for our natural resources continues to increase, we need a forum to demonstrate these new conservation advances to the public. A working demonstration farm would not only benefit consumers of natural resources but also the producers of those resources and others.</p> <p>The Farm would be utilized in multiple ways to exhibit conservation practices. Farmers would be shown cutting edge farming practices that would benefit the environment while at the same time benefiting their bottom line. Students will take advantage of the facility to better understand the native habitats and the methods that are being used to handle the growing of them today. Schools will be able to expose children to where the food and fiber that they consume daily comes from and what it takes to get those products to town. Researchers will continue to explore new mechanisms that will aid in conservation. State and County officials can use the site to better understand the issues of those who they serve. These are just a few of the services that the Farm should be able to provide to the public in its understanding of conservation.</p> <p>The CMSWCF would like the opportunity to establish a 250-acre Conservation Demonstration Farm. The land would be acquired and the necessary infrastructure established. The locations would ideally consist of varied topography within a watershed basin close to a major waterway.</p>	Harrison, Hancock, Jackson	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	\$ 5,000,000.00	\$ -
Eco Restoration	2107	8/29/2014	Invasive Plant Species Control	<p>Both terrestrial and aquatic invasive plants are causing devastating effects to the native Gulf Coast ecosystems, agriculture industry and public entities. Recent hurricanes spread many of these plants in the region. Grass farmers, timber growers, livestock producers, horticulturalists and many others in the industry are becoming overwhelmed with these invasives. The high cost of treatment and the aggressive establishment of many of these species is causing great concern to our agriculture industry. Native ecosystems are becoming greatly affected by these invasive plants as well, reducing biodiversity and decreasing native food for wildlife. The thick biomass of cypripediums make it difficult for tortoises and other animals to burrow. Cypripediums are highly combustible and burn at a much hotter temperature than native undergrowth, sometimes killing mature timber and creating a dangerous situation around structures. Aquatic invasives like salvinia, hydrilla and water hyacinth choke waterways and block sunlight. Invasives climbing fern can kill down saplings and Chinese tallow tree can choke open areas. Public entities spend much money and staff time battling these plants. The Soil and Water Conservation Districts in the lower six counties propose an outreach and education plan for these invasive pest plants. In addition, we would develop a treatment program and task force consisting of State, Local and Federal Agencies, private businesses and organizations to deal with the encroachment of these species in the lower six counties of Mississippi.</p>	Harrison, Hancock, Jackson	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	\$ 9,000,000.00	\$ -
Eco Restoration	2111	9/11/2014	Pascagoula River Marsh Coastal Preserve Acquisition	<p>This project would locate willing sellers of land located within the Pascagoula River Marsh Coastal Preserve, purchase the land and preserve it as part of the Coastal Preserve program, and manage it for the benefit of future generations. From the DMR website:</p> <p>This preserve consists of 11,150 acres that includes essentially all marsh associated with the mouth of the Pascagoula River. This brackish, coastal marsh has over 300 species of plants that are known to occur in these marshes, but needs rich (Juncus roemerianus) is the dominant species. Sections of this area are nesting sites for the Mississippi Noddy, Turkey and the Gulf of Mexico Turtledove. This unique location provides excellent feeding, nesting, and roosting habitat for numerous types of migratory bird species, such as the Brown Pelican, White Pelican, Osprey, and cormorants. Much of this area is currently unspoiled, however some areas to the south of the Escatawpa River are suffering from development and pollution. The marshes are threatened primarily by industrial and residential developments that involve dredging, fill, and byproduct pollution. The Escatawpa River is believed to be a major source of industrial pollution. Future diversion of water from the Pascagoula River and its tributaries could result in an increase of water intrusion and expansion of the marsh area northward into the area now forested. Diversion could also result in increase water pollution as diatoms is increased.</p> <p>http://www.dem.mg.gov/index.php/misissipi/gems/218-pascagoula-ri-ver-marsh-73d31e2b-d9d7</p>	Jackson	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	\$ 100,000.00	\$ -

Eco Restoration	2114	9/12/2014	Escatawpa River Marsh Coastal Preserve Acquisition This project will locate willing sellers within the Escatawpa River Marsh Coastal Preserve, acquire the land and preserve and monitor it for future generations. From the DMR website: This unique location provides excellent feeding, resting, and wintering habitat for numerous types of migratory bird species, such as the Brown Pelican, White Pelican, Osprey, and cormorants. This area is also known to be a rookery for Osprey. http://www.dnr.ms.gov/index.php/mississippi/gems/2114-escatawpa-river-marsh/akthsh_00y58uM_dpuF	Jackson	Yes	No													\$ 400,000.00	\$ -		
Eco Restoration	2115	9/12/2014	Bellefontaine Marsh Coastal Preserve Acquisition The project will locate willing sellers within the Bellefontaine Marsh Coastal Preserve, acquire the land, and preserve and monitor it in the name of the State for future generations. From the DMR website: This preserve consists of 1,305 acres and is represented largely by a marine, mesohaline marsh/dune system in that it receives no major freshwater input. The marsh area lies between a coastal oak/pine forest and a narrow (5-10 ft) beach dune system. The combination of Scirpus dominated marsh areas and shallow water ponds makes this area a prime waterfowl overwintering area. Lands adjacent to the Bellefontaine Marsh Coastal Preserve are either privately, locally, state or federally owned. Much of the property considered had wetlands, and owned by the State. http://www.dnr.ms.gov/index.php/mississippi/gems/206/bellefontaine-marsh/akthsh_MQZy6d_dpuF	Jackson	Yes	No														\$ 1,000,000.00	\$ -	
Eco Restoration	2116	9/18/2014	Pascagoula River Basin Enhancement Program Watershed Enhancement Management Program Within the Pat Harrison Waterway District, there are eight USGS HUC-8 basins. By using the authority of the Pat Harrison Waterway District to develop watershed management plans, the upper basins that drain in the highly bio-diverse Pascagoula River can be properly maintained and monitored. The Pascagoula River is the largest by volume unimpounded river system in the contiguous 48 states. The goal of the watershed management program is to identify ecological stressors including habitat fragmentation and destruction, human induced changes in hydrology, altered sediment loading, and future barriers on the mainstem and tributaries. The watershed approach would break down the hydrologic and hydrologic study of these systems by watershed. The focus will establish a baseline of river health. The next step is to develop management guidelines for each watershed by focusing on the baseline values and developing ways to maintain or improve the health of the basin. Key areas of focus include: water quality, sediment transport, and debris removal. Best management practices will be implemented in restoring the biological integrity of the watersheds and ensuring all systems achieve the MDEQ attaining aquatic life use support designation.	Jackson	Yes	No		Yes	No	No	No	No	No	No	No	No	No	No		\$ -	\$ -	
Eco Restoration	2117	9/18/2014	Park Restoration and Expansion Initiative Currently Pat Harrison Waterway District owns and operates eight parks. These parks provide camping, cabins, and recreational facilities for both locals and tourists to enjoy. As part of the Pascagoula River Basin Enhancement Program a renewed focus will be taken on maintenance and restoration of these parks to enhance recreational opportunities for the community. The goal of the park restoration and expansion initiative is to reach out to the local communities and civic groups to identify restoration needs of the parks as well as looking into the expansion of existing facilities based on attendance and local interest. By providing new pavilions, boat ramps, updating cabins, adding watercraft rental outposts, educational trails and interpretive stations, the existing parks can be improved to increase tourism and improve quality of life for the community. As part of the park restoration and expansion initiative, community outreach is imperative. Allowing the community to identify needs and concerns ensures the intended recipients of these improvements are satisfied. Event programming and outreach to increase tourism will be initiated in parallel with restoration efforts as well as updating the multi-media facilitation park information.	Stone, Jackson, Pearl River, Perry, Harrison, George	Yes	Yes		Yes	Yes	No	No	No	Yes	No						\$ -	\$ -	
Eco Restoration	2118	9/22/2014	Pascagoula River Basin Enhancement Program Pascagoula River Water Trail The Pascagoula River Basin Enhancement Program has the opportunity to capitalize on the vast ecological treasures that the Pascagoula River Provides. The Pascagoula River Water Trail Project establishes the national designation of this river system in the National Water Trails System. This identification serves to bring existing and newly identified water trails together into one cohesive national network of water trails. The objective of the National Water Trail System is established as protecting and restoring America's Rivers, shorelines, and waterways and conserve natural areas along waterways. Also serves to increase access to outdoor recreation on shorelines and waterways. Using the established major tributaries to the Pascagoula, the Pascagoula Water Trail seeks to unite the Pat Harrison Waterway District with a cohesive goal of recreational access and restoration of the riverine systems. The first phase would establish the Leaf, Chickasawby, and Pascagoula Rivers as water trails. The second phase would expand to include other tributaries in areas that community outreach and support is strong. A key objective of the water trail is to develop trail-heads at strategic locations along the trail. These trail-heads will be existing park facilities that are adjacent to the water trail like Dunns's Falls and new facilities that will include water sports outposts and convenience stores. Part of the development of the water trail will be the establishment of safe watercraft launches, campgrounds, walking trails, fishing outposts, and educational boardwalks. There is an opportunity to develop a cultural heritage museum at one of the trail-heads that would increase the tourism traffic to the trail. Additional infrastructure to connect the new facilities to existing roadways will be built as well as improvements to existing infrastructure. The goal of the water trail is to increase the quality of life in adjacent communities, increase the ecotourism appeal of the region, improve existing facilities, extend recreational opportunities, and highlight the historical significance of this unimpounded water system. Each water trail will be designated nationally by local management. With community support the Pat Harrison Waterway District, Pascagoula Water Trail will provide recreational opportunities, educate the public about the value of water resources and cultural heritage, provide opportunity for conservation of waterway health, provide the public with accessible and understandable water trail information, maintain the routine and long term investments on the water trail, and plan for the future vision of the Pascagoula River Basin.	George, Perry, Forrest, Jackson, Stone	Yes	Yes		Yes	Yes	No	No	No	Yes	No						\$ -	\$ -	
Eco Restoration	2119	9/22/2014	Pascagoula River Basin Enhancement Program Pascagoula River Basin Forest Preserves Program Of the counties within the Pat Harrison Waterway district, an average of seventy-nine percent of the ground coverage is forestland. In order to preserve and maintain both pine and hardwood in the region, the Pascagoula River Basin Forest Preserves Program will restore pine and hardwood and provide technical and on-the-ground restoration assistance to family forest landowners interested in managing or restoring the pine and hardwood on their lands. The program will identify, protect, and manage forest habitat, recognizing that the abundance and productivity of the Pascagoula River Basin ecosystem is a product of the quantity and quality of the forest habitat. The south and central parts of Mississippi continue to face threats from the southern pine beetle on the forestry industry. As part of this program the movement and outbreak of destructive species like the southern pine beetle will be monitored and evaluated for conservation on initiatives. The goal of the Pascagoula River Basin Forest Preserves Program is to integrate landowner outreach with prescribed conservation to monitor, maintain, and restore the forest within the Pat Harrison Waterway District.	Stone, Jackson, Forrest, Perry, Harrison, George	Yes	No		Yes	Yes	No	No	No	No	No						\$ -	\$ -	
Eco Restoration	2120	9/22/2014	Pascagoula River Basin Enhancement Program Pascagoula River Riparian Buffer Maintenance Plan This program will seek to identify, monitor, and maintain riparian buffers along the Pascagoula River and its tributaries. Also provide outreach and technical assistance to accelerate first-time enrollment of new riparian buffer through the conservation reserve enhancement program. Riparian buffers act to partially protect streams from the impact of adjacent land uses. Buffers increase water quality in associated streams as sediment is intercepted, serve to provide habitat, and reduce bank erosion by providing bank stabilization. The Pascagoula River Basin drains much of Southeast Mississippi into Pascagoula Bay. This management program is being undertaken to ensure that past and future development does not diminish the quality of water entering Pascagoula Bay from the upstream river basin. This river basin faces excessive erosion and sedimentation, storm-water runoff from new development can impact the riverine morphology. With planning and monitoring riparian buffers will help control channel instability, head-cutting, mass slumping, and wetland degradation. Riparian buffers that exist currently and proper planning of new buffers will help mitigate future loss in water quality.	Stone, Jackson, Forrest, Perry, George	Yes	No		No	Yes	No	No	No	No	No						\$ -	\$ -	
Eco Restoration	2121	9/22/2014	Pascagoula River Basin Enhancement Program Pascagoula River Species Stewardship Program This program will seek to establish a monitoring and planning program that will increase and maintain the habitat of species native to the Pascagoula River and its tributaries through stewardship activities. The stewardship program will focus on carrying out standard monitoring activities, implement best management practices to secure sensitive habitats and reduce human use and invasive species stressors, and educate diverse audiences to increase understanding of the needs and value of the Pascagoula ecosystem. Several species native to the Pascagoula River Basin include the Gulf sturgeon and the striped bass that migrate to the river to spawn. Also found in this watershed are the Pearl darter, swallow-tailed kite, Mississippi sandhill crane, and the yellow-blotched mop turtle. All of these and any other identified threatened and endangered species will be included in this stewardship program. The goal of the Pascagoula River Species Stewardship Program is to restore and protect Pascagoula River species populations, reduce identified stressors and disturbances, and restore habitat to allow higher rates of survival.	Stone, Jackson, Forrest, Perry, George	Yes	No		Yes	Yes	No	No	No	Yes	No						\$ -	\$ -	
Eco Restoration	2122	9/23/2014	Pascagoula River Basin Enhancement Program Stormwater Management Initiative Stormwater Management Initiative- Pollution and Prevention Plan This plan is intended to develop a management programs for current stormwater rehabilitation and future construction within the Pat Harrison Waterway District. The Pascagoula River and its tributaries head a watershed that covers most of southern Mississippi. The groundwater and surface water that feeds the riverine systems flow into Pascagoula Bay and ultimately the Gulf of Mexico. In order to best conserve and maintain the health of those who depend on this riverine system, proper stormwater and run-off monitoring is vital. The Stormwater Management Initiative will focus on the streams and urban areas that flow directly into the Pascagoula and its tributaries. The program will seek to restore streams that are highly altered including green corridors enhancing their ability to handle stormwater runoff, erosion, and sedimentation. Also, runoff will be monitored for water quality to ensure proper best practice management and construction practices are being implemented. The goal of the Stormwater Management Initiative is to directly engage local communities to the importance of best management practices as well as promote proper construction and design of future stormwater systems. There are several approaches to stormwater management to consider. Low-impact development seeks to manage runoff using a distributed approach that mimics the predevelopment hydrology instead of conveying and treating stormwater at only the end of the drainage area. Green infrastructure is an approach that uses a natural system to capture, clean and reduce stormwater runoff using plants, soils and microbes. And environmental site design is an approach that mimics natural systems along the whole stormwater flow path through combined applications of design principles. The objective for the environmental site design is to replicate forest or natural hydrology and water quality. With proper incentives and partnerships pre-planning for future stormwater infrastructure can help properly conserve and maintain riverine systems. The Stormwater Management Initiative will focus on non-point sources of water pollution and prepare a monitoring program that coincides with the best management practices to be developed and adopted by communities that will identify areas of water quality concern. The identified locations will be the focus of the monitoring initiative and evaluated for improvement options where applicable, with a combination of community outreach and proper planning the Stormwater Management Initiative will seek to educate those on the importance of the ecological value of the Pascagoula River Basin and encourage future responsible stormwater management techniques.	George, Perry, Forrest, Jackson, Stone	Yes	Yes		Yes	Yes	No	No	No	No	No						\$ -	\$ -	

Eco Restoration	2124	9/23/2014	<p>The Pascagoula River Basin is Mississippi's second largest river basin and is also the last unimpacted river system in the contiguous United States. It is approximately 154 miles long, 84 miles wide, and includes more than 15,000 miles of rivers and streams. Major rivers within the Basin include the Pascagoula, Chickasawby, and Leaf Rivers as well as Black Creek and Red Creek. The Basin eventually drains into the Mississippi Sound/Gulf of Mexico at Pascagoula, Mississippi. The Basin's ecosystem is nationally recognized for its abundant wildlife, biological diversity, and rich cultural and historical heritage. It is an undesignated national treasure.</p> <p>As a prime tributary to the northern Gulf of Mexico, the water quality and biological health of the Pascagoula Basin contribute directly to the health, well-being, and quality of the Gulf. Following the BP Oil Spill and the subsequent impacts to Gulf waters, biota, and fauna, numerous initiatives have been proposed (and some initiated) to improve the ecosystem of the Gulf, specifically its inland water bodies and habitats. To this end, the Port Harrison Water Management District's emissions an initiative leading to quantification of the water quality and attributes of the Pascagoula River Basin, over which Port Harrison exercises statutory oversight. This initiative addresses a need for developing a comprehensive, total watershed approach to water resource management throughout the Pascagoula Basin, including the major tributaries the Pascagoula, Leaf, and Chickasawby Rivers, also any minor contributing streams and creeks. The approach would facilitate collaborative relationships with other parties (local, state, and federal), as well as non-governmental organizations) with shared interests in the use, quality, and management of the waters of the Pascagoula Basin.</p> <p>The primary tool of the core of such a total watershed approach is a comprehensive, digital land base model of the Basin. This model will consist of a digital framework of data layers, the chief of which are the images, topography, and hydrography AC at very high resolution. These enable the most advanced modeling and assessment possible. Essentially, this tool would serve as the foundation for all future studies and assessments of the Basin related to water quality, ecosystem and environmental health, infrastructure and economic development, or otherwise. The specific area proposed for development of the initial model is the combined watersheds of the Chickasawby and Leaf Rivers, continuing to their confluence forming the Pascagoula River in George County, Overit, this combined watershed complex nearly 9,000 square miles.</p> <p>The goal of the digital watershed management model is to provide a tool that can be utilized by both public and private users and serve as a host of functions that ultimately promote the mutual interests and benefits of the Pascagoula Basin and Northern Gulf of Mexico. Specifically, the model will facilitate evaluating and establishing policy guidance regarding such issues as:</p> <ul style="list-style-type: none"> 1) Ownership and allocation of water along water courses with multiple contiguous property owners, including addressing Riparian doctrine; 2) Resource management and enhancement; 3) Conservation of the balance of instream flow and nutrient levels along critical stream reaches, including issues related to Total Maximum Daily Loads; and 4) Optimization of interbasin transfers. <p>Further, the watershed management model would facilitate these stated objectives, and others, by providing the digital database that would serve ongoing AC</p> <ul style="list-style-type: none"> 1) Comprehensive, science based, data collection and assessment at all levels of federal, state, and local government; and 2) Comprehensive inventory of water resources, including use, quality, quantity, and availability. <p>The digital Pascagoula Basin Watershed Management Model will consist of framework AC "layers" of digital data representing the surface of the earth and selected features, in a seamless, geospatially-referenced format. The model includes data developed and managed according to AC "layers" of information, the most important of which are high-resolution, digital topography and a three-dimensional, 3D, model of the Basin. We propose to deploy four mooring equipped with a Shemadon S601 Workstation Sentinel ADCP to measure the currents, bathymetry, and suspended sediment concentration (SSC). A Valeport MDCAS DWR Directional Wave Recorder, and four Sondecs YSI 6602ES to measure various parameters such as temperature, dissolved oxygen, salinity, turbidity, and chlorophyll at different depths. The mooring will be deployed for two years. They are placed at four locations for one year and then moved to another four locations for the second year. Guidance for these choices of mooring locations will be based through application of the SWAN wave prediction model. The mooring will be placed near oyster reefs and/or marshes, preferably in water depths of at least 2 m. We plan to deploy moorings at healthy reefs or marshes and at unhealthy reefs or eroding marshes. Whether we choose reefs or marshes may depend on recommendations from the RESTORE Council. If our mooring locations overlap with the moorings that are part of the AC National Coastal Observing and Prediction Network (NCO) data submitted to the RESTORE Council, we will coordinate instruments to reduce costs.</p> <p>To calibrate the SSC ADCP measurements, we will perform monthly surveys at each mooring. These cruises will also be used to maintain the moorings and replace the battery packs. We will measure conductivity and temperature with a Seacore CTD and take water samples at four depths. The SSC in these water samples is measured using a filtration system. In addition we will collect bottom sediment cores during each survey to measure the grain size distribution and sediment properties in order to determine the critical shear stress needed for sediment resuspension. The currents recorded with the ADCP and the orbital velocities estimated from the wave heights will indicate how often these critical shear stresses are exceeded, and provide insight into the active governing processes.</p> <p>The sediment distribution, shear stress and erosion time series gathered as part of this project will be leveraged by the modeling efforts submitted separately to the RESTORE Council as AC. The influence of these forces, hurricanes and storm fronts on the hydrodynamics of the Mississippi deltaic plain, coastal erosion and oyster bed stability were not focal points, so within this proposal our ROMS model implementation for MS will be expanded to handle wetting and drying (Warner et al., 2013), as well as wind-wave coupling and the sediment transport capabilities of the ROMS-based Coupled Ocean-Atmosphere-Wave-Sediment Transport (COAWST) model (Warner et al., 2015). The comprehensive set of in situ measurements will provide in situ data that reveals key mechanisms associated with sediment loading within the MS, which will inform the development and validation of this near shore model. With validated erosion and suspended sediment distributions, the model will be positioned to provide insight into oyster bed stability, marsh and barrier island erosion assessment, as well as key water quality constituents that directly contribute to marine ecosystem function. Deliverables include geospatially referenced sediment cores, critical shear stress, time series of collected data and maps that indicate which reach conditions are most threatened and what locations may be most viable for oyster reefs.</p>	Stone, Jackson, Pearl River, Forrest, Perry, George	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	No	No	\$	\$	-	
Eco Restoration	2128	9/15/2014	<p>The digital Pascagoula Basin Watershed Management Model will consist of framework AC "layers" of digital data representing the surface of the earth and selected features, in a seamless, geospatially-referenced format. The model includes data developed and managed according to AC "layers" of information, the most important of which are high-resolution, digital topography and a three-dimensional, 3D, model of the Basin. We propose to deploy four mooring equipped with a Shemadon S601 Workstation Sentinel ADCP to measure the currents, bathymetry, and suspended sediment concentration (SSC). A Valeport MDCAS DWR Directional Wave Recorder, and four Sondecs YSI 6602ES to measure various parameters such as temperature, dissolved oxygen, salinity, turbidity, and chlorophyll at different depths. The mooring will be deployed for two years. They are placed at four locations for one year and then moved to another four locations for the second year. Guidance for these choices of mooring locations will be based through application of the SWAN wave prediction model. The mooring will be placed near oyster reefs and/or marshes, preferably in water depths of at least 2 m. We plan to deploy moorings at healthy reefs or marshes and at unhealthy reefs or eroding marshes. Whether we choose reefs or marshes may depend on recommendations from the RESTORE Council. If our mooring locations overlap with the moorings that are part of the AC National Coastal Observing and Prediction Network (NCO) data submitted to the RESTORE Council, we will coordinate instruments to reduce costs.</p> <p>To calibrate the SSC ADCP measurements, we will perform monthly surveys at each mooring. These cruises will also be used to maintain the moorings and replace the battery packs. We will measure conductivity and temperature with a Seacore CTD and take water samples at four depths. The SSC in these water samples is measured using a filtration system. In addition we will collect bottom sediment cores during each survey to measure the grain size distribution and sediment properties in order to determine the critical shear stress needed for sediment resuspension. The currents recorded with the ADCP and the orbital velocities estimated from the wave heights will indicate how often these critical shear stresses are exceeded, and provide insight into the active governing processes.</p> <p>The sediment distribution, shear stress and erosion time series gathered as part of this project will be leveraged by the modeling efforts submitted separately to the RESTORE Council as AC. The influence of these forces, hurricanes and storm fronts on the hydrodynamics of the Mississippi deltaic plain, coastal erosion and oyster bed stability were not focal points, so within this proposal our ROMS model implementation for MS will be expanded to handle wetting and drying (Warner et al., 2013), as well as wind-wave coupling and the sediment transport capabilities of the ROMS-based Coupled Ocean-Atmosphere-Wave-Sediment Transport (COAWST) model (Warner et al., 2015). The comprehensive set of in situ measurements will provide in situ data that reveals key mechanisms associated with sediment loading within the MS, which will inform the development and validation of this near shore model. With validated erosion and suspended sediment distributions, the model will be positioned to provide insight into oyster bed stability, marsh and barrier island erosion assessment, as well as key water quality constituents that directly contribute to marine ecosystem function. Deliverables include geospatially referenced sediment cores, critical shear stress, time series of collected data and maps that indicate which reach conditions are most threatened and what locations may be most viable for oyster reefs.</p>	Harrison, Hancock	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	No	\$	\$ 1,640,000.00	\$	-	
Eco Restoration	2129	9/26/2014	<p>Since this project is Gulf wide, was interested in being considered for Council funding, however, just implementing some proposal in MS waters would be a great benefit to DM and DEC's day to day operation.</p> <p>The proposed effort will address the RESTORE Council priority area AC Water Quality Monitoring and Improvement. The project will focus on establishing a time series (2013-2017) of satellite-based water quality products with improved spatial and temporal coverage. Water quality improvements to be achieved include detecting and monitoring: a) coastal river and land discharge points and impacts to estuarine systems; b) spread and dissipation of point source discharges; and c) tracking water quality changes from river discharge. The project will provide for the efficient and effective detection of pollution sources for the purposes of protecting public and environmental health. Present water quality monitoring programs are limited in the spatial and temporal coverage and cannot address that of general water conditions are occurring. By combining with daily satellite products, this will be remedied and enable rapid assessment of spatial water quality events with enhanced spatial extent. Decision makers will be provided a capability to respond rapidly and send sampling collection and clean up actions. They will be continuously satellite monitoring the impact of cleanup activities can be confirmed that water quality has returned to normal conditions.</p> <p>Outcomes from this project will improve water quality management in areas along the Gulf coast. Decision makers in each state's environmental quality agency will have access to an automated web based decision aid that uses real time satellite data with automated algorithms based in Best Available Science to facilitate critical decision based on timely and accurate information.</p> <p>Please see detail proposal with description, benefits, and forecasted Partners-- Proposal is scalable from just MS waters to the entire Gulf of Mexico.</p>	Harrison, Jackson, Hancock, St. Tammany, Mobile	Yes	Yes	2000%	Yes	Yes	No	No	No	No	No	No	\$	\$ 12,000,000.00	\$	-	
Eco Restoration	2133	10/12/2014	<p>The U.S. Gulf Coast is vulnerable to a variety of risks, including oil/contaminant spills, harmful algal blooms (HABs) and Vibrio, hurricanes, coastal land loss, and navigation accidents. Near real-time information on coastal ocean surface currents, water levels and sea level rise is an important piece of information needed for protecting citizens' health and safety, emergency response, the coastal economy and sustainable use of coastal resources. This environmental intelligence, which can be gained through a system of coastal High-Frequency Radar (HFR) stations, can, for example: (1) improve monitoring of restoration projects (sediment transport, water quality); (2) help track spilled contaminants and Harmful Algal Blooms to protect public health, water quality, and critical habitats; (3) help ensure safe commercial and recreational navigation; (4) Enhance research and weather forecast models; including those for storm surge; (5) Enhance public beach safety through the forecasting rip currents; and (7) Enhance community preparedness for coastal land loss issues.</p> <p>This project meets the RESTORE Act Plan Comprehensive Plan priorities for habitats, water resources, living coastal and marine resources, natural processes and shorelines, and science-based decisions by developing a U.S. Gulf-coast wide network of High-Frequency Radar stations to provide real-time monitoring of surface currents and waves in state waters. These stations are efficient, effective tools for meeting multiple public needs along the U.S. Gulf Coast. The project includes Project Management for the government, installation, and operation for these sites across the Gulf Coast. Also, includes Data Management for the design and integration to assure data meets all RESTORE Act Policies and Procedures. Real-time distribution of these data to numerical models, and agency decision makers are included. An Outreach component is included to work with the Public and Agency Decision Makers, to assure the understanding and training is in place to integrate these user-friendly products in to day-to-day operations of each agency.</p>	Hancock, St. Tammany, Mobile, Jackson, Harrison	Yes	Yes	2000%	Yes	Yes	No	No	No	No	No	No	\$	\$ 20,000,000.00	\$	-	
Eco Restoration	2134	10/12/2014	<p>The City of Biloxi proposes to implement its 1980s master plan for utilizing the corridor of public land located under Interstate 110, which runs north-south from the Back Bay of Biloxi to the Mississippi Sound. The original master plan, developed with considerable citizen input, is being updated to include storm water management improvements and acquisition/restoration of a wetlands area adjacent to the I-10 Corridor north of Division Street.</p> <p>Storm water management improvements will include installation of BMPs along the corridor to filter nonpoint source pollutants from the interstate's storm water that drains unchecked from the elevated roadway. The BMPs will have an educational component, identifying their function in improving water quality through all-weather signage located along the walking paths that currently exist (and which are to be enhanced with additional lighting and drainage).</p> <p>Public safety and recreational amenity improvements will expand use of this area by residents and tourists. The south end of the corridor is located immediately west of the minor league baseball stadium being built and the Beau Rivage Casino Resort. The north end includes an under-utilized boat ramp, basketball and tennis courts, all of which are in need of improvements and lighting.</p> <p>Acquisition and restoration of the wetlands area north of Division Street will include removal of invasive, nonnative plant species as well as accumulated debris. Sediment will be removed and appropriate wetlands plant species will be installed to restore the natural functions of the wetlands area that is tidally influenced by the Back Bay of Biloxi.</p> <p>The master plan will be scanned and uploaded as an attachment to this project proposal.</p>	Harrison	Yes	Yes	2000%	Yes	Yes	No	No	No	No	No	No	storm	\$	\$ 6,000,000.00	\$	-
Eco Restoration	2135	10/12/2014	<p>The City of Biloxi proposes to implement a variety of shoreline stabilization measures along the Biloxi Peninsula in areas owned and/or managed by the City to control erosion, adapt to sea level rise and improve public safety and access. Shoreline improvements will include stormwater management BMPs accompanied by all-weather educational signage to identify short- and long-term public benefits of a properly-managed waterfront.</p> <p>Improvements will include removal of nonnative, invasive plant species; installation of appropriate native plant species to support shoreline stabilization and restoration of shoreline habitats; removal of concrete, riprap, abandoned/obsolete infrastructure and miscellaneous debris; and stormwater management improvements to improve water quality. Public safety and access improvements will include provision of lighting, ADA-compliant boardwalks, where appropriate, designed for storm resistance and to be constructed with a variety of materials as dictated by the terrain and proposed uses. Some of these public access areas will include short fishing piers/piers depending upon adjacent land and water uses and subject to federal and state permit approvals. Some of the public access areas also will include boat ramps for launching restored and/or nonmotorized (bayaks, canoes) boats along with supportive parking areas.</p>	Harrison	Yes	Yes	3000%	Yes	Yes	No	No	No	No	No	No	storm	\$	\$ 15,000,000.00	\$	-
Eco Restoration	2137	10/4/2014	<p>Officials should purchase properties north of Highway 90 in Harrison County that have not been re-developed since Katrina. These properties should be managed in the "unimproved" mode of parks that line the Charles River in the Boston area. There could be running/biking/jog trails as well as pocket parks and other green space.</p> <p>These parcels will likely be inundated again and could be managed as part of a flood control strategy to protect the developed areas just to the north.</p> <p>A well-developed system of parks and green space could provide economic benefits through increased nature and sports tourism (marathons, bike races, etc.) and could support cafes, food trucks and other small businesses.</p>	Harrison	Yes	Yes	Yes	No	No	No	Yes	No	No	No	\$	\$	\$	-		
Eco Restoration	2139	10/6/2015	<p>This proposal will develop new technology to reduce sea turtle mortality by developing methods to remove fishing line without removing endangered sea turtles from the water. This new method will be designed for inshore fishing from piers and bridges. The Endangered Species Act can shut a fishery down after a certain number of takes occur. The device I have designed will not require a fisherman to haul the turtle up in the air to the pier surface in order to cut the line from the hook. We will collect data and film our interactions with the device and the line will cut MMS to come collect the turtle. After proof of works as it should then we will share our information. We will then do outreach and education to encourage the use of this technique by our Coastal recreational fishermen. This new technique will address the problems that our recreational fishermen are having in removing their fishing line from the turtles that they are interacting with while fishing in state waters. There has been increased interaction with these endangered species and this new technique will help them be able to expand the use of this new method to other areas to help address their interactions with these endangered sea turtles. This device could be used as a mitigation tool for a section 10 permit for the states.</p> <p>The data shows that these sea turtles die from becoming entangled in the line that was cut from the pole and left on the hook. A turtle can survive a hook but not fishing line. It causes them to drown and get infections. The new device would sit down the line and cut the line off at the hook without harming the turtle. This is a win for the turtle, the fishermen and the economy because our piers were not closed and will supply as many as possible fish to the states, the stranding team and fishermen.</p> <p>When this new technique is proven successful. A full report of the study and success of the new gear will be provided to our Gulf Coastal states and NOAA. This project will include providing new gear to be given to Mississippi recreational fishermen as long as the supply of gear is available in this pilot.</p>	Jackson, Hancock, Harrison	Yes	Yes	2500%	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	\$	\$ 500,000.00	\$	-	

Eco Restoration	2140	1/17/2015	<p>In the face of poor spat falls, low harvests and declining oyster populations, a new approach is needed to restore oysters and the communities that depend on them. We propose a comprehensive long-term oyster restoration plan that restores habitat, improves water quality, revitalizes the economy of the Gulf coastal community, replenishes living coastal and marine resources and enhances community resiliency by revitalizing the Gulf oyster industry economy. This will be accomplished by massively expanding regional oyster hatchery production capacity, establishing remote setting basins in each of the five states, working with state resource agencies in oyster restoration and stock enhancement and actively engaging university-based scientists in monitoring and adaptive management. This project will enhance and restore oyster populations throughout the region, providing significant economic, ecological, carbon sequestration, nitrogen removal, habitat for long marine resources and cultural and encourage community resilience through long-term sustainable economic growth and job creation.</p> <p>The region-wide project will:</p> <ol style="list-style-type: none"> 1. Use existing oyster hatchery capacity while conducting a rigorous site assessment (6 mos.) for a bio-secure mega-hatchery with the capacity to produce > 50 billion oyster eyed larvae/year (comparable to the world's largest oyster hatcheries, with spawners specific to each state within 18 mos.); 2. Build dockside remote setting facilities in each state, capable of producing > 10 billion spat on cultch; 3. Enhance up to 100,000 acres 3-5 yrs. with 500,000 spat on cultch, plus, deploy to state resource agencies; 4. Monitor the success rate through rigorous university-based monitoring program in each state, to guide state-specific adaptive management; 5. Increase the resilience of the system by adding a second bio-secure mega-hatchery in year 4, and 6. Support a long-term comprehensive regional strategic plan, evaluated by university-based researchers and resource agencies, for the industry. <p>For this project, siting and construction of the first hatchery and the dockside remote setting facilities will be accomplished within 18 mos. Larval production will be supported for 3 yrs., with monitoring to occur during this time, with 50 billion juvenile oysters added up to 180,000 acres of public oyster beds throughout the region. In addition to the potential job creation and economic benefits of the enhancement of oyster populations, this project will also provide critical ecosystem services through improved water quality, increased biodiversity, creation of more diverse habitat and cultural services provided by productive oyster reefs worth up to \$200 million to harvesters annually, comparable to the value of the ecosystem services provided by the project.</p>	Gulf of Mexico	Yes	Yes	2000%	Yes	No	Yes	Yes	No	No	No	No	\$	1,337,000,000	\$	-
Eco Restoration	2141	10/8/2014	<p>The proposed project provides programmatic support for the Gulf of Mexico Alliance's collaborative partnership to coordinate restoration-related activities among the various agencies, organizations, resource managers, scientists, consultants, and industry experts in the region. The Gulf of Mexico Alliance proposes to conduct the coordination through its priority issue teams that are well-established and in direct alignment with the goals of the Gulf Coast Ecosystem Restoration Council's Comprehensive Plan.</p> <p>Coordination provided by the Gulf of Mexico Alliance provides the initial core steps in addressing a concern that restoration projects and programs conducted in the Gulf are not being coordinated to maximum efficiency. While Council-level activities are highly coordinated by the RESTORE Council, the Gulf of Mexico Alliance provides the venue for on-the-ground resource managers, scientists, consultants, and industry experts to communicate and collaborate on a regular basis regarding the activities that are being conducted by many regional partners.</p> <p>Deliverables include reports identifying the following:</p> <ul style="list-style-type: none"> • The going list of projects being implemented either as a result of DWH-funded settlements or other non-DWH project efforts (on-line feature could be added as appropriate); • Projects that may have overlap and duplicity with recommendations for solutions to leverage resources; and • Regional initiatives that may impact or inform restoration. <p>Through the priority issue teams and the larger partner network as a whole, agencies and organizations involved in restoration activities will be better informed and able to make project implementation decisions with the maximum available information regarding on-going efforts in the region. As a result, priorities can be aligned, activities can be planned with minimal duplication, and leveraging opportunities can be identified.</p> <p>The overall budget request is \$467,500 per year for five years or \$2,337,500 total.</p>	Gulf of Mexico	Yes	No		Yes	Yes	Yes	No	No	No	No	\$	2,337,500	\$	-	
Eco Restoration	2143	10/8/2014	<p>This project will utilize the resources described below to construct, maintain, and utilize a watershed assessment tool for coastal restoration. This tool will allow interactions with resource managers such as the Mississippi State Department of Environment and Quality and the Mississippi Department of Marine Science to assess both project and cumulative impacts of restoration activities. This tool will be calibrated and verified with scientific field and laboratory investigations and in conjunction with ongoing monitoring conducted by the Mississippi Department of Environment and Quality and the Mississippi Department of Marine Resources.</p> <p>Improved water quality is essential to restoration of coastal habitats and is among the highest priorities identified by Mississippi stakeholders. An ability to assess watershed processes that contribute to degraded water quality is a necessary first step in identifying activities within the watershed that can improve water quality. Watershed management activities such as stream restoration, best management practices in agricultural areas, and low impact development practices in urban areas are all techniques to improve water quality. Consequently, monitoring and modeling of freshwater inflows into the Mississippi coastal systems is required to assess the sustainability of ongoing and planned restoration activities.</p> <p>Researchers at Mississippi State University (MSU) are well experienced with the Watershed Modeling System that contains watershed and water quality models and Geographic Information Systems that are used in detailed watershed assessments. MSU has also conducted water quality modeling in Saint Louis Bay, numerous studies of coastal habitats such as beach erosion, stream restoration, and wetland/deltaic restoration. Additionally, MSU has acquired a complete hydrological data set for Grand Bay National Estuarine Research Reserve for habitat delineation and quality assessment. MSU will also have a complete data base of high resolution topography using Light Detection and Ranging (LiDAR) for the 6 courses of the gulf coast by spring of 2015. These data will provide hydrographic maps for use by state and county managers and baseline conditions for hydrologic modeling.</p> <p>Mississippi State University researchers have extensive experience in watershed management practices to improve water quality. For example, wetland construction and restoration to improve water quality and riparian stream restoration for both habitat and water quality improvement are major components of applied research at MSU. The Watershed Assessment Tool will be calibrated and verified with field and laboratory studies and applied to restoration projects in the watershed to evaluate effectiveness.</p> <p>Workshops will be conducted with state and local resource managers to ensure that ongoing and proposed projects are effectively evaluated for hydrologic assessment and potential for water quality improvement. Public outreach will be conducted with production of reader friendly materials.</p> <p>This is a four year project and will supplement ongoing planning activities as well as serve as decision support tool as new projects are recommended. The estimated cost is \$800,000 per year for a total cost of \$3,200,000.</p>	Hancock, Stone, St. Tammany, Mobile, Jackson, Pearl River, Forrest, Perry, Orleans, Harrison, George, Washington	Yes	No		Yes	No	No	No	No	No	\$	3,200,000	\$	-		
Eco Restoration	2149	1/17/2015	<p>This project will develop fruit orchards in every city and county in the three county of the MS Gulf Coast, Harrison, Hancock and Jackson counties. The Mississippi Urban Forest Council will partner with our five city communities along the coast, local garden groups and civic groups to develop the orchards. Training will be provided to citizens and those involved in the development of the orchards. Overtime for long term maintenance will be provided. Contact with citizens for the orchards will take into account for selection of species. This project will provide model orchards, encourage more local fruit production, provide education to implement sustainable orchards, improve healthy eating and provide source of value added products for local citizens.</p>	Jackson, Harrison and Hancock	Yes	No		Yes	Yes	No	Yes	Yes	Yes	\$	450,000	\$	-		
Eco Restoration	2153	10/22/2014	<p>This proposal defines the current state of 10 residential bays within the city of Moss Point, MS, adjacent to approximately 150 residential properties, and laid serviced for adequate and sustainable depth in the 1950-60 time period.</p> <p>The city of Moss Point is blessed with surface water. The Pascagoula and Escatawpa Rivers adjoin the north and west areas of the city. Numerous bays within the city connect to these major waterways. As the city has grown residential areas have moved along these bays resulting in several hundred waterfront homesites.</p> <p>Effective storm drainage is extremely important in maintaining the integrity of real estate in the city. The residential area bays are a vital part of that system. In many areas, clogging has reduced the effectiveness of bayou drainage. Rehabilitation will improve drainage for the adjacent community. Also, with improvement in water quality and subsequent improvement in tidal flow, marine habitat for shell and fish will be enhanced. The biology health of these waters is greatly dependent upon their depth. During significant temperature extremes increased mortality of fish and shellfish occurs.</p> <p>As the city is moving forward with restoration work to increase its socioeconomic footprint, those Bayou adjacent to the Audubon Center as well as several other residential area bays are prime candidates for landscaping, bird watching, and associated activities.</p> <p>Use also includes boating and fishing by others who launch boats from the city's public launches to take advantage of Moss Point's waterways.</p> <p>Liter by not least, waterfront properties are taxed at a higher rate, valuing the label of "waterfront".</p> <p>Through the water waterfront property owners have depended on these bays for drainage and have increased usage of same. Also, over time many areas of these waterways have eroded erosion and rotation resulting in limitation or loss of normal drainage and usage. Subsequent to Hurricane Katrina the City of Engineers drained debris without any dredging for depth. Attempts in that regard through public works have thus far been without success.</p> <p>With emerging funding sources on the horizon, now is the time to develop a study of Moss Point's multiple bayous leading to restoration of a more healthy and functional status by restoring stream depth and flow where indicated. Only then can the city's bayous possess improved water quality and marine habitat, as well as benefiting the community.</p>	Jackson	Yes	No		No	No	No	No	Yes	No	\$	500,000	\$	-		
Eco Restoration	2154	10/24/2014	<p>The overarching objective of this project is to advance our informational basis of physical/biochemical linkages in the Mississippi Sound (MS) and northern Mississippi Bay (MB) region through execution of field effort consisting of research cruises and moorings that obtain measurements needed to inform a state of the art modeling approach. The observations will characterize bottom sediment type, seasonal variation in sediment, nutrient and dissolved oxygen distributions, suspension and transport of sediments, order of surface and surface waves, and sedimentarily driven material exchanges between the MS and MB. The model system, supported by this knowledge, will be a platform that allows resource managers and restoration scientists to project the impact of RESTORE activities, thus enabling better planned restoration efforts that have a higher likelihood of successful success.</p> <p>Numerous coastal restoration projects in the state of MS have been proposed to meet RESTORE program goal http://www.mirestore.com/pages/overviewview.asp. Some of these efforts aim to restore hydrology patterns, marshes and barrier islands with the intent of mitigating the issues noted above, among others. In order to fully remedy harm and reduce risk to the natural resources of the Mississippi Gulf Coast, comprehensive understanding of the MS is required. Without RESTORE projects to resolve short lived issues, the overarching goal of the combined observational and model synthesis approach we have proposed herein is to advance our informational basis through execution of a targeted field effort and integrate the acquired knowledge into a state of the art modeling approach that will enable better planned restoration efforts, with higher likelihood of successful success, as well as advance our understanding of current and future vulnerability. To attain the needed informational basis on waves, currents, sediment transport, and distributions of sediment, nutrients and dissolved oxygen, we propose to utilize moored instrument arrays and shipboard sampling to record the critical physical, geochemical and biological measurements needed to characterize the processes and distributions of interest. These measurements will be used to inform and validate a model system that simulates the circulation, waves, sediment loading and biogeochemistry of the MS and the hydrodynamic and material exchange with the MB. The resulting modeling system will be ideally suited as a tool for scenario exploration that provides assessments and insight into the viability of proposed restoration projects and resource management strategies. In particular, the model will provide temporally varying distributions of nutrients, dissolved oxygen, salinity and suspended sediment, all of which contribute to vitality of ecosystem function in the MS.</p>	Hancock, St. Tammany, Mobile, Jackson, Harrison	Yes	Yes	1500%	Yes	Yes	Yes	No	No	No	\$	1,150,000	\$	-		
Eco Restoration	2155	10/17/2014	<p>By the year 2050, the global population is expected to surpass nine billion. As the population continues to grow, the ability for the world to feed itself will become increasingly more difficult. Environmental factors and limitations on water, land, energy, and other vital resources will further stress food production throughout the world. New technologies that do not compete with current human food production resources and processes are urgently needed to support the growing food demand.</p> <p>Fish is a major source of high protein food, and the demand for fish is increasing worldwide at a rate approximately double that of population growth. The world's oceans, however, cannot meet the increasing demand for fish. To accommodate production of the world's growing demand for fish, scientists are exploring what the ocean can provide when the world demands high protein diets. High protein diets require high protein diets, and fishmeal, the primary source of protein in marine species' diets, is in short supply given that it is derived from the world's oceans. Thus, to support continued aquaculture expansion, a new source of protein for aquafeeds that is not derived from the world's oceans and does not compete with terrestrial food production is urgently needed.</p> <p>Algae are a promising candidate for fishmeal replacement because species from the genus <i>Spirulina</i> have the density and resources necessary to support efficient algal biomass production. Further, the University of Southern Mississippi (USM), through its Gulf Coast Research Laboratory (GCRL) and Thad Cochran Marine Aquaculture Center (CMAC) affiliates, has the marine biology and aquaculture expertise necessary to conduct the algal biomass production and fishmeal replacement in future aquaculture facilities.</p> <p>General Atomics (GA) proposes to team with USM to establish an algae-for-aquaculture research center to demonstrate the value of algal biomass as a high protein ingredient in future commercial aquafeeds. A research-scale algae growth facility utilizing GA's existing technology will be constructed at USM, on or near the grounds of the GCRL. Algae strains high in protein will be the focus for research. The facility will initially utilize algae strains produced by GA, but subsequent facilities will utilize local Mississippi algae strains, after suitable isolation and optimization at GA. The algal biomass produced will be used to conduct fish feed trials at CMAC, using the substantial aquaculture research infrastructure already present as well as the cell biology, marine science, and analytical support capabilities of USM. The results of initial fish feed trials will be used to inform algal growth parameters to support the overall fish health and growth requirements in subsequent feed trials. The program will also allow USM to establish an aquafeed formulation and feed production capability which bridges the gap between algal growth and aquaculture feed and will provide more timely responses to feed validation requirements.</p> <p>The initial program is expected to run for 24-30 months. This will allow for construction and systemization of the algae growth facility and installation of the supporting analytical equipment and procedures, estimated to require 9-10 months, followed by operation of the facility for 15-20 months. After several months of algae growth, the initial algal biomass will be available for inclusion in feed formulations supporting fish feed trials. Fish species of interest include Shrimp, Fish, Trout, Sea Bass, and Cobia. Additional feed trials will be conducted at production scale as additional algal biomass is produced. The goal will be to show that algal biomass-containing aquafeeds yield a final fish product with health, growth, and taste comparable to that produced with current fishmeal feeds. Proof of the value of algal biomass as a substitute for fishmeal will confirm the economics of algal biomass production and will enable the establishment of commercial-scale algae growth facilities within Mississippi and elsewhere in the U.S. and the world.</p> <p>The benefits to the State of Mississippi include establishment of an algae-for-aquaculture industry in our area and include:</p> <ol style="list-style-type: none"> (1) Establishment of a world class algae-for-aquaculture research center at USM; (2) Establishment of a new high-tech farming industry that can be expanded to numerous other areas in the U.S. and the world; (3) Development of new high-tech jobs associated with high-protein algae production, feed formulation and production, and aquaculture; (4) Utilization of the State's abundant natural resources; 	Jackson/Harrison	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	\$	12,000,000	\$	-	

Eco Restoration	2165	11/7/2014	Environmental Geophysics Measurements for Coastal Restoration	<p>Dr. Craig Hickey, Dr. Leonardo Macelloni, Dr. Anne Diarck</p> <p>Description: The University of Mississippi proposes to employ relatively inexpensive acoustic, seismic, electrical and other geophysical surveying techniques to collect dense subsurface spatial information about barrier islands, marshlands, and coastal environments that have been negatively impacted by human and natural events. This information will complement information gathered from visual inspection, local sampling, and remote sensing, creating a more complete picture to inform coastal restoration efforts, including restoring wetlands and barrier islands using dredged sediments.</p> <p>Impacts to the Mississippi Gulf Coast are due to human modification of rivers and streams flowing into the Gulf altering the sediment deposition patterns as well as natural events such as hurricanes which can alter large sections of the landscape. Mitigating or reversing these impacts requires restoration of wetlands and barrier islands using dredged sediments, reintroducing native plants, and reworking structures to rivers and protecting themselves from erosional forces. These restoration projects require a multidisciplinary group of scientists equipped with the best remote sensing available. Much of the information is obtained by visual inspection and measurements obtained by local sampling. Spatially dense information is obtained from remote sensing but the same is not usually obtained for the subsurface.</p> <p>Geophysical investigations are an indirect method of obtaining generalised spatially dense sub-surface geologic information by using special instruments to make certain physical measurements (Reynolds, 2011). Near surface geophysical techniques have been used for geotechnical and environmental problems and several handbooks describing their use have been published (EPA, 1993; AICCE, 1998). A recent handbook has been published on agricultural applications (Stevie, Daniels and Ehsani, 2008). Numerous geophysical methods are applicable to coastal restoration and include: acoustic/seismic, electromagnetic and resistivity, gravity, optical sensing, radar, magnetic, as well as others. Most methods can be used on land, within the transition zone (marsh areas), and in the water.</p> <p>Geophysical surveys provides information to assist with the restoration of barrier islands, marsh lands, and coastal environments. It has the potential to provide information about the extent of subsidence, location and extent of freshwater aquifers, locations and extent of salt water intrusion, and the location and amount of land reserves for coastal restoration projects (Andrews et al., 2007). The cost of geophysical explorations is generally low compared with the cost of core borings or test pits, and considerable savings may often be affected by judicious use of this exploration method in conjunction with other methods.</p> <p>The University of Mississippi proposes to leverage its extensive experience in using acoustic, seismic, and electrical methods for surveying and mapping agricultural soils, monitoring sediment transport in streams, mapping sediment accumulation in reservoirs, and investigating hydraulic structures such as dams and levees in the context of coastal restoration. USACE's choice of seismic and electrical methods is based on the fact that these methods provide orthogonal information. Seismic methods use mechanical energy that returns to the surface after travelling some distance through the ground. The seismicity image map/section then be used to infer subsurface units/natures having sufficient differences in elastic properties that are important, for example, in modelling subsidence of barrier islands. Electrical methods utilize direct currents or low frequency alternating currents to determine the electrical properties of the subsurface. Most earth materials conduct electricity by the passage of ions in the pore water. Factors that affect the resistivity of soil-water mixtures include ionic concentration, porosity, surface conduction, tortuosity, and connectivity of phases. Therefore, these electrical methods are useful for delineating freshwater aquifers and well as the interface location of saltwater intrusions.</p>	Yes	No		Yes	Yes	No	No	No	No	No	\$	200,000.00	\$	-
Eco Restoration	2167	11/7/2014	Environmental Geophysics Measurements for Coastal Restoration	<p>Coastal marine ecosystems are crucial environments of the Gulf of Mexico, and the Mississippi Sound, that include important commercial fishery species, as well as threatened and unique species. Recent natural and anthropogenic stressors (including multiple Category 3+ hurricanes, as well as the Deep Horizon oil spill) within these GOM ecosystems have resulted in significant damage and loss of these critical resources. Thus, the restoration of water quality along the Mississippi coastline is crucial for residents and stakeholders. We propose to deploy a system of biological filters around the periphery of important GOM habitats (e.g., seagrass beds) to clear contaminants from the water column and improve water quality. Specifically, we will attach marine sponges to multiple deployed oyster blocks and divers will position these <i>Microsporum</i> identified habitats and/or between point source discharges and the habitat in question. Marine sponges are important filter feeders with pumping rates in excess of 1 gal per min, and many contain diverse and highly specialized microbial populations that have important roles in biogeochemical cycling (e.g., nitrification processes). Research by the Statters and Goehfeld has demonstrated significant clarification of particulate organic carbon (POC) and microbial metabolism of dangerous nitrogen species into biologically useful nitrogen. Moreover, we can coat sponges with specific microbes that are known to clear PHEs and other toxic metabolites. We will position sufficient biological filters in a, oyster blocks w/ sponges to clear the water near habitats of interest, and through resources in USACE's Environment Toxicology Research Program (ETRP), we will monitor changes in the water quality post-deployment. The data will be analyzed using appropriate time series statistics, as well as community profiling tools, and a final report will be provided to the appropriate resource managers to encourage and inform improvements in water quality remediation and habitat restoration, while outreach lectures will be provided to convey the results of the study and the implications for the regional stakeholders.</p> <p>The budget provided represents the aforementioned remediation for a single site only. This project can stand alone based on the efforts of a UM field collection team, as well as the laboratory efforts of the UM ETRP. However, value added mapping and/or issue analysis options would be beneficial (see Restore Projects headed by Eason, Dierks, and Statters, respectively).</p> <p>University of Mississippi: Marc Statters, Deborah Goehfeld, John Remoldi, & Kristine Willett</p>	Yes	Yes	3000%	No	No	Yes	No	No	No	No	\$	211,763.00	\$	-
Eco Restoration	2168	11/7/2014	Biological Filtration Using Sponges to Remediate Gulf of Mexico Coastal Contaminants	<p>In recent years, direct and indirect anthropogenic impacts on Gulf of Mexico, and the Mississippi Sound, coastal ecosystems have reached critical levels. In addition to the recent oil spill, this region experiences nutrient enrichment and pesticides from agricultural run-off, metals and chemical pollutants from industrial discharge, and a variety of pharmaceutical and personal care products from community wastewater. These multi-stressors emphasize that as stakeholders and future generations of scientists deal with these increasingly complex environmental issues, they will need training in novel interdisciplinary skills and perspectives that will enable them to tackle these issues in creative ways. Using the GOM as a natural laboratory, we will train graduate students in the varied effects of aquatic stressors using cutting edge technologies from a diversity of scientific disciplines (i.e., Biology, Chemistry, Engineering, Geology, and Pharmacy), and we will apply these lessons to societal implications (e.g., Restoration Management, Land Use Policy). The Environmental Toxicology Research Program (ETRP) at the University of Mississippi utilizes these lessons using a variety of techniques including: 1) Biomarker studies (cellular/molecular processes), 2) Environmental Processes (organismal- to community-level organizational effects), 3) Fate & Transport (chemical analyses), 4) Risk Assessment, and 5) Environmental Remediation. We propose to develop an intensive summer <i>Academy</i> with broad training and multiple perspectives in these core research areas. Participants will receive training and mentorship from ETRP scientists, as well as collaborate in government and industry laboratories to prepare them to deal with current and future Gulf health issues. Specifically, we will recruit interested students (undergraduate, graduate and high school) and stakeholders from Mississippi communities for month long summer sessions divided between the UM Field Station (Oxford MS) and the MS coast. During the first third of the course, students will receive focused lectures on water quality analysis and biomarker surveys. The team will then drive to the Gulf Coast Research Laboratory where they will learn field monitoring procedures, and habitat remediation/restoration approaches.</p> <p>We plan to recruit 24 students into each of two summer sessions (i.e., June and July) for a total of 48 stakeholders trained each year. However, if funding will only allow a single cohort to be trained, the budget provided represents the aforementioned training for one month and 24 students only. This education and outreach program can stand alone based on the efforts of the UM ETRP personnel and their collaborators, but we will attempt to leverage outreach opportunities with other funded Restore Projects to provide greater context for trainees.</p> <p>University of Mississippi: Marc Statters, Deborah Goehfeld, John Remoldi, & Kristine Willett</p>	Yes	No		No	Yes	Yes	No	No	No	No	\$	391,457.00	\$	-
Eco Restoration	2169	11/7/2014	Gulf of Mexico Education & Outreach: Training the Next Generation of Environmental Health Managers	<p>Marine coastal communities of the Gulf of Mexico, and the Mississippi Sound, represent important commercial fishery grounds, as well as habitats that support threatened species and provide essential coastal protection and recreation opportunities. Recent natural and anthropogenic stressors (including multiple Category 3+ hurricanes, as well as the Deep Horizon oil spill) to the GOM have resulted in significant damage and loss of these critical ecosystems and the people they support. Thus, the management of these important ecosystems along the Mississippi coastline is crucial for residents and stakeholders. This requires cutting edge monitoring strategies that focus on measuring the concentrations of contaminants: 1) in local seawater and sediment, and 2) in species tissues. We propose to acquire two incredibly powerful monitoring instruments to enhance the existing University of Mississippi Environmental Toxicology Research Program (ETRP) resources. Specifically, we will upgrade our existing Gas Chromatography/Mass Spectrometer (GC/MS) to address contaminant concentrations in seawater and sediment at resolutions that are approximately an order of magnitude more sensitive than our current instrument. Likewise, we will also upgrade the ETRP <i>Synapt</i> proteomic mass spectrometer workstation to include a MALDI TOF interface to measure contaminants in tissues of affected species. While our current resources enable us to perform the studies proposed in other RESTORE proposals (Statters), these upgrades will provide state-of-the-art instrumentation for UM ETRP researchers, and will provide Mississippi resource managers access to sophisticated monitoring approaches that focus on the fate and transport of contaminants in the environment, as well as the stress responses of affected species in their entirety (i.e., the proteome).</p> <p>University of Mississippi: Marc Statters, Deborah Goehfeld, John Remoldi, & Kristine Willett</p>	Yes	Yes	10000%	No	Yes	Yes	No	No	No	No	\$	400,000.00	\$	-
Eco Restoration	2170	11/7/2014	Gulf of Mexico Health Assessment: Instrumentation for Environmental Monitoring	<p>Hard-bottom reefs are crucial environments of the Gulf of Mexico, and the Mississippi Sound, that represent essential habitats for many important fishery species, as well as threatened marine life, and organisms that produce chemical compounds with potential biomedical importance (e.g., gorgonians and sponges). Recent natural and anthropogenic stressors (including multiple Category 3+ hurricanes, as well as the Deep Horizon oil spill) to GOM hard-bottom reefs have resulted in significant damage and loss of these critical commercial resources. Thus, the restoration and management of these important ecosystems along the Mississippi coastline is crucial for residents and stakeholders. Our team of marine scientists, environmental toxicologists and natural product researchers proposes to develop an environmental monitoring program to encompass current hard-bottom reefs along the MS coastline. Specifically, at each site we will collect replicate seawater and sediment samples (in-ID only) monthly over the course of one year, for the following fate and transport analyses: 1) Total coliform levels, 2) PHE concentrations, 3) Heavy metal profiles, and 4) the presence of other important anthropogenic contaminants (e.g., endocrine disruptors). In addition, we will monitor the health of the hard-bottom reefs through time by evaluating changes in biomass, biodiversity, and percent cover, as well as biochemical parameters indicative of stress (i.e., changes in protein, carbohydrate, lipid and chemical constituents). The data will be analyzed using appropriate time series statistics, as well as community profiling tools, and a final report will be provided to the appropriate resource managers to encourage and inform improvements in water quality remediation and habitat restoration, while outreach lectures will be provided to convey the results of the study and the implications for the regional stakeholders.</p> <p>While we recommend complete coverage of MS hard-bottom reefs, it is possible that regional resource managers may wish to focus on a specific resource site and the data from that study can drive models for additional sites throughout the GOM coast. Thus the budget provided represents the aforementioned sampling regime for a single site only. This project can stand alone based on the efforts of a UM field collection team, as well as the laboratory efforts of the UM Environmental Toxicology Research Program and National Center for Natural Products Research. However, value added mapping and/or issue analysis options would be beneficial (see Restore Projects headed by Eason, Dierks, and Statters, respectively).</p> <p>University of Mississippi: Marc Statters, Deborah Goehfeld, John Remoldi & Kristine Willett</p>	Yes	No		No	Yes	Yes	No	No	No	No	\$	294,392.00	\$	-
Eco Restoration	2171	11/7/2014	Monitoring the Health of Coastal Gulf of Mexico Oyster Beds	<p>Oyster reefs are crucial environments of the Gulf of Mexico, and the Mississippi Sound, that represent important commercial fishery species as well as biological sinks of anthropogenic contaminants. Recent natural and anthropogenic stressors (including multiple Category 3+ hurricanes, as well as the Deep Horizon oil spill) to GOM oyster reefs have resulted in significant damage and loss of these critical commercial resources. Thus, the restoration and management along the Mississippi coastline is crucial for residents and stakeholders. Our team from USACE's Environment Toxicology Research Program (ETRP) proposes to develop an environmental monitoring program along the MS coastline to encompass current and planned deployment of oyster reefs. Specifically, at each site we will collect replicate seawater and sediment samples (in-ID only) monthly over the course of one year, for the following fate and transport analyses: 1) Total coliform levels, 2) PHE concentrations, 3) Heavy metal profiles, and 4) the presence of other important anthropogenic contaminants (e.g., endocrine disruptors). In addition, we will monitor the health of the oyster reefs through time including changes in biomass and percent cover, as well as biochemical parameters indicative of stress (i.e., changes in protein, carbohydrate, and lipid). The data will be analyzed using appropriate time series statistics, as well as community profiling tools, and a final report will be provided to the appropriate resource managers to encourage and inform improvements in water quality remediation and habitat restoration, while outreach lectures will be provided to convey the results of the study and the implications for the regional stakeholders.</p> <p>While we recommend complete coverage of MS oyster reefs, it is possible that regional resource managers may wish to focus on a specific resource site and the data from that study can drive models for additional sites throughout the GOM coast. Thus the budget provided represents the aforementioned sampling regime for a single site only. This project can stand alone based on the efforts of a UM field collection team, as well as the laboratory efforts of the UM ETRP. However, value added mapping and/or issue analysis options would be beneficial (see Restore Projects headed by Eason, Dierks, and Statters, respectively).</p> <p>University of Mississippi: Marc Statters, Deborah Goehfeld, John Remoldi & Kristine Willett</p>	Yes	No		No	Yes	Yes	No	No	No	No	\$	287,952.00	\$	-

Eco Restoration	2122	11/7/2014	<p>Seagrass beds are crucial environments of the Gulf of Mexico, and the Mississippi Sound, that represent essential habitats for many important fishery species as well as threatened marine life. Biological effects of nutrients and anthropogenic contaminants, and both for coastal residents and storm surge. Recent natural and anthropogenic stresses (including multiple Category 2+ hurricanes, as well as the Deep Horizon oil spill) to Gulf seagrass communities have resulted in significant damage and loss of these critical resources. Thus, the restoration and management of these important ecosystems along the Mississippi coastline is crucial for residents and stakeholders. Our team of marine scientists and environmental toxicologists from LMU's Environmental Toxicology Research Program (ETRP) proposes to develop an environmental monitoring program along the MS coastline to encompass a variety of seagrass communities. Specifically, at each site we will collect replicate seawater and sediment samples (n=10 ea), monthly over the course of one year, for the following data and transport analyses: 1) fecal coliform levels, 2) PAH concentrations, 3) heavy metal profiles, and 4) the presence of other important anthropogenic contaminants (e.g., endocrine disruptors). In addition, we will monitor the health of the seagrass community through time including changes in biomass and percent cover, as well as biochemical parameters indicative of stress (i.e., changes in proteins, carbohydrates, lipid, and photosynthetic function). The data will be analyzed using appropriate time series statistics, as well as community profiling tools, and a final report will be provided to the appropriate resource managers to encourage and inform improvements in water quality remediation and habitat restoration, while outreach lectures will be provided to convey the results of the study and the implications for the regional stakeholders.</p> <p>While we recommend complete coverage of MS seagrass beds, it is possible that regional resource managers may wish to focus on a specific resource site and the data from that study can drive models for additional sites throughout the GOM coast. Thus, the budget provided represents the aforementioned sampling regime for a single site only. This project can stand alone based on the efforts of a LMU field collection team, as well as the laboratory efforts of the LMU ETRP. However, value added mapping and/or tissue analyses options are would be beneficial (see Restore Projects headed by Eason, Derks, and Sletten, respectively).</p> <p>University of Mississippi: Marc Sletten, Deborah Gochfeld, John Rimoldi & Kristine Whitte</p>	Yes	No	No	No	Yes	No	No	No	No	No	No	No	No	\$ 287,192.00	\$ -	
Eco Restoration	2123	11/7/2014	<p>Background The Mississippi Sound and surrounding estuarine areas comprise a large portion of the State territorial waters in a unique geological, physiographic, and economic setting. Vast urbanized coastal areas adjacent to natural and recreational areas adjacent to very shallow water (0-1m) make seabed characterization very challenging. Traditional marine geophysical methods employing seismic/acoustic devices suffer strong absorption from the prevalent coarse sediment seafloor, and/or experience high noise levels from signal bouncing in the shallow water, while nearby land requires integration of offshore/onshore geophysical methods (i.e. Lidar topography/multibeam bathymetry, marine/farina/resistivity).</p> <p>Project goal The project is designed to employ innovative geophysical/geological methods to characterize the geology and morphology of Mississippi Sound and its important tributary estuaries. Geophysical and geological data integration will facilitate the creation of a multi-attribute geo-model and provide the fundamental baseline for restoration/sustainability activities including marine geo-hazards assessment, ecosystem assessment and restoration, contaminants mapping, marine infrastructures, sediment dynamics, beach nourishment, etc.</p> <p>Project Description MMS-CMRE NIIST at the University of Mississippi has a long and varied experience in geophysical and geological exploration of the very shallow coastal zone. We have developed/customized geophysical tools to better image the seabed and the shallow subsurface. Multibeam Bathymetry and Seabed Scan Sonar are used to image seabed morphology, characterize sediment texture, map gas gas, crater beds, ship wrecks etc. in multi-frequency chirp subbottom and linebeam seismic profiles image buried reefs, gas pockets, sediment thickness, marine magnetometer surveys image buried metal objects. Geological methods include core logs, gravity core logs, grab sampling, geophysical and geomechanical analysis of sediment and possible contaminants. The resistivity profiles can be acquired in conjunction with seismic profiles to better define fluids circulation in the subsurface, i.e. fresh water table position/depth, buried seagrass, gas, tar and additional hydrocarbon pollution. We also have vast experience in processing and interpreting the various datasets that we collect, often devising innovative techniques to suit particular problems and challenges.</p> <p>Relationship to RESTORE goals Characterizing the seabed and shallow subsurface of Mississippi's coastline and nearshore is vital to the biologic and economic health of the region and needed in order to evaluate natural and anthropogenic changes to this valuable resource area. This project will identify debris/hazards and damaged areas that need to be addressed in order to ensure personal, recreational, and economic safety in the area. It will inform habitat and ecosystem management and monitoring into the future, and assure that maximum care is taken in coastal health recovery and management.</p> <p>Methods A series of shallow-water cruises would be scheduled to collect geological and geophysical data from the Sound and estuaries. The whole suite of equipment can be operated from a small vessel that can easily navigate the Sound. Many forms can be acquired contemporaneously making data acquisition fast efficient and cost effective.</p>	Hancock, Harrison, Jackson	Yes	No	No	Yes	Yes	Yes	No	No	No	No	No	No	No	\$ 125,000.00	\$ -
Eco Restoration	2124	11/7/2014	<p>Description: Restoration of the aquatic habitats of rivers draining into the Mississippi Sound, and of the Sound itself, is a goal of significant interest to the people of Mississippi. Improving the quality and quantity of fish stocks can be a major economic impact on the Gulf region by enhancing both sport and commercial fishing industries. The purpose of this proposal is to provide a low-cost, autonomous device for the acquisition of the data needed by the Mississippi Department of Environmental Quality (MDEQ) and other stakeholders to monitor the physical condition of near-shore and coastal fisheries, thereby providing a metric for assessing the progress and ultimate success of restoration efforts. It is also worth noting that the proposed device may find of special utility both in the initial decision-making process regarding proposed development in or near Sensitive Fish Habitats and also during and following any permitted development by monitoring fish populations, thus providing a means of ground-truthing predictability of impact with observational data.</p> <p>We propose to leverage the considerable expertise acquired at the National Center for Physical Acoustics (NCPA) and the University of Mississippi (UM) during its previous federally funded research and development project on the counting and sizing of catfish stocks in commercial aquaculture ponds (Chambers et al. 2002, 2010; Heffington et al. 2006). Specifically, we propose to adapt two existing high-frequency (400 kHz) echosounders currently carrying out systems that were originally developed to size and count catfish in commercial catfish ponds to a smaller lake in rivers draining into the Mississippi Sound or in the sound itself. A typical catfish pond ranges in size from 0.4 to 7.2 hectares, with the most desirable size being about 4 hectares. Such ponds are typically about 100 meters in length and 1 to 2 meters in depth. The current device can accommodate this and deeper areas of most rivers and of the Sound itself, if desired. The current version of the sonar is capable of 1.0m (0.4-m) range resolution combined with an approximately 100-meter (100-yard) maximum range. Areas of lesser depth can be sampled by use of higher frequencies, e.g., 1 MHz, although at the cost of reduced range.</p> <p>Use of the system may be divided into two parts, calibration and experimental measurements. The calibration portion is necessary to create accurate acoustic target strength (TS) with the size of fish in the target population. This is described in SAC Progress Report 12 (2010). Briefly, a seine net is used to collect a sample of fish which are weighed and then allowed to swim back into the river through a PVC pipe. The slow descent of the seine causes the reflection of the pipe, and the returning echoes are recorded. The statistical relationship between target strength and measured fish weight is then determined. During experimental measurements of free-swimming fish, the pipe is removed and the data recorded from each of several hundred pulses (aka 24-captures/24). However, an additional step is necessary to adjust each recorded TS for attenuation of the water and scattering of the acoustic wave. This is done by using the total time of flight of the signal to calculate the distance to the fish and applying predetermined correction factors. The final result will consist of one or more plots of the number of fish vs. size, weight or other desired endpoint.</p> <p>Budget: The cost entered in the form is for one year. This includes adapting and updating two detection systems, travel (two trips to the coast for calibration and measurement with two systems), salaries, and F&A.</p>		Yes	No	No	Yes	No	No	No	No	No	No	No	No	\$ 215,000.00	\$ -	
Eco Restoration	2181	11/1/2014	<p>The goal of ecological restoration is to provide a productive and sustainable ecosystem that results in the increase in biodiversity and nutrient retention. In near shore marshes, plant diversity and species differences lead to carbon sequestration, changes in water quality and nutrient retention. However, such wetlands are generally either nitrogen or phosphorus limited and the availability of these essential nutrients affects plant community type and species richness. Therefore, an essential step in the restoration of Mississippi Sound is the understanding the temporal aspect of water quality before and during restoration projects.</p> <p>Water quality indexes have been based on measurements of DIN, DIP, chlorophyll a, water clarity, and dissolved oxygen; however, because no DIP sensors are available such measurements are made on discrete samples and the availability of sending people to sea. As a result there are limited temporal observations especially on hourly to daily time scales and when weather is bad. In contrast, studies of submersed aquatic vegetation (SAV) typically focus on off-the-shelf sensors (temperature, salinity, pH, DO, turbidity light attenuation), but lack critical information about nutrient concentrations.</p> <p>To deal with these shortfalls, we have been developing and utilizing continuous fluid samplers (Domsamplers) for oceanic, estuarine, riverine, and land-based borehole research (Vibart et al. 2011). Domsamplers use osmotic gradients to draw fluids into small bore tubing (Samsa et al., 2004). Such systems have been designed for studies lasting days (samples every 15 minutes) to 5 years (samples every week). Samples also can be preserved in situ to stabilize dissolved metals, nutrients and microbial community structure (Riddiart et al., 2013).</p> <p>We propose to deploy new state-of-the-art water quality monitoring systems that couple standard sensor measurements with Domsampler systems that are specifically designed to preserve fluids for nutrients, trace metals, and microbial community structure. We move beyond standard nutrient measurements to include trace metals and microbes. Trace metals can be toxic and are mobilized by reduction of sulfide in Spartina alterniflora and contaminated natural sediments the latter resulting from changes in redox state. Samples will undergo standard microbial analyses with a particular interest in E.coli, an indicator species for human health issues. However, the entire biome will be assessed because not much is known about the temporal aspects of microbial structure and function in these environments.</p> <p>We propose to deploy 4 units in representative environments within Mississippi Sound for one year. Each unit will be recovered and redeployed every quarter (daily record) during which a companion deployment of a week in duration will be deployed and recovered (hourly record). Samples will be analyzed at LMU and other universities (e.g. USM). Fabrication, deployment, recovery, and analytical costs are estimated at \$380k with university overhead.</p>	Jackson/Harrison	Yes	No	No	Yes	No	No	No	No	No	No	No	No	\$ 380,000.00	\$ -	
Eco Restoration	2182	11/1/2014	<p>The goal of ecological restoration is to provide a productive and sustainable ecosystem that results in the increase in biodiversity and nutrient retention. In near shore marshes, plant diversity and species differences lead to carbon sequestration, changes in water quality and nutrient retention. However, such wetlands are generally either nitrogen or phosphorus limited and the availability of these essential nutrients affects plant community type and species richness. Within marsh environments nutrients and availability of water affect plant growth as a function of competition, physical stress and nutrient limitation. Therefore, continuous monitoring of these constituents is essential for restoration projects in Mississippi Sound to understand the temporal aspect of water quality before and during restoration projects and to elucidate the effect of tidal forcing on the subsurface environment. For example, temporal monitoring within sandy marsh and coastal aquifers show a tidal influence on nutrient consumption and microbial productivity within the system (e.g., Sansone et al., 2008).</p> <p>We propose to deploy novel sampling and sensor capabilities in piezometer (boreholes) within and near restoration projects to monitor nutrient, trace metal, salinity, and water level in the subsurface. Such data will provide an indication of water flow, availability of fresh water, the transport and consumption of nutrients, and the mobilization of metals in response to changes in redox state and productivity of microbial communities within sediment. This proposed work goes beyond standard analyses to include trace metals because mobilization of urban and industrial sources of trace metals (e.g., Fe, Mn, Cu, Cr, Pb, Zn, Cd, and Hg) through natural redox changes can reach concentrations that are detrimental or toxic in tidal creeks, waterheds, and in the subsurface.</p> <p>The novel system that we propose to deploy couples standard sensor measurements with Domsampler systems that are specifically designed to preserve fluids for nutrient and trace metal concentrations. Domsamplers are continuous fluid samplers that have been utilized for oceanic, estuarine, riverine, and land-based borehole and geometer research (Vibart et al. 2011). Domsamplers use osmotic gradients to draw fluids into small bore tubing. The slow pump rate and small bore result in plug flow, minimizing dispersion (Janssach et al., 2004). Such systems have been designed for studies of days (samples every 15 minutes) to 5 years (samples every week) and can be designed to preserve samples in situ for later laboratory-based analysis of dissolved metals.</p> <p>We propose to deploy 4 units in representative environments within Mississippi Sound proposed restoration projects for one year. Each unit will be recovered and redeployed every quarter (daily record) during which a companion deployment of a week in duration will be deployed and recovered (hourly record). Samples will be analyzed at LMU and other universities (e.g. USM). Fabrication, deployment, recovery, and analytical costs are estimated at \$280k with university overhead included.</p>	Mobile/Jackson/Harrison	Yes	No	No	Yes	No	No	No	No	No	No	No	No	\$ 280,000.00	\$ -	

Eco Restoration	2183	11/11/2014	Restoration and monitoring projects in Mississippi Sound require STEM (Science, Technology, Engineering, and Mathematics) trained personnel and a community that appreciates the benefits of a healthy ecosystem. However, there is a deficiency in both that could stymie the growth, continuity and quality of proposed restoration projects. To address these deficiencies and to position Mississippi for the future we need to develop a child's capacity to develop theory based learning, which is inherent and can be fostered by promoting curiosity and by exposing them to a spectrum of experiences. Such experiences play a vital role in achieving proficiency in science understanding, but unfortunately, a myriad of budgetary and socioeconomic reasons limits opportunities for youth, leaving many economically disadvantaged students trailing in STEM fields (NRC, 2007). To meet these challenges, the RETINA program provides schools with a cost effective and administratively beneficial way to broaden the scope of student exposure through its STEM curriculum. The RETINA Program is a 50-minute per day program that lasts 5 days. The program blends formal classroom instructional activities with hands-on, 4th development in a team-based setting conducted by the teacher and guided by national science standards that are set for each grade (e.g., ecology and water quality). There are four different activities per grade that are presented during the first four days. Activities are chosen with the intention of integrating technology under the umbrella of a continuum of difficulty across the grades. The program focuses on interactive participation in the design and development of simple robotic and sensor systems, providing a range of challenges to engage all students through project-based learning and provide a medium for communicating interest, experience, and challenges on the fifth and final day of the program. The RETINA program has been designed, modified, and tested in several diverse schools in California and Vermont. It is now poised to expand. Because RETINA's hands-on activities require (1) components that may be prohibitively expensive in today's educational fiscal climate, (2) secure storage space, and (3) technology savvy individuals to maintain systems, the RETINA Program is designed as a traveling program that gives many students access to the same resources. We propose to (1) supply two towed cargo vans with all of the materials necessary for teachers to conduct the educational modules, (2) provide educators with program materials (lesson plans, PowerPoint presentations, homework, instructional videos, and images) and STEM professional development sessions, (3) introduce the RETINA Program within school systems to engage students, and (4) organize a community service organization to provide technical and logistical support to maintain and refurbish modules and to transport cargo vans from school to school. Each van will be loaded with modules to accommodate 5 different classrooms per grade for each of the K-6 grades at a particular school. Given a week long program, one cargo van can reach ~20 different schools per year (5,000 students). With the two vans proposed herein the cost per student reached per year is ~\$1, based on an initial cost of \$570K (2 year award). Future costs to maintain and transport systems can be as low as ~\$10K for each cargo van per year (~\$0.05 per student) and supported by a community organization. Additional vans and professional development can be added to reach each of the 447 elementary schools in Mississippi.	Peer River, Houston, TX; Hancock, Stone, St Tammany, Mobile, Jackson, Pearl River, Forest, Parrish, Harrison, George	Yes	Yes	2000%	No	Yes	No	No	No	No	No	No	No	\$ 570,000.00	\$ -	STEM Curriculum
Eco Restoration	2184	11/11/2014	Overview and Motivation. The collection of restoration science data in the Mississippi Gulf Coast will require the development of innovative new sensors and deployment platforms. New sensors are needed to efficiently collect important chemical and biological data to characterize the health of the Mississippi Sound Estuary. In addition to the sensor designs, new, low cost deployment platforms are needed to provide the vehicle to integrate the sensors into off-shore data collection systems. Project Goal: Create a yearly design competition among engineering and engineering technology students at all Mississippi universities that will address the needs of the restoration science community and provide critical science data. Project Description: Collecting ecosystem data in a marine environment requires interdisciplinary engineering design to create compact and robust platforms that can be easily deployed and recovered. These data collection platforms must operate in the marine environment of currents, safety and interference from fishing boats. The design of marine data collection platforms will require students to work as teams with representatives from different engineering disciplines. Based on the requirements developed yearly by the restoration science community, students at Mississippi universities will research and design solutions for new data collection platforms. These designs will be judged by a committee from the university and restoration science community and a prototype of the winning design from each university will be built. The prototypes will be judged and the winning design will be built and deployed to collect the needed data. The Mississippi Mineral Resources Institute (MMRI) at the University of Mississippi has a long history of designing, building, deploying and recovering marine data collection platforms. We will use this expertise and the resources of the MMRI Marine Technology shop to build multiple copies of the winning design, deploy and recover them in the Mississippi Gulf Coast. Budget and Timeline Each team would be supplied with a budget of \$1500 per year for materials and supplies. The cost of working prototypes, with all instruments, would be dependent on the cost of required instruments and is estimated to be \$150,000 per year. The cost to build, deploy and recover the final winning design is estimated at \$250,000 per year, including instruments, for a yearly cost of approximately \$425,000.	Hancock, Stone, St Tammany, Mobile, Jackson, Pearl River, Orleans, Harrison	Yes	No		No	Yes	No	No	No	No	No	No	\$ 425,000.00	\$ -		
Eco Restoration	2185	11/11/2014	Restoration and monitoring programs in Mississippi require STEM (Science, Technology, Engineering, and Mathematics) trained personnel and an enlightened, educated community that is cognizant of the need for a healthy coastal ecosystem. However, there is a deficiency in both that could stymie the growth, continuity and quality of such proposed programs. Middle school students, in particular, are at the crossroad between a future in a STEM career and one that typically lacks scientific and environmental influences. To engage this demographic, we have developed the SS-RDV (Seafood Recovery and Oceanized Disposable Vehicle) summer camp, which is a unique STEM-oriented summer program offered to students entering grades 6th to 8th. We propose to offer the SS-RDV Summer Camp throughout the state of Mississippi, but in particular, for this call, in southern Mississippi. SS-RDV Summer Camp is a week long day camp that has an overarching theme that revolves activities around an oceanic research vessel. The science program is based on exploration and exposing students to new ideas and concepts in a stimulating, confidence building atmosphere. Within this scientific theme students are engaged in challenging project based and team-oriented problem solving activities. These activities represent functional technologies that are needed to achieve successful real-life missions and lead to the students creating innovative missions that the students devise. During the camp, students are challenged to effectively communicate, create, and solve problems while completing practical projects and performing real-world tasks. Workshops, schematics and instruction guide students toward success and understanding in technical and scientific activities such as: •Scientific method •Buoy exploration technique •Electronic circuits and computers •Underwater robotics •Marine ecology •Buoy flying ecosystem composition •Automated buoy cover •Sensor calibration and data interpretation •Group communication and collaboration •Risk taking and responsibility SS-RDV Summer Camp was initiated in Oxford, MS in 2014. The program will be offered for one week in each of four Mississippi towns in 2015 (Dorset, Tupelo, Nesh, Springs, and Southaven) through the support of CDEB, and National Science and Technology Center. We propose to expand the program to dozens of other towns in southern Mississippi and to provide more than one week at a given venue. A team of educators (one instructor and 3 interns) can oversee 6 camps per summer with 28 students per camp (total of 168 students). Because of the technical nature of the camp an introductory week is necessary. We also reserve an extra week for the interns (early college or graduating high school seniors) to develop/improve an activity, providing the interns with	Hancock, Stone, St Tammany, Mobile, Jackson, Pearl River, Forest, Parrish, Washington, Harrison, George	Yes	No		Yes	Yes	No	No	No	No	No	\$ 40,000.00	\$ -	STEM Curriculum		
Eco Restoration	2187	11/11/2014	Restoration and monitoring systems in Mississippi require STEM (Science, Technology, Engineering, and Mathematics) trained personnel and an enlightened, educated community that is aware of the benefits of these actions for the future health of the Mississippi Sound and for maintaining or improving all of the activities and benefits that mankind has expected from the Mississippi Sound. One of the best ways to reach a community is by providing an exciting and stimulating hands-on activity to student that relay the excitement to their parents. Given the breadth of potential science and engineering topics that excite children, we propose to focus on interactive participation in the design and development of simple robotic systems through team-based and project-based learning. Thus, young students experience discovery through technology in a collaborative atmosphere. We propose to extend an educational/outreach program that is currently operating in northern Mississippi to southern Mississippi and to the entire state. The program introduces fourth grade students to the ecology of offshore organisms (utilizing national science standards) and a mechanism to study these organisms using underwater remotely operated vehicles (ROV). The program begins with an introductory assembly-style presentation to all of the 4th grade students at a particular school. This presentation introduces offshore organisms, ecology, healthy ecosystems, and the functionality of ROVs while exposing students to potential careers. Then one class at a time is introduced to parts, motors, and switches to build a simple, but functional ROV. Student teams then test the operational capabilities of their ROV and modify their ROV to complete a specified task or to get a desired outcome. The hands-on, interdisciplinary, and applied science nature of this program sets the stage for fun, rewarding learning opportunity and provides a real-world framework for understanding ecology and technologies that are active in the Gulf of Mexico. When students are finished with the ROV activity, they are given a sticker and homework (that can be completed in class) to provide a foundation for discussing the activity with siblings and parents. We propose to expand this program to reach many of Mississippi's 447 elementary schools. We request \$95K for salaries, supplies, and travel (gas/riding) to reach 80 individual schools (~8,000 fourth grade students) with the help of volunteers and unpaid student interns.	Hancock, Stone, St Tammany, Mobile, Jackson, Pearl River, Forest, Parrish, Washington, Harrison, George, Hancock, Stone, St Tammany, Mobile, Jackson, Pearl River, Forest, Parrish, Harrison, George	Yes	No		Yes	Yes	No	No	No	No	No	\$ 95,000.00	\$ -	STEM Curriculum		
Eco Restoration	2188	11/11/2014	Critical to all four of the proposals that will be submitted by Mississippi to RESTORE is the need to know the water depth (bathymetry) and substrate composition in Mississippi Sound (e.g., mud, sand, hard substrate). More than half of Mississippi Sound is <3m deep, restricting navigation to small, low draft vessels and severely limiting the swath width of multi-beam sonars that are typically used to map the seafloor. Even shallower are the many sites that harbor vital grass, submerged aquatic plants, and future sites for restoration projects. While airplane-based LIDAR has been used to map shallow coastal zones, this technology is limited where there are obstructions to the surface and is expensive to collect, and does not provide a context for submersed top and structure. We propose a solution to this problem that affords an expensive mapping program for these shallow water areas with the resolution necessary to track temporal change in seafloor relief and to discern substrate structure and type. To complete such operations we propose to use a fleet of autonomous instrumented (e.g., single beam sonar, navigation and communication hardware) surface boats (kayaks) that is responsive to a manned boat (e.g., Boston Whaler) with a multi-beam system and a sub-bottom chirp sonar. This automation exists (e.g., Mchavac et al., 2009; Kets and Mas, 2009) and has been expanded upon for gradient following (e.g., Adams et al., 2013). Multi-robot systems offer many advantages over a single system, including redundancy, coverage and flexibility. One of the key technical considerations is coordinating individual units. We have designed and fabricated a new low cost autonomous surface vessel (ASV) that is capable of autonomous navigation using the cluster space control technique. These ASVs are monitored by a centralized controller, implemented via a sea-based computer that wirelessly receives ASV data and relays drive commands that are monitored by humans. Humans can intervene to adjust spacing based on visual cues and bathymetric data that are relayed from the ASVs. Thus, our cluster space control approach allows one to get the best quality data in an otherwise treacherous seafloor terrain. Furthermore, the reduced presence provides a measure of quality control for the multi-beam system and chirp sub-bottom sonar on the command vessel. We propose to fabricate 8 autonomous systems boats that will respond to a master computer on a command ship. Specifically we will use a Boston Whaler with pole mounted multi-beam and sub-bottom profiler sonars to tow the fleet of ASVs to the sites of interest. Then the ASVs will be initialized and follow information behind the command boat. We will use Mike-A-Robot-governor@kayaks at a speed of 10 knots then can go 20 knots for 8-10 hours and lease a Boston Whaler for the command vessel. With side by side ASV operation with 10 meter spacing and at 10 knots, we will be able to cover a 5 km2/hr or 14 km2/day (3,300 acres). This will provide a bathymetric map with centimeter resolution, characterize sediment type, and provide an indication of substrate stratigraphy. Each kayak will cost ~\$18K to purchase, instrument, and integrate with the aid of a graduate student, engineering technical support, and a small operator team. These kayaks will be integrated into the command structure during Year 1. For Year 2 we propose 20 days of operation in Mississippi Sound to cover ~700,000 acres or 17 square miles. The total cost of the preparing the vessels in Year 1 and operating them in the field for 20 days in Year 2 is \$600K, but will provide 17 square miles of data in a cost frame that can be received yearly at a much reduced cost to monitor change in bathymetry to establish depositional and erosional rates within Mississippi Sound.	Jackson, Harrison	No	Yes	2000%	No	Yes	Yes	No	No	No	No	No	\$ 650,000.00	\$ -	Equipment development and purchase	

Eco Restoration	2189	11/12/2014	<p>The National Oceanic and Atmospheric Administration highlights the importance of the marine sector. 40% of every job in the United States is marine related and over one-third of the U.S. Gross National Product originates in coastal areas. However, the number of trained engineers from institutions of higher learning that have a understanding of the challenges associated with working within the marine sector are insufficient and do not meet community needs. For example, remotely operated vehicles (ROV) in 2015 are anticipated to have net revenues of \$48 with an order of magnitude more spent on operations. Similarly, investment in AUVs is advancing with a projected increase in more than a thousand AUVs (\$2.3B) by 2019 and the growth of sensors and navigational equipment doubled in the 2010-2011 period alone (Lee et al. 2012).</p> <p>We propose to make an investment in the education of engineers at the college level within the state of Mississippi, by exposing students to challenging engineering applications in the marine world, thereby opening the door to a plethora of potential careers. To accomplish this that we will team up with Dr. Chris Kites, Associate Dean of Research and Faculty Development, School of Engineering, Santa Clara University, who is funding by the Kern Family Foundation to develop a multi-institutional, cooperative, engineering program in which teams of students engineers and mentors design and fabricate instruments, platforms, and/or sensors. These products are integrated among the various university-based teams to complete a specified task that accomplishes a scientific goal. This successful and long-standing program incorporates a dozen universities in the Midwest, where the Kern Family Foundation wants to make a difference.</p> <p>Building upon this successful program, we propose to a similar program within the state of Mississippi to integrate each of the schools of higher learning with an engineering program. The National Institute for Undersea Science and Technology (NIUST), which is a partnership between the University of Mississippi and the University of Southern Mississippi, will take the lead in designing criteria for different sensors, vehicles, or platforms that will be developed at each of the participating universities. Student teams will design, fabricate and test their system in context of design criteria. This work will commence with the teams meeting at the Gulf Coast Research Laboratory in Ocean Springs, MS. Each team will then participate in the mission to collect data for restoration projects.</p> <p>The cost for this program is \$160K per year with half of the funds being spent on materials/travel/sensors for engineering teams and the remainder for coordination and science outcomes. Potential Year 1 projects could include, for example, the development of autonomous surface vessels for water collection, preservation, and sensing 4K" the initial project will depend on the amount of money available and current restoration projects.</p>	Hancock/Jackson	Yes	Yes			Yes	Yes	No	No	No	No	No	No	\$	160,000.00	\$	-	Curriculum development
Eco Restoration	2190	11/12/2014	<p>The National Oceanic and Atmospheric Administration highlights the importance of the marine sector. 40% of every job in the United States is marine related and over one-third of the U.S. Gross National Product originates in coastal areas. An example of the growth in the marine sector is the expectation that remote operated vehicles (ROV) in 2015 are anticipated to have net revenues of \$48 with an order of magnitude more spent on operations. Similarly, investment in AUVs is advancing with a projected increase in more than a thousand AUVs (\$2.3B) by 2019 and the growth of sensors and navigational equipment doubled in the 2010-2011 period alone (Lee et al. 2012). However, no deep-water ROV systems for marine science are based in the state of Mississippi or in any of the five states that border the Gulf of Mexico.</p> <p>We propose to make an investment in the infrastructure of Mississippi Marine Technology through the purchase and sea trials of a 4000-m capable remotely operated vehicle (ROV). The National Institute for Undersea Science and Technology (NIUST), which is a partnership between the University of Mississippi and the University of Southern Mississippi, will take the lead in designing criteria for an ROV that will be suitable for scientific operations within the Gulf. Upon delivery of the ROV, the NIUST team will subject the ROV to sea trials and design and fabricate the various tools that will be needed for scientific discovery and experimentation.</p> <p>The cost for such a vehicle would include a tether, winch, and tether management system, control van, and supply van. The vehicle would have 2 seven-function manipulators. The cost for this the design, purchase, and sea trials is ~\$5M and would take 3 years to complete the final integration of systems for ocean operations.</p>		Yes	Yes	10000%	Yes	Yes	No	No	No	No	No	No	No	\$	5,000,000.00	\$	-	Equipment development and purchase
Eco Restoration	2197	11/12/2014	<p>Coastal Louisiana has experienced substantial wetland loss since the construction of Mississippi River levees in the late 1800s. This land loss is largely a result of marsh-edge erosion and subsidence of interior wetlands, combined with smaller contributions from direct land removal for canals, construction purposes, etc. One cause is the elimination of spring over-bank flooding which delivers sediment to the marshes. Other factors include 1) reduced sediment input to the Mississippi River; 2) dredging and hydraulic alterations from man-made canals; 3) a high rate of regional subsidence due to sediment compaction, tectonic subsidence, subsurface withdrawal associated with oil/gas/groundwater extraction, and sea level rise; 4) wave and tidal erosion, which accelerates in importance as water bodies become larger; and 5) tropical cyclone events.</p> <p>In response, Louisiana has developed a 50-year Master Plan which includes a mix of sediment diversions to build new deltas, removing existing barriers on Mississippi River tributaries such as the Bayou Lafourche floodgates, sediment jetties and dredging to increase protection against storm waves from storm surge. This Master Plan will be funded through a variety of sources, including different Restore Act avenues. However, the impact on Mississippi has generally not been considered.</p> <p>We propose a monitoring and surge modeling program to assess these impacts. Freshwater flow from diversions could affect Mississippi's seafood industry and also alter the Mississippi Sound ecosystem. The high-nutrient content of Mississippi River water is known to create hypoxic zones in the Gulf of Mexico. In addition, these nutrients may also be impacting wetland root systems in organic soils, making them vulnerable to storm surge as suggested by the Cameron Parish. Deliverables include: 1) utility and water quality monitoring with widely basing surveys; 2) assess modeling sensitivity studies of diversion outflow and floodgate removals; 3) sensitivity modeling studies of storm surge from floodgates in the Rigales and Chef Pass on Mississippi, which is part of the Master Plan.</p>	Hancock, St Tammany, Mobile, Jackson, Harrison	Yes	Yes		No	No	Yes	No	No	No	No	No	\$	500,000.00	\$	500,000.00		
Eco Restoration	2200	11/12/2014	<p>Project Goal: To integrate water quality parameters derived from remote sensing with hydrodynamic water quality models to improve the monitoring and assessment of Mississippi Sound estuary.</p> <p>Overview and Motivation: The Gulf of Mexico has received a tremendous amount of attention lately from government, private industry and the general public. As a result of the Deepwater Horizon oil spill, a great deal of attention has been given to restore the Gulf of Mexico estuary. The RESTORE Act was passed. During the State of Gulf of Mexico conference, organized by the Harte Research Institute at Texas A&M University at Corpus Christi, a large number of speakers spoke of the need for science data to monitor restoration projects and to evaluate the potential for success of selected restoration projects. The linkage of remote sensing with hydrodynamic modeling can provide that needed monitoring.</p> <p>Estuaries represent an important component of the complex and dynamic coastal watersheds. They are usually characterized by abrupt chemical gradients and complex dynamics, which can result in major transformations in the amount, chemical nature and timing of the flow of material along these river-to-ocean transition zones. The ecological functioning of these areas is considered to be of major concern, as estuaries offer the last opportunity to manage water quality problems before they become uncontrollable in the coastal waters.</p> <p>Numerical models are capable of providing hydrodynamically computed water quality data to study estuaries, however, it is difficult to set initialization and boundary conditions and to calibrate and validate the models. Remote sensing data can provide surface observations, but these data are limited by proximity to shore, cloud coverage, and variable spatial and temporal resolution. Mapping and monitoring water quality with remote sensing is also limited to the surface and near surface conditions, with little or no information on depth. Numerical models have the ability to predict, in three dimensions, the changes in water quality parameters over time, providing coastal management agencies with information needed to evaluate restoration projects for effectiveness.</p> <p>Satellite remote sensing provides a synoptic and multi-temporal view of water quality at different resolutions, spatial, temporal, and spectral. Satellite remote sensing commonly used for water quality parameters includes MODIS, VIIRS and Landsat. With their daily temporal resolution and good spectral bands for water quality, MODIS and VIIRS are ideal for monitoring and mapping water quality on a frequent basis. The Landsat series of systems has higher 30 meter spatial resolution, but is limited in its temporal resolution to a 16 day repeat cycle. With the frequent cloud concerns in a coastal environment, temporal frequency is important.</p> <p>While both techniques have weaknesses, when integrated they are a powerful tool to study water quality in estuarine environments. The integration of these techniques was developed and demonstrated through a recent application to study water quality problems in Lake Pontchartrain during Bonnet Carré Spillway opening in 1997 (Hossain et al., 2014; Chao et al., 2013; Chao et al., 2012). In that study, the integration of remote sensing data with the CROCO numerical water quality model was used to map and monitor suspended sediment concentrations, chlorophyll-a concentration and salinity in the lake water at high spatial and temporal resolution. Satellite imagery derived water quality data were used to initialize, calibrate and validate the numerical model.</p> <p>Project Description:</p>	Hancock, Mobile, Jackson, Harrison	Yes	No		No	No	Yes	No	No	No	No	No	\$	750,000.00	\$	-		
Eco Restoration	2201	11/12/2014	<p>Commercial Proving Ground for Space to Sea Floor Environmental Monitoring Technologies and Autonomous Airborne and Marine Systems</p> <p>Project Overview and Rationale Testing and validating new environmental monitoring technologies to enable long term land use planning, management, and sustainability of coastal resources is a foundational precept of community resilience through ecosystem preservation and restoration. Protecting these coastal resources which provide critical ecological services to the communities along the Mississippi Gulf Coast in terms of buffers against storm surge and sea level rise requires long term dependable, detailed, and proven information to make decisions that affect restoration and preservation outcomes. The National Oceanic and Applications Research Center (NOARC) is focused on developing, testing, and validating the commercial applications of environmental monitoring technologies and the information they provide to address Mississippi restoration objectives while enhancing the long term economic sustainability of this regarding geospatial information industry on the Mississippi Gulf Coast.</p> <p>Expansion and sustainability of this industry and its long term benefits to ecosystem restoration is currently inhibited by inconsistent means to calibrate and validate the basic data sets that underpin the derived resource management information. Scientific sampling designs to determine ecosystem restoration trends and quantified geospatial frameworks to make informed restoration investment decisions are critically dependent on calibrated and quantified data sets of known positions, spatial, spectral, and radiometric resolution. Replicable, calibrated data is the fundamental requirement for measuring spatial and temporal trends in coastal ecosystems that address long term adaptive management alternatives.</p> <p>This proposal addresses the fundamental requirement for quantified data and geospatial information products by Federal, State, NGO, and private organizations focused on wetland restoration and sustainability. In addition, the long term viability of this growing environmental monitoring service industry on the Mississippi Gulf Coast is also dependent on proven, demonstrable data and information product performance. The NOARC team will provide a comprehensive test range comprised of calibrated and instrumented target sites as well as highly instrumented and surveyed ecosystem responses to Mississippi companies and universities to validate data products and derived geospatial information. The Mississippi Proving Ground will provide a unique, competitive edge to our companies and universities as they fully demonstrate and prove new monitoring technologies and information products to broader national and international markets.</p> <p>Key Opportunity The market is currently exploding in low cost environmental monitoring technologies including commercial small satellites, unmanned air vehicles (UAVs), and autonomous maritime vehicles operating on and below the surface. To reduce vehicle cost, weight and power requirements, these platforms typically omit on-board calibration equipment. Therefore, the only way environmental data streams from these platforms can be validated and calibrated is through well characterized, calibrated, and instrumented ground based test ranges. This proposal addresses this requirement by providing the means for Mississippi companies to enter the market with proven and tested information products and platforms.</p> <p>At the same time a well characterized, instrumented test range is aligned with RESTORE objectives focused on sustainable wetlands and resilient communities. The natural ecosystem component of this range will be used as the reference condition for conducting restoration and to aid in reporting long term outcomes of restoration. In addition, the natural ecosystem test sites will be used to develop quantified sampling and monitoring techniques to determine long term health and condition of wetland habitats including change in aerial extent, species composition, and competing land uses.</p>	Hancock/Jackson	Yes	No		Yes	Yes	No	Yes	No	No	No	No	\$	2,500,000.00	\$	-		
Eco Restoration	2207	11/12/2014	<p>The Harrison County Development Commission (HCDC) is requesting \$1.1 million to fund the stabilization of the eroding shoreline of the Bernard Bayou Island and restore the eroded shoreline, marsh and associated wetland habitat. Bernard Bayou Island was created by the erosion of a small strip of land which previously connected to a larger body of land to the east. Since the construction of the Industrial Sawway in the 1960s this strip of land has slowly eroded due to wave action created by vessel traffic along the sawway and should be returned to its original footprint. Restoration of the island will involve the construction of riprap (rip rap) along the northern end of Bernard Bayou and along the north side of the island (south bank of Industrial Sawway), filling previously eroded areas with beneficial use dredged material (between riprap piles), and planting of marsh vegetation on restored (filled) area.</p>	Harrison	Yes	Yes	10000%	No	No	No	No	No	No	No	\$	1,100,000.00	\$	-			

Ecological Restoration	3210	11/14/2014	Seagrass Habitat Characterization Using Acoustic and Sedimentological Techniques Dr. Ann R. Stevens (USM), Dr. Craig Hinkle (USM), Dr. Charles Church (USM), Dr. Dan Wallace (USM) Coastal habitats provide ecological, cultural, and economic value. Seagrass beds within these coastal areas, provide essential habitats for a wide variety of aquatic species and buffer subsequent sediments from erosion (Eriess and Short, 2003). As with many barrier islands along the Atlantic and Gulf coasts, seagrasses are found in the lee of the islands, protected from open oceanic conditions. Since the early 1970s, the decline of seagrass beds has occurred throughout the Gulf of Mexico coastlines. Seagrass communities are exposed to a variety of environmental processes, ranging from reduction in water clarity, alteration of sediment migration via dredging, direct destruction from boating and commercial fishing and manmade and natural disasters affecting the natural setting of the seagrass habitat (Eriess et al., 2006). Times of high salinity and long temporal restoration is important for distinguishing the effects of major disturbances from natural variation in seagrass coverage (Dekker, et al., 2005). Methodological differences (e.g., mapping potential seagrass habitat rather than existing seagrass beds) are important in explaining the dramatic decline in seagrass coverage that is apparent when recent data are compared with reports of earlier surveys. Seagrass beds are important not only in terms of the plant biomass produced (much of which provides food for bacteria and microscopic organisms) but also as feeding habitats for both juvenile and adult fishes. The major prey categories for omnivorous and carnivorous fishes from seagrass habitats are crustaceans (Hindell et al., 2000). Restoration of seagrass beds can be achieved by encouraging natural recolonization in areas that have experienced improvements in surface water quality, replanting of rhizomes and over-seeding of bottom areas and/or with artificial seagrass beds, sediment properties and environmental conditions. We are proposing to acoustically characterize an existing seagrass bed and establish the acoustic signature of the seagrass environment that allow growth of seagrass beds. We will support the acoustic work with sediment cores collected in the same areas to calibrate the acoustic data and to get an understanding of the sediment sub-bottom structure. Using the acoustic signature plus sediment coring, we propose to distinguish differences that have occurred in the sediment structure and to investigate potential suitable areas that have disappeared and to investigate potential sites for coastal restoration. Seagrass beds are an important ecological system that sustain larval fish and crustacean development providing the future for commercial and recreational fisheries in the Gulf waters. Located at strategic sites, they can slow down sediment transport within the sound, and provide a filtration function, thus stabilizing barrier islands and improving water quality. While we recommend complete coverage of all MS Seagrass habitat, it is possible that regional resource managers may wish to focus on a specific resource site and the data from that study can drive models for additional sites throughout the MS Sound. Thus the budget provided represents the aforementioned sampling regime for two sites, 1) a currently existing Seagrass bed and 2) a known site from which seagrass has vanished. This project can provide data on the effects of a combined USM and USM field collection team, as well as laboratory efforts of the USM and USM team. However, value added toxicology analyses options are available (see RESTORE Project headed by Wallace, USM and Slatkany USM). Deliverables: Year 1: Base map of seagrass extends at one of the existing sites in the MS Sound, based on seafloor data, side scan and sub-bottom data. We will produce an acoustic and sedimentological site characterization of an existing seagrass bed which will include side scan, sub-bottom and sediment composition data of this site. Sediment push cores will be analyzed for grain physical sediment properties like grain size distribution, porosity, POC content. We will investigate a historic seagrass bed near ship island with the same methods as above to see how hurricanes have impacted that site and what changes have occurred in the environment. Based on sedimentology of the existing healthy seagrass bed we will provide guidance to the USACE and DNR to produce proper sediment conditions during the seagrass restoration. Seagrass beds are an important ecological system that sustain larval fish and crustacean development providing the future for commercial and recreational fisheries in the Gulf waters. Located at strategic sites, they can slow down sediment transport within the sound, and provide a filtration function, thus stabilizing barrier islands and improving water quality. While we recommend complete coverage of all MS Seagrass habitat, it is possible that regional resource managers may wish to focus on a specific resource site and the data from that study can drive models for additional sites throughout the MS Sound. 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Ecological Restoration	3211	9/1/2015	Seagrass Habitat Characterization Using Acoustic and Sedimentological Techniques Project Explorer's Pathways project with the goal of advancing students in grades 5-8 in science, technology, education and mathematics (STEM) fields through a variety of school experiences related to the impacts of the 2010 Deepwater Horizon (DWH) oil spill and the ensuing restoration efforts. Our objective is to develop and implement a model that accomplishes this goal through after-school/Saturday activities coupled with a two-week non-residential summer camp relating to natural disasters and ensuing restoration that impact student's local communities. This model will be implemented in a state with very limited informal science opportunities. Each year, 30 students (60 total) in grades 5-8 will be targeted to learn science relating to their local environment in an informal setting. Students will be exposed to a variety of STEM areas and careers through interaction with researchers and educators involved in the DWH restoration efforts. Proposed topics rely heavily on science, but the other areas of STEM are represented in the restoration efforts and will be part of the proposed program. Disciplines represented by Project Explorer include life and earth sciences, in addition to foundational concepts in science, engineering and technology, which are learned from mathematics. Students are also exposed to a variety of techniques used by scientists and engineers to address environmental issues. Through their discovery of the impact of a major disaster like the DWH oil spill on their community, students will become better enabled to think globally. Project Explorer: Students Exploring Their Local Environment	Hancock, Stone, Jackson, Pearl River, Harrison, Georgia	Yes	No	No	Yes	No	No	No	No	No	\$ 150,000.00	\$ -	
Ecological Restoration	3213	11/14/2014	Community Collaborations International will deploy teams of university and college volunteers from around the country to participate in a week of service devoted to giving a boost of youthful energy to community based organizations supporting children, families, and the environment along the Gulf Coast. Community Collaborations International began working in the Gulf Coast ten years ago recruiting and organizing teams of college volunteers to assist with Hurricane Katrina recovery efforts. Since then, we have returned every year building relationships and a firm commitment to sustained impact in the region. Volunteer teams will coordinate their efforts with organizations such as the South Mississippi Land Trust, Audubon Society, Horticulture for Humanity, Gaudier Parks and Recreation Department, Mississippi Department of Marine Resources, Boys and Girls Clubs of the Gulf Coast, Gulf Islands National Seashore, Rowan our River, and many more. Based on prior year results, we expect 30 universities and colleges to participate resulting in between 400-600 volunteers primarily during the month of March. 4000 volunteers each committing to a full week of service results in over 22,000 hours of much needed support for community organizations! These students have made a commitment to spend their spring break week focused on meeting the needs of Gulf Coast communities! They work hard and get the job done.	Harrison	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	\$ 410,000.00	\$ 360,000.00	
Ecological Restoration	3216	11/14/2014	Long-term restoration, recovery and monitoring of marine mammals and sea turtles in the Mississippi Sound A proposed component in Mississippi's Strategy for RESTORE Act's 2) proposed 4) Creation of a Mississippi Sound Estuarine Program (MSEP) Summary: In the aftermath of BP Deepwater Horizon Oil Spill, larger numbers of bottlenose dolphins and sea turtles have stranded in the northern Gulf of Mexico, and many of these strandings have occurred along the coast of the Mississippi Sound. The proposed project will promote the restoration and recovery of dolphins and sea turtle populations in Mississippi waters through a systematic approach 1) responding to dolphin and sea turtle strandings; 2) rehabilitating sick and injured dolphins and sea turtles; and 3) monitoring the recovery of wild dolphins and sea turtle populations. Reestablishing wild populations, dolphins and sea turtles are ideal bioindicator of ecosystem health. This project will facilitate understanding of how these species have endured numerous environmental stressors in the northern Gulf of Mexico and foster their future survival in the Mississippi Sound. Participants: 1) Mississippi State University College of Veterinary Medicine (MSU-CVM), The College of Veterinary Medicine operates aquatic animal health diagnostic laboratories at the Delta Research and Extension Center in Stoneville, MS, and at the MSU main campus in Starkville, MS. These diagnostic laboratories serve as regional resources primarily for freshwater fish diagnostics for the Mississippi Delta and East Mississippi. They also conduct freshwater and marine aquatic animal health diagnostics on cases from other states. MSU-CVM has aquatic animal health scientists in pathology, bacteriology, forensic, parasitology, toxicology, immunology, and pharmacology. 2) The Coastal Research and Extension Center (CREC) at USM. CREC has had a close affiliation with coastal and marine issues since its origination in the early 1970s. The original mission of recreation and tourism associated with the Sea-Grant Advisory Service slowly expanded to include a Coastal Aquaculture Unit focusing on aquaculture suited to the coastal area. Shortly thereafter, the Experimental Seafloor Processing Laboratory was created through a cooperative agreement with NOAA. 3) The Institute for Marine Mammal Studies (IMMS) at USM. Since 1984, IMMS has been a leader in marine conservation research and outreach regarding endangered, threatened, and protected marine species in the northern Gulf of Mexico. IMMS played a central role in the response and rescue of these species in the aftermath of the Deepwater Horizon oil spill. In the aftermath of the oil spill, the IMMS responded to and evaluated over 150 dead dolphins and nearly 600 stranded sea turtles, representing approximately 50% of the dead turtles observed during the spill response. Plans: Systematic surveys of Mississippi Sound's mainland beaches and barrier islands will be conducted to more effectively respond to stranded marine mammals and sea turtles. Locality and morphometric data along with tissue samples will be collected for IMMS assessments. Additionally, stranding sites will be analyzed to identify demographic, seasonal, and annual trends. Low stranded marine mammals and sea turtles will be transported back to IMMS facilities for rehabilitation. These animals will be given a full veterinary exam, and a health plan will be developed for each animal. Recovery of wild dolphins and sea turtle populations will be monitored by transect surveys, photo identification surveys, satellite tracking, and sampling of wild sea turtle populations in the Mississippi Sound. Coordinating Partners: MSU-CVM is one of five colleges of veterinary medicine in Gulf Coast states (Texas A&M University, Louisiana State University, MSU, Auburn University, and University of Florida). There is potential for linkage with these CVMs for a comprehensive GOM aquatic animal health network. IMMS is part of the National Stranding Network. Sustainability: The proposed program will result in long-term establishment of MSU-CVM aquatic animal health diagnostics and research located at CREC with cooperative veterinary and rehabilitation facilities at IMMS. This cooperation will be modeled after the successful MSU-CVM fish health diagnostics and research program at CREC. Community engagement through education and outreach will be conducted at both CREC and IMMS.	Harrison	Yes	No	No	Yes	No	No	No	No	No	\$ 15,520,875.00	\$ -	
Ecological Restoration	3220	11/14/2014	Natural resource management and regulatory agencies lacked systematic species-specific distribution or abundance data which could be used to evaluate the effects of the Deepwater Horizon Oil Spill. Marsh birds were an integral part of the Natural Resource Damage Assessment primarily because are excellent indicators of the health of Gulf Coast tidal marsh ecosystems along the Gulf of Mexico. Unfortunately, because of the limited scope of previous marsh bird monitoring and research, extrapolation of these existing data to differing geographic areas and marsh types found across the Gulf of Mexico was extremely limited. Fortunately, a regional monitoring and research framework has already been developed for marsh birds but has yet to be implemented along the Gulf of Mexico. Thus, the fundamental goal of this project is to maximize the usefulness of marsh bird monitoring data to inform and facilitate conservation and restoration efforts along the Gulf of Mexico. Development of a Gulf of Mexico wide marsh bird conservation cooperative	Hancock, ST Tannam, Mobik Jackson, Harrison	Yes	No	No	Yes	No	No	Yes	No	No	\$ 12,500,000.00	\$ 50,000.00	
Ecological Restoration	3221	11/14/2014	The purpose of this proposal is to determine the effects of oil spill and/or discharges on the quality (chemical, sensory characteristics, and microbial) representative species of benthic (mollusks and shellfish) oysters, shrimps, and blue crab, and also on environment (seawater and sediments) in Mississippi Gulf Coast. Samples will be collected from different areas that have been exposed to oil and different areas that have not been exposed to oil along the Gulf Coast of Mississippi for four different seasons; this will need to be repeated 5 times (in 5 different years) to get accurate data. Polycyclic Aromatic Hydrocarbons (Naphthalene, anthracene, fluoranthene, pyrene, chrysene, benzo(a)anthracene, and benzo(b)fluoranthene), saturated hydrocarbons, waxes & BTEX compounds, biomarker terpane and sterane compounds in seafood products (mollusks, blue crab, shrimp, and oysters), seawater and sediments samples will be determined. Sensory evaluation of uncooked and/or cooked seafood will be determined. Microbiological (Total Count, Vibrios, E. coli, and Salmonella) in seafood, seawater, and sediments will be determined. Protein and lipid compositions of seafood products will be determined. Nutrients and heavy metals in seafood, seawater and sediments samples will be determined. Salinity, turbidity, pH and dissolved oxygen of seawater will be determined. This proposal would allow us to develop methods/approaches to determine the quality of seafood, sediments, and seawater in the event the oil spill incident happens again in the future. The outcome of this project will allow us to understand whether the Gulf Coast of Mississippi is restored from the BP oil spill and if the seafood produced in the Gulf of Mexico is safe to consume. This may increase the consumer confidence of Gulf of Mexico seafood, generate new jobs, and improve the quality of life of the fishermen/seafood processors and their families in Mississippi. Application of Chemical, Sensory, and Microbial Measurements/Approaches to Determine the Restoration of Marine Fisheries and Environmental Quality in Mississippi Gulf Coast after the BP Oil Spill and Disasters	Hancock, ST Tannam, Mobik Jackson, Harrison, Georgia	Yes	No	No	Yes	No	No	No	No	No	\$ 3,500,000.00	\$ -	
Ecological Restoration	3222	11/15/2014	Birds are a conspicuous and remarkable natural resource of the Gulf of Mexico, where they thrive in a diverse array of habitats across the region. Hundreds of species and millions of individual birds are supported by habitats in and around the Gulf. Unfortunately, these coastal habitats are increasingly stressed by a variety of human demands that are often at odds with the value of these habitats as breeding, nesting, feeding and resting areas for birds. Anthropogenic stresses along with more natural disturbances can reduce the quantity and quality of habitats in sensitive coastal ecosystems. Regularly, the conservation community and regulators struggle to design and implement a single, coordinated restoration strategy to inform and facilitate long-term restoration and management of the Gulf of Mexico ecosystem. Mississippi State University and the U.S. Fish and Wildlife Service, in cooperation with a group of partners, have been working to develop a structured framework to identify bird monitoring objectives and priorities. This proposed effort seeks to advance an action monitoring program by developing and communicating objectives and priorities to facilitate the design and implementation of surveys to maximize learning and improve the efficacy of restoration and management activities. Gulf-wide Bird Monitoring Program	Hancock, ST Tannam, Mobik Jackson, Harrison, Georgia	Yes	Yes	No	Yes	No	No	Yes	No	No	\$ 21,400,000.00	\$ 50,000.00	

Eco Restoration	3224	11/15/2014	<p>INTRODUCTION</p> <p>The lower 6 counties in Mississippi contain 1.7 million acres of forestland, and forestland is the major land use of this region. The major watersheds in this region include the Pearl River in the west, the Pascagoula River in the east, and a series of coastal rivers and streams in between. This region supports a number threatened and endangered species in both aquatic and terrestrial environments, including the gopher tortoise and the Gulf Sturgeon.</p> <p>Most of the forestland in this region is owned by individuals or families, with the vast majority of landowners owning less than 500 acres. There are, on average, about 1,500 unique forest landowners per county that own 10 or more acres of forestland. The National Woodland Owners Survey revealed, again, that most private landowners have multiple objectives for their forestland. Forests as a legacy for future generations, enjoyment of scenery, and forest as an investment were the top three objectives of Mississippi landowners. Landowners with larger acreages had a much greater interest in timber income than those with smaller acreages.</p> <p>Private landowners are essentially small businesses, but only 10% of landowners have a written management plan that helps them identify and meet their objectives. Forest management plans also recommend strategies that protect soil, water, and other valuable resources. Managing forestland without a written plan is like taking a trip without a road map.</p> <p>This proposed effort will develop MSLandPlan, a robust but user-friendly management plan software template available for use on both computers and mobile devices. We will educate landowners on the importance of a good management plan, and develop a plan for them. Significantly increasing the number of landowners with written management plans will help them make correct decisions for their land, preserve and improve water quality, increase income from the property, and enhance their enjoyment of the land. A key element in the planning process is the use of Best Management Practices (BMPs) which focus on reducing soil erosion and sedimentation.</p> <p>The Mississippi State University Extension Service and the MSU Department of Forestry will lead this effort, but will involve other partners involved in water quality and land management in the development of MSLandPlan software. The partners include, but are not limited to, the Mississippi Forestry Commission and the Mississippi Department of Environmental Quality.</p>	Harrison	Yes	Yes		Yes	Yes	No	Yes	No	No	No	No	\$	591,000.00	\$	
Eco Restoration	3225	6/1/2015	<p>1. INTRODUCTION</p> <p>This proposal seeks to establish and implement a training program for the Gulf Coast region, through the Mississippi State University Extension Service (MSU ES), with the mission of providing training, information, and resources for the general public to foster environmentally friendly landscape practices. The consumer and community outreach program will encourage Gulf Coast stakeholders to utilize landscape design and management methods that will reduce property stormwater runoff and leaching leading to the contamination of surface and groundwater.</p> <p>The Mississippi State University Extension Service has an established delivery method for extending knowledge to the public, and a proven track record. For more than 100 years, the MSU Extension Service has provided research-based information, educational programs, and technology transfer focused on issues and needs of the people of Mississippi, enabling them to make informed decisions about their economic, social, and cultural well-being. Extension's overall purpose is to provide education that empowers people to make intelligent decisions relating to their vocations, their families, and their environment. The Extension Service believes that quality of life is affected by the reciprocal relationship between people and their environment, and therefore, environmental issues are of great importance.</p> <p>The Crosby Arboretum, located within the Gulf Coast region, is the premier environmental education center in the state of Mississippi, dedicated to educating the public about their environment. The 104-acre interpretive site is owned by Mississippi State University and operated by the MSU Extension Service. The Arboretum's mission is to preserve, protect, and display plants native to the Pearl River Drainage Basin ecosystem, a major Mississippi watershed. The facility provides environmental and botanical research opportunities, and cultural, scientific, and recreational programs, as well as programs which provide education about the region's biological diversity. The Arboretum also houses 700 acres of off-site natural areas in the Gulf Coast region, preserved for scientific study. Many rare, threatened, and endangered species of plants and wildlife are found within Arboretum preserves.</p> <p>The mission of the Crosby Arboretum supports the directives of MSU and the Extension Service. The MSU Extension Service provides research-based information, educational programs, and technology transfer focused on issues and needs of the people of Mississippi, enabling them to make informed decisions about their economic, social, and cultural well-being. Agriculture and natural resources, family and consumer education, enterprise and consumer resources development, and 4-H educational programs are Extension's ongoing priorities. The Coastal Research and Extension Center has the Agricultural and Forestry Experiment Station units in south Mississippi. Research and Extension priorities include horticulture, beef cattle production, seafood safety, natural resource economics, and coastal ecology.</p> <p>The East Gulf Coastal Plain Ecoregion</p> <p>The lands that define the Mississippi Gulf Coastal region comprise the 42 million acre East Gulf Coastal Plain Ecoregion (EGCP). This ecoregion is one of the most biologically diverse terrestrial landscape systems found in North America, and many of the plants, reptiles, amphibians and fishes occur only within the region (MORFF, 2005). Twenty-nine endangered or threatened animal species live within these forests, which harbor at least 123 species of threatened or endangered plants, including the nationally rare Crosby Arboretum MSU-ES natural lands, including the gopher tortoise, and the White Pine Sparrow, <i>Ammodramus hendewicki</i>, which lives in grassland areas such as the Arboretum's "Savanna Exhibit."</p>	Pearl River	Yes	No		No	Yes	No	No	No	No	No	No	\$	590,200.00	\$	
Eco Restoration	3226	11/15/2014	<p>The goal of ecological restoration is to provide a productive and sustainable ecosystem that results in the increase in biodiversity and nutrient retention. In near shore marshes, plant diversity and species richness lead to carbon sequestration, changes in water quality and nutrient retention. However, these wetlands are generally either nitrogen or phosphorus limited and the availability of these essential nutrients affects plant community type and species richness. Therefore, an essential step in the restoration of Mississippi Sound is to understand the temporal aspect of water quality before and during restoration projects.</p> <p>Water quality indexes have been based on measurements of DIN, DIP, chlorophyll <i>a</i>, water clarity, and dissolved oxygen; however, because no DIP sensors are available such measurements are made on biweekly samples and the availability of sending people to sea. As a result there are limited temporal observations especially on hourly to daily time scales and when weather is bad. In contrast, studies of enhanced aquatic vegetation (EAV) typically focus on the shelf sensors (temperature, salinity, pH, DO, turbidity, light attenuation), but lack critical information about nutrient concentrations.</p> <p>In a separate proposal we presented the idea of using continuous fluid samplers in fixed (EAV) locations to monitor water quality using a system that couples standard sensor measurements with CTD/sampler systems that are specifically designed to preserve fluids for nutrients, trace metals, and microbial community structure. This provides the ultimate record at fixed points. However, for some monitoring needs there is the desire for a larger spatial coverage for Lagrangian distribution) and the need for larger volume samples for additional measurements. To meet this need we propose to develop an autonomous surface boat that is instrumented with physical sensors and capable of collecting up to 48 (500) samples that can be preserved automatically and stored. Such automation exists for science-based surface craft missions (e.g., Malackoff et al., 2009; Kite and Max, 2009) and is well suited for operation on the shallow, but busy waters of Mississippi Sound.</p> <p>The benefits of an autonomous boat are many. The boat can be (1) launched and programmed by one person, who can monitor the boat locally, with others monitoring results using a web interface from their offices scattered about the state, (2) limits liability by taking the human out of the element while allowing the human to monitor obstacle avoidance sensors and other tracking and sensor systems.</p> <p>We have designed and fabricated a new low cost autonomous surface vessel (ASV) that is capable of autonomous navigation, implemented via a sea based computer that wirelessly receives GPS data and relay drive commands that are monitored by humans. Human can intervene to adjust operational parameters. Specifically, we will use a Minotaur powered ASV with a cruising speed of 20 knots. This kayak will include navigation, communication, obstacle avoidance, physical and chemical sensor, and sampling systems. The science package will include a single beam sonar, CTD, multi-spectral fluorometer, nitrate analyzer, dissolved oxygen and pH sensors, turbidity, and fluid sampling systems. The fluid sampler will be a 3600MQuattroBYre sampler that is capable of collecting 48 discrete samples that can be filtered in-line and immediately preserved if desired.</p> <p>A weekly mission will be undertaken. This mission will have a pre-programmed path with location for discrete samples and appropriate filtering for individual samples. This affords a variety of samples to be collected for shore-based analyses, from nutrient to organic to trace metals to microbial community structure and function. Furthermore, the person on the beach or anyone monitoring the system can change the protocol in response to near-time physical and chemical sensor data. These people can change sampling protocol and analyze from the pre-programmed plan in response to 3600MQuattroBYre</p>	Hancock/Lucknow Harrison	Yes	Yes	2000%	Yes	Yes	No	No	No	No	No	\$	530,000.00	\$		Proposed Research Development
Eco Restoration	3228	11/15/2014	<p>Invasive plant species are recognized as one of the greatest threats to the survival of many indigenous species. The five Gulf States together including Mississippi's coastal wetlands are affected by at least thirty species of non-indigenous invasive plant species. Dealing with this enormous environmental problem requires collaborative efforts on the part of many agencies and organizations, but it ultimately begins with detection and mapping of the non-indigenous invasive species. After mapping, a change detection analysis would further help in delineating areas where management efforts should be prioritized to contain the growth of the problematic species. Remote sensing technologies offer an opportunity to address the invasive species problem by providing timely information on the spatial distribution of any plant species, including those that could threaten the ecological balance. The overarching objective of this project is to develop a suite of tools and products to locate and delineate the spatial coverage of ten most pervasive invasive plant species that occur along the Mississippi coast and provide results from change detection analysis extracted from a time series of geospatial products collected using remotely sensed data. The end result will be a Decision Support System (DSS) that will be updated with the images of invasive species on a monthly basis. The DSS will also include images of the hot spots of invasive species growth in the areas that were originally dominated by indigenous species.</p> <p>The first aim is to develop a remote sensing based operational monitoring platform by utilizing data from multiple high (Landsat OLI, HRC etc.) and low (MODIS, VIIRS etc.) spatial resolution satellite sensors as well as very high spatial resolution remotely sensed data collected by unmanned aerial systems (UAS) and very high spectral resolution remotely sensed data collected by a hyperspectral system, AirMS2iS, flown on an aircraft. The data from the UAS and the hyperspectral data will help develop models, which will be implemented on the data from the satellite sensors for extracting invasive species maps and the mapped images will be made available on a monthly basis. The second aim is to run a change detection analysis to delineate areas of extensive invasive plant species growth that was originally occupied by indigenous species. A trend analysis will also be carried out to locate areas where management efforts should be prioritized to contain the growth of the problematic species. The final aim is to disseminate the project findings to four categories of target audience including (1) state and local managers, (2) MSU graduate and undergraduate students, and selected middle and high school teachers, (3) the general public, and (4) the scientific community. The final aim also includes providing the methods and products to the managers showing the vulnerable regions where management efforts should be prioritized. This research is significant because it will not only enhance the current state of knowledge on the occurrence of invasive species on the Mississippi's Gulf coast but also it will provide a continuous monitoring platform for at least ten invasive plant species, which will support state and coastal community efforts to manage wetlands in the region.</p> <p>This is a three year project and will supplement ongoing planning activities as well as serve as decision support tool as new projects are recommended. The estimated cost is \$300,000 per year for a total cost of \$900,000.</p>		Yes	No		Yes	Yes	No	No	No	No	\$	900,000.00	\$			
Eco Restoration	3229	11/15/2014	<p>The northern Gulf of Mexico waters are affected by water pollution, leading to undesirable increases in disease-causing bacteria (pathogens). Bacterial contamination of surface waters are an increasing concern for state and local water managers because pathogenic bacteria can cause serious health issues in humans, such as Vibrio infections. Vibrio infections are responsible for the most severe infections in people exposed to sea water or raw shellfish and also pathogenic to a lot of aquatic organisms in the northern Gulf of Mexico. One recent event that made news was the death of a man due to Vibrio vulnificus infection in Ocean Springs, MS on July, 11, 2014. According to the Centers for Disease Control and Prevention Mississippi had 17 reported cases of Vibrio infections. Louisiana had 52, Florida, 45, and Alabama, 20 in 2012 alone. Since it is difficult, time-consuming, and expensive to test directly for the presence of a large variety of pathogens, studies conducted by EPA suggest that the best indicators of health risk from recreational water contact in fresh water are E. coli and enterococci and for salt water, enterococci are the best. The overarching objective of this project is to develop a suite of tools and products to identify and locate sources, transport pathways, and fate of enterococci flowing into Bay St. Louis, Mississippi from storm-water. The proposed work is a lab, laboratory, remote sensing, watershed modeling, and GIS based research approach focused on quantifying the suspended sediments and colored dissolved organic matter (CDOM) in Bay St. Louis, derive the enterococci concentrations from the correlation of sediments and CDOM with enterococci by accounting for the spatial distribution, intensity and amount of rainfall in the subwatersheds, and source-located the pollutants detected in the sub-watersheds feeding into Bay St. Louis. The end result will be a Decision Support System (DSS) that will be updated with the input data from the water quality and sediment and colored dissolved organic matter (CDOM) in near real time. The DSS will also include visualizations of source-tracking the bacterial contaminants using digital elevation models (DEMs) and CDOM fluorescence.</p> <p>The first aim of this project is to investigate the water quality of Bay St. Louis by measuring the concentration of bacterial contaminants, suspended sediments, CDOM and a few other auxiliary water quality parameters. The second aim is to develop a remote sensing based operational monitoring platform by utilizing data from multiple high (Landsat OLI, HRC etc.) and low (MODIS, VIIRS etc.) resolution satellite sensors as well as very high spatial resolution remotely sensed data collected by unmanned aerial systems (UAS) and utilizing them for extracting improved products for mapping suspended sediments and CDOM, and making the maps available to a general audience. The third aim is to apply the Remote Sensing Assisted Tool (RSAT) to extract and compare the modeled and measured bacterial concentrations with the monthly measured bacterial concentrations at the outlet of the watershed and to track the source of the pollutants and locate the hot spots of pollutant source using watershed modeling and CDOM fluorescence. The fourth aim is to develop maps detailing the classes of water and sediment yields and distributions of suspended sediments and CDOM with enterococci so that enterococci concentrations can be estimated from suspended sediment and CDOM concentrations by accounting for the spatial distribution, intensity and amount of rainfall in the subwatersheds. The final aim is to disseminate the project findings to four categories of target audience including (1) state and local water managers, (2) MSU graduate and undergraduate students, and selected middle and high school teachers, (3) the general public including the farmers, and (4) the scientific community. This effort will help watershed managers to implement best management practices to improve water quality as well as in minimizing beach closures. Since Bay St. Louis is similar in many ways to other coastal water environments, this research may also be applicable to other shallow estuaries.</p> <p>This is a three year project and will supplement ongoing planning activities as well as serve as decision support tool as new projects are recommended. The estimated cost is \$300,000 per year for a total cost of \$900,000.</p>		Yes	No		Yes	Yes	No	No	No	No	\$	900,000.00	\$			
Eco Restoration	3229	11/15/2014	<p>A Stormwater Bacterial Decision Support System (BSS) for Assisting State and Local Water Managers in Minimizing Beach Closures</p> <p>This is a three year project and will supplement ongoing planning activities as well as serve as decision support tool as new projects are recommended. The estimated cost is \$300,000 per year for a total cost of \$900,000.</p>		Yes	No		Yes	Yes	No	No	No	\$	900,000.00	\$				

Eco Restoration	3230	11/16/2014	<p>Establishing a Regional Coastal Land Grant University Initiative. A Coordinated, Multi-state Approach to Integrated Engagement, Research, Technology Transfer, Education and Outreach. Objectives of this project are:</p> <p>1.Understanding Stakeholder Beliefs and Perceptions: The First Step toward Effective Engagement, Awareness, Outreach, and Policy Development</p> <p>To formulate effective engagement, outreach and educational programs requires an understanding of the underlying beliefs and values of various target audiences. Every individual, every community, and every culture has a set of beliefs and values that guide decision-making. Through the use of social science surveys and interviews, the underlying beliefs and values of selected target audiences will be surveyed at the local and regional scales to serve as a basis for effective engagement, technology transfer, education and outreach through the expanded Coastal REACH Program and to serve as a reference to gauge the effectiveness of these efforts. This information should also be very useful to the RESTORE Council as it considers project selection and evaluation.</p> <p>2.Developing Social Indicators to Guide and Evaluate Coastal Restoration and Protection Projects and Activities</p> <p>Social indicators are measures that describe the context, capacity, skills, knowledge, values, beliefs, and behaviors of individuals, households, organizations, and communities at various geographic scales. Social indicators are typically used to assess current conditions or attainment of social goals related to a variety of applications. Building upon Project 1 described above, this project will identify and define social indicators that can be used to guide and increasingly evaluate and monitor restoration and protection projects developed to implement the RESTORE Council's Comprehensive Plan. The indicators can also be leveraged to serve as a common reference to evaluate the success of individual coastal watershed restoration and protection projects.</p> <p>This foundational project will be designed to support and evaluate many of the activities and projects facilitated by the RESTORE Council by addressing the societal dimensions inherent in the Council's Comprehensive Plan. A wide range of questions exist that, if answered and monitored, could help the RESTORE Council achieve the success that it desires, such as: What constitutes project success from a societal standpoint? What expectations do different types of stakeholders have? What types of projects are desired geographically? What information is needed to inform stakeholders and where is it needed? How effective are education and outreach activities? What can be done to improve these efforts? What are stakeholders saying through social media? Starting with analysis of the input generated through local stakeholder meetings facilitated by RESTORE Council members that influenced the Council's approach to developing social metrics, to conducting baseline assessments, through incremental monitoring as projects are conceptualized, implemented, and completed, the objectives of this project could provide great benefits during planning, implementation and evaluation of many, if not most, of RESTORE Council projects and activities.</p> <p>This project was created to offer significant advantages to the RESTORE Council to assist in implementation of its Comprehensive Plan. This concept:</p> <p>1)can support all five of the RESTORE Council's goals and other engagement, research, technology transfer, education and outreach needs.</p>	Hancock, Harrison, Jackson	Yes	No	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	\$ 3,200,000.00	\$	-
Eco Restoration	3231	11/16/2014	<p>Establishing a Regional Coastal Land Grant University Initiative. A Coordinated, Multi-state Approach to Integrated Engagement, Research, Technology Transfer, Education and Outreach. Objectives of this project concept are:</p> <p>1.Establishing a structure and processes for regional collaboration among Gulf of Mexico land grant universities and their coastal Extension programs to foster a consistent Gulf-wide approach that leverages Extension activities and capabilities to support the engagement, technology transfer, education and extension priorities of the RESTORE Council's Comprehensive Plan.</p> <p>2.Disseminating RESTORE Council-facilitated coastal restoration and protection projects, activities, outputs, and outcomes through annual state-wide conferences, Gulf-wide summits, and Extension Land Grant Universities. Land Grant Universities (LGU) are uniquely positioned to assist each coastal state in a variety of ways: 2C) from conducting research ranging from basic discovery to on the ground applications of the science of soil conservation, water quality, habitat and ecosystem dynamics, human behavior, and other applications; LGUs in each coastal state have a wide range and depth of expertise in these areas, and are a highly trusted source of objective research-based information. Researchers, Extension specialists, and educators put the science into practice by engaging and educating agricultural and business interests, local governments, and urban and urbanizing communities; conducting applied research; and understanding economic drivers that lead to decision making. In addition, faculty in LGUs regularly collaborate on multi-state research and extension education projects.</p> <p>Extension Service. The Smith-Lever Act of 1914 established the Cooperative Extension System, a publicly funded, informal educational system that links the U.S. Department of Agriculture, the land grant university system, and individual counties. Extension, as the off-campus educational arm of the land grant universities, has a large footprint in each state with offices in all or most counties and trained staff to provide community education and outreach in multiple disciplines. Extension's overall purpose is education. Its unique interdisciplinary perspective enables the organization to make a real difference through the provision of research-based information, educational programs, and services on issues and needs of the citizens of each state. Extension also hosts customer-friendly websites loaded with information sheets, publications, reports and other outreach materials designed for its stakeholders. Extension is organized regionally; however, the Extension structure on the Gulf coast is separated into two regions.</p> <p>Objective 1. Establishing process for regional collaboration among Gulf of Mexico land grant universities and Extension programs. Objective 1 is a foundational component that establishes processes, through meeting and land grant university infrastructure, that leverages participating coastal Extension and other programs to provide a consistent, coordinated, multi-state approach that delivers effective engagement, research, technology transfer, education, outreach and extension to support implementation of the RESTORE Council's Comprehensive Plan. It is envisioned that the successful implementation of this objective will foster 1) the development of integrated, multi-state, Gulf-wide restoration and protection projects and activities that leverage the significant resources and capacity of coastal land grant universities and Extension, and 2) serve as the platform upon which to implement Objective 2 of this proposal below.</p> <p>Objective 2. Disseminating RESTORE Council-facilitated coastal restoration and protection projects, activities, outputs, and outcomes through annual state-wide conferences, Gulf-wide summits, and Extension.</p>	Hancock, Harrison, Jackson	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	\$	\$	-
Eco Restoration	3232	11/16/2014	<p>Land Grant Universities (LGU) are uniquely positioned to assist each coastal state in a variety of ways: 2C) from conducting research ranging from basic discovery to on the ground applications of the science of soil conservation, water quality, habitat and ecosystem dynamics, human behavior, and other applications; LGUs in each coastal state have a wide range and depth of expertise in these areas, and are a highly trusted source of objective research-based information. Researchers, Extension specialists, and educators put the science into practice by engaging and educating agricultural and business interests, local governments, and urban and urbanizing communities; conducting applied research; and understanding economic drivers that lead to decision making. In addition, faculty in LGUs regularly collaborate on multi-state research and extension education projects.</p> <p>Coastal Storm Water and Waste Water Workshops and On-line Management Toolbox to Advance Effective Storm Water and Waste Water Management along the Gulf Coast and Reduce Nutrient, Pathogen and Sediment Loadings to the Gulf. Pollution caused by storm water continues to be a problem in urban coastal watersheds evidenced by the constant recurrence of beach closures and/or advisories due to high pathogen levels after heavy rain events and in agricultural coastal watersheds evidenced by the evidence of nutrient, pathogen and sediment impairments. Expanding economic development along the coast is also challenging the capacities of coastal storm water programs and resources. This project is designed for Extension, Mississippi State University's (MSU) Coastal REACH Program, and the Mississippi Water Resources Research Institute (MWRRI) to work with state and local agencies/venues administering coastal storm water programs to increase their engagement, technology transfer, education and outreach capacity and effectiveness through targeted workshops that focus on effective storm water management practices as well as the benefits of various storm water ordinance options available to local communities.</p> <p>In coastal watersheds, numerous TMDLs have been developed for impaired waters that identify specific nutrient and pathogen load reductions from both point and nonpoint sources needed for the receiving streams to meet their designated uses. States are also being encouraged by EPA to make progress on the development of numeric nutrient criteria. Wastewater treatment in coastal watersheds uses a variety of treatment systems 2C) from large facilities to cluster systems to individual treatment systems. The reduction of nutrient and pathogen loads is different from these systems that can be costly per acre. This project is designed for Extension, MSU's Coastal REACH Program, and MWRRI to first evaluate the performance of various types geographically and then provide quality coastal watersheds identify the range, effectiveness, and costs of appropriate treatment options available to reduce nutrient and pathogen loadings in targeted watersheds, through workshops provide utility officials, operators, consultants, and contractors the knowledge to make decisions that maximize environmental and economic benefits, and establish a network for the sharing of information among coastal wastewater interests. This project will require coordination with state environmental agencies and wastewater treatment interests.</p> <p>A component of this project includes the development and maintenance of a web-based Coastal Storm Water and Waste Water Management Toolbox as an extension of the workshops. Initial implementation of this project would focus on coastal Mississippi. The project would then be expanded to the other states through the Coastal Land Grant University Initiative and funding proposals for the expansion submitted to each participating state.</p>	Hancock, Harrison, Jackson, Pearl River, Stone, George	Yes	No	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	\$ 450,000.00	\$	-
Eco Restoration	3236	11/17/2014	<p>This project concept was created to offer significant advantages to the RESTORE Council to assist in implementation of its Comprehensive Plan. This concept:</p> <p>Community-based Environmental Planning and Design Assistance for Living Shorelines and Tidal Marsh Restoration.</p> <p>The Gulf Coast Community Design Studio (GCCDS) was established on the Mississippi Gulf Coast in 2005 to work in communities impacted by Hurricane Katrina and has evolved from disaster recovery work to addressing long term issues of affordable housing, healthy communities and resilient landscapes and infrastructure. The GCCDS is a research and professional service program of Mississippi State University College of Architecture, Art and Design. Located five hours from the main campus the GCCDS operates with a full-time staff of architects, landscape architects and planners and always works in close collaboration with multiple non-profit, municipal and professional partners. The work of the GCCDS includes: 1) community-based housing design, 2) storm water and tidal ecology, 3) flood resilient buildings and landscapes, and 4) public-driven decision making. The GCCDS operates with around \$500,000 annual grant and contract income with national funding partners including HUD, Department of Energy, Small Business Administration, the National Endowment for the Arts, and the Department of Homeland Security, along with many local and regional partners. For the past three years the design studio has been working in partnership with other Gulf Coast planning agencies with the support of HUD's Sustainable Communities Initiative to produce Plan For Opportunity, a regional plan for a more resilient and sustainable Gulf Coast. Recently, the GCCDS was part of one of ten national design teams selected by HUD to participate in Rebuild By Design, in which teams worked with communities in the North East impacted by Super Storm Sandy to design more resilient future cities.</p> <p>The Gulf Coast Community Design Studio is well experienced in community-based restoration projects. Since 2010 the Gulf Coast Community Design Studio has been working in partnership with several other organizations to restore Bayou Abbeville, an inner-city bayou that connects East Biloxi to the Back Bay. The GCCDS is the lead organization and brought together five partners to work on the restoration project: The Land Trust for the Mississippi Coastal Plain, The City of Biloxi, Biloxi Public Schools, the Biloxi Housing Authority, and a local environmental science firm called Caprice Environmental. For the past year the Gulf Coast Community Design Studio has been doing a Watershed Management Plan for Rotten Bayou in Hancock and Harrison County. The planning activities include extensive community engagement and professional workshops as well as designing and installing best practices. The plan is funded by the Mississippi Department of Environmental Quality and the Land Trust for the Mississippi Coastal Plain. In addition to Bayou Abbeville and Rotten Bayou, the GCCDS is designing a wetland nature park in Biloxi Parish, is working with the Natchez Conservancy on a living shoreline and oyster break-water in Biloxi, and with funding from the Surdna Foundation is doing community-based storm-water planning in Biloxi and Gulfport.</p> <p>As a program of Mississippi State University, GCCDS works through the Office of Sponsored Programs, is experienced at grant funded work and has the ability to adapt to the needs of the project. In the past immediately following Hurricane Katrina, when HUD funds were administered through Mississippi State University, GCCDS was able to provide professional services as needed to many of the home building organizations. GCCDS assisted five non-profit building organizations and provided shore house designs for over 300 house projects. By being an independent contractor for professional services GCCDS was able to establish a high standard of quality and assist effective homeowner involvement from the first house to the last. At the same time because of the efficiency of working on multiple projects GCCDS was able to manage the project to meet the tight budgets and demanding schedules.</p>	Hancock, Harrison, Jackson	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	\$ 200,000.00	\$	-
Eco Restoration	3239	11/17/2014	<p>Inner-City Tidal Stream Restoration</p> <p>Scope</p> <p>Much of the tidal habitat along the Mississippi Gulf Coast is distributed in small waterways that flow through inner-city neighborhoods. A healthy inner-city tidal stream has four critical functions: nursery habitat for marine life, flood way for tidal storms, discharge and treatment for storm water, and convenient public access to natural environments. Unfortunately, most of the inner-city tidal streams are seriously impaired. Flow has been modified and degraded over time and is not providing the ecological service that these four functions support. Many of them have been reduced to drainage channels, thus functioning to discharge storm water 2C) and often not doing that well. Restoring inner-city tidal streams to provide all four of the critical functions not only creates important tidal habitat, it improves storm water management and flood mitigation, and if done with good community involvement, it increases environmental stewardship. Successful inner-city restoration projects show that bringing nature into neighborhoods helps people see the value of protecting natural environments not only close to home but larger, wider places away from our cities.</p> <p>Partnership</p> <p>The proposal is submitted by the Gulf Coast Community Design Studio.</p> <p>The Gulf Coast Community Design Studio (GCCDS) was established on the Mississippi Gulf Coast in 2005 to work in communities impacted by Hurricane Katrina and has evolved from disaster recovery work to addressing long term issues of affordable housing, healthy communities and resilient landscapes and infrastructure. The GCCDS is a research and professional service program of Mississippi State University College of Architecture, Art and Design. Located five hours from the main campus the GCCDS operates with a full-time staff of architects, landscape architects and planners and always works in close collaboration with multiple non-profit, municipal and professional partners. The work of the GCCDS includes: 1) community-based housing design, 2) storm water and tidal ecology, 3) flood resilient buildings and landscapes, and 4) public-driven decision making. The GCCDS operates with around \$500,000 annual grant and contract income with national funding partners including HUD, Department of Energy, Small Business Administration, the National Endowment for the Arts, and the Department of Homeland Security, along with many local and regional partners. For the past three years the design studio has been working in partnership with other Gulf Coast planning agencies with the support of HUD's Sustainable Communities Initiative to produce Plan For Opportunity, a regional plan for a more resilient and sustainable Gulf Coast. Recently, the GCCDS was part of one of ten national design teams selected by HUD to participate in Rebuild By Design, in which teams worked with communities in the North East impacted by Super Storm Sandy to design more resilient future cities.</p> <p>Since 2010 the Gulf Coast Community Design Studio has been working in partnership with several other organizations to restore Bayou Abbeville, an inner-city bayou that connects East Biloxi to the Back Bay. The GCCDS is the lead organization and brought together five partners to work together on the restoration project: The Land Trust for the Mississippi Coastal Plain, The City of Biloxi, Biloxi Public</p>	Hancock, Harrison, Jackson	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	\$ 90,000.00	\$	-

Eco Restoration	4247	11/20/2014	<p>Objective: Use a time series of satellite imagery to map land-use/land-cover changes on the Mississippi Gulf Coast from the 1940s to the present.</p> <p>Background: Quantifying the changes in the land use and land cover (LULC) of an area are an important part of understanding the natural conditions that existed in the past and how those conditions have been altered and/or stressed. Mapping changes in LULC helps in understanding how the landscape has changed through time to reach its current state and how those changes have impacted the services provided by an ecosystem. These LULC change data can be used to formulate goals and strategies for restoration of the natural and environmental conditions of an area and provide important benchmarks on which to measure progress in restoration.</p> <p>The LULC change along the Mississippi Gulf coast have altered the coastal ecosystem on land and in the Mississippi Sound Estuary. These changes on the Gulf Coast include the development for residential housing, creation of beaches through re-nourishment, development of the tourist and gaming industry and creation of the transportation and energy infrastructure. The transportation infrastructure includes roads and bridge crossings as well as the ports, harbors and shipping channels in the Mississippi Sound. It is much easier to identify and quantify the current LULC than it is to identify LULC in the historic past.</p> <p>Due to the lack of comprehensive information from satellite remote sensing, it is difficult to obtain a synoptic assessment of LULC for the Mississippi Gulf coast prior to 1972. Since 1972 satellite imagery from Landsat programs has provided a reliable source of satellite remotely sensed data needed to image the entire Gulf coast. Prior to 1972, aerial photographs are the only source of data to extend our analysis back into the 1940s, but these data are more difficult to analyze, especially when the study area is large.</p> <p>Our research institute recently carried out study very similar to the one proposed. I used Landsat imagery of 1971 (MSS), 1984 (TM), 1999 (ETM+) and 2014 (OLI) and produced 4 classified images and few change detection images along with the tables quantifying the change. This was done as a test case. The outputs as shown in the attached figure and table show the level and types of information that can be extracted from such study.</p> <p>We also explored the possibility of using aerial photos to extend the timeline into 1940s. Using two sets of photographs acquired in 1942 and 1952 we did a similar study. That result is also shown in a separate figure. It is strongly believed that a rigorous study as proposed will provide more useful information that will help the restoration activities in the Gulf coast.</p> <p>Methods:</p> <p>The Landsat satellite series has provided remotely sensed data, free of charge, 1972 with the launch of the first satellite. The Multi-Spectral Scanner (MSS) sensor has a ground resolution of 80-80 meters. The follow-on Landsat satellites carried the Thematic Mapper (TM) with a ground resolution 30x30 meters. Imagery from the TM sensor is available from 1982 to present, allowing remote sensing scientist the ability to map LULC for the entire Mississippi Gulf Coast. In 1999, with the launch of Landsat 7, the ability to use LULC at 15 meter ground resolution is available using imagery that is pan-sharpened using the higher resolution panchromatic images. The newest Landsat satellite, Landsat 8, carries the Optical Land Imagery (OLI) sensor that will be providing high quality data for many years in the future. With the large footprint of satellite image frames, the Mississippi Gulf coast can be mapped using only 2 images.</p> <p>The area of the Grand Bay National Estuarine Research Reserve (NERR) around Point aux Chenes Bay has 2000m facing shoreline against the Mississippi Sound which needs protection from any type of barrier. Every time I visit in my kayak the area has receded some, especially the western point of the entrance to Bayou Combert. Rock jetties like they have used in Louisiana at Fourchon or any type of barrier to help reduce wave action could do a lot to help prevent these Southern shores from receding. I have written a blog post regarding the erosion I have seen in this area. It can be viewed here: http://tamarafrank.com/2017/07/21/fourchon-project-4248-protect-point-aux-chenes-bay-shoreline/</p> <p>Historically, Grand Batture island provided erosion protection for the Grand Bay NERR, and specifically Point aux Chenes Bay. Over time, Grand Batture was eroded into an island chain, and, in 1969, Hurricane Camille reduced Grand Batture to nothing more than fragmented shoals. This effectively removed any barrier for coastal erosion in Point aux Chenes Bay and accelerated the rate at which land has eroded within the Grand Bay NERR.</p> <p>There is evidence to support this erosion over the years in a study published in 2007. This study can be viewed at the following link: http://grandbaynerr.org/wp-content/uploads/2010/12/Grand-Bay-National-Estuarine-Research-Reserve-Field-Photo-Final-Draft-03Oct2007.pdf</p> <p>Another study titled "Decadal-scale changes in historic morphology and sea level rise on tidal hydrology in a microtidal estuary (Grand Bay, Mississippi) @Wetzel" was published in Volume 113, Part 8 of Continental Shelf Research, December 2013, supports the fact that erosion has progressively increased in the Grand Bay NERR due to a lack of tidal barrier. This study can be found here: http://www.sciencedirect.com/science/article/pii/S0278484313300212</p> <p>Finally, the United States Geological Survey provided a time lapse video showing the effects of this erosion. This time lapse video is compiled of shots from a 5 month period. It gives a glaring example of how fast the coastal erosion is taking place in Point aux Chenes Bay. The video can be found here: https://twitter.com/Video/88744958477192172?embed_source=facebook</p> <p>This coastal erosion not only affects the amount of viable marshland within the Grand Bay NERR, it also affects some significant archaeological sites within the NERR. Indian mounds made of oyster shells are located throughout the NERR. Several of these have been taken away by wave action, and more are in danger of being washed away as well.</p> <p>Finally, this coastal erosion is allowing salinity intrusion into the Bay. This is slowly changing the Bay's low salinity ecosystem to a higher salinity. This can eventually alter species of marine life that call the Bay home.</p> <p>Please consider this proposal for RESTORE funding. We can help protect this fragile, culturally significant ecosystem from further loss.</p>		Yes	No		Yes	No	No	No	No	No	No	No	No	No	No	No	\$ 25,000.00	\$ -	
Eco Restoration	4248	11/25/2014	<p>Point aux Chenes Marsh Shoreline Protection</p> <p>Objective: Develop a decision support tool to evaluate the impacts of upland land use land cover (LULC) change on coastal water quality and provide analytical tools to help select the most suitable areas for restoration and a site for monitoring the progress of the restoration.</p> <p>Background: With the development of the gaming and tourist industry, Mississippi's Gulf coast has experienced rapid growth in population and economic activity in the past several years. The population of the coastal counties in Mississippi has been increasing and continues to increase, resulting in changes to the land use and the land cover on the coast and the upland areas. According to the new U.S. Census population estimates the Mississippi Gulf coast has three of the top 10 fastest growing cities in the state from 2012 to 2013. In response to the rapid growth in coastal population and economy, the Mississippi Department of Marine Resources (DMR), the lead agency for the State's Coastal Management Program, developed the Comprehensive Resource Management Plan (CRMP). The CRMP seeks to balance natural resource protection and economic development through cooperation among local, state, and federal agencies and the private sector.</p> <p>Land use/land cover and water quality are unequivocally linked. Changes in the upland land use and/or land cover can impact water quality in the coastal area. Coastal waters receive runoff from surrounding watersheds that drain these upland areas into the coastal estuary. Changes in the LULC of the upland portions of coastal watersheds can produce increased amounts of nutrients, sediment, and other pollutants. Proper understanding of these complex processes will result in better decisions and make the restoration process more sustainable. This understanding will play an important role in coastal restoration by helping decision makers select the most suitable areas along the coast to restore and/or purchase and to model and monitor the effect of the restoration activity. The modeling part of the decision support tool will allow decision makers to ask "what if" scenarios and answer questions about a part of a watershed.</p> <p>Project Description: The proposed tool will develop a decision support system (DSS) (Figure 1) by integrating remote sensing and geospatial analysis with existing and validated numerical watershed models to analyze potential restoration decisions and provide possible outcome scenarios. The DSS will integrate the drainage network, current and/or past LULC, and the EPA coupled watershed and water quality model Better Assessment Science Integrating point & Non-point Sources (BASINS), which has been developed and tested by the EPA. The interface to the model and the DSS will be in a web mapping service created as part of the project. The web mapping service will be developed using a Geographic Information System (GIS) and will allow users to evaluate potential development projects through a web portal. The integrated models will accept user input for the scenarios, and process the results in a geographic format.</p> <p>The goal is to evaluate the potential changes in nutrient and pollution concentrations into the coastal environment by simulating the entire path of nutrients and pollutants from watershed to the drainage network and to estimate the impact on coastal water quality. This system will provide a tool for decision maker to evaluate the water quality in the Mississippi Sound estuary (Figure 2), and analyze the impact of upland land use and land cover change. The BASIN model will quantify the Total Maximum Daily Loads (TMDLs) for nutrient and sediment management, and provide information for evaluating alternatives.</p>	Jackson	Yes	No		No	No	No	No	No	No	No	No	No	No	No	No	\$ -	\$ -	
Eco Restoration	4249	11/26/2014	<p>Objective: Develop a decision support tool to evaluate the impacts of upland land use land cover (LULC) change on coastal water quality and provide analytical tools to help select the most suitable areas for restoration and a site for monitoring the progress of the restoration.</p> <p>Background: With the development of the gaming and tourist industry, Mississippi's Gulf coast has experienced rapid growth in population and economic activity in the past several years. The population of the coastal counties in Mississippi has been increasing and continues to increase, resulting in changes to the land use and the land cover on the coast and the upland areas. According to the new U.S. Census population estimates the Mississippi Gulf coast has three of the top 10 fastest growing cities in the state from 2012 to 2013. In response to the rapid growth in coastal population and economy, the Mississippi Department of Marine Resources (DMR), the lead agency for the State's Coastal Management Program, developed the Comprehensive Resource Management Plan (CRMP). The CRMP seeks to balance natural resource protection and economic development through cooperation among local, state, and federal agencies and the private sector.</p> <p>Land use/land cover and water quality are unequivocally linked. Changes in the upland land use and/or land cover can impact water quality in the coastal area. Coastal waters receive runoff from surrounding watersheds that drain these upland areas into the coastal estuary. Changes in the LULC of the upland portions of coastal watersheds can produce increased amounts of nutrients, sediment, and other pollutants. Proper understanding of these complex processes will result in better decisions and make the restoration process more sustainable. This understanding will play an important role in coastal restoration by helping decision makers select the most suitable areas along the coast to restore and/or purchase and to model and monitor the effect of the restoration activity. The modeling part of the decision support tool will allow decision makers to ask "what if" scenarios and answer questions about a part of a watershed.</p> <p>Project Description: The proposed tool will develop a decision support system (DSS) (Figure 1) by integrating remote sensing and geospatial analysis with existing and validated numerical watershed models to analyze potential restoration decisions and provide possible outcome scenarios. The DSS will integrate the drainage network, current and/or past LULC, and the EPA coupled watershed and water quality model Better Assessment Science Integrating point & Non-point Sources (BASINS), which has been developed and tested by the EPA. The interface to the model and the DSS will be in a web mapping service created as part of the project. The web mapping service will be developed using a Geographic Information System (GIS) and will allow users to evaluate potential development projects through a web portal. The integrated models will accept user input for the scenarios, and process the results in a geographic format.</p> <p>The goal is to evaluate the potential changes in nutrient and pollution concentrations into the coastal environment by simulating the entire path of nutrients and pollutants from watershed to the drainage network and to estimate the impact on coastal water quality. This system will provide a tool for decision maker to evaluate the water quality in the Mississippi Sound estuary (Figure 2), and analyze the impact of upland land use and land cover change. The BASIN model will quantify the Total Maximum Daily Loads (TMDLs) for nutrient and sediment management, and provide information for evaluating alternatives.</p>	Hancock, Stone, St Tammany, Mobile, Jackson, Pearl River, Washington Harrison, George	Yes	No		No	Yes	No	No	No	No	No	No	No	No	No	No	\$ 300,000.00	\$ -	Evaluating and monitoring
Eco Restoration	4258	12/10/2014	<p>Bioclar has emerged as a promising sorbent for recovering or containment of marine crude oil spills (Nguyen and Pignatelli, 2013). Bioclar are porous, and has a bulk density lower than that of seawater so that bioclar particles float on seawater. Bioclar contain pores with hydrophilic internal surfaces that are wetted much faster by organic components rather than water (Gray et al., 2014). This difference is particularly noticeable when the bioclar is produced from porous at low temperature (i.e., 373K). Thus, the spilled oil can effectively fill the pores of bioclar particles while water cannot. Bioclar can also adsorb the dissolved oil species and remediate the contaminated seawater. Biomass is abundant in the Gulf region and bioclar is usually a byproduct of biofuel production. It is therefore relatively inexpensive compared to other synthetic absorbents. Moreover, the spent bioclar can be burned directly along with the absorbent oil in controlled environments for energy production. That is, there is no need to separate the absorbent oil from the bioclar for their end use, and the energies of both bioclar and oil can be recovered. As results of these advantages, bioclar is likely a cost-effective absorbent for remedying spilled oil.</p> <p>Bioactivity for Activation and Newly-discovered Method: Absorption is a major technology for the remediation of spilled oil and contaminated water. Sorbent's adsorption capacity and ultimate fate are a major cost factor for this technology. Absorption capacity, in turn, depends mainly on the sorbent's internal pore volume and surface area. Nguyen and Pignatelli (2013) reported that bioclar from hardwood has a lower absorption capacity than those of many synthetic absorbents. Thus, internal pore volume of bioclar has to be increased. CO₂ and water are usually used to form a fraction of carbon in generating larger pore volume during activated carbon production. Such physical absorption usually requires a temperature in the range of 600K-1200K, implying the energy intensity required for such activation process. Recently, the Sustainable Energy and Environment (SEE) group at the University of Mississippi (UM) developed a family of new methods for bioclar activation that was conducted in the temperature range 60-703K. The energy throughput for the activation is much lower than the traditional methods. SEE is able to achieve a 16-fold increase in internal surface area from 12.9 to 209.0 m²/g. This activation approach is simple and requires agents that are readily available everywhere. Moreover, SEEA's low-temperature activation methods remove significant amount of exchangeable mineral components, which further enhance the hydrophobicity of the bioclar's internal surfaces. Considering these benefits of energy consumption and those mentioned in the last section, the cost for such absorption concept is likely to be highly competitive to the current remediation methods.</p> <p>Proposed Work: The proposed work will include the following tasks: 1. SEE group will produce bioclars from typical readily available biomass in the Gulf States including rice hull, rice straw, switch grass, and hardwood under different conditions in our Combustion Lab. 2. SEE group will activate and characterize the bioclars by using novel activation and analytical methods. 3. SEE will optimize the variables for pyrolysis and treatments. 4. SEE group will then test the oil absorption capacity of the new and activated bioclar and compare those of the synthetic carbon in the market. 5. SEE will conduct techno-economic analysis of the proposed bioclar-adsorption process and compare it with that of the current technologies.</p>		Yes	No		Yes	Yes	No	No	No	No	No	No	No	No	No	No	\$ 300,000.00	\$ -	Develop product and create industry in MS
Eco Restoration	4278	12/29/2014	<p>A partly channelized ditch supplies a large amount of runoff into the Mississippi Sound and causes persistent beach closures in a very popular beach area. Although there is a low forested area adjacent to the drainage way, it provides limited ecological service for improving water quality. The geometry of the ditch is straight and direct, and it has steep sides, contributing sediment from erosion of the banks, and reducing the potential for settling and filtration during rain events. The extent of this rain-watered estuary past Central Avenue and the railroad tracks.</p> <p>Initially, the water quality (land quantity) will be monitored to determine the problem: is it animal waste, sewer issues, or other bacterial sources? We will work with the City of Bay St Louis Public Works and REACH, a program of Mississippi State University, to set up a water sampling program.</p> <p>The proposed project will then address the specific problems identified. Actions may include: repair lift stations, enlarge drainage space, introduce settling areas for sediment, and replant stormwater drains to filter other undesirable contents. Water quality monitoring will also be performed after improvements to measure the changes. The outfall is located in proximity to MDEQ Hancock County Sampling Station 04 (EPA MS316173), which is frequently listed as water Contact Advisory as a result of high bacterial pathogen indicator levels.</p>	Hancock	Yes	Yes		Yes	Yes	No	No	No	No	No	No	No	No	No	No	\$ 350,000.00	\$ 20,000.00	
Eco Restoration	4279	12/29/2014	<p>Restoring the Ditch</p> <p>A low wetland area consisting of forested lots which led to the Mississippi Sound was damaged during hurricane Katrina. This area now provides limited ecological service for improving water quality and adjacent beach closures. Current development patterns are low, but the lots have been converted to residential use. Outfall is located in proximity to MDEQ Hancock County Sampling Station 03 (EPA MS594393) which is often listed as water Contact Advisory as a result of probable high bacterial levels. Because of the habitat damage, the wetland area and the lack of a healthy forest have decreased the protective aspects for community resilience for this site, for both incoming and outgoing flows of water.</p> <p>The first step will be to monitor the water quality (land quantity), to determine the problem: is it animal waste, sewer issues, or other bacteria sources? We will work with the City of Wouland Public Works, and REACH, a program of Mississippi State University, to set up a water sampling program.</p> <p>The proposed project will take action to address specific problems identified through: repair of lift stations, enlarging drainage space, removing construction debris and abandoned sills, introducing settling areas for sediment, and replanting stormwater drains to filter undesirable contents. Water quality monitoring will be performed after improvements to measure changes.</p>	Hancock	Yes	Yes		No	Yes	No	No	No	No	No	No	No	No	No	No	\$ 320,000.00	\$ 20,000.00	

Project ID	Project Name	Start Date	Description	Lead Agency	Priority	Phase	Status	Impact	Cost	Notes								
4283	1/5/2015	Eco Restoration	Supporting facts 1. A more attractive appearance, tourist friendly public amenities and coordinating tourist information signage is needed in order to maximize the effectiveness of programs and marketing that generates visit to our destination. 2. Research shows that one of the reasons cited for not visiting the MS Gulf Coast is lack of a variety of things to do. With over 600 visitor amenities, attractions and activities available, it is clear that we need to improve our communication of tourism offerings. 3. Improving the visitor experience will generate return visits and invaluable word of mouth advertising for our destination, especially in this age of social media when personal experiences and endorsements are the most trusted source of information for travelers. 4. Harrison and Hancock County already have fully developed plans with costs that include tourist friendly areas, signage, parking, amenities and more that would make Beach Boulevard and Hancock County waterfront and beach areas a true visitor destination. These plans could easily be expanded and coordinated for Jackson County tourist areas. Managing these plans as one project with inter-local agreements and cooperation between municipalities will enhance and strengthen marketing as one Mississippi Gulf Coast. 5. Additional jobs will be created to complete construction and installation of the new facilities and enhancements as well as potential permanent jobs necessary to provide ongoing maintenance. Required funding Enhance aquatic habitat around existing piers to promote fishing, crabbing and other recreational activities for tourists. \$1,750,000	Harrison, Hancock Jackson	Yes	No	No	No	No	No	No	No	No	No	\$ 1,750,000.00	\$ -		
4288	1/8/2015	Eco Restoration	It is recommended that \$2,019,350 in Restore Act Funds be utilized to launch ONE COAST Scenic Byways and Relocation Campaign to drive tourism and real estate sales. A decade in the making, Beach Boulevard in Hancock County, is the only shoreline along the MS Gulf Coast that has received the designation as a Mississippi Scenic Byway. The vision for a scenic byway did not start at the 13 miles of shoreline in Hancock County. The 30 miles in and around NARADAC's Stevens Space Center buffer zone, an untouched natural green space that can never be developed, is now part of the Byway to Space. The buffer zone—a natural haven for birding, hiking, fishing, camping and exploring—is not only a national asset for homeland security and defense, but also for the emerging new eco-tourism product of the Mississippi Gulf Coast. Work is underway now to connect the beach boulevard byway to the rest of the Gulf Coast by naming Highway 90 in Harrison and Jackson counties as Scenic Byways, to celebrate the 100th Year Anniversary of the Old Spanish Trail. During 2015, the by-way will extend into Harrison County up to Debus Road. There is interest from Jackson County leaders to extend the by way there and in Biloxi, segmentation may be required to carve out the Casino Districts. A Mississippi Scenic Byway designation can benefit a community in several interrelated ways: Resource protection; Community recognition as a source of pride; Economic development/tourism through visitor loyalty, access spots to scenic tourists; Community cohesion to address roadway concerns and land use issues; Farming by bringing individuals, land owners, the public and private sector to partner for betterment of the community; Access to federal and state grants, trusts, loans and assistance programs for safety improvements, facilities, improvements to access areas, protecting historical and cultural resources. The mission of the Mississippi CoastScenic™ two new scenic byways is to preserve, enhance, protect and promote the natural, historic and cultural tourism intrinsic values of 62 miles of scenic roadways for the enjoyment and education of the American public. The goal of the scenic byways programs is to introduce the Byways to Space and the Beach Boulevard Scenic Byways to the public by: 1. Being a major advantage of the INFINITY Science Center, a Mississippi Tourist attraction that opened in mid April 2012 that has a focus on the science of land, sea, and outer space. 2. Connecting the Byways to Space and the Beach Boulevard Scenic Byways, and the intrinsic resources along these byways, as an eco-tourist laboratory where people can have a hands-on experience with what they have learned about inside the INFINITY Science Center. 3. Providing electronic and static information on to the public to plan their visit to the byways, to actually guide the public around the byways, and to provide visitor information at various locations on the many scenic resources located along the byways. 4. Encouraging the public in the potential expansion of the byways to provide more of a seamless visitor experience. Promoting the cultural and heritage tourism of the area is the catalyst needed to increase visitation, new business income, tax revenue and jobs for the region, using the INFINITY Science Center as the mechanism to draw the estimated 300,000 annual visitors off the interstate and into the communities surrounding the Center. Connecting the Scenic Byways to Space to the Beach Boulevard Byway will draw the visitors from the interstate into the coves of Houndstooth and Bay St. Louis and ultimately across the Coast as a preferred tourism route, thereby generating tourism activity throughout the region.	Hancock, Harrison Jackson	Yes	Yes	50000	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	\$ 2,019,350.00	\$ -	
4303	1/20/2015	Eco Restoration	Not as an integrated ecosystem monitoring and modeling network is critical to understanding the interconnected Gulf ecosystem. It is also critical to design, develop, and implement this network as a Comprehensive Integrated Project. A detailed Project Management Plan will be prepared from all the individual proposals. Project Management Principles and Procedures are an ideal way to ensure that the execution of this science based system is successful and meets the needs of the resource management, regulatory and emergency response community (hereafter referred to as decision makers). The project will follow a modified spiral development approach, where each proposal will represent a spiral. Figure 1 in the following attachment, highlights the complexity due to the number of organization performing research and implementation of funded projects in the Gulf. A large effort of coordination between all developing organizations will be required to minimize unwanted duplication. Table 1 in the following attachment, provides the basis for the funding requests and forms the project management basis for all further actions. A Requirements Traceability Matrix (RTM) will be established and maintained throughout the design, development, testing, and implementation phase of each spiral. A key component of the Project Management Plan will be defining how the large amount of data being collected will be managed, and what information products derived from those data are needed by decision makers. Deep Water Horizon once again highlighted the need for a better understanding of the environment and ecosystem making up the Gulf of Mexico region. Many agencies, at all levels of government, universities, NGOs, and industry are more involved in the complex environment of the Gulf. Resources from the quantities from the oil spill are being provided to NOAA, IAMS, and the RESTORE Act and other for the restoration of the Gulf. These programs will generate large amounts of environmental data and information. These funding sources will direct how this data and information are to be managed. Each recipient of funding will be required to manage the funded data quality. Working with NOAA and Restore Act funding sources, plan develop a Data Management Policy and Procedures for managing all these collected data. All data collected under these funding initiatives have to open and free to the public. These data have to be discoverable and accessible to users. These data have to be prepared for future generations. This Project Management Plan will define all the Data Policies and Procedures needed for all these data types collected. It will be the responsibility for each of the funded proposals to actual processes these data in the Project Management Plan direction. As part of the Project Management Plan, project personnel will interact with NOAA, the EPA, the MDCO and MS DMR to ascertain what information products, or decision support tools, would be most useful to them from the subproject monitoring data in the Gulf of Mexico. Where possible with existing resources these tools will be developed. If more resources are required, the development of these tools will be recommended for future funding.	Hancock, St Tantany, Mobile, Jackson, Harrison	Yes	No	Yes	Yes	Yes	No	No	No	No	No	\$ 2,000,000.00	\$ -	monitoring and Data Systems	
4306	1/26/2015	Eco Restoration	The health and productivity of the Northern Gulf of Mexico's estuarine and coastal ecosystems and habitats is tied to salinity levels and their inland extent. Salinity levels are inextricably linked to the timing, duration, volume and location of freshwater inflows from innumerable rivers, streams and bays. Mississippi's main coastal rivers such as the Pascagoula and Escatawpa collect and transport large volumes of silt, sediment and nutrients from a fairly flat landscape into the Mississippi Sound where fresh, estuarine and Gulf water intermingle. As they near the coastal interface, rivers often meander through flat, marshy landscapes with numerous secondary and abandoned channels, oxbows, and large areas of off-channel wetlands. The coastal savannahs and estuarine marshes of Mississippi's Grand Bay represent the historic deltaic environments the Pascagoula and Escatawpa Rivers formed when the Escatawpa River flowed directly into the Mississippi Sound near the border of Mississippi and Alabama, just east of Jackson County, Mississippi. At some point before 1950, the Escatawpa River channel shifted so that it flowed directly into the Pascagoula River and Grand Bay. The Pascagoula River outlet also shifted westward which severely limited the inflow of freshwater, nutrients, and sediments into Grand Bay. The construction of bridges for railroads and highways also altered historic flows and surface flows that contributed to the loss of historic freshwater flows into Grand Bay. Many of the bays now flowing into Grand Bay have also been modified by development and conversion for commercial, residential, industrial, or recreational purposes. Much of the Grand Bay's unique ecosystem is protected and managed as public lands including a National Estuarine Research Reserve (NERR) (18,000 acres) and a National Wildlife Refuge (NWR) (12,000 acres when completed). The Mississippi Department of Marine Resources also has two Gulf Environmental Management Sites (GEMS) in the Grand Bay watershed: 1) the 2,226-acre Escatawpa River Marsh Preserve and 2) the 20,000-acre Grand Bay Savanna Preserve. Most estuarine ecosystems can only tolerate a specific salinity range. Many plants and animals are intolerant of salinity levels that are too low or migrate to find water with the appropriate salinity. However, plants cannot adapt as quickly and will die and be replaced with more resilient plants if there are long term salinity changes. Precipitation, or the lack of precipitation, and its delivery into the estuaries is the primary factor influencing salinity levels. Similarly, habitats change in response to salinity levels. Moving upstream or inland from the coast the tidal influence weakens allowing tidal freshwater marshes and swamps to form. Water levels in these transitional habitats vary from tidal fluctuation and from freshwater inflow. The habitats may be dry for prolonged periods of time during droughts and totally submerged for weeks at a time during floods. Accordingly, alterations in the location and volume of freshwater inflow can severely disrupt Grand Bay's unique coastal ecosystems and habitats. In addition, Global Climate Change/Variation projections predict even less freshwater inflow because of less precipitation and higher temperatures with increased evapotranspiration throughout Grand Bay's watershed. A diversion project to return a portion of the Escatawpa River's flow to Grand Bay may be critical to ensure Grand Bay's ability to provide long-term ecosystem services. Still, any freshwater diversion may deliver excess sediment and nutrients into Grand Bay which could cause algal blooms, lower light attenuation, and eutrophication. The Mississippi Coastal Improvement Program (2009) proposed developing a Kcares refined hydrodynamic model for the area, integrating biological, water quality, and physical data into the model to evaluate a variety of freshwater diversion scenarios. The modeling effort needs to be conducted in conjunction with interviews and public workshops to gather community information. If feasible, a freshwater diversion project may serve to enhance the areas wildlife resources. The need for freshwater diversion at the Grand Bay savannahs and marshes would help restore the predominant wet pine savannah habitat.	Jackson	Yes	No	No	No	No	No	No	No	No	No	\$ 3,500,000.00	\$ -		
4310	1/27/2015	Eco Restoration	Escatawpa River Hydrologic Restoration Study The purpose of this project is to qualitatively and quantitatively study the sand beaches and natural shorelines within Jackson County. Erosion of the beach and shorelines through natural accretion and storm activity requires continuous maintenance and replenishment efforts to sustain the coastline. The goals of the study are as follows: 1. Develop baseline data to accurately quantify and qualify the sand beach shorelines. 2. Develop numerical models to simulate beach and shoreline erosion for high and low frequency storm events. 3. Develop strategies to control erosion of the sand beaches. 4. Investigate alternate shoreline/bayline and determine those that are the most suitable for this environment. 5. Develop a Management, Operations, and Maintenance Program for the sand beaches. 6. Develop and investigate an offshore dredging replenishment program. The County's beaches and shorelines face loss of sand and sediment. Stabilization of the beaches and shorelines will significantly reduce maintenance costs. A well-established coastline will provide protection during storm events and promote tourism, while maintaining wildlife habitat.	Jackson County Shoreline Protection Program	Yes	Yes	No	No	No	No	Yes	No	No	No	\$ 500,000.00	\$ -		
4311	1/28/2015	Eco Restoration	The Jackson County Board of Supervisors is proposing the replacement of the current Spring Lake Dam situated in a residential/agricultural area north of the Vanhook Community. Spring Lake is approximately 71.8 acres in area at normal pool. This lake was created by a man-made dam constructed across the reach of Little Creek. Spring Lake Drive is located on the crest of the dam which forms the embankment for the downstream boundary of the lake. Over recent years, the dam has failed resulting in the loss of Spring Lake Drive and a severely decreased pool elevation for the lake, as well as the loss of access across the dam. Continued deterioration of the dam is eminent. The purpose of this project is to restore the Spring Lake Dam to breach conditions. Restoration will reestablish access across the dam and allow the lake to fill to the normal design pool elevation. The proposed dam structure will be established in accordance with established requirements for spill dams as indicated by the Mississippi Department of Environmental Quality. In addition to providing safe access and creating a structurally sound dam, this will provide recreational and fishing activities to the local residents.	Jackson	Yes	Yes	10000	No	No	No	No	Yes	No	No	\$ 3,125,000.00	\$ -		
4314	2/19/2015	Eco Restoration	Bay St. Louis has over 27 miles of waterways inside the city limits. The waterways include natural streams and a system of canals that connect to the Jordan River and Bayou LaCade. The entire system is in great need of maintenance or dredging and debris removal to cure the residual impacts of sediment and trash accumulated from decades of hurricane and flood deposits. Dredging the entire system would have multiple benefits that would include but not be limited to improving water quality; flood prevention with better drainage/runoff; navigation, recreational safety and useful byproduct (sediment removed could serve as marsh replenishment material). BLS proposes to remove the numerous derelict boat houses and damaged piers/docks from along the water front on Beach Blvd. These structures pose a navigational danger to boaters, fishermen and recreationalists which frequent the water front.	Hancock	Yes	Yes	Yes	No	Yes	No	No	No	No	No	\$ 15,000,000.00	\$ -		
4333	3/4/2015	Eco Restoration	BLS proposes to remove the numerous derelict boat houses and damaged piers/docks from along the water front on Beach Blvd. These structures pose a navigational danger to boaters, fishermen and recreationalists which frequent the water front. The project will locate willing sellers within the Bayou Portage Marsh Coastal Preserve, acquire the land, and preserve and monitor it in the name of the State for future generations. From the DMW website, the primary boundary of this 4,020-acre preserve follows the edge of the marsh along the Biloxi River, Choctawhatchee River, Bernard Bayou, and includes the portions of marsh that is non-flooded. This unique location provides excellent feeding, resting, and wintering habitat for numerous types of migratory bird species, such as the Brown Pelican, White Pelican, Osprey, and cormorants. This area is also known to be an Osprey rookery. See more at: http://www.dnr.state.ms.us/index.php/mississippi-gems/020-biloxi-river-marsh-coastal-preserve/	Harrison	Yes	No	No	No	No	No	No	No	No	No	\$ 2,201,470.00	\$ -		
4324	3/4/2015	Eco Restoration	This project will locate willing sellers within the Bayou Portage Preserve, acquire the land and preserve and monitor it for future generations. From the DMW website, the primary boundary of this 1,337-acre preserve follows the edge of the estuary along Bayou Portage. This is an estuarine marsh that is expected or known to include the following ecological communities: estuarine habitat 1) muddy sand embayment 2) small tidal creek, estuarine intertidal 1) mesohaline marsh 2) oligohaline marsh. See more at: http://www.dnr.state.ms.us/index.php/mississippi-gems/025-bayou-portage-marsh-wildlife-draft/	Harrison	Yes	No	No	No	No	No	No	No	No	No	\$ 294,600.00	\$ -		
4325	3/4/2015	Eco Restoration	This project will locate willing sellers of the Biloxi Bay Marsh Coastal Preserve, acquire the land, and preserve and monitor it in the name of the State for future generations.	Harrison	Yes	No	No	No	No	No	No	No	No	\$ 350,000.00	\$ -			

Eco Restoration	5379	7/13/2015	Exit Mississippi Artificial and Oyster Reef Expansion and Enhancement	Anglers and conservation organizations working with the THCP to identify projects to help restore and sustain fisheries along Mississippi's coast stand areas in eastern Mississippi are lacking in artificial reefs and the natural reefs in the area have been diminished by decades of oyster harvest. Areas in Pascagoula Bay and adjacent waters suitable for oyster production after placement of reef materials would have to be identified. Placement of 30 acres in all of reefing materials including limestone, crushed concrete and recycled oyster shells would follow the identification of suitable reefing areas. Additional funding should be set aside for maintenance and monitoring of reefs over the next two decades.		Yes	No		Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	\$	6.00	\$	-	
Eco Restoration	5380	7/13/2015	Reef Fish Barotrauma Reduction, Education and Outreach Program	Reef fish such as snappers, groupers, amberjacks and sometimes red drum caught in waters deeper than 30 feet can suffer from barotrauma. Recreative seasons, creel limits and size limits are forcing the release of fish and unintended species caught by anglers out of season. Barotrauma reduction devices allow the fish to be returned back to the depth from which it was caught without puncturing the fish's swim bladder. Research facilities and anglers in the Gulf have been experimenting with the use of barotrauma reduction devices recently and have determined they are an effective way to return fish to the depth from which they were caught and increase survival rates. Increasing survival rates can possibly lead to more consistent recreational seasons and help improve stock sizes. An education and outreach initiative should be coordinated by the Mississippi Department of Marine Resources along with other appropriate state agencies and research institutions as well as conservation and industry groups such as the Coastal Conservation Association and American Sportfishing Association and local retailers. Printed materials, videos and workshops should be targeted towards anglers and charter captains and efforts should be made to provide reduction devices to anglers and captains.		Yes	No		Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	\$	1.00	\$	-	
Eco Restoration	5381	7/13/2015	Offshore Artificial Reef Creation, Monitoring and Maintenance	Mississippi Recreational Fishing groups have been successful in securing materials suitable for construction of productive reefs that can increase fisheries habitat as well as access for anglers. Funds have historically been unavailable for monitoring and maintenance of existing reef materials. The offshore artificial reef creation monitoring and rehabilitation program would provide the funds needed to monitor and enhance existing reefs as well as identify additional locations for reef construction in areas most suitable for reef habitat and where fisheries production can be maximized.		Yes	No		Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	\$	25.00	\$	-	
Eco Restoration	5388	8/30/2015	Executive Summary Developing Grassroots Ideas for the Purpose of Building a Sustainable Economic Engine by Finding Innovative Ways of Restoring Gulf Coast Industry and Reinvesting in Existing and New Business Development	The proposed plan outlines a multi-faceted approach to developing a Community-based High Technology Laboratory capable of producing an Economic Engine. Resulting in innovative approaches to developing for-profit businesses and industry, future products to capture retail trends, and innovations in green technologies in order to produce sustained economic and community development in targeted impoverished regions. The Coastal cities and Counties sit at the epicenter of the slowest recovery from the effects of natural disasters and economic and community development in the State of Mississippi. Hancock, Harrison, Jackson Counties in Mississippi are parts of the coastal region which severely suffers from challenges in business development, economic disparities, poor school systems and inadequate predictable measures for warning evacuees and responders during disaster events. A multi-faceted approach capable of maximizing existing resources while creating effective Economic Engine(s) needed to stimulate job creation in the targeted region. This engine has to be strong enough to withstand a consistent level of development while creating tools that will produce short-term, mid-term and long-term results. The Transocean and BP settlements can be effective alternatives in order to have create the flexibility to access outcomes and effectively change course to achieve set objectives capable of sustaining effective economic growth. We believe the goal in the Coastal region should be to create a viable, productive and growing economy capable of maximizing its rich assets. The Living Worst High Technology Renewable Energy and Business Development Incubator (HTREBDI) can be the catalyst needed utilizing S&S Laboratories to effectively address economic and community development in the Coastal region.	George, Jackson, S Tate, Hancock, Pis in River, Mobile, St Tammany	Yes	Yes	25000	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	\$	10.00	\$	-
Eco Restoration	5395	9/17/2015	Tricentennial Park Public Improvements	Tricentennial Park, located on the north side of Highway 90 in East Biloxi, was purchased to preserve public access to valuable waterfront property that bordered the restored, historic Tullis-Talbot Manor and some of Biloxi's finest old live oak trees. Damage from hurricane Katrina destroyed the Manor and its outbuildings, but many of the oaks survived and the site continues to serve a public purpose by preserving unobstructed views of the Mississippi Sound. Through this project, the City seeks to improve the sight access to complement activities of the Ole' Ole' Ole' Museum of Art located on the west side of the site) to provide pedestrian access across Highway 90 via a crosswalk to connect the park with the Sand Beach and Schooner Pier Complex; to restore a wetlands area on the southeast portion; and to enhance recreational opportunities on the park's east side. Improvements will include uniform landscaping, lighting, irrigation and walkways, additional parking on the northeast portion of the site, interpretive signage, relocation of the Biloxi Tricentennial mosaic mural to the park, and installing a berm to support a bandshell/patio for outdoor music and other activities. Before development of Highway 90, the southeast portion of the site was heavily influenced and will be restored as a wetlands garden area with interpretive signage identifying the benefits of restoring and/or preserving wetlands in Coastal Mississippi. A pedestrian crosswalk across Highway 90 will be installed to provide public access to connect the park with the Sand Beach and Schooner Pier Complex. Benefits derived from implementation of this project include, but are not limited to, improved public access to a public park with magnificent views of the Mississippi Sound and Deer Island, expanded public recreational park space for picnics and other leisure activities, restored wetlands and improved water quality to support marine species and public recreational uses. Benefits also include expanded educational opportunities through signage and displays to educate the public about the value of the Coast's natural resources and habitats. Increased visitation to the park as a result of project implementation is anticipated to have regional economic benefits, such as job creation and increased sales tax collections, by stimulating redevelopment in East Biloxi. Match for the project, valued at an estimated \$90,000, will be provided by the Ole' Ole' Ole' Museum of Art in the form of in-kind services contributed for architectural and landscape plans; in-kind labor provided by the Harrison County Public Works Department; and donation of LED lighting fixtures and installation services provided by Mississippi Power Company.	Harrison	Yes	Yes	40000	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	\$	840,000.00	\$	90,000.00	
Eco Restoration	5399	9/2/2015	Point Cadet Revitalization from Highway 90 Bridge to I-10 Corridor along the Back Bay Biloxi	This comprehensive project will revitalize waterfront areas of East Biloxi from the Highway 90 Bridge north to and west of the I-10 Corridor through multi-use improvements to enhance and restore natural resources, create jobs, support the seafood and maritime industries, and expand family-oriented attractions to extend visitors' stay on the Mississippi Gulf Coast. Throughout the project area, the City will provide safe, convenient public access to the shoreline and will enhance traditional working waterfront activities with a variety of land uses that showcase local seafood through shopping, dining, entertainment, and educational venues. RESTORE grant funds will be used as part of a public investment strategy to yield a long-term increase in value by revitalizing the Back Bay shoreline east of the I-10 Corridor and adjoining Old Biloxi neighborhoods by enhancing public access to the waterfront and revitalizing the seafood industry through public improvements that will include expanded commercial dock space and supportive landscape amenities. The project will include incentives to diversify the regional seafood industry through development of such things as a soft-shell crab aquaculture program. Redevelopment of the project area, as well as of the local seafood industry, has been particularly slow following its devastation by hurricane Katrina. The Back Bay Festival Marketplace and recreational marina component of the overall project will be located at the site of the Sherman Canaan Fishing Dock, which includes approximately 15 City-owned acres at the north end of Lee Street. This public waterfront area will be reconfigured to offer a marina with recreational boat slips for temporary and long-term rental (for private and for hire vessels), venues for retail shops and restaurants, a sailing school, and space for Mississippi Department of Marine Resources boating safety lessons and boating storage operation. The market place will include an open-air kitchen area to showcase local seafood and to educate the public about seafood cooking methods and opening options, as well as facilities for workforce training in culinary arts that focuses on Gulf seafood and locally-grown/raised products. Shrimping boats currently berthed at the Sherman Canaan Fishing Dock will be relocated east to a new commercial marina that will be constructed on previously-developed property to be acquired by the City in the vicinity of Oak Street. This new marina will improve commercial boat access to Gulf channels and other maritime improvements such as commercial off-loading areas, boat building and repair areas, marine services and net repair areas. Pedestrian walkways will link these two activity hubs to each other and to other points of interest in the project area, including the National Register, City-owned Old Back House and the Bayou Auguste Restoration Project, which involved a local, state and federal partnership effort to convert a neglected urban bayou into a beautiful 12-acre park. The Pine Street Waterfront Access Road and Maritime Commerce Corridor will extend and improve Pine Street from 5th Street south to Highway 90, concurrent with implementation of the City project to extend Back Bay Boulevard from Oak Street southward to Pine Street and then south to 5th Street with funding assistance provided through the Mississippi Development Authority's Economic Development Highway Program. The improved Pine Street will be a four-lane, divided boulevard for greater safety and aesthetic appeal. Debris removal, storm-resilient shoreline stabilization measures and pedestrian access improvements along public waterfront property from the Biloxi Fishing Bridge south to and under the Highway 90 Bridge will expand public opportunity to access a unique area where the Mississippi Sound merges with the waters of the Back Bay of Biloxi. The project will enhance preservation of undeveloped shoreline. The City of Biloxi is requesting funding support to remove marine debris and to restore the shoreline of Point Cadet from the Biloxi Coastal Springs Bridge north to the Biloxi Fishing Bridge. Debris removal, storm-resilient shoreline stabilization measures and pedestrian access improvements along the City-owned waterfront property will expand public opportunity to access a unique area where the Mississippi Sound merges with the waters of the Back Bay of Biloxi. The project will enhance preservation of undeveloped shoreline for the benefit of the public as well as for marine and bird species. In addition, low impact all-weather educational signage will expand opportunities to learn about habitat supported by locally-respected oyster and to encourage long-term stewardship of Coastal natural resources.	Harrison	Yes	Yes	80000	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	\$	95,000,000.00	\$	-
Eco Restoration	5401	9/2/2015	Point Cadet Sunrise Park: Biloxi Tip of Peninsula Public Access and Shoreline Stabilization Improvement Project	The project includes extending the small sand beach on the shore east of the Maritime and Seafood Industry Museum; incorporating the use of the seawall in improving pedestrian access; improving the safety and security of the walkway under the Biloxi-Ocean Springs Bridge; and constructing a small pier for fishing and crabbing. Upland improvements to be built near the MSM include a fluffy around a mature live oak tree; a gazebo; a fountain; a foundation for the Golden Fisherman statue; and a wooden boat building and training demonstration site. Those who attend the many activities hosted at the MSM and/or Biloxi Waterfront Park frequently are tempted to walk along the shoreline north of the Park's splash pad to access the nearby Biloxi Fishing Bridge. Hurricane debris, litter, unanchored mooring plant growth and lack of a well-defined, well-walked path would be an enjoyable nature walk into a hazardous experience. Project implementation will address this problem by providing ADA-compliant pedestrian connectivity along the shoreline of the project area. In addition to the general public, others who will benefit specifically from project implementation are shoreline and wade fishermen, throwers of cast nets and those who enjoy non-motorized water activities such as kayaking, canoeing, and paddle boarding. Participants in the MSM's numerous educational activities and summer camps for children also will benefit from expanded on-site marine-related programming. Marine species and native and migratory shore birds also will benefit from project implementation through replacement of invasive, non-native plants with native plant species appropriate to the shoreline environment. The project complies with the Mississippi Coastal Program in terms of restoring wetlands and marine/shoreline habitat, improving management of stormwater runoff into a public water body and addressing shoreline erosion. Not only will the project provide expanded access to the waterfront and improvements to enhance public enjoyment of the waterfront, but the safety of those who visit the project area will be greatly improved through the removal of hazardous debris. The project's location between City-owned recreational amenities will also expand public access to the shoreline without requiring the construction of additional surface parking. As a part of this project, architectural and engineering planning and design for Phase II of the project will begin. Phase II includes building a longer pier for fishing and dock space for a schooner; dredging at the end of the pier to provide an access channel to the main navigation channel; and clearing all marine debris in the new access channel. The project addresses community goals identified in the Biloxi Comprehensive Plan to preserve public access to waterfront areas and improve pedestrian linkages between public amenities, especially along	Harrison	Yes	Yes	60000	No	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	\$	500,000.00	\$	25,000.00

Project ID	Date	Project Name	Description	County	Status										Funding	Start	End	Type							
					Yes	No	Yes	No	Yes	No	Yes	No	Yes	No											
Eco Restoration	543	10/23/2015	Mississippi Oyster Aquaculture Revolving Loan Program	St Tammany	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	\$	1,000,000.00	\$		
Eco Restoration	545	10/16/2015	Black Creek Land Protection	Jackson/George	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	\$		\$		Land Acquisition
Eco Restoration	544	10/28/2015	Black & Red Creek Land Protection	Jackson	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	\$		\$		Land Acquisition
Eco Restoration	547	10/26/2015	Maple Bend Land Protection	George	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	\$		\$		Land Acquisition
Eco Restoration	549	10/28/2015	Seapoint Land Protection	Jackson	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	\$		\$		Land Acquisition
Eco Restoration	549	10/28/2015	Tchouacabouffa Land Protection	Harrison	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	\$		\$		Land Acquisition
Eco Restoration	541	10/28/2015	Bayou Talla Land Protection	Jackson	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	\$		\$		Land Acquisition

Eco Restoration	5438	10/28/2015	Bel Fontaine Land Protection	The Land Trust for the Mississippi Coastal Plain (LTMCP) is an accredited Land Trust dedicated to the conservation, promotion, and protection of open spaces and green places of ecological, cultural or scenic significance in the counties of the Mississippi Coastal Plain. LTMCP utilizes both fee simple and conservation easement tools in conserving land for the benefit of habitats, species, and recreation. These parcels are located along Graveline Bay in Jackson County, Mississippi, and are part of the Graveline Bayou watershed. This watershed is located in the East Gulf Coastal Plain ecoregion of the southeastern United States, and is part of the Mississippi Coastal Basin and Stream. Native vegetation in this area includes species found in palustrine forested wetlands, estuarine and evergreen forested wetlands, palustrine scrub/shrub wetlands, upland scrub/shrub, and evergreen forested uplands. Ecological Significance: <ul style="list-style-type: none"> ACProtects near-by developed properties as a buffer area for storm surge by providing dispersal and displacement in a flooding event. These flood events have a natural function of turnover and flushing of coastal wetlands. The protected open spaces create an offset to protect community infrastructure. ACProtects grasslands that are important for removal of foreign nutrients from the water column, which promotes clearer and healthier water for all wildlife and surrounding communities. ACProtects emergent vegetation and subsurface vegetation that provides values required for wildlife to nest, rest, breed, and forage. ACProvides critical wintering and migratory stop-over sites for migratory birds. ACProvides a runoff buffer for sediments that, if allowed to enter the bay directly, will clog waterways used for recreation and as habitat for wildlife. ACCreates open spaces that will provide areas for people to witness and learn about their natural environment. ACCreates open spaces that provide opportunities for low impact recreational activity, such as bird watching and other wildlife observation, fishing, net-casting, and kayaking. 	Jackson	Yes	No			No	No	No	No	No	No	No	No	No	No	\$	\$	-	Land Acquisition
Eco Restoration	5439	10/29/2015	Thairwater Land Protection	The Land Trust for the Mississippi Coastal Plain (LTMCP) is an accredited Land Trust dedicated to the conservation, promotion, and protection of open spaces and green places of ecological, cultural or scenic significance in the counties of the Mississippi Coastal Plain. LTMCP utilizes both fee simple and conservation easement tools in conserving land for the benefit of habitats, species, and recreation. These two parcels are located along the entrance into the Back Bay of Bilou in Ocean Springs, Mississippi. These parcels are currently undeveloped tidal marsh and scrub/shrub wetlands adjacent to residential developed properties. The Colford parcel has belonged to the Anderson family since the 1910s, and is historically significant to the community. The Ocean Springs property lies adjacent to essential white egret and blue heron nesting areas. Ecological Significance: <ul style="list-style-type: none"> ACCreates open spaces that will provide areas for people to witness and learn about their natural environment. ACCreates open spaces that provide opportunities for low impact recreational activity, such as bird watching and other wildlife observation. ACProtects emergent vegetation and subsurface vegetation that provides values required for wildlife to nest, rest, breed, and forage. ACProvides critical wintering and migratory stop-over sites for migratory birds. ACProtects near-by developed properties as a buffer area for storm surge by providing dispersal and displacement in a flooding event. These flood events have a natural function of turnover and flushing of coastal wetlands. The protected open spaces create an offset to protect community infrastructure. 	Jackson	Yes	No			No	No	No	No	No	No	No	No	No	No	\$	\$	-	Land Acquisition
Eco Restoration	5440	10/29/2015	Old Fort Bayou Land Protection	The Land Trust for the Mississippi Coastal Plain (LTMCP) is an accredited Land Trust dedicated to the conservation, promotion, and protection of open spaces and green places of ecological, cultural or scenic significance in the counties of the Mississippi Coastal Plain. LTMCP utilizes both fee simple and conservation easement tools in conserving land for the benefit of habitats, species, and recreation. This parcel is located along Old Fort Bayou in Jackson County, Mississippi. It is currently undeveloped scrub/shrub wetlands. This property could act as a put-in and take out point for those who kayak and fish in Old Fort Bayou, as there is no such place that serves this function in this area along the waterway. These parcels are part of the Old Fort Bayou watershed, located in the East Gulf Coastal Plain ecoregion of the southeastern United States, and is part of the Mississippi Coastal Basin and Stream. Native vegetation in this area includes species found in palustrine forested wetlands, estuarine emergent wetlands, palustrine scrub/shrub wetlands, upland scrub/shrub, and mixed forested uplands. Ecological Significance: <ul style="list-style-type: none"> ACProtects emergent vegetation and subsurface vegetation that provides values required for wildlife to nest, rest, breed, and forage. ACProvides critical wintering and migratory stop-over sites for migratory birds. ACProvides a runoff buffer for sediments that, if allowed to enter the bay directly, will clog waterways used for recreation and as habitat for wildlife. ACCreates open spaces that will provide areas for people to witness and learn about their natural environment. ACCreates open spaces that provide opportunities for low impact recreational activity, such as bird watching and other wildlife observation, fishing, net-casting, and kayaking. ACProtects near-by developed properties as a buffer area for storm surge by providing dispersal and displacement in a flooding event. These flood events have a natural function of turnover and flushing of coastal wetlands. The protected open spaces create an offset to protect community infrastructure. 	Jackson	Yes	No			No	No	No	No	No	No	No	No	No	No	\$	\$	-	Land Acquisition
Eco Restoration	5442	10/29/2015	Tchoutatoubouff Land Protection 2	The Land Trust for the Mississippi Coastal Plain (LTMCP) is an accredited Land Trust dedicated to the conservation, promotion, and protection of open spaces and green places of ecological, cultural or scenic significance in the counties of the Mississippi Coastal Plain. LTMCP utilizes both fee simple and conservation easement tools in conserving land for the benefit of habitats, species, and recreation. This property is located along the Tchoutatoubouff River in Harrison County, Mississippi. This property is located along a portion of the Tchoutatoubouff River known as a foraging ground for white pelicans and is essential habitat for many species of migratory birds. This parcel is within the acquisition boundary of the State's Coastal Preserve Program and would help to further buffer this riparian habitat and provide connectivity to other protected lands. Ecological Significance: <ul style="list-style-type: none"> ACProtects emergent vegetation and subsurface vegetation that provides values required for wildlife to nest, rest, breed, and forage. ACProvides critical wintering and migratory stop-over sites for migratory birds. ACProtects near-by developed properties as a buffer area for storm surge by providing dispersal and displacement in a flooding event. These flood events have a natural function of turnover and flushing of coastal wetlands. The protected open spaces create an offset to protect community infrastructure. ACCreates open spaces that will provide areas for people to witness and learn about their natural environment. ACCreates open spaces that provide opportunities for low impact recreational activity, such as bird watching and other wildlife observation, fishing, net-casting, and kayaking. 	Harrison	Yes	No			No	No	No	No	No	No	No	No	No	No	\$	\$	-	Land Acquisition
Eco Restoration	5443	10/29/2015	Tchoutatoubouff Land Protection 1	The Land Trust for the Mississippi Coastal Plain (LTMCP) is an accredited Land Trust dedicated to the conservation, promotion, and protection of open spaces and green places of ecological, cultural or scenic significance in the counties of the Mississippi Coastal Plain. LTMCP utilizes both fee simple and conservation easement tools in conserving land for the benefit of habitats, species, and recreation. This property is located along the Tchoutatoubouff River in Harrison County, Mississippi and is essential habitat for many species of migratory birds. Riparian buffers along this corridor will help water quality for the watershed and receiving waters of Back Bay Bilou. Ecological Significance: <ul style="list-style-type: none"> ACProtects emergent vegetation and subsurface vegetation that provides values required for wildlife to nest, rest, breed, and forage. ACProvides critical wintering and migratory stop-over sites for migratory birds. ACProtects near-by developed properties as a buffer area for storm surge by providing dispersal and displacement in a flooding event. These flood events have a natural function of turnover and flushing of coastal wetlands. The protected open spaces create an offset to protect community infrastructure. ACCreates open spaces that will provide areas for people to witness and learn about their natural environment. ACCreates open spaces that provide opportunities for low impact recreational activity, such as bird watching and other wildlife observation, fishing, net-casting, and kayaking. 	Harrison	Yes	No			No	No	No	No	No	No	No	No	No	No	\$	\$	-	Land Acquisition
Eco Restoration	5444	10/29/2015	Delisle Bayou Land Protection	The Land Trust for the Mississippi Coastal Plain (LTMCP) is an accredited Land Trust dedicated to the conservation, promotion, and protection of open spaces and green places of ecological, cultural or scenic significance in the counties of the Mississippi Coastal Plain. LTMCP utilizes both fee simple and conservation easement tools in conserving land for the benefit of habitats, species, and recreation. This parcel is located along Delisle Bayou in Harrison County, Mississippi and is part of the Delisle watershed. This parcel encompasses a significant oak grove that is home to several 800-year old live oak trees, as well as waterfront acreage to Delisle Bayou. Protection of this parcel would be essential in maintaining green-space within the surrounding community. This property would also serve as an outdoor classroom for nearby schools. Ecological Significance: <ul style="list-style-type: none"> ACHistorically significant in protection of 800-year old live oaks and habitat. ACCreates open spaces that will provide areas for people to witness and learn about their natural environment. ACCreates open spaces that provide opportunities for low impact recreational activity, such as bird watching and other wildlife observation, fishing, net-casting, and kayaking. ACProtects emergent vegetation and subsurface vegetation that provides values required for wildlife to nest, rest, breed, and forage. ACProvides critical wintering and migratory stop-over sites for migratory birds. ACProtects near-by developed properties as a buffer area for storm surge by providing dispersal and displacement in a flooding event. These flood events have a natural function of turnover and flushing of coastal wetlands. The protected open spaces create an offset to protect community infrastructure. 	Harrison	Yes	No			No	Yes	No	No	No	No	No	No	No	No	\$	\$	-	Land Acquisition
Eco Restoration	5445	10/29/2015	North Beach Land Protection	The Land Trust for the Mississippi Coastal Plain (LTMCP) is an accredited Land Trust dedicated to the conservation, promotion, and protection of open spaces and green places of ecological, cultural or scenic significance in the counties of the Mississippi Coastal Plain. LTMCP utilizes both fee simple and conservation easement tools in conserving land for the benefit of habitats, species, and recreation. These parcels are located along the transition area of Jordan River into the St. Louis Bay in Mississippi. The area is tidally influenced. Native vegetation founded on the parcels are those found in pine forested wetlands and tidal marsh. There is a county-owned boat launch in the area making it ideal for kayak/canoe launching. The Hancock County Greenway/Blunkey Committee has this area as a conserved priority area for ecotourism utilization. Ecological Value: <ul style="list-style-type: none"> ACCreates open spaces that will provide areas for people to witness and learn about their natural environment. ACCreates open spaces that provide opportunities for low impact recreational activity such as observation of birds, wildlife, fishing, net-casting and kayaking. ACProtects areas that provide clean water for our natural resources further down the watershed. 	Hancock	Yes	No			No	No	No	No	No	No	No	No	No	No	\$	\$	-	Land Acquisition

Eco Restoration	5443	10/29/2015		The Land Trust for the Mississippi Coastal Plain (LTMCP) is an accredited Land Trust dedicated to the conservation, promotion, and protection of open spaces and green places of ecological, cultural or scenic significance in the counties of the Mississippi Coastal Plain. LTMCP utilizes both fee simple and conservation easement tools in conserving land for the benefit of habitats, species, and recreation. These parcels are part of the Campbell Bayou Bayou Caddy watershed. The watershed is located in the East Gulf Coastal Plain ecoregion of the southeastern U.S. and is part of the Mississippi Coastal Basin and Streams. Native vegetation in this area includes: slash pine wetlands, maritime emergent wetlands, saltwater scrub/shrub wetlands, upland scruboak/pine, and evergreen forested uplands. This whole area has large tracts of protected lands of which this parcel could add to and provide further protected areas for marsh migration and storm buffering. Ecological Value: <ul style="list-style-type: none"> 1. A large contiguous area has been identified as Section 404 wetlands within the property boundaries. Wetlands on the site improve water quality by filtering out contaminants, reduce surface water intrusion, act as a buffer against storm surges, and help reduce flooding through stormwater absorption. 2. Three plant communities have been identified: pine forest wetland, forested upland, and forested hardwood wetland. 3. Critical wetlands that are important for removal of nutrients from the water column to provide cleaner and healthier water for all wildlife. 4. Provides critical wintering and migratory stop-over sites for trans-hemispheric migratory bird populations. 5. Provides critical stop-over sites for neo-tropical migratory bird populations. 6. Creates open spaces that will provide areas for people to witness and learn about their natural environment. 7. An intermittent stream, totaling approximately 1,700 linear feet is present. 	Hancock	Yes	No			No	No	No	No	No	No	No	No	No	No	\$	\$	-	Land Acquisition		
Eco Restoration	5447	10/29/2015	Asley Area Land Protection	The Land Trust for the Mississippi Coastal Plain (LTMCP) is an accredited Land Trust dedicated to the conservation, promotion, and protection of open spaces and green places of ecological, cultural or scenic significance in the counties of the Mississippi Coastal Plain. LTMCP utilizes both fee simple and conservation easement tools in conserving land for the benefit of habitats, species, and recreation. This property located along the North Beach adjacent to the Bay of St. Louis in Hancock County, Mississippi. This property is part of the Saint Louis Bay watershed, located in the East Gulf Coastal Plain ecoregion of the southeastern United States, and is part of the Mississippi Coastal Basin and Streams. This property is essential in maintaining blue ways and greenways in Hancock County. Conceptual drawing for a potential greenspace for visitors been developed in which sustainable construction techniques would be utilized to allow wildlife and native species to remain undisturbed and enjoyed by visitors (e.g. marsh path boardwalk, pavilions, look-out tower). Ecological Significance: <ul style="list-style-type: none"> 1. Creates open spaces that will provide areas for people to witness and learn about their natural environment. 2. Creates open spaces that provide opportunities for low impact recreational activity, such as bird watching and other wildlife observation, fishing, net-casting, and kayaking. 3. Protects emergent vegetation and subtidal vegetation that provides values required for wildlife to nest, rest, breed, and forage. 4. Provides critical wintering and migratory stop-over sites for migratory birds. 5. Protects near by developed properties as a buffer area for storm surge by providing dispersal and displacement in a flooding event. These flood events have a natural function of turnover and flushing of coastal wetlands. The protected open spaces create an offset to protect community infrastructure. 	Hancock	Yes	No			No	No	No	No	No	No	No	No	No	No	No	\$	\$	-	Land Acquisition	
Eco Restoration	5448	11/6/2015	Cedar Point Land Protection	The Henderson Point property was donated to the Land Trust for the Mississippi Coastal Plain (LTMCP) in 2013. This property currently has concrete debris, timber, and buildings throughout most of its footprint. The LTMCP intends to remove the concrete debris and restore this property to its native and natural state. This restoration effort will include planting native vegetation, removing invasive species, and recycling the concrete debris in order to stabilize the shoreline with a breakwater structure along the property's western border. This shoreline improvement project is intended to enhance the waterfront through ecological friendly means, while decreasing erosion forces on the property. For the Henderson Point property, there are two objectives to the restoration plan. The first objective is to restore historic, natural land use through removal of concrete debris, buildings, an old bulkhead, electrical wiring, and timber. Once the property is cleared of anthropogenic materials, it will be graded, and native vegetation can either be physically planted or allowed to naturally infiltrate and grow on the property. Any invasive species on the property will be removed, and an invasive species monitoring plan should be established to ensure growth of native species. The second objective is to reduce shoreline erosion through creation of a living shoreline. The LTMCP intends to use material currently on the property (crushed concrete debris) for this breakwater, which will assist in the first step in enhancing the terrestrial portion of the property to its historic, natural state. With the implementation of this living shoreline, sediment is expected to accumulate and native wetland vegetation should begin to grow along the shoreline. A monitoring plan should be established to track any settlement along the breakwater structures, shoreline erosion and/or accretion, vegetation species, oyster settlement on the breakwaters, and any other aquatic species associated with the construction of the breakwater. By implementing these objectives the following outcomes will be achieved: <ul style="list-style-type: none"> 1. Maintain natural coastal processes and shoreline dynamics. 2. Create or preserve habitats for native species of aquatic and terrestrial flora and fauna. 3. Preserve access for aquatic and terrestrial organisms. 4. Reduce economic impacts of facilitating sediment accumulation, potentially resulting in formation of new land. 5. Trap and retain runoff and pollutants. 	Harrison	Yes	No			No	No	No	No	No	No	No	No	No	No	No	\$	600,000.00	\$	-	
Eco Restoration	5449	11/9/2015	Henderson Point Property Restoration and Living Shoreline	The Land Trust for the Mississippi Coastal Plain (LTMCP) is an accredited Land Trust dedicated to the conservation, promotion, and protection of open spaces and green places of ecological, cultural or scenic significance in the counties of the Mississippi Coastal Plain. LTMCP utilizes both fee simple and conservation easement tools in conserving land for the benefit of habitats, species, and recreation. This 40 acre property is in the Old Fort Bayou watershed and contains remnants of long leaf pine habitat. A majority of the property is wetland and is adjacent to a tract of land protected by the LTMCP.	Jackson	Yes	No			No	No	No	No	No	No	No	No	No	No	\$	\$	-	Land Acquisition		
Eco Restoration	5450	11/11/2015	Belly Road Land Acquisition	A project that would look to remove/enhance and protect longleaf pine and bottomland hardwood habitat in the coastal counties of Mississippi. The restoration and/or enhancement efforts would improve water quality and habitat for many species of wildlife including some listed and threatened and/or endangered.	Pearl River, Stone, George, Hancock, Harrison and Jackson	Yes	No			No	Yes	Yes	No	No	Yes	No	No	No	No	\$	\$	-	Land Acquisition		
Eco Restoration	5451	11/23/2015	Longleaf Pine / Water Quality Restoration Project	The Land Trust for the Mississippi Coastal Plain (LTMCP) is an accredited Land Trust dedicated to the conservation, promotion, and protection of open spaces and green places of ecological, cultural or scenic significance in the counties of the Mississippi Coastal Plain. LTMCP utilizes both fee simple and conservation easement tools in conserving land for the benefit of habitats, species, and recreation. The Markham Drive Property is located in Long Beach, MS. The property is under threat of development of an RV park. The area is currently greenspace that the neighboring residents enjoy for wildlife habitat. This tract of land is of significance to the entire Gulf Coast as one of the only remaining undeveloped tracts of mixed pine-hardwood forest land that extends from the beach to the railroad track between St. Louis Bay and Blue Bay. It is the land that takes off place for migrant birds that journey across the Gulf of Mexico. It is winter home to many warblers, flycatchers, and hawks. There is documentation of 77 species of birds utilizing the habitat (47 species of migratory birds and 30 resident species). There is also a variety of native plants, mammals, amphibians, and reptiles. This tract of land is significant locally to the residents of Markham Drive as a buffer from Hwy 90. Development of this land would further exacerbate current flooding issues and the current 12.5 Acres of land (4.5 acres of wetland) act as a buffer for flood management. This land could be part of the Long Beach Strategic Plan for biking/walking area.	Harrison	Yes	No			No	No	No	No	No	No	No	No	No	No	\$	\$	-	Land Acquisition		
Eco Restoration	5453	12/11/2015	Markham Drive Land Protection	The proposed project will fund a perpetual GoCoast Trust Fund that will provide: (1) debt and equity financing of qualified private and public projects that will repay loans with interest and yield a return on equity investments; and (2) grants to public agencies for urgent public projects that do not generate revenue directly, especially eco-restoration projects. The Trust Fund will provide a long term, economically sound framework to stimulate regional economic recovery and growth that serves long term public interests, and it will have the flexibility to adjust to market-driven changes in the regional, national and world economies. The GoCoast Trust Fund will be governed by a three-member Board of Trustees, composed of one resident from each of Hancock, Harrison and Jackson counties. The Governor shall appoint the trustees, subject to the approval of the Mississippi Senate and House of Representatives, for four-year terms, commencing with the Governor. All actions of the Board of Trustees must be by unanimous vote of the trustees. Operating expenses of the Trust may be funded from Trust Fund income and any public or private grants obtained by the Trust. On or before September 1st of each year, the Trustees shall submit to the Governor, the Legislature, and MOED (1) a report of investments; (2) the next state fiscal year itemizing all proposed investments and projects for the next fiscal year; (3) financial statements of the Trust for the previous year, and (3) financial statements projected for the next five years. Prior to submitting each Plan of Investments, the Board of Trustees must submit the Plan to all state Senators and state Representatives representing any part of the three Coast counties. If a majority of Senators and Representatives identify an objection (in writing) to any specific project in the Plan, then that project shall be deleted from the list of projects that may be funded by the Trust for that fiscal year. The Trust will operate in the nature of a public investment bank to fund projects that address economic development, infrastructure, eco-restoration, research and education, seafood, tourism, or workforce development. Priority will be given to projects that stimulate and accelerate long-term, regional economic recovery and growth, job production, tax base expansion, and quality of life for Mississippi Gulf Coast residents. Selection must be based on projects that: Address GoCoast Trust assistance, otherwise would likely not go forward with a strategic timeline and scope of development according to the long-term strategic plan adopted by the Board of Trustees. The operating office of the Trust shall be located within the three Coast counties. Preference will be given to projects that leverage financing from private sources and other public sources, including state and federal grants and incentive programs, such as New Market Tax Credits, Tax Increment Financing, Mississippi Tourism Rebate Program, Public Improvement Districts, Business Improvement Districts, and Community Development Financial Institutions, like the Gulf Coast Renaissance Corporation. Each project will demonstrate it has an economically sound basis for repaying the investment and, where feasible, yielding an appropriate return on investment. Although lending and investment criteria will be designed to preclude and grow the Trust Fund, the Board of Trustees will have the flexibility to set terms that may be less than market rate in order to invest timely, qualified projects that make long-term, systemic improvements to the regional economy and quality of life.	Hancock, Harrison and Jackson	Yes	Yes			Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	\$	100,000,000.00	\$	-	
Eco Restoration	5454	1/15/2016	GoCoast Trust Fund	A project to provide ease of transportation, accessibility and safety along the Interstate 10, Highway 63 and Highway 613 corridors from Old Sarcoma Road north of I-10 to McInnis Avenue and Grison Street south of I-10. <ol style="list-style-type: none"> 1. Interchange improvements and extension of service roads along with service road improvements along the I-10 and Hwy 63 and 613 corridors. 2. Transform the Pascagoula Street/River Road/Giffin Street/Danzler Street corridor into a major improved connector between Hwy 90 and Hwy 613, with widening, turning lanes, improved drainage, resurfacing, lighting, etc. 3. Widening and improvements along Grison & McInnis Ave. from Hwy 63 to Main St. (Once Hwy 90) to create greater access and increased flow to downtown from the east. Also include a stop light and cross walk at McInnis & Main and straightening and widening of McInnis in front of City Hall with added parallel parking. 4. Turning lanes and a traffic light at Hwy 613 and Dutch Bayou Road to create a new main entrance and exit at the Pelican Landing Conference Center, at the intersection. 5. Extend Audubon Way eastward across Main Street to Morris, creating a new intersection and creating commercial development opportunities. 	Jackson	Yes	Yes			Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	\$	\$	-		
Eco Restoration	5455	2/16/2016	Highway Connectivity Project for City of Moss Point	Developing Working Proposals to hire University Researchers and Marketers to address the RESTORE act and present the proposal 100% into dimensional sections for fundamental business comprehensive training and developmental studies in progress.		Yes	Yes			Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	\$	18,000,000.00	\$	-		
Eco Restoration	5473	4/14/2016	Bay St. Louis Public Beach Access	Computerized RESTORE <ul style="list-style-type: none"> 1. International intervention and mitigate NREIS Wetlands Invasions Training and Development. 2. Bay St. Louis proposes to convert public access points along Beach Blue to the public and beach at Carroll and Uthman Ave. These access points will be ADA accessible and consist of concrete walkway, timber decking, timber ramp, galvanized steel support structure, lighting, benches, etc. These access points will provide more access for public use of beach for recreational functions. 	Hancock	Yes	Yes			Yes	No	No	No	No	Yes	No	No	No	No	\$	500,000.00	\$	-		

Eco Restoration	5476	4/20/2016	From Island	All parts of the Gulf Islands National Seashore at available acres on Horn Island needs to be purchased to preserve the natural importance of untouched sand, dunes dotted with sea oats, tall pines on small groves, and a few island iguanas. This magnificent island is the result of an enormous array of life. It is home to varied wildlife including pelicans, cormorants, terns, herons, and other migratory birds. The Sound and the Gulf host innumerable species of sea life. The island is undeveloped, and is a favorite boating destination for those living on the Mississippi Gulf Coast.	Jackson	Yes	No	No	Yes	No	No	No	No	No	No	No	\$ 2,850,000.00	\$ -	
Eco Restoration	5477	4/24/2016	From Island	All land that is for sale that has been designated as part of Gulf Islands National Seashore needs to be purchased to protect the natural state of the preserve. This land has live oaks and pine trees and is adjacent to a saltwater marsh, offering a tropical setting for migratory bird watching. Ocean Springs is a favored bayside, beautiful ocean-view escape by history.	Jackson	Yes	No	No	Yes	No	No	No	No	No	No	No	\$ 495,000.00	\$ -	
Eco Restoration	5478	4/24/2016	Las Arbores	Fort Bayou is a beautiful, meandering waterway in Jackson County, Mississippi. Its origins (headwaters) begin in the longleaf pine swamps south of Vanhook. The Bayou continues through many important natural areas, including the Sandhill Crane Wildlife Refuge, The Nature Conservancy's Old Fort Bayou mitigation property, the Land Trust's Twelve Oaks Conservation Park, and Mississippi's Old Fort Bayou Coastal Preserve, deepening and widening toward its mouth at Flow Bay in Ocean Springs. Due to the importance this waterway plays in the health of the Gulf of Mexico, all available land adjacent to the Old Fort Bayou and its tributaries need to be purchased and preserved in its natural condition.	Jackson	Yes	No	No	Yes	No	No	No	No	No	No	No	\$ 2,800,000.00	\$ -	
Eco Restoration	5479	7/15/2016	Fort Bayou & Highway 57	To jumpstart oyster production off the coast of Mississippi by introducing seeded eyed larvae. These eyed larvae would come from Mississippi brood stock and produced at a Mississippi hatchery. The eyed larvae would be seeded on substrate and then placed in the water. The project would benefit the state of Mississippi by jump starting the number of oysters to be harvested. The young oysters being put on the substrate would grow naturally and release their larvae into the beds being created.	Harrison/Hancock Jackson	Yes	No	No	Yes	No	Yes	No	No	No	No	No	\$ 500.00	\$ -	
Eco Restoration	5480	4/26/2016	Ways to augment oyster restoration with special products	In Mississippi and throughout the Gulf of Mexico, the oyster fishery serves as an integral part of the economy and heritage of coastal communities. Events over the past decade such as Hurricane Katrina and numerous anthropogenic events (e.g., spillway openings, oil spills, etc.) have, however, impacted those resources in Mississippi and caused significant reductions in oyster landings and the amount of viable oyster reef habitat present. Identified as a priority by the Governor's Oyster Council (OCOM), USOM proposes to continue its research and development in the production of eastern oyster larvae in an artificial seawater, microclimate aquaculture system to incrementally scale up larval production to provide a consistent supply of healthy oyster larvae for purposes of restoration and economic development. This supply of larvae will directly support: (a) restoration of the State's public reef and expansion of private leases to increase annual oyster harvest numbers; (b) creation of living frontlines and establishment of natural non-harvest reef for shoreline stabilization/marsh restoration, fishing habitat, and water quality enhancement; and (c) off-bottom culture (90-gallon farming) for expansion of the State's commercial oyster fishery. To support these restoration objectives and achieve the State's goal of ten billion eyed oyster larvae annually, acquisition of the Aqua Green aquaculture facility in Perlinston, MS, and retrofitting/expansion of systems there is necessary to provide a platform for this large scale larval production. Aqua Green was identified by the Council's Oyster Sub-Committee as the recommended hatchery to support Mississippi's oyster restoration because of its island location out of harm's way from tropical storms and its ability to be operational in a short period of time.	Stone	Yes	Yes	7700%	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	\$ 13,000,000.00	\$ -
Eco Restoration	5481	5/4/2016	Oyster Restoration through Aquaculture - Aqua Green	SRHS built and operates a medical clinic in Hurley, MS, prior to the installation of a community water and wastewater treatment facility that required that we build a sewage lagoon for the clinic's waste water. With the implementation of the recently completed wastewater treatment facility, SRHS has subsequently been required by MDEQ to site that system to decommission the existing sewage lagoon, and restore the property to its natural state. The cost for that mitigation will be \$385,500.00 as per the attached proposal by FCLE Engineering, dated March 22, 2016. While SRHS feels that it should be the Jackson County Utility Authority's responsibility to mitigate the treatment facility, as SRHS is a public entity, solely owned by Jackson County, and the JCUA has already accepted responsibility for mitigation of the Jackson County School System sewage lagoons in the area. MDEQ has placed the mitigation burden on SRHS and has given us until December 31, 2016 to complete the work. SRHS is seeking funding through Restora, for that project.	Jackson	Yes	Yes	No	No	No	No	No	No	No	mitigation	\$ 385,500.00	\$ -		
Eco Restoration	5482	5/4/2016	Wastewater Containment Pond Mitigation	Background The maritime "Blue Economy" is the largest sector of Mississippi economic activity and includes shipbuilding, shipping (and related), fishing, tourism, defense (and related), and construction activities among many others. New and very large investments are being made to capitalize on this growth potential. We propose to centralize the connection between this massively important state investment with the investments the university has made in marine and fisheries research, business and entrepreneurship, construction, and trade, transportation and logistics. Need Given the magnitude of the investments made by both the state and the University, there is not a centrally located access node to interact needs of economic development with the intellectual capacity of the University. The nation is full of examples where critical mass has been reached by providing facilities at the nexus of industry, academia and agencies; clearly, those interactions create new and exciting opportunities and push the boundary of innovation. The State of Mississippi needs such a place, and we propose a state-of-the-art facility that: The University of Southern Mississippi Ocean Enterprise to be located adjacent to the Mississippi Aquarium in the heart of Mississippi's Blue Economic Development of Gulfport. Opportunity Through Ocean Enterprise, USM will develop and concentrate expertise in the areas of marine research, economic development, entrepreneurship, trade, logistics and transportation. We will place world leaders in research and education in the facility, and give them access to state and federal partners and to leaders in economic development and private industry. In the facility we will research and education spaces for training tomorrow's leaders, collaborative spaces to solve the region's most critical problems and community spaces to bring all of the city/campus to the table.	Harrison	No	Yes	280000000%	Yes	Yes	No	Yes	No	No	No	No	\$ 28,000,000.00	\$ -	
Eco Restoration	5483	6/2/2016	USM Ocean Enterprise at the Mississippi Aquarium	Restore the Tree Canopy will work with every city and county in the three coastal counties to identify potential public green spaces and enhance those spaces with trees varieties that are sustainable. This project can also work with privately approved RESTORA project to ensure that urban forestry is included in public planning. The sites that we work with will be identified by their city or approved restore project locations such as the conservation greenways or other projects approved. This project will help make-up for or mitigate the natural resources of trees that support habitats of all kinds including native birds, reptiles, and other species. Plus matched and enhance economic benefits. The project will include benefits for people and wildlife. The results will be a series of arborize creating a linear coastal green spaces for benefits such as eco-tourism recreation, clean air and water, storm water management, shade, increase property value and many other related benefits. Restore the Tree Canopy Strategies Habitat, Water Quality, Community Resilience Submitted by Donna Howell, Executive Director of the Mississippi Urban Forest Council 601-677-0755 Recreate the Canopy Strategies A project that meets all five of the overarching framework goals of Restore the Gulf. This project will focus on collaborative and sustainable tree planting strategies and activities for local government, citizens, and NGOs. The project will include ways the community and individuals can actively participate, building knowledge, resilience, conservation activities, and ownership. Communities will learn the benefits of connectivity, to a healthy Gulf, based on actions within the town community. Stakeholder engagement and wide spread collaboration would be another focus. Trees have proven their natural capital to tourism and community economic enhancement, as well. Restore the Canopy is comprehensive in being a Mississippi coast wide project and will cover all three coastal counties with a recommendation to include the other 3 counties in the lower tier of Mississippi. The project will include all cities and counties officials plus local civic groups such as chambers, youth groups, and other civic groups. This would be a landscape level restoration effort along coastal streams, targeted shore lines, and waterheds; implementing a strong green component and collaboration for involvement. "Instate community based efforts to increase the awareness of the importance of coastal resources and the best management practices to support conservation and renewal of the valuable assets." Restore water quality Restore ecosystems	George/Harrison/Hancock/Tammany/Jackson and Hancock/Pearl River/Mobile/St Tammany	Yes	Yes	8000%	Yes	Yes	No	Yes	No	No	No	Yes	\$ 450,000.00	\$ -	
Eco Restoration	5484	6/15/2016	Restore the Coastal Tree Canopy Strategies Storm Preparedness and Mitigation	The lower Pearl River system is a rich and diverse ecological system that is home to a variety of aquatic and terrestrial species, including several of the endangered species list such as the Gulf Sturgeon. The hydrologic system is a braided system of major and minor channels and it is heavily influenced by several man-made structures including a canal with two low-water lifts and three locks systems on the west Pearl River, and a low-water weir on the east Pearl River, all of which have altered the natural flow characteristics of the system. Most of the flow comes from the Pearl River itself, which drains more than 6,700 square miles above Bogalusa, LA. Additional inflows from the East and West tributaries flows in Mississippi and Bogalusa, Louisiana contribute some flow. Heavy precipitation events in the coastal region of these tributaries can be primary contributors to the flow in the region. In these instances, the hydrologic flow models generally used for forecasting are not nearly as accurate since they are developed with flows from the Pearl River being the major contributor. The transfer of ownership and possible removal of the canal, locks, and lifts are the subject of ongoing discussions between federal, state, and local agencies. Some hydrologic and biologic data are currently being collected in the system, but none of those currently being collected integrates the cumulative streamflow of the system. Additionally, data are not currently being aggregated and housed in one central location to facilitate ease of access. Furthermore, little to no comprehensive background data, streamflow or water quality, exist to document changes to either flow patterns, suspended sediment transport, or water quality of the area. The purpose of this project is to collect water level, velocity, and instantaneous discharge data and use these data to compute the flow from the Pearl River at U.S. Highway 90 in Hancock County, MS. Instrumentation will be installed on the bridges over the east and west Pearl River channels to collect stage and velocity data to compute the instantaneous discharge in the channels. Discrete stream flow measurements will be collected at the 5 bridges on the lower Pearl to determine the flow distribution between the channels. The computed discharge data will be filtered using a tidal filter to compute the flow flow to the weir at the U.S. Highway 90 crossing. Additional flow data will be collected at the C&M Railroad bridge crossing at the mouth of the river to compare the flow through that channel to augment the collection of water quality data at that location. These data will allow the impact of the flows from the tidal fluctuations on the distribution of the headwater flows to be analyzed. The cost to obtain the equipment needed for the collection of time series data at two locations, and add a velocity sensor at the third, is \$75,000. Data will be collected for 5 years, at \$70,000 per year, which will allow for the data to be used in statistical operations as needed. Additionally, and of significant importance, the installation of the monitoring equipment at the U.S. Highway 90 crossing is expected to significantly improve the ability to forecast flood events on the lower Pearl River.	St Tammany/Hancock/Louisiana	No	Yes	2000%	No	Yes	No	No	No	No	No	\$ 425,000.00	\$ -		
Eco Restoration	5489	6/2/2016	Pearl River stream flow monitoring	Chermont Harbor once featured a sizable resort in western Hancock County built in 1915, with paddleboats, a dance pavilion, games for the community, a pier and boat harbor. It was heavily damaged by the 1915 hurricane, then rebuilt, and finally burned in 1946. Since Hurricane Katrina, many of the homeowners surrounding the Harbor have not returned, leaving a large swath of land unattended. Renew Our Rivers efforts to clear hurricane debris from the last 87 years have been an important step toward improving water quality. The harbor connects to the Mississippi Sound through large culverts, instead of the open channel for boats that is once sported. However, it still acts as a marine nursery for fish and shellfish. Restoration of the marsh edge, buffer plantings to filter stormwater, and reforestation of the site will improve the marine and human habitat along its edge. The project request is for acquisition and permanent conservation of adjacent lands, from willing owners. Those lands will be made accessible for public access to the waterway, and will support nature-based tourism with low-impact improvements including: recreational trails, a pavilion, interpretive signage, restoration of the Chermont Harbor pier, and a kayak launch.	Hancock	Yes	Yes	No	No	No	Yes	No	No	No	No	\$ 250,000.00	\$ -		
Eco Restoration	5491	6/24/2016	Chermont Harbor Acquisition and Restoration	This effort seeks to permanently protect lands adjacent to the existing Jourdan River Coastal Preserve, which is owned by the State of Mississippi and managed by the Mississippi Department of Marine Resources (DMR). The project would acquire approximately 4.27 acres to the 573-acre currently owned by DMR, and managed by DMR, comprising the Jourdan River Coastal Preserve site. It will add critical coastal frontage to the Jourdan River Coastal Preserve, along the Bay of St. Louis and the Jourdan River, for permanent protection, as well as improved management of coastal wetlands, and adjacent upland areas. The targeted 4.27-acre ownership lies within the 6,290-acre Coastal Preserve boundary in Hancock County, and directly adjacent to 573 acres currently owned by the State of Mississippi. The unit consists of open saline marshes containing saltgrass, needle rush, and cordgrass; maritime forests, and tidal brackish marsh. Mottled ducks and scarlet kingfishers are found commonly within the Preserve. The area is also a breeding, resting, and overwintering ground for several other species of migratory birds. In addition, these wetlands also support many aquatic invertebrates occurring in the Gulf of Mexico, access to intact salt marsh and shoreline habitats. Boaters and anglers utilize this area for fishing and seasonal waterfowl hunting. The Conservation Fund is in discussions with the landowner regarding acquisition of these tracts, and anticipates that the project could be completed immediately, pending availability of funds.	Hancock/Harrison/Hancock	Yes	No	No	No	No	No	No	No	No	No	Yes	\$ 2,000,000.00	\$ -	

Eco Restoration	5504	8/12/2016	Grand Bay NWR & Mississippi Sandhill Crane NWR Restoration Project	This proposal consists of habitat restoration and enhancement work on Mississippi Sandhill Crane National Wildlife Refuge (NWR) and Grand Bay NWR, which are part of the Gulf Coast Refuge Complex. These refuges contain a wide diversity of habitats ranging from ecologically important areas to open coastal prairie. The project will consist of three components: (1) pine savanna restoration at Grand Bay NWR, (2) Aerial wetland survey over Grand Bay NWR and other areas of the Mississippi coast, and (3) Enhancement of wetland/habitat at Mississippi Sandhill Crane NWR. The pine savanna restoration work on Grand Bay NWR will include prescribed burning, invasive and exotic species control, and mechanical treatments. Restoration activities will be monitored to ensure that desired results are achieved. The second component of this project includes the aerial wetland survey with the goal of assessing wetland/habitat populations on Grand Bay NWR and other areas of the Mississippi coast. The third component of the project will include enhancement of wetland habitat on Mississippi Sandhill Crane NWR. Ducks Unlimited will construct one moist soil impoundment on former wastewater outfalls to benefit waterfowl, waterbirds, shorebirds, cranes, and other priority species. The project includes invasive species control and native grass planting on approximately 300 acres of sprucefields surrounding the impoundments to restore savanna habitat.	Jackson	Yes	No	No	Yes	No	No	No	No	No	No	No	No	\$ 2,962,700.00	\$ 17,775.00		
Eco Restoration	5507	8/16/2016	Mississippi Gulf Coast Region Utility Board Restora Plan	In the attached plan you will find recommended turnkey projects for five South Mississippi counties: Hancock, Harrison, Jackson, Pearl River and Stone. These are projects that can have significant environmental impacts on the region. Each individual project identified can be accomplished within a budgetary range of \$500,000 to \$3 million. Any approved project will enhance water quality and in many cases directly enhance the quality of water habitats throughout the region. The Mississippi Gulf Coast Region Utility Board adopted a strategy to work together as a region, understanding what is good for us, is good for all. The objective of the attached plan is to see approval of every individual project, but other approval of one project at a time if necessary. Over a 15 year period we can only imagine the accumulative effect, the significant environmental impact this strategy holds for South Mississippi.		No	Yes	5000%	Yes	No	Yes	No	No	No	No	No	No	\$ 500,000.00	\$ -		
Eco Restoration	5508	8/17/2016	Hogan Bayou Waste Water Treatment Plant Improvements for the Collection and Treatment of Seafood Industry Discharge	As part of the comprehensive public and private effort to improve water quality in the Back Bay of Biloxi before it reaches the Gulf of Mexico, the City of Biloxi is requesting RESTORE funding to renovate seafood processing byproduct discharge and treat it at the Hogan Bayou Waste Water Treatment Plant. This project will result in benefits to the public by preserving existing levels of business and supporting expansion of the local seafood industry operating on the Back Bay while significantly enhancing water quality through more efficient collection and treatment of industrial discharge. The proposed discharge collection and treatment improvements will provide a well-coordinated system to more expeditiously improve Back Bay water quality by exceeding National Pollutant Discharge Elimination System permit requirements for seafood processors while allowing the cost-effective growth of Biloxi's seafood industry. This project complements the City of Biloxi's RESTORE Project #5399, Back Bay of Biloxi Festival Historization and Marina, which requests funding to revitalize the seafood industry through public improvements that include expanded commercial dock space and supportive landside amenities. Project #5399 also includes incentives to diversify the regional seafood industry through development of such things as a soft-shell crab aquaculture program in partnership with the Mississippi Department of Marine Resources. The two projects will be coordinated to enhance traditional working waterfront activities on the Back Bay with a variety of uses that showcase Biloxi's rich cultural history as the former Seafood/Shell Capital of the World/Edibleough shopping, dining, entertainment, and educational venue. These authentic, family-oriented activities will help grow the regional tourism industry in concert with activities to revitalize the seafood industry. The two RESTORE projects also will work together to meet federal and state water-related public health goals of the Clean Water Act to support present and future most beneficial uses for the propagation and growth of aquatic life as well as public water supply and public recreational uses. Implementation of both projects will have significant near-term as well as long-term positive impact upon Back Bay water quality, wetlands conservation and recreational safety and appeal. In collaboration with the Harrison County Utility Authority and the Mississippi Department of Environmental Quality, the City of Biloxi will design the discharge collection and treatment project to address projected levels of increased discharge from and-catch seafood industry expansion. Best management practices will be used throughout project implementation and operation.	Harrison	Yes	Yes	10000%	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	\$ 25,000,000.00	\$ -	
Eco Restoration	5514	9/28/2016	Provide Daily Ocean Weather reports to local news channel and Harbor Masters along the Mississippi coast	The lagoon was de-activated a few years ago but has not been properly closed. The lagoon is near an active stream that is a tributary to the Pearl River and to the gulf. Proper closure of the lagoon would eliminate the chance of leakage into the nearby stream. We estimate the cost of closure to be approximately \$400,000. We would be willing to share in the cost of the closure. We could contribute 10% to the closure.		Yes	No	No	No	No	No	No	No	No	No	No	\$ 400,000.00	\$ 60,000.00			
Eco Restoration	5524	12/9/2016	Provide Daily Ocean Weather reports to local news channel and Harbor Masters along the Mississippi coast	OBur project will provide daily graphic display of Ocean and atmospheric conditions in the Mississippi sound and shelf to the local harbor masters and coast managers and the public. Ocean weather includes wind, ocean currents, water quality and clarity (diveSCAM visibility), ocean temperature, water turbidity, and additional ocean conditions at a spatial and temporal resolution not presently available on a daily time schedule. Visual products from these data would be provided from these oceanographic modes and satellite imagery on daily bases that can be made public through the University of Southern Mississippi (USM) Ocean Weather Laboratory. Harbor Masters require daily updates to the local ocean conditions so that ship operations can be performed accurately and safely. This capability will enhance the coastal operations for safety and commercial applications and support the growth of port activity along the coast. OBur local coastal community will be provided with local ocean-weather conditions for the Mississippi coastal waters to support commercial activities such as fisheries, recreational boating, beach conditions, water clarity and turbidity, swimming and diving purposes. Ocean weather products will be a major extension of the local weather conditions operation; the telepresence news. Conditions will be reported daily on websites and sent to daily television news. The public will be informed of local ocean conditions, so they can take advantage of present research capability at USM. Public awareness of ocean conditions will increase ocean activities along the Mississippi coastal waters. This capability will provide both improved safety on ocean conditions and improve occupation and activities on our coastlines. Areas for recreation fishing, boating, diving, etc. will be improved. Local water quality will be reported to the Mississippi Department of Environmental Quality and Department of Marine Resources, so they can inform the news and public about water safety conditions along the coast. Unsafe conditions could be related to public safety for beach users and fishermen include harmful algal blooms or contaminated waters. The Ocean Weather Laboratory at the USM will examine satellite products and radar products for indications of ocean activity in the Mississippi Sound, shelf and offshore waters. These ocean weather conditions will provide the public a new capability for monitoring and observing our coast and provide improved safety and public health response and management operations. These ocean weather data can be used to support the coast guard for tracking movement of debris and support search and rescue in the Miss sound and shelf.	Hancock, St Tammany, Mobile, Jackson/Pearl River/Harrison	Yes	Yes	1000%	No	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	\$ 200,000.00	\$ -		
Eco Restoration	5526	12/10/2016	Magnolia Bayou Acquisition and restoration/research center	Magnolia bayou is an approximately 87 acre bayou and stream that feeds into the Bay Saint Louis Bay. It is just behind the Frogens and to the east of Dunbar street off of Highway 90. It is relatively undisturbed, with home situated on the banks of the bayou. Hancock County, and this natural location for it. There is a cleared tract of land that sits just off the service road that could serve as the parking and educational building location. The educational center on the natural environment in Hancock county, tours of the bayou, educational outreach to local schools and groups, etc. This will help bring eco-tourism to Hancock County, start a grassroots educational program with the local youth to teach them how to be environmentally conscious from a young age, and to preserve a very important piece of Hancock County for generations to come. This project is flexible, but the important part is protecting this land from any future developments and to utilize it as our natural history abatement structures. If there are any questions about this proposal please don't hesitate to contact me! Thank you so much for indulging me in this proposal.	Hancock	Yes	Yes	Yes	Yes	No	No	No	No	No	No	No	No	\$ -	\$ -	Land Acquisition	
Eco Restoration	5528	1/20/2017	BANDU CASOTTE INDUSTRIAL PARK REDUCTION OF ENVIRONMENTAL IMPACTS THROUGH NATURAL BARRIERS	This project propose the restoration of the wetlands near the Bayou Casotte Industrial Parkway using plants that also act as natural noise abatement structures. By restoring the ecosystem, the community issues of dust, noise, and odor can be greatly reduced. Some of the value and benefit of wetlands include: flood control, storm buffer, and wind buffer. This project proposes increasing the value/benefit of the wetlands by carefully selecting vegetation that also serves as natural noise abatement structures. The Port of Pascagoula has two harbors: the Bayou Casotte Harbor and the Pascagoula River Harbor. The Port is zoned for industrial and special uses. The Port of Pascagoula, Bayou Casotte Harbor Industrial Park, is located in Jackson County, Mississippi, in the southeasternmost portion of the state in the Gulf of Mexico. It is positioned south of the juncture of Interstate 10 and Mississippi Highway 63. The community east of Bayou Casotte is surrounded by industrial activities nearshore and open water offshore. This community was one of the many communities on the Gulf Coast flooded by Hurricane Katrina. Current sources of pollution include existing industrial and shipping activities that are active year-round. In the Pascagoula Harbor, sources of those activities include the Port of Pascagoula, Signal International, Chevron, Mississippi Phosphates Corporation, Vt Halter Marine, NOAA, Gulf LNG Energy, and the USCG. In January 2014, a meeting was held to begin the process of collaboration among MDEQ, local government, and local industry to resolve issues raised on numerous occasions by residents living in the K&C/Cherokee/Community. The issues are: 1) dust (particulate matter), 2) noise, and 3) odor. The community also raised concerns/complaints about the removal of wetlands between the community and the nearest industry that prevented a percentage of the dust from reaching the community. Since 2014, MDEQ has responded to numerous complaints from the Bayou Casotte community. In the Fall of 2014, local industry from Bayou Casotte Industrial Park installed community air monitors to evaluate the community concerns about Sulfur Dioxide odors. In late 2016, the Mississippi Department of Environmental Quality (MDEQ) collected these ambient air samples in the Cherokee neighborhood located in Pascagoula, MS in response to concerns expressed by some members of the neighborhood about possible exposure to pollutants being emitted from the neighboring industrial complex. The increased number of complaints and concerns about air pollution are in part due to the loss of the wetlands that served as a buffer between the community and the industrial park.	Jackson	Yes	Yes	No	No	No	No	No	No	No	No	No	No	\$ -	\$ -		
Eco Restoration	5541	6/12/2017	Shepard State Park Recreational and Ecological Enhancement	The City of Gautier has assumed the daily operation and management of this 395-acre park, which is located south of U.S. 90 along Greenline Road. Currently, the park consists of eight miles of trails, with a mix of developed and primitive camps throughout. In addition, the park has golf and a premier outdoor archery range with 28 lanes. The City has increased the utilization of the park by the addition of these amenities and has hosted national archery tournaments, bringing tourists from all over the United States to participate, as well as state high school archery teams and Senior Olympics tournaments. SC College archery has also expressed interest in using the facility for its conference championship. The facility is one of the few within the state of Mississippi and is unique to the state due to its proximity. The City already hosts the Mississippi Sandhill Crane National Wildlife Refuge and offers birding and wildlife eco-tours of its swamps and bayous, resulting in eco-tourism visitors from all 50 states and numerous other countries each year. The City seeks to add amenities and upgrades as set forth below to Shepard State Park to further enhance, capitalize on and increase the number of tourists for its eco-tourism attractions. The City plans to expand the recreational opportunities available at Shepard State Park to assist in developing this pristine park into one of the South's premier nature destinations. Expansion of the existing nature trails will be implemented to reach additional areas of the park. Shepard State Park is home to a variety of wildlife native to the coastal areas, such as great white egrets, pelicans, eagles and osprey. Additionally, other woodland creatures reside in the area, including deer, wild rabbits, opossums, bears, raccoons and more. In the surrounding Bayous, visitors can see turtles, alligators, wild geese, and a wide variety of fish. Strategically placed resting areas and observation decks will be constructed for creating an environment for optimal opportunities to monitor the wildlife and bird watch, as the park is listed on the Mississippi Coastal Birding Trail. The existing road network throughout the park is in need of repairs. The City is proposing to complete such repairs, clear underbrush and remove invasive species of vegetation. Furthermore, new water and sewer lines will be placed to upgrade and expand sites within the park with such amenities to support additional restrooms, pavilions, and playground areas. Power lines on park friendly lighting will be installed to delineate the appropriate pathways for visitors throughout. Due to the age of the park, many upgrades are needed, and this project would include walking trail upgrades, including new foot bridges in low-lying areas prone to flooding, trail clearing, a rehabilitated small boat launch and fishing pier, updated and repaired picnic fire pits and picnic tables at RV sites, an amenities building with laundry facilities and recreational game tables, educational plaques for the trails, fire pits, an outdoor classroom, a natural playground, traditional playground equipment, kayak launches, a lodge to accommodate guests and overnight studies in conjunction with the outdoor classroom, a new bathroom and restroom renovations. The City envisions the lodge will be utilized by educational institutions, including the Mississippi Gulf Coast Community College's Jackson County campus located within the City, and other educational institutions offering the premier archery camp as part of their sports curriculum. Mississippi Wildlife Rescue has also expressed interest in utilizing Shepard State Park as a research and rehabilitation site. Additionally, the City has recently acquired a historic two-story log cabin, the Wilson House, and is relocating the house to the entrance of Shepard State Park to serve as a welcome center and general visitor information center. That project is currently underway. The park also has another large home on adjacent land that is in need of repair. The City has plans to upgrade this house for community meetings and small events. The City plans to leverage Tideland's Recreational Trail Program and Land Trust for the Mississippi Coastal Plain funds and other available funding opportunities to complete some of the amenities in its long-term plan stated above. This project would promote long-term economic growth and increase economic development through eco-tourism and recreational opportunities that are unique to the coastal area. The City already has an established eco-tourism base, and these additions would encourage these tourists from all over the United States and other countries to stay and play in the Coastal region of our state, particularly in coastal Mississippi. Gautier is unique to have an almost 400-acre park within its limits.	Jackson	Yes	Yes	5000%	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	\$ 9,000,000.00	\$ -	
Eco Restoration	5544	3/10/2017	Bayou Casotte Barrier	Project would add natural vegetation along two roadway areas along the east side of Pascagoula to form a natural vegetative barrier to minimize impacts from noise, odor, and other elements common to more heavily industrialized areas. Numerous industrial sites are located east of Bayou Casotte Parkway, and residential lots are immediately located west. Plants would improve the quality of life of the residents while not reducing the positive economic impact to the workforce of Mississippi found in the business to the east. Maps showing five segments of the proposed project are attached.	Jackson	Yes	No	No	No	No	No	No	No	No	No	No	\$ 1,179,475.00	\$ -			

Eco Restoration	550	5/2/2017	<p>Cherokee Estates is a neighborhood in Pascagoula, MS located immediately next to Bayou Cassette and a lot of heavy industry. This includes a Chevron Refinery, First Chemical, MS Phosphate, Hater Marine, etc. This creates a lot of pollution and dust.</p> <p>The residents of Cherokee have complained to industry, EPA, MDEQ and the City of Pascagoula. One partial solution would be replanting a line of trees that were removed to widen a road. These trees were tall and dense enough to catch some of the noise, air pollution, and dust.</p> <p>The State of Mississippi, EPA, MDEQ, Jackson County and the City of Pascagoula would all like to see some improvement." Howard page, Steps Organization</p> <p>Need: Trees provide buffers from sound, air pollution, storm water run-off and trees have a large capacity to enhance property values and create quality places to live. This area is in dire need of a living buffer that offers eco-system services.</p> <p>This project will plant a tree buffer and be used as an educational tool to demonstrate how to use trees for the maximum benefits. This is an excellent location to demonstrate upland land management and how it can benefit downstream for healthier Gulf habitats. This area is receiving a lot of public attention and provides an opportunity to demonstrate tree benefits and using trees to address upland watershed issues and how trees directly impact Gulf health. We will combine educating trees through education in the community about the connection. The project will focus on how land owners, home and business owners can get involved in their community health by planting the right tree in the right place in this area we will inventory plantable spaces and plant the correct tree species for climate, soils and buffer benefits.</p> <p>This project will be a challenge in that the development damage is significant enough to warrant a variety of practices with trees being the most beneficial aspect of redevelopment for this area. We will use aerial maps, GIS for inventory of plantable spaces, develop a best species list for small, medium and large trees and provide planting and tree maintenance workshops to residents plus invite the general public to attend the workshops. We will plant a majority of plantable spaces. Once the tree buffer has been established it will provide a model for generations to come and for new development to learn from as well. The tree buffer will consist of any public lands and private lands surrounding the issue. Private landowners will be offered trees for them to plant if adjacent to the project area.</p> <p>Deliverables: Deliverables will include a tree inventory of plantable spaces of trees serving as a buffer from pollution and storm water run-off. An education brochure will be developed.</p> <p>To highlight the species and placement plus the eco services the trees provide. We will use the I-Tree program to calculate a monetary value on these services. We will include outreach with educational documents highlighting plan features, workshops, media outlets, and through the partners in the area, local government, industry and state agencies.</p> <p>Activities: This project qualifies as both education and outreach based because it will demonstrate ways to use trees to mitigate negative impacts of development. In the process of design and planting this area a series of educational events will be included.</p> <p>The focus groups will include: Cherokee Citizens Group, industry contractors, local leadership, other NGOs.</p> <ol style="list-style-type: none"> Develop a local team made up of local government, state and federal agencies, arborist, citizens and others. Inventory plantable spaces (public and private) and develop tree species lists. Conduct educational workshops and planning forums. Implement tree planting in stages, implement BMP and other strategies. Complete educational signage and documents for distribution road wide. 	Jackson	Yes	No			No	Yes	No	No	No	No	No	No	No	\$	100,000.00	\$	-
Eco Restoration	551	5/2/2017	<p>Cherokee Urban Forestry Project Proposal</p> <p>Pollinator health is about our social and economic impacts and how all citizens can play a role in its success. Many times research on environmental projects do not have the opportunity to be applied on the ground in a variety of venues with nontraditional audiences. So, if research does impact citizens of all walks, it can result in a greater success rate for the mission and when data and knowledge is disseminated in a unique way it supports fulfilling the true potential or establishing greater value for the benefits. This project puts research, education, BMP, technology and education in the hands of local citizens and community leaders that can make a difference on their properties, their community public lands and specialty crop farmers. Most local citizens do not have a true pollinator health impacts the quality and production of their food. The public research provides a more informed citizenry that can gain a better understanding of the role they play in pollinator health, the practices they can implement and why it's important. MUFH has many years of using research data and applying it to our cities and towns and the citizens living in and near these communities. The ultimate challenge of any research is applying that research on the ground, providing sound technology transfer, demonstrating best management practices and supporting the mission through creative partnerships and collaborations. We will work through our municipal partners to conduct the workshops and implement the pollinator sites. Currently, MUFH has 17 committees in our Bloom Town Mississippi program with every community on the coast included. All of these are willing to host a pollinator health site. Other local partners will include local community leaders, civic groups and private producers and land owners to conduct outreach and education venues. Through this project we will partner with the project we currently have in our network and even new collaborators to include: workshops, hands on implementation of planting, social networking, local press, newsletters, web site, and large data base contacts. Contacts in the project include industry partners, mayors, city leaders, civic groups, chambers, parks and recreation professional, arborist, farmer, landscape architects and others. Proposed metrics include multiple sources of information to outline in detail in the pre-proposal. Any data, surveys, charts, photo journal or other information generated as a result of this project will be public information and available for FAIR or other research to use as needed.</p>	George/Harrison, Washington, Perry Forrest, Pearl River, Jackson, Maible, St Tammany, Stone, Hancock	Yes	Yes			Yes	Yes	No	No	No	No	No	No	No	\$	110,000.00	\$	75,000.00
Eco Restoration	552	5/11/2017	<p>The goal of this project is to protect in perpetuity a 1,127-acre tract from a willing landowner of bottomland hardwoods, riparian forests and adjacent upland forests in the Pascagoula River Basin in Jackson County, Mississippi. This fee acquisition of one of the remaining large forested tracts fronting the Pascagoula River will allow the MS Forestry Commission and its partner: The Nature Conservancy of Mississippi, to manage Forest Legacy Program lands from the US Forest Service in partnership with the landowner and the local government to protect and restore best practices in forest management for multiple purposes: water quality, conservation, working forestland and habitat management.</p> <p>The Pascagoula River is the largest, by volume, unmodified river in the lower 48 states. The Nature Conservancy, the Mississippi Department of Wildlife, Fisheries and Parks, the Mississippi Forestry Commission and other government and non-profit partners have been working since 1974 to conserve an 85-mile forested corridor of public and private conservation lands along the river. This area runs from its headwaters to the Gulf of Mexico. Its habitat quality is directly related to extensive land conservation over decades, including over 72,000 acres along the river and over 550,000 acres of US Forest Service land in the watershed.</p> <p>The watershed harbors over 100 bird species, including neotropical migrants that use the diverse habitats found such as those on the property and surrounding Pascagoula River WMA. The subject property (labeled the Griffin Tract) has one mile of river frontage containing sandbars, mussel beds and riparian forests and is within U.S. Fish and Wildlife Service's "designated critical habitat for the federally listed Gulf Sturgeon and the yellow-blotched sawback turtle. The Pascagoula is designated critical habitat for the Gulf Sturgeon. Clearcutting or site disturbance on the property, if the forests are not protected, may cause sedimentation and impact sturgeon habitat. One of the Gulf Sturgeon Recovery/Management Task Team's Gulf Sturgeon Recovery/Management Plan objectives is to identify, protect, and/or assure land or aquatic habitats on an ecosystem approach, highlighting that critical habitat areas and ecosystems that enhance them are priorities for protection. Protecting 1,127 Acres forest the Pascagoula River directly supports that objective.</p> <p>Doppler radar studies by the University of Southern Mississippi indicate a great number of neotropical migrant birds use bottomland hardwoods and oxbow lakes in their spring/fall migration along the Pascagoula River corridor. Other species of concern such as the American Bald Eagle, Wood Stork and Louisiana Blue Bird would find suitable habitat on the tract. Mussel beds with a variety of species are found here along with numerous fish species. Rare Swallow-tailed Kites, a raptor species of concern, are seen regularly on the tract and many nests have been recorded along the Pascagoula River in the vicinity. Other endangered fishes such as the Alabama Shad, American Eel and Striped Bass have been documented in the project area. Protection of additional public lands in the Pascagoula River corridor will conserve habitat critical to their continued proliferation. The mature bottomland hardwood, swamp and upland forests also provide excellent habitat for game species such as a white-tailed deer, turkey, wood ducks and squirrels.</p> <p>The USF, through a Forest Legacy Program Grant to the MFC, is providing up to 75 percent of the land costs for this fee acquisition. Other partners in the project include the Mississippi Forestry Commission, The Nature Conservancy, and the landowner.</p>	Jackson	Yes	No		No	No	No	No	No	No	No	No	No	No	\$	2,430,000.00	\$	1,666,940.00
Eco Restoration	554	5/15/2017	<p>Diamondhead Water and Sewer District is located in Hancock County Mississippi within the City of Diamondhead. We provide water and sewer service to approximately 4300 customers and a population of 1800. The District's certificated area is located within watershed areas that drain with open ditches and normal amounts of subsurface drainage. The discharge points for these watershed areas are tidally influenced due to the geographical location of the District's certificated area. Located along the Southern Certificated Area Boundary is the Northern Shoreline of the Bay of St Louis, the Western Certificated Area Boundary is the East Shoreline of Rotten Bayou and the Northern Certificated Boundary is the Southern Shoreline of Rotten Bayou and Bayou LaLade.</p> <p>In moderate to heavy rain events, street flooding is common and the District's sewer manholes act as catch basins for the flood waters to enter and then be transported to the District's wastewater treatment plant. As a result of the sewer infrastructure's leaks/infiltration with flood waters and ancillary funds are being spent to treat the flood waters. Overflows of sewage are also a result of the excess amount of flood waters entering the sewer infrastructure resulting in costly cleanup and potential hazards to the environment.</p> <p>The scope of work for this project is to install stainless steel inserts in the tops of all sewer manholes located within the District's sewer infrastructure. A total of 1422 inserts will be installed in the tops of the sewer manholes to block flood waters from entering the sewer manholes. In addition to the inserts, repairs will be performed to properly graft and realign manhole tops, repair pipe seals, raise tops of manholes, replace manhole frames and lids, repair manhole inverts and bottoms, repair surface and curb in/out of manholes.</p> <p>The benefit of this project is to significantly reduce flood waters from entering the sewer infrastructure resulting treatment cost and sewage overflows hence restoring water quality, replenishing and protecting living coastal and marine resources, restoring and conserving habitat and enhancing community resiliency.</p>	Hancock	Yes	Yes	8000%	Yes	No	No	No	No	No	No	No	No	No	\$	450,000.00	\$	-
Eco Restoration	555	5/15/2017	<p>Diamondhead Water and Sewer District is located in Hancock County Mississippi within the City of Diamondhead. We provide water and sewer service to approximately 4300 customers and a population of 1800. The District's certificated area is located within watershed areas that drain with open ditches and normal amounts of subsurface drainage. The discharge points for these watershed areas are tidally influenced due to the geographical location of the District's certificated area. Located along the Southern Certificated Area Boundary is the Northern Shoreline of the Bay of St Louis, the Western Certificated Area Boundary is the East Shoreline of Rotten Bayou and the Northern Certificated Boundary is the Southern Shoreline of Rotten Bayou and Bayou LaLade.</p> <p>Forty years ago the clay sewer mains were installed in the District's certificated area at the primary material for sewer mains. At the time of installation, pipe bedding standards were not as widely understood as they are today. The rigid nature of clay makes it very brittle and when unstable soil conditions are introduced, cracking will occur. Once a clay sewer pipe cracks and starts to leak the surrounding soil enters the pipe with any flow creating voids and uneven loads and eventually the pipe will collapse. The District is currently experiencing large amounts of inflow and infiltration as a result of a large portion of our infrastructure consisting of cracked and leaking 40 year old clay pipe that needs rehabilitation. The increase in I/I causes excess amounts of water into the sewer infrastructure resulting in sewage overflows, costly cleanup and potential hazards to the environment.</p> <p>The scope of work for this project is to rehabilitate 174,250 linear feet of cracked, broken and failed clay sewer mains, point repair mains and remove roots. The rehabilitation of the clay sewer mains will consist of cured-in-place pipe (CIPP) and CCTV of all mains after rehabilitation. The District's CCTV software will need to be updated in order to complete reports necessary repairs and proper documentation of the rehab improvements.</p> <p>The benefit of this project is to restore and conserve habitat, restore water quality, replenish and protect living coastal and marine resources and enhance community resiliency.</p>	Hancock/Harrison	Yes	Yes	8000%	Yes	No	No	No	No	No	No	No	No	No	\$	6,732,000.00	\$	-
Eco Restoration	556	6/2/2017	<p>NOAA ID# 12462: Fisherman catch tar ball in their nets. they rake this tar ball back into water. So instead of them raking the tar ball back into water give them some kind of storage container to put the tar ball in to give them an incentive to do this pay them by the pound or container. This how we feel some of oil can be removed from Gulf. Date Entered: April 26, 2015. Date Edited: August 4, 2015</p>		Yes	No		No	No	No	No	No	No	No	No	No	\$	-	\$	-	
Eco Restoration	556	6/2/2017	<p>NOAA Project ID#12805: The Gulf of Mexico and Atlantic Ocean provide habitat for protected species such as sharks and the commercially and ecologically important species of bigeye and yellowfin tunas. Fish aggregating devices (FADs) are man-made floating objects consisting of a raft, synthetic netting and plastic buoys that are deployed in the ocean to aggregate bigeye and yellowfin tunas for purse seine fishing vessels. FADs can be used in unlimited numbers, driving unsustainable fishing of juvenile bigeye and yellowfin tunas and contributing to fishing mortality on sharks. These species are caught incidentally when purse seine nets are used around FADs because many FADs are not covered by fishing vessels, they contribute to ghost fishing, and they continue to attract marine mammals before sinking in the ocean or washing ashore, adding to marine debris. FADs deployed by vessels in the Atlantic have been found washed ashore on the coast of Gulf States including Texas. This project would enable data to be gathered electronically via FADs deployed in commercial tuna fisheries in the Atlantic. FADs already transmit data to industry that indicates the numbers of FADs used, their locations and movement, and their fate (recovered, beached, and/or lost). The project partners, Pew and Quake Computers (QAC), have proven this data can be transmitted to third parties in real time and use an additional cost to industry. In 2016, eight countries in the Western and Central Pacific Ocean began using a software system designed by QAC to implement a FAD tracking and data collection effort that is generating new knowledge on the use of thousands of FADs that regulate in the Atlantic, providing information on FADs in real time and use an additional cost to industry. This project will improve scientific understanding on the effects of FADs in the marine ecosystem in the Atlantic, where bigeye is overfished and experiencing overfishing. Analysis of the data could lead to more effective conservation for tunas and protected species, which could improve their recovery from the Gulf of oil. Studies showed juvenile yellowfin respond to oil developed heart defects, other species such as obligate deepwater chironomid, silver chironomid and long-tailed chironomid. QAC, a respected hardware based software organization, will develop software to receive and manage data from the Atlantic and managers for the system. Pew will work with international fishery managers, industry, and scientists to build the institutional arrangements to enable the system to benefit science and management. A brief description of the project of concept to create a FAD tracking and data gathering system in the Pacific can be viewed at http://www.pewtrusts.org/research-and-analysis/factsheets/2014/09/electronic-tracking-of-fish-aggregating-devices. Date Entered: December 13, 2016</p> <p>Understanding the use of Fish Aggregating Devices to enhance the conservation of tunas and protected species</p>		Yes	No		No	No	No	No	No	No	No	No	No	\$	400,000.00	\$	-	

Eco Restoration	552	6/2/2017	<p>NADA Project ID#1296: Assess the role of ecological connectivity in the Gulf including between the nearshore and offshore marine environments, for anadromous fish, and among coral reefs and evaluate the role of nearshore habitats as nursery and foraging areas for offshore fish. Study of anadromous fish runs in the past and future Gulf ecosystems, and the relationships among coral reefs. Objectives: Identify the near-shore, freshwater, and coral reef environments that are most critical to protect and sustain populations of a variety of Gulf species that spend part of all of their life cycle in the open ocean. B. Species group/habitat: Fish, water column invertebrates and sea turtles. C. Description: It is critical to integrate the linkages between the near shore, freshwater, and offshore environments in the design, development and monitoring of coastal and offshore habitat restoration investments. To do that studies should: 1. Identify and prioritize protected waters and nearshore environments (e.g., bays, estuaries, etc.) that contribute to maintaining populations of offshore endangered, commercial, and recreationally important species. This project should merge oceanographic and coastal biological, use and management information to design and monitor restoration (fishery) and protect scenarios for public marine use and ocean conservation planning. 2. Evaluate the potential for and impact of restoring anadromous fish runs in Gulf rivers including the potential for increasing the forage base for offshore fish. Historical accounts suggest that anadromous fish runs on Gulf rivers contributed significant amounts of forage fish to the overall Gulf ecosystem including the open ocean predators. This project has three parts: 1) Conduct historical research to verify fish magnitude, location and species composition of anadromous fish runs in Gulf rivers. 2) Evaluate impediments to fish passage on Gulf rivers with historically large fish runs and/or species strategies for reducing or removing those impediments where cost-effective. 3) Propose other actions to restore historic populations of anadromous fish. B. Study coral larvae connectivity. The objective of this study element is to understand the interdependence of important mesohabitat and deep sea coral communities and their ecological connectivity for sustaining shallow water coral systems. The Gulf of Mexico is an important area for mesohabitat and deep sea coral communities, especially along the edge of the continental shelf (e.g., offshore banks). This project should assess the similarities, connectivity and threats to these communities in the northern Gulf. To do that it is necessary to compile multiple sets of biogeographic data for these areas, assess the ecological relationships among their species composition with shallow water coral reef species, understand structural aspects of these communities using GIS modeling of benthic terrain, assess the ecological relationships of mesohabitat species to shallow water coral species, and assess the importance of mesohabitat and deep sea corals as essential fish habitat for commercially, recreationally and ecologically important species. Outcomes of this project should include indicators of diversity, structural complexity threats and recommendations for their conservation. Date Entered: April 26, 2017 Date Edited: April 27, 2017</p>	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	\$	1,300,000.00	\$	-
Eco Restoration	553	6/2/2017	<p>Assessing the Ecological Connectivity of Gulf Environments</p> <p>NADA Project ID#1297: The 1998 seagrass guidelines document has emerged as a foundation reference guide for by regulatory agencies and applicants in the Gulf of Mexico (GOM) and worldwide. Frequently, regulatory guidance is quoted directly from the document. As such, it is critically important to the successful management of the GOM seagrass resources that such a decision support tool provides the best science. However, this document is now significantly out of date (ageing 20 years), and a revision is required. Moreover, "85% of the seagrasses in the continuous U.S. lie within the waters of the GOM, making the need for updated information in the GOM especially pressing. Since 1998, over 2,000 seagrass-related papers have been published, with 346 reporting directly on seagrass restoration. Much of this work has fundamentally changed our understanding of seagrass biology and ecology and how seagrass restoration is approached. This information needs to be synthesized and unified with the previous guidance to provide an up-to-date and state-of-the-art seagrass restoration guidance document for the GOM. For the revision, emphasis will be placed on shallow-water seagrasses, including addressing frequently asked questions of policy, planning, methods, monitoring, and evaluation of success. This will be achieved by revising the 1998 document structure as well as through consultation with stakeholders, including practitioners and state and federal regulatory staff throughout the GOM region. Through that consultation, the addition of instructive case studies and call-out highlighting instances of particular relevance will be provided throughout the text. Similarly, the document outline and content plan will be reviewed by stakeholders. The core task is straightforward but also requires the most effort: careful reading, interpreting, and synthesizing the literature (both previous and new since 1998) and writing the revised document. Special assistance is requested for the genetics review. Notably, the lead author for the 1998 landmark publication is the lead author proposed here, and he has had extensive experience editing, reviewing, and writing peer-reviewed publications related to seagrass restoration and ecology. The contractor to be an expert and leader in the field of seagrass ecology and restoration. His role as the lead author provides the proposed revision with a unique level of practical experience and continuity. This project deliverable will meet standards of peer review and modern delivery systems. Peer review will be conducted by soliciting reviews of limited sections of the document from professionals and experts in the field of seagrass restoration, both nationally and internationally. The final product will be made freely available from NOAA's website and through appropriate government websites. Promotion of the revised decision tool will also be made through direct engagement with regulatory personnel and the public, including training seminars. A diverse plan of social media utilization (imagines, Twitter, Facebook, websites) is also proposed. Date Entered: April 27, 2017</p>	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	\$	700,000.00	\$	-
Eco Restoration	554	6/2/2017	<p>Revision of the seagrass guidelines document is support tool for restoration of seagrass impacts in the Gulf of Mexico</p> <p>NADA Project ID#1292: Shallow-, mid- and deep-water coral communities in the northern Gulf of Mexico provide critical habitats for associated fish and other marine wildlife species, and help support a productive marine ecosystem and important fisheries in the Gulf. Many benthic invertebrates, including Lophelia spp. and Paramuricea baccata, were exposed to oil flowouts from the Macondo wellhead, and also to dispersant and synthetic-based drilling mud, which led to various degrees of negative impact on these deep-water coral communities in the northern Gulf of Mexico. Overall, these negative impacts could have increased deep-water coral mortality and genetic diversity in these populations, potentially limiting sufficient population size and genetic diversity in these populations. Despite their important ecological importance, there has been a lack of understanding even as to what a healthy Gulf coral reef ecosystem looks like. Hence, there is urgent need to continue monitoring and research on the health of northern Gulf coral communities and track their recovery from injuries sustained through the DWH oil disaster, which better inform restoration activities and improve understanding on how chronic and future threats affect recovery rates and overall health of these communities, as well as impacting their resiliency. Monitoring and research of coral reef systems, consisting of coral and non-injured reference sites and coral communities, can help restoration managers understand recovery rates of coral communities relative to those injuries and how their genetic diversity and connectivity are affected by chronic or emerging stresses (e.g., fishing, changes in pH). This proposed project would expand monitoring and research activities at selected coral sentinel sites at various depths across the northern Gulf of Mexico to collect needed information on the status and condition of both injured and healthy (reference) coral communities. The information collected can help improve understanding of coral recovery, promote their long-term survival in the face of other threats, and determine the level of effectiveness of restoration measures at injured coral reefs and sites. Hence, coral populations at sentinel sites would be a control for comparative studies with other reefs injured by the DWH disaster. Within this context, the project would make use of recently developed techniques to provide better understanding of the level of genetic connectivity across reefs in the Gulf and in particular for mesohabitat and deep-water coral populations injured by the DWH disaster. Additionally, enhanced conservation of coral communities can be achieved by offering voluntary courses for fishermen in which they acquire knowledge of best fishing practices within or around ecologically sensitive coral sites. This type of program can help reduce the negative impact of fishing practices on coral communities and support their recovery. Moreover, graduation from such training courses could lead to the development of an endorsement program, allowing fishermen who have taken the course and agree to certain requirements to fish in buffer areas that would otherwise be restricted to fishing. This proposed project will develop and implement a program to train commercial (e.g., golden crab and red snapper) and recreational (e.g., snapper and grouper) fishermen in adopting best fishing practices when snaggling or fishing within or around sensitive areas for corals. The aim is that fishermen would use these best practices to reduce deleterious impacts on coral communities at different depths, although mainly in shallow- and mid-water (<200 meters depth) depths. The program would consider and incorporate the best fishing and technology fishermen already use to take advantage of existing fishing technology. This action can potentially lead to a fishing endorsement in areas characterized by the presence of these coral communities. Date Entered: April 21, 2017 Date Edited: April 24, 2017</p>	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	\$	-	\$	-
Eco Restoration	556	6/2/2017	<p>Habitat monitoring and research efforts, and develop and implement a best fishing practices program at sentinel sites to enhance conservation of shallow-, mid-, and deep-water coral communities in the Gulf of Mexico</p> <p>NADA Project ID#1293: Several deep-water coral species and communities, including Lophelia spp. and Paramuricea baccata, were exposed to oil flowouts from the Macondo wellhead, and also to dispersant and synthetic-based drilling mud, which led to various degrees of negative impact on these deep-water coral communities in the northern Gulf of Mexico. Overall, these negative impacts could have increased deep-water coral mortality and genetic connectivity in these populations, potentially limiting sufficient population size and genetic diversity in these populations, affecting the recovery of injured corals. Therefore, there is a need to clarify the role and extent of genetic connectivity among deep-water coral communities in the Gulf, which can help identify important natural corridors for larvae to maintain sufficient population size and genetic diversity in these populations. This information will allow scientists and managers to better estimate the status of coral populations, which can clarify how deep-water coral communities cope with stressors, such as the DWH disaster, and support significant fisheries species. The De Soto Canyon is a large deep-water area adjacent to the well location that, depending on the site and its distance from the Macondo wellhead, was less affected by the oil disaster. Healthy coral communities found in the canyon could be managed as a seed stock to restore injured coral populations in the impacted area if the genetic composition and dispersal pathways are compatible with restoration objectives. Detailed information on the presence and locations of deep-water coral communities in the Gulf of Mexico is scattered or limited. Due to inherent difficulties and high cost in conducting deep-sea explorations, scientists often make coarse predictions of where corals might occur on the seafloor based on models and available data. There is an urgent need for high-resolution mapping based on direct observations of coral that can increase the power of model predictions to make better management decisions in the Gulf and parts of the De Soto Canyon. A better understanding of the extent of deep-water coral communities inside and outside the De Soto Canyon area and their species composition, abundance, and habitat characteristics is critical to prioritizing management interventions that can enhance recovery of injured corals and support their long-term survival. In this regard, there is a critical need to clarify the extent of genetic connectivity in deep-water coral populations through innovative approaches. The information collected from surveys can then be integrated into coral restoration strategies and approaches. This project will deploy side-scan sonar from research vessels to characterize mesohabitat and deep-sea benthic habitats for different coral communities inside and outside the De Soto Canyon area. This information will be used to develop high-resolution habitat maps and habitat suitability models for various coral communities that can advance knowledge on coral distribution and essential habitat features for these populations. Moreover, ROV and AUVs (the latter one for mesohabitat communities) will be deployed to produce high-resolution video recordings. This information will be used to provide more accurate estimates of coral communities' composition, distribution, density, and habitat characteristics. Collectively, these results will provide managers with a better understanding of habitat characteristics and population connectivity in deep-water corals in the De Soto Canyon and surrounding area. In turn, this information will be of significant value to advancing the recovery of coral communities impacted by the DWH disaster by enabling resource managers to identify, prioritize and plan restoration and conservation actions for both injured and healthy deep-sea corals in the northern Gulf of Mexico. Date Entered: April 11, 2017 Date Edited: May 2, 2017</p>	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	\$	-	\$	-
Eco Restoration	557	6/2/2017	<p>Habitat mapping and identification of species abundance and distribution for deep-water coral communities inside and outside the De Soto Canyon area to clarify genetic connectivity among populations and guide restoration activities.</p> <p>NADA Project ID#1290: Red snapper and reef fishes are susceptible to barotrauma when caught and brought to the surface, and mortality caused by barotrauma hinders rebuilding of overfished red snapper populations and could deter recovery from DWH impacts. Preliminary studies have demonstrated that recompression devices have great potential to increase fish survival from barotrauma-related injuries. Initial information indicates that devices utilizing pressure-activated release occur to a certain depth is reached by the device (i.e., SeaDuctor) are considered the most promising from scientists and the most reliable from the majority of fishermen. Though recompression devices are promising, detailed information on their real-world applicability has yet to be determined, especially for specific species. This project will make use of SeaDuctor fish descender devices in a series of the Gulf to study the effects of their use on released reef fish, and to quantify the reduction in fish mortality obtained in different species and environmental conditions by employing conventional or acoustic tags to estimate immediate and delayed mortality of fish after return to depth versus surface release. An integral component of this project will be the use of instruments for geospatial verification of fishing activity instead of using participating fishing vessels to efficiently track their fishing effort and spatiotemporal distribution while actively fishing and releasing fish. The information collected through this technology will help to provide more accurate estimations of fishing effort within the study area and for the entire project duration so that the benefits and use of fish descender devices in the live reef fish fisheries across the Gulf of Mexico can be better modeled and quantified. This project will also help determine best practices for using fish descender devices on specific species. The project will include the use of fish descender devices in the study area, and will guide subsequent outreach efforts to increase descender device acceptance and use among fishermen. Stakeholders will define species-specific needs and will assist in development of best release practices for these species. This is especially important for those species affected by the DWH disaster, potentially offsetting DWH impacts by allowing these populations to recover at a faster rate than if these devices were not utilized and unused. The NMFS Southeast Fisheries Science Center has offered to provide technical guidance during various phases of the project, from the identification of best use of fish descender devices to the collection of information and data needed to advance fishery management of red snapper and reef fish. This assistance will help ensure that the data generated are of maximum use to fishery scientists for stock assessments and fisheries management decisions. Results of this research project will add to the state of knowledge regarding methods to improve post-release survival for reef fish species. Data derived from this study will help managers determine tools that can aid the recovery of red snapper and reef fish populations impacted by DWH disaster and that are suitable for wider use in Gulf of Mexico fisheries. These data will also increase the accuracy of discard mortality estimates across the Gulf and improve annual catch calculations. Date Entered: March 29, 2017 Date Edited: May 2, 2017</p>	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	\$	-	\$	-
Eco Restoration	558	6/2/2017	<p>Quantify the efficacy of fish descender devices on reducing discard mortality in red snapper and other reef fishes.</p> <p>NADA Project ID#1299: Passive acoustics is a very versatile tool in studying both anthropogenic (boat traffic, dredging, etc.) and biological (fish, marine mammal, invertebrate) sound source. Long-term recordings can be deployed with oceanographic sensors for up to several months at various locations within the MS Sound to assess the presence, temporal and spatial distribution, and interactions of both types of sound sources while also monitoring basic oceanographic properties such as temperature, salinity, and light. Post-processing detection algorithms can identify candidate fish and invertebrate species, as well as marine mammals, inhabiting the coastal waters of Mississippi in order to provide more information on temporal or spatial habitat range variability. Some surficial fishes in Mississippi waters are also important commercial stocks. Assessing their distribution and potential changes in temporal or spatial habitat range directly affect management and restoration of marine resources. Marine mammals specifically are a sentinel species, reflecting the overall health of the coastal ecosystem, and were greatly affected by the oil spill. Being able to manage impacts to their surficial or habitat are vital to the health of the Gulf of Mexico. Documenting overlap of oceanographic water properties (i.e., new outflow characteristics) and marine mammal distribution offers another piece of missing information about the impact of mortality and recovery on depth distribution and habitat range. Date Entered: May 1, 2017</p>	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	\$	60,000.00	\$	-
Eco Restoration	559	6/2/2017	<p>Anthropogenic and Biological soundscape assessment of the Mississippi Sound using passive acoustics.</p> <p>NADA Project ID#1303: Detailed scientific data are lacking for many species of offshore marine mammals in the Gulf of Mexico, so restoration activities will require an incremental approach including initial data collection and monitoring, that will vary by species and stock. To identify priority threats there is an additional need for population monitoring, and spatial habitat definition. Population assessment, monitoring and habitat characterization are also monitoring basic oceanographic properties such as temperature, salinity, and light. Post-processing detection algorithms can identify candidate fish and invertebrate species, as well as marine mammals, inhabiting the coastal waters of Mississippi in order to provide more information on temporal or spatial habitat range variability. Some surficial fishes in Mississippi waters are also important commercial stocks. Assessing their distribution and potential changes in temporal or spatial habitat range directly affect management and restoration of marine resources. Marine mammals specifically are a sentinel species, reflecting the overall health of the coastal ecosystem, and were greatly affected by the oil spill. Being able to manage impacts to their surficial or habitat are vital to the health of the Gulf of Mexico. Documenting overlap of oceanographic water properties (i.e., new outflow characteristics) and marine mammal distribution offers another piece of missing information about the impact of mortality and recovery on depth distribution and habitat range. Date Entered: May 1, 2017</p>	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	\$	5,000,000.00	\$	450,000.00
Eco Restoration	559	6/2/2017	<p>Habitat mapping and identification of species abundance and distribution for deep-water coral communities inside and outside the De Soto Canyon area to clarify genetic connectivity among populations and guide restoration activities.</p> <p>NADA Project ID#1303: Detailed scientific data are lacking for many species of offshore marine mammals in the Gulf of Mexico, so restoration activities will require an incremental approach including initial data collection and monitoring, that will vary by species and stock. To identify priority threats there is an additional need for population monitoring, and spatial habitat definition. Population assessment, monitoring and habitat characterization are also monitoring basic oceanographic properties such as temperature, salinity, and light. Post-processing detection algorithms can identify candidate fish and invertebrate species, as well as marine mammals, inhabiting the coastal waters of Mississippi in order to provide more information on temporal or spatial habitat range variability. Some surficial fishes in Mississippi waters are also important commercial stocks. Assessing their distribution and potential changes in temporal or spatial habitat range directly affect management and restoration of marine resources. Marine mammals specifically are a sentinel species, reflecting the overall health of the coastal ecosystem, and were greatly affected by the oil spill. Being able to manage impacts to their surficial or habitat are vital to the health of the Gulf of Mexico. Documenting overlap of oceanographic water properties (i.e., new outflow characteristics) and marine mammal distribution offers another piece of missing information about the impact of mortality and recovery on depth distribution and habitat range. Date Entered: May 1, 2017</p>	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	\$	5,000,000.00	\$	450,000.00

Eco Restoration	5580	6/22/2017	Resource mapping of marine habitats important to GOM sea turtles which were affected by the Deepwater Horizon Oil spill	NOAA Project DMR3018: Sea turtles are highly migratory species with complex life cycles. They use a variety of marine habitats that range from the surface ocean to sea floor ecosystems. The Deepwater Horizon (DWH) oil spill damaged surface and benthic marine habitats that are critical to Gulf of Mexico sea turtles. The proposed project would focus on two such habitats that are of critical importance to sea turtle conservation: 1) Sargassum drift habitats of juvenile sea turtles and 2) the deep-benthic and hardbottom (mesophotic reef) habitats used by juvenile and adult loggerheads. Specific project objectives are outlined below, those specific to surface pelagic studies are preceded by [SP] and objectives specific to WFS benthic habitat studies are preceded by [BH]. 4AC [SP] Identify and monitor Sargassum drift habitat within the Gulf of Mexico and nearby Atlantic and Caribbean waters as part of a regional, collaborative monitoring program. 4AC [SP] Monitor juvenile sea turtle occurrence, density, and seasonality within regional sites using on-water transect techniques. 4AC [SP] Link Sargassum habitat extents with measured juvenile sea turtle densities (from capture and transects). 4AC [SP] Utilize Sargassum habitat estimates using satellite imagery and field observations. 4AC [SP] Investigate usage of surface pelagic habitats by sea turtles during fall, winter, and spring through a combination of expansion survey effort. 4AC [SP] Understand the threat of marine debris to surface pelagic turtles through an examination of drift samples and by developing a method for quantifying debris found within surveyed habitat. 4AC [SP] Assemble remotely sensed observations to produce a spatiotemporal representation of surface pelagic habitat in the Gulf of Mexico. 4AC [SP] Map the estimated abundance and distribution of surface pelagic juvenile turtles in the Gulf of Mexico based on the occurrence of surface pelagic habitat and the behavior and movements of observed and telemetered turtles. 4AC [BH] Describe the distribution, habitat use, and foraging behavior of loggerheads on the WFS within the eastern Gulf of Mexico. 4AC [BH] Identify the isotopic signature of the WFS loggerhead residence area based on carbon, nitrogen and sulfur stable isotopes of the WFS. 4AC [BH] Use water, sediment, and dietary isotopes to determine residence (from recaptured and archival data) to assess potential interactions between sea turtles and anthropogenic threats within the Gulf of Mexico (e.g., fisheries and oil spills). 4AC Characterize habitat use and movement ecology using satellite telemetry. 4AC Conduct analyses of diet and habitat use by assessing esophageal lavage, fecal samples, and stable isotope ratios of tissue samples. 4AC Develop and enhance regional, on-water disaster response and rescue capabilities based on findings of the current study and existing data including Sargassum habitat forecasting, resource preparation, and streamlined information sharing strategies. Date Entered: May 3, 2017	Alt Coastal	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	\$ 4,524,474.00	\$ -	
Eco Restoration	5581	6/22/2017	Reduce vessel collisions with marine mammals	NOAA Project DMR13007: This project will restore open ocean marine mammals by reducing their collisions with vessels in the Gulf of Mexico. A program will be developed to understand the nature of marine mammal and vessel collisions and strategies to avoid them. Use of passive acoustic data, predictive modeling, and animal tagging data will inform better understanding of the causes of ship strikes and their threats to each population of marine mammals. A collaborative partnership with NOAA and the shipping industry will be developed to assess changes in vessel routing that could reduce the risk of marine mammal and vessel collisions and/or voluntary speed restrictions that would help reduce the probability of vessel collisions. Recreational boater education and awareness will be another issue addressed by this project. Bryde's whales (Balainoptera adeni) are the only resident baleen whale species in the Gulf of Mexico (GOM), where they are extremely rare, and have a distribution restricted to the eastern Gulf of Mexico. Vessel collisions may be a major factor in their restricted distribution and small population size. Tagging data suggest that these whales have shallow nocturnal diving patterns with 88% of their nighttime spent near the surface within the draught depths of most large commercial vessels. Better understanding of how to protect Bryde's whales from vessel collisions will be one goal of this project. Date Entered: May 2, 2017. Date Edited: May 3, 2017		Yes	No	No	Yes	No	No	No	No	No	No	No	No	No	No	No	\$ 5,000,000.00	\$ 500,000.00		
Eco Restoration	5583	6/22/2017	Reduce impacts of anthropogenic noise on marine mammals	NOAA Project DMR3022: The goal of this project is to identify the sources of ocean noise and map their relative influence as stressors of offshore marine mammals, and to propose means for noise mitigation. Ocean noise in the GOM has reached its highest levels measured at any open-ocean location, owing to anthropogenic noise from commercial activities related to exploration, production and commercial shipping. Calibrated passive acoustic monitoring data will be used to characterize the spectral, temporal, and spatial distribution of anthropogenic noise throughout the GOM and determine areas of overlap between high noise levels and marine mammal habitat. Long-term passive acoustic data have been collected throughout shelf, slope, and deep-ocean waters. These data will be used to make geospatial maps of noise distribution and their overlap with marine mammal habitat. In addition, the source levels of individual noise sources (shipping, seismic, airguns, commercial oil platforms) will be measured to provide model input. Collaborative partnerships (NMFs, NOAA Sanctuaries, NGOs) will be developed to identify, test, and implement strategies to reduce noise impacts from sources of commercial shipping, and seismic exploration and extraction noise, with priority for noise reduction in areas of overlap between high noise levels and high animal densities. Date Entered: May 3, 2017. Date Edited: May 4, 2017		Yes	No	No	Yes	No	No	No	No	No	No	No	No	No	No	No	\$ 5,000,000.00	\$ -		
Eco Restoration	5584	6/22/2017	Reduce Marine Mammal Bycatch in Commercial Fisheries Gear	NOAA Project DMR13033: Bycatch in fishery gear is a leading source of mortality for marine mammals, however annual mortality of marine mammals in the Gulf of Mexico from fisheries bycatch is well understood. Gulf of Mexico fisheries with known or potential marine mammal bycatch include: pelagic longline, shrimp trawl, gillnet and purse seine. Bycatch in fishery gear will be addressed as a collaborative project with NOAA and the fishing industry. Offshore Gulf of Mexico pelagic longline and gillnet fisheries, as well as shelf and slope commercial fisheries, expanded and enhanced fisheries observer coverage will be supported and better understanding of the circumstances that lead to capture bycatch will be obtained. A strategy will be developed to address marine mammal bycatch in commercial fisheries, including potential modifications to fishing hardware and methods. Date Entered: May 4, 2017. Date Edited: May 4, 2017		Yes	No	No	Yes	No	No	No	No	No	No	No	No	No	No	No	\$ 3,000,000.00	\$ -		
Eco Restoration	5585	6/22/2017	Passive Acoustic Monitoring for Open Ocean Marine Mammal Restoration in the Gulf of Mexico	NOAA Project DMR3034: An array of the passive acoustic monitoring (PAM) system has been deployed continuously since 2010 in the Gulf of Mexico. In response to the Deepwater Horizon oil spill, these instruments allow monitoring of marine mammal populations for a variety of species (e.g. sperm whales, beaked whales, dolphins, Bryde's whales). Our proposed project would extend the temporal sampling and expand the spatial coverage of passive acoustic monitoring to include the entire GOM, to allow monitoring for marine mammal restoration efforts including habitat modeling and the study of impact assessment from anthropogenic noise and vessel collisions. Current long term Passive Acoustic Monitoring (PAM) efforts in the Gulf of Mexico consist of the sites that were designed for damage assessment following the Deepwater Horizon oil spill. These sites have been operating continuously since summer 2010, and are collecting data using High-Frequency Acoustic Recording Packages (HARP). High-Frequency Acoustic Recording Packages are uniquely capable of collecting continuous acoustic data suitable for marine mammal density estimation for the full range of species. Other autonomous acoustic monitoring hardware is available that can match the HARP's capabilities for bandwidth and deployment duration. Likewise, the Scripps Institution of Oceanography has unique capabilities for collecting, processing and analyzing large acoustic data sets for marine mammal calls. Our project partners, University of St Andrews, Center for Research into Ecological and Environmental Modelling (CREEM), have world-leading capabilities for providing density estimates from long-term passive acoustic monitoring datasets. Together, we have been working with NMF's SETEC to use these density estimates as part of a habitat model, integrating both visual and acoustic data into the final model. Our vision for this project is to create a passive acoustic monitoring network that includes sensor coverage for the entire Gulf of Mexico. The rationale for this plan is that marine mammal populations, sufficient spatial coverage for habitat modeling, and detailed models of knowledge including both broadband and directional information. Density estimation using passive acoustic data requires supplementary information on animal sound production rates (call rate), source levels and behavior. We have been working to develop density estimates for deep diving cetaceans, dolphins, and Bryde's whales in the Gulf of Mexico. As a component of the overall project, we propose to collect data on animal diving and vocal behavior using suction-cup attached acoustic recording tags, in addition to constructing acoustic tracking arrays at selected monitoring sites. These data will provide the supplementary information on detection distance, call production rates) needed to expand the range of species that are amenable to density estimate on. Date Entered: May 3, 2017		Yes	No	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	\$ 5,000,000.00	\$ -	
Eco Restoration	5586	6/23/2017	Gulf of Mexico Dolphin Identification System (GIDMS)	NOAA Project DMR3040: The Deepwater Horizon (DWH) oil spill and a prolonged Unusual Mortality Event(s) (UME) in the northern Gulf of Mexico made it exceedingly clear that knowledge of bottlenose dolphins in much of the region is insufficient to be able to provide optimal protection as mandated under the Marine Mammal Protection Act. Stock shortfalls have been largely assigned arbitrarily for management purposes based on geography rather than on dolphin biology. Abundance estimates are of little use for many pelagic Gulf stocks and are essential for stock assessments. In the absence of ranging information, it was difficult for managers to assign specific mortalities or health conditions during the DWH and UME to specific stocks. These shortfalls complicated efforts to assess the impacts of large scale environmental (on mortality events), and inadequate baseline monitoring for recovery or preparation for future large-scale events. A conceptual plan has been developed to rectify some of these issues by developing a collaborative team to combine dolphin photographic identification catalogs from around the Gulf. Utilizing the OBS-SEMPA photo identification application as an end product, the Gulf of Mexico Dolphin Identification System (GIDMS) is a Gulf-wide effort to compile available photo-ID catalog images and data from collaborating researchers to document movements of dolphins through web-based comparisons of regional photo-ID catalogs. It is a central repository and archival location for identification photos and associated metadata, providing the basis for detecting large-scale movements of individual dolphins among the relatively limited study areas of the individual investigators. To better assist managers with decision-making, collaborators will be asked for additional information. By incorporating data on alternate human interactions, areas of NOAA concern can be better identified, for increased law enforcement or education. A communication plan will be used between the stranding network and photo-ID programs can be bridged by building a platform utilizing a cloud system to make GIDMS more "real-time" facilitating incorporation and dissemination of stranding data in a more timely, efficient manner to all interested parties. Priority searches for stranded animals among compiled photo-ID catalogs will expeditiously provide vital information to identify where management actions might be required. Incorporation of a new protocol for expanding the in-match process will update the process. Date Entered: May 6, 2017		Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	\$ 600,000.00	\$ -	
Eco Restoration	5587	6/23/2017	Health, contaminant concentrations, ranging and dispersal patterns of dolphins inhabiting the West Florida and Mississippi Albatross Channels	NOAA Project DMR13042: Many questions remain regarding the environmental effects of the Deepwater Horizon oil spill (DWH) petroleum/liquid system on Gulf ecosystems. Cetaceans, as top predators, are an important component of Gulf of Mexico (GOM) ecosystems and can be sentinel species for ocean health. However, outside of research in bays, sounds, estuaries and associated coastal waters, where they were found to have serious health conditions consistent with exposure to petroleum products, dolphins have received very little research attention with regards to the impacts of the DWH petroleum/liquid system (PDS). The West Florida Shelf (WFS) and Mississippi-Albatross shelf (MAS) occupy much of the eastern Gulf. Two cetacean species regularly inhabit these shelves; bottlenose dolphins (Tursiops truncatus) and Atlantic spotted dolphins (Stenella frontalis). Based on the documented distribution of these animals' shelf waters of the northern GOM, and their air-ground occurrence, individuals or populations of dolphins in GOM shelf waters, and they could be exposed to future spills as well. Accurate assessment of the potential impacts of exposure, as well as the ability to monitor recovery, requires detailed knowledge of the ecology and health of these animals, unfortunately, little is known about shelf dolphins. The proposed research will be the first ever systematic tagging, tracking, and health assessments of dolphins in GOM shelf waters. The overarching goal is to apply existing and developing tools and approaches to address gaps in existing knowledge of the effects of exposure to PDS for shelf dolphins. The specific objectives for the proposed research include: 1) Improve understanding of stock structure through tagging, tracking, and genetic sampling; 2) Establish baseline data on environmental contaminant concentrations in dolphin tissues; 3) Obtain baseline dolphin health data; 4) Evaluate potential relationships between lung disease and respiration and diving patterns; and 5) Develop and refine tools for remote dolphin health assessment. The proposed project will apply a suite of tested and new tools under the novel situation of the deep water of the WFS to meet these objectives. The project will involve capture-release health assessments, tagging with satellite-linked, time-depth-recording transmitters, and biopsy dart sampling. Date Entered: May 6, 2017		Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	\$ 5,000,000.00	\$ -	
Eco Restoration	5588	6/23/2017	Migratory Species Studies	NOAA Project DMR2967: Expand Gulf of Mexico Migratory Species Pathways Mapping and Conservation Project with emphasis on migratory connectivity modeling, threats assessment, and the identification of habitat restoration needs including pelagic habitat. A. Objectives: Understand the most significant migratory pathways of fish, Sea Turtles, Marine Mammals, and birds in the Gulf of Mexico large marine ecosystem, and the habitats that their populations need to continue being viable. Identify the most important threats to those pathways and habitats. B. Species group/habitat: Fish and Water Column Invertebrates, Sea Turtles, Marine Mammals, C. Description: Migratory species rely on multiple habitats to complete their cycles. This project should: 1. Assess the threats to species while migrating along their pathways in the Gulf of Mexico. 2. Develop an optimized habitat portfolio that identifies the essential habitats and migratory connectivity that identify the essential habitats. 3. Create a migratory species population throughout their life cycle and to guide habitat restoration and protection. 4. Support technological advancements in the development of biological tracking and oceanographic monitoring networks, such as acoustic monitoring networks, gliders including the development of migratory movement tracking networks and infrastructure across the Gulf. 5. Develop a shared fund. Current or new establishment of scientific and management networks of practitioners assessing the movements of marine organisms (e.g., ITAC network of academic telemetry) and synthesis of a collaborative strategy a Gulf of Mexico Animal Tracking Network. This project continues work previously completed and published by The Nature Conservancy to map the migration routes of 20 land, fish, marine mammal and turtle species in the Gulf of Mexico (Berner et al. 2016). We believe that this research revealed the great importance of species migration to the Gulf of Mexico as well as the importance of continuing to map and analyze migratory pathways as an important decision-making tool for Gulf restoration. This project would accomplish the next phase of this work with particular emphasis on three assessment areas: 1) habitat restoration, 2) population viability, and 3) protection for their habitats. (Berner, J., C. Vogler, D. Mahman, 2016. Mammal Migration Species in the Gulf of Mexico Large Marine Ecosystem: Pathways, Threats, and Conservation. The Nature Conservancy, Arlington, VA. 93 pp.) Date Entered April 26, 2017. Date Edited May 7, 2017		Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	\$ 1,200,000.00	\$ 250,000.00	
Eco Restoration	5589	6/13/2017	Development of a tool for tagging free-swimming small cetaceans	NOAA Project DMR13045: There is a strong need to learn about the ranging and dive patterns of small cetaceans in the Gulf of Mexico waters. Satellite-linked telemetry has advanced greatly in recent decades, to the point where small tags can reliably provide such data for periods of months, with little risk to the animals. The limiting factor for collecting the needed information is acquiring the animals for tagging. In shallow inshore waters, capture-release techniques exist for accessing small groups of bottlenose dolphins for such tagging. However, in deeper offshore waters, capture opportunities are limited to hoop-netting individual small cetaceans. There is a strong need for a technique that would allow deployment of satellite-linked transmitters without needing to capture the dolphins. It would be very desirable to develop a technique for attaching standard satellite-linked tags to small cetaceans that risk below the bow of small vessels. Preliminary designs have been developed, but production and testing are required. Date Entered: May 7, 2017		Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	\$ 285,000.00	\$ -	
Eco Restoration	5590	6/23/2017	Next-generation Gulf sturgeon Conservation using genomics and epigenetics to identify low-allele diversity and local adaptation	NOAA Project DMR13051: Using neutral markers, Gulf Sturgeon (Acipenser oxyrinchus desotii) are differentiated into four populations with low gene flow. However, fine-scale structure, detected using single nucleotide polymorphisms (SNPs), can influence inbreeding/outbreeding, population demography, and recruitment. Thousands of SNPs can be sequenced, increasing the power and accuracy of identifying genetic differentiation, gene flow, effective population size, and bottlenecks. Thus, these investigations of fine-scale diversity through SNPs and epigenetics is warranted. Adaptive genetic diversity, identified as unique mutations and under selection, provide insight into fitness effects and local adaptation. Understanding the gene regions that are adaptive can be used to identify evolutionarily significant units, aiding adaptive management. The proposed study can inform management of adaptation to resources and the response of populations to impacts, such as oil spills, urbanization, and climate change. Epigenetics, the study of changes in an organism due to modified expression, can be used instead of changes to the genome, can also be used to detect local adaptation and population differentiation. Methylation, the most commonly studied epigenetic marker in natural populations, like SNPs, methylation markers can be identified as outliers. Through the combination of SNPs and methylation, we can better understand how Gulf Sturgeon populations are adapted to various living in five populations. Levels of contaminants, food, etc. The main goal of this proposal is to identify underlying molecular diversity. In addition to this, we propose to: 1) Perform a genome scan of Gulf sturgeon to identify neutral and adaptive SNPs, and 2) Identify patterns of differential methylation using epigenetic markers. Samples will be taken from sturgeon across their distribution. DNA will be extracted and qPCR (epigenetic genotyping by sequencing), a next-generation sequencing method, will be performed to identify SNPs and methylation sites. Subsequently, if adequate Gulf sturgeon samples cannot be obtained DNA samples will be taken and using highly sensitive digital PCR equipment genetic analyses can be performed. This project will provide baseline genomic-level data to improve genetic estimates and will inform managers of local adaptation, impacts due to episodic events and to chronic stressors. These data are paramount to identifying management priorities and successful conservation strategies. Date Entered: May 9, 2017		Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	\$ 574,190.00	\$ -	

Eco Restoration	5599	6/23/2017	Informing deep-benthic and mesophotic habitat restoration by characterizing baseline coral microbionomes	NOAA Project ID#13094: The human microbiome project has made a paradigm where our microbes are a critical part of our biology "linked to nutrition, physical and mental health). Corals also have many associated microbes that are an integral part of their biology. It is critical to understand the baseline of coral microbionomes in order to improve understanding of mesophotic and deep-sea communities to address critical uncertainties, inform management, and ensure resiliency. Microbes are the most quickly adaptable part of coral, responding to environmental changes and stressors long before effects are visible. Having available baselines will provide the necessary benchmark against which future samples can be compared, allowing detection of impacts and providing a guideline for restoration. These coral-associated microbes are sensitive indicators of coral health and without knowing what a healthy microbionome looks like, it is impossible to know if we have restored back to the healthy state or instead created a third baseline of 4C" bacter but not fully functional. Currently, the only baseline microbionome data available for deep-sea corals is GOM are for <i>Lophelia pertusa</i> (Keough et al., 2008; DOI: 10.1126/science.1237578; Keough et al., 2017; DOI: 10.3389/fmicb.2016.01296). This coral microbionome associated with Deepwater Horizon impacted coral was examined (Smit et al., 2015; DOI: 10.1016/j.cors.2015.01.010), but the closest comparisons available for healthy baseline microbionomes for coral species come from outside the GOM and may have regional differences that make them less useful for determining local impacts (Gray et al., 2011; DOI: 10.1111/1365-2745.12010; Gray et al., 2016; DOI: 10.3389/fmicb.2016.01296; Keough et al., 2016; DOI: 10.7717/peercomm.2016). New mesophotic data would be made available to the larger mesophotic management, and research community via NOAA's Sequence Read Archive. Key mesophotic recognized public data repository maintained by the US Federal Government. The proposed project would require a ship and remotely operated vehicle (ROV) for proper collections. Samples would be preserved onboard. Microbionomes would be analyzed using Illumina MiSeq. To improve research methods, this project could be combined with studies that require similar vessels such as population genetics/connectivity, coral health assays, coral algal/growth rate, or restoration. This could include sharing ship/ROV time and coral samples to maximize the information gathered per collection. Target areas for sampling include areas impacted by the oil spill and control sites. Mesophotic sites: Alabama AIs, Roughground Reef, Yellowtail Reef, Coral Trees and Madison Swanton South. Deep sites: Green Canyon (GCC2), Mississippi Canyon (MC237, MC14, MC207, MC203), Vioxx Area (VX26), and near Florida Slope. Date Entered: May 12, 2017	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	\$	5,029,000	\$	-
Eco Restoration	5600	6/23/2017	Species-wide population analysis of Gulf sturgeon to support restoration planning and design	NOAA Project ID#13104: Multiple researchers and agencies have conducted sporadic capture/recapture sampling on the seven natal populations of Gulf Sturgeon. These efforts have normally been basin-specific, and resulted in basin-specific, short-term estimates of local populations. In recent years, efforts have been made to safeguard and gather the relevant data sets to prevent data from disappearing when researchers move or retire. However, there has not been an effort to collate, validate, and analyze data from several near systems in one analysis framework. Thus, basic information, such as how many Gulf Sturgeon have ever been tagged or recaptured, is unknown, much less more advanced demographic data that could be useful for inter-basin comparisons. This project proposes to work with all existing data sets from current and past Gulf Sturgeon researchers to create a coherent, consistent species-wide database, and then analyze that dataset within a multi-scale spatial capture/recapture (MSCR) framework. This would be accomplished within the framework of the Gulf Sturgeon Working Group, a researcher driven collaboration of researchers and administrators. By working within the existing group, which includes all organizations currently working with Gulf Sturgeon, we will ensure access to existing data, and dissemination of related data, model structure, and results to all interested parties. Existing data and analyses have suggested that the western populations of Gulf Sturgeon have lower recruitment and survival. By working in a species-wide MSCR modeling environment with environmental covariates, we would be able to verify lower survival, and partition the differences in survival among size classes and years, thus suggesting starting points for hypotheses about the differing mortality that may be amenable to remediation, leading to restoration. Date Entered: May 12, 2017	Hancock, Jackson	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	\$	750,000	\$	-
Eco Restoration	5601	6/23/2017	2018/19 update of NOAA mesophotic reef ROV studies	NOAA Project ID#13121: In 2010, 2011 and 2014, USGS WAGB researchers conducted ROV cruises at a series of mesophotic reefs along the NE Gulf shelf edge, from Louisiana to Florida. Changes in fish and invertebrate communities were documented post-Deep Water Horizon, compared to ROV footage obtained at the same reefs between 1997 and 2003. This data was the basis of the POAMP Mesophotic reef action. In 2011 and 2014, detailed images were made of individual species identified with anchored markers. It would be necessary, in order to design restoration efforts for mesophotic reefs, to revisit the same sites in 2018/19, to document changes in fish and invertebrate fauna and density, and compare and contrast to the 2011, 2012, and 2014 data. If the reefs are recovering on their own, then active restoration will not have to be undertaken, necessitating only the continued monitoring of the reefs on the other hand, revisiting the reefs shows that some components of the ecosystem are not returning on their own, then restoration targets will be able to be set, and plans for active restoration made. Date Entered: May 12, 2017		Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	\$	3,825,000	\$	-	
Eco Restoration	5602	6/23/2017	Gulf wide investigation of Estuarine Gulf Sturgeon Dynamics and Estuarine Habitat Use	NOAA Project ID#13038: A multitude of restoration projects have been proposed within the footprint of estuarine critical habitat for the federally protected Gulf Sturgeon (GS), yet identifying regulatory avoidance of the Endangered Species Act. Estuaries serve as winter foraging habitat for juvenile Sturgeon, yet relatively little is known about the spatiotemporal patterns of estuarine habitat use, the degree of preference for mesohabitats such as oyster reefs, seagrass beds, mud flats. This information is critical for guiding projects through the Federal regulatory process, and for determining effective strategies for estuarine restoration to benefit the GS. Also unknown are patterns of recruitment, growth, and survival of juvenile GS, yet this information is fundamental to quantify the success of Gulf Sturgeon restoration efforts. Following an approach currently demonstrated in the Apalachicola River system, we propose to conduct a multi-year assessment of 1) the spatiotemporal trends in estuarine habitat use by juvenile GS via sonic telemetry and habitat mapping, and 2) trends in Age 1 juvenile Sturgeon recruitment, growth, genetics, and survival using proven fisheries techniques across the following 5 GS populations: Escambia, Escambia, Apalachicola, and the Apalachicola River system. This project will provide the data necessary to evaluate the impact of restoration projects and within the critical estuarine habitat of GS. Also of great importance, this project will establish the necessary baseline for determining whether restoration projects succeed at increasing the production of Gulf Sturgeon, and/or improving the growth rates and survival of juvenile GS in populations affected by the Gulf Oil Spill: the ability to directly measure the effects of restoration projects is critical. This project will also reveal the effective number of spawning adults that successfully contribute to the next generation. This metric will help to evaluate the cost of restoration activities like fish passage/barrier removal projects. This project will be coordinated by a dedicated USFWS biologist, and executed through a cooperative partnership with state, federal, and academic institutions across the northern Gulf of Mexico. This project will leverage the resources of existing projects involving passive telemetry arrays, such as those currently deployed in Lake Pontchartrain and the Pearl River system. Funding for this project will provide the resources and will yield the knowledge and commitments necessary to continue monitoring juvenile GS in these systems into the future, thereby achieving the ultimate goal of assessing effects attributable to Gulf-wide restoration efforts over the long term. Furthermore, the project will greatly advance our understanding of juvenile GS dynamics and management relationships within estuarine habitats, a key objective for recovery of this federally-protected, iconic species. Date Entered: May 9, 2017. Date Edited: May 12, 2017	St. Tammany Parish, Jackson County, Santa Rosa County, Gulf County, De County	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	\$	1,150,000	\$	100,000
Eco Restoration	5603	6/23/2017	Characterizing Gulf Sturgeon Spawning Habitat and Habitat Use in the Pearl and Pascagoula River Systems	NOAA Project ID#13103: Information on the location and extent of spawning habitat, and patterns of accessibility and use of this habitat by adult Gulf Sturgeon is extremely limited for the Pearl and Pascagoula river systems, where populations are believed to comprise only a few hundred remaining individuals. This critical information deficit impedes our ability to identify restoration projects that target spawning habitat with active manipulation or protection approaches: in the Pearl system, 2 low-head dams (i.e., still) impede access to upstream reaches thought to contain the necessary hard-bottom substrate suitable for Sturgeon spawning. Removal of these barriers is the highest priority for Gulf Sturgeon restoration, yet knowledge of where adult fish will go to spawn once the barriers are removed is lacking. Identifying spawning habitat in the Pearl system is not only important to monitoring the success of dam removal, but this information is essential to guiding regulatory actions and species recovery within the basin. In the Pascagoula River, this knowledge gap is likewise essential to Gulf Sturgeon restoration planning and implementation. We propose to use methods developed and demonstrated by this author to map and characterize potential Sturgeon spawning habitat throughout the entire navigable, upstream portions of both the Pearl and Pascagoula rivers and associated tributaries (Kaiser et al., 2012; Lutz and Kaiser 2016). Once identified, passive telemetry arrays will be established to investigate patterns of adult fish access and utilization of these habitats. To confirm spawning, high-use areas will be targeted for the collection of eggs using methods proven to be effective for Gulf Sturgeon. This study will result in maps that quantify the extent of available habitat for spawning in both river systems. This much-needed information will directly inform future threats assessments and decisions associated with restoration or protection of these habitats. The importance of recovering the Pearl and Pascagoula populations to overall species recovery cannot be overstated: the 2 populations are genetically distinct from those in the east, occupy different estuarine and marine habitats, exhibit behaviors and seasonal migratory patterns that are unique, and are faced with different threats. Given the high priority assigned to spawning habitat restoration, this project represents a fundamental first step toward achieving the overarching goal of improving the status of Gulf Sturgeon in the two populations most likely to have been affected by the Gulf Oil Spill. Date Entered: May 12, 2017	Washington Parish, George County	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	\$	350,000	\$	20,000
Eco Restoration	5604	6/23/2017	Microscale landers on mesophotic reefs	NOAA Project ID#13122: Documenting fish and invertebrate communities on mesophotic reefs using traditional oceanographic ROVs and research vessels, while successful, is an expensive undertaking. Doing so using deep diving techniques adds a large degree of personnel risk. There may, however, be a faster, cheaper, smaller methodological fit that may yield comparable results with much lower cost and less risk. Several recent convergences in technology have created the possibility of creating small, easily deployable mini-observatories that would detect telemetered marine life, while recording visual, audio, and physical data over a period of time before being recovered, all at a relatively low cost. Nimble Armbot-style autonomous telepresence robot with a built-in acoustic telemetry receiver (VR2AR). Meanwhile, multiple sources, such as the Haskerty PI Foundation, produce minicomputers which would be adaptable to the requirements of an ocean observatory. Mated together (embedding a coded Haskerty PI camera, and sensors into a float around the VR2AR), would create a miniature, highly flexible, reusable ocean observatory capable of 500 m deployment, able to be hand launched and recovered from small craft, at a cost of around \$6000 each. By lowering the cost low, it would be possible to deploy landers in an array, greatly increasing the amount of data collected and increasing redundancy. Sport fishing charter boats are now capable of handling most wave conditions at speeds over 60 knots. By utilizing fast, stable charter boats, micro-rovs, and hand-launchable and recoverable mini-observatories, researchers could instrument many more mesophotic reefs at much lower costs. By designing the micro lander around an open-source architecture system, incorporating a standard power package, open-source software, and easily sourced hardware, individual researchers could add whatever sensors they needed to their landers. Working in conjunction with the University of Florida Department of Computer and Electrical Engineering MST Center, USGS would design, create and test a basic observatory system, with add-on potential for use by other researchers. By deploying many small multi-sensor landers on mesophotic reefs, we would be able to monitor recovery at longer time scales over larger areas than can be accomplished by ROV missions, at lower cost and with more flexibility. Date Entered: May 12, 2017		Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	\$	2,250,000	\$	-
Eco Restoration	5606	6/23/2017	Acoustic telemetry arrays to support tracking Gulf sturgeon, sea turtles, marine mammals, and fish species in the Northeast Gulf of Mexico	NOAA Project ID#13105: Multiple researchers and agencies are conducting acoustic telemetry studies on Gulf Sturgeon. Within the framework of the Gulf Sturgeon Working Group, researchers have standardized telemetry equipment, and established a coordinated set of passive receivers that monitor entry and exit from natal rivers. Concurrently, there is a Gulf-wide collaborative multi-species Telemetry group (TAG) to share acoustic receiver data, and encourage collaboration in receiver array distribution and deployment. Several areas across the Southeastern Gulf have established receiver arrays, and more arrays are being established over time. However, across the Northeast Gulf, there is a large gap in offshore coverage between the Tampa Bay region and Lake Fort Zachary. We propose to work with state, university, and federal agencies and researchers to increase and augment acoustic telemetry receiver coverage and test there is a seamless series of receiver arrays from the Du Toque to the Mississippi River. Such an array would be valuable not only for Gulf Sturgeon researchers, but also sea turtles, sharks, marine mammals, and fish researchers. Large-scale acoustic receiver arrays exist along the Atlantic and Pacific coasts of North America from the US through Canada, and several Atlantic NMEA funding created a dispersed array from Louisiana to Cedar Key, FL. In 2010 and 2011, on their empirical knowledge as to field-tested deployment methods and results in this region. These large-scale arrays and collaborative networks have enabled new discoveries about movements of marine animals. By working within the established collaborative group, and with the existing arrays, we would facilitate communication of data, and interactive planning of projects. By working with many researchers across geographic areas, we would facilitate multi-specific spatial analysis, examine a wide range of temporal and environmental conditions. Large-scale data acoustic tracking data would be able to inform the scale and success of restoration planning and design efforts from Louisiana to Florida. Date Entered: May 12, 2017		Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	\$	1,500,000	\$	-
Eco Restoration	5607	6/23/2017	Science exchange for sea turtle research and management	NOAA Project ID#13096: We propose a biennial science exchange for researchers and managers working with sea turtles in the Gulf of Mexico. The objectives of the project are to: 1) Provide a venue for exchange of current approaches to restoration, monitoring, and research of all sea turtles species found in the Gulf of Mexico. 2) Promote collaborative interactions and synergies among groups receiving restoration funds earmarked for sea turtles. As a settlement funds will be allocated over a 15-year period, we propose to gather the Gulf of Mexico sea turtle community every other year during the duration of the settlement period. This will help the community evaluate the status of monitoring and adaptive management in order to help determine if management objectives are being met, as outlined in the Final POAMP. The format of the science exchange will differ from a traditional scientific meeting in that presentations will be limited in time, and longer periods will be devoted to discussion and group interactions. Registered participants will be asked to give 5-minute lightning talks highlighting progress on their restoration projects, followed by 15-minute question and answer periods. Longer blocks of time will be devoted to facilitated group discussions so that the community can identify continuing priorities, pinpoint gaps in restoration activities, and target future goals with a comprehensive vision. The budget will provide funds for two 2-day science exchange forums with the idea that biennial meetings will continue into the future. The location would rotate between the Gulf states. Meals will be provided in a community setting to promote interactions and networking among participants. Groups with active sea turtle restoration funding would be encouraged to participate and supported under the project, while any other attendees would be welcome. Date Entered: May 12, 2017		Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	\$	250,000	\$	-

Ecological Restoration	5603	6/23/2017	Turtle connections: Gulf-wide sea turtle nesting, beach and foraging area connectivity.	NOAA Project IEM3209: Sea turtle monitoring is based toward nesting aggregations. Whereas this approach provides valuable information about sea turtle nesting populations, it does not address the foraging locations, which is where sea turtles spend the majority of their time. The programmatic restoration plan highlights the need for robust monitoring both to track restoration projects and address critical information gaps such as spatiotemporal distribution and movements. We propose a Gulf-wide effort to enhance foraging area monitoring by sampling sea turtles at the nesting beach and using intrinsic markers to determine foraging area origin. This effort can permit long-term tracking of foraging area abundance trends without having to monitor the in-water populations directly. Identifying origins can also help identify the spatial overlap between foraging area hotspots and commercial fisheries. Tissue samples collected from nesting females with a non-invasive protocol will be analyzed for stable isotopes, which are biological markers that can be used to reveal information about a habitat used by organisms without having to observe them directly. The most commonly used isotopes in marine studies are carbon and nitrogen. Both of these elements are incorporated into primary producers at the base of the food web and are then transferred through trophic levels. Because of baseline differences in the isotopic signals from different regions in the ocean, stable isotope concentrations can reflect location and can be used for tracking marine animal movements. A stable isotope approach to determining origin has been validated in a number of sea turtle populations around the world, and in the Gulf of Mexico (GOM), spatial patterns in the stable isotope composition of foraged tissues have been mapped using an isotopic landscape, or isotopic approach. The method was validated in the Gulf to be able to assign nesting individuals to a foraging area origin with high accuracy. Thus, stable isotope analysis will be a very powerful tool to effectively determine geographic origin for large numbers of untagged nesting sea turtles in the GOM. The proposed project addresses the need for information on sea turtle abundance, distribution, migration patterns, and habitat use highlighted in the programmatic restoration plan. In turn, these data may be used to assess restoration options toward recovery goals. We propose that these stable isotope tracking efforts be supported for three species: Loggerheads, green turtles, and Kemp's ridley on a Gulf-wide basis. The work will consist of two primary objectives: 1. Create species-specific isotopic baselines: A previously published isotopic baseline is available for Loggerhead turtles in the GOM (Vander Zanden et al. 2015). But must be developed for green turtles and Kemp's ridley. In order to create these isotopic baselines, tissue samples from these species, from their original individuals. Therefore, we will obtain samples from satellite-tracked or in-water turtles by working with various teams that are currently deploying satellite telemetry turtles. The isotopic data will be mapped and interpreted in a geographical framework to develop new isotopic baselines for green turtles and Kemp's ridley using a similar approach that was used for the Loggerhead turtles. 2. Long-term nesting beach monitoring: We propose long-term sample collection in conjunction with nest beach monitoring programs already in operation for the three species. Sites to be sampled on an annual basis for each of the three species, and foraging area origin will be determined with the isotopes from the previous step. The estimated budget will provide three years of project support, but monitoring should be continued for a minimum of ten years in order to examine any trends that may occur as a result of Gulf-wide restoration efforts and highlight geographic regions of high use that may coincide with anthropogenic activities. Data Entered: May 12, 2017.	Yes	No														\$	1,023,000.00	\$				
Ecological Restoration	5609	6/23/2017	Assessing recovery rates of deepwater organisms in the northern Gulf of Mexico through multigenerational examinations of species assemblages, community structures, distributions, trophic relationships and interannual variability in abundance.	NOAA Project IEM32151: The Deep Water Horizon (DWH) explosion well located in the northern Gulf of Mexico 55 km off the shores of Louisiana is approximately 1,800 m water depth. This region, while relatively close to shore, is not easily sampled due to the water depth and the resultant requirements for the sampling equipment and ships. These difficulties have resulted in infrequent sampling efforts in these deepwater habitats especially in the context of fisheries independent surveys. Thus, when the DWH accident occurred there was a paucity of information relative to the affected communities, particularly in regards to low-series information that would have been needed to analyze impacts to deepwater organisms, in an attempt to characterize the population dynamics and ecology of deepwater ecosystems in the northern Gulf of Mexico, we propose a survey that will deploy a suite of gear types at randomly selected sites between depths of 200 M - 2000 M. As this project aims to examine all biological components of these poorly known and infrequently sampled habitats, we propose to deploy multiple gear types to collect information from the surface to the seafloor. Selected gear types will include trawls, longlines, traps, video arrays, water samplers, acoustic and sediment grabs. All captured specimens will be identified to the lowest possible taxa, enumerated and measured. Specimens and water samples will be retained for future DNA, diet, genetic, environmental DNA, and toxicology analyses. In addition to randomly sampled locations, transects will be run in eight cardinal directions (i.e., N, NE, E, SE, S, SW, and W) from the location of the DWH to determine long-term spatial impacts of the event on deepwater ecosystems. To meet the goal, an unspecified reference site will be selected from outside of the influence of the DWH spill (i.e., western Gulf of Mexico) and metrics will be randomly sampled upon which to compare with impacted locations at both 15-50 m and shelf edge depths (75-200 m). The slope depth 150 m ecosystem located between these two sites, did not appear to be impacted (EI). Proposed activities at study sites (Fig. 1-4). Survey DWH communities in these 3 habitat types: from non-exposed and unimpacted sites to describe benthic distribution and population demographics of dominant coral and sponge species; b) benthic fish community structure; c) human impacts. 2. Collect samples to assess healthy, reproductive strategy and population genetic structure of dominant DWH. 3. Evaluate habitat enhancement or restoration tools: measuring coral recruitment and community succession on replicates coral transplant reefs. These will be deployed using elevators and placed near the reef edge (over 100 m). 4. Corals will be collected in insulated bins, fragmented and deployed on transport units near reef habitat (using divers or ROVs) to assess their value as restoration tools for DWH habitats. Restoration outcomes: In accordance with recommended standard approach for deepwater fisheries resources, we propose initial assessment of deepwater fisheries resources, we propose initial assessment study comparing current status of sites posed vs unimpacted communities in 3 depth habitats and evaluating benefit of artificial hard substrates to enhance recruitment/recovery potential. This information is pre-requisite to determine potential benefits of conventional reef restoration approaches. Results will also create tools for effective management (placement of MPAs, regulation of commercial and recreational activities) via predictive models for DWH-impacted distributions, larval dispersal and vulnerability assessment. Data Entered: May 13, 2017.	Yes	No															\$	18,000,000.00	\$			
Ecological Restoration	5610	6/23/2017	Restoration and assessment of post-disturbance recovery for deep water coral habitats.	NOAA Project IEM31512: Deep-water corals (DWC) occur throughout the Gulf of Mexico at depths of 50 m [1, 20]. Benthic communities are distinct between shelf edge (80-100m), dense octocorals, black corals and sponges, with occasional stony corals, sponges (ranging from 100m to 2000m), including stony coral <i>Lophelia pertusa</i> thickets and reefs, fig. 1), and bathyal (2000m), octo- and black coral) habitats. Corals and sponges provide complex habitat for diverse faunas, some of which are economically valuable (3). DWC are usually long lived and slow growing, with low recovery potential (4). The "ecological footprint" of the DWH spill covered a large swath of the northern GOM, including several known areas of deep water coral habitat, for "90 days (4). Post-spill surveys of some sites showed oil damage (Fig. 2) to octocoral colonies at bathyal (50), and shelf edge depths (75-150), but the slope depth 150 m ecosystem located between these two sites, did not appear to be impacted (EI). Proposed activities at study sites (Fig. 1-4). Survey DWH communities in these 3 habitat types: from non-exposed and unimpacted sites to describe benthic distribution and population demographics of dominant coral and sponge species; b) benthic fish community structure; c) human impacts. 2. Collect samples to assess healthy, reproductive strategy and population genetic structure of dominant DWH. 3. Evaluate habitat enhancement or restoration tools: measuring coral recruitment and community succession on replicates coral transplant reefs. These will be deployed using elevators and placed near the reef edge (over 100 m). 4. Corals will be collected in insulated bins, fragmented and deployed on transport units near reef habitat (using divers or ROVs) to assess their value as restoration tools for DWH habitats. Restoration outcomes: In accordance with recommended standard approach for deepwater fisheries resources, we propose initial assessment of deepwater fisheries resources, we propose initial assessment study comparing current status of sites posed vs unimpacted communities in 3 depth habitats and evaluating benefit of artificial hard substrates to enhance recruitment/recovery potential. This information is pre-requisite to determine potential benefits of conventional reef restoration approaches. Results will also create tools for effective management (placement of MPAs, regulation of commercial and recreational activities) via predictive models for DWH-impacted distributions, larval dispersal and vulnerability assessment. Data Entered: May 13, 2017.	Yes	No															\$	2,950,000.00	\$			
Ecological Restoration	5611	6/23/2017	An acoustic stranding alert system for the Gulf coast.	NOAA Project IEM32054: Marine mammal strandings occur regularly in the Gulf of Mexico, but stranding rates increased substantially after the Deep Water Horizon (DWH) spill. Post-DWH, stranded odontocetes (toothed whales and dolphins) were in poor health and often premature, consistent with exposure to DWH petroleum products (Schuckler et al. 2014, Venn-Watson et al. 2015). Restoration of odontocete populations in the Gulf of Mexico could significantly benefit from an improved response to strandings. The Woods Hole Oceanographic Institution (WHOI) is developing an odontocete stranding alert system based on the digital acoustic monitoring (DAM) instrument that detects, classifies, and reports the sounds of marine mammals in real time (Baumgartner et al. 2011, Baumgartner et al. 2013, 2014). WHOI's DAM system has been deployed and evaluated in laboratory based moored buoys, which have been used successfully since 2015 to detect the presence of baleen whales in near real time (see robot-buoys, who.edu for current buoy locations). The system is now being adapted to detect the whales and odontocetes, and with NOAA Sea Grant support (proposal pending), an odontocete stranding buoy will be deployed to Wellfleet Cape, Massachusetts during 2018 in an early warning system for stranding events. A near real-time Sea Grant-funded WHOI study is demonstrating that whales recorded just outside of Wellfleet harbor occur reliably prior to mass strandings. Using advance warning from a near real-time acoustic detection system, animal rescue teams can significantly decrease response times and improve health outcomes by either (1) preventing animals from stranding (i.e., netting to sea and (2) minimizing more quickly to recently beached animals. The objective of this proposal is to field test and evaluate two odontocete stranding alert systems on the Gulf Coast. Exact locations of the proposed systems are to be determined in consultation with local stranding networks, but known or recent stranding hotspots (e.g., Hog Island, near Everglades City, FL) are likely candidates. Near real-time detection information from the buoys will be manually reviewed, and odontocete presence information will be publicly accessible to robot-buoys, who.edu. Stranding networks and NOAA Southwest Regional stranding coordinator and staff will be alerted to the presence of odontocetes automatically by text message and email immediately after detection. Members of the stranding network will evaluate the efficacy of the early warning system by comparing outcomes before and after installation of the acoustic monitoring buoy. Milestones: Baumgartner, M.F. and S.L. Masouline. 2011. A generalized baleen whale call detection and classifier system. <i>Journal of the Acoustical Society of America</i> 129:2889-2902. Baumgartner, M.F., D.M. Forstrom, T.P. Hunt, M.W. Brown, T.V. Cota, S.M. Van Paris, and M. Johnson. 2013. Near real-time reporting of baleen whale passive acoustic detections from ocean gliders. <i>Journal of the Acoustical Society of America</i> 134:1814-1823. Baumgartner, M.F., K.M. Starford, P. Wisser, H. Stotzwech, and D.M. Forstrom. 2014. Glider-based passive acoustic monitoring in the Arctic. <i>Marine Technology Society Journal</i> 48(2):40-53. Schuckler, L. et al. 2014. Health of common bottlenose dolphins (<i>Tursiops truncatus</i>) in Barataria Bay, Louisiana, following the Deepwater Horizon oil spill. <i>Environmental Science & Technology</i> 48:93-103. Venn-Watson, S., et al. 2015. Adult health and lung lesions in Gulf of Mexico common bottlenose dolphins (<i>Tursiops truncatus</i>) found dead following the Deepwater Horizon oil spill. <i>PLoS ONE</i> 10(5):e0129518. Data Entered: May 10, 2017 (Date Edited: May 13, 2017).	Yes	No																\$	900,000.00	\$		
Ecological Restoration	5612	6/23/2017	Expanding existing observer programs in support of the Gulf of Mexico Marine Assessment Program for Protected Species (GOMMAPS).	NOAA Project IEM31166: Executive summary: A modified funding request of \$7.72K to the Gulf of Mexico Marine Assessment Program for Protected Species (GOMMAPS) is requested to more than double spatial and temporal coverage in year 1 of this inter-agency program to better inform restoration actions and decisions for at least 25 injured seabird species as identified in Table 4. 3 of the Final Programmatic Damage Assessment and Restoration Plan (PDARP). Supplemental funding would increase total days surveyed from 90 to 190 in the first program year, and would be leveraged with up to \$200K already granted annually for 3 years from Bureau of Ocean Management (BOM) to the GOMMAPS component for sea-based seabird surveys. Proposed work conforms to all protocols and requirements under a GOMMAPS Subaward Science Plan, and the inter-agency agreement established between BOM and U.S. Fish & Wildlife Service (USFWS). Data collected will be used by BOM to inform NEPA analysis, Exploration Plans (EPs), Development Operations Coordination Document (DOCD), oil spill risk assessment (OSRA) model, and by the USFWS for Section 7 consultations and planning of DOD activities in the Outer Continental Shelf (OCS) to reduce or mitigate associated impacts to other seabirds. Supplemental funding for seabird observers is requested for GOMMAPS program year 1 only, after which time the principal investigators will re-evaluate (and likely scale back) the scope of seabird observer placement during program years 2 and 3. Background: The Gulf of Mexico (GOM) region is critically important to offshore breeding, foraging, and wintering habitats for North American (NA) migratory avian resources. Despite the numbers of environmentally important platforms and cumulative level of oil and gas activity in the northern GOM region exceeding all other Bureau of Ocean Energy Management regions combined, limited information is still available about the species composition, distribution, and abundance of birds (Gulfedits, particularly for offshore seabirds). Consequently, such information is important for assessing the science foundation and regulatory decision making by Department of Interior agencies (BOM, USFWS, U.S. Geological Survey) in relation to offshore resource extraction as an effort to mitigate potential effects to avian resources. Upon completion, the GOMMAPS Subaward Project is anticipated to be the most spatially and temporally extensive avian research effort in the northern GOM, and is intended to document avian distribution, abundance, and diversity to better inform regulatory decisions that influence conservation of migratory birds. Data Entered: May 14, 2017.	Yes	No															\$	72,436.00	\$	45,800.00		
Ecological Restoration	5613	6/23/2017	Adaptive management approach to diadromous open-ocean fishes restoration	NOAA Project IEM31186: Many open ocean fishes use fresh-water rivers during their life history. This connectivity makes these fishes important to open ocean, coastal and inland ecosystems. Notable examples of these species include Atlantic Shad, Striped Bass, Gulf Sturgeon, and American Eel. Many of these species have populations at a fraction of historic levels or are imperiled due to freshwater habitat limitations. Habitat limitations fall into 4 broad hypotheses where habitat is: 1) unavailable or limited for young life stage 2) available but environmental conditions exceed physiological tolerances 3) unavailable due to in stream barriers 4) unavailable due to in stream barriers and environmental conditions exceed physiological tolerances. The 4 hypotheses represent structural uncertainty in how habitat influences diadromous fish populations and the best restoration action in terms of population response largely depends on the hypothesis with the most evidentiary weight. Adaptive management (AM) is a decision making approach that can be used to reduce structural uncertainty by iteratively applying management actions. Restoration of diadromous fishes is needed, but two adaptive management approaches, one that formalize learning by comparing predictions from hypotheses to monitoring and then updating evolutionary weight using Bayesian updating to adapt decisions given learning over time, therefore the goal of this study is to develop an AM framework for diadromous fish restoration. The Pearl River and Pascagoula River systems will be used to develop the AM approach due to the importance of these river systems to a number of species and proposed restoration projects. A significant component to any AM framework is the development of models that will predict the outcome of potential restoration actions for competing hypotheses and couple to monitoring data such that uncertainty around competing hypotheses can be reduced (i.e., learning). The objectives of this project are to: Objectives: 1. Develop an adaptive management framework to evaluate restoration options for diadromous fish population restoration in the Pearl and Pascagoula River systems. This objective will identify restoration objectives and actions, additional hypotheses representing uncertainties, and monitoring biology. Objectives 2. Develop models to predict the fish population response to restoration actions accounting for structural uncertainty. In the context of the 4 hypotheses previous identified models need to be developed that predict habitat use and physiological tolerance. Therefore, we will develop models that predict habitat use and physiological tolerance. A bioenergetics model will be developed to predict the likelihood of restoration actions to produce the environmental conditions (e.g., temperature, dissolved oxygen) within physiological tolerances. A bioenergetics model would be created based on physiological and movement studies by P. Allen and B. Prchal as well as existing capture-recapture data when available for Gulf Sturgeon as a model species due to the focused efforts on this species. Together these models will be used to predict habitat use, limitations, and likely outcomes of restoration actions. These predicted outcomes will then be used to identify optimal restoration actions (i.e., monitoring) compared to predictions to update understanding of the system and inform decision making. Objectives 3. Develop an AM framework to identify key uncertainties, potential restoration alternatives and optimal restoration actions given restoration objectives. Outcomes: Identify most beneficial restoration and monitoring actions benefits: Ecosystem health, robust fisheries, energy trading between ecosystems Data Entered: May 12, 2017	Yes	No																\$	500,000.00	\$		Stone County, Washington County, Florida, Florida County

Eco Restoration	5614	6/23/2017	NOAA Project DMS1197: Blue crabs support a valuable fishery in the Gulf of Mexico (GOM), worth over \$73 million in 2015. Despite active management, many states have seen declines in harvest in recent years, which could be indicative of declines in spawning stock abundance, larval and juvenile recruitment, or suboptimal habitat and spawning conditions. Blue crabs have a migratory life cycle, inhabiting different estuarine and offshore habitats at different life history stages. These migrations result in both spawning females and larvae occurring offshore in large numbers, dispersing long distances, and crossing management boundaries. Management, assessment, and restoration strategies are most effective at a geographic scale that matches the geographic scale and boundaries of the stock. The modern stock concept describes units of a population that can be considered homogeneous for management purposes, and can inform the scale of stock assessments and management/restoration actions. In the GOM, stock identification for blue crabs has only recently been undertaken. Difficulties in assessing stock structure and boundaries have arisen due to a lack of information on connectivity patterns and unclear and often conflicting population genetic information. Understanding how physical and biological factors influence migration is necessary for marine fisheries management and restoration, especially in the face of environmental stressors such as climate change and oil spills. This is especially critical for species with migratory life cycles, such as blue crabs, whose offshore distribution of spawning females and larvae results in a high probability of encountering from a single such as the Deepwater Horizon oil spill. For the most recent Gulf-wide stock assessment, the Gulf States Marine Fisheries Commission was forced to draw stock boundaries based on one primary metric: tagging data, and genetic data of other species. This exercise revealed that a basin-wide understanding of population structure and stock boundaries is a priority research need of both state and regional management agencies. The goal of this research program is to fill this knowledge gap. Developing a more complete understanding of connectivity patterns and stock boundaries allows for better adaptive management, assessment, and restoration plans for this species. The overarching objective of this study is to transform our understanding of connectivity patterns and stock structure of blue crabs in the GOM. We will work closely with managers to accomplish the following objectives: (1) To map the distribution of spawning females and larvae in offshore waters, assess reproductive output and future reproductive potential, and identify important spawning grounds; (2) To understand how spawning grounds and stock boundaries are related to spawning stock abundance and larval recruitment in the GOM, and to identify spawning areas; (3) To understand interannual variability in transport of blue crab larvae between spawning grounds and estuary mouths and estimate Gulf-wide connectivity patterns by applying a Gulf-wide larval transport model. The three-dimensional larval transport model will simulate the transport of larval and plankton stocks with results from previous marine restoration studies to estimate transport and connectivity in the face of model simulations; (3) To synthesize observations, model predictions, and recent genetic information to provide integrated and actionable results for state and federal fisheries managers in the Gulf region. By including fisheries managers in this research, responding to their information needs, and directly disseminating integrated results to them, this research will support improved future stock assessments, management decisions, and restoration plans while promoting a better understanding of the stock structure of this ecologically and economically important species. Data Entered: May 15, 2017	Yes	No	No	No	No	No	No	No	No	No	\$ 1,000,000.00	\$ -	
Eco Restoration	5615	6/23/2017	NOAA Project DMS1128: Restoration efforts for mesohaline and deep benthic communities will rely on accurate maps of deep coral sites. Due to the depths involved, acoustic bathymetric mapping from surface vessels is not possible at a resolution sufficient to confirm coral presence. The use of Unmanned Underwater Vehicles (UUVs) is needed to obtain the sub-meter resolution required. Many projects in the mesohaline and deep benthic sector will employ UUVs explicitly for the purpose of high-resolution mapping of known and suspected coral sites. Creating a centralized pool of multiple UUV assets with supporting infrastructure and expertise will provide: (1) an economy of scale to reduce costs and (2) standardization of data resolution, mapping and processing protocols, and gear configurations which will allow significantly more effective coordination between projects. The National Unmanned Systems Shared Resource Center (NUSRC) is located in Panama City, FL. The NUSRC operates a fleet of 12 vehicles with depth capabilities to 600m and through Memoranda of Agreement/Understanding (MOAs/MOUs) has unrestricted access to vehicles with depth capabilities to 8000m. Available sensor packages include sidescan sonar (SSS), multibeam sonar (MB3), synthetic aperture sonar (SAS), visual and oceanographic. Existing contracts and relationships with vendors allow rapid acquisition of sensors and vehicles to meet needs. Feasible, cost-effective, and reproducible research and restoration. NUSRC offers a complete turn-key solution to the need for high-resolution mapping of deep coral systems, equipment, operation, pre-mission planning and field and laboratory infrastructure is available from this single source. Section 5.1.3 of the GAP clearly describes desired outcomes, quality standards and data requirements for UUV operations producing extremely high resolution bathymetric maps. The leading edge technology being used and under development at NUSRC will allow many of the POAIP goals to be achieved. Current capabilities may not be known to scientists proposing research activities. For example, cm-scale resolution SAS mapping could allow monitoring of coral growth rates on restoration models that avoiding the need for expensive ROV surveys. The use of NUSRC assets will be offered as a NOAA-funded mesohaline and deep benthic project. NUSRC's location in a coastal city of Mexico will enable rapid and economical deployment to any Gulf Coast port. Deploying NOAA missions. It is anticipated many NOAA-funded restoration activities will have similar deep water mapping requirements. The most logical and parsimonious solution to these needs is a centralized asset pool. The economy scale, standardization of mapping and format and technical facilities provided by NUSRC makes it an excellent choice for this asset pool. This project idea is based upon NUSRC providing 100 days at sea per year with 1000m, 1000m or 1000m depth-rated vehicles, 10 days at sea per year with 6000m depth-rated vehicles, launch and recovery equipment, and sufficient fully qualified personnel to provide 24 hour operations. NUSRC will also provide an on-site order data processing (of sufficient quality to select next day ROV dives) and shore-based data processing. Clear deliverables and performance metrics are easily described for this project. Fully processed maps and images will be the primary deliverables. Technical metrics will be the area mapped (total area and area per unit time), the number of missions conducted annually, and the response rate to processing map requests. Data Entered: May 12, 2017 Date Edited: May 15, 2017	Yes	Yes	No	No	No	No	No	No	No	No	\$ 9,330,000.00	\$ -	Mapping
Eco Restoration	5616	6/23/2017	NOAA Project DM 1240: Justification: Numerous large-scale restoration projects have been proposed in the northern Gulf of Mexico (nGOM), many of which may alter physical processes in coastal waters (e.g., discharge rates, nutrient inputs) affecting biological processes (e.g., plankton food webs, fisheries recruitment, epifauna). Regional fisheries, natural resources in the biological environment and a wide range of spatiotemporal scales can directly affect the survival of planktonic larval fishes (the most vulnerable life stage), subsequently influencing stock recruitment and population sustainability. However, the degree to which these processes affect larval mortality remains poorly understood. Historically, biological sampling of lower trophic levels (i.e., plankton) has been performed at relatively coarse scales (e.g. 10-20 m vertically, 100s of meters horizontally), which has limited our ability to quantify the relative importance of the different causes of variation in larval fish survivorship, and account for the variability of important monitoring of restoration plans. The Open Ocean Trusmi Implementation Group has created the initial priorities for the restoration of fish and water column invertebrates and marine mammals. Ecosystem and information needs for effective restoration of habitat variation in ecosystem processes, resources, and stressors that affect target species or habitats. Inadequate understanding of the impacts of environmental variation leads to uncertainties in the reference point for the system, which is needed to evaluate restoration initiatives. Approach: First, we propose conducting high-resolution, lab experiments, and modeling to assess the effects of hypoxia on three poorly described aspects of plankton ecology that can have a substantial impact on fisheries production: (1) habitat use and spatiotemporal distribution of larval fish, their prey, and their planktonic predators; (2) predatory impact of gelatinous zooplankton on fish larvae; and (3) larval fish growth and condition. We hypothesize that hypoxia will affect predator-prey interactions by limiting the distributions of plankton (vertical and horizontal), consequently increasing encounter rates between larval fishes and their zooplankton predators (i.e., gelatinous zooplankton). Thus, we anticipate a negative impact on larval fish survivorship due to hypoxia-driven increased predation rates, with net positive or minimal impact on organisms with lower metabolic rates (e.g., gelatinous zooplankton). Our focus on hypoxia (an anthropogenic perturbation) allows for a comparative approach to examine the impact of environmental stressors on food web dynamics, habitat quality and quantity, and the monitoring of impacts related to coastal restoration efforts. Lastly, relatively small changes in larval fish mortality rates can have large repercussions for recruitment success; therefore, our emphasis on the biological and physical drivers of larval fish survival is directly related to the factor governing strong recruitment success in fish. Our project deliverables will directly benefit our understanding of the nGOM ecosystem, which will lead to an understanding of processes that affect population variability of key fish species (e.g., Red Snapper, Spotted Seatrout, Burgeil). We will also develop ecosystem-based management metrics through habitat quality analysis, in which scenarios will be used to elucidate changes in the production of functional groups to varying intensity levels of hypoxia. Our proposed work directly benefits practitioners by improving our understanding of the underlying variability in ecosystem processes. Data Entered: May 15, 2017	Yes	No	No	No	No	No	No	No	No	No	\$ 2,500,000.00	\$ -	
Eco Restoration	5617	6/13/2017	NOAA Project DMS1233: Successful restoration of Gulf Sturgeon populations requires knowing more about the moorments and habitat use of juvenile sturgeon to make sure the right habitats are selected for conservation and restoration activities. Juvenile sturgeon are especially important for increasing populations because mortality during this portion of the life can be very high, thus increasing survival is the most direct strategy for rapid population recovery. We propose to direct restoration activities on Gulf Sturgeon through addressing three research questions: 1) How, when, and where do juvenile Gulf Sturgeon move? 2) What limits Gulf Sturgeon movement, particularly juveniles? and 3) What conservation and restoration actions can be done to increase Gulf Sturgeon populations? Question 1: How, when, and where do juvenile Gulf Sturgeon move? Juvenile sturgeon are notoriously difficult to track and catch through traditional fisheries techniques because of their small size and cryptic habitat use. However, through using state-of-the-art tracking technology, such as acoustic telemetry, we can determine the kinds of habitat juvenile sturgeon use through collecting samples from juveniles to adults, without harming fish. Sturgeon fins are analogous to the blackboard in an airplane by the density of the surrounding water as fish grow. Moreover, sturgeon fins form rings of cement, like rings of a tree, that let us determine their age. In combining the rings in the fins with the chemistry information, we can figure out where a fish lived and moved at age. Because juvenile fish grow more than adults, these techniques are especially useful for restoring movement and habitat information in juvenile sturgeon. Juvenile sturgeon have relatively large amounts of fin tissue, and fin studies have shown that the water chemistry is different within the Pearl River system and likely between other systems. Further, studies in our laboratories have shown the usefulness of this technique to Gulf Sturgeon. Therefore, determining fin chemistry is useful for assessing movement and habitat selection. We will use new and archival sturgeon fin collected in these rivers in collaboration with the US Fish & Wildlife Service, University of Southern Mississippi Gulf Coast Research Laboratory, and the US Army Corps of Engineers to determine how, when, and where juvenile sturgeon move. Question 2: What limits Gulf Sturgeon populations, particularly juveniles? Sometimes good habitats for Gulf Sturgeon are blocked by dams or other barriers creating limited access to places that could help juvenile sturgeon thrive. Through identifying these habitats through a suite of physical conditions in the river such as water quality, substrate type, and water flow, we can pinpoint actual locations where juvenile Gulf Sturgeon could be and potentially use, living. We will use a combination of physical tolerance experiments, habitat measurements from known points of juvenile Gulf Sturgeon presence, and hydrologic and species distribution modeling to determine where in the Pearl and Pascagoula rivers juvenile Gulf Sturgeon may be living. This information can be used to prioritize efforts to protect and enhance Gulf Sturgeon critical habitat and identify important corridors for restoration. Question 3: What conservation and restoration actions can be done to increase Gulf Sturgeon populations? Juvenile Gulf Sturgeon may not be found at all locations meeting their habitat requirements. This can happen for a variety of reasons including watershed alterations or barriers to movement that make a site less desirable or inaccessible. We will use information generated in addressing questions 1 & 2 to come up with a prioritized list of restoration actions including mapped locations where possible, that can be used for determining future resource allocations. We will also use data generated in this project to help generate and test hypotheses as part of an adaptive management plan. Data Entered: May 15, 2017	No	Yes	No	No	No	No	No	No	No	No	\$ 1,000,000.00	\$ 60,000.00	Manion County, Greene County, Perry County, Wadsworth
Eco Restoration	5619	7/7/2017	NOAA Project DMS1225: Colonial waterbirds, including several listed species and species of local and regional concern, nest in large colonies along the shoreline and stands of the entire Gulf Coast. These colonies are typically established within proximity to a good nesting site in an undisturbed natural area, but are not necessarily disturbed and provide protection from, or absence of, predators. Threats to these colonies include human disturbance, overworking, nesting habitat degradation, and degradation. Changes in water levels and water chemistry due to climate change presents and additional consideration when managing and protecting colonies. Colony collapse can occur if foraging sites collapse which is often due directly to water levels or critical nesting stages. Water levels can also affect colony access by humans and by predators. Typical surveys are expensive due to the human resource needs and aerial survey needs. While these surveys are necessary, they provide snapshots of colony activity and do not provide accurate timing of events over long (decadal) monitoring periods. Particularly a high of climate change, slight changes in the timing of nesting and fledging could have profound population effects over the long term. Accurate monitoring of colonies provides a predictive, continuous record of at colony activities. Accurate data can pinpoint episodic events such as colony predators (not all of which occur during observable, daylight hours) and natural or human disturbance or can provide timing information on arrival, colony establishment, chick feeding, and abandonment. Additionally, there have been several studies that have demonstrated that colony disturbance can be correlated to acoustic activity. We propose to establish a long-term monitoring program in each of the Gulf States that will supplement ongoing survey to better establish strong correlations between traditional survey methods and acoustic methods. The program can be modified as needed to include additional colonies, areas that are under-surveyed, or areas that are part of a restoration program. A minimum of four colonies (two that thrive nesting and two that are struggling) in each Gulf state will be instrumented with 1 to 3 depending on colony size and acoustic activity for nesting season. Recording will be continuous and monitored after nesting season. At least four sites will be equipped with PMAAC software such that near real-time data will be sent to a web-based user portal where events can be monitored. Acoustic data will be processed for ambient noise levels, spectral metrics, episodic ambient levels and vocal behavior. Environmental data, survey data, and acoustic data will be analyzed in conjunction with other data available specific to nesting success or failure at each site and as a whole along the Gulf Coast. We propose an initial 5-year, 5-state, 20-site program. This long-term approach provides for continuous monitoring and increases sampling effort during nesting seasons throughout the Gulf Coast. Data Entered: may 15, 2017	Yes	Yes	No	Yes	No	No	No	No	No	No	\$ 580,000.00	\$ -	Escambia, Hillsborough, Charlotte, Lee, Collier, Monroe, Mobile, Baldwin, Hancock, Harrison, Jackson, Cameron, Terrebonne, Lafourche, Plaquemine, Iberville, San Patricio, Aransas, Calhoun, Bayou, Chambers, Jefferson
Eco Restoration	5622	7/7/2017	NOAA Project DM 1323: Much of the sand for projects are sourced from fine, natural sand shok in the OCS. Sand shok has been identified as potentially important fish and invertebrate habitat, and as such, BDEM and other federal agencies have invested in extensive baseline ecological studies of several sand shok sources. Acoustic tagging, tracking, camera surveys and other traditional fishery methods, while highly valuable, provide only partial or episodic information at a 2016. Novel acoustic monitoring has been used to monitor coastal habitats and provide an effective method of monitoring vocal species and enhancing the long-term understanding of species and habitat use (Bourne 2006; Zinner 2011). However, acoustic surveys and acoustic habitat characterization have focused on species presence/absence and ambient sound level characterization rather than the assessment of the ecosystem as a whole (Pignatelli et al. 2011). Through this more holistic perspective, ecologists can assess how ecosystems, and their change due to disturbance. Objectives: This study seeks to further develop specific acoustic activity metrics as a tool to monitor the long-term baseline and recovery of offshore sand sources where acoustic activity and variability can be correlated to a statistically significant level with marine ecosystem health. Therefore, a logical next step in developing goals in sustainable management is to adopt and apply novel tools for assessing acoustic biodiversity within existing data collection initiatives. This proposed study will deliver novel, adapted analytic tools that provide an assessment of acoustic diversity in local and regional soundscapes to enhance the ability to detect changes in marine sand shok ecosystems. Methods: Data will be collected through the deployment of acoustic arrays across selected sand shok locations, specifically along human disturbance gradients. To establish how shok soundscapes vary across a span of time, and disturbance, a suite of over three dozen soundscapes metrics will be applied to the acoustic dataset. The utility of each of these metrics as descriptive acoustic monitoring methods will be established by validating the results with traditional metrics, and through several short-term deployments with a progressive assessment of acoustic parameters, timing and level of detail from metrics. In identifying the key metrics in the ecosystem. The proposed metrics will provide researchers and natural resource managers with critical information about acoustically, ecosystems dynamics, and disturbance impacts. Development of these monitoring regimes for selected ecosystems will provide a standardized assessment method and monitoring tool that can be applicable across BDEM MPA regions. This is a critical consideration because marine-based projects often suffer from comparatively high access costs. Data Entered: May 15, 2017	Yes	Yes	No	Yes	No	No	No	No	No	No	\$ 1,500,000.00	\$ -	Harrison, Jackson
Eco Restoration	5623	7/7/2017	NOAA Project DM 1323: Much of the sand for projects are sourced from fine, natural sand shok in the OCS. Sand shok has been identified as potentially important fish and invertebrate habitat, and as such, BDEM and other federal agencies have invested in extensive baseline ecological studies of several sand shok sources. Acoustic tagging, tracking, camera surveys and other traditional fishery methods, while highly valuable, provide only partial or episodic information at a 2016. Novel acoustic monitoring has been used to monitor coastal habitats and provide an effective method of monitoring vocal species and enhancing the long-term understanding of species and habitat use (Bourne 2006; Zinner 2011). However, acoustic surveys and acoustic habitat characterization have focused on species presence/absence and ambient sound level characterization rather than the assessment of the ecosystem as a whole (Pignatelli et al. 2011). Through this more holistic perspective, ecologists can assess how ecosystems, and their change due to disturbance. Objectives: This study seeks to further develop specific acoustic activity metrics as a tool to monitor the long-term baseline and recovery of offshore sand sources where acoustic activity and variability can be correlated to a statistically significant level with marine ecosystem health. Therefore, a logical next step in developing goals in sustainable management is to adopt and apply novel tools for assessing acoustic biodiversity within existing data collection initiatives. This proposed study will deliver novel, adapted analytic tools that provide an assessment of acoustic diversity in local and regional soundscapes to enhance the ability to detect changes in marine sand shok ecosystems. Methods: Data will be collected through the deployment of acoustic arrays across selected sand shok locations, specifically along human disturbance gradients. To establish how shok soundscapes vary across a span of time, and disturbance, a suite of over three dozen soundscapes metrics will be applied to the acoustic dataset. The utility of each of these metrics as descriptive acoustic monitoring methods will be established by validating the results with traditional metrics, and through several short-term deployments with a progressive assessment of acoustic parameters, timing and level of detail from metrics. In identifying the key metrics in the ecosystem. The proposed metrics will provide researchers and natural resource managers with critical information about acoustically, ecosystems dynamics, and disturbance impacts. Development of these monitoring regimes for selected ecosystems will provide a standardized assessment method and monitoring tool that can be applicable across BDEM MPA regions. This is a critical consideration because marine-based projects often suffer from comparatively high access costs. Data Entered: May 15, 2017	Yes	Yes	No	Yes	No	No	No	No	No	No	\$ 1,500,000.00	\$ -	Harrison, Jackson

Eco Restoration	563	7/3/2017	Monitoring the effects of restoration activities on Gulf of Mexico bay, coastal and estuary common bottlenose dolphins using video.	NOAA Project ID#1328. Cetacean stocks in all Gulf of Mexico (GOM) habitats (bays, sounds, and estuaries) (SES), coastal, continental shelf, and oceanic were injured by the DWH oil spill. Common bottlenose dolphins stocks inhabiting SES waters impacted by oil spill found to have reduced survival and reproductive rates, and suffered negative health effects. As a result, these stocks were predicted to have population declines ranging from 31-67% by 2028. To monitor recovery and the effectiveness of restoration efforts, and to target adaptive management efforts, similar studies at four SES index sites are proposed over the period of restoration. The index sites would be selected to include sites with differing levels of oiling ranging from heavily oiled to not for comparison, and include sites expected to be targets of restoration efforts. The study techniques proposed are well established and were used successfully in the DWH NOAA capture-recapture photo-identification (photo-ID), biopsy sampling, and capture-release health assessments. At each index site, a complete suite of similar studies would be conducted every 3 years for 12 years (4 replicate studies/site with each consisting of: 1) a series of capture-recapture studies to monitor and measure survival rates; 2) pregnancy of individuals would be evaluated during health assessments and to biopsy sampling of their ovaries; 3) biopsy sampling (success) would be measured by follow-up photo-ID surveys during the next 12 months; 4) Health assessments would monitor among other weight, adrenal status (luciferase/immunity), and lung condition to follow changes in health impacts documented from DWH. These studies would benefit the injured stocks by evaluating the success of restoration and potentially reinitiating/changing restoration techniques. The work would be a large collaborative effort with Federal and State agencies most of who were involved in the DWH NEPA and have experience with these techniques. A comprehensive report comparing results from all aspects of the studies from each index site would be prepared after each replicate as well as a final report at the conclusion of all the replicates. Results will be compared to effects documented during and just after the spill to evaluate change in status as restoration occurs. Date Entered: May 15, 2017	Yes	No	No	No	No	No	No	No	No	No	\$ 24,000,000.00	\$ -	
Eco Restoration	564	7/6/2017	Bycatch Mitigation	NOAA Project ID#1343. This is a project that will support restoration through reducing bycatch and bycatch mortality of fish and sea turtles. The long term goal of this project is to replenish these marine resources, expand to other marine resources, and at the same time enhance recreational opportunities. To achieve this goal the project aims to: 1. use bycatch mitigation strategies and safe handling measures of bycatch that have been identified (such as circle hooks); 2. use bycatch mitigation measures that either prevent capture or promote escape in commercial fisheries using gillnet, longline, and purse seine gear, and 3. implement safe handling measures to increase survivability post capture (such as Turtle excluder devices for turtles). This project is innovative in nature as it aims to use outcomes and information from two existing projects: a recent inventory conducted of best available science on bycatch mitigation measures across taxa for gears through the review of gear and fishing practice modifications and post-capture release procedures to determine effectiveness in reducing bycatch and increasing post-capture survivability of marine species; and b. an inventory of existing data collection programs in EC&T fisheries of the Caribbean/Central America States and to improve data reporting in artisanal fisheries in the region. This information will increase the success of the project, reduce collateral damage from implementation, and build from benefits that may be used in a number of species. Date Entered: May 15, 2017	Yes	No	No	No	No	No	No	No	No	No	\$ -	\$ -	
Eco Restoration	565	7/6/2017	Improved and/or Expanded Assessments of Trans-Boundary Marine Mammal Stocks	NOAA Project ID#1340. Many marine mammal stocks that occur in U.S. waters also range or migrate into international waters of Mexico, Cuba, and the Caribbean. Assessing trans-boundary marine mammal stocks is particularly challenging because they can be distributed widely and be taken (disrupted, injured, or killed) by fisheries, energy development, vessel strikes, and/or other human activities throughout their range. Assessment of total abundance for such stocks requires substantial survey capacity, and assessment of fishery interactions and other types of take of such stocks requires the exchange of information with foreign or international organizations and/or governmental agencies. Complete assessment of trans-boundary stocks that were injured as a result of the Deepwater Horizon spill is essential for their recovery and restoration. Priority should be given to those stocks that are endangered or threatened, hunted, or known to interact significantly with fisheries or other human activities in international or foreign waters. Date Entered: May 15, 2017	Yes	No	No	Yes	No	No	No	No	No	No	\$ -	\$ -	
Eco Restoration	566	7/6/2017	Filling the southern Gulf of Mexico gap: assessments of marine mammal and seabird distribution, abundance and habitat on a Gulf wide scale for effective monitoring of restoration impacts	NOAA Project ID#1336. The Gulf of Mexico (GOM) is a large marine ecosystem comprised of the exclusive economic zones of the U.S. in the north, and Mexico and Cuba in the south. The oceanic GOM (>200m deep) is inhabited by a variety of seabird species and 21 species of cetaceans, including the ESA listed sperm whale and the GOM Bryde's whale, and most cetacean species were significantly impacted by the Deepwater Horizon (DWH) oil spill. Oceanic cetacean assessments have been conducted primarily in the U.S. GOM but little is known about the distributions, abundance, and stock structure of cetaceans and seabirds in the southern GOM. For example, the stock structure of GOM oceanic cetaceans is assumed to comprise wide stock species, but this assumption has not been tested. Most of these species have distributions that cover the entire GOM and are impacted by anthropogenic stressors on a GOM-wide scale. The lack of information from the southern GOM (GOM wide waters), is a significant data gap that makes it difficult to assess trends in abundance from changes in the distribution of fishery-dependent species. To better assess and monitor the impacts of restoration activities on GOM oceanic cetaceans and seabirds injured by the DWH oil spill, assessment surveys in both the northern and southern waters must be conducted. Therefore, multi-year seasonal GOM-wide assessments in oceanic waters are proposed and consist of summer and winter southern GOM surveys that include visual cetacean and seabird transect surveys, acoustic transect surveys, cetacean biopsy sampling for stock structure analysis, and the strategic deployment of acoustic moorings to better understand the year-round occurrence of cetaceans including Bryde's whales, sperm whales, and beaked whales. Four southern GOM ship surveys would be conducted in conjunction with similar NMFS northern GOM ship surveys. Year 1 would consist of winter and summer surveys, followed by either winter or summer surveys in Years 2 and 3. The two products would be GOM-wide seasonal species abundance estimates, trends in abundance for high density species, and spatially explicit habitat maps of density for cetacean and seabird species for the oceanic GOM that can be evaluated for changes to assess and monitor recovery and restoration. These are all well-established methodologies that have successfully been used in U.S. waters and elsewhere. Date Entered: May 15, 2017	Yes	No	No	No	No	No	No	No	No	No	\$ 11,000,000.00	\$ 3,600,000.00	
Eco Restoration	567	7/6/2017	Mapping species distributions and bycatch hotspots using comprehensive survey database and geostatistical models	NOAA Project ID#1319. As part of a Florida RESTORE Act Centers of Excellence Program (FLACEP) project, researchers at the University of Miami (UM) compiled a comprehensive survey database including nearly all fishery dependent and independent sources of information on the distribution, density and size-frequency of fish and other species in the Gulf of Mexico (GOM), along with corresponding environmental data. The UM team, along with collaborators at NOAA Fisheries, applied geostatistical modeling techniques to generate seasonal maps for many species. The maps were used primarily for use as inputs to ecosystem simulation models and to inform monitoring survey design. The proposed project will build on this work to generate predictive maps that allow fisheries to focus their effort on areas and places that have high catch rates of target species and the stages while avoiding areas with high bycatch of undesired individuals, spawning fish, or unwanted or protected species. Targets of catch and bycatch may be areas where biological and physical conditions are such that species or the stage to be concentrated, such as areas with preferred feeding habitat and/or frontal zones where prey species are concentrated, spawning aggregation sites, or migration corridors. The project will develop improved metrics of the physical environment of each ocean heat content and distance to fronts inferred from satellite data. Applying geostatistical models to data from the comprehensive survey database will increase the sample size and precision of estimates of the spatial distributions and the environmental conditions that influence these distributions. We will apply multivariate models, because the distributions of many species are correlated with each other based on similar habitat preferences or predator-prey interactions. This project will primarily focus on species that are of interest to mitigate and bottom longline fisheries and are priorities for restoration, including juvenile and adults of bluefish, weakfish, snook and reef fish, as well as prohibited species such as sea turtles and sea birds. Also, although many broodstock spawning species in the GOM aggregate in the location of spawning aggregation and the geomorphological or environmental conditions that favor spawning aggregations are not well known. Thus, we will map the location of high densities of aggregations of species for which the identification of spawning aggregation sites has been identified as a priority by the Gulf of Mexico Fishery Management Council, including gag, cobia, snook, weakfish, and black grouper. For predictions of bycatch hotspots to be useful to help fisheries avoid bycatch, the models must have high predictive accuracy. Thus, we will evaluate how bycatch rates vary across space and time, and how they are predicted by environmental data. We will use the historical data to estimate how much total bycatch could have been reduced if fishers had avoided areas predicted to have high bycatch according to our predictive models. This will allow us to determine whether and to what extent fishers could reduce bycatch either by avoiding areas that the model predicts will have high bycatch, or simply by moving when they encounter high bycatch rates. To evaluate whether improved data collection would allow for more sophisticated methods to avoid bycatch, we will also use a longline simulator developed by NOAA Fisheries to simulate increased bycatch avoidance scenarios. Because this project focuses on summarizing existing biological and physical data, we will be able to produce useful maps fairly quickly, and also identify species, life stages and regions for which data are lacking. We will be able to test whether current data are sufficient to make useful predictions about bycatch, and also make recommendations for future data collection to improve bycatch mitigation. Date Entered: May 15, 2017	Yes	No	No	No	No	No	No	No	No	No	No	\$ 1,500,000.00	\$ -
Eco Restoration	568	7/6/2017	Using unmanned aerial systems (UAS), DNA barcoding to assess and monitor the health of individual Bryde's whales, and sperm whales in the northern Gulf of Mexico	NOAA Project ID#1318. Large whales in the Gulf of Mexico (GOM) are vulnerable to a number of direct threats including ship strikes, entanglement in fishing gear, and catastrophic events, such as a Deepwater Horizon (DWH) oil spill. They are also susceptible to more insidious threats such as harmful algal blooms, lack of available food, and long-term accumulation of anthropogenic pollutants. Small populations are particularly vulnerable to these threats. The resident GOM Bryde's whales exhibit dangerously low abundance (n=33) and the GOM sperm whale abundance is only 763. Sustaining and recovering these populations demands monitoring and maintaining the health of adults, as well as their offspring. However, monitoring the health of adults is difficult, expensive, and dangerous. This project employs unmanned aerial systems (UAS) for remote and non-invasive health assessment of the two large whales in the GOM by quantifying body condition and analyzing microbial communities in exhaled respiratory condensate, or eSABWADeWet. The project also provides standard protocols and workflow for a shirable, easily deployable, remote health assessment tool for monitoring and adaptive management of other cetaceans. Using a custom remanaged hexacopter (Aerial Imaging System) purchased from a research vessel, we will collect high-resolution aerial photographs and blow samples of whales during two seasons every year (3-4 whs each) for four years (2018 to 2021). High-resolution photographs collected at a known altitude will be analyzed to accurately quantify body size parameters (e.g., girth) and examine anomalies in body condition, such as skin lesions, scars, and health features. (Bjork et al. 2012; Durkin et al. 2016; Photogrammetric analysis will follow methods and standards developed by NOAA (Durkin et al. 2015). Our goal is to collect measurements and samples for 15-20 animals per year from each species. The respiratory tract is a common site of infection in marine mammals. Analysis of exhaled hampburgs will follow collection using UAS obtained enough DNA for microbiome analysis (Appel et al. in Prep). This project will use UAS to collect respiratory blow samples for microbial tests using two approaches (Appel et al. in Prep: 1) identifying bacterial constituents in the blow by sequencing a rDNA barcode gene (Appel et al. 2015), and 2) a metagenomic approach to detect all microbes, bacteria and DNA viruses (Palakumar et al. 2009). Variation in respiratory microbial communities will be compared between individuals, species, seasons, and body condition (similar to Appel et al. 2016). Potential pathogen data will be examined using a custom database developed in Appert et al. 2012; Gupta et al. 2014). The PIs on this proposal have employed these methods to collect similar data from blue whales, right whales, and humpback whales. Because of the low abundance of GOM Bryde's whales, we will first test for disturbance before attempting to collect blows. Photo identification will be conducted to avoid repeated sampling of the same animals in a season. This projective project fills essential gaps in methods and establishes monitoring protocols for the Natural Resource Damage Assessment (NRDA) process, it also directly contributes to recovering marine mammal survival through better understanding of causes of illness and death as well as early detection and intervention for anthropogenic and natural threats to the goal of the Open Ocean Trustee Implementation Group. Furthermore, it meets the scientific priorities of the Group's 2) Priorities for Marine, Coastal and Marine Resources, and 2) Priorities for Monitoring, Adaptive Management, and Administrative Oversight to Support Restoration Implementation Bibliography Removed For Length Considerations. Available On Request: May 14, 2017 Date Edited: May 15, 2017	Yes	No	No	No	No	No	No	No	No	No	No	\$ 1,731,063.00	\$ -
Eco Restoration	569	7/6/2017	Designation of Florida and Mississippi Canyons as Marine Protected Areas	NOAA Project ID#13053. Deloto and Mississippi Canyons provide important habitat for Bryde's whales and sperm whales, respectively, as well as for other oceanic marine mammals and deep-sea coral communities. The northern Gulf of Mexico stock of Bryde's whales inhabits Deloto Canyon and adjacent continental slope waters extending east and south of the Canyon, and Bryde's whales are the only regulars occurring between whales in the Gulf (Wright and Wilson 2014; Ross et al. 2016). The northern Gulf of Mexico stock of sperm whales also represent a distinct stock in the Gulf. Sperm whales are found throughout offshore waters of the Gulf, but the Mississippi Canyon represents an important feeding area (Jochens et al. 2008). Both species of large whales were impacted by the Deepwater Horizon (DWH) oil spill, with estimates of 27 percent of the Bryde's whale population killed and 6 percent of the sperm whale population killed (DWH NMHQ 2015). Mississippi Canyon was subject to intense and prolonged oiling below and at the surface during the oil spill (Eaton et al. 2015). Deloto Canyon was also heavily contaminated but also experienced oiling at the surface and seabed (Brooks et al. 2015). Other marine mammals found regularly or occasionally in these areas include Atlantic spotted dolphins, Beaked whales, Cuvier's beaked whales, Gravid's beaked whales, dwarf and pygmy sperm whales, oceanic and continental shelf stocks of bottlenose dolphins, Risso's dolphins, rough-toothed dolphins, short-finned pilot whales, spinner dolphins, and striped dolphins (Waring et al. 2013). Little is known about the distribution of other oceanic marine mammals within these areas, such as Cymenodons dolphins, Fraser's dolphins, killer whales, false killer whales, melon-headed whales, and pygmy killer whales. The designation of marine protected areas was noted by the DWH Trustee as a mechanism for addressing key threats to ecological and deep-sea communities (FRANWET-SES Section 5.5.1.3). However, no information was provided in the FRANWET-SES on what specific areas in the Gulf the Trustee might be considering for such designations. The Commission believes that areas that provide protection for multiple species, including marine mammals, should be prioritized for designation. Habitat density maps for sperm whales, Bryde's whales, and other marine mammal species that occur in these areas of the Gulf can be found at http://www.fishbase.org/abstract.asp?ref=USFWS%202015 . Reference: Brooks, G.R., et al. 2015. Distribution patterns in the NE Gulf of Mexico following the 2010 DWH blowout. PLoS ONE 10(7):e0133343. DWH NMHQ2 (Marine Mammal Injury Quantification Team). 2015. Models and analyses for the quantification of injury to Gulf of Mexico cetaceans from the Deepwater Horizon oil spill. DWH Marine Mammal NEPA Technical Working Group Report. Jochens, A., et al. 2008. Sperm whale scientific study in the Gulf of Mexico. Fisheries Report. Minerals Management Service, Gulf of Mexico OCS Region, New Orleans, Louisiana. NMFS NMHQ 2008-006. 23 pp. Ross, P.J., and G. Wilson. 2014. Genetic evidence reveals a unique lineage of Bryde's whales in the northern Gulf of Mexico. Endangered Species Research 25:194-204. Ross, P.J., et al. 2015. Status Review of Bryde's whales (Balainotus edeni) in the Gulf of Mexico under the Endangered Species Act. NOAA Technical Memorandum NMFS-SEFSC-638. 133 pp. Coull, L.A., et al. 2015. Spatial extent of oil-contaminated food web in the Mississippi and Deloto canyons in the deep-sea floor following the Deepwater Horizon oil spill (CHEM_TR_161). DWH Natural Resource Exposure NEPA Technical Working Group Report, Waring, G.T., et al. (eds). 2014. U.S. Atlantic and Gulf of Mexico Marine Mammal Stock Assessments - 2011, 501 pp. Date Entered: May 9, 2017 Date Edited: May 15, 2017	Yes	No	No	Yes	No	No	No	No	No	No	No	\$ -	\$ -
Eco Restoration	562	7/7/2017	Restoring Gulf of Mexico Bryde's whales by Monitoring and Mitigating Fishery Interactions	NOAA Project ID# 1327. The Gulf of Mexico Bryde's whale (Balainotus edeni) is the only resident baleen whale species in the northern Gulf of Mexico (GOM) and is extremely rare, with an estimated population of 33 individuals (CV = 1.07) in U.S. waters in 2009. Currently, the northern GOM waters from the northern GOM to the northern GOM are in addition to their extremely low population abundance and restricted range, they exhibit a unique evolutionary lineage, low genetic diversity, and have potentially experienced a range contraction. The population is currently being evaluated for potential listing as endangered under the U.S. Endangered Species Act. The primary natural mortality risk to the most imperiled individuals occurs during the restoration period from 2010 to 2020 with an estimated 48% of their habitat oiled and an estimated 22% population decline as a result of the spill. Reducing the probability of the loss of any individual GOM Bryde's whale is critical to their restoration and recovery. Fishery entanglements are a major source of mortality for most baleen whales. Recent research indicates the GOM Bryde's whale population may be at risk of fishery entanglements from the GOM wide bottom longline fishery. Considerable effort has been made to reduce the number of bottom longlines in the GOM, but an estimated 1.5 to 1.6 million sets per year (range to 2,004). The Bryde's whale habitat in the northern GOM. Further, a tagged Bryde's whale exhibited odd diving behavior with diurnal deep dives and foraging lunge at or near the sea floor. If bottom or near-bottom feeding is a normal feeding strategy for these whales, this is a significant potential for gear entanglement with the bottom longline gear. Currently, bottom coverage of the fishery in individuals by 15 and much higher levels of coverage are needed to observe extremely rare events, such as the loss of one of 33 whales. Increasing observer coverage within GOM Bryde's whale habitat to approach 200% for bottom longline fisheries operating there could provide the necessary data to determine whether rare fishery interactions occur. If they do, gear modifications and geospatial mitigation measures would be an important restoration technique to reduce anthropogenic mortality for this species. Date Entered: May 15, 2017	Yes	No	No	No	No	No	No	No	No	No	No	\$ 11,250,000.00	\$ -

Eco Restoration	5648	7/14/2017	<p>NDAA Project ID#1318B: Western population segment Gulf Sturgeon (GS; native to the Pearl and Passaicoula rivers) appear to be recovering at a slower rate than those in the east. Of all GS populations, the Passaicoula River population is estimated to be the smallest (about 120 adults). The Fish and Wildlife Service (FWS) and the National Oceanic and Atmospheric Administration (NOAA) are currently conducting a genetic analysis of the Pearl and Passaicoula populations to assess population recovery. Resilience of a population is associated with the size and demographics that describe subpopulations (spatially aggregated spawning) and redundancy of subpopulations to spread extinction risks. Currently, only one spawning site is known for the Passaicoula River population (no spawning sites are known for the Pearl River), located in the Bowe River (a tributary of the Leaf River), but other spawning sites likely occur in the Chickasaw River. This is the only major difference compared with spawning site: effects of ocean population segment GS having outcropping of sandbars rather than limestone. Before any restoration project begins, the crucial question of <i>What are we restoring to?</i> must be asked. For the Passaicoula River population, spawning habitat represents a key knowledge gap in asking if this population is resilient and sustainable. To overcome this knowledge gap and inform restoration we advance four objectives: 1. Characterize the Bowe River spawning site in terms of bottom herbaceous and diagenetic, sediment grain size, composition, and POC, and environmental parameters. Passive acoustic telemetry receivers will be deployed upstream, downstream, and at the spawning site which individuals arrive at the site, the duration, and time of year. Adult GS will be tagged for the proposed project and the number of telemetered GS that visit the spawning site will be augmented by those tagged using USFWS's 5 year tag for ongoing projects. 2. Deploy acoustic receivers at potential spawning sites in the Leaf and Chickasaw rivers using data gathered in Objective 1 and previous suggestions (Heiser et al. 2006). If it is detected, the same habitat metrics as in Objective 1 will be quantified. Data quantified in a multivariate approach will be used to determine the dimensionality of the data such that the resulting principal components can be used to identify spawning sites in other systems (e.g., Pearl River). 3. Using genetic data collected for this project and archival samples collected since 2010, we will perform parentage and kinship analysis to quantify relationships among juveniles, determine the relative importance of individual parents to juvenile GS recruitment, and determine if individuals associated with various spawning sites represent genetically distinct groups (from Objectives 1, 2). We will obtain sex data from juveniles using genotyping and evaluate sex ratios and the use of potential spawners to better interpret the parentage analysis results. We propose obtaining genetic data from juveniles (rather than collecting eggs) to avoid removing potential recruits from the population. The combined genetic and sex data will provide data on the population. 4. Synthesize data from Objectives 1-3 to provide resource managers with information on redundancy of 1-5 spawning habitat within the Passaicoula River watershed. These data can inform restoration and conservation measures that directly benefit GS recovery and monitor any such efforts. We anticipate this will be a collective assessment with state/federal partners. In the best scenario, the only spawning site for this population is in the Bowe River, and restoration efforts would focus on protecting this site. Date Entered: May 15, 2017</p> <p>A combined physical, behavioral, and demographic approach to identify Gulf Sturgeon spawning sites in the Passaicoula River, characterizing what is known to inform the restoration.</p>	Forecast	Yes	No	No	No	No	No	No	No	No	No	\$ 1,100,000.00	\$	
Eco Restoration	5647	7/14/2017	<p>NDAA Project ID#1311D: Mississippi Sound currently has a variety of planned, ongoing, or completed habitat restoration projects (e.g., living shorelines, island restoration, oyster reef replacement, and compensatory restoration projects) that are within federally designated, critical habitat for Gulf Sturgeon (GS), and habitat for coastal pelagic finfish (Mackerel, Red Drum). These projects have the potential to alter habitat characteristics (sediment composition, water quality, macroinvertebrate abundance) important to these fish. Restoration efforts require assessment for potential impacts on these species (e.g., loss or conversion of foraging habitat), specifically for GS. Unfortunately, most of the science related to GS habitat dependency is derived from work in their eastern range, and may not be applicable to the bottom habitat in the west. Additionally, artificial reef projects may enhance habitat for coastal finfish, but harm GS habitat. The objectives of this project are to: describe habitat-specific occupancy patterns for GS and other coastal pelagic finfish (Mackerel, Red Drum) within Mississippi Sound, in relation to restoration projects. Specifically, we will (1) develop an acoustic telemetry array within restored and non-restored habitats to monitor acoustically tagged target species to determine habitat use and occupancy, (2) assess use patterns of these species in restored versus non-restored regions, and (3) provide a decision support tool to inform resource managers and restoration practitioners of the impacts each restoration effort has on habitat use for these species. The new year revision of The Gulf Sturgeon Recovery Plan highlighted the need to identify habitat parameters for GS estuarine feeding habitats, especially of western populations (Pearl and Passaicoula Rivers), which have been slower to recover than their eastern counterparts for GS habitat restoration. Habitat-specific occupancy patterns for GS in estuarine systems are lacking, particularly for juveniles and sub-adults. Therefore, we will fill knowledge gaps related to what actually constitutes suitable GS habitat by size-class. Mackerels (Spanish and King) and Red Drum may use the same habitats as GS, but during different seasons and in different ways (gray selection). These species likely benefit from compensatory restoration versus GS, but this has not been quantified. Based on occupancy patterns of these species in restored and non-restored habitats (e.g., open water and artificial reefs, areas adjacent to living shorelines), we will determine if restoration efforts affect typical habitat use in the region. Because this assessment will be specific to restoration events (e.g., living shorelines, reefs) as well as to target species, the results will allow managers to determine the possible effects that implementation of each restoration type could have on the target species. This project will also create opportunities for scientists working with other target species in Mississippi Sound and north-central Gulf of Mexico. Methodology: Acoustic telemetry will be used to assess occupancy of target species in various restored and non-restored habitats in a paired manner. Side sonar will assess habitats for hard bottom and relief prior to comprehensive characterization. We will examine sediment grain size, composition, and sediment POC concentrations and characterize macro-invertebrate composition and density within the benthic data loggers. Bottom data loggers will measure environmental parameters within defined stations; these data will be correlated with the movements and habitat use of telemetered fishes. An occupancy index will be used to determine habitat use. Partners on this project have some of the required infrastructure, and are actively tagging GS and Red Drum with acoustic tags that should be active during this project. Date Entered: May 15, 2017. Date Edited: May 15, 2017</p> <p>Informing restoration efforts in the Mississippi Sound. Quantifying Gulf Sturgeon winter foraging habitat occupancy and coastal pelagic finfish habitat use with passive acoustic technology</p>	Harrison County, Hancock County, Jackson County	Yes	No	No	No	No	No	No	No	No	No	\$ 2,585,000.00	\$	
Eco Restoration	5648	7/14/2017	<p>NDAA Project ID#1338: Oil and gas released in offshore ecosystems can have multiple impacts on organisms in the water column and on the sea floor. Research in the Gulf shows the Deepwater Horizon oil spill resulted in some of the ways that oil and gas can affect the biological communities of offshore waters, and from the carbon from oil and gas (hydrocarbon) can penetrate into and travel through the food webs of offshore ecosystems. We propose two related lines of research: 1. A focused series of measurements of oil and gas impacts around natural seeps via water column and benthic sampling coupled with deployment of time-series sediment traps to capture sinking particles and aggregates, including oil slicks. We will use stable and radioactive measurements to assess the assimilation of petroleum by organisms and transfer of petroleum through the pelagic and benthic food webs. We will use genomic approaches to characterize microbial communities and the ways they may be altered by exposure to oil and gas. These measurements will be complemented by experimentation work to resolve the mechanisms of oil and gas movement to the benthos, and the role of biological processes in controlling the vertical sedimentation of oil and gas-derived particles. 2. Benthic surveys to determine the distribution and fate of sedimented oil, both around natural seeps and in regions affected by the Deepwater Horizon spill. We will carry out photographic surveys to assess benthic megafauna community composition, density, and health. We will carry out coring surveys to assess the fate of sedimented oil. 3. Impacts on benthic organisms, and risk to supporting sedimentary microbial communities through a combination of geochemical characterization (stable and radioactive measurements) and laboratory experiments. The ultimate goal of this research program is to provide basic understanding of the ways that oil and gas alter the composition and function of offshore communities of microbes, phytoplankton, zooplankton, and benthic fauna. This study is timely and will provide critical insights into ecosystem responses to storm force gas flares responses to offshore drilling accidents. Date Entered: May 15, 2017</p> <p>Impact of oil and gas on offshore pelagic and benthic ecosystems.</p>		Yes	No	No	No	No	No	No	No	No	\$ 8,000,000.00	\$		
Eco Restoration	5650	7/14/2017	<p>NDAA Project ID#1334C: The Deep Water Horizon (DWH) exploratory well was located in the northern Gulf of Mexico 65 km off the shore of Louisiana in approximately 1,600 m water depth. This region, while relatively close to shore, is not easily sampled due to the water depth and the resultant requirements for the sampling equipment and skills. These difficulties have resulted in infrequent sampling efforts in these deepwater habitats, especially in the context of fisheries management. Thus, when the DWH accident occurred there was a paucity of information relative to the effects communities, particularly in regards to time series information that would have been resultant to analyses of impacts to deepwater organisms. In an attempt to characterize the population dynamics and biology of deepwater ecosystems in the northern Gulf of Mexico, we propose a series of long-term, multi-year (10-15 years) of randomly selected sites between depths of 2000-3000 m. Our objectives: 1. To examine all biological communities of these poorly known and infrequently sampled habitats, we propose to deploy multiple gear types to collect information from the surface to the seafloor. We would conduct the survey over 45-days using NPTV RV Southern Journey. Selected gear types will include trawls, longlines, traps, video arrays, water samplers, acoustic and sediment gauges. All captured organisms will be identified to the lowest possible taxon, enumerated and measured. Specimens will be retained for taxonomy, diet, genetic, and toxicology analyses. Water samples will be retained to conduct environmental DNA analyses. In addition to randomly sampled locations, transects will be run in eight cardinal directions (i.e., N, NE, E, SE, S, SW, W and NW) from the location of the DWH spill to inform an effort to determine long-term spatial impacts of the event on deepwater ecosystems. To meet this goal, three unimpacted reference sites will be selected from outside of the influence of the DWH oil spill (e.g., western Gulf of Mexico) and metrics will be developed upon which to compare with impacted locations and in proximity to the DWH wellhead along the transect lines. Metrics will include categories such as abundance, biomass, trophic composition, diversity of invertebrates and fishes, and habitat mapping characterization and quality. An index of biotic integrity will be calculated for each location which will quantify the degree of site-specific impacts, and allow for tracking of recovery rates for each site. Deliverables: 36 ACES spatial variability in degree of impact of DWH and provide a mechanism to quantify recovery of deep water ecosystems (trawls, longlines, traps, optical, DNA). 34 AC Index of biotic integrity by trawls, longlines, traps, optical, DNA 34 AC Abundance trawls, longlines, traps, optical 34 AC Species diversity of fish and invertebrates (trawls, longlines, traps, optical, DNA) 34 AC Trophic relationships (diet data, DNA). 34 AC Biomass estimates (EKO broadband acoustic) 34 AC Bathymetric mapping (multibeam) 34 AC Habitat ground truthing and characterization (optical, sediment grab) Performance metrics: 34 AC Cruise reports 34 AC Annual data inventory, summarization, and project status report 34 AC Annual project review and improvement webinar 34 AC Final project report 34 AC Presentation of results at regional and national meetings 34 AC Peer review publications</p> <p>Assessing recovery rates of deepwater organisms in the northern Gulf of Mexico through multiple examinations of species, assemblages, community structures, distributions, trophic relationships and interannual variability in abundance.</p>		Yes	No	No	No	No	No	No	No	No	\$ 18,000,000.00	\$		
Eco Restoration	5651	7/14/2017	<p>NDAA Project ID#1314E: Considerable resources will be dedicated to restoration activities in the mesohaline and deep benthic communities affected by DWH. Projects should be planned using techniques that factor in efficiency and capabilities, not only total cost. Saturation Diving will allow mesohaline and deep benthic projects to greatly expand their capabilities over untrained divers, yet at equivalent or lower cost to more traditional ROV systems. Utilizing Saturation Divers on the bottom will provide unmatched capabilities to meet the goals outlined in Section 5.13 of the PS&RP, particularly the approach of placing hard ground substrate and transporting coral for direct restoration activities. Other solid approaches such as community characterization (including genetic studies), improved understanding of foodweb dynamics and trophic connectivity would also be greatly enhanced by the superior collection capabilities offered by Saturation Divers compared to ROVs. The U.S. Navy is eager to support mesohaline and deep benthic projects with the Saturation Fly-Away Diving System (SATFADS). This system provides manned Saturation Diving capability using a mobile Saturation Diving system to conduct diving operations at depths up to 300 feet for 30 consecutive days using a 6-man dive team conducting continuous Saturation Diving operations. Efficiency is gained through unlimited bottom time and rapid relocation and deployment to multiple project sites within each 30-day Saturation Dive. Extensive communication capability provides real time video and audio transmission between divers and logistic scientists to coordinate on-bottom activities. The Navy's SATFADS system is based at the Naval Experimental Diving Unit (NEDU) in Panama City, FL, near the center of actual activities for NDAA mesohaline and deep benthic projects, making mobilization/demobilization cost effective as well. Use of SATFADS will be offered to all NDAA-funded mesohaline and deep benthic projects. The elimination of ROV leaving costs for Saturation Diving supported projects will significantly reduce the individual cost of those projects while the enhanced capabilities of Saturation Divers over machines will greatly increase the efficiency and range of activities undertaken at depth. The multiple benefits saving will more than offset the SATFADS costs. NEDU also houses the Ocean Simulation Facility (OSF), a shore based hyperbaric training and testing facility. The OSF may be used to train Navy divers on the assembly, disassembly and service of instrumentation arrays and coral restoration modules over deployed by other NDAA-funded mesohaline and deep benthic restoration projects. Much like NAGASA's training of astronauts in their Neutral Buoyancy Lab prior to space flights, the pre-deployment training of Saturation Divers and testing of equipment and procedures will greatly enhance the likelihood of mission success. The Navy is committed to working with scientists from NDAA-funded restoration missions to ensure mission success. The project idea is based upon the Navy providing up to four 30-day Saturation Diving missions per year consisting of 180-240 days at sea, to include pre and post mission phases to NDAA-funded mesohaline and deep benthic community projects. NDAA will assist in vessel meeting heavy specifications for load carrying capacity, dynamic positioning capability and the provision of required services (power, berthing, meals, etc.). Saturation Dives may be conducted individually or consecutively, consecutive Saturation Dives require two weeks between each mission. Date Entered: May 13, 2017. Date Edited: May 15, 2017</p> <p>Saturation Diving Capability - U.S. Navy / NDAA Collaboration</p>		Yes	No	No	No	No	No	No	No	No	No	\$ 29,100,000.00	\$	
Eco Restoration	5652	7/17/2017	<p>NDAA Project ID#1335J: This project addresses the current priority of monitoring and adaptive management activities to inform restoration, including the development of tools to support restoration planning. This project also addresses the following P&M&RES needs: Develop effective planning and monitoring strategies; evaluate effectiveness of restoration measures; develop adaptive management frameworks that can be updated periodically with new data; Restoration goals identified for marine mammals (MMs) aim to restore injured populations and improve their resilience to anthropogenic natural stressors (PS&RP P&M&RES 2016). MMs are protected by biologically independent stocks (MMPAs 012). Of approximately 33 Gulf of Mexico stock areas, 22 are continental shelf and oceanic MMs stocks (hereafter Sh-Oc stocks). These stocks are subject to multiple stressors (natural and anthropogenic), potentially with cumulative effects on MM populations. Because MMs are long-lived with slow-growing populations, inferring the effects of stressors (or restoration projects) on population strictly based on outcomes from monitoring surveys could compromise recovery of these stocks. Creating an approach to predict/estimate recovery of MM populations is essential not only to assist with planning (e.g. identify areas for vulnerable, high priority stocks), but also to evaluate effectiveness of restoration in a manner that periodically incorporates new data collected in monitoring activities and allows adjusting restoration measures if needed, following an adaptive management approach. Such a framework for tool development should help understand the effects of critical gaps and uncertainties associated with MM populations (or with the effects of stressors) on the ability to achieve conservation/restoration goals for MM populations. Abundance is a key metric to assess and monitor MM populations, to understand the population level impact of stressors and, ultimately, to evaluate the performance of restoration measures (National Academy of Sciences 2016). However, MMs, especially Sh-Oc stocks, are highly mobile, which combined with the large area to be surveyed tends to limit abundance estimates with high precision. For example, precision of abundance estimates reported in 2016-2016 Assessment Reports for Sh-Oc stocks was on average three times lower than the NOAA recommended benchmark. Likewise, estimating mortality for these 22 Sh-Oc stocks from human activities can be challenging, as tracking of carcasses from offshore areas is difficult and observers tend to miss or misidentify. Improving data availability and quality, including increasing precision of abundance estimates, can be achieved by increasing survey effort/coverage. However, maintaining high level of monitoring for Sh-Oc stocks over decades can be cost prohibitive. Thus, a framework is needed to evaluate monitoring strategies and identify the most cost effective strategy to meet restoration goals. This project proposes to develop a Management Strategy Evaluation (MSE) modeling framework (tailored specifically for shelf and oceanic stocks that alternate), 34 AC Reporting elements regarding alteration of sampling to optimize monitoring efforts, 34 AC Incorporating uncertainty associated with key estimates (e.g. abundance, mortality) to examine the effect of achieving conservation/restoration objectives using performance measures, 34 AC Examining population level impacts of multiple stressors on Sh-Oc stocks to help prioritize restoration measures, 34 AC Evaluating tradeoffs of restoration measures based on performance metrics and restoration objectives for Sh-Oc stocks that can be updated as new data becomes available following an adaptive management approach. MSE, a risk assessment framework that integrates population dynamics with the management system, has been widely used in managing fisheries and marine mammals, including in the US. Date Entered: May 15, 2017</p> <p>A management strategy evaluation framework to effectively plan and monitor recovery of marine mammal shelf and oceanic populations.</p>		Yes	No	No	No	No	No	No	No	No	No	\$ 220,000.00	\$	

Eco Restoration	5674	7/24/2017	NOAA Project (E01338). The Deepwater Horizon oil spill in 2010 caused injury to the entire ecosystem in the northern Gulf of Mexico. Despite playing important ecological roles, the small (less than 2 mm), cryptic eukaryotic species that make up the plankton remain a poorly documented component of marine ecosystems (Lewin & Inoué 2016), especially in the deep Gulf of Mexico (GOM). Long-term time-series datasets have shown that plankton are sensitive indicators of environmental change, often having a non-linear response that can amplify otherwise subtle environmental disturbances (Bryce et al., 2005). As such, reestablishment of biological baselines are necessary in order to quantify changes in biodiversity over time and to predict the impacts community shifts may have on sensitive deep benthic communities. In the last decade, reestablishing a high throughput sequencing (HTS) based approach to understanding microscopic eukaryotic diversity, including unculturable and small multicellular species groups that have been challenging for taxonomists due to lack of diagnostic features and an inability to be cultured. Importantly, such approaches have been used to document environmental impacts to shallow water benthic microbial eukaryotic communities following the Deepwater Horizon oil spill (Ward et al., 2012). We propose to sample benthic communities monthly using instrumented moorings or benthic landers, and use metabarcoding techniques and high throughput sequencing (HTS) to characterize biodiversity, to assess deep sea coral larval supply, and to identify key planktonic contributors to carbon export from surface waters that sustain sensitive benthic communities. Environmental DNA will be screened for target select GOM eukaryotic plankton (e.g., protists, ctenophores, ctenidians, coral larvae, fish), using panel selective sequencing (illumina) following molecular methods utilized in the GOM restoration project (Dobson et al., 2015 and/or Thomson et al., 2012). Amplicon libraries will also be created for several microalgal genes that are likely to provide increased taxonomic resolution for mesozooplankton. Comparable taxonomic data will be generated to those from the last time-series from previously collected voucher specimens, creating barcode libraries that will allow for comparisons to the markers of the GOM database (MarBOL, http://www.marbicol.org/) and will be made publicly available. Seasonal water sampling using an ROV or AUV at deep coral habitats will complement the temporal benthic edDNA sampling, allowing for freshly preserved samples for both visual species identifications and metabarcoding. Additionally, repeated plankton tows or sampling with an AUV water filtering device will target certain water column depths (i.e. surface, and lower thermocline) that will be determined by water column temperature profiles using a CTD. The cost of this research could be reduced considerably (by upwards of \$4,000,000) by sharing ship and ROV/AUV time with complementary studies of deep coral habitats, such as assays of coral microbiomes and health, hydrodynamic, nutrient dynamics, and restoration. Date Entered: May 15, 2017 Date Edited: May 16, 2017	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	\$	5,122,868.00	\$	-
Eco Restoration	5675	7/24/2017	NOAA Project (E01330). The Deepwater Horizon oil spill was the largest man-made disaster ever and will have long-lasting impacts on the Gulf of Mexico ecosystem, including marine mammals, sea turtles, and pelagic and benthic fish and invertebrates. Large scale ecosystem impacts require large scale restoration efforts. The most effective method for improving damaged ecosystems is by setting aside and protecting habitat from anthropogenic impacts. This restoration idea is to set aside large (thousands of square kilometer) regions in the Gulf of Mexico to protect and enhance recovery of all impacted taxa by protecting the ecosystem from all anthropogenic activities, for example by creating marine protected areas or similar habitat protections. Priority habitats to protect might include the only known Bryde's whale habitat of the northeastern Gulf of Mexico, the productive foraging habitat of sperm whales near the Mississippi Canyon, the potential calving habitat of sperm whales off the Dry Tortugas, expanding the area of the reef ecosystem habitat protections of the Flower Garden Banks sanctuary, or creating similar habitat protections for deep coral reefs throughout the northern Gulf of Mexico. Ecosystem damage or never-before-seen spatial scales require ecosystem protection at similarly large scales and must be included as part of the restoration project to encourage ecosystem recovery. Date Entered: May 15, 2017 Date Edited: May 16, 2017	Yes	No	No	No	No	No	No	No	No	No	No	No	No	\$	50,000,000.00	\$	-
Eco Restoration	5676	7/24/2017	NOAA Project (E01340). >>>Overview: The goal of this project is to offset Mississippi™™ ongoing 200cmyr coastal habitat losses. The objective is to extend current assets of Deer Island outward onto the adjacent Deer Island Shoals to protect Mississippi™™ estuarine function, ecological diversity, and overall estuarine, habitat and recreation values. These assets include include island habitats, linear sand borrow area and the Katrina Key artificial reef currently work in concert to increase resiliency of the overall resource. According to NOAA charts, Mean Little Deer Island Shoals over 800 acres at mean low tide. This NOAA Chart data will be updated with a new bathymetric survey so that restoration concepts can be refined enough to be specific and ready to begin a permit application process. >>>Setting: Deer Island is the larger of Mississippi's two "remnant remnant" islands. Unlike the sand barriers of the Gulf Islands National Seashore several miles to the south, both Deer Island and Round Island (about 15 miles to the west) are stable structures that have responded to sea level rise with consistent erosional losses. Deer Island measured over 800 acres in 1930 and has shrunk to about 400 acres prior to the initiation of restoration efforts in 2001. Project location: Since 2001, the USACE Mobile District and NOAA have worked collaboratively on Deer Island to restore the bogpans to approx. 770 acres. However, a significant restoration opportunity for Deer Island has yet to be initiated. A large sand shoal (4000 ft wide) extends eastward of the current island. This area still has emergent land until a decade ago and based on historic sea level rise, measured 1000 acres of new marsh within the last 100 years. This lost habitat will be restored as a result of Mississippi's restoration experience and success in this type of setting. The State of Mississippi has extensive success with restoration in this shallow, bogpans setting recently completing 220 acres of new island and marsh habitat on a similar shoal north of Round Island. Funded by NFWF, this project captured 3.3 million cubic yards of high quality, new wet dredged material that was otherwise destined for ocean disposal. Also, two 40-acre beneficial use of marine restoration projects established along the northeast shore of Deer Island are nearing completion. >>>Project Detail: (1) Depending upon public/agency/scientific/technical consensus: Build approximately 300 to 1000 acres of new emergent coastal habitat (land) with a similar distribution of habitats and elevations to that currently exist on Deer Island. This includes wet beach dunes, coastal maritime and aquatic forest, coastal shrub dunes, tidal flats and marshes, etc. This emergent portion may incorporate some beneficial use of dredged material in order to obtain optimum material for marsh creation. (2) Include up to a 12,000 foot extension of the Katrina Key artificial reef which is currently about 4,000 feet long and visible about 1,000 feet southwest of eastern Deer Island (visible on the project map in this submittal - blue markers) (3) Extend the parallel linear sand borrow area used for the initial MCRP project in 2011 (also visible in this submittal - blue markers) eastward to provide optimal sand quality for the emergent portion of the project as well as providing wave energy modification to help ensure sea level rise stability. Note: USACE Mobile District has noted that the combination of offshore living shoreline/breakwater and parallel linear borrow trench has significantly added to the protection of the current Deer Island from wind-wave driven erosion. (4) Outer reef and sub-grass areas could also be developed because the project will provide significant energy reduction on large, unshaded areas of the shoal. Date Entered: May 12, 2017 Date Edited: May 16, 2017	Yes	No	No	Yes	No	No	No	No	No	No	No	No	No	\$	50,000,000.00	\$	-
Eco Restoration	5679	7/25/2017	NOAA Project (E01347). Deep-sea corals provide a number of ecosystem services for the Gulf of Mexico and are increasingly linked to the broader Gulf ecosystem. They provide habitat for a diverse community, including shelter from predators and breeding grounds for mobile fish and squid species. They are also responsible for significant amounts of carbon sequestration and the remineralization of nutrients. These nutrients can then be provided to the surface waters, and transferred to higher trophic levels, and the productivity of offshore planktonic communities. Therefore, the loss of deep-sea coral can have repercussions for the entire Gulf of Mexico large marine ecosystem. There were four primary sites of impact to the deep-sea corals of the Gulf of Mexico. These are found within a radius of approximately 25 km from the Deepwater Horizon, and are dominated by the ectosymbiotic, Pannucina bispica. Direct restoration of these communities would be the most and an effective way to restore their ecosystem function and services. Placement of appropriate substrate for the establishment of new populations in pathways of connectivity would be the most means to achieve these restoration goals. Deep-sea ectosymbiotic rely on hard substrate with sufficient biofilm for settlement and successful metamorphosis. Hard substrata that have been colonized by deep-sea corals in the area include natural lithogenic carbonates, ophiolites, and drifting lithogenic structures. The most significant populations of P. bispica are found on near-vertical carbonates and granite substrata. The best strategy for placement of artificial substrata would be to mimic the habitat where the most abundant new populations are present. Therefore, we propose to use structures similar to the concrete Alcatraz™™ that have been successfully employed for coral restoration in shallow waters. These are spherical, reinforced concrete structures with three poles in them, similar in appearance to a large white ball. These would be placed in areas near existing populations that would serve as a source of propagules for the establishment of these new communities, and along existing corridors of connectivity, as determined by other restoration work. The areas of seafloor selected for deployment will be surveyed prior to placement to ensure that they do not contain sensitive habitats that could be disturbed by this placement. The artificial habitat structures would be placed on the seafloor and released just north of the seafloor to minimize disturbance. There would be 4 structures placed at each site. One of these per site will be instrumented with oceanographic sensors, in collaboration with other restoration projects. These will be monitored for colonization by visitations with an ROV on an annual basis. This trip time would be combined with other study with additional work that would occur at the same site and use similar admittance assets. In the first year of the study, only 2 of these would be deployed very close to a large population of P. bispica as a pilot study. We know that colonization of metal structures takes at least 6-7 years based on surveys of old rigs and platforms of known age, but the concrete carbonates should be colonized earlier. We can also increase the time to colonization by inducting the structures in natural seawater in order to begin the process of biofilm growth. If coral colonization is revealed in the first 1-2 years of deployment, then this project could be scaled up to additional sites, as determined by other genetic connectivity and predictive habitat modeling studies. Date Entered: May 16, 2017	Yes	No	No	No	No	No	No	No	No	No	No	No	No	\$	30,000,000.00	\$	-
Eco Restoration	5680	7/25/2017	NOAA Project (E01347). This project will provide fundamental data for monitoring the in-water population of sea turtles in the GOM to inform adaptive management within the restoration process, as well as to directly address PMAP Approach 1: Reduce Sea Turtle Bycatch in Commercial Fisheries through Identification and Implementation of Conservation Measures. The goal of this project is to develop an acoustics driven towed system to conduct seasonal monitoring of sea turtles from near shore to the continental shelf in the GOM. The gear would employ a digital camera and a high-frequency acoustic camera mounted in a shrimp trawl with a TED. The system will be used to conduct stratified, random fishery-independent surveys to determine sea turtle species, abundance and distribution. Survey data will be used to monitor population recovery as the result of various restoration approaches. Acoustic data will identify turtle distribution and detect fishery from the densest concentrations of turtles to reduce interactions. The project benefits will be to: (1) Address critical information gaps helping to inform the temporal and spatial implementation of future restoration projects; abundance estimates would allow monitoring and adaptive management within the restoration process. (2) Survey data could prevent fishery overlap with the densest concentrations of turtles to reduce bycatch. The likelihood of success is high given that a preliminary 2013 evaluation of the system by the SEFMC NE Lab successfully demonstrated the feasibility of this technique for imaging turtles with a trawl. Date Entered: May 16, 2017	Yes	No	No	No	No	No	No	No	No	No	No	No	No	\$	50,000,000.00	\$	-
Eco Restoration	5681	7/25/2017	NOAA Project (E01347). This proposal describes the most direct form of restoration for deep-sea corals, fragmentation and transplantation of coral colonies. There were four impacted sites, with approximately 200 coral colonies affected by the spill. It would take a significant effort to replace all of these colonies directly, and since this has never been attempted before in the deep sea, a pilot study is required to see if this method will be an effective strategy. The pilot study will be conducted to ensure that the result of this project is a net gain of coral structure rather than a loss due to smaller colony sizes and increased mortality. Initially, two different large populations will be targeted at a source of the corals. One branch will be trimmed from each of six large colonies using caution coral cutters on an ROV manipulator and transported to the surface in insulated coolers. Source colonies will be marked with a yellow marker and be carefully imaged before and after sampling. From previous work, we know that careful sampling of branches from P. bispica does not harm the source colony, but we will monitor these colonies to document our impact. On the surface, the base of the fragments will be placed inside a small length of tubing so this will be mounted on a larger platform for deployment. There are two options for either onto a raft that can be easily mounted on the artificial substrate (if this restoration strategy is also selected), or onto a larger concrete block that is still to be placed and deployed from an ROV. Three of the colonies will be returned to the site they were collected from and three will be placed at the other collection site (reciprocal transplant design). Large physical markers will be placed along with them so they are easily recognized. Transplanted colonies will be monitored using on-ship imagery during annual ROV cruises to evaluate their progress. These colonies will be planted and carried out in collaboration with other Restoration projects in order to maximize the efficiency of these operations. Costs include annual ROV cruises to evaluate the progress of the corals. These could be combined with other projects and reduce the total cost. Date Entered: May 16, 2017	Yes	No	No	No	No	No	No	No	No	No	No	No	No	\$	15,000,000.00	\$	-
Eco Restoration	5682	7/26/2017	NOAA Project (E01347). Pannucina bispica is a deep-sea ectosymbiotic that has a broad distribution. It was the most common species among those that showed clear impacts from the Deepwater Horizon oil spill. The first deepwater coral site to show these impacts was found in base hole Mississippi Canyon 294 in November 2010. Since then, 3 more sites were found to be impacted, with damage documented to these populations to varying degrees. During the search for these communities, most of the sites in the immediate vicinity (15-25 km radius) of the Deepwater Horizon contained relatively small populations of P. bispica, on the order of 100 colonies or less. A larger population was first observed in 2009 along the northern end of the Florida Escarpment, just to the south of the opening to the DeSoto Canyon, and then was further explored in subsequent cruises. One other population of 50-100 P. bispica colonies is known from Green Canyon 852, much further to the west. In order to properly conduct direct restoration actions that would help to replace the impacted populations and restore their ecosystem function, or conduct compensatory restoration in the form of protection for significant existing and healthy populations, a more complete assessment of the existing population structure of this species in the Gulf of Mexico is required. The first field above sea currently rest the only places that P. bispica exists in the Gulf of Mexico. In this proposal, we describe a pilot to discover additional P. bispica sites and assess the site size and population structure at these locations. There are two ways to predict new sites of P. bispica populations, through predictive habitat modeling and (2) this will help to suggest areas that fit what we know of P. bispica™™ niche in the Gulf of Mexico. These models will not be followed directly, but their quantitative assessment of habitat suitability will be used to select the most probably sites from a long list of potential sites based on more qualitative assessments of depth, bathymetry, and depth that have been used over the years to discover all of the deep-sea coral known so far from the Gulf. Once sites are selected, two cruises will be carried out to ground truth these locations. First, we will conduct preliminary surveys using the AUV Sentry on a cruise of approximately 30 days. Targets will be selected for high resolution (>50 cm scale resolution) bathymetry from the Sentry AUV at a height of 20 to 30 above the seafloor. Then, the most high-resolution targets will be selected for photo surveys at a height of 5 m above the seafloor. If these specific targets within each site are fairly large, this will consist of parallel transects with closely spaced but non-overlapping lines and images. If it is a small area (<50 m on a side), then the entire area will be photographed with overlapping photos to ensure complete coverage of the target. All of photos will be analyzed and any visible coral colonies will be noted. Corals will be identified to the finest possible taxonomic level. Any sites with P. bispica colonies and depth that have been used over the years to discover all of the deep-sea coral known so far from the Gulf. This cruise will also be approximately 30 days and will utilize an AUV with precise navigation, a 7-function manipulator, and high resolution cameras used in stereo mode for scale. This will provide the direct ground truth of P. bispica presence and abundance for all of the downstream studies to be conducted. Funds are estimated for 1 cruise per year for 5 years for approximately \$3M per cruise. Date Entered: May 16, 2017	Yes	No	No	No	No	No	No	No	No	No	No	No	No	\$	15,000,000.00	\$	-

Ecological Restoration	5600	7/28/2017	NODA Project ID#13497. In the aftermath of the DWH oil spill, several communities of deep water corals were discovered that had been impacted by the spill. Initial identification and quantification of the impact was difficult because of the lack of background data on undisturbed corals in the project area. Productivity recovery is also hampered by the fact that data on normal deep water coral recovery patterns and rates. However, an intensive effort aimed primarily at two Paramuricea species has proven the efficacy of using high resolution imaging techniques to document and quantify both impact and recovery of octocorals with this type of growth form. Plural octocorals (including the taxa Calocoma, Halimnobia, and Sclerianomia in particular) are excellent sentinel organisms because their morphology allows identification of impact, they are normally very long-lived, their skeletons is normally covered with living tissue, their exposed tissues interact directly with epibiotic water for their nutrition and respiratory needs, and since they are attached, damaged or killed colonies remain in place providing a record of deleterious impact that can persist after the affecting agent has disappeared or no residual is left on the surface. This research following the DWH spill, particularly the data from non-impacted communities, has provided sufficient baseline data to establish Paramuricea bicolora and Paramuricea sp. as robust sentinel species for detection of anthropogenic impact. However, to date we have only established monitoring sites in a relatively small area of the GOM and these two Paramuricea species are only present between about 3000 and 3800 m depth. We propose to expand the use of these types of corals to include additional robust sentinel species and monitor other depths and regions of the GOM. In addition to providing robust sentinels for anthropogenic impact for monitoring, this effort will provide the background data needed to use additional coral species at a wide depth range to detect and quantify potential future impacts in other locations and to assess success of restoration efforts with respect to recovery, natural mortality and growth rates. The cost of this effort is scalable depending on the number of new sites established, their depth, and whether there are currently well enough known to allow immediate work, and the efficacy of monitoring. Discovery of a new site, including confirmation of the presence of corals in a specific area and depth range averages about 4 days of AUV operations. Repeat monitoring of an established site can be accomplished with 24 hrs of ROV operation. A minimum effort to expand the number of crown sites with appropriate sentinel species would require a minimum of 1 month of AUV operations with a survey type AUV (approximate \$1million), followed by one month of ROV operations (approximate \$1.5million) to establish the sites and acquire images to initiate the monitoring. A smaller effort aimed at only known sites would not need AUV operations. Repeat visits every 2-3 years (when needed), could be accomplished with about 3 weeks of ROV time each (approximate \$1.5million). All ROV time should be used collaboratively for other funded sampling of deep water corals and associated communities. Other costs associated with the data acquisition, processing and analysis specific to this project would be approximately \$400K for during establishment of a total of about 10 new sites and monitoring of 6 established sites which would decrease to about \$300K/yr associated with ongoing monitoring. Additional sites, geographic area, or intensity within a given area would require additional support. Date Entered: May 17, 2017 Date Edited: May 18, 2017	Yes	Yes	No	No	No	No	No	No	No	No	\$ 4,000,000.00	\$	-
Ecological Restoration	5601	7/31/2017	NODA Project ID#13498. The proposed project will restore of both bluenose tuna and sea turtles through the reduction on bycatch in the pelagic longline fishery. The GOM has become an area of concern due to the bycatch mortality of spawning bluenose tuna in the directed yellowfin tuna longline fishery. As a result there have been several management measures to mitigate the bycatch of bluenose, including the required use of weak hooks in 2015 and the implementation of Individual Bluefin Ductile (IBD) in 2015. Research conducted by NOAA Fisheries in 2012 showed that setting longlines deeper than typically found can reduce bluenose interactions with longline gear and thereby increase the catch of targeted yellowfin tuna. During the study researchers explored hook time and temperature depth responses (TRC) on the longline to determine when and at what depth yellowfin and bluenose become hooked on the longline. Researchers also deployed satellite (PSAT) tags on both yellowfin and bluefin to learn about water column utilization during the daylight period (the period when tuna are caught) on longlines. TRC data showed that 70% of fishing effort occurred between 60 and 120m depth (primary fishing zones). Results also showed a strong correlation between the proportion of tuna time spent in the top primary fishing zone (from PSAT data) and CPUE. PSAT data also showed that bluefin spend a higher portion of daylight time in the primary fishing zone (near the thermocline) than do yellowfin. Results suggest that sets deployed greater than 120m have the potential to reduce the bluenose interactions while potentially increasing yellowfin catches. Research in other fisheries has also shown the benefit of longline gear also can reduce sea turtle bycatch. Based on these results we propose to conduct a demonstration project within the GOM pelagic longline fishery to contract vessels to make alternating sets to make alternating sets to make alternating sets and sets at greater depth. If the indications from the previous research are accurate, fishery industry will be interested in the increase in yellowfin fish catch, results of the demonstration project will be documented and disseminated through a series of workshops throughout the GOM longline fishery. The project will be monitored by observations on the project vessels. Dissemination of project results will prompt changes in general fishing practices GOM wide, which will be monitored through the mandatory observer program. Date Entered: May 17, 2017 Date Edited: May 18, 2017	Yes	No	No	No	No	No	No	No	No	No	\$ 2,500,000.00	\$	-
Ecological Restoration	5602	7/28/2017	The Deepwater Horizon oil spill released an unprecedented quantity of oil directly into the deep sea, and also resulted in the introduction of large amounts of dispersants and drilling sediments into the northern Gulf of Mexico (Carroll et al. 2011; Barro 2012). Subsequent research has uncovered extensive damage to deep-sea habitats, most notably to cold water coral communities dominated by Paramuricea species. Paramuricea is an ecologically important genus in the deep Gulf of Mexico, providing critical three-dimensional habitat structure for a large number of associated species. Following the spill, Paramuricea colonies in the vicinity of the Macondo wellhead were found to be covered with a brown flocculent material containing Macondo fingerprinted oil, and exhibited signs of stress and mortalities including excessive production, tissue damage, and proliferation (Ehrlich et al. 2012; Fisher et al. 2014). Based on the severity of the impacts to this important and sensitive deep-sea life supporting coral, there is an urgent need to develop a comprehensive restoration plan to ensure the future of these communities throughout the northern Gulf of Mexico. One of the foremost obstacles to designing a comprehensive restoration plan for Paramuricea is the extreme paucity of baseline observational data. Therefore, we propose to integrate species distribution models, an exploratory cruise, and a comprehensive population genetic analysis to assess full characteristics of Paramuricea communities throughout the northern Gulf of Mexico. Species distribution models statistically couple species occurrences with a suite of environmental factors to predict suitable habitat and quantify niche space (e.g., Georgian et al. 2014). The ability of these models to predict novel distributions in unexplored areas will be used during the exploratory cruise to guide candidate locations for restoration efforts. Baseline genetic data will be collected to assess genetic diversity and genetic structure. Genetic diversity will be conducted, monitoring sites will be established, and genetic samples will be collected to analyze the population structure of Paramuricea within the Gulf of Mexico. Model results, field observations, and genetic data will be incorporated into a spatially explicit restoration plan that includes the design of effective marine protected areas. In addition, these results will provide important insights into the magnitude of the initial damage caused to these communities by the Deepwater Horizon oil spill, will help identify and prioritize sites for future research and remediation efforts. Costs for this project do not include ship time for validation, which would fall under other proposed projects. Salary for a biogeographer and support to integrate new datasets are included. Date Entered: May 17, 2017 Date Edited: May 18, 2017	Yes	No	No	No	No	No	No	No	No	No	\$ 1,000,000.00	\$	-
Ecological Restoration	5603	7/31/2017	NODA Project ID#13503. This project will contribute to the restoration of various species of finfish by reducing sources of mortality in the commercial shrimp trawl fishery in the open ocean restoration area throughout the Gulf of Mexico (GOM). Through cooperative research, innovative bycatch reduction devices (BRD) and BRD combinations will be developed and fieldly certified. Fishers will then be provided economic incentives to use BRD or BRD combinations for the project period. While one BRD is currently required in these fisheries, further reducing finfish bycatch with the use of BRD combinations will assist restoration of fish populations in the GOM. Recent collaborative testing in North Carolina identified several new BRD combinations that exceeded 40% reduction of finfish bycatch relative to a control (standard 4-inch bar spacing TRD, fishery BRD) and a 3.6-inch coded hook. These reduction rates exceed currently accepted standards set by state and federal fishery managers. Transferring this technology to the GOM shrimp fishery could provide available to the restoration of numerous fish stocks impacted by the DWH oil spill. Additionally, shrimp loss associated with the use of the BRD combinations evaluated was minimal, which should facilitate industry acceptance of the gear in the GOM. Collaboration for this project will include the gear monitoring team (GMAF HSI), NMFS EBCS observers (Eaton, TN, Sea Grant), and commercial fishery organizations and fishery representatives. There will be two primary components of this project including independent prior of concept testing and comparative testing aboard federally permitted GOM shrimp trawl vessels. Simultaneous, monetary incentives to implement new BRDs will be offered to a portion (20%) of the vessels permitted fleet. This project will assist in the open ocean restoration area through the GOM. Collectively, this project will facilitate increased communication among GOM fishermen and gear researchers concerning BRD performance (design, usability, functionality). This feedback mechanism will allow for adaptive project management and refinement of BRD designs through an iterative process focusing on regional performance and functionality. Date Entered: May 18, 2017	Yes	Yes	No	No	No	No	No	No	No	No	\$ 6,500,000.00	\$	-
Ecological Restoration	5604	7/31/2017	NODA Project ID#13504. This project will contribute to the restoration of open ocean reef fish populations by reducing post-hooking mortality. Post-hooking mortality in recreational fisheries is one of the largest determinants of larger quotas and fishing season ends in the GOM reef fish fishery. Numerous stock assessments from New England to the West Pacific Islands have indicated the need to reduce post-hooking mortality in recreational fisheries due to stress inflicted while aboarding and releasing unharmed fish. Barbless circle hooks have been demonstrated to reduce handling time through ease of removing the hook, thereby decreasing associated mortality (Cooke et al., 2001; Casselman 2005). Significant mortality factors were use of natural barb, removing hooks from deeply hooked fish, use of hooks (vs. circle hooks), lesser depth of capture, warm water temperatures, and extended jugging and handling times. Barbless hooks had marginally higher mortality than barbed hooks (Barthelmeier, A., Barboza 2005). The goal of this project will be to compare the post-hooking mortality of reef fish caught using barbed and barbless circle hooks by monitoring acoustically tagged fish. The year-on-year study will be conducted on two study site reefs. Acoustic receivers will be placed at each reef to ensure complete coverage and to monitor movement and survival of tagged fish. We will fish during the closure of the reef snapper fishery to help minimize additional fishing pressure on our study areas. The fishing effort will consist of two fisherman fishing with a two hook top and bottom end rig. Each fisherman will fish alternating hook locations i.e., one top hook barbless and bottom hook barbed while the other fisherman top hook barbed and bottom hook barbless. We will place acoustic tags into an equal number of fish for each hook type. Reef sites will be located at 30 meters to balance the need for cooler bottom temperatures and the need for shallower water to combat barotrauma. As depth of the water increases the risk of mortality, fish will be released by means of a fish decoder. A go pro camera mounted to the fish decoder will be used to record the immediate release of the fish. The acoustic receiver will be programmed to record data for approximately 40 days. After the first year, we will expand our coverage area and fishing effort. Outreach with the recreational fishery sector must be done on continual basis over year one, and we will take two to three personnel each year to accompany this task. Outreach should be done with but not limited to fishing clubs, schools, fishing tournaments, outdoor writers, fishery councils, fishery commissions, and law enforcement groups. One of the positive benefits of using barbless circle hooks is that individual animals should be able to do themselves of the barbless circle hook more quickly and easily should they break off or release by cutting the line as close as possible. (IFPC, NMFS, NOAA). Given the advantages of using barbless circle hooks, this technology has significant benefits for interactions with protected species, i.e. sea turtles, marine mammals, and sea birds, and could potentially expand to other fisheries where those interactions might occur. Date Entered: May 18, 2017	Yes	No	No	No	No	No	No	No	No	No	\$ 6,800,000.00	\$	-
Ecological Restoration	5605	7/31/2017	NODA Project ID#13511. This proposed project will provide descending devices to recreational anglers (private and for hire) and conduct educational outreach on best practices and the proper use of these devices throughout the Gulf of Mexico. In addition, the Southeast Region Headboat Survey (SRHS) will implement a monitoring and fish tag/recapture program on headboats participating in the survey in order to collect information on the ability, effectiveness and impacts of descender devices on post-release mortality in the Gulf of Mexico headboat fishery. Recreationally important species with high release mortality, including red snapper, gag grouper, vermilion snapper, red grouper, as well as strictly regulated species such as goliath grouper, speckled hind, Warsaw grouper and Nassau grouper, will be the focus of this program. Additionally, the effectiveness of descending devices on reducing dolphin degradation will be evaluated. In order to raise public awareness on the problem of fish barotrauma and the benefits of using descending devices, outreach will be conducted at boat shows, tournaments, fishing clubs, and one evening from Ft. Le. Outreach will include distributing educational DVDs SharkDiveSave Snapper and Grouper from BarotraumaDed descender devices to anglers that may otherwise not obtain or purchase these items. The implementation of and monitoring component of this project incorporates a design that includes the SRHS electronic logbook (e-log) system, SRHS decline sampling and sea observers. In addition to utilizing existing SRHS infrastructure and capabilities, the addition of sea-view observers will provide 360 total number of fish discarded 360 lengths of fish from a sub-sample of discarded 360 number of fish discarded on device 360 the ability to tag a sub-sample of fish discarded and fish not discarded. For subsequent analysis of recapture rates. Partners in this project include Sea Grant, Gulf States Marine Fisheries Commission, recreational fishing associations, and state agencies. This collaboration ensures regional coverage and makes this project well suited for promoting best practices and the proper use of descending devices, along with monitoring and evaluating the impacts on reducing post-release mortality and improving post-release mortality estimates. Date Entered: May 18, 2017 Date Edited: May 19, 2017	Yes	Yes	No	No	No	No	No	No	No	No	\$ 4,500,000.00	\$	-
Ecological Restoration	5606	7/31/2017	NODA Project ID#13512. Interactions between protected species such as sea turtles and marine mammals have been documented, but wells are largely unknown. This project proposes to put fishery observers on the recreational hire sector (headboats and large charter vessels) to observe incidental capture of sea turtles, as well as marine mammals, sea birds, and non-target fishes. This project addresses the NOAA Fisheries restoration approach "Reduce interactions with bycatch and associated mortality and implementation of conservation measures" and NOAA's marine mammal restoration approach "Reduce injury and mortality of bottlenose dolphins from hook-and-line fisheries. The project will also address Resource-Live Monitoring and scientific support for adaptive management" by providing information about threats to sea turtles and bottlenose dolphins. The project objective is to conduct systematic surveys of recreational fisheries to understand the scale, scope and frequency of hook-and-line interactions with protected species. We plan to develop a protocol that specifies the gear used in the Gulf of Mexico recreational fishery sector, documented spatial and temporal bycatch patterns, gear characteristics, and other potential contributing factors. This information could be used to focus outreach and restore conservation measures within the recreational fishing community. Observers will be deployed throughout the Gulf of Mexico (from during the spring and summer seasons) from 5:30 p.m. Observers will be trained during the first season of the project. Data collected on three vessels from larger ports with multiple fish harvests or vessels with enough demand to fish daily to enhance the likelihood for success and ensure logistical viability will not be a limitation (e.g., lodging and proximity to large metropolitan areas). Contract vessels operating in areas of high private vessel density could be a secondary priority and serve as a proxy for private boat bycatch rates in those areas. Project deliverables include (1) resumes of all observers and other personnel, and sea birds in the for the sector; (2) bycatch hotspots and (3) an analysis of gear characteristics to identify patterns in the factors associated with bycatch. This project budget is scalable depending on the spatial extent and number of years of desired coverage. (Proposed budget is \$2,300,000 for 5 years of coverage - \$3,200,000 for 7 years; less than 5 years is optional). Date Entered: May 18, 2017 Date Edited: May 28, 2017	Yes	No	No	No	No	No	No	No	No	No	\$ 2,300,000.00	\$	-

Eco Restoration	5697	7/31/2017	<p>NOAA Project ID#13533. This project is designed to decrease interactions of marine mammals with commercial shrimp trawling gear. Dolphins are occasionally captured in shrimp trawls or entangled in the byline as a result of predation on gilled fish in the trawl, with hundreds of mortalities estimated per year in the Gulf of Mexico shrimp trawl fishery. Further, this predation results in extensive trawl damage, creating hours of work to repair the nets and these interactions have resulted in dolphins being injured or killed by fishers out of frustration. The majority of shrimp nets used in the GOM shrimp fishery are made from standard polyethylene webbing. In recent years, material such as Dyneema and Spectra have been introduced into the fishery but have yet to gain widespread use. NOAA Fisheries research suggests that these stronger materials could prevent dolphin byline hook snags. However, shrimp fishers are unlikely to make the investment in stronger materials unless they know that comparable catch rates can be achieved. This project will compare and quantify target catch rates and dolphin byline damage between polyethylene netting (control) and stronger netting (experimental) aboard commercial trawlers to get into gear. Additional objectives include the optimal material and fishing configuration for trawl bylines to reduce dolphin entanglement. A comparison of different byline materials will be conducted to determine if increasing line stiffness will decrease the likelihood of marine mammal entanglement. Drones, optical cameras, and acoustic cameras (DOSONAR/S) will be used to observe which materials have fewer dolphin interactions. This project will consist of four different objectives: 1) Compare the fish catch rates and shrimp catch rates of Dyneema nets to Spectra nets to determine the material that results in the lowest number of dolphin interactions; 2) Compare the number of dolphin hook snags for identical cameras and Polyethylene nets; 3) Compare dolphin interaction rates between bylines made from different materials using drones, optical cameras, and acoustic cameras; 4) Compare the fish catch rates and shrimp catch rates of Dyneema nets to Spectra nets to determine the material that results in the lowest number of dolphin interactions. Once gear demonstrations with the least dolphin interactions will be promoted to fishers, improved bylines or trawls will be given away to a limited number of fishers along with monetary incentives with the requirement of other observer coverage or reporting. Additionally, to assure fishers are using the gear, NMFS OATM will conduct at sea monitoring of the gear. Once fishers become aware of the benefits of these materials, dolphin/fishermen conflicts should decline resulting in fewer dolphin mortalities in shrimp trawling gear. Additional outreach will be conducted at workshops for upcoming TED regulations where these new materials will be presented. Data Entered: May 18, 2017. Data Edited: May 18, 2017.</p>	Yes	No	No	No	No	No	No	No	No	No	No	No	\$ 4,600,000.00	\$ -	-
Eco Restoration	5698	7/31/2017	<p>NOAA ID#13522. We propose a comprehensive sampling program for highly migratory species (tunas and billfish) and large pelagic species (mackerel and dolphin fish). Sampling would include a fishery-independent monitoring survey, at-sea observer commercial sampling and dock side/tournament recreational sampling. Two 65 day pelagic longline cruises will be conducted in the northern Gulf of Mexico during the spring and fall of each year. The sampling universe will be defined as waters extending from the 200 m isobath to the furthest extent of the EEZ. Fifteen days of survey operations will be conducted in each of three regions biannually. A stratified random sampling design will be employed based on factors known to cause the patchy distribution of pelagic fishes (e.g., areas of localized high primary productivity and ephemeral oceanographic features). Up to four longline sets will be conducted each day for a total of 40 stations per region or 120 stations per cruise. Data collected during surveys will be used to assess trends in abundance, hook selectivity effects of hook time/temperature/death to mortality rates, movement patterns, habitat factors driving distribution and abundance, genetic assemblages, relative abundance and habitat preferences. Biological samples will be taken for age and growth studies, otolith micro-chemical analysis, reproductive studies, diet/trophic studies and genetic analysis. Additionally, we will deploy 2000 up-4000 depth satellite tags on selected species each year to further examine movement patterns, residency times and habitat use of pelagic fishes. There is currently no fisheries-independent data to monitor trends in abundance of pelagic fishes. This study would provide these much needed data and allow for enhanced monitoring of recovery rates of pelagic fishes. Deliverables include: index of abundance, identification of fishing related sources of mortality (at-vessel and post-release), information of impacts such as gear selectivity and the effects of hook time, temperature and depth of capture on mortality rates, knowledge of how impacts will help monitor reductions in harvest and assist in the recovery rates of impacted populations, identification of habitat (e.g. spawning grounds), movement and distribution patterns will assist in the recovery process. Biological samples will be used to determine length and age composition, calculate growth curves, estimate mortality and fecundity, estimate natural mortality, identify natal origin and examine food habits and trophic dynamics. Performance metrics include: cruise reports, annual progress reports, GOM and the HRS stock assessment reports and the HRS Annual Stock Assessment and Fisheries Evaluation (SAFE) Report, as well as through participation at scientific meetings and gear renewal publications. The proposed project directly addresses three Programmatic Treaties for Fish and Water Column Invertebrates, as listed in the POAMP, specifically, 1) Hershman and Protect Living Coastal and Marine Resources; 2) Provide and Enhance Recreational Opportunities; and 3) Provide for Monitoring, Adaptive Management, and Administrative Oversight to Support Restoration Implementation. Data Entered: May 19, 2017.</p>	Yes	No	No	No	No	No	No	No	No	No	No	No	\$ 20,000,000.00	\$ -	-
Eco Restoration	5699	8/1/2017	<p>NOAA Project ID#13523. Our project will apply innovative molecular technologies to highly migratory species such as tunas and billfishes to 1) fill significant information gaps in stock assessments thus reducing mortality through better management and 2) develop robust alternative management approaches to reduce the impact of the MAM approach to the restoration effort. We will establish a stable restoration process that we will establish baseline data (i.e., index of abundance) for target species. Restoration actions can then be monitored against these baseline data and adapted as needed. Highly migratory species are inherently difficult to monitor due to their behavior and ecology, thus baseline abundance data for many of these species in the Gulf of Mexico are lacking. As an alternative to fishery dependent data, multi-year surveys of ichthyoplankton abundance can be used to track temporal changes in adult biomass. We propose to implement innovative molecular technologies in order to identify larvae of highly migratory species (i.e., tunas and billfishes) and develop larval indices for the Gulf of Mexico. We will use novel (1982 to 2008) formalin preserved SEAMAP samples by implementing and applying new methods that we developed by Fisheries Science Center's Asia Blue Laboratory by process we used (2009 to present) ethanol preserved SEAMAP samples. We will use a high resolution melting analysis (HRMA) combined with a fast, minimally invasive DNA isolation protocol. The application of these innovative molecular techniques to process existing samples is a cost effective way to develop fishery independent indices of abundance for several highly migratory species, providing an efficient alternative to costly surveys of adult fishes. This project will also serve as an experiment in the improvement of future processes. This project will also have the potential to assist in the restoration by developing novel indices. This project will assist the reduction of mortality of highly migratory species by enhancing stock assessments, and it will create a historical record against which the restoration of highly migratory species can be robustly monitored and assessed. This project will also allow a more rigorous application of the MAM approach to the restoration effort. We expect this project to advance the utilization of monitoring techniques that can be used to assess future vulnerabilities to anthropogenic environmental perturbations and to enhance regional restoration efforts. This project meets several restoration goals including: 1) Reduce mortality among Highly Migratory Species and other oceanic fishes and 2) develop Monitoring and Adaptive Management techniques. Data Entered: May 19, 2017.</p>	Yes	Yes	No	No	No	No	No	No	No	No	No	No	\$ 5,000,000.00	\$ -	-
Eco Restoration	5700	8/1/2017	<p>NOAA Project ID#13524. The project assesses the relative abundance and distribution of Gulf of Mexico outer-continental shelf and deep ocean fishes and invertebrates, specifically intermediate trophic level fauna (typical mesopelagic species) that constitute the prey base for various species addressed by NOAA/NMFS's management objectives (e.g., cetaceans, sea turtles, billfishes, tunas, coastal migratory species, sea birds). The proposed project fills a scientific data gap addressing sampling for intermediate and high trophic level species; currently there are no going longline surveys addressing mesopelagic nekton and high trophic level predators (e.g., cetaceans), however, intermediate trophic level species that are the predator/prey link are not research objectives. DWH injury is demonstrated by overfishing between the DWH oil spill and intermediate fauna distribution. Fishery independent surveys NOAA/NMFS Mississippi Laboratories (MSL) http://lap.msl.usgs.gov/index.cfm?CID=7242 are performed. The likelihood of success is high considering MSL has an extensive history of outer-continental shelf and deep ocean faunal assessments (bottom and mid-water trawling), and is well staffed for scientific, vessel, gear and IT specialists. Mid-water trawling for intermediate trophic level fauna will be conducted both on the continental shelf and in deep ocean and include, in part, areas with high trophic level species that prey on intermediate trophic level species (e.g., Bluefin Tuna) sampling and large cetacean aggregation areas (e.g., C. at the ocean's surface using overlies the proposed survey area. The annual project satisfies a Restoration objective for sentinel sight monitoring since population dynamics of the intermediate trophic level fauna can be used as a metric for assessing effects of future oil spills to light events and for Gulf of Mexico ecosystem management related to the causes of population change for high trophic level species. The survey also provides numerous sampling opportunities for trophic level stable isotope analysis and biological tissue sampling related to the resolute effects of the DWH oil spill. There are several special factors of the POAMP/PEIS Comprehensive Restoration Plan Section 5, of particular importance is Restoring Natural Resources. Alternative 1, Comprehensive Integrated Ecosystem Restoration (5.1), Fish and Invertebrates (5.1.2), mesopelagic communities (5.1.1.3), sea turtles (5.0.4.6), cetaceans (5.0.5.3) and sea birds (5.0.6.1.1). Data Entered: May 19, 2017.</p>	Yes	No	No	No	No	No	No	No	No	No	No	No	\$ 3,401,120.00	\$ -	-
Eco Restoration	5701	8/1/2017	<p>NOAA Project ID#13525. We propose to conduct a life history review and resiliency analysis for economically important Gulf of Mexico (GOM) teleost species including the shelf and offshore teleost species (POAMP Table 4.4-9) to determine the impact from Deepwater Horizon oil spill (DWH). The review of the life history information would focus on: growth, natural mortality, reproductive parameters, and diet. Since these parameters would most likely be affected by changes to the food web provided direct and indirect mortalities following the DWH. In addition to the literature review, the collection of biological samples (otoliths, stomachs, reproductive and muscle tissues) will support standard life history research, as well as, conduct analysis of stable isotopes (determine trophic level), model species-specific bioenergetics (aid in predator-prey interactions), and monitor the recovery. Of the five shelf and offshore teleost species (POAMP Table 4.4-9), three examples cover all species from the genera Seriola spp. (4 species GOM), Coryphæna spp. (1 species GOM), and Thunnus spp. (7 species global distribution). There are limited published research on 5. Fasciella, S. ventriosus, and C. japonicus; thus, conducting a review of literature and even collecting biological samples might be a possibly ineffective. Therefore, we propose to gather historical fishing conditions, landings, size composition and ephemeral environmental events available from difficult to obtain reports, interviews, files, and particularly newspaper articles. This historical information can provide insights into abundance estimates and environmental perturbations such as, algal blooms, weather and upwelling/oceanographic induced kills, and adverse events. In addition, for these species, novel approaches are needed for collecting biological sample, size and current sampling programs have not produced substantial information. Novel approaches would include carcass collections, observers on recreational vessels, and fishery independent surveys specifically targeting these pelagic species. This proposal's success requires the cooperation from state and federal fishery dependent sampling programs and fishery independent surveys, and new sampling schemes and surveys. Data Entered: May 19, 2017.</p>	Yes	No	No	No	No	No	No	No	No	No	No	No	\$ 20,000,000.00	\$ -	-
Eco Restoration	5702	8/1/2017	<p>NOAA Project ID#13524. The proposed project aims to apply an integrative approach, using a combination of traditional (e.g., numerical and volumetric) quantification of stomach content through visual identification methods and novel approaches (e.g., genetic identification of stomach contents, compound specific isotope analysis), to improve our understanding of trophodynamics in the northern Gulf of Mexico. Project efforts will maximize cost-effectiveness by collecting samples from ongoing surveys funded by the Southeast Area Monitoring and Assessment Program and SEAMAP. Project results will then be incorporated into new and existing ecosystem models to explore direct and indirect linkages among key species and trophic guilds, as well as assess ecosystem-level impacts of various management alternatives and environmental perturbations (e.g., oil, trawls, hypoxia, oil spills). As the output of the project, all existing trophodynamics data for the northern Gulf of Mexico will be compiled. Depending on the quantity of data available for a given species or life history stage, analyses will include species accumulation curves to assess how effectively overall diet composition has been characterized, as well as additional analyses to assess the temporal and spatial stability of the relative importance of key prey taxa. Results from these analyses will be used to prioritize the subsequent collection and processing of stomach contents. Stomach contents will primarily be collected opportunistically through SEAMAP research surveys. The information will come from summer and fall groundfish trawl surveys, which capture several hundred species of fish annually. Additional samples, primarily of managed fishes, will come from bottom longline and vertical longline surveys, although focused sampling efforts may be required for certain taxa and/or life history stages. A subset of stomach contents will be processed using traditional visual-based identification techniques. Supplemental and support of stomach content analyses is proposed through the use of compound specific stable isotope analysis. This approach provides greater precision in determining trophic level and likely enable the identification of basal resources (i.e., phytoplankton vs. benthic). Diet data will be integrated into existing models (i.e., the eastern Gulf of Mexico, Atlantic) and used to develop new models (i.e., in the western Gulf of Mexico). The proposed research will fill significant information gaps by determining food web structure and dynamics, key species linkages, and predator-prey relationships in order to develop ecosystem models to enhance stock and community assessments, therefore, aiding in the MAM approach to the restoration effort. Data Entered: May 19, 2017.</p>	Yes	No	No	No	No	No	No	No	No	No	No	No	\$ 2,000,000.00	\$ -	-
Eco Restoration	5703	8/1/2017	<p>NOAA Project ID#13546. Sperm whales and Bryde's whales in the Gulf of Mexico were injured during the Deepwater Horizon event. Both species are also exposed to a suite of anthropogenic stressors (e.g., shipping traffic and commercial fisheries). Reducing impacts to these whales will be to effectively restore information on both acute and chronic exposure to stressors and how they influence population dynamics and species recovery is a key data gap needed for adaptive management and selection of most effective restoration techniques. The Population Consequences of Disturbance (PCoD) model is an effective impact assessment framework for evaluating the effects of acute and chronic impacts of noise and other stressors on marine mammal populations. Key parameters for the PCoD model include 1) stage-specific survival rates, 2) mature and reproductive rates, 3) metrics of disturbance caused by anthropogenic stressors, and 4) metrics of the bioenergetic cost of disturbance responses. To develop an accurate PCoD model, directed studies to measure the effects of stage-specific population parameters are needed for sperm whales and Bryde's whales in the Gulf of Mexico or those populations are distinct from other global populations that may limit the relevance of population parameters derived from those regions. This project includes a series of large vessel cruises to collect data to estimate these key parameters. Photo-identification capture-recapture studies will be conducted to estimate survival rates. Biopsy samples will be collected from animals to collect tissues to measure pregnancy hormones, stress hormones, fatty acid profiles, and other parameters. Photogrammetry from unmanned aerial systems will be used to derive visual metrics of animal health. Finally, passive telemetry tags will be deployed to measure feeding behaviors, dive profiles, and swimming energetics. Data collection, model parameterization and model implementation, and the elicitation of expert opinion will be guided by a working group including experts in large whale health, population biology, and PCoD model implementation. The outcome of this project will be a well-parameterized model that can provide a quantitative basis for planning restoration projects and environmental impact assessments and improve the capability to restore these injured species by identifying key factors that limit population growth and recovery. Data Entered: May 19, 2017.</p>	Yes	No	No	No	No	No	No	No	No	No	No	No	\$ 4,500,000.00	\$ -	-

Eco Restoration	5704	8/2/2017	NOAA Project DMI3528: Primary objectives are to map and characterize habitats of the U.S. Gulf of Mexico (GOM) from the continental shelf break seaward to less than 10m depth as well as determining species associations and community structure. Modern technology supported by statistically based groundtruthing will be used to supply cost effective determinations of bathymetry and habitat data in U.S. GOM from depths of 500m and shallower. An estimated 10-15% of U.S. waters will be mapped to 500m depth by 50m transects spaced approximately every 50km throughout the GOM. Little of the GOM has been mapped with enough resolution to accurately locate and quantify the hard/soft bottom habitats as well as artificial reefs. Accurate and comprehensive habitat maps are essential for ecosystem based fisheries management and marine spatial planning. This project will be primarily used to assess project effects to catalog and prioritize mapping in the GOM as well as mapping and sampling OTU data gaps and provide region wide assumptions about fisheries habitat, species associations, and community structure. In response to the DWH oil spill, the Trustee determined that injuries to reef fish communities occurred, but were not quantified (PDMR 5.5.1.4). Enhanced fishery independent data collection methods, such as increased spatial and temporal efforts for fishery independent surveys are recommended as part of the Monitoring Plan. It is also noted that SeaHabit associations could improve restoration outcomes. SeaHabit information that increases our understanding of diversity of organisms in geography over time, ecosystem functioning and trophic relationships can be used to inform restoration project planning, design, and evaluation. This project intends to bridge gaps in knowledge on the distribution of offshore habitats and their species associations. Community structure information will be critical in expanding ongoing and future fishery independent surveys to allow for pre- and post-stratification. By refining surveys by habitat, variance will be greatly reduced for indices of abundance and lead to more accurate stock assessments. A suite of advanced remote sensing technologies will be utilized, including towed and buoy-mounted dual and synthetic aperture radar, multi-beam echosounders, ROVs, and other optical sensors. Mapping the GOM has increased in the last decade; however, there has not been a unified large scale effort across the entire depth range of the continental shelf. This project intends to 1) expand upon current and previous mapping efforts from nearshore to 500m throughout the U.S. Gulf, 2) characterize essential habitats for benthic organisms and their habitat associations, 3) quantify and characterize estimates of hard bottom and artificial habitats. Imagery will be used to produce classifications which will be used to monitor Marine Ecological Classification Standard (MECS) in all cases of surface and subsurface mapping, and will be taken to avoid duplication of previous efforts. Deliverables will include completed high resolution habitat maps and GIS products, scalable habitat information by region, groundtruthing imagery, species/community structure information, and online data portals to access and visualize data products. Initial and ongoing monitoring of these systems will support fishery management strategies and provide more accurate information on landscape scale habitat distribution patterns as well as connectivity throughout the GOM. Stock assessments with detailed information regarding amount, distribution, and contributions of various types benthic habitat will reduce uncertainty as well as allow for more efficient and accurate population surveys. Baseline information will allow for pre- and post-analysis of habitat change due to events such as hurricanes, contaminant spills, coastal erosion, and restoration activities as well as informing decision-making processes of the latest research findings. Date Entered: May 19, 2017 Date Edited: May 22, 2017	Yes	Yes	No	No	No	No	No	No	No	No	\$	20,000,000	\$	-	-	
Eco Restoration	5705	8/2/2017	Broad-scale Habitat Mapping and Monitoring of the Northern Gulf of Mexico	NOAA Project DMI3591: Coastal and Bay, Sound and Estuary (BSE) populations of bottlenose dolphins in the Gulf of Mexico (GOM) are at risk from natural and man-made threats, such as bottomless pollution runoff, and increased freshwater exposure, that can cause illness and death and limit recovery. This project aims to develop and implement a health assessment program to identify risks for illness and death for these dolphin stocks and mitigate potential impacts. This project will coordinate with federal and state agencies to identify new capabilities that need to be developed to improve the marine mammal health assessment community to help identify causes of illness and death in free-ranging coastal and BSE bottlenose dolphins and identify knowledge gaps. Specifically, this project will develop and implement a bottlenose dolphin health assessment program to identify illness and death risks including impacts from natural (e.g., stranding, toxicoparasites, botulism, etc.) and man-made threats (e.g., chemical and oil spills). This project will develop and implement a study plan for live capture/release health assessments of free-ranging bottlenose dolphins by establishing both case and control study sites to evaluate population level health changes over time and emergence of new threats and diseases. Additionally, this project will work with the marine mammal conservation medicine program to assess and implement future health intervention techniques, such as immunization vaccination, development of rapid point of care tests, improved real-time diagnostic capabilities such as remotely deployed electrocardiogram (ECG) tags to detect heart abnormalities, and deployment of satellite sensors in remote satellite tags to detect real-time satellite fluctuations, etc. By addressing these new techniques this project will also enhance the capabilities of marine mammal health assessment research to identify causes of marine mammal illness and death and evaluate the impacts of these threats including fresh water disease. By identifying, monitoring, and mitigating natural and man-made threats to bottlenose dolphins this project could minimize the number of animals that become ill or die due to these threats and lead to increased recovery of coastal and BSE bottlenose dolphins. Date Entered: May 22, 2017	Yes	No	No	No	No	No	No	No	No	No	\$	\$	\$	-	-
Eco Restoration	5706	8/2/2017	Region-wide bottlenose dolphin health assessment program	NOAA Project DMI3593: Marine mammal populations in the Gulf of Mexico (GOM) are at risk from natural and man-made threats that can cause illness and death and limit recovery. This project would develop and implement a region-wide marine mammal conservation medicine and health assessment program to identify risks for illness and death for these species and mitigate potential impacts. This project will coordinate with federal and state agencies to identify new capabilities that need to be developed by the marine mammal stranding network (MAMSN) and to partner with health assessment researchers to help identify causes of illness and death in both stranded and free-ranging marine mammals and identify knowledge gaps. Specifically, this project will develop a working group to identify GOM specific risks for illness and death, including impacts from natural (e.g., stranding, toxicoparasites, botulism, etc.) and man-made threats (chemical and oil spills, etc.). This project will develop and implement a health assessment program to identify illness and death risks including impacts from natural (e.g., stranding, toxicoparasites, botulism, etc.) and man-made threats (e.g., chemical and oil spills). This project will develop and implement a study plan for live capture/release health assessments of free-ranging bottlenose dolphins by establishing both case and control study sites to evaluate population level health changes over time and emergence of new threats and diseases. Additionally, this project will work with the marine mammal conservation medicine program to assess and implement future health intervention techniques, such as immunization vaccination, development of rapid point of care tests, improved real-time diagnostic capabilities such as remotely deployed electrocardiogram (ECG) tags to detect heart abnormalities and/or tool/tags for remotely collecting blood for diagnostics. Additionally, this project will establish regular training sessions and workshops to train the MAMSN in advanced health monitoring techniques and capabilities, and disseminate information about causes of illness and death and new health monitoring techniques in marine mammals with GOM partners. Lastly, this project will develop and implement a study plan for region-wide live capture/release health assessments of free-ranging cetaceans, including pelagic species using special offshore capture techniques (trap-netting), by establishing both case and control study sites to evaluate population level health changes over time and emergence of new threats and diseases. By identifying, monitoring, and mitigating natural and man-made threats to marine mammals this project could minimize the number of animals that become ill or die due to these threats and lead to increased recovery of marine mammal species. Date Entered: May 22, 2017	Yes	No	No	No	No	No	No	No	No	No	\$	\$	\$	-	-
Eco Restoration	5710	8/2/2017	Marine Mammal Conservation Medicine and Health Assessment Program	NOAA Project DMI3689: Through this project, NOAA intends to recover submerged derelict/abandoned fishing gear from popular land heavily used shore-based fishing locations. Derelict gear, particularly monofilament fishing line, that is accidentally or intentionally left in the environment by recreational fishers is a persistent threat to sea turtles. This is the most commonly documented marine debris found on stranded sea turtles in the GOM. This abandoned fishing gear significantly impairs entanglement of sea turtles and leads to accumulation around areas used for shore-based fishing. Project locations would be selected and prioritized based on intensity of use for recreational fishing, known co-location with sea turtles (e.g., foraging areas), and frequency of entanglement/incision-related strandings. This project could potentially also benefit marine mammals. This project could be scaled based on available funds. Estimated 75K/yr. Date Entered: May 22, 2017	Yes	No	No	No	Yes	No	No	No	No	\$	225,000.00	\$	-	-	-
Eco Restoration	5711	8/2/2017	Removal of derelict fishing gear around popular shore fishing sites (bars and artios)	NOAA Project DMI3606: This project aims to develop new and enhance pre-existing technical and infrastructure capabilities within the Gulf of Mexico (GOM) region to respond to marine mammal disasters from natural and anthropogenic causes. First, an information gathering and coordination phase will be conducted, working with federal and state agencies to determine existing and identify new capabilities to be developed by the stranding network and its partners to identify impacts of disasters on marine mammals and improve rapid response to those threats. Phase 1 will involve developing new partnerships and enhancing existing ones to address gaps identified in Phase 1. Both Phase 1 and 2 will involve development of guidance documents, including response and standardized response protocols. Phase 2 will be to train the stranding network through workshops in the new standardized response techniques and capabilities. The stranding network will also receive information about newly identified threats and the efficacy of response options to those threats. Finally, in Phase 2 we will work with partners to disseminate information throughout the GOM related to the standardized response techniques and capabilities, and continue the coordination with those partners. Specifically, the project is the development of an overarching disaster response program, focused on improving effective and efficient responses to marine mammal stranding and health events or disasters. This program would be implemented across the GOM, and benefit all stocks of marine mammals by increasing and improving the effectiveness of marine mammal response during a disaster in the GOM. One focus of the work would be on planning and preparing for future oil spills, identifying vulnerability and response planning needs for spills of different types of products, different quantities of products, and different locations, such as those in the far offshore environment. Once needs were identified, the second focus would be on developing a response plan to inform and guide the marine mammal stranding network and response partners, and integration of those planning and protocol documents into existing efforts such as Area and Regional Contingency Plans. Not limited to oil spills, we also envision the need for responses to mitigate impacts to marine mammals from natural disasters such as hurricanes, freshwater inundation events, harmful algal blooms, and other types of natural and anthropogenic crises that may be identified in Phase 1 and 2 of outreach and communication with our partners. As response plans are developed, we will implement the necessary training, includes drills and exercises, to help test the plans and then iteratively improve them as needed. The plans, partnerships, protocols, training and drills developed in this disaster response program will lead to a more timely and effective responses to marine mammals following a disaster, which will improve survivorship of animals during and following these events. Date Entered: May 22, 2017	Yes	Yes	No	No	No	No	No	No	No	\$	\$	\$	-	-	
Eco Restoration	5712	8/2/2017	Marine Mammal Disaster Response Program for the Gulf of Mexico	NOAA Project DMI3613: Vessel collisions are a leading source of anthropogenic mortality for many marine mammal species. Unfortunately, a large portion of vessel strikes mortalities go undetected or unreported when they occur in remote areas or when carcasses drift out to sea. This stranding records an minimum estimate of ship strike occurrences (Janak & Storr 2004). By identifying "hot spots" areas where vessel collisions are most likely to occur and implementing mitigation measures in those locations, the likelihood of interactions between vessels and marine mammals could be reduced at the source. The goal of this project is to conduct a risk assessment to identify vessel interaction hot spots to target mitigation and restoration efforts. The risk assessment will utilize previously developed characterizations of vessel traffic data and marine mammal distribution and incorporate spatial and temporal factors. The risk assessment will also consider species specific avoidance behaviors to identify sensitive, more vulnerable species or greater risk of vessel strike. As hot spots are identified through the risk assessment exercise, mitigation measures can be implemented to help reduce the risk of vessel collisions in those areas. The identification of these areas may also lead to be reevaluated as the marine mammal distribution data becomes readily available to incorporate into the risk assessment. This project can increase the survivorship of marine mammals in coastal and offshore habitats by proactively planning, implementing, and managing mitigation measures to reduce the likelihood of a vessel interaction in a high priority location. Date Entered: May 22, 2017	Yes	Yes	No	No	No	No	No	No	No	No	\$	300,000.00	\$	-	-
Eco Restoration	5713	8/2/2017	Mitigating vessel strike mortality through the identification of vessel interaction hot spots	NOAA Project DMI3618: Health assessments, necropsies, and photo-identification body condition data can help to identify health threats to marine mammals and provide links to potential environmental and anthropogenic stressors. However, if the type of information collected varies among research groups and stranding networks between animals and locations, it is difficult to make general, region-wide comparisons among cases. The goal of this project is to develop a standard protocol for the MAMSN and photo-identification program to identify, characterize, and document evidence of vessel struck animals, such that they can be compared and analyzed on a region-wide scale. The protocol would include watercraft forensic analysis to determine the types of vessels that are most commonly interacting with marine mammals. Standardized data collection of wound characteristics (i.e. depth, length, location, etc.) would help to identify information about the vessel, vessel type, and vessel speed that interacted with the animal. This project will support consistency, efficiency, and coordination of data collection and analysis of vessel strike animals in the coastal and offshore waters of the Gulf of Mexico. This project will increase marine mammal survivorship through an increased understanding of the nature of interactions between vessels and marine mammals that aid in mitigation and restoration techniques. Date Entered: May 22, 2017	Yes	Yes	No	No	No	No	No	No	No	No	\$	600,000.00	\$	-	-
Eco Restoration	5714	8/2/2017	Develop standardized protocols to characterize vessel collisions with marine mammals	NOAA Project DMI3620: The Marine Mammal Stranding Network plays a critical role in diagnosing illness and cause of death in stranded marine mammals to better understand population health. This includes identifying evidence of human interaction, outbreaks of diseases, and new emerging threats to marine mammals. Currently, the only stranding data available in a high quality or national database are the Real-time Assessment (RTA) data, that describe the basic occurrence information of the stranding, but not the cause of stranding or death. More detailed health data aspects of a stranding case are typically held at each stranding network's individual facility, in a variety of formats including individual facility databases. These data are more useful if they are available to managers and marine mammal health experts to evaluate patterns across areas/regions, determine emerging or ongoing threats, and develop potential mitigation measures or interventions. Thus, it is important to develop and maintain regional databases to manage marine mammal health data and make it readily accessible for those who may need to use it. There is currently no RTA database (GOMRT) development under the WFFW Gulf Environment Benefit Fund in partnership with NOAA to house and visualize marine mammal health data from the Gulf of Mexico but there are limited fields currently programmed in the database and few funds to support the database long term. This project would increase access to information from stranded marine mammals by supporting regional databases (such as the GOMRT) and personnel to enter, GOMRT data, and maintain databases. These data could be used to provide a better long-term understanding of the causes of marine mammal illness and death in the Gulf of Mexico to mitigate natural and anthropogenic threats. Date Entered: May 22, 2017	Yes	Yes	No	No	No	No	No	No	No	No	\$	\$	\$	-	-
Eco Restoration	5715	8/2/2017	Increase access to health information from stranded marine mammals by supporting regional databases	NOAA Project DMI3617: Physical examination of marine mammals through live capture and release health assessments, necropsies of stranded animals, or photo-identification body condition data can help to identify threats to marine mammals and provide links to potential environmental and anthropogenic stressors. Vessel interactions are a type of anthropogenic stressor that can be recognized on marine mammals from physical examination. Typically, interactions will result in serious injury or mortality due to either penetrating injuries from propeller cuts (the severity of which depends on the species, the individual, the location of the cut, and the depth of penetration) or from blunt trauma from colliding with the hull of a vessel (likely to bone fractures, organ damage, and/or severe hemorrhaging) (Anderson et al. 2008). Vessel interactions are more likely to occur in areas where marine mammal distribution patterns overlap with high vessel traffic densities. This project focuses on an alternative method to identify vessel interaction hot spots: health assessments and photo-identification data to quantify health stressors across areas/regions. Data collected from these animals tend to be more prevalent and congregated. This analysis will not only help identify specific hot spots and/or type of habitat vessel collisions are more likely to occur, but also quantify the number or percentage of animals with vessel collision injuries. This project serves as a baseline of pre- and post-restoration efforts. The location of strandings data, health assessments, and photo-identification can be identified for the past 5 years and reviewed after mitigation efforts have been implemented, such that this project is intended to be a multi-year effort continually being updated. Continual data entry, maintenance, and analysis of a region-wide boat strike database will help to keep this effort updated, such that vessel collision hot spots may be newly identified, not defined, or eliminated. This project will enhance marine mammal survivorship by further understanding specific locations or habitats where vessel collisions occur and proactively implementing mitigation measures to reduce the likelihood of an interaction. Date Entered: May 22, 2017	Yes	Yes	No	No	No	No	No	No	No	No	\$	450,000.00	\$	-	-

Eco Restoration	5728	8/10/2017	NOAA Project ID#13555: Benthic fauna provide essential ecosystem services, including nutrient cycling, biomass production, and sediment bioturbation, and a loss of benthic biodiversity has been associated with an equivalent decline in ecosystem services. Sediment macro- and meiofauna (benthic) represent important indicators of natural and anthropogenic disturbance primarily due to their sedentary lifestyle and their rapid response to change, thus, examining these communities has proven useful in impact assessments of coastal and deep-sea communities. For example, in the wake of the Deepwater Horizon oil spill, immediate impacts were detected in benthic communities including sediment adjacent to deep-sea corals. Annual collections of sediment adjacent to the impacted corals are tracking changes in these communities with time since the spill (2010-2016). While long-term impacts to these habitats are unknown, recovery rates are predicted to be slow with Deepwater Horizon contaminants remaining in biologically active sediments for many years. Coral-associated sediments contain benthic communities that differ from other soft sediments in the GOM, and thus recovery trajectories for these locations may differ as well, making regional generalizations that include the regional trajectory for recovery of communities, will be unable to apply meaningfully to these habitats. This research will characterize infaunal community structure at several deep-sea coral sites. Sediment cores will be collected adjacent to corals to assess infaunal abundance, diversity, evenness, and composition in ecosystems affected by different stressors. Sediment also will be processed for total organic carbon and nitrogen, hydrocarbon and metal concentrations, particle size analysis and redox conditions. Similarities and differences in benthic communities using non-metric multidimensional scaling ordination techniques will be made between sites in order to estimate the percent community dissimilarity/similarity and the taxa responsible for differences among coral sites. REACT and DSTM11 multivariate statistics will be used to analyze and model the relationship between the faunal assemblage data and the environmental variables. This work will provide traditional taxonomic data (i.e. comparable to existing datasets) as well as impact and non-impacted deep-sea coral sites, and regionally for northern GOM soft-sediments, and natural hydrocarbon seeps including the environmental parameters for these habitats. This work also links to proposed research examining the environmental sequencing of sediment communities and, develop rapid response techniques and advanced technologies to enable rapid assessment of deep-sea coral community ecology (ISCS-Deepseacorals). These comparisons will quantify community changes using the soft-sediment ordination, and determine whether these systems have recovered comparable community structures near healthy reference areas. Assessing the community composition and biodiversity at selected deep-sea coral sites will provide baseline data for community response to perturbations and future restoration projects. This call is for an effort directly related to the number of sites examined and temporal frequency of collections. Initially, this work will investigate 3 impacted and 3 healthy deep-sea coral environments where baseline information exists, on 1 cruise/year for 5 years. Other costs will include expenses for sample processing and data analysis. Additional funding would allow this work to include additional monitoring sites, including areas adjacent to coral transplants and within protected areas, which would require additional support. An RDV is required, but this RDV operations can be conducted in concert with other studies examining these environments, CO2, including expenses: \$20M total for 5 years. Date Entered: May 22, 2017. Date Edited: May 22, 2017	Yes	Yes	No	Yes	No	No	No	No	No	No	\$ 10,000,000.00	\$	
Eco Restoration	5730	8/16/2017	NOAA Project ID#13558: This project uses novel satellite technology to provide classified habitat data throughout approximately 40 meters water depth across the Gulf of Mexico. Because satellites pass over any location regularly, this unique project will create a time series of spatial habitat data thus allowing rapid identification of where and when change occurs. Such data are invaluable for effective, targeted restoration planning, project monitoring, and obtaining how the region responds to a variety of pressures. Many open ocean fish, invertebrates, marine mammals, and turtles migrate during disturbance dependent on both nearshore and estuarine habitats. Indeed, central to many restoration planning discussions leading to the GOMRP were the linkages between offshore and nearshore or estuarine habitats. This is because the most viable and pragmatic open ocean restoration often has a nearshore or estuarine focus. However, nearshore and estuarine habitats were also injured by the Deepwater Horizon oil spill and are further degraded by channelization, energy development, subsidence, and sea level rise. These processes will present challenges to the foreseeable future. Mitigating such losses or even recovering them - would be most effectively achieved if one understands how and where change is most rapid. Advanced satellites now offer the capability to rapidly collect bathymetric and geological habitat data to water depths as deep as forty meters. This capability means that broad-scale maps of habitat and bathymetry covering large swaths of the continental shelves can be developed quickly and efficiently. Further, repeated satellite passes over any given area allow one to measure habitat and landform change through time. These techniques offer distinct advantages in coverage and speed over the traditional geographic, ground-truth data collection. The work will provide refined habitat data for the Gulf of Mexico, and will include agreements in coordination on models that all rely on bathymetric data, and offer a means to monitor change in critical habitat from 40 meters up into terrestrial environments across the Gulf of Mexico. This project will use recent developments in satellite and classification analysis to provide habitat categorized maps of the coastal zone (inshore of the sparrows out) to a water depth of 40m depending on water quality). The satellite-derived time-series of habitat data will be examined to identify those areas that are stable and those that are undergoing rapid change in elevation of habitat type. The information will be useful for state planning, geoenvironment, restoration personnel preparing for marsh and seagrass projects, and biologists interested in the habitats of fish, cetaceans, and turtles. Date Entered: May 22, 2017	Yes	No	No	Yes	No	No	No	No	No	No	\$ 5,000,000.00	\$	
Eco Restoration	5731	8/16/2017	NOAA Project ID#13629: There is still much to learn about large whale species such as sperm whales and Bryde's whales in the offshore waters of the Gulf of Mexico. Information about their distribution, movement patterns, habitat use, feeding patterns, and population dynamics can help to evaluate species occurrence with respect to natural and anthropogenic disturbance. This information is also needed to assess and predict the impacts of these activities on the species. A large effort to collect this type of information will be conducted through GOMAPPS. However, GOMAPPS is projected to collect data for three years. This goal of this project is to augment GOMAPPS and continue data collection of large whale species in the offshore waters of the Gulf of Mexico. Due to the life history patterns of these large whale species, it often takes significant time to be able to distinguish such changes in their population status. This continued data collection is particularly important since sperm whales and Bryde's whales were two species that experienced high mortality rates after the DWH oil spill. It is crucial to the survivorship of these species to continue research efforts beyond the scope of GOMAPPS and continue to monitor their population status, particularly due to the high amount of anthropogenic activities occurring in the Gulf of Mexico. Date Entered: May 22, 2017	Yes	No	No	No	No	No	No	No	No	No	\$	\$	
Eco Restoration	5732	8/16/2017	NOAA Project ID#13563: Brydeid* whales in the northern Gulf of Mexico are an extremely small, isolated population with fewer than 50 individuals confined primarily to the northeastern Gulf. They were injured by the DWH oil spill with 48% of their known habitat impacted by surface oil. Due to the small population size and high injury due to the spill, restoration actions to protect Gulf of Mexico Brydeid* whales are urgently needed. The confirmed source of mortality is strikes by large vessels. Behavioral data collected from a telemetry tag deployed in 2013 demonstrated that these whales frequently occur near surface waters and are vulnerable to ship strikes, particularly during night hours. In addition, it is probable that noise resulting from the transit of large vessels can result in behavioral change or other disturbances that can influence behavior and population dynamics. In this project, we propose to evaluate the level of risk vessel strikes in the Brydeid* whale habitat and evaluate potential strategies to reduce fatal vessel strikes and vessel noise impacts and vessel noise impacts. This project will include vessel noise measurements and vessel noise data, and will be used to evaluate vessel classes, speeds, and traffic patterns and the degree of overlap with Brydeid* whale to identify high risk areas. This information can then be used to identify possible alternative vessel routes that could be evaluated to determine if it is possible to reduce risk to whales while maintaining safety of navigation. Similar projects have been successfully conducted to reduce risk to North Atlantic right whale and blue whale. Reduced vessel speed decreases the mortality risk of vessel strikes when they do occur. Mortality rates for North Atlantic right whales are reduced when large commercial vessels travel at speeds less than 10 knots. Thus, we propose to evaluate current vessel speeds and identify regions of highest risk to Gulf of Mexico Brydeid* whales. We will build upon existing and anticipated data collected on the spatial distribution and habitat requirements of these whales. This project will evaluate the risk of vessel strikes and explore alternative strategies to reduce vessel strikes to support restoration. Date Entered: May 22, 2017	Yes	No	No	No	No	No	No	No	No	No	\$ 500,000.00	\$	
Eco Restoration	5733	8/16/2017	NOAA Project ID#13568: This plan addresses aging of deepwater and mesophotic corals to assess injuries to natural resources, stemming from the May 2010 Macondo Well blowout that led to the Deepwater Horizon oil spill. Targeted reefs include Alabama Alps Reef and Roughneck Reef, both large high-relief platform reefs within the Pinacoffs reef tract, northeastern Gulf of Mexico (NEGOM), Yellowtail Reef, a lower relief Pinacoffs Trend reef near Roughneck Reef, as well as Coral Tree Reef (CTR) located on the West Florida shelf edge, and Madison Swanson South Ridge (MSR). Information on growth rate and life spans of mesophotic deep-sea (65 m) and deepwater coral (100 m) and deepwater coral is important for understanding the vulnerability of these organisms to both natural and anthropogenic perturbations, as well as the likely duration of any observed adverse impacts. Results from Proulx et al. (2011) indicate that deep-sea black coral longspines (S. have been growing continuously for at least the last two millennia, and results from Proulx et al. (2012) suggest consistent life spans of over 600 years are possible for the deep-sea octocoral Paramuricea sp. These demonstrated slow growth rates of deep-sea corals suggest that it may take centuries for certain deep-sea coral species to recover from negative impacts. However, there are no published values for growth rates or ages for azooxanthellate gorgonian mesophotic corals from the Gulf of Mexico. Therefore, information on growth rates and life spans is essential for understanding the life history and ecology of these habitat forming corals. Gorgonian octocorals such as Paramuricea rely on a surface-derived food source (i.e., particulate organic carbon) rather than sedimentary or dissolved carbon (Duffell et al., 1995; Roub et al., 2006). As a result, the SAC-derived age estimates of gorgonian corals are assumed to be unaffected by feeding upon old resuspended sedimentary carbon because these organisms acquire their carbon from surface-derived or gain matter after rapid transport to depth (Roub et al., 2009). Therefore, robust SAC-derived chronologies and known surface ocean SAC reservoir age constraints in the Gulf of Mexico provide reliable calendar ages to the collection of gorgonian mesophotic corals. The objective of this analysis plan is to use both ¹⁴ C/ ¹³ C/ ¹² C radiocarbon over the last approximately 60 years and conventional ¹⁴ C ages (based on the known radiocactive decay rate) calibrated with reservoir corrections to calculate calendar ages, as well as growth rates for mesophotic corals collected in the northeastern Gulf of Mexico. Specifically, the objective is to assess coral ages of mesophotic gorgonian octocorals in genera Paramuricea, Swella, Bredia, and Paramuricea and mesophotic black corals in genera Sclerophyllia and Antipathes. The methodology for preparing, radiocarbon dating, and determining age and growth rates for the coral samples is described in detail in Proulx et al. (2011, 2014) where this technique has been used successfully with samples collected in the Gulf of Mexico. A cross-sectional disc will be prepared from the base (trunk) of each coral specimen. A transect across this disc will be sampled and analyzed to include pulp, tissue layer, center (trunk), middle and outer portions across the radial transects. Therefore, when sufficient skeletal material is present, each coral specimen will yield approximately 1 radiocarbon measurement. This information will be used in the calculation of maximum ages and growth rates of a particular specimen. In addition, tips and polyps from the coral specimens will be analyzed in order to capture the radiocarbon signal in the most recently accreted material. Each subsample of skeletal and tissue material will be prepared for Accelerator Mass Spectrometry (AMS) radiocarbon (¹⁴ C) dating at the Radiocarbon Laboratory at UC Irvine (RCLAMS). Samples will be pretreated with a deionized (DI) water rinse three times and a Date Entered: May 22, 2017	Yes	No	No	No	No	No	No	No	No	No	\$ 70,000.00	\$	
Eco Restoration	5734	8/16/2017	NOAA Project ID#13570: This project involves developing a mobile outreach and education exhibit that would travel throughout the Gulf States to educate residents and visitors about dolphin conservation issues. The audience includes recreational fishermen, motorboat vessel operators, and the general public and non-restoring their behavior. By educating these audiences and distribute outreach materials at fishing piers, marinas, and events, this project will: Reduce injury and mortality to bottlenose dolphins from hook and line fishing gear by educating fishermen about ways to avoid interactions with dolphins while fishing and provide them with Dolphin Friendly Fishing Tips; Increase bottlenose dolphin survivor through better understanding of cause of illness and death as well as early detection and intervention of anthropogenic and natural threats because this audience would know how to help a stranded, injured or entangled marine mammal and to report these animals to the appropriate stranding network immediately; Reduce injury, harm, and mortality to bottlenose dolphins by reducing illegal feeding and harassment activities because audiences will better understand the harm and consequences of these activities. They will learn how to recognize feeding behavior that is illegal and also how to responsibly view dolphins in the wild while reducing injury and mortality of marine mammals from vessel collisions by educating mariners about marine mammal viewing guidelines and precautions they can take to avoid vessel strikes. A large van would be purchased and equipped with outreach, sea catching dolphin graphics and boat educational materials. Not only would this attract people during outreach but the van would also serve as a vehicle without that has the potential to reach thousands when traveling throughout the Gulf States. The inside of the van would be a customized exhibit illustrating and educating audiences about the topics above. The budget includes funds to purchase and customize the vehicle, as well as funds for salary of an educator/driver, fuel, per diem (food/housing), outreach materials, and insurance & maintenance of the vehicle for at least 3 years. Date Entered: May 22, 2017	Yes	Yes	No	Yes	No	No	No	No	No	No	\$ 500,000.00	\$	
Eco Restoration	5739	8/16/2017	NOAA Project ID#13579: Bycatch in fishing gear is a leading source of mortality among marine mammals and one of the main threats identified for bottlenose dolphins in the Gulf of Mexico (Phillips & Roul 2014; Read et al. 2006). Dolphins are captured in shrimp trawls or entangled in the bay line, with hundreds of mortalities estimated per year in the Gulf of Mexico either trawl portion of the fishery (Sokolov et al. 2015, 2016). Dolphins often interact with gear by both pulling and being towed. Interactions with the shrimp trawl net, foraging within the trawl and net, and rubbing against the foraging buoy are key risks. For fishermen, interactions may cause frustration over potential lost catch and damaged gear. For dolphins, interactions may cause entanglement/capture in the trawl and bayline, and potential interaction by fishermen (Viel 2015; DOI 2012). The nature of dolphin-trawl interactions includes gear type (e.g. other or shrimp trawl), gear configurations and fishing practices, location, and dolphin behavior. Therefore, identifying factors that increase the risk of dolphin entanglement/capture is critical to informing conservation measures that will reduce related interactions and bycatch in the gear (Sokolov et al. 2015; Hayway & Foster 2015). This project will conduct research to: (1) fully characterize the risk factors for dolphin entanglement/capture in both shrimp and other trawls and other sources of entanglement (i.e. fisherman-retrievable) and (2) explore ways to reduce these risk factors (i.e. deep-sea fishing gear from trawl net). This project will collaborate with commercial fishermen by chartering four skimmer and four other trawl vessels from different ports to document and characterize dolphin interactions with the gear in various locations. Underwater imaging devices (e.g. DIVERCAM, IMU) will be used to image bottlenose dolphin interactions with the gear. Along with detailed observations of dolphin behavior including the number of animals observed per tow, when the animals appear during the fishing process, and if possible, the individual dolphin identities. Based on identified risk factors and types of interactions, observation measures will be identified to evaluate and implement. This project will enhance survivorship and resiliency of bottlenose dolphins by identifying, evaluating, and implementing conservation measures to reduce dolphin bycatch and related mortalities. Date Entered: May 22, 2017	Yes	No	No	No	No	No	No	No	No	No	\$ 550,000.00	\$	

Ecological Restoration	5768	1/24/2018	non-destructive removal of oil/gas infrastructure	NOAA Project ID#13746: Rather than exploding obsolete oil and gas infrastructure, with the concomitant death of fish, turtles, etc., these structures can be cut and either left in place or removed. It is more costly than blowing up rigs but it has the direct restoration benefit that the fish that would otherwise have been killed are not killed. Date entered 10/12/2017	Jackson	Yes	No													\$	\$	-					
Ecological Restoration	5769	1/24/2018		NOAA Project ID# 13491: The Gulf menhaden is forage for a wide diversity of fish, bird, and marine mammal populations that inhabit the Gulf of Mexico. Its estuarine, wetlands, and tributaries. Annually, the purse seine fishery targeting this species removes about 1 billion pounds (450,000 metric tons, mt) of fish biomass from the ecosystem. While that biomass is dominated by gulf menhaden, substantial quantities of commercially, recreationally, and ecologically important species are also retained as bycatch. In addition, deleterious fishery interactions with protected species occur, such as with bottlenose dolphins and sea turtles. Hundreds of dolphins of larval menhaden (and relatives) were likely killed as a result of the DWH oil spill (PMSP 2017). This project seeks to produce ecosystem benefits via a short-term, voluntary, company specific quota program for a specified period. Proposal is \$600,000. Future expected annual landings beyond 300,000 metric tons for a 5 yr period, which would represent about a 3% decrease in total catch (i.e., 2002-2008) and would reduce 2754 mt of bycatch. The two member state reduction companies to lead themselves to a voluntary total allowable catch (TAC) of 300,000 metric tons; and (2) development and implementation of a multi-species fishery monitoring and assessment program with which to quantify impacts. Compensation would be allocated between the two companies (Dodge Protein and Dapula Bros) for 2018-2020 landings. The compensation would be split equally between the two companies for the current quarters, as the companies would not have operating costs for that portion of the 'landings' beyond the 300,000 mt TAC. Given the diversity of living resources and fisheries that are produced to benefit, and the magnitude of those benefits, this action may be a viable, cost-effective and potentially transformative opportunity to implement ecosystem restoration in the Gulf of Mexico. Project benefits include (1) restoring the eco system level prey base for multiple injured taxa, including marine mammals, sea turtles, sea birds, and fish; (2) enhancing restoration of marine mammals by ensuring sufficient availability of food resources for recovering populations (e.g., damage assessment data indicate low body weights of Bastard Bay bottlenose dolphins after the spill); (3) reducing bycatch of sea turtles, marine mammals, and non-targeted fish; and (4) enhancing recreational and commercial fishing opportunities by allowing other fish species and fisheries to indirectly benefit from the increased availability of forage fish that will allow for their faster growth and greater total reproduction (e.g., red drum, king mackerel, and several reef fishes). Project impacts will be quantified through analysis of data routinely collected in fishery independent and fishery dependent surveys conducted by state and federal scientists. The expectation is that index of recruitment, cohort strength, reproduction and body condition of multiple taxa will increase after project implementation, as rates commensurate with each taxon's life history. Date entered: 5/14/2017	Jackson	Yes	No															\$	\$	75,000,000	\$	-	
Ecological Restoration	5762	2/9/2018	Ecosystem restoration by decreasing gulf menhaden catch and effort	Compton Engineering has encountered several projects where submerged aquatic vegetation is present and impacts need to be mitigated for. Compton proposes to conduct a pilot study in the Back Bay of Biloxi to located suitable habitat that is devoid of SAV, harvest mature emergent plants, plant test plots and monitor for one to two years, evaluate success and prepare a guidance document for other SAV mitigation projects.	Jackson	Yes	No														\$	\$	250,000	\$	-		
Ecological Restoration	5766	2/25/2018	Reef Study/SAV Mitigation	The Mississippi Commercial Fisheries United, Inc. proposes for funding a Mississippi Reef Fish Community Permit/Quota Bank. Mississippi is the most under served state in the commercial Gulf reef fish fishery. Mississippi has the least amount of Gulf reef fish permit holders and individual fishing quotas in the nation. This project would help to increase commercial access to reef fish species such as red snapper; a variety of groupers; a variety of filefish, and several other fish species that require a federal Gulf of Mexico reef permit to harvest commercially. This program would also help to reduce dead discards in the reef fish fishery by providing the needed quota to harvest fish that would otherwise have to be discarded at sea.	Hancock,Stone,Isaksen,Peart,Boyer,George	Yes	No					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	\$	\$	1,000,000	\$	50,000		
Ecological Restoration	5769	2/25/2018	Reef Fish Community Permit/Quota Bank	This project would greatly benefit Mississippi's coastal economy by increasing access and landings for several species of reef fish. Mississippi's commercial fishermen, seafood dealers, seafood markets, and restaurants would all benefit from this project. Similar programs have been implemented across the nation to provide community protections for limited access commercial fisheries. Visit www.catchinvest.com to learn more about permit and quota banks work. The need to diversify the income of seafood industry members is greatly reduced due to the severe decline in revenues generated from the local oyster and shrimp industry following the BP oil spill.	Hancock,Lackson,Harriison	Yes	Yes					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	\$	\$	750,000	\$	50,000		
Ecological Restoration	5771	2/25/2018	Sea Turtle Conservation and Shrimp Trawl Visual Electronic Monitoring Program	The Mississippi Commercial Fisheries United, Inc. proposes funding for a Sea Turtle Conservation and Mississippi Shrimp Trawl Visual Electronic Monitoring Program. This program would initially target eastern trawling vessels that currently operate in the Gulf of Mexico. The program would limit the length of tow lines to the length of the tow lines to 15 minutes, depending on the time of the year. A pending NOAA rule has been promulgated that would require shrimp trawl vessels to use TEDs has stalled. Therefore, this program would provide a viable alternative to the use of TEDs in shrimp trawls.	Hancock,Lackson,Harriison	Yes	Yes					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	\$	\$	250,000	\$	-		
Ecological Restoration	5772	2/25/2018	Shrimp Industry Task Force (Advisory Panel)	The Mississippi Commercial Fisheries United, Inc. proposes funding for the establishment of a Mississippi Shrimp Industry Task Force. The purpose of the task force (advisory panel) will be to engage stakeholders throughout the shrimp industry to bring forth ideas and recommendations to implement sustainability projects and management measures. Mississippi currently does not have an shrimp industry task force. This task force would not have any regulatory power and would only be able to provide recommendations to the proper state and/or federal governing bodies.	Hancock,Lackson,Harriison	Yes	Yes					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	\$	\$	250,000	\$	-		
Ecological Restoration	5773	2/25/2018	Oyster Industry Task Force (Advisory Panel)	The Mississippi Commercial Fisheries United, Inc. proposes funding for the establishment of a Mississippi Oyster Industry Task Force. The purpose of the task force (advisory panel) will be to engage stakeholders throughout the oyster industry to bring forth ideas and recommendations to implement sustainability projects and management measures. Mississippi currently does not have an oyster industry task force. This task force would not have any regulatory power and would only be able to provide recommendations to the proper state and/or federal governing bodies.	Hancock,Lackson,Harriison	Yes	Yes					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	\$	\$	250,000	\$	-		
Ecological Restoration	5780	5/21/2018	Ocean Springs High School Aquaculture Expansion	This project will be based on the addition of two fully equipped greenhouses at Ocean Springs High School. By adding these new greenhouses, Ocean Springs High School (OSHS) will be able to increase the number of students who take aquaculture classes (OAH), and it will be able to successfully maintain the program for 3-4 years. This past year, 80 students signed up to take Aquaculture. At the current site, full capacity is 98 students (18 per class and 18 students for aquaculture 2 classes). The addition of two new greenhouses would give each class its own building. This would increase class sizes from 18 students to 25 students in each class for a total of 75 students per year. These students will be trained and graduate with work force skills in aquaculture, water quality, and any marine fisheries that may become available. The program also focuses on eco-restoration. In the past, the program has raised, system, blue crabs, speckled trout, shad, and striped bass. The oysters, blue crabs and speckled trout were released in the Mississippi Sound. With the addition of the greenhouses, other species will be evaluated to be included in the program. The greenhouses are also used in collaboration with kindergarten and fourth grade students as they come to the high school and learn systems with planting and raising fish. Students then grow these plants in smaller greenhouses and eat what is grown. In addition to these greenhouses, a smaller greenhouse will be opened to the special education department. This greenhouse will be opened to your students to grow vegetables and other resources to use in their classes.	Jackson	Yes	Yes		1700%	No		Yes	Yes	No	No	No	No	Yes	Yes	Yes	Yes	\$	\$	290,000	\$	-	
Ecological Restoration	5783	6/20/2018	Increase marine mammal survival through development of standardized protocols	NOAA Project ID# 13642: In the Gulf of Mexico, there are numerous diverse parties conducting marine mammal-related activities. Some of these parties include research groups conducting health assessments and stock abundance surveys, rapid response groups investigating natural and anthropogenic impacts on animals, and also laboratories performing biological, chemical, and statistical analyses on marine mammal data/samples. However, not every party involved in marine mammal-related activities has the same level of training, resources, and/or funding, such that each organization may have disparate capabilities and may be collecting and analyzing information differently. To be able to analyze data on a region-wide scale, there is a need to develop consistent and standardized protocols. This project focuses on developing tools, protocols, training, and infrastructure that will be used to support standardized and integrated data collection and analysis, region-wide. To support this effort, web-based and archival systems can be developed to facilitate rapid dissemination of information. This project also supports planning for all parties working on marine mammal-related activities, it supports monitoring to ensure that data collected can be easily integrated into the broader analysis and management systems, and builds capacity through the region by enabling other parties working on marine mammal-related activities to contribute their work in a meaningful and integrated fashion. This project also increases the survivorship and resiliency of marine mammals in the Gulf of Mexico by developing consistent and standardized protocols that will aid in the restoration, management, and monitoring of marine mammal species. Date entered: May 22, 2017	Jackson	Yes	No															\$	\$	-	-		
Ecological Restoration	5786	7/10/2018	Bayou Acadian Land Protection	The Land Trust for the Mississippi Coastal Plain (LTMCP) is an accredited Land Trust dedicated to the conservation, protection, and protection of open spaces and green places of ecological, cultural, or scenic significance in the counties of the Mississippi Coastal Plain. LTMCP utilizes both fee simple and conservation easement tools in conserving lands for the benefit of habitats, species, and recreation. This parcel consists of approximately 48.32 acres of forested shell wetland that borders the Wolf River for a total of 787 feet. The Wolf River runs through Bayou Acadian into the Bay of St. Louis. Protection of these upstream lands is vital to the water quality and erosion control downriver and into the Mississippi Sound. Ecological Value: Protects properties as a buffer area for storm surge by providing dispersal and displacement in the event of flooding waters. These flooding waters have a natural function of turnover and flushing of coastal wetlands. It provides clean water for our natural resources further down the watershed. It provides valuable habitat for a wide variety of plants and animals native to Mississippi, as well as migratory birds. It provides opportunities for low impact recreational activities such as birdwatching and other wildlife observation, fishing, and kayaking. It creates open spaces that provide areas for people to witness and learn about their natural environment.	Harrison	Yes	No															\$	\$	-	-	Land Acquisition	
Ecological Restoration	5788	7/11/2018	Older Lake Island Land Protection	The Land Trust for the Mississippi Coastal Plain (LTMCP) is an accredited Land Trust dedicated to the conservation, protection, and protection of open spaces and green places of ecological, cultural, or scenic significance in the counties of the Mississippi Coastal Plain. LTMCP utilizes both fee simple and conservation easement tools in conserving lands for the benefit of habitats, species, and recreation. These parcels consist of approximately 6.25 acres of forested shell wetland, and 1.81 acres of freshwater forested wetland habitat that borders Old Fort Bayou. Protection of these upstream lands is vital to the water quality and erosion control downriver and into the Mississippi Sound. LTMCP protects and manages 49.73 acres adjacent to the Cedar Lake Island Land Protection project. Ecological Value: Protects properties as a buffer area for storm surge by providing dispersal and displacement in the event of flooding waters. These flooding waters have a natural function of turnover and flushing of coastal wetlands. It provides clean water for our natural resources further down the watershed. It provides valuable habitat for a wide variety of plants and animals native to Mississippi, as well as migratory birds. It provides opportunities for low impact recreational activities such as birdwatching and other wildlife observation, fishing, and kayaking. It creates open spaces that provide areas for people to witness and learn about their natural environment. It provides a continuous corridor along the Thibodaux/Batture River.	Harrison	Yes	No															\$	\$	-	-	Land Acquisition	
Ecological Restoration	5789	7/11/2018	Cedar Lake Island Land Protection	The Land Trust for the Mississippi Coastal Plain (LTMCP) is an accredited Land Trust dedicated to the conservation, protection, and protection of open spaces and green places of ecological, cultural, or scenic significance in the counties of the Mississippi Coastal Plain. LTMCP utilizes both fee simple and conservation easement tools in conserving lands for the benefit of habitats, species, and recreation. This parcel consists of approximately 2.8 acres of freshwater forested wetland, and 1.15 acres of freshwater forested wetland habitat that borders Old Fort Bayou. Protection of these upstream lands is vital to the water quality and erosion control downriver and into the Mississippi Sound. LTMCP is also looking to acquire 63.85 acres of adjacent land to the south. These two parcels share an intermittent stream that flows into Old Fort Bayou. Ecological Value: Protects properties as a buffer area for storm surge by providing dispersal and displacement in the event of flooding waters. These flooding waters have a natural function of turnover and flushing of coastal wetlands. It provides clean water for our natural resources further down the watershed. It provides valuable habitat for a wide variety of plants and animals native to Mississippi, as well as migratory birds. It provides opportunities for low impact recreational activities such as birdwatching and other wildlife observation. It creates open spaces that provide areas for people to witness and learn about their natural environment.	Jackson	Yes	No																\$	\$	-	-	Land Acquisition
			Cedar Lake Island Land Protection		Jackson	Yes	No														\$	\$	-	-	Land Acquisition		
			Older Lake Island Land Protection		Jackson	Yes	No														\$	\$	-	-	Land Acquisition		
			Cedar Lake Island Land Protection		Jackson	Yes	No														\$	\$	-	-	Land Acquisition		

Eco Restoration	5790	7/1/2018	The Land Trust for the Mississippi Coastal Plain (LTMCP) is an accredited Land Trust dedicated to the conservation, promotion, and protection of open spaces and green places of ecological, cultural, or scenic significance in the counties of the Mississippi Coastal Plain. LTMCP utilizes both the simple and conservation easement tools to conserve land for the benefit of habitats, species, and recreation. This parcel consists of approximately 26.8 acres of freshwater forested wetland, 1.35 acres freshwater pond, 5.24 acres of riverine habitat, and 6.6 acres of forested evergreen upland habitat. Bayou Gaspard and Touchette Creek meet the Touchetouba River at this parcel. Also, LTMCP manages and protects a total of 206 acres directly adjacent to this property along the Touchetouba River including the Touchetouba Nature Preserve. Protection of these upstream lands is vital to the water quality and erosion control downstream and into the Mississippi sound. The acquisition of this parcel, LTMCP would create a corridor of conservation lands 2.1 miles long along the Touchetouba River. Ecological Value: Protects properties as a buffer area for storm surge by providing dispersal and displacement in the event of flooding waters. These flooding waters have a natural function of coastal wetlands. ACProtects areas that provide clean water for our natural resources further down the watershed. ACProvides valuable habitat for a wide variety of plants and animals native to Mississippi, as well as migratory birds. ACOpportunities for low impact recreational activities such as birdwatching and other wildlife observation, fishing, and kayaking ACCreates open spaces that provide areas for people to witness and learn about their natural environment. ACCreates a corridor 2.1 miles long along the Touchetouba River.	Harrison	Yes	No	No	Yes	No	No	No	No	No	No	No	No	No	\$	\$	-	Land Acquisition
Eco Restoration	5791	7/1/2018	The Land Trust for the Mississippi Coastal Plain (LTMCP) is an accredited Land Trust dedicated to the conservation, promotion, and protection of open spaces and green places of ecological, cultural, or scenic significance in the counties of the Mississippi Coastal Plain. LTMCP utilizes both the simple and conservation easement tools to conserve land for the benefit of habitats, species, and recreation. This parcel consists of approximately 3 acres of freshwater forested wetland and 8.75 acres of mixed hardwood upland. LTMCP are interested in acquiring and restoring a total of approximately 188 acres of adjacent property. This block of conservation land would share a border with the Mississippi National Wildlife Refuge to the East. Ecological Value: Protects areas that provide clean water for our natural resources further down the watershed. ACProvides valuable habitat for a wide variety of plants and animals native to Mississippi, as well as migratory birds. ACOpportunities for low impact recreational activities such as birdwatching and other wildlife observation. ACCreates open spaces that provide areas for people to witness and learn about their natural environment.	Jackson	Yes	No	No	No	No	No	No	No	No	Yes	No	No	No	\$	\$	-	Land Acquisition
Eco Restoration	5792	7/1/2018	The Land Trust for the Mississippi Coastal Plain (LTMCP) is an accredited Land Trust dedicated to the conservation, promotion, and protection of open spaces and green places of ecological, cultural, or scenic significance in the counties of the Mississippi Coastal Plain. LTMCP utilizes both the simple and conservation easement tools to conserve land for the benefit of habitats, species, and recreation. This parcel consists of approximately 15 acres of upland pine forest. Ecological Value: Provides valuable habitat for a wide variety of plants and animals native to Mississippi, as well as migratory birds. ACOpportunities for low impact recreational activities such as birdwatching and other wildlife observation. ACCreates open spaces that provide areas for people to witness and learn about their natural environment.	Jackson	Yes	No	No	No	No	No	No	No	Yes	No	No	No	\$	\$	-	Land Acquisition	
Eco Restoration	5794	7/1/2018	The Land Trust for the Mississippi Coastal Plain (LTMCP) is an accredited Land Trust dedicated to the conservation, promotion, and protection of open spaces and green places of ecological, cultural, or scenic significance in the counties of the Mississippi Coastal Plain. LTMCP utilizes both the simple and conservation easement tools to conserve land for the benefit of habitats, species, and recreation. This parcel consists of 367 acres of planted pine forest as well as bottomland hardwood with several creeks that flow into both the Jordan River as well as the Wolf River. Protection of these upstream lands is vital to the water quality and erosion control downstream and into the Mississippi sound. Ecological Value: Protects properties as a buffer area for storm surge by providing dispersal and displacement in the event of flooding waters. These flooding waters have a natural function of coastal wetlands. ACProtects areas that provide clean water for our natural resources further down the watershed. ACProvides valuable habitat for a wide variety of plants and animals native to Mississippi, as well as migratory birds. ACOpportunities for low impact recreational activities such as birdwatching and other wildlife observation. ACCreates open spaces that provide areas for people to witness and learn about their natural environment.	Pearl River	Yes	No	No	No	No	No	No	No	No	No	No	No	\$	\$	-	Land Acquisition	
Eco Restoration	5798	8/6/2018	The Land Trust for the Mississippi Coastal Plain (LTMCP) is a nationally accredited Land Trust dedicated to the conservation, promotion, and protection of open spaces and green places of ecological significance in Hancock, Harrison, Jackson, George, Stone, and Pearl River Counties of the Mississippi Coastal Plain. LTMCP utilizes both the simple and conservation easement tools to target priority conservation lands for the benefit of coastal Mississippi habitats, species, and recreation. The goal of this project is to provide funding to purchase individual parcels of land, which may be relatively small in acreage but are located in areas that have been identified as crucial to extending corridors of existing conservation lands. This Land Trust has identified several sites that would expand key conservation corridors presently owned by LTMCP, the Mississippi Secretary of State's Office, as well as the Mississippi Department for Marine Resources. These sites can be found on the Mississippi Department of Environmental Quality's portal (www.mdeq.ms.gov) project numbers 5436 Brickyard Bayou Land Protection, adjacent to the Touchetouba River Coastal Preserve, owned by NDMR, 5708 Cedar Lake Land Protection, adjacent to the LTMCP Cedar Lake Land Preserve, and 5797 Touchetouba River Land Protection, adjacent to LTMCP Touchetouba Nature Preserve. Protection of these upstream lands is vital to the water quality and erosion control downstream and into the Mississippi Sound. Ecological Value: ACProtects to continuous corridors of conservation land. ACProvides valuable habitat for a wide variety of native plants and wildlife, as well as migratory birds. ACProtects upstream areas that support clean water. ACProtects properties as a buffer area for storm surge by providing dispersal and displacement in the event of flooding waters. ACProvides a natural function of turnover and flushing of coastal wetlands. ACProvides opportunities for educational, low impact recreational activities such as birdwatching and other wildlife observation.	Jackson/Harrison	Yes	No	No	Yes	No	No	No	No	No	Yes	No	No	\$	\$	-	Land Acquisition	
Eco Restoration	5800	8/9/2018	Kittiwake Conservation has been able to identify some acreage in Pass Christian that appears suitable for coastal preservation. This property was partially used as part of the Camp Kittiwake, a church camp used into the 1950s, then partially developed as a residential subdivision, Kittiwake, and for the Kittiwake Baptist Church. The remaining 12 acres has had follow for the past 50 years. The neighborhood group, kindly engaged as Kittiwake Conservation, see the area being targeted for natural features, its expansion and wildlife, while adjacent to the sand beach. The area presents itself as an area where local runoff can be filtered naturally prior to reaching the Sound, reducing the number of beach closures in the area after heavy rainfall. Presently, the acreage is semi-wetland forest, and the homes to remove, explore, fox, bobcat, racoon, armadillo and rabbits. The property (11.8 acres) was recently purchased by an individual in 2017, and has expressed some interest in allowing the acreage to be used as a park, a wildlife preserve, a conservation area, and appears willing to part with the land for such uses. This has often been "blinded" due to high bacterial count, particularly after heavy rainfall. This tract of land could be used to develop a series of ACwatersheds to naturally filter the surface water of sediment and pollutants prior to reaching the Sound, and some existing underground water routes could be rerouted into the same system of canals. There are five intact land parcels available along Beach Boulevard that have not been through development, especially over the past 50 years. This is a parcel that has been neglected and allowed to become its own wildland. With minimal development it could become its own show piece of what upland areas would have looked like prior to significant development. A trail meandering through from Second Street to Beach Boulevard might be the focus of developing the area. A parking area and would allow the visitor to enjoy the woodland. School groups could group on-site here. This woodland/park can be used as an outdoor school site exploring natural habitats, bird watching and learning about the natural filtering systems. These are just a few ideas for school, civic, scouting and tourist groups. Aside from the direct expense of acquiring the parcel, creating a parking area, a trail, trail signage, and a perimeter fence, would be the minimal expense. An architectural plan to enhance the site, creating a natural filtration system, or redirecting current drainage lines would increase the cost factor quickly. Would the City of Pass Christian take maintenance, or the County Sand Beach Commission, or some other entity is unawake? This project could be combined with similar coastal projects nearby.	Harrison	Yes	No	No	Yes	No	No	No	No	No	Yes	No	No	\$	3,000,000.00	\$	-	Land Acquisition
Eco Restoration	5802	8/10/2018	About 11% of the surface water streams in Mississippi coastal region received fair or poor ratings indicating possible point or non-point source pollution loads into these surface streams. The Jordan River watershed is degraded as a priority watershed for improving the water quality in this region. Primary water quality concerns for the Jordan River have been identified as faulty septic & wastewater systems, sediment from soil and stream bank erosion and nutrient enrichment. This restoration research project will evaluate the performance of current on-site wastewater treatment systems for decentralized communities in the coastal region of Mississippi where the effluent standards might be at risk. The investigation will include a comprehensive assessment of effectiveness of current wastewater treatment approaches from the surface and ground water quality and economic feasibility perspectives. In our previous efforts, we have identified representative sites (surface streams of Bayou Bacon, Bayou La Terre, and Ophian Creek) in the watershed and evaluated the existing on-site wastewater treatment systems. A sample collection and analysis program was implemented for representative sites to measure pH, temperature, biochemical oxygen demand (BOD), total suspended solids (TSS), total nitrogen (TN including TNK), nitrate and nitrite, and total phosphorus (TP) and fecal coliform bacteria. Established methods were used to measure these constituents from the select representative sites at designated time intervals to represent dry and wet weather and cold and hot weather conditions over seven months. These results were analyzed to determine the feasibility of on-site wastewater treatment systems and estimate nutrient loads released through effluent discharges. Outcomes from this project include: (i) a compilation of data on current on-site, decentralized wastewater treatment facilities in the Jordan River watershed and characterization of wastewater management practices for the coastal region, and (ii) analysis of water quality parameters for representative sites to assess performance of on-site wastewater treatment systems. This study albeit based on a very limited data showed that onsite wastewater treatment and management systems in the areas surrounding the sample collection sites are probably not the major contributing sources for fecal coliform contamination. Additionally, constituents normally found in wastewater effluent were not found in high concentrations in the water samples collected from these tributaries. This indicated that the majority of the onsite wastewater treatment and management systems in the areas around the sample collection sites were functioning properly, and that alternative means of contamination should be explored. A poor correlation was also observed between the precipitation events and coliform and nutrient concentrations in the tributaries. However, the fecal coliform bacteria counts exceeded the regulatory limits in several occasions, especially, those following precipitation events. These observations suggested that a more detailed, holistic (spatial and temporal), long-term sampling program is required to determine the non-point sources contributing to the impairment of these tributaries in the Jordan River watershed. We now propose a strategic plan to assess the current water quality and their impacts on the receiving water streams and public health in coastal watersheds of Mississippi. Our preliminary results indicated a poor correlation between the precipitation events and the nutrients and fecal coliform contamination in the sensitive streams of Bayou Bacon, Bayou La Terre, and Ophian Creek. Biweekly water sampling and data analysis for four months on these creeks did not yield any critical or concerning observations. This suggests that long term water sampling is necessary to understand the impacts of on-site decentralized wastewater treatment facilities and other anthropogenic activities that contribute to this water impairment. We propose a three dimensional approach which consists of environmental, human (social) and technical factors to holistically assess the current state of water quality of streams impacted by numerous activities surrounding them. Lack of sufficient data on the residential wastewater treatment facilities, their treatment capabilities makes the assessment of their impact on the receiving water streams a daunting task. The first step to address this issue is to conduct a survey across the communities to gather information related to the existing onsite and decentralized wastewater treatment systems and their utility of operation. The second step would be to utilize in-situ measurement methods based on a GPR 1500 Spectrometer and satellite (Landsat imagery, and Risk MODIS (Moderate Resolution Imaging Spectroradiometer) data to delineate land use, soil types and properties, and water quality in water bodies and streams in the Jordan River watershed. Finally, the State of Mississippi where possible. NOAA Project ID# 13891 Date: Aug 7, 2018	Hancock	Yes	Yes	Yes	No	No	No	No	No	No	Yes	Yes	Yes	\$	500,000.00	\$	-	Land Acquisition
Eco Restoration	5803	8/10/2018	NOAA Project ID# 13891: Expansion of a Coastal Reference Monitoring System (CRMS) wetland observation network into Mississippi to inform wetland restoration success and also assist with Trustee easement restoration quantification. The proposed project would build off of the existing CRMS wetland monitoring system being implemented in Louisiana. In Louisiana CRMS was designed to monitor the effectiveness of restoration actions at multiple spatial scales from individual project sites and the influence of those projects throughout the coastal zone. The CRMS design includes data for swamp habitats along with fresh, intermediate, brackish and salt marshes. This project could be implemented for swamp and marsh or only marsh if needed depending on the need. The following data types are proposed: recent land change, hydrologic data and vegetation including false color imagery, vegetation, soil permeability, soil porosity, hydrographic, hydrodynamic, additional activities such as data management and visualization, data analysis, report cards would be built into the project as necessary and appropriate. This project would aim to build off of and leverage existing efforts in the State of Mississippi where possible. NOAA Project ID# 13891 Date: Aug 7, 2018		Yes	Yes	Yes	No	No	No	No	No	No	No	No	\$	\$	-	Land Acquisition		
Eco Restoration	5806	8/10/2018	NOAA Project ID# 13885: Since 2001, the City of Long Beach has faced increasingly severe urban flooding from less severe/unusual storms and hurricanes. These repeated floods deliver a glugme of untreated flood waters directly into Bay St. Louis and into the Mississippi Sound with direct and sudden impacts to safety levels and other, unquantified water quality impacts. The City proposes a comprehensive resilience project for a watershed project to integrate upstream and urban flood drainage reduction measures to achieve measurable water quality improvements to the Mississippi Sound. The watershed covers 10,857 acres (4,566 acres in Long Beach and 6,291 acres in City of Pass Christian) and the remainder is unincorporated west Harrison County. Historically, flood protection in the City of Long Beach was provided by Canal No. 2 (Johnson Bayou) and Canal No. 3 (Bayou Portage). However, despite significant restoration and enhancement of these Canals done in cooperation with the National Resources Conservation Service (Emergency Impact Studies 1989 and the U.S. Army Corps of Engineers (part of the Mississippi River Improvement Program) starting in the early 1990s, urban flooding has significantly increased since 2001. It is apparent that a new, holistic watershed approach is necessary to provide a long term, sustainable solution to the watershed flooding and associated water quality impacts into Bay St. Louis. The starting point of the project will be integrating resiliency elements into the comprehensive drainage plan that the City of Long Beach has recently completed. Date: Aug 8, 2018		Yes	No	No	No	No	No	No	No	No	No	No	\$	35,000,000.00	\$	-	Land Acquisition	
Eco Restoration	5809	8/10/2018	NOAA Project ID# 13877: This project will build an online Decision Support System (DSS) that will allow managers to run scenarios by altering identified sources of nutrients or sediment within Gulf watersheds to see the downstream effects of those scenarios on nutrient and sediment loads entering bays and estuaries across the Gulf. The DSS will be based on development of Total Nitrogen, Total phosphorus, and Suspended Sediment Quantities derived from Regression on Watershed Attributes (RSQWA) models for the entire Gulf. In addition, display of model results in the DSS can be managers target watershed areas with high nutrient loads to better locate Best Management Practices implementation. Nutrient load estimates from the models entering bays and estuaries can also be used as nutrient loads to identify hydrodynamic models to identify potential Harmful Algal Bloom hotspots. Sediment models can help locate hot spots areas for high sediment loads within Gulf watersheds, which could be important to manage wetland restoration. Date: Aug 1, 2018		Yes	Yes	Yes	No	No	No	No	No	No	No	No	\$	4,000,000.00	\$	-	Land Acquisition	

Eco Restoration	5810	8/10/2018	Restoration of Piping Plover and other overwintering shorebirds through reductions in anthropogenic stressors.	NOAA Project ID# 13873: The impact of habitat loss on shorebirds may be exacerbated by disturbance from human recreational use, which further reduces the amount of coastal habitat that is functionally available. This can have consequences for the condition of individual birds or for population processes, both of which should be considered in strategies to reduce conflict between shorebirds and recreational users of coastal habitats. Our objectives were to implement measures to mitigate the negative impacts from human recreational use, coastal habitat modifications to Piping Plover (Charadrius dominicus) condition and demography. Also applies to additional overwintering bird species. The condition of those overwintering species may influence reproductive output, through cross-seasonal effects and areas that are heavily disturbed can result in reduced reproductive output from affected individuals (Johnson et al. 2014). July 31, 2018	Yes	No														\$ 2,000,000.00	\$ -		
Eco Restoration	5812	8/10/2018	Groundwater neutral strategies to create habitat for migratory shorebirds on private lands of the Mississippi Delta	NOAA Project ID# 13888: Summary of rationale and proposed project: Nearly half of North American shorebird species (such as sandpipers and plovers) are declining, and a key factor in these declines is a loss of available habitat for migration stopover, especially in fall (July-October) when such habitat is more limited. To mitigate the impact of the Deepwater Horizon oil spill on this group of birds, we need high-quality stopover habitat for them not just on the immediate Gulf Coast, but also away from the Gulf Coast, in the MS Delta. Private lands, including aquaculture farms and former aquaculture farms being managed for duck hunting, and also active agricultural fields, can provide high-quality stopover habitat for migratory shorebirds. Groundwater is an increasingly valuable and limited resource in the MS Delta, so groundwater-neutral strategies for such wildlife habitat creation are needed. We will work with private landowners to provide high-quality, groundwater-neutral stopover habitat for migratory shorebirds in the MS Delta. Goal 1: Create 600 hectares of fall habitat for migrating shorebirds or private lands in the MS Delta, which has been estimated to be necessary to support the number of birds typically migrating through our region. Goal 2: Demonstrate the viability of ground water neutral strategies for creating shorebird habitat, including use of surface water sources, lateral pumping, water storage, and drop-off pumping strategies. Goal 3: Engage a diverse coalition of private landowners and evaluate the ease for long-term voluntary implementation of these practices. Estimated Cost: \$200,000 per year. We have begun to build towards these goals by developing a network of partnerships with farmers and waterfowl enthusiasts throughout the Mississippi Delta, helping to assure the provision of substantial acreage of high-quality habitat for migratory shorebirds. During each of the fall 2015 and 2017 shorebird migrations, for example, we worked with landowners to create up approximately 40 hectares (~100 acres) of habitat. Our on-the-ground surveys allowed us to estimate that this habitat was used each year by hundreds of migratory shorebirds, plus hundreds of nesting birds, including herons, greys, Wood Storks, and Roseate Spoonbills. In addition, we are currently pioneering a unique ground water neutral strategy to create fall migratory shorebird habitat on a 67-acre crop field by pumping treated water from surface-water retention reservoirs, working with a soon farmer in Sunflower, Mississippi. Our long-term goal is to assure that the entire 600-hectare target is met through provision of habitat via such partnerships with private landowners in the Mississippi Delta. July 31, 2018	Yes	No															\$ 200,000.00	\$ 20,000.00	
Eco Restoration	5816	8/10/2018	Bottlenose Dolphin Health Assessments to Monitor Restoration Effectiveness in Mississippi	Health assessments are used to identify and understand population stressors, mitigate their effects, or plan more effective conservation measures, in response to management drivers (e.g., NMMP, ESA, NOAA's Ocean and Human Health Initiative, and, more recently, for Natural Resource Damage Assessments; NRDAs). Captives: Disease health assessments involve large teams of researchers using multiple vessels to locate, capture, assess, and release wild bottlenose dolphins. A large net is used to encircle one or more dolphins in shallow water. The team then enters the water and once the dolphin is disentangled from the net and restrained, blood is collected and vital signs are assessed. The dolphin is then brought up onto a specially designed platform on a boat for further examination and the collection of morphometrics, diagnostic, and biological samples. Samples are processed on the boat for timeliness and quality control purposes. Standard morphometrics and diagnostics include a physical exam, body measurements (length and girth), ultrasound to assess reproductive status and blubber thickness, complete blood count (CBC)/blood chemistry/blood gases, serology, pathogens, endocrinology, immunology, urinalysis, skin and oral assessment, biotoxin and contaminant measures, and blowhole genital swabs. Most of these diagnostics can only be obtained from wild dolphins through capture and restraint procedures. Health assessments conducted on bottlenose dolphins in the Southeast have used standardized protocols and established laboratories for sample analysis. The pooling of available samples has resulted in the establishment of reference intervals for many health parameters, such as CBC, serum chemistry, muscle:fat ratio, and also baseline levels for biotoxins, persistent organic pollutants (POP) including polychlorinated biphenyls (PCBs), polybrominated diphenyl ethers (PBDEs), and a suite of organochlorine pesticides. Health assessments have been conducted on bottlenose dolphin populations in various locations in the Gulf, including Sarasota Bay, Florida (1987âpresent), Mississippi Sound, Mississippi (1982â88), 2011, 2018), Matagorda Bay, Texas (1992), St. Joseph Bay, Florida (2005â08), and Barataria Bay, Louisiana (2011, 2011, 2014, 2017, 2018). Health assessments conducted in Barataria Bay, Mississippi Sound, and Sarasota Bay were instrumental in quantifying injury associated with the Deepwater Horizon oil spill. There is a continued need for periodic health assessments of bottlenose dolphins in Barataria Bay, Mississippi Sound, and reference populations in Sarasota Bay to monitor the effectiveness of, and potential impacts from, restoration activities being conducted in Louisiana waters. The health assessments would follow the same protocols and procedures that have been developed and implemented previously in Gulf waters. The future vision is to obtain more information from remote sampling of bottlenose dolphins injured by the oil spill, including biopsy, breath, and tagging. This would minimize the need for captures. Disease health assessments because they represent higher risk to dolphins and to the team, and because of the difficult logistics and high costs. We also need coordinated data management, mapping, and spatial/temporal analysis to maximize the information gained from available samples.	Yes	No															\$ -	\$ -	
Eco Restoration	5817	8/10/2018	Bottlenose Dolphin Photo-Identification Studies to Monitor Restoration Effectiveness in Mississippi	Photo-identification studies are a type of capture-mark-recapture study used to detect known (marked) and unknown individuals over time to estimate population size and vital rates. They are also used to provide information on distribution, seasonal movements, habitat use, behavior, and body condition and health of individuals. Information gained from multi-year photo-identification studies would be an indicator of the effectiveness of efforts to restore bottlenose dolphin populations in waters most heavily impacted by the Deepwater Horizon oil spill, including Barataria Bay, Mississippi Delta, Mississippi Sound, and adjacent coastal waters. Centralized large-scale, collaborative photo-identification catalogs for bottlenose dolphins and other species have been established (e.g., the Gulf of Mexico Dolphin Identification System, or GOMDIS), providing a basis for tracking movements of individual animals beyond project study sites and detecting range shifts in response to environmental changes. Existing data systems need to be assessed, refined, and expanded to facilitate rapid analysis of a large number of images and to improve data access and sharing by a diverse group of field researchers and partner organizations in Mississippi and throughout the Gulf to better determine connectivity and movements of bottlenose dolphins within and between adjacent water bodies. Periodic workshops are needed to ensure standardized methods for image acquisition and processing are being used and necessary. More data systems need to be expanded to include additional study areas in Mississippi and across the Gulf, particularly coastal and offshore areas affected by the oil spill. Further research is needed on: (1) the development of software to enable more effective and timely analysis and comparison of still and video images, (2) the potential for high-resolution aerial imaging systems to augment or replace traditional aerial and/or vessel surveys, and (3) the use of unoccupied aircraft systems (UAS) or drones to collect images of marine mammals independently of other traditional vessel surveys or other surveillance operations. Budget is variable depending on the frequency of assessments and the duration of the project. Studies are most informative for assessing recovery of these long-lived species if conducted annually for a minimum of 10-15 years. Entities capable of conducting such studies, or that have successfully conducted such studies in other areas of the Gulf, include the National Marine Fisheries Service Pascagoula Laboratory, the National Ocean Service Charleston Laboratory, academic institutions (e.g., University of Houston, Seacord College, University of Southern Mississippi, University of South Florida, University of Central Florida), and four scientific research organizations (i.e., Chicago Zoological Society Marine Mammal Foundation, and the Institute for Marine Mammal Studies in Gulfport, MS). Authors: The proposal was prepared by the Marine Mammal Commission, based on information compiled at the 2015 Gulf of Mexico Marine Mammal Research and Monitoring Meeting and subsequent meetings. The Marine Mammal Commission is not seeking funding for this project, nor does it anticipate receiving funds, if approved and adopted in whole or in part, by the National Resource Trustees, the Gulf states, the National Fish and Wildlife Foundation, the National Academy of Sciences, the Restoration Council, or any other funding entity. More information on GOMDIS can be obtained at: http://www.sarasotadolphin.org/introducing-gomdis-the-gulf-of-mexico-dolphin-identification-system/	Yes	No															\$ -	\$ -	
Eco Restoration	5818	8/10/2018	Tree Phase Gulfport Urban Forest for Clean Waters	In undeveloped areas of the coast, rain is intercepted by trees and the rain soaks into the ground, storing up pollution. But on the developed coast, buildings, parking lots, roads, and other impervious surfaces, trees and soil no longer slow the rainfall and filter the water. The resulting stormwater instead picks up nitrogen and phosphorus pollutants. It flows rapidly into bays, beaches, and Mississippi Sound via storm drains. The results include beach closures, oyster contamination, and fish kills. This project would increase urban forestry: tree and soil in city landscapes. Trees and soil decrease polluted stormwater runoff (including oil, pet waste, and fertilizers). This increases water quality for recreation, oysters, and fish on the Mississippi Gulf Coast.	Harmful	Yes	Yes														\$ 1,000,000.00	\$ -	
Eco Restoration	5819	8/10/2018	Red Creek Nutrient/Sediment Reduction Program Stone and George Counties, MS. Lower Pascagoula River Drainage Basin	Red Creek in George County has been suffering from water quality problems due to periodic sediment inflow with animal wastes. Several sites are possible within, but one large one exists. A 400-acre recreational riding park for All Terrain Vehicles, "K.C.O.R." on Vestry Road has been in operation for about 15 years, and the runoff from the constantly disturbed soils and mud pits on the site has been and is still reaching Red Creek through small woodland branches running into the Creek from its south bank. Despite citizen complaints over the past 3 years, and in spite of several attempts at discontinuing the source, timing, and magnitude of the sediment inputs from this site, or other sites, no definitive answers have been put forward by any person or government agency that can be used to isolate, regulate or otherwise modify or mitigate this water quality impairment from mud and sediment. Remote sensing, drone photography, balloon cameras, trail cameras, and/or photography using airplanes could be used to document runoff events that fill Red Creek with sediment in this section of the stream in George County as well as upstream in Stone County. With such visual documentation, simultaneous testing of Red Creek water quality for sediment and nutrient components must be done so a baseline/record of this problem can be created. Engagement and creative collaboration of MDEQ staff and NRCS/USDA could possibly result in discovery of the right "hook" or incentive so that these agencies can collaborate on the water quality problem in this section of Red Creek. The land is mostly forested in the vicinity, and there is almost no agricultural land use along Red Creek. There also is not a protected species like the Gulf sturgeon with habitat in Red Creek that can be used to clearly justify federal agency intervention or some kind of enhanced soil conservation practice payments. Also, the owner of the Red Creek Off Road park has been intransigent and has not, to my knowledge, volunteered any measures to reduce the sediment contribution from his land to the Creek. This situation is an impediment, and has been for about 3 years. There is not enough data collected by MDEQ to confirm the water quality problem: the downstream neighbors can see, so there is not a permit that proscribes Red Creek Off Road from polluting, and there is very little likelihood that USDA/NRCS can do here what it has done in the NRDA Upper Pascagoula Nutrient Reduction projects because the Gulf sturgeon was the ESA "hook" that helped get NRCS involved, and there isn't an apparent hook here through the ESA. Red Creek downstream of the ATV park is on the new 303(d) list for pH impairment, but not for sediment. Some of the upstream tributaries to Red Creek have been on the impaired waters list in the past. Red Creek. There are also a number of grant opportunities that may be available in this section of the Creek, and there are a number of upstream NPDES discharge permits, including the Petaluma Campus of MDEQ along with several industries in Wiggins. However, the people downstream of this ATV park in George County have seen what has happened to the Creek over the past 15 years since the park began operation and there doesn't seem to be much doubt that the ATV park is a major sediment polluter. Some residents captured bad runoff from the park's small drains with pictures two years ago, just MDEQ has copies of these. At the very least, MDEQ, USDA/NRCS and the Mississippi Health Department should discuss how to focus restoration funding on this problem. It'd like to be included in such a meeting, as would the Red Creek fishing camp owners downstream. If a connection or "hook" can be found to use any source of BP RESTORE, NRDA, or NFWR Restoration money to characterize this problem, or to help install BMPs.	George	Yes	Yes	50000	No	No	No	No	Yes	Yes	No							\$ 500,000.00	\$ -
Eco Restoration	5820	8/10/2018	Lower Pascagoula Nutrient Reduction	Improve water quality by reducing nutrient loads to coastal watersheds. Develop conservation plans on agricultural land and rural communities that support them to address nutrient and sediment runoff, and implement conservation practices identified in the conservation plans. The primary goal for this project is to improve water quality through nutrient and sediment reduction. The health of the Gulf of Mexico depends upon the health of its estuaries, and the health of those coastal waters is influenced by the land uses in the watershed tributaries to the five Gulf States, over 80 percent of the acreage in private ownership (USDA/NRCS 2014) is used for forestry and agriculture. This watershed-scale project restores water quality impacted by the DWH oil spill by reducing nutrients and the sediments carrying them into coastal waters. Runoff from cropland, pasture, grassland, forest, urban areas contributes nutrients and sediments that adversely affect the health of coastal waters of the Gulf. While agricultural lands are a contributor (and in many instances, not the leading contributor) of nutrients to coastal waters, there are opportunities to address nutrient related resource concerns at their source across multiple landuses in the lower Pascagoula River watershed. USDA will provide outreach and technical assistance to voluntary participants - especially on the most vulnerable acres in the watershed - to develop conservation plans. The project proposes to implement clusters of conservation practices within the smallest watershed practicable with the goal of making a discernable difference in water quality at the watershed level. While this targeted and concentrated approach is desired, the project proponent understands the voluntary nature of landowner participation and will strive to reach the critical sources within the watershed. The proposed conservation practices would reduce nutrient losses from the landscape, reduce nutrient loads to streams and downstream receiving waters, and reduce water quality degradation in watersheds that would provide benefits to coastal watersheds and marine resources.	George	Yes	No															\$ 2,000,000.00	\$ -

Eco Restoration	5801	8/10/2018	<p>Nearshore and coastal habitats throughout the Gulf of Mexico are adjacent to areas of high human population. The high degree of overlap with human activities results in concern for both bottlenose dolphins that were also affected by the Deepwater Horizon oil spill. There are documented impacts on bottlenose dolphins from recreational fishing, boating, and tourism, including mortalities, injuries and harassment/disturbance. Harmful interactions between people and dolphins have been documented throughout the Gulf of Mexico, including in Mississippi coastal waters. Such interactions can be damaging to the dolphins by altering their natural behavior, and can put both humans and dolphins at risk of illness, injury, and death. The large variety of user groups and stakeholders and multiple management jurisdictions involved in such interactions requires a coordinated effort among state and federal biologists, managers, and enforcement agencies.</p> <p>Human activities of concern for bottlenose dolphins include:</p> <ul style="list-style-type: none"> Commercial fisheries: Interactions stem from entanglement in or ingestion of active or discarded fishing gear, degradation on bait or catch, scavenging of released fish, habitat degradation, and poisoning of animals. They can also stem from irritation or lethal envenomation by fishermen for degradation on bait or catch. Acute and chronic impacts include altered behavior, decreased nutritional status, injury, and mortality. Recreation and recreational activities: Interactions occur with recreational boaters, jet ski, dolphin and whale watching tour boats (particularly those operating irresponsibly by touching, feeding, swimming with, or harassing animals), and include boat strikes, disruption of natural behaviors, changes in group composition, association of people/boats with food if provisioning occurs, and conditioning. Long term avoidance of high use areas can lead to localized declines in abundance or shifts in habitat use to sub-optimal habitat. Acute and chronic impacts include altered behavior, decreased nutritional status and growth rates, injury, and mortality. <p>Prevention of human-dolphin interactions is key, and is based on an understanding of how and why interactions occur. Targeted research on human attitudes towards dolphins coupled with long-term, year-round behavioral studies and data from stranded animals can help provide a more complete picture of causes of interactions, interaction rates, trends over time, and potential mitigation strategies. Studies conducted to date have identified mitigation strategies that have shown some effectiveness at preventing interactions. However, long-term effectiveness requires follow-up research on the effectiveness of mitigation, consistent and targeted public education and outreach efforts, and coordinated enforcement efforts in situations where education and outreach is not sufficient at curbing harmful interactions.</p> <p>Addressing harmful human-dolphin interactions in Mississippi state waters can aid directly in the restoration of bottlenose dolphins injured by the oil spill. Effort is needed in the following areas:</p> <ul style="list-style-type: none"> Characterizing the scope and nature of interactions as well as driving factors throughout Gulf. Conducting surveys and interviews to understand the human dimensions of interactions and factors driving harmful human interactions with dolphins. Encouraging collaborative approaches to develop effective mitigation strategies, and methods for assessing effectiveness. 	Yes	No	No	Yes	No	No	No	No	No	No	\$	\$	-	
Eco Restoration	5821	8/10/2018	<p>Addressing Harmful Human-Dolphin Interactions in Mississippi through Research, Education, and Enforcement</p> <p>Undeveloped areas of the coast, rain is intercepted by trees and the rest soaks into the ground, filtering out pollution. But on the developed coast, buildings, parking lots, roads, and other impervious surfaces, trees and soil no longer slow the rainfall and filter the water. The resulting stormwater instead picks up nitrogen and phosphorus pollutants. It flows rapidly into baysou, beaches, Biloxi Bay, and Mississippi Sound via storm drains. The results include beach closures, oyster contamination, and fish kills. This project would increase urban forestry - trees and soil - in the city landscape. Trees and soil decrease polluted stormwater runoff (including oil, pet waste, and fertilizer). This increases water quality for recreation, oysters, and fish on the Mississippi Gulf Coast.</p>	Harrison/Jackson	Yes	Yes	Yes	Yes	No	No	Yes	Yes	No	\$	2,000,000.00	\$	-
Eco Restoration	5824	8/10/2018	<p>Undeveloped areas of the coast, rain is intercepted by trees and the rest soaks into the ground, filtering out pollution. But on the developed coast, buildings, parking lots, roads, and other impervious surfaces, trees and soil no longer slow the rainfall and filter the water. The resulting stormwater instead picks up nitrogen and phosphorus pollutants. It flows rapidly into baysou, beaches, Pascagoula River, and the Mississippi Sound via storm drains. The results include beach closures, oyster contamination, and fish kills. This project would increase urban forestry - trees and soil - in the city landscape. Trees and soil decrease polluted stormwater runoff (including oil, pet waste, and fertilizer). This increases water quality for recreation, oysters, and fish on the Mississippi Gulf Coast.</p>	Jackson	Yes	Yes	Yes	Yes	No	No	Yes	Yes	No	\$	2,000,000.00	\$	-
Eco Restoration	5825	8/10/2018	<p>Improve water quality by reducing nutrient loads to coastal watersheds. Develop conservation plans on agricultural land and rural communities that support them to address nutrient and sediment runoff, and implement conservation practices identified in the conservation plans.</p> <p>The primary goal for this project is to improve water quality through nutrient and sediment reduction. The health of the Gulf of Mexico depends upon the health of its estuaries, and the health of those coastal waters is influenced by land uses in the watersheds of its tributaries. In the five Gulf States, over 80 percent of the acreage is in private ownership (USDA-NRCS 2014) and is used for forestry and agriculture. This watershed-scale project restores water quality impacted by the DWH oil spill by reducing nutrients and the sediments carrying them into coastal waters. Runoff from cropland, pasture, grassland, forest, urban areas contributes nutrients and sediments that adversely affect the health of coastal waters of the Gulf. While agricultural lands are a contributor (and in many instances, not the leading contributors) of nutrients to coastal waters, there are opportunities to address nutrient related resource concerns at their sources across multiple landuses in the Middle Escarpment River watershed.</p> <p>USDA will provide outreach and technical assistance to voluntary participants - especially on the most vulnerable acres in the watersheds - to develop conservation plans. The project proposes to implement clusters of conservation practices within the smallest watershed practicable with the goal of making a discernable difference in water quality at the watershed level. While this targeted and concentrated approach is desired, the project proponent understands the voluntary nature of landowner participation and will strive to reach the critical sources within the watershed. The proposed conservation practices would reduce nutrient losses from the landscape, reduce nutrient loads to streams and downstream receiving waters, and reduce water quality degradation in watersheds that would provide benefits to coastal watersheds and marine resources.</p>	Jackson/George	Yes	No	No	Yes	No	Yes	Yes	No	\$	2,000,000.00	\$	-	
Eco Restoration	5827	8/10/2018	<p>Improve water quality by reducing nutrient loads to coastal watersheds. Develop conservation plans on agricultural land and rural communities that support them to address nutrient and sediment runoff, and implement conservation practices identified in the conservation plans.</p> <p>The primary goal for this project is to improve water quality through nutrient and sediment reduction. The health of the Gulf of Mexico depends upon the health of its estuaries, and the health of those coastal waters is influenced by land uses in the watersheds of its tributaries. In the five Gulf States, over 80 percent of the acreage is in private ownership (USDA-NRCS 2014) and is used for forestry and agriculture. This watershed-scale project restores water quality impacted by the DWH oil spill by reducing nutrients and the sediments carrying them into coastal waters. Runoff from cropland, pasture, grassland, forest, urban areas contributes nutrients and sediments that adversely affect the health of coastal waters of the Gulf. While agricultural lands are a contributor (and in many instances, not the leading contributors) of nutrients to coastal waters, there are opportunities to address nutrient related resource concerns at their sources across multiple landuses in the Upper Escarpment River watershed.</p> <p>USDA will provide outreach and technical assistance to voluntary participants - especially on the most vulnerable acres in the watersheds - to develop conservation plans. The project proposes to implement clusters of conservation practices within the smallest watershed practicable with the goal of making a discernable difference in water quality at the watershed level. While this targeted and concentrated approach is desired, the project proponent understands the voluntary nature of landowner participation and will strive to reach the critical sources within the watershed. The proposed conservation practices would reduce nutrient losses from the landscape, reduce nutrient loads to streams and downstream receiving waters, and reduce water quality degradation in watersheds that would provide benefits to coastal watersheds and marine resources.</p>	George	Yes	No	No	Yes	No	Yes	Yes	No	\$	2,000,000.00	\$	-	
Eco Restoration	5828	8/10/2018	<p>Improve water quality by reducing nutrient loads to coastal watersheds. Develop conservation plans on agricultural land and rural communities that support them to address nutrient and sediment runoff, and implement conservation practices identified in the conservation plans.</p> <p>The primary goal for this project is to improve water quality through nutrient and sediment reduction. The health of the Gulf of Mexico depends upon the health of its estuaries, and the health of those coastal waters is influenced by land uses in the watersheds of its tributaries. In the five Gulf States, over 80 percent of the acreage is in private ownership (USDA-NRCS 2014) and is used for forestry and agriculture. This watershed-scale project restores water quality impacted by the DWH oil spill by reducing nutrients and the sediments carrying them into coastal waters. Runoff from cropland, pasture, grassland, forest, urban areas contributes nutrients and sediments that adversely affect the health of coastal waters of the Gulf. While agricultural lands are a contributor (and in many instances, not the leading contributors) of nutrients to coastal waters, there are opportunities to address nutrient related resource concerns at their sources across multiple landuses in the Hobeckitto Creek watershed.</p> <p>USDA will provide outreach and technical assistance to voluntary participants - especially on the most vulnerable acres in the watersheds - to develop conservation plans. The project proposes to implement clusters of conservation practices within the smallest watershed practicable with the goal of making a discernable difference in water quality at the watershed level. While this targeted and concentrated approach is desired, the project proponent understands the voluntary nature of landowner participation and will strive to reach the critical sources within the watershed. The proposed conservation practices would reduce nutrient losses from the landscape, reduce nutrient loads to streams and downstream receiving waters, and reduce water quality degradation in watersheds that would provide benefits to coastal watersheds and marine resources.</p>	Pearl River	Yes	No	No	Yes	No	Yes	Yes	No	\$	2,000,000.00	\$	-	
Eco Restoration	5829	8/10/2018	<p>Undeveloped areas of the coast, rain is intercepted by trees and the rest soaks into the ground, filtering out pollution. But on the developed coast, buildings, parking lots, roads, and other impervious surfaces, trees and soil no longer slow the rainfall and filter the water. The resulting stormwater instead picks up nitrogen and phosphorus pollutants. It flows rapidly into baysou, beaches, St. Louis Bay, and Mississippi Sound via storm drains. The results include beach closures, oyster contamination, and fish kills. This project would increase urban forestry - trees and soil - in the city landscape. Trees and soil decrease polluted stormwater runoff (including oil, pet waste, and fertilizer). This increases water quality for recreation, oysters, and fish on the Mississippi Gulf Coast.</p>	Hancock/Harrison	Yes	Yes	Yes	Yes	No	No	Yes	Yes	No	\$	1,000,000.00	\$	-
Eco Restoration	5830	8/10/2018	<p>Health assessments are used to identify and understand population stressors, mitigate their effects, or plan more effective conservation measures, in response to management drivers (e.g., MMPA, ESA, NOAA's Ocean and Human Health Initiative, and more recently, for Natural Resource Damage Assessments (NDRDAs)).</p> <p>Capture/Release health assessments involve large teams of researchers using multiple vessels to locate, capture, assess, and release wild bottlenose dolphins. A large net is used to encircle one or more dolphins in shallow water. The team then enters the water and once the dolphin is disentangled from the net and restrained, blood is collected and vital signs are assessed. The dolphin is then brought up onto a specially designed platform on a boat for further examination and the collection of morphometric, diagnostic, and biological samples. Samples are processed on the boat for timeliness and quality control purposes.</p> <p>Standard morphometrics and diagnostics include a physical exam, body measurements (length and girth), ultrasound to assess reproductive status and blubber thickness, complete blood count (CBC)/blood chemistry/blood gases, serology, pathogen, endocrinology, urinalysis, skin and/or oral assessment, biotoxin and contaminant measures, and blubber and genital swabs. Most of these diagnostics can only be obtained from wild dolphins through capture and brief restraint. Health assessments conducted on bottlenose dolphins in the Southeast have used standardized protocols and established laboratories for sample analysis. The pooling of available samples has resulted in the establishment of reference intervals for many health parameters, such as CBC, serum chemistry, mass: length ratio, and also baseline levels for biotoxins, persistent organic pollutants (POP) including polychlorinated biphenyls (PCBs), polycyclic aromatic hydrocarbon (PAHs), and a suite of organochlorine pesticides.</p> <p>Health assessments have been conducted on bottlenose dolphin populations in various locations in the Gulf, including Sarasota Bay, Florida (1987-2002), Mississippi Sound, Mississippi (1982-2008), 2013, 2018), Matagorda Bay, Texas (1992), St. Joseph Bay, Florida (2005-2006), and Barataria Bay, Louisiana (2011, 2013, 2014, 2017, 2018). Health assessments conducted in Barataria Bay, Mississippi Sound, and Sarasota Bay were instrumental in the quantitative injury associated with the Deepwater Horizon oil spill.</p> <p>There is a continued need for periodic health assessments of bottlenose dolphins in Barataria Bay, Mississippi Sound, and reference populations in Sarasota Bay to monitor the effectiveness of, and potential impacts from, restoration activities being conducted in Louisiana waters. The health assessments would follow the same protocols and procedures that have been developed and implemented previously in Gulf waters.</p> <p>The future vision is to obtain more information from remote sampling of bottlenose dolphins injured by the oil spill, including biopsy, breath, and tagging. This would minimize the need for capture/Release health assessments because they represent higher risk to dolphins and to the team, and because of the difficult logistics and high costs. We also need coordinated data management, mapping, and periodic temporal analysis to maximize the information gained from available samples.</p>	Yes	No	No	Yes	No	No	No	No	No	\$	\$	-		

Eco Restoration			Coastal Environment Land Protection	The Land Trust for the Mississippi Coastal Plain (TMCP) is an accredited Land Trust dedicated to the conservation, promotion, and protection of open spaces and green places of ecological, cultural, or scenic significance in the counties of the Mississippi Coastal Plain. TMCP utilizes both the simple and conservation easement tools to conserve land for the benefit of habitats, species, and recreation. The Land Trust holds a conservation easement on approximately 18 miles of the Wolf River in partnership with the Wolf River Conservation Society (WRCS). WRCS is a non-profit corporation dedicated to conserving, managing, and protecting the Wolf River and its watershed from its headwaters in Lamar County to its termination at the Bay of St. Louis. The State of Mississippi has classified the entire length of the Wolf River as a Fish Wildlife stream to protect recreational use and the propagation and maintenance of a healthy, well-balanced population of fish and wildlife. The Wolf River is also Mississippi's first scenic river. The goal of this project is to establish funding to purchase individual parcels of land totaling 4-428.5 acres, located in areas identified as crucial to connecting continuing corridors of conservation land. The Wolf River Conservation Society has identified these areas based on locations that would establish the most effective corridor previously established by the State of Mississippi. In Harrison County, which total approximately 1320 acres managed by the Mississippi Department of Wildlife, Fisheries, and Parks. These properties are all tidally influenced, and consist of both estuarine marsh and bottom land habitat. Ecological Value: Protects properties as a buffer area for storm surge by providing dispersal and displacement in the event of flooding waters. These flooding waters have a natural function of turnover and flushing of coastal wetlands. Protects areas that provide clean water for our natural resources along the Wolf River and into the Bay of Saint Louis. Provides valuable habitat for a wide variety of plants and animals native to Mississippi, as well as migratory birds. Provides a natural ecosystem for marine life. Opportunities for low impact recreational activities such as kayaking, bird watching, fishing, and wildlife observation extend and connects corridors of conservation land.	Harrison	Yes	No		Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	\$	\$		Land Acquired	
Eco Restoration	5877	4/16/2019	Blount Upstream and Downstream Storm Water Education and Community Engaged Green Infrastructure	The purpose of this project was to raise awareness among property owners in the Blount peninsula area of the Mississippi coastal plain and encourage them to take steps to reduce stormwater runoff and improve water quality. Because all of the stormwater runs into marine water either directly or by way of one of several bays leading to the Back Bay. In the past few years most of the streets and the storm drainage systems on the peninsula have been or are being replaced, a situation that is positive as far as moving stormwater out of streets but will increase the stormwater impact on the bayous and back bay with more and faster moving storm water. What is more, the construction work itself has impacted the natural waterways due to increased dirt running the bayous from unpaved roads. The time for the Blount peninsula is right for a comprehensive community-engaged stormwater management campaign that improves and creates both upstream and downstream green infrastructure. Upstream, the project will improve the quality and quantity of water that enters the storm drainage system with four related activities: 1.Environmental education with Blount Public School students 2.Stormwater education to residents of the Blount peninsula 3.Low impact development training and design resources for developers and city staff 4.Property owners small grant program to do on-site and neighborhood-scale green infrastructure projects. Downstream, the project will improve the stormwater quality and quantity that enters the marine environment with two related activities: 1.Betterment and improvements of natural waterways that connect storm drainage to the Back Bay, especially Keegan Bayou and Bayou Auguste, which have been impacted most by the road construction work. 2.Education and leveraging of on-going and planned projects to bring green infrastructure planning and funds to install and maintain landscape areas. Environmental education with Blount Public School students. For the past seven years GCCDS has developed and implemented educational outreach programs with Blount Junior High School, East Hancock Elementary, St. Martin High School, and with middle school students in the Gulfport School District. During the summer of 2017, GCCDS received funding through the National Marine Sanctuary Foundation in partnership with NOAA to further modify the curriculum for a summer program with the Bayou and Gulf Club of Hancock County. Measures of success: Over 800 students and teachers reached through direct programming with several hundred more potentially reached through exhibitions of work to parents, local leadership and the larger community. Outcome: Change of behavior for students, their families and larger community to reduce trash and pollution entering storm water drainage system. Stormwater education to residents of the Blount peninsula. The project will build through the City of Blount's ongoing stormwater management resident outreach as well as with community workshops in conjunction with the property owner small grant program. Measure of success: outreach to all Blount residents through 8 Mail and other media, at least 10 community workshops. Outcome: Change of behavior for residents to make improvements to their yards and stormwater entering the stormwater drainage system. Low-impact development training and design resources. GCCDS will work with the City of Blount to develop training and explore possible incentives to promote low-impact development. Measure of success: low-impact development training material tailored to the Blount peninsula. Outcome: Economic growth with improved development. Property owners small grant program to do green infrastructure projects. Around 20% of the proposed funds will have a direct impact on citizen's quality of life by making upstream stormwater improvements in the community. At least 75 small grants between \$2500 and \$5000 will be awarded to property owners on the Blount peninsula who apply for assistance to do green infrastructure projects on their property or on property owned by their city or neighborhood. With the completion of the road and stormwater infrastructure construction such projects will be a welcome contribution for ensuring the inconsequence of several years of road construction and will have multiple benefits. First, the projects will reduce runoff and help	Harrison	Yes	Yes	60%	Yes	Yes	No	No	No	Yes	No	Yes	No	Yes	No	Yes	No	\$	\$		
Eco Restoration	5878	4/17/2019	Hancock County Utility Authority - Kln / Back Bay Phase 3	This project is Phase 3 of the area East of the Hancock County Area. It will be to install a sewer collection system with grinder pumps and lift stations in the designated area to connect approximately 80 homes and disperse the use of septic tanks. These tanks are close to creeks, streams and bayous that empty out through Bottom Bayou into the Bay of St. Louis and eventually into the Gulf of Mexico. This is a significant source of impaired waterways. The wastewater from this area will be transported to the Northern Regional Wastewater Treatment Plant for proper treatment.	Hancock	Yes	Yes	70%	Yes	No	No	No	No	No	No	No	No	No	No	No	\$	\$	2,620,550.00		
Eco Restoration	5882	7/11/2019	Enhancing Gulf Waters through Forested Watershed Restoration	Background: The Gulf of Mexico's forests, when healthy, reduce sediment and nutrient yields, regulate surface water flows, and improve groundwater recharge relative to other land uses (Sun et al., 2004; Lockaby et al., 2013). They offer recreational opportunities, wildlife habitat, improved air quality, support for the region's economy, and are an integral part of the carbon cycle. Protecting forests at risk of conversion to more intensive uses (Kilgus et al., 2014), restoring native species (Bradley et al., 2018), controlling invasive species, managing for resilience against catastrophic loss (e.g., wildfire, hurricane, drought, pests, etc.), and restoring forested wetlands, floodplains and riparian areas are vital to the health of the Gulf (Nouse et al., 2011). Proposal: This application seeks to establish a program that will enhance and maintain water quality and quantity by protecting, managing, and restoring forested ecosystems. The program is centered on advancing the RESTORE Council's water quality and quantity goal, but benefits will accrue in all goals. The focus is on protecting and restoring forests, including urban forests, in priority watersheds in Alabama, Florida and Mississippi where the need is great, and Partners stand ready to assist and leverage investments. The program is a scalable, science-based approach implemented on public and private lands. It involves: •Landowner outreach techniques that build upon and look to enhance existing tools and networks. •Coordinated delivery through State Forestry Agencies in Alabama, Florida, and Mississippi. •Revised recruitment of forest landowners in targeted watersheds. •Science-based decision support from the USDA Forest Service Southern Research Station who will use the Soil and Water Assessment Tool (SWAT) model and other data and tools to inform priorities, assess and monitor project impacts, and inform adaptive management decisions. •Proactively using a portion of funding for an open and competitive Request for Proposals (RFP) to extend the reach of these efforts and cultivate innovation. •Integrated alignment with other federal, state, and non-federal programs as a program multiplier to conduct similar work upstream of the RESTORE coastal area. •Use of USDA practices and standards to ensure compliance with environmental and cultural resource requirements. There are limited risks and uncertainties: private landowner willingness to participate can cause delays and require strategic adjustments, catastrophic events (e.g., hurricanes, wildfires) can alter the landscape and impact expected outcomes, and weather extremes (e.g., droughts, excessive rain) can delay implementation. Anticipated outcomes resulting in improved water quality and quantity, avoided land conversion and increased forest cover, increased forest management activities and best management practices, increased landowner understanding of forest management benefits, improved wildlife habitat, and added economic resilience. Priority Criteria Information Priority Criteria: Large-scale projects and programs that are projected to substantially contribute to restoring and protecting the natural resources, ecosystems, fisheries, marine and wildlife habitats.	Hancock, Stone, St Tammany, Mobile, Jackson, Forrest, Washington, Harrison, George, Perry	Yes	No		Yes	No	No	No	No	No	No	No	No	No	No	No	No	\$	\$	3,080,000.00	
Eco Restoration	5901	4/30/2020	Enhance conservation of bottlenose dolphins in Mississippi state waters by strengthening capacity for science-based marine mammal health and management	The Mississippi Sound (MSS) is home to the nation's largest bay, sound, and estuarine (BSE) population of common bottlenose dolphins (Tursiops truncatus). The MSS serves as a nursery ground for juvenile dolphins calves in the spring and summer months and provides vital foraging and nursery habitat for dolphins year-round. As a top predator, dolphins are an important sentinel species for the ecosystem. In addition, the Furbes waters of the MSS also support a large recreational and commercial fishing industry and an oyster industry. The MSS is heavily impacted by freshwater inputs from large watersheds such as the Mississippi River, Pearl River, and Pascagoula River. In particular, the 2019 opening of the Bonnet Carré Spillway introduced a substantial amount of freshwater from the Mississippi River into the Mississippi Sound, which is not normally exposed or connected to this marine system. During this year, dolphin mortalities increased by more than three times over the yearly average from 2014-2018. Other large ecological disasters such as the Deepwater Horizon (DWH) oil spill, hurricanes, and algal blooms also affect dolphins. Therefore, effective management of dolphin health in the MSS is critical for the viability of this important species in the Gulf of Mexico, and it requires science-based decision making and interventions from experienced and qualified experts to manage this marine resource in the context of the economically vital MSS. To effectively and sustainably manage this vital species in the MSS over the next ten years, Mississippi State University College of Veterinary Medicine (MSU-CVM) and the Institute for Marine Mammal Studies (IMMS) have developed a comprehensive, science-based plan with the following objectives: 1) Determine the threats to dolphin health, including human interactions, in the MSS that result in strandings and mortalities. 2) Assess the environmental threats affecting dolphins and their habitat, particularly changes to water quality and salinity, pollutants, and prey availability in the natural habitats of dolphins in the MSS. 3) Estimate the abundance and distribution of the dolphin population in the MSS using the transect methodology for stock assessments. 4) Determine the degree of connectivity and boundaries of the dolphin population in the MSS using photo identification to determine habitat use, site fidelity of individuals and groups within the MSS, as well as determine the movements in response to changes, including salinity. 5) Provide education and increase outreach to build capacity in Mississippi for effective management of dolphins in the MSS. By providing outreach for K-12 students; and the public; and by conducting hands-on specialized education for veterinary students and undergraduate students, MSU-CVM and IMMS will build capacity in Mississippi to enable future expertise to manage the state's coastal resources. The objectives of this plan align with state and federal agency priorities. Furthermore, MSU-CVM and IMMS have experience and a track record of productivity in all the proposed activities. We anticipate that, through conducting this comprehensive set of aims from 2021-2030, the bottlenose dolphin population in the MSS will be effectively monitored and managed to establish their sustainable, long-term health. We further expect that, through the knowledge gained in this proposed program, the MSS bottlenose dolphins will be the most well-documented population in the Gulf of Mexico, and Mississippi will become a model state for effective management of its wild marine mammal stocks.	Pearl River	Yes	No		Yes	No	No	No	No	No	No	No	No	No	No	No	No	\$	\$	30,000,000.00	

PROJECT ALREADY FUNDED / TO BE FUNDED / OR VETTED THROUGH SELECTED (GREY CELLS)

Eco Restoration	PROJECT ID	PROPOSAL DATE	PROJECT NAME	DESCRIPTION	LOC. COUNTY	COEXISTENCE														ESTIMATED COST	FUNDING AVAILABLE	COMMENTS			
						MANUFACTURING (CONSUMABLE)	MANUFACTURING (DURABLE)	AGRICULTURE (CONSUMABLE)	AGRICULTURE (DURABLE)	RECREATION AND RECREATION	RAILROADS	RAILROADS	MINERAL EXPLORATION	MINERAL EXPLORATION	MINERAL EXPLORATION	MINERAL EXPLORATION	MINERAL EXPLORATION	MINERAL EXPLORATION	MINERAL EXPLORATION						
Eco Restoration	1586	7/7/2011	Deployment of New Turtle Excluder Devices (TLEDs) on the Wolf River	(ORIGINAL DRRB) The objective of this project is to provide a complete set of new Turtle Excluder Devices (TEDs) to all shrimp fishing vessels required to use TEDs in the Gulf and South Atlantic including shrimp trawls, if required. The benefits of this project will be to increase the percent effectiveness of public and private sector efforts to protect and restore endangered and threatened species of sea turtles and other species of concern. Endangered and threatened populations of sea turtles that forage and nest throughout the Gulf and South Atlantic region were adversely impacted by the oil spill and the clean-up activities, including the use of dispersants and controlled burns. These impacts included the effectiveness of long-standing public and private sector efforts in the US and internationally to protect and restore these sea turtle populations throughout the Atlantic basin. A major component of these efforts is the use of TEDs in the US shrimp fishery. TEDs are highly effective in reducing injury and mortality of sea turtles and other species of concern, including various species of coastal sharks. The effectiveness of TEDs to exclude sea turtles and other species decreases over time with contact use, even with maintenance. The cost of new TEDs and maintenance is high relative to the financial condition of the shrimp fishery, and TEDs serve as a disincentive to replace or maintain old, less effective gear. This can reduce the level of sea turtle protection achieved by the fishery. The full deployment of new TEDs on all shrimp vessels required to use TEDs would reduce sea turtle injury and mortality, increase the effectiveness of public and private efforts to protect and restore threatened and endangered sea turtles, and contribute to the mitigation of the adverse impacts of the oil spill and clean-up activities on these species. Please see attached project cost estimate analysis.	Hancock, Harrison, Jackson	Yes	No		Yes	No	No	No	No	No	No	No	No	No	No	No	No	\$	\$	30,800,000.00	
Eco Restoration	1591	8/18/2011	Wolf River Restoration Project	(ORIGINAL DRRB) The purpose of the Wolf River Restoration Project (WRRP) to facilitate fish, wildlife, and plant habitat protection, restoration, and enhancement, primarily for Federal trust resources, including migratory birds, endangered and threatened species, coastal wetlands and marshes, and aquatic resources, floodplains, and riparian areas along the Wolf River in Hancock and Harrison Counties in Mississippi. The core of the WRRP is lands totaling approximately 2,800 acres or approximately 28.1 miles of Wolf River frontage. Residential and commercial development in Hancock and Harrison Counties has seen a tenfold increase over the past two decades. Consequently, much of the lands found within the Wolf River Watershed have been or are under immediate threat of conversion by purchasing, restoring and preventing this critical drainage and riparian buffer, the Wolf River will continue to provide important freshwater flow into the important tidal marshes of the Bay of St. Louis and the Mississippi Sound.	Harrison	Yes	Yes		No	Yes	No	No	No	No	No	No	No	No	No	No	\$	\$	42,000,000.00	1,750,000.00	

Eco Restoration	1693	5/16/2013	Reduction of Nutrients and Sediments from Agricultural Lands	(ORIGINAL DMI1976) This project would involve landowners with livestock on land adjacent to field ditches, canals, streams and waterways to reduce the amount of nutrient and sediment entering the stream flow. This would involve assistance to landowners with fencing off of critical riparian conditions, water sources, feeding areas, grazing rotations and educational meetings to assist landowners in best management practices and to learn about other sources of funding. This project would reduce the amount of nutrients and sediment entering the waters that flow into the Tombigbee river basin and then the Gulf of Mexico. This would be administered through the NE Miss. RC&B with the assistance of the local Soil and Water Conservation Districts and Miss. Soil and Water Conservation Commission and the Natural Resources Conservation Service office.	Alcorn, Tallapoosa, Lee, Lawrence, Prentiss, Chickasaw, Calhoun, Clay, Monroe, Lowndes, Oktobaha, Webster, Choctaw, Nowata, Kemper	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	No	No	\$ 1,750,000.00	\$	-	
Eco Restoration	1680	1/22/2014	Land Acquisition - Forest Heights	Purchase approximately 600 acres at \$20,000.00 a acre for a total cost of \$12,000,000.00 The land is presently owned by Bayou West which is located between and 1.5, west of the railroad track. It is mostly pine and savanna wetlands. It would be used as a permanent conservation easement, a mitigation bank, and not allow any development in this area.	Harrison	Yes	Yes		No	No	No	No	No	No	No	No	\$ 12,000,000.00	\$	-		
Eco Restoration	1703	2/4/2014	Pass Christian - Johnson Bayou Drainage Improvements	Study flooding effects and improve drainage characteristics of Johnson Bayou. This project will serve to reestablish the optimum drainage characteristics of Johnson Bayou and lessen the effects of flooding of adjacent properties caused by the restriction (i.e., overgrowth of vegetation, sediment buildup, encroaches, etc.) that currently exist in the channel. Work involved will include removing vegetative debris and sediment buildup from the side slopes and flow line of the channel, determine and establish the optimum cross-sectional area of the bayou for improved drainage characteristics, stabilize the surrounding ground with rip-rap or gabions on the side slopes, replant riparian native vegetation species in the floodplain to help prevent erosion, etc.	Harrison	Yes	Yes		No	No	No	No	No	No	No	No	No	\$ 2,450,000.00	\$	-	
Eco Restoration	1716	2/6/2014	Proposed RESTORE Fund Land Acquisitions	The Land Trust for the Mississippi Coastal Plain (LMCP) is an accredited Land Trust dedicated to the conservation, promotion, and protection of open spaces and green places of ecological, cultural or scenic significance in the counties of the Mississippi coastal plain. This proposal is intended to provide a brief overview of several properties the Land Trust for the Mississippi Coastal Plain has determined to be in line with the goals set forth in the Gulf Coast Ecosystem Restoration Council's Proposed Comprehensive Plan entitled, the path Forward to Restoring the Gulf Coast: A Proposed Comprehensive Plan: 1) Restore and Conserve Habitat 2) Restore Water Quality 3) Regulate and Protect Living Coast and Marine Resources 4) Enhance Community Resilience 5) Restore and Revitalize the Gulf Economy. The proposed properties are dispersed throughout three of the six coastal counties in which the Land Trust for the Mississippi Coastal Plain operates. Jackson County: Graveline Bayou- Cumber 369 acres, Graveline Bayou-Whithead 739 acres, Graveline Bayou-Mahoney 639 acres, Soggett 16.64 acres, Gulf Creek 19.54 acres, Brinkley Bayou 138.82 acres; Harrison County: Turkey Creek 214.27 acres, Canal Land 218.52 acres; Hancock County: North Beach 41.129 acres, Andyke Area 331.27 acres, Mangrove Beach 19.89 acres, Canal Land Co. 132.82 acres. The attached documents is designed to illustrate the value each of these properties holds. Acquisition of any one of these proposed sites and its subsequent conservation will increase property, economic, and aesthetic value of the area in which the site is located. The properties, if acquired by the Land Trust for the Mississippi Coastal Plain, will have the potential to restore and conserve habitats by providing homes for our unique coastal habitats and all species that reside within them. They can restore water quality by protecting our watersheds and, in turn, our water supply clean. They can enhance community resilience by offering educational opportunities and revitalize the Gulf economy by creating interesting new low-impact recreational spaces where adults, children, citizens, and visitors can fully immerse themselves in the beauty and intrigue of the Mississippi Gulf Coast. It is restored natural state. Funding these acquisitions will ensure a legacy left for our future, as RESTORE funds are made to do.	Harrison, Hancock, Jackson	Yes	Yes	Yes	Yes	No	No	Yes	No	Yes	No	Yes	No	Yes	\$	\$	-
Eco Restoration	1775	3/20/2014	Graveline Bayou Watershed Restoration	This project includes the development of a watershed management plan and modeling of the Graveline Bayou Watershed. The hydrologic and hydraulic study will help to determine water mitigation or erosion measures that need to be taken moving forward. This watershed consists of freshwater wetlands, rivers, streams, and associated riparian areas. Facing wetland loss, shoreline erosion, and increased sedimentation from land development, creating a watershed management plan can help prepare and mitigate future impacts of both man-made and natural disasters. Part of the management plan will include a quantitative analysis of current pollutant and sediment loading. The goal of this project is to model the watershed, identify high risk areas, and develop a plan to address further impacts of urbanization on the habitat capacity and degraded streams and install management measures to monitor water quality of the watershed.	Jackson	Yes	No		Yes	No	No	No	No	No	No	No	No	\$	\$	-	
Eco Restoration	1797	4/7/2014	Mississippi Dusky Gopher Frog Preservation Parcel at Tradition	Acquisition of 270 acres, currently owned by Columbus Communities, LLC, contiguous with the DeCade National Forest in central Harrison County, Gopher Frog Preservation Parcel at Tradition would serve multiple environmental purposes: a) enhance future water quality and habitat of the estuarine ecosystem comprised of the Biloxi River watershed flowing into the Biloxi Bayou Mississippi Sound, thereby aiding in the restoration of these natural resources harmed by the BP oil spill, and b) increase permanent habitat around Glen's Pond, the primary breeding site of the Mississippi Dusky Gopher Frog (endangered species), the Red Cockaded Woodpecker (threatened species), and the Gopher Tortoise (threatened species), which, with Longleaf Pine, are important to the restoration of natural resources in the Coastal Plain. This additional habitat would likely increase the population and survivability of the MS Dusky Gopher Frog. This 270-acre parcel borders critical habitat recently designated by USFWS for the MS Dusky Gopher Frog. Approximately 100 MS Dusky Gopher Frog breed in Glen's Pond on the parcel proposed for acquisition, making this habitat an important breeding site for the species. The DeCade National Forest contiguous to the east of controlled burns and other ecosystem management techniques. Recently, USFWS has successfully hatched Dusky Gopher Frog eggs from Glen's Pond in another pond nearby. If acquired by a state or federal agency or land trust, the Tradition parcel could be beneficial for: a) protecting the current population of MS Dusky Gopher Frog and Gopher Tortoise, b) restoration of longleaf pine on the parcel, and c) enhancement of water quality in the estuary formed by Biloxi River, Bay of Biloxi, and Mississippi Sound. Restoring the longleaf pine ecosystem on this parcel would also create habitat for another endangered species, the Red-shouldered Woodpecker. It is our understanding that biologists from the USFWS and the Center for Biological Diversity, who have studied the MS Dusky Gopher Frog, support the acquisition of this parcel by an appropriate governmental agency or land trust to enhance the habitat, range and survivability of the MS Dusky Gopher Frog and its partner, the Gopher Tortoise, a threatened species. The Dusky Gopher Frog spends part of its life cycle in Gopher Tortoise burrows along with approximately 300 other species of animals. In order to increase the chance of survivability of the MS Dusky Gopher Frog and Gopher Tortoise, biologists predict that by improving the quality of the additional habitat through controlled burns, relocation of Gopher Tortoise, and planting of longleaf pine, the MS Dusky Gopher Frog population from Glen's Pond would likely increase, allowing government biologist to transfer more of the eggs or frogs that hatch in Glen's Pond to other historically suitable habitats in the Southeastern United States, thereby increasing the range and survivability of this endangered species.	Harrison	Yes	Yes		No	No	Yes	No	No	No	No	No	No	No	\$	\$	-
Eco Restoration	1884	6/9/2014	Diamondhead Ecosystem Restoration, Stabilization and Sustainability Project - Water Quality Restoration Enhancement Project	Stream restoration, sedimentation control, ditch bank restoration, habitat restoration, natural resource and monitoring both conservation and recovery are the components of this project. Stream restoration will enhance the quality of water in adjacent waterways in addition to detention ponds and overflow discharge outfalls located within the City. In conclusion, the project restores streams and drainage discharge areas to its original state with the addition of sediment traps which makes beneficial use of runoff.	Hancock	Yes	No		Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	\$ 1,688,000.00	\$	-	
Eco Restoration	2034	8/2/2011	Turkey Creek Ecosystem Restoration	Restoration of 698 acres of an undeveloped site of degraded wet pine savanna habitat. Measures required to restore hydrology and natural vegetation of the site include filling drainage ditches, road removal and controlled burns	Harrison	Yes	No		No	No	No	No	No	No	No	No	Yes	\$	\$	-	
Eco Restoration	2046	8/1/2011	Coastal Beach and Dune Restoration	This project consists of the creation of a dune field (2' high, 60' wide, and 36 linear miles long), the planting of dune vegetation, and placement of sand fencing	Hancock, Harrison, Jackson	Yes	No		No	No	No	No	No	No	No	Yes	\$	\$	-		
Eco Restoration	2050	7/25/2011	Restoration of Buccanear State Park	Re project consists of habitat enhancements including submerged aquatic vegetation (SAV) plantings. Historically, SAV beds of Ruppia maritima have been documented intermittently along the adjacent coastline. SAV beds are an important nursery for many commercially important species, such as blue crabs. Once the marine environment of the State Park can be impacted by freshwater from the opening of the Bonnet Carré spillway, it would be important to utilize a multiple habitat restoration approach for this area. Also, adjacent waters have some existing oyster reefs and sand borrow areas used for local beach nourishment projects. Therefore, oyster reefs could be re-established at the park/Oyster reefs could enhance the stability of the seabed, promoting additional SAV development throughout the reef. Sand replenishment and construction of low profile artificial reefs would further habitat and fisheries enhancements.	Hancock	Yes	No		No	No	No	No	No	No	No	No	Yes	\$ 7,000,000.00	\$	-	
Eco Restoration	2084	11/9/2011	Restoration Initiatives of the INFINITY Science Center	The INFINITY Science Center provides a unique opportunity to restore the impacts of the oil spill and educate the public about coastal wetlands and the state of recovery. INFINITY is a state-of-the-art, interactive science and interpretive center under construction in Hancock County and is a 67-acre oil spill and wetland habitat. Through hands-on activities in the science gallery, as well as in the field, visitors will learn about wetland plants and participate in restoring vegetation in the nearby Pearl River watershed. Nature trails to the East Pearl River, which flows into the Mississippi Sound/Gulf of Mexico, will connect with 43 miles of scenic beaches in Hancock County. The INFINITY trail will provide opportunities to monitor the impact of the spill on local wetlands, native wetland bird species and wetland-dependent migratory species.	Hancock	Yes	No		No	No	No	No	Yes	No	Yes	No	Yes	\$ 10,000,000.00	\$	-	
Eco Restoration	2087	10/21/2011	Restoration of Buccanear State Park	The significant and long term negative impacts along the Gulf Coast resulting from the Deepwater Horizon oil spill will require a suite of restoration projects. In addition to physical marsh restoration and other activities to restore resources, the entire Gulf region will require a targeted, sustained outreach and education campaign to improve the health of impacted resources. This type of restoration project, conducted as part of NREDA in the past, will reduce future injury to protected species - both marine mammals and sea turtles - and their habitats through the reduction of existing marine debris as well as the prevention of future introduction of hazards. By preventing preventable future injuries, this project will enhance the capacity for species and habitat recovery and the time of impact to recovery will be shortened. Enhancing nearshore and shoreline habitats through reducing impacts of marine debris will aid in the long-term, sustainable recovery of the Gulf Coast at an accelerated rate. Specifically, this project will effectively coordinate and execute a two-year, intense outreach and education campaign that will result in lasting change after the project is complete. Hosted at the NOAA Disaster Response Center in Mobile, AL, and coordinated as a NOAA partnership project with the NOAA Marine Debris Program as lead coordinator, this project will engage all the state, maintain and improve partnerships with state and local organizations, and strengthen public engagement across the Gulf. This project is specifically targeted to involve and educate Gulf Coast communities how marine mammals, sea turtles, and habitat will all directly benefit from debris prevention and removal. The project will also look to identify targeted areas for debris removal that will have the most impact to improve the ecological health of the Gulf. Key contacts associated with this project already have strong professional working relationships across the region. As has been successfully demonstrated in previous projects in the Gulf of Mexico, Sea Grant extension agents have a unique capacity to strengthen community involvement - including select communities where English is not the first language and broader awareness through effective beach clean-ups, fish releases, etc. This project will incorporate powerful Public Service Announcements, print materials, and technology to effectively raise the awareness across the Gulf States that a sustained outreach campaign focused on debris prevention and removal will benefit livelihoods in the entire region in both the short and long term.	Gulf of Mexico	Yes	No		No	Yes	No	No	No	No	No	No	Yes	\$ 10,000,000.00	\$	-	
Eco Restoration	2127	9/24/2014	Addressing Marine Debris to Expedite Recovery along the Gulf Coast	State of the Wolf River in Harrison County, Mississippi has been and is being protected for conservation, restoration and recreational use as part of the ecosystem of the Mississippi Gulf Coast. Land owners such as oyster leases recognize the importance of the Wolf and other coastal rivers and streams to the health and productivity of the coastal ecosystem. The Wolf River has been designated by the State of Mississippi as a scenic and protected river from its headwaters in Lamar County to its estuary in the Bay of St. Louis. There are many privately owned suitable parcels of land available for our right purchase which would further the conservation, restoration and recreational process and improve the water quality of the region. For example there is a 200 acre site available for sale just south of Cable Bridge and Cable Bridge Road well suited to a public recreational area and public access to the river. Such a site, and there are other suitable sites along the river, could also provide educational opportunities for improved public awareness and understanding of the vital role of our coastal rivers and streams within the coastal ecosystem.	Harrison, Hancock, Jackson	Yes	No		No	No	No	No	No	No	No	No	Yes	\$	\$	-	
Eco Restoration	2138	10/4/2014	Mississippi Gulf Coast Litter Control	Another important restoration, conservation and recreational project to be considered within the coastal counties of Mississippi is the public acquisition of selected low lying land north and south of US Highway 90. There are many vacant and larger parcels throughout the coastal counties with a high level of visibility to regional/recreational opportunities, improved water quality and to restore both habitat for native plants and animals of the Mississippi Coastal Ecosystem.	Hancock, Harrison, Jackson	Yes	No		Yes	No	No	No	No	No	No	Yes	\$	\$	-		

Eco Restoration	3209	11/14/2014	Oyster Reef Mapping and Habitat Monitoring 2C ¹ Suggestions to Improve Commercial Yield Dr. Anne Stoeckl (USFWS), Dr. Ian Church (USFWS) and Dr. Craig Welch (UM) Coastal habitats provide ecological, cultural, and economic value. They act as critical habitat for thousands of species, including numerous threatened and endangered species, by providing shelter, spawning grounds, and food. Oysters, a commercially harvested food source in the Mississippi Sound, are subject to many natural and man-made impacts, including storms moving sand onto the reef and surge traffic running across the reefs. While covering by surface rocks will damage the reef structure, toxic runoff advected over the reef can cause damage to the biota living within the reef damaging or even destroying the natural ecosystem that allows them to flourish and grow producing the seafood covered by many. It is costly, time consuming and labor intensive to estimate health and shape of a large reef using conventional methods of spot sampling small boats and systems to get oyster shells on the surface. We propose to map one oyster reef that previously showed signs of damage, using a multibeam echo sounder, a sub bottom profiler and a side scan sonar to establish the extent of the reef and the sub bottom structure below and around the reef. To guide future culturing projects. Since Oyster growth is slow, we will collect monthly passive and active acoustic time series measurements at this reef as well as at an alternate reef that is established as being healthy. Acoustic signatures of both reef will be compared to evaluate the health status of the damaged reef. In case of natural or man-made disasters we will collect additional data to properly document the effects of these events to the reef. We propose that new culturing efforts to be directed to areas identified by sub bottom structure analyses to be likely to sustain a positive relief after culturing thus providing the hard ground necessary for young oysters to grow on. An additional spatial multibeam survey of the newly culched area after will be used to evaluate the distribution of the applied dead oyster shells on the seafloor. This high resolution bathymetry data will provide spatial coverage and thickness of this material on the seafloor by subtracting pre from post culturing bathymetry, with the difference in the data showing the added water chills. While we recommend complete coverage of MS Oyster Reefs, it is possible that regional resource managers may wish to focus on a specific resource site and the data from that study can drive models for additional sites throughout the Gulf coast. Thus the budget provided targeting regime for a single site only. This project can stand alone based on the efforts of a combined USM and UM field collection team, as well as the laboratory efforts of the USM and UM team. However, value added toolbox analysis options are also available (see Restore Project headed by Sturtevy, UM) Deliverables: Year 1 Basic map of oyster reef extents, based on high resolution multibeam seafloor data, side scan and sub bottom data. Suggestions for future culturing sites based on those data to improve efforts of reef maintenance and expansion. Pre and post culturing MBES and SSS maps over new cultch sites. Collect and disseminate passive acoustic data to gauge reef health Year 2 and 3 Continued monthly monitoring of reef using passive and active acoustics to measure changes in reef shape, growth and health, based on acoustic backscatter data and passive noise changes in the reef. For the passive data, the general idea is that more high pitch noise will indicate a more active and healthy reef (do a higher activity of benthic organisms in the reef making more sound. Monitoring of culched reef) The Deepwater horizon oil spill caused direct and significant harm to Mississippi's St. Louis Bay and the Mississippi Sound. St. Louis Bay and its tributaries offer an ideal ecosystem for a water quality and quantity restoration program to demonstrate a comprehensive, integrated approach to holistic restoration which could be transferable Gulf-wide. Water quality assessments and monitoring provide a foundation for programmatic, science-based decision-making to coordinate, expand and integrate many on-going projects proposed by local stakeholders, or from various comprehensive plans. This effort will aggressively identify, engage and include local government, non-government and private stakeholders in a transparent process to identify, prioritize, permit and implement priority water quality and quantity projects while building new partnerships to leverage technical and financial resources during implementation and for long term operation and maintenance. This program proposes a new collaboration between Mississippi State University (MSU), the U.S. Department of Agriculture's Natural Resources Conservation Service (NRCS), Jackson State University (JSU) and the Pickering Firm, Inc. (PFI) to address the Gulf of Mexico water quality and water resources goals and objectives. MSU and PFI have longstanding Memorandums of Understanding which has water quality monitoring on oyster projects that research and implementation. The Gulf Council's "Five restoration goals are: 1) Coastal, estuarine and marine habitats, 2) Fresh estuarine and marine water quality, 3) Living coastal and marine resources, 4) Estuarine community resilience and 5) a restored and revitalized Gulf economy. Seven objectives support these goals, 1) restore, enhance and protect habitats, 2) restore, enhance and protect estuarine and marine resources, 4) restore and enhance estuarine and marine resources, 6) promote natural resource stewardship and environmental education, and 7) improve science-based decision-making. JSU, PFI, and NRCS provide MSU with the depth and breadth of technical and professional expertise to support this program. The program's geographic location and size encompassing the St. Louis Bay and tributaries was selected to meet the Council's four priority criteria. Specifically, this holistic approach is easily scalable to address the Council's goals and objectives and transferable to be replicated throughout the Gulf region and: PFI will significantly and measurably contribute to restoring and protecting the Gulf Coast Region's natural resources, ecosystems, fisheries, marine and wildlife habitats, beaches, and coastal wetlands; include projects; PFI has enough to substantially contribute to restoring and protecting the Gulf Coast ecosystem's natural resources, ecosystems, fisheries, marine and wildlife habitats, beaches, and coastal wetlands; yet still enough quantity specific improvements; PFI owns the St. Louis Bay and tributaries which Mississippi's GoCoast 2013(2) identified as a Coastal Bay and River Delta project site and also integrate and coordinate myriad projects from other federal or Mississippi agency plans, and PFI provides a forum for local government and stakeholder participation and a mechanism to leverage their resources to restore the long term resiliency of an area and resources physically impacted by the Deepwater horizon oil spill (e.g., providing up-front cost share and long-term operation and maintenance for specific projects) MSU would implement and manage this program in partnership with JSU, NRCS and PFI. This approach ensures the application of science-based decision-making, strong community engagement and education expertise. The process is patterned after tested and proven watershed management approaches and would start with extensive outreach and local engagement to create and organize a St. Louis	Hancock, St. Tammany, Iberville, Jackson, Harrison	Yes	No		Yes	Yes	Yes	No	Yes	No	\$	1,360,324.00	\$	-
Eco Restoration	3214	11/14/2014	Oyster Reef Mapping and Habitat Monitoring Suggestions to Improve Commercial Yield This program proposes a new collaboration between Mississippi State University (MSU), the U.S. Department of Agriculture's Natural Resources Conservation Service (NRCS), Jackson State University (JSU) and the Pickering Firm, Inc. (PFI) to address the Gulf of Mexico water quality and water resources goals and objectives. MSU and PFI have longstanding Memorandums of Understanding which has water quality monitoring on oyster projects that research and implementation. The Gulf Council's "Five restoration goals are: 1) Coastal, estuarine and marine habitats, 2) Fresh estuarine and marine water quality, 3) Living coastal and marine resources, 4) Estuarine community resilience and 5) a restored and revitalized Gulf economy. Seven objectives support these goals, 1) restore, enhance and protect habitats, 2) restore, enhance and protect estuarine and marine resources, 4) restore and enhance estuarine and marine resources, 6) promote natural resource stewardship and environmental education, and 7) improve science-based decision-making. JSU, PFI, and NRCS provide MSU with the depth and breadth of technical and professional expertise to support this program. The program's geographic location and size encompassing the St. Louis Bay and tributaries was selected to meet the Council's four priority criteria. Specifically, this holistic approach is easily scalable to address the Council's goals and objectives and transferable to be replicated throughout the Gulf region and: PFI will significantly and measurably contribute to restoring and protecting the Gulf Coast Region's natural resources, ecosystems, fisheries, marine and wildlife habitats, beaches, and coastal wetlands; include projects; PFI has enough to substantially contribute to restoring and protecting the Gulf Coast ecosystem's natural resources, ecosystems, fisheries, marine and wildlife habitats, beaches, and coastal wetlands; yet still enough quantity specific improvements; PFI owns the St. Louis Bay and tributaries which Mississippi's GoCoast 2013(2) identified as a Coastal Bay and River Delta project site and also integrate and coordinate myriad projects from other federal or Mississippi agency plans, and PFI provides a forum for local government and stakeholder participation and a mechanism to leverage their resources to restore the long term resiliency of an area and resources physically impacted by the Deepwater horizon oil spill (e.g., providing up-front cost share and long-term operation and maintenance for specific projects) MSU would implement and manage this program in partnership with JSU, NRCS and PFI. This approach ensures the application of science-based decision-making, strong community engagement and education expertise. The process is patterned after tested and proven watershed management approaches and would start with extensive outreach and local engagement to create and organize a St. Louis	Hancock, St. Tammany, Iberville, Jackson, Harrison	Yes	Yes	200%	Yes	Yes	No	Yes	No	\$	14,968,000.00	\$	-	
Eco Restoration	3227	11/15/2014	St. Louis Bay and Tributaries, MS Comprehensive Restoration Program Phase The overarching objective of this project is to develop a suite of tools and products to identify and locate sources, transport pathways, and fate of pollutants flowing into Bay St. Louis, Mississippi, assess their ecological impacts, and develop management strategies. The proposed work is a field laboratory, remote sensing, watershed modeling, and GIS based research approach focused on quantifying the water quality deteriorating agents found in Bay St. Louis and source tracking the pollutants detected in the sub-watersheds feeding into Bay St. Louis. We will test the hypothesis that terrestrial nutrient inputs from the watersheds lead to eutrophication in Bay St. Louis, Mississippi, which tends to worsen in future because of climate change. The end result will be a Decision Support System (DSS) that will be updated with the images of Sentinel 2A (MSI), Landsat 8 (OLI), and MODIS (OC2) in near real-time. The DSS will also include visualizations of source tracking the pollutants, using digital elevation models (DEM) and CDM fluorescence. Additionally, the DSS will be updated time-to-time with images showing the hot-spots of pollutant sources in the watersheds in different climate scenarios. The first aim of this project is to investigate the water quality of Bay St. Louis by measuring the concentrations of suspended sediments, chlorophyll a, CDM, nitrogen, phosphorous and a few other ancillary water quality parameters. The second aim is to develop a remote sensing based operational monitoring platform by utilizing data from multiple high (Landsat OLI, MODIS) and low (MODIS, VIIRS) spatial resolution satellite sensors as well as very high spatial resolution remotely sensed data collected by unmanned aerial systems (UAS) and utilizing them for extracting improved water quality products for making the mapped images available in near real-time. The third aim is to track the source of the pollutants and locate the hot-spots of pollutant sources using watershed modeling approach. The fourth aim is to develop maps depicting the classes of water and sediment yields, precipitation, temperature, and CO2 levels under different climate scenarios 20-30 years into the future. The first aim is to disseminate the project findings to four categories of target audience including: 1) state and local water managers, 2) MSU graduate and undergraduate students, and selected middle and high school teachers, 3) the general public, the scientific community, and 4) the scientific community. The first aim also includes promoting the methods and products to the water managers showing the vulnerable regions where best management practices (BMP) should be implemented and the total maximum daily loads of pollutants (TMDL) should be allocated in the sub-watersheds. This research is significant because it will not only enhance the current state of knowledge in identifying the hot-spots of pollutant sources with different climate scenarios but also will provide a continuous monitoring platform for the HABs, sediments, and dissolved nutrients, which will support state and coastal community efforts to manage water quality in the region. Since Bay St. Louis is similar in many ways to other coastal water environments, this research may also be applicable to other shallow estuaries. Furthermore, data generated from these efforts will address critical links between the watershed, water body and human health as they relate to future climate change. This is a three year project and will supplement ongoing planning activities as well as serve as decision support tool as new projects are recommended. The estimated cost is \$300,000 per year for a total cost of \$900,000.	Hancock, St. Tammany, Iberville, Jackson, Harrison	Yes	No		Yes	Yes	Yes	No	Yes	No	\$	900,000.00	\$	-
Eco Restoration	4257	12/8/2014	Benthic Mapping of the MS Sound: This project proposes to comprehensively map the Mississippi Sound using Multibeam Echo Sounders (MBES) augmented with Airborne Laser Bathymetry (ALB) system. The underlying purpose of the project is to establish a baseline benthic habitat map of the Sound; however, the data have numerous additional uses. The data will provide measurements of geologic biomass over various habitats and sediment transport, and storm surge/coastal inundation simulations. Revisit surveys to key areas can assess habitat response to natural or anthropogenic stresses, siltation, reef material subsidence, and sea level rise. The gold standard for obtaining high precision, hydrographic measurements is 100% coverage (non-occurrence) of the sea floor using acoustic MBES. Obtaining 100% coverage of Mississippi Sound using MBES is an extensive project. Multibeam sonar covers a swath of the seabed out to a width of approximately 5 times the water depth. Figure 1 outlines the areas of the Mississippi Sound bounded by a depth contour of approximately 2 meters (black contour line). The average depth through the Mississippi Sound is less than four meters. Using the equipment currently owned by the University of Southern Mississippi, a maximum line spacing of 10 meters is required to obtain 100% coverage. Due to declining returns in shallow water and safety of navigation, a minimum sonar depth of approximately 2 meters is recommended. A polygon of survey extent based on the 2 meter contour and a line spacing recommendation of 10 meters, an estimate of survey time can be established. Planning the lines in a north-south orientation would allow for efficient data collection and manageable data files. The average width of Mississippi Sound is approximately 6 nautical miles (Nm), and with an average survey speed of 6 knots, each line of data collection will take approximately 1 hour to complete. If a line spacing of 10 meters is utilized from the Mississippi/Louisiana border to the Mississippi/Alabama border, a distance of approximately 120 km or 230000 meters, a line count of approximately 12000 lines can then be assumed. 12000 lines each a length of 6 km, equates to 72000 Nm of survey lines. Completing all lines would require 12000 hours. Other factors that need to be considered in a time estimate are transit times, turns between lines, time to obtain sound speed profiles, and time to take bottom samples. At a minimum, an additional 25% should be added to the initial line estimate, for a total of approximately 15000 hours. Completion time estimates based on single vessel operations show a projected completion time of 10 years, based on successfully collecting data 188 days per year. The time scales vary accordingly with addition of multiple vessels. Operational days per year will highly depend on weather and equipment functionality and are difficult to estimate. This proposal recommends an upgrade to existing equipment to increase the efficiency of data collection to reduce the collection time to 5 years. Habitat Mapping the Waters of Mississippi Sound Additionally, ALB systems provide an efficient method for collecting data useful in delineating benthic habitats in shallow water. The Coastal Zone Mapping and Imaging Lidar (CZML) was specifically	Hancock, St. Tammany, Iberville, Jackson, Harrison	Yes	Yes	100%	Yes	Yes	Yes	No	Yes	Yes	\$	4,511,000.00	\$	-
Eco Restoration	4277	12/29/2014	Habitat Mapping the Waters of Mississippi Sound Water quality is a tremendous factor in the growth of a community, impacting economic stability through tourism, property values, as well as access to recreation and locally harvested food. Although water quality in the Gulf of Mexico is affected by many large water bodies, small scale improvements may have a positive effect on both the Gulf and within the local community by providing access to natural spaces and improving sites for fishing and swimming as well as increasing community resilience. Highway 623 is a major corridor to the community with high traffic speeds, long frontages, and loosely planned infrastructure. The low elevation of the roadway and its proximity to multiple water crossings creates multiple environmental and community resilience problems: poor water runoff, persistent flooding, low density land use, and declines that occupy a large percentage of the right-of-way rendering alternative transportation path construction impossible. This project will analyze areas where improvements may positively impact water quality and community resilience along the Jourdan River and tributary waterways: Breath Bayou, Bayou LaCroix, Four Datar Bayou, Edwards Bayou, and Bayou Taita. The project will set up a water sampling program to determine current issues such as sewer concerns and effluent overflow, roadway and impervious surface runoff, or over fertilization of lawns. This project will identify areas to address the problems identified: conserve lands in perpetuity, restore landscape filters for sediments and pathogens, intercept runoff, provide access to water and the natural environment, and connect with alternative transportation pathways. Water quality monitoring will also be performed after improvements to measure the changes, as well as the number of days the road is flooded per year.	Hancock	Yes	Yes		Yes	Yes	Yes	No	Yes	No	\$	570,000.00	\$	20,000.00

<p>Eco Restoration 5392 9/12/2015</p> <p>Point Cadre Waterfront Boardwalk, Marina and Small Craft Harbor Expansion and Tricentennial Park Improvements</p>	<p>Through implementation of this comprehensive project to improve public access and balance public/private development along Point Cadre's southern waterfront from the Biloxi-Ocean Springs Bridge to the Biloxi Small Craft Harbor in downtown Biloxi, the general public, the State of Mississippi, the City of Ocean Springs and other private developers will benefit.</p> <p>The project includes upgrading the existing Point Cadre Marina and expanding it west and constructing an ADA-compliant public boardwalk with amenities that will meander along the waterfront to the Biloxi Schooner Pier Complex, where a lighted boardwalk will provide pedestrian access across Highway 90 to Tricentennial Park and the Onr-O'Marke Museum. In the same area, the public boardwalk will connect with the existing seawall walkway to provide pedestrian access to the Biloxi Small Craft Harbor in downtown Biloxi, which also will be expanded and upgraded to support growth of the charter boat industry and expansion of sports fishing tournaments and other water-dependent activities that will benefit the local and state economy.</p> <p>The Point Cadre Marina upgrade and expansion component will provide new docks to meet market demand to accommodate 75 boat and larger recreational and sports fishing yachts owned/operated by Mississippi Coast residents and intercoastal Waterway visiting boaters. Removal of marina sediment will restore boater safety and will accommodate deeper draft, large recreational boats. The project involves reconfiguring and upgrading finger piers and existing boat slips, constructing new boat slips and finger piers to the west and installing a new breakwater to increase the resiliency of shoreline improvements and the expanded marina by protecting them from waves action and storm surge.</p> <p>The public boardwalk, which will include open-air pavilions, lighting, educational signage and a northern docking area to support the State's shuttle service to Deer Island, will be constructed to support public enjoyment of the waterfront to expand family-oriented activities and to provide small business development opportunities.</p> <p>The public waterfront area due south of the Biloxi-Ocean Springs Bridge enjoyed considerable public use for a wide variety of family-oriented activities prior to Hurricane Katrina, including fishing tournaments, festivals, concerts, educational programs, observing marine life and shore birds, and just generally appreciating nature. Since 2005, the State fishing pier and shoreline boardwalks have not been replaced and the area poses safety hazards to the few who attempt to access the waterfront to fish or to enjoy the view. Through this project the City of Biloxi will restore lake access through construction of the ADA-compliant boardwalk that will include amenities to support a variety of public waterfront uses. Low-profile, all-weather signage will be installed to educate the public about native marine species, native and migrating bird species and restoration of other natural resources including nearby Deer Island. Existing surface parking north of the Point Cadre Marina will support increased public usage in the project area; a portion of the parking area will be restricted to support educational and research vessel staff and operators. The existing green space between the parking area and the new boardwalk will be enhanced as an open space for special events and the public's daily enjoyment.</p> <p>Through the boardwalk, the waterfront gate will connect to the Point Cadre Marina and the Biloxi Small Craft Harbor, expanding opportunity for small business growth through boat rental and tours and special events such as boat shows and festivals. Redevelopment of the Point Cadre project area will spur revitalization of this unique waterfront resource that offers unobstructed views of Deer Island and the Mississippi Sound, offers direct boat access to navigational channels and vehicular access to Highway 90, and is in close proximity to the Tricentennial Park and Onr-O'Marke Museum.</p> <p>In addition to installing a crosswalk to provide pedestrian access across Highway 90, Tricentennial Park improvements will include uniform landscaping, lighting, signage and walkways, educational signage and look-alikes and rebuilding a berm to support a band-shell/gazebo for outdoor concerts and other activities. Additional parking spaces will be installed on the northeast portion of the site and the southeast section will be restored as a wetland garden with interpretive signage identifying the benefits provided by wetlands in Coastal Mississippi.</p> <p>Biloxi Small Craft Harbor improvements will reconfigure and expand the area to allow at Biloxi-based charter boats to berth together in one central harbor located on the Biloxi Lateral Channel with direct access to East and West Channels. Project activities include expanding the harbor size to provide approximately 60 new slips and improve harbor accessibility, constructing new public amenities including:</p> <ul style="list-style-type: none"> The Land Trust for the Mississippi Coastal Plain (LMCP) is an accredited Land Trust dedicated to the conservation, promotion, and protection of open space and green places of ecological, cultural or scenic significance in the counties of the Mississippi Coastal Plain. LMCP utilizes both simple and conservation easement tools to conserve land for the benefit of habitats, species, and recreation. <p>The parcels of interest are the only remaining parcels on the Wolf River that are not in easement or ownership for preservation. There is approximately 6,500 feet of the Wolf River bordering the southern portion of the parcel and offers continuity with the Bilokalee Preserve, directly across the River. There is potential for restoration on the property to allow more natural hydrologic flow through the wetlands into the Wolf River. The 200-acre property has multiple habitats including bottomland hardwood forest, long leaf pine, wetlands, riparian buffer with natural beach sands, and two lakes encompassing a total of 8.5 acres.</p> <p>This area is part of the larger Wolf River watershed (235,052 acres), which is rich in cultural history and nature-based recreational activities. The Wolf River Watershed Implementation Plan (WIP), funded by section 319 grants from Mississippi Department of Environmental Quality (MDEQ), highlights the importance of land acquisitions along the River for protecting water quality in the larger watershed. The WIP indicates that conservation easement and buffer acquisition along the watershed and river system cover 5,000 acres of land and water. Land acquisition along the River have been placed under easement. This property would be a significant addition to the currently protected land. The Wolf River-Big Creek Subwatershed has a high environmental resource value score according to the WIP. It contains a high number of endangered species, moderate bottomland hardwood forests, and is of high importance as a recreation stream area. Major threats to river are potential water quality concerns (fertilizer etc.) 2002 MDEQ and high erosion rates which can be ameliorated with acquisition of riparian buffers where BMPs can be implemented.</p> <p>The Wolf River Conservation Society, a local, grassroots organization dedicated to the preservation, conservation, management, and protection of the Wolf River and its watershed, is an important partner in this proposal. The Wolf River is also part of the State of Mississippi's Scenic Streams Stewardship Program, a voluntary program designed to encourage conservation and stewardship by riparian landowners, and the Water Trails of the Wolf River encourage primitive boating activities, such as kayaking and canoeing, along the River.</p>	<p>Harrison Yes Yes 8000% Yes Yes Yes Yes Yes No \$ 35,000,000.00 \$</p>
<p>Eco Restoration 5428 10/28/2015</p> <p>Wolf River Land Protection</p>	<p>This effort seeks to permanently protect lands identified by the U.S. Fish and Wildlife Service and the State of Mississippi as critical for acquisition and long-term management by the Grand Bay National Wildlife Refuge (NWR) and Grand Bay National Estuarine Research Reserve (NERR). This project will add approximately 1,686 acres to the nearly 18,000 acres currently owned by the U.S. Fish and Wildlife Service and the State of Mississippi. It will add critical coastal lands to the Grand Bay NWR/ NERR for permanent protection, and improved management of coastal wetlands, and adjacent upland areas. The Grand Bay NWR/ NERR protects one of the last expanses of wet pine savanna habitat in the country. Due to fire suppression and conversion to pine plantation, less than 5% of the original acreage of this habitat system remains, making it one of the most endangered ecosystems in the country. Because of the great biological significance of this area, it is important to continue to expand the protection of both core and buffer areas, while enhancing management capabilities.</p> <p>The targeted 1,686 +/- acres consists of wet pine savanna, maritime forest, tidal and non-tidal wetlands, salt marshes, salt pannes, bays and bayous. Federally threatened and endangered species that occur at the Grand Bay Refuge/ NERR include the gopher tortoise, sandhill crane, and the manatee. Also, a number of migratory species utilize the habitats provided on this acreage for portions of the life cycle, including ibis, Martins and Swallows, Rails, Plovers, Sandpipers and Phalaropes, and Gulls and Terns, along with many different neo-tropical species. This acreage also provides salt marsh/ estuarine habitats for many aquatic species occurring in the Gulf of Mexico. In addition to protecting critical habitat and ecosystems, expanding the footprint of the Grand Bay NWR/ NERR will also expand public recreational access, research, education, and training opportunities in this unique coastal environment.</p> <p>The Conservation Fund has initiated due diligence with financial assistance from the Knobloch Family Foundation, is in discussions with the landowner regarding acquisition of these tracts, and anticipates that the project could be completed immediately, pending availability of funds.</p>	<p>Harrison Yes No No No No No No No No No \$ 5 \$</p> <p>Land Acquisition</p>
<p>Eco Restoration 5490 6/24/2016</p> <p>Land Acquisition for expansion of Grand Bay National Wildlife Refuge and National Estuarine Research Reserve</p>	<p>We own Audubon Coastal Bird Survey at Lake Mari pier. The property west of the pier is vandalized by trucks and parties. Last weekend there was a small truck 1/2 submerged in mud and another large truck trying to get it out. They said they had been there for 3 days.</p> <p>These parcels are all owned by the same person. You can see them on this map: http://www.jackson.ms.us/services/webmapping.php</p> <p>Click on "Jackson County web mapping beta"</p> <p>Use the "r" symbol. Click into "Horseshoe" and keep clicking until you are on Beachview/Lake Mari Road. Only the parcel directly across the pier is owned by Jackson County. The other three, to the west, are the ones that need protection.</p> <p>Audubon Coastal Bird Survey also has a Graveline site. There, vandals started a fire and burned the marsh. So someone convinced some entity to build a concrete wall. It keeps the trucks out, and now there are turtles nesting.</p> <p>PLEASE USE THE LINK ABOVE to find these parcels. I have been thrown out of the mapping tool on the next page and don't want to risk being what I have written again.</p>	<p>Jackson Yes No No No No No No No No No \$ 2,200,000.00 \$</p>
<p>Eco Restoration 5517 10/15/2016</p> <p>Purchase property or conservation easement on 3 parcels west of Lake Mari pier in Jackson County to protect bird and turtle habitat</p>	<p>This effort seeks to permanently protect lands identified by the US Fish and Wildlife Service and the State of Mississippi as critical for acquisition and long-term management at both Grand Bay and Graveline Bay. This project will add approximately 1,678 acres to the 20,000+ acres currently owned and managed by the USFWS and the State of Mississippi at Grand Bay and Graveline Bay. The acquisition will add critical coastal lands to the Grand Bay NWR/ NERR/ Preserve and the Graveline Bay Preserve for permanent protection and improved management of coastal wetlands, as well as important adjacent upland areas. The Grand Bay NWR/ NERR protects one of the last expanses of wet pine savanna habitat in the country. Due to fire suppression and conversion to pine plantation, less than 5% of the original acreage of this habitat system remains, making it one of the most endangered ecosystems in the country. Because of the great biological significance of this area, it is important to continue to expand the protection of both core and buffer areas, while enhancing management capabilities. The Graveline Bay parcels include several acres of true uplands that could be lost to residential or commercial development. The targeted 1,678 +/- acres consists of wet pine savanna, maritime forest, tidal and non-tidal wetlands, salt marshes, salt pannes, bays and bayous. Federally threatened and endangered species that occur at the Grand Bay and Graveline Bay include the gopher tortoise, sandhill crane, and the manatee. Also, a number of migratory species utilize the habitats provided on this acreage for portions of the life cycle, including ibis, Martins and Swallows, Rails, Plovers, Sandpipers and Phalaropes, and Gulls and Terns, along with many different neo-tropical species. This acreage also provides salt marsh/ estuarine habitats for many aquatic species occurring in the Gulf of Mexico. In addition to protecting critical habitat and ecosystems, expanding the footprint of protected lands at Grand Bay and Graveline Bay will also expand public recreational access, research, education, and training opportunities in this unique coastal environment. The Conservation Fund is in discussions with the landowner regarding acquisition of these tracts and anticipates that the project could be completed immediately, pending availability of funds.</p>	<p>Jackson Yes No No No No No No No No No \$ 4,905,000.00 \$</p> <p>Land Acquisition</p>
<p>Eco Restoration 5677 7/25/2017</p> <p>Sea turtle and mammal mortality locations</p>	<p>NOAA Project IDB13477: This project will increase sea turtle survival through enhanced mortality investigation and earlier detection of and response to recreational threats. Strandings are often the only early warning indicator for an sea mortality of sea turtles, and can be used to help identify mortality sources (i.e. fisheries interaction & vessel strikes). However, documented strandings only represent a percentage of total sea mortality, because many factors influence whether or not a carcass will strand and be reported. These factors include, time of year, geographic location, decomposition rate and oceanographic conditions. We propose to deploy ePflaps, which closely mimic ePfl characteristics of sea turtle carcasses, in federal and state waters at 30 locations from Tampa, Florida to determine the percent of carcasses that actually strand on GOM beaches during March/July which is peak stranding season in the Gulf. Deployments will occur in areas with documented sea turtle occurrence and known monitoring effort or in areas of potential mortality sources (i.e. ship traffic). This project will last for six months. This project is scalable by location & duration. This methodology is successfully being used in Mississippi (Early Restoration), and expansion to other regions of the GOM is recommended. Existing ocean models are fairly adequate on a large scale, but models show major discrepancies when used to backcast small objects such as sea turtles at the fish scale. The ePflaps are required to provide invaluable data specifically on the behavior of sea turtle carcasses in various ocean conditions in the GOM, and will be directly used for interpretation of strandings, monitoring, and law data available to the ocean modeling community for further ground truth and model near models. We will also develop a web based portal that can be used by Strandings, Networks, managers and enforcement to input stranding data and provide real time back cast model outputs. If a spike in strandings is observed, the probable area of the mortality can be used to help direct the efforts of the NOAA Sea-Linking Teams and state/ federal enforcement. Success will be determined by a reduction in strandings, use of program and feedback from users. This carcass drift work focused on sea turtles, but the program could be modified to include marine mammals. Data Entered: May 16, 2017</p>	<p>numerous Yes No No No No No No No No No \$ 375,000.00 \$</p>
<p>Eco Restoration 5678 7/25/2017</p> <p>Reducing Sea Turtle and Fish Bycatch in the Southeast Offshore Shrimp Fishery through Development and Implementation of Turtle Excluder Devices (TED) Designed to Exclude Small Turtles</p>	<p>NOAA Project IDB13476: This project addresses NOAA approach: 3C (enhance sea turtle bycatch in commercial fisheries through identification and implementation of conservation measures) 3E (reduce bycatch) through enhanced training and outreach to the fishing community 3D (reduce known sources of mortality by fish population that occur in open ocean habitat). The goal of this project would be to develop, evaluate, and implement reduced bar spacing TEDs designed to reduce small sea turtles in the Southeast Offshore shrimp fishery and foreign fisheries occurring in the Caribbean Sea and Atlantic that import wild caught shrimp to the U.S. This would be done in three phases: cooperative target catch retention/sea turtle exclusion evaluations, domestic fishery implementation through financial incentives, and foreign fishery technology transfer to the restoration of both sea turtles and fish populations through reducing primary threats and known sources of mortality. Under current southeast shrimp fishery regulations, the minimum spacing between deflector bars must not exceed 440cm however, federal observers have documented 84mp% fishery and green turtles captured in trawl after passing through TED grids. Size distribution data from these turtles indicates that TED bar spacing needs to be reduced to approximately 2.5x the size of small sea turtles of this size. A limited SA and GOM study comparing performance of 2.5x and 3x TEDs (relative to 440cm) reduction rates for incidentally caught green sturgeon, sharpnose shark and 75% for mixed species of Atlantic/Car. The conservation benefit of this project has the potential to significantly contribute to the restoration of sea turtle and fish populations with a high likelihood of success. Sea turtle restoration success will be measured through (1) documenting reduced bar spacing TED use by existing expanded NMFS data, sea coverage data and (2) measuring improvements of sea turtle exclusion rates through NMFS Small Turtle TED Testing. Fish restoration success will be measured by documenting changes in bycatch rates with target catch retention TED testing, bycatch rates with expanded coverage of the NMFS Observer Program, and reduced bar spacing TED use by NMFS GOM fishery monitoring. Fishery restoration will be measured by adding survey questions to existing Fishery Permit Surveys, and documenting reduced bar spacing TED use. Data Entered: May 16, 2017</p>	<p>Yes No No No No No No No No No \$ 12,100,000.00 \$</p>
<p>Eco Restoration 5718 8/4/2017</p> <p>Expanding Observer Coverage to Unobserved Sectors of the Non-Shrimp Trawl Fisheries</p>	<p>NOAA Project IDB13628: Additional observer coverage is needed throughout the Gulf on non-shrimp trawl fishery (e.g., sheepshead/black drum trawl fishery in LA, blue crab trawl fishery, Atlantic foodfish trawl fishery, etc.). While these trawl fisheries are small, sometimes only a handful of fish, they do not use TEDs and have no information on sea turtle takes. The goal of the project is to gather additional information on sea turtle interactions in currently under or un-observed trawl fisheries and develop and implement new conservation measures if necessary to reduce sea turtle bycatch and mortality. The project costs are reflective of a 3-year program to identify the non-shrimp trawl fisheries, initiate observer programs, and observe the fisheries. After the 3-year period the data would be evaluated to determine the need for an ongoing observer program. 3C (Restore/Linkage: reduce sea turtle bycatch in commercial fisheries through development and implementation of conservation measures; Monitoring and adaptive management activities to address relevant data gaps to inform restoration. Data Entered: May 22, 2017</p>	<p>Yes Yes No No No No No No No No \$ 500,000.00 \$</p>

Eco Restoration	5713	8/4/2017	NOAA Project ID#13632: There is currently a proposed rule to require minimum trawls to use TED grids with smaller bar spacing under an upcoming rule. However, non-dimmer trawls, fishing for shrimp in the Gulf of Mexico are required to use grids with 48" bar spacing. An examination of these coastal waters where these dimmer trawls operate show that the smaller bar spacing would be beneficial to the fishery between the 48" bar spacing of the current grids may occupy those areas. Providing free 2.556bar-spaced grids to non-dimmer trawler fishers willing to voluntarily use those grids has the potential to save sea turtles and it provides a cost savings to trawlers who need to replace their old grids. 36" Restoration Inlakes: reduce sea turtle bycatch in commercial fisheries through implementation of conservation measures. Date Entered: May 22, 2017		Yes	Yes	No	No	No	No	No	No	No	No	\$	5,000,000.00	\$		
Eco Restoration	5749	10/17/2017	Phase one attached Oyster restoration is dependent upon putting oysters in locations that 1) provide a suitable environment and 2) receive viable larvae from "upstream reefs" and provide viable larvae to "downstream reefs." There is a notion that Bay St. Louis reefs provide larvae for much of Mississippi's harvestable reefs but this has yet to be confirmed. The objective of this project is to understand the larval transportation network in the western Mississippi Sound. This objective will be met through two tasks: 1) determining the locations of oyster reefs in Bay St. Louis and 2) modeling the larval transportation system using a hydrographic model.		Yes	No		Yes	No	Yes	No	No	No	No	\$		\$		
Eco Restoration	5750	10/16/2017	The oyster industry is an integral part of the Mississippi Gulf Coast's economy, its history and its culture. The oyster industry has suffered greatly because of several natural and man-made disasters since 2005, including Hurricane Katrina, the BP Oil Spill and three separate openings of the Bonnet Carré Spillway (2008, 2011 and 2016). In 2004, oyster fishermen in Mississippi harvested nearly 500,000 bushels of oysters. In 2012, there were no oysters harvested, and in 2016, about 40,000 bushels were harvested. Gov. Phil Bryant created the Governor's Oyster Council on Restoration and Resiliency in 2015 to address the problems this industry faces and to come up with solutions. One of those solutions is a remote setting facility. The Mississippi Department of Marine Resources (MDMR) is proposing to construct, operate, and maintain a large-scale remote setting facility at the Port of Gulfport. This facility would assist in increasing the production of the natural oyster reefs along the Mississippi Gulf Coast. The proposed funding would allow for the planning, construction, operation, and monitoring activities that will be conducted to evaluate and document restoration effectiveness. It would: 1) award the MDMR the resources, procedures and personnel to implement MDMR manage and operate a large-scale remote set operation to help increase the production of the natural reef. The proposed facility would allow MDMR to increase the amount of spat (oyster larvae) after it attaches on cultch material introduced into the MS Sound and monitor the health and growth of those oysters. Remote setting is a method of producing oysters that differs from natural oyster production. Remote setting is the production of oyster spat by setting hatchery-reared larvae onto cultch (hard material for oyster larvae to attach usually shell, crushed concrete or limestone) at a remote location on the hatchery, spat are then planted on bottom or off-bottom. Remote setting has been successfully implemented for the production of oysters along the Pacific coast and the Chesapeake Bay areas of the United States. Remote setting was developed in the Pacific in response to low natural oyster production as a result of over harvesting, pollution, disease and predation (Jones and Jones 1983, Henderson 1983). Initially, the Pacific coast oyster industry depended on imported seed, which became an unreliable source; however, with the development of hatcheries along the Pacific coast, remote setting continued to develop and thrived (Henderson 1983). In the Chesapeake Bay area, remote setting developed in an effort to increase oyster production and to utilize disease-resistant larvae produced by hatcheries (Conger et al. 2009). In Mississippi, the oyster industry relies primarily on planting cultch and naturally produced oyster larvae (wild larvae) to set on the material to produce market oysters. According to the Adaptive Management for Oyster Restoration Action Plan, bycatch reefs provide a broad variety of ecosystem services, including water quality improvement, shoreline stabilization (and associated habitat protection), carbon burial, habitat provisioning for fish and mobile invertebrates (including commercial and recreationally important species), habitat for epibenthic fauna, diversification of the landscape, and food source for commercial and recreational fisheries. Because of reef building capabilities, oysters are commonly referred to as natural ecosystem engineers. The complex calcareous formed by oysters enhances the recruitment and growth of economically valuable and ecologically important fish and crustaceans, thereby increasing these species' productivity. Oyster fishery sediments, phytoplankton, and detrital particles from the water column, potentially reducing turbidity and improving water quality. Oyster reefs also promote bacterial denitrification, thereby counteracting nitrogen loading. By filtering water and enhancing light penetration, oysters promote other valuable estuarine habitats such as submerged aquatic vegetation. Nearshore oyster reefs can reduce erosion and stabilize coastal shorelines through sediment trapping and accretion, and by adding hard substrate adjacent to marsh edges. Intertidal oyster beds provide foraging sites for low tide, when the shellfish are accessible, to shorebirds such as the American oystercatcher. Although native oyster reefs have declined in many regions, the Gulf of Mexico oyster reefs are among the most productive in the world, with natural reefs supporting a robust oyster fishery. In 2015, the Gulf of Mexico produced 53 percent of the total U.S. oyster landings, with a dockside value of \$99.3 million. The eastern oyster also has cultural and historical importance to the GOMR region. Oysters, along with other mollusks, have been an important food resource for Native Americans for thousands of years, as evidenced by shell middens at many sites along or near the Gulf Coast. The calcium carbonate shell of the oyster has also long been used for a variety of non-food purposes. Current day commercial and recreational fisheries are dependent on oyster reefs. The Mississippi Commercial Fisheries Unit, Inc. proposes to fund a Mississippi Oyster Aquaculture Advancement & Investment Program. Off-bottom oyster aquaculture investment has been proven successful in surrounding states and is currently pending permit approval in Mississippi territorial waters. This program would help establish a cooperative for potential off-bottom oyster farmers and investment capital to help jump start the off-bottom oyster aquaculture industry in Mississippi. The program would also help to increase Mississippi oyster production and provide stimulus to Mississippi's coastal economy. Currently, obtaining sufficient investment capital is a barrier to entry in the off-bottom oyster aquaculture industry. Preliminary estimates place the cost of entry into the industry at about 550,000 per acre. The program proposed would give traditional oyster harvesters and oyster industry members priority to access funds that could be used to establish private off-bottom oyster farms.	Harrison	Yes	No		Yes	Yes	No	No	Yes	\$	9,360,000.00	\$				
Eco Restoration	5768	2/25/2018	MDMR Remote Setting Facility	Hancock/Luckson/Harrison	Yes	No		Yes	Yes	Yes	Yes	Yes	Yes	\$	10,000,000.00	\$			
Eco Restoration	5774	2/25/2018	Off Bottom Oyster Aquaculture Advancement & Investment Program	Hancock/Luckson/Harrison	Yes	Yes		Yes	Yes	No	No	No	No	\$	2,000,000.00	\$			
Eco Restoration	5775	3/1/2018	Marine Debris and Derelict Trap Removal Incentive Program	Lamar	Yes	Yes	85000	No	No	No	No	Yes	No	\$	2,054,300.00	\$			
Eco Restoration	5784	7/10/2018	City of Lumberton Stormwater & Sewer Systems Improvement Project	Hancock	Yes	No		No	No	No	No	No	No	\$		\$		Land Acquisition	
Eco Restoration	5796	8/6/2018	WOLF River Land Protection	Jackson/Mobile	Yes	No		No	Yes	No	No	Yes	No	\$		\$		Land Acquisition	
Eco Restoration	5799	8/6/2018	Pascagoula Tributaries Nutrient Reduction Project	Jackson/George	Yes	No		Yes	Yes	No	No	Yes	No	\$	5,000,000.00	\$			
Eco Restoration	5808	8/10/2018	Quantifying water availability and quality from submarine discharge points into Gulf estuaries.		Yes	Yes		No	No	No	No	No	No	\$	1,000,000.00	\$			

Eco Restoration	5815	8/10/2018	<p>There is an approved RESTORE Act-funded Gulf-wide river flow study that will use a Mississippi coastal plain stream as a study site. It is currently being planned by the USGS Gulf Water Science Center in Houston, with Ashley Knight as the principal investigator. This study needs to either focus on the Pearl River or model both the Pearl and the Pascagoula rivers with the OASIS modeling program for regulated rivers.</p> <p>The following three questions have been posed for investigation using OASIS, a powerful modeling framework:</p> <ol style="list-style-type: none"> 1) How far downstream can a dam's disruption to flow be detected? 2) How sensitive are the fresh water needs of the estuary to upstream damming? 3) Can the coastal waters be so distant from a dam's influence on the river that it can't be detected? <p>With the current plans to add more low head dams/weirs and a new impoundment on the Pearl River in Jackson, MS in the name of flood control, these three questions need to be answered for the Pearl before more structures are placed on it. If the best river scientists in the U.S. cannot answer these questions about the Pearl River, further damming is not justifiable.</p> <p>In a phone conversation with the USGS principal investigator, he said that there is no reason both rivers could not be investigated. The environmental data set on the Pascagoula may be a bit better than that of the Pearl, but beyond this and affordability under the budget, there isn't a reason that OASIS couldn't be developed and run for the Pearl River. It is basically a matter of hiring Hydrologics Inc. to develop the program and sponsor a team of USGS scientists to apply it.</p> <p>Given the importance of the Pearl River to downstream Parishes and Counties, to the seafood industry of two states, to NACA and the Navy river warfare teams that practice in the Pearl, this research is needed for the Pearl River.</p>	Rankin, Hinds, Copiah, Simpson, Lawrence, Madison, Pearl River, Hancock, Tammany, Hancock	Yes	No	No	No	Yes	No	No	No	No	No	No	\$	3.00	\$	-	-
Eco Restoration	5825	8/10/2018	<p>This project requests sufficient long term resources for the designated Marine Mammal Health and Stranding Response Program (MMHRS) network member in Mississippi to monitor the effectiveness of restoration efforts through enhanced surveillance, response, investigation, and, where possible, recovery and rehabilitation of stranded marine mammals from populations in Mississippi nearshore and offshore waters that were directly impacted by the Deepwater Horizon (DWH) oil spill. Nearly every population of marine mammals that inhabits the nearshore and offshore waters of Mississippi suffered quantifiable injuries due to the Deepwater Horizon oil spill. Response to both live and dead stranded marine mammals and the collection of biological information from these animals is critical to obtaining an understanding of natural and human-caused factors that are either contributing to or impeding the restoration of DWH-impacted populations.</p> <p>The MMHRS network member that has been designated by the National Marine Fisheries Service (NMFS) to conduct stranding response activities in Mississippi, in accordance with the requirements of the Marine Mammal Protection Act, is the Institute for Marine Mammal Studies (IMMS) in Gulfport, MS. IMMS has several highly trained and experienced stranding responders on-call, with access to technicians, veterinarians, pathologists, and other specialists as needed to provide effective medical and forensic response during and after a stranding event.</p> <p>Prior to the spill, stranding response efforts were patchy and inconsistent in many portions of the Gulf of Mexico. Response capabilities increased during the spill with funding from the Natural Resource Damage Assessment (NRDA) and IMMS was instrumental in ensuring timely response and collection of biological samples from animals in Mississippi and Alabama. However, long-term, consistent funding is needed in Mississippi and across the Gulf to monitor the effectiveness of NRDA directed restoration efforts and to provide an ongoing assessment of injuries that may continue to be associated with oil spill response or restoration activities. Institutional funding is variable but generally inadequate to provide the level of response needed. Limited expertise throughout the Gulf in marine mammal response, investigation, forensic, veterinary care, and rehabilitation necessitates the retention and recruitment of properly trained specialists to ensure consistent response capabilities. Stranding response complements on-water observational studies of free-swimming wild animals, which provide a means to measure population vitality, juvenile survival, visual health indicators, and incidences of injury or harassment by human activities (e.g., vessel strikes and fisheries interactions).</p> <p>The primary objectives of this project are to 1) Increase surveillance efforts to identify stranded marine mammals, 2) ensure timely response to reports or sightings of live- and dead-stranded marine mammals, 3) conduct timely and thorough examinations of live- and dead-stranded animals, and 4) collect, analyze, maintain, and disseminate consistent, standardized, high-quality information from stranded animals and stranding events, in coordination with other marine mammal stranding network members across the Gulf. This project also would facilitate the integration of stranding data with other biological and environmental information to highlight and understand the connections between oceanography, ecosystem processes, and marine mammals health via the Marine Mammal Health Monitoring and Analysis Platform (HealthMAP), with a Gulf-specific GulfMAP in development. Additional benefits of this project are the ability to improve the response and response capabilities across networks that serve other impacted marine wildlife species, such as sea turtles and sea birds.</p> <p>Cost Estimates: Approximately \$10-15 million over 10-15 years*</p>		Yes	No	No	Yes	No	No	No	No	No	No	\$	10.00	\$	-	-	
Eco Restoration	5834	8/12/2018	<p>NDA Project DM 12933 The aim of this project is to restore sea turtle populations in the Gulf of Mexico, particularly Kemp's ridley (Lepidochelys kempi), which small juvenile overlap with the nearshore and inshore otter trawl and skimmer fishery in Mississippi. The project will also increase the health of fisheries by providing fishing communities with methodologies and incentives to reduce impacts to fishery resources. Sea turtle restoration will be achieved through the incentivized use of smaller bar spacing TEDs, capable of excluding small juvenile sea turtles in the otter trawl fishery of Mississippi. In order to protect juvenile sea turtles that inhabit nearshore and inshore waters of the northern Gulf of Mexico, pending TED regulations for the skimmer trawl fishery will require TEDs with a maximum bar spacing of 3 inches, which is less than the current 4 inch maximum required for the otter trawl fishery. The skimmer trawl and inshore otter trawl fish in Mississippi overlap operationally and likely encounter the same small turtles. This component of the project aims to incentivize the use of TEDs with 3 inch bar spacing in the otter trawl fishery in Mississippi. Date: April 20, 2018</p>	Harrison, Hancock and Jackson counties	Yes	No	No	Yes	No	No	No	No	No	\$	540,000.00	\$	-	-		
Eco Restoration	5844	8/11/2018	<p>NDA Project DM 13883 Marine Debris Arise on the Islands from a range of sources, including visitors and campers on the island, mainland sources, off shore oil rigs and services, commercial and recreational fishing, as well as debris generated by hurricanes and storms. Debris will be collected from supralittoral, intertidal, and subtidal zones. Marine debris impacts are widespread to both people and ecosystems. Debris represents a threat to a wide range of species (birds, fish, mammals) from entanglement, ingestion, transport of invasive species, and toxicity. Debris can also have impacts to humans, from the aesthetic impacts of a fouled beach, to health concerns from medical or sewage based debris, to impacts to animals from fishing irks and propellers. Marine Debris ranges in size from cigarette butts to entire sailboats. Methods to remove it will be similarly varied, from contract marine salvage crews removing large debris which may need to be dismantled in place, to crews on foot collecting and bagging small and medium debris for transport and disposal. All island beaches will be cleaned. Success can be measured in miles cleaned, or in approximate weight of debris removed. Date: Aug. 9, 2018</p>	Jackson County	Yes	No	No	Yes	No	No	No	No	No	\$	950,000.00	\$	-	-		
Eco Restoration	5852	9/10/2018	<p>Scope of Work: This Project will complement the existing Federal restoration project at Deer Island by minimizing the fracturing of diversity and creation of an additional 400 acres of highly productive wetlands, beach and dune and maritime forest habitat. Planned improvements include restoration of a portion of the northern and southern shorelines of the island, and new stone training dikes to prevent future erosion. Project will also restore emergent coastal marsh, restore vital nodal connection of marsh/locustaine habitat for Gulf Sturgeon (threatened species) breeding and nursery area as well as Federally protected migratory species, project will restore critical winter habitat for Piping Plover (threatened species), and nesting habitat for raptors including Bald Eagle as well as listed sea turtles, project will also fully restore barrier island and natural hydrologic conditions to M55 sound as well as historical inflow of Gulf water into the sound area. The project will also fully restore historic geomorphic features through restoration, stabilization of island elevations and shoreline profiles.</p> <p>Background and Cost: A feasibility study was completed in September 2009. The recommended total project, estimated to cost \$25,800,000 with an estimated Federal cost of \$16,770,000 and an estimated non-Federal cost of \$9,030,000. Of this amount, \$1,231,000 is estimated to be needed to complete PED (design phase elements) with an estimated Federal cost of \$800,000 and an estimated non-Federal cost of \$431,000.</p> <p>Funding Status: This project is currently unfunded. The next potential chance for funding will be from the FY 20 (October 2019) budget. Ahead of this, local non-Federal Sponsor support via a Letter of Intent will be needed. Would like to further discuss the LOI with you going forward.</p>	Harrison	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes	Yes	\$	25.00	\$	431,000.00	-	
Eco Restoration	5854	10/15/2018	<p>Project consists of pump station upgrades to include new pumps, internal wet well rehabilitation with new discharge pipes and valves, line of wetwell and bypass valves installed near the valve box. This pump station is continually in a state of disrepair and undersized to handle existing demand. Also, during heavy rain falls the pumps are over worked causing periodic bypass of sanitary sewer into the nearby environment.</p>	Hancock	Yes	Yes	10000%	Yes	No	No	Yes	No	No	\$	250,000.00	\$	-	-		
Eco Restoration	5873	2/20/2019	<p>The Land Trust for the Mississippi Coastal Plain (LMCP) is an accredited Land Trust dedicated to the conservation, promotion, and protection of open spaces and green places of ecological, cultural, or scenic significance in the counties of the Mississippi Coastal Plain. LMCP utilizes both fee simple and conservation easement tools to conserve land for the benefit of habitats, species, and recreation. The Land Trust holds a conservation easement on approximately 18 miles of the Wolf River north of I-10 in partnership with The Wolf River Conservation Society which is a non-profit corporation dedicated to conserving, managing, and protecting the Wolf River and its watershed from its headwaters in Lamar County to its termination at the Bay of St. Louis. The State of Mississippi has classified the entire length of the Wolf as a Fish & Wildlife Stream to protect recreational use and the propagation and maintenance of a healthy, well-balanced population of fish and wildlife. The Wolf River is also Mississippi's first scenic stewardship stream.</p> <p>The goal of this project is to establish funding to purchase individual parcels of land owned by the Weyerhaeuser Company totaling 4-39,028 acres, located in areas identified as crucial to establishing complete corridors of conservation land. The Wolf River Conservation Society has identified these sites based on locations that would continue conservation corridors previously established by the State of Mississippi. North of I-10, in Harrison County that totals approximately 1,330 acres managed by the Mississippi Department of Wildlife, Fisheries, and Parks. Portions of these upstream lands is vital to the water quality and erosion control downstream and into the Mississippi sound.</p> <p>Ecological Value: Protects properties as a buffer area for storm surge by providing dispersal and displacement in the event of flooding waters. These flooding waters have a natural function of turnover and flushing of coastal wetlands. Protects areas that provide clean water for our natural resources along the Wolf River and into the Bay of Saint Louis. Provides valuable habitat for a wide variety of plants and animals native to Mississippi, as well as migratory birds. Opportunities to impact recreational activities such as kayaking, canoeing, fishing, and other wildlife observation. Adds to complete corridors of conservation land.</p>	Harrison	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	\$	-	\$	-	-	Land Acquisition
Eco Restoration			<p>Sand Dune Plantings</p> <p>Planting of native sea oats will create sand dunes along the 26 mile long man-made beach in Harrison County. Sea oats will grow for an early spring planting. The grasses, with 6-8 vigorous shoots between 10 and 16 inches in length, will be deep planted approximately 8-20 inches deep at different sites along the Sand Beach. This methodology was discovered by landscape architects on beach planting after Hurricane Katrina. This method results in nearly 100% survival rate in the moisture naturally available at a depth of 8" below the sand surface. Marsh oler and sea myrtle shrubs that are native to the area will be added periodically to establish the dune habitat when impacted by tropical weather.</p>	Harrison	Yes	No	No	No	No	No	No	No	No	\$	2,000,000.00	\$	-	-		
Eco Restoration	5899	4/20/2020	<p>Enhance conservation of sea turtles in Mississippi state waters by strengthening capacity for science-based animal health and management</p> <p>The Mississippi Sound (MS) is home to the most critically endangered sea turtle in the world, the Kemp's ridley (Lepidochelys kempi), along with other endangered or threatened sea turtle species such as the loggerhead (Caretta caretta) and the green sea turtle (Chelonia mydas). Juvenile Kemp's ridley sea turtles utilize the MS for development, foraging on blue crabs that are abundant in the MS. The green sea turtle, immovably at the juvenile stage, forages on sea grass beds and fish prey in this area. Loggerhead sea turtles have been documented to nest on Mississippi beaches from as early as 1990 (Hogarth 1991). In addition, the MS supports a large recreational and commercial fishing industry as well as a boating industry. The MS is heavily impacted by freshwater inputs from large watersheds such as the Mississippi River, Pearl River, and Pascagoula River, by large ecological disasters such as the Deepwater Horizon (DWH) oil spill, and by natural events such as hurricanes and algal blooms. Therefore, effective management of turtle health in the MS is critical for the viability of these important species in the Gulf of Mexico, and it requires science-based decision making and interventions from experienced and qualified experts to manage the MS in the context of the economically vital MS.</p> <p>To manage this vital species effectively and sustainably in the MS over the next ten years, MSU-CVM and IMMS have developed a comprehensive plan with the following objectives:</p> <ol style="list-style-type: none"> 1) Conduct stranding response/rehabilitation and implement a systematic approach to identify threats to sea turtle health, including human interactions, in the MS. This includes providing timely response to incidentally captured, stranded, and injured turtles on the Mississippi coast and a systematic approach to determining cause of death. 2) Assess the environmental threats impacting sea turtles and their habitat, including investigating changes to noise pollution, water quality, and pollutants in the habitats of turtles in the MS. 3) Enhance turtle movements, distribution, and habitat utilization using satellite tagging and archival telemetry. 4) Review, document, and manage any sea turtle nesting activity on Mississippi mainland beaches. 5) Provide educational opportunities for students and conduct outreach to build capacity in Mississippi for management of sea turtles. Specialized, postgraduate education will be provided for veterinary students, as well as undergraduate and graduate students, to build expertise in Mississippi for coastal management, and outreach will be enhanced for K-12 students and the public to improve public awareness. <p>We anticipate that, through conducting this comprehensive set of aims from 2021-2030, the sea turtle population in the MS will be effectively monitored and managed to establish their sustainable, long-term health. We further expect that, through the knowledge gained in this proposed program, the MS turtles will be the most well-documented population in the Gulf of Mexico, and Mississippi will become a model state for effective management of its wild turtle stocks.</p>	Harrison	Yes	No	No	No	No	No	No	No	No	No	\$	-	\$	-	-	
Eco Restoration	5988	6/17/2021	<p>Bay St. Louis Lift Station Upgrade</p> <p>The lift station will need upgrades to both pumps and the electrical system to increase capacity. These upgrades are needed due to the possibility of overflow from near waterways and wastewater going out into the Bay of St. Louis. Also, pipes and valves will need to be replaced.</p>	Harrison	Yes	No	No	No	Yes	No	No	No	No	\$	-	\$	-	-		
Eco Restoration	5989	7/20/2021		Hancock	Yes	Yes	Yes	Yes	No	Yes	No	No	\$	600,000.00	\$	-	-			

1279	12/16/2013	<p>the red snapper, <i>Lutjanus campechanus</i>, is the most economically important reef fish species in the Gulf of Mexico (GOM), supporting major commercial and recreational fisheries in the five Gulf states. The stock has, however, been overfished since the 1980s, prompting the Gulf of Mexico Reef Fish Management Plan in 2004 to institute catch limits and seasonal closures on the fishery. A subsequent rebuilding plan was approved in 2001 with the goal of recovery of the red snapper stock by 2032. Despite these efforts, a combination of increased direct effort, reported quota overages and uncertainty about stock status has resulted in more restrictive management measures. For instance, the recreational red snapper season in the GOM has been incrementally reduced from a year-round season (365 days) prior to 1997 to only 28 days in 2012. Over the same time period, the stock limit has been increased from a 2.3-inch to a 16-inch minimum length, and the daily bag limit has been decreased from seven to two fish per angler. As a result, the management of red snapper has become quite controversial.</p> <p>Compounding this management issue are impacts to red snapper stocks from the Deepwater Horizon oil spill in 2010. The release and dispersal of oil from the damaged MC252 well encompassed natural and artificial reef areas that serve as primary habitats for the species, thereby jeopardizing biological and ecological function of juveniles and adults. Further, red snapper spawn from May through September in Gulf waters, a time period overlapping the spill, and those exposed larvae would have been subjected to oil exposure in the water column during their post-settlement phase. While the scale of oil impact remains undetermined, the distribution and benthic nature of red snapper made them particularly susceptible to oil exposure, and the stock was undoubtedly impacted by the Deepwater Horizon event.</p> <p>The State of Mississippi currently manages more than 16,000 acres of permitted offshore reef sites at 15 fish havens north and south of its barrier islands, and an additional eight sites are part of the Mississippi Right to Reef Program, coordinated with the Bureau of Ocean Energy Management. However, unlike Alabama and Louisiana, Mississippi currently does not utilize a standardized reef fish sampling protocol. Therefore, data on abundance, distribution, and life history characteristics of these locations that could contribute to regional management decisions are lacking. Given the uncertainty in various stock parameters for GOM red snapper and the unknown status of spill-related impacts, the purpose of this program is to obtain comprehensive ecological data on reef fish species occurring in northern GOM waters off Mississippi for use in regional stock assessments. Data on abundance, size and age composition, feeding, habitat use, population dynamics, movement/migrations, growth rates, mortality rates, and habitat values will address significant gaps in our knowledge of fishes inhabiting Mississippi's offshore reefs. A unique aspect of our approach is to use cultured red snapper to validate estimates of vital rates obtained with more traditional sampling techniques. Releasing tagged cultured fish of a known age and health status will contribute to a better understanding of red snapper biology and habitat quality. By addressing key data gaps, this program will benefit the reef fish management process, serve as a basis for the regional management of GOM red snapper, and enhance the recovery and sustainability of the resource. Additionally, project sampling will provide new data for determining the distribution and ecology of invasive species such as the lionfish, which has been shown to impact reef ecology by altering trophic dynamics.</p> <p>Based on the needs identified herein, we propose to:</p> <ol style="list-style-type: none"> 1) implement standardized sampling protocols to 18 data gaps for red snapper and other reef fish species occurring at Mississippi artificial reef sites to support regional assessment and management; 2) utilize traditional and acoustic tagging techniques to determine habitat use, movements/migrations, growth and mortality of wild red snapper; 3) develop and test the use of cultured red snapper to corroborate vital rates estimated from more traditional methods and to assess habitat quality. 	Hancock, Harrison, Jackson	Yes	No	No	No	No	No	No	No	No	No	No	No	No	\$	1,540,600.00	\$		
1588	1/21/2000	<p>Habitat Restoration with Artificial Reefs</p>	Hancock, Harrison, Jackson	Yes	No	No	No	No	No	No	No	No	No	No	No	No	\$		\$		
1572	6/22/2011	<p>ORIGINAL (08216) The sub tidal oyster reef habitats in coastal Mississippi have been degraded over time due to poor riverine water quality, questionable land use practices in watersheds, shoreline hardening and natural processes such as hurricanes. Substantial expanses of suitable bottom area exist in all Mississippi bays and estuaries. The proposed project will construct oyster reef habitat using natural oyster shells on suitable water bottoms. Careful scientific monitoring will document long term success. Restoration of oyster reefs in Biloxi Bay began in 2007 with the construction of a 10-acre pilot project. The reef was later expanded to 22 acres. Suitable water bottoms exist in the Bay for further restoration. TNC has requested additional funding from FWH/Commerce to add an additional 10 acres of reef. Project time line: Permitting and project design July 2011 Pre deployment sampling, October 2011 Contracting, December 2011 Reef construction, May 2012 Post construction monitoring and May 2012 When compared to other areas, Mississippi's oyster reefs are in fairly good condition, but significant losses have occurred. Restoration of sub tidal oyster reef produces increased biomass and species diversity, along with a shift to important sport fish, including spotted sea trout, white sea trout, black drum, and southern kingfish (ground mullet). Resident and migratory shorebirds will also benefit. It is unlikely that restored oyster reefs in Bay St. Louis will have any effect on state or federal listed species.</p>	Harrison	Yes	No	No	No	Yes	No	No	No	No	No	No	No	\$	375,000.00	\$			
1573	6/22/2011	<p>ORIGINAL (08217) The sub tidal oyster reef habitats in coastal Mississippi have been degraded over time due to poor riverine water quality, questionable land use practices in watersheds, shoreline hardening and natural processes such as hurricanes. Substantial expanses of suitable bottom area exist in all Mississippi bays and estuaries. The proposed project will construct oyster reef habitat using natural oyster shells on suitable water bottoms. Careful scientific monitoring will document long term success. Restoration of oyster reefs in Bay St. Louis began in 2007 with the construction of a 2-acre pilot project. In 2009 a larger, 14-acre project was constructed nearby. Sampling of both reefs in early 2011 showed that both reefs are fully functional, and contributing to the productivity and biodiversity of the Bay. Suitable water bottoms exist in the Bay for further restoration. TNC has requested additional funding from NOAA to add an additional 10 acres of reef. Project timeline: Permitting and design July 2011 Pre deployment sampling, October 2011 Contracting, December 2011 Reef construction, May 2012 Post construction monitoring, until May 2013 When compared to other areas, Mississippi's oyster reefs are in fairly good condition, but significant losses have occurred. Restoration of sub tidal oyster reef produces increased biomass and species diversity, along with a shift to important sport fish, including spotted sea trout, white sea trout, black drum, and southern kingfish (ground mullet). Resident and migratory shorebirds will also benefit. It is unlikely that restored oyster reefs in Bay St. Louis will have any effect on state or federal listed species.</p>	Harrison	Yes	No	No	No	Yes	No	No	No	No	No	No	No	\$	375,000.00	\$			
1574	6/22/2011	<p>ORIGINAL (08218) The proposed project will create a living shoreline of intertidal oyster bars to stabilize and protect critical coastal marsh habitat within the Hancock County Coastal Preserve. A series of oyster bars, each several hundred feet long, will be created along 15.5 miles of shoreline from Bayou Cadeau near the mouth of the Pearl River creating up to 60,000 tons of oyster habitat. Local substrate conditions are ideal for the use of living shorelines, including oyster reef blocks, to prevent erosion and habitat loss. In some areas, marsh accretion may occur, allowing for additional future restoration of salt marsh habitat. Additionally, the oyster reefs will provide valuable ecosystem services including increased water clarity and water quality, fish and invertebrate habitat, and increased habitat complexity. timely protection of the Hancock County Coastal Preserve is critical and this project, if funded, will be the largest coastal stabilization and habitat restoration project to date utilizing living shoreline (oyster reef blocks) techniques in the State of Mississippi. To date, a preliminary site survey has been completed, potential contractors (single source) have been identified, and the permitting process has been initiated. Construction of reef blocks will begin immediately (FY12), equiptment hire will start in a priority site where erosion is most severe (FY12-13). Following the deployment of reef blocks over the remaining area (FY12-FY13). Five to ten miles of oyster reef habitat will be created along 15.5 miles of shoreline in Bayou Cadeau-Heron Bay, Hancock County, Mississippi over a two year period. Reefs will be constructed and deployed in a non-contiguous, staggered design to allow for tidal flow, boat access to marsh creeks, etc. These reefs will protect approximately 3,500 acres of adjacent estuarine marsh. Pre assessment and post construction monitoring activities will occur over a two year period.</p>	Hancock	Yes	No	No	No	No	No	No	No	No	No	No	No	\$	18,797,603.00	\$			
1576	6/22/2011	<p>ORIGINAL (08230) Loss of coastal marsh from shoreline erosion is a major problem across the entire Gulf coast. In Mississippi, estuarine marshes are considered to be imperiled. In certain areas in Coastal Mississippi, it is possible to document by aerial photography, the loss of up to 1500 linear feet. These areas of rapidly eroding wetlands, often totaling 2.25 miles, were selected for this work, based on either public ownership of lands, or within private landowners. In each area, intertidal marshes were mapped and erosion has sometimes exceeded 250 linear feet, over 50 years. Oyster based shoreline structures will be placed along selected wetlands. This project will create oyster based living shorelines structures along eroding marsh shorelines in Harrison and Jackson counties. These structures will prevent further erosion and should accrete sediment leading to additional, self-sustaining living shoreline structures themselves will create marsh habitat. There are no structures of this type in use in Mississippi however, they are in widespread use in Louisiana, Alabama and Texas. In each case significant shoreline protection has been achieved, and accretion of new marsh has sometimes resulted. Other sources of funding are being sought but have not yet been located. It is hoped that successful completion of these pilot projects will stimulate interest in further wetland restoration. By protecting and restoring coastal marsh, one of the most important habitats on earth, this project will protect and restore habitat for marine fish and invertebrates and migratory and resident seabirds. These species include most of the important commercially fished species, including shrimp, crabs, and spotted seatrout, red drum, and bull murrelets. State and federally listed species in the area include Gulf sturgeon and some species of sea turtles, but they are unlikely to use this habitat. In addition to the positive effects on coastal marshes, the living shore structures themselves also provide habitat for oysters, mussels, and other marine fish and invertebrates.</p>	Hancock, Harrison, Jackson	Yes	Yes	No	No	No	No	No	No	No	No	No	No	\$	2,250,000.00	\$			
1597	9/7/2011	<p>ORIGINAL (08220) This project addresses the extensive damage done by the Deepwater Horizon event on natural resources, namely fish, oysters, and shrimp. Specifically, the project would establish hatcheries for fish, oysters, and shrimp. It would be funded for 20 years by a trust that long-term replenishment of oyster would be available to residents and attract visitors to the coastal area. Suggested locations consist of a site near Bayou Cadeau, West Pearl River, or the Jordan River.</p>	Hancock	Yes	No	No	No	Yes	No	Yes	No	No	No	No	No	\$		\$			
1601	9/12/2011	<p>ORIGINAL (08104) Make enhancements to the marine private recreational fishing survey to improve timeliness and spatial resolution of catch and fishing effort data for better management. Link to Hiny Private recreational angler log access to a considerable portion of federal and state waters in the northern Gulf that were closed to fishing during the BP oil disaster. The resulting angling public must be compensated for lost access to fishing as a service. Benefits and Rationale: Improving the private recreational survey in the Gulf of Mexico will help keep fishery resources healthy and available to anglers. Specifically, improving the timeliness and spatial resolution of catch and effort data can help fishery managers keep total catch within prescribed fishing limits and prevent recreational anglers from exceeding their quotas and incurring penalties. These improvements would benefit the public by lowering the likelihood of overfishing and accountability measures, which, if triggered, could result in shorter fishing seasons in the future.</p>	N/A	Yes	No	No	No	Yes	No	No	No	No	No	No	\$		\$				
1604	9/26/2011	<p>ORIGINAL (081158) This land acquisition would protect 60.85 acres of Round Island. The property would be transferred to the Mississippi Coastal Preserve system where it would be managed by the Mississippi Department of Marine Resources for the use and enjoyment of the citizens of Mississippi. Such uses include bird watching, kayaking, recreational fishing, and hiking. The Coastal Preserve System manages over 83,300 acres of coastal lands in perpetuity. The island contains a large northern slash pine forest, estuarine and intertidal wetlands, and beach habitat. Gulf-wide coastal island habitats are in decline due to erosion, channelization and geological changes in land source availability.</p>	Jackson	Yes	Yes	No	No	No	No	Yes	No	No	No	No	No	\$	1,800,000.00	\$			
1605	9/26/2011	<p>ORIGINAL (081159) This land acquisition would protect 6 acres of Deer Island. The property would be transferred to the Mississippi Coastal Preserve system where it would be managed by the Mississippi Department of Natural Resources for the use and enjoyment of the citizens of Mississippi. Such uses include bird watching, kayaking, recreational fishing and kayaking. The Coastal Preserve System manages over 83,000 acres of coastal lands in perpetuity. The island contains a large riverine slash pine forest, estuarine and intertidal wetlands, and beach habitat. Gulf-wide coastal island habitats are in decline due to erosion, channelization and geological changes in land source availability.</p>	Harrison	Yes	Yes	No	No	No	No	No	No	No	No	No	\$	1,000,000.00	\$				
1607	10/25/2011	<p>ORIGINAL (081439) Problem: The Deepwater Horizon Oil Release (DWH) caused environmental and economic damage to fisheries in the northern Gulf of Mexico. America must employ novel and effective approaches to restore both economic and environmental wellbeing. In addition, habitat destruction caused by hurricanes and other man-made causes (over fishing, erosion and spillo) have led to significant decrease in Gulf fish populations during the last decade. Solution: Marine aquaculture of key species can be employed to restore fisheries through restocking and to restore economic vitality through technology transfer and stimulation of small business resulting in job creation. This effort should be highly collaborative involving institutions in all five Gulf States as well as other national and international institutions, public and private, with significant hatchery technologies. Implementation Team: Gulf of Mexico Hatchery and Fisheries Restoration Consortium. Gulf Coast Research Laboratory/University of Southern Mississippi (GCR, lead institution); University of Texas Marine Science Institute (UTMSI); Louisiana University Marine Consortium (LUMCON); Auburn University (AU); Alaska Marine Laboratory (AML); University of Maryland System (UMD). These institutions are leaders in marine aquaculture and stock enhancement research, implementation, and technology transfer for the northern GOM. The consortium is built on established relationships and will employ the highest quality science and economic approaches to implement, and transfer the technology to raise significant numbers of fish for fishery restoration and to stimulate private sector small business development. In addition to the implementation team, the consortium has established scientific, governmental agency and commercial Advisory Boards. Implementation Team: Gulf of Mexico Hatchery and Fisheries Restoration Consortium. This consortium has established the collaborative invovement of these 6 leading institutions that has conducted research on over 10 of the most important and ecologically important Gulf fish species. Among the species are those for which the technology is applied: roachling, technology transfer, and business opportunities for innovative implementation of stockling and technology transfer include Red Drum, Spotted Sea Trout, Red Snapper, White Shrimp, Bull Minnow, Croaker, Florida Pompano, Cobia, Greater Amberjack, and Southern Flounder. Projected Results: The work of the consortium will result in advanced technologies for use by Gulf States fishery agencies and private industry. Similar efforts in the Mediterranean Sea led to a \$1 billion industry in 10 years. The 2007 NOAA aquaculture plan projects 75,000 lbs created for every million tons of seafood produced by aquaculture of Gulf fish species would double the seafood output of the Gulf of Mexico (2700 Million in 2008). Additionally the recreational fishing industry (\$12 Billion in 2008) would realize expanded employment and business opportunities as natural populations are restocked with hatchery produced fishings.</p>	N/A	Yes	No	No	Yes	Yes	No	No	No	No	No	No	\$	60,000,000.00	\$				
1610	10/26/2011	<p>GULF OF MEXICO HATCHERY AND FISHERIES RESTORATION CONSORTIUM</p> <p>ORIGINAL (081425) A cooperative, federal, state, and private project to restore the Point au Chien Bay ecosystem and its historic oyster habitats through 1. The rebuilding of the Grand Barataria Islands with sediment maintenance dredged from nearby channels or Mississippi Sound (MS-CEJ). 2. The removal of sections of man-made levees along US HW 90 and the CSX Railroad that restrict freshwater flows into the (MS-OTI & CEJ). 3. The restoration of freshwater inflows to facilitate oyster rearing, survival, growth, & recruitment. 4. The reestablishment of water bottom conditions through planting of oyster shells and/or crushed concrete aggregate materials (by MCOMMS). 5. The reweaving & transplanting of new oyster stocks from Pascagoula Bay & Greiveline Bayou by private industry under the direction of MS-DMR. 6. The removal of upland sources of domestic & industrial wastewater that now flow into Bayou Cumber & Bang Lake (by MDEQ). 7. The reclassification of Point au Chien Bay & Bang Lake as appropriate or conditionally approved growing waters (by MCOMMS & USFWS). 8. The requirement that Mississippi Bayou Company restore Bang Lake to its pre-aid spill status including the funding of oyster restoration therein. 9. The in-embourcement of social fisheries for assisting with oyster relaying & replanting on Point au Chien Bay & Bang Lake, and 10. The re-establishment of commercial & recreational oyster fisheries in Point au Chien Bay, Bang Lake, & Bang, Crooked, & Cumber Bayous.</p>	Jackson	Yes	No	No	No	Yes	Yes	No	No	No	No	No	No	\$	2,500,000.00	\$			

Eco Restoration	1611	3/27/2013	10-Year enhancement for responding Gulf of Mexico Sea Turtle Stranding Network response and science capacity	<p>ORIGINAL (0811947) Proposed Restoration Project: The project will augment resources available to the Sea Turtle Stranding and Salvage Network (STSN) in the Gulf, led by NOAA, and help participating entities respond to and learn from future sea turtle strandings, and thus increase the recovery of populations impacted the Deepwater Horizon (DWH) oil disaster. Links to injury: Sea turtles were exposed to petroleum hydrocarbons resulting from the Deepwater Horizon oil disaster and likely to chemical dispersants used during DWH response. More than 450 highly oiled, live sea turtles and 18 highly oiled, dead sea turtles were recovered during DWH response from April 2010 through February 2011. Another 500+ stranded sea turtles with no visible external signs of oiling were reported during this period. Animal autopsies revealed that the cause of death for a subset of recovered sea turtles was consistent with drowning, but whether and how the DWH disaster contributed to strandings of non-oiled, dead sea turtles remains under investigation. Benefit and Rationale: NOAA leads the STSN in the Gulf of Mexico, but depends on employees of federal and state agencies, universities, non-governmental organizations to run on-the-ground operations and field response. In some cases, STSN participating entities receive limited or no additional institutional support and conduct STSN activities using their own limited time and funding. However, they are often the first to respond to sea turtle strandings, a key function in maintaining the survival of sea-stranded animals, and could do more with dedicated funding to help support monitoring and response to strandings. Since April 2010, the number of sea turtle strandings in the northern Gulf has approached 2,000 animals, far exceeding the historical average. Stranded sea turtles would be located and rehabilitated. The project would increase the capacity of organizations. Rehabilitation of animals released back into the wild are given another opportunity to reproduce and thus contribute to the recovery of populations impacted by episodic events like the DWH disaster. Sea turtles, among other species, are the ocean's "tombax" in the coal mine, and their recovery, through tissue sampling and necropsies, collect valuable information on the condition of animals that can help biologists understand the cause of illness or death but detect subtle or significant changes in ecosystem condition or function. The collection of biological information from stranded animals is critical to understanding more clearly the long-term effects of the DWH disaster and other human activities on Gulf sea turtles. Description: This project would increase capacity for sea turtle stranding programs in the state or regional level such that they are in a better position to respond to strandings, maximize survival of recovered animals, and improve the consistency and quality of pathological information collected from tissue samples or post-mortem. Specifically, this project would increase capacity across Gulf STSN programs in the field by making investments in the following operational areas: 1) developing and implementing uniform animal detection and data collection methods; 2) supplies (including fuel); 3) collection, handling, shipment and analysis (necropsies); 4) data entry, management and synthesis for scientific, use and public communication and 5) rehabilitation facilities (including salary support and other administrative costs such as coordination with other networks and resolving permit problems). In regards to #1, this project would cover the cost of developing uniform animal detection and data collection methods, which are important for understanding how stranded turtles represent the entire population. Hiring experienced researchers and veterinarians from other regions to train local responders in its act of collecting information from stranded animals is needed to ensure that information collected from stranded animals is consistent across stranding networks in the Gulf, integrated with other health assessment studies, contributes to a better understanding of the impacts of the DWH disaster on Gulf sea turtles, and informs sea turtle recovery strategies going forward. Note: Specific program needs will vary by a state by state basis and therefore should be determined by in-state coordination. Note: This proposal was prepared by Ocean Conservancy, with input from stranding network members. Ocean Conservancy is not seeking funding for this project, nor does it anticipate receiving funds, if approved and adopted in whole or in part, by the Trustees, the Gulf States, the National Fish and Wildlife Foundation, the Restore Coast, or any other funding entity.</p>	n/a	Yes	No	No	No	No	No	No	No	No	No	No	\$	1,000,000.00	\$	-
Eco Restoration	1621	4/18/2013	Expand and improve Gulf of Mexico Marine Mammal Stranding Response and Science Capacity	<p>ORIGINAL (0811866) Proposed Restoration Project: The project will augment resources available to the Marine Mammal Health and Stranding Response Program (MMHSSRP) network members in the Gulf, helping them respond to and learn from future marine mammal strandings and thus increase the survival of rescued animals and the recovery of populations impacted by the Deepwater Horizon (DWH) oil spill. Added benefits from this project are the ability to augment the resources and response capability across networks that serve other impacted marine wildlife species, such as sea turtles and sea birds. Links to injury: Marine mammals (whales, dolphins, and manatees) inhabit the northern Gulf and have been exposed to petroleum hydrocarbons and impacted by cleanup activities resulting from the Deepwater Horizon oil spill. Aerial surveys conducted under the Natural Resource Damage Assessment observed 6 species of whales or dolphins swimming in surface oil or offshore water. Two dolphins were rescued after being trapped behind oil booms in Alabama during the spill event. Health assessments conducted in Barataria Bay in 2011 showed that animals in the high-impacted region were exhibiting signs of severely compromised immune systems – symptoms consistent with those seen in other mammals exposed to oil. Approximately 930 marine mammal strandings (almost entirely bottlenose dolphins) have been reported as of 4/18/2013 as part of an ongoing Unusual Mortality Event that began in February 2010 in the northern Gulf. Strandings in 2010-2012 far exceeded the historical average (Figure 1). The majority of the strandings occurred in Louisiana, followed by Mississippi, Alabama, and the Florida panhandle (Figure 2). Scientists are still investigating the cause of the strandings. The potential for long-term impacts exists for marine mammals that were exposed to contaminants, but may take many years to be realized. Benefit and Rationale: The collection of biological information from stranded marine mammals is critical to understanding the long-term effects of the DWH oil spill and to assessing the recovery of affected populations. Prior to the spill, stranding response efforts were patchy and inconsistent in many portions of the region, especially Louisiana and Alabama. Response capabilities increased in certain areas during the spill with funding from the Natural Resource Damage Assessment; however, long-term funding is needed across the Gulf because it is not known where or when delayed strandings related to the DWH spill may arise in the future. Institutional funding is variable but generally inadequate to provide the level of response assessment. Limited global expertise in marine mammal rescue and diagnosis underscores the need to recruit and retain properly trained specialists in the impacted region. MMHSSRP network members are often the first and only responders to marine mammal strandings in the Gulf region. Rapid response to live and dead stranded animals is key to collecting the information that determines cause of death and to monitor the health status of populations. The availability of trained and qualified stranding responders, technicians, and veterinarians is essential in providing effective medical and forensic response. The unusually high number of sick and dead marine mammals recovered in the northern Gulf since the DWH oil spill underscores the importance of network members in responding to, rescuing, and rehabilitating stranded marine mammals. Often, MMHSSRP network members participate along in response efforts for other injured or dead marine turtles and seabirds. Although none of the marine mammals rescued during the DWH event could be released back into the wild, other live stranded marine animals (e.g., seabirds and sea turtles) were rescued and rehabilitated by network members and typically were released. There is an ongoing need to treat and successfully release stranded dolphins, whales, and manatees back to the Gulf. Released animals are then able to reproduce and contribute to the recovery of the wild population. Follow-up monitoring of released animals via tagging and resightings will provide data on the success of rehabilitation efforts and assist in adaptive management of rehabilitation and release techniques. Marine mammals, among other species, are the ocean's "tombax" in the coal mine, and MMHSSRP network members, through biological sampling and post-mortem examinations, collect high value information on the condition of animals that can help scientists not only understand the cause of illness or death, but also detect subtle or significant changes in ecosystem condition and function. Stranding response complements on-water observational studies of free-swimming wild animals, which provide a means to measure population vitality, birth, juvenile survival, visual health indicators, and incidences of injury (e.g., harassment by marine activities (e.g., vessel strikes or fish traps)). Description: This project would maximize the survival of marine mammals affected by the DWH oil spill by increasing the capacity of Gulf marine mammal health and stranding response program network members, with emphasis on areas affected by the spill, to 1) respond to reports or sightings of live and dead</p>	n/a	Yes	No	No	No	No	No	No	No	No	No	\$	45,000,000.00	\$	-	
Eco Restoration	1617	1/14/2014	Coffea Creek Restoration and Enhancement	<p>Coffea Creek is a 1.25 miles long and drains portions of the City east of Hwy 49 and south of Pass Road. The estuarine channel collects and treats storm water runoff starting around the intersection of 26th St and Gulf Ave with direct outfall to the Mississippi Sound. This restoration project intends on enhancing the Coffea Creek's navigability, restoring the channel's natural flow, and improving public access and recreational activities to portions of the same beach where access was limited due to oiling during the 2010 oil spill. Initially, the project will involve routine maintenance and debris removal on an approximate 1/2 mi stretch beginning at the outfall at the Gulf. These low impact, non-structural improvements will restore natural flows and revitalize Coffea creek as a natural corridor and refuge for estuarine wildlife. Secondly, beachfront enhancements are proposed in line with the current "Gateway" projects already underway within Harrison County. These enhancements may consist of aesthetic improvements (landscaping, etc.) and recreational improvements such as fire pits, showers, volleyball courts, pavilions, etc., while providing more access for fishing. The recreational improvements will complement the existing parking field already in place at this location. Further, a kayak rental facility will be constructed to encourage kayaking opportunities. Kayaking improvements will be in line with the Heritage Trails Partnership of the Mississippi Gulf Coast's Blueways program. The final element of this project will be providing a boardwalk alongside Coffea Creek that will access 0.1 mi of its outfall at the sand beach of the way to the existing Coker-Thrasher Nature Trail just north of the existing railroad approximately 1/2 miles to the north. A portion of Highway 90 will need to be raised approximately 4' to allow the boardwalk to pass underneath. This boardwalk will provide public access between the two recreational uses, and will encourage economic development and tourism by providing immediate (and safe) access between the upcoming Centennial Plaza development and Gulfport's pristine beaches.</p>	Harrison	Yes	Yes	5000%	Yes	No	No	No	No	Yes	No	\$	9,500,000.00	\$	-	
Eco Restoration	1661	1/20/2014	Turkey Creek Restoration and Enhancement	<p>Turkey Creek is 1.7 miles long with an approximate 17,800 acre drainage basin. Located in the City of Gulfport, the City of Long Beach, and Harrison County, Mississippi, this transitional freshwater/estuarine water body collects, stores, and treats storm water runoff for multiple municipalities. Turkey Creek holds high levels of debris deposited by storm events and local residents. With its natural flows impeded, during high flow conditions, this creek overflows the south stream bank and causes widespread flooding. In a 2005 "Flood Damage Reduction Study," the United States Army Corps of Engineers (USACE) recommended selective clearing and snagging for identified portions of the creek. Subsequent attempts to do so by Harrison County were halted by public protest from organizations such as the NACAC, the North Gulfport Coalition, and the Sierra Club. Instead, this project proposes the formation of a "Turkey Creek Improvement Committee" consisting of the above referenced municipalities and organizations. This committee would be focused on Public Outreach and be tasked with suggesting improvements to be designed and approved final design prior to construction. Anticipated improvement methods will include low impact methods such as shoreline stabilization, stream maintenance, etc. These improvements will restore natural flow and revitalize the natural refuge and natural corridor this creek provides to all sorts of estuarine wildlife. This project also proposes improvements within the watershed (drainage ditches and piping, particularly near the intersection of Cokerade Rd and Rippy Rd. These improvements will allow storm water to flow more efficiently thereby reducing the flood levels in the lower Turkey Creek Basin. Flood level reduction will help ease economic development and community resilience. Further, additional emphasis would be placed on opening up recreational activities to residents and eco-tourism. These improvements could include additional access points for fishing and kayaking. Turkey Creek is already a designated "blueway" by the Heritage Trails Partnership of the Mississippi Gulf Coast; recreational improvements will be coordinated with this program.</p>	Harrison	Yes	Yes	Yes	Yes	No	No	No	Yes	No	\$	5,000,000.00	\$	-		
Eco Restoration	1679	1/21/2014	Hancock County Marsh Living Shoreline Project	<p>We have designed and patented a system that will help control effects of sea rise. Our system will provide shoreline protection, will enhance building of habitat, and will assure land building. Designed to replace rock jetties, our new concept (Geo-TECH jetties) is installed above the water line, considering projected sea rise (as determined by official government determinations). Our Geo-TECH jetties are filled with dredged material sourced from near the installation. Within a prepared area on top of the Geo-tech containers are RootZone Humus Filled (RZH), biodegradable containers. The RZH-filled containers are planted with natural native marsh grasses and other select native plants. Our specialized method, proven in several previous deployments, ensures highly efficient and sustained plant growth, while providing shoreline force and sea-rise protection. Land building also results as these solutions continue to work efficiently, while cooperating with nature. Once in place the Geo-TECH jetties units are stabilized with XX heavy duty PVC pipe, driven down 7 feet for firm hold, three stainless steel rings on the bottom of units in three locations for PVC pass through. The PVC stabilization devices are designed so that they can be retrieved at a future time, when it may be determined that plant rooting and accretion has been achieved and our RZH-filled structure is no longer needed. Our proven methods allow for replacement of rock or stabilization means. Using our proven methods, we ensure rapid reestablishment of habitat: shellfish, fish-fishes, invertebrates, and other vital coastal organisms are able to reestablish populations. Installing our Geo-TECH jetties units, we accomplish rapid rebuilding of the entire food web, by providing the multiple benefits: (1) We provide protection from sea-rise. (2) We ensure rapid establishment of native plants along shorelines, making possible rapid habitat establishment. (3) Our methods assure accretion, as the long, well-set units of Geo-TECH jetties prevent erosion. (4) The Geo-TECH jetties also provide protection from surface and sub-surface of encroachment on shorelines and into adjacent marshes. (5) Shoreline areas of land, (marshes or barrier island shores), behind the rows of Geo-TECH jetties are filled with dredged material that our process continues to make firm (RZH and RZH) are applied to ensure fertility. The Geo-TECH jetties is set in place, working from barges. Our Geo-TECH jetties Placement System makes it possible for us to position units efficiently, one in front of the other, and over lapping with space between them allowing existing habitat to continue functions as installation is accomplished. If it is decided that marsh or shore is not to be filled in some areas where Geo-TECH jetties are being installed, our units are set next to each other and can be used to serve as solid shoreline protection without back-filling.</p>	Hancock	Yes	No	Yes	Yes	Yes	No	No	Yes	Yes	\$	6,248,000.00	\$	-		
Eco Restoration	1681	1/22/2014	Hancock County Marsh Living Shoreline Project	<p>After 48 acres of dredge material is installed Trident is proposing to plant approx 802,000 native coastal grasses and plants with RZH (joppote). Flooded every 2-3 feet. Monitor growth for 1 year. Hire local labor and suppliers. Project coincides with installation of the Geo-TECH jetties Units. Project ID #1679</p>	Plaquemine (I think he meant to put Hancock)	Yes	Yes	Yes	Yes	Yes	No	Yes	No	Yes	\$	2,110,000.00	\$	-		
Eco Restoration	1683	1/24/2014	Hancock County Marsh Living Shoreline	<p>Planning on budgeting for the installation of dredge fill and 46 acres of subtidal oyster reef on another project site.</p>	Harrison	Yes	No	No	No	No	No	No	Yes	No	\$	85,000.00	\$	-		
			Creeks and Streams Evaluation	<p>Evaluate Harrison County creeks and streams for population, silted in obstructions, and clean-up program. Particularly the following: Name / County / USGS Topo Map Augusta Bayou / Harrison / Bayou Bayou Acadian / Harrison / Bay St. Louis Bayou Bernard / Harrison / Gulfport North Bayou Laporte / Harrison / Biloxi Bayou Portage / Harrison / Bay St. Louis Big Creek / Harrison / Gulfport NW Biggin Bayou / Harrison / Biloxi Blind River / Harrison / Biloxi Brakley Bayou / Harrison / Biloxi Brickyard Bayou / Harrison / Gulfport North Cedar Bayou / Harrison / Bay St. Louis Cypress Creek / Harrison / Biloxi De Lisle Bayou / Harrison / Bay St. Louis Fitz Branch / Harrison / Gulfport NW Fitz Branch / Harrison / Gulfport North Fitz Branch / Harrison / Success Fitz Creek / Harrison / Gulfport North</p>	Harrison	Yes	No	No	No	No	No	No	Yes	No	\$	85,000.00	\$	-		

Project ID	Year	Date	Project Name	Description	Agency	Funding Type	Funding Source	Funding Amount	Other Funding	Status	Notes						
Eco Restoration	1684	2/3/2014	Hancock County Living Marsh Shoreline Project	Mitchell Marine, Inc. will use a 12" hydraulic dredge to move material from a mining area 2000 feet off the shore to fill in low marsh berm. Approximately 130,000 yards of material will be moved over the planned term area. Mitchell Marine is located in Biloxi MS. This coincides with Project # 1679 and 1681. Propose to deploy 435 tons per acre on 46 acres to equal 20,000 tons for Oyster Catch. The material used will be 100 oyster shells and 90% IRMs. All work will be done in a minimum of 4 ft. of water at mean low tide. This is a add alternate to basic bid. Project ID# 1679, 1681, 1684 and 1689. Install 600 Geo-TECH units with dredge material on top of the Geo-tech containers are Rootzone Humus filled. (RHZ) biodegradable containers. The RHZ filled containers are planted with native marsh grasses and other native salt grasses. Once set in place the Geo-TECH units are stabilized with XX heavy duty PVC pipe. Drive down 7 feet for firm hold, there are stainless steel rings on the bottom of units in three locations for PVC pipe through. Back fill 114,000 cubic yards dredge material within 40 acres behind Geo-TECH units.	Hancock	Yes	Yes	Yes	Yes	No	No	No	Yes	\$ 5,923,200.00	\$ -		
Eco Restoration	1691	2/3/2014	Hancock County Living Marsh Project	Propose to deploy 435 tons per acre on 46 acres to equal 20,000 tons for Oyster Catch. The material used will be 100 oyster shells and 90% IRMs. All work will be done in a minimum of 4 ft. of water at mean low tide. This is a add alternate to basic bid. Project ID# 1679, 1681, 1684 and 1689. Install 600 Geo-TECH units with dredge material on top of the Geo-tech containers are Rootzone Humus filled. (RHZ) biodegradable containers. The RHZ filled containers are planted with native marsh grasses and other native salt grasses. Once set in place the Geo-TECH units are stabilized with XX heavy duty PVC pipe. Drive down 7 feet for firm hold, there are stainless steel rings on the bottom of units in three locations for PVC pipe through. Back fill 114,000 cubic yards dredge material within 40 acres behind Geo-TECH units.	Hancock	Yes	No	Yes	No	Yes	No	Yes	No	Yes	\$ 2,469,200.00	\$ -	
Eco Restoration	1720	3/6/2014	Hancock County Living Marsh Shoreline Restoration Project	This proposal coincides with project ID# 1720 has add alternate. Propose to deploy 435 tons per acre on 46 acres to equal 20,000 tons for Oyster Catch. The material used will be 100 oyster shell and 90% IRMs. All work will be done in a minimum of 4 ft. of water at mean low tide. This project will use the sediment removed from the bayous within the Bayou Causee Ft. Aux Chien Waterfowl for marsh creation jump it via sediment pipelines into an area of open water near the Ft. Aux Chien Bay. Marshes within the watershed have degraded to an extent of total loss, including lack of natural fresh water and sediment input. The sediment removed from the project will be transported via sediment pipelines into an area near Bangs Lake. The material will spread over the project area and become primarily contained with existing land features. The pipeline will be camouflaged under the boardwalk in the area adjacent to the Bangs Lake Viewing Pier and Park. Unlike most restoration projects that involve borrowing fill material from adjacent shallow water areas within the landscape, this project will utilize renewable bayside sediment remaining duration of the adjacent water and marsh platforms.	Hancock	Yes	No	Yes	No	Yes	No	Yes	No	Yes	\$ 5,675,200.00	\$ -	
Eco Restoration	1725	2/7/2014	Hancock County Living Marsh Shoreline Restoration Project	This proposal coincides with project ID# 1720 has add alternate. Propose to deploy 435 tons per acre on 46 acres to equal 20,000 tons for Oyster Catch. The material used will be 100 oyster shell and 90% IRMs. All work will be done in a minimum of 4 ft. of water at mean low tide.	Hancock	Yes	No	Yes	No	Yes	No	Yes	\$ 5,068,000.00	\$ -			
Eco Restoration	1772	3/20/2014	Hancock County Living Marsh Shoreline Restoration Project	This project will use the sediment removed from the bayous within the Bayou Causee Ft. Aux Chien Waterfowl for marsh creation jump it via sediment pipelines into an area of open water near the Ft. Aux Chien Bay. Marshes within the watershed have degraded to an extent of total loss, including lack of natural fresh water and sediment input. The sediment removed from the project will be transported via sediment pipelines into an area near Bangs Lake. The material will spread over the project area and become primarily contained with existing land features. The pipeline will be camouflaged under the boardwalk in the area adjacent to the Bangs Lake Viewing Pier and Park. Unlike most restoration projects that involve borrowing fill material from adjacent shallow water areas within the landscape, this project will utilize renewable bayside sediment remaining duration of the adjacent water and marsh platforms.	Hancock	Yes	No	Yes	No	Yes	No	Yes	No	Yes	\$ -	\$ -	
Eco Restoration	1773	3/20/2014	Marsh Restoration	This project will focus on restoring Graveline Bayou's oyster reefs through the planting of new catch material, dissemination of seed oysters, and cultivation of existing reef beds. The goal of this project is to increase Jackson County oyster reefs, enhance the ecological diversity of the watershed, and provide support to the local seafood industry, and also maintain and monitor the oyster habitat going forward. Oysters are not only a vital part of the seafood industry, but they also stabilize shoreline by breaking up wave energy, provide habitat for other marine organisms, and help filter the water. Oyster reefs in coastal Mississippi have been severely degraded due to the impact from erosion and sedimentation, drought, production, and harvesting. These impacts were heightened by direct exposure to the BP Deepwater Horizon Oil Spill. By enhancing the quantity and quality of catch material currently available and planting new material, the reef locations can be prioritized, oyster density quantified, and overall reef health and informed harvest strategies developed.	Hancock	Yes	No	Yes	No	Yes	No	Yes	No	\$ -	\$ -		
Eco Restoration	1813	4/25/2014	Graveline Bayou Oyster Bed Restoration	Buccaneer State Park is in the Campbell Bayou-Bayou Caddy watershed (NHC 031200901401) west of the City of Wetland in Hancock County, MS and abuts multiple diverse coastal ecosystems and habitats. It related marshes, bayous, estuaries and marshes adjacent to the Park were physically injured by oil from the Deepwater Horizon (DWH) Oil Spill. A Two-Island Project is proposed to restore and protect these coastal habitats by filling, designing, maintaining and monitoring approximately 11.1.9 miles of near-shore living shoreline. It is a low-crested submerged breakwater, and 21.7.5 miles long by 500 yard deep high profile, off-shore artificial reef. These features will complement and supplement three other proposed estuarine and upland restoration projects that encompass the majority of the Campbell Bayou-Bayou Caddy watershed: 1) Mississippi Department of Environmental Quality (MDEQ) Restoration of Buccaneer State Park Natural Resources Damage Assessment (NRDA) proposal, 2) Grand Bayou Artificial Restoration Project 1 (R7) and 3) Jackson Park, Grand Bayou and the adjacent Gulf. Headwater hydrologic Restoration Project 1872. This Project is the marine component of a holistic watershed approach to restore a habitat corridor for coastal marine mammals, birds and fish between coastal, estuarine and upland ecosystems and provides multi-barrier protection to prevent residual oil from the DWH Oil Spill from reaching these restored habitats. MDEQ prioritized \$2.6 million of NRDA Phase I early restoration fund to enhance Mississippi 67 existing near-shore artificial reefs each of which is approximately three acres in size. These traditional near-shore reef provide hard bottom forage and shelter habitats for smaller crustaceans, e.g., juvenile shrimp, crab and oysters that live on the reef and in the sediment. Most recently MDEQ selected the Hancock County Marsh Living Shoreline Project for NRDA Phase II early restoration funding. This \$50,000,000 Project combines constructing a 5.9 living shoreline to protect and enhance the shoreline and building 46 acres of subtidal oyster reef and 46 acres of marsh to increase near-shore secondary productivity. This project proposes creating two mutually supporting habitats that will be sited to extend Mississippi artificial reef system west of Airhouse Reef. The combination of an off-shore, high-profile (roughly 90 feet above high tide), artificial reef and a low-crested, submerged living shoreline will create a unique coastal habitat in Mississippi. The two-reef approach will restore damaged marine habitats and natural resources and protect coastal, estuarine and upland habitats from residual impacts from the DWH Oil Spill. The living shoreline will restore injured near-shore habitats and enhance secondary natural resource productivity with the large, high-profile reef that will attract and concentrate larger recreational and commercial fish and restore enhanced damaged habitats for marine mammals and marine and coastal birds. Florida recently permitted a similar high-profile artificial reef system two miles off Henderson Beach State Park. The living shoreline will also be designed and sited to provide a final barrier to slow and treat run off, including stormwater runoff, from the entire Campbell Bayou-Bayou Caddy watershed before it enters the Mississippi Sound. MDEQ has a coastal water quality monitoring station immediately off shore of Buccaneer Park. This station can provide historical near-shore water quality data as the foundation of an expanded long-term monitoring effort to quantify and track the Project's secondary water quality benefits.	Hancock	Yes	No	Yes	No	Yes	No	Yes	No	Yes	\$ 8,900,000.00	\$ -	
Eco Restoration	2001	11/8/2011	Mississippi Early Resource Restoration Living Artificial Reefs	This project intends to restore and enhance existing reefs within the Mississippi Sound using crushed concrete or limestone. These reefs would be low profile. Restoration would consist of adding concrete to the existing artificial reef footprint. MDEQ's Artificial Reef Bureau would be working with the nonprofit group Mississippi Gulf Fishing Bank (MGFB). MGFB is made up of fishermen throughout Mississippi whose interests are in creating viable marine habitat in Mississippi's nearshore and offshore waters. This project would restore 1,200 acres in total (800 marsh, 200 forested, and 200 savanna). Wadsworth has significant marsh debris and siltour from storm surge. However, the scoured areas appear to be forming high quality open water habitat indicated by a high level of dragon fly activity and breeding. The scours are several feet deep and would require an invasive operation to be filled and replanted. The debris consists predominantly of natural material, mostly the marsh "rolled up" from the scoured areas. Much of the remainder of the tract is forest and savanna which has suffered wind damage in the form of downed trees and vegetation. This has increased fuel loads and complicated access across the property. This is significant because the fuel loads at Wadsworth were already high. The tract is very much in need of prescribed burning, particularly since that was planned with regular fire several years back. The tract is immediately south of 10 or so special conservation sites that require to facilitate a safe and effective burn. Invasive species, particularly Chinese tallow, are present site-wide and will require special attention in the post-Katrina environment. There would be removal of debris in preparation for the project, prescribed fire, 400 acres of invasive species control via spraying and cutting, hydrology report, 300 acres of stabilization, and monitoring.	Hancock, Harrison, Jackson	Yes	No	No	No	Yes	No	No	No	Yes	\$ 6,700,000.00	\$ -	
Eco Restoration	2003	7/25/2011	Wadsworth Restoration	From the Master Plan for the Beneficial Use of Dredged Material for Coastal Mississippi: Round Island is a 65 acre site south of English River Island. The lands are mostly privately owned and state-owned. It provides feeding, resting, and migratory habitat for a variety of migratory birds including Blue Herons, Great Egrets, and endangered species supported on the site include the Cagney, the American Alligator, and the Night-Flowering Bushbuck. The site is used on a seasonal basis for limited waterfowl hunting and fishing. Round Island is identified as a priority area for beneficial use of dredged material. It is rapidly deteriorating and may become submerged by 2040. Approximately 30 acres are available for acquisition by the State of Mississippi, which would then hold it in trust as a coastal preserve and make it available for disposal of dredge material. This program will identify willing sellers and purchase land and wetland Coastal Preserves. These lands would then be held by the State of Mississippi in trust for the benefit of the public, and preserved and managed to encourage the growth and reproduction of rare species of plants and animals.	Hancock	Yes	No	No	No	No	No	No	No	Yes	\$ 12,180.00	\$ -	
Eco Restoration	2109	9/1/2014	Round Island Conservation Acquisition	From the Department of Marine Resources website: The primary boundary of this 1,410-acre preserve follows the edge of the non-forested estuarine marsh along the Davis Bayou, Stark Bayou, Heron Bayou, and Simmons Bayou. For more information, go to: http://www.dnr.ms.gov/mississippi-gems/2109-davis-bayou-hatch-litvhab.pdf	Jackson	Yes	No	No	No	No	No	No	\$ 800,000.00	\$ -			
Eco Restoration	2111	9/12/2014	Davis Bayou Coastal Preserve Acquisition	This project will seek out willing sellers of land falling within the Graveline Bay Coastal Preserve, purchase that land, and preserve it as state-owned lands for future generations. From the Department of Marine Resources website: Graveline Bay and Bayou represents one of few relatively undisturbed estuarine bays and small tidal creeks in Mississippi. The area supports salt marsh, brackish marsh, and several oyster beds. The bay, marsh, adjoining upland forest, and undeveloped beach front near the mouth of Graveline Bayou are an important landing area for neotropical migrant birds. It is a coastal bay/marsh estuarine system. http://www.dnr.ms.gov/index.php/mississippi-gems/211-graveline-bay-hatch-82qctfm.pdf	Jackson	Yes	No	No	No	No	No	No	Yes	\$ 900,000.00	\$ -		
Eco Restoration	2112	9/12/2014	Graveline Bay Coastal Preserve Acquisition	This program would locate willing sellers of land located within the Grand Bay Swamias Coastal Preserve, purchase the property and preserve it in the State for future generations. From the DMR website: This preserve is contained in Mississippi and Alabama. The boundary line for this 36,900-acre preserve is drawn open-ended across the state line. This preserve is one of the largest expanses of Gulf Coast Swamias remaining in relatively undisturbed condition. There are open herbaceous communities dominated by grasses and sedges with scattered clumped shrubs and trees. This is a high priority site. It supports numerous wading and wading species plants and high species diversity having 20-25 (56) species in 35 square miles. http://www.dnr.ms.gov/index.php/mississippi-gems/212-grand-bay-swamias-hatch-82qctfm.pdf	Hancock	Yes	No	No	No	No	No	No	No	Yes	\$ 2,560,000.00	\$ -	
Eco Restoration	4274	3/12/2015	Grand Bay Coastal Preserve Acquisition	The Greater Town Center Project, located in Guadalupe County, central business district just 13 miles from the Alabama state line, consists of two master-planned phases including a construction component for the 32-acre Town Commons Park which will be centered around grade level pedestrian and a public infrastructure component including roadway lighting that will facilitate the construction of off-campus housing for the adjacent Mississippi Gulf Coast Community College (MGCC) and mixed use commercial, retail, and other uses. While these two projects are directly linked, this Project Description focuses on the Town Commons Park component and a separate Project Description outlines the City of Guadalupe's plans for the transportation component. The overall purpose of the project is to enhance the quality of life of the community. The City of Guadalupe is one of the few cities on the Mississippi Gulf Coast that lacks a traditional downtown. This project will create a unique natural setting urban park adjacent to the City of Guadalupe's major commercial district to serve as an anchor for the newly defined Town Center area. Hurricane Katrina resulted in a previously funded a multi-million dollar highway interchange, decorative lighting and a 4.25-acre sculpture depicting the City of Guadalupe's theme of "Reckoning the Past, Embracing the Future" development project will create a downtown, feet for the area which is bordered by civic buildings, the Mississippi Gulf Coast Community College, and Singing River Mall. The City plans to continue the revitalization of this area by creating a large park behind the mall on a 32-acre parcel which was purchased with funding from the Coastal Impact Assistance Program and Titleblades. The master plan for this park includes festival zones, an outdoor amphitheater, and boardwalk boardwalks around the spring-fed fountains that feed the Pascagoula River. The fountains are currently threatened by commercial encroachment, environmental pollutants, and invasive species. The Town Commons Park will restore the ecological beauty of what otherwise would be considered 40-acre "dark" property. The City is poised to implement the construction of amenities at the Town Commons. The new owners of the Town Commons Park will be considered 40-acre "dark" property. The development project that will create a new open-air mall that will attract national retailers. Right-of-way has been donated for a planned roadway that will facilitate construction of off-campus housing and mixed-use commercial cottages in the area near the park and mall. The Town Commons project will establish a social and cultural center for the community and significantly enhance the quality of life enjoyed by people living in central Jackson County.	Jackson	Yes	Yes	1000%	No	No	No	No	No	Yes	\$ 3,500,000.00	\$ -	paired with ID
Eco Restoration	4301	1/9/2015	Guadalupe Town Commons Park Project	The project consists of renovating five sanitary sewer pump stations. The work includes raising the top of the wet well and site elevations to eliminate potential pump station flooding; reworking piping to reduce the risk of possible pipe failure during heavy rain; installing force main and sanitary sewer lines to eliminate sanitary sewer cross-connections; installing septic tank and waste pit covers to improve safety and security, and drainage improvements to correct erosion and flooding issues at the sites. The improvements will reduce potential damage to the natural environment including nearby drainage ways and wetlands, reduce hazards to health and safety due to sewer overflow, sewer spills and provide improved security of the facilities.	Jackson	Yes	Yes	2500000%	No	No	No	No	Yes	\$ 300,000.00	\$ -		
Eco Restoration	4320	3/4/2015	Sanitary Sewer Improvements Ocean Springs	This project will locate willing sellers within the Hancock County Marsh Coastal Preserve, acquire the land and preserve and monitor it for future generations. From the DMR website: This is the second largest continuous marsh area in the state. The heartland of the 13,570-acre preserve extends all of the adjoining marshlands bordering the Mississippi Sound from the Four Rivers to Point Clear. This entire marsh area includes a historically significant captured oyster barrier island (Campbell Island) and an Indian shell midden (Cedar Island) over 1800 years old. The Hancock County Marshes are part of an estuarine system bordering the Mississippi Sound from the Pearl River to Point Clear. Included within the marshes are several low ridges and small hummocks that are above mean high tide. Most important are the Point Clear Island and Campbell Island, which are sand areas with barrier ditches. The islands of this marsh support several rare plant species including the rarest shrub in the United States, the tiny-leaved buckhorn (Elaeagnus microtheca), found on the small midden. The marsh area is also well known for an abundance of waterfowl. See more at: http://www.dnr.ms.gov/index.php/mississippi-gems/4320-hancock-county-marsh-82qctfm.pdf	Hancock	Yes	No	No	No	No	No	No	No	Yes	\$ 4,488,340.00	\$ -	
Eco Restoration	4345	4/10/2015	Hancock County Utility Authority - Bayou Lafourche Sewer System Collection	This project would be to install a lift station, force main and connector lines for this subdivision which has specific tanks that overflow back into Bayou La Chica waterway. The force main will be directly into an existing lift station which will take the wastewater to the northern regional wastewater treatment plant. The HCUA Board of Directors has prioritized this project as Number 2.	Hancock	Yes	Yes	Yes	Yes	No	No	Yes	\$ 1,200,000.00	\$ -			
Eco Restoration	4346	4/10/2015	Hancock County Utility Authority - Atlantic Street Area Sewer Collection System Installation	This area North of Highway 90 and South of Highway 652/43 does not have a Sewer Collection System installed. There are approximately 75-100 homes in this area that are discharging into the ditches and the bayous which eventually lead to the Gulf. The HCUA Board of Directors has prioritized this project as Number 3.	Hancock	Yes	Yes	Yes	Yes	No	No	Yes	\$ 3,000,000.00	\$ -			

Eco Restoration	4302	4/17/2015	Hancock County Marshes Coastal Preserve/Wetlands Restoration (estimated budget: \$3,862,500)	Hancock	Yes	Yes		No	No	No	No	No	No	No	No	\$ 3,862,500.00	\$ -		
<p>Hancock County Marshes Coastal Preserve/Wetlands Restoration (estimated budget: \$3,862,500) Hancock County Marshes Preserve contains the second largest contiguous marsh area in Mississippi. It supports a mosaic of habitat types including salt and brackish marsh, oyster barrier islands, and forested riverine wetlands. In cooperation with the Mississippi Department of Marine Resources (MDMR), this project will restore a natural hydrology to 450 acres of marsh habitat impacted by extensive mosquito ditches constructed in the 1950s. The ditches disrupt natural sheet flow from the marsh system to Heron Bay, reducing the habitat value of both of these important systems. Restoration strategies for this project include backfilling ditches using siltocast material or clean fill, placing ditch blocks in strategic locations, and installing culverts. Restored areas will be planted with native vegetation to restore their habitat values. The Preserve has several existing programs that will be used to provide opportunities for community engagement and hands-on stewardship activities in cooperation with partners, such as the Mississippi Habitat Stewardship Program.</p>																			
Eco Restoration	4300	5/12/2015	DeWitts Elbow Stream Restoration and Beneficial Use	Hancock	Yes	No		No	No	No	No	No	Yes	No	No	\$ 2,000,000.00	\$ -		
<p>Hancock County proposes to complete a project at DeWitts Elbow, an outflow of Rotten Bayou, in Diamondhead MS to completely restore the stream. Accelerated sedimentation, due to a lack of upland Best Management Practices, has reduced the water quality and made the waterway no longer navigable. The applicants propose to remove approximately 16,000 cubic yards of material from the project site. The proposed dredge area is 1,560 feet in length by 200 feet in width with existing depths ranging between 0 to 11 feet below Mean Low Water (MLW). The area would be dredged to a maximum depth of 8 feet below MLW in order to align with natural channel depths upstream and downstream of the accumulated sediment.</p> <p>The applicants intend to utilize a beneficial use site for dredged material disposal if one becomes available. The applicants do not propose compensatory mitigation because the project is intended to restore historic flows and improve water quality within Rotten Bayou. In addition to the proposed dredging and disposal, the applicants intend to implement a sedimentation and erosion Remediation and Maintenance Plan within the City of Diamondhead to control the source of sediment to DeWitts Elbow.</p> <p>The applicant has received all applicable permits and authorizations from the Department of Marine and the United States Corps of Engineers to complete the project.</p>																			
Eco Restoration	4301	5/14/2015	Shoreline Park Stream Restoration and Beneficial Use	Hancock	Yes	No		No	No	No	No	Yes	No	No	No	\$ 6,000,000.00	\$ -		
<p>Hancock County proposes to complete a project in the shoreline park community to restore the natural habitat and flow of the waterways within shoreline park. Accelerated sedimentation, due to a lack of upland Best Management Practices, has reduced the water quality and made the waterway no longer navigable. The area would be dredged in order to align with natural channel depths upstream and downstream of the accumulated sediment. The applicants intend to utilize a beneficial use site for dredged material disposal if one becomes available. The applicants do not propose compensatory mitigation because the project is intended to restore historic flows and improve water quality.</p>																			
Eco Restoration	4302	5/14/2015	Jourdan River Shores Stream Restoration and Beneficial Use	Hancock	Yes	No		No	No	No	No	No	No	No	No	\$ 1,000,000.00	\$ -		
<p>Hancock County proposes to complete a project in the Jourdan River shores community to restore the natural habitat and flow of the waterways within the community. Accelerated sedimentation, due to a lack of upland Best Management Practices, has reduced the water quality and made the waterway no longer navigable. The area would be dredged in order to align with natural channel depths upstream and downstream of the accumulated sediment. The applicants intend to utilize a beneficial use site for dredged material disposal if one becomes available. The applicants do not propose compensatory mitigation because the project is intended to restore historic flows and improve water quality.</p>																			
Eco Restoration	4303	5/14/2015	Bayou Phillip Stream Restoration and Beneficial Use	Hancock	Yes	No		No	No	No	No	No	No	No	No	\$ 2,000,000.00	\$ -		
<p>Hancock County proposes to complete a project in Bayou Phillip and the adjoining streams restore the natural habitat and flow of the waterways. Accelerated sedimentation, due to a lack of upland Best Management Practices, has reduced the water quality and made the waterway no longer navigable. The area would be dredged in order to align with natural channel depths upstream and downstream of the accumulated sediment. The applicants intend to utilize a beneficial use site for dredged material disposal if one becomes available. The applicants do not propose compensatory mitigation because the project is intended to restore historic flows and improve water quality.</p>																			
Eco Restoration	5422	10/6/2015	Coordinated Strategy for Sea Turtle Recovery in the Gulf		Yes	No		No	No	No	Yes	No	No	No	No	\$ 18,600,000.00	\$ -		
<p>NFWF and its partners, including managers from all five Gulf States, USFWS, NOAA, and NPS, as well as NGOs and science institutions, propose to restore Gulf populations of sea turtles through the following 3 strategies. This work builds on \$3.8M in previous investments NFWF has made to bolster Gulf sea turtle populations since June 2010.</p> <p>1) Bycatch Reduction - This two-part strategy is projected to save the reproductive equivalent of a minimum of 3,000 nesting females over five years: a) NFWF will provide free vouchers for 2,000 Turtle Excluder Devices (TEDs) to U.S. and U.S. fishers, and work with state managers to offer training and assistance on TED installation, and inspections and usability follow-up testing. b) NFWF will convene state and federal agents to standardize enforcement, data collection and reporting processes to create a Gulf-wide database; invest in the capacity of states to enforce the use of TEDs, and evaluate the results of increased enforcement.</p> <p>2) Nesting Beach Restoration - This three-part strategy is projected to save the reproductive equivalent of 2,400 nesting females over five years: a) Predator Control: NFWF will establish a fund to invest \$100,000 annually in predator reduction efforts on high density nesting beaches in FL and AL to maintain predation levels at or below 30% in perpetuity. b) Light Pollution Reduction: NFWF and the Sea Turtle Conservancy (STC) will minimize light pollution on 600 of the highest priority public and private properties along high density nesting beaches, and train county code enforcement staff to address lighting problems. c) Habitat Protection: NFWF and USFWS will protect 2.5 miles of priority nesting habitat (1,300 nests annually) within Archa Carr and Hole Sound NWRS, NFWF, STC and U of M. We will also pilot a new conservation easement to strengthen protection of existing nesting habitat on developed properties.</p> <p>3) Critical Gaps in Science/Management - NFWF will mobilize scientists to address two critical research gaps that impact turtle recovery efforts: a) coordination of a 5-year study to identify priority habitats in the Gulf and to identify overlying threats; and b) a pilot program to test new methods for turtle-friendly beach nourishment.</p>																			
Eco Restoration	5424	10/28/2015	Graveline Bayou Land Protection	Jackson	Yes	No		No	No	No	No	Yes	No	No	No	\$ -	\$ -	Land Acquisition	
<p>The Land Trust for the Mississippi Coastal Plain (LTMCP) is an accredited Land Trust dedicated to the conservation, promotion, and protection of open spaces and green places of ecological, cultural or scenic significance in the counties of the Mississippi Coastal Plain.</p> <p>For Graveline Bayou, the Cumbert, Whitehead, and Mahoney properties in Jackson County, when combined, present an ideal opportunity to conserve large tracts of land under heavy development pressure. In addition, the Mahoney property offers a chance to provide access to passive recreation for exploration of the Graveline Bayou and Bay Area. These properties can be purchased as a group or individually with the Cumbert properties being LTMCP's first priority. These landowners are supportive of LTMCP's need to seek funding for potential acquisition.</p> <p>These parcels are located in the Graveline Bayou watershed in Jackson County, MS. This watershed is located in the East Gulf Coastal Plain ecoregion of the southeastern U.S. and is part of the Mississippi Coastal Basin and Streams. Native vegetation in this area includes those species found in palustrine forested wetlands, emergent wetlands, palustrine scrub/shrub wetlands, upland scrub/shrub, and emergent forested uplands. The property is adjacent to conservation lands held by Coastal Preserves and are within their acquisition boundary.</p> <p>Ecological Value: a) Protects properties as a buffer area for storm surge by providing dispersal and displacement in the event of flooding waters. These flooding waters have a natural function of turnover and flushing of coastal wetlands. The open spaces protected create an effort to protect community infrastructure. b) Protects grasslands that are important for removal of nutrients from the water column to provide cleaner and healthier water for all wildlife. c) Protects emergent vegetation and vegetation below the surface that provides values required for wildlife to roost, rest, breed and feed. d) Provides critical wintering and migratory stop-over sites for trans-hemispheric migratory bird populations. e) Provides critical stop-over sites for neo-tropical migratory bird populations. f) Supports the fishing community which is critical to the local economy and the industry and culture of the Gulf Coast by protecting areas that are important to the fishing and shell fishing industries. These areas are the fin and shellfish breeding factories of our Gulf of Mexico. g) Provides open spaces that will provide areas for people to witness and learn about their natural environment. h) Creates open spaces that provide opportunities for low impact recreational activity such as observation of birds, wildlife, fishing, net-casting and kayaking. i) Provides a runoff buffer for sediment that, if allowed to enter the bay directly, will silt waterways used for recreation and as wildlife habitat.</p>																			
Eco Restoration	5441	10/29/2015	Turkey Creek Greenway Land Protection	Harrison	Yes	No		No	No	No	No	Yes	No	No	No	\$ -	\$ -	Land Acquisition	
<p>Land Trust for the Mississippi Coastal Plain (LTMCP) priority for this County is the Turkey Creek Watershed. LTMCP has been working with the citizens since 2003 when facilitated meetings were held to determine problems surrounding and the need to protect the Turkey Creek Watershed.</p> <p>The Turkey Creek Community has identified a greenway to buffer the creek as the number one project they desire. Acquisition of the proposed lands would further progress the development of the greenway and thus greatly improve the community's resilience and address many of the issues currently having a negative impact on their quality of life.</p> <p>When the acreage is in conservation, these acquisitions help reduce the opportunity for additional impervious surfaces which have increased greatly in this watershed thus increasing community resilience. Turkey Creek has been identified for the "Coastal streams" Conservation Action Planning Project funded under National Fish and Wildlife Federation (NFWF) Gulf Environmental Benefit Fund (GEBF). These riparian buffers will most likely be strategic outcomes/actions that come from this plan.</p> <p>Specific property examples include Bailey (556.70 acres), Canal Lands (218.5 acres), and Canal Road (1043 acres). There are other properties also along this greenway that would also add to this riparian buffer.</p> <p>Ecological Value: a) Protects properties as a buffer area for storm surge by providing dispersal and displacement in the event of flooding waters. These flooding waters have a natural function of turnover and flushing of coastal wetlands. The open spaces protected create an effort to protect community infrastructure. b) Protects emergent vegetation and vegetation below the surface that provides values required for wildlife to roost, rest, breed and feed. c) Provides critical wintering and migratory stop-over sites for trans-hemispheric migratory bird populations. d) Provides critical stop-over sites for neo-tropical migratory bird populations. e) Creates open spaces that will provide areas for people to witness and learn about their natural environment. f) Creates open spaces that provide opportunities for low impact recreational activity such as observation of birds, wildlife, fishing, net-casting and kayaking. g) Provides a runoff buffer for sediment that, if allowed to enter the bay directly, will silt waterways used for recreation and as wildlife habitat.</p>																			
Eco Restoration	5515	10/5/2016	Johnson Road Pump Station and Connection of Long Beach Industrial Park		Yes	Yes	1000%	No	No	No	No	No	No	No	No	\$ 3,149,459.00	\$ -		
<p>The Johnson Road pump station conveys all waste water from the City of Long Beach through 2,300 feet of 24-inch concrete-lined force main to the Long Beach/Pasadena Wastewater Treatment Facility (LUPC WWTFF) located in Pas Christian. This station is from existing stations within Long Beach to the Johnson Road pump station and one to the LUPC WWTFF. Since May 2014, there have been ten (10) bypasses at this pump station releasing an estimated 500,000 gallons of sewage/wastewater due to system limitations and excessive flow. An additional bypass occurred on the force main along Munge Avenue in August of 2015 releasing an estimated 800 gallons of raw sewage from an air release valve. These bypasses ultimately drain into waters leading to Bay St. Louis. The force main associated with this system has been repaired on numerous occasions and has experienced failures that have resulted in spills of untreated wastewater until emergency repairs corrected the failure. Investigation of these failures have shown severe deterioration of the concrete liner raising legitimate concerns about the integrity of the pipe.</p> <p>This project would abandon the existing 24-inch force main from Johnson Road to the LUPC WWTFF by re-routing flow to HCUA's newly constructed 51.2 system located along Munge Avenue. Furthermore, the proposed project would abandon the existing Long Beach Industrial Park Wastewater Treatment Facility (currently permitted to discharge 600,000 gallons/day into a tributary of Johnson Bayou) by redirecting flows in the industrial park into the system to be constructed from the Johnson Road pump station.</p> <p>The project is proposed to be constructed in two phases:</p> <p>Phase 1 would reduce the flow to the Johnson Road pump station by redirecting flows from the Alverado and Wisteria pump stations to the HCUA's Red Creek pump station and redirecting the remaining flows from the Johnson Road pump station to the HCUA's Munge Avenue pump station. This project will include modifications to the pumps at the Alverado and Wisteria pump stations and installation of approximately 12,800 linear feet of 12-inch force main from the Alverado pump station and approximately 285 linear feet of 6-inch force main from the Wisteria pump station to connect into the Red Creek pump station. Redirecting remaining flows from the Johnson Road pump station to the Munge Avenue pump station will include rehabilitation/modification of the Johnson Road pump station and installation of the Munge Avenue station to adjust for increased flows, and installation of approximately 9,000 linear feet of 18-inch force main. The existing force main to be taken out of service will be disconnected and abandoned in-place.</p> <p>Phase 2 will remove flows from the existing Long Beach Industrial Park treatment facility to the Munge Avenue pump station. A 450 GPM pump station will be constructed near the existing treatment facility and approximately 2,400 linear feet of 8-inch force main will be installed from the new pump station to connect to the 18-inch force main installed in Phase 1. Phase 2 would include the decommissioning of the existing treatment facility.</p> <p>If necessary, HCUA is prepared to assist in this project through contribution of funds (either other grants funds or HCUA funds) and in-house contributions.</p>																			

Eco Restoration	5518	10/3/2016	<p>Flows from the City of Long Beach are delivered to Harrison County Utility Authority (HCUA) pump stations and transported through constrained force mains to an HCUA pump station on Johnson Road for conveyance to the Long Beach/Pass Christian Wastewater Treatment Facility (WWTFF) located in Pass Christian. These force mains were installed in the 1960s and have been repaired on numerous occasions and have experienced failures that have resulted in spills of untreated wastewater until emergency repairs corrected the failures. Investigation of these failures has shown severe deterioration of the concrete liner raising legitimate concerns about the integrity of the pipe.</p> <p>The primary HCUA pump station upstream of Johnson Road pump station is located on Nicholson Avenue. Since March 2014, there have been three (3) backups at this pump station causing overflows of sewage/water to the adjacent drainage ditch due to system limitations and excessive flow. An additional release of sewage occurred on the force main along Pinwheel Road, apparently a result of pipe failure. These bypasses ultimately drain into waters leading directly to the beach along U.S. Highway 90.</p> <p>The proposed project includes the replacement of two segments of the existing force main that generally convey sewage from the Nicholson Avenue pump station (serving the City of Long Beach) to the Long Beach/Pass Christian WWTFF. Approximately 10,700 linear 18-inch force main will be replaced along Nicholson Avenue, Allen Road and Pinwheel Road. Approximately 4,500 linear feet of 24-inch force main will be replaced along Beatrice Road and Johnson Road.</p> <p>The project also includes the rehabilitation of the Nicholson Avenue pump station. The corrosion and cracking in the concrete structure of the wet well will be repaired and then lining will be installed. The existing piping from the pump connection through the sewer line to the force main leaving the pump station also will be replaced.</p> <p>Implementation of this project should improve water quality through the elimination of bypasses/overflows through the repair, replacement and upgrade of the existing facilities.</p> <p>If necessary, HCUA is prepared to assist in this project through contribution of funds (either other grant funds or HCUA funds) and in-house contributions.</p>	Jackson	Yes	Yes	1000%	No	No	No	No	No	No	No	\$ 2,582,350.00	\$ -	
Eco Restoration	5535	3/2/2017	<p>The Land Between the Creeks (LBTC) is a multi-property land acquisition opportunity in partnership with The Trust for Public Lands to permanently protect a critically important 2,320 acre site along the Pascagoula River corridor near the confluence of Red Creek and Black Creek in Jackson County, Mississippi. The Pascagoula is the largest unconfined river in the lower 48 states and is a state-designated Sensitive Stream and designated national Wildway. Since 1974, government, landowners and NGO partners have collaborated to protect an 85-mile forested corridor of 72,000 acres of conservation lands along the river. If funded, this project will add 2,320 acres of well-managed wetland forests bordering state-designated Sensitive Stream/Red and Black Creeks (major tributaries of the Pascagoula).</p> <p>The LBTC properties feature gently sloping, the managed pine uplands (including longleaf), glacial silt flat, a 115 acre perennially flooded Cypress/Tupelo lake which boasts a multi-species rookery, and extensive bottomland hardwoods along Red and Black Creeks. The LBTC properties are one of the largest blocks of fire-managed uplands along the protected Pascagoula River corridor. These diverse habitats benefit a number of important game and non-game species of concern.</p> <p>Once acquired, the LBTC properties would be owned by the State of Mississippi and managed as part of the Pascagoula River Wildlife Management Area. LBTC properties share approximately 7 miles of boundary on two sides with the Pascagoula River WMA. Acquisition of LBTC properties will provide needed recreational access to difficult-to-access segments of Red Creek and Black Creek as well as the state Pascagoula Wildlife Management Area's Big Swamp area.</p>	Jackson	Yes	No		No	Yes	No	No	Yes	No	\$ -	\$ -		Land Acquisition
Eco Restoration	5536	3/1/2017	<p>Introduction</p> <p>Advances in mobile phone technology have made it possible for citizens to contribute valuable data for ecological monitoring and scientific investigation. Citizen Scientist initiatives harness the massive numbers of people who are sportsperson and science amateur naturalists and view the casual observer of nature, to submit observations and data that accumulate as a global database. These initiatives have broadened opportunities for public participation in science and have served to democratize scientific process for the average citizen. Thanks to the internet and smart phones, data can be acquired, uploaded, validated, and accessed with amazing rapidity. Worldwide access to this data has served to encourage public participation in biological monitoring and has provided unprecedented opportunities for collaboration among scientists.</p> <p>There is a long history of citizen scientist involvement in biological research. Arguably, the earliest example of this involvement is the Audubon Society Christmas Bird Count that provided information to establish bird migratory patterns in the U.S. Other more recent citizen scientist initiatives include the Great Backyard Bird Count, NestWatch, the Zomba Project, Wildlife Health Event Reporter and iBEECOW (insect diversity project). Citizen scientist volunteers are being successfully employed around the world to generate databases that would be logistically impossible and prohibitively expensive for most research project budgets.</p> <p>In the Gulf of Mexico Citizen Scientist Initiative (GMCSCI) proposal we will recruit and train citizen scientists in the use of a mobile phone app for marine assessment (MAMA) that will be developed. MAMA will allow Gulf Coast citizens and visitors to a) upload photos, measurements, GPS location and other data regarding specimens they have captured, observed, and identified b) submit photos of endangered/invasive specimens of fish and other marine organisms for identification and health of fish species of interest seasonally and regionally, c) document invasive species in Gulf waters, and e) monitor changes in the health of coastal ecosystems, and shoreline erosional changes. The curated long-term data set would be available to researchers and resource managers for scientific management. A database of this type can be an invaluable resource for assessing changes in the health of Gulf of Mexico ecosystems.</p> <p>Benefits of the Gulf of Mexico Citizen Scientist Initiative</p> <p>1) Long-term data acquisition: A particularly valuable aspect of citizen scientist initiatives is the potential for long-term data acquisition. Data sets longer than a few years are rare in ecology and are sorely needed, particularly in marine systems. Once the mobile phone app is developed and distributed, we envision an 4000+ citizen scientists collecting data for multiple years.</p> <p>2) Coastal resident (and beyond) involvement: The GMCSCI will recruit coastal residents as well as any other interested parties, that may act as 4000+ citizen scientists to document and monitor changes in coastal populations of marine organisms. We firmly believe there is an untapped wealth of volunteers in Mississippi that would be glad to assist in this regard and, in particular, many individuals retired from academia and professional careers that would like to be involved. However, all interested parties, young and old alike, would be encouraged to participate.</p>	Hancock/Harrison River	Yes	Yes		Yes	Yes	Yes	No	Yes	No	\$ 1,711,190.00	\$ -		Monitoring
Eco Restoration	5543	6/7/2017	<p>Bayou Bayou is relatively an undisturbed estuary in South Mississippi that supports salt and brackish marsh areas, along with several oyster beds throughout this estuarine bay and bayou. Furthermore, it supports an abundance of wildlife that makes this area an excellent location for fishing and birdwatching.</p> <p>Development materialized further inland, erosion has attributed to much loss of wetlands, other native vegetation along the shoreline and muddy/sand beach areas at the inlet. This narrowed inlet aided as a full self-occur the channel alignment of the near shore waters and permitted ease of navigation. With the ongoing erosion of this inlet, water velocities are diminished and it is not able to adequately flush the navigational channel cleared of oyster shells, resulting in a change of course, thus restricting coastal habitat and the need for routine maintenance dredging to support marine use of waterway.</p> <p>The scope of this project would be to restore the inlet to a prior year boundary that would be conducive to achieving similar ecological benefits once met prior to the inlet dredging, it would be the intent to establish a protective jetty around the degraded boundary of both sides of the inlet to re-establish the original width. The jetty, which would be comprised of local material dredged from the near shore or inland areas of the Bayou. The jetty would incorporate native vegetation and, if necessary, a portion would be hardened to ensure stability of structure to withstand the regular impact from tidal flow and storm surge.</p> <p>Once the jetty was constructed and fortified, the interior area of the re-established boundary would be utilized as a Beneficial Use Disposal Site for placement of suitable dredge spoils for the purpose of replacing the eroded shoreline. Ideally, as continued maintenance dredge materials within the area, said dredge spoils if deemed suitable could be placed within this Beneficial Use Site. Such action would yield lower dredge costs due to proximity of dredge disposal site and would permit government agencies more opportunities to dredge needed bayous for the purpose of flood minimization areas enhanced recreational access.</p> <p>Upon completion of the proposed Beneficial Use Site, native vegetation would be planted to establish the ecological environment which once existed for expanding the native wildlife habitat. The project benefit would be to restore this pristine estuary and bay back into a sound ecological state, re-establish the lost habitat area and to minimize the required maintenance dredging in the near shore waters which is vital to support the discharge of this watershed and navigable access.</p>	Jackson	Yes	Yes	Yes	No	Yes	No	Yes	No	\$ 6,000,000.00	\$ -			
Eco Restoration	5726	8/10/2017	<p>NCAA Project D813603: The project would establish and fund a Coordinator position to coordinate sea turtle conservation and monitoring activities on nesting beaches throughout the Gulf of Mexico. This would be accomplished in close coordination with the relevant states as well as DOI entities. The responsibilities of this position would include coordination with the states regarding annual nesting survey efforts, survey needs, and data archival/availability, coordination of lighting assessments/needs, development of training materials, assessment of data gaps and development/implementation of plans to fill data gaps (i.e., hatching orientation assessment), and development of best practices and protocols. This position will result in a better coordinated Gulf-wide program to enhance sea turtle hatching production and restore and conserve nesting beach habitat. This enhanced coordination of nesting beach surveys across the states and development of best practices, combined with gap assessments and focused approaches to fill gaps will result in more effective protection of nesting sea turtles, nests, and hatchlings, as well as integrated information across the Gulf to inform restoration needs and adaptive management. Estimated cost is \$75K per year, estimated for purpose of this submission for a 5-year period. Data Entered: May 22, 2017</p>		Yes	No		No	No	No	No	No	\$ 875,000.00	\$ -			
Eco Restoration	5765	2/25/2018	<p>The Mississippi Commercial Fisheries United, Inc. proposes for funding an oyster shell recycling program that engages Mississippi restaurants, oyster processors, and the general public to establish a recycling program that provides the oyster shell pickup, training, and drop-off locations to recycling otherwise discarded oyster shells. Oyster shells are the preferred catch material for oyster reef restoration but due to their limited supply has been used minimally in recent restoration efforts. Alternative catch materials have that for proven to be highly ineffective at restoring oyster reefs in the Mississippi Sound.</p> <p>Funds for this project would include the procurement and management for necessary collection materials, transportation vehicles, employees, land for shell staging, and heavy equipment for shell sanitation. Similar successful projects have been implemented in other Gulf states such as Alabama, Louisiana, and Texas. The Mississippi Commercial Fisheries United, Inc. launched a successful pilot oyster shell recycling effort in 2017 that focused on collecting oyster shells at a local seafood market. nearly 2,000 lbs of oyster shells were collected in one day. A detailed project proposal and estimated project budget for the proposed Mississippi Oyster Shell Recycling Program included an attachment.</p>	George/Harrison/Jackson, Hancock, Mobile, St Tammany, Stone, Pearl River	Yes	Yes	Yes	No	Yes	Yes	No	Yes	\$ 300,000.00	\$ 50,000.00			
Eco Restoration	5785	7/10/2018	<p>The Land Trust for the Mississippi Coastal Plain (LMCP) is an accredited Land Trust dedicated to the conservation, protection, and protection of open spaces and green places of ecological, cultural, or scenic significance in the counties of the Mississippi Coastal Plain. LMCP administers the land and conservation easement lands to conserve land for the benefit of habitats, species, and recreation. This parcel consists of approximately 23 acres of forested shrub wetland that borders each side of Turkey Creek as well as approximately 13 acres of upland pine forest that has been thinned. Protection of these historic lands is vital to the water quality and erosion control downstream and into the Mississippi Sound. LMCP protects and manages 117 acres of land along the Turkey Creek watershed in an effort to create a continuous corridor that buffers both sides of Turkey Creek. Ecological Value: Protects properties as a buffer area for storm surge by providing dispersal and displacement in the event of flooding waters. These flooding waters have a natural function of turnover and flushing of coastal wetlands. 3CProtects areas that provide clean water for our natural resources further down the watershed. 1CProvides valuable habitat for a wide variety of plants and animals in Mississippi, as well as migratory birds. 4COpportunities for low impact recreational activities such as birdwatching and other wildlife observation. 4CCreates open spaces that provide areas for people to witness and learn about their natural environment. 3CActs in creating a continuous corridor along Turkey Creek.</p>	Harrison	Yes	No		No	No	No	No	Yes	No	\$ -	\$ -		Land Acquisition
Eco Restoration	5835	8/13/2018	<p>NCAA Project ID813912: The aim of this project is to restore sea turtle populations in the Gulf of Mexico through enhancement of their protection in Mississippi coastal waters where small juveniles overlap with the nearshore and inshore shrimp trawl and skimmer trawl fishery. Sea turtle restoration will be achieved through enhancing the activities of Mississippi marine enforcement directed toward TED compliance monitoring. Restoration will be achieved by monitoring TED effectiveness and enhancement of TED regulations by Mississippi marine enforcement will be achieved through increased training of marine patrol officers in proper TED inspection procedures and through targeted funding for increased TED enforcement efforts at sea. Enforcement efforts will be tracked through submission of NOAA Fisheries TED Inspection forms and TED compliance data uploads to the NOAA Fisheries TED compliance Database. Date Aug 10, 2018</p>	Harrison, Hancock and Jackson counties	Yes	No		No	Yes	No	No	No	\$ 600,000.00	\$ -			
Eco Restoration	5836	8/13/2018	<p>NCAA Project ID813911: The aim of this project is to restore sea turtle populations in the Gulf of Mexico, particularly Kemp's ridley (Lepidochelys kempii), when small juveniles overlap with the nearshore and inshore shrimp trawl and skimmer trawl fishery. The project will also increase the health of fisheries by providing fishing communities with methodologies and incentives to reduce impacts to fishery resources. Sea turtle restoration will be achieved through enhanced outreach and training in turtle exclusion device (TED) technology specifically for the skimmer trawl fishery which will be affected by a TED requirement in 2020. NOAA Fisheries will fund the implementation of a TED use requirement for the south-east U.S. skimmer trawl fishery. Industry outreach and education on specially designed TEDs for the skimmer fishery will be crucial to successful implementation and compliance with federal regulations. Improving compliance will reduce potential lethality sea turtle interactions with skimmer trawls in Mississippi coastal waters. Workshops will focus on skimmer trawl TED performance results by TED configuration, installation of pre-constructed TED, TED handling techniques, and troubleshooting TED performance problems. Date: Aug 10, 2018</p>	Harrison, Hancock and Jackson Counties	Yes	No		No	Yes	No	No	No	\$ 50,000.00	\$ -			
Eco Restoration	5837	8/13/2018	<p>NCAA Project ID813910: The aim of this project is to restore sea turtle populations in the Gulf of Mexico through enhancement of their protection in Mississippi coastal waters where small juveniles overlap with the nearshore and inshore shrimp trawl and skimmer trawl fishery. The project will also increase the health of fisheries by providing fishing communities with methodologies and incentives to reduce impacts to fishery resources. Sea turtle restoration will be achieved through the establishment of a core TED outreach team to provide enhanced outreach and training in Turtle Exclusion Device (TED) technology to Mississippi shrimp fishery, through which TED compliance will be maintained at the highest level possible. A core TED outreach team consisting of a coordinator and a technical expert (TED specialist) will be established for the State of Mississippi. The team will provide outreach and training to Mississippi observers on the latest advancements in TED technologies and regulatory requirements. The team will work with Mississippi marine enforcement to provide training in the proper methods for inspecting TED compliance and will ensure that TED compliance information is recorded accurately for inclusion in a NOAA TED compliance Database. The TED coordinator will receive training from and work closely with the NOAA Fisheries Gear Monitoring Team (GMT) to ensure that the most up-to-date information is provided to fishery and marine enforcement in Mississippi. Date: Aug 10, 2018</p>	Harrison,	Yes	No		No	Yes	No	No	No	\$ 656,000.00	\$ -			

PROJECT CATEGORIZED INCORRECTLY IN PORTAL (ORANGE CELLS)																				
Go/Coast	PROJECT ID	PROPOSAL DATE	PROJECT NAME	DESCRIPTION	LOC. COUNTY	NO. RESTORATION	MANUFACTURE COMPONENT	RECREATION/LEISURE/BIODIVERSITY	ECONOMIC DEVELOPMENT	RESEARCH AND EDUCATION	WATER	WATER QUALITY	WATER SUPPLY	WATER USE	WATER RESOURCES	WATER USE COST	FINANCING AVAILABLE	COMMENTS		
Eco Restoration	1152	11/9/2011		<p>(ORIGINAL ID#11459) This project consists of improvements to the BSL Harbor located at 100 Judy Compton Drive, near Downtown. Proposed projects consist of:</p> <ol style="list-style-type: none"> The City proposes to construct Pier 5 inside the BSL Harbor. The project consists of permitting and coordination with regulatory agencies, design, bidding and construction of a new 10' wide timber pier with concrete piling associated water and electrical utilities and lighting. The BSL Harbor has proven to be an economic driver for Hancock County and BSL since it's opening in 2013 and boasts one of the highest occupancy rates of all harbors on the MS Coast. The proposed Pier 5 project will add approximately 18,650' wet slips and approximately 25 35'-40' wet slips. These slip uses represent the size range in most demand, all current slips in this size range are leased to long term slip holders. Planning and preparing a maintenance dredging plan for BSL Harbor dredging and removal of approximately 60,000 CY of material from the BSL Harbor basin. The planning stage will consist of hydrographic surveying of all canals and the harbor basin to determine the amount of material which needs to be dredged and utilized for marsh restoration. Bay St. Louis proposes to extend the existing Day Pier which is located adjacent to the Rutherford Pier at the Municipal Harbor. The Day Pier is used daily to dock local transient vessels which frequent the nearby downtown establishments. The current pier is approximately 200 LF in length can not support the amount of vessels which frequent the area. The extension would add an additional 400 LF of docking space and enhance and support local and regional tourism efforts. 	Hancock	Yes	Yes										\$ 4,300,000.00	\$		
Eco Restoration	1164	7/8/2013	BSL Municipal Harbor Improvements	<p>(ORIGINAL ID#12018) The idea of a working waterfront for the seafood industry in D'Iberville is not new. In fact, the City has tried for over 20 years to raise sufficient money to expand the current harbor limited to the space underneath the I-10 Bridge. The City has tried to negotiate leases with Bay Front property owners to no avail. The City has prepared several plans over the years to construct a working waterfront harbor but funds to acquire shoreline properties have not been available. The commercial harbor is part of the overall plan to revitalize the downtown area block north linked with the French Market one block north. The City has Tideland funds that would be leveraged to effectuate land purchase and then on to construction of the harbor. The attached summary provides an overview of the project and how well it fits the Seafood Industry portion of the GulfCoast 2020 report. Approximately 12 acres of property is needed to accommodate waterline and landside needs. Wetland restoration on both sides of the existing harbor is planned. The working waterfront is a key component of the City's downtown revitalization plan. In conjunction with existing Tideland, Fund, land and development costs are estimated to be \$8.5M.</p>	Harrison	Yes	Yes		Yes	No	Yes	Yes	No	Yes	No	\$ 8,500,000.00	\$ 800,000.00			
Eco Restoration	1167	3/2/2015	D'Iberville Working Waterfront & Commercial Seafood Harbor	<p>(ORIGINAL ID#12122) Gaudier would like to expand our Town Center Area to create an Economic Development hub and to create a mix-use walkable environment. The Gaudier Town Center Project, located in Gaudier's central business district just 1.3 miles from the Alabama state line, consists of two master planned phases. One phase would be a public infrastructure component including roadways and lighting that will facilitate the construction of retail, industrial, and mixed-use commercial developments including campus housing for the adjacent MS Gulf Coast Community College (MGCCC) and a business incubator. The other phase would be implementation of master plan components for the 13-acre Town Commons Park which will be an urban park surrounded by development. The park features a large field that faces the Pascagoula River. While these projects are directly linked, they can each be constructed independently. The Project Description focuses on the infrastructure component and a separate Project Description outlines the City's plans for the Town Commons Park.</p> <p>The City of Gaudier is one of the few cities on the Mississippi Gulf Coast that lacks a traditional downtown. The purpose of this project is to develop a multi-modal street grid with town center attractions to facilitate the further revitalization of Gaudier's urban core in proximity to MGCCC and civic buildings. The Gaudier Town Center Project incorporates 2.5 miles of roadway, 1.3 miles of multi-use pathway, and a transit link in a 300-acre area for retail, residential and recreational areas together. The project will provide the transportation infrastructure necessary for the creation of a traditional downtown in Gaudier with an improved living and working environment that has multiple transportation options. The five proposed roadways create a street grid on 23.6 acres north of an existing regional mall, big box retailers, and the Community College. The roadways will facilitate new Town Center mixed-use master planned development to close proximity to Interstate 55, and will also provide a connector from Gaudier-Vancleave Road to Beasley Road - a dead-end road that currently provides the only ingress/egress for the Courtyards' landfill, municipal buildings, residential neighborhoods, and heavy commercial uses.</p> <p>In recent years, the City invested Hurricane Katrina recovery dollars in a Town Center Streetscape Project that included a multi-use pathway as a first step towards making Gaudier a walkable community and to foster the development of a town center by creating an identifiable town center with the theme of "Historic Downtown." Progressed! Other grant funding enabled the City to acquire the 12 acres next to Spring River Mall to be developed as the Town Commons Park. The mall has recently undergone demolition and will be built with a \$50 million private investment into an open-air mall with national tenants, and the right-of-way for the planned roadways has been donated. Community partners on this project include the Mississippi Gulf Coast Community College, Waze Pro, and the Compressed Natural Gas Fueling Station. The City's infrastructure plans are also included in the Gulf Coast Planning Commission's Regional Transportation Plan. The City is therefore poised to implement the next phase of transportation improvements.</p> <p>The proposed transportation network will provide access to existing anchors and new recreational areas by constructing urban transportation corridors with street parking and sidewalks as an alternative to the high speed multi-lane arterials such as Gaudier-Vancleave Road and US Hwy 90. This infrastructure along with appropriate zoning will bring high density mixed use development a much needed economic driver. The projected economic effects of the project, increased real estate values and municipal tax revenues, more affordable housing, and enhanced transportation opportunities. This project along with the Town Commons Park Project will result in improved livability and enhanced sustainability for the City of Gaudier's residents and visitors.</p>	Jackson	Yes	Yes	10000%	Yes	No	No	No	No	Yes	No		\$ 7,500,000.00	\$		
Eco Restoration	1229	9/7/2011	Gaudier Town Center Revitalization	<p>(ORIGINAL ID#1066) The Veterans Avenue Pier was damaged by Hurricane Katrina. This pier had been a major beach amenity. The pier will be re-constructed and will be approximately 700' long. The damage to the pier was mainly destruction of the superstructure. The support structure is basically intact, but may need some repair/replacement. The superstructure of the pier will be timber and will be approximately 20' wide. The water bottom around the pier will be enhanced to attract more aquatic life through constructing an artificial reef, planting aquatic vegetation and other habitat enhancements.</p>	Harrison	Yes	Yes									\$ 1,000,000.00	\$			
Eco Restoration	1726	2/7/2014	Rebuild Veterans Avenue Pier	<p>Rebuild the Community Pier on beach in front of USM Long Beach Campus and create an artificial reef environment to promote marine life in use. Prior to Hurricane Katrina the pier was used well by the community.</p>	Harrison	Yes	Yes	9000%	No	No	No	No	Yes	No	\$	\$				
Eco Restoration	1752	2/19/2014	Community Pier at USM	<p>This project will provide land and building assets in order to support water front ecological systems, eco tourism, and day to day activities of the riverfront. The building will showcase points of interest within the city with emphasis on wildlife and plant species that inhabit the Moss Point area. Education activities will include, guest lectures with expertise in the ecological system that surround the Escatawpa River. Electronic technology will be used to create and disseminate the culture and atmosphere that surrounds the Escatawpa River part of the facility will also support the maintenance of this technology and other physical resources to maintain the riverfront.</p>	Jackson	Yes	Yes									\$	\$			
Eco Restoration	1771	3/20/2014	Moss Point River Front Maintenance and Information Building	<p>As an effort to provide increased access to natural resources, the Bangs Lake Viewing Pier and Park will increase the ecological value of the area by providing a viewing center pavilion, fishing pier, and boardwalk park highlighting the natural beauty of marsh land. Not only will visitors come to walk along the marshes but a boat ramp will provide access to the lake and the Gulf. Along the boardwalk, interpretive stations will display information highlighting the history and legacy of Bangs Lake and the surrounding marshes. The area will also feature a waterfront outpost to rent kayaks, canoes, and paddle boards. Visitors are just a short ride to the Gulf and can explore the surrounding area in a highly industrialized area. The marsh land within the park will be preserved and used to further the beautification of the surrounding community.</p>	Jackson	Yes	Yes		Yes	No	Yes	No	Yes	No		\$	\$			
Eco Restoration	1774	3/20/2014	Bangs Lake Viewing Pier and Park	<p>This project will consist of the construction of a new pier at the convergence of Graveline Bayou with the Pascagoula Bay that will provide protection to the channel and reduce the effects of silt. In an effort to increase recreational boat traffic, channel markers within the bayou will be updated and replaced. This designation allows for management of granulation areas like the oyster reefs and oyster reefs and around Graveline Bayou. Any construction will stabilize the mouth of Graveline Bayou and limit the risk of drifting, as well as focus both tide and bayou discharges through a single opening thus combating the effects of E-tide events. With a deep and clear channel, boating traffic for both commercial and recreational can increase. The goal of this project is to increase the recreational opportunities of the adjacent community, allow for greater access to natural resources, and stabilize the convergence of Graveline Bayou with Pascagoula Bay.</p>	Jackson	Yes	Yes		Yes	No	Yes	No	Yes	No		\$	\$			
Eco Restoration	1777	3/20/2014	Channel Marker Replacement and Jetty Construction	<p>This project will renovate the existing fishing pier, while expanding the boat launches to accommodate a range of vessel sizes. A park area will house organized parking, boardwalks, lighting improvements, landscaping, and amenities such as restrooms and fish cleaning station. The current pier is located along the Gulf outside of Blue Bay. This area is optimal for fishing and recreation activities. The expansion of the current fishing pier along with the creation of additional amenities will increase and enhance the Gulf Park estate community quality of life, provide additional access to the natural resources along the Gulf, and enhance overall recreational experiences. Within the area surrounding the fishing pier, additional shoreline stabilization and riprap, will replace existing water edge treatments. The goal of this project is to increase recreational opportunities available to the adjacent community and allow improved access to natural resources.</p>	Jackson	Yes	Yes									\$	\$			
Eco Restoration	1793	3/25/2014	Gulf Park Estates Fishing Pier Expansion	<p>Plans are in place to construct a new 28,000 sq. ft. MEC facility at GCR's Cedar Point Teaching Site. The new MEC facility is an \$11.5 million dollar FEMA funded project with anticipated construction beginning in 2015. In this new facility is designated exhibit space that will be open to the public or to cost and will include a series of high quality, interactive educational exhibits. The three exhibits will focus on The Science of the Spill, Coastal Hazards/Community Resilience and Blue Water Science.</p> <p>The Science of the Spill exhibit will be an extension of the work that GCR did as part of a Rapid Response Grant through the National Science Foundation in 2010-2011 and continued through an EPA grant in 2013. The exhibit will address the role of science during an emergency. It will be published research conducted by GCR, scientists and others to answer the questions set out by the Gulf of Mexico Research Initiative: 1) What happened to the oil and the dispersant? 2) What were the effects on the environment? 3) What methods are being used for recovery and how are they working? 4) What are the impacts on human health?</p> <p>The Coastal Hazards/Community Resilience exhibit will describe the natural disasters (e.g., hurricanes) and ecosystem processes (e.g., sea level rise) that can affect communities in the coastal region and highlight strategies that communities and individuals can adopt to be more resilient.</p> <p>The Blue Water Science exhibit will highlight the research of GCR's researchers in offshore environments that most people never experience. Ecosystem processes and species that may be highlighted include the loop current, sargassum, and large pelagic species such as whale sharks.</p> <p>Visitors to the MEC, which include students and citizens from the region, will gain a better understanding of the impacts on the Gulf of Mexico from the Deepwater Horizon oil spill and the importance of long term monitoring and research to help ensure a healthy Gulf.</p>	Jackson	Yes	Yes									\$ 2,782,000.00	\$			
Eco Restoration	1798	4/1/2014	Educational Exhibits at the Proposed Marine Education Center	<p>The On-Chowley Museum of Art, on a four-acre stretch of the Mississippi Gulf Coast contiguous to the Mississippi Sound that archeological studies show once was inhabited by American Indian tribes. A central focus of the On-Chowley Museum and an important part of the American Indian culture, dating from pre-historic times to the contemporary tribes of Mississippi, is pottery. The Museum proposes annual summer programming, to present cultural, educational and arts programming about not only the on and pottery of the Mississippi tribes, but also their customs and traditions, thereby enabling local and out-of-town Museum visitors of all ages to discover and explore the practices and opportunities of past and present Mississippi Native Americans. Development of these programs will involve consultation with Mississippi tribal representatives, the Mississippi Department of Archives and History, the Mississippi Department of Marine Resources, and the National Museum of the American Indian in Washington D.C.</p> <p>The program, which will show a continuous flow of pottery traditions and culture on the Gulf Coast linking the Museum with Mississippi Native American Heritage, will include:</p> <ul style="list-style-type: none"> • A seminar for the investigation, discussion and understanding of issues facing native communities in Mississippi that will provide a statewide forum for discussion, study and civic engagement of historical and contemporary topics of concern and interest to Native peoples and the general public; • Conversations, lectures, workshops, and films that will highlight both traditional and contemporary Native American arts and arts cars; • After school and summer youth programs teaching Mississippi American Indian crafts and lore to children in a local venue • Culture tourism relating to nearby Deer Island also to tell the story of Mississippi American Indian culture and way of life. Not only is Deer Island home to various eco-systems, but also it is home to Native American shell mounds, pottery shards, and firing pits. • Additional and contemporary art objects from Mississippi tribes will be professionally exhibited and interpreted in a Museum gallery • Additional development opportunities for teachers through workshops that give a range of topics and enable teachers to discover analytical approaches to connect the museum's collections and content with classroom teaching strategies will be held at the museum for educators in all subject areas <p>The Mississippi Native American Heritage Program will benefit the community in numerous ways, including the promotion of partnerships with state and local entities, creation of jobs for artists, teachers and others connected to the programming aspects of the project, extended stays for visitors to the Gulf Coast, professional development opportunities for area educators, and expansion of nature tourism through a tie with the Native American history neighboring Deer Island.</p> <p>To enable the exhibitions and program space that is required for the Mississippi Native American Heritage Program, the museum requests funding to complete construction of its final gallery space. With completion of this space there will be dedicated gallery space to devote to the Mississippi Native American Heritage Program in the gallery on the Museum campus.</p>	Harrison, Hancock	Yes	Yes		Yes	No	No	No	Yes	No		\$	\$			

Eco Restoration	1893	5/14/2014	Modernization of GCR's research infrastructure on the Halsestad Campus	GCR's physical plant is not modern and so is energy inefficient, has inadequate backup generator power, and supports several buildings with modern day uses very different from the original design intentions. Of particular importance is to reduce the energy footprint for the campus. In addition, the GCR boat basin has not been renovated since prior to Hurricane Katrina. The following projects would substantially modernize the Halsestad Campus: 1. Upgrade of electrical, air conditioning, and generator capacity for Caylor. Much of the lower level wiring is aging prematurely due to submergence in saltwater during Katrina. Generator capacity is gravely inadequate. The air conditioning and heating units should be replaced with modern energy efficient power plants. 2. Upgrade of electrical, air conditioning, and generator capacity for the Research Building. Much of the lower level wiring is aging prematurely due to submergence in saltwater during Katrina. Generator capacity is gravely inadequate. The air conditioning and heating units should be replaced with modern energy efficient power plants. 3. The Director's "house," originally a home, now serves as an administrative unit. Efficient use of the facility requires renovation to e.g., remove the kitchen and replace it with office space. Movement of GCR administration in total to this facility would open up badly needed office space for faculty and graduate students in the Oceanography Building. 4. The old toxicology building will be replaced by a new building east on the Center Front Campus. Renovation of the old building to convert it into a modern laboratory and office facility will permit expansion of the Fisheries and Ecosystems Research group. Location (City, County): Ocean Springs, Jackson, GCR, Halsestad Campus Infrastructure cost (8 years): \$1,820 million Annual Operation & Maintenance Cost (8 years): GCR supports full maintenance, utilities, and custodial services for these buildings. GCR anticipates that the renovations will reduce, not increase, these costs resulting in a long-term cost savings to GCR. How will this leverage with other RESTORE priority areas or non-RESTORE funds? GCR expects the renovations to support a wide range of science programs aimed at fisheries, coastal restoration, ecosystem and landscape biology and marine diseases, among others. Information relevant to Economic Development (e.g., new construction, new employment opportunities, workforce development and training, etc.): The project will permit GCR to upgrade its physical plant and reduce its cost of operation. The facilities support a wide range of research programs affecting local, regional, and national economies by providing the location for a range of basic and applied research.	Jackson	Yes	Yes	1000%	Yes	Yes	Yes	No	No	No	No	\$	1.92	\$	-
Eco Restoration	1840	5/14/2014	Redesign of GCR Halsestad Campus entrance, vehicular routes, and boat access	GCR's main entrance is a road-based easement across a neighboring piece of property. Due to seawall rise, this entrance is increasingly flooded preventing employees from attending work on some days and rising the entrapment of employees and students already on site. In addition, 13+ number of areas of severe erosion endanger the property and adjacent marshes. In addition, boat-ramp access by local boaters, provided under an MOU signed with the City of Ocean Springs, generates congestion without providing a positive experience of the visitor. Growth of the MEC program has situated possible student parking and resulted in high traffic use on old, poorly marked roadways. The main entrance, vehicular routes, and parking should be fully redesigned. This will entail the following steps: 1. Purchase of the adjoining property. 2. Relocation of Halsestad vehicular traffic by moving the main entrance to higher ground and re-orienting roadways consistent with the new entrance. 3. Establishment of a new boat launch and parking facility near the present entrance. 4. Development of a landscaping plan including a swale to capture storm runoff and erosional materials along the near-shoreface from the new ramp to the boat basin. 5. Addition of trees to improve wind management, and 6. Reconstruction of additional parking for students, staff, and faculty in the area where the present entrance road divides towards the boat basin. Location (City, County): Ocean Springs, Jackson, GCR, Halsestad Campus Infrastructure cost (8 years): \$750,000 Annual Operation & Maintenance Cost (8 years): GCR expects little additional long-term costs above present day upkeep of the present entrance, as landscaping will be low maintenance trees and shrubs; mow the grass on the new property with the only additional maintenance item. Ocean Springs has obligated funds to maintain garbage pickup and to provide police security in the public access areas. How will this leverage with other RESTORE priority areas or non-RESTORE funds? GCR expects the renovations to support a wide range of science programs aimed at fisheries, coastal restoration, ecosystem and landscape biology and marine diseases, among others, as well as the middle to high school and undergraduate programs of the MEC and graduate level courses taught by GCR's faculty. Information relevant to Economic Development (e.g., new construction, new employment opportunities, workforce development and training, etc.): The project will permit GCR to maintain its research and education program in the face of rising sea level and restore the shoreface to a more natural habitat in keeping with GCR's commitment to coastal restoration. The project will support tourism by permitting boat access for recreational boaters and fishermen in a portion of Ocean Springs where independent access is not available.	Jackson	Yes	Yes	1000%	Yes	Yes	Yes	No	No	No	\$	735,000.00	\$	-	
Eco Restoration	1865	6/9/2014	Diamondhead Ecosystem Restoration, Stabilization and Sustainability Project - Marine Education and Recreation Restoration	This project consist of a marine education center, a 9 mile kayak route and a 1 mile hiking and biking trail that will provide marine education and restore nature recreation. Identifies oysters, tube worms, fresh water, brackish water, saline marsh, environment through education, information and monitoring station at strategic locations along the 9 mile route. Conclusion: this project stimulates public interest and support as well as education and participation in recreation information, seafood participation and water quality.	Hancock	Yes	Yes	4000%	Yes	Yes	Yes	No	Yes	Yes	\$	1,370,500.00	\$	-	
Eco Restoration	2123	9/23/2014	Pascagoula River Basin Waterfront Development Program	This plan is intended to develop a management program for future waterfront development within the Pat Harrison Waterway District. A waterfront can be the most desirable location for future development. Proper planning and adopted management programs for waterfront areas are fundamental when the need to ensure environmental sensitivity in an ecologically diverse region. The Pascagoula River Waterfront Development Program will establish a best practices and development method that ensure the desired waterfront economic and job creation are responsibly achieved in a way that mitigate environmental impact. Waterfront properties and recreational development can enhance the quality of life for communities. Greenways and riverwalks become tourist hot spots and can enliven a city's economy. The Pascagoula River Basin Waterfront Development Program will maintain environmental focus while properly monitoring future development along the riverine system. The development of educational boardwalks, farmers markets, and greenways all a part of waterfront development programs will promote tourism, economic development, and expand recreational options.	Stone, Jackson, Forrest, Perry, George	Yes	Yes	Yes	Yes	Yes	No	No	Yes	No	\$	\$	\$	-	
Eco Restoration	2125	9/23/2014	Pascagoula River Basin Water Supply Partnership	This partnership would focus on community water supply demands along the Pascagoula River and its tributaries within the Pat Harrison Waterway District. The partnership will provide the means for management and monitoring of water withdrawal and release limits in the basin. The plan would set up a cooperative program to best manage the water capacity of the basin as well as set up above shore condition plans to address any man-made or natural disaster event that occur. The precedent for this plan is an event that occurred in 2000. A severe drought limited the capacity of water reaching Pascagoula Bay. In an effort to mitigate risk of the economic impacts to the region, water from upstream reservoirs was released to help downstream industrial centers avoid costly shutdowns. The Pat Harrison Waterway District is situated to manage and oversee future water transmission supply expansion. As the opportunities for development increase the Pascagoula River Basin Water Supply Partnership will manage current and future water intake as well as monitor and plan for water supply events that could harm the ecological and economic viability of the basin.	Stone, Mobile, Jackson, Pearl River, Forrest, Perry, George	Yes	Yes	Yes	No	No	No	No	No	No	\$	\$	\$	-	
Eco Restoration	2126	9/23/2014	Pascagoula River Basin Enhancement Program Dam Safety Best Management Initiative	The Pascagoula River is the largest by volume unimpounded river in the contiguous United States. However, there are several dams that were set in place to create reservoirs that help control flooding in the region along tributaries and streams that feed into the Pascagoula River. These dams are largely managed by the Pat Harrison Waterway District but several are managed by private landowners. The Pascagoula River Basin Dam Safety Best Management Initiative will ensure a cohesive inspection and monitoring plan is in place. Through best management practices and coordination with private landowners, the initiative seeks to mitigate risk of dam related emergencies within the region. The formal guidelines will ensure dam owners coordinate with emergency management authorities to facilitate the development of plans that are comprehensive and consistent. As part of the comprehensive planning in the region, a second phase including analysis of dams considered at risk or demonstrating structural deficiencies will be completed to further mitigate dam failure threats.	Stone, Mobile, Jackson, Pearl River, Forrest, Perry, George	Yes	Yes	Yes	Yes	No	No	No	No	\$	\$	\$	-		
Eco Restoration	4265	12/15/2014	Tourist Corridor and Gateway Beautification - Pedestrian Areas	A more attractive appearance, tourist friendly public amenities and coordinating tourist information signage is needed in order to maximize the effectiveness of programs and marketing that generates bid to our destination. 2. According to a recent visitor perception study, the beauty of the area is an attribute that drives visitor satisfaction. Of those that were not satisfied with their visit, 36% noted cleanliness and the perception of Katrina recovery issues as a major reason. 3. This research also shows that one of the reasons cited for not visiting the Ms Gulf Coast is lack of a variety of things to do. With over 600 visitor amenities, attractions and activities available, it is clear that we need to improve our communication of tourism offerings. 4. Improving visitor signage will increase awareness of tourism offerings and increase length of stay and therefore economic impact. 5. A recent study in a competing market indicated that 20% of their visitors pass through one or all of our Coast counties on their way to their market, however there is very little directional signage on the major freeways equating to visitors. 6. Improving the visitor experience will generate return visits and invaluable word of mouth advertising for our destination, especially in this age of social media when personal experiences and endorsements are the most trusted source of information for travelers. 7. Harrison and Hancock County already have fully developed plans with costs that include tourist friendly areas, signage, parking, amenities and more that would make Beach Boulevard and Hancock County Waterfront and beach areas a true visitor destination. These plans could easily be expanded and coordinated for Jackson County tourist areas. Managing these plans as one project with inter-local agreements and cooperation between municipalities will enhance and strengthen our destination marketing as one Mississippi Gulf Coast. 8. Several parts of the plan have already been funded and are expected to be completed this year including way-finding signage coordinated with a tourism entity directory. 9. Additional jobs will be created to complete construction and installation of the new facilities and enhancements as well as potential permanent jobs necessary to provide ongoing maintenance. Required Funding Complete pedestrian areas used for walking, biking, jogging, etc. along the beach via continuation of concrete boardwalk where missing - \$9,600,000	Hancock, Harrison	Yes	Yes	5000%	Yes	No	No	No	Yes	Yes	\$	9,600,000.00	\$	-	
Eco Restoration	4276	12/17/2014	Mississippi Coastal Heritage Restoration, Education, & Preservation Trail	Funding is requested to establish the Mississippi Coastal Heritage Trail (MCHT), a 100+ mile multi-use pathway linking coastal communities from Grand Bay National Estuarine Research Reserve to NASA's Stennis Space Center. While increasing public understanding and providing public access to natural resource interpretive sites, waterways, islands, and forests, this Trail will also provide an opportunity to educate community members and visitors about the effects of the Deep Water Horizon Oil Spill on Gulf Coast communities. MCHT will serve as an educational tool to teach about the interconnection between humans and the marine environment as well as offer recreational access to a gateway/biway stretching across the historic and culturally rich Mississippi Gulf Coast. The MCHT will serve as the backbone of the physical network of cultural, historical and natural places where residents and visitors alike can connect with these places. Heritage Trails Partnership of the Mississippi Gulf Coast (HTP), highly supported by the National Park Service, is working to reconnect residents and visitors to the coastal ecosystems that surround them through recreational trails and conservation education projects. HTP is creatively fostering connections to education and tourism growth through trails and greenways while safeguarding the quality of coastal destinations. HTP has rallied all communities along the Mississippi Gulf Coast in a dialogue about creating a network made up of beaches and greenways where one did not exist. HTP's diverse Board of Directors, including community leaders of conservation, business, planning and health organizations, now leads the effort to create the Mississippi Coastal Heritage Trail (MCHT), recognized by the U.S. Department of Interior through the America's Great Outdoors Initiative. HTP has become a vibrant instrument for information exchange and building of interagency trust, related to trail projects, for the benefit of all coastal communities.	Hancock, Harrison, Jackson	Yes	Yes	7800%	Yes	Yes	Yes	Yes	Yes	Yes	\$	25,775,000.00	\$	-	
Eco Restoration	4284	1/2/2015	Tourist Corridor and Gateway Beautification Veterans Avenue Pier	Supporting Facts 1. A more attractive appearance, tourist friendly public amenities and coordinating tourist information signage is needed in order to maximize the effectiveness of programs and marketing that generates bid to our destination. 2. According to a recent visitor perception study, the beauty of the area is an attribute that drives visitor satisfaction. Of those that were not satisfied with their visit, 36% noted cleanliness and the perception of Katrina recovery issues as a major reason. 3. This research also shows that one of the reasons cited for not visiting the Ms Gulf Coast is lack of a variety of things to do. With over 600 visitor amenities, attractions and activities available, it is clear that we need to improve our communication of tourism offerings. 4. Improving the visitor experience will generate return visits and invaluable word of mouth advertising for our destination, especially in this age of social media when personal experiences and endorsements are the most trusted source of information for travelers. 5. Additional jobs will be created to complete construction and installation of the new facilities and enhancements as well as potential permanent jobs necessary to provide ongoing maintenance. Required funding Repair Katrina damaged Veterans Avenue pier which had been a major beach amenity - \$1,000,000	Harrison	Yes	Yes	1000%	No	No	No	No	Yes	No	\$	1,000,000.00	\$	-	

Eco Restoration	4286	1/5/2015	Tourist Corridor and Gateway Beautification - Beach Parking and Parking Area Pavilions	<p>Supporting facts</p> <ol style="list-style-type: none"> 1.A more attractive appearance, tourist friendly public amenities and coordinating tourist information signage is needed in order to maximize the effectiveness of programs and marketing that generates visit to our destination. 2.According to a recent visitor perception study, the beauty of the area is an attribute that drives visitor satisfaction. Of those that were not satisfied with their visit, 36% noted cleanliness and the perception of Katrina recovery issues as a major reason. 3.This research also shows that one of the reasons cited for not visiting the Ms Gulf Coast is lack of a variety of things to do. With over 600 visitor amenities, attractions and activities available, it is clear that we need to improve our communication of tourism offerings. 4.Improving the visitor experience will generate return visits and invaluable word of mouth advertising for our destination, especially in this age of social media when personal experiences and endorsements are the most trusted source of information for travelers. 5.Harrison and Hancock County already have fully developed plans with costs that include tourist friendly areas, signage, parking, amenities and more that would make Beach Boulevard and Hancock County waterfront and beach areas a true visitor destination. These plans could easily be expanded and coordinated for Jackson County tourist areas. Managing these plans in a project with inter-local agreements and cooperation between municipalities will enhance and strengthen our destination marketing of one Mississippi Gulf Coast. 6.Additional jobs will be created to complete construction and installation of the new facilities and enhancements as well as potential permanent jobs necessary to provide ongoing maintenance. <p>Required funding</p> <p>Construct additional beach parking areas with shaded pavilions to provide access to and ease of use of the beach and beach amenities - \$7,500,000</p>	Hancock/Harrison Jackson	Yes	Yes	1000%	No	No	No	No	No	Yes	No	\$	7,500,000.00	\$	-
Eco Restoration	4287	1/5/2015	Tourist Corridor and Gateway Beautification - Beach Event Pavilions	<p>Supporting facts</p> <ol style="list-style-type: none"> 1.A more attractive appearance, tourist friendly public amenities and coordinating tourist information signage is needed in order to maximize the effectiveness of programs and marketing that generates visit to our destination. 2.According to a recent visitor perception study, the beauty of the area is an attribute that drives visitor satisfaction. Of those that were not satisfied with their visit, 36% noted cleanliness and the perception of Katrina recovery issues as a major reason. 3.A recent study in a competing market indicated that 20% of their visitors pass through one or all of our Coastal counties on their way to their market, however there is very little directional signage on the major byways appealing to visitors. 4.Improving the visitor experience will generate return visits and invaluable word of mouth advertising for our destination, especially in this age of social media when personal experiences and endorsements are the most trusted source of information for travelers. 5.Additional jobs will be created to complete construction and installation of the new facilities and enhancements as well as potential permanent jobs necessary to provide ongoing maintenance. <p>Required funding</p> <p>Construct various sized beach pavilions for group gatherings, entertainment events and beach amenities - \$2,700,000</p>	Hancock/Harrison Jackson	Yes	Yes	1000%	No	No	No	No	Yes	No	\$	2,700,000.00	\$	-	
Eco Restoration	4288	1/5/2015	Tourist Corridor and Gateway Beautification - Comfort Stations	<p>Supporting facts</p> <ol style="list-style-type: none"> 1.A more attractive appearance, tourist friendly public amenities and coordinating tourist information signage is needed in order to maximize the effectiveness of programs and marketing that generates visit to our destination. 2.According to a recent visitor perception study, the beauty of the area is an attribute that drives visitor satisfaction. Of those that were not satisfied with their visit, 36% noted cleanliness and the perception of Katrina recovery issues as a major reason. 3.Improving the visitor experience will generate return visits and invaluable word of mouth advertising for our destination, especially in this age of social media when personal experiences and endorsements are the most trusted source of information for travelers. 4. Additional jobs will be created to complete construction and installation of the new facilities and enhancements as well as potential permanent jobs necessary to provide ongoing maintenance. <p>Required funding</p> <p>Construct additional and repair existing comfort stations along the beach - \$10,250,000</p>	Hancock/Harrison Jackson	Yes	Yes	1000%	No	No	No	No	Yes	No	\$	10,250,000.00	\$	-	
Eco Restoration	4297	1/8/2015	Gulfport Downtown Tourist Destination/Alley Streetscape Project	<p>Gulfport Downtown Tourist Destination/Alley Streetscape Project i.e. Skiffel Street Alley Project</p> <p>In the tradition of Printers Alley in Nashville, Pirates Alley and Exchange Place in New Orleans, and the Alley Station in Montgomery, AL, Gulfport, MS is seeking to develop the downtown alley between 26th Avenue and 27th Avenue into a true outdoor public entertainment and arts destination. Currently used for utility and waste removal purposes, the alley has received a design study by Tom McCalloway of the firm Mahan Swan Design, Baltimore, MD and Randy Wilcox of Community Design Solutions, Columbia, SC, the national #1 leading Urban/Urbanist/Alley Redevelopment designers. The team has re-purposed and designed alleys in New York City, Austin, TX, Seattle, Portland, Chicago, and Atlanta and are now focused on opportunity in Gulfport, MS. Their assessment is that the location on Historic Downtown Gulfport will have a transformational effect in the heart of the entertainment district, creating a safe, attractive and highly desirable appeal to the character of downtown. Major design options will be to streetscape the surface with new brick pavers, drainage systems, arched signage at each entrance, wireless and arched lighting treatments, creative and unique art installations and signage, bamboo planters, benches and seating areas and dedicated areas for the restaurant's outdoor dining area. Also, to address a balance of utility and desirability/sanitation, the current 40' and 60' wide alley will be replaced with a small dumpster corral that will contain dumpsters that will be on casters providing ease of access for trucks to remove/dump/replace the containers on a daily basis. Based on recommendations and having the endorsement of the local Director of the Department of Health, the corral area will be adjacent one of the alley walls, placed off on a concrete pad with sewer drainage and hot and cold water for safe clean up and maintenance of the area.</p> <p>This new attraction will directly increase traffic in this pedestrian friendly area to locally owned restaurants that will have back door and/or courtyard access to the newly transformed Skiffel Street Alley. The Gulfport Main Street District will be responsible for providing outdoor dining area awnings, public art displays, poetry readings and musical entertainment. It will also allow for the development of new small businesses in our downtown area by creating a new synergy of art and entertainment. Currently, the alley is an eyesore, a health and safety hazard, and quite possibly the worst maintained area in all of Downtown Gulfport. With the development of Skiffel Street Alley/26th only will we correct and clean up a blighted area, we will create a destination that young and old will be able to visit to view public art exhibits, eat, drink, be entertained and most importantly be proud of the continued growth and rebirth of Downtown Gulfport.</p> <p>To accomplish the transformation of the alley, Gulfport has dedicated approximately \$317,000 from the Mississippi Development Authority to the above ground alley project which would include lighting, street pavers, electrical. To complete the project, we are seeking an additional \$350,000 to replace the aging sewer infrastructure that runs the length of the alley, engineering costs, concrete replacement and other infrastructure needs. This funding would complete all the necessary below ground infrastructure in order to complete the project properly the first time.</p> <p>Currently, there are 33 locally owned restaurants and entertainment establishments that are all small businesses that have opened or renovated and reopened since Hurricane Katrina. The City has used over \$10 Million in CDBG for one of the nation's largest emergency and follow-up grant projects resulting in a resurgence and rebirth of Downtown Gulfport. The Skiffel Street Alley/26th project is the project that will differentiate Downtown Gulfport from any other along the coast, offering a true destination that attracts more patrons to our small businesses, improves a currently depressed area and creates a unique public space for tourists and locals alike will be drawn to.</p>	Harrison	Yes	Yes	5500%	Yes	Yes	No	Yes	Yes	Yes	Yes	\$	1,500,000.00	\$	317,000.00
Eco Restoration	5486	6/7/2016	Singing River Hospital Storm Drain Replacement	<p>One of our primary acute care facilities, Singing River Hospital, located at 2800 Darnley Avenue, Pascagoula, MS, has storm drains located around the facility, on our campus, that are collapsing due to age and deterioration. The old drains, made of ceramic tile, were installed so long ago that we have no surviving records showing the original installation dates. Video images taken inside the drains show blockages from cracked, broken and collapsing sections of the tile components. Blocked drains during significant rain, tropical storm or hurricane events subject the ground floors of the facility to flooding as a direct result of the inability of the storm drains to carry off water accumulating on the campus grounds, that also impede or block access to our Emergency Department and other entrances needed to carry out our mission as first responders during severe weather events. Singing River Health System is requesting funding to replace the existing storm drains.</p>	Jackson	Yes	Yes	1000%	Yes	No	No	No	Yes	No	Healthcare	\$	500,000.00	\$	-
Eco Restoration	5525	1/7/2018	Nature Tourism Proposal for the Mississippi Gulf Coast Region: A project and budget plan based on the 2016 process and strategy document.	<p>Tourism and business leaders have realized the necessity of creating an environment of conservation and protection of Mississippi's coastal resources in the wake of the Deepwater Horizon Oil Spill in the Gulf of Mexico. A great deal of planning has taken place since 2010 to celebrate the natural beauty and wonder of the Mississippi Gulf Coast. There is an area of opportunity in this region that is a most promising method to protect natural resources and promote environmental stewardship while stimulating new economic development. Across the world, nature tourism is recognized as a significant effort to provide responsible travel to natural areas and promote conservation. Nature tourists are looking for original and authentic experiences to high quality environments with historical and cultural significance. These travelers are more likely to be well educated and travel often in multi-generational groups with extended families. They are seeking safe, well-connected communities that place emphasis on environmentally and culturally responsible travel with low visitor impact to natural areas.</p> <p>The Final GulfCoast 2020 Report, commissioned by the Executive Order of Governor Phil Bryant, included focus of MGAECO Tourism/IBto be a substantial initiative for recovery, restoration, tourism, and economic development. In response to the worthwhile efforts of the GulfCoast 2020 Final Report, a Nature Tourism Task Force was created and adopted the Skiffel framework for Nature Tourism/IBto be implemented by November 1, 2013. In its conclusion, the Task Force recommended the Mississippi Gulf Coast National Heritage Area (MGCNHA) to lead a nature-based tourism initiative.</p> <p>In 2015, with funding from the National Park Service, the MGCNHA re-navigated this Nature-based Tourism Task Force of thirteen (13) Gulf Coast leaders, with assistance from the contracted team of Allen Engineering and Science, Gulf Regional Planning Commission, and the Heritage Trails Partnership. This year-long consultation culminated in the recommendations depicted in the 2016 NBT Plan for Coastal Mississippi (NBT Plan).</p> <p>Accepting the charge to implement a nature-based tourism plan, this Mississippi Gulf Coast National Heritage Area - Nature Tourism Proposal for the Mississippi Gulf Coast Region outlines the framework to manage, operate, plan, market, and implement the recommendations with a budget of \$10 million over the next five years. This proposal outlines management and administration, operations, planning, marketing, and implementation.</p> <p>Management and Administration: The MGCNHA will provide general management, oversight, and coordination of day to day operations for the nature-based tourism program. It will provide leadership to local officials and partners to implement the NBT Plan. Six (6) Area Managers will be chosen by each of the six coast counties to serve as liaisons to ensure that initiatives and priorities for each of the counties are being carried out with consistency, and that established goals are being met.</p> <p>Operations: The MGCNHA will implement the recommendations outlined in the NBT Plan, as they are aligned with the mission of the MGCNHA to conserve, enhance, and promote understanding of the heritage resources in the six counties of the MS Gulf Coast. Office and travel related expenses are included in the proposal.</p> <p>Planning: Years of collaboration between a diverse group of stakeholders, including tourism professionals, small business owners, natural resource experts, Chambers of Commerce, and NGOs in Mississippi culminated in the 2016 Nature-Based Tourism Plan for Coastal Mississippi developed by the six coastal counties. A successful program will benefit the ecological and economic health of South Mississippi, as well as provide a framework for development in the Mississippi Hills and Mississippi Delta National Heritage Areas.</p>	George/Harrison, Pearl River/Jackson,Sta Hancock	Yes	Yes	1000%	Yes	Yes	No	Yes	Yes	Yes	Yes	\$	10,000,000.00	\$	-
Eco Restoration	5540	6/7/2017	Tourism Marketing Strategies	<p>This project's scope would be to develop a tourism marketing strategy that would include the creation of an interactive website and attractive brochure/other marketing materials for placement at key locations to highlight the City's unique tourism attractions, lodging opportunities, retail areas, restaurants and other amenities.</p> <p>This informational packet would include a map showing directions to each location. It is anticipated that kiosks could be strategically placed that would aid tourists in finding their desired destinations and to perform other points of interest.</p> <p>The City does not have a chamber of commerce to help with such items.</p>	Jackson	Yes	Yes	2500%	Yes	Yes	No	Yes	Yes	Yes	\$	100,000.00	\$	-	
Eco Restoration	5544	3/10/2017	Waveland downtown elevated boardwalk/Marina/Boatwalk	<p>Coleman Ave in Waveland is the Historic Downtown area of Waveland and is where City Hall was located prior to Hurricane Katrina and has been rebuilt at the very same location. Since adopting the FEMA Digital Flood Rate Maps in Oct 2009, the flood elevations has drastically changed with the new elevations requiring businesses to elevate businesses up to 21 feet above ground. These requirements have caused businesses not to rebuild and development is at standstill and has been since 2005. The concept of a boardwalk would address the elevation issues by elevating the businesses on the boardwalk with a walkable space and seating as well as taking care of the ADA issues at same time and creating a destination spot in Waveland.</p>	Hancock	Yes	Yes	500%	Yes	No	No	Yes	Yes	No	\$	10,000,000.00	\$	-	

Eco Restoration	5561	5/16/2017	Diamondhead Water and Sewer District is located in Hancock County Mississippi within the City of Diamondhead. We provide water and sewer service to approximately 4300 customers and a population of 1600. This District has 2,295 aging water meters, over 54 percent of the meters are older than 10 years and of the 54 percent, 73 percent are over 25 years. Due to the age of the District's meters, the District is losing revenues and unaccountable water loss. Aging water meters, experience a breakdown of accuracy over time. The breakdown results in less accurate water meters that leads to lost revenue because the consumption of water is not completely recorded. An article published in Water and Wastewater Digest (10-11-16) by Albenberg (2008) test results conclusively proved that water meters' recording capability diminishes over time. The article reported the results of an analysis that included sampling of a number of meters in one zone based on age and flow, low, intermediate and fast. After the accuracy of the meters were calculated, the gallons of water going through the meters without being recorded were calculated by subtracting the average consumption from the result of the multiplication of the RAM (the Real Accuracy of Meters). An average consumption of 3,000 gallons was used in this analysis based on a typical household and historical data considering the summer peak consumption. The recorded result were as follows: Meters 15 Years Old 9,000 Gallons - (9,000)(0.994) = 54 Gallons per month Meters 20 Years Old 9,000 Gallons - (9,000)(0.990) = 90 Gallons per month Meters 25 Years Old 9,000 Gallons - (9,000)(0.958) = 378 Gallons per month Meters 30 Years Old 9,000 Gallons - (9,000)(0.816) = 1,556 Gallons per month Based on the data from this report and the age of the District's meters, the District is losing approximately 279,108 gallons per month and monthly water/wastewater revenue of \$ 1384.38, yearly \$16,612.56. The District has 295 meters and over 54 percent are older than 10 years and of the 54 percent, 73 percent are over 25 years. All meters over 10 years old need to be replaced and the regions for the	Hancock	Yes	Yes	8500%	Yes	No	No	No	Yes	No	Yes	No	\$	750,000.00	\$	
Eco Restoration	5581	6/12/2017	Advancements in Florida's sea turtle conservation research data collection, analysis, and communication	All Coastal	Yes	No	No	No	No	No	No	No	No	No	\$	885,156.00	\$		
Eco Restoration	5714	8/2/2017	Socioeconomic impact analysis of potential marine protected area implementation		Yes	No	No	No	No	No	No	No	No	No	\$	500,000.00	\$		
Eco Restoration	5735	8/16/2017	Marine Mammal Conservation Print Ads in Tourism & Trade Magazines		Yes	Yes	No	Yes	No	No	No	No	No	No	\$	500,000.00	\$		
Eco Restoration	5736	8/16/2017	Protect Wild Billboards		Yes	Yes	No	Yes	No	No	No	No	No	No	\$	530,000.00	\$		
Eco Restoration	5737	8/16/2017	Printing and Distribution of Marine Mammal Conservation Outreach Materials & Signs		Yes	Yes	No	Yes	No	No	No	No	No	No	\$	275,000.00	\$		
Eco Restoration	5738	8/16/2017	Marine Mammal Adult Outreach Banners		Yes	Yes	No	Yes	No	No	No	No	No	No	\$	180,000.00	\$		
Eco Restoration	5752	11/20/2017	Navigation Security in Mississippi Gulf Coast Working Waterfronts	Harrison	Yes	No		Yes	No	No	No	No	No	No	Resident W	\$	11.00	\$	
Eco Restoration	5756	1/18/2018	East McHenry Road Restoration and Improvements (Final Phase)	Stone	Yes	Yes	10000%	Yes	No	No	No	Yes	No	No	\$	3,140,000.00	\$		
Eco Restoration	5761	1/26/2018	County Wide Paving Project	Stone	Yes	Yes	10000%	No	No	No	No	Yes	No	No	\$	1,000,000.00	\$		

Eco Restoration	1589	8/2/2011	<p>ORIGINAL ID#763) The Maritime & Seafood Industry Museum located on P. Cadet, Harrison County, Biloxi, MS serves as a welcoming bastion to the great City of Biloxi, an educational tool and a superior exhibit for residents and visitors of the Mississippi Gulf Coast region and for the entire state of Mississippi. The foundation was established in March 1986 to preserve and interpret the maritime history and heritage of Biloxi and the Mississippi Gulf Coast, which came to prominence more than a century ago as one of the world's great seafood producers. Since 1986, the Maritime and Seafood Industry Museum has become recognized for its interpretation of Mississippi Gulf Coast history, culture, and heritage. The Museum exhibits, the replicated sailing schooners, the educational programs, the schooner pier complex, and the research collections have proven invaluable to the citizens of Mississippi as well as national and international clientele. Special programs held within the museum, has won it national and national television. The Museum expanded another 8,000 sq. ft. in 2003 and in 2005 was destroyed by Hurricane Katrina. The new three story 20,000 sq. ft. museum reopened in August 2014 at a cost of approximately \$30 million.</p> <p>Since 1986, the Museum has been on a steady path of accomplishment 34' from our award-winning building to our exhibits and tools 200' but there is much more to accomplish. Our educational and economic impact within the community, the region and the state has made the Maritime and Seafood Industry Museum a destination of enjoyment and a significant economic contributor. Our \$4 million expansion would add a state-of-the-art Exhibit Hall that will also host world class traveling exhibits. The Museum is currently the address of the Zankov Hall that elevates the Museum experience and enhance the regional economy through the distribution of admission dollars and funds raised from sponsored traveling exhibits. It would also enable the Museum a larger venue for convention space for one night events from the Coast.</p> <p>Tourism is frequently seen as a way of creating new employment opportunities in regions which have suffered from devastating hurricanes or oil spills. Mississippi's Gulf Coast has embraced the tourist industry, bringing in major cruise and support services to lower tourist engaged. Visitors stay at hotels, eat at restaurants, visit cultural sites and consume goods and services within a local economy. This, in turn, as an economic boon to the area benefits many other sectors. Regional tourism is an important magnet to draw visitors, as they flavor the experience, present the region's history, display their treasures and share the artistic and cultural essence of the region. Giving visitors a variety of exciting activities and events impacts their experience and ensures their return. Recently published reports from the American Alliance of Museums, show indisputable evidence that museums are true economic engines for their communities, supporting jobs and wages that are vital to the health of their hometowns. And, as an industry, Museums have widespread public support that transcends political affiliations and geographic locations. Along with the revenue generated from patron visits, museums have a wider economic impact as they purchase goods and services from local vendors (such as caterers, exhibit designers, and window washers), and provide community gathering spaces and alternate venues for conferences and social gatherings.</p> <p>Now, it is time to enhance our offering to the public, while enhancing the regional economy. And with these goals in mind, we are requesting the assistance of the Resources and Ecosystems Sustainability, Tourist Opportunity and Revived Economies of the Gulf States Act of 2011 (RESTORE).</p>	Harrison	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	\$ 5,548,904.00	\$		
Eco Restoration	1595	8/31/2011	<p>ORIGINAL ID#963) In 2010, The Ole-Of-Keele Museum of Art received funding from the MS Coastal Impact Assistance Program to development a landscape master plan focusing on the conservation, protection and restoration of the Museum site fronting the Mississippi Sound. The grounds of the Museum will be restored with native plants, the site becoming a living laboratory for coastal restoration projects including heritage plantings and wetlands restoration. The site will serve as a microcosm of naturalized coastal landscape and food ecology. The project will provide a permanent, very visible forum for increasing public awareness of environmental issues and improving stewardship of the Mississippi coastal ecology by example. The plantings will serve as an educational tool coordinating a permanent exhibition documenting the coastal habitat restoration areas of the Museum grounds with a they and written material available to school groups and other visitors to the Museum. The Ole-Of-Keele is requesting funding to implement the Museum's restoration/landscape project. In May 2011, landscape architect Thomas Doyle of LA South Inc., with a team of geologic, wetlands scientists and botanists completed the master plan for the landscape architecture of the Ole-Of-Keele Museum site. This plan is an overview of restoration plantings of native species, including establishment of low dune areas and other site specific species, for upland, freshwater wetland and beach/dune habitats as well as potential circulation and human impact. The landscape master plan was approved by the Museum Board of Trustees Executive Committee in June 2011. The project start date for the project is September 2013, when construction of all buildings has been completed. The time frame for the project is 10-14 months, the total budget is \$800,000.00. Benefits derived from this project include stabilization, restoration, and preservation of an important coastal ecosystem, enhancement of natural scenic qualities in the coastal area, and education of 75,000- visitors annually regarding the importance of restoration and preservation of natural habitats and coastal wetland areas through exhibitions and educational programs at the Museum. Area school teachers will have the opportunity to use the Museum's living laboratory as a visual learning technique integrating the Museum grounds and information into their lesson plans in academic subjects required by the Mississippi standard course of curricula.</p>	Harrison	Yes	No	No	Yes	No	No	No	Yes	No	No	Yes	No	No	No	\$ 800,000.00	\$		
Eco Restoration	1629	3/20/2013	<p>ORIGINAL ID#11938) BACKGROUND OF NCDCD PROGRAM The North Central Mississippi Resource Conservation & Development Council (NCRCDC) covers 10 counties in North Mississippi. The NCRCDC is a 501(c)(3) non-profit organization made up of volunteers who identify needs of residents who identify needs of their communities and find solutions to work with County sponsors as the Board of Supervisors and Soil & Water Conservation Districts. 2) NATURAL RESOURCE DAMAGE The NCRCDC recognizes the need to fund a project to restore or rehab approximately 77 watershed structures that are near failing. Most structures will require new pipes installed, dirt work, and sediment removal from these dams. These water control structures were built in the late 1950s-1960s by USDA, Soil Conservation Service along with channels for erosion control purposes. Over the past 60 years they have trapped tons of nutrients and sediment. Not if, but when these structures fail, sediment and nutrients will pollute streams on down to the Gulf of Mexico. 3) EXECUTIVE SUMMARY Goal is to restore or rehab 77 water control structures back to original designs in Mississippi watersheds that include: Leflore, Tallahatchie, Coldwater, Horn Lake, Neshoba, and Wolf River. The NCRCDC is capable of administering this project. 4) FACTORS The NCRCDC will be responsible for project coordination and seeing that the project is completed in a timely and efficient manner. The action plan includes the following: A) NCRCDC and Watershed District or local sponsor will obtain easements B) USDA, Natural Resources Conservation Service will provide as-built plans (designs already completed) and will provide permit to construct. The project NCRCDC will provide assistance in obtaining permits for each of both plans, bid advertisements, bid packages, contracting, payments, and final reports D) NCRCDC will provide sub-grants to local organizations and/or certified engineers E) SUBJECT A) 77 Water Control Structures Restored (\$2,475,000 B) Project Coordination - Easements, Contracting, Misc. Engineering (\$200,000) C) Travel (\$5,500) D) NCRCDC 4th Administrative Fee (\$107,000) E) Bid Matching Funds USDA: NRCS(\$450,000) F) EVALUATION OF PROJECT: A) Number structures restored B) Efficiency C) Timeliness of project completion D) Reduction of sediment and nutrients into the Gulf of Mexico.</p>	Panola	Yes	Yes	No	Yes	No	No	No	No	No	No	Yes	No	No	No	\$ 2,797,000.00	\$ 450,000.00		
Eco Restoration	3217	11/17/2014	<p>Job Training for Living Shorelines and Tidal Marsh Restoration.</p> <p>A benefit of the RESTORE funds will be creating a stronger demand for skilled workers to install living shorelines and do work to restore tidal marshes. The skills for such green jobs combine construction and landscaping skills along with a sufficient knowledge of tidal ecology to be able to understand the end goals of a restoration project. The outdoor work environment is demanding and requires good work habits to be safe and productive. What is more, such projects are interesting to the general public and have the potential to encourage people to take better care of the environment. Therefore, the project architect often have opportunity to engage with people on site to explain the project. There is growing interest with private property owners to apply best practices to water front property and instead of rebuilding bulkheads to use more resilient and ecologically beneficial shoreline improvements. So the workers on site should understand the project and be able to explain the benefits of the project to curious site visitors.</p> <p>There will be a need for job training for living shorelines and tidal marsh restoration. The RESTORE funds for restoration projects can be leveraged to pay for such job training as a way to build capacity for future restoration projects. Many of the jobs created by such projects have pay comparable to building construction jobs and, like building construction, are job skills that are best gained by hands on learning. The RESTORE funds will have a long term impact on such emerging green jobs if training programs are part of the community benefit.</p> <p>Partnership</p> <p>The proposal is submitted by the Gulf Coast Community Design Studio in partnership with Moore Community House 487th Women in Construction Program.</p> <p>The Gulf Coast Community Design Studio (GCCDS) was established on the Mississippi Gulf Coast in 2005 to work in communities impacted by Hurricane Katrina and has evolved from disaster recovery work to addressing long term issues of affordable housing, healthy communities and resilient landscapes and infrastructure. The GCCDS is a research and professional service program of Mississippi State University College of Architecture, Art and Design. Located five hours from the main campus the GCCDS operates with a full-time staff of architects, landscape architects and planners and always works in close collaboration with multiple non-profit, municipal and professional partners. The work of the GCCDS includes: 1) community based housing design, 2) storm water and tidal ecology, 3) flood resilient buildings and landscapes, and 4) public domain decision making. The GCCDS operates with around \$600,000 annual grant and contract income with national funding partners including NEH, Department of Energy, Small Business Administration, the National Endowment for the Arts, and the Department of Homeland Security, along with many local and regional partners. For the past three years the design studio has been working in partnership with other Gulf Coast planning agencies with the support of HUD's Sustainable Communities initiative to produce Plan For Opportunity, a regional plan for a more resilient and sustainable Gulf Coast. Recently, the GCCDS was part of one of ten national design teams selected by HUD to participate in Rebuild By Design, in which teams were charged with creating a resilient North East impacted by Super Storm Sandy to design more resilient future cities.</p>	Hancock, Harrison, Jackson	Yes	Yes	Yes	Yes	No	No	No	No	Yes	No	No	Yes	No	No	Yes	\$ 90,000.00	\$	Curriculum development
Eco Restoration	3240	11/14/2014	<p>Organizational Overview Moore Community House (MCH) was founded in 1924 to serve the children of migrant workers in the seasonal fishing industry. Today MCH responds to the needs of low-income women and young children in east Biloxi through two programs that research shows make the most strategic and positive difference in moving a low-income family close to self-sufficiency: quality affordable early childhood education and job training that leads to higher paying employment. Through the Women in Construction Program (WinC), MCH creates a pathway for low-income women to higher paying jobs in the construction industry.</p> <p>Women make up nearly half of the workforce in Mississippi (MS) but women earn less than men at every income and education level, and in every profession. Women are clustered in low paying jobs, making up 80% of minimum wage workers. MS has the highest rate of single-mother headed families, mothers who bear financial responsibility for children. Minimum wage leaves a family of 2 (mom and child) below the federal poverty level. Construction jobs are the only ones in MS where women earn the same wages as men, and these jobs pay an hourly wage identified by the MS Economic Policy Center as a self-sufficiency wage. Thus, WinC offers a pathway for women to family economic security.</p> <p>The mission of WinC is to create a climate across the Gulf Coast enabling women to pursue careers which will allow them to earn wages to promote self-sufficiency within the construction field. Besides ongoing provide well-paying jobs to the region's low-income women for a trained workforce, within the construction trades offer career that provide self-sufficiency wages and good benefits. WinC is the only job-training program in the region that is tailored to prepare women for this work. At this point and time it is critical to maintain momentum by expanding programming, reaching more women, and strengthen the community towards economic and ecological recovery.</p> <p>Since inception of the program, WinC has graduated 22 classes totaling 220 plus women in the fields of general construction, welding, green job training, and disaster relief and recovery. Of the 220 plus women who have graduated the program, 75% of these individuals have gained employment. Graduates have gained high wage jobs in apprenticeship and nontraditional occupations in trades such as, welding, shipfitting, habitat restoration, and construction management, earning from \$14 to \$28 an hour. WinC is remaining the face of construction on the Gulf Coast one well-trained woman at a time. Qualitative data is used to assess impact that improves socioeconomic wellbeing. Participants have made cross cultural bonds, left abusive relationships, gained GEDs, housing, improved upon health/wellness, and made huge strides that improve their wellbeing and quality of life.</p> <p>Proposed action Moore Community House seeks RESTORE Funds of \$1,500,000 for Women in Construction Program to recruit, train, and place women into jobs created by RESTORE projects; and to improve the outreach, training, employment, and retention of women in nontraditional occupations; as well as train low-income women in construction trades and in skills required by current and upcoming industries. By using innovative techniques, this program will expose women to nontraditional career pathways that meets the demands of future ecosystem restoration projects along the Gulf Coast through upcoming RESTORE opportunities.</p>	Mobile, Jackson, Biloxi, Ocean Springs, Panama, Pearl River, Harrison	Yes	No	Yes	Yes	No	No	No	No	Yes	No	No	Yes	No	No	Yes	\$ 1,500,000.00	\$ 250,000.00	
Eco Restoration	4271	12/22/2014	<p>Women in Construction Program</p> <p>The goal of the proposed program is to place women into employment focusing on skills such as living shorelines, marsh creation and environmental reconstruction while increasing capacity for</p> <p>1) ERs with historic districts was the second highest ranked destination attraction checked by travelers in a recent visitor perception survey. Beaches was number one.</p> <p>2) Beachcombers that broaden visitor experience could help to increase length of stay. This research indicates that the average length of stay for visitors along the Gulf Coast is 2.8 nights compared to 3.4 nights nationally. Reaching the national average length of stay would increase visitor spending by \$40 million annually.</p> <p>3) A recent trend in the travel industry is that visitors are seeking Meaningful experiences such as nature, history and those that provide educational opportunities. The Mississippi Gulf Coast has a rich history and culture so is in an excellent position to take advantage of this trend.</p> <p>4) The La Pointe Kreibitz House is the oldest standing structure in the State of Mississippi and possibly in the Mississippi Valley and is a valuable historical asset. Hurricane Katrina caused extensive damage to the house and museum and they have been closed to the public since that time.</p> <p>5) \$663,776 has been spent in excess on the restoration of the structure funds with grants, donations and by Jackson County. Jackson County budgets \$50,000 per year for upkeep and maintenance of the site. The La Pointe Kreibitz Foundation supports ongoing operation of the site through fundraising.</p> <p>6) Required Funding</p> <p>1) \$1,200,250 is the remaining funding that would be required to restore the property, museum, artifacts and grounds.</p> <p>2) Project attributes</p> <p>1) Sustainable</p> <p>2) Coast-wide industry impact</p> <p>3) Generates additional State and local tax revenue</p> <p>4) Community partner investment</p>	Jackson	Yes	Yes	10000%	No	No	No	No	No	Yes	No	No	Yes	No	No	Yes	\$ 1,900,000.00	\$ 700,000.00	

Eco Restoration	1873	6/17/2014	Land Acquisition	Land Acquisition consists of 1,255 acres located in George County, Mississippi and Mobile County, Alabama. It has 1000 acres, more or less, with planted pines, 20 years old and not thinned. The balance is hardwood timber on both sides of the Escatawpa River. No oil or gas minerals are available. Ailing sum is \$2,700 per acre subject to prior sale. Other tracts are also available in the area along the Mississippi Gulf Coast.	George, Mobile	Yes	Yes	No	No	No	No	No	No	No	No	No	\$	3,388,500.00	\$	-
Eco Restoration	2026	11/9/2011	Land Acquisition	The goal of this project is to restore approximately oyster culch areas in the marine waters of the State of Mississippi. The state of Mississippi has approximately 12,000 acres of total culch areas. About 9,000 acres of the oyster culch areas can be harvested while about 3,000 acres of culch areas are closed to harvest. This project would restore and enhance the major and minor oyster culch areas within the marine waters of Mississippi Sound of Mississippi. This project will utilize culch planting to improve the oyster culch areas. Specific activities consist of the following: [1] Deploying Culch Material: Culch would be deployed within existing oyster culch areas. Locations for potential culch deployment are known based on recent surveys. [2] Monitoring: NOAA staff would regularly monitor the newly established oyster culch areas by live collections to assess the overall health of the oyster culch. The cost for this project is \$10,000,000 to \$12,000,000.	Hancock, Harrison	Yes	No	No	No	Yes	No	No	No	No	Yes	\$	12,000,000.00	\$	-	
Eco Restoration	2030	11/9/2011	Early Restoration of Oyster Culch Area in Mississippi Sound	Creation of marsh on the western side of coast wide harbors (i.e., the lee of the longshore current).	Hancock, Harrison, Jackson	Yes	No	No	No	No	No	No	Yes	\$	5,000,000.00	\$	-			
Eco Restoration	2063	7/25/2011	Harbors	This is a fund to acquire easements or fee title to key properties for ecological restoration and management. The initial fund will purchase select conservation properties with the remainder used to establish a trust, interest-generating endowment with a protected principal. An anticipated annual interest yield could be several million dollars depending upon the initial principal invested and the overall investment risk selected by the endowment managers. No permanent action would be demonstrated to effect the ecological character of the Coastal Zone than the purchase of ecologically significant properties that are otherwise at high risk for development. In many cases these properties are water associated and tend to have high ecological sensitivity but are frequently attractive for development from an aesthetic standpoint. Many of these properties are at increased risk for development because they contain uplands which are not protected by any comprehensive regulatory structure. However, the long term cost of such development is likely unacceptable both in ecological terms, and in terms of resilience to storm damage. The vulnerability of developed versus natural lands to storm surge damage is tremendous as post-Katrina observations have so vividly illustrated.	Hancock, Harrison, Jackson	Yes	Yes	No	No	No	No	No	Yes	\$	500,000,000.00	\$	-			
Eco Restoration	2071	7/27/2011	Coastal Zone Acquisition Fund	This is a general recommendation, not tied to a specific project. Instead of habitat restoration, focus instead on purchasing lands in fee title or in easement to protect these fragile and ecologically important areas that are threatened by future development while they still exist. As you know, land development usually causes conditions that are irreversible. By protecting these areas in perpetuity, we would permanently protect these areas and the ecological services they provide for a multitude of coastal terrestrial and aquatic species. By doing so, we not only protect habitat for many species, but also prevent future damage to human structures as a result of climate change driven weather events, such as hurricanes, sea level rise, etc.). It is my personal opinion that protecting as much currently undeveloped land as is possible from future land development, especially in coastal areas that typically sustain a more rapid growth rate than other areas, is the single most important thing we should be doing with available funding. To me it is a more valuable use of dollars than habitat restoration, which is very costly and may or may not be successful.	Gulf of Mexico	Yes	Yes	No	No	No	No	No	Yes	\$	-	\$	-			
Eco Restoration	2074	7/14/2014	Coastal Land and Marsh Protection	Summary attached.	Hancock, Harrison	Yes	No	Yes	Yes	Yes	Yes	Yes	No	\$	438,035.00	\$	-			
Eco Restoration	2152	10/17/2014	Oyster Reef Structural Complexity	GOMA's Habitat Conservation and Restoration Team (HCRT) suggests a project that generates more beneficial use projects in all the Gulf States while facilitating the continuation of the community based, small-scale restoration program. The GCRP has a long history of galvanizing communities behind restoration and stewardship. GOMA HCRT efforts in RSM have significantly increased beneficial use of sediment resources, developed peer-reviewed technical resources, and laid the groundwork for managing sediment resources more productively. Leveraging these various pursuits are two long standing partners and doing so by investing in them as a joint venture will result in more sustainable restoration outcomes and continued community level engagement.	Hancock, Harrison	Yes	No	No	No	No	No	No	No	\$	5,925,000.00	\$	-			
Eco Restoration	4347	4/10/2015	Regional Sediment Management/Beneficial Use and Small Scale Habitat Restoration	Area South of Highway 90 West of Bayou Park Community that needs a Sewer Collection System installed to connect 75, 100 homes now on septic tanks dumping into ditches and into local bayous. Wastewater can be sent to a lift station already in place and then onto the Southern Regional Wastewater Treatment Plant. The HCUA Board of Directors prioritized this project at Number 4.	Hancock	Yes	Yes	Yes	No	No	No	No	\$	2,000,000.00	\$	-				
Eco Restoration	4364	5/14/2015	Hancock County Utility Authority - Springwood Sewer Collection System	Hancock County proposes to complete a project in Bayou LaLacrie to restore the natural habitat and flow of the waterway. Accelerated sedimentation, due to a lack of upland Best Management Practices, has reduced the water quality and made the waterway no longer navigable. The area would be dredged in order to align with natural channel depths upstream and downstream of the accumulated sediment. The applicants intend to utilize a beneficial use site for dredged material disposal if one becomes available. The applicants do not propose compensatory mitigation because the project is intended to restore historic flows and improve water quality.	Hancock	Yes	No	No	No	No	No	No	\$	1,500,000.00	\$	-				
Eco Restoration	5509	9/8/2016	Bayou LaLacrie	Need for Project: Significantly reduce U/I, consolidate facilities, reduce operating costs, reduce sanitary sewer overflows.	Jackson County	Yes	Yes	1000%	No	Yes	No	Yes	No	\$	15,745,027.00	\$	1,574,502.70			
				Scope of Work: Installation of 40,000 LF of new 12" and smaller 308.28 PVC gravity sewer system and abandonment of 40,000 LF of existing 50+ yr old clay pipe sewer system; installation of 20,000 LF of CPP lining in 12" and smaller 50+ yr old clay and concrete pipe sewer system; 40,000 LF of 4" sanitary sewer service line to replace existing 50+ yr old bituminous wood fibre pipes and clay pipes; 4000 LF of new 12" force main pipe to replace 50+ yr old pipe; 150 new gravity sewer manholes; interior lining of 100 existing gravity sewer manholes; 200 point repairs of existing gravity sewer system; consolidation of pump facilities with construction of a single new sewer lift station to allow abandonment of six existing small sewer lift stations.																
				Project Benefits: Significantly reducing U/I Reduce operating cost by reducing electrical costs associated with pumping, reducing wastewater treatment costs, reducing spot repair costs, reducing repairs associated with root intrusion, reduce root intrusion chemical costs, reduce maintenance cost by reducing # of pump stations, reduce sanitary sewer overflows that harm the sensitive coastal environment and damage the ecosystem, reduce raw sewage dumps to drainageways that discharge to coastal beach areas and cause health hazards for residents and scuba divers enjoying recreational activities along the coast line, reduce raw sewage dumps to the streams and discharge to Gulf waters damaging fishing and shellfish industry.																
Eco Restoration	5510	9/22/2016	Sanitary Sewer System Rehabilitation Project	The City of Ocean Springs proposes to complete a major citywide sewer rehabilitation project. The existing system was constructed in the 1950's and 1960's utilizing clay pipe. The system has experienced multiple failures which leads to malfunctions and reduced capacity. Sewer pipe has collapsed several locations within the last year and the city has conducted local repair as needed which depletes the city's limited public works budget. During heavy rain events the system overflows at several locations around the city resulting in discharges of sewage to surface ditches and drainage ways that ultimately discharge to the Back Bay of Biloxi, Fort Bayou and the Mississippi Sound along Front and East Beach. A total of 35 major pump stations and 14 minor pump stations will be upgraded. Approximately 60,000 linear feet of 8" pipe, and 20,000 linear feet of 12" pipe will be replaced. The City plans to rehabilitate approximately 30,000 linear feet of 8" pipe and 15,000 linear feet of 12" pipe with a cured in place pipe lining (CIPP). Cured in place pipe is a trenchless (or no-dig) pipeline rehabilitation process involving a flexible liner tube and liquid resin combination. The City plans to replace 417 manholes. Several pump station control panels will be replaced and numerous meter upgrades will be completed. There will be professional inspections and tests conducted to insure quality and construction according to the City of Ocean Springs standards.	Jackson County	Yes	Yes	No	No	No	No	No	No	\$	30,000,000.00	\$	-			
				The improvements to the sewer system will reduce potential damage to the natural environment including nearby drainage ways and wetlands, reduce hazards to human health and safety due to sewer overflows, sewer spills and provide improved security of the facilities. This would help to improve water quality on the Gulf Coast for recreation with reduced beach advisories, improve water quality for sea life in the bays and estuaries in the Mississippi Sound, improve habitat for species that inhabit the wetlands along the coast and improve water quality for the fish nurseries and oyster reefs. A healthy environment is also beneficial to the fishing and oyster industries preserving or creating jobs in those industries.																
Eco Restoration	5549	5/1/2017	City of Ocean Springs Sewer Improvements Project	Construct a new 70,000 LF gravity sewer collection and 60,000 LF of cured in place gravity sewer system to replace old dilapidated sewer system of clay sewer pipe, brick manholes and unreliable pressurized residential grinder system (RSO) which. New collection system will be highly reliable system of modern materials of construction with fall safe systems to prevent sanitary sewer overflows at old collection manholes and at unstable residential grinder stations subjected to clogging and failure of numerous electrical components. Sanitary sewer overflows in the Old St Martin area can inject harmful bacteria and viruses that damage the coastal environment including oyster bed reefs, fish and other marine life. These bacteria and viruses can also find their way back into humans by ingestion. Fears of virus mutation in marine life and potential for transmission back to humans.	Jackson	Yes	Yes	1000%	Yes	No	Yes	Yes	Yes	No	\$	10,000,000.00	\$	1,000,000.00		
Eco Restoration	5764	2/23/2018	Old St Martin Wastewater System Rehabilitation and Replacement Project	The Helena community is located in southeast Jackson County, Mississippi and currently consists of approximately 650 homes. The area has historically high groundwater and low permeability soils. This combination of conditions has led to a septic system failure rate estimated at 98 percent. Expansion of the existing Helena Utility District sanitary sewer collection system would serve to prevent further pollution from failed septic systems. Additionally, due to the high contamination levels in the near surface water aquifer, water distribution system expansion is necessary to provide potable water to the Helena Citizens who are currently utilizing private wells as their sole potable water source.	Jackson	Yes	Yes	1000%	No	No	No	No	No	\$	10,000,000.00	\$	-			
				The Helena Utility District was formed in 2006 and consists of approximately 290 customers connected to a low pressure sewer system and 100 customers connected to a potable water distribution system. This proposed project will include expansion of the existing Helena Utility District sanitary sewer collection and potable water distribution systems to connect to the remaining 360 homes that currently utilize individual septic systems for wastewater treatment and private groundwater wells as their sole water source. The proposed wastewater system extension will include construction of low pressure sewer piping, service piping, and grinder pumps at each residence to be served. The potable water distribution system extension will include construction of distribution piping, fire hydrants, and water service lines. When completed, the project will provide service to the remaining residents with a fully automated individual wastewater collection pumping system, potable water service, and fire protection. Benefits achieved will include an improved community environment, a reduction in contamination of surrounding surface water (Black Creek and subsequent receiving streams including the Escatawpa and Pascagoula Rivers) and groundwater, quality potable water source regulated by the Mississippi Department of Health, and an increase in public safety with the extension of fire protection.																
Eco Restoration	5987	7/16/2021	Helena Utility District Sanitary Sewer and Water System Expansion	This project would provide sanitary sewer service for the Springwood Subdivision. The project will use individual grinder systems at each residence that will discharge into a small diameter sewer collection system. A proposed sewer lift station at the corner of Oak and Kingswood will pump the sewer through a 4-inch sewer force main to the nearest lift station by Cypress Street on US Hwy. 90.	Hancock	Yes	Yes	Yes	No	Yes	No	Yes	No	\$	2,573,150.00	\$	-			
Eco Restoration	5989	6/4/2021	Springwood Sewer Collection System	This project consists of connecting to a force main that NASA has constructed and continuing to use that force main from the North gate of NASA Earhart to the entrance of HCUA's Northern Regional Wastewater Treatment Plant. It will consist of 5 lift stations and 7 miles of pipe. This will allow for NASA officials to shut down both the lagoons permanently and also eliminate the outfall line into the Pearl River.	Hancock	Yes	Yes	100%	Yes	No	Yes	No	No	\$	10,250,000.00	\$	2,000,000.00			