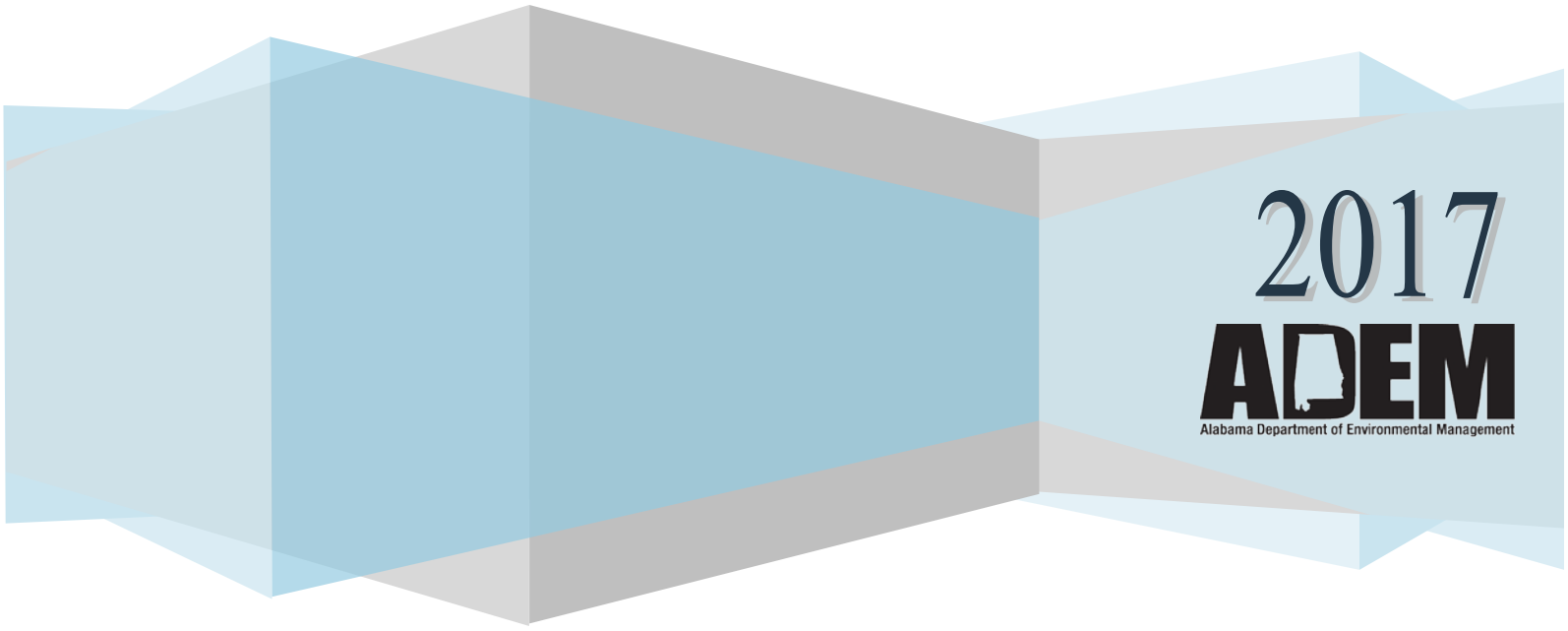
ALABAMA NONPOINT SOURCE MANAGEMENT PROGRAM

ANNUAL REPORT



2017

ADEM

Alabama Department of Environmental Management

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Executive Summary

Nonpoint source (NPS) pollution, also known as polluted runoff, is the largest cause of Alabama's water quality impairments, accounting for approximately two-thirds of the water quality pollution sources to our streams and lakes. NPS pollution is caused by rainfall or snowmelt moving over and through the ground, picking up and carrying pollutants to our streams, rivers, lakes, wetlands, coastal waters, and ground waters. Unlike point source pollution that enters waters from definable locations such as discharge pipes from wastewater treatment plants, NPS pollution originates from many and varied sources. NPS pollution is usually associated with farming, logging, mining, urban and construction activities, land disposal, and onsite septage and wastewater disposal activities. Atmospheric deposition can also contribute to NPS pollution.

Section 319(h) of the Clean Water Act authorizes federal grant funding to implement U.S. Environmental Protection Agency (EPA) approved state NPS management programs. Since 1990, the Alabama Department of Environmental Management (ADEM) has used Section 319(h) grant funding to target a wide range of NPS problems and provide for their solutions. State and local agencies and governments, academia, nonprofit entities and others are eligible to apply for Section 319(h) grant funding through the ADEM. Grant funds may be used to address the implementation of watershed management plans to restore impaired waters. These watershed projects include on-the-ground implementation of best management practices (BMPs), along with the provision of technical assistance, education and outreach, and local stakeholder capacity.

TABLE 1: ALABAMA NPS PROGRAMMATIC GOALS AND OBJECTIVES FOR FISCAL YEARS 2014 - 2019

Goal 1:	Continue to collect surface water and groundwater data annually using the ADEM Statewide Water Quality Monitoring Strategy to assess whether state waters meet state water quality standards and use classifications.
Goal 2:	Target NPS pollution program resources to restore, protect, and maintain beneficial uses of waters.
Goal 3:	Implement NPS BMPs to restore and protect watershed health and water quality.
Goal 4:	Enhance institutional capacity to implement a sustainable statewide NPS pollution management program.
Goal 5:	Facilitate statewide Education and Outreach (E&O) activities to increase the public's knowledge and awareness about NPS pollution, watershed health, water quality protection and restoration, and natural resource stewardship.

Alabama's Disbursement of 319(h) Funds

The EPA awards Section 319(h) grant funding to the States each year according to an allocation formula that has been developed. The States determine the best possible use of their allocated funds. These funds are typically used for assessment and monitoring of Alabama's waterways, education, training, technology transfer, implementation of NPS Total Maximum Daily Loads (TMDLs), and implementation of watershed projects and BMPs.

Current grant balances (effective October 2017)

Balances for active grants FY2013-FY2017 are listed in Table 2 and represented graphically in the Figure 1 below.

TABLE 2 – CURRENT 319 GRANT BALANCES

Grant Year	Award Amount	Amount Obligated	Program Funds	Project Funds	Total # Projects
FY13	$2,914,000	$2,914,000	$950,000	$1,964,000	12
FY14	$2,981,000	$2,981,000	$1,490,500	$1,490,500	11
FY15	$2,950,500	$2,950,500	$1,475,250	$1,475,250	10
FY16	$3,050,000	$3,050,000	$1,525,000	$1,525,000	12
FY17	$3,154,600*	$3,154,600	$1,627,300	$1,527,300	13
Total	**$15,050,100**	**$15,050,100**	**$7,068,050**	**$7,982,050**	**58**

**FY2017 Projects were funded by the EPA in October 2017.*

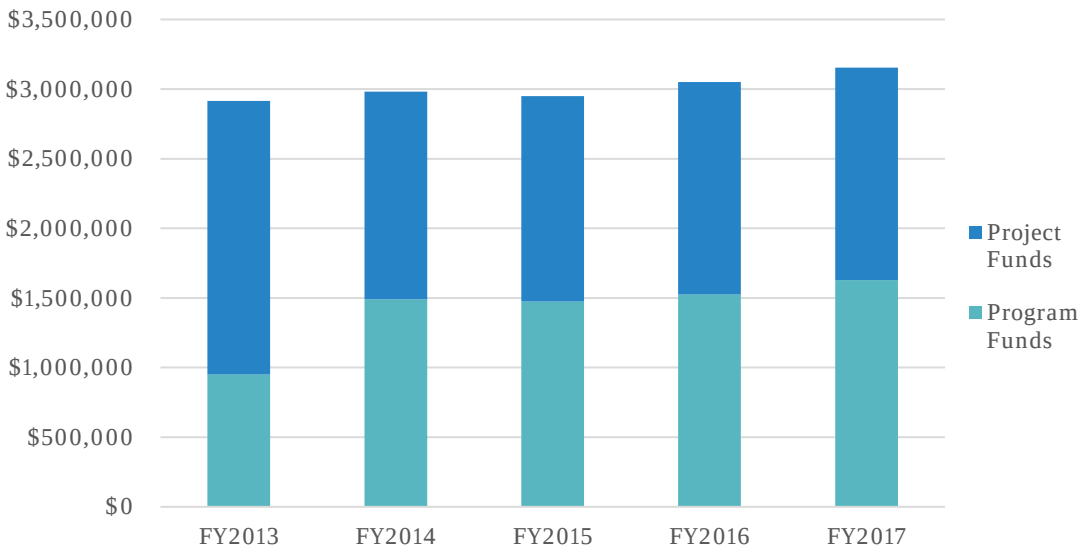


Figure 1: Current 319 Grant Balance

Pollutant Load Reduction Totals in FY2017

The projects and activities outlined in this report provide a brief overview of the Department's efforts to address NPS pollution in Alabama. However, in order to provide a numerical measure of the effectiveness of these efforts, EPA 319 guidance calls for a report of the "annual reduction in nitrogen, phosphorus, and sediment from NPS to waterbodies". In cooperation with its 319 partnerships, pollutant load reductions have been estimated using developed methodologies for past and ongoing projects. Table 3 and Figure 2 below contains data from EPA's Grant Reporting Tracking System (GRTS) database and gives an estimate of the positive impact these efforts have made on water quality in Alabama and overall grant program success. The pollutant load reductions for current individual projects are available on the GRTS interactive website at www.epa.gov/nps/grts.

TABLE 3 – POLLUTANT LOAD REDUCTIONS

Fiscal Year	Nitrogen (lbs/yr)	Phosphorus (lbs/yr)	Sedimentation-Siltation (tons/yr)
2013	75,521.88	13,870.62	7,286.57
2014	107,287.80	17,015.60	8,065.20
2015	32,062.50	9,064.90	11,406.70
2016	156,627.63	40,263.05	27,499.78
2017	120,780.18	38,277.45	30,501.47
Total	**492,279.99**	**118,491.62**	**84,759.72**

*FY2017 319 Projects were approved/funded by the EPA in October 2017.

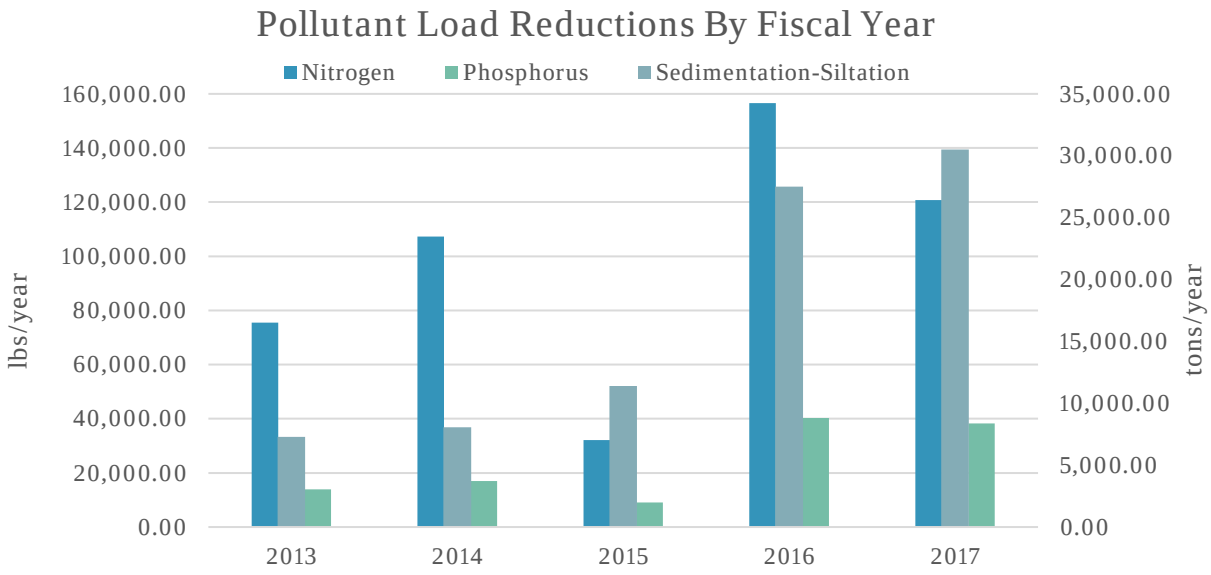


Figure 2: Nitrogen, Phosphorus, and Sediment Load Reductions by Fiscal Year

Section 319(h) Grant Program Success Story

Adding Riparian Buffers Decreases Pollutant Loading, Increases Dissolved Oxygen, and Improves Habitat in Crowdabout Creek

WATERBODIES IMPROVED

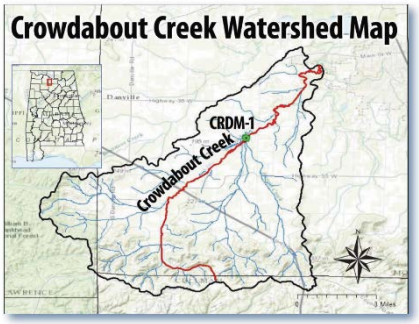


Figure 1. Crowdabout Creek is in northern Alabama.

Changing land use—from forest cover to cropland, pastures and residential development—contributed to increased siltation and organic enrichment and a decrease in dissolved oxygen levels in Crowdabout Creek. In 1996, Alabama placed the creek on the state's Clean Water Act (CWA) section 303(d) list of impaired waters for failing to support its Propagation of Fish, Wildlife and Aquatic Life designated use because of biological community and habitat impairment. Implementing agricultural BMPs resulted in decreased siltation and nutrient runoff, increased dissolved oxygen, and improved biological and in-stream aquatic habitat conditions. In 2014, Crowdabout Creek was listed as attaining water quality standards for nitrogen, phosphorus, sedimentation/siltation and CBOD for all uses.

PROBLEM

The Crowdabout Creek subwatershed (HUC 06030002-1006) is in the Tennessee River Basin near the town of Falkville in Morgan County, Alabama (Success Story Figure 1). It is 15 miles long and comprises about 31,150 acres of the Flint Creek watershed. Agricultural practices associated with crop production and animal husbandry were identified as primary sources of water quality impairments. Major sections of the stream channel were historically straightened with direct livestock access, streambank erosion, and very small or no riparian buffers.

The Geological Survey of Alabama (GSA) collected water quality data from 1995 to 1997. Of the 49 samples taken, 16 violated the dissolved oxygen standard. In addition, biological assessments conducted by the Tennessee Valley Authority in the mid-1990s determined biological health ratings of *poor* (macroinvertebrate) and *poor/fair* (fish). Water chemistry data collected by the ADEM from 1992 to 1995 led to the placement of Crowdabout Creek and other Flint Creek tributaries on the state's CWA section 303(d) list of impaired waters in 1996. The TMDLs for siltation, nutrients, organic enrichment/low-dissolved oxygen, and pathogens for the Flint Creek watershed were approved to help ensure water quality standards are attained in the Crowdabout Creek subwatershed.

PROJECT HIGHLIGHTS

The Flint Creek Watershed Conservancy District (FC–WCD) developed a Crowdabout Creek Watershed Management Plan (WMP). U.S. Environmental Protection Agency (EPA) and ADEM provided CWA section 319(h) NPS grant funding to the FC–WCD to facilitate implementation of watershed management workplans from 2003 to 2007. The WMP includes the recommendations found in the 2002 Siltation TMDL and the 2003 organic enrichment/low-dissolved oxygen, Nutrient, and Pathogens TMDLs. Project resources were leveraged in cooperation with the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS), the Morgan

County Soil and Water Conservation District (SWCD), agricultural producers, and private landowners. Between December 2005 and March 2009, 1,372 acres of riparian forest buffers were planted in the watershed. Additional management practices included planting 132.4 acres of grassed waterways and nearly 90 acres of hardwood vegetation. Riparian buffers were enrolled in the USDA Farm Service Agency's (FSA) Conservation Reserve Program (CRP) to enhance long-term protection and maintenance. Other practices implemented included pasture planting, exclusion fencing, cross-fencing, and stream crossings for cattle.

RESULTS

In 2009, a comparison of water quality data collected by GSA (in 1996) and by ADEM (in 2009) indicated much improved dissolved oxygen levels as well as reductions in turbidity, specific conductance, and median concentrations of total dissolved solids, total suspended solids, ammonia nitrogen, nitrate+nitrite nitrogen, and carbonaceous biochemical oxygen demand (CBOD5) (Success Story Table 1). By 2014, nitrogen, phosphorus, sedimentation/siltation, and CBOD were listed as being attained for all uses as a result of the improvements in the watershed.

Table 1. Summary of GSA (1996) and ADEM (2009) water quality data for Crowdabout Creek.

Parameter	Measure	GSA (1996)[a]	ADEM (2009)
Temperature (°C)	Maximum	25.0	24.3
Turbidity (NTU)	Maximum	130.0	71.4
Total Dissolved Solids (mg/L)	Median	187.0	140.0
Total Suspended Solids (mg/L)	Median	37.0	13.5
Specific Conductance (µmhos)	Median	262.0	238.0
Stream Flow	Minimum	1.0	2.4
Dissolved Oxygen (mg/L)	Minimum	0.7	6.0
Ammonia Nitrogen (mg/L)	Median	0.12	0.003
Nitrate+Nitrite Nitrogen (mg/L)	Median	0.513	0.213
Total Kjeldahl Nitrogen (mg/L)	Median	0.74	1.134
CBOD-5 (mg/L)	Median	1.3	0.05
Total Phosphorus (mg/L)	Median	0.04	0.275

Notes: °C = degrees Celsius; NTU = nephelometric turbidity units; mg/L = milligrams per liter

[a] GSA 1996 sampling site was approximately 0.6 stream miles upstream of the ADEM sampling site (CRDM-1).

In 2009, ADEM collected physical characteristic and habitat assessment data. When compared to past bioassesssments and with fully supporting ecoregion reference sampling site information, Crowdabout Creek showed reduced siltation and increases in substrate organic matter and canopy cover. In addition, instream habitat quality, sinuosity, bank and vegetative stability, riparian buffer, and habitat assessment scores all improved (Success Story Figure 2). The overall habitat assessment rating improved from *poor* in 1996 to *fair* in 2009.

Figure 2. Riparian restoration efforts in Crowdabout Creek have improved water quality and habitat.

Monitoring in 2013 continued to show improving trends in water quality as the new riparian forests and other BMPs became more established. Calculations using the Spreadsheet Tool for Estimating Pollutant Loads (STEPL) model estimated that installed BMPs reduced 3,035.1 pounds of nitrogen; 3,537.2 pounds of phosphorous; and 344.2 tons of sediment annually.

PARTNERS AND FUNDING

Project cooperators included ADEM, the FC–WCD, NRCS, FSA, Morgan County SWCD, Alabama Cooperative Extension System (ACES), Morgan County Commission, Tennessee Basin Clean Water Partnership, Alabama Mountains Rivers and Valleys Resource Conservation and Development Council, and local agricultural producers and landowners. The project was primarily funded by two CWA section 319(h) grants from fiscal years 2002 and 2003, which provided $393,000 in federal funding. The Morgan County SWCD, farmers, landowners, and volunteers provided $291,533 in nonfederal project match. Total project cost was $684,533. The 1,594.5 acres of riparian buffers were entered into the CRP; these contracts extend from 2005 until 2020 and are expected to provide about $1.2 million in incentive and annual payments.

TMDLs and Assessments Update

TMDLs in Alabama

The TMDLs are developed by ADEM as specified in the State of Alabama Water Quality Monitoring Strategy. The TMDLs establish the amount of each pollutant causing water quality impairments that can be allowed in a water body without causing exceedances of water quality standards, along with reductions needed to meet these standards. Once the TMDLs are developed by ADEM's Water Quality Branch, the documents are submitted to EPA for approval and subject to public comment. The NPS Management Program uses TMDLs to help with establishing watershed priorities, leverage resources, and implement water quality protection and restoration activities.

In FY2017, the TMDL Program of ADEM continued to make great strides in protecting Alabama's water resources. Alabama's cumulative total of approved TMDLs in FY2017 was 247 and the associated pollutants are represented in Figure 3.

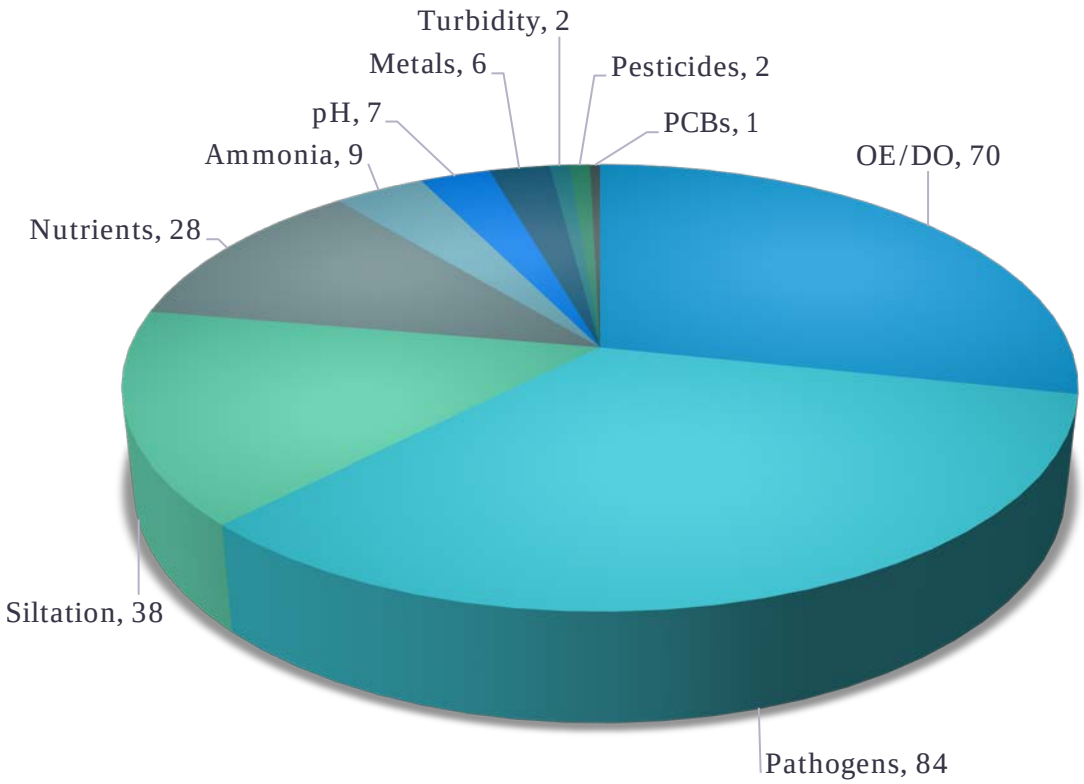


Figure 3: Alabama TMDLs by Pollutant

Current NPS Projects Implementing a TMDL

TABLE 4 – IMPLEMENTATION PROJECTS FY 2013 - FY 2017

Fiscal Year	Project Title	Total
2013	#13 West Flint Creek Watershed Project - Phase 2 #14 French Mill Creek Watershed Project #15 Harris Creek Watershed Project - Phase 2 #18 Pintlala Creek Watershed Project	4
2014	#8 Upper Scarham Creek Watershed Project #9 Graves Creek Watershed Project #10 Shoal Creek Watershed Project #11 Pursley Creek Watershed Project	4
2015	#7 Second Creek Watershed Project #8 Brindley Creek Watershed Project #10 Neely Henry Nutrient Reduction Project	3
2016	#8 Upper and Lower Flint River #9 Shoal/Swann Creek (Limestone Co.) #10 West Flint Creek Watershed Project - Phase 3 #11 Three Mile Creek Watershed Project	4
2017	# 9 Graves Creek – Phase 2 #10 Crowdabout - Phase 3 #12 Parkerson Mill Creek	3
Total Projects Implementing a TMDL		**18**

ADEM Surface Water Monitoring and Assessments Strategy

Between 1996 and 2014, ADEM's overall strategy was implemented on a five-year rotation by basin and incorporated a combination of targeted, probabilistic, and long-term monitoring stations to meet state monitoring goals and objectives. Concentrating monitoring in one basin group enabled ADEM to identify opportunities to meet multiple monitoring objectives at a single site, increasing overall efficiency. It also created a comprehensive dataset to develop the criteria and indicators needed to meet other objectives. Progress made during the last ten years, as well as changes to EPA's program priorities, now allow ADEM to conduct monitoring within each basin each year, while continuing to meet monitoring goals over a five-year period. This change supports more frequent, intensive monitoring within each basin group to more accurately measure trends in water quality before and after implementation of restoration efforts, respond to data needs more quickly, and to minimize the impact of weather-related events on data collected within any one basin. The strategy also provides level loading for ADEM's labs and field offices, making better use of ADEM's available resources.

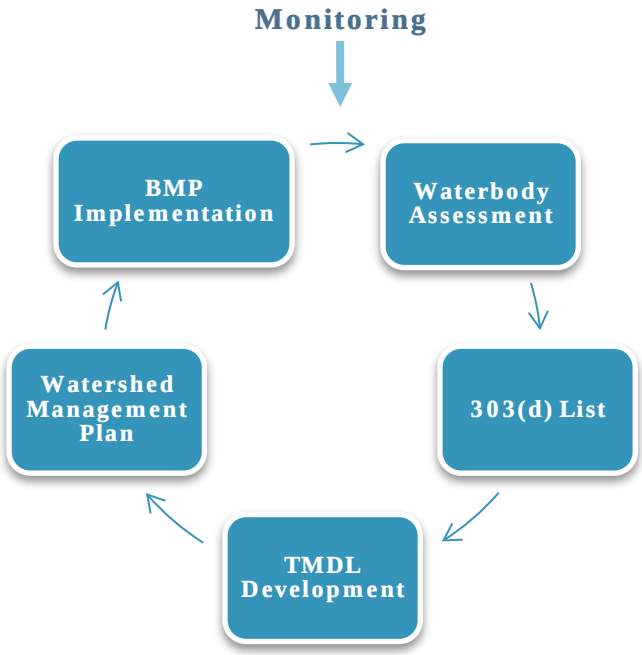


Figure 4: Assessment Strategy

A prioritization framework was also developed to prioritize monitoring to meet program priorities within each basin group. Priorities identified included monitoring impaired, unimpaired, and unassessed waters; evaluating the effectiveness of restoration efforts; and collaborating with partner agencies and stakeholders when possible. Monitoring conducted within each basin group is planned and coordinated annually by ADEM's basin teams.

The Basin Teams were developed to improve communication among project managers, field staff, and ADEM management within Field Operations, the Water Quality Branch, and the NPS Unit. Participation provides opportunities for Team members to become familiar with data needs and issues within their basin. Responsibilities of each Basin Team includes development of the annual basin plan, tracking and documenting State Water Quality Monitoring Plan decisions and revisions, basin team status summaries, data requests and reviews, and review of final reports.

Rivers, Reservoirs, and Tributary Embayments Assessments

Thirty-seven mainstem river and reservoir stations on the Black Warrior, Chattahoochee, Escatawpa, and Escambia River basins were intensively monitored in FY2017. Stations from each station were sampled monthly, from April through October within a one-week period to reduce weather-related variability in water quality conditions. Water quality data collected through this project provides an estimate of the current water quality and trophic state of the basin. It also allows for determinations of compliance with established water quality compliance criteria. This information is also used to update the Department's Integrated Water Quality Assessment and Monitoring Report (CWA Sections 303(d), 305(b), 314), the ADEM Water Resources System –

Alabama Water-Quality Assessment & Monitoring Data Repository (ALAWADR), which is then exported to EPA's Water Quality Exchange (WQX).

Since the Department is still developing water quality criteria for tributary embayments, these assessments will also determine which tributaries are most affected by NPS pollution, aid in development of TMDLs for these tributaries as required by Section 303(d) of the Clean Water Act, and assist the department in developing water quality criteria to ensure each waterbody is meeting its use classification.

At each sampling site, temperature, dissolved oxygen, specific conductance, and pH were measured *in situ* at multiple depths in the water column with a multi-parameter instrument. Using a pump and hose apparatus, water was collected from the entire photic zone and composited. From this composite, water quality and water-column chlorophyll *a* samples were collected monthly, hardness was collected monthly from May-September, and algal growth potential testing (AGPT) samples were collected once in August. Surface water *Escherichia coli* (E. coli) samples were collected four times during the sampling season for each station. Select stations were sampled for low-level mercury analysis in September.

Wadeable and Non-wadeable Streams and Rivers Assessments

Thirty-five locations on wadeable flowing streams and rivers were sampled in FY2017. Biological, chemical, and habitat data were monitored at twenty-three established and candidate reference reaches located throughout the state to characterize least-impaired conditions within seven Level 4 and four Level 3 Ecoregions. Nine locations were monitored to develop TMDLs for seven waterbodies located throughout Alabama. Three locations were monitored to document water quality conditions prior to the implementation of CWA Section 319 watershed plans. An additional twenty-eight wadeable flowing streams were monitored through other projects to fully assess use support attainment and to identify waterbodies impaired by nonpoint sources pollution. Two additional reference reaches were also monitored. Monitoring locations were selected to provide data from priority Section 319 grant-funded projects, priority watersheds identified by Alabama's SWCDs and the Clean Water Partnerships, Strategic Habitat Units (SHUs) identified by the U.S. Fish and Wildlife Service, and an EPA/USDA-National Water Quality Initiative (NWQI) priority watershed.

Data generated during this project will be used in developing and prioritizing watershed management plan goals and documenting successes. It will also be used to categorize wadeable stream and river assessment units in the Alabama Integrated Water Quality Assessment and Monitoring Report. New and legacy least-impaired reaches monitoring data will support ADEM's Ecoregional Reference Reach Program and be used to develop nutrient and sediment criteria, biological condition gradients, and assessment criteria for wadeable and non-wadeable streams and rivers. As applicable, data will also be used to assign CWA section 303(d) listings (Category 5) for impaired waters and to develop TMDLs.

Macroinvertebrate or fish assessments were conducted once at each station in early April through late August. Habitat assessments were conducted at all sites during the biological assessment. In situ measurements (stream flow, dissolved oxygen, pH, conductivity, and turbidity) and water quality samples were collected monthly (including nutrients, water-column chlorophyll *a*, total dissolved solids, total suspended solids, and *E. coli*), semi-monthly (total and dissolved metals), or quarterly (pesticides, semi-volatiles, atrazine, and glyphosate), March through October, to help identify any stressors to biological communities.

NPS Partnerships

ADEM Nonpoint Source Cooperators' Meeting/Conference & Grant Training Workshops

The 2017 Annual NPS Cooperators' Meeting/Conference was held on January 25, 2017 (Agenda and Presentations: https://goo.gl/dm2hgM), at the ADEM office in Montgomery, Alabama. Approximately, 43 attendees participated in the event. The Department provided key updates on the 319 Program, described new and existing procedures, and offered cooperators a glimpse into the various aspects of urban and agricultural projects. The ADEM's Water Quality Branch and Field Operations Division also presented on listing methodology and sampling techniques. This interactive meeting encouraged existing cooperators to ask questions and offer suggestions on how we could improve procedures and foster communication in order to expand the 319 Program into new watersheds within the State.

Participants at the 2017 Cooperators' Meeting and Grant Training Workshop.

The 2017 ADEM NPS Program scheduled a series of NPS grant training workshops. On Wednesday, February 22, 2017 (Agenda and Presentations: https://goo.gl/zfUxJR) and Thursday, February 23, 2017 (Agenda and Presentations: https://goo.gl/1NYqkZ), the first of a series of NPS grant training workshops were hosted by the ADEM NPS Management Program for the Cahaba and Black Warrior Basins at the Shades Valley Training Facility in Birmingham, Alabama. A total of 76 people representing state, county, federal, consulting, university, and nonprofit agencies registered for the event.

The Tennessee River Basin training workshop was held at the Wheeler National Wildlife Refuge Visitor Center in Decatur, Alabama on Thursday, March 16, 2017 (Agenda and Presentations: https://goo.gl/1lVDj7). A total of 52 attendees participated in the workshop.

The Southeastern Basins training workshop took place at the Trojan Dining Civic Room at Troy University on Thursday, April 13, 2017 (Agenda and Presentations: https://goo.gl/dEqOet). A total of 41 attendees from across southeast Alabama participated in the workshop.

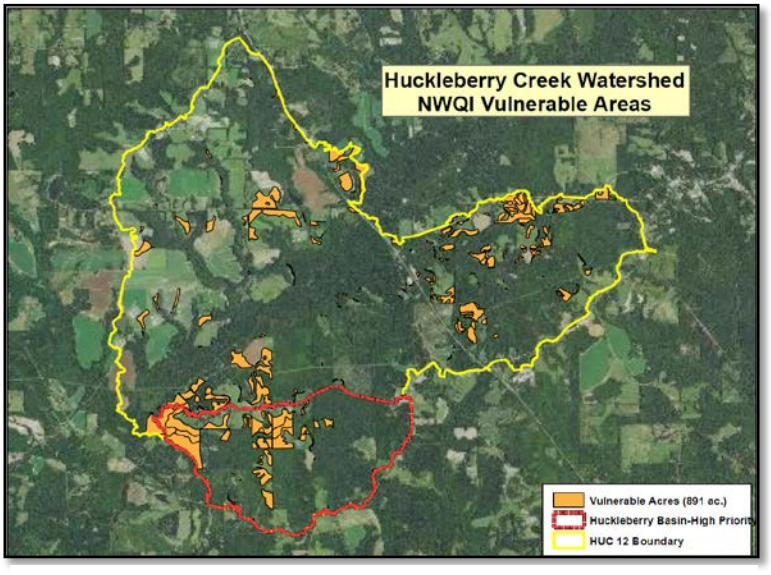
National Water Quality Initiative in Alabama (NWQI)

In FY2017, ADEM continued to partner with the National Resource Conservation Service (NRCS) as part of the NWQI to target Cox Mill Creek-Hurricane Creek (HUC 03140201-1004) within the Upper Choctawhatchee River Basin and the Upper Scarham Creek Watershed (HUC 06030001-0803) within the Tennessee River Basin. Initially, the Clean Water Partnership worked with NRCS to assist in selecting priority watersheds where on-farm conservation investments will deliver the greatest water quality improvement benefits. The NRCS is continuing to provide funding for implementation practices in addition to technical assistance and planning tools. ADEM is providing monitoring of water quality to assess results and document improvements, as well as providing Section 319 funding targeting the Upper Scarham Creek Watershed. The EPA Region 4, ADEM, and NRCS have continued coordination through conference calls and meetings in 2017.

The Cox Mill Creek-Hurricane Creek Watershed includes over 15,700 acres within the watershed, with about 12,500 acres being agricultural land use. Approximately 75 percent of the agricultural land within the watershed is categorized as "high to potentially highly erodible land." Since 2014, NRCS has worked with farmers and landowners to apply BMPs that will improve the land and thus improve water quality.

The Upper Scarham Creek Watershed, within the Guntersville Lake Sub-basin, was selected as a priority by ADEM for the development of a watershed management plan in 2014. The Top of Alabama Regional Council of Governments completed the Upper Scarham Creek Watershed Management Plan in June 2015. In August 2015, the DeKalb County SWCD contracted with ADEM to implement the Upper Scarham Creek Watershed Project using FY14 Section 319 funding.

In addition, the NRCS is interested in comprehensive resource assessments for new NWQI-funded watersheds. In 2017, NRCS, in cooperation with ADEM, identified the Huckleberry Creek Watershed for a pilot project to study the watershed prior to receiving NWQI funding. This watershed was newly listed on the 303d list for pathogens (E. coli). A watershed management plan was developed by the Clean Water Partnership in 2016. NRCS is currently working with Auburn University on a project to identify the sources of the pathogen impairment. A source assessment is being conducted where quantitative polymerase chain reaction (qPCR) is being used to target genetic markers for general and host-associated fecal pollution. Host associated genetic markers include human, cattle, poultry and wild pigs. This effort will improve NRCS abilities to update and refine the watershed plan. Further, the study and resulting updated plan will help NRCS focus financial assistance dollars to address the specific causes of water quality degradation.



Huckleberry Creek is within the Choctawhatchee Basin in Coffee and Dale counties.

TABLE 5. USDA NWQI PRACTICES SUMMARY FOR THE COX MILL CREEK-HURRICANE CREEK WATERSHED

Practice Name	Land Unit Acres	Applied Amount	Practice Unit	Applied Count
Access Control	264	264	acres	10
Comprehensive Nutrient Management Plan - Written	231	5	number	5
Conservation Cover	352	352	acres	19
Conservation Crop Rotation	1342	1331	acres	40
Contour Farming	464	464	acres	17
Cover Crop	2184	2166	acres	65
Critical Area Planting	910	18	acres	16
Fence	115	13060	feet	3
Feral Swine Management Conservation Activity - Interim	206	206	acres	1
Firebreak	200	29715	feet	8
Forage and Biomass Planting	617	387	acres	20
Grade Stabilization Structure	21	1	number	1
Grassed Waterway	695	7	acres	7
Heavy Use Area Protection	121	0.3	acres	6
Herbaceous Weed Treatment	32	8	acres	2
Integrated Pest Management (IPM)	1101	1199	acres	35
Irrigation Pipeline	61	5280	feet	1
Irrigation Water Management	177	113	acres	3
Land Smoothing	809	69	acres	14
Livestock Pipeline	66	2217	feet	3
Nutrient Management	1411	2028	acres	50
Pond	55	1	number	1
Prescribed Burning	404	381	acres	20
Prescribed Grazing	211	211	acres	2
Pumping Plant	41	2	number	2
Residue and Tillage Management, No-Till	755	755	acres	26
Residue and Tillage Management, Reduced Till	1167	1157	acres	34
Residue Management, Seasonal	96	96	acres	1
Restoration of Rare or Declining Natural Communities	202	202	acres	6
Sprinkler System	287	181	acres	5
Terrace	652	36126	feet	14
Tree/Shrub Establishment	149	126	acres	5
Underground Outlet	601	6120	feet	11
Water and Sediment Control Basin	66	2	number	2
Water Well	41	2	number	2
Watering Facility	121	6	number	6
Totals	**16,334**			**467**

TABLE 6. USDA NWQI PRACTICES SUMMARY FOR THE UPPER SCARHAM CREEK WATERSHED

Practice Name	Land Unit Acres	Applied Amount	Practice Unit	Applied Count
Animal Mortality Facility	145	12	number	12
Conservation Crop Rotation	1,047	1023	acres	54
Cover Crop	161	155	acres	9
Critical Area Planting	575	9	acres	10
Fence	623	33,234	feet	35
Firebreak	39	3,479	feet	1
Forage and Biomass Planting	366	138	acres	9
Grade Stabilization Structure	26	3	number	3
Heavy Use Area Protection	1,305	8	acres	83
High Tunnel System	36	6,350	sq ft	3
Land Smoothing	575	15	acres	10
Livestock Pipeline	475	15,325	feet	29
Nutrient Management	2,433	2,300	acres	145
Prescribed Burning	39	37	acres	1
Prescribed Grazing	1,201	1,199	acres	59
Pumping Plant	10	2	number	2
Residue and Tillage Management, No-Till	607	599	acres	31
Stream Crossing	31	2	number	2
Terrace	12	300	feet	1
Tree/Shrub Establishment	39	37	acres	1
Underground Outlet	24	64	feet	2
Waste Storage Facility	275	22	number	22
Water Well	28	2	number	2
Watering Facility	662	40	number	40
Totals	**10,736**			**566**

Additional Federal Partners

As the lead state agency of the Alabama NPS Management Program, ADEM continues to work closely with many federal agencies across the state. While some efforts result in the direct leveraging of resources, many instances involve data/information sharing, technology transfer and collaborative dialogue. The following information highlights some of the unique federal partnerships the Department has established to implement projects and enhance water quality in Alabama:

- The **National Oceanic and Atmospheric Administration (NOAA)** is involved in specific NPS projects through and with other state agencies. The NOAA and ADEM work with the Gulf of Mexico Program on watersheds that directly affect the Gulf of Mexico waters. The Clean Marina Initiative is a voluntary, incentive-based program also promoted by NOAA.
- **Weeks Bay Reserve** and the **Mobile Bay National Estuary Program** work in conjunction with the **Alabama Department of Conservation and Natural Resources (ADCNR)** and ADEM in watersheds along the coast, implementing stream restorations, agricultural BMPs, and the restoration of wetlands.
- The **U.S. Army Corps of Engineers (USACE)** provides technical assistance with several stream restoration and/or stabilization projects and workshops because of the oversight needed in conjunction with permitting requirements. In both the Moores Creek and the Mill Creek Subwatersheds (Chattahoochee Basin), the USACE provides advice on Section 404 permitting requirements, as needed, for a stream restoration projects and has helped to identify solutions to siltation problems.
- The **Natural Resources Conservation Service (NRCS)** continues to assist with identifying areas of concern for NPS pollutant sources and causes, supply technical guidance for developing Comprehensive Nutrient Waste Management Plans statewide, and provide technical and engineering assistance with Section 319 watershed projects involving implementation of agricultural BMPs.
- Through its Clean Water Initiative, the **Tennessee Valley Authority (TVA)** builds partnerships with community residents, businesses, and government agencies to promote watershed protection. The TVA's Regional Watershed Offices are responsible for carrying out the program. The TVA focuses on improving water and shoreline conditions so that people and aquatic life can benefit from having clean water. The TVA continues to work with several watershed projects in the Tennessee River Basin and is vital in gathering and providing water quality data.
- The **U.S. Fish and Wildlife Service (USFWS)**, in conjunction with the Alabama Department of Conservation and Natural Resources and the Geological Survey of Alabama, has selected watersheds and river segments to focus conservation activities for managing, recovering, and restoring populations of rare fishes, mussels, crayfishes, and snails. The purpose of designating SHUs is to facilitate and coordinate watershed restoration and management efforts as well as to focus funding to address habitat and water quality issues. The ADEM is working with the USFWS to coordinate these efforts through prioritization of data monitoring, information exchange, and in monitoring SHUs where 319 implementation projects have occurred.
- The **U.S. EPA Region 4** provides administrative oversight and support for the Section 319 Program in Alabama. The EPA also assists with the collaborative effort to evaluate the environmental conditions and solutions needed in the Village Creek Watershed in Jefferson County.

Education and Outreach Highlights

Groundwater and Water Festivals in Alabama

A key to providing protection for our surface and groundwater resources is education. The goal of a water festival is to educate fourth grade students, and indirectly their guardians and the community, on surface and groundwater issues including water sources and its protection, uses of water, and how to protect water from pollution. The Groundwater and Water Festivals are a culmination of classroom study and hands-on activities, allowing students the opportunity to experience first-hand, through experimentation and problem-solving, the complexity of surface and groundwater and its relationship to nature in general. This is the 19th year of Groundwater and Water Festivals in Alabama. Since January 2017, twenty-four counties have participated.

Students at the Lee County Water Festival learn about the water cycle.

Earth Day Activities

Students participated in several hands-on demonstrations as part of Earth Day at ADEM.

The ADEM celebrated Earth Day 2017 by hosting a pair of special events for more than 380 middle and high school students. On April 20, students from area schools visited the ADEM central office in Montgomery to learn about environmental programs that are being implemented on a daily basis to safeguard and preserve Alabama's valuable natural resources. The visiting students received guided tours and hands-on demonstrations from ADEM staff related to a wide-range of environmental programs including water quality sampling, fish tissue monitoring, air monitoring, recycling, solid waste disposal, and efforts that ensure Alabamians are provided with clean, safe drinking water. Students also learned about career opportunities at ADEM and were encouraged to pursue careers in science-

related fields. A week prior to that, the Department took the Earth Day event "on the road." On April 13, ADEM held a special event for more than 300 students at Pike County High School in Brundidge. The students were able to engage in a number of activities with ADEM staff to learn about how some of the things they do can affect the environment. The event was designed to promote the students' interest in learning about science and the world around them.

ADEM hosted two large Earth Day events.

The first organized "Earth Day" was held in 1970, with more than 20 million Americans demonstrating in various cities. Now, it is an annual event on which activities are held worldwide to demonstrate support for environmental protection. While many people celebrate Earth Day one day each year, every day is Earth Day at ADEM as the staff works to protect and preserve Alabama's air, land, and water resources.

Alabama Envirothon

The ADEM's NPS Unit, in a joint effort with other agencies, continues to play a vital supporting role in the Alabama Envirothon competition by helping in event planning, developing test materials, and leading many of the training events, judging, and overall program implementation. In addition, the NPS Unit coordinated a training event for FFA advisors in west Alabama who were interested in participating in future competitions.

ADEM NPS Unit trains students on water quality at the State Envirothon Competition.

This year's state competition was held April 6-8, 2017, at the 4-H Camp in Columbiana. The current issue of this year's Envirothon was "*Agricultural Soil and Water Conservation Stewardship*". NPS staff, along with NRCS personnel, taught about agricultural BMPs, tools, and federal programs related to soil and water conservation. Bob Jones High School from Madison County was the overall state winner.

Clear Water Alabama Erosion and Sediment Control Workshop

ADEM continued to provide support in the planning and organization of the annual "Clear Water Alabama Seminar and Field Day" as part of the Alabama Erosion and Sediment Control Partnership.

The goal of the Partnership is to help planners, designers, contractors, inspectors, and others learn about the latest erosion and sediment control practices. Members include the Alabama Soil and Water Conservation Committee, the Natural Resources Conservation Service, ADEM, and the Alabama Association of Conservation Districts, the Alabama Department of Transportation, the Home Builders Association of Alabama, the Associated General Contractors of Alabama and Auburn University –Cooperative Extension System.

This year's seminar and field days were held November 1 - 2, 2017 in Mobile, Alabama. The first day's workshop included a seminar with some of the following topics:

- Update on regulation changes from the Stormwater Management Branch from ADEM
- Erosion and Sediment Control Handbook Update
- Information about preserving water quality during construction
- Update on erosion and sediment research from Auburn University
- Turning soil into green infrastructure
- Low impact development (LID) case studies and tree preservation

The workshop also hosted several exhibits that highlighted erosion and sediment control technology from representatives from across the southeast. The second day of the workshop included a field tour of several erosion and sediment control demonstration sites that highlighted residential, commercial, industrial, and road construction BMPs.

Workshop attendees tour a construction BMP demonstration site in Mobile, Alabama.

Watershed Management Plans

Large-scale management plans have been completed for each major river basin across the state. These plans continue to be used as a vital basis for background information for the smaller targeted 12-digit hydrologic unit code (HUC) plans and by stakeholder groups as they move to prioritize and target water quality problems and solutions in each river basin. A list of the targeted 12-digit HUC plans is shown below.

As outlined in the Section 319 workplans, the watershed management plans are in various stages of development and implementation. These plans will incorporate, as applicable, EPA's "a-i" elements for watershed management plans as outlined in the FY13 Section 319 grant guidance.

Alabama River Basin

• Baldwin Slough (031502010307)	17,280 acres	Complete
• Upper Pintlala Creek (031502010401, 031502010404)	55,437 acres	Complete
• Pursley Creek (031502030802)	48,429 acres	Complete
• Mulberry Creek (031502011001, 031502011002, 031502011003, 031502011004, 031502011005, 031502011006)	176,990 acres	Updating

Black Warrior River Basin

• Brindley Creek (031601090105)	15,638 acres	Complete
• Long Branch (031601090303)	19,752 acres	Complete
• Black Branch-Cane Creek (031601090602)	40,670 acres	Complete
• Headwaters Ryan Creek-Alvis Branch (031601100501)	26,334 acres	Complete
• Bavar Creek-Ryan Creek (031601100502)	16,540 acres	Complete
• Graves Creek (031601110202)	37,766 acres	Complete
• Dry Creek (031601110203)	12,648 acres	Complete
• Big Scirum Creek-Upper Locust Fork (031601110208)	16,953 acres	Complete
• Village Creek (031601110408, 031601110409)	60,917 acres	Complete
• Rock Creek-Crooked Creek (031601100401, 031601100402)	132,695 acres	Complete
• North River (031601120401, 031601120402, 031601120404)	121,967 acres	Complete
• Cottonwood Creek (031601130704)	28,428 acres	Complete
• Dollar Hyde Creek (031601130801, 031601130803, 031601130804)	55,040 acres	Complete

Cahaba River Basin

• Little Shades Creek (031502020201)	39,908 acres	Complete
• Dry Creek (031502020902)	5,312 acres	Complete

Chattahoochee-Chipola River Basins

• Moores Creek (031300020907)	11,558 acres	Complete
• Mill Creek (031300030101)	15,729 acres	Complete
• Cowarts Creek (031300120201, 031300120202, 031300120203)	77,066 acres	Updating

Choctawhatchee-Pea-Yellow River Basins

- Hurricane Creek-Dowling Branch (031402010704) 15,647 acres Complete

Coosa Basin

- Spring and Mud Creek (031501050807) 10,880 acres Complete
- Broken Arrow Creek (031501060602) 38,903 acres Complete
- Buxahatchee Creek (031501070502) 45,663 acres Complete
- Middle Coosa 915,016 acres Complete
  Targeting the following subwatersheds:
  - Little Land Valley Creek (031501060103)
  - Fisher Creek (031501060104)
  - Whippoorwill Creek (031501060105)
  - Little Wills Creek (031501060106)
  - Black Creek (031501060107)
  - Horton Creek (031501060108)
  - Ball Play Creek (031501060201)
  - Dry Creek (031501060202)
  - Big Cove (031501060203)
  - Turkey Town Creek (031501060204)
  - Little Canoe Creek (031501060301)
  - Headwaters Big Canoe Creek (031501060302)
  - Upper Big Canoe Creek (031501060303)
  - Lake Sumatanga-Little Canoe Creek (031501060304)
  - Middle Big Canoe Creek (031501060305)
  - Lower Big Canoe Creek (031501060306)
  - Laymous Pond-Beaver Creek (031501060307)
  - Shoal Creek-Coosa River (031501060308)
  - Neely Henry Lake-Coosa River (031501060309)
  - Upper Ohatchee Creek (031501060404)
  - Lower Ohatchee Creek (031501060405)
  - Woods Island-Coosa River (031501060409)
  - Trout Creek (031501060601)
  - Broken Arrow Creek (031501060602)
  - Embry Bend-Coosa River (031501060603)
  - Broken Arrow Shoals (031501060605)
  - Rabbit Branch (031501060803)
  - Jess Branch-Shoal Creek (031501060804)
  - Upper Kelly Creek (031501060805)
  - Hearthstone Creek-Wolf Creek (031501060806)
  - Buckhorn Branch-Bear Creek (031501060807)
  - Lower Kelly Creek (031501060808)
  - Spring Creek-Coosa River (031501060810)

- Upper and Middle Coosa Watersheds (DeKalb Co.) 340,026 acres Complete
  Targeting the following subwatersheds:
  - Lower West Fork Little River (031501050701)
  - Middle Fork Little River (031501050702)
  - Upper Little River East and West Forks (031501050703)
  - Upper East Fork Little River (031501050704)
  - Lower East Fork Little River (031501050705)

  - Yellow Creek (031501050801)
  - Upper Little River (031501050802)
  - Bear Creek (031501050803)
  - Johnnies Creek (031501050804)
  - Wolf Creek (031501050805)
  - Lower Little River (031501050806)
  - Yellow Creek (031501051001)
  - Headwaters Big Wills Creek (031501060101)
  - Upper Big Wills Creek (031501060102)
  - Little Sand Valley Creek (031501060103)

- Middle Coosa Priority Subwatersheds — Acreage above — Complete
  Targeting the following subwatersheds:
  - Dry Creek (031501060202)
  - Big Cove Creek (031501060203)
  - Turkey Town Creek (031501060204)
  - Little Canoe Creek (031501060301)
  - Headwaters Big Canoe Creek (031501060302)
  - Upper Big Canoe Creek (031501060303)
  - Middle Big Canoe Creek (031501060305)
  - Neely Henry Lake-Coosa River (031501060309)
  - Trout Creek (031501060601)
  - Broken Arrow Creek (031501060602)
  - Broken Arrow Shoals (031501060605)
  - Rabbit Branch (031501060803)
  - Jess Branch-Shoal Creek (031501060804)
  - Hearthstone Creek-Wolf Creek (031501060806)
  - Buckhorn Branch-Bear Creek (031501060807)
  - Easonville Creek (031501060290)

Mobile Basin

- Wolf Bay (031401070201, 031401070202,031401070203) — 36,296 acres — In Progress
- Eight Mile Creek (031602040304) — 22,287 acres — Complete
- Three Mile Creek (031602040504) — 19,002 acres — Complete
- D'Olive Creek (031602040505) — 20,480 acres — Complete
- Dog River (031602050101, 031602050102, 031602050103, 031602050105) — 61,735 acres — In Progress
- Fowl River (031602050104) — 39,739 acres — Complete
- Weeks Bay (031602050201, 031602050202, 031602050203, 031602050204) — 129,610 acres — In Progress
- Bon Secour (031602050206, 031602050207, 031602050208) — 43,673 acres — Complete
- Juniper Creek-Big Creek (031700080401) — 5,936 acres — Being updated
- Bayou la Batre (031700090102) — 19,562 acres — In Progress
- West Fowl River (031700090103) — 20,489 acres — In Progress
- Dauphin Island (031700090202) — 3,851 acres — In Progress

Tallapoosa Basin

• Town Creek (031500010301)	150 acres	Complete
• Wolf Creek-Copper's Rock (031501081004)	23,488 acres	Complete
• Moore's Mill Creek (031501100201, 031501100204, 031501100203)	7,360 acres	Complete
• Saugahatchee Creek (031501100201, 031501100202, 031501100203, 031501100204)	108,482 acres	Complete
• Parkerson Mill Creek (031500010301)	5,981 acres	Complete

Tennessee Basin

• Guess Creek (060300020105)	21,818 acres	Complete
• Cole Spring Branch (060300020201)	3,110 acres	Complete
• Brier Fork and Beaverdam Creek (060300020305, 060300020307)	67,290 acres	Complete
• Upper and Middle Flint River (060300020307, 060300020403)	54,648 acres	Complete
• Hester Creek-Mountain Fork (060300020304)	53,838 acres	Complete
• Upper Hurricane Creek and Lower Hurricane Creek (060300020401, 060300020402)	46,873 acres	Complete
• Goose Creek (060300020404)	7,552 acres	Complete
• Yellow Bank Creek (060300020405)	6,208 acres	Complete
• Indian Creek (060300020505)	24,847 acres	Complete
• Hughes Creek (060300020601)	18,276 acres	Complete
• West Fork Cotaco Creek (060300020602)	34,573 acres	Complete
• Town Creek (060300020604)	23,442 acres	Complete
• French Mill Creek (060300020802)	26,908 acres	Complete
• Upper Scarham Creek (060300020803)	31,238 acres	Complete
• Shoal Creek-Sleighton Branch (060300021005)	10,140 acres	Complete
• Crowdabout Creek (060300021007)	31,180 acres	Complete
• Elam Creek (060300021009)	19,651 acres	Complete
• Upper and Middle West Flint Creek (060300021010, 060300021012)	56,260 acres	Complete
• Big Shoal Creek (060300021011)	12,967 acres	Complete
• Flat Creek (060300021013)	38,246 acres	Complete
• Village Branch (060300021014)	33,457 acres	Complete
• Swan Creek (060300021101)	35,928 acres	Complete
• Second Creek (060300021203, 060300021204)	37,714 acres	Complete
• Shoal Creek (060300040401)	39,088 acres	Complete
• Harris Creek (060300060201)	35,224 acres	Complete
• Browns Creek (060300010904)	37,248 acres	Draft
• Anderson Creek (060300040404)	37,913 acres	In Progress

Implementation of Watershed Plans

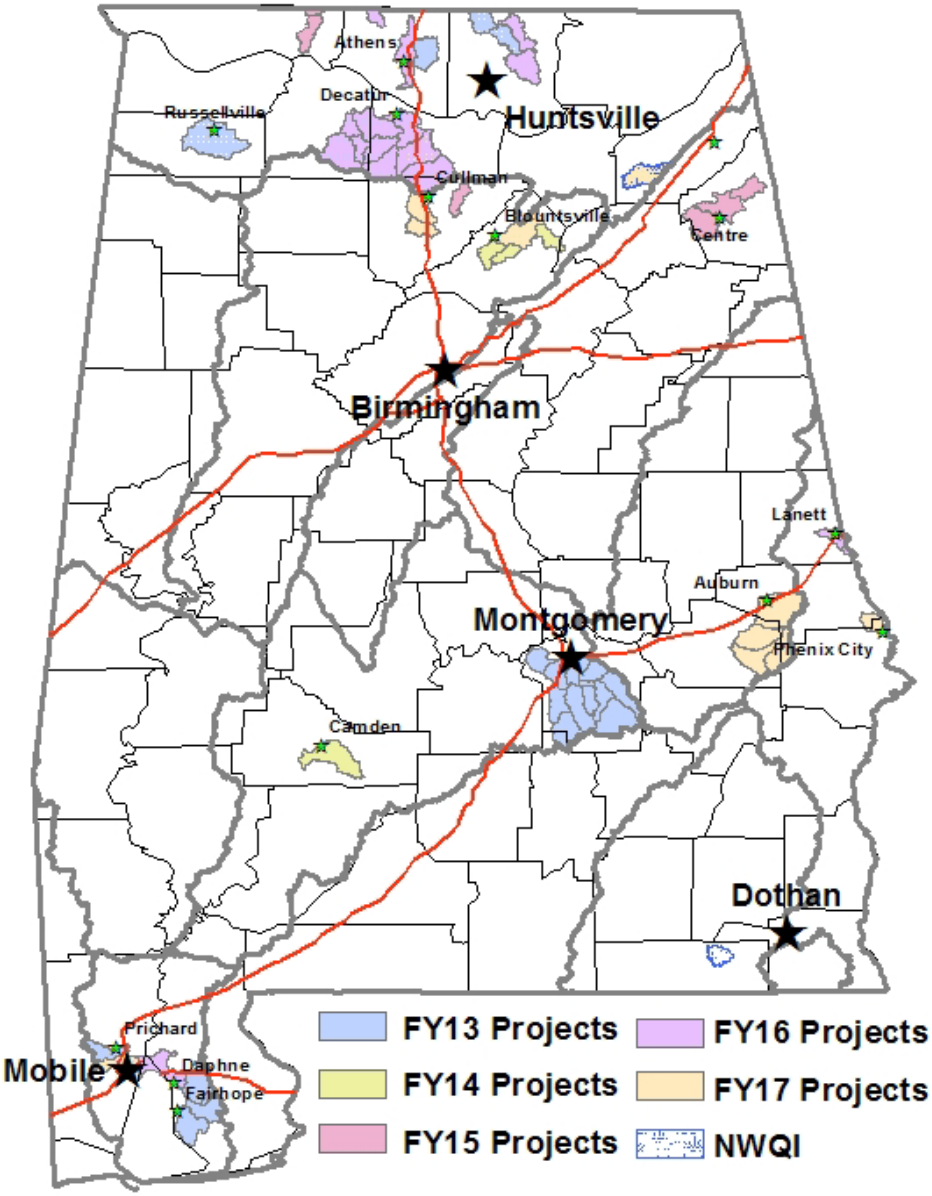


Figure 5: ADEM NPS Targeted 12-Digit HUCs

Alabama River Basin

Pintlala Creek & Catoma Creek Watersheds Project (FY13)

Pintlala Creek (HUC 03150201-0401 and 03150201-0404) begins in northern Crenshaw County and flows through Montgomery County into the Alabama River. It is approximately 49 miles in total length, of which 26 miles is impaired by pathogens due to pasture grazing, from its source to its confluence with Pinchony Creek. Additional site reconnaissance and local stakeholder meetings identified additional possible sources of pathogens, including wildlife, illegal dumping, and improperly functioning septic systems. Catoma Creek, Ramer Creek, and an unnamed tributary to Catoma Creek are all impaired streams within the larger Catoma Watershed (HUC 0315020103), all impaired for pathogens and organic enrichment/low dissolved oxygen. The source of the pathogens is listed as urban runoff/storm sewers and pasture grazing. The goal of the Pintlala and Catoma Creek Watersheds Project is to restore the creeks by addressing pathogen and nutrient loadings through the implementation of on-the-ground BMPs and by educating watershed stakeholders on the sources of NPS pollution. Implementation of these practices will also help foster activities that perpetuate watershed and stream stewardship and create a healthier balance between the local community and its ecosystems.

This project began in October 2014, in cooperation with the Montgomery County SWCD, and ended in July 2017. In total, 23,508 feet of fencing for livestock, 49,240.7 square feet of heavy use area protection, 28,406 feet of livestock pipeline, 35 alternative watering sources, four wells, nine pumping plants, and 486.2 acres of pastureland improvement were installed on farms in both the Pintlala and the Catoma Creek watersheds. Two agricultural workshops were also held in the watersheds in conjunction with the Alabama Cooperative Extension System, including a Weed ID/Chemical Control/Water Quality workshop and a Fencing and Grazing Clinic. A no-till drill was purchased with a grant from the Mid-South Resource Conservation and Development to use in the watersheds to help continue to reduce sediment and nutrients from pastureland runoff.

The District coordinated and held two Pintlala Creek Septic Tank Workshops at local churches in the Pintlala Creek watershed. Eighty-one homeowners in the watershed attended. The ADEM, the Alabama River Basin Clean Water Partnership, and the Alabama Department of Public Health presented on watershed conditions and septic tank maintenance. A total of 50 Septic Tank vouchers were distributed to the homeowners that attended the workshops, valued at $300 each. Thirty-two pump outs were completed. Montgomery Water Works waived the dumping fee at the sewage treatment plant providing additional match towards the project.

An educational environmental club, the Blue Planet Defenders, was established at the Pintlala School for the 5th grade students as part of the project. Beginning in 2015, an Education Coordinator attended and planned outreach meetings and planned and held Environmental Club monthly sessions at the school. The educational activities and programs taught the Pintlala Creek community the value of clean water and the responsibility we all have to keep the water clean. The areas of education presented included the Water Cycle, What is a Watershed, NPS Pollution, Wetlands, and Wetlands Art. The Blue Planet Defenders Environmental Club ended on April 29, 2016 with an all-day field trip for the club members and teachers to a farm that has Pintlala Creek running through it.

Though there were several delays and changes due to weather conditions and slow landowner response, the Pintlala and Catoma Creeks Watershed Project was a very successful project in providing a cooperative effort to address NPSs of pathogens and nutrients in the Pintlala and Catoma Creek Watersheds. The educational events and workshops really helped to get the word out about the availability of funding to address these sources, though it was a slow process in developing the interest. The Montgomery County SWCD continues to seek ways to leverage funding and efforts to target these impaired waters, with a goal of restoring the water quality in Pintlala and Catoma Creeks.

A fencing and grazing workshop was held for local landowners.

Cumulative Load Reductions:

- 14,273 lbs/yr of nitrogen
- 1,896 lbs/yr of phosphorus
- 548.2 tons/yr of sediment

Pursley Creek Watershed Project (FY14)

Pursley Creek forms in Wilcox County southeast of the city of Camden, within the Alabama River Basin. Pursley Creek is listed as impaired for pathogens from its source to the Alabama River. Its entire length, 26.11 miles, is listed as impaired, with a total watershed area of 105.72 square miles (HUC 03150203-0802). Town Branch, a tributary to Pursley Creek, is also listed as impaired for pathogens. The Pursley Creek and Town Branch pathogen impairment is addressed in a Pursley Creek TMDL. The goal of the Pursley Creek Watershed Project is to help to restore the creeks and to improve the watershed by addressing nonpoint-source loadings through the implementation of on-the-ground BMPs.

This project began in August 2015 in cooperation with the Wilcox County SWCD. A successful project kickoff meeting was held with 16 landowners attending and nine applications received by the District. In 2017, the project period was extended and the amount of funding was reduced. The extension was granted in order to complete existing approved cost-share applications from landowners for management measure implementation. The funding amount was reduced due to lack of interest, cancellations, and lack of response from landowners in the watershed. To date, six farms have installed practices to improve the Pursley Creek Watershed. These practices include 172 acres of tree planting, 61 acres of pastureland improvement, 3,765 feet of livestock fencing, one watering facility and pipeline, and six acres of critical area improvement on pastureland. This project will be completed February 2018.

Cumulative Load Reductions:

- 675.6 lbs/yr of nitrogen
- 53.6 lbs/yr of phosphorus
- 19.5 tons/yr of sediment

Black Warrior River Basin

Brindley Creek Watershed Project (FY15)

Brindley Creek is a part of the upper Black Warrior River Basin. It combines with Eightmile Creek east of the town of Cullman to form the Broglen River before it drains into Mulberry Fork. The Brindley Creek Watershed (HUC 03160109-0105) has an area of 24.83 square miles. The Brindley Creek Project is being implemented in cooperation with the Cullman County SWCD. Two segments of Brindley Creek have been identified as impaired for nutrients and pathogens associated with agriculture and urban runoff.

Announcements regarding the project are published in the local newspaper and in the District's quarterly newsletter. Responses have been slow. The District has begun attending local agriculture organizations meetings and requesting to be on the agenda to discuss the project, including the Cullman County Young Farmer's Federation meeting and Cullman Extension Service Farmer meetings. The District has begun to see more interest in the program by taking this approach, but no additional applications were received. To date, agricultural practices installed include a grassed waterway, heavy use area, poultry freezers, and a drystack for poultry litter storage.

Camp Meadowbrook site to be stabilized is adjacent to Brindley Creek.

Camp Meadowbrook, a facility owned by the Cullman County SWCD, is located directly adjacent to the creek. The District uses the camp as the headquarters for the District and watershed meetings and workshops. The District has subcontracted with an environmental engineering firm and developed a plan to install BMPs at the camp to address runoff issues that have developed since the tornadoes of 2011 tore through the camp and left the ground bare. Bids to complete the plan are in process. It is the District's plan to make the camp a showcase facility of how to properly manage erosion issues with installation of BMPs.

The Soil Tunnel and Watershed trailer was completed and named "Agventure". It has been utilized at many events, including the Cullman Farm City Tour and the Cullman Career fair. A watershed display explains what watersheds are and the importance of protecting our watersheds. The SWCD also sets up a table outside trailer to hand out information on ways a small homeowner to a large farm can install practices to help protect or clean up a watershed. To date over 4,000 people have toured the Agventure trailer.

A three-day Environmental Educators' Workshop was held at Camp Meadowbrook in June 2017. Speakers represented ACES, NRCS, ADEM, FWS, and other partners. The teachers were also able to tour the Agventure trailer. On the second day, the teachers toured the WaterWorks Center for Environmental Education on Flint Creek where they learned about LID, sustainability practices, riparian areas, and how to protect natural resources. Several of the teachers have followed up and are planning to volunteer with the Brindley Creek stabilization at the camp.

Cumulative Load Reductions:

- 1,825.4 lbs/yr of nitrogen
- 337 lbs/yr of phosphorus
- 0 tons/yr of sediment

Graves Creek Watershed Project (FY14 and FY17)

Graves Creek in the Graves Creek Watershed (HUC 03160111-0202) is a tributary to the Locust Fork in the Black Warrior River Basin in Blount County. It flows 9.62-miles until its confluence with the Locust Fork River. Graves Creek was originally placed on the 1992 CWA Section 303(d) list of impaired waters for organic enrichment/low-dissolved oxygen from primarily agricultural sources. Phase I of the Graves Creek Watershed Management Plan Implementation Project ended on September 30, 2017. However, Phase II is expected to begin shortly in order to continue the current momentum of project participation and to further improve water quality within the Graves Creek Watershed.

The project is being implemented in partnership with Blount County SWCD and NRCS. During Phase I of the project, 14,175 square feet of heavy use area protection, 22.3 acres of pasture planting, 5,462 feet of cross fence, three 4-ball freeze-proof troughs, five 2-ball freeze-proof water troughs, 314 feet of pipeline, and two water ramps were installed. During the past six months, producers completed 6,278 feet of cross fence, 960 square feet of stream crossing, 160 tons of grade stabilization structure, 70 feet of livestock pipeline, two two-ball freeze-proof water troughs, and 7,518 square feet of heavy use area. Additional non-federal match was gained from Blount County Commission, District 4 road improvements to decrease erosion and pollutant loads and improve drainage. Improvements included replacing pipe/culverts, reshaping, and stabilization work on dirt roads.

Stream crossing before BMPs were installed

Stream crossing after BMPs were installed

Education and outreach activities that have occurred within the past six months include the 2017 "Kid's Day on the Farm", held on April 27th. This event showed Blount County and City of Oneonta second graders what they might find on a farm and stressed the importance of protecting soil and water for future generations. A "Soil Tunnel" was used to teach the students at the farm day. Also, the "Ag in Action Trailer" was displayed to children and adults from September 12-16, 2017 at the Blount County Fair. Both of these events educated attendees on conservation practices for soil and water protection and on the Graves Creek Watershed Project.

Cumulative Load Reductions:

- 9,344.9 lbs/yr of nitrogen
- 1,785.8 lbs/yr of phosphorus
- 649.1 tons/yr of sediment
- 4,134.4 lbs/yr of BOD

Chattahoochee-Chipola River Basin

Mill Creek Watershed Project Phase III (FY17)

The Mill Creek watershed in southeast Alabama (HUC 03130003-0101) flows through portions of the cities of Smiths Station and Phenix City within Lee County and Russell County, respectively. Mill Creek watershed drains approximately 24.8 square miles (15,872 acres) and is a major tributary to the Chattahoochee River-Bull Creek sub-river basin. Mill Creek in its entirety (9.93 miles) is impaired by organic enrichment caused by urban development. Holland Creek above its confluence with Mill Creek is not listed as impaired on the CWA Section 303(d) list of impaired waters, although it is incorporated within the watershed boundary dataset of Mill Creek.

A watershed management plan was completed for Mill Creek in December 2010 and, since then, two previous CWA Section 319(h) awards have been completed targeting the watershed. The Mill Creek Watershed Management Plan was developed to provide focus and direction for stakeholders to effectively and efficiently mitigate NPS pollution and to protect water quality using a dynamic and iterative watershed-based management approach. The plan will assist the public and private sector in cooperatively implementing environmentally-protective BMPs throughout the watershed to protect water quality.

To date the Mill Creek Steering Committee, headed by Water Program Coordinator Eve Brantley and Watershed Coordinators Alex James and Katie Dylewski with Alabama Cooperative Extension System (ACES), has identified and helped to implement two bioretention cells, four stream projects, one constructed stormwater wetland, one infiltration swale, two sediment/erosion control projects, several streambank stabilizations, and countless hours of education and outreach activities, including rain barrel workshops, Alabama Water Watch monitoring/training, invasive plant workshop, trash clean-ups, NPS Education for Municipal Officials, and LID workshops, through CWA Section 319 and matching funds. This project continues to have strong stakeholder support and will benefit from additional BMP implementation throughout the watershed.

Mill Creek Watershed Project – Phase 3 is currently in the coordination phase with ADEM, EPA, and the Alabama Cooperative Extension System. This project builds on the success of the previous two phases. Phase 3 of the Mill Creek Watershed Management Project is primarily focused on a performance-based accountability approach. Investments of Section 319 grant funding are expected to achieve the long-term environmental, economic, or community enhancement results. Some of the anticipated BMPs are listed below:

- Channel/Bank Vegetation
- Constructed Stormwater Wetland
- Bioretention
- Education and Outreach
- Riparian Restoration
- Stream Channel Stability

Moores Creek Watershed Project Phase I (FY14)

The Moores Creek Watershed (HUC 03130002-0907) drains approximately 18.06 square miles (11,558 acres) and is within the Middle Chattahoochee-Lake Harding River Basin. The ADEM identified Moores Creek as being impaired by siltation due to habitat alteration for a length of 11.4 miles, from the Chattahoochee River to its source. Moores Creek was first added to the 303(d) list in 2012 based upon 2007 habitat and macroinvertebrate data.

An in-stream stabilization structure was placed to prevent further streambank erosion.

During this reporting period, approximately 800 linear feet of stream restoration has been completed on the main stream of Moores Creek that is located in the City of Lanett between South 8th Avenue and Veterans Memorial Parkway. The stream restoration implementation has included debris removal, streambank stabilization, riparian buffer planting and remediation, habitat rehabilitation, and instream structures to help turn water back to the center of the channel. This project also encompassed stabilizing about 300 feet of a small tributary to Moores Creek.

Several project tours of the site have been held to educate stakeholders on the project. A community project tour was held on April 11, 2017 and led by Jason Zink, one of the site engineers. This tour was crucial in the planning of Phase 2, which will be located in both Lanett and Valley. It allowed the different communities to see the site before stream project as well as the work that the contractor was completing at the beginning of construction. Another tour was held on April 19, 2017. This tour was well attended by members of the community, including Alabama Power, the City of Lanett, the USACE, ADEM, EPA, and ACES. On June 7, 2017, a post construction tour with planting of native vegetation of the stream was held. These tours were instrumental in gaining stakeholders and strengthening partnerships as Moores Creek moves to Phase 2 of construction, which will include LID implementation, and additional streambank stabilization, stream enhancements, and restoring of native vegetation along the streambank.

A community tour of the stream site was held to promote the project.

On April 22, 2017, a group of volunteers gathered to pick up litter in the watershed. This group included college students, Key Club members Lanette High School, ACES, and ADEM. After the litter cleanup, the group returned to the stream to learn about the project and to help plant a portion of the vegetation on the project area.

There were also several stakeholder meetings held to allow a platform for stakeholders to share what was occurring on the project, to give dates and opportunities for them to get involved, as well as to garner additional stakeholder input regarding its future phase. These meetings targeted areas that stakeholders felt were potentially contributing to the sediment loading to the creek.

Moores Creek Watershed Project Phase I and II (FY16/FY17)

This project is a continuation of the success of Moores Creek Watershed Project Phase 1. It is currently in the coordination stage with ADEM and the Alabama Cooperative Extension System. Local stakeholders have identified this project as a priority watershed plan implementation that makes good environmental, economic, social, and project management sense. It incorporates EPA's nine key watershed management plan elements; targets a Section 303(d) impaired water; and addresses Section 319 priority pollutants (e.g., nitrogen, phosphorus, and sediment). It also leverages and provides the public and private sector with critical resources to restore an impaired waterbody to state water quality standards.

A potential, highly-visible, implementation site adjacent to Valley City Hall.

Phase 2 of the Moores Creek Watershed Project is primarily focused on stream enhancement and streambank stabilization in three areas of Moores Creek located in the City of Valley between 55th Street West and Moores Creek's confluence with the Chattahoochee River. Part of the stream enhancement will potentially be located in an area adjacent to Valley City Hall (left photo). It is highly visible to the public and suffers from lack of floodplain connection, eroding streambanks, poor riparian vegetation, and trash and debris in the channel. The BMPs will be used in this area to address sedimentation along with NPS pollution problems identified in Phase 1 by the watershed stakeholders.

Phase 2 of the Moores Creek Watershed Management Project will also address stormwater runoff issues on the campus of Lanett High School. These improvements will consist of stabilizing temporary of parking areas. The use of permeable pavers or rolled concrete matting is suggested to alleviate soil compactions in areas of seasonal high traffic. Combating soil compaction in these areas will promote infiltration of stormwater and reduce runoff and soil loss. Project efforts will promote infiltration in the area, thus reducing stormwater energies and sediment from entering Moores Creek.

During Phase 1 of the Moores Creek Watershed Project, partners became aware of additional locations of potential stormwater pollution. One site is located along Veterans Memorial Parkway in Lanett. The Chambers County Emergency Management Agency also identified a stormwater pond on their campus that is a potential NPS load to Moores Creek. Retrofitting this pond to a stormwater rain garden as well as the addition of native vegetation will help stabilize the area, reduce sedimentation, and provide habitat.

Stakeholders identifying potential sources of sediment pollution

Cumulative Load Reductions for Moores Creek:

- 594 lbs/yr of nitrogen
- 228.7 lbs/yr of phosphorus
- 433.8 tons/yr of sediment
- 1,188.0 lbs/yr of BOD

Coastal Basin

Joe's Branch Watershed Project (FY16)

Joe's Branch (HUC 03160204-0505), located primarily in the City of Spanish Fort, is a tributary of D'Olive Creek with a confluence near the point where the latter empties into D'Olive Bay. The Joe's Branch subwatershed is approximately 661 acres in area and includes portions of the cities of Spanish Fort and Daphne. Since 2008, ADEM has included a 1.57-mile segment of Joe's Branch from its source to D'Olive Creek on the CWA Section 303(d) List of Impaired Waters, with a cause identified as siltation (habitat alteration) as a result of land development. In fact, GSA stated that the target project area delivered the highest normalized sediment loads ever recorded in the GSA monitoring history, downstream to D'Olive and Mobile Bays.

The Joe's Branch Watershed Project submitted its final report on September 29, 2017. This project completed installing three cross vanes, one J-hook vane, and six log drops in this transition reach along a tributary to Joe's Branch to help dissipate the stormwater velocity, help stabilize the degraded area, and protect the investment of the stream and wetland restoration downstream. The contractor also installed native vegetation throughout the project area to restore the habitat and further protect the stream.

The last six months were focused on project leveraging in the form of vegetation establishment and invasive species management. There were stream tours and adaptive management that also took place. The picture to the left shows the Gulf Coast Conservation Corps, which was established in cooperation with the Mobile Bay National Estuary Program, MLK Avenue Redevelopment Corporation, and the Student Conservation Association, working on invasive species removal.

Cumulative Load Reductions:

- 183 lbs/yr of nitrogen
- 26.5 lbs/yr of phosphorus
- 40.5 tons/yr of sediment

Upper Three Mile Creek Watershed Project (FY16)

The Three Mile Creek Watershed (HUC 03160204-0504) drains a total area of 30.1 square miles with in the cities of Mobile and Prichard. The State of Alabama first identified Three Mile Creek's inability to meet its water use classification of an Agriculture and Industry stream (the lowest use classification) on the 1996 303(d) list of impaired waters. At that time, it was identified for impairments in nutrients, pH, organic enrichment/dissolved oxygen, and pathogens with potential sources including municipal issues, storm sewers, highway/road/bridges, and land development. In December of 2006, a TMDL was developed for all three segments of Three Mile Creek for organic enrichment/dissolved oxygen. This TMDL requires a 21% reduction in Nitrogen Biochemical Oxygen Demand and a 22% in Carbon Biochemical Oxygen Demand in the months of December through April. It also requires a 55% reduction in Nitrogen Biochemical Oxygen Demand and 49% Carbon Biochemical Oxygen Demand in the months of May through November.

Currently, the upper portion of the Three Mile Creek Watershed only has a TMDL for Organic Enrichment/Low Dissolved Oxygen. The Three Mile Creek Watershed Management Plan calls for LID structures to be placed up gradient of storm drains in order to help reduce the peak flows that

are degrading the stream. This urban stormwater runoff is currently causing excessive sediment and organic matter to enter the stream, leading to further damage to aquatic habitats by filling in the natural stream channel's pools, creating less oxygen as more organisms are needed to breakdown organic debris, and creating a layer of sediment covering spawning grounds. In addition to additional volume and velocity being added to the stream, but due to the impervious areas the stream temperature can be increase as well. When the temperature in the stream increases, there is less available dissolved oxygen for the stream environment.

This project will target LID implementation on the University of South Alabama's (USA) campus. It is located in what is known as the Meisler Commons Basin located behind the Administrative Building and just east of Meisler Hall. The bio-infiltration BMPs were designed during this six-month period by project partners and as a result, this project started construction on September 13, 2017. It will include the implementation of five bioswales in the Meisler Commons Basin area as shown in the figure to above. These swales will help intercept, store, and infiltrate stormwater. These swales will also help lower the sediment oxygen demand to the stream, thus increasing the dissolved oxygen within the stream.

During the last six month period, efforts have also focused on continuing to communicate and interact with project steering committee members. This included a presentation and participation in the Three Mile Creek Joint Agency Committee, which is spear headed by the City of Mobile, the Corps of Engineers, and the Mobile Bay National Estuary Program. Attendees typically include but are not limited to, the City of Mobile, Mobile County, the Mobile Area Water and Sewer System, USACE, the Mobile Bay National Estuary Program, ADCNR, USFWS, NRCS, the RESTORE council, and others. The USA campus sustainability committee was also informed about the project on April 5, 2017. The University installed four in-the-ground storm water sampling devices in May of 2017 to collect samples for total suspended solids prior to and after the installation of BMPs.

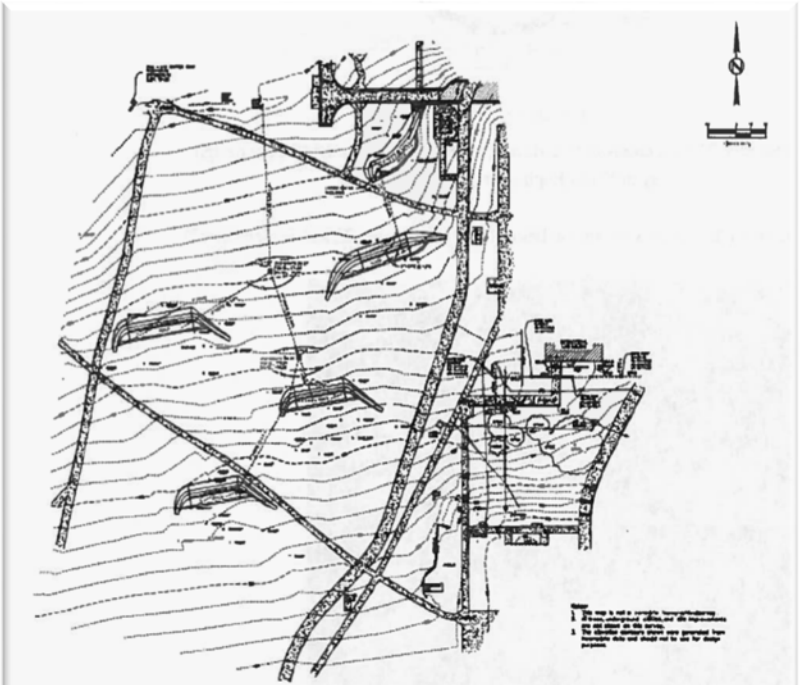


Figure 2. BMP installation locations in the Meisler Commons area just west of the USA Whiddon Administration Building (courtesy of Krebs Engineering).

Upper Three Mile Creek Watershed Project – Phase 2 (FY17)

Phase 2 of the Upper Three Mile Creek Watershed Project will continue to implement components of the nine key element Three Mile Creek Watershed Management Plan. The major challenges to Three Mile Creek's health identified in the watershed management plan include urban stormwater runoff (quantity and quality of this runoff) and altered geomorphology (streambank erosion, sedimentation, etc.). The University of South Alabama, with an enrollment of over 16,000 students, resides on approximately 1,200 acres in the upper reaches of the Three Mile Creek Watershed and was identified in the watershed management plan as contributing sediment to Three Mile Creek. USA has several areas on campus with significant slope (>5%) and impervious surfaces (parking lots) that contribute large volumes of water to local drainage ways causing both bed and bank erosion and contributing oils and greases from automobiles to the creek. Campus stormwater management from parking lots typically consist of curb and gutter inlets that lead to traditional underground storm sewers and earthen drainage ways that outlet directly to Three Mile Creek. Sediment build-up at these storm sewer outlets to Three Mile Creek are evident and the impacts of Oil and Grease pollutants certainly impact dissolved oxygen issues in Three Mile Creek.

This proposed project will continue to address the structural BMP implementation with LID and green infrastructure (GI) on the USA campus. Specifically, bioswales are proposed to be implemented within two large asphalt parking facilities, called the Humanities lot and the Gamma lot. Further implementation of LID techniques will continue to be minimize the quantity of stormwater runoff and reduce soil erosion, sediment load (and associated organic nitrogen load) in the upper Three Mile Creek Watershed.

The project has not begun yet as it is currently pending a cooperative agreement between ADEM and the University of South Alabama.

UT to D'Olive Creek Subwatershed Project (FY13)

The UT to D'Olive Creek project area is located just south of Highway 90 (approximately 1.7 miles east of Exit 35B off I-10) between Oakstone Drive West and Oakstone Drive. Approximately 1,200-feet south of Highway 90, a head cut started its formation at a tributary of D'Olive Creek due in part to increased volume, velocity, and watershed modification during urban development. This head cut over the years has progressed up the tributary to the point that it is approximately 12-feet deep at the lower ends of the project. Compounding the issue, the head cut is advancing at an increased pace due to a steeper valley slope in this portion of the tributary. Significant infrastructure, including the highway, water mains and phone and fiber optic lines, are threatened by the current situation.

The Mobile Bay National Estuary Program partnered with the National Fish and Wildlife Federation, the City of Daphne, the Alabama Department of Transportation, and ADEM for this project. The UT to D'Olive Creek Watershed project was designed to help restore the natural hydrologic function of this severely degraded drainage, reduce and/or prevent further damage, reduce the transport of NPS pollutants (primarily sediment) via the impaired unnamed tributary to D'Olive Creek, and ultimately to help improve the quality of the water that is discharged from the impaired D'Olive Creek into D'Olive Bay and Mobile Bay.

The project stabilized the eroding channel by implementing a combination of stormwater infrastructure and LID techniques. This approach to managing runoff from developed surfaces creates resource value. A system of LID measures with a drawdown system/water quality orifice is designed to interrupt the development of water depth and velocity along the flow path to maintain non-erosive flows during larger volume storms and to limit the development of stream energy.

Left: An eroding channel that has been stabilized as part of the project implementation.

Cumulative Load Reductions:

- 280 lbs/yr of nitrogen
- 12 lbs/yr of phosphorus
- 20 tons/yr of sediment

UTs to D'Olive Creek Subwatershed Project (FY16/17)

This project will continue the work within the D'Olive Creek Watershed. It will focus on the restoration of two unnamed tributaries to D'Olive Creek, which are sediment contributors to the main branch of the stream. This will be done in conjunction with the same techniques and principles that have been completed and discussed in the previous restoration and phases in the watershed. These stream restorations will continue to leverage funding with other partners such as the National Fish and Wildlife Federation's Gulf Benefit Fund, the Mobile Bay National Estuary Program, ADEM, EPA, the City of Daphne, and many others. This project is currently in development between ADEM and the cooperator.

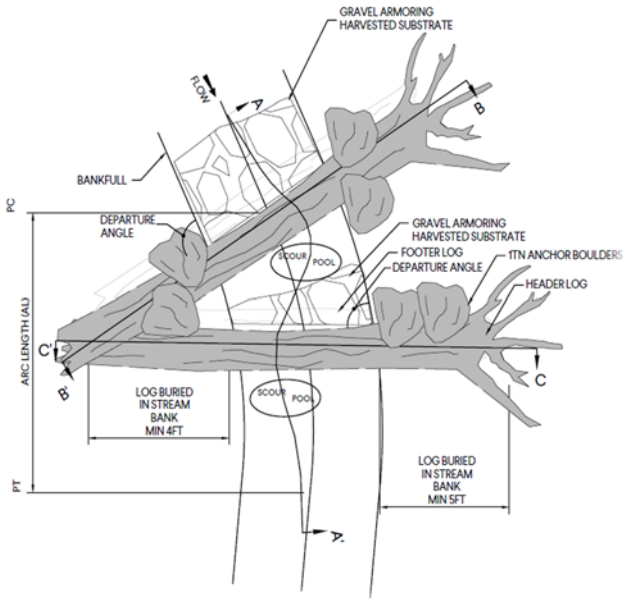
UT to Tiawasee Creek Subwatershed Project (FY13)

This project is a tributary to the Unnamed Tributary to Tiawasee, that was the focus of the stream restoration completed in March of 2016 by funding leveraged through National Fish and Wildlife Federation's Gulf Benefit Fund, the Coastal Impact Assistance Program, the Mobile Bay National Estuary Program, the City of Daphne, and the Clean Water Section 319(h) grant provided by EPA and administered through ADEM.

Sediment loading on the flood plain

In January of 2017, the City of Daphne noticed that there was a sediment loading that was depositing onto the flood plain of the recently restored UT to Tiawasee Creek. This was due to unstable conditions within the tributary. In order to protect the investment to the newly restored stream channel, the City of Daphne applied for funding from ADEM Section 319 to address stabilizing the lower reach of the tributary close to Park Road in Daphne.

This Tiawasee Creek Sub-watershed Management Project continues the efforts of the D'Olive Watershed Management Plan by implementing stormwater management in the headwaters of Tiawasee Creek. The project includes construction of a natural stream restoration in D'Olive Creek Watershed and for this grant specifically along the 500-foot impaired stream segment of an UT of Tiawasee Creek, within the headwaters of Tiawasee Creek Watershed. The recommended restoration plans include instream structures to provide grade control, bank stability, and enhanced habitat. Toe wood revetments, root wads, log j-hook vanes, and log sill riffles will be used to support stream stability while deep-rooted vegetation becomes established.



This project was finished in about a month's time frame. It started in mid-August and was finished in September of 2017. The City of Daphne partnered with the Mobile Bay National Estuary Program, ADEM, and the National Fish and Wildlife Federation to complete stabilization. The project is located on the north side of the Park and Pollard Drive intersection. Areas addressed for the restoration efforts include: 1) channel incision, impacting riffle-pool habitat availability and effecting channel geomorphology; 2) interrupted hydrologic connectivity with floodplain, resulting in adjacent wetland isolation; and 3) tributary head cutting caused by downstream impacts and over widening. This restoration project includes a native vegetation plan.

The overall goal of the restoration is to reduce sediment loads on the UT to Tiawasee Creek, as well as the main stem. This will in turn will lead to the removal of the UT to Tiawasee Creek from Alabama's CWA Section 303(d) impaired streams list. The existing annual erosion of the UT to Tiawasee stream channel is calculated at approximately 480-tons per year due to channel headcutting, incision, and widening resulting in sediment load downstream. The overall project aims to reduce the sediment loads by 473 tons/year. Phosphorus and nitrogen will be estimated at a future time.

Cumulative Load Reductions:

- 850 lbs/yr of nitrogen
- 290 lbs/yr of phosphorus
- 70 tons/yr of sediment

UT to Tiawasee Creek Subwatershed Project (FY15)

Tiawasee Creek (HUC 03160204-0505) is a tributary of the D'Olive Creek Watershed. Tiawasee Creek and the Unnamed Tributary (UT) to Tiawasee, which is addressed by this project, were placed on ADEM's Section 303(d) list for impaired waterways in 2008. The impairment was identified as siltation (habitat alteration) as a result of land development.

Project partners met for a site tour of the restoration, led by the City of Daphne.

The increased volume and velocity of post-construction urban stormwater flows has resulted in severe channel degradation in Tiawasee Creek and its tributaries. Severe erosion and mass wasting have occurred with every significant rainfall event, as the flowing water seeks to create a stable floodplain at lower elevation. The sediment generated during this process has been deposited in wetlands located downstream of the site in the floodplain of Tiawasee Creek, resulting in alterations to stream morphology and hydrologic function; destruction of native vegetation and wildlife habitat in the area; and the proliferation of invasive plan species.

To date, the project has partnered with the National Fish and Wildlife Federation's Gulf Benefit Fund, Mobile Bay National Estuary Program, City of Daphne, the Coastal Impact Assistance Program, etc. to implement a 1400 linear foot stream restoration on the UT to D'Olive. The project has also implemented a constructed stormwater wetland upstream of the project. There has been one basin acquisition, citizen oversight with Daphne's Environmental Advisory Committee, project tours, and many hours working toward a successful education and outreach component.

The past six months have focused on preparing for implementation of future BMPs that include constructed stormwater wetlands, bio-retention areas, porous pavers, and basin retrofits. The City of Daphne has continued its momentum with the education outreach efforts by signing a Memorandum of Agreement with the Alabama Cooperative Extension System to update two lessons within their Master Environmental Educators Program. This will focus on stormwater and NPS components. The City also purchased an Enviroscape to be used in the schools and local

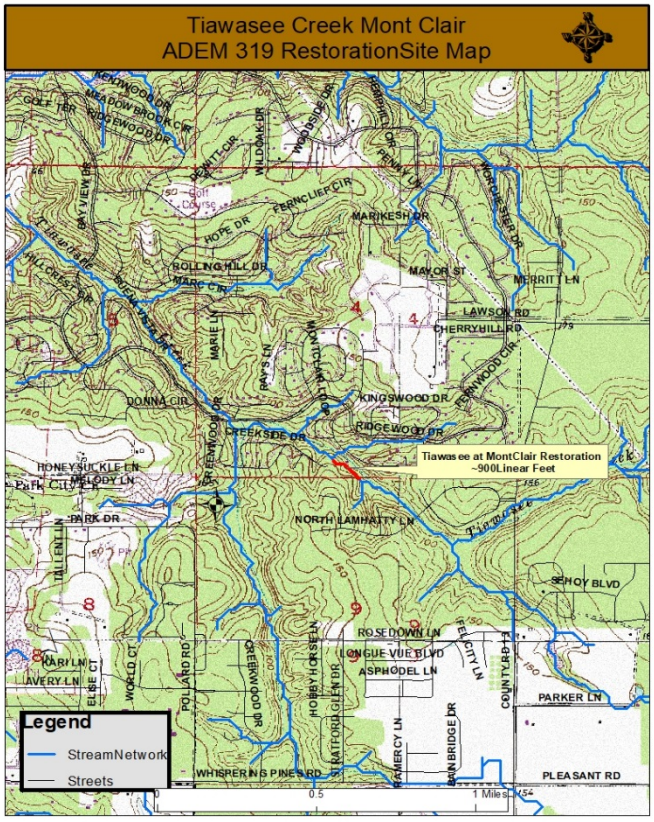
community as part of these lessons. Plans have moved forward on a contract to create a short video for a general Stormwater 101 video to reach out to the general public and students. The Environmental Advisory Committee has continued to be very involved in the project and continue to be a guiding hand. The picture above shows a project tour conducted by Ashley Campbell with the City of Daphne and attended by members of the Environmental Advisory Committee at many of the restoration sites.

Cumulative Load Reductions:

- 2,937 lbs/yr of nitrogen
- 896 lbs/yr of phosphorus
- 1,446.2 tons/yr of sediment

Tiawasee Creek Watershed Project – Phase (FY17)

Tiawasee Creek at Mont Clair Loop is currently in the coordination phase with ADEM and the City of Daphne. This project builds on the success of the D'Olive Creek Watershed Management Plan and all the implementation projects that have occurred before it. This project is a continuation of stream restoration within the D'Olive Creek Watershed.



This project is designed to help restore the natural hydrologic function of this severely degraded drainage, prevent further damage, and reduce the transport of NPS pollutants (primarily sediment) via the impaired Tiawasee Creek and then to D'Olive Creek. The project will help to further improve the quality of the water that is discharged from the improved creeks upstream into D'Olive Bay and Mobile Bay.

In addition to the implementation of the approximately 900 linear feet of stream restoration, native wetland plants will be established throughout the restoration project site to help create a functional riparian floodplain, stabilize the stream bank, reduce erosion and sedimentation, and provide food, habitat, and connectivity/passage corridors for benthic macro invertebrates, fish, and wildlife. The restoration of indigenous vegetation will serve as an aesthetic enhancement to the project area by providing shade and visual interest, as well. The project is expected to reclaim many of the ecological features and services that have been lost due to urbanization. This project will leverage funding from several sources, and through partnerships, will help to protect infrastructure and housing units that are located adjacent to the stream.

Pre-construction conditions of Tiawassee Creek shows severely eroded and unstable streambanks.

Coosa River Basin

Lake Neeley Henry Project (FY15)

Heavy use feeding areas were installed as part of the project.

The Lake Neely Henry Nutrient Reduction Project focuses on addressing nutrients draining into Neely Henry Lake within the Coosa Basin. According to the Coosa Lakes Nutrient TMDL, the Big Wills Creek embayment is one of the highest in nutrients in the lake. Big Wills Creek is the major tributary draining into the Neely Henry Reservoir. Polluted runoff from pastures, animal operations, and improper land application of animal wastes; and animals with unrestricted access to streams continues to degrade water quality and influence organic enrichment of the river and lakes. This project focuses primarily on four watersheds or portions of watersheds located in DeKalb County that flow into Big Wills: HW Big Wills Creek (HUC 03150106-0101), Upper Big Wills Creek (HUC 03150106-0102), Little Sand Valley Creek (HUC 03150106-0103), and a small section of Little Wills Creek (HUC 03150106-0106). The project goal is to reduce nutrients from agricultural sources draining into Big Wills Creek and ultimately into Lake Neely Henry.

To date, twelve agriculture applications have been received with nine being approved. Four cattle farms have completed practices since the last reporting period, to include 15,207 square feet of heavy use area protection, 1,641 feet of cross fencing, ten alternative watering troughs, and 7,573 feet of pipeline. The Project Coordinator presented the Ag in Action Trailer for area students to learn about agriculture and water quality. Conservation Education Programs have also been presented to schools in the watershed, Boy Scouts, and at the local libraries.

Cumulative Load Reductions:

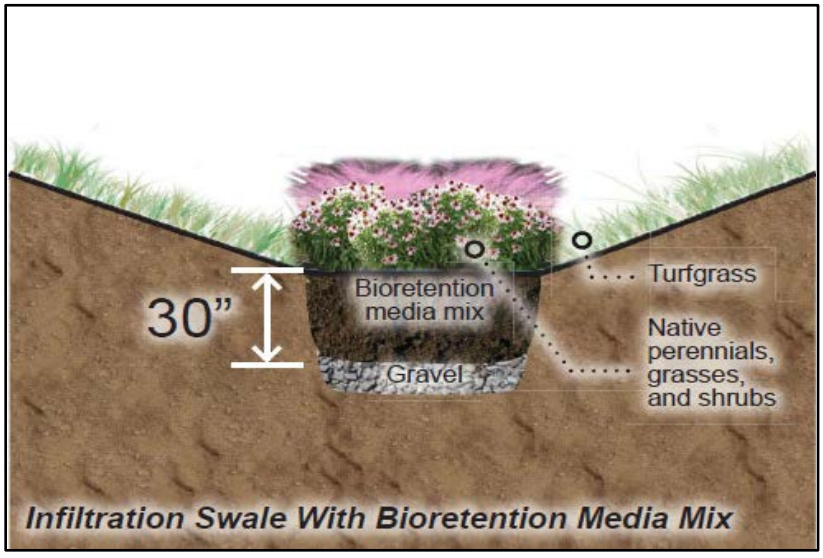
- 2,537.3 lbs/yr of nitrogen
- 3,69.3 lbs/yr of phosphorus
- 179.2 tons/yr of sediment

Tallapoosa River Basin

Parkerson Mill Creek (FY17)

The Parkerson Mill Creek Watershed is located in Lee County, in east-central Alabama. It is part of the Upper Chewacla Watershed (HUC 12 03150110-0202) of the Lower Tallapoosa River Basin. Land use includes a mix of urban (City of Auburn; Auburn University), suburban, industrial, agricultural, and rural areas. The 9.3 square mile watershed has approximately 68,500 feet of perennial streams and 282,152 feet of tributary streams.

Parkerson Mill Creek does not meet minimum water quality standards for its designated Fish and Wildlife water use classification. In 2008, the ADEM listed Parkerson Mill Creek on the CWA Section 303(d) List as impaired for 6.67 miles from Chewacla Creek to its source. Parkerson Mill Creek's listing was based on a series of Auburn/Opelika Intensive Fecal Coliform Studies conducted in 2007. The cause of impairment was identified as pathogens from urban stormwater runoff and storm sewer sources. A pathogen TMDL was developed by the ADEM and approved by the EPA in 2011.



This proposal will help with addressing the components in the Parkerson Mill Creek Watershed Management Plan by installing LID practices to mitigate urban runoff quality and quantity on the Auburn University campus. Research shows that LID BMPs, such as roadside vegetated filter strips and bioswales, play an important role in urban watersheds in decreasing urban stormwater runoff quantity and improving runoff quality. Furthermore, LID BMPs such as these are more cost-effective as compared to conventional, hard-engineered stormwater infrastructure. Cost effective LID BMPs will be used to mitigate urban runoff and maximize and improve water quality in the Parkerson Mill Creek Watershed, while increasing public awareness of LID projects and watershed health.

This project is part of a larger, watershed approach to improving the Parkerson Mill Creek through on the ground practices that serve as demonstration and education for several target audiences including the general public, local governments, Phase II entities, and students who are training to solve problems like this through innovation.

Tennessee River Basin

Brier Fork - Beaverdam Creek Watershed Project – Phase 3 (FY13)

Located in Madison County, the Brier Fork and Beaverdam Creek Watersheds (HUCs 06030002-0304, 06030002-0305, 06030002-0306) are just north of Huntsville in the Wheeler Lake Watershed. Brier Fork is listed as impaired from the Flint River to the Alabama-Tennessee State Line (about 21 miles), while Beaverdam Creek is listed as impaired from Brier Fork to its source (about 22 miles). Both are listed for sediment from agricultural (row crop and pasture grazing) and land development activities. This project ended on September 30, 2017.

The Brier Fork/Beaverdam Creek Watershed Restoration Project Phase 3 was implemented in partnership with the Madison County SWCD and the NRCS. Previously in the project, 7,090 feet of broad based terrace; 47 acres of cropland converted to permanent vegetation, 8,400 feet of pipeline, 13 alternative watering sources; 4,994 feet of cross fencing, 3,218 feet of livestock exclusion fencing, and 15,238 square feet of heavy use area protection were completed. Within the last six months, conservation tillage and cover crop BMPs were documented for 18 participants within the watershed. A total of 913 acres of conservation tillage/cover crop was reported with an additional 1,618 acres counted as match.

Exclusion fencing was installed to prevent cattle from entering the creek.

The goal of increasing public awareness of the water quality concerns of this watershed continues with the education and outreach efforts conducted by the project coordinator and all of the local watershed partners. In the last six months, a Flint River Conservation Association's canoe float and river cleanup occurred on June 10, 2017, where ongoing conservation strategies were discussed with local volunteers. Also, a Madison County Watershed Advisory meeting was held on August 29, 2017, and various watershed and water quality topics were discussed as well as planning for upcoming events related to local water resources.

Cumulative Load Reductions:

- 70,685.8 lbs/yr of nitrogen
- 35,210.4 lbs/yr of phosphorus
- 31,088.4 tons/yr of sediment

Crowdabout Creek Watershed Project - Phase 3 (FY17)

Crowdabout Creek, located in Morgan County, is a tributary to Flint Creek. Flint Creek is part of the Wheeler Lake subbasin within the Tennessee River basin in north Alabama. The headwaters of Crowdabout Creek begin in Lawrence County and the stream flows in a northeast direction to Flint Creek.

As a result of Phase 1 and 2 restoration projects, Crowdabout Creek was listed as attaining water quality standards for nitrogen, phosphorus, sedimentation/siltation and carbonaceous biochemical oxygen demand for all uses in 2014. In light of this, the Phase 3 project will focus on the remaining impairment of pathogens. The headwaters area have been identified as the priority area to focus implementing BMPs for this project phase. Conservation practices will target livestock sources and will include fencing, heavy use area protection, riparian forest buffer re-establishment (for filtration), and pasture planting/improvement, which are effective in reducing pathogens.

This watershed project implementation was just contracted with the Flint Creek Watershed Conservancy District in November 2017. Consequently, no BMPs or load reductions have been submitted.

French Mill Creek Watershed Project (FY13)

The French Mill Creek watershed (HUC 06030002-0802) is located within the larger Wheeler Lake watershed of the Tennessee River Basin. In 1998, French Mill Creek was placed on the §303(d) list for pathogens. Further sampling of French Mill Creek by ADEM in 2003 also resulted in a violation of the five-day geometric mean criterion of 200 col/100 ml. for pathogens. Consequently, a pathogen TMDL was developed by ADEM in December 2006. Based on the dominate land uses of agriculture and forest, the most likely sources of pathogen loadings are from agriculture and/or failing septic systems. This project is implementing a 2013 nine key element watershed management plan.

The project closed out on January 12, 2017. The project resulted in 21 applications and conservation planning for 27 different farms within the watershed. Seven applicants operate more than one tract of land within the project watershed area. All 319 funding was expended and the Limestone County SWCD worked with the local stakeholders and applicants to implement the planned BMPs.

The BMPs installed as a result of this project implementation included 18 alternative watering sources, 8,873 feet of exclusion/cross fencing; three acres of grassed waterways, 33,322 square feet of heavy use areas, 16.4 acres of land smoothing/grading, 31 hours of land smoothing/grading, 7,354 feet of livestock pipeline, 50 square feet of critical area planting; and 27,129 feet of terracing have been installed. Besides meeting with and educating local landowners on improved farming practices, the District's education and outreach activities included participation and planning assistance with local water festivals, coordination of a land judging contest, and presentations and information disbursed at farming events, including the Cattlemen's' Association meeting.

An installation of cross-fencing to limit cattle access to the creek

Cumulative Load Reductions:

- 34,335 lbs/yr of nitrogen
- 13,143 lbs/yr of phosphorus
- 2,962.4 tons/yr of sediment

Harris Creek Watershed Project – Phase 2 (FY13)

Harris Creek in Franklin County is located within the larger Bear Creek watershed of the Tennessee River Basin. Harris Creek, a tributary to Cedar Creek, is within the 55.0-square mile Cedar Creek subwatershed (HUC 06030006-0201). Harris Creek drains a 9.3 square mile area just south of the City of Franklinville. Total land area in the Harris Creek watershed is 35,224 acres.

In 1996, ADEM placed a 5.9-mile segment of Harris Creek on the Section 303(d) list due to organic enrichment/low-dissolved oxygen and siltation. The NPS cause was listed as pasture grazing. The impaired segment extends from its headwaters to the initial section of Mud Creek. In February 2002, a final TMDL was approved for each pollutant.

The Harris Creek Phase 2 project was implemented by the Franklin County SWCD. During the project period, 352.2 acres of cover crop, 12,000 square feet of lined waterway, 806 feet of bank stabilization, eight heavy use areas of 38,202 square feet (in addition, two other heavy use areas were installed but listed in the report as separate units), 800 feet of fencing, one solar pump, and one alternative water source were installed. The project ended in November 2016 with federal funds being returned and reallocated to another project.

Cumulative Load Reductions:

- 5,200 lbs/yr of nitrogen
- 368 lbs/yr of phosphorus
- 3,305 tons/yr of sediment
- 20,760 tons/yr of BOD

Second Creek Watershed Project (FY15)

The Second Creek subwatersheds (HUCs 06030004-1203 and -1204) are located within the larger Wheeler Lake Watershed of the Tennessee River Basin. In 1998, Second Creek was placed on the §303(d) list for pathogens. Further sampling of Second Creek by ADEM in 2003 and 2004 revealed that the stream was still not meeting the pathogen criteria for its use classification of Fish and Wildlife. Consequently, a pathogen TMDL was developed by ADEM in December 2006. Based on the dominate land uses of agriculture and forest, the most likely sources of pathogen loadings come from agricultural land use, namely pastures that contain dense sources of livestock that have direct access to Second Creek.

A planned grazing system in Second Creek

This project is implementing a 2015 nine key element watershed management plan developed by the Northwest Alabama Council of Local Governments. This project provides Section 319 funding for land owners/land users to voluntarily implement incentive-based mechanisms that reduce NPS pollutant loadings in the impaired Second Creek Watershed.

To date, the watershed coordinator contacted at least 25 landowners to locate/inspect areas for installation of BMPs. As a result, five sites (three planned grazing systems and two nutrient management systems) have been installed in accordance with NRCS specifications. In addition, the coordinator has held at least three meetings, including a farm tour, to promote the project and conduct education and outreach.

Cumulative Load Reductions:

- 1,902 lbs/yr of nitrogen
- 733 lbs/yr of phosphorus
- 88 tons/yr of sediment

Shoal Creek Watershed Project (FY14)

Shoal Creek, within the Sleighton Branch-Shoal Creek subwatershed (HUC 06030002-1005), is a tributary to Flint Creek within the Tennessee River Basin. Its headwaters begin in Morgan County and the stream flows in a southwest direction towards City of Hartselle. The stream has a linear distance of 10.9 miles. It was originally placed on Alabama's 1996 Section 303(d) list for organic enrichment/low dissolved oxygen and pathogens. The major sources of organic enrichment and pathogens are agricultural runoff and the direct impact of cattle. Other potential nonpoint source contributions include failing septic systems and urban runoff. The main goal of the project is to implement agricultural and urban BMPs to reduce sources of organic enrichment/low dissolved oxygen and pathogens.

To date, three cisterns totaling 5,500 gallons; 46 acres of pasture planting, 1,900 feet of cross fencing, 5,758 square feet of heavy use area, 10,830 square yards of filter strip, 100 tons of riprap, 120 acres of cover crop, 2,800 square feet of stream bank protection, and 5,758 square feet of heavy use area have been installed. Remaining project to be completed will include a micro-irrigation system and additional pasture planting. Both of these will be completed by the end 2017.

Cross fencing installed in the Shoal Creek watershed

The majority of the agriculture BMPs were implemented as scheduled. The only set back was that the fall of 2016 was extremely dry, which delayed many of the plans that included pasture planting, fencing, pipelines and cover crops. Most were completed, only later in the year than expected. A few were delayed and this resulted in a contract extension until December 2017.

Cumulative Load Reductions:

- 23,898.61 lbs/yr of nitrogen
- 2,959.60 lbs/yr of phosphorus
- 844.62 tons/yr of sediment
- 8,431.50 lbs/yr of BOD

Shoal and Swann Creek (Limestone County) Watershed Project (FY16)

Shoal Creek was first placed on Alabama's 303(d) list for pathogens in 1998 based on a study by the Tennessee Valley Authority (TVA) in 1997. A 7.47-mile segment of Shoal Creek was listed for pathogens from pasture grazing. The pathogen TMDL for Shoal Creek was completed by ADEM in December 2006.

Swan Creek was first placed on the Alabama's 303(d) list for siltation, organic enrichment and low dissolved oxygen in 1996 also based on a study by the TVA. An 8.2-mile segment of Swan Creek was listed for the above pollutants from agricultural sources. In addition, the 2016 CWA Section 303(d) list of impaired waters includes Swan Creek for being impaired for nutrients. The TMDL for Swan Creek was completed by ADEM in February 2002 for siltation, low dissolved oxygen, and organic loading.

A kickoff meeting for the Shoal Creek and Swan Creek 319 project was held February 28, 2017 in the watershed community at the Citizens Bank and Trust hospitality room in Elkmont, Alabama. Letters were sent out to the local row crop and cattle farmers within the watershed. Announcements were posted at the USDA Service Center common area, Farm Service Agency office, and Natural Resources Conservation Service office. Fliers were set out at local places of interest within the watershed.

The 319 project to date has produced eleven applications. Six applications have been approved for future conservation practices to reduce siltation, pathogens, or nutrients from reaching the streams.

Upper and Lower Flint River Watershed Project (FY16)

Flint River is located in the Tennessee River Basin in the central part of North Alabama and South Tennessee. Flint River forms in southeastern Lincoln County, Tennessee and flows south through Madison County, Alabama into Wheeler Reservoir southeast of Huntsville. In 2000, a 15.32-mile segment of Flint River, from US Highway 72 to Mountain Fork, was placed on Alabama's Section 303(d) List for pathogens from pasture grazing. A pathogen TMDL was completed in April 2008. In 2006, the segment was added to the 303(d) List for turbidity from agriculture and land development. The turbidity TMDL has not been completed.

The major sources of impairments for Flint River are sediment, nutrients, and organic material from agricultural and urban lands and the direct impact of cattle. Agricultural animals are a potential source of pathogen loading in the Flint River Basin. Cattle with direct access to streams, improper grazing operations, poor pasture vegetation (filtration and uptake), improper litter storage, poor manure management practices, and animal feeding operations all add to the pathogen runoff potential to the river. The goal of the Upper and Middle Flint River 319 project is to address the causes of stream impairment through development and implementation of conservation plans that will result in Flint River meeting its water quality standards.

This project, led by the Madison County SWCD, started November 10, 2016. A public meeting for the Upper and Middle Flint River 319 Watershed Project was held March 21, 2017 in the watershed community at the Alabama A&M University Agribition Center in Huntsville. Letters were sent out to the local row crop and cattle farmers within the watershed. Announcements were posted at the USDA Service Center common area, Farm Service Agency office, and Natural Resources Conservation Service office. Fliers were set out at local places of interest within the watershed. The Madison County Cattlemen's Association provided addresses for its members to

help advertise. Lunch was purchased for the attendees by the District. The Alabama A&M University Agribition Center provided the meeting space and waived any rental fees for its use. Eighteen people attended the meeting.

The 319 project to date has produced eight applications that have been planned and approved by the SWCD board for various conservation practices on private land to reduce NPSs of nutrients, sediment, and pathogens. One applicant has completed one conservation practice during this reporting period. Twenty-four acres of cropland was converted to permanent vegetation within the Acuff Spring-Flint River Watershed (06030002-0403). Additional advertising will continue throughout the community as the first phase of stakeholders/applicants progress through the conservation planning and implementation process of their BMPs.

An Upper Flint River Canoe Cleanup was held on June 10, 2017. The group of volunteers floated a river segment to pick up litter and trash. The Flint River Conservation Association organized the event, Brown Bear Canoe Rental provided boats, and Madison County Commission disposed of the collected trash.

This watershed project is going slower than expected with finding additional willing landowners and with the implementation of measures by the existing applicants. With only fourteen months left within the contract period, the District is looking into the possibility of needing to convert part of the unobligated balance into another impaired watershed in Madison County or finding willing landowners and issues in the urban areas of the watersheds.

Cumulative Load Reductions:

- 382.6 lbs/yr of nitrogen
- 83.3 lbs/yr of phosphorus
- 525.6 tons/yr of sediment

Upper Scarham Creek Watershed Project (FY14)

The Upper Scarham Creek project area is located in the northeast portion of Alabama and drains to the Guntersville Lake Reservoir. The Scarham Creek watershed is approximately 90 square miles with the headwaters in DeKalb County and the downstream area in Marshall County. The two major populated areas in the watershed include Geraldine and Crossville. The Upper Scarham Creek Watershed is also a NWQI Priority watershed in Alabama.

A watering facility for cattle was installed to provide an alternative watering source as part of a planned grazing system.

This project focuses primarily on the Upper Scarham Creek Watershed in DeKalb County (HUC 06030001-0803), which includes 9.12 miles of the total 24 miles stream length. Scarham Creek is listed as impaired for organic enrichment/low dissolved oxygen, pathogens, pesticides, and ammonia. The nonpoint sources of pollutants in the Upper Scarham Creek watershed are primarily attributable to runoff from agricultural lands.

The Upper Scarham Creek Project, led by the DeKalb County SWCD, receives applications on a continuing basis for BMPs. Agriculture BMPs are being implemented and education and outreach projects are reaching stakeholders throughout the watershed. Twenty-two applications for agricultural cost-share have been received and nineteen approved to date. A total of 27 systems have been installed for this project. Management measures completed during this reporting period include 45 acres of pastureland improvement, 16,331 square feet of heavy use areas, four alternative watering systems, one well and pumping plant, 2,535 feet of pipeline, and 7,911 feet of fencing. Due to the drought of 2016, a six-month extension was given in order to be able to complete the applications received.

Cumulative Load Reductions:

- 65,638.3 lbs/yr of nitrogen
- 11,958.7 lbs/yr of phosphorus
- 406.9 tons/yr of sediment

West Flint Creek Watershed Project – Phase 2 (FY13) and Phase 3 (FY16)

The West Flint Creek Watershed (10-digit HUC 06030002-10) is comprised of the No Business Creek (-1008), the Elam Creek (-1009), the Upper West Flint Creek (-1010), the Big Shoals Creek (-1011), the Middle West Flint Creek subwatershed (-1012), and the Lower West Flint Creek (-1013) subwatersheds. These subwatersheds contain approximately 62 miles of impaired streams. The West Flint Creek's origin and the majority of the watershed is within Lawrence County with the creek flowing into western Morgan County before entering the Wheeler Reservoir within the Tennessee River Basin.

Lawrence County SWCD and NRCS participated in a technology demonstration.

The goal for West Flint Creek Phase II Watershed Project was to implement best management practices throughout the watershed to address the causes of stream impairments by targeting load reductions called for in the 2003 Flint Creek Watershed TMDL in order for the impaired segments of West Flint and its tributaries to meet state water quality standards and criteria for the Fish and Wildlife use classification. Project funds were primarily focused on resolving predominantly rural based agricultural nonpoint source pollution problems using cooperative efforts to maintain, improve, and protect the physical, chemical and biological conditions throughout the watershed.

A kickoff meeting was held on November 13, 2014 and the Cooperative Agreement ended on September 11, 2017. During the life of the project, a total of 26 applications were received by the Lawrence County SWCD; however two applications were cancelled. Project BMP implementation included 89,833 square feet of heavy use area, 44.08 ac of forage and biomass planting, 1,700 feet of pipeline, 11 freeze-proof ball troughs, 3,104 feet of pipeline, 66 acres of herbaceous weed control, one waste storage facility composter, two animal mortality facilities (poultry freezers), and 0.5 acres of land smoothing with critical area planting. This project also included several education and outreach activities, including a Small Farmer's Workshop on May 28, 2015, an

Enviroscape demonstration to sixth graders at East Lawrence Middle School on May 11, 2016, exploration of the Ag trailer by second graders at Mount Hope School on April 18, 2016, and an Ag Farm Tour on September 16, 2016. These events help to educate stakeholders on water quality, water pollution, and what individuals can do to help prevent water pollution and improve water quality.

Although the Phase II has been completed, more critical areas could be targeted within the project HUCs in order to achieve the overall goal of this project. Stakeholder support and landowners' willingness to participate continues within these watersheds. Therefore, a West Flint Creek Watershed Restoration Project- Phase III has been contracted in order to facilitate stakeholder participation and continue to work towards water quality improvements in West Flint Creek Watershed and its impaired tributaries. The Lawrence County SWCD currently has additional applications that have yet to be funded and will be rolled over into Phase III. A new cooperative agreement for Phase III was signed July 21, 2017.

Cumulative Load Reductions:

- 8,240.9 lbs/yr of nitrogen
- 831.3 lbs/yr of phosphorus
- 38.6 tons/yr of sediment

Alabama Coastal Nonpoint Source Pollution Control Program

The State of Alabama continues to develop its Coastal Zone Management Program under the Coastal Zone Management Act (CZMA) of 1972. The CZMA requires the State to develop and implement its Alabama Coastal Nonpoint Pollution Control Program (ACNPCP) under Section 6217 of the Coastal Zone Act Reauthorization Amendment of 1990 (CZARA). Section 319 funds are being used to assist in the implementation of management measures contained in these programs. The ADEM NPS Program staff works closely with Coastal Nonpoint Program staff to integrate and coordinate both the ACNPCP and the AL NPS Management Programs. Section 319 program funds are obligated in the coastal area to address specific priorities of Alabama's Coastal NPS Management Program. The ACNPCP and ADEM-319 work to assist stakeholders in identifying specific coastal NPS problem areas and issues, and to provide resources to plan and implement corrective NPS management measures and practices. Focused targeting of Section 319 program funds to address and implement category measures advances the goal towards full approval of the ACNPCP under CZARA-§6217 by:

- Identifying specific NPS stressors, targeting locations or intensity, including GIS mapping and data layers where available (with consideration for maintaining citizen privacy issues).
- Strategically focusing on and clearly articulating BMP remedies and measures to meet state water quality standards.
- Leveraging, integrating, and aligning planning and priority-setting funding to make the best use of available human and financial capital to control NPS pollution.
- Facilitating key stakeholder "ownership" of NPS problems and concerns by balancing NPS staffing and actions to deliver measurable environmental results.
- Facilitating delivery of targeted-audience education and outreach and providing technical assistance.
- Partnering to improve project accountability, tracking and reporting results (including success stories) to demonstrate project progress and success.

During this past year, the ACNPCP has continued to serve as national Chair of the Coastal States Organization's *Coastal NPS (6217) Work Group*. This position serves the national Coastal NPS Work Group (coordinating directly with the federal NOAA and EPA representatives, CSO Director, Counsel and Staff, Sub Committees, as well as other State representatives) to provide bi-monthly Teleconferences that are directed toward the promotion, approval and implementation of the ACNPCP. The ADEM-319 Program actively participates in this ongoing forum for all coastal states' Nonpoint Programs, with over 105 Work Group members engaged nationally to address coastal NPS issues. This unique Teleconference forum provides interstate networking to address mutual NPS issues focusing on state coastal areas and waters.

On the local and regional level, this program has continued to coordinate and facilitate the implementation of NPS measures by providing technical assistance as various RESTORE projects are being developed and implemented by the ACNPCP's partnerships with various entities on the Alabama coast. These include coordination and cooperation with local County and Municipal entities, ADCNR, Mobile Bay National Estuary Program, Weeks Bay National Estuary Research and Reserve, NRCS, USFWS, USACE-Mobile District, MS-AL Sea Grant, Dauphin Island Sea Lab, Alabama Coastal Foundation, Nature Conservancy, and others.

In April of 2017, Alabama received the results from NOAA's 312-Review assessment of Alabama's Coastal Zone Management Program, which was conducted in the August of 2016. Their findings included a Necessary Action for completion of ACNPCP's approval process, which requires submission of a five-year workplan to be submitted by November 30, 2017. Also, it is required that the federal approval process for the ACNPCP be completed for Alabama by May 2022 to avoid

federal funding sanctions. A working draft of ACNPCP's workplan has been developed as a state interagency document and submitted to both NOAA-OCM and EPA headquarters for review and completion as we continue to address and implement those remaining category measures.

Coastal Alabama Regional No-till Grain Drill (NTGD) Project (FY13)

In 2015, two no-till seed and grain drills were purchased to help reduce erosion and sedimentation impacts to targeted waterbodies (Red Creek-Eightmile Creek subwatershed, HUC 03170008-0402/Mobile County; Fish River subwatersheds, HUCs 03160205-0201, 03160205-0202, 03160205-0203, 03160205-0204/Baldwin County). Through the ACNPCP, ADEM 319 program contracts were developed and executed for both the Baldwin County Conservation District and the Mobile County Conservation District.

Throughout 2016, the Soil and Water Conservation Districts in Baldwin and Mobile Counties have facilitated this project through their management, maintenance, and stewardship while providing public access to the no-till drill machinery. The Districts, with the help of local partners, have also held several successful workshops and field demonstrations to enhance and provide informative presentations and/or handouts to assist agriculture land users. Topics included information on soils and soil health, along with technical information to improve water quality, reduce soil loss, and reduce the use of synthetic fertilizers.

The Baldwin County SWCD was able to implement use of the no-till drill on 235 acres in all three of the targeted Fish River subwatersheds and the Magnolia River Watershed. This resulted in an erosion reduction estimate of approximately 3,943.1 tons per year using USDA-RUSLE2 calculations. When including additional reductions for the other county subwatersheds participating in this project, the completed BMP totals county-wide were recorded for 1,308.0 acres in nine subwatersheds, providing a total erosion reduction estimate of approximately 8,266.3 tons of soil per year for Baldwin County.

The Mobile County Conservation District's implementation and use of this machinery was documented on 39.0 acres of the targeted Eightmile Creek Subwatershed. These efforts resulted in a soil erosion reduction estimate of approximately 130.5 tons per year using USDA-RUSLE2 calculations. The completed county-wide implementation was documented for 1,352.0 acres in five subwatersheds, providing a total erosion reduction estimate of approximately 5,687.5 tons per year for Mobile County.

The promotion and usage of the no-till grain drill equipment has been well received. To date, 2,660 acres have been planted with this equipment within the ACNPCP Management Area. The Conservation Districts of Baldwin and Mobile Counties plan to continue their implementation of this project, with cooperative monitoring and tracking of its use planned for the next ten years.

Coastal Alabama Onsite Sewage Distribution Systems Inspection & Maintenance Program (FY14) – Sector 2

This program has moved forward with excellent reception from the public and enhanced awareness of individual responsibilities for protecting the environment. Section 319 program funds continue to provide a means to fund Alabama's implementation of important coastal Onsite Sewage Distribution Systems (OSDS) measures by engaging NPS programmatic priorities, partnerships, opportunities, and challenges. Coastal sewer entities have helped the implementation of category-related measures that address onsite sewer systems NPS impacts and pollutants. Implementing this program will help to reduce and negate potential NPS impacts and may enhance load reductions to protect water quality and restore impaired waters to state water quality standards. Specifically, Section 319 set-aside program funds are being used by the Baldwin

County and Mobile County Conservation Districts to implement the *Coastal Alabama OSDS Inspection & Maintenance Program* as follows:

1. Implement an intensive "on-the-ground" county-wide septic tank inspection and maintenance program in designated priority eight-digit HUC subwatersheds.
2. Provide mapping to identify hydric soils region profiles in prioritized eight-digit HUC watersheds as Geographic Sewer Areas targeted for implementation by Sector.
3. They were active in the development of the Memorandum of Understanding with pumpers that included seventeen important partners in preparation for the Sector 2 Workshop inspections and maintenance activities that were implemented starting January 2016 through September 2016.
4. Our contractors updated project planning, promotion materials and advertising, and completed implementation for Sector 2, including the presentation of eight educational maintenance/pump out workshops for the over 248 members of the public.
5. Successful issuance of 210 Inspection/Pump-out Vouchers to qualifying homeowners, administered and dispersed reimbursements to the Alabama Onsite Wastewater Board pumpers that completed voucher pump-outs for participating residential OSDS. The regional Gulf Coast Resource Conservation and Development Council graciously provided additional funds to assist the further implementation of this effort.

The local County Health Departments (Baldwin and Mobile) were also recruited by the ACNPCP to continue implementation of this *Coastal Alabama OSDS Inspection & Maintenance Program* by:

1. Providing technical assistance and regulatory authority for the development and implementation of this multi-year OSDS Inspection and Maintenance Program.
2. Providing invaluable coordination with the Alabama Onsite Wastewater Board and expertise in securing the services of the state-certified pumpers through the association and the Alabama Onsite Wastewater Training Center that are vital to the success of this program.
3. Development of the Memorandums of Understanding with setting the pumper fees and vital partners in the preparation for the Sector 2 Workshops that were implemented in January and February of 2017.

Based upon the estimated Sector 2 data reported by the Program Contractors and partners:

1. Approximately 2,812 certified OSDS Inspections were conducted during this project in both Counties.
2. Combined, the Health Departments conducted almost 600 OSDS inspections in the targeted Sector 2 watersheds.
3. Each coastal county gained an additional increase of inspections due to implementation of this Program in Sector 2 Project:
    - Baldwin County estimated an extra 7.2% increase countywide for OSDS inspections, reflecting a 60.6% increase in Sector 2.
    - Mobile County yielded an increase of 8.4% county-wide and a 75.3% increase for their Sector 2 OSDS inspections due to this project.
4. During this project period total numbers from both counties show an increase of 8.1% for OSDS inspections for the *ACNPCP Management Area* and an overall increase of 67.5% for the targeted Sector 2 watersheds.

The *Coastal Alabama OSDS Inspection & Maintenance Program* is planning for continued development to carry forward future implementation with Sector 3 in 2017-2018.

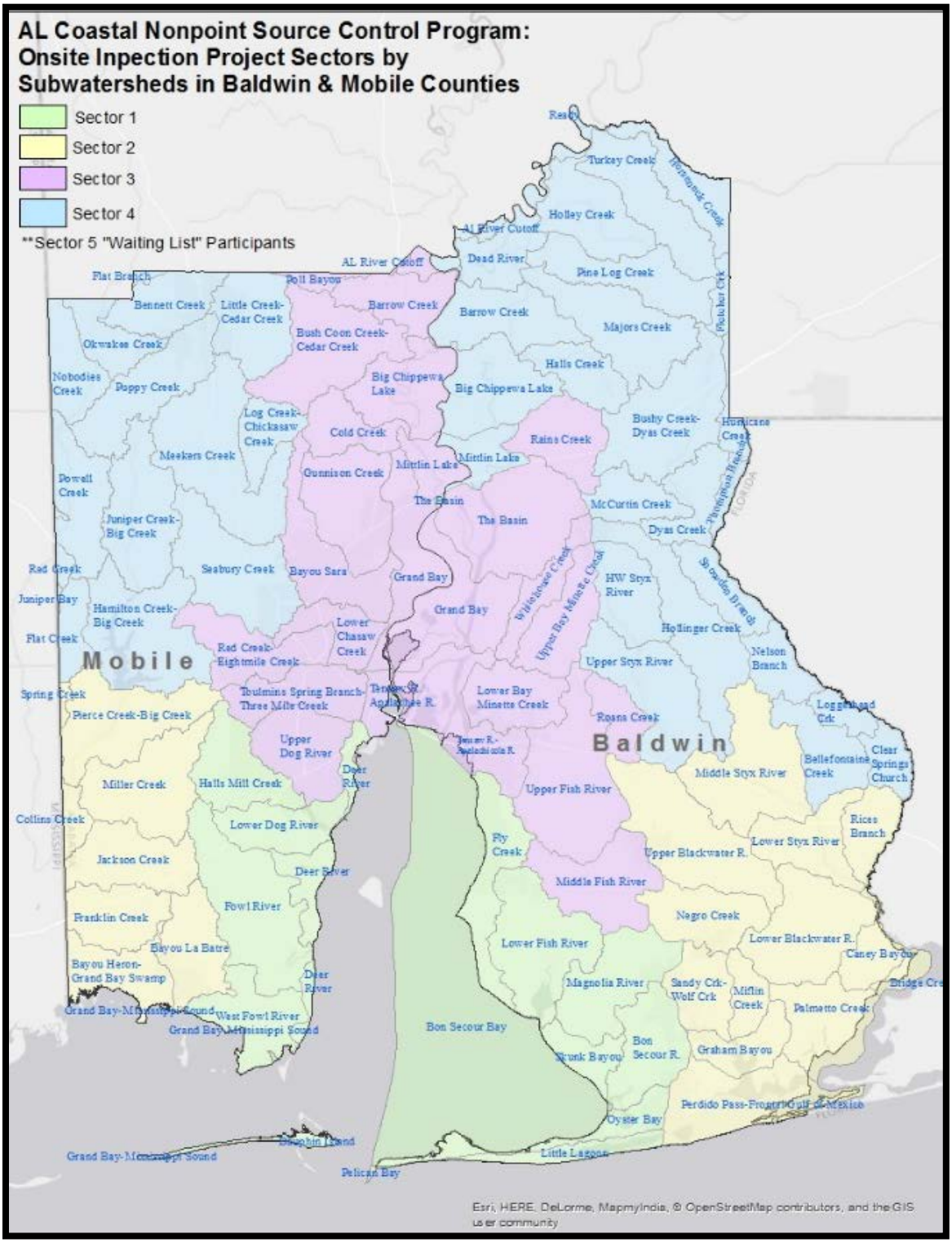


Figure 6: Coastal Alabama Onsite Inspection Project Sectors for Mobile and Baldwin Counties

Efforts in 2017 to Achieve 2014 -2019 Alabama NPS Management Program Goals and Objectives

Goal 1: Continue To Collect Surface Water and Groundwater Data Using a Five-Year Rotational Major River Basin Monitoring Approach To Assess Whether State Waters Meet State Water Quality Standards and Use Classifications.			
Objectives	**Status**	**Implementation Strategies to Ensure Continued Statewide Program Progress**	**NPS Success Measures and Indicators Targeted** (Derived from Table 8.8 of the 2014 AL NPS Management Program)
Long-term Objective 1: Continue to collect WQ monitoring data to characterize the chemical, physical, and biological conditions of subwatersheds in a priority major river basin and to help evaluate whether waters fully or partially meet state water quality standards and water use classifications. **Timeline**: Annual	Thirty-seven mainstem reservoir stations on the Black Warrior, Chattahoochee, Escatawpa, and Escambia River Basins were intensively monitored in FY2017. Thirty-five locations on wadeable flowing streams and rivers were sampled in FY2017.	FY16 Section 319 Workplan Project 2 (Statewide Surface Water Quality Monitoring of Priority Wadeable Streams and Rivers) FY16 Section 319 Workplan Project 3 (Surface Water Quality Assessment of Rivers, Reservoirs and Tributary Embayments on a Statewide Rotation)	**I.** Water Quality Improvements from NPS Controls: a: ...WQ standards attainment b: ...impairments and threats c: ...N, P, and sediment loadings d: ...303(d) delisting e: ...leveraged funds/ resources f: ...USDA-NWQI priorities h: ...CZARA 6217/Coastal NPS i:..lakes/reservoirs/ shorelines j: ...marine, coastal, wetlands l: ....drinking water sources m: ...fish/shellfish advisories **II.** Interim Water Quality
Short-term Objective 1.1: Continue to collect WQ data to identify, list and categorize NPS threats and impacts to surface waters and groundwaters of the state in the latest CWA Section 305(b)/Integrated Water Quality Monitoring and Assessment Report (IR). **Timeline**: Biennial CWA Section 305(b) Report; 303(d) List	Continuing. Current IR 4/1/2016. The 2016 Section 303(d) List of Impaired was approved by EPA and final on 9/6/2016.	FY16 Section 319 Workplan Projects 2 and 3	
Short-term Objective 1.2: Continue to collect or assess WQ data from a priority CWA Section 303(d) listed HUC-12 subwatershed to support the development or implementation of a watershed-based management plan that	WQ data continued to support the development or updating of requisite watershed-	FY16 Section 319 Implementation Projects 6, 7, 8, 9, 10, 11, and 12. Contracts were executed to initiate FY16 Section 319 funded Watershed-based Projects:	

incorporates Section 319 grant guideline nine-key watershed-based plan elements. **Timeline**: Annual	based plans to apply for Section 319 funding. Nine locations were monitored to develop TMDLs for seven waterbodies. Three locations were monitored to document water quality conditions prior to the implementation of 319 watershed plans. An additional 28 streams were monitored to assess use support attainment and to identify waterbodies impaired by nonpoint sources.	8 – Upper and Lower Flint River 9 – Shoal/Swann Creek 10 – West Flint Creek, Phase 2 11 – Three Mile Creek 12 – Joe's Branch	Protection and Restoration a: ...results of installed BMPs b: ...success story documentation c. ... watershed plan progress d:...priority NPS/TMDL pollutant f: ...WQ trend data and tracking g: ...trophic data h: ...Coastal plan/ implementation **III.** Protection of High Quality Waters a: ...ensure continued high quality b: ...threat prevention c: ...valid data collection process d: ...high quality water listing **VI.** Nonpoint Source Education and Outreach c: ...enhance partnerships d: ...specific audiences targeted f: ...enhance data collection g:...TMDL/water-shed plan based
Short-term Objective 1.3: Continue to collect or assess Section 319 grant-funded watershed project WQ data to track restoration progress and successes (e.g., achieve priority TMDL and Section 319 pollutant load reductions; meeting state water quality standards, etc.). **Timeline:** Annual	Continuing.	FY16 Section 319 Workplan Projects 1 (Admin.), 2 and 3 Beginning in FY2014, the ADEM Water Quality Monitoring Strategy was revised from a Five-Year Basin Rotation Strategy to an Annual Statewide Monitoring Strategy. This coordinated strategy allows intensive WQ monitoring for prioritization in watershed management plans, and, of completed watershed-based projects as requested and prioritized. It also allows targeted monitoring of stakeholder identified nonpoint source issues, concerns, and improvements.	
Short-term Objective 1.4: Collect data to target and leverage Section 319 and other public and private funds and resources to gain NOAA/EPA final program approval of the Alabama Coastal Nonpoint Pollution Control Program (including meeting and sustaining implementation of Interim Decision Document recommendations)	Continuing.	FY16 Section 319 Project 4 (Coastal NPS Program Approval (Septage Category III) ADEM staff serves as the national Coastal States Organization - Coastal NPS Work Group Chair for all conditionally-approved states seeking final EPA/NOAA program approval.	

relative to Section 6217 of the Coastal Zone Act Reauthorization Amendments of 1990. **Timeline**: Annual		The ADEM coastal NPS coordinator has continued collect information towards gaining program approval and also provides technical assistance for various RESTORE projects being developed and implemented through partnerships with various entities including ADCNR, Mobile Bay NEP, WBNERR, NRCS, USFWS, COE-Mobile District, MS-AL Sea Grant, DISL, AL Coastal Foundation, Nature Conservancy, and local municipalities.	
Short-term Objective 1.5: Continue to partner with USDA-NRCS to monitor priority National Water Quality Initiative watersheds to help document pre- and post-conservation practice implementation effectiveness. **Timeline**: Annual	Continuing.	FY16 Section 319 Project 1 (Admin), 2 (Statewide Surface Water Quality Monitoring of Priority Wadeable Streams and Rivers) ADEM has partnered with NRCS and the DeKalb Co. SWCD to address the NWQI priority Upper Scarham Creek Watershed through a FY2014 Section 319 project. The Upper Scarham Creek Watershed is to be monitored in 2018. ADEM targeted WQ monitoring resources to assess NWQI priority Cox Mill/Hurricane Creek Watershed. ADEM has monitored this watershed as an NWQI priority since 2014. NRCS targeted and implemented BMPs in the Cross Creek Watershed and the Huckleberry Creek Watershed as part of the National Water Quality Initiative. ADEM participated in an on-site sampling meeting for Huckleberry Creek. ADEM participated in a conference call with NRCS on 8/30/2017 to coordinate on next year's NWQI watershed selection directives for 2018.	

Goal 2: Target and Leverage Nonpoint Source Management Resources to Restore, Protect, and Maintain Beneficial Uses of Waters			
Objectives	**Status**	**Strategies to Make Continued Progress**	**NPS Success Measures and Indicators Targeted** (Derived from Table 8.8 of the 2014 AL NPS Management Program)
Long-term Objective 2: Continue to leverage NPS management measure and practice resources to help ensure the public of clean and safe waters in accordance with the following authorities such as: • Clean Water Act Section 319 • Alabama Water Pollution Control Act • Other relevant NPS pollution federal and state laws, rules, regulations, ordinances, or policies and guidelines. **Timeline**: (Sustain, Replicate Annually)	Continuing.	FY16 Section 319 Workplan Project 1 (Admin) FY16 Section 319 Implementation Projects 6, 7, 8, 9, 10, 11, and 12. Basin Teams continued to improve communication among project managers, field staff, and ADEM management within Field Operations, the Water Quality Branch, and the Nonpoint Source Unit. Meetings were held in FY17 to plan and coordinate FY18 monitoring needs in order to assess NPS issues and to track watershed project progress and successes. ADEM, ADPH, ADCNR, and TVA continued to cooperatively assess waterbodies to determine the support of healthy fish populations and their consumption through the Fish Tissue Monitoring Program. NPS staff have assisted in this effort by presenting the fish consumption advisory information to stakeholder groups. A Fish Tissue Coordination meeting between ADPH and ADEM was held on May 1, 2017.	**I.** Water Quality Improvements from Nonpoint Source Controls: g: ... riparian areas/filter buffers h: ...CZARA 6217 implementation i:...lakes/reservoirs /shorelines j: ...marine, estuaries, wetlands k: ...beaches/ human contact l: ...groundwater, drinking water m: ... fish/shellfish advisories n: ...threats to shellfish beds o: ...LID/green infrastructure **II.** Interim Water Quality and Protection and Restoration b:...incremental restoration progress c: ...incremental plan implementation d:...incremental load reductions
Short-term Objective 2.1: Continue to develop the NPS components of nine-key element watershed plans that will not/do not require or request a commitment of implementation resources. **Timeline**: Annual	No Nine-Key Element Plans have been developed to date that do not primarily rely on Section 319 funds to assist in implementation.	ADEM partnered with the Alabama Regional Council of Governments to develop three Watershed Management Plans using Section 604(b) funding. Components of watershed plans are continually being implemented through local municipalities, NRCS, public and private fund leveraging.	

Short-term Objective 2.2: Continue to leverage public and private sector resources to implement NPS best management practices to restore impaired Section 303(d) listed waters per a Total Maximum Daily Load (TMDL) or to protect high quality waters identified in Section 305(b) Integrated Reports. **Timeline**: Annual	No Section 319 funds primarily target watershed "protection" of high quality waters (Tier 3), but continues to focus on "restoration" of NPS-impaired waters (Section 303(d) listed or TMDLs).	FY16 Section 319 Project 1 (Admin.) FY16 Section 319 Implementation Projects 6, 7, 8, 9, 10, 11, and 12. ADEM partnered with multiple agencies to provide WQ monitoring data for the EPA/NEP Mobile Bay science advisory and project implementation committees to help prevent future threats to WQ and throughout the Alabama River Basin. The Weeks Bay Reserve and the Weeks Bay Foundation continually work to implement the Weeks Bay (OAW) Management Plan. The plan is currently in the process of being updated. ADEM partners with the Clean Water Partnerships, local organizations, and other state agencies to assist with programs to protect Outstanding Alabama Waters, such as the Little River, Cahaba River, Paint Rock River, and the Tensaw River.	e: ...phased implementation h: ...coastal program approval **III:** Protection of High Quality Waters a:... protection against treats b:...regulations/ criteria/ programs c:...science-based data d: ...verification and listings **IV.** Nonpoint Source Pollutant Load Reductions a: ...Section 303(d)/ TMDLs b: ...N, P, and sediment c: ...BMPs target critical areas d: ...meet water quality standards e: ...lakes and reservoirs f: ...pollution prevention g: ...major river basins
Short-term Objective 2.3: Continue to leverage Section 319 grant resources to achieve priority NPS (i.e., nitrogen, phosphorus, and sediment) and TMDL pollutant of concern load reductions. **Timeline:** Annual	Continuing.	FY16 Section 319 Project 1 (Admin); FY16 Section 319 Projects 6, 7, 8, 9, 10, 11, and 12. All Section 319 funded watershed-based projects target priority NPS components of TMDLs (when completed). N, P, and Sediment pollutant load reductions are reported in GRTS prior to Feb and Oct, annually.	
Short-term Objective 2.4: Continue to place strong emphases on restoring NPS impaired HUC-12 delineated watersheds by facilitating and leveraging funding, BMP implementation, education and outreach, technology transfer, and technical assistance resources. **Timeline**: Annual	Continuing.	FY16 Section 319 Project 1 (Admin.) *Examples of technology transfer/education and outreach activities conducted with partners to target impaired waterbodies in FY2016 include: -NEMO and Stormwater presentations (MS4 Communities) - 2017 Nonpoint Source Cooperators Conference	

		-2017 NPS Grant Training Roadshows -AL Erosion and Sediment Control Workshops – Clear Water Alabama 2016 (AL Soil & Water Conservation Committee) -BMP Manuals distribution (as requested) -STEPL training (as part of project cooperator training) -LID/Stormwater Workshops (Auburn University Cooperative Extension System) -Septic Tank Workshops (Coastal Program Projects) -Alabama Water Watch (assistance with training workshops) - Several meetings and presentations for watershed stakeholders targeting specific impaired streams FY16 Section 319 Projects 6, 7, 8, 9, 10, 11, and 12. All Section 319 funded watershed-based projects targeted "manageable" HUC-12 scale watersheds to best ensure improved WQ and project implementation success.	

Goal 3: Implement NPS Management Measures and Practices to Restore and Protect Watershed Health and Water Quality			
Objectives	**Status**	**Strategies to Make Continued Progress**	**NPS Success Measures and Indicators Targeted** (Derived from Table 8.8 of the 2014 AL NPS Management Program)
Long-term Objective 3: Continue to facilitate a partnership approach to implement NPS measures and practices to restore watersheds and water quality and protect human health from nonpoint sources of pollution.	Continuing.	FY16 Section 319 Project 1 (Admin); FY16 Section 319 Implementation Projects 6, 7, 8, 9, 10, 11, and 12. Conducted 2017 Nonpoint Source Cooperators Conference and four NPS Grant Roadshows.	**I.** Water Quality Improvements from Nonpoint Source Controls g: ... riparian areas/filter buffers

Timeline: (Replicate Successes per five-year Programmatic Update Iterations)		Works closely with Clean Water Partnership groups and basin partners to assist in meeting program and project goals. Staff attended and/or presented at several basin and watershed meetings.	h: ...CZARA 6217 implementation i: ...lakes/ reservoirs/shore lines j: ...marine, estuaries, wetlands k:...beaches/human contact l: ...groundwater, drinking water m: ... fish/shellfish advisories n: ...threats to shellfish beds o: ...LID/green infrastructure **II:** Interim Water Quality and Protection and Restoration g: ...Riparian areas/filter buffers **IV.** Nonpoint Source Pollutant Load Reductions a: ...Section 303(d)/ TMDLs b: ...N, P, and sediment c: ...BMPs target critical areas d: ...meet water quality standards e: ...lakes and reservoirs f: ...pollution prevention g: ...major river basins
Short-term Objective 3.1: Implement BMPs in at least one HUC-12 subwatershed, exclusive of Section 319 grant funding, to restore water quality and watershed productivity and resilience. **Timeline**: Annual	Continuing.	NRCS targeted and implemented BMPs in the Cross Creek Watershed and the Huckleberry Creek Watershed as part of the National Water Quality Initiative. NRCS targets Gulf of Mexico Initiative (GOMI) funds in the NPS impaired Weeks Bay (Upper/Middle/Lower Fish River Watersheds). Several watershed litter cleanup projects were coordinated and held by partners to increase awareness and address water quality	
Short-term Objective 3.2: Employ a suite of measures (including retrofits) to protect, maintain and restore the ecological integrity of aquatic systems in the state's rivers, lakes, wetlands, streams, and estuarine waters. **Timeline**: Annual	Continuing. No specific wetland or estuarine restoration projects were not funded by Section 319 in FY2017.	FY16 Section 319 Implementation Projects 6, 7, 8, 9, 10, 11, and 12. The Deepwater Horizon (BP) Oil Spill Liability Trust Fund continues to target restoration of natural resources along the coast. Section 319 funded watershed-based projects employ a suite of BMPs to mitigate NPS runoff to impaired streams, river, and lakes. ADEM works with Gulf of Mexico Alliance (GOMA) to address coastal water issues on a multistate/regional basis.	

			V. Implementation of Nonpoint Source Controls a: ...project planning b:...inclusive partnerships c: ...statewide and coastal d: ...local funds/capacity e: ...priority impaired areas f: ...USDA Farm Bill/ NWQI g:...Coastal Program approval h:...National Estuary Program i: ...Clean Water Revolving Fund j: ....pervious surfaces k: ...T&E species and habitat l: ...invasive species m: ....LID n: ...resources integrated/ leveraged o: ...BMP maintenance p: ...locally-led and implemented q: ...fiscal accountability

Goal 4: Enhance Institutional Capacity to Implement a Sustainable Statewide Nonpoint Source Pollution Management Program			
Objectives	**Status**	**Strategies to Make Continued Progress**	**NPS Success Measures and Indicators Targeted** (Derived from Table 8.8 of the 2014 AL NPS Management Program)
Long-term Objective 4: Continue to enhance programmatic efficiency and effectiveness by updating programmatic Goals and Objectives by September 30, 2014. **Timeline**: (Replicate every five years.)	The AL NPS Management Program was approved by EPA in August 2014.	Completed. Staff continues to discuss and document revisions needed to the AL NPS Management Program.	**I.** Water Quality Improvements from Nonpoint Source Controls: e: ...leverage Section 106 and other WQ resources f: ...leverage NWQI resources h:...coordinate CZARA 6217 **V.** Implementation of Nonpoint Source Controls e: ...voluntary citizen approach f:...align with USDA-Farm Bill g: ...coordinate with CZARA h:...coordinate with NEP i: ...Clean Water Revolving Fund n: ...resource integration and leveraging p: ...local solutions to local problems using local resources q:. .fiscally responsible **VI.** Nonpoint Source
Short-term Objective 4.1: Continue to enhance Section 319 grant transparency, program accountability, and fiscal management by implementing iterative technology-based approaches. **Timeline**: Annual	Continuing.	FY16 Section 319 Project 1 (Admin.) All required Section 319 grant and project data is entered into GRTS in October and February, annually. ADEM NPS staff develop and update dedicated Section 319 grant and project specific tracking systems to help ensure accountability and provide timely information.	
Short-term Objective 4.2: Continue to track the diversity of watershed planning and implementation partnerships. (e.g., agency, university, advisory, others). **Timeline**: Annual	Continuing.	ADEM (Project 1) partners with the basin partnership groups to identify, sustain, and support many and varied NPS partners, interest, and input. ADEM continued to work with Auburn University in FY2017 as a Center for Watershed Excellence. Began redeveloping the MOUs with Alabama A&M and the University of AL to become Centers for Watershed Excellence. ADEM submitted FY2016 Section 319 workplans to EPA-Region 4 that incorporate a myriad of NPS partners and mitigation resources (*submitted on 9/30/2015*). The NPS Annual report documents and highlights the project partners across the state	

		that are involved in nonpoint source program implementation. The report is placed on the ADEM website and advertised at basin meetings and at conferences.	Education and Outreach a: ...targets watershed and WQ b: ...increase awareness and knowledge c:...partnerships d:...specific and target audiences e: ...pollution prevention f: ...enhance data monitoring g: ...TMDLs, watershed based plan, public health and safety
Short-term Objective 4.3: Continue to track successful completion of planned NPS water quality restoration outcomes (e.g., materials developed, reports generated, practices implemented, conferences/meetings facilitated or attended, etc.). **Timeline:** Annual	Continuing.	FY16 Section 319 Project 1 (Admin.) Specific Section 319 project outputs are presented in interim and closeout reports. Final reports are submitted to EPA R-4 at grant closeout.	
Short-term Objective 4.4: Continue to convey institutional capacity by developing or submitting final TMDL and Section 319 NPS watershed planning and pollutant load reduction success stories to EPA. **Timeline**: Annual	Continuing.	FY16 Section 319 Project 1 (Admin.) Submitted a Crowdabout Creek (WQ-10) success story to EPA-Region 4 on 7/25/17 for review and comments. Finalized by EPA Region 4 and posted to the NPS Success Story website on 9/26/16.	

<u>Goal 5</u>: Facilitate statewide Education and Outreach (E&O) activities to increase the public's knowledge and awareness about nonpoint source pollution, watershed health, water quality protection and restoration, and natural resource stewardship.			
Objectives	**Status**	**Strategies to Make Continued Progress**	**NPS Success Measures and Indicators Targeted** (Derived from Table 8.8 of the 2014 AL NPS Management Program**)**
<u>Long-term Objective 5</u>: Continue to facilitate the delivery of statewide and coastal zone NPS program communication materials and actions to enhance citizen education (e.g. awareness and knowledge; decision-making, problem solving, etc.) and outreach (e.g., dissemination of information; seeking input and active participation. **Timeline**: (Replicate Processes Every five years)	Continuing.	The Coastal Program 319 funding was used to help purchase two no-till drills to assist with erosion and sedimentation from cropland in impaired watersheds. In addition, funding is being used in Mobile and Baldwin Counties to implement a Coastal Alabama Septic Tank Inspection and Maintenance Program to identify problem areas and to provide a septic tank pump-out program to promote the maintenance needs.	**V.** Implementation of Nonpoint Source Controls a: ...project planning b:...inclusive partnerships c: ...statewide and coastal d: ...local funds/capacity **VI.** Nonpoint Source

Short-term Objective 5.1: Continue to leverage Section 319 grant resources to plan, produce, or disseminate water quality based E&O products that target specific audiences (e.g., NPS pollution category or place-based issues). **Timeline**: Annual	Continuing.	FY16 Section 319 Project 1 (Admin.)	Education and Outreach a: ...targets watershed and WQ b:... increase awareness and knowledge c:...Partnerships d:...Specific and target audiences e: ...pollution prevention f: ...enhance data monitoring g: ...TMDLs, watershed based plan, public health and safety
Short-term Objective 5.2: Continue to leverage public and private sector resources to develop and deliver E&O presentations, models, documents, and technologies. **Timeline**: Annual	Continuing.	FY16 Section 319 Project 1 (Admin.)	
Short-term Objective 5.3: Continue to deliver E&O activities that target specific Section 319 and TMDL priority pollutants in at least one NPS impaired HUC-12 subwatershed. **Timeline:** Annual	Continuing.	FY16 Section 319 Project 1 (Admin.) FY16 Section 319 Implementation Projects 6, 7, 8, 9, 10, 11, and 12.	
Short-term Objective 5.4: Continue to facilitate E&O activities to strengthen working relationships and linkages to appropriate interstate, state, regional, and local entities (i.e., everyone "works-off-the-same-page"). **Timeline**: Annual	Continuing.	FY16 Section 319 Project 1 (Admin.)	

Progress in Achieving Annual Milestones of the Alabama NPS Management Program and Section 319 Grant Program

(1) Statewide NPS Programmatic Water Quality Annual Milestones	Year 2017		
Measure:	**Water Quality Monitoring Data Indicates a Primarily NPS Impaired Waterbody or Segment Is Now Fully or Partially Meeting State Water Quality Standards**		
(Baseline is 2013)	**Indicator**	**Waterbody / HUC**	**Comments**
a) Number of Waterbodies identified in AL's 2000 or later year Integrated Reports (IR) as being primarily NPS impaired that now meets state water quality standards and designated uses (WQ-10): (Goal is minimum 1/year): (i.e., Category 5/ Section 303(d) listed Impaired Waters):	1	Crowdabout Creek / 06030002-1006	More recent data indicated water quality standards were attained for Crowdabout Creek for nitrogen, phosphorus, sedimentation/siltation and CBOD for all uses in 2014.
Number of WQ-10 Waterbodies Fully/Partially Restored or Meets State Water Quality Standards or Designated Uses:	1	Crowdabout Creek / 06030002-1006	Watershed project restoration efforts were funded by 2002 and 2003 Section 319(h) funds in conjunction with contributions by the USDA Farm Service Agency's (FSA) Conservation Reserve Program (CRP). All restoration activities took place from December 2005 to March 2009.
Number of WQ-10 NPS/Section 319 Success Stories Developed as a Result of Full/Partial Restoration:	1	Crowdabout Creek / 06030002-1006	WQ Standards were attained due to NPS and other partnerships in restoration activities.
Number of WQ-10 NPS/Section 319 Success Stories That Are Being Developed as a Result of Full/Partial Restoration:	1	Crowdabout Creek / 06030002-1006	A Crowdabout Creek WQ-10(a) Success Story is being prepared for submittal to EPA R-4 for partial restoration due to attainment of nitrogen, phosphorus, sedimentation/siltation and CBOD standards.
Number of WQ-10 NPS/Section 319 Success Stories Submitted to EPA Region 4 as a Result of Full/Partial Restoration:	1	Crowdabout Creek / 06030002-1006	Submitted to EPA R-4 on September 1, 2017 for review and comments.
Number of WQ-10 NPS/Section 319 Success Stories Listed by EPA-HQ as Result of Full/Partial Restoration:	1	Crowdabout Creek / 06030002-1006	Accepted by EPA Region 4 and posted to the HQ website in September 2017.
b) Number of Waterbodies identified in AL's 2002 IR as not attaining water quality (WQ) standards where state water quality standards are now partially attained using a watershed-based approach (SP-12): (Goal is minimum 1/year): (i.e., Category 5/	0		

Section 303(d) listed Impaired Waters):			
Number of Waterbodies Where the Watershed Approach Was Used to Target or Restore Impairments to Water Quality:	0		
Number of SP-12 NPS/Section 319 Success Stories Developed to Proclaim WQ Standards are Partially Restored:	0		
Number of SP-12 NPS/Section 319 Success Stories That Are Being Developed to Proclaim WQ Standards are Partially Restored:	0		
Number of SP-12 NPS/Section 319 Success Stories Submitted to EPA Region 4 as a Result of WQ Standards Now Being Partially Restored:	0		
Number of SP-12 NPS/Section 319 Success Stories Listed by EPA-HQ as Result of WQ Standards Being Partially Restored:	0		

(2) Nonpoint Source Pollutant Load Reductions	**Year 2017**	
Measure: Cumulative Estimated Statewide NPS Load Reductions		
(Baseline is FY 2013)	**Indicator**	**Comments**
a) Pounds of Nitrogen (N) Pollutant Load Reductions Annually from Nonpoint Sources Using Section 319 Grant Watershed Project Funds (WQ-9a):	492,279.99 lbs/year	Cumulative "N" for all ongoing Section 319 grants (2013- 2017). 2013-2017 project load reductions are pending additional implementation.
Number of Section 319 Funded Projects Reporting "N" Pollutant Load Reductions (Total Watershed Projects/Total Projects Targeting "N"):	24	
Load Reductions Entered in GRTS by Feb 15	Yes	
b) Pounds of Phosphorus (P) Pollutant Load Reductions Annually from Nonpoint Sources Using Section 319 Grant Watershed Project Funds (WQ-9b):	118,491.62 lbs/year	Cumulative "P" Total for all "open" Section 319 grants (FY2013 – 2017) reported in GRTS. 2013-2017 project load reductions are pending additional implementation.
Number of Section 319 Funded Projects Reporting "P" Pollutant Load Reductions (Total Watershed Projects/Total Projects Targeting "P"):	24	
Load Reductions Entered in GRTS by Feb 15	Yes	
c) Tons of Sediment (S) Pollutant Load Reductions Annually from Nonpoint Sources Using Section 319 Grant Watershed Project Funds (WQ-9c):	84,759.72 tons/year	Cumulative "S" Total for all "open" Section 319 grants (FY2013 – 2017) reported in GRTS. 2013-2017 project load reductions are pending additional implementation.
Number of Section 319 Funded Projects Reporting (S) Pollutant Load Reductions (Total Watershed Projects/Total Projects Targeting "S"):	24	

Load Reductions Entered in GRTS by Feb 15	Yes	
d) Number of Impaired Waterbodies/Segments Where "Other" NPS Pollutant Load Reductions are Achieved (#):	4*	Biological Oxygen Demand (BOD) was sometimes reported by projects since it is included in STEPL results. All watershed-based projects leverage the recourses of two or more resource agencies. *"Other" narratives/data reporting address pathogens, OE/DO, and aquatic habitat.
Priority TMDL Pollutants of Concern (Pollutants Other than N, P and Sediment) Were Mitigated Using Leveraged Section 319 Watershed Project Funds:	Yes	
Section 319 Watershed Project Funds Compliments and Leverages Technical and Financial Assistance from 2 or more Federal and State Resource Agencies:	Yes	
"Other" Pollutant Project Narrative/Data included in the NPS/Section 319 Annual Report:	Yes	

(3) Project-Level Water Quality Planning and Restoration and Activities	**Year 2017**	
Measure: Watershed Project Funds Target NPS Impaired or Mixed Source Impaired Section 303(d) Listed Waters		
Baseline is FY2013 and 2002 Impaired Waters List	**Indicator**	**Comments**
a) Watershed-based Plans or Acceptable Alternative Plans are Completed Prior to Beginning to Implement On-The-Ground Projects with Section 319 Watershed Project Funds:	Yes	Nine-key element Watershed-based Plans submitted to ADEM to mitigate NPS impacts and improve water quality with 2016 or 2017 grant funds include: • Upper Middle Flint River (Chase) WMP (completed 2016)* • Shoal/Swann Creek WMP (completed 2016)* • Tiawasee Creek • Three Mile Creek • Mill Creek Phase III • Graves Creek Phase II • Crowdabout Creek Phase III • UT to D'Olive Creek • Parkerson Mill Creek • Moores Mill Creek Phase II Collaboration and coordination continues to ensure early and sustained buy-in from many and varied resource agencies, landowners, and other entities.
At least two (2) EPA nine-key Element Watershed-based Plans are Drafted or Final Plans Developed Annually:	2*	
At least two (2) EPA nine-key Element Watershed-based Plans Begin Implementation Annually:	6	
Appropriate Stakeholders Were Involved in Watershed Planning and Implementation Processes:	Yes	
All current mandated project data elements are entered into GRTS with no exceptions associated with the previous year Section 319 grant award noted by Region 4 or EPA HQ remaining unresolved:	Yes	
Progress schedules reasonably ensure completion within the grant funding periods:	Yes	All mandated data elements entered into GRTS prior to Feb 15, 2017.

(4) Program Management and Accountability	Year 2017	
Measure: The NPS Management Program Increases Implementation Efficiencies		
Baseline is FY2013	**Indicator**	**Comments**
a) Program Performance Issues/Concerns and Associated Corrective Actions Continue to Be Addressed to Meet Foundational Aspects of Section 319 Grant Guidelines and Funding/Management Requirements:	Yes	The 2017 Section 319 RFP notice as well as the Inter-governmental Clearinghouse Review was executed. Watershed projects were selected for FY17 funding. Final EPA budget was approved on October 2, 2017 and projects are currently being contracted. The ADEM NPS Unit uses/refines dedicated Section 319 grant/project tracking databases as well as coordinates invoice payments with the Fiscal Office. All mandated data elements are entered into GRTS as grant and project-specific information is acquired by ADEM staff. ADEM NPS Staff facilitates or participates in E&O activities multiple monthly. The ADEM participated in the EPA GRTS Training Meeting on September 20 – 21, 2017, and NPS Staff are scheduled to attend the National NPS Training Meeting in November 2018. Data continues to be QA'd and entered into ADEM-specific and national /EPA reporting databases. The Upper Scarham Creek Watershed (06030001-0803) was approved in 2014 as an additional NWQI priority. The Upper Scarham Creek Watershed is an ongoing FY2014 Section 319 implementation project with the DeKalb County Soil and Water Conservation District. The Cox Mill Creek/Hurricane Creek Watershed has been monitored by ADEM as an NWQI priority since 2014.
A statewide NPS project workplan RFP is submitted to the public within 6 months of the fiscal year begin data (prior to Sept 30):	Yes	
Previous Year Section 319 funds were obligated by ADEM within one (1) year of the date of receipt from EPA Region 4:	Yes	
Programmatic and financial systems are developed, evaluated, revised or updated to enhance project tracking and reporting:	Yes	
Mandated project elements entered into GRTS at least biannually:	Yes	
NPS staff facilitate or participate in at least one (1) NPS related education and outreach or training program activity at least one (1) time per month to enhance public awareness and knowledge:	Yes	
Annual Regional and National GRTS and NPS Program/Section 319 Managers Meetings are Attended as scheduled:	Yes	
Environmental data collected to assess NPS water quality impacts continues to be input into ADEM-specific, STORET or other publicly available databases or reporting formats:	Yes	
ADEM partners with USDA-NRCS to select and/or monitor water quality for at least one (1) NWQI priority watershed:	Yes	

The Alabama NPS Management Program Projects, Percent Completion, and Federal/Non-Federal Funds

	Projects	Percentage of Project Completed	Obligated Federal Funds	Required Matching Funds	Project Completion Date
FY13	Planning Administration/Management	100%	$ 563,955	$ 375,970	09/30/2013
	Rotational River Basin Approach: Surface Water Assessment for TN River Basin	100%	$ 129,373	$ 86,249	11/30/2015
	Rotational River Basin Approach: WQA of TN Reservoirs for Nutrient Criteria and TMDL	100%	$ 147,847	$ 98,565	03/31/2017
	Coastal Monitoring	100%	$ 108,825	$ 72,550	09/30/2017
	Project Grant Implementation Management	100%	$ 253,267	$ 168,845	09/30/2013
	Alabama Clean Water Partnership	100%	$ 315,236	$ 210,158	11/01/2015
	West Flint Creek Watershed-Phase II	100%	$ 207,263	$ 138,176	09/11/2017
	French Mill Creek Watershed	100%	$ 226,000	$ 150,667	01/13/2017
	Harris Creek Watershed - Phase II	100%	$ 184,955	$ 159,947	11/19/2016
	Eight Mile (Mobile) and Fish River (Baldwin)	100%	$ 91,100	$ 60,734	12/15/2016
	Brier Fork-Beaverdam Phase 3	100%	$ 230,000	$ 153,334	09/30/2017
	Pintlala	100%	$ 292,253	$ 267,476	07/08/2017
	UT to D'Olive Creek	100%	$ 54,965	$ 48,101	09/20/2017
	UT to Tiawasee	100%	$ 108,961	$ 72,641	09/25/2017
FY14	Planning Administration/Management	100%	$ 662,769	$ 441,846	09/30/2014
	Statewide Surface Water Quality Monitoring of Priority Wadeable Streams and Rivers	100%	$ 304,140	$ 202,760	11/30/2016
	Surface Water Quality Assessment of Rivers, Reservoirs and Tributary Embayments on a Statewide Rotation	100%	$ 150,592	$ 100,395	03/31/2017
	Coastal NPS Program Approval (Septage Category I)	59%	$ 100,000	$ 66,667	09/30/2018
	Alabama Clean Water Partnership	100%	$ 272,999	$ 203,411	01/01/2017
	Project Grant Implementation Management	100%	$ 168,844	$ 112,563	09/30/2014
	Moores Creek	26%	$ 527,322	$ 348,215	09/30/2017
	Upper Scarham Creek	83%	$ 269,820	$ 179,880	02/05/2018
	Graves Creek	90%	$ 179,583	$ 119,722	09/30/2017
	Shoal Creek	95%	$ 158,800	$ 105,867	12/20/2017
	Pursley Creek	88%	$ 141,127	$ 127,421	02/07/2018
	Catoma – Waller Creek	0 %	$45,004	$ 30, 003	02/22/2018
FY15	Planning Administration/Management	100%	$ 615,724	$ 410,483	09/30/2015
	Statewide Surface Water Quality Monitoring of Priority Wadeable Streams and Rivers	95%	$ 359,140	$ 239,427	11/30/2017
	Surface Water Quality Assessment of Rivers, Reservoirs and Tributary Embayments on a Statewide Rotation	80%	$ 152,387	$ 101,592	03/31/2018
	Coastal NPS Program Approval (Septage Category II)	0%	$ 100,000	$ 66,667	09/30/2019
	Alabama Clean Water Partnership	0%	$ 247,999	$ 165,333	04/01/2018
	Project Grant Implementation Management	100%	$ 193,746	$ 129,164	09/30/2015
	Second Creek	37%	$ 205,829	$ 137,219	01/05/2018
	Brindley Creek	35%	$ 259,004	$ 172,669	01/12/2018
	Tiawassee Creek	49%	$ 596,671	$ 397,781	02/05/2018
	Neely Henry Lake Nutrient Reduction (Coosa River)	51%	$ 220,000	$ 146,667	04/06/2018

	Projects	Percentage of Project Completed	Obligated Federal Funds	Required Matching Funds	Project Completion Date
FY16	Planning Administration/Management	100%	$ 786,252	$ 524,168	09/30/2016
	Statewide Surface Water Quality Monitoring of Priority Wadeable Streams and Rivers	65%	$ 274,955	$ 183,304	12/31/2018
	Surface Water Quality Assessment of Rivers, Reservoirs and Tributary Embayments on a Statewide Rotation	65%	$ 115,794	$ 77,196	03/31/2019
	Coastal NPS Program Approval (Septage Category III)	0%	$ 100,000	$ 66,667	09/30/2020
	Alabama Clean Water Partnership	0%	$ 247,999	$ 165,333	09/30/2020
	D'Olive Creek	0%	$ 197,227	$ 131,485	09/30/2020
	Moores Phase II	0%	$ 296,682	$ 197,788	09/30/2020
	Upper and Lower Flint River	11%	$ 248,000	$ 165,334	11/09/2018
	Shoal/Swann Creek (Limestone Co.)	5%	$ 360,000	$ 240,000	11/10/2019
	West Flint - Phase III	0%	$ 300,000	$ 200,000	07/21/2019
	Three Mile Creek	4%	$ 46,041	$ 30,694	12/01/2018
	Joes Branch	100%	$ 77,050	$ 51,367	09/28/2017
FY17	Planning Administration/Management	25%	$766,742	$511,161	09/30/2017
	Statewide Surface Water Quality Monitoring of Priority Wadeable Streams and Rivers	30%	$338,380	$225,587	11/31/2019
	Surface Water Quality Assessment of Rivers, Reservoirs and Tributary Embayments on a Statewide Rotation	40%	$174,379	$116,253	03/31/2020
	Coastal NPS Program Approval (Septage Category IV)	*	$100,000	$66,667	*
	WMP, Public Stakeholder Involvement, E&O	*	$247,799	$165,199	*
	Tiawasee Creek	*	$350,204	$233,469	*
	Three Mile Creek	*	$152,339	$101,559	*
	Mill Creek Phase 3	*	$260,276	$173,384	*
	Graves Creek Phase 2	*	$250,250	$166,833	*
	Crowdabout Creek Phase 3	*	$160,300	$106,867	*
	UT to D'Olive Creek	*	$195,540	$130,360	*
	Parkerson Mill Creek	*	$152,091	$101,394	*
	Moores Creek - Phase 2	*	$6,500	$4,333	*
FY18	Planning Administration/Management	**	$837,566	$558,377	**
	Statewide Surface Water Quality Monitoring of Priority Wadeable Streams and Rivers	**	$339,392	$226,261	**
	Surface Water Quality Assessment of Rivers, Reservoirs and Tributary Embayments on a Statewide Rotation	**	$173,932	$115,955	**
	Coastal NPS Program Approval (Septage Category IV)	**	$100,000	$66,667	**
	WMP, Public Stakeholder Involvement, E&O	**	$176,610	$117,740	**
	Dry Creek	**	$113,485	$75,657	**
	Cowarts Creek	**	$296,525	$197,683	**
	Mulberry Creek	**	$196,079	$130,719	**
	Browns Creek	**	$190,913	$127,275	**
	Scarham Creek Phase 2 / Town Creek	**	$237,246	$158,164	**
	Pintlala / Catoma Creek	**	$123,124	$82,083	**
	French Mill Creek Phase II	**	$120,000	$80,000	**
	UT Tiawasee Creek	**	$376,483	$250,989	**

**FY17 Funds were released by the EPA on 10/4/2017. Contracting is currently ongoing.*
***FY18 319 Application submitted to the EPA on 9/28/2017. Pending approval.*

The Alabama Nonpoint Source Management Program

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