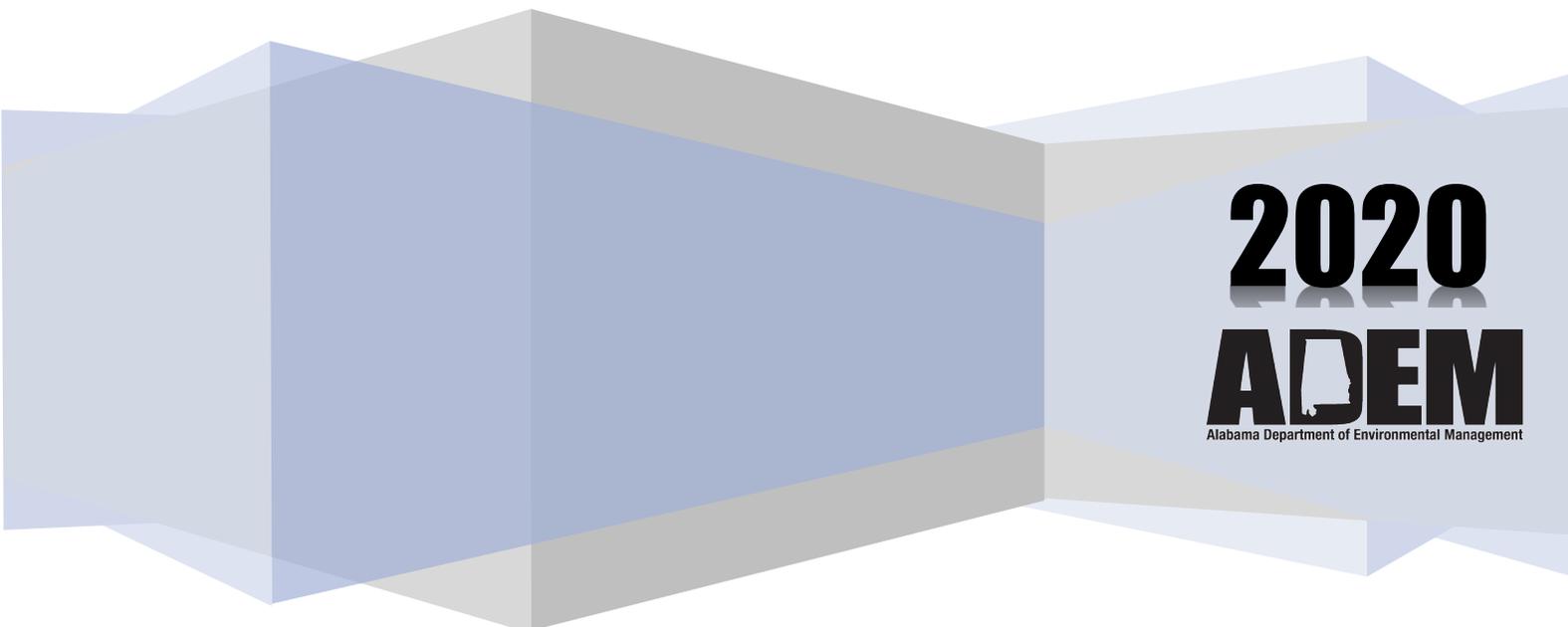


ALABAMA NONPOINT SOURCE MANAGEMENT PROGRAM

SEMI-ANNUAL REPORT



2020
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. The 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 development, 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 (CWA) 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 CWA 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, and nonprofit entities are eligible to apply for CWA Section 319(h) grant subawards 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.

ALABAMA NPS PROGRAMMATIC GOALS AND OBJECTIVES

- Goal 1:** Continue to collect surface water and groundwater monitoring data using an iterative statewide targeted monitoring approach to assess whether state waters meet state water quality standards and use classifications.
- Goal 2:** Target AL NPS management program resources to restore, protect, and maintain beneficial uses of waters of the state.
- Goal 3:** Implement NPS management measures and practices 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 the delivery statewide Education and Outreach (E&O) activities to increase the public knowledge and awareness relative to NPS pollution, watershed health, water quality protection and restoration, and natural resource stewardship.

Alabama’s Disbursement of 319(h) Funds

The EPA awards CWA 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 these allocated funds. The federal funding is 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 March 2020)

Balances for active grants FY2016-FY2020 are listed in Table 1 and represented graphically in Figure 1 below.

TABLE 1 – CURRENT 319 GRANT BALANCES

Grant Year	Award Amount	Amount Obligated	Program Funds	Project Funds	Total # Projects
FY16	\$3,050,000	\$3,050,000	\$1,525,000	\$1,525,000	14
FY17	\$3,154,600	\$3,154,600	\$1,627,300	\$1,527,300	13
FY18	\$3,116,000	\$3,116,000	\$1,608,000	\$1,508,000	11
FY19	\$3,086,000	\$3,086,000	\$1,593,000	\$1,493,000	9
*FY20	\$3,216,000	\$3,216,000	\$1,658,000	\$1,558,000	9
Total	\$15,622,600	\$15,622,600	\$8,011,300	\$7,611,300	56

**FY2020 Projects are pending the receipt of EPA funds.*

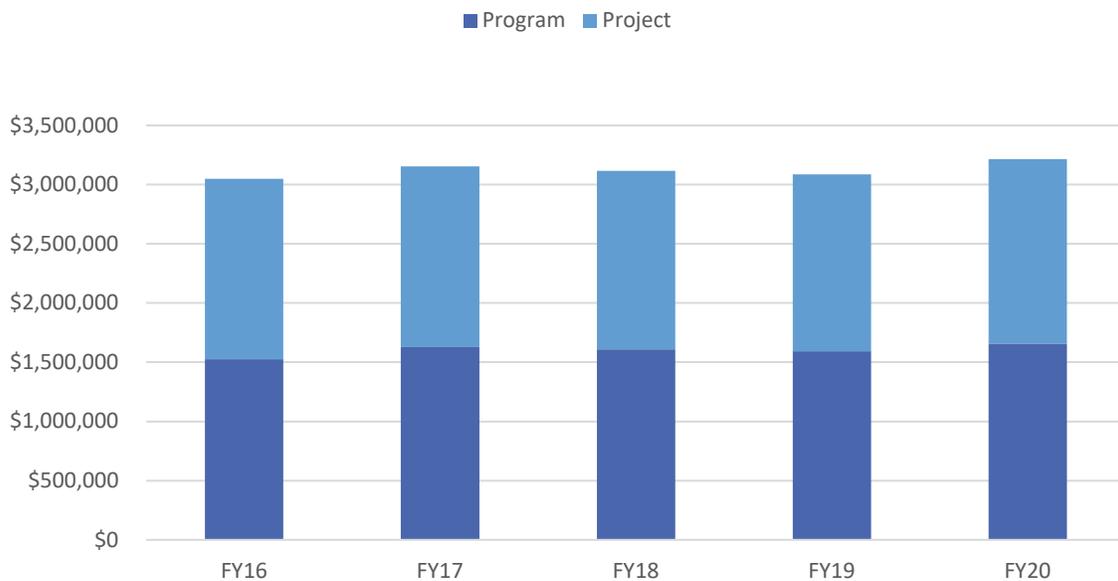


Figure 1: Current 319 Grant Balances

Pollutant Load Reduction Totals in FY2020

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 2 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 2 – POLLUTANT LOAD REDUCTIONS

Fiscal Year	Nitrogen (lbs/yr)	Phosphorus (lbs/yr)	Sedimentation-Siltation (tons/yr)
2016	104,258	29,324	32,311
2017	133,846.38	20,409	3,115
2018	122,001	42,103	33,407
2019	38,762	11,132	8,128
2020	43,482	13,246	3,540
Total	442,349	116,214	80,501

Section 319 Project Load Reductions

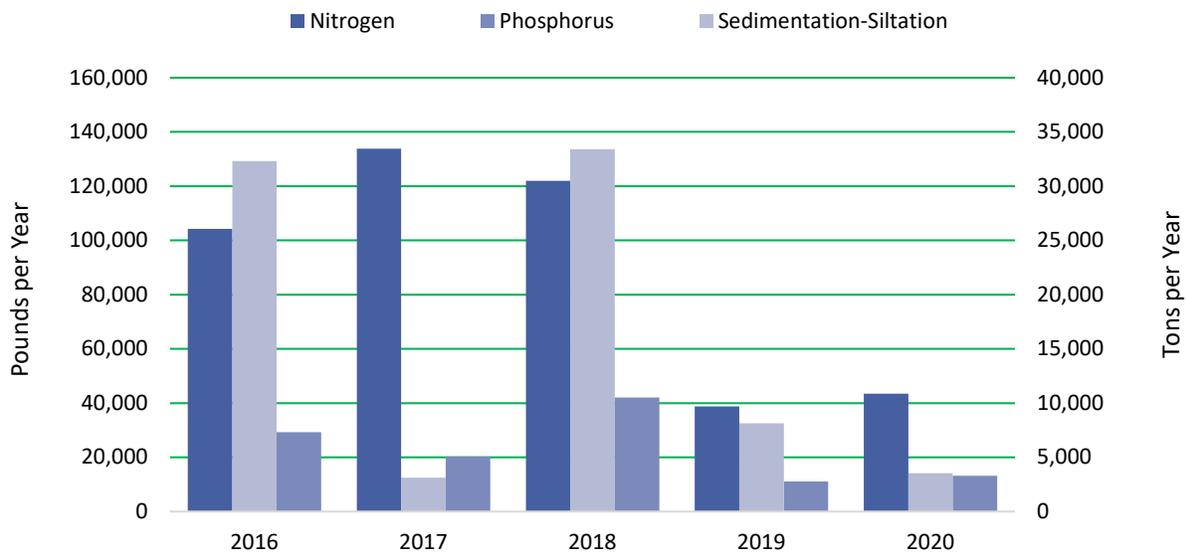


Figure 2: Nitrogen, Phosphorus, and Sediment Load Reductions by Fiscal Year

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 waterbody 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 Alabama NPS Management Program uses TMDLs to help with establishing watershed priorities, leverage resources, and implement water quality protection and restoration activities.

In FY2020, the TMDL Program of ADEM continued to make great strides in protecting Alabama’s water resources. Alabama’s cumulative total of approved TMDLs in FY2020 was 258 and the associated pollutants are represented in Figure 3.

Approved TMDLs in Alabama

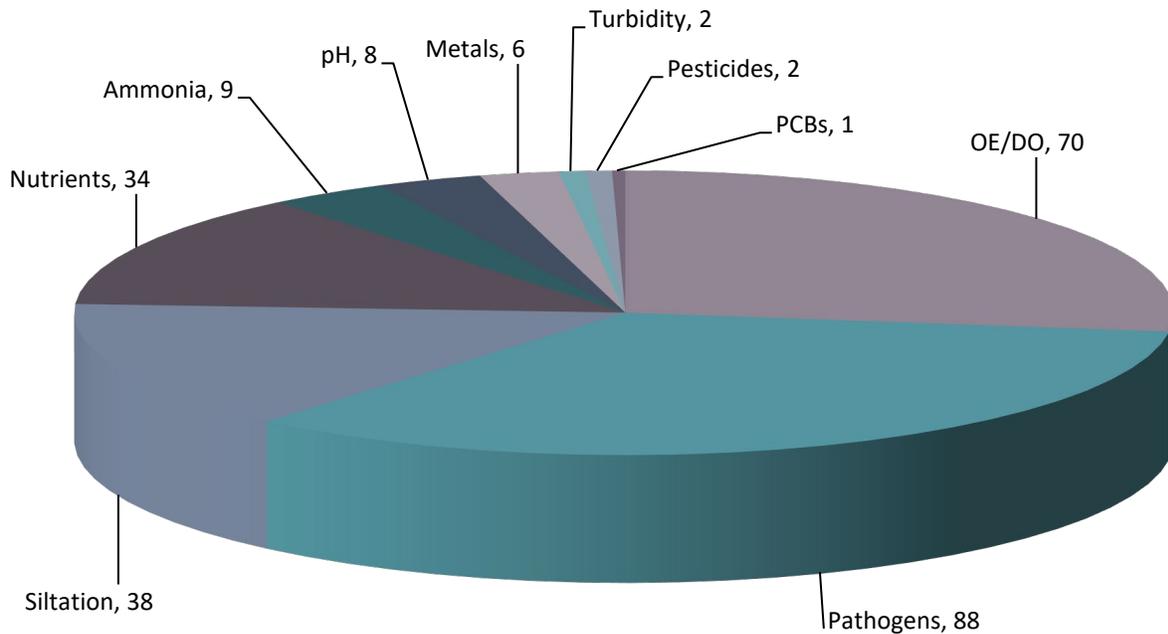


Figure 3: Alabama TMDLs by Pollutant

Current Watersheds Implementing a TMDL in NPS Projects

TABLE 3 – IMPLEMENTATION PROJECTS FY 2016 - FY 2020

Fiscal Year	Project Title	Total
2016	<ul style="list-style-type: none"> • Upper and Lower Flint River Watershed Implementation Project • Shoal and Swan Creek Watershed Restoration Project • Swan-French Mill Creek Watershed Restoration Project • West Flint Creek Watershed Project - Phase III • Bioinfiltration Swale Implementation on USA Campus Meisler Commons in the Upper Three Mile Creek Watershed 	5
2017	<ul style="list-style-type: none"> • Parking Lot Bioswale Implementations on USA Campus in the Upper Three Mile Creek Watershed • Graves Creek Watershed Management Plan Implementation - Phase II • Crowabout Creek - Phase III Implementation Project • Parkerson Mill Creek Watershed Management Plan Implementation Low Impact Development BMPs 	4
2018	<ul style="list-style-type: none"> • Ryan Creek Watershed Implementation Project • Roebuck Municipal Golf Course Stream Restoration and Demonstration Project 	2
2019	<ul style="list-style-type: none"> • Pathogen Reduction of Turkey Branch: A Weeks Bay Watershed Project • Anderson Creek Watershed Restoration Project • Big Nance Creek Watershed Restoration Project • Upper Three Mile Creek Ephemeral Gully Restoration Project 	4
2020	<ul style="list-style-type: none"> • Shoal Creek Watershed Implementation Project Phase II • Black Creek Stream Restoration Project • Pepperell Branch Watershed Implementation Project • Upper Three Mile Creek Watershed Implementation Project – Phase III 	4
Total Projects		19

ADEM Surface Water Monitoring and Assessments Strategy

From 2005 to 2014, the annual Surface Water Quality Monitoring Plan was developed by a small group of program managers. Monitoring was concentrated in one target basin in accordance with ADEM's 5-year basin rotation. Between 2015 and 2019, the Rivers and Reservoirs Monitoring Program and Coastal Monitoring Program were conducted on 3-year basin rotations. The Rivers and Streams Monitoring Program was implemented statewide annually to provide data more frequently to stakeholders in each basin.

The 2015 strategy implemented a statewide target number of stations monitored annually, both statewide and by basin, as well as by each of the field offices. These have provided level loading for ADEM's labs and field offices, making better use of ADEM's available resources. The 2020 monitoring strategy implemented a coordinated, 3-year basin rotation for the Rivers and Streams Monitoring Program, Rivers and Reservoirs Monitoring Program, and Coastal Monitoring Program. This linked monitoring data reservoirs, embayments, nonwadeable and wadeable rivers, and streams.

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.

Basin teams were developed to improve communication among project managers, field staff, and ADEM management within Field Operations, the Water Quality Branch, and the Nonpoint Source Unit. Participation in the basin teams provides opportunities for team members to become familiar with the data needs and issues within their basin. Between 2014 and 2019, program managers participated in each annual basin team meeting to explain and review program objectives and background information during discussions. These large, inclusive meetings provided a means to improve coordination and communication among the individual programs, while also providing opportunities for young staff to gain knowledge and experience in their specific program, their basin, and ADEM's overall planning process.

In 2020, the annual basin team meetings were completed by much smaller groups. The basin team coordinator for each program (standards, monitoring, assessment and listing, TMDL, and NPS) discussed all data needs and sampling requests. This change to essential personnel only was necessitated by COVID-19 but also served to illustrate how much progress the basin teams have achieved in providing valuable training opportunities for young staff. The basin coordinators were well-prepared to conduct the basin team meetings and to develop the annual sampling plan.

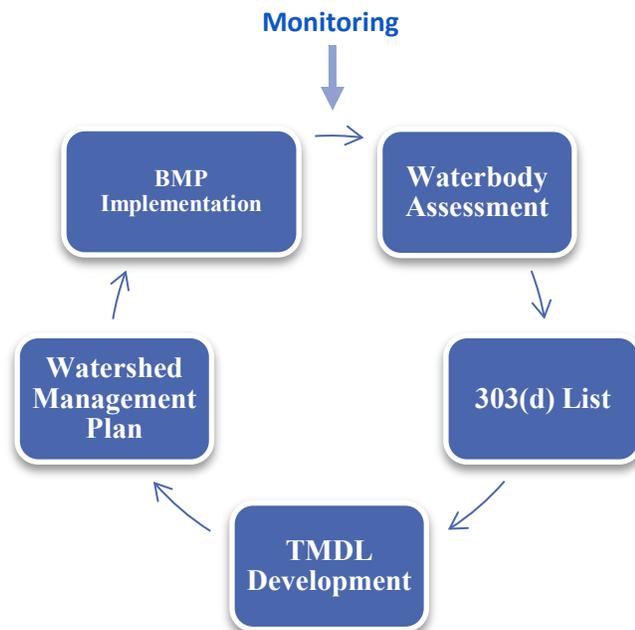


Figure 4: Assessment Strategy

Rivers, Reservoirs, and Tributary Embayment Assessments

Twenty-nine main stem river and reservoir stations on the Alabama, Tallapoosa, and Tennessee River basins were intensively monitored in FY2020. Stations from each basin were originally scheduled to be sampled monthly, from April through October within a one-week period to reduce weather-related variability in water quality conditions. Due to the COVID-19 outbreak, sampling in April was suspended, but sampling efforts resumed in May. Seven samples were collected during the original sampling period (Apr-Oct), which required multiple sampling trips in selected months. 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, which is then exported to EPA's Water Quality Exchange.

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 CWA, 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 will be measured in situ at multiple depths in the water column with a multi-parameter instrument. Using a pump and hose apparatus, water will be collected from the entire photic zone and composited. From each composite, water quality and water-column chlorophyll a samples will be collected, hardness will be collected on any samples between May-September, and algal growth potential testing samples from select stations will be collected once in August. Surface water *Escherichia coli* (*E. coli*) samples will be collected four times during the sampling season for each station. Select stations will be sampled for low-level mercury analysis in November.

Wadeable and Non-wadeable Streams and Rivers Assessments

Thirty-nine locations on wadeable flowing streams and rivers will be sampled as part of the FY2020 Wadeable and Non-wadeable Rivers and Streams Assessment. These include collecting biological, chemical, and habitat data at 13 established and candidate reference reaches located throughout the state to characterize least-impaired conditions within ten Level 4 and five Level 3 Ecoregions. Two locations will be monitored to develop a siltation TMDL. Seven locations will be monitored to document water quality conditions prior to the implementation of the CWA Section 319(h) watershed plans. Nine wadeable flowing streams will be monitored to fully assess use support attainment, to identify waterbodies impaired by NPS pollution, and to develop TMDLs. Monitoring locations were selected to provide data from priority CWA Section 319(h) grant-funded projects, priority watersheds identified by Alabama's Soil and Water Conservation Districts (SWCDs) and stakeholders, Strategic Habitat Units identified by the U.S. Fish and Wildlife Service (USFWS), The Nature Conservancy (TNC), and an EPA/United States Department of Agriculture (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 surveys are conducted to assess biological community conditions and aquatic life use support. Habitat surveys and in situ and water quality samples are collected to help identify any stressors to biological communities, document high-quality waters, and to meet the minimum data requirements for Wadeable rivers and streams specified in Alabama's Assessment and Listing Methodology. In situ measurements and water quality samples include stream flow, dissolved oxygen, pH, conductivity, turbidity, nutrients, water-column chlorophyll *a*, total dissolved solids, total suspended solids, *E. coli*, and total and dissolved metals. Pesticides, semi-volatiles, atrazine, and glyphosate are collected at the sub-set of stations most at risk to impairments from these compounds from agricultural and urban runoff.

Wadeable rivers and streams monitoring is conducted during different sampling periods, based on drainage area and ecoregion, to provide data for the most accurate assessment of biological, physical, and chemical conditions. Macroinvertebrates, fish, habitat surveys, in situ measurements and water samples are collected January-April in waterbodies <5 mi² or located within the Blackbelt region of Alabama (ecoregions 65a and 65b), when these streams are flowing. In situ and water quality samples are collected March-October at all other stream sites. Habitat, macroinvertebrate, and fish surveys are conducted May-late August at Wadeable, flowing stream stations, and August-October at non-Wadeable, flowing streams and rivers.

Implementation of the 2020 Rivers and Streams Monitoring Program was delayed due to the COVID-19 pandemic. All surface water monitoring was suspended March 9-May 8. No samples were collected in March or April. The majority of scheduled samples were collected within the blackbelt stations prior to suspended sampling. The remaining samples were collected in May to provide data to fully assess these sites. Waterbodies <5 mi² are sampled monthly, January-April; the decision was made to postpone sampling these stations until January-April 2021 in order to collect all four samples as scheduled. For all other sites, in situ and water quality sampling continued through November to collect the samples missed in March and April.

Section 319(h) Grant Program Success Story

Joel Branch Restoration: Illustrating a Model Watershed Approach

Waterbody Improved

As urbanization grew in Joel Branch watershed, construction, impervious areas, and stormwater quantity and force caused massive turbidity and erosion of stream channels and drainageways. The Alabama Department of Environmental Management (ADEM) added Joel Branch to the 2008 Clean Water Act (CWA) section 303(d) list of impaired waterways for not fully supporting its use classification of fish and wildlife (F&W) due to a siltation impairment. Dedicated partnerships levered funding sources to implement targeted best management practices that improved water quality; as a result, ADEM removed the segment from the CWA section 303(d) list in 2020.

Problem

Joes Branch begins in Spanish Fort, Alabama, before flowing into Daphne and converging with D'Olive Creek past the Lake Forest subdivision's dam. It then discharges into D'Olive Bay and eventually into Mobile Bay (Figure 4). The watershed is comprised of 64 percent urban and 19 percent forested land. It encompasses an area of 0.97 square miles. Between 2001 and 2016, the developed land in the Joes Branch watershed increased by nearly 24 percent. Increased impervious surfaces reduced rain infiltration rates and increased the overall volume and velocity of stormwater. This caused severe erosion and headcuts of streams and drainage channels and decreased the total amount of retention areas.

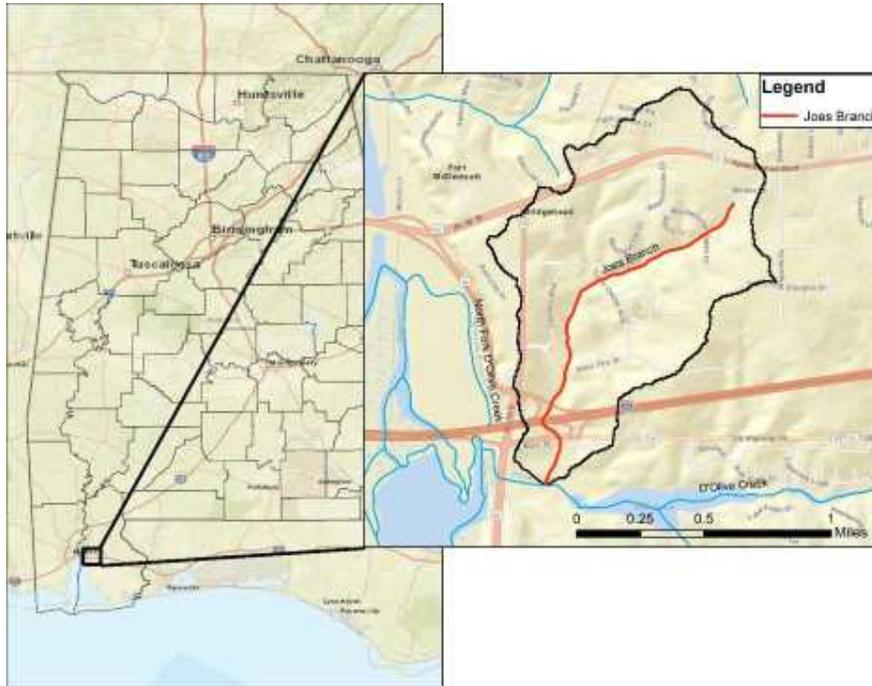


Figure 4: Joes Branch watershed empties into D'Olive Bay in southwest Alabama.

A study by the Geological Survey of Alabama in 2007, which assessed the sedimentation rates in streams in the D'Olive Creek watershed, identified elevated suspended sediment loads within the 1.57-mile segment of Joes Branch. ADEM concluded that Joes Branch no longer supported its F&W use classification due to a siltation impairment resulting from land development; consequently, ADEM included the waterbody on the 2008 CWA section 303(d) list.

Folley Creek was selected as the reference station for this site. When assessing impairment, ADEM's reference condition approach considers ambient water quality data from reference streams in the same ecoregions with characteristically similar watersheds.

ADEM allotted CWA section 319 money from the U.S. Environmental Protection Agency (EPA), which partially supported the Watershed Management Plan for the D'Olive Creek, Joes Branch, and Tiawasee Creek Watersheds—Daphne, Spanish Fort, and Baldwin County, Alabama (WMP). The goal of the plan was to identify scientifically supported and economically effective restoration activities to improve the health and habitat of the impaired waters. Through the WMP development effort, a pathway to recovery was identified.

Story Highlights

The successful delisting of Joes Branch is due to a network of partners and restoration efforts that spanned 6 years and targeted five discrete areas covering stream reaches, wetlands, floodplains, and two detention ponds. For the restoration video, select [here](#); for further information, visit Mobile Bay National Estuary Program's (MBNEP) [website](#).



Figure 5: Incised headcut of the Joes Branch channel. Photo Courtesy of MBNEP

The first project, called JB1, created a series of step pools that restored a degraded channel with an active head cut (Figure 5). These pools cause high-velocity water to slow down and infiltrate, which fosters stream channel habitat restoration (Figure 6). This project was the first of its kind in the D'Olive Creek Watershed, and it showed the National Fish and Wildlife Foundation (NFWF) that continued investment in the watershed was justified. A second project (JB2), continued the step pool conveyance system downstream and completed wetland restoration and floodplain realignment. Section 319 funds were used to help restore the wetlands downgradient of the step pools.



Figure 6: Step pool conveyance system in Joes Branch. Photo Courtesy of Thompson Engineering

ADEM also allocated CWA section 319 funds to add additional step pools to a transition between projects known as JB1 and JB2 (1,400 feet of NFWF-funded stream restoration downstream). This project connected the two restorations and provided a more stable water flow path. It also further stabilized the channel and provided additional habitat.

Results

Post-restoration monitoring of Joes Branch by Marlon Cook revealed sediment loading had reduced by 90–95 percent. Separate monitoring and analysis by ADEM's Water Quality Branch determined that Joes

Branch had been restored to support its water use classification of fish and wildlife. ADEM’s reference condition approach was used to compare ambient water quality data from reference streams in characteristically similar regions of Alabama, known as ecoregions.

The median total suspended solid concentration (7.0 milligrams per liter [mg/L]) from Joes Branch were considerably less than the ecoreference guideline concentration (10 mg/L). In addition, the turbidity samples were less than the applicable numeric criterion. Based on a review of the data, ADEM removed Joes Branch from the CWA section 303(d) list in 2020.

Partners and Funding

The restoration effort received two prestigious awards: the International Green Apple Award and the Gulf Guardian Award for Partnerships. MBNEP was a neutral entity that brought restoration partners together. The cities of Spanish Fort and Daphne used resources and partnerships to restore the waterbody. NFWF’s Gulf Environmental Benefit Fund recognized the targeted approach and committed \$12 million dollars to restoring the D’Olive Creek watershed, with almost \$3 million in federal funding allocated to Joes Branch. CWA section 319(h) funds from multiple fiscal years totaled \$919,668 in federal funding; watershed partners provided \$712,382 in match.

Partners included NFWF; EPA Region 4; Mississippi– Alabama Sea Grant Consortium; City of Daphne; City of Spanish Fort; Baldwin County; Thompson Engineering; Alabama Power; Lake Forest Property Owners Association; Westminster Village Retirement Community; Alabama Department of Transportation; North State Environmental; Southern Excavators, LLC; Geological Survey of Alabama; Cook Hydrogeology, LLC; and others.

NPS Partnerships

Alabama Nonpoint Source Conference



Figure 7: Shannon McGlynn with ADEM’s NPS Unit presents during the NPS Conference.

The Alabama NPS Management Program hosted its biannual Nonpoint Source Conference on January 9, 2020, at the Renaissance Hotel and Spa Convention Center in downtown Montgomery. The event was attended by 236 environmental engineers, biologists, environmental consultants, municipal leaders, watershed stakeholders, and water quality specialists.

Susan Summerlin, Chief of the NPS Unit, started the conference off with welcoming remarks and an introduction into the ADEM NPS Management Program. NPS staff member Shannon McGlynn, presented on the

importance of partnerships, identifying project successes, and the 2019 Mill Creek success story. The conference also provided presentations on a variety of topics such as Successful Trends in Water Quality, Alabama Watershed Stewards, The Future of Water Protection, and Profitable Nature Based Farming.

In addition, the event included more than a dozen exhibits with displays and handouts. Several organizations and agencies participated in the conference including Region 4 of the U.S. Environmental Protection Agency, the U.S. Geological Survey of Alabama, The Nature Conservancy in Alabama, Alabama Association of Conservation Districts, and the Alabama Cooperative Extension System (ACES).

American Society of Civil Engineers – Huntsville Branch Meeting

On March 3, 2020, NPS staff presented at the monthly meeting for the Huntsville Branch of the American Society of Civil Engineers in Huntsville, Alabama. The presentation focused on Working Together for Better Watershed Health. Knowledge of Alabama’s Nonpoint Source Management Program, nonpoint source pollution, CWA Section 319(h) implementation projects, and impaired Alabama streams (Category 4 and Category 5) were all topics focused on during the presentation. Detailed review of impaired streams within Madison County, which comprises Huntsville, urban BMPS, and the importance of design and engineering for urban implementation projects was also included.

Tennessee River Basin Network Annual Meeting



Figure 8: ADEM NPS Unit partners with diverse groups and agencies like the Tennessee River Basin Network to meet NPS pollution reduction commitments in Alabama.

Since 2014 the Tennessee River Basin Network has strived to bring partners representing all eight states within the Tennessee River Basin together through its annual meeting. This year’s event was held on September 15-16, 2020, and focused on connectivity, NPS pollution, and diversity and inclusivity in environmental platforms. On the second day of the conference, NPS Unit staff presented on “Communities Committed to Reaching Success”. The presentation reviewed sources of nonpoint source pollution and focused on the 2018 and 2017 Section 319(h) success stories for Hester Creek in Madison County and Crowabout Creek in Morgan County, respectively.

The conference also offered opportunities for presentations on water management resources and agricultural management measures, hydromodification and barrier removal practices, aquatic connectivity and biodiversity, the importance of diverse stakeholders and engaging partnerships, and how the network community at large can work together to improve nonpoint source pollution by also involving unique and diversified groups.

National Water Quality Initiative in Alabama (NWQI)

In FY2020, ADEM continued to partner with the NRCS as part of the NWQI to target the Guntersville Lake – Scarham Creek (HUC 06030001080) within the Tennessee River Basin. 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 2020. On April 30, 2020, the NRCS hosted a State Technical Committee Teleconference meeting to discuss nominations for additions/changes to NWQI priority watersheds for 2021 (Table 3). Topics included watershed selection,

important NWQI program changes, and details of the NRCS NWQI watershed assessment guidance. In preparation for the selection of watersheds for the next fiscal year, ADEM and NRCS corresponded throughout the year. A follow up NRCS State Technical Committee Teleconference meeting occurred on September 24, 2020, during which several new NWQI priority watersheds were identified for targeted planning and potential future implementation.

TABLE 3. LIST OF APPROVED NWQI WATERSHEDS IN ALABAMA FOR 2021

HUC-12 Code	HUC-12 Name
031601110202	Graves Creek
060300010801	Cross Creek
060300010802	Upper Short Creek
060300010803	Upper Scarham Creek
060300010804	Whippoorwill Creek-Shoal Creek
060300010805	Lower Scarham Creek
060300010806	Middle Short Creek
060300010807	Lower Short Creek

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 received a subaward from ADEM to implement the Upper Scarham Creek Watershed Project using FY14 Section 319 funding. The WMP was implemented by leveraging funding provided by the NRCS, ADEM Section 319 Program, and other partners, August 2015-February 2018. Best management practices continue to be implemented in this watershed (Table 4).

TABLE 4. USDA NWQI Practices Summary for the Upper Scarham Creek Watershed

Practice Name	Practice Unit	Applied Amount	Applied Count
Animal Mortality Facility	Number	3	3
Comprehensive Nutrient Management Plan - Written	Number	5	5
Conservation Crop Rotation	Acre	208	5
Cover Crop	Acre	208	7
Fence	Feet	23,390	22
Heavy Use Area Protection	Square Feet	29,980	31
Herbaceous Weed Treatment	Acre	234.8	4
Improved grazing management for soil compaction through monitoring activities	Acre	33.8	2

Livestock Pipeline	Feet	6075.8	12
Nutrient Management	Acre	48.3	2
Pasture and Hay Planting	Acre	106.4	13
Reduce ozone precursor emissions related to pesticides by utilizing IPM PAMS techniques	Acre	16	1
Residue and Tillage Management, No Till	Acre	143.4	6
Stockpiling cool season forage to improve plant productivity and health	Acre	3.5	1
Stream Crossing	Number	1	1
Waste Storage Facility	Number	4	4
Watering Facility	Number	18	18

Alabama Watershed Stewards (FY16)

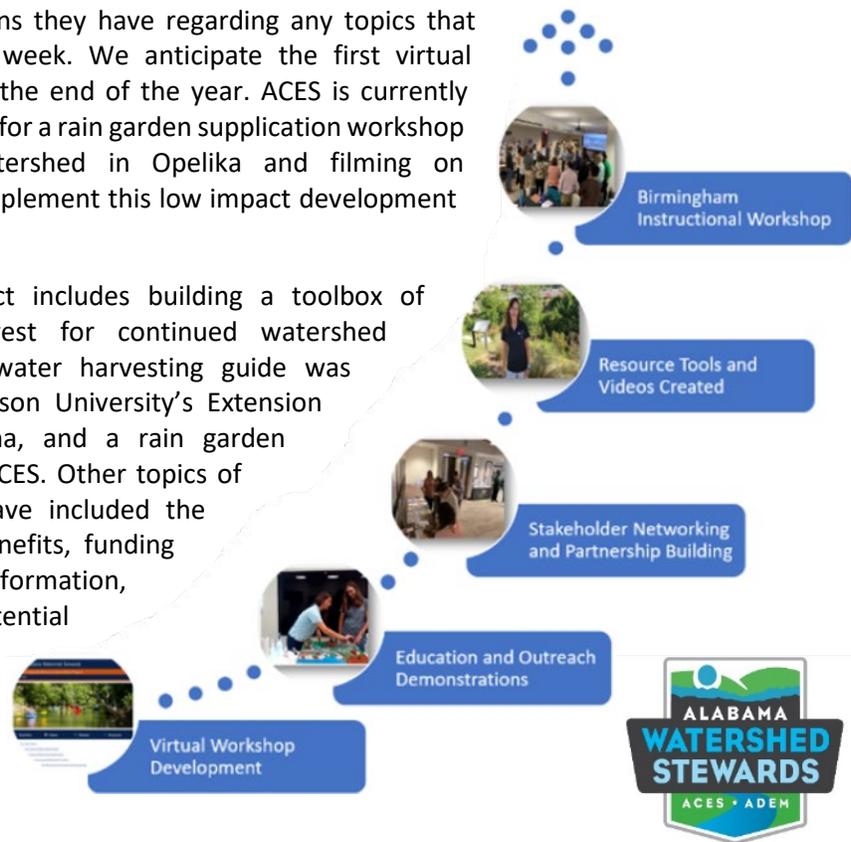
In January of 2020, the ACES began its second phase of Alabama Watershed Stewards. The ACES and ADEM envisioned this phase would initiate the process of spreading the program statewide, not only with instructional workshops teaching about watersheds, planning, best management practices, water quality impairments, how to connect with the right people within their communities, and how to contribute to environmental stewardship, but also with additional supplication workshops to show stakeholders how to take the next steps. Additional topics would include backyard stream repair, rain gardens, litter clean-ups, etc. This would help build a network of watershed stewards in the area and also build confidence within the community on how to take the next steps for individuals to improve the world around them.

These workshops were slated to take place in the cities of Birmingham, Enterprise, and Hartselle and Mobile/Baldwin Counties. These areas were identified as priority locations by ADEM as places where watershed management plans and project implementation projects were anticipated. ACES would identify interested stakeholders in the watershed and help connect them to projects with opportunities to strengthen networking and the stewardship base.

The initial instructional Birmingham workshop took place on March 5, 2020. It was a huge success with 29 attendees from the area. It was an all-day workshop with engaging discussions that connected people from agencies and municipalities with members of the community to work towards a common goal of improving water quality in their area. Unfortunately, the other workshops, both instructional and supplication, had to be postponed due to the COVID-19 pandemic.

Both ACES and ADEM acknowledge that COVID-19 protocols created a temporary setback, but both agencies refused to let this invaluable program remain dormant. As the pandemic progressed, ACES developed and began trial runs of the online virtual workshop option with two groups reviewing the modules so far. The online version breaks the workshop into several small components of weeklong virtual classrooms, slides, and survey/feedback questions. At the end of the week, participants join in for a live, virtual round up session where they can connect to people in their community and discuss questions they have regarding any topics that were covered throughout the week. We anticipate the first virtual workshop to take place before the end of the year. ACES is currently working on securing the location for a rain garden supplication workshop in the Pepperell Branch Watershed in Opelika and filming on instructional video on how to implement this low impact development (LID) BMP around Alabama.

Another benefit of this project includes building a toolbox of resources on topics of interest for continued watershed stewardship. This year a rainwater harvesting guide was created with the help of Clemson University’s Extension Program out of South Carolina, and a rain garden handbook is being drafted by ACES. Other topics of discussion for the tool box have included the following: LID and its many benefits, funding resources, litter cleanup information, backyard stream repair, potential creation of a podcast to discuss topics of importance in protecting water quality, and others. Some of these tools will be in print format, and some will be videos.



D'Olive Creek Watershed Management Plan Update (FY17)

The D'Olive Creek watershed is part of the Tensaw River – Apalachee River Basin (HUC 03160204-0505) and is located in Baldwin County, Alabama. ADEM has included D'Olive Creek and one of its tributaries, on the CWA section 303(d) list of impaired waterways, with a cause identified as siltation (habitat alteration) as a result of land development. In the 2018 CWA section 303(d) list, D'Olive Creek was also added for pathogens from D'Olive Bay to its source.

“Excessive erosion and sedimentation have plagued the approximately 7,700-acre D'Olive Creek Watershed since the 1970s. Population growth and urban development have continued to intensify problems in each of the Watershed’s three principal drainages (D'Olive Creek, Tiawasee Creek, and Joes Branch) with the Cities of Daphne and Spanish Fort and unincorporated areas of Baldwin County. Increased volume and velocity of stormwater runoff, as well as changes to local drainage patterns, have exacerbated concerns over erosion and sedimentation within the watershed’s stream network, Lake Forest Lake, D'Olive Bay, and Mobile Bay. This WMP outlines a holistic approach to (1) reduce sediment

sources; (2) repair degraded stream channels; and (3) restore the Watershed’s hydrology to the maximum extent technically feasible.” (D’Olive Creek Watershed - MBNEP Website)

The D’Olive Creek watershed partners and stakeholders have been continually working on improving water quality and habitat for the last ten years. During this time, there has been a strong focus on stream restorations, stormwater management BMPs, partnering and planning, and education and outreach. As a result, Joes Branch was able to be removed from the Section 303(d) list of impaired waterways and has been identified as meeting its water use classification. Although stakeholders are proud of the progress that has occurred over the last ten years, they recognize that they have further to go. Therefore, they have started planning for the next ten years.

In August of 2020, MBNEP was awarded a Section 319 grant to help supplement efforts with watershed planning that were started by ADCNR and NFWF. Geosyntec and partners were awarded the project via a vetted process of Request for Qualifications, Statement of Qualifications, and interviews. This project will continue with the integrity of an EPA nine key element watershed management plan and update information to address climate vulnerability, recreational access and recommendations, historical and culturally significant resources, a comprehensive monitoring strategy (to include volunteer monitoring), current conditions of habitats determined to be most stressed, as well as continue to draw on the six common values that are important to the coastal way of life.

Although COVID-19 has made the planning process more challenging, partners in this watershed are still moving forward. At this time, initial field assessments have been completed, an updated GIS database is in progress and includes a modification of the original watershed boundaries, an updated watershed characterization is in progress and nearing completion, a climate vulnerability assessment is in progress and nearing completion, a development of watershed conditions/critical areas is in progress and nearing completion, and community engagement is underway.

Shoal Creek Watershed Management Plan (FY20)

The Shoal Creek watershed is in the Tennessee River Basin within Morgan County, Alabama. Shoal Creek is part of the Sleighton Branch-Shoal Creek watershed and functions as a sub-watershed of the Flint Creek watershed, which flows into the Wheeler Reservoir on the Tennessee River. Shoal Creek flows southwest for 10.9 miles from its source to its confluence with Flint Creek. The Shoal Creek watershed comprises 10,142.72 acres, with a drainage area of 15.85 square miles. The Shoal Creek watershed is dominated by agricultural lands in the northern and northeastern portions of the watershed. Shoal Creek has a use classification of fish and wildlife. Major sources of impairment in the Shoal Creek watershed have been identified as nonpoint sources from urban runoff/storm sewers. The significant percentage of impervious surface area, combined with limited stream buffers, has direct impacts to the water quality within the watershed.



SHOAL CREEK WATERSHED MANAGEMENT PLAN

January 2015 (Revised March 2020)



Figure 9: Cover page for Shoal Creek WMP.

In 1998, ADEM placed a 10.9-mile segment of Shoal Creek on the CWA Section 303(d) list due to organic enrichment/low-dissolved oxygen, and pathogens due to agriculture and urban runoff/storm sewers. The impaired segment extends from its headwaters to the confluence with Flint Creek. In September 2003, a final TMDL was approved for each pollutant.

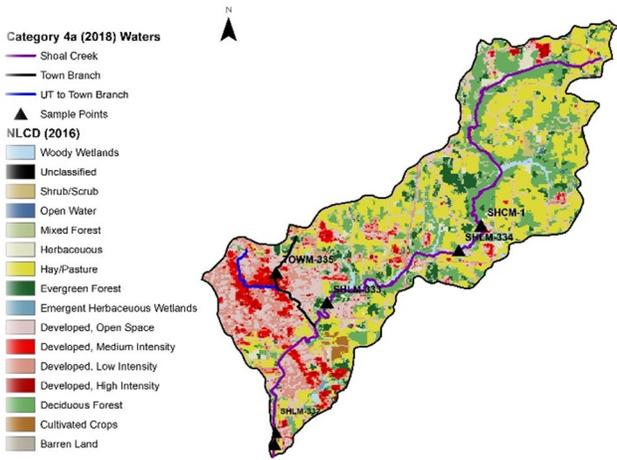


Figure 10: 2016 Land Use Map for Sleighton Branch-Shoal Creek Watershed.

The development of a WMP for the Shoal Creek- Phase I Project was completed in January 2015. This project included a diversified approach to improve water quality within the Shoal Creek watershed and reduce nonpoint source pollutants. This project developed a plan following EPA’s nine minimum elements for successful watershed planning.

Phase I focused on agricultural sources of NPS pollution into Shoal Creek. Project funds were also able to contribute to LID workshops and education, as well as implementation of LID management measures.

Shoal Creek - Phase II (FY2020) will focus its attention of urban sources of NPS pollution within the Shoal Creek watershed. The Shoal Creek - Phase II project will bring about updates to the WMP following EPA’s nine key elements. Updates to the WMP will include Phase I management measure implementation, updated water quality data, wildlife estimates, habitat assessments, land use, soil characteristics, and urban sprawl. Education and outreach and community involvement will be crucial to the success and advancement of long-term project success for the Phase II project.

The last three months have focused on compiling updated data and writing updates to the watershed management plan. Close communication with the project coordinator has aided in developing updates to the WMP. Stakeholders and partners will be highly engaged in the planning process and success of this Phase II project.

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 ADEM has established to implement projects and enhance water quality in Alabama:

- The **National Fish and Wildlife Foundation (NFWF)** continues to partner with **Mobile Bay National Estuary Program (MBNEP)** and ADEM in watersheds along the coast, implementing stream restorations and the restoration of wetlands.
- 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.

- The **Natural Resource 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 CWA Section 319(h) 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. 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. 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 **United States Fish and Wildlife Service (USFWS)**, in conjunction with the **Alabama Department of Conservation and Natural Resources (ADCNR)** and the U.S. **Geological Survey of Alabama (GSA)**, 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 strategic habitat units 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 strategic habitat units where 319 implementation projects have occurred.
- The **U.S. EPA Region 4** provides administrative oversight and support for the CWA Section 319(h) 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.
- **Weeks Bay National Estuarine Research Reserve (WBNERR)** and the **MBNEP** work in conjunction with the **ADCNR** and ADEM in watersheds along the coast, implementing stream restorations, agricultural BMPs, and the restoration of wetlands.

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 groundwater festival is to educate 4th grade students, and indirectly their guardians and the community, on groundwater issues. The festival activities cover the definition of groundwater, the use of groundwater, and its susceptibility to contamination. The Groundwater and Water Festivals are a culmination of classroom study and hands-on activities. Students have the opportunity to experience firsthand, through experimentation and problem solving, the complexity of groundwater and its relationship to nature in general. This is the 21st year of Groundwater and Water Festivals in Alabama. ADEM NPS Staff have assisted with providing guidance during festivals, training presenters, and presenting classroom demonstrations.



Figure 11: Students learn about the water cycle at the Covington County Groundwater Festival.

Reduce, Reuse, Recycle Binder Distribution to Area Schools

From September to October, the ADEM donated over four hundred binders to local schools for use. The binders provided a teaching opportunity for educating students on the “3 R’s” of waste reduction - Reduce, Reuse, and Recycle. Reusing binders helps to save money, energy, and natural resources within our communities. The binders were distributed to Highland Avenue Elementary School, Highland Gardens Elementary, Dalraida Elementary School, Capitol Heights Middle School, and Chisholm Elementary School, all within Montgomery County. Binders were also distributed to Stanhope Elmore High School and Millbrook Middle School in Elmore County.



Figure 12: Inserts reminded the students to reduce waste through reusing.

Alabama Environmental Youth Council Meeting

The Alabama Environmental Youth Council acts as ambassadors in engaging youth from around the state in projects and volunteer actions that promote sustainability in our communities. The Alabama Environmental Youth Council is comprised of twenty high school students from varied regions of the state who demonstrate leadership and determination. Alabama Environmental Youth Council's main focus is caring for Alabama's natural environment in the present and in the future.

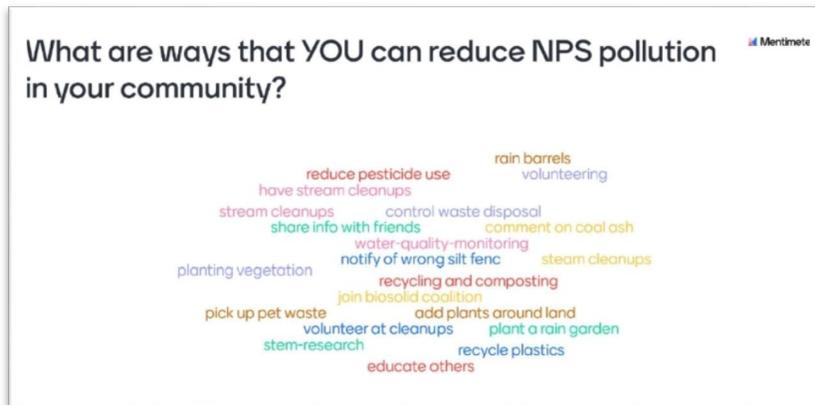


Figure 13: Students provided answers during the presentation on how individuals could reduce NPS pollution.

On October 28, 2020, NPS Unit staff presented on “Water Quality: What YOU Can Do” to the Alabama Environmental Youth Council. The presentation educated on nonpoint source pollution, what a watershed is, what a healthy stream looks like, and urban and agricultural management measures to reduce sources of nonpoint source pollution. The presentation provided opportunities for the high school students to think about their actions on reducing nonpoint source pollution in their community as well as how they can be involved through volunteering, water quality monitoring, stream cleanups, and developing green ideas.

Tennessee River Basin Network Annual Meeting

Since 2014 the Tennessee River Basin Network has strived to bring partners representing all eight states within the Tennessee River Basin together through its annual meeting. This year's event was held on September 15-16, 2020, and focused on connectivity, NPS pollution, and diversity and inclusivity in environmental platforms. On the second day of the conference, NPS Unit staff presented on “Communities Committed to Reaching Success”. The presentation reviewed sources of nonpoint source pollution and focused on the 2018 and 2017 Section 319(h) success stories for Hester Creek in Madison County and Crowabout Creek in Morgan County, respectively.

The conference also offered opportunities for presentations on NRCS water management resources and agricultural management measures, hydromodification and barrier removal practices, aquatic connectivity and biodiversity, the importance of diverse stakeholders and engaging partnerships, and how the network community at large can work together to improve nonpoint source pollution by also involving unique and diversified groups.

Alabama Rivers and Streams Network Meeting



Figure 5: Presentations during the ARSN Meeting.

Alabama Rivers and Stream Network (ARSN) is comprised of non-profit organizations, private companies, state and federal agencies, and citizens. ARSN works to investigate water quality, habitat conditions, and biological quality in rivers and streams and communicate those results to the public. ARSN holds an annual meeting to bring together partners to learn about new and existing projects that focus on the habitat needs of Alabama’s aquatic species. The meeting allows for development of partnerships and a direct approach to working together to improving the water quality within Alabama’s rivers and streams.

On January 14-15, 2020, ADEM staff attended the annual meeting at Camp Meadowbrook in Cullman, Alabama. This year’s ARSN meeting saw a variety of presentations from the U.S. GSA, The Nature Conservancy, USFWS, Auburn University, Freshwater Land Trust, and other partners.

Stormwater Management: Development Practices Workshop

NPS staff attended the Stormwater Management: Development Practices Workshop on January 30, 2020. The workshop, held in Mobile, was hosted by the University of South Alabama (USA) and the MBNEP. Presentations focused on LID practices for green infrastructure (GI) implementation and enhanced stormwater management. Topics presented included stormwater management, LID practices and vegetation guide, LID case studies, operation and maintenance of LID, as well as cost comparisons of LID versus more traditional measures. The day was concluded with a field visit to completed installations of LID practices on the USA campus.



Figure 6: Workshop participants visit implemented LID practices.

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

Alabama River Basin

• Catoma Creek (031502010301, 031502010302, 031502010303, 031502010304, 031502010305, 031502010306, 031502010307, 031502010308, 031502010309, 031502010310, 031502010311)	230,729 acres	Complete
• Baldwin Slough (031502010307)	17,280 acres	Complete
• Headwaters/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	Being Updated

Black Warrior River Basin

• Brindley Creek (031601090105)	15,638 acres	Complete
• Long Branch (031601090303)	19,752 acres	Complete
• Black Branch-Cane Creek (031601090404)	40,670 acres	Complete
• Ryan Creek (031601100501, 031601100502)	42,874 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 (031502020303)	39,908 acres	Complete
• Dry Creek (031502020902)	5,312 acres	Complete

Chattahoochee River Basins

• Moores Creek (031300020907)	11,558 acres	Complete
• Mill Creek (031300030101)	15,729 acres	Complete

Chipola River Basins

- Cowarts Creek (031300120201, 031300120202, 031300120203) 77,066 acres Complete

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
- Eastaboga Creek (031501060513) 18,286 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)

Escambia Basin

- Ganntt Millpond-Feagin Creek (031403010403) 12,064 acres Complete

Escatawpa Basin

- Juniper Creek-Big Creek (031700080401) 5,936 acres Complete

- Bayou la Batre (031700090102) 19,562 acres Complete

Mobile Basin

- 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 61,735 acres Complete
 - Targeting the following subwatersheds:
 - Upper Dog River (031602050101)
 - Halls Mill Creek (031602050102)
 - Lower Dog River (031602050103)
- Western Shore 16,534 acres In Progress
 - Targeting the following subwatersheds:
 - Deer River (031602050105)
 - Garrows Bend (031602050105)
 - Delchamps Bayou (031602050105)
- Fowl River (031602050104) 39,739 acres Complete
- West Fowl River (031700090103) 20,489 acres Complete
- Weeks Bay 129,610 acres Complete
 - Targeting the following Subwatersheds:
 - Upper Fish River (031602050201)
 - Middle Fish River (031602050202)
 - Magnolia River (031602050203)
 - Upper Fish River (031602050204)
- Bon Secour Watersheds 43,673 acres Complete
 - Targeting the following subwatersheds:
 - Bon Secour River (031602050206)
 - Skunk Bayou (031602050207)
 - Oyster Bay (031602050208)
- Dauphin Island (031700090202) 3,851 acres In Progress
- Fly Creek 21,900 Acres In Progress
- Mobile Tensaw Delta 37,000 acres In Progress
 - Targeting the following subwatersheds:
 - Tensaw-Appalachee River (031602040505)
 - Grand Bay (031602040403)
 - The Basin (031602040203)

Perdido Basin

- Wolf Bay (031401070201, 031401070202, 031401070203) 36,296 acres In Progress
- Gulf Frontal 50,513 acres In Progress
 - Targeting the following subwatersheds:
 - Little Lagoon (031401070205)
 - Perdido Pass-Frontal Gulf of Mexico (031401070204)

Tallapoosa Basin

• Town Creek (031500010301)	150 acres	Complete
• Wolf Creek-Copper's Rock (031501081004)	23,488 acres	Complete
• Moore's Mill Creek (031501100202)	7,360 acres	Complete
• Sougahatchee Creek	108,482 acres	Complete
Targeting the following subwatersheds:		
○ Upper Sougahatchee Creek (031501100102)		
○ Middle Sougahatchee Creek (031501100103)		
○ Lower Sougahatchee Creek (031501100104)		
• Parkerson Mill Creek (031501100202)	5,981 acres	Complete
• Pepperell Branch (031501100202)	9,216 acres	Complete
• Emuckfaw Creek (031501090308)	31,877 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	Being Updated
• 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	Being Updated
• Anderson Creek (060300040404)	37,913 acres	Complete

• Big Nance Creek (060300050104, 060300050105)	52,152 acres	Complete
• Cross Creek (060300010801)	21,259 acres	Updated

Implementation of Watershed Plans

Black Warrior River Basin

Graves Creek Watershed Management Plan Implementation- Phase II (FY17)

Graves Creek watershed (HUC 03160111-0202) is located in Blount County. Graves Creek is a tributary to Locust Fork River, which is part of the Black Warrior River Basin. It has a linear distance of 9.62-miles and a drainage area of 14.4-square miles. Graves Creek was originally placed on CWA Section 303(d) list of impaired waterways in 1992 for organic enrichment/low dissolved oxygen. Its use classification is fish & wildlife.



Figure 16: Cross fencing implemented as part of the Graves Creek Phase II project.

The Graves Creek Watershed Management Plan Implementation Project - Phase II is designed to implement BMPs for addressing the sources and causes of impairment in Graves Creek as identified in the updated 2016 Graves Creek watershed management plan and to attain the pollutant load reductions outlined by the 2002 Graves Creek TMDL for low dissolved oxygen/organic loading. The project is being implemented with the help of Blount County SWCD and other partners.

The Graves Creek Watershed Management Plan Implementation - Phase II Project, which began on April 26, 2018, is a continuation of the Phase I Project. The Phase II Project continues to target critical areas within the watershed and further

the goal of helping Graves Creek achieve water quality standards for fish and wildlife use classification. The project has been advertised to stakeholders through mailed flyers, promoted through word of mouth, and distributed fliers at the Blount County Fair.

To date, one application for 2,638 feet of cross fencing has been completed. The other approved applicants are working on approved practices. An additional agricultural application has been received, and the landowner is waiting on district approval to begin implementation. The watershed coordinator has given the approved applicants a six-month period to complete practice implementation. No education and outreach activities have occurred during this reporting period.

Total Load Reductions:

- 115.3 lbs/yr of nitrogen
- 5.3 lbs/yr of phosphorus
- 0 tons/yr of sediment

Ryan Creek Watershed Implementation Project (FY18)

Ryan Creek watershed is comprised of two subwatersheds within Cullman County in the Upper Black Warrior sub-basin, the Headwaters Ryan Creek – Alvis Branch (HUC 03160110-0501) and the Bavar Creek – Ryan Creek (HUC 03160110-0502). Ryan Creek was first listed on the CWA Section 303(d) list of impaired waterways in 2006, and a TMDL for pathogens (*E. coli*) for Ryan Creek was approved in 2010. The impaired reach length is 16.2-miles and encompasses a drainage area of 66.9-square miles. The aim of this project is to reduce pathogen sources to Ryan Creek to help meet state water quality standards, through the implementation of the Ryan Creek Watershed Management Plan.

The Ryan Creek Watershed Implementation Project, which began September 6, 2019, is being implemented in partnership with Cullman County SWCD. During this reporting period, four applications are awaiting an initial field visit. Field visits have been delayed due to COVID-19 guidelines. One application in the Bavar Creek – Ryan Creek watershed for 2,200 square feet of waste storage facility (drystack), 2,365 square feet of roof and covers, and 820 square feet of heavy use protection area was completed. One application was cancelled by the applicant.

The Ryan Creek Watershed Implementation Project continues to be discussed at District board meetings. There was a follow up article to the May 13, 2020, board meeting in the Cullman Times, which discussed the Ryan Creek Project and the availability of funds for best management practices. The District also promoted the project at education events such as the Young Farmer’s Entrepreneur Class and teacher’s workshop. Living with the reality of COVID-19, the future of in-person events with our schools and the community is unsure and will look very different from pre-pandemic events. The District is considering virtual events, outdoor activities, and downsizing the number of guest who are allowed to attend each event. However, to make up for the downsizing of attendance, an increasing number of presentations will allow more stakeholders to be reached. The District does not want to lose the interest of the future generation in the protection and conservation of natural resources during the pandemic.

Total Load Reductions:

- 426.5 lbs/yr of nitrogen
- 29.5 lbs/yr of phosphorus
- 0 tons/yr of sediment



NRCS

Merry Gaines
District Conservationist

Dustin Potter
Soil Conservationist

Mark Butler
Soil Technician

319 and State Cost Share Funding Available

Cullman County Soil and Water Conservation District is pleased to announce Project 319 and State Cost Share has been approved. Incentive payments for best management practices will be made to qualifying landowners that live in the project area. Examples of practices included fencing, heavy use areas, waste storage facility, watering facility, critical area improvement and pasture planting, etc. Natural Resource Conservation Service’s Environmental Quality Incentive Program rules and regulations apply. For more information contact the Cullman County Soil and Water Conservation District office.

Figure 77: The project was announced in the Cullman County Soil and Water District brochure.

Chattahoochee River Basin

Moore's Creek Watershed Management Project – Phase II (FY16/17)

Moore's Creek Watershed (HUC 03130002-0907) drains approximately 18.06-square miles (11,558-acres) and is within the Middle Chattahoochee-Lake Harding River Basin (HUC 03130002). The ADEM identified Moore's Creek as being impaired by siltation due to habitat alteration for a length of 11.4-miles, from the Chattahoochee River to its source. Moore's Creek was first added to Alabama's 2012 CWA section 303(d) list of impaired waterways based upon 2007 habitat and macroinvertebrate data. In 2018, the ADEM Water Quality Branch added a second impairment to Alabama's CWA section 303 (d) list for pathogens based off water chemistry data that was obtained in 2014 and 2016.



Figure 18: Artist rendering of expected vegetation after 3-5 growing seasons.

Phase II of the Moore's Creek Watershed Implementation Project ran from February of 2018 to May of 2020. This project builds on the success of Moore's Creek - Phase I. Local stakeholders worked collaboratively to identify new watershed priorities. Project partners outlined projects for Phase II that made good environmental, economic, social, and project management sense. Phase II incorporated EPA's nine key watershed management plan elements (per Section 319 grant guidelines); targeted a Section 303(d) impaired water; and addressed Section 319 priority pollutants (e.g., nitrogen, phosphorus, sediment, and pathogens). Partners outlined plans to leverage financial resources and provide the public and private sector with critical resources to restore Moore's Creek to state water quality standards.

The primary focus of the Moore's Creek - Phase II project proposal was streambank stabilization of a highly visible reach of Moore's Creek located in the City of Valley directly upstream of 55th Street West (Fob James Dr.) and directly downstream to 20th Avenue (AL-29). The proposed starting location of this project was adjacent to Valley City Hall and ended in front of Lafayette Lanier Elementary School. The stream suffered from lack of floodplain connection, eroding streambanks, poor vegetation community (no shade or habitat), and trash and debris in the channel.

The primary goals of the stabilization work were to provide stabilization to reduce sediment loads originating from the site and to increase the efficiency of water and sediment transport. Secondary goals included improved habitat (in-stream and riparian) and aesthetic value. Construction began on November 5, 2019, with the final walk through in January of 2020 by the project coordinator and project engineers. Grading and streambank stabilization began upstream, moving progressively downstream in approximately 100 linear foot sections. Stabilization work included relocating sections of Reach One, the upstream reach, away from the steep slopes on the left bank, reconnecting the stream with the floodplain, and adding in-stream structures to provide bank stability and flow control. Slopes had a final grading of 3:1. Volunteers helped plant the stream project with over 300 plants in two days. The project held up very well despite the significant rainstorms that occurred following implementation of final measures. Some maintenance was required but overall, the resilience of the stream was very impressive.

During the project, another site was identified that needed immediate correction. The slopes along a tributary that discharged into the restored Reach Two, the downstream reach, of Moore's Creek were failing. The project had additional money left over since the Hwy 50 project area in Lanett was not viable

at this time due to unexpected circumstances and a lack of additional resources. Therefore, additional funding was used to buy materials to assist in the stabilization of the slope area along Fob James Drive. Flex-a-mat was used to stabilize the slope immediately after bank stabilization and seed was added to further enforce protection of the area. This work was completed by the City of Valley.



Figure 19: Before (left) and after (right) pictures of the slope stabilization on the tributary to Moores Creek.

A third project activity involved the Chambers County EMA/911 Center located within the Moores Creek Watershed in Huguley, Alabama. The existing stormwater basin often overflowed over the emergency spillway and was not aesthetically pleasing despite it being very visible from the highway. It is possible that surrounding development and additional impervious surfaces were contributing more stormwater than the BMP was originally designed to receive. The Moores Creek Project developed plans to improve water quality and promote infiltration by adding aesthetically pleasing native vegetation and improving habitat.

The ACES Water Team coordinated with the Chambers County Career and Technical School agriculture classes to help design a rain garden. There was community interest in hosting an additional Design Your Own Rain Garden workshop apart from the contest. Community members and partners met on August 23, 2019, for the event. Many attendees expressed plans to implement the knowledge gained in and around their own homes. In coordination with the Chattahoochee Riverkeeper and Point University students and other volunteers, rain garden site preparations took place on October 18, 2019. Students and volunteers excavated approximately six inches of topsoil in the drainage area. Soil was mixed with hardwood mulch and replaced to a depth of approximately three inches to allow for ponding. On October 28, 2019, partners and volunteers were joined by Chambers County Career Tech students to install native vegetation in the prepared rain garden bed. Native plants provided at a discounted rate by Ponders Nursery included soft rush, blue flag iris, swamp milkweed, black-eyed susans, and purple coneflower. These plants at maturity promote water quality by filtering out excess nutrients, improving infiltration, and restoring habitat. Also, part of the design plans included upland plants that added to the habitat value of the area as well as the aesthetics. Furthermore, an educational sign was developed for the site. Installation of the upland plants and the educational sign were provided by partners.

The project partners were heavily involved in education and outreach activities. There were at least 50 education and outreach events recorded through the project life. Project partners spanned the Cities of Lanett and Valley, the Chattahoochee River Keeper, Chambers County Emergency Management Agency, Zink Environmental, Jennings Environmental, Hydro LLC, Chambers County School, Lanett City Schools, Chambers County Sheriff, North State Environmental, Coosa Valley RC&D, Point University, NRCS, Chambers County SWCD, Chambers County Extension, Chambers County Commission, 5 Smooth Stones Restoration, PLLC, East Alabama Water, Sewer, & Fire Protection District, Alabama Department of Transportation, Alabama Power, and many more.

Moore's Creek: A Stream Restored

The Story of Moore's Creek

The stream you see before you didn't always look this way. Moore's Creek is an urbanized stream and, as such, has a lack of flood plain, reduced streamside vegetation, impaired habitat for wildlife, and excessive sedimentation from streambank erosion and land development. Since 2014, stakeholders and partners throughout the community have worked on restoring water quality, implementing natural stream designs, and creating a better habitat in Moore's Creek, as well as improving watershed stewardship in the community.

Taking a Watershed Approach

A watershed is an area of land that water flows across, through, or under on its way to a stream, river, lake, bay or other water body. Water drains to one central location in a watershed. The Moore's Creek watershed covers portions of Hagley, Laurel, and Valley. Actions we take in our homes, backyards, parks, schools and places of work can influence the health and cleanliness of our local water. Everything that happens upstream affects everything downstream. All land areas are part of a watershed, so no matter where you live, your actions can help improve local environmental quality.

Watershed Restoration

Moore's Creek was added to Alabama's impaired waterways list for stream and elevated pathogen counts. Alabama Cooperative Estuarine System (ACES) and the Alabama Department of Environmental Management (ADEM) helped organize and guide the Moore's Creek Watershed project. Stakeholder involvement helped identify priority areas in the watershed to help restore the health of the waterway.

This stream restoration site is only one of the prioritized areas within a larger watershed restoration approach. At this location, instream structures were installed to help direct water off the streambanks and help prevent erosion. In addition, restoration of the flood plain, installation of native streamside plants to stabilize the banks, and new maintenance operations championed by the City of Valley occurred. Stakeholders and community leaders have played a role in watershed stewardship, and community partnerships have driven watershed improvements.

For more ideas on how you can create a better watershed future, please visit Alabama Watershed Steward website at: <https://ah.watershedsteward.com> and the Clean Water Future website at: <https://www.cleanwaterfuture.com>



Replanting

The City of Valley and project volunteers helped plant more than 3,000 native plants along the length of the streambank. The roots of these native plants will help hold the soil in place during big storm events. Native plants also help improve soil and filter stormwater pollutants, while also providing valuable habitat.

The native plants will grow into a colorful and protective riparian buffer for the creek, similar to the visualization on the right below.



2019. After stream restoration, native plants not yet visible.



Visualized vegetation growth in 5+ years.

Outdoor Classroom

Moore's Creek is an ideal place for students to get hands-on learning opportunities to explore topics like watersheds, habitat restoration, the importance of natural habitat, and community stewardship.

Look at Moore's Creek. Can you spot these plants?



Figure 8: Sign used at the walking trail along the Moore's Creek Restoration in front of Valley City Hall.

Total Load Reductions:

- 24,639 lbs/yr of nitrogen
- 1,292 lbs/yr of phosphorus
- 269 tons/yr of sediment

Mobile River Basin

Tiawasee Creek Watershed Implementation Project (FY16/17)



Figure 21: Post construction picture of the Tiawasee Creek stream restoration in January 2020.

The D'Olive Creek watershed, of which Tiawasee Creek is one of 3 main tributaries, is a subwatershed of the Tensaw River – Apalachee River Basin (HUC 03160204-0505) and is located in Baldwin County, Alabama. Since 2008, ADEM has included Tiawasee Creek and one of its tributaries on the CWA Section 303(d) list of impaired waterways, with an impairment identified as siltation (habitat alteration) because of land development.

This Tiawasee Creek project continues to build on the successes of the watershed restoration that is occurring with the efforts of multiple partners throughout the D'Olive Watershed. This project includes approximately 750-linear feet of stream restoration along the main channel of Tiawasee Creek and two enhancements of stormwater facilities along the impaired Unnamed

Tributary (UT) to Tiawasee Creek aimed to improve water quality, stormwater quantity, and stormwater velocity entering into the waterway.

Areas that will be addressed for the stream restoration efforts are: 1) channel incision, impacting riffle-pool habitat availability and affecting 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. The 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. Vegetation in the riparian corridor benefits water quality and habitat by regulating temperature, adding organic matter (leaves and twigs), assisting in pollution reduction, stabilizing streambanks, and providing wildlife habitat. The most stable and effective riparian buffers include a combination of native trees, shrubs, grasses, and herbs that form functional plant communities. The restoration project includes a native vegetation plan.

The overall goal of the stream restoration component of the project is to reduce sediment loads on Tiawasee Creek, as well as the main stem. This will in turn will contribute to efforts that will eventually lead to the removal of Tiawasee Creek from Alabama's CWA Section 303(d) list of impaired waterways. The stream restoration is a complementary project with an Emergency Watershed Protection (EWP) project by NRCS, which addressed stormwater management and a portion of stream restoration. Together with this project, 1,037 linear feet of stream has been restored. The 100% design for construction was issued on October 25, 2019 by Volkert, and the construction by Streamline Environmental on the Section 319/NFWF portion of the project was started in November 2019 and was completed in February 2020.

The goal of the stormwater facility restoration component of the project is to enhance the reduction of NPS pollutants in Tiawasee Creek by implementing LID/GI practices. Nitrogen, phosphorus and sediment reductions will be achieved by the restoration and enhancement of the detention basins. These totals will be calculated and submitted to ADEM upon completion of the grant.

While the stream restoration portion of this grant has been completed, the stormwater retrofits had a few challenges to overcome which included U.S. Army Corps of Engineers approval and the struggles that have occurred due to COVID-19 and bidding process. At this time, a design has been agreed upon. MBNEP has requested a time extension for this grant until July of 2021. This will allow the project enough time to be built, planted, and observed for success.

Total Load Reductions:

- 4,880 lbs/yr of nitrogen
- 823 lbs/yr of phosphorus
- 602 tons/yr of sediment

D'Olive Creek Sub-Watershed Management Project at Stream Segments DAF-1 and DAF-1A (FY16/17)

The D'Olive Creek watershed is part of the Tensaw River – Apalachee River Basin (HUC 03160204-0505) and is located in Baldwin County, Alabama. Since 2008, ADEM has included D'Olive Creek on the CWA Section 303(d) list of impaired waterways, with an impairment identified as siltation (habitat alteration) because of land development. In the 2018 CWA Section 303(d) list, D'Olive Creek was also added to the list for pathogens from Lake Forest Dam to its source.



Figure 22: DAF-1, aka. Golf Course Tributary or UT to D'Olive Creek, was enhanced in partnership with NFWF funding.

The ADEM, in coordination with the EPA, MBNEP, the NFWF, and the City of Daphne, has completed two stream restorations in UTs to D'Olive Creek that are sediment contributors to the impaired main branch of the stream. This project utilizes CWA Section 319(h) funding to implement natural stream stabilization and restoration on the UTs to D'Olive Creek. Implemented BMPs included measures such as log grade controls, log drop structures, log sills, rock sills, j hooks, floodplain sills, riffles, and native vegetation. These structures will help provide grade control, improve stream reach connectivity with the existing floodplain, and improve aquatic habitat by creating pools and adding oxygen to the water.

The first stream restoration project DAF-1A is located near Melanie Loop in Daphne, Alabama. This project bid was won by North State Environmental, LLC. Construction began on April 24, 2018, and construction was substantially completed on May 23, 2018. This project restored 490 linear feet of stream in the D'Olive Creek watershed using the structures mentioned above. Revegetation planting was executed in February 2020.



Figure 23: DAF-1A, aka. Melanie Loop, shown with completed restoration and site stabilization.

DAF- 1 is known as the Golf Course Tributary and reached 100 percent design completion in April 2018. Construction, which was originally slated for May 2018, was delayed until December 2018 due to weather concerns and time constraints for optimal post construction seasonal planting. Stream restoration was completed in February 2019. Substantial completion of the project occurred in June 2019. In January 2020, the contractor returned to complete maintenance issues at the site. This project restored 535 linear feet of stream in the D'Olive Creek watershed.

Total Load Reductions:

- 5,200 lbs/yr of nitrogen
- 1,200 lbs/yr of phosphorus
- 360 tons/yr of sediment

Three Mile Creek Watershed Implementation Project (FY17)

Phase II of the Upper Three Mile Creek watershed project (HUC 03160204-0504) continues to build on the momentum of the stakeholders and partners working within the watershed. It also continues to implement components of the Three Mile Creek Watershed Management Plan. The major challenges to Three Mile Creek watershed's health identified in the WMP include urban stormwater runoff (quantity and quality of this runoff) and altered geomorphology (streambank erosion, sedimentation, etc.).

The USA, 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 WMP as contributing sediment to Three Mile Creek. The USA has several areas on campus with significant slope (>5%) and large impervious surfaces (parking lots) that contribute significant volumes of water to local earthen drainages, causing both bed and bank erosion, and oil and grease contributions from automobiles to Three Mile 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 the stream are evident, and the impacts of oil and grease pollutants contribute to dissolved oxygen issues.

This project addressed structural BMP implementation with LID and GI on the campus. Specifically, bioswales are proposed for two large asphalt parking facilities on the campus, the Humanities Lot and the Gamma Lot. The WMP mentions adding LID/GI to drainage areas up gradient of the stormwater outfalls. Implementation of LID techniques will be used to minimize the quantity of stormwater runoff and reduce soil erosion and sediment load (and possibly associated organic nitrogen load) in the Upper Three Mile Creek watershed. Due to a change in University priorities, the Gamma Lot construction will be delayed at this time as they evaluate a new priority in nonpoint source pollution reduction on campus.

Construction of bioswales in the Humanities parking lot were completed in August 2019 because there were fewer students on campus during that semester. The islands were roughly 200 feet long and 10 feet wide. The bio-infiltration areas inside each island measured about eight feet across and two feet deep. The bottom layer of these infiltration areas consisted of large stone located underneath a foot of coarse sand and compost and topped with more stone and plants, making this feature easy on the eyes and the environment, but tough on storm water runoff and sediment. The Thermo Scientific Nalgene Storm Water Samplers are monitoring for total suspended solids, total nitrogen, total phosphorus, and oil and grease.



Figure 24: The completed installation of bio-infiltration swales in the USA parking lots.

The USA hosted a half day LID workshop on January 30, 2020, to discuss the benefits and maintenance associated with LID, as well as showcase the project and other LID implementations on campus. The USA project coordinator, Dr. Kevin White, discussed the projects. Dr. White also participated in the Three Mile Creek coordination meeting on February 11, 2020. The meeting included all stakeholders and businesses working on projects in the Three Mile Creek watershed.

Load reductions are being recalculated after the University of South Alabama recognized an error in the calculations.

Tallapoosa River Basin

Parkerson Mill Creek Watershed Improvement Project (FY17)

The Parkerson Mill Creek watershed is located in Auburn, Alabama. It is part of the Upper Chewacla watershed (HUC 03150110-0202) of the Lower Tallapoosa River Basin. Land use includes a mix of urban (City of Auburn and 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.



Figure 95: Completed bioswale implemented as part of the project.

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 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.

Along with maintenance and monitoring of the original portion of the bioswale, in November 2019, Auburn University installed a vegetation termination of a segment of right of way located southwest of the original 100-foot bioswale. This was to reduce the weed infiltration in the area and provide a more uniform native vegetation bed after construction. In March 2020, construction of the second 600-foot section of the bioswale was underway. A two-inch layer of compost was added to the soil to improve

physical and chemical soil properties. An additional 16 rock filter dams were constructed at 1-foot elevation increments according to specifications in the Alabama Handbook for Erosion Control, Sediment Control, and Stormwater Management on Construction Sites and Urban Areas. The west end of the second section was vegetated with muhly grass (*Muhlenbergia capillaris*), cone flower (*Echinacea purpurea*), and swamp milkweed (*Asclepias incarnata*) in April 2020. The east end of the second section has also been completed and vegetated. A sign was placed at the project to explain the project and low impact development BMPs.

The University's stakeholder outreach has been challenging due to COVID-19. The University shutdown in spring of 2020 and moved to virtual classes. In person workshops were cancelled and may begin after November 30, 2020. Therefore, the project coordinator has already begun to plan for workshops and stakeholder involvement and outreach in 2021. If the need arises, they will move to a virtual platform, but the personal interaction is desired and beneficial. During the past few months, Auburn University has been evaluating areas for additional BMPs. Due to the cost savings of designing and installing the bioswale in house, Auburn University project coordinator, Dr. Thorsten Knappenberger was able to work to identify other areas on campus where BMPs could be used with the remainder of the implementation money. There were several areas that have been identified. At this time, Auburn University is working to find the best project to further reduce pathogens to Parkerson Mill Creek.



Figure 26: A June 3, 2020, promotion of environmental projects around AU campus.

Emuckfaw Creek Watershed Improvement Project (FY18)



The Emuckfaw Creek watershed (HUC 03150109-0308) is located in rural areas of Northeast Tallapoosa County with the headwaters crossing over from southeast Clay County. It encompasses 23.51-miles of stream and drains approximately 49.81 acres of land. Records at ADEM station EMKT-14 from 2016 show that the E. coli criterion was exceeded in 2 out of 8 samples causing it to be listed on Alabama's Section 303(d) list of impaired waterways.

The Tallapoosa County SWCD sponsored a Section 319 grant implementation project, which began on January 15, 2020. This project received funding to bring local landowners and producers, the District, NRCS, and other stakeholders together to identify ways that they can reduce pathogens from entering

the waterway. The District, working with local landowners on a voluntary basis, were able to find areas to implement rotational grazing practices, fence to protect the stream and limit access for their herd, alternative water sources, heavy use areas, forage and biomass planting, critical area planting, and other practices.

During January of 2020, project partners met to discuss the Section 319 grant and answer any questions that participants may have with moving forward with the grant activities. This was a very beneficial meeting where participants were able to view their conservation plans, understand the benefits of the BMPs implemented and the logistics of requirements, ask any questions they might have about the process, etc. In January of 2020, NRCS had the opportunity to discuss the grant and NPS pollution to approximately 91 attendees at the Cattleman's Association Meeting. The Tallapoosa County Cooperative Extension was working hard with partners to coordinate the 2020 Water Festival for the county, which is held at Wind Creek each year. However, due to COVID-19 schools shut down, the festival had to be cancelled.

During 2020, the District and NRCS have experienced a lot of employee turnover. They have lost a long time Soil Technician, the District Coordinator, and the District Administrative Coordinator. Since September of 2020, Millicent McKelvey has been hired in the Soil Technician role for the area, Patrick Rohling is acting as District Coordinator over this and two other counties, and Kimberly Teel has been hired by the District as the new District Administrative Coordinator. Due to COVID-19 and the rotation of staffing for the office, it has been a challenge to jump-start the project. The office for most of spring and summer was open to appointment only visits and limited person-to-person interaction. In a meeting in September 2020, the District and NRCS shared that they are currently trying to get up to speed on the grant requirements, evaluating different methods to reach their match activities, and continuing to move forward as they are able.

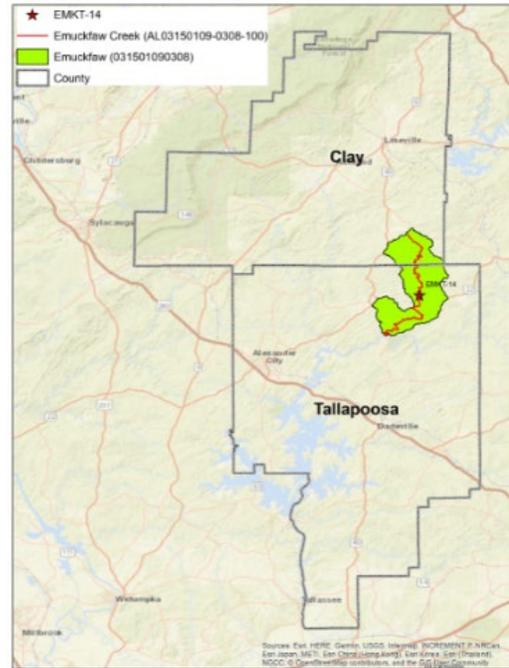


Figure 107: Map of Emuckfaw Creek Watershed within Clay and Tallapoosa Counties.

Tennessee River Basin

Browns Creek Watershed Implementation Project (FY18)

The Browns Creek watershed (HUC 06030001-0904) drains approximately 32,278 acres within the Tennessee River Basin. Browns Creek originates in Blount County and flows into Marshall County where it empties into Lake Guntersville. Browns Creek consists of two distinctly different waterbody types: a wadeable, free flowing stream and the tributary embayment segment of Lake Guntersville. In 2012, the 11.86-mile stretch of Browns Creek from Lake Guntersville to its source was identified as being impaired for nutrients and total dissolved solids (TDS) from agricultural and mining sources. In 2016, the creek was removed from the CWA Section 303 (d) list for the TDS listing due to more recent data. In 2018, Browns Creek was identified as being impaired for pathogens (*E. coli*) from agricultural sources. The 5,915.66-acre

Browns Creek (Lake Guntersville) embayment from the Tennessee River to end of embayment was also listed in 2012 for nutrients from agriculture. Currently, Browns Creek has no approved TMDLs. The use classification of the tributary embayment segment of Browns Creek is public water supply/swimming/fish and wildlife and the stream segment classification is fish and wildlife.

The 2017 Browns Creek WMP is guiding the Marshall County SWCD in project implementation. This project focuses on the Marshall County portion of the Browns Creek watershed, where the Marshall County SWCD is working with landowners in the watershed to install BMPs that address nutrient and/or pathogen sources to Browns Creek. Project activities were discussed and applications approved at Marshall County Board meetings. However, the office was closed to the public due to state ordered social distancing guidelines. Although large gatherings have not been allowed during this project period, the Browns Creek watershed is being announced by word of mouth through individual stakeholders at this time.



Figure 28: Heavy use area protection was implemented as part of the Browns Creek project.

The District has been successful with project participation in that ten applications have been accepted and approved by the District Board. Three applicants have finished practices, and four new applications have been submitted and are awaiting approval within this reporting period. The three completed BMP systems include 5,909 feet of fencing and 3,136 square feet of heavy use area protection.

Due to COVID-19 there were no new stakeholder education activities from March 1 to September 1, 2020 in order to comply with state ordered social distancing guidelines. New education and outreach opportunities that fit the guidelines will need to be organized in order meet project match requirements and gather additional stakeholder support for the project.

Total Load Reductions:

- 4,973.4 lbs/yr of nitrogen
- 292.6 lbs/yr of phosphorus
- 38.2 tons/yr of sediment

Cross Creek Watershed Implementation Project (FY18)

The Cross Creek watershed (HUC 060300010801) is located in the Tennessee River Basin within DeKalb County in Alabama. Cross Creek flows west for 7.53-miles from its source to its confluence with Short Creek. It has a drainage area of 21,251 acres and runs through predominantly agricultural lands, which

influence water quality in the watershed. Cross Creek was first listed on the CWA Section 303(d) list of impaired waterways in 2018 from its source to Short Creek for pathogens (*E. coli*) due to pasture grazing.

The 2019 Cross Creek WMP will be used as a guide in the development of a systematic, partnership-based approach to advance conservation efforts in the watershed by the DeKalb County SWCD. The goal of the Cross Creek Watershed Implementation Project is to reduce the cumulative effects of nonpoint source polluted runoff in order to improve water quality in Cross Creek. Activities were limited during this reporting period due to COVID-19 State Order of Social Distancing. However, the District board was able to participate in monthly board meetings to discuss project progress and approve BMP applications. Education and outreach activities and all other in-person interactions related to the project are being reimagined to comply with the State Order. Budget and timeline adjustments may be necessary in the next reporting period depending on continued evolution of state social distancing guidelines and stakeholder adaptation to the necessary changes.



Figure 29: Incinerator implementation has been completed in the Cross Creek watershed.

Three applications have been received by DeKalb County SWCD. One application for 41.49 cubic feet of animal mortality facility (incinerator) has been completed. Two additional applications have been approved. Approved practices are currently expected to be completed within nine months' time. Applicant communication, site visits, and other in-person interactions will be performed in compliance with COVID-19 State Order of Social Distancing.

Total Load Reductions:

- 6,646.7 lbs/yr of nitrogen
- 6,646.7 lbs/yr of phosphorus
- 0 tons/yr of sediment

Crowdabout Creek Phase III Implementation Project (FY17)

Crowdabout Creek (HUC 06030002-1006), located in Morgan County, is a tributary to Flint Creek in the Tennessee River Basin in North Alabama. The headwaters of Crowdabout Creek begin in Cullman County, and the stream flows in a northeast direction to Flint Creek. Crowdabout Creek has a linear distance of 15-miles and a drainage area of 49.2-square miles. It was originally placed on the 1996 CWA Section 303(d) list of impaired waterways for organic enrichment/low dissolved oxygen, siltation, and pathogens. The stream's use classification is fish and wildlife.



Figure 110: Students learn about aquatic environments and build connections to the world around them.

Crowdabout Creek was listed as attaining water quality standards for nitrogen, phosphorus, sedimentation/siltation and carbonaceous biochemical oxygen demand for all uses in 2014, likely due to implementation efforts during the Phase I and Phase II portions of this restoration project. Considering this, the Phase III project focused on the remaining impairment of pathogens.

The Crowdabout Creek Watershed Management Plan (2016), was implemented in partnership with Morgan County Soil and Water Conservation District and the Flint Creek Watershed Conservancy District. It began on November 16, 2017 and was completed on November 16, 2019. For phase III, management measure implementation was focused in the headwaters of the Crowdabout Creek watershed.

A total of 15 BMP systems were completed during the life of the project. Agricultural BMPs implemented included 49.10 acres of tree and shrub planting, 9,669 feet of cross fencing, 2 alternative watering systems, 210 feet of livestock pipeline, 9,038 square feet of heavy use area protection, 488.50 acres of cover crop, and 196.40 acres of forage and biomass planting.



Figure 121: Cross fencing installed as part of the Crowdabout Creek project.

Education and outreach for the project included Wetland Wanderers, Wild Wetlands, Wet N' Wild Festival, and the Morgan County Farm Field Day. Partnerships were strengthened through the Wetland Wanderers and Wild Wetlands education events where volunteers from NRCS, ACES, USFWS, and Morgan County SWCD assisted in presentations on nonpoint source pollution and watersheds, local wildlife, macro invertebrates, native wetland plants, and wetlands. Each event emphasized the importance of improved water quality in the Crowdabout Creek watershed and watershed stewardship in the future.

Total Load Reductions:

- 59,039.6 lbs/yr of nitrogen
- 8,328.35 lbs/yr of phosphorus
- 2,844.8 tons/yr of sediment

Swan-French Mill Creek Watershed Restoration Project (FY16)

Located in Limestone County, the Swan Creek watershed (HUC 06030002-1101) is within the Upper Wheeler Lake watershed of the Tennessee River Basin. The total land area of the Swan Creek watershed is 35,328 acres. Swan Creek was first placed on the CWA Section 303(d) list of impaired waterways for siltation, organic enrichment, and low dissolved oxygen in 1996 based on a study by the TVA. An 8.2-mile segment of Swan Creek was listed for the above pollutants from agricultural sources. The TMDL for Swan Creek was approved in 2002 for siltation, low dissolved oxygen, and organic loading.

Located in Limestone County, French Mill Creek is a tributary to Piney Creek and is a part of the Piney Creek watershed (HUC 06030002-0802) within the Tennessee River Basin. In 1998, French Mill Creek was placed on the CWA Section 303(d) list for pathogens (fecal coliform). A 5.21-mile segment with a drainage area of 7.96-square miles was listed due to unknown sources. In 2000, the source was adjusted to pasture grazing. A TMDL for French Mill Creek was completed in 2006 and requires a 36 percent load reduction for the waterbody to meet its use classification of fish and wildlife.



Figure 32: An applicant showing off a completed alternative watering system funded through this 319 project.

The Swan Creek Watershed Management Plan (2016) and the French Mill Creek Watershed Management Plan (2013) were implemented in partnership with Limestone County Soil and Water Conservation District. The Swan-French Mill Creek Watershed Restoration Project began on March 21, 2019 and was completed on February 12, 2020. The Swan Creek and French Mill Creek Watershed Management Plans guided restoration efforts and agricultural management measure implementation within the Swan Creek and French Mill Creek watersheds.

A total of five applications were approved and six BMP systems were implemented in the Swan Creek watershed. Management measures implemented within the Swan Creek watershed included 3,757 feet of cross fencing; 6 alternative watering systems; 4,026 feet of livestock pipeline; 9,288 square feet of heavy use area protection; and 230 acres of cover crop.

Education and outreach events for the project included the Alabama Grazing Clinic, Land Judging, and the Limestone County Career Technical Center – Agricultural Presentation. Low landowner participation created challenges for the district expending the total federal allotment for management measures. Due to a combination of district staffing and timing constraints, the district was unable to utilize the remaining federal allotment for the project. A contract amendment for a project extension was not feasible. The district was able to capture the required 40 percent project match. This local match was generated by the district and landowners.

Total Load Reductions:

- 8,597 lbs/yr of nitrogen
- 4,073 lbs/yr of phosphorus
- 2,708 tons/yr of sediment

West Flint Creek Watershed Project – Phase III (FY16)

The West Flint Creek watershed (HUC 06030002-10) is part of the Tennessee River Basin and has a total drainage area of 204-square miles, covering approximately 130,344 acres. The West Flint Creek watershed is comprised of No Business Creek, Elam Creek, Upper West Flint Creek, Big Shoal Creek, Middle West Flint Creek, and Lower West Flint Creek 12-digit HUC watersheds. These six sub-watersheds combined contain approximately 62-miles of impaired streams. The majority of the West Flint Creek watershed is in Lawrence County, with a portion in Morgan County. The impaired West Flint Creek originates in Lawrence

County and flows in a northerly direction through the eastern section of Lawrence County until it reaches Morgan County where it enters the Wheeler Reservoir. The impaired streams within the above mentioned 12-digit HUC watersheds are tributaries to West Flint Creek. The tributaries to West Flint Creek were placed on the 1998 CWA Section 303(d) list of impaired waterways as not supporting their fish and wildlife use classification.

The West Flint Creek Watershed Management Plan (2014) was implemented in partnership with Lawrence County Soil and Water Conservation District. The West Flint Creek Watershed Project – Phase III began on July 21, 2017 and was completed on January 21, 2020. The West Flint Creek Watershed Management Plan guided restoration efforts and agricultural management measure implementation within the West Flint Creek watershed.

A total of 33 applications were approved and completed during the life of the project. Agricultural practices installed included 118.68 acres of pasture planting, 23,407 feet of cross fencing, 24 alternative watering systems, 6,659.80 feet of livestock pipeline, 75,651 square feet of heavy use area protection, 37 acres of pasture spraying, and 1,116 acres of cover crop.



Figure 133: Heavy use area protection BMP completed as part of the West Flint Creek project.

Education and outreach events such as Ag in Action, Pizza Farm, Soil Health Program, Lawrence County Youth Leadership Program, and the Alternative Watering System Workshop were just a few ways district staff partnered with other local agencies to promote the West Flint Creek watershed project. Events also provided platforms to discuss the importance of soil health and how it directly impacts and affects water quality within the West Flint Creek watershed.

A six-month contract extension was approved on July 17, 2019, to fully obligate federal funds and provide the required 40 percent matching funds. Challenges were met with at the end of the project when multiple landowners backed out of approved applications. Contract timing, wet weather, and time of season made it difficult to obligate the remaining federal funds. The district was unable to commit to an additional project extension because of time constraints. The district was able to capture more than the required 40 percent project match. This local overmatch was generated by the districts, landowners, and community volunteers which lends to the overall support of the project and the numerous stakeholder and education/outreach events that occurred.

Total Load Reductions:

- 9,054.6 lbs/yr of nitrogen
- 1,442.6 lbs/yr of phosphorus
- 732.8 tons/yr of sediment



Figure 34: Education and outreach was a key component in the success of the West Flint project.

Alabama Coastal Nonpoint Pollution Control Program (ACNPPC)

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 (ACNPPC) under Section 6217 of the Coastal Zone Act Reauthorization Amendment of 1990 (CZARA-6217). CWA Section 319(h) funds are 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 the ACNPPC with the Alabama NPS Management Program. This CNPCP is being developed and implemented regionally within the federally defined Alabama Coastal NPS Management Area, which encompasses eight 8-digit HUCs that occur within the geo-political boundaries of both Baldwin and Mobile Counties located in southwestern Alabama.

CWA Section 319(h) program funds are obligated in the coastal area to address priorities of the Alabama Coastal Nonpoint Pollution Control Program (ACNPPC), assist stakeholders in identifying specific coastal problem areas, and to provide resources to plan and implement corrective NPS management measures and practices in order to address those designated categories or issues. Focused targeting of CWA Section 319(h) program funds advances the goal towards full approval of the ACNPPC under CZARA-§6217 by:

- Identifying specific categorical NPS stressor locations including GIS mapping and data layers (with consideration for maintaining citizen privacy issues).
- Strategically focusing on and clearly articulating BMP remedies 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 technical assistance.
- Partnering to improve project accountability, tracking and reporting results (including success stories) to demonstrate project progress and success.

During this past year, Alabama’s CNPCP has continued to serve as the national Chair of the Coastal States Organization’s (CSO) *Coastal NPS (6217) Work Group*. Serving in this position since 2010, the national Coastal NPS Work Group coordinates directly with the federal NOAA and EPA representatives, CSO Director, Counsel and Staff, and Sub-Committees, as well as other State representatives to provide monthly national teleconferences that are directed toward the promotion, approval, and implementation of State CNPCPs. The ADEM actively participates in this ongoing forum for all coastal states’ Nonpoint Source Programs, with over 95 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.

The ACNPCP utilizes partnerships with Federal, State and local agencies, businesses, organizations, and decision makers to influence the implementation of items necessary to achieve program approval and operation. The ACNPCP supported the former Coastal Alabama Clean Water Partnership, which has now been partially redeveloped as the Alabama’s Coastal Nonpoint Source Resources Matrix. The ACNPCP continues its support through the Alabama Coastal Nonpoint Source Resources Matrix. The matrix is a modular 40 member forum tasked with tackling challenging coastal NPS issues. The ACNPCP has also redeveloped the smaller regulatory-based ACNPCP Technical Advisory Committee to address nonpoint source pollution management program needs and provide guidance for regulatory agency coordination issues. The ACNPCP also works closely with the ADEM NPS program to assist and support these coastal NPS efforts and issues. These various forums are utilized to enhance coordination and cooperation regarding coastal water quality resources management. NOAA Office for Coastal Management (OCM), EPA, NRCS, USFWS, USACE, ADEM, ADCNR-State Lands, and many other agency environmental partners have helped to advance administrative coordination and interagency cooperation as we further develop and implement the ACNPCP as a more effective coastal program.

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 Resources and Ecosystems Sustainability, Tourist Opportunities, and Revived Economies of the Gulf Coast States (RESTORE) Act projects are being developed and implemented by the ACNPCP’s partnerships with various entities here on the Alabama coast. These include coordination and cooperation with local county and municipal entities, ADCNR, MBNEP, WBNERR, NRCS, USFWS, USACE-Mobile District, Mississippi-Alabama Sea Grant Consortium, Dolphin Island Sea Lab, Alabama Coastal Foundation, TNC, and others.

In the recent NOAA §312 Review, Alabama received a Necessary Action to submit a 5-Year Strategy Work Plan for the Alabama Coastal Nonpoint Pollution Control Program, which was submitted November 30, 2017. This Alabama CNPCP Final Approval Work Plan was accepted by NOAA-OCM and EPA. Alabama has

formed an interagency ACNCP Work Group that has conducted several meetings to coordinate and plan our approaches for the ACNCP. Federal Coordination Meetings with NOAA and EPA were initiated in January of 2018 and have continued. State and Federal representatives participated in Alabama's CNPCP teleconferences this year that were held on June 16, 2020, and September 24, 2020, in order to monitor the state's progress and coordinate approval issues with the State CNPCP.

ANCPCP activities coordinate closely throughout the State with CSO, the Gulf of Mexico Alliance Water Resources & Education Enhancement Teams, MBNEP, and other program partners and projects in order to specifically address approval criteria for the program. Through these activities, the ACNCP staff have participated in over 60 specific events during this past fiscal year and reporting period. These activities continue to provide support, technical advice, and technical coordination with ADCNR, ADEM, MBNEP, NRCS, USFWS, USACE-Mobile District, Mississippi-Alabama Sea Grant Consortium, TNC, and others, including cooperation with local county and municipal entities to develop ACNCP applicable projects and programs.

Coastal Alabama Onsite Sewage and Disposal System Technical Report and Category Summary Project

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 seek to report and further Alabama's approach 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, CWA Section 319 set-aside FY16 program funds were used by the Baldwin County and Mobile County Conservation Districts and Mobile County Health Department to implement the Coastal Alabama OSDS Inspection & Maintenance (I&M) Program as follows:

- ACNCP secured a contract with an agency to implement the Coastal Alabama OSDS Technical Report and Category Summary Project. The contract was executed in a timely manner for ACF. Baldwin County Health Department and Mobile County Health Department committed their resources to support the project through its regulatory auspices under the Alabama Department of Public Health.
- Two larger areas in Baldwin and Mobile counties were selected for workshop implementation based upon NRCS and SWCDs hydric mapping and expertise provided by the local health departments.
- Coastal OSDS Project Workshop flyers were designed and distributed for these targeted area workshops. Sites were secured for each workshop by the contractor. [*Note the format and implementation of these workshops were changed to compensate for the COVID-19 response.]
- Baldwin and Mobile SWCD Boards, the Mobile County Health Department, the Alabama Department of Public Health, and several municipalities and NGOs supported efforts to publicize these efforts through local contacts and social media on behalf of the ACF. Also, the contractors and partners reported project workshops in their social media outlets and newsletters.
- OSDS I&M Workshop resident folders were provided to each resident participant. This provides each participant with a personal OSDS tracking and pump-out reminder.

- Strategic Workshop locations were facilitated by the contractors for each county SECTOR with the gracious participation of our OSDS I&M Workshop hosts.
- Contractor and program partners successfully accepted the challenge to oversee several workshops, which were implemented during 2020 and are now complete. There is potential for future related OSDS activities hosted by the Mobile and Baldwin County SWCDs as well.
- Two of the completed workshops were set-up online for continuous viewing. A total of 48 members of the public attended the interactive online workshops and as of the printing of this report, over 200 people have viewed the free videos publicly available online (<https://www.joinacf.org/osds-workshops>).

The twelve-digit HUC sub-watersheds targeted for this Coastal Alabama OSDS Technical Report and Category Summary implementation were prioritized and identified in Table 5 below.

Table 5. ACNPCP sub-watersheds by SECTOR (12-Digit HUCs).

12-digit HUC	Watershed Name
BALDWIN COUNTY: SECTOR 1 Watersheds	
031401070205	Little Lagoon
031602050204	Lower Fish River
031602050203	Magnolia River
031602050207	Skunk Bayou
031602050206	Bon Secour River
031602050208	Oyster Bay
031602050300	Bon Secour Bay
BALDWIN COUNTY: SECTOR 2 Watersheds	
031401060602	Upper Blackwater River
031401060504	Upper Styx River
031401060506	Middle Styx River
031401060507	Lower Styx River
031401060702	Rices Branch
031401060601	Negro Creek
031401060603	Lower Blackwater River
031401060703	Caney Bayou
031401070201	Sandy Creek
031401070202	Mifflin Creek
031401070104	Palmetto Creek
031401070203	Graham Bayou
031401070204	Hammock Creek
BALDWIN COUNTY: SECTOR 3 Watersheds	
031602050201	Upper Fish River
031602040505	Tensaw River-Apalachee River
031602050205	Fly Creek
031602050202	Middle Fish River
031602050204	Lower Fish River
031401060601	Negro Creek

031401060602	Upper Blackwater River
BALDWIN COUNTY: SECTOR 4 Watersheds	
031401060102	Fletcher Creek
031401060103	Hurricane Creek-Perdido River
031401060104	Thompson Branch-Perdido River
031401060201	Bushy Creek-Dyas Creek
031401060202	McCurtin Creek
031401060203	Dyas Creek
031401060401	Snowden Branch-Perdido River
031401060402	Nelson Branch-Perdido River
031401060403	Loggerhead Creek-Perdido River
031401060501	Headwaters Styx River
031401060502	Roans Creek
031401060503	Hollinger Creek
031401060504	Upper Styx River
031401060505	Bellefontaine Creek
031401060506	Middle Styx River
031401060507	Lower Styx
031401060701	Clear Springs-Perdido River
031401060702	Rice's Branch-Perdido River
031502040501	Long Hollow Creek
031502040503	Horseneck Creek-Little River
031502040701	Brickyard Creek-Turkey Creek
031502040702	Holley Creek
031502040703	Pine Log Creek
031502040704	Majors Creek
031502040705	Dead River
031602040103	Farris Creek-Barrow Creek BC/MC
031602040104	Little Halls Creek-Halls Creek
031602040106	Big Chippewa Lake
031602040201	Rains Creek
031602040202	Mittlin Lake
031602040203	The Basin
031602040403	Grand Bay
031602040501	Upper Bay Minette Creek
031602040502	Whitehouse Creek
MOBILE COUNTY: SECTOR 1 Watersheds	
031602050103	Lower Dog River
031602050104	Fowl River
031602050105	Deer River
031602050107	Delchamps Bayou
031700090103	West Fowl River
031700090202	Dauphin Island
MOBILE COUNTY: SECTOR 2 Watersheds	
031700090101	Bayou Heron-Grand Bay Swamp

031700090102	Bayou La Batre River
031700090201	Grand Bay-Mississippi Sound
031700080702	Franklin Creek
031700080701	Jackson Creek
031700080602	Miller Creek
031700080603	Collins Creek-Big Creek
MOBILE COUNTY: SECTOR 3 Watersheds	
031602050103	Lower Dog River
031602050101	Upper Dog River
031602050105	Garrow's Bend-Mobile Bay
031602050102	Hall's Mill Creek
031602040504	Three Mile Creek
031602040304	Eight Mile Creek
031602040303	Seabury Creek
031602040302	Meekers Creek
031602040402	Bayou Sara
031602040305	Lower Chasaw Creek
031602040401	Gunnison Creek
MOBILE COUNTY: SECTOR 4 Watersheds	
031700080405	Spring Creek – Escatawpa River
031700080601	Pierce Creek – Big Creek
031700080404	Flat Creek
031700080502	Hamilton Creek – Big Creek
031602040303	Seabury Creek
031602040302	Meeker's Creek
031700080501	Juniper Creek – Big Creek
031700080303	Powell Creek – Escatawpa River
031602040301	Log Creek – Chickasaw Creek
031602040105	Cold Creek
031700080206	Nobodies Creek – Escatawpa River
031700080205	Puppy Creek
031602040102	Bush Coon Creek – Cedar Creek
031602040106	Big Chippewa Lake
031700080204	Owakee Creek – Escatawpa River
031700080203	Bennet Creek
031602040101	Little Creek – Cedar Creek
031602031102	Poll Bayou
031602040103	Farris Creek – Barrow Creek

The targeted four year rotation (October 2015-March 2019) of OSDS projects to develop the processes and create support for the Coastal Alabama OSDS Inspection & Maintenance Program has been completed. ACNPCP is working to provide technical assistance for our local county partners to help initiate upcoming OSDS projects being developed for future implementation in 2020 and beyond.

Efforts in 2020 to Achieve 2016-2020 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 <u>State Water Quality Standards</u> and Use Classifications.			
Objectives	Status	Implementation Strategies to Ensure Continued Statewide Program Progress	NPS Success Measures and Indicators Targeted <small>(Derived from Table 8.8 of the 2014 AL NPS Management Program)</small>
<p>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 <u>state water quality standards and water use classifications</u>.</p> <p>Timeline: Annual</p>	<p>Thirty-three main stem reservoir stations on the Coosa and Tombigbee River Basins were intensively monitored as part of the FY2020 SWQMP. Thirty-eight locations on wadeable flowing streams and rivers were sampled as part of the FY2020 SWQMP</p>	<p>FY20 Section 319 Program Workplan Project 2 (Statewide Surface Water Quality Monitoring of Priority Wadeable Streams and Rivers)</p> <p>FY20 Section 319 Program Workplan Project 3 (Surface Water Quality Assessment of Rivers, Reservoirs and Tributary Embayments on a Statewide Rotation)</p>	<p>I. Water Quality Improvements from NPS Controls:</p> <p>a: ...WQ standards attainment</p> <p>b: ...impairments and threats</p> <p>c: ...N, P, and sediment loadings</p> <p>d: ...303(d) delisting</p> <p>e: ...leveraged funds/resources</p> <p>f: ...USDA-NWQI priorities</p> <p>h: ...CZARA 6217/Coastal NPS</p>
<p>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)/<u>Integrated Water Quality Monitoring and Assessment Report (IR)</u>.</p> <p>Timeline: Biennial CWA Section 305(b) Report; 303(d) List</p>	<p>Continuing. Current IR 4/1/2020.</p> <p>The 2020 Section 303(d) list of impaired waterways was approved by EPA as part of the Department's 305(b) report dated April 1, 2020.</p>	<p>FY20 Section 319 Program Workplan Projects 2 and 3</p>	<p>i: ...lakes/reservoirs/shorelines</p> <p>j: ...marine, coastal, wetlands</p> <p>l: ...drinking water sources</p> <p>m: ...fish/shellfish advisories</p> <p>II. Interim Water Quality Protection and Restoration</p>
<p>Short-term Objective 1.2: Continue to collect or assess WQ data from a priority <u>CWA Section 303(d)</u> listed <u>HUC-12 subwatershed</u> to support the development or implementation of a watershed-based management plan</p>	<p>WQ data continued to support the development or updating of requisite</p>	<p>FY18 Section 319 Watershed Implementation Projects 9, 14, 15.</p> <p>Contracts were executed to initiate FY18 Section 319 funded Watershed-based Projects:</p>	<p>a: ...results of installed BMPs</p> <p>b: ...success story documentation</p>

<p>that incorporates Section 319 grant guideline <u>nine-key watershed-based plan elements</u>.</p> <p>Timeline: Annual</p>	<p>watershed-based plans to apply for Section 319 funding. One waterbody was monitored to develop a siltation TMDL. Four locations were monitored to document water quality conditions prior to the implementation of 319 watershed plans. An additional twenty-five streams were monitored to assess use support attainment and to identify waterbodies impaired by NPS pollution.</p>	<p>9 – Browns Creek 14 – Ryan Creek 15 – Cross Creek 16 – Emuckfaw Creek</p>	<p>c. ... watershed plan progress d:...priority NPS/TMDL pollutant f: ...WQ trend data and tracking g: ...trophic data h: ...Coastal plan/ implementation</p> <p>III. Protection of High Quality Waters</p> <p>a: ...ensure continued high quality b: ...threat prevention c: ...valid data collection process d: ...high quality water listing</p> <p>VI. NPS Education and Outreach</p>
<p>Short-term Objective 1.3:</p> <p>Continue to collect or assess <u>Section 319 grant-funded watershed project</u> 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.).</p> <p>Timeline: Annual</p>	<p>Continuing</p>	<p>FY20 Section 319 Program Workplan Projects 1 (Admin.), 2 and 3</p> <p>The 2020 Monitoring Strategy implements a coordinated, 3-year basin rotation for the Rivers and Streams Monitoring Program, Rivers and Reservoirs Monitoring Program, and Coastal Monitoring Program.</p>	<p>c: ...enhance partnerships d: ...specific audiences targeted f: ...enhance data collection g:...TMDL/water-shed plan based</p>
<p>Short-term Objective 1.4:</p> <p>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 <u>Alabama Coastal Nonpoint Pollution Control Program</u> (including meeting and sustaining implementation of Interim Decision Document recommendations) relative to <u>Section 6217</u> of the Coastal Zone Act Reauthorization Amendments of 1990.</p> <p>Timeline: Annual</p>	<p>Continuing.</p>	<p>FY20 Section 319 Program Workplan Project 4 (Coastal NPS Program Approval).</p> <p>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.</p> <p>The ADEM coastal NPS coordinator has continued to 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 Alabama</p>	

		Department of Conservation and Natural Resources, Mobile Bay NEP, WBNERR, NRCS, U.S. Fish and Wildlife Service, COE-Mobile District, MS-AL Sea Grant, DISL, AL Coastal Foundation, Nature Conservancy, and local municipalities.	
<p>Short-term Objective 1.5:</p> <p>Continue to partner with USDA-NRCS to monitor priority <u>National Water Quality Initiative</u> watersheds to help document pre- and post- conservation practice implementation effectiveness.</p> <p>Timeline: Annual</p>	Continuing.	<p>FY20 Section 319 Program Workplan Project 1 (Admin), 2 (Statewide Surface Water Quality Monitoring of Priority Wadeable Streams and Rivers). Monitoring will continue for the Scarham/Guntersville watershed.</p> <p>The NWQI designation was discussed during the State Technical Meeting on April 30th, 2020.</p> <p>A follow-up ADEM/NRCS conference call was conducted on June 18, 2020.</p>	

Goal 2: Target and Leverage NPS 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)
<p>Long-term Objective 2:</p> <p>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:</p> <ul style="list-style-type: none"> • CWA Section 319 • Alabama Water Pollution Control Act • Other relevant NPS pollution federal and state laws, rules, regulations, ordinances, or policies and guidelines. <p>Timeline: (Sustain, Replicate Annually)</p>	Continuing.	<p>FY20 Section 319 Program Workplan Project 1 (Admin)</p> <p>FY18 Section 319 Watershed Implementation Projects 9, 14, 15, 16.</p> <p>Basin Teams continued to improve communication among project managers, field staff, and ADEM management within Field Operations, the Water Quality Branch, and the NPS Unit. Meetings were held in FY20 to plan and coordinate FY21 and FY22 monitoring needs in order to assess NPS issues and to track watershed project progress and successes.</p> <p>ADEM, ADPH, Alabama Department of Conservation and</p>	<p>I. Water Quality Improvements from NPS Controls:</p> <p>g: ... riparian areas/filter buffers</p> <p>h: ...CZARA 6217 implementation</p> <p>i: ...lakes/reservoirs/s horelines</p> <p>j: ...marine, estuaries, wetlands</p> <p>k: ...beaches/ human contact</p> <p>l: ...groundwater, drinking water</p>

		Natural Resources, 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.	<p>m: ... fish/shellfish advisories</p> <p>n: ...threats to shellfish beds</p> <p>o: ...LID/green infrastructure</p> <p>II. Interim Water Quality and Protection and Restoration</p>
<p>Short-term Objective 2.1:</p> <p>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.</p> <p>Timeline: Annual</p>	Nine-Key Element Plans have been and are being developed by the Mobile Bay National Estuary Program, which do not primarily rely on Section 319 funds.	<p>ADEM partnered with the Mobile Bay National Estuary Program to develop watershed management plans.</p> <p>Components of watershed plans are continually being implemented through local municipalities, NRCS, public and private fund leveraging.</p>	<p>b:...incremental restoration progress</p> <p>c: ...incremental plan implementation</p> <p>d:...incremental load reductions</p>
<p>Short-term Objective 2.2:</p> <p>Continue to leverage public and private sector resources to implement NPS BMPs to restore impaired Section 303(d) listed waters per a TMDL or to protect high quality waters identified in Section 305(b) Integrated Reports.</p> <p>Timeline: Annual</p>	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).	<p>FY20 Section 319 Program Workplan Project 1 (Admin.)</p> <p>FY18 Section 319 Watershed Implementation Projects 9, 14, 15, 16.</p> <p>ADEM collaborated with multiple agencies to provide WQ monitoring data for the EPA/NEP Mobile Bay science advisory, government networks, and project implementation committees to help prevent future threats to WQ.</p> <p>ADEM partners with 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.</p>	<p>e: ...phased implementation</p> <p>h: ...coastal program approval</p> <p>III: Protection of High Quality Waters</p> <p>a:... protection against treats</p> <p>b:...regulations/ criteria/ programs</p> <p>c:...science-based data</p> <p>d: ...verification and listings</p>
<p>Short-term Objective 2.3:</p> <p>Continue to leverage Section 319 grant resources to achieve priority NPS (i.e., nitrogen, phosphorus, and sediment) and TMDL pollutant of concern load reductions.</p> <p>Timeline: Annual</p>	Continuing.	<p>FY20 Section 319 Program Workplan Project 1 (Admin);</p> <p>FY18 Section 319 Projects 9, 14, 15, 16.</p> <p>All Section 319 funded watershed-based projects target priority NPS components of TMDLs (when completed).</p> <p>N, P, and Sediment pollutant load reductions are reported in GRTS prior to Feb and Oct, annually.</p>	<p>IV. NPS Pollutant Load Reductions</p> <p>a: ...Section 303(d)/ TMDLs</p> <p>b: ...N, P, and sediment</p> <p>c: ...BMPs target critical areas</p> <p>d: ...meet water quality standards</p> <p>e: ...lakes and reservoirs</p>
<p>Short-term Objective 2.4:</p> <p>Continue to place strong emphases on restoring NPS impaired HUC-12</p>	Continuing.	FY20 Section 319 Program Workplan Project 1 (Admin.)	f: ...pollution prevention

<p>delineated watersheds by facilitating and leveraging funding, BMP implementation, education and outreach, technology transfer, and technical assistance resources.</p> <p>Timeline: Annual</p>		<p>*Examples of technology transfer/education and outreach activities conducted with partners to target impaired waterbodies include:</p> <ul style="list-style-type: none"> • Covington County Groundwater Festival • Clear Water AL Erosion and Sediment Control Workshops October 2019 (AL Soil & Water Conservation Committee) • Stormwater Management: LID Development Practices Workshop • Elmore County Homeschool Enviroscene Demonstrations • ASCE-Huntsville Branch Monthly Meeting • 2020 AL NPS Conference • 2020 AL Rivers and Streams Network Meeting • 2020 Envirothon Planning Meeting • Shades Creek Watershed Management Plan Steering Committee • Moores Creek Stream Planting • Land Trust Endangered Species Tour • Tennessee River Basin Annual Meeting • "Reduce, Reuse, Recycle" binder distribution to area schools • BMP manuals distribution (as requested) • Alabama Watershed Stewards • Septic Tank Workshops (Coastal Program Projects) • Several meetings and presentations for 	<p>g: ...major river basins</p>
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		<p>watershed stakeholders targeting specific impaired streams</p> <ul style="list-style-type: none"> • FY18 Section 319 Projects 9, 14, 15, 16 • All Section 319 funded watershed-based projects targeted “manageable” HUC-12 scale watersheds to best ensure improved WQ and project implementation success. 	
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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)
<p>Long-term Objective 3:</p> <p>Continue to facilitate a partnership approach to implement NPS measures and practices to restore watersheds and water quality and protect human health from NPS of pollution.</p> <p>Timeline: (Replicate Successes per five-year Programmatic Update Iterations)</p>	Continuing.	<p>FY20 Section 319 Program Workplan Project 1 (Admin); FY19 Section 319 Implementation Projects 9, 14, 15, 16.</p> <p>Conducted 2020 Alabama Nonpoint Source Conference and Stakeholder Meeting.</p> <p>Worked closely with basin partners to assist in meeting program and project goals.</p> <p>Staff attended and/or presented at several basin and watershed meetings.</p>	<p>I. Water Quality Improvements from NPS Controls</p> <p>g: ... riparian areas/filter buffers</p> <p>h: ...CZARA 6217 implementation</p> <p>i: ...lakes/reservoirs/shorelines</p> <p>j: ...marine, estuaries, wetlands</p> <p>k:...beaches/human contact</p>
<p>Short-term Objective 3.1:</p> <p>Implement BMPs in at least one HUC-12 subwatershed, exclusive of Section 319 grant funding, to restore water quality and watershed productivity and resilience.</p> <p>Timeline: Annual</p>	Continuing.	<p>NRCS targeted and implemented BMPs in the Guntersville Lake – Scarham Creek (HUC 06030001080) Watersheds as part of the National Water Quality Initiative.</p> <p>NRCS targets Gulf of Mexico Initiative (GOMI) funds in the NPS impaired Weeks Bay (Upper/Middle/Lower Fish River Watersheds).</p>	<p>l: ...groundwater, drinking water</p> <p>m: ... fish/shellfish advisories</p> <p>n: ...threats to shellfish beds</p> <p>o: ...LID/green infrastructure</p>
<p>Short-term Objective 3.2:</p> <p>Employ a suite of measures (including retrofits) to protect, maintain and restore the ecological integrity of aquatic systems in the state’s rivers,</p>	Continuing. No specific wetland or estuarine restoration	<p>FY18 Section 319 Watershed Implementation Projects 9, 14, 15, 16.</p> <p>The Deepwater Horizon (BP) Oil Spill Liability Trust Fund continues</p>	<p>II: Interim Water Quality and Protection and Restoration</p>

<p>lakes, wetlands, streams, and estuarine waters.</p> <p>Timeline: Annual</p>	<p>projects were not funded by Section 319 in FY2018.</p>	<p>to target restoration of natural resources along the coast.</p> <p>Section 319 funded watershed-based projects employ a suite of BMPs to mitigate NPS runoff to impaired streams, river, and lakes.</p> <p>ADEM works with Gulf of Mexico Alliance (GOMA) to address coastal water issues on a multistate/regional basis.</p>	<p>g: ...Riparian areas/filter buffers</p> <p>IV. NPS Pollutant Load Reductions</p> <p>a: ...Section 303(d)/TMDLs</p> <p>b: ...N, P, and sediment</p> <p>c: ...BMPs target critical areas</p> <p>d: ...meet water quality standards</p> <p>e: ...lakes and reservoirs</p> <p>f: ...pollution prevention</p> <p>g: ...major river basins</p> <p>V. Implementation of NPS Controls</p> <p>a: ...project planning</p> <p>b: inclusive partnerships</p> <p>c: ...statewide and coastal</p> <p>d: ...local funds/capacity</p> <p>e: ...priority impaired areas</p> <p>f: ...USDA Farm Bill/NWQI</p> <p>g: ...Coastal Program approval</p> <p>h: ...National Estuary Program</p> <p>i: ...Clean Water Revolving Fund</p> <p>j: ...pervious surfaces</p> <p>k: ...T&E species and habitat</p> <p>l: ...invasive species</p> <p>m: ...LID</p> <p>n: ...resources integrated/leveraged</p>
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			o: ...BMP maintenance p: ...locally-led and implemented q: ...fiscal accountability
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Goal 4: Enhance Institutional Capacity to Implement a Sustainable Statewide NPS 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)
<p>Long-term Objective 4: Continue to enhance programmatic efficiency and effectiveness by updating programmatic Goals and Objectives. Timeline: (Replicate every five years.)</p>	<p>The AL NPS Management Program was approved by EPA in August 2014.</p>	<p>Completed. Staff continues to discuss and document revisions needed to the AL NPS Management Program.</p>	<p>I. Water Quality Improvements from NPS Controls: e: ...leverage Section 106 and other WQ resources</p>
<p>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</p>	<p>Continuing.</p>	<p>FY20 Section 319 Project 1 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.</p>	<p>f: ...leverage NWQI resources h: ...coordinate CZARA 6217 V. Implementation of NPS Controls e: ...voluntary citizen approach f: ...align with USDA-Farm Bill</p>
<p>Short-term Objective 4.2: Continue to track the diversity of watershed planning and implementation partnerships. (e.g., agency, university, advisory, others). Timeline: Annual</p>	<p>Continuing.</p>	<p>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 as a Center for Watershed Excellence. EPA coordination is ongoing for the redevelopment of the MOUs with Alabama A&M and the University of AL for the Centers for Watershed Excellence. ADEM submitted FY2019 Section 319 workplans to EPA-Region 4 that incorporate a myriad of NPS partners and mitigation resources (submitted on 9/28/2020). The NPS Annual report documents and highlights the project partners</p>	<p>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</p>

		across the state that are involved in NPS program implementation. The report is placed on the ADEM website and advertised at basin meetings and at conferences.	VI. NPS 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.	FY20 Section 319 Program Workplan Project 1 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.	FY20 Section 319 Project 1	

Goal 5: Facilitate statewide 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.			
Objectives	Status	Strategies to Make Continued Progress	NPS Success Measures and Indicators Targeted <small>(Derived from Table 8.8 of the 2014 AL NPS Management Program)</small>
Long-term Objective 5: 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 Alabama Coastal Nonpoint Pollution Control Program continues to educate individuals about the need to install and maintain their septic tanks to ADPH Guidelines and Rules through workshops that due to COVID-19 will be virtual using technology and connecting people. During the last six months, ACNPCP has been coordinating with its partners and ACF to compile a technical document showing how the ACNPCP continues to execute its program and the OSDS management measure in the Coastal Counties of Alabama.	V. Implementation of NPS Controls a: ...project planning b:...inclusive partnerships c: ...statewide and coastal d: ...local funds/capacity VI. NPS Education and Outreach a: ...targets watershed and WQ b:... increase awareness and knowledge c:...Partnerships
Short-term Objective 5.1: Continue to leverage Section 319 grant resources to plan, produce, or disseminate water quality based E&O	Continuing.	FY20 Section 319 Program Workplan Project 1	

<p>products that target specific audiences (e.g., NPS pollution category or place-based issues).</p> <p>Timeline: Annual</p>			<p>d:...Specific and target audiences</p> <p>e: ...pollution prevention</p> <p>f: ...enhance data monitoring</p> <p>g: ...TMDLs, watershed based plan, public health and safety</p>
<p>Short-term Objective 5.2:</p> <p>Continue to leverage public and private sector resources to develop and deliver E&O presentations, models, documents, and technologies.</p> <p>Timeline: Annual</p>	Continuing.	FY20 Section 319 Program Workplan Project 1	
<p>Short-term Objective 5.3:</p> <p>Continue to deliver E&O activities that target specific Section 319 and TMDL priority pollutants in at least one NPS impaired HUC-12 subwatershed.</p> <p>Timeline: Annual</p>	Continuing.	FY20 Section 319 Program Workplan Project 1 FY18 Section 319 Watershed Implementation Projects 9, 14, 15, 16.	
<p>Short-term Objective 5.4:</p> <p>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”).</p> <p>Timeline: Annual</p>	Continuing.	FY20 Section 319 Program Workplan Project 1	

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 2020	
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., <u>Category 5/ Section 303(d) listed Impaired Waters</u>):	1	Joes Branch / 03160204-0505	Water quality standards were attained for Joes Branch. ADEM removed the segment from the CWA section 303(d) list in 2020.
Number of WQ-10 Waterbodies Fully/Partially Restored or Meets State Water Quality Standards or Designated Uses:	1	Joes Branch / 03160204-0505	Joes Branch Watershed was addressed with CWA Section 319 funding in cooperation with other leveraged funding opportunities. After numerous restoration projects the waterbody no longer is impaired for siltation.
Number of WQ-10 NPS/Section 319 Success Stories Developed as a Result of Full/Partial Restoration:	1	Joes Branch / 03160204-05051	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	Joes Branch / 03160204-0505	A Mill Creek WQ-10(a) Success Story was entered in GRTS on May 20, 2020.
Number of WQ-10 NPS/Section 319 Success Stories Submitted to EPA Region 4 as a Result of Full/Partial Restoration:	1	Joes Branch / 03160204-0505	The Department submitted a draft for EPA R-4 to review on August 14, 2020.
Number of WQ-10 NPS/Section 319 Success Stories Listed by EPA-HQ as Result of Full/Partial Restoration:	1	Joes Branch / 03160204-0505	EPA R-4 finalized the success story on October 13, 2020.
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., <u>Category 5/ Section 303(d) listed Impaired Waters</u>):	0		
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) NPS Pollutant Load Reductions		Year 2020	
Measure: Cumulative Estimated Statewide NPS Load Reductions			
(Baseline is FY 2013)		Indicator	Comments
a) Pounds of Nitrogen (N) Pollutant Load Reductions Annually from NPS Using Section 319 Grant Watershed Project Funds (WQ-9a):		442,349.38 lbs/year	Cumulative "N" for all ongoing Section 319 grants (2016- 2019). 2016-2019 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"):		33	
Load Reductions Entered in GRTS by Feb 15		Yes	
b) Pounds of Phosphorus (P) Pollutant Load Reductions Annually from NPS Using Section 319 Grant Watershed Project Funds (WQ-9b):		116,214.00 lbs/year	Cumulative "P" Total for all "open" Section 319 grants (FY2016- 2019) reported in GRTS. 2016- 2019 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"):		33	
Load Reductions Entered in GRTS by Feb 15		Yes	
c) Tons of Sediment (S) Pollutant Load Reductions Annually from NPS Using Section 319 Grant Watershed Project Funds (WQ-9c):		80,501.00 tons/year	Cumulative "S" Total for all "open" Section 319 grants (FY2016- 2019) reported in GRTS. 2016- 2019 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"):		31	
Load Reductions Entered in GRTS by Feb 15		Yes	
d) Number of Impaired Waterbodies/Segments Where "Other" NPS Pollutant Load Reductions are Achieved (#):		0	All watershed-based projects leverage the resources 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	
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(3) Project-Level Water Quality Planning and Restoration and Activities		Year 2020
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 drafted or final plans developed during FY2020 include: <ul style="list-style-type: none"> • Shoal Creek - Phase II • Black Creek/Village-Hooper City • Feagin Creek • Update to D'Olive Creek • Western Shore • Gulf Frontal • Fly Creek • Eastaboga Nine-key element Watershed-based Plans beginning implementation during FY2020 include: <ul style="list-style-type: none"> • Emuckfaw Creek • Browns Creek • Cross Creek • Ryan Creek Collaboration and coordination continues to ensure early and sustained buy-in from many and varied resource agencies, landowners, and other entities. All mandated data elements entered into GRTS prior to February 28, 2020.
At least two (2) EPA nine-key Element Watershed-based Plans are Drafted or Final Plans Developed Annually:	8	
At least two (2) EPA nine-key Element Watershed-based Plans Begin Implementation Annually:	4	
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	

(4) Program Management and Accountability		Year 2020
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 2020 Section 319 RFP notice as well as the Inter-governmental Clearinghouse Review was executed. Watershed Implementation Projects were selected for FY20 funding. The ADEM NPS Unit uses/refines dedicated Section 319 grant/project tracking databases as well as coordinates invoice payments with the Fiscal Office.
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	<p>All mandated data elements are entered into GRTS as grant and project-specific information is acquired by ADEM staff.</p> <p>ADEM NPS Staff facilitates or participates in multiple E&O activities monthly.</p> <p>The ADEM NPS staff participated/attended the following training and education workshops/conferences:</p> <ul style="list-style-type: none"> • EPA’s STEPL Live Training October 7, 2020 • EPA’s How’s My Waterway Webinar August 27, 2020 • EPA R4 State and Tribal NPS Program Call June 4, 2020 • SRF Workshop Teleconference April 23, 2020 • NRCS State Technical Committee Meeting April 30, 2020 • LID Seminar January 30, 2020 • GoToWebinar - Low Impact Development: Post-construction Water Quality Treatment November 13, 2019 <p>Data continues to be QA’d and entered into ADEM-specific and national /EPA reporting databases.</p> <p>NRCS targeted and implemented BMPs in the Gunterville Lake – Scarham Creek (HUC 06030001080) Watersheds as part of the National Water Quality Initiative. This watershed has been monitored by ADEM, as needed, as an NWQI priority.</p>
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

Project	Percentage of Project Completed	Obligated Federal Funds	Required Matching Funds	Project Completion Date	Notes
Fiscal Year 2016					
Planning Administration/Management	100%	\$ 786,251	\$ 524,168	09/30/2016	ADEM match to be provided per PPG
Statewide Surface Water Quality Monitoring of Priority Wadeable Streams and Rivers	100%	\$ 357,579	\$ 150,137	09/30/2020	ADEM match to be provided per PPG
Surface Water Quality Assessment of Rivers, Reservoirs and Tributary Embayments on a Statewide Rotation	100%	\$ 181,024	\$ 60,529	09/30/2020	ADEM match to be provided per PPG
Coastal NPS Program Approval (Septage Category IV)	100%	\$ 100,000	\$ 52,001	09/30/2020	
Statewide Implementation of Watershed Stewards Program	49%	\$ 76,440	\$ 56,756	08/30/2021	This project requested an extension due to the COVID-19 pandemic which has hindered workshops that are in person so the milestones will have to be rethought and updated to meet CDC guidelines and social distancing.
D'Olive Creek Sub-Watershed Management Project at Stream Segments DAF-1 and DAF-1A	100%	\$ 197,956	\$ 131,971	03/30/2020	
Moores Creek Watershed Management Project - Phase II	100%	\$ 295,953	\$ 175,223	05/07/2020	
Upper and Lower Flint River Watersheds Implementation Project	100%	\$ 143,543	\$ 95,695	11/09/2018	MCSWCD returned \$104,457 in federal funds. The funds will be reallocated to a different project.
Shoal and Swan Creek Watershed Restoration Project	100%	\$ 125,940	\$ 83,960	11/10/2019	Overmatch of \$445. LCSWCD returned \$234,600 in federal funds. The funds were reallocated for funding in the Alt-9 Project: Swan-French Mill Creek.

West Flint Creek Watershed Project - Phase III	100%	\$ 269,693	\$ 200,000	01/21/2020	Overmatch of \$23,242. LCSWCD returned \$30,306.79 in federal funds. The funds were reallocated for funding in the Tiawasee Creek Sub-watershed Management and Restoration Project.
Bioinfiltration Swale Implementation on USA Campus Meisler Commons in the Upper Three Mile Creek Watershed	100%	\$ 33,774	\$ 30,694	12/01/2018	Federal funds in the amount of \$12,267 were returned and will be reallocated to Tiawasee Creek Sub-watershed Management and Restoration Project
Implementation of the Watershed Management Plan for D'Olive Creek, Tiawasee Creek, and Joe's Branch Watershed Management Plan Implementation Modification to the Transition between Step Pool Stormwater Conveyance and the Restored Tributary JB2 Project	100%	\$ 77,050	\$ 51,367	09/28/2017	Overmatch of \$2,304.
Swan-French Mill Creek Watershed Restoration Project	100%	\$ 36,457	\$ 24,305	02/12/2020	LCSWCD returned \$76,543.03 in federal funds. The funds were reallocated for funding in the Tiawasee Creek Sub-watershed Management and Restoration Project.
Tiawasee Creek Sub-Watershed Management and Restoration Project	100%	\$ 344,633	\$ 229,756	09/30/2020	Note: this is a multiple fiscal year workplan.
Headwaters Ryan Creek Watershed Management Plan Implementation	Cancelled	\$ -	\$ -	09/30/2020	Submitted to EPA but not contracted. Resubmitted to EPA in FY19 but contracted under FY18 funding.
Fiscal Year 2017					
Planning Administration/Management	100%	\$ 766,742	\$ 511,161	09/30/2017	
Statewide Surface Water Quality Monitoring of Priority Wadeable Streams and Rivers	94%	\$ 338,380	\$ 225,587	09/30/2021	
Surface Water Quality Assessment of Rivers, Reservoirs and Tributary Embayments on a Statewide Rotation	76%	\$ 176,776	\$117,851	09/30/2021	
Coastal NPS Program Approval (Septage Category V)	0%	\$ 100,000	\$ 66,667	09/30/2021	

Watershed Management Plans, Public Stakeholder Involvement, Education & Outreach	0%	\$ 204,265	\$ 133,557	09/30/2021	Pending redevelopment of workplan
Update to the D'Olive Creek Watershed Management Plan	0%	\$ 41,137	\$ 30,044	09/30/2021	
Tiawasee Creek Sub-Watershed Management and Restoration Project	51%	\$198,295	\$ 132,197	07/31/2021	Note: this is a multiple fiscal year workplan.
Parking Lot Bioswale Implementations on USA Campus in the Upper Three Mile Creek Watershed	49%	\$ 152,339	\$ 101,559	03/14/2020	
Graves Creek Watershed Management Plan Implementation - Phase II	0%	\$ 250,250	\$ 166,833	04/26/2021	
Crowdabout Creek Phase III Implementation Project	100%	\$ 160,300	\$ 179,491	11/06/2019	Overmatch of \$27,103
D'Olive Creek Sub-Watershed Management Project at Stream Segments DAF-1 and DAF-1A	100%	\$ 195,858	\$ 301,668	03/30/2020	Note: this is a multiple fiscal year workplan. Project is currently overmatched by \$171,096.
Parkerson Mill Creek Watershed Management Plan Implementation Low Impact Development BMPs	38%	\$ 158,629	\$ 105,753	12/30/2020	
Moore's Creek Watershed Management Project - Phase II	100%	\$ 66,996	\$ 44,664	5/07/2020	Note: this is a multiple fiscal year workplan.
Tiawasee Creek Watershed Implementation Project	0%	\$ 312,805	\$ 208,537	07/31/2021	Note: this is a multiple fiscal year workplan.
Mill Creek Watershed Management Project - Phase III	Cancelled	\$ -	\$ -	09/30/2021	This stream was delisted. Phase III will not occur.
Scarham Creek Watershed Project	Cancelled	\$ -	\$ -	09/30/2021	Delayed project to another fiscal year due to local SWCD request.
Headwaters Ryan Creek Watershed Management Plan Implementation	Cancelled	\$ -	\$ -	09/30/2020	Submitted to EPA but not contracted. Submitted to EPA in FY19, but contracted under FY18 funding due to available funding.
Fiscal Year 2018					
Planning Administration/Management	100%	\$ 837,566	\$ 558,337	09/30/2018	
Statewide Surface Water Quality Monitoring of	86%	\$ 339,392	\$ 230,000	09/30/2022	

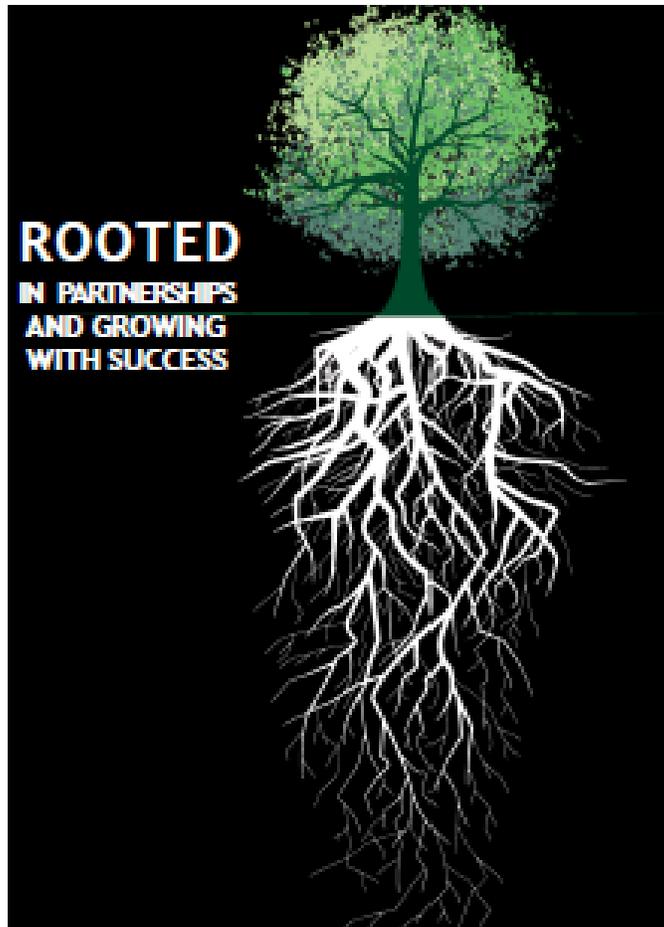
Priority Wadeable Streams and Rivers					
Surface Water Quality Assessment of Rivers, Reservoirs and Tributary Embayments on a Statewide Rotation	85%	\$ 173,932	\$ 115,171	09/30/2022	
Coastal NPS Program Approval	0%	\$ 100,000	\$ 66,667	09/30/2022	
Watershed Management Plans, Public Stakeholder Involvement, Education & Outreach	0%	\$ 157,110	\$ 117,740	09/30/2022	
Browns Creek Watershed Implementation Project	23%	\$ 200,700	\$ 133,800	08/23/2021	Contracted
Tiawasee Creek Watershed Implementation Project	0%	\$312,805	\$208,537	09/30/2022	
Ryan Creek Watershed Implementation Project	12%	\$ 222,321	\$ 111,315	09/06/2021	Contracted. Originally submitted as a FY19 project.
Cross Creek Watershed Implementation Project	0%	\$ 225,747	\$ 148,154	08/23/2021	Contracted. Not submitted with original EPA Package, Project modification from Scarham Creek.
Pathogen Reductions to Emuckfaw Creek: A Watershed Restoration Project	0%	\$ 166,972	\$ 150,498	1/15/2022	Contracted. Not submitted with original EPA Package, Fill in Project.
Roebuck Municipal Golf Course Stream Restoration and Demonstration Project	0%	\$ 379,545	\$ 253,030	09/30/2022	Workplan being finalized. Originally submitted as a FY19 project. Note: this is a multiple fiscal year workplan.
Dry Creek-Cahaba River Watershed Restoration Project	0%	\$ -	\$ -	09/30/2022	Submitted to EPA but not contracted. Local SWCD cancelled project.
Cowarts Creek Watershed Implementation Project	0%	\$ -	\$ -	09/30/2022	Submitted to EPA but not contracted. Moved to FY19.
Mulberry Creek Watershed Project	0%	\$ -	\$ -	09/30/2022	Submitted to EPA but not contracted. Project delayed for additional sampling.
Scarham Creek Watershed Project	0%	\$ -	\$ -	09/30/2022	Submitted to EPA but not contracted. Project changed to Cross Creek watershed due to stakeholder interest.
Pintlala Creek Watershed Project	0%	\$ -	\$ -	09/30/2022	Submitted to EPA but not contracted. Project cancelled per SWCD.
French Mill Creek Watershed Restoration Project - Phase II	0%	\$ -	\$ -	09/30/2022	Submitted to EPA for FY18 but contracted in FY16 using unspent funds from Shoal Creek/Swan Creek Project. Renamed French Mill Creek/Swan Creek.

Fiscal Year 2019					
Planning Administration/Management	100%	\$ 862,394	\$ 574,929	09/30/2019	
Statewide Surface Water Quality Monitoring of Priority Wadeable Streams and Rivers	88%	\$ 333,187	\$ 222,125	09/30/2023	
Surface Water Quality Assessment of Rivers, Reservoirs and Tributary Embayments on a Statewide Rotation	69%	\$ 177,419	\$ 118,279	09/30/2023	
Coastal NPS Program Approval	0%	\$ 100,000	\$ 66,667	09/30/2023	
Watershed Management Plans, Public Stakeholder Involvement, Education & Outreach	0%	\$ 120,000	\$ 80,000	09/30/2023	
Pathogen Reduction of Turkey Branch: A Weeks Bay Watershed Project	0%	\$ 215,779	\$ 143,853	09/30/2023	**Pending
Anderson Creek Watershed Restoration Project	0%	\$ 255,089	\$ 170,390	09/30/2023	**Pending
Big Nance Watershed Restoration Project	0%	\$ 132,778	\$ 88,519	09/30/2023	**Pending
Cowarts Creek Watershed Implementation Project	0%	\$ 296,525	\$ 197,683	09/30/2023	**Pending
Roebuck Municipal Golf Course Stream Restoration and Demonstration Project	0%	\$ 82,523	\$ 55,015	09/30/2023	**Pending Note: this is a multiple fiscal year workplan.
Upper Three Mile Creek: Ephemeral Gully Restoration Project	0%	\$ 510,306	\$340,204	09/30/2023	**Pending
Ryan Creek Watershed Implementation Project	0%	\$ -	\$ -	09/30/2023	Project moved to FY18
Fiscal Year 2020					
Planning Administration/Management	100%	\$ 883,290	\$ 568,527	09/30/2020	*
Statewide Surface Water Quality Monitoring of Priority Wadeable Streams and Rivers	59%	\$ 330,441	\$ 220,294	09/30/2024	*
Surface Water Quality Assessment of Rivers, Reservoirs and Tributary Embayments on a Statewide Rotation	55%	\$ 185,676	\$ 123,784	09/30/2024	*
Coastal NPS Program Approval	0%	\$ 100,000	\$ 66,667	09/30/2024	*
Watershed Management Plans, Public Stakeholder	0%	\$ 158,593	\$ 105,729	09/30/2024	*

Involvement, Education & Outreach					
Shoal Creek Watershed Implementation Project - Phase II	0%	\$ 524,187	\$ 349,458	09/30/2024	*
Black Creek Stream Restoration Project	0%	\$ 665,204	\$ 443,469	09/30/2024	*
Pepperell Branch Watershed Implementation Project	0%	\$ 290,703	\$ 193,802	09/30/2024	*
Upper Three Mile Creek Watershed Implementation Project - Phase III	0%	\$ 77,906	\$ 51,937	09/30/2024	*

**FY20 319 Application submitted to the EPA on 9/28/2019. Funding released 4/24/2020. Workplans are being updated based on available funds.*

***FY19 319 Application submitted to the EPA on 9/28/2018. Funding released 5/30/2019. Workplans are being updated based on available funds.*



The Alabama Nonpoint Source Management Program

Administered by the:
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