

Collaborating to Address Nutrient Pollution: Louisiana

ACWA 63rd Annual Meeting
August 22, 2024

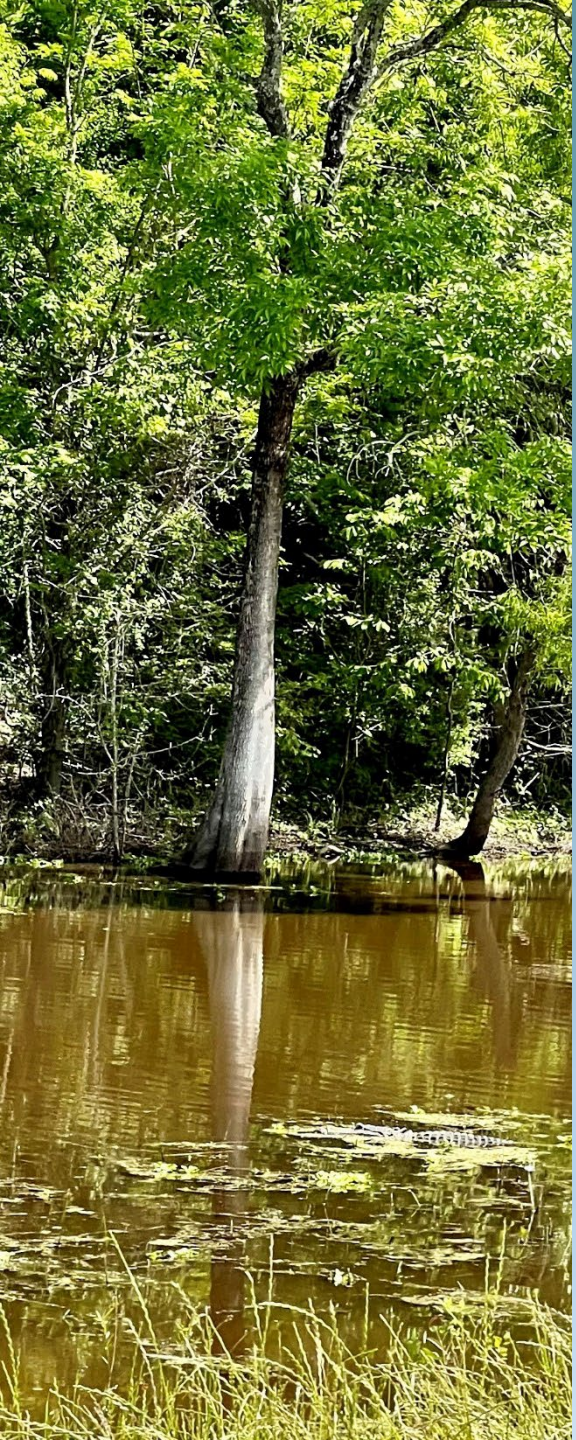
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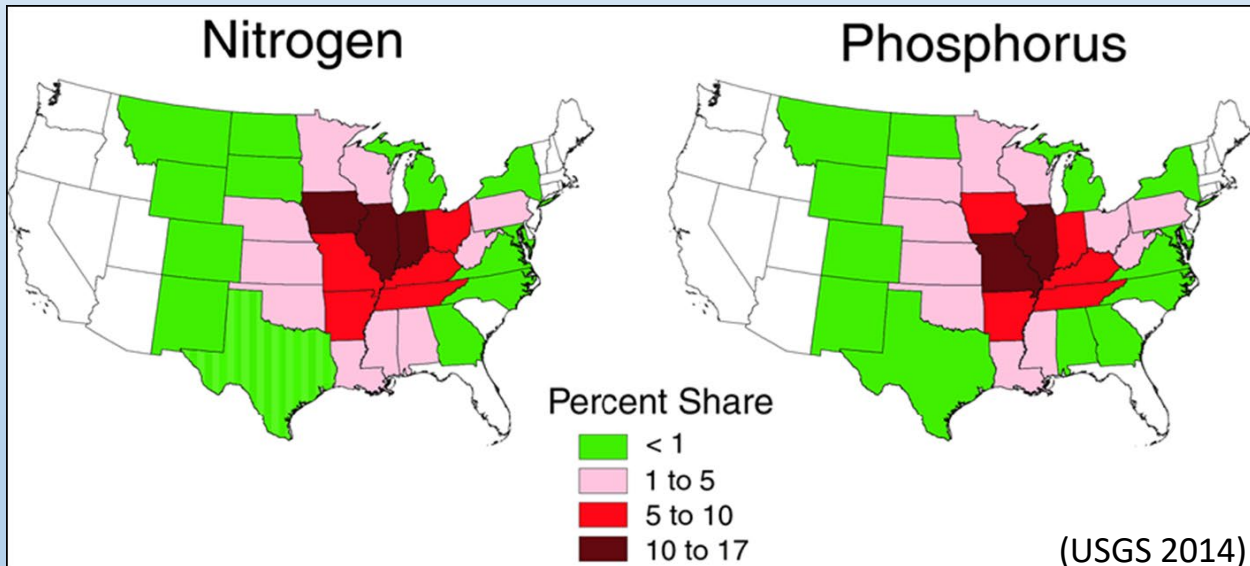
Louisiana Department of Environmental Quality (LDEQ)

Mission: ...provide service to the people of Louisiana through comprehensive environmental protection in order to promote and protect health, safety and welfare while considering sound policies regarding employment and economic development.

❖ Protecting water quality through surface water management is a key element of LDEQ's mission.

Nitrogen & Phosphorous

On average, only 2% of nutrient load is attributable to Louisiana (LDEQ 2023b).



- Although Louisiana's overall contribution to nutrients entering the Gulf of Mexico is small, it is at the terminus of all nutrient impacts resulting from upstream loads.
- For this reason, Louisiana is committed to protecting and improving water quality within its inland and coastal waters, and cooperating with upstream states to reduce nutrient loads in the MARB.

Nutrient Reduction Management Strategy

- Hypoxia Task Force (HTF) established in 1997 to address eutrophication and hypoxia in the Gulf of Mexico.
- First Action Plan in 2008 called each of 12 member states to develop state nutrient reduction strategies.
- Louisiana implemented its Nutrient Reduction Management Strategy (NRMS) in 2014 as a result of coordinated efforts between the HTF and Louisiana agencies (HTF 2023, NRMS 2024)
 - LDEQ takes the lead in preparing the NRMS.
 - The draft 2024 5-Year NRMS Review is currently under review.

Mississippi River/Gulf of Mexico Watershed Nutrient Task Force

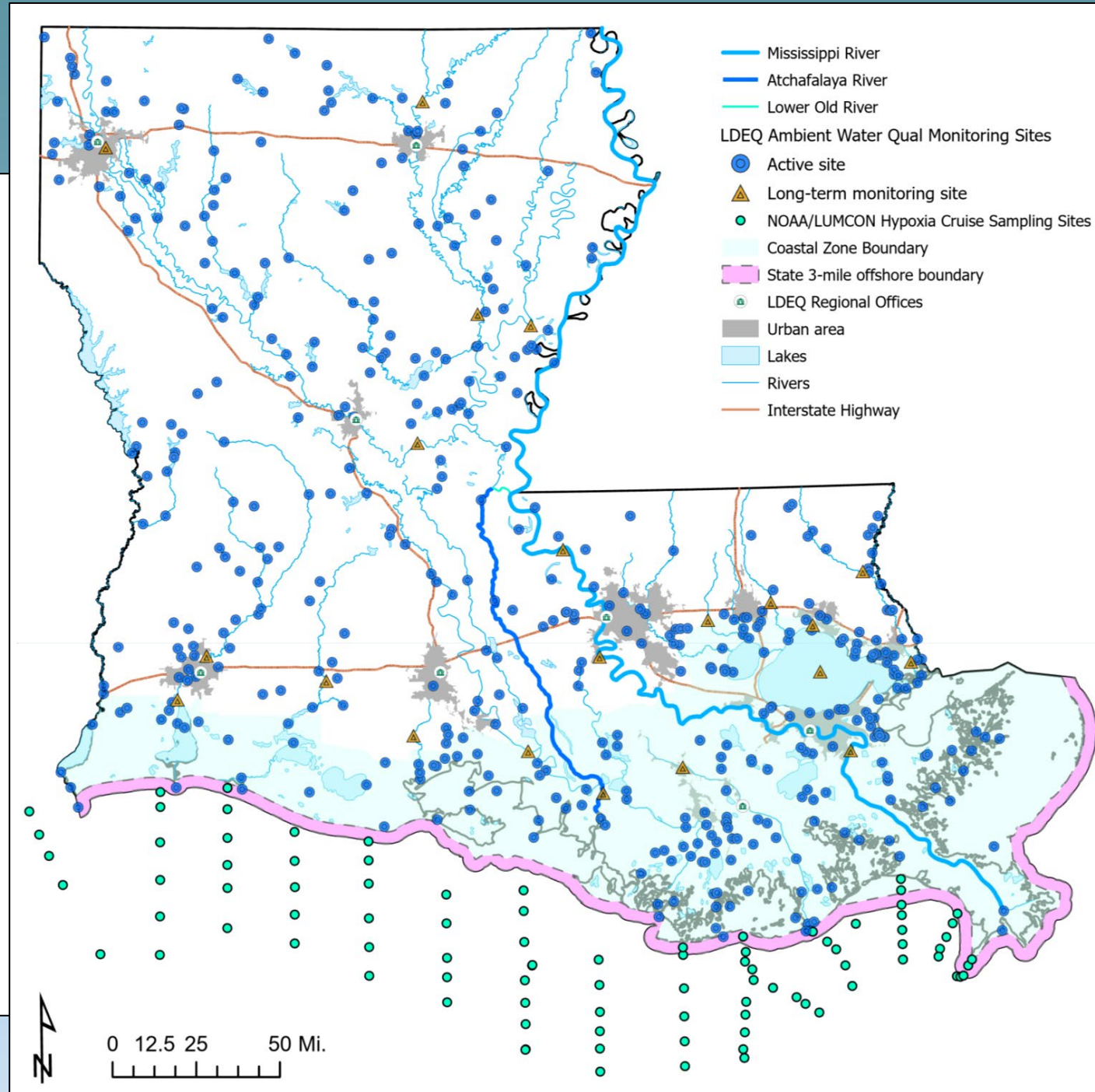
EPA United States Environmental Protection Agency

LDEQ Monitoring Sites

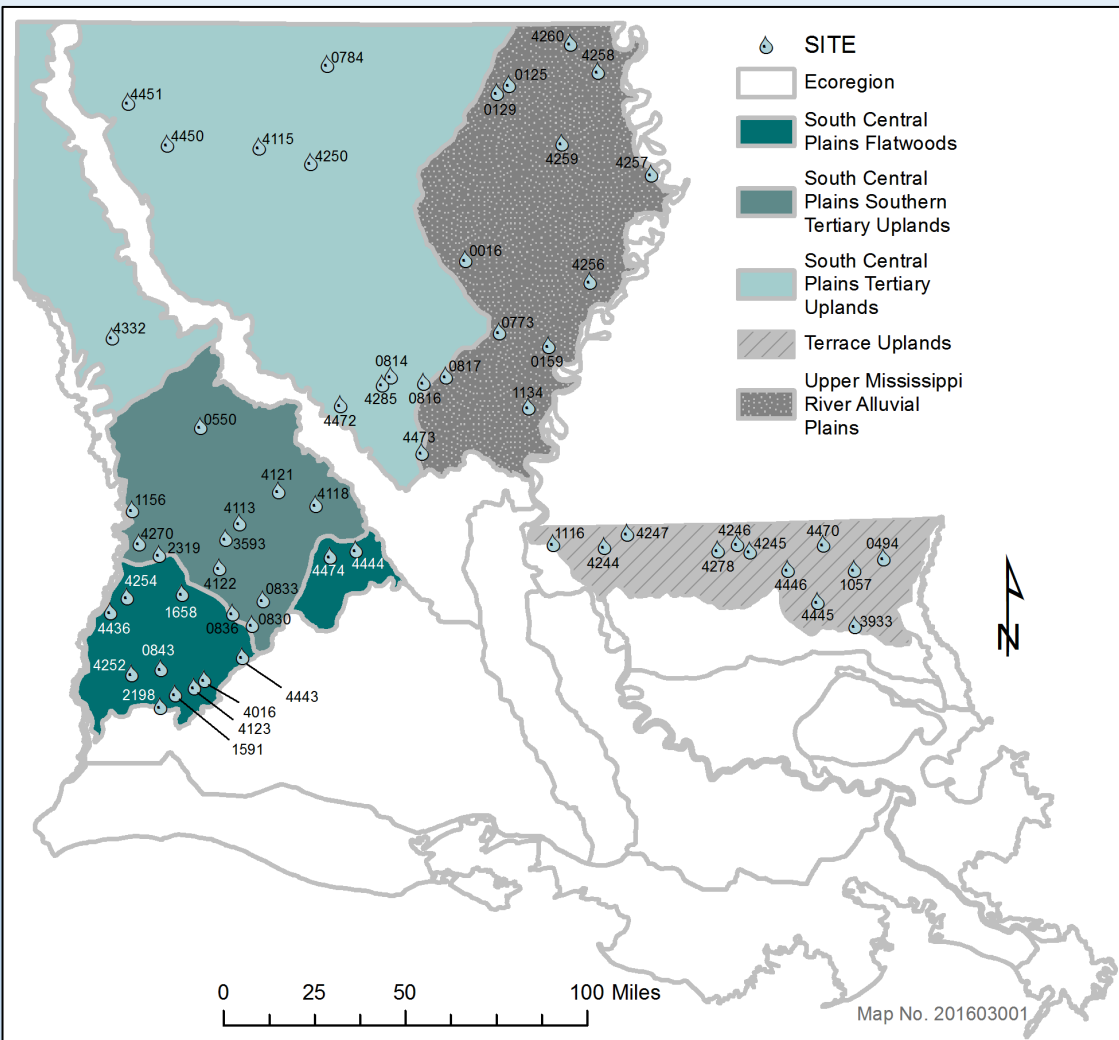
Ambient Water Quality Monitoring Network (AWQMN)

Through the LDEQ AWQMN, the agency monitors in-stream water quality in water bodies across the state. During the 2022/2023 water sampling year (November 2022 through October 2023), LDEQ monitored approximately 151 sites in 149 subsegments for in-stream water column concentrations of nitrogen (nitrate-nitrite and TKN) and phosphorus (TP). Results of the LDEQ ambient water quality monitoring are available through the AWQMN [LEAU Web Portal](#) (LDEQb).

Right: LDEQ's active Ambient Water Quality Monitoring Sites (~482, blue) sampled monthly for a year as part of the four-year cyclical monitoring rotation & long-term ambient monitoring sites (21, orange) sampled every month. Shown with the Gulf Hypoxia Cruise monitoring sites (green).

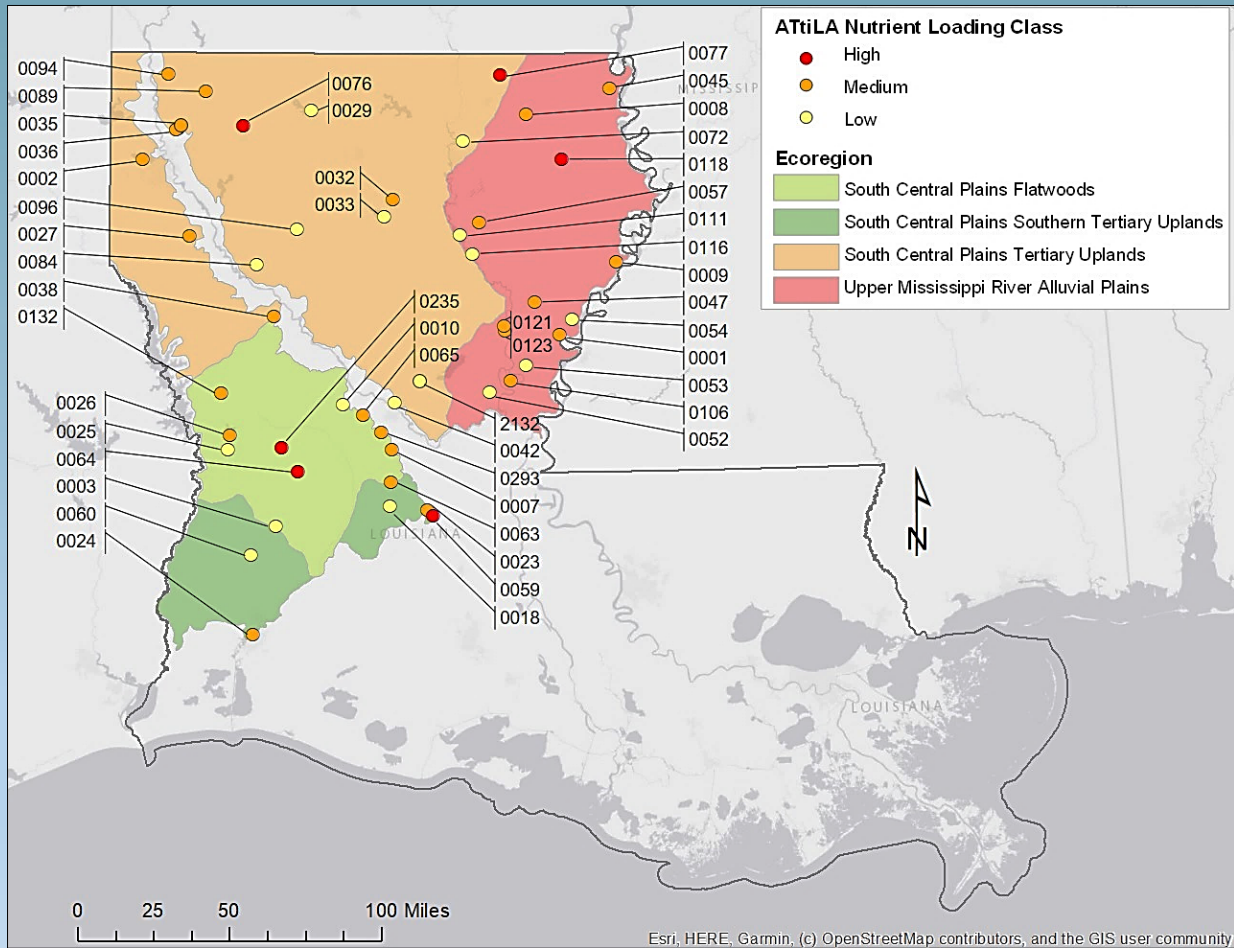


Nutrient Gradient Project – Inland Work: Inland Lakes and Reservoirs



- Currently developing an assessment protocol for possible exceedance of TN and TP
- Five Inland Ecoregions
- Protocol includes 5 steps which consist of:
 - Step 1. Meet minimum for Data Sufficiency
 - Step 2. Evaluate for Exceedance of Ecoregional Screening Values
 - Step 3. Factor in any concurrent subsegment impairments for DO, pH, or Turbidity
 - Step 4. Perform desktop geospatial analysis and review for suspected sources.
 - Step 5. List impairment for those that are determined to be anthropogenic

Nutrient Gradient Project – Inland Work: Inland Lakes and Reservoirs



- Currently analyzing data and developing report
- Four of Five Inland Ecoregions
 - Terrace Uplands has insufficient number of lakes/reservoirs
- Study developed to mimic National Lakes Assessment to expand on already large dataset
- Collected Water Chemistry, Nutrients, Chlorophyll-a, Fish, Macroinvertebrates, Periphyton, Zooplankton, and Physical Habitat
- Obtained 745 Taxa at 48 lakes

Water Quality Trading (WQT) Program

- LDEQ developed regulations for WQT in 2019 (LAC 33:IX.Ch. 26), supported by state legislation and consistent with the Clean Water Act, to facilitate trading among watershed stakeholders interested and eligible in participating in trading opportunities.
 - Regulations amended in 2021 to allow eligibility of projects funded with public conservation funds unless otherwise prohibited by the project terms and conditions.
 - Main objective:
 - Achieve equal or greater reduction of pollution and improvement of water quality at lower costs,
 - Reduce cumulative pollutant loading,
 - And prevent future environmental degradation.
 - WQT, particularly between point and nonpoint sources, does include inherent uncertainties around market supply and demand, as well as the challenge of quantifying nonpoint source pollutant reductions.
- Nutrients (TN, TP) are appropriate pollutants for trading, and LDEQ is currently reviewing a nutrient reduction project's credit application.
- If the application is approved and credits issued, details will be available to the public online at: <https://www.deq.louisiana.gov/page/water-quality-trading>

LDEQ's Nonpoint Source (NPS) Pollution Program

- State water quality data indicates about 1/2 of state waters are affected in some way by NPS pollution (LDEQ 2023a).
- LDEQ's NPS Pollution Program's mission is to restore use support in waters identified as impaired by NPS in the LDEQ Integrated Report through two strategies:
 - A statewide implementation strategy,
 - And addressing identified priority watersheds for targeted watershed implementation strategies.
- Receives funding through CWA **Section 319**, prioritizes funding projects in coordination with USDA Farm Bill.
- NPS Outreach Program educates citizens of all ages on the state's waters and watersheds, encouraging behaviors that keep pollutants out of local streams and the ocean (LDEQ 2023a).

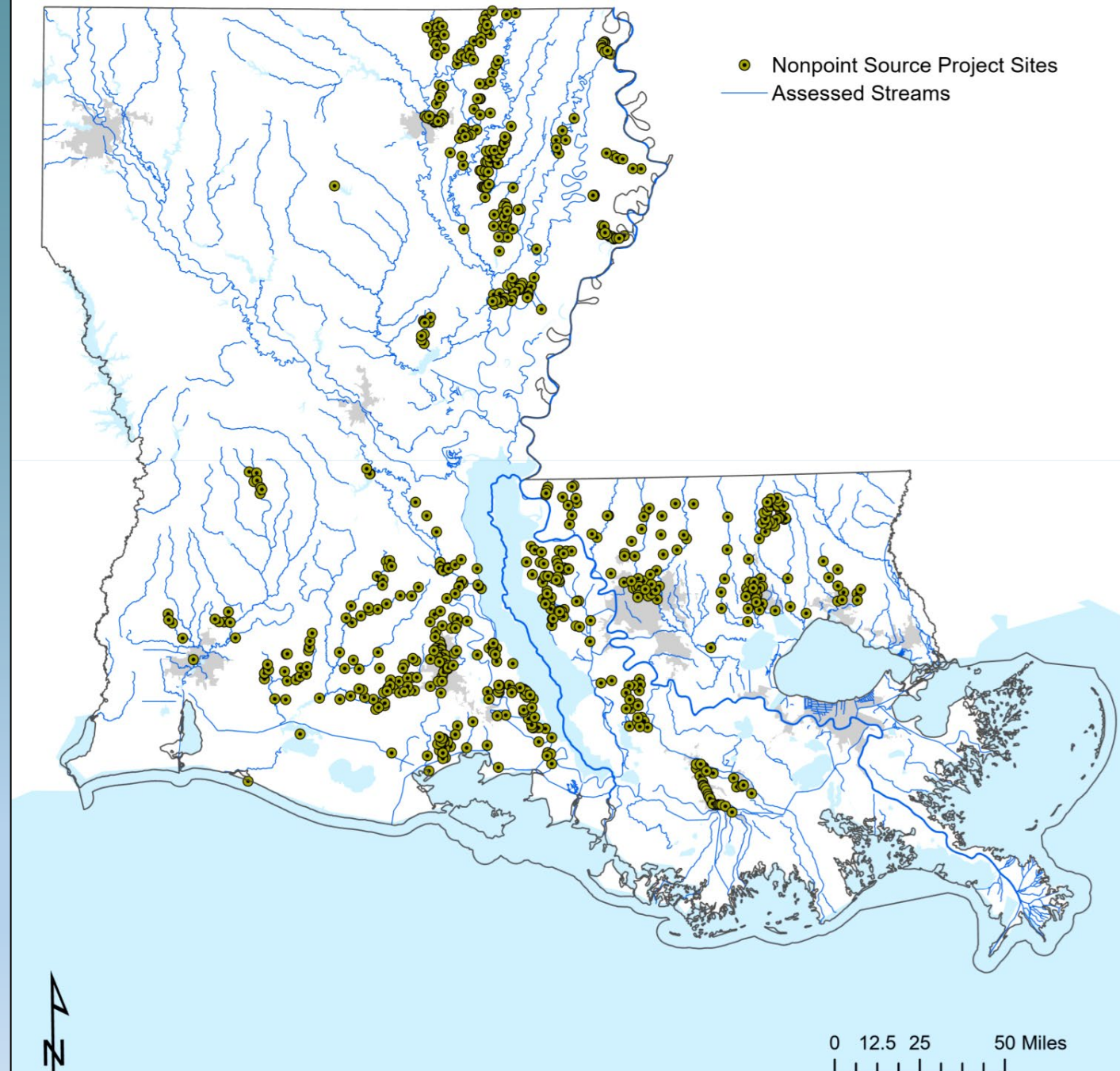
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NPS Monitoring Program Project Sites

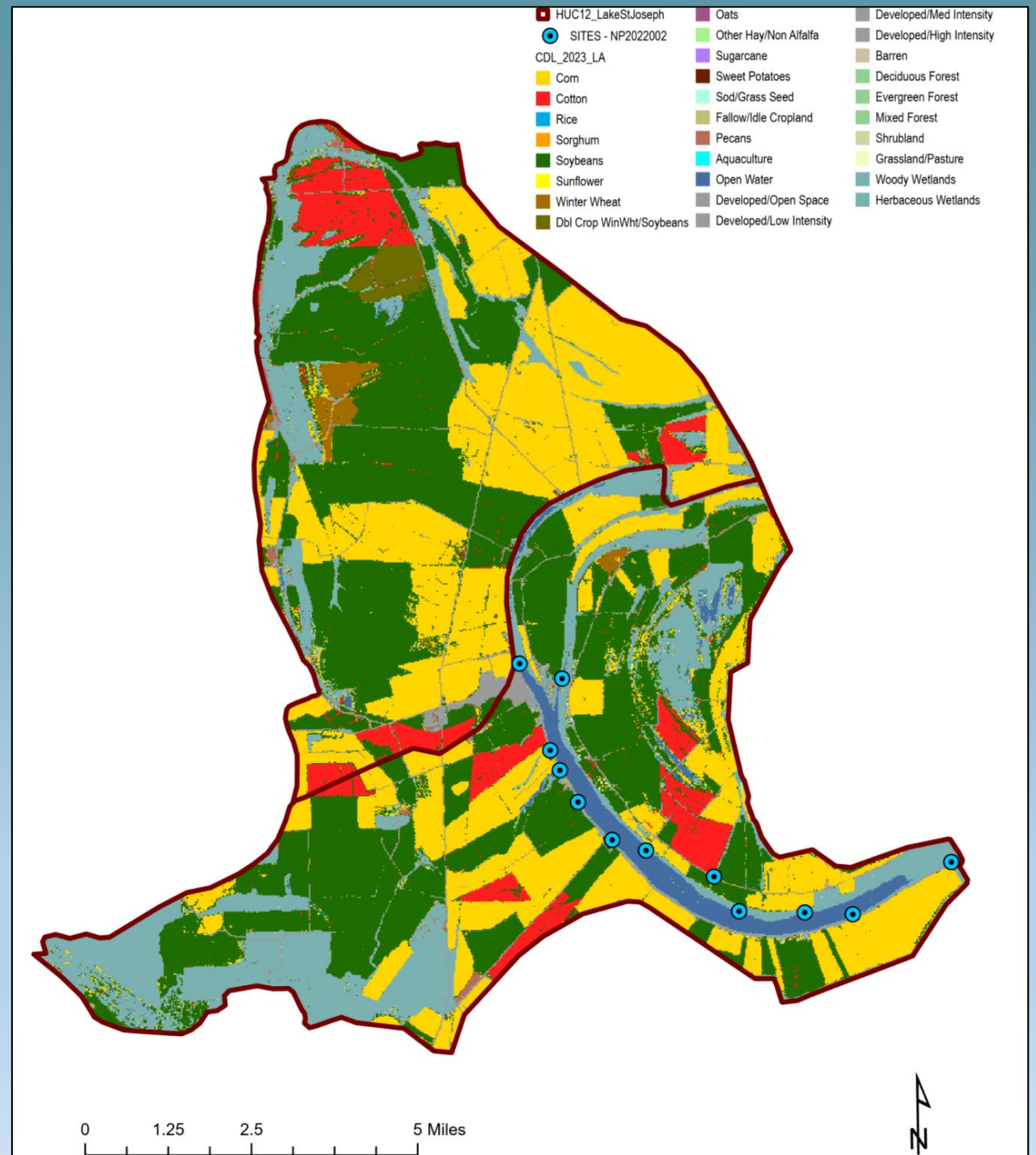
LDEQ NPS Project Monitoring conducts periodic sampling to track changes in water quality via:

- **Baseline Monitoring** – assess load concentrations, potential sources, geographic components, water quality changes, probable source areas
- **Long-term Monitoring** – assess effectiveness of implementation
- **Post Implementation Monitoring** – assess water quality trends expected to continue after implementation

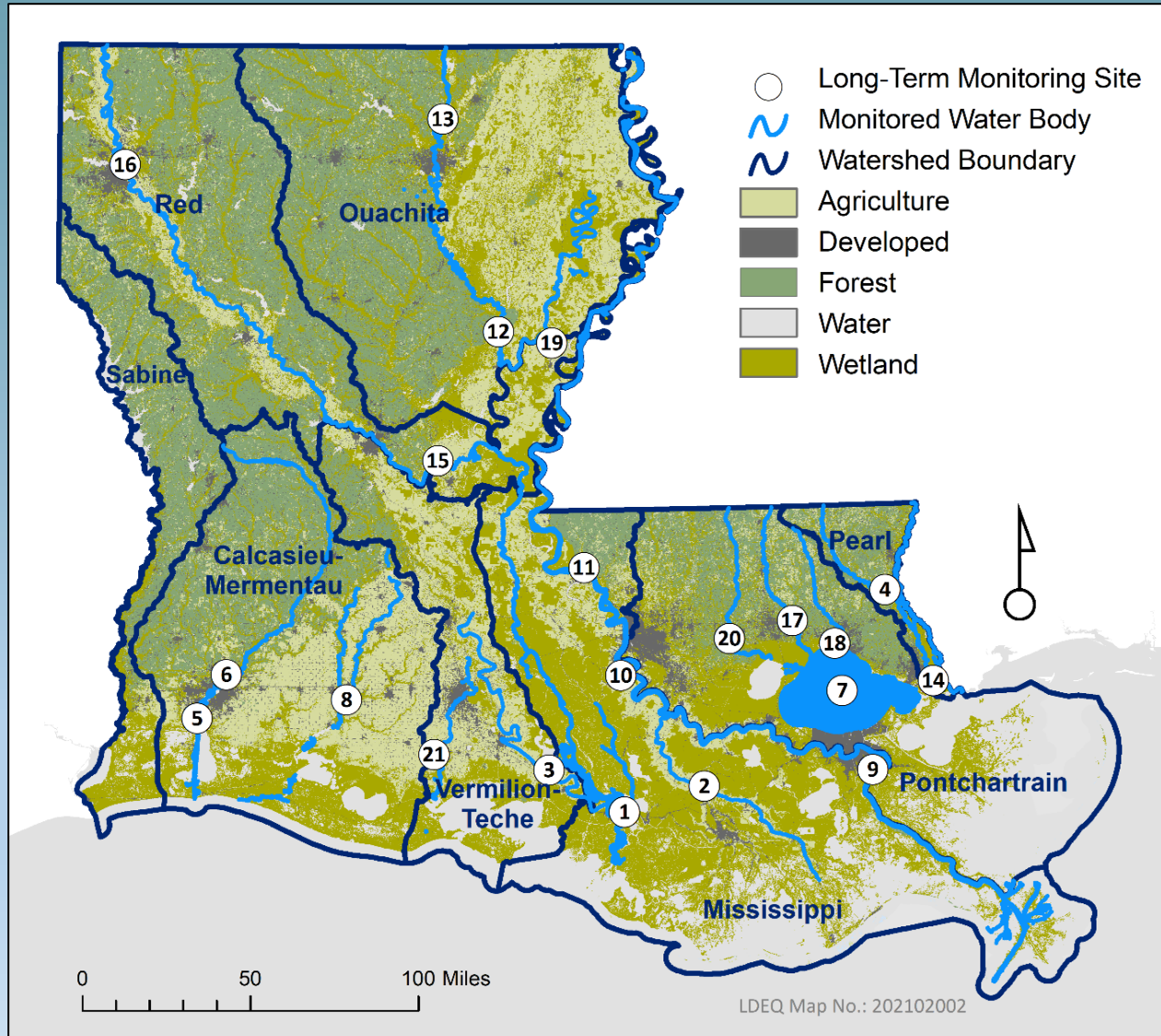


LDEQ Nonpoint Source Project NP2022002

- Project in the Lake St. Joseph watershed monitoring in-stream water quality parameters for nitrogen, phosphorous, and turbidity.
- Will allow further review of the results of BMP implementation on water quality in the watershed.
- Sample collection began in April 2023 and is ongoing.



'Nitrogen and Phosphorus Trends of Long-Term Ambient Water Quality Monitoring Sites in Louisiana'



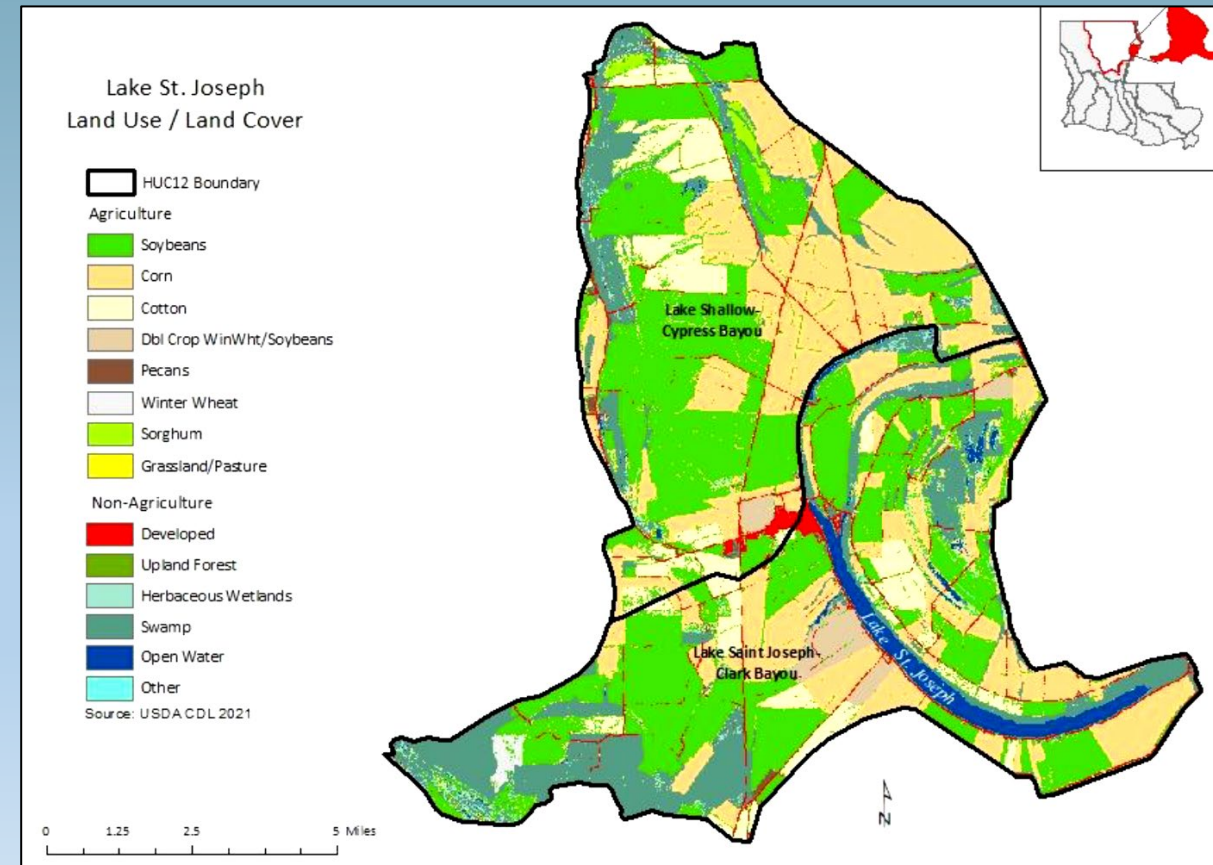
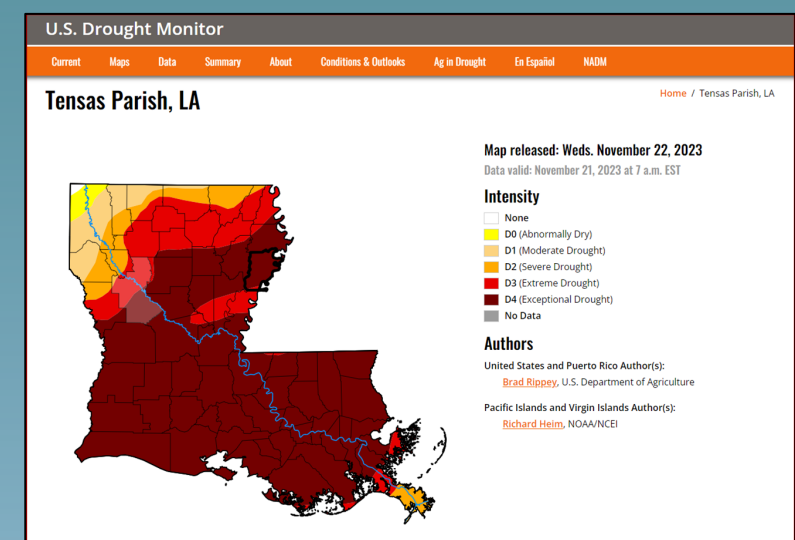
- Developed in support of NRMS Strategic Action 5.h. to determine trends in nutrient water quality at long-term monitoring stations.
- First report released 2015, update released late 2021.
- Trends show overall nutrient concentration decreases for the majority of long-term monitoring sites within the state, with slight increases in the Bogue Chitto (NO_x, P) and Pontchartrain sites in Southeast LA (P). (LDEQ 2021)

Gulf Hypoxia Program Grant

- Bipartisan Infrastructure Law (BIL) Funding to Hypoxia Task Force States
- The Louisiana Department of Environmental Quality (LDEQ) is lead agency for the cooperative agreement in Louisiana.
- Received USEPA approval Nov. 9, 2023
 - Project 1 implemented by the Louisiana Department of Agriculture and Forestry (LDAF) - \$1,616,933.00
 - Project 2 implemented by the Louisiana Coastal Protection and Restoration Authority (CPRA) - \$45,000

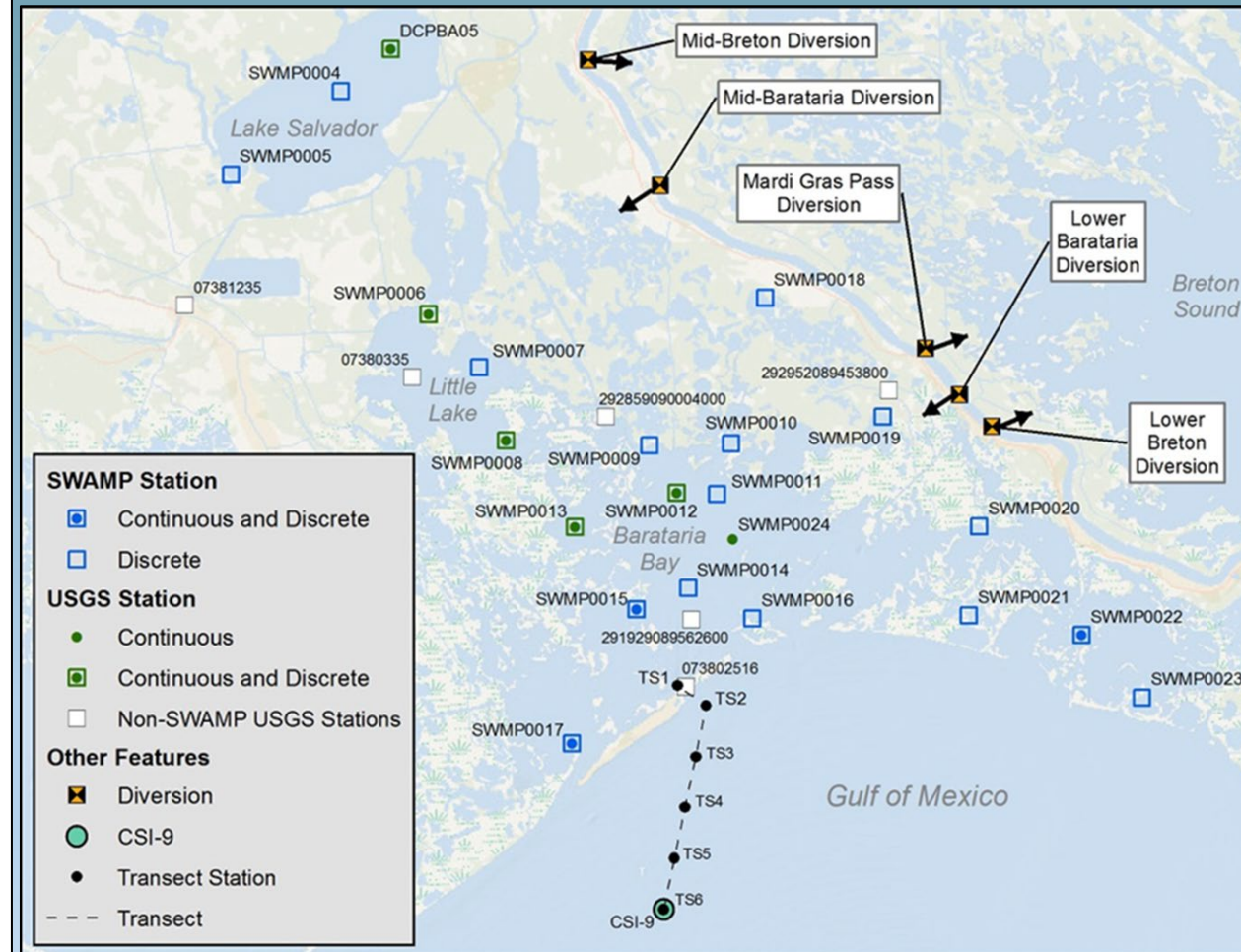
Project 1: Lake St. Joseph, Louisiana, Nutrient Loading Reduction

- Targeted Best Management Practices (BMP) program implementation in the Lake St. Joseph-Clark Bayou and Cypress Bayou to reduce nitrogen and phosphorous edge of field runoff & provide other water quality improvements.
- Monitor implementation through collection of edge of field runoff for differences in water quality and clarity compared to control site.
- 6 area producers qualified and were enrolled in the BMP implementation program.
- Fall cover crops planted late 2023, delayed by severe drought.
- Edge of field monitoring contract approved and expected to begin late Aug./Sept. 2024.



Project 2: Pilot Transition to Autonomous Monitoring from Inshore to Offshore in Coastal Louisiana

- Provide continuous characteristic water quality data along a transect extending from Barataria Pass, LA to the inner shelf of the Gulf of Mexico.
- Coastal transect monitoring began in 2018 with GOMA funding and has continued under EPA funding sources since 2019.
- Has been conducted ~3x/yr. with boat-based surveys
- Spring 2023 samples collected by boat at all 6 sites:
 - June 29, 2023
 - July 25, 2023
 - September 26, 2023
- Working to secure contract for autonomous vessel sample collection and extend contract through 2025.



Louisiana Pollutant Discharge Elimination System (LPDES) Permit Program

- **Municipal Separate Storm Sewer (MS4):** Storm water permittees discharging to waters with dissolved oxygen/nutrient TMDLs are required to develop monitoring programs to evaluate the effectiveness of BMPs to control pollutants in runoff
- **Facility nutrient monitoring:** Collects nutrient effluent monitoring data from major facilities discharging to the Mississippi River. In May 2016, LDEQ began executing the Point Source Implementation Strategy as a means to track point source nutrient contributions, especially of Publicly Owned Treatment Works
- **General permits:** Monitoring occurs for nutrient (e.g. nitrogen and phosphorus) and/or nutrient-related parameters (e.g. nitrate/nitrite-nitrogen) for specific sectors and subsectors within specified industry categories. Required reporting of nutrient (and other) pollutants to the LDEQ and USEPA via Discharge Monitoring Reports (LDEQa)
- **Point source wetland assimilation:** Permittees are required to monitor nutrients in their effluent, and the LPDES program collects and analyses the results (LDEQ 2023b)

Thank you

Questions?

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LDEQ NPS Pollution Program: crisalda.adams@la.gov

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Web Portal Home About Contact Projects Sites Reference Guide

  LOUISIANA DEPARTMENT OF ENVIRONMENTAL QUALITY
Secretary Aurelia S. Giacometto

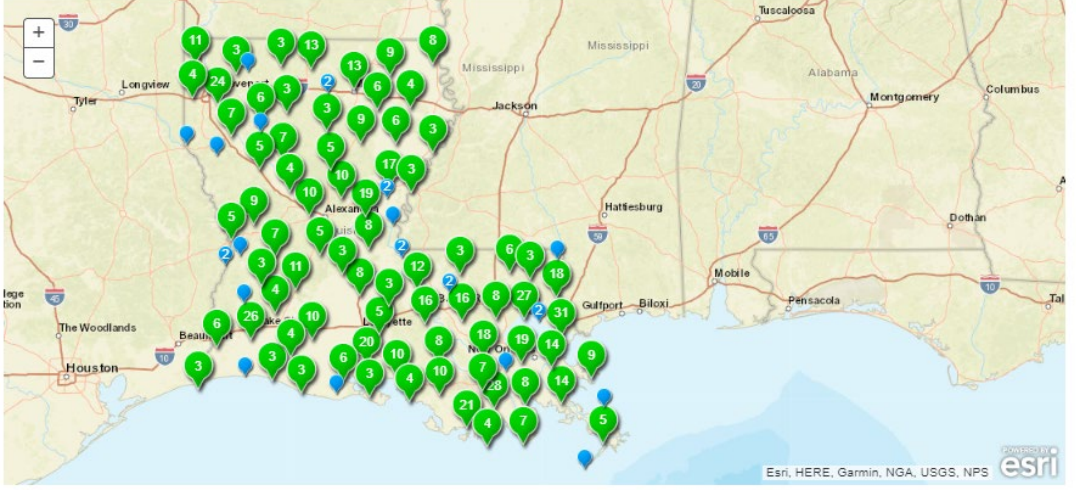
[< BACK TO LDEQ HOME PAGE](#)

Project: WQ1958001 - Statewide Water Quality Monitoring Network


Name: Statewide Water Quality Monitoring Network
Objective: Characterize ambient surface water quality
Start Date: 6/1/1958 12:00:00 AM **End Date:**

[Start Tour](#) [Freehand Polygon](#) [Polygon](#) [Query](#) [View Collections](#) [Clear](#)

Map



The map displays the state of Louisiana with numerous green circular markers representing monitoring sites. Each marker contains a number. The sites are distributed across the state, with a higher density in the central and southern regions. Major cities like Houston, New Orleans, and Baton Rouge are visible. The map includes a scale bar, a north arrow, and a legend for the sites.

Esri, HERE, Garmin, NGA, USGS, NPS 

Sites [+](#)

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