Building a Partnership for the Watersheds of the Upper Bay of St. Louis*

Photo, Leah Bray, Jourdan River Coastal Preserve from I-10

2007 Action Plan

*The Upper Bay of St. Louis Watershed Partnership consists of several stream basins that flow into the western and northern reaches of the Bay of St. Louis and are primarily located in Hancock County, Mississippi

Action Plan for the Upper Bay of St. Louis Partnership Area

Sponsored by the Land Trust for the Mississippi Coastal Plain

Funding assistance from EPA, Region IV

Technical Assistance from MDEQ
Pascagoula River Basin Team

Mississippi Department of Environmental Quality
Office of Pollution Control

Prepared by Eco-Logic Restoration Services, LLC

www.ecologic-restoration.com

Spring 2007

Building a Partnership for the Watersheds of the Upper Bay of St. Louis
2007 Action Plan

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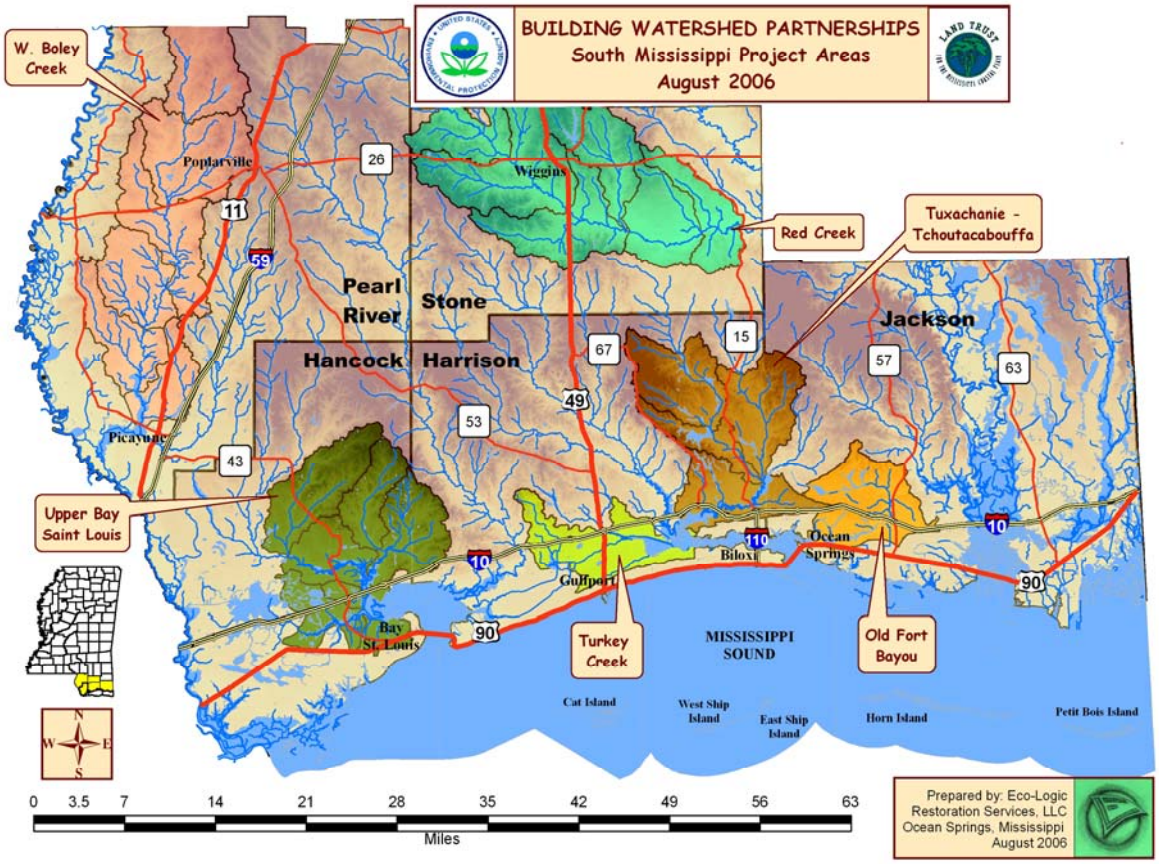
Purpose and Introduction

Before Hurricane Katrina, the Land Trust for the Mississippi Coastal Plain (Land Trust) was awarded a grant from EPA Region IV to build watershed partnerships in six watersheds in south Mississippi. Criteria for selecting watershed partnership areas included: (1) watersheds that represented south Mississippi both geographically and ecologically; (2) watersheds where the Land Trust owned and managed lands; and (3) watersheds where there was a demonstrated need for restoration and protection. The six watersheds that were chosen included Turkey Creek in Harrison County, Red Creek (stream sections flowing through Stone County), Old Fort Bayou in Jackson County, West Hobolochitto Creek in Pearl River County, Tchoutacabouffa River (stream sections flowing through Harrison County) and Upper Bay of St. Louis (identified streams in Hancock County).



The Land Trust's efforts to build a partnership for Upper Bay of St. Louis began in November of 2006 with Alison Anderson and Chris Lagarde agreeing to co-chair community watershed forums. The first roundtable discussion was held at the Kiln public library on January 18, 2007. The second roundtable discussion was held at the Hancock County EOC on March

29, 2007. We have learned much from the participants and are very appreciative of their participation.

Hancock County was ground zero for this country's greatest natural disaster, Hurricane Katrina. We feel that it is important to respect that citizens are working hard to rebuild and recover and that any individual's time to participate in long-term watershed planning is limited. The Land Trust will continue to support the development of a watershed partnership for the Upper Bay of St. Louis, seeking financial and other resources to help the community accomplish some of the actions identified to address their concerns for the waterways of Hancock County.

This document is written to provide a strategic approach to watershed planning with particular focus on private sector participation in the process. We want to provide context and a brief overview of the ecological, cultural and scenic significance of streams as they flow to the Bay of St. Louis in Hancock County. This is a record of our planning efforts and an accounting of actions identified to address watershed concerns. The hope of those involved in this planning is to foster better stewardship of the natural resources of the watershed.

Forum participants were asked, "What's so special about this place? Is there anything in the watershed in its present state that you want to protect?" They responded with a clear understanding of their natural heritage and a strong vision of the qualities that they want to restore and protect:

1. Rural heritage, including farmlands, healthy forests and open green space
2. Peace and tranquility
3. Wild sounds: frogs, birds, insects
4. Incredible beauty of our water: clean, clear water that provides opportunities for people to swim, fish and hunt
5. Oak trees with their many colors of green.
6. Seafood industry

From the impacts of storm debris and tree loss to the threats of failing septic tanks and accelerated erosion in streams, participants clearly have a passion to restore, protect and educate. Failing septic tanks, head cutting, down cutting, deforestation and contaminated runoff are sources of stress that contribute to increased sedimentation, nutrient and bacteria loading. Forum participants also identified the need for increased understanding about the impact of motorized vehicles on stream banks, stream beds and sandbars and for increased enforcement of public waterway laws. Residents discussed the need to keep regular prescribed fire as a primary tool for natural lands management; limit development and create setback requirements in the floodplain through local zoning action; reforest stream banks and protect headwater streams and tributaries. There is a great need to educate the local citizenry and to develop pride in place so that littering and dumping can be minimized, streamside management can be better understood and implemented, and appropriate public policy can be implemented as the population grows.

The goal of the Upper Bay of St. Louis Watershed Partnership is to develop and implement a solution-oriented, action plan. We have two primary objectives: (1) Research, identify and implement watershed protection and education strategies in the Upper Bay of St. Louis

Partnership Area; (2) Research, design and implement watershed restoration and education strategies in the Upper Bay of St. Louis Partnership.

Protection is defined as defending the existing natural and cultural resources of the Watershed from further degradation caused by encroachment, abuse or neglect. Restoration is defined as actively initiating or accelerating the recovery of the ecological and cultural health, integrity and sustainability of the watershed that has been degraded, damaged or destroyed.

Teams to Support the Upper Bay of St. Louis Watershed Partnership

Proposed Steering Committee

Judy Steckler, Land Trust for Mississippi Coastal Plain
Chris Lagarde
Allison Anderson
Kelvin Burge
Dr. Donald Redalje
Curt Beyer
Mike Felter
Joe Pettigrew

Proposed Technical Advisory Team

MDEQ, Coastal Basin Team Coordinator, Larry Estes
South Mississippi RC&D Council, Patty Rogers
MS Department of Wildlife Fisheries & Parks, Scenic Streams Program, Andrew Whitehurst
Mississippi Department of Marine Resources, CRMP
Mississippi Department of Marine Resources, Coastal Preserve Program
Mississippi Gulf Coast Heritage Program
MS Soil and Water Conservation, Hancock County SWCD
Natural Resource Conservation Service
Hancock County Utility Authority
EPA, Gulf of Mexico Program (Habitat restoration team)
EPA, Region 4, Watershed program

Proposed Education and Recreation Advisory Team

Land Trust for Mississippi Coastal Plain
Hancock County Planning Commission
Hancock County Greenways, Hancock County Chamber of Commerce
MSU Extension Service
South MS Environment and Agricultural Coordination Organization (SMEACO)
MS Canoe and Kayak Club
Watershed Harmony Puppet Show
Hancock County School District
Mississippi Coast Audubon and Audubon Mississippi

Photographs, Leah Bray, 2007

Marsh gradation, Jourdan River Coastal Preserves

Marsh gradation with stream, Jourdan River Coastal Preserves

Bottomland hardwood adjacent to stream, Upper Bay area

Wet pine savanna with stream, Upper Bay area

Description of the Upper Bay of St. Louis Partnership Area

The Watersheds of the Upper Bay of St. Louis flow into the western and northern reaches of the Bay of St. Louis. This watershed partnership area is part of the larger Bay of St. Louis Watershed. (See maps page 9 and 10). The Upper Bay Partnership Area can be broken down further into smaller watersheds that include Bayou Bacon, Orphan Creek, Bayou Talla, and Cutoff Bayou which drain to the Jourdan River. Bayou La Terre drains into Rotten Bayou which empties into Jourdan River before that river meets the Bay of St. Louis. In addition, Lower Bayou and Bayou LaCroix travel through the city of Bay St. Louis before meeting the Bay of St. Louis. The Upper Bay Partnership Area also includes the community of Kiln. Outside the city limits, the watershed is mostly rural with agricultural areas including livestock farms and timberlands. Also included within the watershed is public Coastal Preserves owned and managed by the MS Department of Marine Resources. These preserves are mostly coastal marsh, wet pine savanna, and maritime forests.

Prior to Hurricane Katrina, the **Hancock County Greenways** project hosted by the Hancock County Chamber of Commerce and Board of Supervisors conducted several public forums and surveyed the community. Water quality concerns were the number one issue for both citizens and local governments. Most of the concern was focused on fecal coli-form contamination in the waters caused by faulty septic and wastewater systems, especially after heavy rain events. Currently, the county is working to install new water and sewer systems; however, many rural residents are concerned that this will generate more development outside of the cities thereby increasing water quality issues, decreasing the quality of life in the rural setting and creating addition loss of wildlife habitat and green space.

The watersheds of the Upper Bay of St. Louis Partnership Area are:

Bayou Bacon Watershed covers
@42 square miles and is 8.56 miles long
*Hydrologic Unit Code (HUC): 031700090906

Jourdan River/Bayou Talla Watershed
covers @27 sq. miles and is 12.07 miles long
*Hydrologic Unit Code: 031700091001

Jourdan River/Cutoff Bayou Watershed
covers @19 sq miles and is 4.31 miles long
*Hydrologic Unit Code: 031700091004

Rotten Bayou Watershed covers
@35 square miles and is 12.84 miles long
*Hydrologic Unit Code: 03170091002

Bayou La Terre Watershed covers
@24 sq. miles and is 10.73 miles long
*Hydrologic Unit code: 03170091003

Lower Bayou/LaCroix Watershed covers
@21 sq. miles and is 7.30 miles long
*Hydrologic Unit Code: 03170091
102

*Hydrologic Unit Code, or HUC as it is called, is the watershed address.

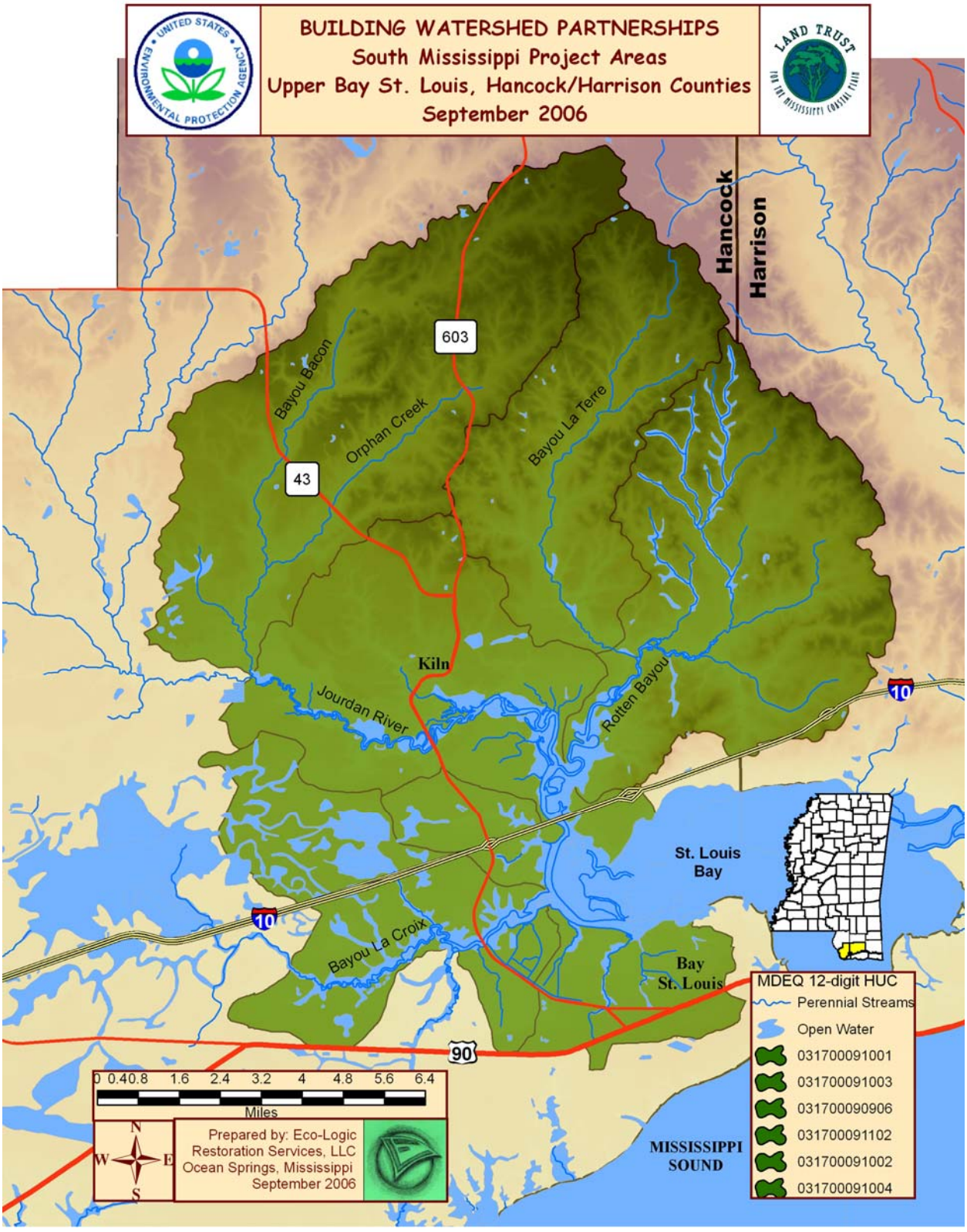


Figure 1: Upper Bay of St. Louis, Watershed Partnership Area

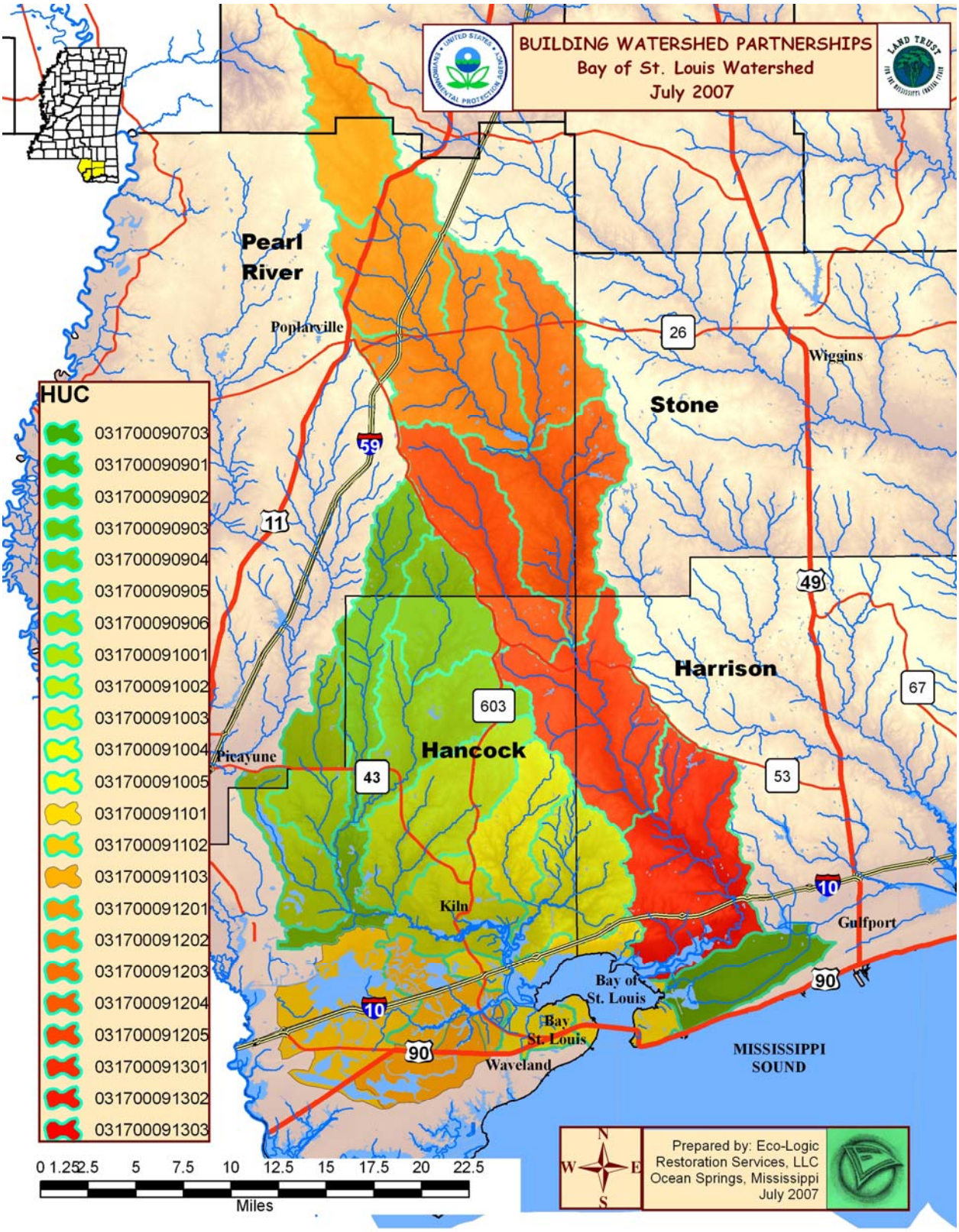


Figure 2: Bay of St. Louis Watershed

Stakeholder interests:
Results from Community Forum and Roundtable Discussion

What would you like to see for your watershed in the future?

- Protect the integrity of the waterways: lakes, streams, rivers
- Protect waterways from development
- Keep waterways swimmable, fishable, floatable. Waterways set aside for public recreational use.
- Lower bacteria and nutrient levels and reduced sedimentation (turbidity)
- More positive perception of the farmer; the farmer is not the primary source of water quality problems
- Reduce non-point sources of pollution: sustainable building practices that include permeability and swales to reduce run-off.
- Need sewerage systems in upper part of the county to replace failing septic tanks
- Concerns about water quality at DuPont need to be mitigated: more testing at Wolf River Station east side of the Bay
- Identify key areas for land and water protection
- Stop the dumping and littering: increase the sense of personal responsibility
- More funding for restoration, especially for private landowners; stream restoration and cleaner water benefits the public more than the private landowner
- Forestry industry continues to become more environmentally conscious. There is a need for even more operations to work under BMPs
- Need protected rural areas: undeveloped and unfragmented farmlands and forest lands.
- Protect tree canopy
- Great concern about loss of trees in the county.
- More landowners participating in programs to keep cattle fenced out of waterways; storm debris (timber) off the ground; more prescribed fires to reduce wildfires
- Resolve sewerage problems: eliminate sewerage outfalls into low-flow bayous
- More Protected and restored riparian buffers.
- More public access to the waterways and more options for public use: recreation is a good source of passive education.
- Keep motorized vehicles (ATVs) out of the stream-beds. Identify areas that can be free of jet skis

How would you describe the current state of your watershed?
Fair

What's so special about this place? Is there anything in the watershed in its present state that you want to protect?

- Rural heritage, including farmlands, healthy forests and open green space
- Peace and tranquility
- Wild sounds, frogs
- Incredible beauty of the water
- Clean, clear water - Swimming, Fishing, Hunting

- Independent spirit of the people in Hancock County
- Oak trees with their many colors of green.
- Seafood industry

<u>What are the challenges/concerns that we face in order to see the watershed become what we envision for the future?</u>

- Storm debris, forced timbering. Problems with timber on the ground which can cause wildfires and also challenges for conducting prescribed fire.
- Residential growth in northern part of the county
- Concern for water/sewerage pipe in areas that don't need that infrastructure; infrastructure can encourage growth in areas not suited for growth, i.e. wetlands
- Littering and dumping are big problems
- The independent spirit, a positive quality, can also be negative quality because it drives people to resist regulations needed to protect our environment as the population grows
- Need more watershed education: when people build houses they need to think about where the water is going to go (impervious surfaces create run-off); stop polluting practices such as washing paintbrushes in the creek/ditch or dumping used automotive oil in the ditch or drain
- Too often plans are left unimplemented: need a strong plan and leadership for action
- Need more personal responsibility in keeping a desirable environment
- Need to take actions to reduce elevated bacterial and nutrient levels
- Need to reduce sedimentation: elevated bacterial and nutrient levels are associated with increased sediment after storms
- Concern that there is a negative perception of the farmer – that the farmer is blamed as the primary source of the water quality problems
- Big concern about non-point sources – we need to be a leader in sustainable building practices, providing permeability & swales to reduce run-off
- Need sewerage in upper part of the county – remove/replace failing septic tanks
- Concerned about water quality at DuPont, wolf River station east side of the Bay
- Need to identify key areas for protection
- One critical issue: dumping and litter – there is no sense of personal responsibility. This can't be mandated. Trash along roads is an indicator of people who don't care.
- Most federal programs require a significant match and local landowners need to choose where they spend their cost-share $$. If restoration and clean-up benefits the public at large, then the individual landowners should not be solely tasked with the local match. Is there precedence in other watersheds – are there examples from other watersheds for successful match programs?
- Allocate funding to solve identified problems. Money talks.
- Forestry industry is much more conscious about BMP now than 25 years ago.
- In the Upper Bay project area, there are some developed areas, still many rural areas – but land is getting more and more fragmented. Historically the objectives for the rural land were farming and timber – now different objectives (residential) are changing the balance. Need new strategies for reducing impacts of fragmentation.
- Land values are problematic. Economically, we are land rich and cash poor. This creates environmental problems. For example, lands in the buffer zone are now $4-5K per acre without development rights so the land is often used as a source of fill dirt.

- Great concern about loss of trees in the county.
- Many water quality problems in the Bay are associated with sewerage. Toley Bayou is clear. Watts Bayou is very turbid and stagnant – is the water there polluted? There is a problem with failing septic tanks and sewerage run-off from housing developments. There is concern about where the sewer outfalls are going – they are flushing into low-flow bayous – sewerage without enough flushing
- Need to educate people about the negative impacts there actions have on the watershed.
- There is a lot of stream bank erosion. Sometimes nature heals itself, but it always starts back again. Erosion is not necessarily a localized problem. Need to understand accelerated erosion in the watershed: what are the causes and what are the best approaches for restoration. Private landowners don't have the money to cost share for this kind of restoration. If we are going to have clean water that is swimmable and fishable, then we must restore stream banks.
- Some of the restoration needs to be done at 100% public funding. Most federal programs require a significant match. Local landowners need to choose where they spend their cost-share $$. General concern that if restoration and clean-up benefits the public at large, then the individual landowners should not be solely tasked with the local match.

Hancock County was ground zero for Hurricane Katrina. It will be decades before rebuilding and recovery is complete in the Upper Bay of St. Louis Watershed Partnership Area. The devastation of Hurricane Katrina creates a critical call for wetland protection and a watershed approach to land use planning. Yet, citizens and local governments can not accomplish this daunting task alone; we need technical and financial assistance at every level.

Hosting watershed forums in Hancock County during 2006 was impossible and remained difficult in 2007. The Land Trust for Mississippi Coastal Plain is dedicated to working through their board of directors, members, staff and friends to ensure that private citizens have a voice in watershed issues for the Bay of St. Louis.

Storm debris on property owned and managed by the Land Trust for Mississippi Coastal Plain.
Photo by Jim Kelly

Clearing storm debris on Land Trust property near the Bay of St. Louis.

Photos by Jim Kelly

UPPER BAY OF ST. LOUIS
WATERSHED PARTNERSHIP
ACTION PLAN

After reviewing literature about the Upper Bay of St. Louis and developing maps for use in community discussions, the Land Trust for the Mississippi Coastal Plain (LTMCP) hosted two roundtable discussions with private landowners. These meetings were our first formal discussions with landowners and the foundation of building a long-term partnership to address the health of the Upper Bay of St. Louis.

The mission of the LTMCP is to conserve, promote and protect the open spaces and green places that have ecological, cultural or scenic significance in the counties of the Mississippi Coastal Plain. Riparian corridors, or streamside management zones, have great ecological, cultural and scenic significance and are a primary focus of the LTMCP. Healthy riparian corridors are also essential elements for maintaining clean water. LTMCP owns and manages four properties in Hancock County: Sweetbay Hollow Preserve, Tate, Blount and Whitney. Sweetbay Hollow Preserve and Tate are located just south of the Upper Bay watershed in the independent coastal streams. Both Blount and Whitney properties are within the watershed boundary. Watershed education will become a part of the public use and management plans for all four protected properties.

The mission of EPA is to protect human health and to safeguard the natural environment - air, water and land - upon which life depends. The foundation for building a watershed partnership for Upper Bay is funded through a grant from EPA Region IV to the LTMCP.

LTMCP is committed to achieving its mission in the Upper Bay of St. Louis and is grateful for the EPA watershed grant that funded the exploration and initiation of this watershed partnership. LTMCP is committed to working with stakeholders –private landowners, local government and natural resource agencies, to implement identified education, protection and restoration strategies for the Upper Bay of St. Louis.

First, we recommend an assessment at the watershed scale to determine the full extent of geomorphic changes causing accelerated erosion and impairing water quality. Such an assessment will identify priority areas for restoration, protection and land use planning at the watershed scale, particularly in the flood plain. Further study and partnership efforts may ultimately result in the development of a watershed implementation plan that will include prioritized action, timelines, budget estimates and measures of success. We recommend continued strategic planning efforts to improve the scope of the Upper Bay of St. Louis Watershed Action Plan.

EDUCATION STRATEGIES

1. Create a webpage for the Upper Bay of St. Louis that can provide answers to questions asked by local stakeholders:
    a. General information and map of the watershed
    b. Watershed Action Plan
    c. Information about natural services of wetlands
    d. Information about economic value of blueways and greenways
    e. Streamside Management and Best Management Practices (BMPs)
    f. Links to county and city zoning maps
    g. Links to primary collaborators and partners in the watershed and pertinent watershed information

2. Design and implement environmental education programs for elementary school-age children, programs that are specific to the Upper Bay of St. Louis
    a. Print and distribute watershed education coloring books for children: focus on litter reduction, recycling – Keeping the environment clean, Grades K-3
    b. Design *Find the animal in the swamp* activity page for Grades 3-5
    c. Host Watershed Harmony Puppet Show during 2007-2008 school year, use above educational materials in conjunction with performance

3. Educate the public about watersheds and streamside management. Specifically, develop and install watershed signage along roadsides and streamsides of willing private landowner. Signage will be designed to:
    a. educate and build pride in place along the bayou and
    b. encourage watershed protection.

4. Host a neighborhood meeting, or series of meetings, about streamside management and best management practices. Include city and county public works employees in these discussions. Print and distribute *Upper Bay of St. Louis Streamside Management for Landowner's Handbook*.

5. Prioritize other watershed education projects proposed for the watershed
    a. Provide education venues to tie the water quality to economic development, property values and quality of life
    b. Develop a speakers bureau to educate general public about watershed issues
    c. Find meaningful ways to engage civic groups: Farm Bureau, Cattleman's Association, Hancock County Forestry Association, Rotary, Kiwanis, Master Gardeners, Leadership Program, Hancock County Chamber of Commerce, West Coast (Hancock County Tourism)
    d. Work with MDOT and other partners to implement a watershed signage along major federal, state and county roads
    e. Design education campaign about septic tank maintenance for landowners

6. Identify educational tools for county decision-makers and public officials about watershed concerns and solutions: land use changes, storm water management,

accelerated erosion, wetland loss. Plan and host an informational executive breakfast to begin the discussion about watershed management; this would be a good opportunity for the Land Trust to partner with the new Hancock County Utility Authority to engage the public in conversations about a watershed approach to storm water and land use planning.

7. Discuss with MSU Coastal Extension Service the possibilities of designing and hosting a landowner education program for homeowners that addresses the primary information needs for homeowners and small land owners along the bayou, especially bank stabilization, native plants and reforestation.

PROTECTION AND RESTORATION STRATEGIES

1. Identify streamside areas that need re-planting. Establish a re-planting program to include native trees and vegetation in streamside management areas and other priority areas of the watershed.

2. Install best management practices for (1) streamside management areas (2) construction areas.

3. Work with County and City planning commissions to establish "set-backs" along the banks of the bayous through zoning.

4. Promote construction of conservation design developments – denser, tighter development that creates larger buffers and open green spaces. Focus on use of permeable products and swales to reduce run-off.

5. Support prescribed fire education and use of prescribed fire in the watershed. Work with MS Department of Marine Resources, MS Forestry Commission and Volunteer fire departments to preserve right to burn and promote adequate resource allocation for prescribed fire on public and private lands

6. Create protected riparian buffers through voluntary conservation easements and/or fee simple donations or acquisition.

7. Work with state and federal partners, particularly EPA and MDEQ, to identify grant programs and primary partners to complete a watershed assessment and watershed implementation plan that will identify and prioritize (1) public and private stream and ecosystem restoration needs in the watershed, (2) conservation and protection strategies in the watershed.

8. Identify funding programs to assist in private lands/stream bank restoration projects. This will provide a great benefit to the public good, not just the private landowners.

9. Work with Coastal Clean-up Program to include more waterway clean-ups. Work with city and county governments to enforce litter and dumping laws. Work with citizens to create and implement no littering campaigns.

10. Identify landowners interested in adopt-a-stream programs along their local waterways and host an adopt-a-stream training and support.

11. Establish a dialogue with Hancock County Utility Authority, particularly focused on encouraging the utilization of green infrastructure for storm-water management (vegetated riparian buffers protected by conservation easements or fee simple acquisition/donation)

12. Consider options for private action to address failing septic systems in the watershed. Work with DEQ and Health Department to develop and implement educational campaigns regarding landowner responsibilities to maintain septic systems in working order.

Photo taken after Hurricane Katrina along the roadway near the Tate protected area in Hancock County. The photo demonstrates the need for improved storm water and waste water systems, especially in anticipation of future storm events. Photo by Jim Kelly

ORGANIZATIONAL STRATEGIES
TO ENSURE IMPLEMENTATION AND SUPPORT OF ACTION PLAN

1. Identify a local champion(s) for the watershed

2. Ask the Land Trust for Mississippi Coastal Plain Board of Directors to establish an Upper Bay of St. Louis Watershed Partnership Committee (steering committee) that will function as a special action committee under the Land Trust's auspices until which time the partnership desires to create an independent organization. The primary purpose of the committee will be to implement the action plan. This committee will be tasked with:
    a. Categorizing and prioritizing the Action Plan;
    b. Creating a timeline for the Action Plan;
    c. Developing an estimated budget and volunteer staffing program to implement the timeline;
    d. Conducting an annual review of the watershed Action Plan.

3. Formalize the technical advisory committee and send each person a copy of the action plan so that they are better prepared to participate and provide information and assistance as needed.

4. Formalize the education, recreation resources team and send each person a copy of the action plan so that they are better prepared to participate and provide information and assistance as needed.

EVALUATION OF PROGRESS AND PLAN REVISION

Regular evaluation of the watershed action plan will ensure that the plan remains a vital tool for developing a strong watershed partnership and to guide future management efforts in the watershed. LTMCP advisory team shall appoint a small working group to review the action plan annually. **Watershed plans are living documents that must be adapted to changing conditions within the watershed.** The annual review shall include consideration of tasks completed as well as reviewing changes in the watershed, in stakeholder interests and in understanding of the Upper Bay of St. Louis.

RESOURCES

Watershed Description:
MARIS on-line mapping for Mississippi at www.maris.state.ms.us/HTM/maps.htm

Wildlife Resources:
Mississippi Natural Heritage Inventory on-line at www.mdwfp.com/museum/html/research/general_info.asp, NatureServe Explorer database of species information on-line at www.natureserve.org/explorer/

Water Quality Standards:
Through MDEQ Basin Management water quality standards website at www.deq.state.ms.us/MDEQ.nsf/page/WMB_Water_Quality_Standards?OpenDocument

Designated Beneficial Uses: through the MDEQ Basin Management website at www.deq.state.ms.us/MDEQ.nsf/page/WMB_Basin_Management_Approach?OpenDocument

Biological Ratings: Contact MDEQ.

303(d) List and 305(b) report: MDEQ on-line at www.deq.state.ms.us/MDEQ.nsf/page/TWB_Total_Maximum_Daily_Load_Section?OpenDocument

Approved TMDLS: MDEQ TMDL website at www.deq.state.ms.us/MDEQ.nsf/page/TWB_Total_Maximum_Daily_Load_Section?OpenDocument

or through Basin Management website at
www.deq.state.ms.us/MDEQ.nsf/page/WMB_Basin_Management_Approach?OpenDocument

Potential management actions:
Mississippi NRCS program website at www.ms.nrcs.usda.gov/programs/, particularly the EQIP program conservation practice, sign up, and ranking documents

Mississippi Streamside Landowner's Handbook. By Andrew Whitehurst, Scenic Streams Stewardship Program, Mississippi Museum of Natural Science, Mississippi Dept of Wildlife, Fisheries and Parks

Handbook for Developing Watershed Plans to Restore and Protect Our Waters, U.S. Environmental Protection Agency, Office of Water, Nonpoint Source Control Branch, Oct. 2005

Economic values (Natural Capital):
From Open Spaces to Wild Places, The Economic Value of Habitat protection to Your Community, a publication of the Southeast Watershed Forum.
www.southeastwaterforum.org

Appendix

MISSISSIPPI NATURAL HERITAGE DATA

PLANTS AND ANIMALS FOUND IN HANCOCK COUNTY, MISSISSIPPI

Source: Mississippi Natural Heritage Program, located in the Mississippi Museum of Natural Science, Mississippi Department of Wildlife Fisheries and Parks: www.mdwfp.com/museum/html/research/

The Mississippi Natural Heritage Program identifies the state's most significant natural areas through a comprehensive inventory of rare plant and animal species, exemplary natural communities, special geological features, and significant natural areas. From the inventory, the Natural Heritage Database compiles information on the distribution, biology, status, and preservation needs of these species and communities. The database is updated continuously and is used to set state, national and global priorities for the preservation of natural diversity.

The Natural Heritage Database

The Natural Heritage Database is a continuously updated inventory of rare plant and animal species and representative natural communities in Mississippi. Today current information on the statewide status and locations of special animals, plants, and natural communities is available in a central location. By utilizing the Heritage Program, resource planners are able to save time and money. The information contained within the Program's database was compiled from a broad range of sources, including museum and herbarium collection records, publications, unpublished reports, and experts throughout the southeast.

Specific Information Available:

- Tracks the status of more than 700 species of plants and animals that are rare or imperiled at the state or global level.
- Contains more than 9,400 records of locations for rare plants, animals, and natural communities.
- State and Federal protection status of select species.
- State and global ranking of species and communities.
- Protection and management priorities and urgency.

Plants – Hancock County

Scientific Name	Common Name	Global Rank	State Rank
AGALINIS APHYLLA	COASTAL PLAIN FALSE-FOXGLOVE	G3G4	S2S3
AGALINIS FILICAULIS	THIN STEMMED FALSE-FOXGLOVE	G3G4	S2?
AMSONIA LUDOVICIANA	CREOLE PHLOX	G3	SH
BURMANNIA BIFLORA	NORTHERN BURMANNIA	G4G5	S3S4
CALOPOGON BARBATUS	BEARDED GRASS-PINK	G4?	S2S3

CALOPOGON MULTIFLORUS	MANY-FLOWER GRASS-PINK	G2G3	S1
CAREX EXILIS	COAST SEDGE	G5	S2
CHAMAECYPARIS THYOIDES	ATLANTIC WHITE CEDAR	G4	S2
CLEISTES DIVARICATA	SPREADING POGONIA	G4	S3
COREOPSIS NUDATA	GEORGIA TICKSEED	G3?	S1S2
ELEOCHARIS ELONGATA	SLIM SPIKE-RUSH	G5?	S1
EPIDENDRUM CONOPSEUM	GREEN-FLY ORCHID	G4	S2
ERIOCAULON TEXENSE	TEXAS PIPEWORT	G4	S2S3
ERYNGIUM AQUATICUM	MARSH ERYNGO	G4	S1
EULOPHIA ECRISTATA	SMOOTH-LIPPED EULOPHIA	G2	S1S2
GORDONIA LASIANTHUS	LOBLOLLY BAY	G5	S3S4
HIBISCUS COCCINEUS	BRILLANT HIBISCUS	G4?	S2
ILEX AMELANCHIER	JUNEBERRY HOLLY	G4	S3
ILEX MYRTIFOLIA	MYRTLE HOLLY	G5?	S3S4
JUNIPERUS SILICICOLA	SOUTHERN RED CEDAR	G5T4T5	S2
LACHNOCAULON DIGYNUM	PINELAND BOGBUTTON	G3	S2
LILAEOPSIS CAROLINENSIS	CAROLINA LILAEOPSIS	G3G5	S2S3
MACRANTHERA FLAMMEA	FLAME FLOWER	G3	S3?
MELANTHIUM VIRGINICUM	VIRGINIA BUNCHFLOWER	G5	S2S3
PANICUM NUDICAULE	NAKED-STEMMED PANIC GRASS	G3Q	S2
PHASEOLUS SINUATUS	SANDHILL BEAN	G3?	S1S2
PHYSALIS ANGUSTIFOLIA	COAST GROUND-CHERRY	G3G4	S3S4
PINGUICULA PLANIFOLIA	CHAPMAN'S BUTTERWORT	G3?	S2
PINGUICULA PRIMULIFLORA	SOUTHERN BUTTERWORT	G3G4	S3
PLATANTHERA INTEGRA	YELLOW FRINGELESS ORCHID	G3G4	S3S4
POLYGALA HOOKERI	HOOKER'S MILKWORT	G3	S1S2
RHYNCHOSPORA CURTISSII	CURTISS'S BEAKRUSH	G4	S1
RHYNCHOSPORA MACRA	LARGE BEAKRUSH	G3	S3
RHYNCHOSPORA STENOPHYLLA	CHAPMAN BEAKRUSH	G4	S1?
RUELLIA NOCTIFLORA	NIGHT-FLOWERING RUELLIA	G2	S2
RUELLIA PEDUNCULATA SSP PINETORUM	PINE BARREN RUELLIA	G5T3?	S3
SAGERETIA MINUTIFLORA	TINY-LEAVED BUCKTHORN	G4	S2
SPIRANTHES LONGILABRIS	GIANT SPIRAL LADIES'-TRESSES	G3	S2S3
SYNGONANTHUS FLAVIDULUS	YELLOW PIPEWORT	G5	S2?

UTRICULARIA PURPUREA	PURPLE BLADDERWORT	G5	S2S3
XYRIS DRUMMONDII	DRUMMOND'S YELLOW-EYED GRASS	G3	S2
XYRIS SCABRIFOLIA	HARPER'S YELLOW-EYED GRASS	G3	S1S2

Animals – Hancock County

Scientific Name	Common Name	Global Rank	State Rank
ALOSA ALABAMAE	ALABAMA SHAD	G3	S1
CRYSTALLARIA ASPRELLA	CRYSTAL DARTER	G3	S1
ELANOIDES FORFICATUS	SWALLOW-TAILED KITE	G5	S2B
EUDOCIMUS ALBUS	WHITE IBIS	G5	S3B,SZN
FARANCIA ERYTROGRAMMA	RAINBOW SNAKE	G5	S2
GOPHERUS POLYPHEMUS	GOPHER TORTOISE	G3	S2
GRAPTEMYS OCULIFERA	RINGED MAP TURTLE	G2	S2
HALIAEETUS LEUCOCEPHALUS	BALD EAGLE	G4	S1B,S2N
HETERODON SIMUS	SOUTHERN HOGNOSE SNAKE	G2	SH
LAMPROPELTIS CALLIGASTER RHOMBOMACULAT	MOLE KINGSNAKE	G5T5	S3?
MICRURUS FULVIUS	EASTERN CORAL SNAKE	G5	S3S4
NOTROPIS CHALYBAEUS	IRONCOLOR SHINER	G4	S2
NOTURUS MUNITUS	FRECKLEBELLY MADTOM	G3	S2
PERCINA LENTICULA	FRECKLED DARTER	G2	S2
PITUOPHIS MELANOLEUCUS LODINGI	BLACK PINE SNAKE	G4T3	S2
PLEUROBEMA BEADLEIANUM	MISSISSIPPI PIGTOE	G2G3	S3?
POLYODON SPATHULA	PADDLEFISH	G4	S3
PROCAMBARUS BIVITTATUS	RIBBON CRAYFISH	G4	S3
PTERONOTROPIS WELAKA	BLUENOSE SHINER	G3G4	S3
RHADINAEA FLAVILATA	PINE WOODS SNAKE	G4	S3?
UNIOMERUS DECLIVIS	TAPERED PONDHORN	G5	S2