

Nonpoint Source
PROGRAM

*Louisiana Nonpoint Source
Annual Report*

Federal Fiscal Year (FFY) 2018

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1.0 Executive Summary

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Executive Summary

The Louisiana Department of Environmental Quality (LDEQ) administers Louisiana's Nonpoint Source (NPS) program and partners with the Louisiana Department of Agriculture and Forestry (LDAF) and other agencies and organizations to implement the statewide program to improve water quality across the state. Activities undertaken through these partnerships include prioritization of watershed planning and implementation/demonstration activities, evaluating progress, and reporting program activities. This interagency coordination is the strength of Louisiana's NPS Program, resulting in water quality restoration and improvement, as well as success stories for the state. Louisiana's federal fiscal year (FFY) 2018 NPS Annual Report has been prepared in compliance with Section 319 of the Clean Water Act (CWA). This report outlines an overview of progress made in reducing NPS pollution and improving water quality within Louisiana. Sources of NPS pollution include agricultural production, forestry, sand and gravel mining, urban storm water runoff, construction, and onsite disposal systems (OSDS). During FFY 2018, the State of Louisiana has continued to make progress in implementing its NPS Management Plan. Significant progress has been made in the process in which Louisiana's waterbodies are prioritized. In addition, the NPS milestones have been updated to describe the variety of activities that LDEQ and its partners will be conducting through 2022. In addition to updating the milestones in the NPS Management Plan, LDEQ-NPS published success stories for Bayou des Cannes and Bayou Sara. These stories can be accessed at the United States Environmental Protection Agency (USEPA's) national website. Watershed restoration in Bayou Sara resulted from partners collaborating on efforts to reduce pollution from OSDS, and from reducing pollution from agricultural lands in Bayou des Cannes. Another essential achievement conducted during FFY 2018 involved the satisfying of the final management measures that comprise the Louisiana Coastal Zone Act Reauthorization Amendments (CZARA).

OSDS maintenance issues continue to be a concern in Louisiana; therefore, LDEQ-NPS continues to place emphasis on water quality problems associated with OSDS. Several partners remain actively involved in inspecting systems and educating homeowners on the importance of protecting Louisiana's waterways by properly maintaining sewage systems. Partners engaged in this effort include Capital Resource Conservation & Development Council (RC&D), Louisiana Rural Water Association (LRWA), Bayou Vermilion District (BVD) and Barataria-Terrebonne National Estuary Program (BTNEP).

In 2018, the NPS Program and its partners were immensely involved in watershed restoration activities and education and outreach across the state. These activities led to substantial progress in reducing NPS pollution, improving water quality, and therefore, will continue to focus on watersheds in need of restoration. 2018 NPS Program highlights are as follows:

- LDEQ participated in 20 outreach and educational events;
- LDEQ drafted success stories for Bayou des Cannes and Bayou Sara which were approved by the (USEPA) as qualifying for two (2) WQ-10 measures;
- LDEQ and LDAF managed approximately \$3.5 million of Section 319 grant funds in order to implement projects to reduce NPS pollution and improve water quality;
- LDEQ continued watershed planning and implementation activities with two watershed coordinators (WSCs) and three watershed groups that are located in various parts of the state;
- LDEQ continued revising and drafting 4 watershed implementation plans (WIPs) within 3 Basins;

- LDEQ, LDAF and USDA-NRCS continue partnering in watersheds prioritized through National Water Quality Initiative (NWQI);
- LDEQ's NPS and Assessment staff worked together on the New Vision Initiative;
- LDEQ Water Surveys (WS) staff provided water quality sampling for the NPS program in 12 watersheds; several partners provided water quality sampling for the NPS program in 8 watersheds.
- Louisiana continues to focus on watershed planning, assessment, monitoring and implementation in 23 watersheds;
- In partnership with Louisiana Department of Natural Resources (LDNR), LDEQ responded to comments from USEPA and National Oceanographic and Atmospheric Administration (NOAA) on Louisiana's Coastal Nonpoint Pollution Control Program (CNPCP); all measures have been satisfied;
- LDEQ's DWPP implemented activities in Sabine, De Soto, Red River, Bienville, Cameron, East Feliciana, Natchitoches, St. Tammany, and Vernon parishes; LDEQ published monitoring data in EQUIS and USEPA's Storage and Retrieval (STORET) Data Warehouse for active watersheds;
- LDEQ developed maps using the Watershed Delineator from the ArcGIS Soil and Water Assessment Tool (ArcSWAT) for active watersheds to assist in watershed planning, implementation, and monitoring.

LDEQ's DWPP staff engaged in several source water protection activities in various parishes which included educating local businesses identified as potential sources of contamination to drinking water sources, conducting public community meetings and school presentations, developing contingency plans with water systems, as well as updating source water assessment data.

LDEQ, LDAF and the United States Department of Agriculture – National Resources Conservation Service (USDA-NRCS) continue to work together to improve the process of restoring and protecting watersheds. Quarterly interagency committee meetings with LDEQ, LDAF, and USDA-NRCS, continue to take place to keep everyone abreast of activities occurring in priority watersheds, as well as future plans or needs, in new or existing watersheds. The success of LDEQ's NPS program is fundamentally attributed to proficient collaboration of federal, state, and local governments partnering with universities, non-profit organizations, and the public. These alliances will continue to be the basis for watershed and statewide efforts during 2019.

2.0 Section 319 Funding

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Section 319 Funding

2.1 Louisiana Department of Environmental Quality Nonpoint Source

Louisiana's NPS program receives funding through CWA Section 319, which is prioritized to fund projects in coordination with USDA's Farm Bill, to implement its water quality goals and objectives. LDEQ continued partnering with WSCs to conduct water quality monitoring, inspect OSDS systems, and to assist in developing WIPs to be implemented by LDAF and USDA-NRCS, in NPS priority watersheds.

LDEQ utilized approximately \$1.59 million in CWA Section 319 funds to support the NPS and Source Water Protection Program (SWPP), watershed coordination, NPS monitoring, implementation, and demonstration projects to protect and/or restore recreational waters and drinking water supplies. Table 1 illustrates LDEQ Section 319 grant expenditures.

Grant Year	LDEQ (Federal)
2014	\$ 369,700.00
2014 Special Award	\$ 87,544.00
2015	\$ 365,890.00
2016	\$ 378,200.00
2017	\$ 391,200.00
TOTAL	\$1,592,534.00

Table 1. LDEQ Section 319 Grant Expenditures

2.2 Louisiana Department of Agriculture and Forestry

To provide technical assistance and best management practices (BMPs) through cost-share and incentive payments LDAF expended approximately \$1.95 million on watershed implementation within multiple watersheds around the state. Implementation was conducted on approximately 28,925.19 acres of private farm land in an effort to restore or partially restore surface water quality in nine priority watersheds within the Ouachita River, Mermentau River, and Vermilion-Teche Basins. Table 2 illustrates LDAF Section 319 grant expenditures.

Grant Year	LDEQ (Federal)
2011	\$277,190.44
2012	\$72,312.12
2013	\$185,327.22
2014	\$576,052.20
2015	\$290,720.81
2016	\$461,833.95
2017	\$89,057.45
TOTAL	\$ 1,952,494.19

Table 2. LDAF Section 319 Grant Expenditures

3.0 Water Quality Monitoring and Implementation

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Water Quality Monitoring and Implementation

3.1 LDEQ Nonpoint Source

In FFY 2018, water quality monitoring continued in 20 watersheds (Table 3). The data collected assists LDEQ and its partners in making valuable decisions. Pre-BMP monitoring assists in identifying critical areas contributing to NPS pollutant loads. This aids in the selection of the appropriate types of BMPs needed in the most suitable locations. Post-BMP monitoring assists LDEQ and partners in determining if water quality is improving.

Watershed	Subsegment	River Basin
Comite River	040103	Lake Pontchartrain
Middle Comite River	040102	
Upper Amite River	040301	
Middle Amite River	040302	
Yellow Water River	040504	
Bayou des Cannes	050101	Mermentau River
Bayou Mallet	050103	
Bayou Queue de Tortue	050501	
Bayou Chene	050603	
Bayou du Portage	060703	Vermilion-Teche River
Vermilion River	060801	
Boston Canal	060910	Mississippi River
Thompson Creek	070502	
Tunica Bayou	070505	
Bayou Louis/Lake Louis	080202/080203	Ouachita River
Big Creek (North)	080903	
Upper Bayou Lafourche	080904	
Lake Providence	081101	
Hemphill Creek	081609	
Bayou Folse	120305	Terrebonne

Table 3. Watersheds in which water quality monitoring was conducted in FFY2018

LDEQ's NPS staff developed the WIPs indicated in Table 4. WIPs developed for other priority watersheds are updated annually as water quality data becomes available and projects identified in the plan are implemented.

Watershed	Subsegment	Basin
Bayou des Cannes (Accepted)	050101	Mermentau River
Hemphill Creek (Accepted)	081609	Ouachita River
Bayou Folse (Accepted)	120302	Terrebonne
Bayou Chene (Awaiting DO Revision)	050603	Mermentau River

Table 4. WIPs developed/submitted in FFY2018 developed

In FFY 2019, LDEQ-NPS will be drafting/revising WIPs to be submitted to USEPA R6 for review. Prospective watersheds are indicated in Table 5.

Watershed	Subsegment	River Basin
Bayou du Portage	060703	Vermillion-Teche
Vermilion River	060801/060802	Vermillion-Teche
Big Creek (North) (Accepted)	080903	Ouachita River
Bayou Lafourche	080904	Ouachita River
Bayou Gross Tete	120104	Terrebonne
Bayou Maringouin	120111	Terrebonne

Table 5. Draft WIPs to be submitted to USEPA in FFY2019

3.2 Louisiana Department of Agriculture and Forestry

LDAF provided technical assistance and BMP implementation on 28,925.19 acres in nine watersheds, see Table 6.

Watershed	Acres Implemented	Basin
Bayou Queue De Tortue	284.59	Mermentau River
Bayou Des Cannes	11,414.6	Mermentau River
Bayou Chene	7,361.86	Mermentau River
Boston Canal	94.4	Vermilion Tech
Bayou Mallet	8,028.57	Mermentau River
Hemphill Creek	219.3	Ouachita River
Big Creek (North)	602.1	Ouachita River
Bayou Lafourche	919.77	Ouachita River
TOTAL	28,925.19	

Table 6. Technical Assistance and BMP implementation

These BMPs were carried out through the traditional conservation partnership cooperation between the USDA-NRCS, the LDAF and participating SWCD. These local SWCDs included Acadia, Vermilion, Jefferson Davis, Morehouse, St. Landry, Lasalle, Evangeline, and Bouef River. Signed contracts establish

the participant's BMP payment schedules and implementation requirements, defining the relationship between themselves and the Federal-State-Local conservation delivery team. To attain Section 319 water quality crop rotation objectives, an array of proven conservation practices such as grade stabilization, conservation, prescribed grazing, heavy use area protection, critical area planting, irrigation land leveling, tillage and residue management and others were cost-shared through this program. Participants are required to implement a total RMS plan through which additional BMPs are prescribed. These additional BMPs further ensure reduction of water quality impairments and exceed the participants required matching funds. To ensure effective delivery of these necessary BMPs, LDEQ provides water quality data, watershed modeling, targeted sampling, mapping and other critical logistical assistance to ensure maximum effectiveness for our collective efforts in restoring water quality in agricultural settings.

4.0 Coordination with Partners

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Coordination with Partners

4.1 LDEQ Water Surveys

LDEQ Water Surveys plays an intricate role in aiding the NPS Program in completing our mission towards 319 sampling activity goals. Utilizing Water Surveys continues to be extremely cost effective for the program, and has eliminated the need for expensive contractors. LDEQ NPS program relies upon LDEQ's Survey staff to assist NPS staff and watershed support groups with water quality reconnaissance, baseline assessment, water quality sampling and flow measurements for calculating in-stream loading in priority watersheds. The information obtained is used to provide baseline data, flow data for modeling, sampling site selection, information on water quality changes and percent reduction of pollutants from BMPs in targeted watersheds. Water Surveys is currently conducting water quality sampling in approximately 13 watersheds with an estimated five additional in the near future.

In addition to Water Surveys support of NPS, they are collaboratively working with the LDEQ Water Permits Division and the Total Maximum Daily Load (TMDL) group under the long-term vision projects for assessment, restoration, and protection under the CWA Section 303 (d) Program.

Current watersheds:

- Bayou des Cannes (050101)
- Boston Canal (060910)
- Bayou du Portage (060703)
- Queue de Tortue (050501)
- Bayou Lafourche (080904)
- Lower Comite River (040103)
- Vermilion River (060801)
- Lake Providence (081101)
- Hemphill Creek (081609)
- Big Creek (080903)
- Bayou Chene (050603)
- Bayou Louis/Lake Louis (080202/080203)
- Yellow Water River (040504) **New Vision**

Proposed future watersheds:

- Bayou Maringouin (120111) (FY 2019)
- Bayou Grosse Tete (120104) (FY 2019)
- Bayou Sara (070501) **New Vision**
- New River (040404) **New Vision**
- Blind River (040402) **New Vision**

4.1.1 Featured Priority Watersheds

4.1.1.1 Lake Providence (081101)

Lake Providence, subsegment 081101, is located in northeast Louisiana and is approximately 14,000 acres. The subsegment is 68 percent agricultural (Figure 1) and the lake is surrounded by agricultural fields that produce primarily corn, cotton, and soybeans; consequently, the watershed is impaired for total dissolved solids (TDS).

Citizens that live near and enjoy the lake's recreational fishing became increasingly concerned about sedimentation issues, which were adversely impacting the fish and wildlife propagation (FWP) designated use and increasing flooding for adjacent residences. After stakeholders appealed to state representatives for relief, the Louisiana Legislature established the Lake Providence Watershed Council in 2015. The Council is made up of local, state, and federal representatives. The Council named the USDA-NRCS as the federal partner for agricultural BMP implementation. LDEQ's role has been to sample water quality around the lake to help identify source areas for the sediment, to track water quality changes over time, and to provide this data to stakeholders using various formats including tables, graphs, and maps.

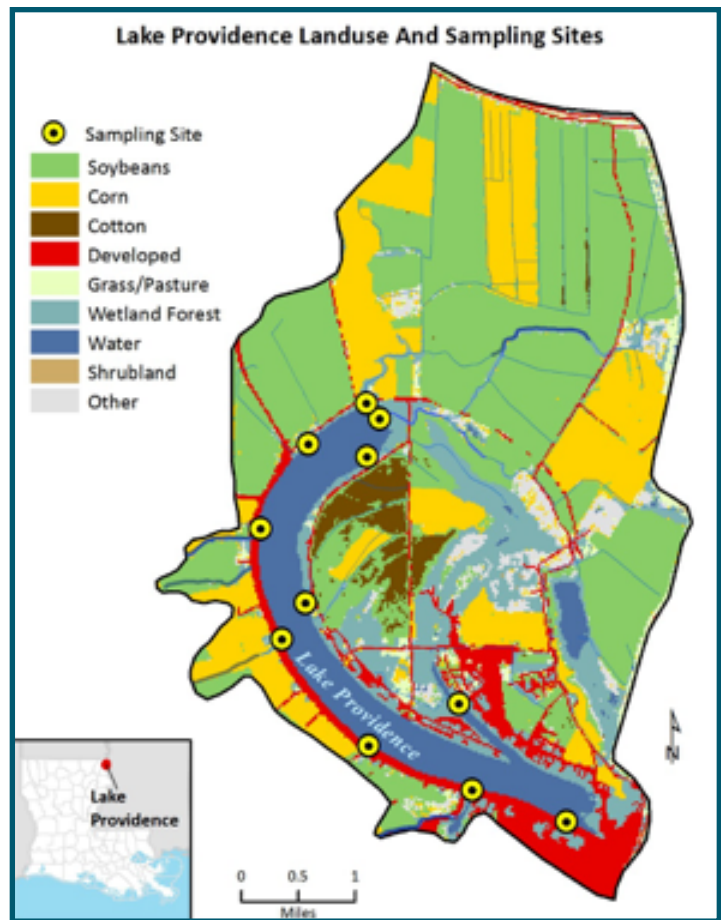


Figure 1. USDA 2016 Land Use / Land Cover

Lake Providence is one of NRCS' Mississippi River Basin Healthy Watershed Initiative (MRBI) watersheds. MRBI goals include reducing soil loss and improving nutrient management through methods such as reducing fall tillage, using cover crops and/or residue, and employing better nutrient management techniques. NRCS is working with Soil and Water Conservation Districts in the area to develop outreach plans and to implement BMPs. NRCS began implementation in 2016 and plans to continue implementation through 2020. As of 2018, 100 percent of producers in the watershed are implementing BMPs and water quality monitoring is tracking the impact of these efforts.

4.1.1.2 Bayou du Portage (060703)

Bayou du Portage, subsegment 060703, is a 97,000-acre watershed located in the Vermilion-Teche Basin, east of Lafayette and west of the Atchafalaya Basin protection levee. The drainage area straddles St. Martin and Iberia parishes. It is impaired for primary contact recreation (PCR), secondary contact recreation (SCR), and fish and wildlife propagation designated uses. Suspected sources of impairment include natural sources, agriculture, on-site treatment systems (septic systems and similar decentralized systems), package plant or other permitted small flows discharges. Currently, the USDA-NRCS is implementing BMPs in a



Figure 2. Kristian Latiolais and Chaz Keating located at site 4802 (Unnamed tributary to Coulee Nicole Guidry at Grand Bois Rd] is showing a discharge into the stream from nearby crawfish ponds



Figure 3. Jacie Ourso and Chad Keith taking flow measurements from the banks of ambient site, 0676 [Bayou du Portage at Parish Rd 679], with the RiverPro 1200 purchased with 319(h) funds.

small southern portion of the watershed, downstream of the ambient site, as part of the National Water Quality Initiative (NWQI) project.

The Bayou du Portage water quality sampling plan was approved October 4, 2017, and the sampling began October 31, 2017. All 14 sites are located in St. Martin and Iberia parishes. The distance from LDEQ Headquarters to the closest site is approximately 45 miles. Sampling all 14 sites would be approximately 160 miles, round trip. At times the sampling sites were split into two crews; resulting in one crew monitoring eight sites and the other monitoring six sites, and taking a flow measurement. Water Surveys has encountered various safety issues, including traffic, wildlife, and diverse weather conditions (heat, cold, lightening).

Once a watershed implementation plan is accepted by UEPA, Bayou du Portage will be placed in LDAF's work plan. BMPs to be implemented in the watershed will target sediment, nutrients, and bacteria. Reducing erosion and runoff from agricultural lands, pasture, and streambanks are expected impacts from the implementation of BMPs.

4.1.1.3 Big Creek (080903)

Subsegment 080903 is located in the Ouachita Basin and is comprised of Big Colewa, which is renamed Big Creek at or near the Louisiana Highway 80 bridge. Big Creek flows in a general north-to-south direction from its headwaters to its confluence with the Boeuf River.

Louisiana's 2016 Integrated Report (IR) indicates that Big Creek is not supporting its designated use for FWP; however, it is fully meeting its SCR and PCR designated uses. The suspected cause of the nonpoint source impairment is turbidity, stemming from agriculture. The watershed is approximately 431 square miles; the dominant land use is cropland, which accounts for 60.1 percent of land use in the watershed.

Big Creek watershed consists of 14 full or partial 12-digit hydrologic unit code areas (HUC-12s). While the overall goal is to eventually expand activities throughout the watershed, of the 14 HUCS, the following two HUCs are currently the focus of BMP implementation for LDAF and the USDA.

- Cane Bayou-Little Creek (HUC: 080500011010);
- Dry Fork Creek-Bee Bayou (HUC: 080500011005).

LDAF BMP implementation began in 2016 and includes the following practices to address the turbidity impairment:

Access Control; Conservation Crop Rotation; Cover Crop; Critical Area Planning; Fence; Field Border; Forage & Biomass Planting, Grade Stabilization Structure, Grassed Waterway, Heavy Use Area Protection; Irrigation Land Leveling; Irrigation Pipeline; Irrigation Tailwater Recovery System, Irrigation Water Management; Pipeline (livestock); Precision Land Forming; Prescribed Grazing; Pumping Plant; Residue & Tillage Management, Mulch Till; Residue & Tillage Management, No Till; Riparian Forest Buffer; Structure for Water Control; and Tree/Shrub Establishment.

In addition to agricultural BMPs, education and outreach opportunities can bring awareness to the health risk and minimize illegal disposals by promoting proper disposal methods.

LDEQ Water Surveys began sampling 30 sites in Big Creek, which fall in West Carroll, Richland, and Franklin Parishes, in February 2016, to track water quality changes. The parameters being collected are turbidity and in-situ. The travel distance to the watershed is between 150-180 miles with the round trip being approximately 370 miles for the northern most crew. Water Surveys has encountered various safety issues, including traffic, wildlife, and diverse weather conditions (heat, cold, lightning).



Figure 4. Site 4688 [Unnamed tributary at La Hwy 576] - Canal Dredging



Figure 5. Site 4692 [Little Creek at Burgess Rd] reveals illegal and unethical animal carcass dumping at this bridge during deer season which can contaminate the water.

4.2 USDA-NRCS Initiatives

During FFY 2018, LDEQ, LDAF and USDA-NRCS continued partnering in watersheds prioritized through USDA’s NWQI (see Tables 7-10). Through the funding acquired from the USDA Farm Bill and Section 319, the USDA and LDAF work with land owners and producers to implement agricultural BMPs through cost share agreements. LDEQ utilizes section 319 grant funds for several contracts to aid in monitoring and assistance from LDEQ Water Surveys. Water Surveys performs watershed assessment and characterization, pre-BMP sampling to collect baseline data and determine critical areas for BMP implementation, and post-BMP sampling to determine the changes in water quality.

4.2.1 Mississippi River Basin Initiative

Six new MRBI projects began in FFY 2016 (Table 7). These projects will receive USDA Farm Bill funding over a three-year life span totaling \$3,689,966. These MRBI watersheds are located in the northeastern portion of the state within the Ouachita River Basin as a priority area in the Louisiana Nutrient Management Strategy.

The overall goals of the MRBI include reducing fall tillage and keeping the soil covered by increasing the use of cover crops and/or increasing residue to reduce soil loss. NRCS will assist producers in improving nutrient management techniques above their current level to increase nutrient utilization. NRCS, SWCDs, and other partners will develop targeted outreach plans to reach every producer within the watershed. Conservation planning and technical assistance will be offered at no charge to help producers address the watershed goals and to improve water quality.

Watershed	Subsegment	Acres	Parish	12-Digit HUC Name	12-Digit HUC
Bayou Macon	081001	21,058	West Carroll	Alligator Bayou	080500020503
Big Creek	080903	22,030	Richland	Little Creek	080500011001
Lake Providence	081101	34,953	East Carroll	Lake Providence-Tensas Bayou	080500030101
Tensas River	081201				
Tensas River	081201	51,777	Tensas	Lake Bruin	080500030503
Lake Bruin	081203			Van Buren Bayou	080500030501
Tensas River	081201	28,952	Madison	Little Tensas Bayou – Bull Bayou	080500030105
Deer Creek	081003	26,671	Franklin	Upper Deer Creek	080500011601

Table 7. USDA – FFY2016 Mississippi River Basin Initiative

In FFY 2017, LDEQ continued to sample in Big Creek. LDEQ began sampling in Lake Providence in April 2017 and sampling in Lake Joseph ceased in FFY 2016.

Watershed	Subsegment	Parish	12-Digit HUC Name	12-Digit HUC
Bayou Macon	081001	West Carroll	Alligator Bayou	080500020503
Big Creek	080903	Richland	Cane Bayou	080500011010
Big Creek	080903	Richland	Little Creek	080500011001
Lake St. Joseph	081202	Tensas	Lake St. Joseph-Clark Bayou	080500030406
Lake Providence	081101	East Carroll	Lake Providence-Tensas Bayou	080500030101
Tensas River ¹	081201			
Tensas River	081201	Tensas	Lake Bruin	080500030503
Lake Bruin	081203		Van Buren Bayou	080500030501
Tensas River	081201	Madison	Little Tensas Bayou – Bull Bayou	080500030105
Deer Creek	081003	Franklin	Upper Deer Creek	080500011601

Table 8. USDA – FFY 2017 Mississippi River Basin Initiative

4.2.2 National Water Quality Initiative (NWQI)

Watershed	Subsegment	Watershed Basin	12-Digit HUC Name	12-Digit HUC
Bayou Grand Marais	050501	Mermentau River	Bayou Grand Marais	080802020103
Lake Louis Bayou du Portage	080203	Ouachita River Mermentau River	Bayou Louis	080402070303
	060703		Indian Bayou	08081020801
LDEQ continues to sample in Lake Louis and Bayou Grand Marais. Sampling began in Bayou du Portage in October 2017.				

Table 9. USDA - National Water Quality Initiative

Watershed	Parish	12-Digit HUC Name	12-Digit HUC
Lake Louis	Catahoula	Lake Louis	80402070303
Bayou Du Portage	Iberia St. Martin	Bayou Du Portage	8081020801
Bayou Folse	Lafourche Terrebonne	Bayou Cutoff	80903020502
		Lake Fields	80903020503
		Bayou Boeuf-Frontal Lac des Allemands	80903010205
		Halpin Canal	80903010203
LDEQ continues to sample in Lake Louis and Bayou du Portage. BTNEP began sampling Bayou Folse in 2016.			

Table 10. FFY 2018 USDA – National Water Quality Initiative

4.3 Water Standards and Assessment

The Water Quality Standards and Assessment Section conducts work to support appropriate water quality standards and to routinely assess their degree of support in state waters. The Section also curates water quality data collected by regional field staff. Activities performed by the section during the fiscal year include:

- Development of a Quality Assurance Project Plan (QAPP) to establish appropriate dissolved oxygen (DO) criteria in the Southern Plains Terrace and Flatwoods (SPTF) ecoregion;
- Development of a toxicity study to inform on future minerals water quality criteria revision efforts;
- Review of historic water quality data to identify duplicate data records, inappropriately qualified data points, and verify extreme data points;
- Development and implementation of an improved webpage to facilitate public access to water quality data;
- Development of a QAPP to collect nutrient, water quality, and biological data to detect nutrient thresholds in lakes in the inland (South Central Plains Flatwoods (SCPF), South Central Plains Tertiary Uplands (SCPTU), South Central Plains Southern Tertiary Uplands (SCPSTU), and the Upper Mississippi River Alluvial Plains (UMRAP)) ecoregions;
- Development of a QAPP to analyze and synthesize existing data to inform development of numeric translators for narrative nutrient criteria in inland (SCPF, SCPTU, SCPSTU, UMRAP, and the Terrace Uplands (TU)) rivers and streams;
- Development and subsequent approval of a QAPP for coastal DO criteria review and consideration of secondary data components;
- Development of a Use Attainability Analysis Addendum to the Mermentau River Basin for DO for Bayou Chene;
- Participation in GOMA Water Resources Team Steering Committee and Monitoring Community of Practice;
- Participation in EPA Hypoxia Task Force;
- Participation in State of the Coast Conference;
- Participation in Louisiana Chapter of the American Fisheries Society Annual Meeting;
- Development of Louisiana Nutrient Management Strategy 5-year review;
- Development of a water quality trading program; and
- Development of the 2018 305(b) IR.

4.4 Total Maximum Daily Load Section: A State Plan for Prioritizing Watersheds for Restoration and Protection in Louisiana

The CWA Section 303(d) Program provides effective integration for implementation of activities to restore and protect the nation's aquatic resources where the nation's waters have been assessed. The primary goals of the long-term vision include prioritization, assessment, protection, alternatives, engagement, and integration. Restoration and protection objectives have been systematically prioritized, and TMDLs and alternative approaches are being adaptively implemented to achieve water quality targets with the collaboration of states, federal agencies, tribes, stakeholders, and the public, from 2016-2022.

The USEPA worked together with states to develop the new vision and six goal statements to help coordinate and focus efforts in advancing the effectiveness of the program. The vision and goals are neither regulation nor policy guidance but provide a mechanism for USEPA and states to better manage the program to achieve water quality goals. USEPA encouraged each state to embrace the vision concept and develop a strategy that outlines a comprehensive, integrated and iterative approach to addressing the challenge of achieving and communicating water quality improvements.

Initially, LDEQ identified seven priority watersheds under this new vision in the 2016 IR. They were Tunica Bayou (070505), Bayou Sara (070501), Turkey Creek (080905), Yellow Water River (040504), Natalbany River (040503), Blind River (040401, 040403), and New River (040404). In an effort to optimize limited resources, LDEQ removed subsegment 080905 Turkey Creek from the list of priority watersheds in 2017 due to the limited access to the waterbody and uncertainties regarding loading sources. Subsegment 080905 Turkey Creek will remain under consideration and may be added to the list of priority watersheds in the future.

In 2016, a draft plan was developed for the first priority watershed, subsegment 070505 Tunica Bayou. LDEQ received comments from EPA on the draft plan in 2017. LDEQ plans to update and resubmit the plan to EPA in 2018. LDEQ initiated monitoring, outreach and engagement, and watershed investigations in Subsegment 040504 Yellow Water River. Outreach and engagement, integration, data analysis and assessment, watershed investigations, and the development of monitoring strategies were initiated in the remaining 5 priority watersheds.

There has been a long-term connection between the Section 319 NPS program and the CWA 303(d) programs. LDEQ remains committed to integrating across federal and state water programs, engaging the public and stakeholders, and adaptively developing, evaluating, and implementing TMDLs and TMDL alternatives and strategies to ensure strategic use of available resources to achieve water quality goals.

4.5 Watershed Coordinators and Watershed Groups

LDEQ WSCs continue to serve as valuable partners in implementing Louisiana's NPS program. In FFY 2018, LDEQ continued to partner with Capital RC&D, Trailblazer RC&D, BTNEP, LRWA, and BVD. This partnership accomplishes several goals listed in Louisiana's NPS Management Plan including:

- Involving appropriate stakeholders in watershed implementation;
- Statewide educational programs;
- Identifying priority areas in the watershed for BMPs implementation;
- Implementing BMPs in watershed priority areas;
- Water quality monitoring and data analyses to evaluate water quality changes; and
- Preparing success stories or identifying future actions needed to achieve success.

These WSCs are dedicated to restoring and preserving the water quality in the areas where they live and serve.

4.5.1 Capital RC&D



Capital RC&D finished its “Nonpoint Source (NPS) Pollution Reduction through Enhancement of the On-Site Wastewater Disposal Systems Inspection, Educational Outreach, Sampling and Low Income Home Waste System Initiative” project in September 2018.

The project targeted eleven watersheds. Ponchatoula Creek, Yellow Water River, Selsers Creek, Big Creek, Comite River, Middle Comite River, Tunica Bayou, Bayou Sara, Thompson Creek, Upper Amite River, and Middle Amite River. These watersheds were listed on Louisiana’s IRs as not supporting one or more designated uses of PCR, SCR, FWP, or Outstanding Natural Resource (ONR).

The goal of this project was to reduce NPS pollution with the objectives of improving surface water quality and restore support for CWA designated uses, and maintaining healthy waters. This goal was accomplished by monitoring water quality to determine critical areas with high fecal coliform (FC) concentrations in the watersheds. These areas then became the focus of OSDS inspections and homeowners to ensure properly functioning systems. Both Capital RC&D and contract personnel worked together to accomplish this.

At the conclusion of the project, 5,613 OSDS had been inspected. Of the 5,613 OSDS inspected, 1,754 were found to be not working and 778 OSDS were repaired/replaced. Capital RC&D estimated that a total load reduction of 14,858,000 cfu of FC was achieved in the watersheds at the conclusion of the project.

Capital RC&D also continued its partnership with area organizations. They participated in meetings with the City of Hammond and Keep Hammond Beautiful, and worked with Department of Health personnel in targeted watersheds. Capital also participated in clean-up and recycling events.



Figure 6. Sewage overflowing from an improperly managed home waste system



Figure 7. Tangipahoa Parish inspector introducing the OSDS inspection program

4.5.2 Trailblazer RC&D



Beginning October 1, 2017, LDEQ contracted with Trailblazer RC&D to reduce NPS pollution related impairments in the Ouachita and Red River Basins. The objective was to improve water quality, restore support for CWA designated uses, and maintain healthy waters; thus, reducing the number of watersheds listed as impaired and preventing the listing of new watersheds, in these basins, on the Louisiana Water Quality IR.

LDEQ's 2016 IR listed the Ouachita Basin as having 208 impairments in 60 subsegments. The impaired uses include FWP, PCR, SCR, drinking water supply (DWS), outstanding natural resources (ONR), and limited aquatic life and wildlife (LAL).

LDEQ's 2016 IR listed the Red River Basin as having 201 impairments in 71 subsegments. The impaired uses include FWP, PCR, ONR, SCR, and DWS.

Trailblazer RC&D's full-time WSC, Olivia Ward, conducted specific tasks in the Red River and Ouachita Basins to address NPS related impairments. Ms. Ward fulfilled responsibilities of Trailblazer's WSC, until her departure in December 2017. Subsequently, Ellzey Simmons, chief executive officer (CEO) of Trailblazer RC&D, assumed the WSC position until the conclusion of the contract. Throughout several parishes in north Louisiana, Trailblazer personnel participated in 24 educational workshops, gave presentations at multiple events, and distributed water quality information through media outlets. By distributing NPS pollution related educational material, RC&D newsletters, and presenting information on the Basins' pollution related water quality concerns at public meetings, schools, and libraries, approximately 8,345 citizens were enlightened on NPS pollution problems in their areas and on how they are able to aid in improving the issues in their respective watersheds. In addition, approximately 1,500 water quality activity handbooks, *Splish! Splash! The Amazing Story of Water*, have been distributed. The activity book includes mazes, word searches, matching games, and graphs that lead students on a journey through the water cycle, down a river, and through the pipes, into our homes. Through the various events Trailblazer has attended and/or conducted,



Figure 8. Water quality presentation at Cedar Creek High School in Ruston, Louisiana



Figure 9. Forestry BMP workshop participants, El Dorado, Arkansas

valuable contacts have been formed; consequently, the RC&D has set the foundation for federal, state, and local agencies and citizens to develop a stakeholder group and an action plan, in hopes of protecting the Ouachita and Red River Basins, from NPS pollution, and reducing the number of listed waterbodies in the aforementioned basins, in LDEQ's IR.

The draft 2018 IR indicates the Ouachita River Basin remains listed as not supporting its designated uses of DWS, FWP, PCR, SCR, ONR, and LAL. Currently, there are 203 listed impairments in 61 subsegments, a reduction in five listed impairments and one subsegment, since the 2016 IR.

The draft 2018 IR indicates Red River Basin remains listed as not supporting its designated uses of FWP, PCR, SCR, and DWS. Currently, there are 189 listed impairments in 72 subsegments a reduction of two listed impairments; however, there has been one additional subsegment added to the draft 2018 IR.

This project helped implement Louisiana's NPS management program through interagency coordination, statewide and watershed implementation, and carrying out milestones to meet short and long-term NPS water quality goals in the Ouachita and River Basins. The contract concluded September 30, 2018.

4.5.3 Barataria-Terrebonne National Estuary Program



LDEQ continues to partner with BTNEP to address water quality impairments in the Bayou Folsé area, subsegment 120302. Both PCR and FWP uses are impaired due to NPS pollution. BTNEP's regular sampling of water quality parameters at 10 locations throughout the subsegment was imperative for identifying areas with high concentrations of sediment, nutrients, and bacteria. This data, along with coordination through BTNEP and multiple stakeholders in the Bayou Folsé area, helped formulate an EPA-

approved watershed plan for addressing water quality impairments using education and outreach, BMP implementation, and home sewage system inspections and repair.

Throughout the year, BTNEP staff collected water quality data at 10 sites twice monthly along a transect of the Bayou Folsé watershed. In FFY 2018, BTNEP staff and volunteers conducted 19 sampling events that included field sampling parameter collection, grab samples for laboratory analysis, and velocity measurement for flow estimation at the ambient location. Water quality sampling data and flow estimation enabled the estimation of loading from specific geographic areas within the watershed, used in the watershed plan to target hot spots for pollution reduction activities in the next phase of this project.

BTNEP staff regularly attends education events, sharing information about Bayou Folsé, NPS pollution, and water quality in both formal and informal settings. Staff members continue to update the Bayou Folsé web page and information sheet, and perform outreach via radio and print media. Additionally, BTNEP and its multi-agency management conference provide a formal structure to communicate with local, state, federal, private, and citizen stakeholders in the Bayou Folsé watershed.

In 2018, BTNEP worked with local governmental entities to forge agreements to address malfunctioning home sewage systems in the watershed. BTNEP obtained support from the Bayou Lafourche Freshwater District (BLFWD) to inspect home sewage treatment systems for proper functioning. Together with BLFWD, BTNEP will work toward identifying and correcting malfunctioning home sewage systems. To augment education, outreach, and inspections, BTNEP has obtained an additional \$427,000 in funding from the Gulf of Mexico Program to assist homeowners with the cost of maintenance and repairs. The mapped water quality data will assist in targeting areas for inspection and maintenance. Additionally, LDEQ's SWPP works with BTNEP and the LRWA to organize home system maintenance classes that provide both classroom instruction and on-site demonstrations to residents in the watershed.

In addition to addressing home systems, BTNEP and LDEQ continue to work with another key stakeholder in the watershed, NRCS, to address agricultural runoff. Sugarcane and pasture activities contribute nutrients, sediment, and bacteria to Bayou Folsé. NRCS has identified Bayou Folsé as an NWQI watershed and is committed to work with producers in implementing conservation activities. Mapping and analysis of water quality data collected throughout the watershed will help NRCS target areas for BMPs.

With the first phase of the Bayou Folsé restoration effort completed, baseline monitoring and geographic targeting, work will move into the next phase, home system inspection and maintenance, and agricultural BMP implementation, starting October 2018.

4.5.4 Bayou Vermilion District



Bayou Vermilion District (BVD) continued their OSDS inspections/re-inspections this year in the Lafayette area. Through their continued efforts, they have educated many residents on the dangers of malfunctioning systems. BVD has also participated in numerous outreach events which include the Festival Acadiens et Creoles, Shake your Trailfeather, Black Pot Festival, Celtic Bayou Festival, University of Louisiana Lafayette Earth Day Festival, and the Vermilionville Earth Day Event.

BVD has been featured on the local News Station, to discuss environmental issues and inspection programs, published an article in the Times of Acadiana, titled, *Keep Your Sewer System Working Properly*, participated in EPA’s Septic Smart Week, and presented on the educational inspection program at the Annual Louisiana Department of Health Sanitarian Conference. BVD employees attended several meetings including the Gulf Hypoxia meeting, the Bayou Vermilion Preservation Association Technical Committee Meeting, and met with parish officials, to discuss the contract, inspections progress, problems, and possible solutions. Because their inspection program has been so successful, BVD has also worked with other parishes, which are interested in starting their own inspection programs.

Date	Total Initially Inspected	Passed	Failed	Total Times Re-Inspected	Re-Inspected & Passed	Re-Inspected & Failed
Oct-17	17	1	16	30	8	22
Nov-17	55	11	44	26	5	21
Dec-17	7	1	6	46	9	37
Jan-18	12	3	9	30	9	21
Feb-18	36	10	26	15	5	10
Mar-18	50	17	33	30	14	16
Apr-18	60	24	36	28	14	14
May-18	23	6	17	47	24	23
Jun-18	48	12	36	43	21	22
Jul-18	64	16	48	37	26	11
Aug-18	25	2	13	38	20	18
Sep-18	40	11	29	17	10	7
Totals	437	114	313	387	165	222

Table 11. Summary of BVD’s inspections from October 1, 2017 to September 30, 2018.

4.5.5 Louisiana Rural Water Association



The LRWA is a non-profit organization whose mission is to promote public health, assist small water and wastewater systems through training, on-site technical assistance, and state operator certification necessary for promoting public health and environmental protection for the state of Louisiana. The purpose of this project was to improve water quality by 1) educating homeowners on the importance of routine inspections, 2) how to properly maintain their home sewage treatment system, and 3) identifying repairs needed on their individual home sewage treatment system through OSDS inspections and to encourage and educate homeowners on the importance of

denitrification systems. These elements combined will ultimately help to reduce FC bacteria in the targeted areas.

In the past year, LRWA raised awareness of the importance in maintaining individual home sewage systems by conducting door-to-door education outreach inspections in St. Landry and Acadia Parishes. By going door to door, the inspectors were able to educate the homeowners on a one-on-one basis through distributing educational material while addressing the homeowner’s questions. Inspectors also offered to educate homeowners on how their systems worked and explained how to maintain their systems through repairs, upgrades and pump-outs.

This project aided in the reduction of the number of septic system failures, and ultimately increased the quality of effluent released into local waterways. LRWA distributed informational brochures at the city/town halls; notifying parish presidents by letter, phone calls, and personal visits; and through public advertisements to draw interest to the local area activities and encourage participation. LRWA educated more than 7,000 local residents in St. Landry and Acadia parishes. Table 12 summarizes the project results.

St. Landry & Acadia Parishes	
7630	Total Homeowners To Visit
1411	Contact Made With Homeowners
1378	Inspections Occurred
1348	Systems In Good Condition
30	Systems Not Operating Or In Poor Condition
33	Refused Inspections
6219	No Contact Made With Homeowners
5973	No One Home
9	Homes Vacant Or Abandoned
209	Businesses -Not Required To Visit
9	Homes Had Dog(S) Unable To Enter Yard
19	Unable To Locate
7384	Total Flyers Distributed

Table 12. Louisiana Rural Water Association inspections.

5.0 Meeting NPS Milestones

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Meeting NPS Milestones

Louisiana’s NPS Management Plan includes annual milestones. In FFY 2018, Louisiana’s NPS program continued its focus on watershed planning, assessment, monitoring and implementation, in 23 waterbodies.

BASIN	WATERBODY	P	A	M	I	SUBSEGMENT	WIP	Success Story
Lake Pontchartrain	Middle Comite River			✓		040102		
	Comite River			✓		040103		
	Upper Amite River			✓		040301		
	Middle Amite River			✓		040302		
	Yellow Water River			✓		040504		Approved 2015
Mermentau River	Bayou Des Cannes			✓	✓	050101	Approved 2017	
	Bayou Mallet			✓	✓	050103	Approved 2017	Approved 2016
	Bayou Queue de Tortue			✓	✓	050501	Approved 2013	
	Bayou Chene	✓	✓	✓	✓	050603	In progress	
Vermilion – Teche	Bayou du Portage	✓	✓	✓		060703	In progress	
	Vermilion River	✓	✓	✓		060801/060802		
	Boston Canal	✓	✓	✓	✓	060910		
Mississippi River	Tunica Bayou			✓		070505		
	Bayou Sara		✓			070501		
	Thompson Creek			✓		070502		
Ouachita River	Bayou Louis/Lake Louis			✓		080202/080203		
	Big Creek (North)	✓	✓	✓	✓	080903	Approved 2019	
	Upper Bayou Lafourche	✓	✓	✓	✓	080904	In progress	
	Lake Providence	✓	✓	✓		081101		
	Hemphill Creek	✓	✓	✓	✓	081609	Approved 2017	
Terrebonne	Bayou Folse	✓	✓	✓		120305	Approved 2018	
	Bayou Grosse Tete	✓	✓			120104	In progress	
	Bayou Maringouin	✓	✓			120111	In progress	

Table 13. Waterbodies included planning (P), assessment (A), monitoring (M) and implementation (I) in FFY2018.

Statewide Milestones for Water Quality Improvement	2018
<p>Number of waterbodies identified in LA's 1998/2000 IR or subsequent years as being primarily NPS impaired that are partially or fully-restored (WQ-10): Identify fully restored water bodies in Appendix C of state's IR primarily impaired by NPS pollutants in 1999 court ordered 303(d) list or 1998/2000 IR; review NPS related activities in watershed where water body was restored; write NPS success story; and identify activities to maintain water quality.</p>	2
<p>Number of NPS impairments removed from LA's IR: Annually review state IR for NPS impairments (DO, fecal coliform bacteria, TSS, etc.) removed as a result of NPS activities and include information in NPS annual report. Compare the previous IR to the current IR.</p> <p>Number is based on the 2016 IR.</p>	2
<p>Progress in reducing unliquidated obligations (ULO): Percentage of ULO funds anticipated yearly for LDEQ (total remaining funds/total awarded = percentage ULO).</p>	38.23%

Table 14. Statewide milestones for water quality improvement, based on LDEQ's 2018 IR

5.1 Water Quality Improvements

Louisiana's NPS Program has made significant progress in partially or fully restoring NPS impaired watersheds. Louisiana's NPS Management Plan's milestones include USEPA water quality measures WQ-10 for water quality improvements. Measure WQ-10 requests states to report on the number of watersheds identified in 2000 or subsequent years, primarily impaired by NPS pollutants that have been partially or fully restored. Louisiana reviews related activities for each watershed impaired with NPS pollutants that have been delisted. All watersheds restored utilizing Section 319 funds or other funding sources are counted for this measure.

5.2 Success Stories

Success stories for Bayou des Cannes and Bayou Sara were written and submitted to USEPA Headquarters in Washington D.C. for approval. They can be found on USEPA's NPS Success Story Website at: <https://www.epa.gov/nps/nonpoint-source-success-stories>.

5.2.1 Bayou des Cannes

Bayou des Cannes, subsegment 050101, is a 68-mile perennial stream located in southwestern Louisiana (Figure 10). The northern portion of the watershed is characterized by rice, pastureland, and soybeans, and the southern segment features aquaculture, rice, and a large area of forested wetland. The watershed is sparsely populated outside of its municipalities. Excessive nutrient deposition, stemming from agriculture, led to increased concentrations of TDS in the watershed. Bayou des Cannes was added to the LDEQ's 2008 CWA Section 303 (d) list for not supporting its FWP designated use, due to elevated

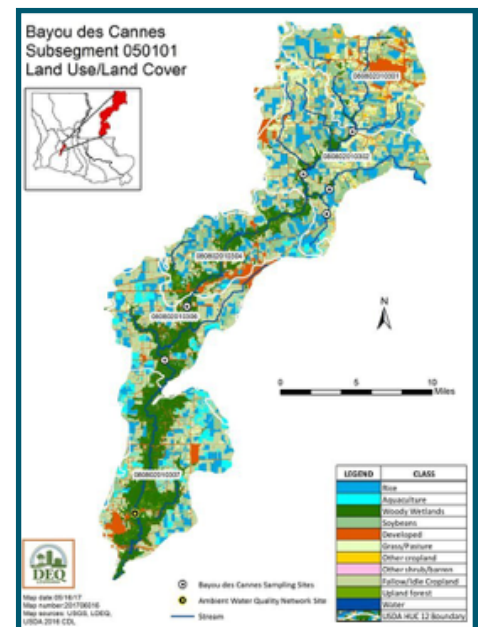


Figure 10. Bayou de Cannes

levels of TDS. The USDA-NRCS, as well as LDAF implemented BMPs in the watershed, beginning in 2009 and 2015, respectively. In December 2015, LDEQ Water Surveys began collecting water quality samples to monitor critical areas and to evaluate water quality changes in the watershed. Recent data indicate the river no longer exceeds the TDS standard; as a result, LDEQ removed the water body's FWP impairment, due to TDS, from the state's draft 2018 IR.

5.2.2 Bayou Sara

Bayou Sara, subsegment 070501, is approximately 31 miles long. The watershed is located in West Feliciana Parish and includes the town of St. Francisville. The primary land cover in the watershed is deciduous forest and shrubland (Figure 11). Homes within this watershed contain improperly managed septic systems that caused high bacteria loadings to Bayou Sara. Sewage leaking from improperly managed septic systems led to a fecal coliform bacteria impairment in Bayou Sara. LDEQ added the water body to the state's 2012 CWA section 305(b) list for not supporting its PCR designated use because of the high bacteria levels. Partners implemented a series of initiatives to restore this designated use, including home septic and facility inspections, and education and outreach. Recent data indicate that the river no longer exceeds the fecal coliform standard for PCR; as a result, LDEQ removed the water body's PCR impairment listing from the state's draft 2018 CWA section 305(b) list.

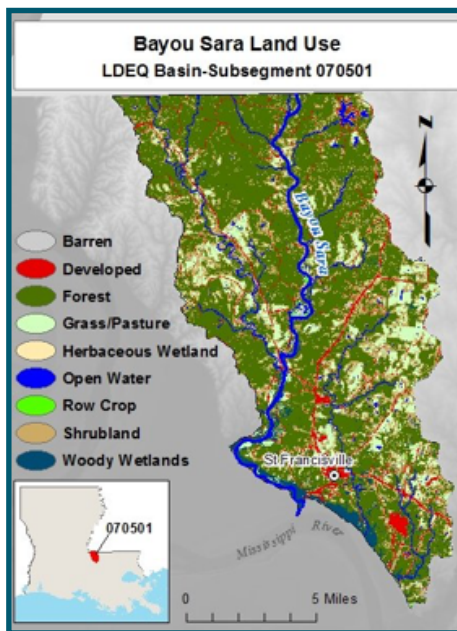


Figure 11. Bayou Sara

6.0 Statewide Programs

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P R O G R A M



Statewide Programs

6.1 Coastal Nonpoint Pollution Control Program (CNPCP)

Jefferson Parish 18th Annual Storm Water Pollution and Solutions Poster and Essay Contest

One of the most effective ways to raise public awareness of an issue is through educating our young people, who will in turn share the information learned with their parents. For this reason, Jefferson Parish sponsor an annual contest for Jefferson Parish public, private and parochial school students in grades 3 through 8. The poster contest encourages students to depict or describe at least one source of NPS pollution and present potential solutions. The winners of the “Non-point Source Storm Water Pollution and Solutions” poster and essay contest were announced at the 18th Annual Storm Water Poster and Essay Awards Ceremony on April 6, 2018 at the Kenner City Park Pavilion in Kenner.

Outreach and Education

The CNPCP currently has a representative on the management conference for BTNEP. BTNEP became recognized in 1990 as one of 28 National Estuary Programs through the United States, and it works to protect and preserve the culture and land located between the Mississippi and Atchafalaya Rivers in Southeast Louisiana. The management conference originally convened in 1990 to develop the Comprehensive Conservation and Management Plan (CCMP), and it evolved to become an arena for producing open and frank discussions about some of the most critical coastal management issues. In 2018, nine different committees, made up of representatives from the management conference, reviewed and updated the CCMP. In addition, the management conference meets quarterly to provide direction and oversight to BTNEP as they implement the CCMP.

The CNPCP participated in six educational outreach events throughout the year.

- On March 6 at the Ponchartrain Center in Kenner, LA; the theme of the year was about Adapting to Change, and featured hands-on demonstrations to help all participants connect with the changing world of seafood;
- On March 24 at the Big Bass Rodeo and Fishtival in New Orleans City Park; the event is focused on children as well as adults and to highlight many of the state’s fishing resources and the importance of a healthy ecosystem;
- On March 28 at the La Branch Wetland Watchers Day in Kenner, LA; an event that involves high school students and elementary school students, where presenters instruct and help high school students present their displays to elementary school students;
- On April 13 at the St. James Parish Agriculture Day in Gramercy; this event is geared kindergarten through second-grade students and is designed to give students a better understanding about the role of agriculture in everyday life.
- On October 14 at the St. James Parish Agriculture Day in Gramercy, this event is geared third and fourth grade students and is designed to give students a better understanding about the role of agriculture in everyday life; and,
- On October 25 at the 21st Annual Ocean Commotion at the Louisiana State University in Baton Rouge, LA; each year this event brings approximately 2,500 area students, teachers, and chaperones, and it is designed for students to get involved and develop a further understanding in ocean and coastal environments.

6.2 Drinking Water Protection Program

LDEQ's DWPP staff gave presentations at eleven educational events/meetings/conferences and worked booths at five educational events/conferences. Combined with the sewage treatment education in Lafourche parish, the approximate total number of people reached was over 10,500 for this reporting period.

Public education is one of the main elements of the DWPP; therefore, various opportunities are utilized to inform students and educators about drinking water source protection. Presentations on the DWPP were given to elementary, middle, and high school students and teachers in five parishes.

As part of LDEQ's continuing efforts to address NPS pollution from malfunctioning OSDS, LDEQ and the LRWA held another OSDS class in Thibodaux for owners/operators of these systems. The LRWA set up the class and advertised within the target area. At the class DWPP staff explained how OSDS maintenance relates to public health and the environment and the LRWA educated attendees on the different types of systems and how to maintain them.

DWPP staff manned booths at the LRWA Annual Conference, the Louisiana Conference on Water Supply, Sewerage and Industrial Waste, and the Louisiana Municipal Association Conference. Additionally, staff presented at the Wetland Watchers and Ocean Commotion events, and at the Sparta Aquifer Commission's annual, multi-week Sparta Water Festival.

DWPP staff implemented the following SWPP activities during this reporting period. The bulleted items below list the activities that occur in each targeted parish, as well as other parish specific SWPP activities. Routine activities that occur in each targeted parish include:

- explaining the DWPP to water systems and local officials;
- developing contingency plans with water systems;
- updating source water assessment data;
- introducing a model ordinance;
- educating local businesses identified as potential sources of contamination to drinking water sources, and,
- conducting public education (including community meetings, and school presentations).

Routine activities not reported below were either conducted during a previous reporting period or have yet to be implemented. Also note that while only ordinances that have been passed are reported, the DWPP staff introduces a model ordinance to every governing body in each targeted parish that has public water supply wells within its jurisdiction.

6.2.1 Target Parish Activities

Sabine Parish	
DWPP Initiation	The program was initiated in August 2017.
Public Supply Water System(s)	There are 17 systems in Sabine parish.
Source Water Assessment Data	GPS data was obtained for one new public supply well and two potential sources of contamination.
Educational visits	One hundred sixty-nine businesses/facilities identified as potential sources of contamination were verified and 41 educational visits were made to owners and operators of these businesses/facilities.
Community and Committee meeting(s)	One community meeting and four committee meetings were held in Sabine parish.

De Soto Parish	
DWPP Initiation	The program was initiated in October 2017.
Public Supply Water System(s)	There are 11 systems in De Soto parish.
Source Water Assessment Data	GPS data was obtained for eight new public supply wells and 14 potential sources of contamination.
Educational visits	One hundred seventy-eight businesses/facilities identified as potential sources of contamination were verified and 17 educational visits were made to owners and operators of these businesses/facilities.
Community and Committee Meeting(s)	One community meeting and three committee meetings were held in De Soto parish.

Red River Parish	
DWPP Initiation	The program was initiated in January 2018.
Public Supply Water System(s)	There are 11 systems in Red River parish.
Source Water Assessment Data	GPS data was obtained for three new public supply wells and four new potential sources of contamination.
Educational visits	Fifty-three businesses/facilities identified as potential sources of contamination were verified and 17 educational visits were made to owners and operators of these businesses/facilities.
Community and Committee meeting(s)	Red River parish residents to attend neighboring Bienville parish community meetings. No committee formed due to rural nature of parish.

Bienville Parish	
DWPP Initiation	The program was initiated in July 2018
Public Supply Water System(s)	There are 23 systems in Bienville parish.
Source Water Assessment Data	GPS data was obtained for eight new public supply wells and 14 new potential sources of contamination.

Cameron Parish	
DWPP Initiation	The program was initiated in September 2018.
Public Supply Water System(s)	There are seven systems in Cameron parish.
Source Water Assessment Data	GPS data was obtained for four new potential sources of contamination.

Table 15. Target parish activities

6.2.2 Non-Target Parish Activities

East Feliciana	
DWP Program Initiation	The program was initiated in 2006
Public Water Supply System(s)	There are 16 systems in East Feliciana parish.
Source Water Assessment Data	GPS data was obtained for one new water well.

Natchitoches	
DWP Program Initiation	The program was initiated in 2005
Public Water Supply System(s)	There are 14 systems in Natchitoches parish.
Source Water Assessment Data	GPS data was obtained for one new surface water intake and three new potential sources of contamination.

St. Tammany Parish	
DWP Program Initiation	The program was initiated in July 2016
Public Water Supply System(s)	There are 102 systems in St. Tammany parish.
Ordinance Activity	Met with parish officials on two separate occasions to present and explain the groundwater protection ordinance.
Source Water Assessment Data	GPS data was obtained for five new public supply wells and five new potential sources of contamination.

Vernon	
DWP Program Initiation	The program was initiated in January 2009
Public Water Supply System(s)	There are 16 systems in Vernon parish.
Source Water Assessment Data	Updated SWA Plans for Fort Polk and provided Drinking Water Protection signs.

Table 16. Non-target parish activities

6.3 Source Water Assessment Program

Source water risk assessments were completed for all public water supply systems between 2000 and 2003. By utilizing data collection, assessment, and automated data processing tools which were developed and implemented in 2013, LDEQ is able to collect and process new assessment data. Specifically, the Source Water Assessment Program (SWAP) Calculator automates the generation of new source water assessment reports based on existing data and new data collected with the SWAP Mobile data collection tool. These tools ensure data integrity, improve data management efficiency, and facilitate reporting to USEPA through the Grant Reporting and Tracking System (GRTS).

In 2018, new source water assessment data was collected in five DWPP target parishes and three non-target parishes. In addition, utilizing the functionality of the SWAP Calculator allowed over 20 source water assessment reports to be generated. These new reports and the data used to generate them are used by DWPP staff and citizen volunteers when performing visits to businesses that are potential sources of contamination to inform and educate them of the potential impact on their drinking water source.

6.4 Statewide Onsite Disposal System Program

Many of Louisiana's watershed impairments are caused by high concentrations of fecal coliform bacteria. The state's numerical criteria for fecal coliform bacteria for designated uses are as follows:

Designated Use	Louisiana numerical criteria
Primary Contact Recreation	fecal coliform bacteria: 400 cells/100 mL
Secondary Contact Recreation	fecal coliform bacteria: 2000 cells/100 mL
Public Water Supply	fecal coliform bacteria: 2000 cells/100 mL
Oyster Propagation	fecal coliform bacteria: 14 cells/100 mL

Table 17. The State's numerical criteria for fecal coliform bacteria for designated uses

LDEQ, WSCs, and WSC support groups continued to partner with LDH and the parish and/or local governments in developing education and outreach programs and assist in inspecting OSDs located in priority watersheds.

Table (18) depicts the watersheds and partners involved in OSDS inspection projects.

Watershed	Project Summary
Tunica Bayou (070505)	In FFY2018, Capital RC&D Capital RC&D conducted monitoring and individual home sewage inspections. Monitoring and inspections will continue.
Comite River (040103)	In FFY2018, Capital RC&D conducted individual home sewage inspections. Monitoring was conducted by LDEQ Water Surveys personnel. Monitoring and inspections will continue.
Middle Comite River (040102)	In FFY2018, Capital RC&D continued monitoring and individual home sewage inspections. Monitoring and inspections ended on September 30, 2018
Big Creek (040703)	Capital RC&D conducted water quality monitoring that ended on September 30, 2016. Capital RC&D conducted individual home sewage inspections ended on September 30, 2017.
Selsers Creek (040603)	Capital RC&D conducted individual home sewage inspections that ended in December 2016.
Ponchatoula Creek (040505)	Capital RC&D conducted individual home sewage inspections that ended on September 30, 2017
Yellow Water River (040504)	In FFY2018, Capital RC&D conducted monitoring and individual home sewage inspections. Monitoring and inspections will continue.
Vermilion River (060801)	In FFY 2018, BVD continued to conduct home sewage inspections. A cooperative agreement with Bayou Vermilion District began January 1, 2017, to initiate inspections which were initiated July 2017. LDEQ Water Survey's continues conducting monitoring.
Bayou Folsé (120302)	In 2018, BTNEP obtained support from BLFWD to inspect home sewage treatment systems for proper functioning, inspections set to begin Oct. 1, 2018. In FFY2017, LDEQ-NPS initiated a partnership with BTNEP and has a cooperative agreement in place.
6217 Coastal Management Area in Coastal Louisiana	In FFY2018, LDEQ-NPS continued its partnership with Louisiana Rural Water Association (LRWA) conducting inspections and workshops initiated September 2016.

Table 18. OSDS inspection projects

Evaluation of continuing inspections in the watersheds will be made based on water quality data obtained from the ambient water quality network sites (AWQNS) in each subsegment. Criteria for the designated uses will be used to determine whether NPS bacteria are being reduced and progress is being made towards meeting water quality standards in each subsegment.

7.0 Outreach and Education Activities

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7.0 Outreach and Education Activities

LDEQ, partners, and WSCs, all worked together to conduct education and outreach across the state. Each department realizes the importance of sharing our findings and continued education of the public to promote watershed restoration.

LDEQ attended 20 outreach and educational events across the state this fiscal year. These events were geared to people of all ages, and activities included hands-on demonstrations (often using our Enviroscape and Walnut Bayou models) as well as lectures. The Enviroscape model allows for students to see how water moves through an array of landscapes, from urban to agricultural, illustrating the interconnectedness of our waterways and the transportation of NPS pollution. Walnut Bayou is a model developed by a LDEQ Senior Scientist; it is used to show the corresponding geomorphological alterations that result from the movement of water. When demonstrating these models, students are asked to think about and predict how the water will move through various environs and substrates, and how that will affect the transportation of NPS pollution. In FFY 2018, LDEQ reached over 12,300 adults and students through the following events:

October 14, 2017

20th Annual *Wild Things* celebrated its 20th Anniversary at the Bayou Lacombe Center in Lacombe where over 4800 attendees participated.

October 24, 2017

Ocean Commotion celebrated its 20th Anniversary on the campus of LSU/BR by hosting over 1800 students, teachers, chaperones, and exhibitors.

December 12, 2017

Dutchtown High School Science Day – LDEQ representatives took the Enviroscape model to Dutchtown High School to educate 125 11th and 12th grade agri-science students on erosion, and nonpoint source pollution to give the students a visual of how pollution is spread and the ways we can reduce it.

February 1, 2018

Region 8 Science Fair – LDEQ personnel attended the Region 8 Science Fair in Hammond and educated approximately 220 students about water quality. The region consists of the following parishes: Livingston, St. Helena, St. Tammany, Tangipahoa, and Washington Parishes.

February 23-24, 2018

Louisiana Environmental Education Symposium was held in Baton Rouge. It is a two (2)-day professional development event hosted each year by the Louisiana Environmental Education Commission and the Louisiana Environmental Education Association and was attended by 200 science teachers. LDEQ personnel provided water quality information to these attendees. The symposium is a forum where professionals are taught to support and promote environmental education through facilitating communication, coordination and professional development among an array of environmental education programs throughout the state.

April 20, 2018

Xavier University Earth Day was held at the University Center on campus. Approximately 250 students passed through the center and participated in events including a panel discussion and green games. LDEQ demonstrated the NPS pollution model and provided information on water quality.

April 22, 2018

Bayou Vermilion District Earth Day – is an annual event held at the Vermilionville Living History Museum in Lafayette. LDEQ participated in the Bayou Vermilion Earth Day Celebration to highlight environmental responsibility and promote sustainability of our natural resources to the community about what they can do to help foster a healthy and thriving environment in their own backyards. Approximately 945 visitors passed through Vermilionville and participated in activities.



Figure 12. Bayou Vermilion Earth Day

April 28, 2018

STEM Festival – LDEQ participated in the Stem Festival at Greenville Park Leadership Academy in Hammond, Louisiana. It was open to adults and students grades Pre-Kindergarten through 9th grade. The purpose of the event was to expose students to careers in the STEM fields. There were over 200 students in attendance.



Figure 13. Stem Festival at Greenville Park Academy

April 29, 2018

Louisiana Earth Day is an annual event that held in Baton Rouge. LSU Parker Coliseum brought intercultural dancers, performances, and arts to the campus of LSU. Attendees experienced local honey farming, feeding horses, sharing native history of Louisiana culture and painting recycle flowers among many activities. LDEQ demonstrated NPS pollution model and provided information on water quality.

May 7, 2018

Louisiana STEM Expo – Approximately 800 elementary and middle school students from the Baton Rouge region packed the new Patrick F. Taylor Hall at LSU to be part of the Louisiana STEM Expo, a fun and interactive exhibition featuring some of the state’s brightest young minds. LDEQ exhibited the NPS Enviroscope model at the largest annual science festival in the Baton Rouge area.



Figure 14. Copper Mill Elementary

May 16, 2018

Copper Mill Elementary – The 5th grade class at Copper Mill Elementary won the Kids to Parks grant and asked LDEQ to do an environmental education demonstration. LDEQ demonstrated the Enviroscope model at Flanacher Park to educate the students about nonpoint source pollution, and some of the sources and causes and things that could be done to prevent it. This was a very interactive and energetic group of about 30 students!

June 20-21, 27, 2018

Big Buddy Program is a summer program for middle and high school students. LDEQ demonstrated NPS Enviroscope model to approximately 100 students and piqued an interest in STEM careers offered by the agency.



Figure 15. Jewel J. Newman Summer Camp

June 26, 2018

Geo Prep Camp provided NPS Enviroscope demonstration to approximately 130 summer campers.

July 6, 2018

Shiloh Summer Camp – approximately 150 campers interacted with LDEQ personnel during NPS Enviroscope demonstration.

July 9, 2018

Jewel J. Newman College and Career Summer Camp – LDEQ educated kids on water pollution specifically nonpoint source versus point source. The Enviroscope demonstration was used to explain how anything that lands on the ground can end up in our local waterways through rain and runoff on impervious surfaces. There were 25 students in attendance.



Figure 16. STEM Fest

August 25, 2018

STEM Fest – The First Back to School STEM Fest was held at Southeastern University on August 25, 2018. Over 1000 students and parents participated in this huge event meant to expose students to STEM activities and careers. LDEQ brought the Enviroscope to show students how pollution is spread from their backyards to the ocean.

September 22, 2018

National Hunting and Fishing Day (NHFD) is a national event celebrated by all 50 states on the fourth Saturday in September. Over 100 years ago, hunters and anglers were the earliest and most vocal supporters of conservation and scientific wildlife management. They were the first to recognize that rapid development and unregulated uses of wildlife were threatening the future of many species; therefore, in 1972 Congress passed two bills establishing a specific day to celebrate the conservation contributions of our nation's hunters and anglers. Louisiana Department of Wildlife and Fisheries (LDWF) introduced its first NHFD event in 1982 at the Monroe district office. In the following years, three more locations were developed in Baton Rouge, Minden and Woodworth.



Figure 17. 2018 National Hunting and Fishing Day

Employees from the LDEQ-NPS section participated in LDWF's on September 22, 2018, in which local citizens were educated on the definition, causes, sources, and possible solutions to reduce NPS pollution in our state. Residents were also informed

of the effects of NPS pollutants on the waterways in our state and how these contaminants have harmful effects on Louisiana’s drinking water supplies, recreation, and fisheries and wildlife. Children and adults were quizzed on various NPS topics discussed, and in return were given informational handouts and LDEQ-NPS promotional items such as pencils, pens, rulers, earbuds, sunglasses, cups, highlighters, lanyards, hand sanitizer, water bottles, and stainless steel straws. All educational materials include LDEQ’s logo and the NPS website.

September 26-27, 2018

Keep Louisiana Beautiful – advocates for a cleaner, greener, more beautiful Louisiana gathered to present and share best practices that encourage environmental stewardship. LDEQ provided information on NPS pollution.

September 28, 2018

Water Palooza was held at St. Mary Academy in New Orleans. It is an education day that engages students in hands-on and demonstrative activities to promote the value of water and encourage students to become stewards of their own water environment. All kindergarten through fourth grade students attended which totaled to 250 students.

September 29, 2018

Girl Scouts – The Girl Scouts Big event was held on the campus of University of New Orleans. It was an exciting day of hands-on activities and presentations showcasing organizations which encourage Girl Scout involvement, focusing on education in STEM, Healthy Living, Financial Literacy and the Great Outdoors. Girl Scouts visited exhibits and attended special demonstrations and other presentations taking place throughout the day. In all, over 1300 girls were in attendance!



Figures 18. Water Palooza event



Figure 19. Girl Scouts Big Event

8.0 Training

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Continued training and education is essential to the success of the NPS program. Staff are encouraged to attend trainings that can add value to the program and increase knowledge of NPS practices and EPA methods.

BMP Training

Oct 4, 2017 Non-Ruminant Organic Livestock on Pasture. This webinar was hosted by USDA/NRCS and covered resource concerns and opportunities for conservation with non-ruminant animals on pasture.

Nov 8, 2017 “Conservation Practice Tracking for the Mississippi River Basin” was a short webinar providing an overview of conservation and water quality tracking across the Mississippi and Atchafalaya River Basin. It was presented by the North Central Region Water Network.

Jan 10-12, 2018 LACD (Louisiana Association of Conservation Districts) meeting. Educational sessions included Soil Health Panel Discussion, How Mitigation Should Be Changed for Protection or Restoration Work, and Water Conservation. Additional presentations included Natchitoches SWCD Feral Swine Control Program, Updating Louisiana Water Code, and Working to Enhance the Sustainability of Coastal, Rivers, and Delta Systems.

July 25, 2018 NRCS Cover Crop Workshop. This was a producers’ meeting for the Lake Providence watershed. LDEQ presented water quality data to stakeholders, but stayed for the workshop, which discussed overcoming obstacles encountered through use of cover crops, and LSU’s latest test plot research on cover crop burning.

Hydrology Training

Aug 13, 2018 Determining 7Q10s. This was a hands-on training that demonstrated using USGS data and methods to determine 7Q10s, taught by retired USGS hydrologist.

Sept 19, 2018 Computing 7Q10-[Louisiana] Regions 2&3. This was a continuation of the previous class, applying USGS data and methods in a hands-on setting.

Watershed Implementation Plan Training

Nov 28 - Dec 1, 2017 EPA Texas Watershed Planning Short Course, Navasota, TX. This workshop was hosted by EPA and provided a series of lectures and hands-on exercises. The training was designed to instruct on how to develop a watershed-based plan that meets EPA’s 9 required elements. Data, expectations, partnership building, models, BMPs, load estimation, critical areas, outreach, monitoring, milestones, funding, and technical assistance were all modules covered in the workshop.

Jan 24, 2018 EPA Civic Engagement Webinar. Pearl Riverkeeper presented this webinar on building citizen participation and engagement in water quality and cleanup efforts.

Technical Training

Nov 7-8, 2017 GIS Tips and Tricks. LDEQ NPS staff attended this hands-on training by an in-house GIS Professional (GISP). The training covered tasks specific to NPS work including creating Mapbook index and Mapbook pages for fieldwork; annotation, labeling, automatic and manual manipulation of labels.

Feb 8, 2018 EPA Watershed Academy Webcast: Using the Surface Water Toolbox – introduction to USGS/EPA tools to estimate streamflow statistics.

March 7-8, 2018 Sewage Treatment System Maintenance Class. Louisiana Department of Health, LDEQ, Louisiana Rural Water Association, and Barataria-Terrebonne National Estuary Program sponsored this workshop, which included bot classroom and field demonstrations. Instruction was designed to help homeowners and small system operators learn to identify proper and improper functioning systems, and observe malfunctioning system repair.

March 20, 2018 NPS Tech Exchange: Introduction to STEPL. This webinar discussed basic STEPL operation and enhancements in the next version.

Aug 8, 2018 Understanding, Tracking and Predicting Harmful Algal Bloom. IN this webinar the North Central Region Water Network discussed predicting blooms, how blooms affect inland waters, and how stakeholders and citizens help scientists track them.

Sept 18, 2018 Coastwise Reference Monitoring System training. The Louisiana Coastal Protection and Restoration Authority held this online training to provide a background on the CRMS water quality monitoring system, online data, charting, bulk charting, data download, and the mapping viewer. Louisiana Remote Sensing/GIS Workshop

Apr 7-9, 2018 Louisiana Remote Sensing and GIS Workshop. Statewide workshop provided attendees with presentations covering local, state, and federal spatial datasets, analytical and mapping methods, and spatial data applications involving geospatial data in the state. The workshop included training seminars covering ArcGIS Online and Survey 123 (field mapping app for handheld devices).

LDEQ Training

Dec 12, 2017 LDEQ records management training. This classroom training covered how to deal with email, identifying records and non-records, responsibilities and legal requirements.

May 10, 2018 Microsoft course Nuts and Bolts of VLOOKUP. This was an online MS Excel class hosted through LDEQ.

Other Training

Aug 8, 2018 A Deeper Look at the Amite Watershed through the Watershed Resiliency Study, Louisiana Office of Community Development. This webinar discussed progress of the Louisiana Watershed Initiative in its data collection and modeling of the Amite River Watershed.

June 2018, FEMA's National Response training series: National Incident Management Training series (100, 200, 700, 800) Covers the Incident Command System and federal protocols for responding to disasters.



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