

Nonpoint Source
PROGRAM

**Louisiana Nonpoint Source
Annual Report
Federal Fiscal Year (FFY) 2013**



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1.0 Executive Summary

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The State of Louisiana’s FFY 2013 Nonpoint Source (NPS) Annual Report has been prepared in compliance with Section 319 of the Clean Water Act (CWA). This report outlines progress made by the State of Louisiana in protecting and restoring water bodies impacted by NPS pollution. Sources of NPS pollution include agricultural production, forestry, sand and gravel mining, urban storm water runoff, construction, and individual home sewerage systems. The NPS program in Louisiana is administered by the Louisiana Department of Environmental Quality (LDEQ), but partners with Louisiana Department of Agriculture and Forestry (LDAF) and many other agencies and organizations on NPS activities, statewide water quality goals, prioritization of watershed planning and implementation activities, evaluating progress, and reporting program activities.

In FFY 2013, Louisiana received approval from United States Environmental Protection Agency (USEPA) for two (2) watershed implementation plans (WIPs). Big Creek Watershed WIP was approved on March 6, 2013. Bayou Queue de Tortue WIP was approved on March 13, 2013. These two (2) serve as templates for all future WIPs.



Figure 1. Educating future generations.

LDEQ’s NPS program hosted the sixth annual project review meeting on December 10, 2013. This meeting provides an excellent forum for LDEQ, USEPA Region 6, watershed coordinators, and other partners to hear about funded projects and share views on the state’s NPS program.

Highlights in implementing the NPS program during federal fiscal year (FFY) 2013 include:

- Jan Boydstun, recently retired Environmental Scientist with LDEQ’s NPS program, was honored with an Exceptional Service award from the Association of Clean Waters Administrators for her leadership in protecting waters of the state and innovation in finding ways to improve water quality;
- LDEQ received approval from USEPA on two (2) Success Stories qualifying for three (3) WQ-10 measures; water quality was improved in two (2) subsegments of Turkey Creek Watershed (080905 and 080906), and one (1) subsegment of Lower Mermentau/Lake Arthur Watershed (050402);
- LDEQ continued watershed planning and implementation activities with six (6) watershed coordinators (WSCs) in the state (Bayou Land Resource Conservation & Development (RC&D), Capital RC&D, Lake Pontchartrain Basin Foundation (LPBF), Louisiana Delta Pride, LLC, Trailblazer RC&D and Twin Valley RC&D);
- LDEQ continued working in 32 NPS projects to reduce NPS pollution in Louisiana’s water bodies;
- LDEQ continued partnering with United States Department of Agriculture (USDA) on implementing Mississippi River Basin Initiative (MRBI)/National Water Quality Initiative (NWQI)/Gulf of Mexico Initiative (GoMI);
- LDEQ and LDAF applied for and was granted a total of \$3,614,300 federal dollars in the FFY 2013 work plan;
- USEPA Headquarters developed a Recovery Potential Screening Tool for Louisiana to compare impaired watersheds and rank by potential restorability; and
- LDEQ staff and WSCs continue educational and outreach events across the state teaching students and engaging the public in taking ownership of their local water bodies.

1.1 Watershed Signs

In FFY 2013, LDEQ's NPS staff and WSCs developed a watershed sign that will be placed at the entrance of all watersheds projects.



Figure 2. Louisiana's NPS Watershed Sign

These signs will increase public awareness of the projects and multi-agency cooperation in each watershed. We anticipate signs posted on all active priority watersheds in FFY 2014.



2.0 Water Quality Improvements

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Water Quality Improvement

2.1 Louisiana's Progress on WQ-09 (a-c) and WQ-10

Louisiana's NPS Program has made significant progress in partially or fully restoring NPS impaired water bodies. Louisiana's NPS Management Plan milestones include USEPA water quality measures WQ-09(a-c) and WQ-10 for water quality improvements. Measure WQ-09 (a-c) requests states to report on estimated annual reductions in nitrogen, phosphorus and sediment from NPS to the state's water bodies. During FFY 2013, LDAF reported 621,287 pounds of nitrogen¹, 117,392 pounds of phosphorus¹ and 113,982,197 pounds of sediment¹ were reduced through the implementation of agricultural best management practices (BMPs) in the Ouachita River, Mermentau River Basins.

Measure WQ-10 requests states to report on the number of water bodies 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 has been delisted. All water bodies restored by 319 funds or other funding sources are counted for this measure. Two (2) success stories (Turkey Creek and Lower Mermentau River & Lake Arthur) which counted towards three (3) stories were written and submitted to USEPA Headquarters in Washington D.C. for approval and will be published on USEPA's NPS Success Story Website at <http://www.epa.gov/owow/nps/Success319/>.

¹Spreadsheet Tool for Estimating Pollutant Loads (STEPL) model was used to estimate nitrogen and phosphorus loading based upon BMPs implemented and tons of sedimentation reported. The Sediment load reductions was based on the Revised Universal Soil Loss Equation (RUSLE).



3.0 NPS Funding

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NPS Funding

In FFY 2013, LDEQ continued partnering with WSCs and agricultural partners in developing and implementing WIPs for the NPS pollution impaired priority watersheds. LDEQ also continued partnering with appropriate stakeholders on statewide programs to reduce NPS pollution from agriculture, forestry, individual home sewage systems, hydromodification, sand and gravel mining operations and urbanized areas through implementation of a number of management tools. 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.

In FFY 2013, LDEQ continued water quality monitoring in 21 watersheds. The data collected assists LDEQ and its partners in making valuable decisions. Pre-BMP monitoring assists in identifying critical areas contributing NPS pollutant loads in order to select the appropriate types of BMPs needed in the most suitable locations. Post-BMP monitoring assists LDEQ and partners in determining if the BMPs implemented are effective.

Watershed	Subsegment	Basin
Bayou Lafourche	020401	Barataria
Natalbany River	040503	Lake Pontchartrain
Yellow Water River	040504	
Ponchatoula Creek/Ponchatoula River	040505	
Selsers Creek	040603	
Big Creek (NWQI)	040703	
Lower Tchefuncte River	040801	
Bogue Falaya River	040804	
Bayou Plaquemine Brule	050201	
Bayou Queue de Tortue (GoMI)	050501	
Bayou Lacassine (MRBI)	050601	
Bayou Chene (MRBI)	050603	
Bayou Teche	060301/060401	Vermilion-Teche
Bayou Desiard	080701	Ouachita River
Upper Ouachita River (Mollicy Farms)	080101	
Bayou Lafourche (MRBI)	080904	
Turkey Creek (MRBI)	080905/080906	
Joe's Bayou	081002	
Tensas River	081201	
Lake St. Joseph	081202	
Upper Bayou Terrebonne	120601	

Table 1. Watersheds in which water quality monitoring was conducted in FFY 2013.

During FFY 2013, LDEQ’s NPS staff and WSCs developed three (3) WIPs. WIPs developed for other priority watersheds are updated continually as water quality data becomes available and projects identified in the plan are implemented.

Watershed	Subsegment	Basin
Bayou Folse	120305	Terrebonne
Cheniere Creek	080801	Ouachita River
Boston Canal	060910	Vermilion-Teche

Table 2. WIPs developed in FFY 2013.

During FFY 2013, LDAF provided technical assistance and BMP implementation on 42,022 acres in six (6) watersheds.

Watershed	Acres Implemented	Basin
Bayou Queue de Tortue (050501)	745	Mermentau River
Coastal Prairie	14,035	Mermentau River
Evangeline	9,296	Mermentau River
Bayou Lafourche (080904))	1,613	Ouachita River
Plaquemine Brule (050201)	5,499	Mermentau River
Lake St. Joseph (081202)	10,834	Ouachita River
Total	42,022	

Table 3. BMPs implemented in FFY 2013 by LDAF with Section 319 funds.

During FFY 2013, LDEQ expended approximately \$2.4 million in CWA Section 319 funds for NPS and Source Water Protection, watershed coordination and NPS monitoring and implementation projects to protect and/or restore recreational waters and drinking water supplies. LDAF expended approximately \$3.2 million on watershed implementation within multiple watersheds around the state. Table 1 provides a description of Section 319 grant expenditures during FFY 2013.

Grant Year	LDEQ (Federal)	LDAF (Federal)
2007	\$ 126,347.00	
2008	\$ 236,372.00	\$1,992,307.90
2009	\$ 311,604.00	\$678,841.07
2010	\$ 145,048.00	\$505,370.04
2011	\$1,230,026.32	
2011 Special Grant	\$ 53,241.00	
2011 MRBI	\$ 332,306.00	
2012	\$ 6,783.00	\$46,839.91
Total	\$2,441,727.32	\$3,223,358.92

Table 4. Federal 319 funds expended by grant award during FFY 2012.



4.0 Coordination With Partners

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4.1 USDA Initiatives

During FFY 2013, LDEQ, LDAF and USDA continued partnering in watersheds prioritized through USDA’s MRBI, GoMI and NWQI (see tables 5-7). Through the Farm Bill and 319 funds USDA and LDAF work with land owners and producers to implement agriculture BMPs through cost share agreements. LDEQ utilizes 319 funds through contracts with local universities and assistance from LDEQ Water Survey Section (WSS) to provide 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 effectiveness of the BMPs.



Figure 2. State and federal partners discuss collaboration of resources in watershed planning.

MRBI

Through the MRBI, between 2010 and 2014, the Natural Resources Conservation Service (NRCS) set a goal of investing \$320 million in 13 Mississippi River Basin states in helping voluntary producer and landowners implement BMPs to improve water quality, restore wetlands, enhance wildlife and sustain agricultural profitability in the Mississippi River Basin.

Watershed	Subsegment	Watershed Basin	12-Digit HUC Name	12-Digit HUC
Bayou Lafourche	080904	Ouachita River	Crew Lake	080500011304
			Steep Bayou	080500011308
			Halfway Bayou	080500011401
Turkey Creek	080906	Ouachita River	Turkey Creek	080500011007
			Little Turkey Creek	080500011502
			West Turkey Creek	080500011503
			Turkey Creek Lake	080500011504
Bayou Chene	050603	Mermentau River	Bayou Chene	080802020205
Bayou Lacassine	050601	Mermentau River	East Bayou Lacassine	080802020202
			West Bayou Lacassine	080802020204
			Thornwell Drainage Canal	080802020206

FFY 2011, USEPA provided LDEQ CWA Section 319 funds to evaluate the effectiveness of BMPs in reducing sediment and nutrients through MRBI in Bayou Lafourche and Turkey Creek in Ouachita River Basin and Bayou Chene and Bayou Lacassine in Mermentau River Basin.

FFY 2012, QAPPs were approved and sampling initiated in Bayou Lafourche on March 27, 2012 and Bayou Chene and Bayou Lacassine on June 20, 2012.

FFY 2013, QAPP for Turkey Creek was approved and sampling initiated on January 10, 2013. Monitoring for all projects continued throughout the year.

Table 5. USDA/NRCS – Mississippi River Basin Initiative

NWQI

In 2012, NRCS provided \$34 million in financial assistance and nearly \$35 million in 2013 to help farmers and ranchers implement BMPs to reduce nitrogen, phosphorous, sediment and pathogen contributions from agricultural land.

Watershed	Subsegment	Watershed Basin	12-Digit HUC Name	12-Digit HUC
Big Creek	040703	Lake Pontchartrain	East Fork Big Creek	080702050202
			Big Creek	080702050203
Bayou Louis & Lake Louis	080202/ 080203	Ouachita River	Bayou Louis	080402070303
			Black Bayou	080402070302
<p>FFY 2012, USEPA provided CWA Section 319 funds to LDAF to implement BMPs and LDEQ to evaluate the effectiveness of BMPs in reducing sediment, nutrients and bacteria through NWQI in Big Creek and Bayou Louis/Lake Louis.</p> <p>FFY 2013, QAPP was approved and sampling initiated in Big Creek on August 13, 2013. QAPP for Bayou Louis/Lake Louis has been developed and approval anticipated in early 2014.</p>				

Table 6. USDA/NRCS - National Water Quality Initiative

GoMI

Through the GoMI, between 2012 and 2015, the NRCS plans to deliver up to \$50 million in voluntary BMP implementation to 16 priority watersheds in five (5) southern states including Louisiana.

Watershed	Subsegment	Watershed Basin	12-Digit HUC Name	12-Digit HUC
Bayou Queue de Tortue	050501	Mermentau River	Bayou Grand Marais	080802020103
			Lyons Point Gully	080802020104
			Indian Bayou	080802020101
			Lazy Point Gully	080802020105
Grand Bayou and Little Grand Bayou	120206	Terrebonne	Bayou Corne	080903020302
			Bayou St. Vincent	080903020304
<p>FFY 2012, USEPA provided Section 319 funds to LDAF for Bayou Queue de Tortue to implement BMPs and LDEQ to evaluate effectiveness of BMPs in reducing sediment and nutrients through GoMI in Bayou Queue de Tortue and Grand Bayou/Little Grand Bayou.</p> <p>FFY 2013, QAPP for Bayou Queue de Tortue has been approved on March 20, 2013 and sampling initiated on July 24, 2013. Grand Bayou/Little Grand Bayou assessments confirm a highly hydromodified watershed that will be difficult to restore due to excessive pumps. Another watershed within the basin is being considered.</p>				

Table 7. USDA/NRCS - Gulf of Mexico Initiative

4.2 Recovery Potential Screening Tool

The Recovery Potential Screening Tool is a Geographic Information System (GIS) tool which provides a systematic approach for comparing waters or watersheds and identifying differences in how well they may respond to restoration efforts. The tool will be used by LDEQ NPS staff to rank the list of priority watersheds, targeted for water quality restoration. In addition the tool will be used to examine all watersheds in the state, indicated by the current 2012 state Integrated Report (IR) or the upcoming 2014 state IR, that are not meeting designated uses due to NPS pollution, for possible future restoration efforts.

In 2013, LDEQ NPS staff in cooperation with USEPA Headquarters prepared data as input to the GIS. The data consists of one (1) of three (3) indicator classes of metrics: ecological, stressor and social context. The overall impacts of each metric will be analyzed as part of preparation and determination of a priority list for NPS impaired watersheds. Utilization of the tool is slated to begin in 2014.

One (1) of the more important aspects of the tool is that LDEQ and its state and federal agricultural partners can provide input on the metrics that they deem crucial parameters in reducing NPS pollution in impaired watersheds.



Figure 4. LDEQ Nonpoint Source staff attend training on restorability tool.

4.3 LDEQ, LDAF and NRCS's New Process

In FFY 2013, LDEQ, LDAF and NRCS, has further refined its collaborative process (see table 8) in an effort to be more efficient and effective in restoring watersheds in Louisiana. Currently, the new process is being infused into active projects where practical. The partnership is planning to select a watershed in 2014 to conduct a pilot study of the new process. The watershed will be chosen with the new Recovery Potential Screening Tool developed for Louisiana by USEPA Headquarters. For one (1) year LDEQ's Water Survey staff will be conducting a complete assessment and characterization of the watershed to collect baseline data, and determine critical areas. The partnership will be meeting on a quarterly basis or more frequently as needed to discuss the Water Survey staff's findings.

LDEQ/LDAF/NRCS New Process
LDEQ Water Survey staff conducts watershed assessment & characteristics.
LDEQ/LDAF/local Soil and Water Conservation Districts recon water body to determine sampling site locations.
LDEQ Water Survey staff conducts a rapid assessment to identify critical areas.
LDEQ meets with LDAF/NRCS quarterly to discuss water quality data results and identify critical areas where BMPs need to be placed.
LDAF/NRCS meets with stakeholders and focuses sign ups in the critical areas and a specific suite of practices geared at reducing the impairment(s).
Once BMPs are implemented long term monitoring begins to monitor the effectiveness of BMPs implemented.
LDEQ/LDAF/NRCS continues to meet quarterly. LDEQ reports on water quality in critical areas and LDAF tracks BMP implementation. LDEQ works with LDAF/NRCS and stakeholders in adding additional BMPs in critical areas, if necessary.
Throughout water quality monitoring LDEQ samples at ambient site for possible delisting, especially if outside the 4 year rotational schedule of ambient sampling in order to achieve 303(d) delisting earlier.
SUCCESS STORY!

Table 8. LDEQ, LDAF and NRCS New Process

4.4 Watershed Coordinators

LDEQ WSCs continue to serve as valuable partners in implementing Louisiana's NPS program. In FFY 2013, LDEQ partnered with six (6) WSCs located across the state. This Partnership accomplishes several goals listed in Louisiana's 2011-2016 NPS Management Plan including:

- developing WIPs;
- involving appropriate stakeholders in watershed implementation;
- statewide educational programs;
- identifying priority areas in the watershed for BMP implementation;
- implementing BMPs in watershed priority areas;
- water quality monitoring and data analyses to evaluate effectiveness of BMP implementation; and
- preparing success stories or identifying future actions needed to achieve success.

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

Lake Pontchartrain Basin Foundation

WSC: Andrea Bourgeois-Calvin, PhD and Chelsea Core.

Area: Lake Pontchartrain and Pearl River Basins.

WIPs: Bogue Falaya & Abita and Natalbany Watersheds.



FFY 2013

Stakeholders

- St. Tammany and Tangipahoa task force meetings held bi-monthly.

Education & Outreach

- Conducted a series of storm water informational workshops.
- Educated homeowners on individual home sewer system operations and maintenance.

Implementation

- Developed and implemented St. Tammany Parish storm water ordinance primarily for construction activities.
- Partnered with Tangipahoa Parish's regional unit of the Louisiana Department of Health and Hospitals (LDHH) to systematically inspect home sewage systems in Yellow Water River watershed. Inspected 234 individual home sewage systems and found that 63 percent of the 151 homes using aerated treatment units failed because the aerators were not plugged in or were not functioning properly. In addition, 79 of the 83 septic tanks inspected failed due to failure to properly pump out tanks.

Post-BMP Monitoring

- Conducted water quality monitoring in Yellow Water River and Ponchatoula Creek watersheds. Results indicate that fecal coliform bacteria concentrations are decreasing.

FFY 2014

Implementation

- Continue inspecting individual home sewage systems in Yellow Water River watershed.

Post-BMP Monitoring

- Continue water quality monitoring in Yellow Water River and Ponchatoula Creek watershed to determine the effectiveness of inspections.

Bayou Land RC&D

WSC: Jennifer Roberts - In 2013, Jen was nominated by the Louisiana Environmental Educators Association and officially appointed by Governor Bobby Jindal to the Louisiana Environmental Education Commission.

Area: Lake Pontchartrain, Terrebonne and Barataria Basins.

WIPs: Upper & middle Bayou Terrebonne and Bayou Folsé Watersheds.



BAYOU LAND
RC&D Council

FFY 2013

Stakeholders

- Terrebonne and Lafourche task force meetings held regularly.
- Applied for Patagonia Grant to improve stakeholder engagement/educational activities in Terrebonne Parish.

Internships

- Sponsored Tulane University interns to assist in watershed work.

Education & Outreach

- Participated with citizens in cleaning and marking storm drains with “Don’t Dump” plaques throughout Orleans, Terrebonne and Jefferson Parishes.
- Utilized the Enviroscape model to engage students in learning about NPS pollution.

Post-BMP Monitoring

- Monitored 16 sampling sites in upper Bayou Terrebonne to identify critical areas contributing to high concentrations of fecal coliform bacteria. The final report was approved on August 9, 2013.

FFY 2014

Pre-BMP Monitoring

- Start monitoring in middle Bayou Terrebonne and Bayou Folsé to identify critical areas contributing to impairments.

Education

- Start education and outreach efforts focused on individual home sewer system operations and maintenance.

Implementation

- Work with local and state government in upper Bayou Terrebonne watershed to conduct homeowner certification classes and hire an inspector to inspect individual home sewage systems.

Post-BMP Monitoring

- Monitor in upper Bayou Terrebonne to determine the effectiveness of certification classes and inspections.

Capital RC&D

WSC: Donny Latiolais

Area: Lake Pontchartrain, Terrebonne, Pearl and Mississippi Basins.

WIPs: Pontchatoula Creek & Yellow Water River, Selsers Creek, and Comite River Watersheds.



FFY 2013

Stakeholders

- Keep Hammond Beautiful, Hammond Storm Water Committee, Southeastern Occupational Safety, Health and Environment Advisory Committee, LDHH and Terrebonne task force meetings.
- Applied for Patagonia Grant to improve stakeholder engagement/educational activities in Terrebonne Parish.

Education & Outreach

- Disseminated storm water and BMP material.
- Participated in Trash Bash and HHW Recycling events.

Post-BMP Monitoring

- Monitored sampling sites in Selsers Creek to identify critical areas for implementation.

Implementation

- Developed resource management planning and progressive planning assistance to landowners. Assisted landowners with BMP implementation.
- Hired an inspector to inspect individual home sewer systems in Selsers Creek. Inspected 1,193 systems and found 144 not working properly. Of these 144 systems 82 were repaired to proper working order.
- Assisted homeowners repairing systems.

Post-BMP Monitoring

- Conducted monitoring in Selsers Creek to determine the effectiveness of the individual home sewage systems.

FFY 2014

WIPs

- Develop Comite River Watershed WIP.

Pre-BMP Monitoring

- LDEQ Water Surveys staff will start monitoring Comite River to identify critical areas contributing to high concentrations of fecal coliform bacteria.

Implementation

- Continue individual home sewage inspections in Selsers Creek and start inspections in Comite watershed once critical areas are identified.

Post-BMP Monitoring

- Once inspections start in Comite Watershed, LDEQ Water Surveys staff will start monitoring Comite River to determine the effectiveness of the inspections.

Trailblazer RC&D

WSC: Olivia Ward

Area: Red River and Ouachita River Basins.

WIPs: Dugdemona River, Caney Lake and Cheniere Creek Watersheds.

FFY 2013

Stakeholders

- Local agriculture and forestry industry.

Educational Outreach

- Developed and presented educational material at numerous schools, libraries, police jury meetings and Sparta Fest in Webster Parish.

Pre-BMP Monitoring

- Assisted LDEQ staff and Water Surveys staff in reconnaissance on Caney Lake in preparation of sampling the effectiveness of BMPs implemented by LDAF and USDA in FFY 2014.

Implementation

- Held Forestry BMP workshops on September 24, 2013 and October 11, 2013.

FFY 2014

Implementation

- Hold additional Forestry BMP workshops.

Pre-BMP Monitoring

- LDEQ Water Surveys staff will start monitoring in north Caney Lake to determine if BMPs are effective.

Louisiana Delta Pride, L.L.C.

WSC: Mike Adcock

Area: Ouachita River Basin

WIPs: Upper and Lower Joe's Bayou Watersheds

FFY 2013

Stakeholders

- Bayou Louis stakeholder and Brushy – Bayou Walnut task forces.
- Local government and engineers involved in Turkey Creek drainage project.

Educational Outreach

- Franklin Parish Livestock Field Day, Brush Bayou Clean-Up Day, and Monroe Annual HHW Collection Day.

Pre-BMP Monitoring

- Assisted LDEQ staff and Water Surveys staff in reconnaissance and characterization on Bayou Lafourche (upper) and Bayou Louis/Lake Louis Watersheds in preparation for sampling to identify the critical areas contributing to impairments.

Implementation

- Assisted local Soil and Water Conservation Districts (SWCDs) with local landowners in BMP implementation.

FFY 2014

Pre-BMP Monitoring

- Start monitoring in Bayou Lafourche (upper) to identify the critical areas contributing to impairments.

Implementation

- Continue assisting local SWCDs with local landowners participating in BMP implementation.

Twin Valley RC&D

WSC: Keisha McConathy. Keisha was hired by Twin Valley in the summer of 2013.

Area: Red River, Sabine, Upper Calcasieu and Upper Vermilion-Teche Basins.

WIPs: Six Mile Creek and Little River Watershed.

FFY 2013

WIP

- Started developing Little River Watershed WIP.

Stakeholders

- Early stages of identifying stakeholders for Little River Watershed.

Educational Outreach

- Judged a local science fair.
- Developed presentations.

Pre-BMP Monitoring

- LDEQ staff and Water Surveys staff completed a reconnaissance and characterization of Six Mile Creek Watershed in preparation for sampling to identify the critical areas contributing to high concentrations of fecal coliform bacteria.

FFY 2014

WIP

- Complete development of Little River Watershed WIP.

Pre-BMP Monitoring

- Water Surveys staff start monitoring Six Mile Creek Watershed to identify the critical areas contributing to high concentrations of fecal coliform bacteria.

4.5 Louisiana Nutrient Management Strategy

Nutrient impacts and eutrophication are a nationwide water quality concern. Many entities, including the Mississippi River Gulf of Mexico Watershed Nutrient Task Force, Hypoxia Task Force, Gulf of Mexico Alliance, USEPA, and the Gulf Coast Ecosystem Restoration Task Force, are collaborating to address excess nutrients within the nation's water bodies.

In 2012 Louisiana created an interagency team comprised of the Coastal Protection and Restoration Authority (CPRA) of Louisiana, LDAF, LDEQ, and Louisiana Department of Natural Resources (LDNR). The team has developed a draft statewide Nutrient Management Strategy (NMS) to combat nutrient issues impacting water bodies within the State. Nutrient issues include both point and NPS programs. Strategies include:

- agricultural conservation management practices;
- inclusion of advanced wastewater treatment technologies;
- coastal programs and restoration activities focused on managing nutrient levels while meeting regulatory requirements under the CWA; and
- developing incentive-based approaches for participation of all stakeholders within the watershed community.

The state's NMS has been developed as one component of a multi-state initiative intended to manage and reduce nutrients (nitrogen and phosphorus) entering Louisiana's coastal waters, thereby reducing the zone of hypoxia. The Gulf Hypoxia Action Plan (2008) identified 11 action items; the first action item is to develop state level nutrient strategies.

In 2012 and through 2013 Louisiana's NMS team addressed the following activities to develop the statewide NMS:

- stakeholders from state and federal agencies, as well as Non-Governmental Organizations, private interests and academia have been engaged;
- a series of decision support tools have been assembled and are available on the Louisiana NMS website at <http://lanutrientmanagement.org>;
- regulations, policies and programs have been identified, which include:
- the Master Farmer Certification Program,
- coastal river diversions;
- existing management practices and restoration activities
- ongoing work with the shareholders to develop new practices and activities;
- modeling and analysis have begun to identify status and trends of water quality with regards to nutrients;
- LDEQ NPS staff is in the process of implementing the USEPA Watershed Recovery Potential Tool which will help to characterize, identify NPS pollutants within, and prioritize watersheds impaired due to NPS pollution; targeting watersheds, setting goals, monitoring and reporting.

In FFY 2013, the NMS team launched a NMS website, held regularly scheduled team meetings throughout the year, conducted interagency review of stakeholder input, developed a GIS made available through the LDEQ LIMA GIS website (see figure 5), team members attended and discussed the state's progress on the states NMS at the annual national Hypoxia Task Force Meeting in Minneapolis, Minnesota and completed and submitted the state's draft NMS to USEPA.

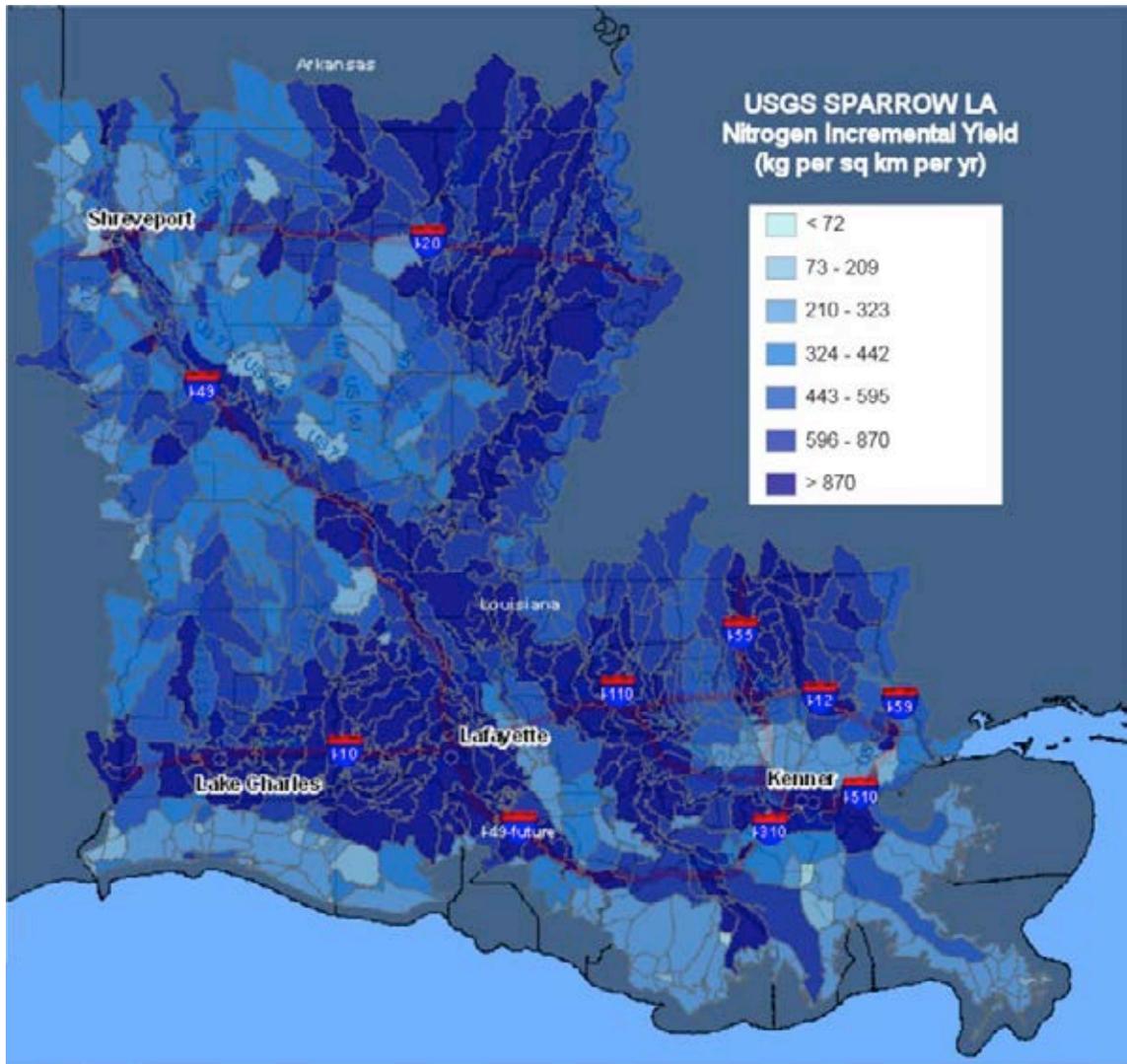


Figure 5. LDEQ LIMA GIS-produced map showing SPARROW model output for Nitrogen Incremental Yield (kg/sq km/yr) in Louisiana (<http://map.deq.state.la.us>).



5.0 Meeting NPS Milestones

2013 Louisiana Nonpoint Source Annual Report



Nonpoint Source
PROGRAM



Meeting NPS Milestones

5.1 Meeting NPS Milestones

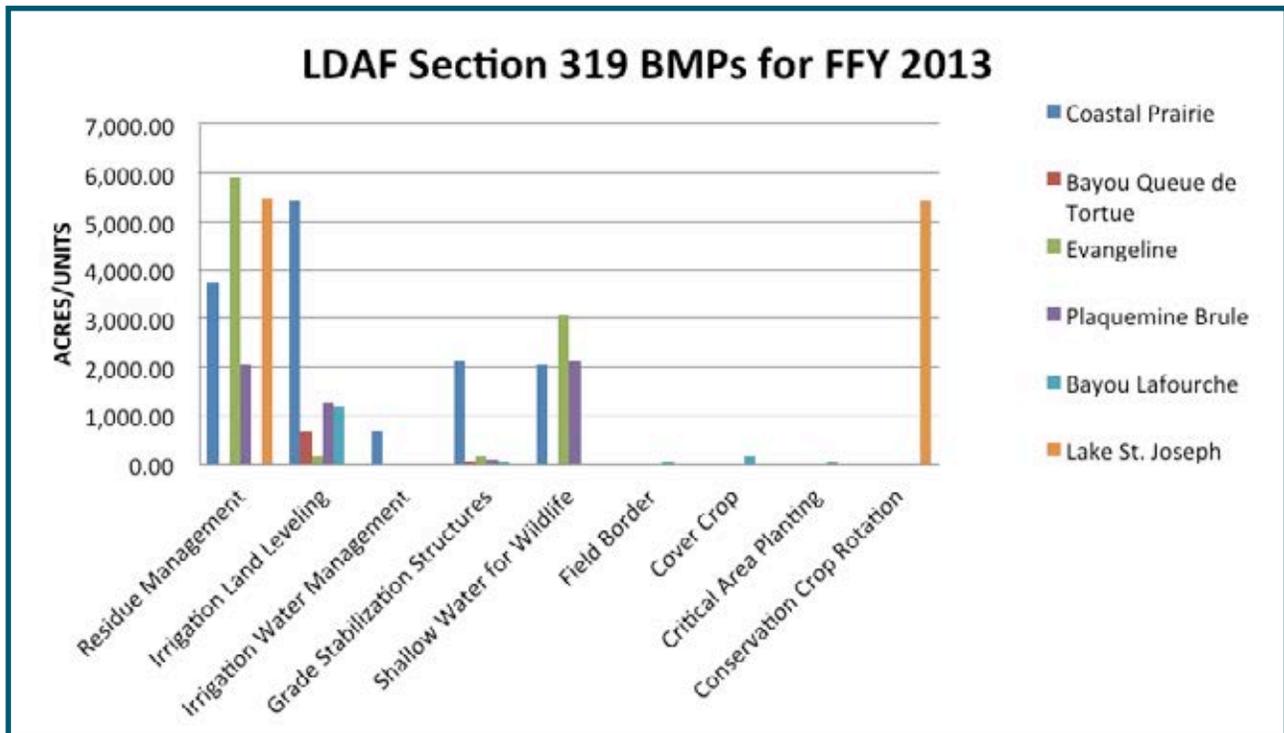
Louisiana’s NPS Management Plan includes annual milestones. In FFY 2013, Louisiana’s NPS program continued its focus on watershed planning, assessment, monitoring and implementation, in 32 water bodies.

Basin	Water Body	P	A	M	I	Subsegment
Barataria	Bayou Lafourche			✓		020401
Calcasieu River	Six Mile Creek	✓	✓			030503/030504
Lake Pontchartrain	Natalbany River			✓	✓	040503
	Yellow Water River			✓		040504
	Ponchatoula Creek/Ponchatoula River			✓	✓	040505
	Selsers Creek			✓	✓	040603
	Big Creek (NWQI)	✓	✓	✓		040703
	Lower Tchefuncte River			✓	✓	040801
Mermentau River	Bogue Falaya River			✓	✓	040804
	Bayou Plaquemine Brule			✓	✓	050201
	Bayou Queue de Tortue (GoMI)	✓	✓	✓	✓	050501
	Bayou Lacassine (MRBI)			✓		050601
Vermilion River	Bayou Chene (MRBI)			✓		050603
	Bayou Teche			✓		060301/060401
	Boston Canal	✓	✓			060910
Ouachita River	Bayou Louis/Lake Louis	✓	✓			080202/080203
	Bayou Desiard	✓		✓		080701
	Upper Ouachita River (Mollicy Farms)			✓		080101
	Cheniere Creek	✓				080801
	Bayou Lafourche (MRBI)			✓	✓	080904
	Bayou Lafourche (Upper)	✓	✓			080904
	Turkey Creek (MRBI)			✓		080905/080906
	Joe’s Bayou			✓		081002
	Tensas River			✓		081201
	Lake St. Joseph			✓	✓	081202
	Dugdemona River				✓	081401
	Caney Lake		✓			081505
Little River	✓				081601/081602	
Terrebonne	Grand/Little Grand Bayou	✓	✓			120206
	Upper Bayou Terrebonne			✓		120301
	Middle Bayou Terrebonne	✓	✓			120601
	Bayou Folse	✓	✓			120305

Table 9. Water bodies included planning (P), assessment (A), monitoring (M) and implementation (I) in FFY 2013.

5.2 LDAF BMP Implementation

LDAF receives CWA Section 319 funds to implement BMPs in watersheds where LDEQ has developed WIPs. Monitoring in these watersheds is conducted to determine the effectiveness of BMPs implemented. This collaborative effort ensures more efficient utilization of Louisiana's 319 funding in addressing NPS pollution. Figure 6 includes BMPs implemented through 319 funding in FFY 2013.



Project	Total Acres
Coastal Prairie	14,034.90
Bayou Queue de Tortue	745
Evangeline	9297
Plaquemine Brule	5499
Bayou Lafourche	1373.08
Lake St. Joseph	10,888.2

Figure 6. LDAF BMP implementation for FFY 2013



6.0 Highlighted Activities in Priority Watersheds

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6.1 Big Creek Watershed

Louisiana 2012 IR – Big Creek (040703)

- Fully meeting fish and wildlife propagation (FWP), but not meeting primary contact recreation (PCR) and secondary contact recreation (SCR) designated uses.
- Suspected causes of impairment: fecal coliform bacteria.
- Suspected sources of impairment: dairies.

Big Creek is located in the Lake Pontchartrain River Basin and flows through Tangipahoa Parish from its headwaters to Tangipahoa River. One of Louisiana’s priority water bodies, Big Creek was prioritized through USDA’s NWQI and LDAF’s CWA Section 319 FFY 2012 work plan. Landowners in the watershed can receive cost share and technical assistance to implement conservation practices to improve water quality. A TMDL for fecal coliform bacteria recommended an 88 percent reduction in fecal coliform bacteria in order to meet in-stream water quality standards and restore designated uses.



Figure 7. Water Quality Sampling Site in Big Creek Watershed

The Big Creek WIP was developed by LDEQ, in coordination with USDA and LDAF. The WIP was approved by USEPA on March 6, 2013. LDEQ’s NPS, Watershed Surveys, USDA and LDAF staffs performed reconnaissance surveys of the watershed to determine where initial rapid water quality assessment (RWQA) sites should be located. On March 22, 2013, USEPA granted approval of a quality assurance project plan (QAPP), which allowed LDEQ to begin intensive water quality monitoring in the Big Creek watershed. Results from the RWQA sampling will allow LDEQ and its partners to determine where more efficient and effective long term monitoring sites should be located. LDEQ began collecting water quality samples on August 27, 2013, for fecal coliform bacteria analysis in 26 locations. Both USDA and LDAF will be implementing BMPs.

The purpose of long-term monitoring is to evaluate effectiveness of BMPs implemented. LDAF began sign ups in Big Creek on February 14, 2013. To date, 14 applications have been received. Farm visits are being conducted, soil and waste lagoons are being sampled and Certified Nutrient Management Plans are being developed (11 have been developed to date). This project is being conducted along with NRCS’s Environmental Quality Incentives Program (EQIP).

6.2 Bayou Queue de Tortue Watershed

Louisiana 2012 IR – Bayou Queue de Tortue (050501)

- Fully meeting PCR and SCR, but not meeting FWP designated use.
- Suspected causes of impairment: Fipronil, nitrate/nitrite (NO₃/NO₂), low dissolved oxygen (DO), total phosphorus (TP), total dissolved solids (TDS), total suspended solids (TSS), turbidity and sedimentation/siltation.
- Suspected sources of impairment: irrigated and non-irrigated crop production.

Bayou Queue de Tortue flows through Acadia, Lafayette, and Vermillion Parishes within the Mermentau River Basin. The bayou was prioritized in LDEQ and LDAF's FFY 2012 work plan and USDA's GoMI. USDA will be utilizing a portion of their GoMI funds to assist producers in implementing a combination of core and supporting practices to reducing the amount of agricultural related nitrogen, phosphorus and sediment leaving the field.

LDAF and USDA will provide technical and cost share assistance to landowners to implement BMPs such as conservation crop rotation, grade stabilization structures, and nutrient management. LDAF began working with landowners in October 2012, and BMP implementation and oversight will continue through September 2017.

The WIP was approved by USEPA on March 13, 2013. LDEQ's NPS and Water Surveys staff coordinated a watershed assessment, characterization for site selection. A QAPP was approved on March 20, 2013. Sampling began on July 24, 2013, at 23 sites.

LDAF held a project sign up in this watershed throughout February 2013. A total of 34 applications were received and 28 contracts were developed. To date, 369.4 acres of irrigation land leveling has been implemented and 4,631.4 acres are currently under contract. Monitoring will enable LDEQ and associated partners to evaluate the effectiveness of the BMPs implemented in reducing NPS pollutants.



Figure 8. The image on the left was taken on the first sampling trip at site 16 which is Simmons Gully on Retriever Road. The image on the right was taken during a recon to show the water body and the land around it.



7.0 Statewide Programs

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PROGRAM

7.1 Coastal Nonpoint Pollution Control Program (CNPCP) Annual Report



Figure 9. Louisiana’s coastal zone boundary and CNPCP management area

LDEQ partners with LDNR Coastal Management Program (CMP) to implement Louisiana’s CNPCP. Throughout the year LDNR staff continued its efforts to engage stakeholders and raise awareness about CNPCP. On the state level staff participated in school events, such as Louisiana Day at University Laboratory School, as well as events combined outreach efforts, such as Earth Day in Baton Rouge, Ocean Commotion at Louisiana State University, and Earth Fest at the Audubon Nature Institute.

On the local level Jefferson Parish held its 13th Annual NPS Pollution & Solutions Poster and Essay Contest” for children in grades 3 through 8 in November 2012.

One of the main goals of CNPCP outreach efforts – at all levels – is to educate and inform about the categories and management measures of CNPCP. This includes not only defining the categories of CNPCP, but also providing examples of efforts across the state to minimize the impacts of CNPCP. Some examples of these statewide initiatives include: implementation of BMPs, the Clean Marina Program, the Coastal Forest Conservation Initiative, and homeowner training programs for On-Site Disposal Systems (OSDS).

Agriculture

Throughout the year the CNPCP has continued to work with its stakeholders and agency state and federal partners to implement the management measures of this category through the NPS watershed implementation programs.

Forestry

Coastal forests in Louisiana are valuable not only for the goods and services that they provide, but also the importance they serve as buffers to hurricane storm surge and winds. The Coastal Forest Conservation Initiative (CFCI) is a completely voluntary part of an overall strategy for restoring, protecting, and conserving Louisiana's coastal forest system. The primary objective of the CFCI is to acquire land rights (fee title or conservation servitude) from willing landowners to address demonstrated threats of conversion (habitat loss or land-use change) and/or opportunities for restoration or enhanced sustainability of coastal forest tracts that provide significant ecological value and that may provide storm damage reduction functions. Although no acres were acquired in FFY 2013, the CNPCP continued to work with stakeholder and agency state and federal partners to implement the management measures of this category throughout the year.

Urban Areas

The LDNR Office of Coastal Management (OCM) and parish Local Coastal Programs (LCP) have authority to include BMPs and NPS conditions in permits. These conditions prevent and reduce NPS pollution in the state's coastal waters. OCM and the LCP generally issue only three (3) types of permit authorizations for activities within the Louisiana coastal zone:

1. determination that the activity is exempt or has No Direct and Significant Impact (NDSI) on coastal waters,
2. General Permits (GP), and
3. individual Coastal Use Permits (CUP).

OCM addresses specific categories and management measures by requiring certain information in order to complete the application and also adding general conditions, operating conditions, and special conditions to each individual CUP and GP issued. Below are examples of the methods that OCM is implementing BMPs and NPS conditions into the permitting process:

1. Site Development

OCM issues individual CUPs and GPs for projects listed as industrial/commercial or residential development. One of the conditions required prior to issuance of all Individual CUPs listed as industrial/commercial or residential development is a needs, alternatives, and justification submittal to address drainage and runoff as part of the infrastructure of the development.

2. Conditions in General Permits

In addition to the applicant addressing runoff during the permit review process, OCM has 22 existing GPs that address specific BMPs and NPS conditions, see Table 10.

General Permit	Category	Management Measure
5,6,7,8,10,11,12,13,14,15,16,17,18,20,23	Hydromodification	Channelization & Channel Modification
5,6,7,10,11,13,15,16,17,20,23,26	Hydromodification	Streambank & Shoreline Erosion
18,19,21,27	Urban Runoff	New development
18,21	Urban Runoff	Watershed Protection
18,19,20,27	Urban Runoff	Site Development
18,27	Urban Runoff	Existing Development
18	Urban Runoff	OSDS
5,14,20	Urban Runoff	Roads, Highways, & Bridges

Table 10. Conditions in GPs

3. OCM utilizes operating conditions in permits to address BMPs and NPS conditions. Operating conditions provide general guidance on BMPs and NPS prevention for non-specific, general permitted activities (i.e. dredging, flowline burial, etc.). See the example below:

That permittee shall insure that any habitable structure (i.e. home, camp, trailer, etc.) existing at the site (or subsequently anticipated as a result of these property improvements) has been provided (or shall be appropriately provided, upon such structure siting) with an individual-type domestic waste disposal system (i.e. septic tank, oxidation pond, mechanical plant, etc.) for which local health unit approval shall have been secured, as is required by the State Sanitary Code. Should such not have been accomplished, it will be necessary for Permittee to contact those appropriate personnel of the local governing health unit in order that such be accomplished.

4. OCM utilizes special conditions in permits to address BMPs and NPS conditions. Special conditions provide guidance on BMPs and NPS prevention for specific types of permitted activities (i.e. qualifying details for GPs, erosion control methods, etc.). See the example below:

The applicant shall implement adequate erosion/sediment control measures to insure that no sediments or other activity related debris are allowed to enter waters of the state. Accepted measures include the proper use of vegetated buffers, silt fences or other USEPA construction site storm water runoff control BMPs.

Additional information on the actual language of the OCM GPs can be found on the web at: <http://dnr.louisiana.gov/index.cfm?md=pagebuilder&tmp=home&pid=728>,

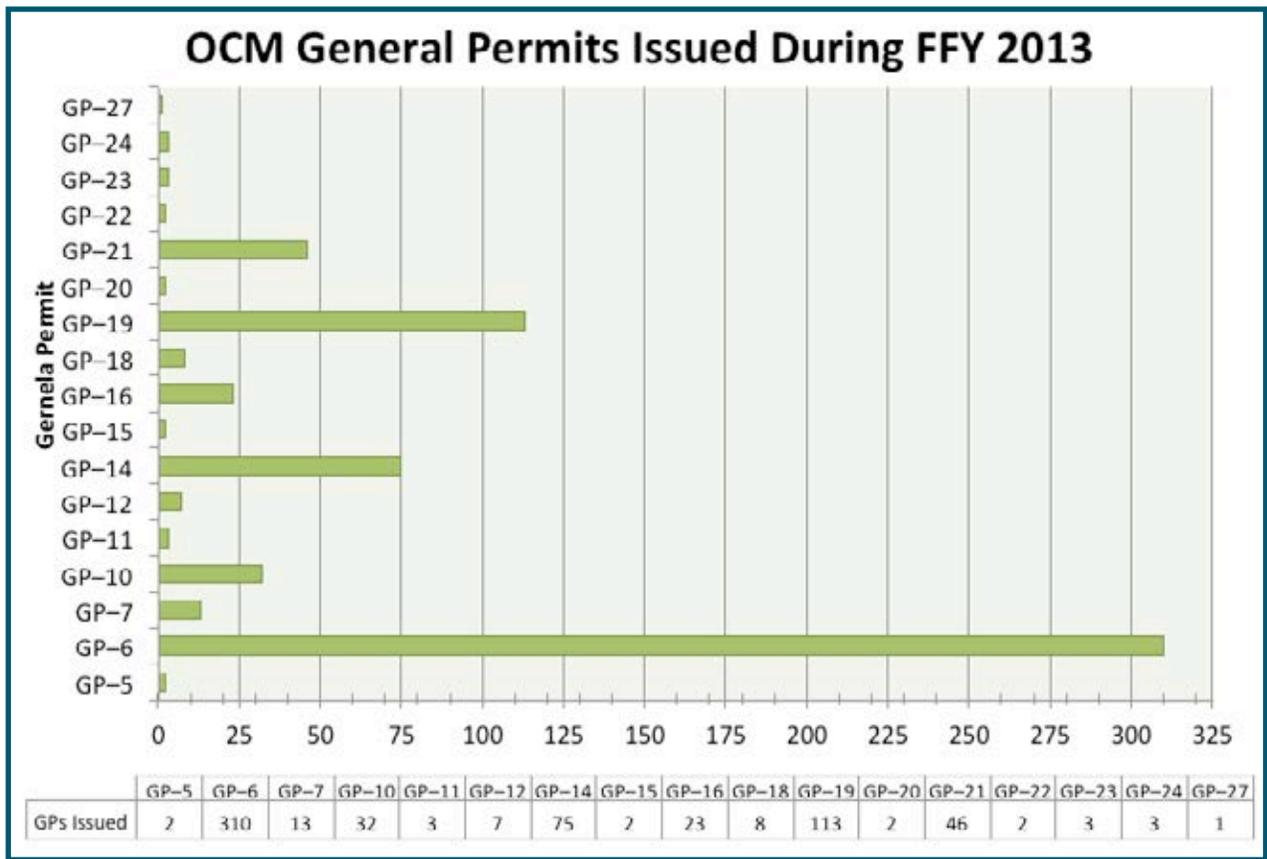


Figure 10. OCM permits issued during FFY 2013.

As a supplement to the State’s OCM program, Louisiana offers each of the parishes the opportunity to run its own Local Coastal Program (LCP). Louisiana currently has ten (10) parishes with approved and active LCPs. Two (2) additional parishes are in the process of developing LCP for their respective parishes. Once an LCP has received approval, the parish becomes the permitting authority for coastal uses of local concern. Each LCP has the authority to require certain information in order to complete the application and also include BMPs and NPS conditions in permits. The LCP for St. Tammany Parish is the CNPCPs model parish because the St. Tammany Parish requires a “detailed description of proposed construction site storm water pollution management plan” for all permits that they issue. During the FFY 2013, St. Tammany Parish issued 68 permits (26 – NDSI determinations, 34 – exemptions, and 8– CUPs).

Watershed Protection and Existing Development

The LDNR-OCM and parish LCP have adopted the same principles in the evaluation of projects that would expand existing development as those that would create new development. OCM and the LCPs use their authority as permitting bodies to include BMPs and NPS conditions in permits. These conditions prevent and reduce NPS pollution in the state’s coastal waters.

OCM and the LCPs address specific categories and management measures by requiring specific information regarding the proposed expansion in order to complete the application. OCM and the LCPs also add general conditions, operating conditions, and special conditions to each Individual CUP and GP issued.

OCM continues to collaborate in bi-weekly meetings with the CPRA, LDAF, and LDEQ in a cooperative effort to develop a statewide NMS. Additional information on the effort is available at <http://lanutrientmanagement.org>.

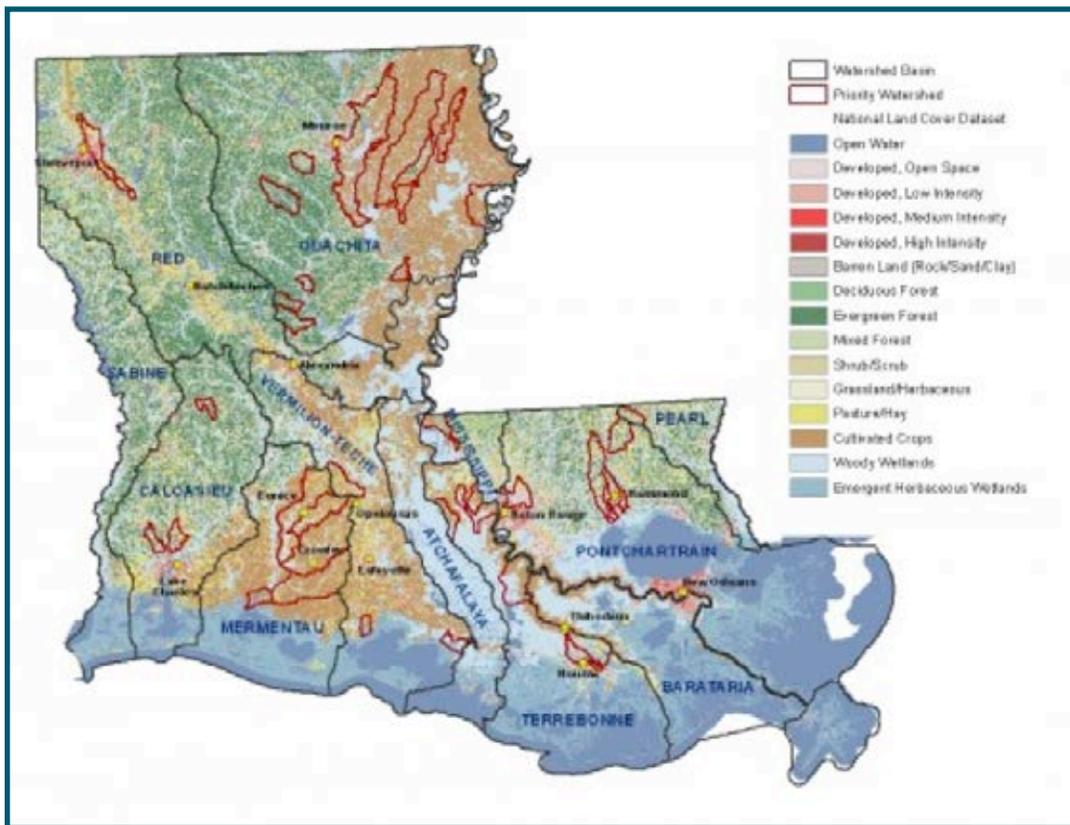


Figure 11. LDEQ's Forty Priority Watersheds

On-Site Disposal Systems

During the operational period a multi-agency effort continues between LDNR, LDEQ, and LDHH. This effort involves geocoding an existing OSDS database maintained by LDHH. LDNR GIS personnel continue to process new data as it becomes available. LDEQ has integrated the watershed subsegments database to create a spatial analysis of the subsegments with OSDS. Continuing efforts include analyzing the information that has been compiled to identify nutrient limited surface waters and determine the priority subsegments.

CNPCP is planning to implement a pilot project with 319 funds in western Louisiana to be used as the model for other coastal communities. LDEQ and LDHH are also partnering to increase the current statewide homeowner training certification program from two (2) training classes per year to additional training to support all NPS OSDS activities statewide.

Marinas

The Louisiana Clean Marina Program (LCMP) promotes the voluntary adoption of BMPs to assist marinas and recreational boaters in protecting Louisiana's waters. Designated "clean marinas" are recognized as environmentally responsible businesses. Louisiana has 12 certified clean marinas located throughout six (6) parishes. During FFY 2013, the CNPCP LCMP certified two (2) new clean marinas into the program and re-certified the ten (10) other marinas in the program. For more information on the Clean Marina Program can be found on the OCM's webpage below: <http://dnr.louisiana.gov/index.cfm?md=pagebuilder&tmp=home&pid=124>



Figure 12. Certified clean marinas

Hydromodification

Permits issued during the year that address this category can be found in the above section on Urban Development. OCM utilizes special conditions in permits to address the hydromodification measures. Operating conditions provide general guidance on BMPs and NPS prevention for non-specific, general permitted activities (i.e. dredging, flowline burial, etc.). See the examples if specific conditions applied to a permit:

Specific Conditions Regarding Hydromodification

Permittees shall provide on-ground pre- and post-construction scaled photographic documentation at a scale that clearly shows both banklines linearly along the entire propwash area in both directions. Pre- and post-project photos of the propwash area shall be taken and submitted to OCM within seven (7) days prior to initiation of activities and seven (7) days of project completion (demobilization of drilling rig). PVC pipe with flagging shall be placed at the land-water interface of both banklines every 25' along the entire length of the propwash area. PVC pipe shall be GPS-tagged and permittees shall provide to OCM with a list of the PVC pipe location coordinates along with the pre-project photographic documentation of the bankline. The PVC pipe with flagging shall be placed prior to initiation of activities and remain in place until completion of permitted activities. The pre- and post-construction photos shall be at the same scale and shall clearly show PVC pipe along the entire length of the banklines in order to demonstrate bankline integrity. Photos shall be taken every 50' facing both directions, parallel to the bankline. Permittees shall contact the OCM Field Scientist no later than ten (10) days prior to initiation of permitted activities. In addition, Permittees shall notify the OCM Field Scientist no later than ten (10) days after completion of permitted activities.



Figure 13. PVC pipe identifying project area.

OCM will evaluate the propwash area following the completion of the propwashing activities to determine the extent, if any, of wetland impacts to the banklines. If OCM determines that wetland impacts have occurred, permittees shall be required to mitigate for wetland impacts and/or perform maintenance activities to restore the banklines to pre-project conditions. Permittees shall submit a mitigation plan and/or a plan for bankline restoration within 30 days of notification. Permittees should be aware that compensatory mitigation projects may be required to be maintained for as many as 20 years for marsh mitigation projects and 50 years for forested wetland mitigation projects. A processing fee will be assessed for the determination of compensatory mitigation requirements and evaluation of the proposed compensatory mitigation plan in accordance with LAC Title 43, Part I, Chapter 7, §724.D. This fee shall apply regardless of which compensatory mitigation option is selected and does not include the cost incurred to implement the required compensatory mitigation.

Wetlands, Riparian Areas, and Vegetated Treatment Systems

The CNPCP continued to work with its stakeholders and agency state and federal partners to implement the management measures of this category.

Administration

Both LDNR and LDEQ continue to coordinate their respective programs to ensure that CPNCP management measures are implemented for each category. The partnership, including LDHH, CPRA and the Louisiana Department of Transportation and Development (LDOTD) met six (6) times in FFY 2013 to coordinate these efforts.

7.2 Drinking Water Protection Program

LDEQ's Drinking Water Protection (DWP) staff targeted Franklin, Richland, Livingston, Catahoula, Ascension and Caldwell Parishes to implement protection programs for FFY 2013 and FFY 2014. They assist water systems in these parishes to develop contingency plans, update source water assessments, and introduced the model groundwater protection ordinance to government officials.

Franklin and Richland Parishes

DWP program initiated

- The program was initiated in June 2012.

Public supply water systems

- There are eight (8) systems in Franklin Parish and 11 systems in Richland Parish.

Groundwater protection Ordinance(s)

- Ordinances were adopted by the Town of Rayville and Village of Mangham.

Educational visits

- Thirty educational visits were made by DWP staff to owners and operators of businesses identified as potential sources of contamination to drinking water sources.

Community meeting(s)

- A community was held on November 1, 2012, to inform attendees about the source of their drinking water and what they can do to protect it.

DWP presentation(s)

- Presentations were given at several local schools.



Figure 14. DWP staff Tiffani Cravens demonstrates how water wells can become contaminated at Delhi Middle School in Richland Parish.

Livingston Parish

DWP program initiated

- The program was initiated July 2012.

Public supply water systems

- The parish consists of 45 active public community water systems.

Groundwater protection Ordinance(s)

- Ordinances were adopted by the City of Denham Springs, the Village of Killian, the Village of Albany, the Town of Livingston, and the City of Walker.

Community meeting(s)

- A community meeting was held on October 18, 2012, introducing the program and seeking volunteers to form a committee. A committee of 22 local citizens and officials met and volunteered to work with LDEQ on drinking water protection activities and identify a funding source to launch an HHW collection day for the parish.

Committee members were presented with information on various topics including backflow prevention and cross connection control, litter abatement and household hazardous materials and used oil recycling.

Educational visits

- Seventy-seven educational visits were made by DWP staff to owners and operators of businesses identified as potential sources of contamination completed by DWP staff. Committee volunteers also distributed information on used oil recycling facilities.

Catahoula Parish

DWP program initiated

- The program was initiated January 2013.

Public supply water systems

- The parish consists of nine (9) active public community water systems.

Community meeting(s)

- DWP committee and Louisiana Rural Water Association (LRWA) and local officials organized a HHW collection day. The LRWA enlisted assistance and requested financial support from various companies and governing bodies while LDEQ SWP staff assisted LRWA in obtaining grant money for the project. LRWA held a community meeting in January 2013 to enlist volunteers. More than 45 volunteers participated in the event held March 2, 2013 and collected over 1,700 pounds of waste



Figure 15. Susan Robbins, LRWA SWP Specialist, gives a presentation at the Catahoula Parish Drinking Water Protection Committee meeting in Harrisonburg, LA.

Caldwell Parish

DWP program initiated

- The program was initiated September 2013. The DWP staff held meetings with water system operators and local officials to introduce the program in October 2013.

Public supply water systems

- The parish consists of 11 active public community water systems.

Groundwater protection Ordinance(s)

- The DWP staff introduced the model groundwater protection ordinance to local officials.

Source water assessment data

- The DWP staff also began updating source water assessment data.

Community meeting(s)

- A community meeting was held on November 14, 2013, to introduce the program to the public and solicit volunteers to form a DWP committee.

Ascension Parish

DWP program initiated

- The program was initiated August 2013. The DWP staff met with water system representatives and government officials to introduce the DWP program in September 2013.

Public supply water systems

- The parish consists of 30 active public community water systems. Three (3) of which are purchasing systems. The parish is divided in half by the Mississippi River. The City of Donaldsonville and two (2) purchasing systems are located on the west bank and all use surface water from the Mississippi River as their drinking water source. The systems located on the east bank use groundwater as their source.

Community meeting(s)

- Community meetings to introduce the program to the public and solicit volunteers to form committees were held on October 24, 2013, for the east bank and November 7, 2013, for the west bank.

7.3 Source Water Assessment Program

Data Collection and Risk Assessment Tools Development

Source water risk assessments were completed for all public water supply systems between 2000 and 2003. Since then, the original data that was used in risk assessments does not necessarily represent the current site specific conditions. As a result, in FFY 2013 new equipment was acquired and deployed in the field utilizing a GIS mobile application tool (SWAP Mobile) to collect data. The SWAP Mobile tool enables source water protection (SWP) staff to collect and transfer field data in a manner that reduces error and improves data integrity and security. Additionally, LDEQ's GIS Center and SWP staff successfully completed development of SWAP Calculator© by finalizing its surface water module.

The surface water option of SWAP Calculator© (as with the groundwater option developed in FFY 2012) utilizes existing GIS functionality to perform risk assessments of surface water systems based on source water assessment data. SWAP Mobile allows for the collection and updating of source water assessment data, while SWAP Calculator© automates the generation of new source water assessment reports. These new reports are used by SWP staff and citizen volunteers when conducting visits at businesses that are potential sources of contamination to inform them of their potential impact on their drinking water source.

7.4 Statewide Individual Home Sewage System Program

Many of Louisiana’s water body 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 11. Louisiana’s Fecal Coliform Numerical Criteria

LDEQ and WSCs partners with LDHH and the parish and/or local governments in developing education and outreach programs and assist in inspecting individual home sewage systems located in critical watershed areas.

The following 319 funded projects are focused on accomplishing this goal:

NPS Pollution Reduction through Enhancement of the On-Site Wastewater Disposal Systems Inspection and Educational Outreach

Calcasieu Parish Police Jury initiated their existing individual home sewage inspection program in FFY 2011 in response to high concentrations of fecal coliform bacteria in impaired watersheds in Calcasieu Parish. The objective of the program is to inspect an estimated 33,000 individual home sewage systems located in unincorporated areas of the parish and to educate home and business owners about the importance of maintaining properly operating systems. Since the beginning of the project 10,696 inspections have been completed, with 4,396 of those performed in FFY 2013.

FFY 2013 Inspections – Wards 1, 3 and 4	
Mechanical systems approved	2,222
Mechanical systems disapproved	1,317
Other systems inspected	455
System inaccessible	402
Total Inspected	4,396

Table 12. Calcasieu Parish FFY 2013 Inspections

Water Quality Monitoring and Educational Outreach in North Shore Watersheds

Since FFY 2006, LBPF has conducted water quality monitoring and pollution source tracking in the Natalbany, Ponchatoula and Yellow Water River Watersheds. These watersheds are impaired due to high concentrations of fecal coliform bacteria. LPBF works with the City of Hammond, Tangipahoa Parish, LDEQ and LDHH to locate and remediate, as necessary, wastewater pollution sources. Business and homeowners are educated on the proper operation and maintenance of their sewage treatment systems.

LPBF conducts bi-weekly water quality monitoring in these watersheds. Results to date indicate a decrease in fecal coliform bacteria on Ponchatoula Creek and Yellow Water River. Additional parameters sampled for fecal coliform bacteria, specific conductance, phosphate-phosphorus, and total nitrogen analyses indicate a source or sources of untreated or partially treated wastewater discharging in one (1) particular area of the watershed. In FFY 2014, LPBF will track and correct the source(s), which may result in the watersheds meeting SCR standards.

Bayou Lafourche Sewage Project

Louisiana 2012 IR – Bayou Lafourche (020401)

- Not meeting PCR designated use.
- Suspected causes of impairment: fecal coliform bacteria.
- Suspected sources of impairment: storm water, failing septic systems, Mississippi pumping and wildlife.

Bayou Lafourche located in south Louisiana is the source of drinking water for six (6) public water systems serving a population of over 200,000. Subsegment 020401 is impaired for fecal coliform bacteria requiring a TMDL. A TMDL was developed requiring a 45 percent reduction in summer and 0 percent reduction in winter.

Fresh water from the Mississippi River is pumped into the bayou to ensure a continuous drinking water supply. The presence of fecal coliform bacteria in a drinking water supply requires additional treatment in the form of disinfection and subsequent removal of disinfection by-products. The additional treatment increases the cost of supplying safe drinking water to the public.



Figure 16. Nicholls State University student Stacy Martinez collects a water sample from a culvert that drains to Bayou Lafourche.

Initially, LDEQ surveillance staff conducted an inspection sweep on 780 commercial sewage systems along the bayou addressing the point source issues. The NPS issues are addressed by inspecting home sewage systems. Local citizens and officials have assisted LDEQ staff in identifying malfunctioning individual home sewage systems. New developments having no community sewage system were identified in the watershed as a potential source.

Samples were collected from Bayou Lafourche to determine total concentrations of fecal coliform bacteria. Approximately 50 percent of these samples indicated concentrations above PCR standard and a number of samples indicated concentrations above SCR standard.

LDEQ contracted with Nicholls State University (NSU) to assist in locating critical areas in the watershed. NSU identified culverts, ditches and canals that could be conduits of sewage to Bayou Lafourche. Fecal coliform bacteria, optical brightener (to detect detergent) and human microbe samples were collected

from these areas on a rotating basis. Twenty three locations between Donaldsonville and Valentine were identified as contributing significant amounts of sewage to the bayou. Visual inspections of these locations identified possible sources of sewage. These findings were reported to the LDHH, LDEQ's surveillance staff and local officials for further actions. Follow-up inspections were conducted to ensure compliance with water quality regulations.

LDEQ continues to coordinate with LDHH to address malfunctioning individual home treatment systems. Plans to repair or replace malfunctioning individual home sewage systems are also being explored on a cost share basis.

The unique layout and drainage system of the community adds to the complexity of solving the problem. Individual homes and business are located along the bayou and subdivisions are located sporadically perpendicular to the bayou. Many of these subdivisions utilize individual home sewage systems that discharge to ditches that carry the waste water directly to the bayou. The best possible solutions involve a combination of education, repair and replacement of malfunctioning systems, connecting unsewered communities to existing community systems or creating new community systems. The feasibility of these options are all be explored.

Bayou Lafourche Time of Travel Study

In FFY 2013, the LDEQ Aquifer Evaluation and Protection Unit and WSS in coordination with the Bayou Lafourche Freshwater District conducted a time-of-travel study for Bayou Lafourche. The study will predict how the bayou will respond during major storm events when the pumping station at Donaldsonville (which supplies freshwater from the Mississippi River to Bayou Lafourche) is closed. Specifically, it will demonstrate how long it would take fresh water to reach public supply intakes in Bayou Lafourche. The data can also be used for public supply system notifications for public health advisories.

The first phase of the study included two (2) separate events utilizing two (2) of the three (3) pumps at the Mississippi River pump station with the weir downstream in Thibodaux closed. For the first event, nontoxic rhodamine dye was injected into the bayou below the pump station in Donaldsonville. Instruments were placed at strategic locations to measure dye concentrations, with the most downstream instrument placed near the intake at Napoleonville. For the second event, dye was injected downstream of the intake at Napoleonville and instruments were strategically placed below the injection point, downstream of LaFort Canal near the Schriever public supply intake.

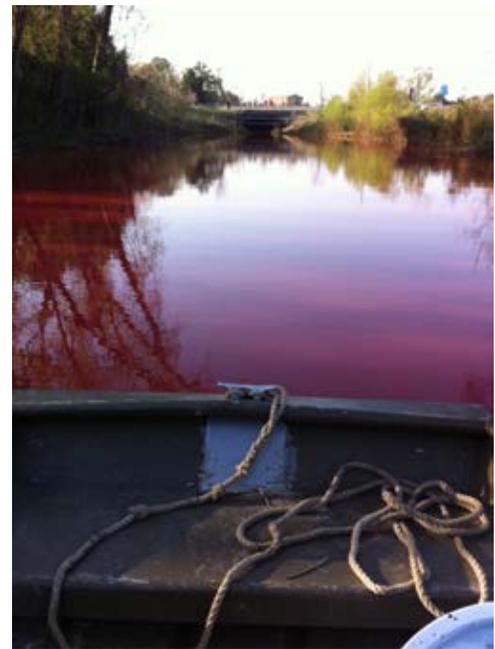


Figure 17. Nontoxic rhodamine dye flows down Bayou Lafourche for time of travel study.

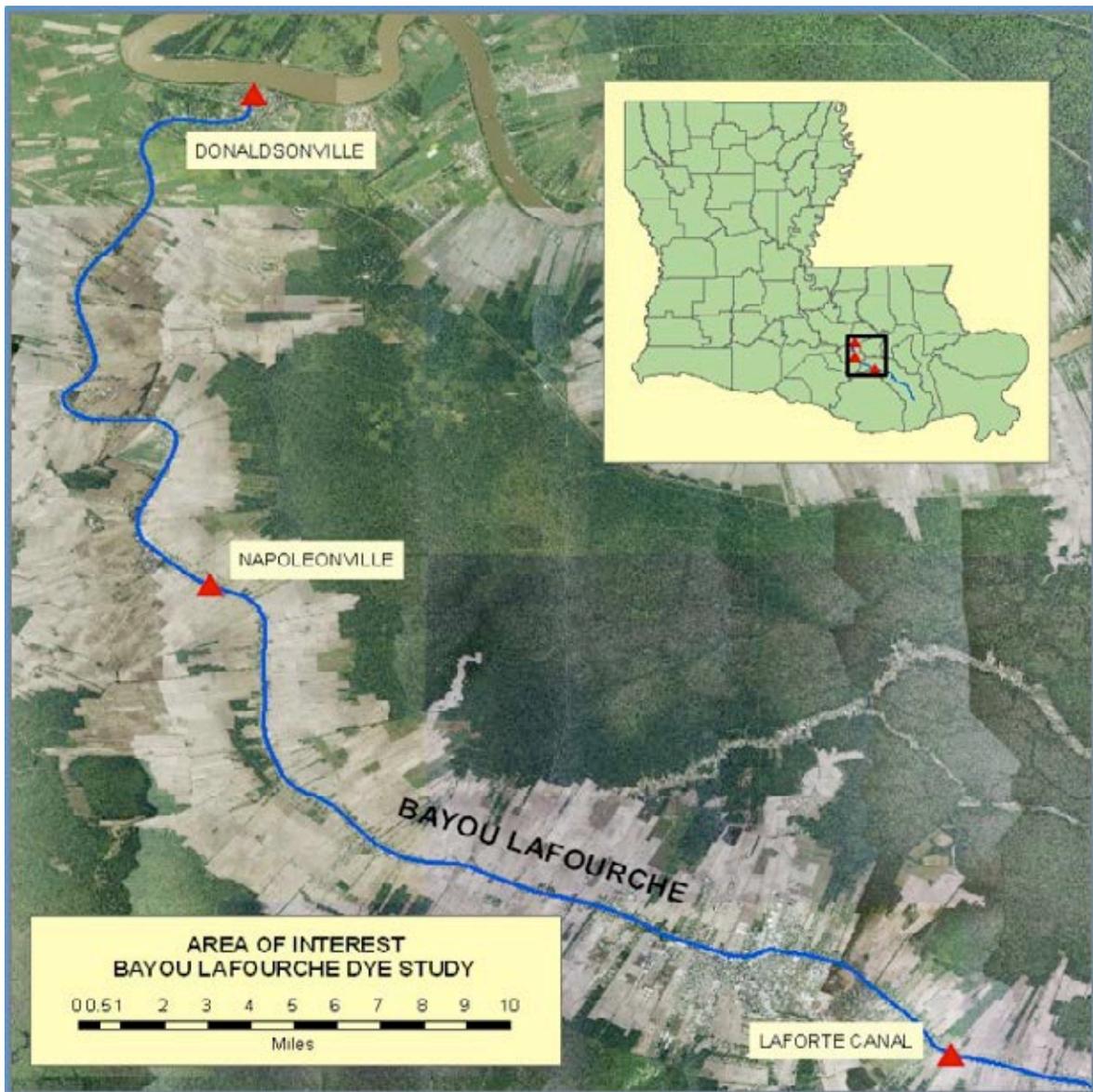


Figure 18. Location of Bayou Lafourche time of travel study area

The total time of travel for water, or contaminants, from Donaldsonville to LaForte Canal was determined to be 102.59 hours, or just over four (4) days. In FFY 2014, the second phase of this study will be conducted on the same two (2) reaches of the bayou, with all three (3) pumps operating.

7.5 Statewide Forestry Program

Forests consist of more than 49 percent or 13.8 million acres of the land in Louisiana. Silviculture activities including cultivation, harvest, and transport of lumber and can significantly affect water quality when proper management practices are not followed. Forestry BMPs are an important means of preventing and/or controlling the runoff of sediments, nutrients, pesticides and organic debris such as residual logs, slash, litter and soil organic matter into water bodies of the state. Activities such as forestry workshops and Master Logger Certification programs provide educational outreach to forestry farmers and landowners on how to prevent and control NPS pollution through the implementation of BMPs.

On September 24, 2013, Trailblazer RC&D held a forestry BMP workshop at Jimmie Davis State Park in Chatham, Louisiana attended by over 40 participants. The workshop agenda included:

- types of historic BMPs used in forestry and their success rate;
- forest erosion and water quality concerns, including information on forest roads, landing zones, skid trails and stream management zones (SMZ);
- considerations for wildlife within SMZs and with log sets and haul roads; and
- the availability of financial assistance and incentives for BMPs pertaining to erosion control on forest haul roads and skid trails through USDA's EQIP.



Figure 19. Participants were informed on proper Forestry BMP Implementation.

Partners for these workshops include Entergy, USDA , National Wild Turkey Federation, Dugdemona SWCD, LDEQ, Louisiana State Parks, Louisiana Forestry Association (LFA), LDAF, Louisiana Department of Wildlife and Fisheries and Louisiana Tech.



8.0 Appendix

2013 Louisiana Nonpoint Source Annual Report



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Appendix A

Statewide Milestones for Water Quality Improvement	2013
<u>Number of water bodies identified in LA's 1998/2000 IR or subsequent years as being primarily NPS impaired that are partially or fully-restored (WQ-10):</u> 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.	3
<u>Estimated annual reductions in pounds of nitrogen from NPS to water bodies (from Section 319 funded projects) (WQ-9a):</u> Annually review information from LDAF, USDA, watershed coordinators, NPS staff and stakeholders for NPS load reductions of nitrogen; and include information in NPS annual report.	621,287 ¹
<u>Estimated annual reductions in of phosphorus from N PS to water bodies (from Section 319 funded projects) (WQ-9b):</u> Annually review information from LDAF, USDA, watershed coordinators, NPS staff and stakeholders for NPS load reductions of phosphorus: and include information in NPS annual report.	117,392 ¹
<u>Estimated annual reductions in pounds of Sediment from NPS to Water bodies (from Section 319 funded projects) (WQ-9c):</u> Annually review information from LDAF, USDA, watershed coordinators, NPS staff and stakeholders for NPS load reductions of sediment: include information in NPS annual report.	113,982,197 ¹
<u>Number of NPS impairments removed from LA's IR:</u> 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.	1
<u>Progress in reducing unliquidated obligations (ULO):</u> Percentage of ULO funds or both LDEQ and LDAF combined (total remaining funds/total awarded = percentage ULO).	29

¹ Reporting period is being adjusted from January through December to October through September. For this annual report, the numbers reflect a nine(9) month reporting period.



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