



*The mission of the Mississippi Department of Environmental Quality is to safeguard the health, safety, and welfare of present and future generations of Mississippians by conserving and improving our environment and fostering wise economic growth through focused research and responsible regulation.*

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## **Mississippi Department of Environmental Quality Environmental News**

VOL. 14 ISSUE 10

NOVEMBER 2017

### **MDEQ Announces Restoration Projects**

The Mississippi Department of Environmental Quality (MDEQ) announced a list of 19 new restoration projects during the Mississippi Restoration Summit in Biloxi on November 14. When implemented, these projects will add more than \$83 million to the total already being spent on restoration projects in the wake of the 2010 *Deepwater Horizon* oil spill.

"These projects will continue our efforts to ensure funds are spent in the most effective and strategic ways to restore and enhance our natural resources and our economy following the oil spill," Gov. Bryant said. "This latest round is another component of our efforts to improve our natural resources for wildlife, for marine life, for sportsmen, for recreation and for beach visitors."

"We believe the Mississippi Restoration Summit is an excellent way to interact with the public and explain where we've been, where we are, and where we are headed with all aspects of restoration funding including these new projects. It has been our goal since the spill happened in 2010 to effectively utilize the funding available to identify projects that will enhance our valuable natural resources and bolster the economy," said Gary Rickard, MDEQ Executive Director.



Open house for the Mississippi Restoration Summit at the Mississippi Coast Coliseum and Convention Center

The projects announced for 2017 are from two funding streams—the RESTORE Act and the National Fish and Wildlife Foundation.

### **RESTORE Act Projects:**

***Mississippi Gulf Coast Water Quality Improvement Program (Additional \$4 million in 2017; Total Program \$60 million)*** –

This program will identify and repair infrastructure in areas along the coast that are having issues with water quality. One of the goals of the project is to reduce the number of beach advisories.

***Remote Oyster Setting Facility (\$9.36 million)*** – This project will fund the establishment of an oyster setting facility to support the placement of oyster larvae on cultch material to transport to oyster reefs and increase oyster production. This project will complement the proposed USM Oyster Hatchery.

***Pascagoula Oyster Reef Relay and Enhancement (Additional \$600,000; Total Project \$4.1 million)*** – The enhancement will invest money in moving oysters from unharvestable reefs to harvestable reefs, using the best available science to select locations and to maximize oyster production.

***Trent Lott International Airport Runway Improvements (\$6.85 million)*** – This project will enhance economic development and support existing industry in Jackson County. The funds will pay for runway improvements.

***Coastal Headwaters Land Conservation (\$8 million)*** – This project will support the coastal headwaters land conservation program by purchasing and/or preserving lands adjacent to, and/or targeted around existing conservation areas.

***Pearl River Community College Workforce Center (\$2.5 million)*** – This project will enhance workforce training in Hancock County by supporting the establishment of a workforce training center focused on existing and future industry workforce training needs.

**Harrison County Bulkhead and Dock Construction (\$3.4 million)** – This project will fund the construction of additional bulkhead and dock capacity along the Industrial Seaway in the Bayou Bernard Industrial District to enhance maritime-related industry growth opportunities and support existing industry.

**Round Island Living Shoreline Demonstration and Protection Project (\$2.2 million)** – This project will support planning, engineering and design and permitting of living shoreline structures at the Round Island Beneficial Use site to protect the newly-created sand berm and marsh as well as provide support for the expansion of the current site.

**Gulf of Mexico Citizen Led Initiative (\$1.9 million)** – This project will provide funding to the University of Mississippi and the Mississippi Department of Marine Resources to establish a citizen-led program and develop a mobile phone app to gather coastal ecosystem health assessment data.

**Bayou Casotte Industrial Buffer Concept – Planning Assistance (\$500,000)** – This project will provide funding to support the assessment of a concept to develop a buffer between the industrial and residential area along Bayou Casotte Parkway in Pascagoula.

**Gulf Coast Small Business Incubator Capacity Enhancement (\$700,000)** – This project will provide funding to expand small business incubator capacity on the Mississippi Gulf Coast to encourage regional small business development and growth.

**Gulf Coast Tourist Wayfinding and Informational Signage (\$1 million)** – This project will support the promotion of tourism by implementing tourist wayfinding and information signage across the Mississippi Gulf Coast to attract visitors and enhance their experience.

**University of Southern Mississippi Marine Research Center (\$2 million)** – This project will support the development of the new USM Marine Research Center by funding the necessary technology and equipment to support marine research and education activities.

**Compatibility, Coordination, and Restoration Planning (Two projects totaling \$1 million)** – This project will provide funds to support restoration planning.

**National Fish and Wildlife Foundation Projects:*****Pascagoula River Corridor Acquisitions (\$11.85 million)*** –

This project will support the acquisition of more than 3,400 acres of floodplain habitat and riparian buffer along the Pascagoula River corridor to benefit various wading birds, waterfowl, fish, and downstream water quality.

***Reef Fish Assessment for Mississippi Coastal and Nearshore Waters – Phase II (\$2.35 million)*** –

This project will fund continuing assessments of reef fish in coastal Mississippi and nearshore Gulf waters. Collection of biological, environmental, and fishery-dependent data will help to reduce the scientific uncertainty around several key factors influencing red snapper and other reef fish population structures and stock assessments.

***Utilization of Dredge Material for Marsh Restoration in Coastal Mississippi – Phase II (\$23.6 million)*** –

This Phase II of the Mississippi beneficial use (BU) of dredge material project will focus on continued utilization of material from various maintenance dredging activities to restore and create additional marsh habitat.

***Mississippi Comprehensive Restoration Planning – Phase II (\$1.5 million)*** –

This Phase II planning project will expand Mississippi's Gulf Coast Restoration Plan to include establishing additional conservation goals for living coastal and marine resources including birds and water quality.



One of the summit's Stakeholder Conversations



## MIP and MSEP Available for Public Input

Among the projects announced during the Mississippi Restoration Summit by MDEQ Executive Director Gary Rikard were two proposed plans released for public review and comment.

- Mississippi's amended Multiyear Implementation Plan (MIP). The MIP is a list of projects and programs proposed for funding under Bucket 1 of the RESTORE Act. Mississippi's amended MIP includes one amended and seven proposed projects totaling more than \$17 million.
- Mississippi's 2017 State Expenditure Plan (MSEP) Amendment. The MSEP is a list of projects and programs proposed for funding under Bucket 3 of the RESTORE Act. Mississippi's 2017 MSEP Amendment includes three amended and four proposed projects totaling more than \$26 million.

MIP Amendment #2 and the 2017 MSEP Amendment are available for public review and input through January 15, 2018, at [www.restore.ms](http://www.restore.ms).

## MDEQ Raises \$8,850 for Cancer Research



MDEQ raised \$8,850 in October and November for breast cancer and prostate cancer research in honor of former employees Dewayne Hedrick and Jimmy Carter. Executive Director Gary Rikard and the agency's Charity Fundraising Committee presented two checks to the American Cancer Society on November 9.

## Ozone Results Again Show the Quality of Mississippi's Air

The 2017 Ozone Season ended on October 31 without any counties in Mississippi exceeding the current ozone standard set by the Environmental Protection Agency (EPA). Ozone levels have continued a downward trend in the last 10 years dropping well below EPA's current standard of 70 parts per billion (ppb).

"This year's results continue to tell the story that Mississippi has great air quality, and that trend is only continuing. We had some of the lowest numbers since the Mississippi air monitoring program began. There has been a concerted effort for several years among local officials, industry, citizens, and MDEQ to inform the public about ozone and to take steps to prevent ozone action days, and it's important that we continue these efforts. It is gratifying to see the results and to avoid the punitive measures that can be implemented when EPA's standards are exceeded," said Gary Rikard, MDEQ Executive Director.

\*For 2017 the ozone sampling results are:

Bolivar County: 62 ppb

DeSoto County: 62 ppb

Hancock County: 60 ppb

Harrison County: 64 ppb

Hinds County: 61 ppb

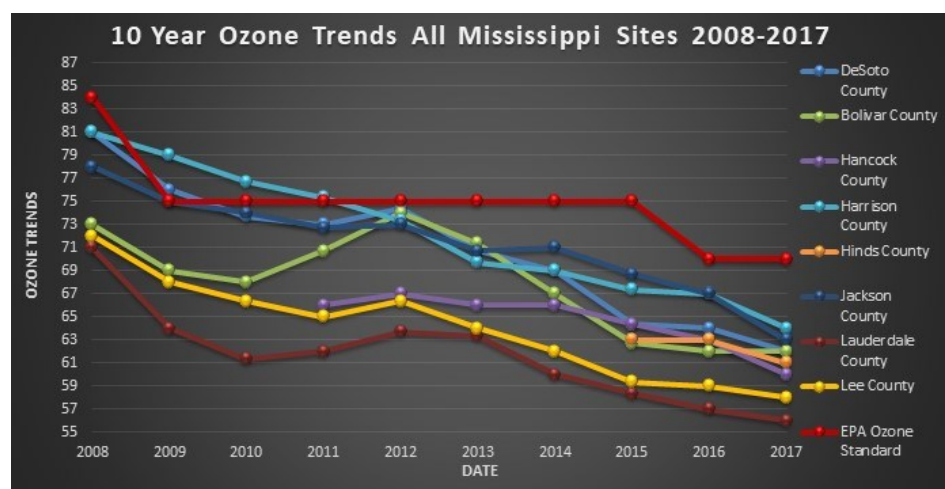
Jackson County: 63 ppb

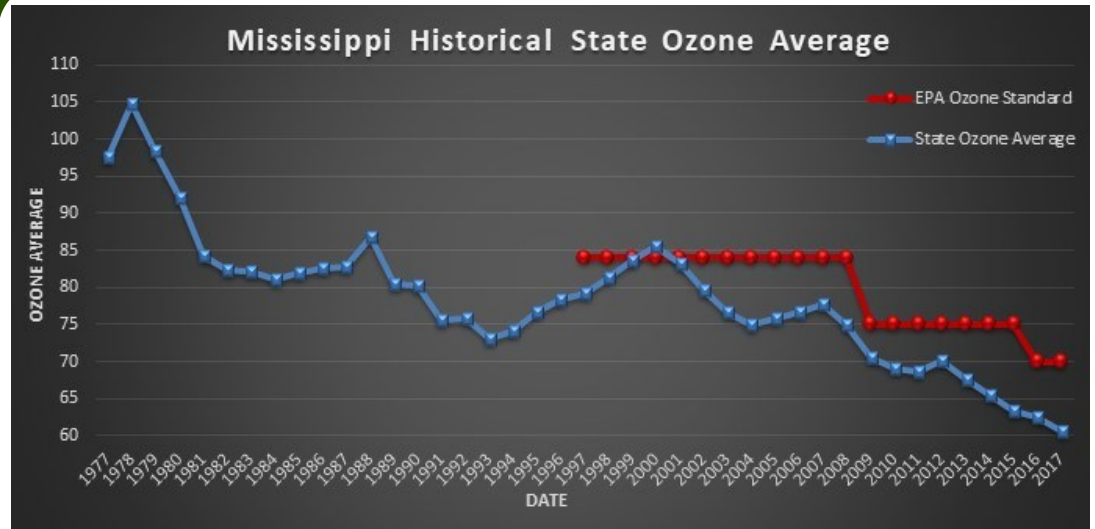
Lauderdale County: 56 ppb

Lee County: 58 ppb

\*preliminary results for 2017.

The following two graphs chart ozone results since 2008 and since 1977.





MDEQ issues ozone and particle pollution (PM<sub>2.5</sub>) forecasts for the Mississippi Gulf Coast, the Jackson Metropolitan area, and DeSoto County daily April 1 through October 31. This information is available to the public as well as being provided to weather media for inclusion in daily weather reports. For more information and to sign up for the daily forecasts, use the following link: <http://bit.ly/2g0qDCN>.

Ground level ozone is not emitted directly into the air, but it is created by chemical reactions between oxides of nitrogen (NO<sub>x</sub>) and volatile organic compounds (VOCs). This happens when pollutants emitted by cars, power plants, industrial boilers, refineries, chemical plants and other sources chemically react in the presence of sunlight. Ozone at ground level is the main ingredient in "smog." Under the Clean Air Act, EPA establishes primary air quality standards to protect public health and secondary standards to protect public welfare that includes protecting ecosystems, plants and animals.



Air Quality Index (AQI) Values	Levels of Health Concern
0 to 50	Good
51-100	Moderate
101-150	Unhealthy for Sensitive Groups
151-200	Unhealthy
201-300	Very Unhealthy
301 to 500	Hazardous



## MRC Accepting Applications for School Recycling Grant Program

The Mississippi Recycling Coalition (MRC) is offering up to \$10,000 in grants to schools to support new or expanding recycling programs. Both \$500 and \$1,000 grants are available to public and private K-12 schools in Mississippi. The deadline for submitting applications is December 18.

Mailed applications should be postmarked by that date; faxed and emailed applications should be submitted by 11:59 p.m.

### **Download the application form**

MRC accepts applications via:

- **Mail:** Attn: School Recycling Grants, Michelle Robinson, 55 County Road 3067, Oxford, MS, 38655.
- **Fax:** Attn: School Recycling Grants, Michelle Robinson, 662-232-2338.
- **Email:** Subject Line: School Recycling Grants, Michelle Robinson, [mrobinson@oxfordms.net](mailto:mrobinson@oxfordms.net).

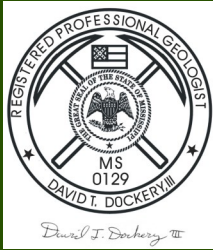
For any questions, contact Michelle Robinson at 662-232-2745 or at [mrobinson@oxfordms.net](mailto:mrobinson@oxfordms.net).

This grant program supports the mission of MRC, a non-profit organization that works to promote and grow recycling efforts in the state.

One of last year's awardees—  
Batesville Junior High School.







## Mississippi's River Basin Geology

David T. Dockery III, RPG, and Barbara Yassin, Office of Geology

The bedrock geology of Mississippi is a controlling factor in the distribution of soil types, physiographic provinces, ecoregions, and river basins in the state. This in turn had a significant impact on the development of agriculture, population settlement, the location of industry, and many other factors in the state's history.

Figure 1 is a graphic depiction of cuestas in the Gulf Coastal Plain from Nevin Fenneman's (1938) *Physiography of Eastern United States*. Cuesta is a Spanish word for "flank or slope of a hill." In geology it specifically refers to outcrop belts that form a gentle slope down structural dip (in Mississippi to the west and south) and a steep opposing slope where strata are eroded in their up-dip limits. In Mississippi, the steep slopes of the Wilcox Cuesta face the Tombigbee River Basin. The cross section of Figure 1 is representative of the geology along the Mississippi-Alabama state line from Tennessee to the Gulf Coast. The two highest hills in Mississippi are Woodall Mountain (806 feet above mean sea level) on the Fall Line Hills Cuesta in the Tennessee River Basin and Mt. Lebanon (790 feet) on the Ripley Cuesta (Pontotoc Ridge) in the North Independent Streams Basin. Prairie low lands such as the Black Belt, Flatwoods, and Jackson Prairie develop on chalk and/or clay strata with low permeability and soils that do not support steep slopes and are more prone to erosion due to increased runoff.

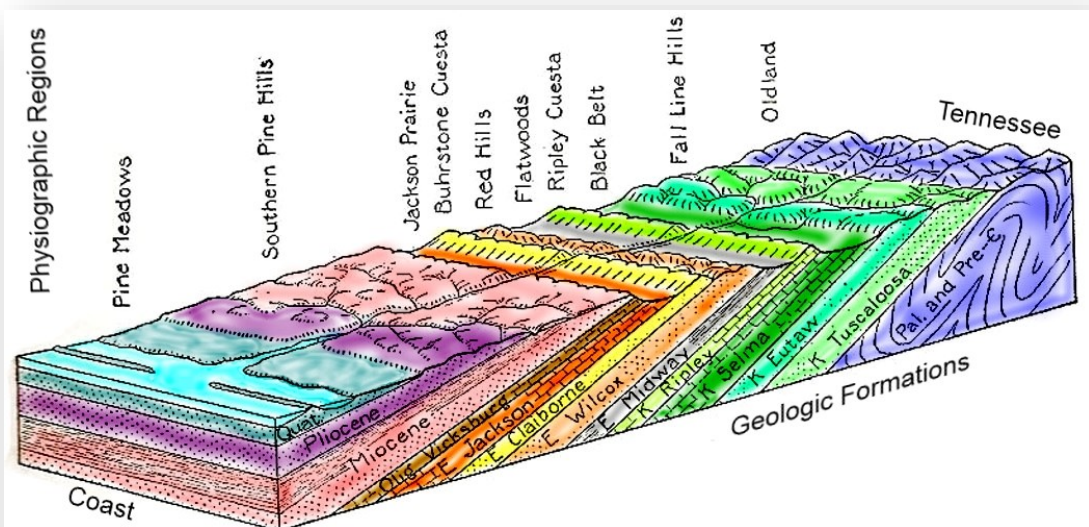


Figure 1. Cuestas in the Gulf Coastal Plain from Fenneman (1938).

Figure 2 is a relief map of Mississippi with the divides of major river basins.

The five largest river basins in order of rank include the Yazoo River Basin, draining 13,355 square miles within the state, the Pascagoula River Basin at 9,600 square miles, the Pearl River Basin at 8,700 square miles, the Tombigbee River Basin at 6,100 square miles, and the Big Black River Basin at 3,400 square miles. The divide between the Tombigbee River Basin and the basins of the Pascagoula,

Pearl, and Big Black rivers is a ridge of high ground in elevation-coded colors of dark green and white with white creating a snow-capped appearance to the highest elevations. This high ground drops to mid-level light-green-coded elevations along the divide of the Tombigbee and Yazoo river basins before rising northward to white elevations along a ridge known as the Pontotoc Ridge extending southward from the North Independent Streams Basin. Across the low saddle, the divide jumps from the Paleocene Wilcox Cuesta across strata to the Cretaceous Ripley/McNairy Sand Cuesta. The low divide is associated with the curious fact that flood plains of the Yazoo and Tombigbee river basins in northern Mississippi are lower in elevation than the Big Black, Pearl, and Pascagoula in central Mississippi.

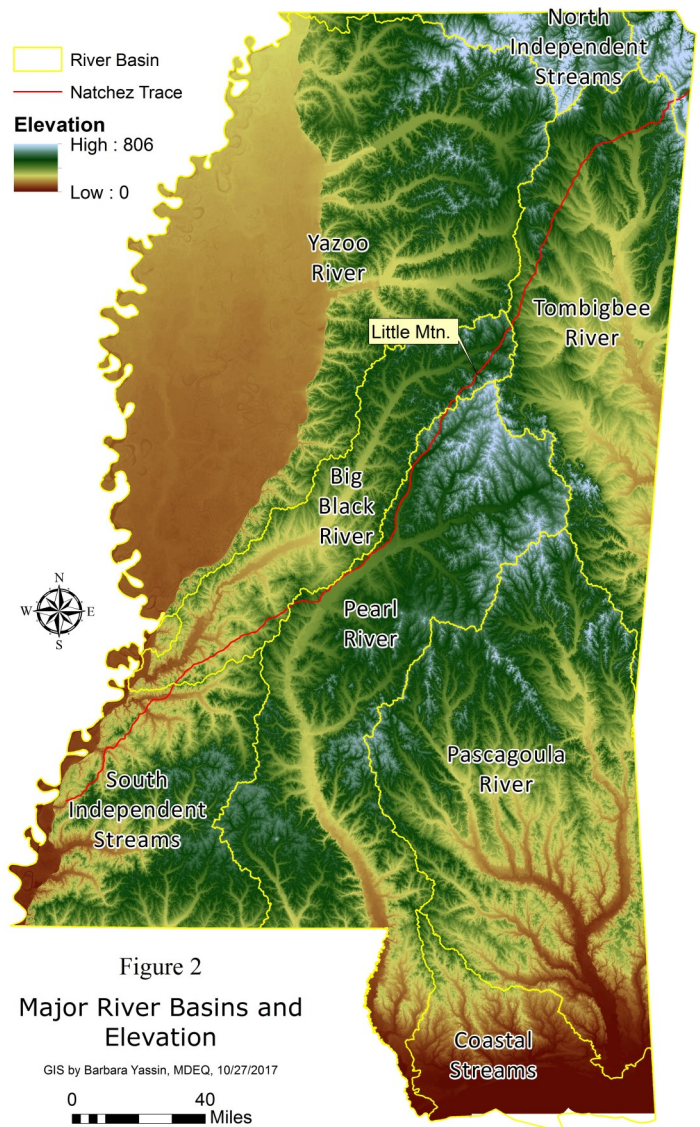




Figure 3 is a composite Mississippi map depicting surface geology, hillshade relief, and major river basins. Labelled on the map is the location of Little Mountain in Jeff Busby Park on the Natchez Trace Parkway, a road that follows the divide of the Big Black and Pearl River divide northward to that point. Little Mountain (Figure 4) is an outlier of the high ground of the Wilcox Cuesta at the triple basin junction of the Big Black, Pearl, and Tombigbee river basins. The low elevations of the Tombigbee River Basin are on the soils of the Black Belt (Figure 1), soils that develop from easily weathered chalks and marls in the Selma Group. Figure 5 is a LiDAR bare earth hillshade relief image showing rugged terrain along the western margin of the Tombigbee River Basin and at the triple basin junction with the Pearl and Big Black river basins. In the east, the Tombigbee River Basin is characterized by low prairie land; in the west, the upper Pearl and Big Black river basins are characterized by higher elevations and greater relief. This varied terrain correlates with the varied bedrock geology beneath it.

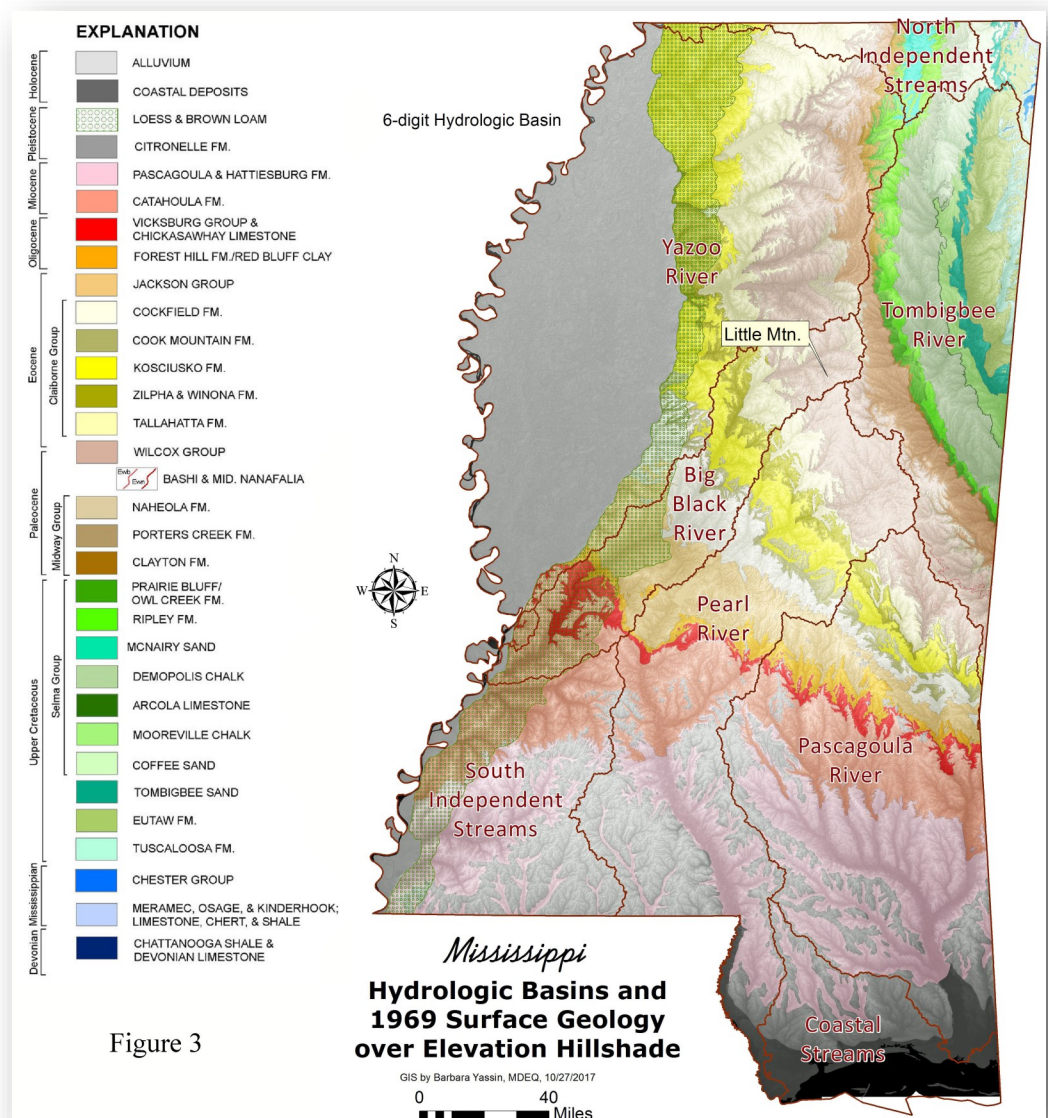


Figure 3





Figure 4. View to the northeast from the Wilcox Cuesta at Little Mountain in Jeff Busby Park on the Natchez Trace Parkway in the upper reaches of the Big Black River Basin. Picture was taken in July of 1973.

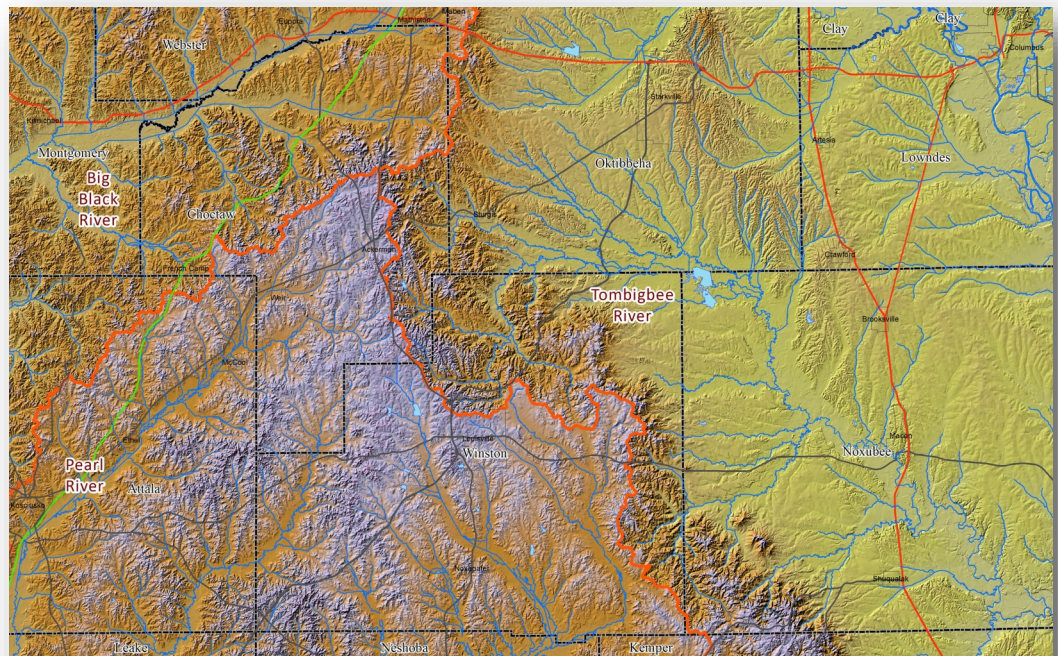


Figure 5. LiDAR bare earth hillshade relief map showing the triple basin junction of the Tombigbee River Basin (east) and the Pearl and Big Black river basins (west). The Natchez Trace Parkway is in green. Elevations are coded with golden yellow for low, brown for intermediate, and lavender for high.





## MDEQ Environmental Action Links

- [Draft permits currently at public notice](#)
- [Environmental Permits Division Scheduled Public Hearings](#)
- [Geology Permit Application Public Notice](#)
- [Permits and certificates issued in the last 90 days](#)
- [General permit coverages issued in the last 90 days](#)
- [Notices of Intent for coverage under a Statewide General permit received by the Environmental Permits Division](#)
- [List of the 401 Water Quality Certifications currently at public notice](#)
- [List of the compliance inspections recently conducted](#)
- [Orders issued by the Mississippi Commission on Environmental Quality](#)



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YouTube

### Picture of the Month

Box Turtle in Madison  
County.

Taken by Ethan Ma-  
yeu, Waste Division.

