12/31/2025

ALABAMA NONPOINT SOURCE MANAGEMENT PROGRAM

2025 ANNUAL REPORT

Alabama Department of Environmental Management

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Copies of this report are available on the Alabama Department of Environmental Management Website at: https://adem.alabama.gov/water/nonpoint-source-pollution-program

Published and distributed by the:
Alabama Department of Environmental Management
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Alabama's Nonpoint Source Program is funded in part by Clean Water Act Section 319(h) awarded through the Performance Partnership Grants BG96464619, BG96464620, BG96464621, BG96464622, BG96464623, and BG96464624, an appropriation by the U.S. Environmental Protection Agency.

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Executive Summary

Nonpoint source (NPS) pollution, often referred to as polluted stormwater runoff, is the predominant cause of water quality impairments in Alabama, contributing to approximately two-thirds of the pollution impacting the state's streams and lakes. This form of pollution occurs when precipitation, such as rainfall or snowmelt, traverses the land, collecting various pollutants and transporting them to water bodies, including streams, rivers, lakes, wetlands, and coastal areas. Unlike point source pollution, which originates from identifiable sources like wastewater treatment plants, NPS pollution arises from a wide array of diffuse sources, including agricultural practices, logging, mining, urban development, construction activities, and inadequate waste disposal methods. Atmospheric deposition also plays a role in contributing to NPS pollution.

To address these challenges, Section 319(h) of the Clean Water Act (CWA) authorizes federal grant funding for the implementation of U.S. Environmental Protection Agency (EPA)-approved state NPS management programs. Since 1990, the Alabama Department of Environmental Management (ADEM) has effectively utilized CWA Section 319(h) grant funding to tackle a broad spectrum of NPS pollution issues and develop sustainable solutions. Eligible applicants for these grants encompass state and local agencies, academic institutions, governments, and nonprofit organizations. The funding is specifically allocated for implementing watershed management plans (WMPs) aimed at restoring impaired waters through the application of best management practices (BMPs).

The initiatives supported by these grants take a holistic approach, focusing not only on the implementation of BMPs but also on providing technical assistance, education and outreach (E&O) efforts, and capacity-building for local stakeholders. By fostering collaborative partnerships and practical solutions, these watershed projects aim to enhance water quality, promote sustainable land use practices, and encourage community engagement in environmental stewardship.

Through the strategic application of CWA Section 319(h) funding, Alabama is making significant progress in addressing NPS pollution and improving the health of its water bodies. By continuing to implement effective watershed management strategies, the state seeks to restore and protect its vital water resources, benefiting both ecosystems and communities. This approach underscores the importance of integrating scientific research, community involvement, and effective policy to achieve lasting improvements in water quality across Alabama.

Alabama NPS Programmatic Goals and Objectives

Goal 1: Continue to collect surface water and groundwater monitoring data using an iterative statewide targeting monitoring approach to assess whether state waters meet state water quality standards and use classifications.

Goal 2: Target Alabama 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 of statewide education and outreach activities to increase public knowledge and awareness relative to NPS pollution, watershed health, water quality protection and restoration, and natural resource stewardship.

Alabama's Disbursement of CWA 319(h) Funds

EPA awards CWA Section 319(h) grant funding to States and tribes annually based on a specific formula. States, including Alabama, then decide how to best utilize allocated funds to address NPS pollution.

In Alabama, the federal funding is primarily directed toward several key activities:

Assessment and Monitoring: Evaluating the condition of waterways to identify pollution sources and impacts.

Education and Training: Providing resources and training to stakeholders, including landowners and community members, on best practices for reducing NPS pollution.

Technology Transfer: Sharing innovative techniques and technologies that can help manage and mitigate NPS pollution.

Implementation of NPS Total Maximum Daily Loads (TMDLs): Developing and applying plans to limit the amount of pollutants that can enter waterways.

Watershed Projects and BMPs: Funding on-the-ground projects designed to improve water quality through effective land and resource management.

Watershed Management Plan Development: Creating comprehensive, EPA nine-key element plans to address water quality issues and guide long-term watershed conservation efforts.

Through these initiatives, Alabama aims to enhance the health of its waterways and ensure sustainable management of its natural resources.

Balances for active grants Fiscal Year (FY)2019-FY2024 are listed in Table 1 and represented graphically in Figure 1 below.

Table 1 - Current Section 319(h) Grant Balances

Grant Year	Award Amount	Amount Obligated	Program Funds	Project Funds	Total # Projects
FY2019	$3,086,000	$3,086,000	$1,593,000	$1,493,000	7
FY2020	$3,216,000	$3,216,000	$1,658,000	$1,558,000	9
FY2021	$3,303,000	$3,303,000	$1,701,500	$1,601,500	11
FY2022	$3,303,000	$3,303,000	$1,701,500	$1,601,500	8
FY2023	$3,303,000	$3,303,000	$1,701,500	$1,601,500	12
FY2024	$3,161,100	$3,161,100	$1,630,550	$1,530,550	9
Total	**$19,372,100**	**$19,372,100**	**$9,986,050**	**$9,386,050**	**56**

** FY2025 funding is pending per EPA award.*

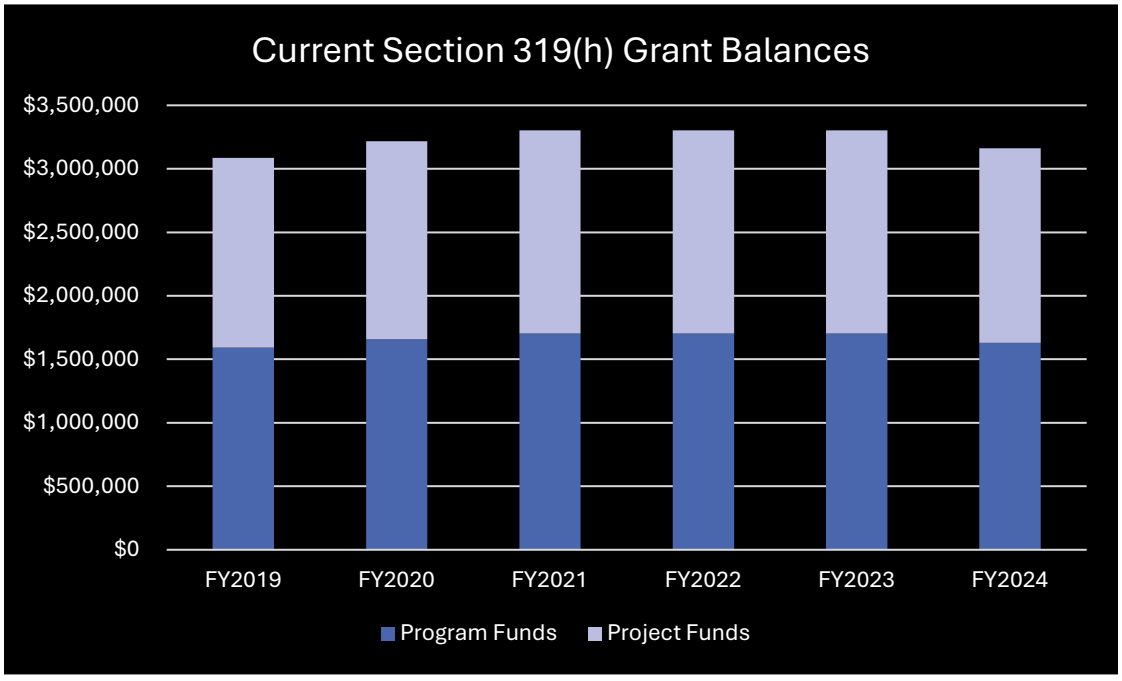

Figure 1 - Current Section 319(h) Grant Balances

FY2019-FY2025 Project Watersheds

Implementation projects employ activities that target the restoration of NPS pollution impaired waterbodies and implement an existing watershed-based management plan. Activities aim to reduce NPS impairments, such as pathogens, nutrients, or low dissolved oxygen (DO). Project areas are based on a targeted 12-digit hydrologic unit code (HUC-12); sometimes multiple HUC-12s are included within a project area. Projects from multiple grant years may occur in the same HUC-12.

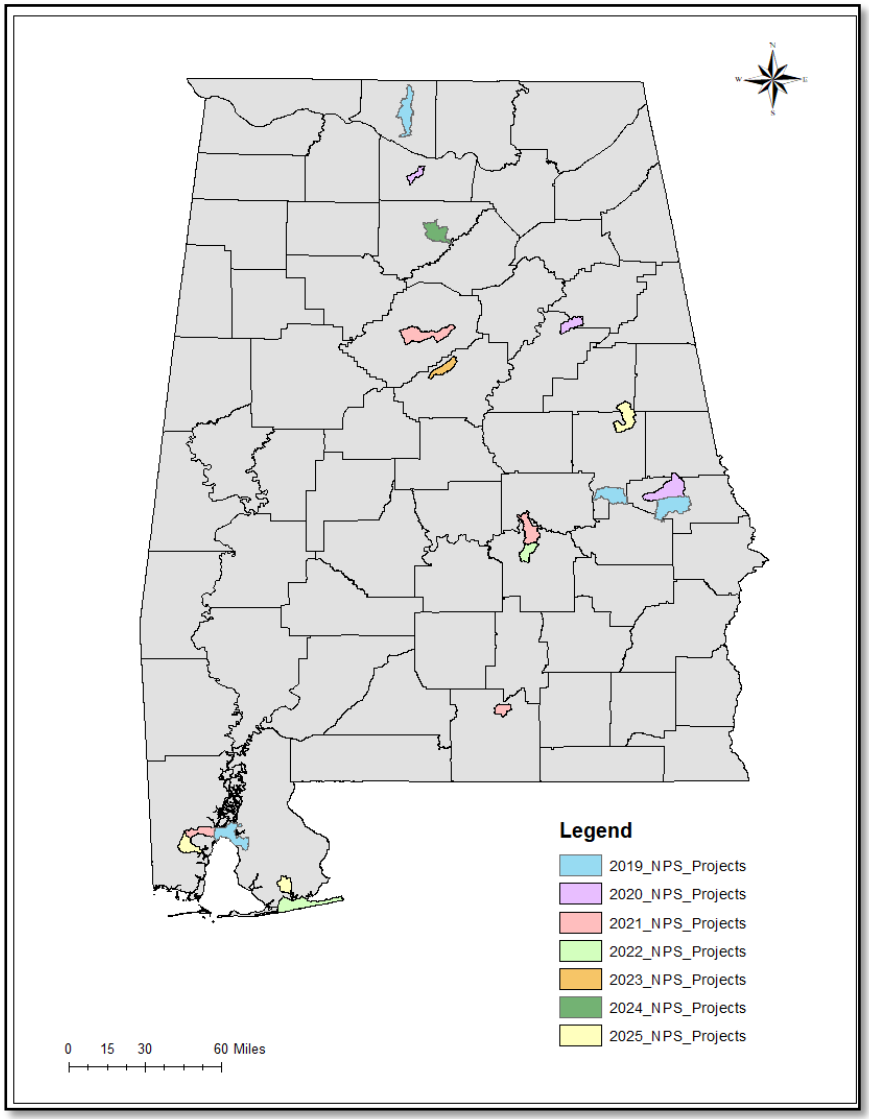

Figure 2 - FY2018-2025 Watershed Implementation Projects (HUC-12 Watersheds)
**FY25 projects are pending due to receipt of EPA award.*

Pollutant Load Reduction Totals in FY2025

The projects and activities outlined in this report provide a brief overview of the Department's efforts to address NPS pollution in Alabama. However, to provide a numerical measure of the effectiveness of these efforts, EPA's CWA Section 319(h) guidance calls for a report of the "annual reduction in nitrogen, phosphorus, and sediment from NPS to waterbodies." In cooperation with its partnerships, pollutant load reductions have been estimated using developed methodologies for past and ongoing

projects. Table 2 and Figure 3 below contain 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 - Load Reductions by Year

Fiscal Year	Nitrogen (lbs/yr)	Phosphorus (lbs/yr)	Sedimentation-Siltation (tons/yr)
2019	41,556	11,654	8,086
2020	64,685	24,960	3,663
2021	5,801	2,468	528
2022	9,391	2,638	581
2023	0	0	0
2024	3,548	948	716
2025	6,558	1,399	514
Total	**131,539**	**44,067**	**14,088**

TMDLs and Assessments Update

TMDLs in Alabama

The TMDLs are developed by the ADEM in accordance with the State of Alabama Water Quality Monitoring Strategy. TMDLs quantify the permissible levels of specific pollutants contributing to water quality impairments within a waterbody, ensuring compliance with water quality standards. They also delineate the necessary reductions required to achieve these standards.

Upon development by ADEM's Water Quality Branch, the TMDL documents are submitted to the EPA for review and approval, followed by a public comment period. The Alabama NPS Management Program utilizes TMDLs to prioritize watershed initiatives, optimize resource allocation, and facilitate water quality protection and restoration efforts.

In fiscal year 2024, ADEM's TMDL Program made significant advancements in the safeguarding of Alabama's water resources. As of FY2025, Alabama has achieved a cumulative total of 330 approved TMDLs, with the associated pollutants illustrated in Figure 3.

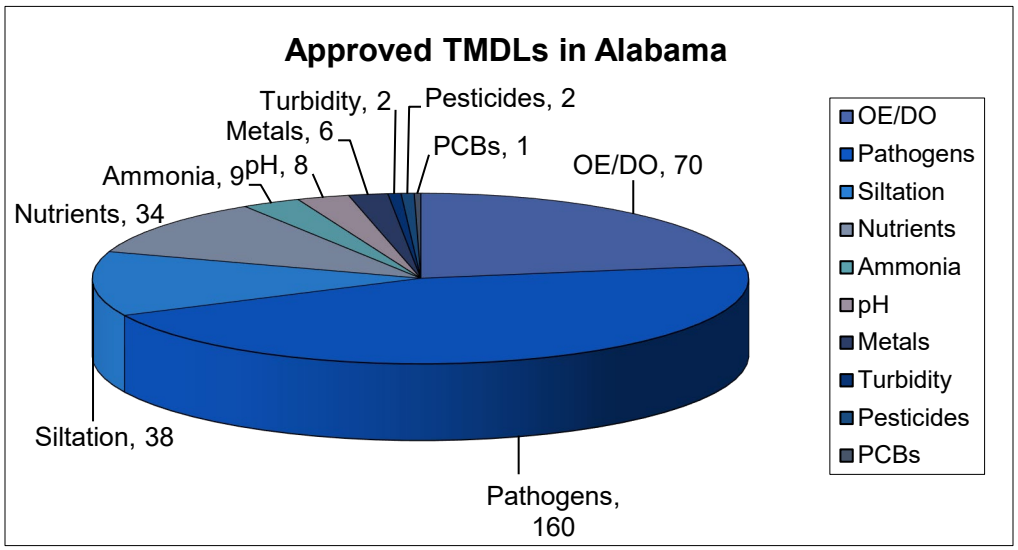

Figure 3 - TMDL Representation by Pollutant

Current Watersheds Implementing a TMDL in NPS Projects

Table 3- Current Watersheds Implementing a TMDL in NPS Projects

Fiscal Year	Project Title	Total
2019	• Implementation of Low Impact Development (LID) Stormwater Practices Across Lee County, AL • Sunrise Park Project • National Water Quality Initiative Statewide Targeted Water Quality Surveys of Wadeable Rivers and Streams	3
2020	• Shoal Creek Watershed Implementation Project Phase II • Pepperell Branch Watershed Implementation Project • Sunrise Park Project	3
2021	• Roebuck Municipal Golf Course Stream Restoration and Demonstration Project • Upper Three Mile Creek Ephemeral Gully Restoration Project • Three Mile Creek LID Implementation Project • Crump Community Center LID	4
2022	• Whites Slough Watershed Restoration and Management Project – Phase II • Three Mile Creek Langan Park Low Impact Development Project	2
2023	• Three Mile Creek Langan Park Low Impact Development Project • Cahaba Valley Creek Watershed Implementation Project • Sunrise Park Project • Montgomery Zoo Restoration	4
2024	• Broglen River Watershed Implementation Project – LID in the City of Cullman • Upper Three Mile Creek Watershed Implementation Project – LID on US Campus • Faulkner University Campus Restoration • Roebuck Creek Watershed Implementation Project – Phase 2	4

ADEM Surface Water Quality Monitoring Strategy

The 2020 Monitoring Strategy (Figure 4) introduced a coordinated three-year basin rotation for the Rivers and Streams Monitoring Program (RSMP), the Rivers and Reservoirs Monitoring Program (RRMP), and the Coastal Waters Monitoring Program (CWMP). This approach integrates monitoring data across reservoirs, embayments, and both wadeable and non-wadeable rivers and streams.

A prioritization framework has been established to enhance monitoring efforts in alignment with program objectives for each basin group. Key priorities include monitoring impaired, unimpaired, and unassessed waters, assessing the effectiveness of restoration initiatives, and fostering collaboration with partner agencies and stakeholders when feasible. Monitoring activities within each basin group are systematically planned and coordinated on an annual basis by ADEM's basin teams.

Basin Teams were formed to enhance communication among project managers, field staff, and ADEM management within the Field Operations Division (FOD), the Water Quality Branch, and the NPS Unit. Participation in Basin Team meetings facilitate familiarity with the data needs and challenges specific to each basin. The responsibilities of the Basin Teams include developing the annual basin plan for their respective groups, tracking and documenting decisions and revisions related to the State Water Quality Monitoring Plan, preparing status summaries for the basin team, responding to data requests and reviews, and evaluating final reports. The Basin Team Meetings for 2026 planning efforts occurred from November 17-21, 2025.

Figure 4 – Water Monitoring and Assessment Strategy

Rivers, Reservoirs, and Tributary Embayment Assessments

Thirty-eight representative river and reservoir stations in the Coosa, Tombigbee, and Escatawpa River basins, as well as the Guntersville portions of the Tennessee River basin, were monitored as part of the FY2025 RSMP. Stations from each basin were sampled monthly from April through October. All stations within the same river basin were sampled within a one-week period to reduce weather-related variability in water quality conditions. Seven monthly sampling events were conducted at each station during the growing season. 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) and 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, DO, specific conductance, and pH were measured *in situ* at multiple depths throughout the water column with a multi-parameter instrument. Using a pump and hose apparatus, water was collected from the entire photic zone and composited. From each composite, water quality samples, including a water-column chlorophyll *a* sample, were collected; hardness was collected at all stations from June through September. Surface water *Escherichia coli* (*E. coli*) samples were collected four times during the sampling season (June-September) at each station. Select stations were sampled for low-level mercury analysis in late February-early March.

Figure 5 - Field Operations Division Personnel Taking Stream Measurements

Wadeable and Non-Wadeable Streams and Rivers Assessments

Fifty-four locations on flowing streams and rivers were sampled as part of the FY2025 RSMP NPS grant. Sampling efforts included collecting biological, chemical, and habitat data at three sites to help establish baseline conditions in the National Water Quality Initiative (NWQI) priority sub-watersheds, as well as six stations at high risk for NPS impairments. In addition, twenty-four established and candidate reference reaches located throughout the state to characterize least-impaired conditions within ten Level 4 and four Level 3 Ecoregions were monitored. These data complement the data collected at the NWQI and NPS sites, the thirty-five sites monitored to develop TMDLs or to assess the effectiveness of TMDLs after implementation, and the thirty-three long term water quality trends sites.

Data generated during this project will be used in developing and prioritizing WMP goals and documenting successes. It will also be used to categorize wadeable stream and river assessment units in the Alabama Integrated Water Quality Monitoring and Assessment Report (IWQMAR). Monitoring data from new and legacy least-impaired reaches 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 were conducted to assess biological community conditions and aquatic life use support. Habitat surveys and *in situ* and water quality samples were collected to help identify any stressors to biological communities, to 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, DO, pH, conductivity, turbidity, nutrients, water-column chlorophyll *a*, total dissolved solids (TDS), total suspended solids (TSS), *E. coli,* and total dissolved metals. Pesticides, semi-volatiles, atrazine, and glyphosate were 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 was conducted during different sampling periods based on drainage area and ecoregion. This allows the RSMP to provide data for the most accurate assessment of biological, physical, and chemical conditions. Habitat, macroinvertebrate, and fish surveys were conducted March through late August at wadeable flowing stream stations, and in October at nonwadeable flowing streams and rivers. *In situ* water quality samples were collected March through October by the Montgomery, Decatur, Mobile, and Birmingham Field Offices. All water quality data has been entered and quality assured (QA'd). Site observations and habitat survey information has also been entered. Fish index of biological integrity (IBI) community survey samples have been identified and QA'd and entered into ALAWADR. All macroinvertebrate samples have been processed, and identifications are underway.

Figure 6 - Aquatic Assessment Unit completing aquatic evaluations

NPS Partnerships

Alabama's Mountains, Rivers, & Valleys RC&D Annual Meeting

Figure 7- AMRVRCD Annual Meeting advertisement

Alabama's Mountains, Rivers, & Valleys Resource Conservation and Development (AMRVRCD) Council hosted their annual meeting on October 30, 2025, at the Guntersville State Lodge Park in Guntersville, AL. Around fifty (50) people attended the event. The project at Pisgah Civitan Park was discussed which included enhancements to the event center facility, upgraded trails, scenic viewing spots, and overlooks to improve the experience for visitors. The security of the park was also updated to ensure the safety of all visitors and staff.

North Alabama Trails & Recreation also spoke about their work as well as an upcoming Sweet Trails Alabama toolkit they are helping to develop. Waterworks announced a new rebranding, and will now be known as Waterworks Environmental Learning Lab. The director talked about new upgrades to the facility as well as announcing dates for upcoming events. The executive director for AMRVRCD gave a recap of the year.

Alabama's Soil and Erosion Control Program Partnership

Figure 8 - Field Day at Clear Water Alabama

The ADEM continues to actively support the Soil and Erosion Control Partnership, a collaborative effort aimed at educating professionals on the latest erosion and sediment control practices. The partnership includes a diverse group of stakeholders, such as the Alabama Soil and Water Conservation Committee, the Natural Resources Conservation Service (NRCS), ADEM, the Alabama Association of Conservation Districts (AACD), the Alabama Department of Transportation (ALDOT), the Home Builders Association of Alabama, the Associated General Contractors of Alabama, the Alabama Cooperative Extension System (ACES), and the Auburn University Stormwater Research Facility and Water Resource Center (AUWRC).

The Partnership's efforts include the ongoing technical review and update of the *Alabama Sediment and Erosion Control Handbook – Volumes 1 and 2*, the accompanying field guide, and informational brochures aimed at reducing sedimentation and erosion. Additionally, the Partnership coordinates various training opportunities for professionals working in stormwater management. The largest of these events is the *Clear Water Alabama Seminar and Field Day*, held this year in Pell City, Alabama, on September 24-25, 2025.

Alabama Water Rally

Figure 9- AL Water Rally Attendees

The Alabama Water Rally was held on March 28-30, 2025, at Camp Beckwith in Fairhope, AL. It is a prominent annual gathering of river and watershed advocates hosted by the Alabama Rivers Alliance. It is a conference-style event featuring educational workshops, plenary sessions, and training focused on clean water advocacy across the state.

At the 2025 Alabama Water Rally, the ADEM's NPS Unit showcased how Section 319 grants help reduce NPS pollution across the state. These federal grants, part of the CWA, fund projects that improve water quality through watershed-based planning, require collaboration and a 40 percent non-federal match from applicants such as local governments, nonprofits, and conservation partners. The presentation highlighted how grants are used in agriculture for erosion and nutrient management, in urban areas for stormwater and outreach projects, in hydromodification efforts to restore streams and habitats, and in watershed planning to implement on-the-ground projects. Emphasizing coordination, monitoring, and partnerships, the NPS Unit demonstrated how Section 319 grants are a key tool for protecting Alabama's rivers and streams while supporting sustainable community and environmental stewardship.

At the Stackin' Paper: Securing Grants, Corporate Cash & Community Support Session, experts shared strategies for securing funding through grants, corporate sponsorships, and community support. Among the presenters, NPS Unit staff highlighted the role of Section 319 grants, which provide federal funds to reduce NPS pollution in Alabama. By explaining how these grants support projects in agriculture, urban areas, watershed planning, and habitat restoration, the NPS Unit emphasized that effective fundraising isn't just about dollars — it's about connecting resources with long-term environmental impact. NPS Unit Chief, Heather Griffin, joined Carlee Sanford (Elton B. Stephens Company Charitable Giving), Andrew Syzmanski (Montgomery City Council), Mark Berte (Alabama Coastal Foundation), and Ryan Anderson (Southeast Law Center).

Figure 10- Panel members during Stackin' Paper Session

Alabama Water Watch

In 1992, Alabama Water Watch (AWW) was established as a citizen lead volunteer water quality monitoring program covering all sixteen major river basins within the state of Alabama. "AWW uses EPA-approved monitoring plans with a community-based approach to train citizens to monitor conditions and trends of their local waterbodies. With a data-to-action focus, AWW helps volunteers collect, analyze, and understand their data to make positive impacts."

AWW offers training classes and workshops year-round across the state. The NPS Unit staff were able to help facilitate several volunteer monitor training opportunities in prioritized watersheds through the inclusion of AWW in many of our CWA Section 319 (h) implementation projects. This helps spread watershed stewardship and empower local stakeholders statewide Alabama Watershed Stewards (AWS) Program. The training consists of a self-paced online course containing coursework on AWW, bacteriological monitoring, and water chemistry monitoring, and a field day where participants demonstrate his/her ability to conduct monitoring tests. The field day also gives hands-on training and demonstrations of field monitoring tools and proper protocols for recording and analyzing data.

Figure 11- Attendees classifying macroinvertebrates

Participants were empowered to make a positive environmental impact by using their knowledge to educate others and promote watershed stewardship.

On January 25, 2025, NPS Unit staff participated in AWW training for Stream Biomonitoring. Participants were trained on what a macroinvertebrate is as well as the different groupings that can help determine a stream's health. Dr. Rosenberg says, "Chemical measurements are like taking snapshots of the ecosystem, whereas biological measurements are like making a videotape." After training indoors and playing a Macro Mania game to help learn how to identify macroinvertebrates, attendees got hands on in a nearby stream and assessed the health of that stream by identifying the macroinvertebrates found there.

The AWW Annual meeting was held on June 21, 2025, at Graham Creek Nature Preserve in Foley, Alabama. AWW staff announced program updates for the past year and presented awards to different citizen water watch monitors.

Choctawhatchee Bay Estuary Program Technical Advisory Committee

Figure 12 - Choctawhatchee Bay Estuary Program's Motto

The Choctawhatchee Bay Estuary Program (CBEP) promotes a thriving ecology and environment for the Choctawhatchee Bay, River, and watershed. The CBEP implements programs and initiatives for the protection and stewardship of natural resources and water quality and strengthens community resiliency and environmental education to maintain a vibrant economy and high quality of life around Choctawhatchee Bay and within the watershed.

ADEM serves as one of the many partners of the CBEP promoting NPS pollution E&O efforts within the northern portion of the Choctawhatchee River watershed in Alabama. NPS Unit staff currently serve on the Technical Advisory Committee (TAC) and E&O Committee. NPS Unit staff along with other key stakeholders hold positions on the Project Prioritization Committee. The committee seeks to prioritize and rank implementation projects based upon the objectives and goals from the Comprehensive Conservation Management Plan (CCMP). The committee will also seek to develop the most advantageous project reporting. Additionally, Walton County (Florida Board Member) is working with the U.S. Army Corps of Engineers (USACE) to conduct an investigative study on the Choctawhatchee Bay and River watershed.

Mobile Bay National Estuary Program Management Conference

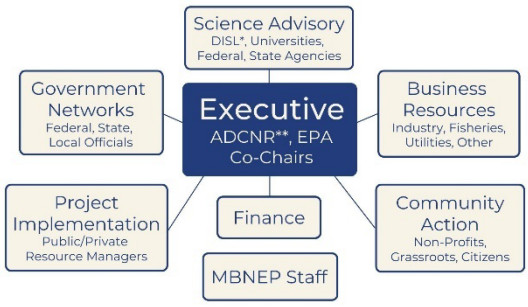

Figure 13 - Depiction of the MBNEP Management Conference Connections

The National Estuary Program (NEP), established by Congress through amendments to the CWA in 1987, is a collaborative network of organizations focused on protecting and restoring 28 estuaries of national significance. The Mobile Bay National Estuary Program (MBNEP), founded in 1995, has been a leader in planning and implementing coastal protection and restoration initiatives in Alabama.

The ADEM's NPS Unit is an active member of MBNEP's Management Conference, contributing to key committees including the Project Implementation Committee (PIC), Executive Committee (EC), and Government Networks Committee. In the past year, ADEM NPS Unit staff have played a significant role in facilitating and co-chairing meetings within the PIC and have supported ongoing efforts to guide restoration projects in the Mobile Bay watershed.

The PIC assesses restoration needs and prioritizes watershed projects through science-based planning and tools. It tracks progress, develops action plans, and integrates citizen input mechanisms into project implementation. In 2025, the PIC held meetings on February 18, May 22, August 19, and December 3, which focused on advancing the CCMP, evaluating WMPs, and reviewing the effectiveness of completed projects.

The Government Networks Committee serves as a platform for state agency leaders, regional officials, and local government representatives to collaborate on coastal resource management. It facilitates dialogue between levels of government, helps local officials better understand state programs, and fosters community involvement in watershed stewardship. The Committee met on February 14, May 30, August 22, and December 3 discussing topics such as the Management Conference Updates, CCMP – The Waters We Share input and updates, Dredging in Mobile Bay, updates on State projects and priorities, status of MBNEP projects, and tools of stormwater management.

The EC, a volunteer body, provides strategic direction and oversight for MBNEP's operations. ADEM NPS Unit staff, serving in the role of co-chair, participated in EC meetings held on February 19, May 30, and December 3. These meetings focused on reviewing and accepting the annual workplan, discussing updates to the CCMP, and reviewing the work and progress of MBNEP's various committees.

Figure 14 - Presentation slide to open the workshop

As part of the continued progress towards drafting and finalizing the CCMP for Coastal Alabama, on June 24, 2025, MBNEP led a management conference-wide workshop to review top priority Action Plan concepts. There were 85 participants overall from different committees. ADEM NPS Unit staff participated as part of the PIC. The tasks in this breakout session were associated with ecosystem

restoration and protection discussing shoreline and sediment management, tracking/education/decision support, planning and resilience at the local level, and conservation and habitat protection. All members were tasked to put details to the Plans that are necessary for successful implementation in the next ten years. Each Action Plan contains goals, objectives, suggested activities, potential lead entity, timeline estimates, funding estimates, and suggested performance measures.

Figure 15- NPS Unit staff and attendees

National Water Quality Initiative

Figure 16- Slide from a Presentation about NWQI

The NWQI is a vital partnership among the U.S. Department of Agriculture's Natural Resources Conservation Service (NRCS), state water quality agencies, and the EPA. This collaborative initiative targets impaired water bodies by leveraging voluntary conservation practices on agricultural lands to improve water quality. The initiative provides financial and technical assistance to farmers in small, high-priority watersheds where conservation practices can make a significant impact.

Through the implementation of best management practices (BMPs) such as cover crops, reduced tillage, filter strips, and nutrient management, the NWQI enhances soil health, reduces erosion, and mitigates nutrient runoff. These practices not only contribute to the restoration of natural resources but also improve agricultural productivity by optimizing the use of inputs and promoting long-term sustainability.

State water quality agencies play a crucial role in the success of NWQI efforts by contributing resources for watershed planning, implementation, and monitoring. They also track the water quality improvements through in-stream monitoring, using EPA CWA Section 319 funds or other sources. This assessment helps determine the impact of voluntary conservation practices on nutrient, sediment, and pathogen levels in water bodies.

Since the success of a 2017 pilot project, NRCS has implemented a "planning" phase, assisting states with watershed assessments, on-farm planning, and outreach efforts before the implementation phase begins. This includes providing technical assistance for workshops, data analysis, Geographic Information System (GIS) studies, stream surveys, and one-on-one coordination with landowners. In FY2019, the scope of NWQI was expanded to include source water protection for public water systems, addressing both surface and groundwater needs.

The NWQI program has ambitious goals, including reducing sediment loss by 1.3 million tons, phosphorus loss by 3.3 million pounds, and nitrogen loss by 16.8 million pounds. These reductions are essential to addressing water quality impairments and improving the ecological function of watersheds.

In Alabama, the partnership between NRCS, the ADEM, and local Conservation Districts has been instrumental in identifying and implementing watershed restoration and protection projects.

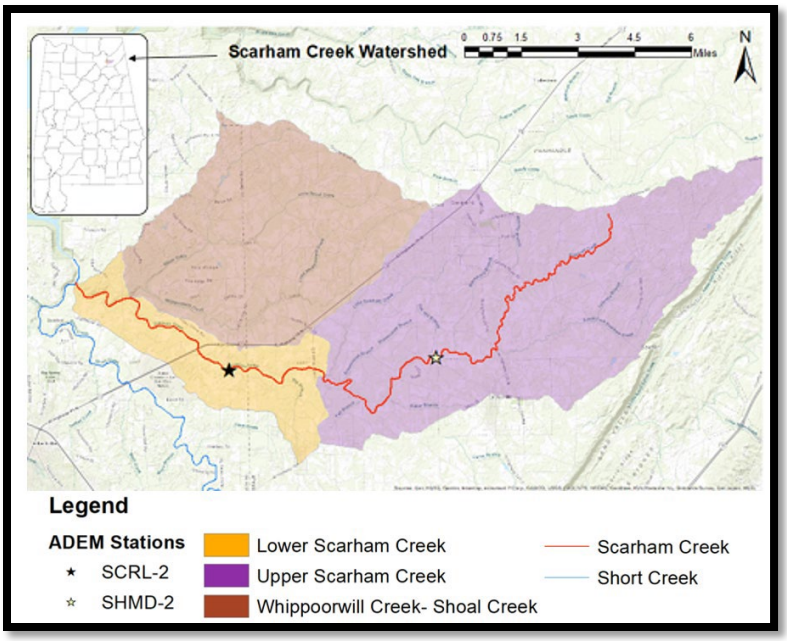

Figure 17- Scarham Creek Subwatersheds, ADEM Stations, and Scarham Creek Segment

Notably, Scarham Creek in northeast Alabama has been a priority watershed under the NWQI since 2012. Following an expanded focus in 2014, NRCS and ADEM, in collaboration with the United States Department of Agriculture (USDA) and local partners, have worked with landowners to implement BMPs to improve water quality without compromising agricultural productivity.

Between 2018 and 2025, ADEM conducted over 214 sampling trips at key monitoring stations on Scarham Creek. These efforts have shown significant progress, with Scarham Creek meeting water quality standards for organic enrichment/low DO and ammonia nitrogen by 2022. Additionally, ammonia levels have remained within state and federal criteria, with no exceedances of TMDLs or EPA standards.

The Fiscal Year 2025 data was unable to be obtained as of the date this report was written due to our NRCS partners being furloughed during the government shutdown. Updates will occur at a later date with meetings being scheduled in December to reconnect and plan for the upcoming year.

Pensacola and Perdido Bay Estuary Program Technical Advisory Committee and Education and Outreach Committee

Figure 18 - PPBEP advertisement

The Pensacola and Perdido Bay Estuary Program (PPBEP) is an essential initiative aimed at preserving, restoring, and maintaining the environmental health of the Pensacola and Perdido Bay watersheds, which are vital ecosystems along the Gulf Coast. The program is backed by funding from a cooperative agreement between the EPA Gulf of America Program and the Gulf Coast Ecosystem Restoration Council, with the Bay Area Resource Council leading the coordination.

Key Components of the PPBEP:

- **Preservation and Restoration**: The PPBEP focuses on maintaining the health of the estuaries, bays, and watersheds of Pensacola and Perdido Bays, which are crucial to the region's ecosystem, economy, and quality of life.
- **Community Engagement**: The program works to build awareness of environmental issues, promote environmental quality, and secure funding for environmental projects. It also fosters partnerships among stakeholders to implement solutions and policies based on scientific data.
- **Guiding Documents**: The CCMP, which was approved in October 2022, outlines priorities for monitoring, research, restoration, E&O, and policy development. It is designed to guide efforts to protect the health of the bays and ensure their long-term sustainability.

Involvement of ADEM and NPS Unit:

The ADEM collaborates to reduce NPS pollution within the Pensacola and Perdido Bay watersheds, particularly in Alabama. NPS Unit staff actively participate in both the TAC and the E&O Committee of the PPBEP, contributing to discussions and actions aimed at addressing NPS pollution in the region. In 2025, NPS Unit staff shared Co-Chair responsibilities on the E&O Committee. NPS Unit staff held a seat on the selection committee for providing feedback to the PPBEP for community grants in Florida's portion of the estuaries in August of 2025.

Recent Meetings and Activities:

- **February 6, 2025 – E&O Committee Meeting**:
    - **Presentations**: The meeting included discussions on the Building Pensacola's Greenway, the Living Shorelines Assistance Program, and National Estuaries Week.
    - **Focus Areas**: The committee heard from Mr. Larry McDonald about The Community Collaborative Rain, Hail, and Snow Network (CoCoRaHS). This is a voluntary program that logs and maps localized precipitation events. The PPBEP looked for input on the Bay Friendly Booklet Topics. This was an amazing exercise that came up with great topics to educate the coastal communities. There were staff updates

about the annual report for the PPBEP, 2025 State of the Bays, Estuary Explorers and upcoming events that participantscould attend.

The PPBEP is instrumental in driving environmental restoration and conservation in the Pensacola and Perdido Bay systems. By coordinating efforts among various stakeholders, including local government, nonprofit organizations, and community members, the program aims to address pressing environmental challenges such as NPS pollution, habitat degradation, and the sustainability of vital marine resources like oysters. It also serves as a model for integrating scientific research with public policy and community outreach, ensuring that the health of the ecosystem is maintained for future generations.

Through its various committees and ongoing projects, the PPBEP continues to serve as a key platform for collaborative decision-making and action aimed at enhancing environmental quality and community engagement.

Alabama Nonpoint Source Management Conference

The ADEM NPS Choctawhatchee River Basin Conference, held on March 6, 2025, at the Hartford Civic Center in Hartford, AL, was a significant event for stakeholders involved in NPS pollution management and environmental protection across the Choctawhatchee River Basin. This conference brought together approximately thirty-five (35) participants from a broad spectrum of sectors, including federal, state, and municipal government agencies, private sector professionals, nonprofit organizations, watershed groups, and academic institutions. The conference served as a platform for fostering collaboration and sharing knowledge among those working on NPS issues and solutions throughout Alabama.

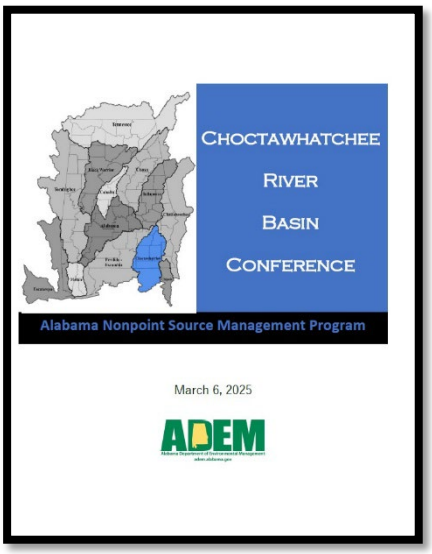

Figure 19- Conference Brochure

Key Aspects of the Conference:

1. Networking and Collaboration:

- The conference provided a vital space for professionals and stakeholders to network and exchange ideas on the reduction of NPS pollution.
- A primary objective was to strengthen communication on NPS pollution issues, share best practices, and identify future opportunities for collaboration to drive forward effective NPS reduction efforts across the state.

2. Presentations and Topics:

The event included several presentations covering a broad range of topics relevant to NPS pollution management and environmental protection:

- **ADEM NPS Unit Update**: The NPS Unit provided an update on ongoing projects, regulatory efforts, and future plans for NPS pollution reduction in Alabama and the Choctawhatchee River basin.
- **NRCS Environmental Quality Incentives Program (EQIP) Funding and Updates**: this presentation focused on NRCS EQIP practices, funding opportunities, and how Section 319 projects can be used similarly.
- **ADEM Water Quality Update**: A detailed update on the Choctawhatchee River water quality monitoring efforts, challenges, and initiatives to improve the health of Choctawhatchee River's watersheds and ecosystems.
- **ADEM TMDL Update**: A detailed update on the Choctawhatchee River TMDL development efforts and challenges, and foster conversations regarding the health of Choctawhatchee River's watersheds and ecosystems.
- **Wiregrass Resource Conservation and Development (RC&D) Update**: A presentation on Wiregrass RC&D grant funding opportunities, website and application navigation, and overview of previously funded projects.
- **Choctawhatchee River Keeper**: A presentation showcasing the history of RiverKeepers, RiverKeeper efforts in the Choctawhatchee River, and ways stakeholders could assist with efforts.
- **People Against A Littered State (PALS)**: Focused on PALS history, goals, and current initiatives throughout the state of Alabama.

3. Goals and Outcomes:

- The conference aimed to raise awareness about NPS pollution and highlight successful strategies for its reduction.
- A key outcome was the strengthened connections between professionals and organizations, fostering partnerships that will continue to collaborate on future NPS-related projects.
- Participants were encouraged to build upon existing BMPs and environmental programs, leveraging lessons learned and identifying new opportunities for NPS reduction across different sectors.

Conclusion:

The ADEM NPS Choctawhatchee River Basin Conference served as a vital gathering for the diverse stakeholders working on NPS pollution issues in the Choctawhatchee River basin. It provided a platform for information exchange, collaboration, and future planning on effective strategies to reduce NPS pollution and improve water quality in the Choctawhatchee River basin. With presentations from key experts and active participation from state, local, and federal agencies, the conference was a step forward in building stronger partnerships and advancing environmental protection efforts.

Figure 20 - March 2025 NPS Management Choctawhatchee River Basin Conference

National Nonpoint Source Training Workshop

Figure 21- National Nonpoint Source Training Workshop Attendees

The 2025 National Nonpoint Source Training Workshop was held in Baton Rouge, Louisiana on October 27–29, 2025. Over the three days of the conference, participants from state, federal, tribal, territorial and non-profit organizations gathered to explore the latest in NPS pollution control under Section 319 of the CWA, with sessions on BMPs for agriculture and urban runoff, emerging tools for monitoring and modeling watersheds, and strategies for community-engagement, funding coordination and program implementation. The agenda also featured special focus areas on tribal-program development, hydromodification, and coastal management, offering ample opportunity for practitioner networking and exchange of approaches to NPS challenges.

State of Alabama Technical Committee with NRCS

This committee serves in an advisory capacity on technical matters related to NRCS programs. The meeting is open to the public. The NRCS State Technical Committee is a group that advises the NRCS on conservation issues and programs at the state level. The committee typically includes a diverse range of stakeholders, such as farmers, ranchers, conservation organizations, and government representatives. Their main roles include:

1. **Advising on Conservation Practices**: Providing input on the development and implementation of conservation practices and programs tailored to local needs.
2. **Identifying Resource Concerns**: Highlighting specific environmental and resource concerns in the state that require attention.
3. **Promoting Collaboration**: Facilitating partnerships among various stakeholders to enhance conservation efforts.
4. **Reviewing Program Effectiveness**: Evaluating the effectiveness of existing NRCS programs and suggesting improvements.

The State Technical Committee met on June 26, 2025. There were presentations and discussions, NRCS Program Updates, cover crop implementation requirements, Soil Tillage Intensity Rating value for ripper roll, alternative methods of applying herbaceous weed management, applying chemicals without the use of a sprayer, etc. This committee is full of a diverse stakeholder group.

Sweet Trails Alabama

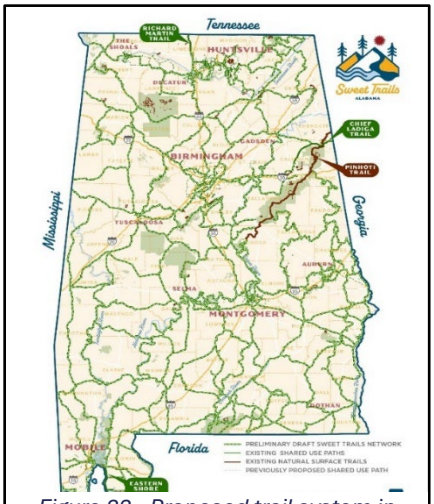

Figure 22 - Proposed trail system in Alabama

Sweet Trails Alabama has finalized a Master Plan including over 7,250 miles of trails, greenways, and blueways that will be connected throughout all sixty-seven counties in Alabama. The trail system will primarily be used for transportation, outdoor recreation, and outdoor education. Throughout 2025 Sweet Trails Alabama has been overseeing a feasibility study looking at trail connectivity, such as the Singing River Trail and Chief Lidiga Trail. Sweet Trails Alabama's Master Plan was available for public view in early January 2025. The Alabama Representatives approved the Plan and allocated $1.2 million for the continuation and implementation of the Plan. Furthermore, Sweet Trails Alabama attended the Innovate Alabama Outdoor Recreation Summit and the "Tour of Alabama's Trails" in April 2025. Currently, Sweet Trails Alabama is working with federal

and state partners with construction on specific projects, such as the Pinhoti Trail near Jogloma-Scott Lake. ADEM has been working to collaborate with state and local government, non-profits, and private organizations to secure federal, local, and private funding for project initiatives. This funding will be used to conduct additional feasibility studies, implement trails, and construct environmental education areas. NPS Unit staff are part of the Sweet Trails Alabama Steering Committee and have identified areas where Section 319(h) funding can be used to assist with the program goals and address NPS pollution in impaired waterways.

Urban Darter Partnership

On September 25, 2025, NPS Unit staff participated in the Urban Darter Partnership Meeting in Birmingham, AL at The Nature Conservancy's (TNC) office building. This meeting was led by U.S. Fish and Wildlife Service (USFWS) Partners Program biologist, Jeffrey Drummond. Geological Survey of Alabama (GSA) presented on Urban Darter Sampling results, USFWS presented on recovery planning updates and current projects they are associated with, and then there was a species update from Mr. Bernie Kuhajda who is associated with the Tennessee Aquarium. Over thirty partners came together to learn what current work was being complete involving the different species of urban darters. Then partners were able to have real discussions about challenges, conservation gaps, community engagement, and next steps to protection and growth of the urban darter species.

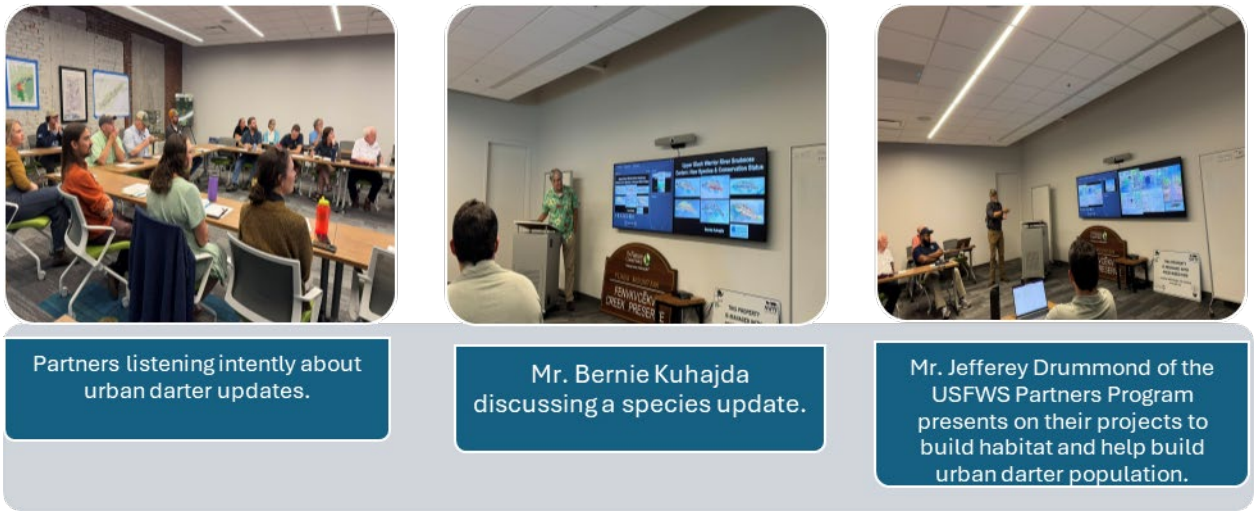

Figure 23- Stakeholder Engagement at the Darter Partnership Meeting in Birmingham, AL

Additional State and Federal Partners

As the lead state agency of the Alabama NPS Management Program, ADEM continues to work closely with many state and 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 Alabama Department of Conservation and Natural Resources (ADCNR)** is the lead partner on the **Alabama Coastal Nonpoint Pollution Control Program (ACNPCP)**.
- The **Alabama Department of Public Health (ADPH)** for partnering with ADEM on an air pollution grant aimed at aiding underserved communities within the state.
- The **ALDOT** is partnering with ADEM by helping to promote anti-littering messages and to educate the public about the importance of good watershed health through interagency cooperation in the Help Keep Our Waters Clean: Alabama's Litter Abatement Project and Trash Free Waters Grant.
- The **Alabama Tourism Department** for partnering in conjunction with ALDOT and the EPA Gulf of America Division for the Trash Free Waters Grant.
- The **Grand Bay National Estuarine Research Reserve (GBNERR)** works in partnership with National Oceanic and Atmospheric Administration (NOAA), ADCNR, and Mississippi State University to preserve, protect, and restore ecologically and environmentally sensitive areas within the Grand Bay Complex in Mobile County, Alabama.
- The **National Fish and Wildlife Foundation (NFWF)** continues to partner with **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 America Program on watersheds that directly affect the Gulf of America waters. The Clean Marina Initiative is a voluntary, incentive-based program also promoted by NOAA.
- The **NRCS** continues to assist with identifying areas of concern for NPS pollutant sources and causes, to supply technical guidance for developing Comprehensive Nutrient Waste Management Plans statewide, and to provide technical and engineering assistance with CWA Section 319(h) watershed projects involving implementation of agricultural BMPs.
- Through its Clean Water Initiative, **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. TVA continues to work with several watershed projects in the Tennessee River Basin and is vital in gathering and providing water quality data.
- The **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 CWA Section 404 permitting requirements, as needed, for stream restoration projects and has helped to identify solutions to siltation problems.
- The **USFWS**, in conjunction with the **ADCNR** and the **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. ADEM is working with the USFWS to coordinate these efforts through prioritization of data monitoring, information exchange, and in monitoring strategic habitat units where CWA Section 319(h) implementation projects have occurred.

- The **EPA Gulf of America Division** for partnering in conjunction with ALDOT and the Alabama Tourism Department for the Trash Free Waters Grant.
- **EPA Region 4** provides administrative oversight and support for the CWA Section 319(h) Program in Alabama.
- **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.

Success Story Submission Summary

Protecting and Restoring Little Paint Rock Creek Through Long-Term Stewardship

Figure 24 - Map of Little Paint Rock Creek Watershed from ADEM's Water Quality Branch

Little Paint Rock Creek (HUC-12 060300020204), a 2.17-mile stream reach in Marshall County, AL, was listed in 1996 on the CWA section 303(d) list of impaired waters for organic enrichment/low dissolved oxygen (OE/DO) and siltation. A 2002 OE/DO TMDL addressed carbonaceous (C) and nitrogenous (N) Biological Oxygen Demand (BOD). In 2021, ADEM collected nine samples that verified the DO, carbonaceous biochemical oxygen demand ($CBOD_5$), and ammonia consistently met state standards, with only one minor DO exceedance. Watershed education, outreach, and partnerships improved stewardship, habitat, and water quality. The creek now meets water quality standards for OE/DO.

Water Quality Challenge

Little Paint Rock Creek is a 5.88-mile tributary of the Paint Rock River in Marshall County, AL, draining 13.1 square miles within the Lower Paint Rock River watershed of the Tennessee River Basin. The watershed is primarily forest (72 percent), pasture/hay (16 percent), and row crops (12 percent), with agricultural runoff and livestock access to streams contributing to organic enrichment and low DO during summer low-flow periods. The creek is classified for Fish and Wildlife (F&W) use, requiring a minimum DO of 5.0 mg/L.

In 1996, the creek was listed on the CWA section 303(d) list of impaired waters for organic enrichment/low DO and siltation based on 1994–1995 TVA biological surveys showing impaired macroinvertebrate and fish communities. ADEM monitoring from 1997–1999 confirmed those violations, with a daily average as low as 4.9 mg/L. The 2002 TMDL identified ultimate (CBOD) and nitrogenous biochemical oxygen demand (NBOD) from NPS as the primary pollutants, with no permitted point source discharges. Modeling showed that a 17.8 percent reduction in NPS loads—limiting summer CBOD to 11.2 lbs/day and NBOD to 46.5 lbs/day—was needed to meet standards during the May–November critical period.

Story Highlights

From 1994 to 2014, project partners implemented a series of targeted and prioritized Section 319 grant funded projects to address NPS pollution in Little Paint Rock Creek and the larger Paint Rock River watersheds. They reduced organic loading and siltation from NPS while building long-term watershed stewardship. Partners coordinated projects highlighting watershed assessment, watershed planning, riparian buffers, livestock management practices to protect water quality, hydroseeding disturbed soils to reduce erosion, improving poultry waste and onsite septic system management, habitat protection, and promoted agriculture and urban composting. The Paint Rock River Watershed Management Plan guided this work and aligned it with TMDL implementation goals for organic enrichment and low dissolved oxygen.

Multiple partners played critical roles in implementing BMPs and sustaining progress. The Marshall County Soil and Water Conservation District (SWCD) and USDA's NRCS provided direct technical and financial assistance to landowners, AWW coordinated volunteer monitoring, Auburn University and ACES provided technical expertise, education/outreach, and project coordination, and the Alabama Clean Water Partnership led watershed planning and outreach. Section 319 funding supported key coordinator positions—including the Alabama Clean Water Partnership Coordinator, Statewide Sediment and Erosion Control Coordinator, and Statewide Agricultural Liaison with the Alabama Soil and Water Conservation Committee—that integrated projects and maintained local engagement. Project teams overcame initial landowner hesitancy and adapted practices to different farm operations by using hands-on demonstrations, peer-to-peer learning, and consistent technical support.

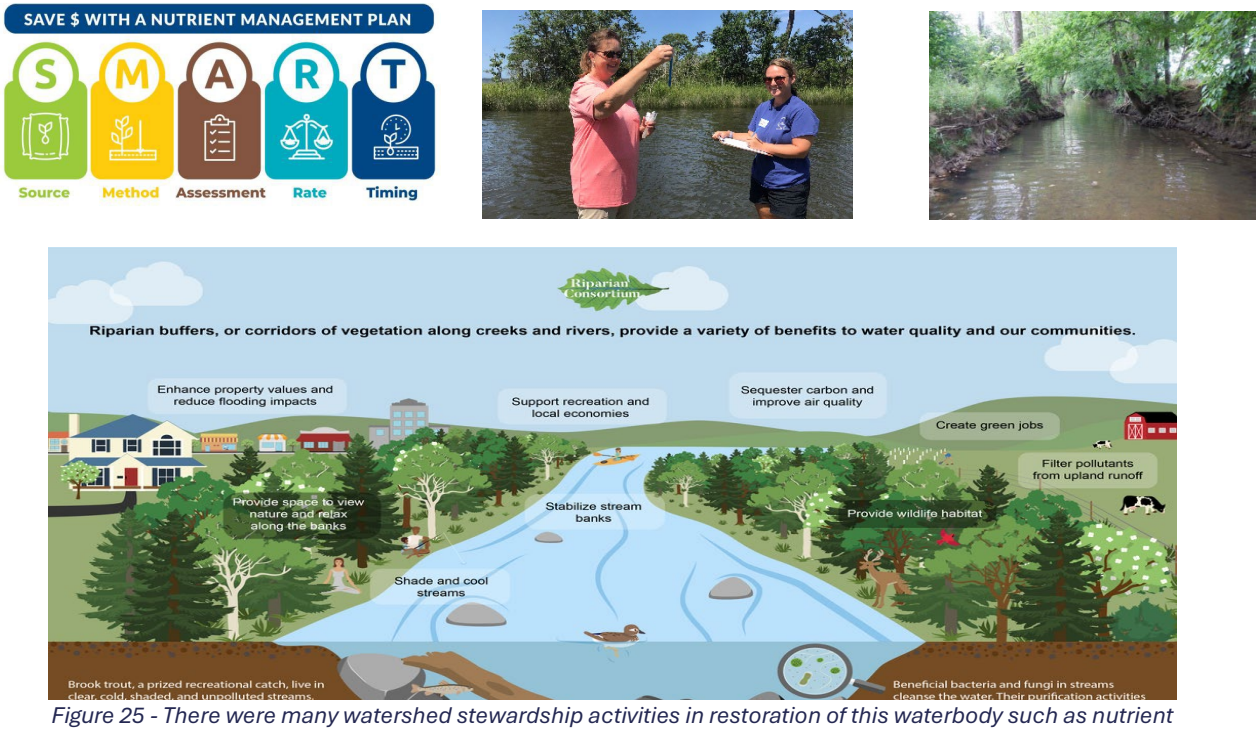

Figure 25 - There were many watershed stewardship activities in restoration of this waterbody such as nutrient management plans, volunteer monitoring, riparian buffers, waste management, watershed planning, livestock management, etc.

Results

The majority of collected data at LPRK-1 from 1999-2021 for both CBOD5 and NH3 were less than the Method Detection Limit (MDL) and results greater than MDL were well below any calculated Ammonia criteria. Analysis of these data indicates that these parameters are not causing any water quality related issues on this section of Little Paint Rock Creek. Based on an examination of all available water quality data and information related to Little Paint Rock Creek from Merril Road Bridge to Jeep trail crossing, there have been no issues regarding CBOD5, NH3, or DO. Consequently, ADEM has determined that the organic enrichment impairment does not currently exist.

Partners and Funding

The successful restoration of Little Paint Rock Creek has been driven by the collaboration of numerous partners, agencies, and funding sources, including:

- Alabama Clean Water Partnership
- ACES
- ADEM
- ADPH
- AMRVRCD
- Alabama Natural Heritage Program
- Alabama Soil and Water Conservation Committee
- AWW
- Auburn University
- Marshall County SWCD
- Paint Rock River Watershed Conservancy District
- Tennessee Valley RC&D
- TNC
- US EPA
- Various local landowners, businesses, consultants, and community organizations

Through the combined efforts of these stakeholders and the leveraging of multiple funding streams, significant progress has been made in improving water quality in Little Paint Rock Creek, and the restoration of the creek serves as a model of successful partnership-driven watershed management.

Conclusion

The restoration of Little Paint Rock Creek underscores the importance of multi-agency coordination, local watershed stewardship, and long-term partnerships in addressing complex water quality challenges.

Education and Outreach Highlights

Academy of Science Annual Meeting

The Alabama Academy of Science hosted its annual meeting on February 27, 2025, at Troy University's Montgomery Campus. The Alabama Academy of Science is the oldest scientific organization in Alabama compromised of faculty, students, professional leaders and other stakeholders in the state to help bolster the scientific enterprise, promote a prosperous and secure future for Alabamians, and preserve the state's rich biodiversity for the benefit of all. Unit staff presented about NPS pollution and the CWA Section 319 grant and were also able to hear other presentations and view student posters from around the state. A NPS booth was also set up to allow attendees to learn about the NPS program, other projects in the area, and some general information about ADEM.

Figure 26- NPS Staff presentation, ADEM booth, and student presentation

Ag & Conservation Celebration for Earth Day

The Ag & Conservation Celebration for Earth Day was held on April 22, 2025, at The ALFA Environmental Hall at the University of West Alabama (UWA). Attendees heard from several speakers including from the UWA Cahaba Biodiversity Center, the Alabama Blackbelt National Heritage Area, and the University of West Alabama. Partners included the AlaWest STEM, Partners for Agricultural Innovation and Sustainability, and Partners in Agri-Business and Conservation Enterprises.

Demonstrations were set up outside for everyone to visit and learn from them. It included a feral hog trap, a seed drill operation, a Digital Skills on Wheels trailer, Cogon grass Eradication, a prescribed fire demonstration, a beekeeping station, as well as a thermal drone operation.

Figure 27- Wildlife containment structure

Alabama Herb Society Herb Day

The Alabama Herb Day was held on April 26, 2025, in Montgomery, AL. Over three thousand people attended the annual event where the NPS Unit staff hosted a table. Children and adults learned to care about the earth and ways pollution can affect their waterways by playing a recycling game and painting earth suncatchers. They learned ways to reduce, reuse, and recycle items so they don't become litter. Coloring books and brochures assured that they took the message home as well. Other partner booths included the Alabama Herb Society, the Montgomery Clean City Commission, and Subaru.

Figure 28- ADEM Booth at the Alabama Herb Society Herb Day in Montgomery, AL

Alabama State Qualified Credentialed Professional (QCP) Program Initiation and Administration Project (FY23)

Figure 29- AU Stormwater Facility advertisement

Project Background

The initiative focuses on the development of a QCP training and certification program for the state of Alabama. This program is driven by the need to align QCP knowledge and practices with state and federal regulatory standards, including the Construction General Permit (CGP), the Alabama Blue Book, and the EPA's inspection program. The program addresses a gap in ensuring that professionals working on construction sites are adequately trained to perform their roles in reducing pollution through proper site assessment, design, and inspection. This project was initiated on March 11, 2025, and it has a two-year project period.

Goals/Objectives

- Identify Stakeholder Needs**:** Determine the specific requirements of stakeholders for a QCP training and certification program.
- Develop Targeted Training: Create training content based on current CGP guidelines and the Alabama Blue Book.
- Ensure Regulatory Compliance**:** Align training with CGP and EPA inspection program requirements, covering design, installation, and inspection standards.
- Establish a Certification Management System**:** Develop a comprehensive database to track certifications and assess ongoing needs.
- Enhance QCP Competency**:** Equip QCPs with the knowledge and skills to meet regulatory standards beyond their formal education and professional experience.

Implementation to Date

- The framework for a targeted training curriculum has been defined, emphasizing pollution prevention through effective design and site management practices.
- Initial assessments of certification management needs and regulatory alignment have begun.
- Efforts are underway to engage stakeholders and identify key competencies and content areas required for the QCP certification.

Figure 30- QCP advertisement

Next Steps

Next steps include continued research and development on the courses, training components, exams, and the QCP database. Identify and train the trainers, creation of a pilot course and exam with members of the advisory council. Soft Launch with ALDOT, ADEM, and invited attendees to test where adjustments are needed.

Alabama Watershed Stewards Program (FY2017/21)

Figure 31- Alabama Watershed Stewards Logo

The Alabama Watershed Stewards (AWS) is a statewide program "to promote healthy watersheds, increase understanding of the potential causes of water resource degradation, and provide the knowledge and tools needed to prevent and resolve water quality problems." (Alabama Watershed Stewards Handbook, p.12) This program was developed by ACES in coordination with ADEM, EPA, AWW, AUWRC, and many other local and state partners.

On January 3, 2022, AWS entered the third phase of implementation. This phase is focused on creating additional resources for stewards, promoting stewardship, creating a more defined network of partners, workshops for general stewardship, education/outreach, and capacity building for BMPs, technology transfer workshops, and watershed management planning.

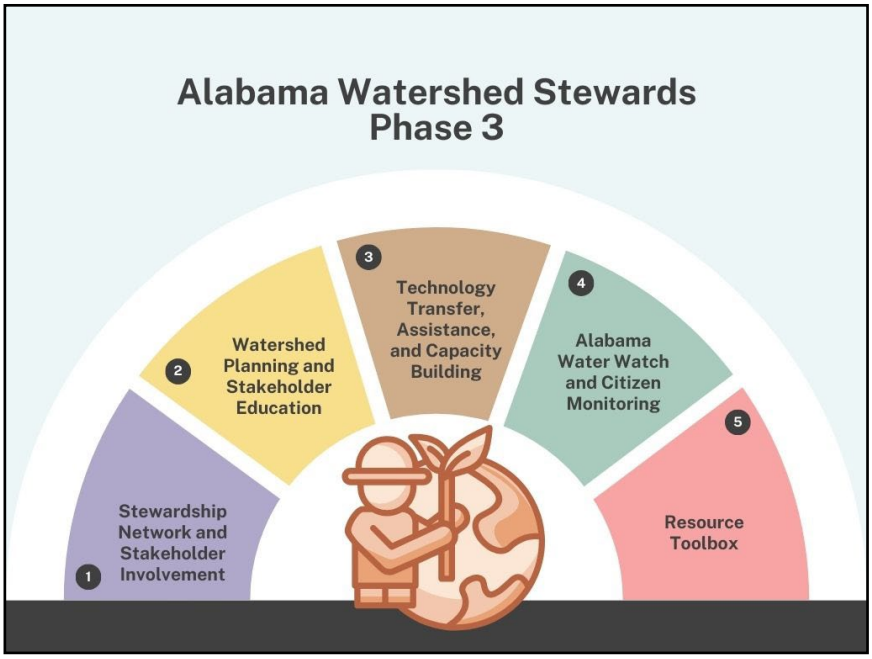

Figure 32 - Diagram of AWS program topics

Resources for the Education and Outreach Toolbox

AUWRC's staff has worked hard to develop additional E&O resources for watershed stewardship in Alabama. The following resources have been developed and published:

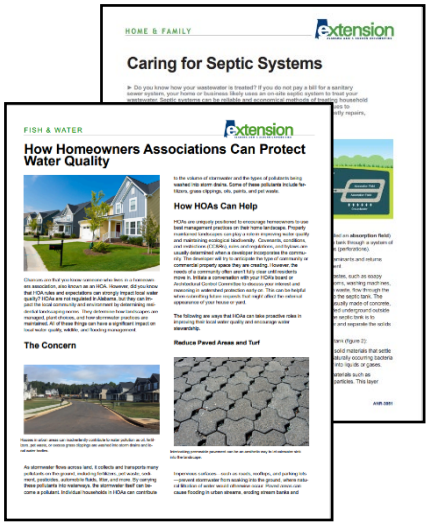

Figure 33 - Examples of AWS publications for the Education and Outreach Toolbox

- "How to Identify & Report Water Pollution from Illicit Discharges"
- "Rainscaping Your Yard for Water Quality"
- "A Homeowner's Guide to Septic Systems"
- "Grant Writing Resources for Environmental Nonprofits"
- "Caring for Septic Systems"
- "Water Quality Risks and Precautions for Recreation"
- "What's Your Community's Water Vision?"
- "How Homeowners Associations Can Protect Water Quality"
- A quarterly newsletter is distributed via email. The newsletter distribution has increased from 288 people to 350 people since its inception. It discussed upcoming events and training for the program and other stewardship opportunities.
- River Basin Articles for the Alabama and Black Warrior River Basins

General Watershed Stewards Workshops

AWS hosts several types of training, each intended to promote healthy watersheds, foster community conversations, and provide people with the tools they need to prevent and resolve local watershed issues. These workshops invite local leaders and members of the water community to share their experiences, identify local challenges and opportunities that can benefit the community, the economy, and the environment. This program offers a platform for local decision makers, organizations, and city officials to come together in imagining the future of their city's waterways, and to take action to protect and plan for those resources. View upcoming events by visiting the Alabama Extension calendar and searching *watershed*.

The online AWS course was made available for the life of the project. Seventy-six (76) people enrolled in the course. The course is available to the public for six months at a time. This will allow people from all over the state to join in on the AWS course, but on their timetable. It will include the option to pursue AWW online water monitoring training as part of the course.

Several in-person events occurred during the project period. On May 20, 2022, an AWS general training was hosted at the Alabama Nature Center's Lanark facility. This workshop targeted the Still Creek watershed which is an ADEM NPS Unit targeted watershed. Another general training was held on October 20, 2022, at the Lakepoint State Park Lodge and Convention Center in Eufaula, AL. It targeted areas in the Chattahoochee River Basin. On October 20, 2022, an AWS general training was hosted at the Lakepoint State Park Lodge and Convention Center in Eufaula, AL. It targeted areas in the Chattahoochee River Basin. On December 1, 2022, an AWS general training was hosted in Gadsden, AL at The Venue at Coosa Landing. It targeted areas in the Middle Coosa River Watersheds. On April 6, 2023, an AWS general training was held at the Lauderdale Extension Office in Florence,

AL. It was a stakeholder requested workshop and housed people from the northern portion of the State.

Figure 34 - General AWS workshops

Watershed Management Planning Workshops

These one-day, in-person workshops introduce the process of watershed planning for communities as a voluntary way to plan for a community's water future and gain opportunities for project funding.

Harrand Creek Watershed Planning Workshop – Enterprise, AL

The first workshop of this type was held in Enterprise, AL on September 29, 2022, in relation to the Harrand Creek watershed which has three listed stream impairments. Indian Camp Creek is impaired for pathogens and sediment. Harrand Creek is impaired for sediment. This workshop was intended for first steps in creating a WMP for the area and to show the community successes other watersheds have gained due to this planning process. Stakeholders were able to identify strengths, weaknesses, opportunities, and training needs; stakeholders who need to be involved in the process; and five steps that were needed in the community in regard to watershed management and the partners who need to be involved.

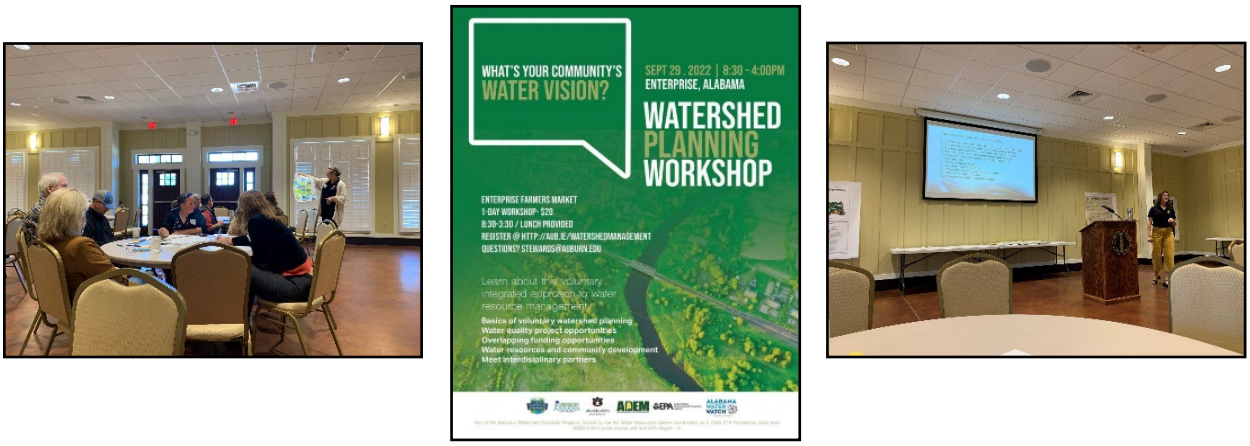

Figure 35 - Harrand Creek Watershed Planning Workshop

Middle Coosa River Watershed Planning Workshop – Gadsden, AL

On March 9, 2023, AWS held its second pilot of a watershed management planning workshop. Watershed management planning is a voluntary integrated approach to responsible resource management by considering the watershed as a whole. These one-day, in-person workshops introduce the process of watershed planning for communities as a voluntary way to plan for a community's water future and gain opportunities for project funding. The second workshop targeted the Middle Coosa River Watersheds. This workshop was intended for the first steps in creating a WMP for the area and to show community successes other watersheds have gained due to this planning process. Stakeholders were able to identify strengths, weaknesses, opportunities, and training needs; stakeholders who need to be involved in the process; and five steps that were needed in the community regarding watershed management and the partners who need to be involved.

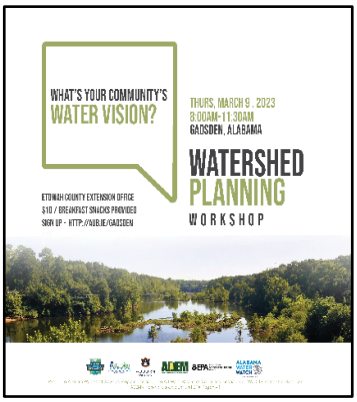

Figure 36 - Advertisement for the Middle Coosa Watershed Planning Workshop in Gadsen, AL

Alabama Stormwater Association Watershed and Infrastructure Talks – Vestavia Hill, AL

On March 22, 2023, AWS hosted the Alabama Stormwater Association (ASA) Table Talks at the Vestavia Hills Civic Center. Thirty-seven local stakeholders attended this workshop. This was an opportunity for municipalities targeted in Jefferson County to understand local stormwater challenges and opportunities. Stakeholders were able to have discussions to address priorities of stormwater and infrastructure goals and identify specific measures to address local stormwater issues.

Figure 37-Table Talks at ASA meeting in Vestavia Hilla, AL

Upper Shades Creek Watershed Management Planning Meeting – Birmingham, AL

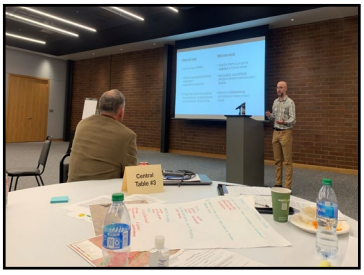

Figure 38-. Upper Shades Creek WMP meeting in Birmingham, AL

On November 16, 2023, AWS partnered with ADEM, TNC, Cahaba River Society (CRS), and Friends of Shades Creek to host an Upper Shades Creek WMP meeting in Birmingham, AL. This workshop was a day to reconnect stakeholders together to discuss what assessments and other deliverables have been completed in the short-term goals for the current WMP that was developed by TNC in December of 2021. There were also discussions of what needs to be added to make it an EPA nine key element plan and eligible for CWA Section 319(h) funding. Then the workshop attendees and watershed stakeholders derived the next steps and dates for the next meeting.

Alabama Stormwater Association Table Talks – Bay Minette, AL

On April 17, 2024, AWS hosted the ASA Table Talks at the Baldwin County Annex. Forty-one local stakeholders attended this workshop. Stakeholders were able to have discussions to address priorities of stormwater and infrastructure goals and identify specific measures to address local stormwater issues. They discussed statewide stormwater infrastructure shortcomings (built and natural infrastructure) and the recent American Society of Civil Engineers (ASCE) report card grade, collaboratively identify and prioritize stormwater-related issues at the local (community/watershed) level. Identify local options and specific measures to address local stormwater issue.

Figure 39-Picture of the Workshop in Bay Minette, AL

Education/Outreach, Technology Transfer, and Capacity Building

Efforts for completing education/outreach, technology transfer, and capacity building have been in full effect since the beginning of the project. A litter pickup was held in the Parkerson Mill Creek watershed on Auburn University's campus. This was completed on February 17, 2022. Over twenty-five individuals donated their time and labor to remove litter from this watershed, which is impaired for pathogens.

There was a rain garden maintenance day at the Wood Duck Nature preserve on March 4, 2022. This rain garden was implemented in the last phase, and volunteers with the preserve continue to donate their time to learn about these practices and how to maintain them.

On May 11, 2022, Auburn University personnel joined other partners to teach fourth graders from schools in Chambers County, AL at the inaugural Chambers County Groundwater Festival.

May 13, 2022, the Town of Pike Road hosted, in partnership with AWS, a technology transfer event about "How to Install a Rain Garden".

Another Rain Garden Workshop was held in Montgomery at the Crump Community Center on September 16, 2022.

Nature Based Stormwater Solutions Workshop – Bay Minette, AL

Figure 40 - Nature Based Stormwater Solutions Workshop in Bay Minette, AL.

On February 23-24, 2023, in coordination with MBNEP, a Nature Based Stormwater Solutions Workshop was held at the Baldwin County Annex. This technology transfer focused on LID and green infrastructure (GI) technologies and how to fund these types of projects. It focused on real life situations and was focused on municipalities, consultants, engineers, designers, planners, and others who can influence the use of these technologies. It had over fifty attendees.

Alabama Water Watch Trainings – Statewide

AWW has partnered with AWS to provide training opportunities for citizens statewide to get trained in volunteer citizen water quality monitoring both in water chemistry and bacteriological sampling. These courses were a hybrid of online course work and field work. A total of sixty-one people attended the workshops below. These trainings occurred on the following dates/locations:

Figure 41 - Advertisement for City of Gadsen AWW training

- *Birmingham, AL – May 6, 2022*
- *Millbrook, AL – August 19, 2022*
- *Enterprise, AL – September 30, 2022*
- *Auburn, AL – February 16, 2023*
- *Gadsden, AL – March 10, 2023*
- *Huntsville, AL – October 23, 2023*
- *Montgomery, AL – February 9, 2024*

Rainscaping Your Yard Workshop – Montgomery, AL

Laura Bell worked with the Alabama Herb Society and Smart Yards to present about Rainscaping Your Yard and help give homeowners actionable stewardship items that they could complete in their own yards. This workshop was hosted on March 13, 2024.

Figure 42 - Cover of the Presentation for Rainscaping Your Yard - Alabama Smart Yards

Online Alabama Watershed Stewards Course

The online AWS Course was developed during COVID-19 pandemic to continue to provide stewardship education while in person meetings weren't allowed. This continued to be available to stakeholders in the State and beyond during the year 2023. It allowed individuals to work at their own pace and take stewardship courses as their schedule allowed.

Appalachian Festival

Figure 43- Appalachian Festival advertisement

The first Appalachian Festival was held at Oak Mountain State Park on November 8, 2025, in Pelham, AL. Around four hundred people attended this family friendly event which included artisan demonstrations like quilters, potters, and ironworkers; educational activities; and live music performances. ADEM NPS Unit staff hosted a booth where attendees could learn about keeping our waters clean using mussels, rivercane, and other strategies to reduce NPS pollution. The booth included a visual of an aquarium with and without mussels to show how they are instrumental in helping to filter out pollutants and keep our waters clean. Kids could also play a game where they learned facts about different mussels found in the Cahaba River Basin and could touch actual mussel shells. River cane was showcased in its plant form and discussed as Alabama's native bamboo and how it was able to control sediment and remove nutrients from the waterways.

Figure 44- NPS Unit staff providing educational materials to attendees

Cherokee County Chamber of Commerce Meeting

NPS Unit staff presented at the Cherokee County Chamber of Commerce meeting on March 13, 2025, in Centre, AL. The CWA Section 319 grant, NPS pollution, as well as impairments in Cherokee County, AL were discussed. Other presenters included the Alabama Forestry Commission and Keep Alabama Beautiful.

Figure 45- NPS Unit staff presenting

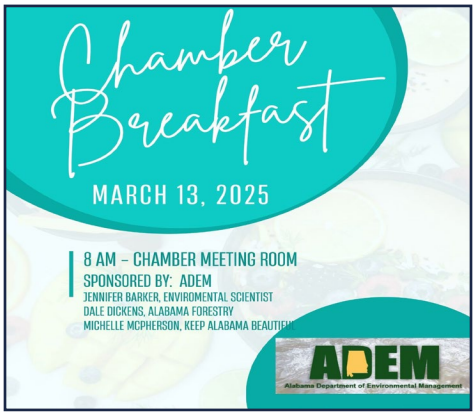

Figure 46- Cherokee County Chamber of Commerce Meeting Advertisement

Classroom in the Forest

Joe Wheeler State Park hosted the Classroom in the Forest program on August 7, 2025, in Rogersville, AL. NPS Unit staff taught fifteen kids about watersheds and NPS pollution. The marble run activity was used to show the kids how slowing down the water can help filter out pollutants before it reaches a waterway. The poop toss was used to teach the kids to clean up after their pets instead of leaving it to be washed into our waterways. The Finny the Fish story was used to discuss how pollution affects the animals in the water along with discussing how there are ways to be watershed stewards and keep pollutants from entering our waterways.

Figure 47- NPS Unit staff educating attendees with activities

Conecuh County SWCD Working Group Meeting

Figure 48- Conecuh County SWCD Working Group Meeting

Around thirty people attended the Conecuh SWCD Working Group meeting on July 30, 2025. Working group meetings include landowners, agricultural producers, and other professionals to find out what natural resource problems exist in the county. Speakers included the Alabama Cattlemen's association, the Conecuh County SWCD's district conservationist and soil conservationist, the Farm Service Agency, ACES, ADEM, and the Alabama Farmer's Federation. NPS Unit staff spoke about the Section 319 grant and rivers/streams impairments found in Conecuh County.

Cullman Nature Camp

Nature Camp in Cullman is a two-day event hosted by the North Alabama Agriplex for children ages 10-14. Campers learn skills such as archery, canoeing, and hiking, and learn about the environment with an emphasis on Native American heritage and culture. Partners included the Alabama Wildlife and Freshwater Fisheries, Cullman SWCD, Blount County Conservation District North Alabama Agriplex, and Cullman County Extension.

On June 4, 2025, the sixth annual Nature Camp was held at Camp Meadowbrook in Cullman, AL. NPS Unit staff provided interactive education on NPS pollution, helping campers understand the connection between human activities and water quality. Students built hands-on filtration systems to explore how pollutants can be removed from waterways, learned about the different types of NPS pollution, and discussed how individual actions, while small on their own, add up to significant collective impacts on the environment.

Campers also learned about the impacts of pathogens in waterways, which represent the largest category of impaired water listings in Alabama. To reinforce this lesson, participants built small catapults and playfully launched "unicorn poop" into its rightful place—an engaging activity that connected serious water quality issues with memorable, age-appropriate learning

Additional lessons addressed the costs and impacts of litter, followed by an engaging game that challenged campers to identify trash, recyclable, and reusable materials. These activities reinforced the importance of personal responsibility and community stewardship in protecting Alabama's natural resources.

By combining outdoor recreation with environmental education, the Nature Day Camp continues to provide meaningful experiences that foster conservation awareness, cultural appreciation, and environmental responsibility among youth in the region.



Figure 49 - Pictures of the Nature Day Camp with ADEM NPS Unit staff teaching students about pathogen and sediment impairments, BMPs, and biodiversity in Alabama

Earth Day Safari

The Montgomery Zoo hosted an Earth Day Safari on April 24-25, 2025. Around three thousand people attended the two-day event. NPS Unit Staff ran an informational booth to teach kids and adults about NPS pollution and how they could prevent these from entering our waterways. Kids got to try a poop toss, learn about slowing stormwater down with the marble run activity, and got to see the effects of pollution on Finny the Fish. ADEM hosted many other booths from the Recycling Department, Brownfields, Field Operations, Air Division, and many others. PALS hosted a booth as well and provided ADEM with litter grabbers and trash bags to help clean up each day after the event ended to help keep trash from getting into the animal enclosures at the zoo. Other partners included the Alabama Division of Wildlife and Freshwater Fisheries, the Alabama Nature Center, EAT South, ACES, the Alabama Soil and Water Conservation Committee, among others.

Figure 50 - Earth Day Safari at the Montgomery Zoo

Envirothon

In 2025, the Envirothon's Current Environmental Issue centered on the theme: "Roots and Resiliency: Fostering Forest Stewardship in a Canopy of Change."

This theme underscored the vital role of forests in ecological conservation and climate resilience. It challenged participants to explore the dynamics of forest ecosystems, evaluate sustainable

management practices, and integrate both traditional stewardship knowledge and scientific innovation. Students were asked not only to study forestry principles, but also to consider their broader implications for building resilient landscapes in the face of environmental change.

The Alabama Envirothon Competition held February 27–March 1, 2025, exemplified this mission. This year's competition brought together about 120 students representing twenty-three teams from across the state, showcasing the reach and impact of the program. Participants engaged in a blend of classroom-based instruction and field-based learning across five core resource areas: aquatics, soils, forestry, wildlife, and the current complex issue. Each area challenged students to apply critical thinking, practical skills, and interdisciplinary knowledge under the guidance of natural resource professionals.

The NPS Unit involvement included teaching the Aquatics Class, developing instructional materials, and designing/proctoring the Aquatics Test for the competition. These contributions ensured that students gained a deeper understanding of water resource management and the importance of protecting aquatic systems within the larger forest ecosystem.

The event concluded with a spirited competition where students demonstrated their mastery of concepts across multiple resource areas. The Straughn High School team earned top honors, reflecting both their hard work and their ability to apply environmental knowledge in real-world scenarios.

Through these efforts, the Envirothon continues to advance environmental education by blending academic rigor, hands-on experience, and collaborative problem-solving—empowering the next generation of natural resource stewards.

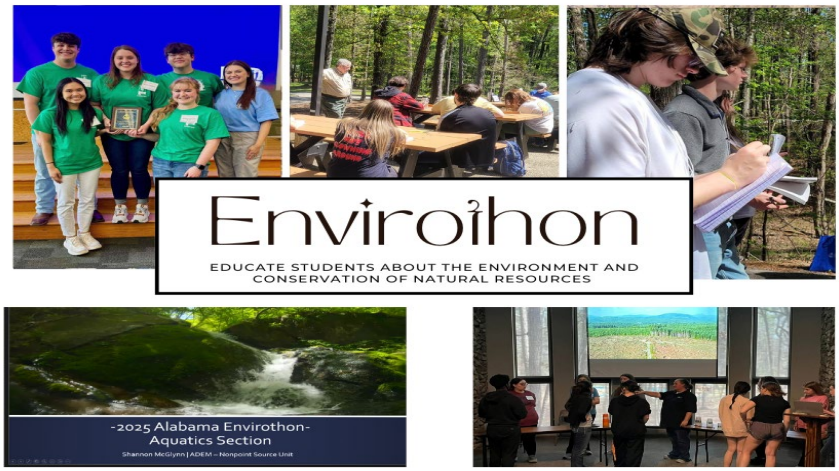

Figure 51 - Envirothon Station Training

Friends of the Forest

The ACES hosted the Friends of the Forest Program in Lowndes County, AL on May 2, 2025. The event was held at the Holy Ground Battlefield Park in Lowndesboro, AL with sixty students and teachers attending. The event had partners from ADEM, Lowndes County Sherriff's Department, Alabama Forest Commission, Alabama Game and Fish Division, and the National Parks Service to teach the children about forest and watershed health. NPS Unit staff presented attendees with a fish printing activity, macroinvertebrate trivia cards, and a Finny the Fish display to educate the children about NPS pollution and the effects it has on our waters and the creatures that live there. They also learned ways they could prevent pollution from entering the waterways as well.

Figure 52- Attendees participating in NPS educational activities

Greater East Alabama Regional Science and Engineering Fair

NPS Unit staff hosted an informational booth and provided volunteers for the Greater East Alabama Regional Science and Engineering Fair held on March 13, 2025, at the Auburn University of Mongomery campus in Montgomery, AL. Over two hundred students around the greater Montgomery area presented on projects, and approximately three hundred attendees from the local community attended the event. NPS Unit staff provided attendees with general knowledge regarding the AL NPS program, water quality and fish tissue sampling data, and educational materials. NPS Staff also assisted with judging the scientific presentations.

Figure 53- NPS Unit staff hosted a booth.

Montgomery Lions Club Meeting

NPS Unit staff attended the Montgomery Lions Club meeting held on January 23, 2025, at the Montgomery County Club in Montgomery, AL. Around forty-eight members and guests around the Montgomery area attended the event. NPS Unit staff provided attendees with information regarding the AL NPS program, funding eligibility and requirements, current Section 319 projects in the area, and general NPS pollution information. Attendees enjoyed a brief presentation and individual conversations to better understand the AL NPS Program.

Figure 54- NPS Unit staff presenting at the Montgomery Lions Club Meeting in Montgomery, AL

Mountains to the Gulf Workshop

Mountains to the Gulf
Legacy Partners In Environmental Education

Figure 55- Legacy Mountains to the Gulf Logo and members

The Legacy Partners in Environmental Education's Mountains to the Gulf workshop began in northwest Alabama at Camp McDowell and ended up at the Dauphin Island Sea Lab traveling from June 22-29, 2025. The educators visited Cheaha State Park, kayaked the Coosa River, visited the Solon Dixon Forestry Education Center, an Auburn University research facility, learned about NPS pollution at the Riverfront in Montgomery, AL, searched for fossils in the south Alabama streams, and explored the Dauphin Island Sea Lab.

Figure 56- NPS Unit staff presenting the Enviroscape watershed model

On June 26, 2025, NPS Unit staff used the Enviroscape Watershed Model to discuss NPS pollution and ways we can prevent that pollution from entering our waterways. Educators received the Help Keep Our Waters Clean coloring books, passports, bookmarks, and stickers. Alabama Scenic River Trails was also there to discuss access to the river, and the Alabama River Foundation provided a ride on the Alabama River where they helped to remove litter from the river and learned about water safety.

NATR Fest

North Alabama Trails & Recreation (NATR) hosted the 2025 NATR Fest at Point Mallard Park in Decatur, AL on September 13, 2025. With over three hundred attendees at the festival, the NPS Unit staff set up a table with information about NPS pollution, fish advisories, and air quality information. Coloring books provided education for children about NPS pollution, the river basins in Alabama, and ways they can help keep litter out of the streams. NPS Unit staff used a recycling game and the poop toss to get people engaged to learn about NPS pollution and how it affects them.

Figure 57- ADEM Booth and attendees at NATR Fest

Pollinate and Celebrate Bee Festival

Figure 58- Pollinate and Celebrate Bee Festival

On September 20, 2025, NPS Unit staff presented and held a booth at the Pollinate and Celebrate Bee Festival in Montgomery, AL. The festival was held at the Tuskegee Urban Agriculture Innovation Center, where seventeen attendees heard from partners including National RC&D, the Zizi Bee Company, ADEM, Tuskegee University Cooperative Extension, and the Xerces Society. They learned about beekeeping, knowing your bees, and the importance of native plantings. NPS Unit staff spoke about ways to help keep the waters clean for both bees and humans, including planting a rain garden. Rain gardens are a great way to collect stormwater and filter out pollutants before they reach our waterways and they also provide a habitat for our pollinators.

Figure 59- NPS Unit staff presenting to attendees

Riverfront Rendezvous

The Alabama River Foundation, the City of Montgomery, and the Lions Club of Montgomery held the third annual Riverfront Rendezvous on July 8-9, 2025, at the Riverfront in Montgomery, AL. Children that attended got to learn about animals from Legacy, Partners in Environmental Education. NPS Unit staff taught about NPS pollution and ways to prevent pollution from entering the rivers and streams. Attendees got to ride a boat on the Alabama River, and learn what litter is and how to prevent it from PALS. , The National Association of RC&D taught about the power of pollinators, the Montgomery Police Athletic League presented on fish, and water safety was taught by the Alabama Law Enforcement Agency. Attendees also saw a water cannon demonstration from the Montgomery Fire Rescue, and explored the Children's Sensory Trail guided by River Region Trails, Alabama Scenic River Trails and the Lions Club.

Figure 60 - Enviroscape Demonstration

Selma Bridge Crossing Jubilee

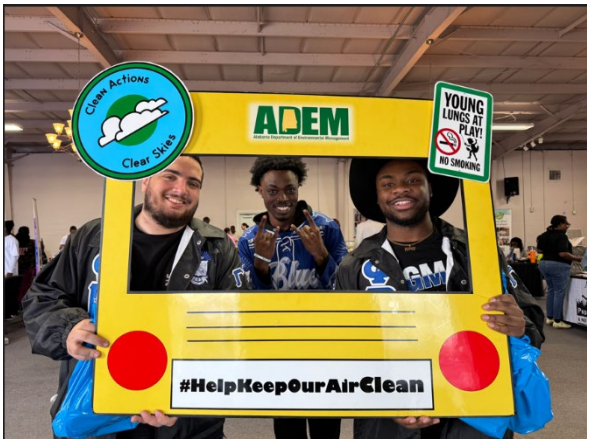

Figure 61- Jubilee Attendees in ADEM Air Quality Photo Frame

The 2025 Selma Bridge Crossing Jubilee took place from March 3-9, 2025. It celebrated the 60th anniversary of Bloody Sunday, honoring the courage and perseverance of the civil rights activists who risked their lives for voting rights. The event highlighted both remembrance and community empowerment, blending historical reflection with opportunities for education, cultural celebration, and civic engagement. Through marches, workshops, and cultural programs, the Jubilee reinforced Selma's enduring legacy as a symbol of resilience and progress.

On Saturday, March 8, 2025, the Wellness & Empowerment Village – held from 11:00 a.m. to 2:00 p.m. at the George Evans Reception Center – served as a vibrant hub of support and resources during the Jubilee. The Village featured an array of nonprofits and social enterprises providing free

health screenings, wellness information, educational tools, and empowerment services ranging from nutrition, mental health, fitness, environment, and career guidance.

The NPS Unit staff operated an informational table providing educational resources on ADEM and its careers, asthma awareness, air quality monitoring, and water resource protection. The Village attracted approximately 500 attendees, reflecting robust community engagement and the initiative was a key component of the day's events. NPS Unit staff were also able to participate in a forum that highlighted Downtown Selma's Vision.

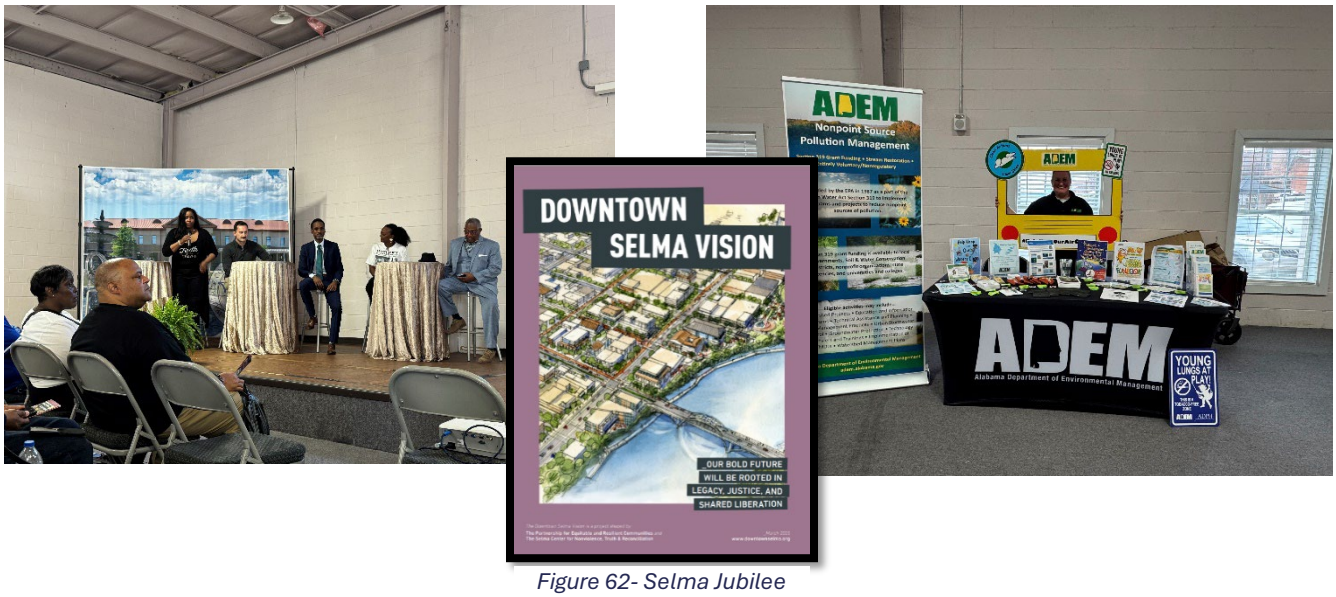

Figure 62- Selma Jubilee

From Soil to Safety: A Small Farmer's Workshop

Figure 63- From Soil to Safety flyer

On October 24, 2025, NPS Unit staff attended the *From Soil to Safety: A Small Farmers Workshop* held at the EV Smith Research Center in Shorter, AL. The event began with a welcome and an introduction to the facility provided by EV Smith Research staff.

Ms. Dorris Skipper of National Association of RC&D presented on behalf of the Sand County Foundation, an organization dedicated to promoting land ethic–based private land stewardship. Her presentation emphasized the importance of soil health and showcased a variety of conservation practices, including the use of prairie strips, soil health monitoring, cover crops, and no-till grain drills. She also discussed the ecological benefits of supporting wildlife habitat and pollinators through these practices.

Following this, NPS Unit staff provided an in-depth presentation on rain gardens. Staff discussed the Section 319 Grant and the AL NPS Management Program, explaining the function and design of rain gardens, their benefits to small farmers, and their role as an effective best management practice.

The session included real-world examples of rain gardens constructed through Section 319–sponsored projects in the local area, as well as guidance on maintenance requirements. To reinforce these concepts, participants engaged in a hands-on activity to visualize how a rain garden could be implemented on their own farms.

The workshop concluded with a presentation from the ACES, focusing on the connection between conservation and food safety. This discussion highlighted how sustainable agricultural practices can support both environmental health and the production of safe, high-quality food.

Overall, the *From Soil to Safety* workshop provided valuable education and practical insights for farmers and staff, promoting improved soil health, sustainable land management, and long-term environmental stewardship across Alabama's agricultural community.



Figure 64- From Soil to Safety Workshop

State of Alabama Groundwater Festivals

A key to providing protection for our surface and ground water in the state is to provide education opportunities for younger generations. The following is a list of groundwater festivals ADEM's NPS Unit staff participated in this year.

Chilton County Water Festival

The 11th annual Chilton County Water Festival was hosted by the Chilton County SWCD and the Chilton County Natural Resource Council on March 21st, 2025, at Jefferson State Community College in Clanton, AL. The event was hosted for roughly five hundred 4th grade students and their teachers from Chilton County, with volunteers presenting from Chilton Natural Resources Council, Chilton County Master Gardeners Association, Alabama Forestry Commission, Chilton County Extension, Chilton County High School Student Government Association, ADEM, and the NRCS. NPS Unit staff educated students using the edible aquifer activity which teaches the children about aquifers, groundwater contamination and groundwater protection; along with discussing NPS pollution and how the students can help keep the waters clean.

Figure 65- Chilton County Water festival in Clanton, AL

Conecuh County Water Festival

The Conecuh County Water Festival took place on May 8th, 2025, in Evergreen, AL. With around 100 students in attendance, NPS Unit staff taught kids about the water cycle using water cycle bracelets. This allowed the students to have a hands-on learning experience while they also discussed how NPS pollution affects the watershed and ways the kids could prevent pollution from entering the waterways.

Figure 66- Conecuh County Water Festival in Evergreen, AL

Crenshaw County Groundwater Festival

The Crenshaw County Groundwater Festival was held on March 20, 2025, at Tom Harbin Agricultural Center in Luverne, AL. Around 150 students from local schools attended the event. The students rotated through three stations to learn about the water cycle, filtration, and aquifers. NPS Unit staff led a water cycle bracelet activity and edible aquifer activity where students were taught about the hydrologic cycle, watershed health, and the formation and importance of aquifers.

Figure 67- Crenshaw Co. Water Festival in Luverne, AL

Cullman County Groundwater Festival

The Cullman County Groundwater Festival was held on May 16, 2025, at Wallace State Community College in Hanceville, AL. Over 1,100 students from local schools attended the event. At the festival, students explored the science of water through a series of hands-on activities that made invisible processes visible. With the Watershed in a Box, they saw how rainwater flows across landforms and carries pollutants into rivers and lakes, highlighting the connection between everyday actions and water quality. The filtration activity let them experiment by adding pollutants like trash, sediment, and oil to water. Students then tested different types of sieves and filters to see how much could be removed. The demonstration emphasized that simple, low-cost filters can remove some debris, while more advanced and expensive systems achieve cleaner results but require more time and resources. One section of these activities was taught by the NPS Unit staff.

Other activities during the festival made learning both fun and memorable. The Edible Aquifer used ice cream, soda, and sprinkles to illustrate how groundwater is stored and how contamination can seep into aquifers and wells. Meanwhile, the Water Cycle Bracelet provided a colorful, take-home reminder of water's endless journey through evaporation, condensation, precipitation, and collection. Together, these activities not only explained key hydrologic concepts but also encouraged students to think critically about how water is used, polluted, cleaned, and conserved.

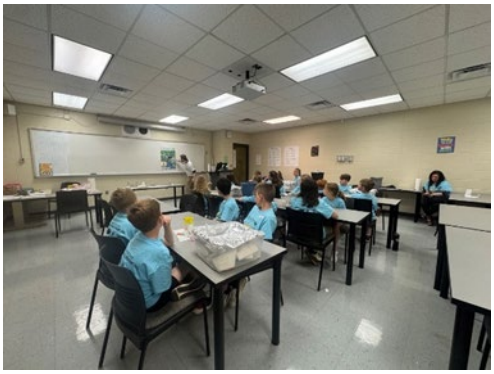

Figure 68- Cullman County Water Festival in Hanceville, AL

Lamar County Water Festival

Figure 69- Lamar County Water Festival in Vernon, AL

NPS Unit staff assisted Lamar County SWCD with the Lamar County Water Festival held on May 8, 2025, at Vernon City Park in Vernon, AL. Approximately one hundred and fifty 4th graders in the Lamar County public school system attended the event. NPS Unit staff provided the attendees with information related to watershed definitions and components, point and NPS pollution, stormwater runoff, infiltration, and methods to reduce NPS pollution from entering waterways. NPS Unit staff used the edible aquifer activity and a filtration activity to assist the information provided.

Madison County Water Festival

NPS Unit staff assisted AMRVRCD with the Madison County Water Festival held on May 6-7, 2025, at the University of Alabama at Huntsville in Huntsville, AL. Over one-thousand six-hundred 4th graders in Madison County attended the event. NPS Unit staff provided the attendees with information related to watershed definitions and components, point and NPS pollution, stormwater runoff, and methods to reduce NPS pollution from entering waterways. NPS Unit staff used the Enviroscape watershed model to further explain the information.

Figure 70- Madison County Water Festival in Huntsville, AL

Mobile Couty Water Festival

On March 12, 2025, a small water festival day was held at Mobile County Training School in Africatown, AL. This E&O event engaged approximately seventy-five 7th grade science students in hands-on learning activities focused on natural resources and environmental science.

The festival was a collaborative effort funded by the Gulf Coast RC&D between National Association of RC&D, Stemming the Tide, Mobile County Training School, NPS Unit staff, and local stakeholders, who partnered to deliver interactive lessons. Students rotated through stations covering the water cycle, groundwater, pollinators, and soil types, gaining a deeper understanding of the importance of these systems. The NPS Unit staff led a session on the water cycle, during which students created water cycle bracelets as a take-home reminder of the cycle's stages.

In addition, partners toured the school's aquaponics lab, where vegetables, fruit, and fish are cultivated in a sustainable system. This tour emphasized the connection between water, food, and ecosystems, while also showing how science can be applied in daily life. The lab's harvest will later be used by students to prepare a fish taco lunch, reinforcing the value of local food systems and practical applications of science education.

This event successfully combined environmental education with cultural and community connections, fostering student engagement and encouraging stewardship of natural resources.

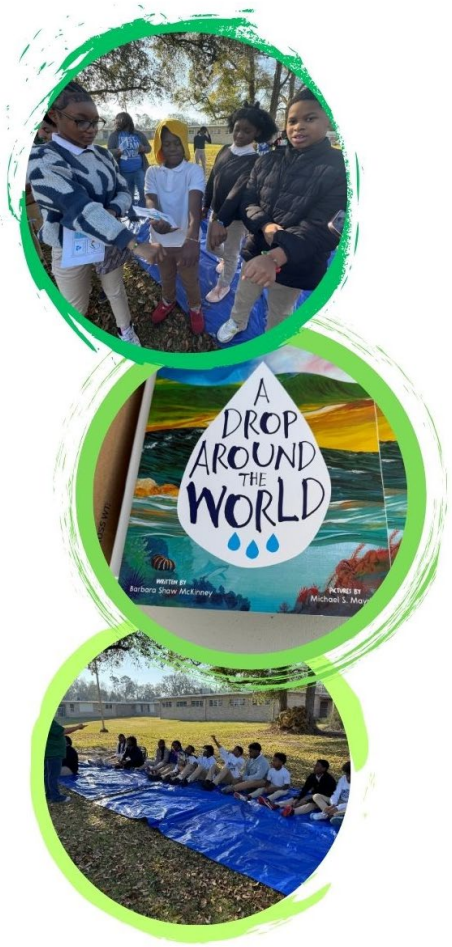

Figure 71- Mobile County Water Festival

Tallapoosa County Water Festival

Around 420 students attended the Tallapoosa Water Festival on the 29th and 30th of April at Wind Creek State Park in Alexander City, AL. NPS Unit staff partnered with PALS to teach students about their watershed, NPS pollution such as litter, and ways they can help keep the waters clean. NPS Unit staff demonstrated how NPS pollution affects a watershed using the Enviroscape watershed model. PALS staff used a demonstration to show how pollution can flow from a nearby stream into our oceans.

Figure 72- Tallapoosa County Water Festival in Alexander City, AL

Statewide Targeted Education

Help Keep Our Waters Clean

Figure 73 – Largemouth Bass Sculpture at the Governor Guy Hunt Rest Stop

ADEM received a $500,000 grant from the EPA Gulf of America Division as part of the Trash Free Waters Program in late 2020 and worked with ALDOT and the Alabama Department of Tourism to implement the "Help Keep Our Waters Clean" project. The "Help Keep Our Waters Clean" project is designed to promote awareness about watersheds and reduce NPS pollution from entering waterways that drain to the Gulf of America. The goal of the project is to engage Alabama citizens in the fight against litter through E&O that encourages the use of voluntary and sustainable best practices.

Perhaps the most visible aspects of the "Help Keep Our Waters Clean" project are signs that were placed along interstates in Alabama to inform motorists that they are entering a watershed and encourage them not to litter. Additionally, litter education sculptures have been placed throughout the state at eight targeted ALDOT Welcome Centers. A Loggerhead Sea Turtle was installed at the Grand Bay Welcome Center, an American White Pelican has

been placed at the Baldwin County Welcome Center, a pair of Sandhill Cranes have been placed at the Dothan Welcome Center, a Largemouth Bass has been placed at the Governor Guy Hunt Rest Stop, a Black Bear has been installed at the Cleburne County Welcome Center, a White-Tailed Deer has been installed at the Dekalb Welcome Center, a Turkey has been installed at the Sumter County Welcome Center, and a pair of Mallard Ducks have been installed at the Lanett Welcome Center.

The sculptures are filled with plastic bottles, an item commonly used and found in litter. Litter on the ground ends up in the water. EPA's WasteWise Program indicates that plastics require 100 to 400 years to break down but producing new plastic from recycled material uses only two-thirds of the energy required to manufacture it from raw materials. By properly managing items like plastics by disposing or recycling, it helps keep it out of our waterways.

The project utilizes a watershed approach and litter reduction initiative to enable citizens to participate in the voluntary practice of preventing litter from reaching waterways by creating an engagement opportunity to abate sources of trash at litter collection sculpture sites, while receiving education about the watershed and promoting long term sustainable voluntary practices to reduce pollution. Outreach to specific disadvantaged communities about abating littering and education about the importance of watershed health has been and will continue to be provided at priority locations within local schools.

The program has accomplished this through E&O efforts across Alabama. Over one thousand eight hundred and fourteen people around the state have been educated on the importance of not littering, NPS pollution, and protecting local watersheds, and how they can help prevent pollution in their community. A coloring book and passport to educate children on how pollution can affect the watersheds of Alabama and the animals that live in them has also been developed. The passports can be picked up at each of the eight welcome centers that have a sculpture, and children can receive a stamp. After collecting all eight stamps, the children can receive a prize! A video describing the project has also been developed for educational purposes. Information cards that have a QR code linking to ADEM's website with more information about the project and river basins in Alabama were also developed.

Cullman County Conservation District Environmental Conservation Education Teacher Workshop

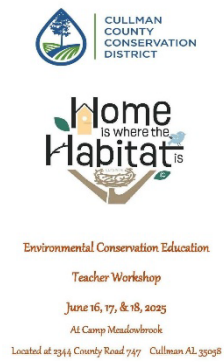

Figure 74- Environmental Conservation Education Teacher Workshop advertisement

The Cullman County Conservation District's Environmental Conservation Education Teacher Workshop was held June16-18, 2025, at Camp Meadowbrook in Cullman, AL. The theme this year centered around Home is Where the Habitat Is. NPS Unit staff presented the Help Keep Our Waters Clean project. Speakers included Keep Alabama Beautiful, Forestry Works, ACES, and NRCS. Field trips included a visit to the Largemouth Bass sculpture at the Governor Guy Hunt Rest Stop, where NPS Unit staff discussed more about NPS pollution, including litter. The passports and coloring books for the Help Keep Our Waters Clean project were given out to the teachers that attended. Other field trip stops included Pettit Fish Farm, Gathered Roots, D & Y Shrimp, and the Flying Fifty. Attendees also got to make sculptures of their own using reused items. Bluebird houses

made out of gourds, fish made from recycling CDs, honey sticks, and soil babies were some of the other creations from the workshop.

Figure 75- Cullman County Conservation District Environmental Conservation Education Teacher Workshop in Cullman, AL

Break To Educate

Figure 76- Break to Educate at ADEM

On October 14, 2025, NPS Unit staff presented an overview of the Help Keep Our Waters Clean project. The presentation covered the installation of watershed signs around Alabama to promote awareness of watersheds and to reduce NPS pollution, like litter, from entering Alabama's waterways.

Tourism Days

As a part of the Help Keep Our Waters Clean campaign, NPS Unit staff held a booth at several Welcome Centers' Tourism Days around Alabama. NPS Unit staff discussed with travelers the importance of not littering and how it can affect the animals that live in a watershed, including them! This was also a great way to network with different partners from around the area and see if there are ways we can collaborate to reduce NPS pollution to our local waterways. The Tourism Days attended

this year included the Admore Welcome Center on May 13, 2025, Sumter Welcome Center on May 14, 2025, and the Grand Bay Welcome Center on May 23, 2025.

Ardmore Welcome Center Tourism Day

NPS Unit staff attended the Ardmore Welcome Center Tourism Day at the Ardmore Welcome Center in Elkmont, AL. Approximately five hundred people from the general public attended the event. NPS Unit staff hosted a booth at the event, providing information on the AL NPS Program, water quality and fish tissue monitoring data, services ADEM offers, and the Trash Free Waters Program. NPS Unit staff provided educational materials such as flyers and coloring books to convey the information.

Figure 77- Ardmore Tourism Day Attendees

Grand Bay Welcome Center Tourism Day

Figure 78- Grand Bay Welcome Center Tourism Day in Grand Bay, AL

The Grand Bay Welcome Center hosted their annual tourism day on May 23, 2025, in Grand Bay, Al. NPS Unit staff were there to promote the Help Keep Our Waters Clean project and educate travelers to keep litter in its place. Coloring books about Alabama's watersheds and the importance of not littering were given out along with fish advisory cards, passports for the sculptures, and other information. The Alabama Emergency Agency, GBNERR, Bellingrath Gardens & Home, and the USS Alabama also hosted booths at the event.

Figure 79- NPS Unit booth

Sumter Welcome Center Tourism Day

The Sumter Welcome Center annual Tourism Day was held on May 14, 2025, in Cuba, AL. NPS Unit staff hosted a table to promote the Help Keep Our Waters Clean project and bring awareness to the importance of not littering. Alabama citizens as well as tourists from other states learned about Alabama's watersheds, played a recycling game, and got to paint earth suncatchers. A fun turkey craft was made while promoting the welcome center's turkey sculpture. Discussions were held with travelers about keeping our waters clean. Partners included the Blackbelt Museum, the Gainesville Fire Department, and the University of West Alabama.

Figure 80- Sumter Welcome Center Tourism Day in Cuba, AL

Supporting Communities with Best Practices During Covid-19

ADEM received a $200,000 grant from the EPA for air related community engagement for Covid-19 response in 2021. ADEM NPS Unit staff developed targeted E&O for the community, produced a mobile education trailer, and created resource materials educating the community on preventive measures for air pollution. Interactive and visually engaging exhibits were created to encourage participants to learn more about how the community is impacted by air pollution. Participants had the opportunity to learn about air quality and learn how to use air quality reports to know when air quality is below healthy standards. ADEM partnered with the ADPH, the Wellness Coalition, and Health Services Inc. to continue community outreach and public engagement for the project.

ADEM's Mobile Education Trailer (delivered March 11, 2025) provides a mobile education resource allowing the Department to provide hands-on demonstrations around Alabama. The trailer is equipped with laptops, a smart board, microscopes, demonstration activities, lung health sensors,

Figure 81- ADEM staff showcasing Mobile Education Trailer

air quality monitors, air quality flags, inflatable medical lungs, and much more. The trailer provides enriching opportunities to engage and educate Alabama citizens of all ages. Through the use of the Mobile Education Trailer, ADEM can reach communities of all population sizes.

Camp Eagle

On May 29, 2025, NPS Unit staff attended Camp Eagle in Eclectic, AL. NPS Unit staff conducted various activities regarding lung health for the thirty campers that attended. Department personnel used the model lungs to explain lung anatomy to the campers. Next, NPS Unit staff conducted a game in which the campers acted as cilia in our airways using pool noodles to block paper and beach balls, or particulate matter, from entering the nostrils represented by hula hoops. At the end of each session, NPS Unit staff conducted a pop quiz of information learned during the activities and shared fun facts about lungs with the campers.

Figure 82- Camp Eagle activities

Camp Wheezeaway

Figure 83- Camp Wheezeaway activities

Camp Wheezeaway is a weeklong summer camp specifically for children aged 8 -12 suffering from moderate to severe asthma. It was held this year from May 25 - 30, 2025, at the YMCA Camp Chandler in Wetumpka, AL. NPS Unit staff attended the camp on May 29, 2025, and were able to take the mobile education trailer out for its first event. Kids learned about the anatomy of the lungs while walking into and around the mega lungs display. They also learned about specific particulate matter and played a fun cilia game using pool noodles to represent the cilia in our airways and beach balls, ping pong balls, and waded up paper to represent particulate matter. The goal of the game was to keep the particulate matter out of the mega lungs. The air quality flag program, air pollution, and things kids could do to improve air quality were also discussed. Facts about asthma, coloring books on Dusty the Asthma Goldfish, and bookmarks on the air quality flag program were given out.

Montgomery Library Fest

The Juliette Hampton Morgan Memorial Library hosted Montgomery's 2025 Library Fest on August 16, 2025. Over 100 people attended the festival, where NPS Unit staff taught about air quality, asthma awareness, the air quality flag program, and air pollution. Inflatable lungs were used to demonstrate parts of the lungs to both kids and adults. NPS Unit staff gave out brochures and information on secondhand smoke, asthma facts for kids, lung anatomy worksheets, and bookmarks explaining the air quality flag program.

Figure 84 - Montgomery Library Fest in Montgomery, AL

Technology Transfer Highlights

Alabama Rivers And Streams Network

The Alabama Rivers and Streams Network (ARSN) hosted its annual meeting at the Alabama Nature Center NaturePlex on February 19-21, 2025, in Millbrook, AL. Federal, state, nonprofit, and concerned citizens met from across the southeast to share project updates, and plan research and restoration efforts in watersheds around Alabama.

As part of the annual meeting, the Mollusk and Crayfish working group meet to discuss projects focused on the conservation of Alabama's mollusk and crayfish species. ARSN is a group of entities

that recognize the importance of clean water and working together to maintain healthy water supplies.


Figure 85- Pictures from the Event

ARSN North Alabama Working Group

NPS Unit staff attended the ARSN's North Alabama Working Group meeting on April 1, 2025, held at the Wheeler National Wildlife Refuge Visitor Center in Decatur, AL. Approximately twenty people attended the event from federal and state government, municipalities, nonprofit organizations, and private citizens. NPS Unit staff discussed current sampling data and projects, as well as potential areas for new projects with attendees. Other attendees provided information regarding work in the North Alabama area, areas of concern, how resources can be leveraged, and general knowledge of North Alabama. Attendees enjoyed productive conversations and networking to share information regarding water quality and conservation work in the area.

ARSN South Alabama Working Group

On July 28, 2025, NPS Unit staff attended ARSN's working group for the southern portion of the State. This meeting took place at Troy University's Forest Resources Education Complex in Troy, AL. There were about fifty people who represented various state agencies, federal agencies, nonprofit organizations, universities, power companies, timber companies, and private landowners.

Attendees were able to listen to L.C. May of Clyde May's Whiskey who discussed the importance of water quality to his family and the distilling industry. While this was an opportunity for partners to learn about potential tools for habitat and network with people who work within the same area, the most important work that came out of this workshop was the Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis for each of the priority areas that were targeted through Strategic Habitat Units (SHUs) in the Southern Region. This allowed partners to discuss the areas they were working in and the strengths and challenges perceived in each watershed area. It gave a clearer view of the work being achieved and gave some ideas for next steps and partners who could contribute.

Figure 86 - ARSN South Meeting in, Troy, AL

ARSN West Alabama Working Group

The West Alabama Working Group meeting of ARSN met on May 12, 2025, at the Nature Conservancy Building in Birmingham, AL. Dr. Fedoroff from the University of Alabama spoke on USACE funding sources. Different projects and needs were discussed in the West Alabama area. Next steps identified included learning more about WMPs, habitat assessments needed, quantitative data needed for habitats, and the potential for organizing other working groups for the Lower Cahaba/Blackbelt Region and an urban darter group.

Attendees got to learn about green infrastructure (GI) improvements (i.e. rain garden, porous pavement, rainwater harvesting device) and other environmental improvements TNC used in the renovation of its new office building. The new building also boasts solar panels that absorb energy from the sun which results in an annual carbon reduction of 189,338lbs.

Figure 87- ARSN West Alabama Working Group meeting in Birmingham, AL

Alabama Stormwater Association Table Talks

Figure 88- ASA Table Talks

ASA Table Talks were held on April 15, 2025, at Montgomery Whitewater in Montgomery, AL. NPS Unit staff spoke about the Section 319 project at the Crump Community Center in Montgomery as well as CWA Section 319(h) grant funding. Other speakers included Barry Fagan, with Fagan Consulting, LLC who spoke about the Stormwater infrastructure report card, John Laney, ADEM, who spoke about the State Revolving Fund, and Jean Szabo from the Alabama Herb Society who spoke more about the Crump Community Center project. Breakout sessions at each table discussed the stormwater report card and assessed the Alabama River Basin.

Alabama Water Resources Conference

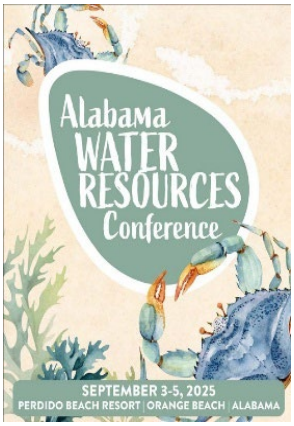

Figure 89- ALWRC brochure cover

The Annual Alabama Water Resources Conference is a forum for all participants of our water resources community, providing opportunities for conversations about many multidisciplinary aspects of water resources and making connections that will improve how we understand the complex water issues that are of importance to this state, the region, and the nation. The conference was held September 3-5, 2025, in Orange Beach, AL. Over 360 participants attended the conference this year. There were 125 concurrent session speakers, and thirty-nine poster presenters. It included a variety of presentations on water quality, stormwater, restoration, coastal issues, modeling and water management, water law and policy, etc. There were also oral and poster sessions, plenary sessions, and networking opportunities.

Figure 90 - NPS Unit Staff

Keynote speakers included Colonel Kelcey R. Shaw who is the Mobile District Commander for the USACE, and Katie Butler who is the Water Division Director for U.S. EPA Region 4. Chris Johnson with ADEM spoke during the welcoming of the conference. Cody Watson with ADEM's NPS Unit presented *Leveraging CWA Section 319(h) Funding to Mitigate Urban NPS Pollution in Athens, AL*, and Jennifer Barker with ADEM's NPS Unit presented on air related community engagement, highlighting the

Community Engagement for Covid-19 Response U.S. EPA grant ADEM received. NPS Unit staff also judged at the poster session.

Brownfields Conference

Figure 91- ADEM Director Edward Poolos speaking at the Alabama Brownfields Conference

The 2025 Alabama Brownfields Conference, held on October 2, 2025, at the Pelham Civic Complex in Pelham, AL, brought together environmental professionals, community partners, and government representatives for a full day of presentations and discussions focused on brownfield redevelopment efforts across the state. Sessions included project case studies such as the redevelopment of Birmingham's former Stockham Valve Foundry site, updates on Alabama HB378 and voluntary cleanup activities, and an ADEM program update highlighting current regulatory and redevelopment initiatives. The conference also featured a student poster presentation, a panel discussion on breaking down redevelopment barriers, and a technical session addressing Per- and Polyfluoroalkyl Substances (PFAS) regulations and vapor intrusion risk assessment. In addition to providing valuable networking opportunities, the event supported ongoing collaboration between ADEM, municipalities, consultants, and industry partners to advance responsible land reuse and protect water quality in Alabama's communities.

Clear Water Alabama

The 2025 Clear Water Alabama seminar was held at the Pell City Civic Center in Pell City, AL on September 24-25, 2025. The Alabama Stormwater Association, the Alabama Erosion and Sediment Control Partnership, and the Alabama Soil and Water Conservation Committee worked together to coordinate this event whose theme this year was "Alabama Rocks!" Stormwater professionals from across the state presented on the history of the Alabama Erosion and Sediment Control Program, Alabama's biodiversity, vegetating Alabama's soils, LID and engineering designs, shoreline stabilization, and an update from Auburn Universities Stormwater Research Center.

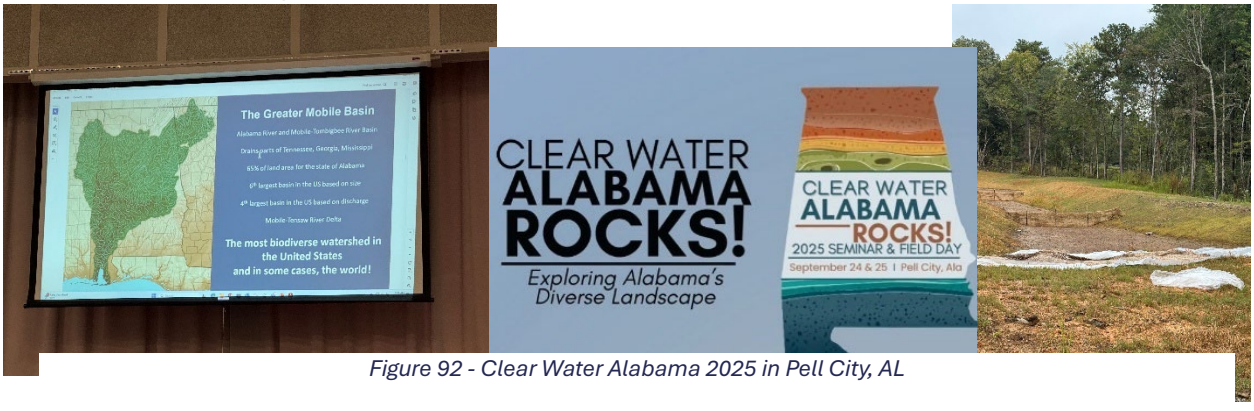

Figure 92 - Clear Water Alabama 2025 in Pell City, AL

Ecostreams

NPS Unit staff attended the 2025 Ecostreams conference held at the Renaissance Asheville Downtown Hotel in Asheville, North Carolina. Approximately 300 professionals from federal and state government, private and nonprofit organizations, and general public attended the conference. Ecostreams is described as a forum for exchanging ideas and experiences that encourages continuing research and enhances networking among restoration professionals. NPS Unit staff received information related to floodplain restoration, streambank erosion and stabilization, GI, and biodiversity in restoration.

Figure 93- Restoration showcase along the French Broad River in Asheville, NC

MS4 Conference

Figure 94 – Advertisement for the 2025 MS4 Conference in Asheville, NC

NPS Unit staff attended the 2025 International Erosion Control Association Municipal Wet Weather Stormwater Conference held on April 28-30, 2025, at the Double Tree Inn in Charolette, North Carolina. Approximately 250 people associated with federal and state government, private and nonprofit organizations, educators, and students attended the conference. NPS Unit staff received information related to Municipal Separate Storm Sewer System (MS4) management, flooding, ASTM standards, solar development, stream bank restoration, erosion & sediment control, GI, regulations, resiliency, stormwater standards, and post-construction BMP implementation, inspection, and maintenance.

Southeastern Partnership for Forests and Water Workshop

SOUTHEASTERN PARTNERSHIP FOR FORESTS & WATER

HEALTHY FORESTS = CLEAN WATER

The Southeastern Partnership for Forests and Water hosted a workshop at the Alabama Forestry Commission's office in Montgomery, AL on July 24, 2025. Speakers discussed forest and water collaboration opportunities in Alabama. The need for a group specific to Alabama and ways to get that started were also discussed. Partners that attended included ADEM, the Auburn Water Resources Center, the Alabama Forestry Commission, GSA, TNC, and the Conserve Research Program with the University of Alabama.

Figure 95- Presentation at workshop

State of Agriculture Meeting

Figure 96- State of Agriculture Opening Remarks

On September 23, 2025, NPS Unit staff attended the Inaugural State of Agriculture meeting at the Oxford Civic Center in Oxford, AL. The State of Agriculture meeting brough together over 120 agricultural producers, federal and state representatives, students, and the general public to discuss current trends, policy changes, and services provided in agriculture and rural development. NPS Unit staff hosted a booth at the event, providing information on Section 319 grants, other Departmental services and grants, and educational materials for children and adults. The meeting featured presentations regarding updates from the Alabama Commissioner of Agriculture and Industries, Alabama Soil and Water Conservation Committee, USDA NRCS, USDA Farm Service Agency, USDA Rural Development, Alabama Farmers Federation, ACES, and Future Farmers of America.

StormCon

Figure 97- StormCon 2025

StormCon 2025 took place on August 26 – 28, 2025, at the Gaylord Palms Hotel and Convention Center in Kissimmee, FL. This conference serves as a forum for professionals engaged in stormwater management, erosion and sediment control, and surface water infrastructure design across North America. The conference attendees are a collective of municipal stormwater managers, civil and environmental engineers, regulatory officials, and industry specialists. The conference provides a space to advance best practices in stormwater system planning, design, operation, and compliance.

NPS Unit staff were able to attend the Dubsdread Golf Course tour. This allowed staff to learn about the hydraulic and environmental issues regarding inflow to the golf course, how the partnership between project stakeholders developed, how the permitting effort worked, what the construction phase entailed, and lessons learned from the project overall.

Then the NPS Unit staff were able to attend the multi-track technical program. StormCon facilitates the exchange of applied research, regulatory updates, and emerging technologies related to hydrologic modeling, water-quality treatment, GI integration, and asset management.

In addition to its educational content, StormCon provided professional networking and technical collaboration, supports continuing professional development by fostering dialogue on innovative methodologies, performance-based design standards, and the evolving regulatory landscape that shapes the future of stormwater infrastructure management.

Figure 98 - StormCon Conference

Sustainability Summit

Figure 99- Summit attendees

The Alabama Coastal Foundation hosted its 11th Annual Sustainability Summit on January 31, 2025, at The Lodge at Gulf State Park. With the theme *"Future Signposts: Learning How to Improve, Protect and Celebrate Our Environment,"* the event brought together leaders from business, government, and nonprofit sectors to share ideas and strategies for advancing sustainability. Attendees participated in a variety of concurrent sessions covering topics such as ecosystem dynamics, living shoreline restoration, sustainable community growth, and the use of LiDAR datasets for coastal mapping. The program emphasized both education and innovation, offering insights into how Alabama can balance environmental stewardship with economic opportunity.

A highlight of the summit was the luncheon oyster panel featuring experts from Alabama's Marine Resources Division, Admiral Shellfish Company, and Navy Cove Oysters, who discussed the challenges and opportunities facing the state's oyster industry. Additional sessions explored greenhouse gas inventories and decarbonization strategies, as well as initiatives like the Green Ribbon Schools program. Closing reflections were offered by representatives from the Alabama State Department of Education, underscoring the importance of youth engagement in sustainability efforts. Overall, the summit fostered collaboration across sectors, inspiring participants to pursue practical, community-driven solutions that protect Alabama's coastal environment while supporting long-term resilience.

Figure 100- Alabama Coastal Foundation logo

Figure 101- Middle school students talking about the impact of their hands on science classes

Tennessee River Basin Network Conference

The Tennessee River Basin Network's 11th annual conference was held in Asheville, North Carolina on August 26-28, 2025. The network's vision is a Tennessee River Basin where aquatic and human life thrives. The mission is to empower and inspire the people of the basin to effectively steward the region's aquatic biodiversity by bringing together partners.

Impacts of Hurricane Helene on western North Carolina, collaborations in western North Carolina, mussel recovery initiatives, the Alabama Rivers and Streams Network, and watershed resiliency were among the topics discussed.

NPS Unit staff got to participate in a litter cleanup at Nasty Branch in Asheville. Staff also got to help reinstall the first Trash Trout into Nasty Branch after Hurricane Helene affected the area. Staff also toured the local New Belgium Brewing Company and viewed GI practices utilized at the location.

Figure 102- NPS Unit staff installing a litter trap in Nasty Branch

Figure 103- NPS Unit Staff at field day events

Figure 104- TRBN Conference presentation

Watershed Management Plans

Large-scale management plans have been completed for each major river basin across the state. These watershed management plans (WMP) continue to be used as a vital basis for background information for the smaller targeted 12-digit 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 WMPs are in various stages of development and implementation. These workplans will incorporate, as applicable, EPA's "a-i" elements for WMPs 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	Complete
• Still Creek (031502010105)	15,165.97 acres	Pending
• Gailbraith Mill Creek (031502010104)	29,394 acres	Complete
• Caney Branch (031502010310)	25,198 acres	In Progress

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
• Broglen River (031601090106)	28,741 acres	Complete

Cahaba River Basin

- Little Shades Creek (031502020303) 39,908 acres Complete
- Dry Creek (031502020902) 5,312 acres Complete
- Shades Creek (031502020301, 031502020302, 031502020303) 88,755 acres In Progress
- Cahaba Valley Creek (031502020202) 18,304 acres Complete

Chattahoochee River Basin

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

Chipola River Basin

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

Choctawhatchee-Pea-Yellow River Basins

- Hurricane Creek-Dowling Branch (031402010704) 15,647 acres Complete
- Upper Wrights Creek (031402030201) 24,097 acres Complete

Coosa Basin

- Spring and Mud Creek (031501050807) 10,880 acres Complete
- Eastaboga Creek (031501060513) 18,286 acres Complete
- Broken Arrow Creek (031501060602) 38,903 acres Complete
- Buxahatchee Creek (031501070406) 45,663 acres Complete
- Yellow Leaf Creek (031501070801) 50,880 acres In Progress
- Middle Coosa 915,016 acres Complete
  Targeting the following subwatersheds:
  - Little Land Valley Creek (031501060103)
  - Fisher Creek (031501060104)
  - Line Creek-Clear Creek (031501060105)
  - Little Wills Creek (031501060106)
  - Black Creek (031501060107)
  - Horton Creek (031501060108)
  - Ball Play Creek (031501060201)
  - 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)
  - 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 Leaf 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)

Escambia Basin

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

Escatawpa Basin

- Juniper Creek-Big Creek (031700080501) 5,936 acres Complete
- Bayou la Batre (031700090102) 19,562 acres Complete
- West Fowl River (031700090103) 20,489 acres Complete
- Dauphin Island (031700090202) 3,851 acres Complete

- Grand Bay Swamp — 24,587 acres — In Progress

Mobile Basin

- Eight Mile Creek (031602040304) — 22,287 acres — Being Updated
- 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 — Complete
  Targeting the following subwatersheds:
    - Deer River (031602050105)
    - Garrows Bend (031602050105)
    - Delchamps Bayou (031602050105)
- Fowl River (031602050104) — 39,739 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 — 43,673 acres — Complete
  Targeting the following subwatersheds:
    - Bon Secour River (031602050206)
    - Skunk Bayou (031602050207)
    - Oyster Bay (031602050208)
- Fly Creek (031602050205) — 21,900 acres — Complete
- Mobile Tensaw Delta — 128,412 acres — Complete
  Targeting the following subwatersheds:
    - Tensaw-Appalachee River (031602040505)
    - Grand Bay (031602040403)
    - The Basin (031602040203)
- Eastern Delta — 49,191 acres — Complete
  Targeting the following subwatersheds:
    - Whitehouse Creek (031602040502)
    - Upper Bay Minette Creek (031602040501)
    - Lower Bay Minette Creek (031602040503)
- Western Delta — 78,153 acres — Complete
  Targeting the following subwatersheds:
    - Lower Chasaw Creek (031602040305)
    - Bayou Sara (031602040402)
    - Gunnison Creek (031602040401)
    - Cold Creek (031602040105)

Perdido Basin

- Wolf Bay (031401070201, 031401070202, 031401070203) 36,296 acres Complete
- Gulf Frontal 50,513 acres Complete
  Targeting the following subwatersheds:
    - Little Lagoon (031401070205)
    - Gulf Frontal-Perdido Watershed Management Plan (031401070204)
- Western Perdido Bay 54,492 acres Complete
  Targeting the following subwatersheds:
    - Palmetto Creek (031401070103)
    - Bridge Creek (031401070104)

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 Being Updated
- Sougahatchee Creek 108,482 acres Complete
  Targeting the following subwatersheds:
    - Upper Sougahatchee Creek (031501100102)
    - Middle Sougahatchee Creek (031501100103)
    - Lower Sougahatchee Creek (031501100104)
- Pepperell Branch (031501100102) 9,234 acres Complete
- Parkerson Mill Creek (031501100202) 5,981 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 Complete

• Crowdabout Creek (060300021007)	31,180 acres	Complete
• Elam Creek (060300021009)	19,651 acres	Complete
• Upper and Middle West Flint Creek (060300021010, 060300021012)	56,260 acres	Complete
• Big Shoal Creek (060300021011)	12,967 acres	Complete
• Flat Creek (060300021013)	38,246 acres	Complete
• Village Branch (060300021014)	33,457 acres	Complete
• Swan Creek (060300021101)	35,928 acres	Complete
• Second Creek (060300021203, 060300021204)	37,714 acres	Complete
• Shoal Creek (060300040401)	39,088 acres	Complete
• Harris Creek (060300060201)	35,224 acres	Complete
• Browns Creek (060300010904)	37,248 acres	Complete
• Anderson Creek (060300040404)	37,913 acres	Complete
• Big Nance Creek (060300050104, 060300050105)	52,152 acres	Complete
• Cross Creek (060300010801)	21,259 acres	Complete
• Lower Flint Creek (060300021014)	33,458 acres	In Progress

Tombigbee Basin

• Sucarnoochee River (031602020404)	23,527 acres	In Progress

Holistic Management Approach to Protecting and Restoring Watershed Health and Improving Water Quality with the Development of Watershed Management Plans

Caney Branch Watershed Management Plan

Project Overview

The Caney Branch watershed HUC-12 031502010310 is in the Alabama River Basin in Montgomery County, AL. The watershed has an area of 25,198 acres. Catoma Creek runs through the middle of the Caney Branch watershed.

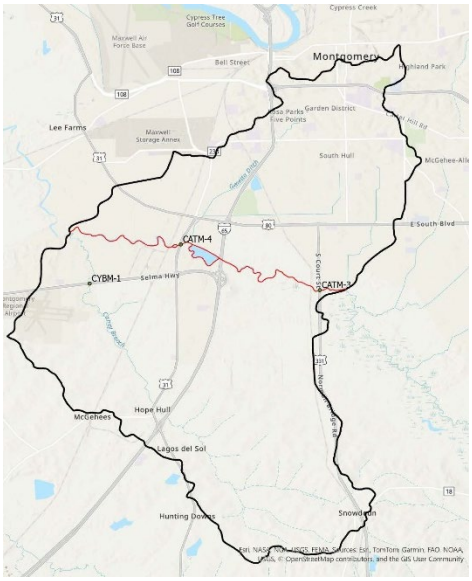

Figure 105- Caney Branch Watershed; Catoma Creek in red

Water Quality Challenges

Catoma Creek was first added to Alabama's 303(d) list in 1996 for OE/DO based upon a 50 percent noncompliance of DO measurements recorded in 1989 and a subsequent 40 percent noncompliance of recorded measurements from 1991 as referenced from the ADEM December 1992 *Alabama Clean Water Strategy Water Quality Assessment Report*. Site reconnaissance by stakeholders has identified possible sources of organic loadings, including streambank destabilization and nutrient management practices.

Water quality data collected from 1998 through the present by state and local agencies (ADEM and Montgomery Waterworks and Sanitary Sewer Board), as well as, from citizen-volunteer monitoring (AWW and Montgomery Water Watch) further identified and confirmed DO impairments to Catoma Creek. Stream flows occurring during periods of impairment were typically near established 7Q10 (the minimum 7-day average flow over a 10-year recurrence interval) levels. DO impairments in Catoma Creek were attributable to low flows and high temperatures as evidenced during summer sampling events. Based on ADEM's data analysis, a steady state modeling approach was deemed appropriate for TMDL development. Water quality measurements recorded on September 19, 2001, provided the most thorough and inclusive representation of critical conditions for TMDL development.

Catoma Creek was added to Alabama's 303(d) list for pathogens in 2002. Sources of impairments for pathogens included municipal storm sewers and pasture grazing. The pathogen impaired segment of Catoma Creek was initially listed as a result of water quality data collected by ADEM from May 2, 2000, through January 16, 2001. Of 77 fecal coliform samples collected from 6 different sampling stations throughout the watershed, nine were found to have exceeded the single sample water quality criterion of 2000 colonies/100mL. Of the six 30-day fecal coliform geometric means that were calculated (one for each station location), none exceeded the 30-day geometric mean water quality criterion of 1000 colonies/100 mL which is applicable for the period October through May. No

geometric means were calculated from the samples taken during the June through September time period. Follow-up sampling was later conducted on the pathogen listed segment of Catoma Creek at Stations CATM-1, CATM-3A and CATM-5 as part of Alabama's Section 303(d) Monitoring Program during 2005 and 2006. The TMDLs have been completed for both OE/DO and pathogens.

Project Objectives

The Catoma Creek Watershed Management Plan (CH2M Hill, 1998) was prompted by the listing of Catoma Creek on the Alabama 303(d) list of impaired waters. The Catoma Creek Watershed Management Plan covers a large, 10-digit HUC watershed (HUC 0315020103) that contains 11 (12-digit HUC) subwatersheds. The State of Alabama identified Catoma Creek as being impaired by organic loading (i.e., CBODu and NBOD) and for pathogens in 1998 for a length of 21.3 miles, from Ramer Creek to its source. The Caney Branch Watershed Management Plan, addendum to the larger Catoma Plan, was driven by the updated Section 319 requirement (FY2004 and above) that WMPs be written on a smaller 12-digit watershed scale.

Figure 106 - Catoma Creek off of Norman Bridge Road, Montgomery, AL

The purpose of this WMP will be restoring the impaired Catoma Creek to meet water quality standards for the fish and wildlife use classification. The development of this WMP will be accomplished by using the EPA's 9 key elements and will be a guide in developing a systematic, partnership-based approach to further restoration efforts in this watershed. The plan will identify critical areas contributing to NPS pollution and develop a plan of action to address these sources through BMPs that will address the impairments to Catoma Creek using implementation and E&O events. Strategies can be prioritized to reduce NPS pollutant loadings to the impaired Catoma Creek.

Moores Mill Creek Watershed Management Plan Update (FY22)

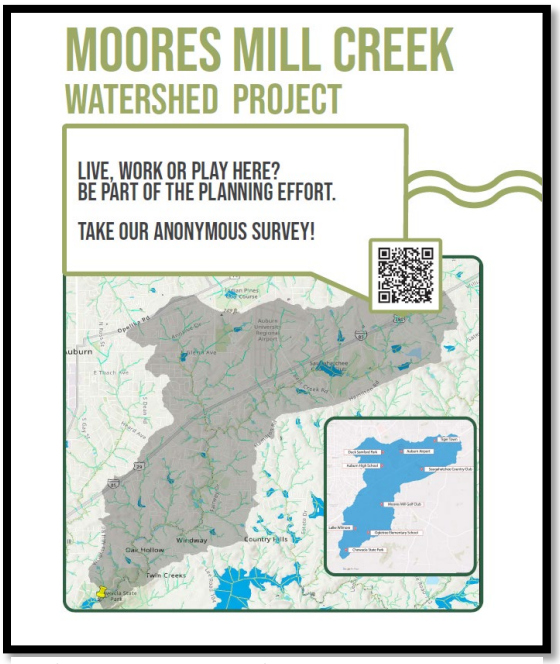

Figure 107- Moores Mill Creek Survey Example

Project Overview: The Moores Mill Creek Watershed Management Plan Update, coordinated by the AUWRC in partnership with the Department of Civil and Environmental Engineering, advanced significantly throughout 2025. Under the leadership of Laura Bell Cooley, the interdisciplinary team made progress in both technical watershed modeling and community-based outreach, furthering the project's goal of restoring and protecting the Moores Mill Creek watershed and its connection to the Tallapoosa River system. Collaboration among university researchers, local governments, and community organizations has continued to strengthen the project's impact and ensure its long-term success.

Project Administration and Coordination: Project coordination remained a major focus during 2025 as the team worked to align research, outreach, and grant management activities. The Water Resources Center maintained consistent communication through regular internal meetings and coordination with the City of Auburn, ADEM, and the Auburn University Contracts and Grants Office. Administrative milestones included the preparation and submission of the project's grant extension request and associated documentation for ADEM's review. The team also refined and expanded the Quality Assurance Project Plan (QAPP) and Standard Operating Procedures (SOPs) for rain gauges, area-velocity sensors, and multi-parameter sondes, ensuring compliance with ADEM's feedback and data quality standards. Through careful coordination, the project maintained a strong foundation for both scientific and community components of the watershed management effort.

Technical and Modeling Progress: Substantial advancements were achieved in hydrologic and water quality modeling through the work of Dr. Jose Vasconcelos, Ashmita Poudel, and Michael Bragg in the Department of Civil and Environmental Engineering. The team continued to refine and calibrate the Personal Computer Storm Water Management Model (PCSWMM) for the Moores Mill Creek watershed, expanding its scope to include both Auburn and Opelika tributaries. Complementary modeling work using HEC-HMS and HEC-RAS allowed for comparative studies of hydrologic response and sediment transport dynamics, improving understanding of TSS within the system.

Throughout the year, the modeling team also conducted sensitivity analyses on watershed land-use characteristics and their influence on stormwater runoff and sedimentation. These efforts contributed to the development of an independent validation method for TSS results and informed the ongoing calibration of the watershed model. The team prepared multiple journal manuscripts, including submissions to *MDPI Water* and *CHI JWMM*, demonstrating the project's contribution to both applied watershed management and academic research. Additionally, results were shared with

professional audiences through the Stormwater Modeling "Lunch and Learn" session and the Stormwater Management Modeling Workshop held at Auburn University's Ag Heritage Pavilion, promoting collaboration between researchers, municipal staff, and stormwater professionals.

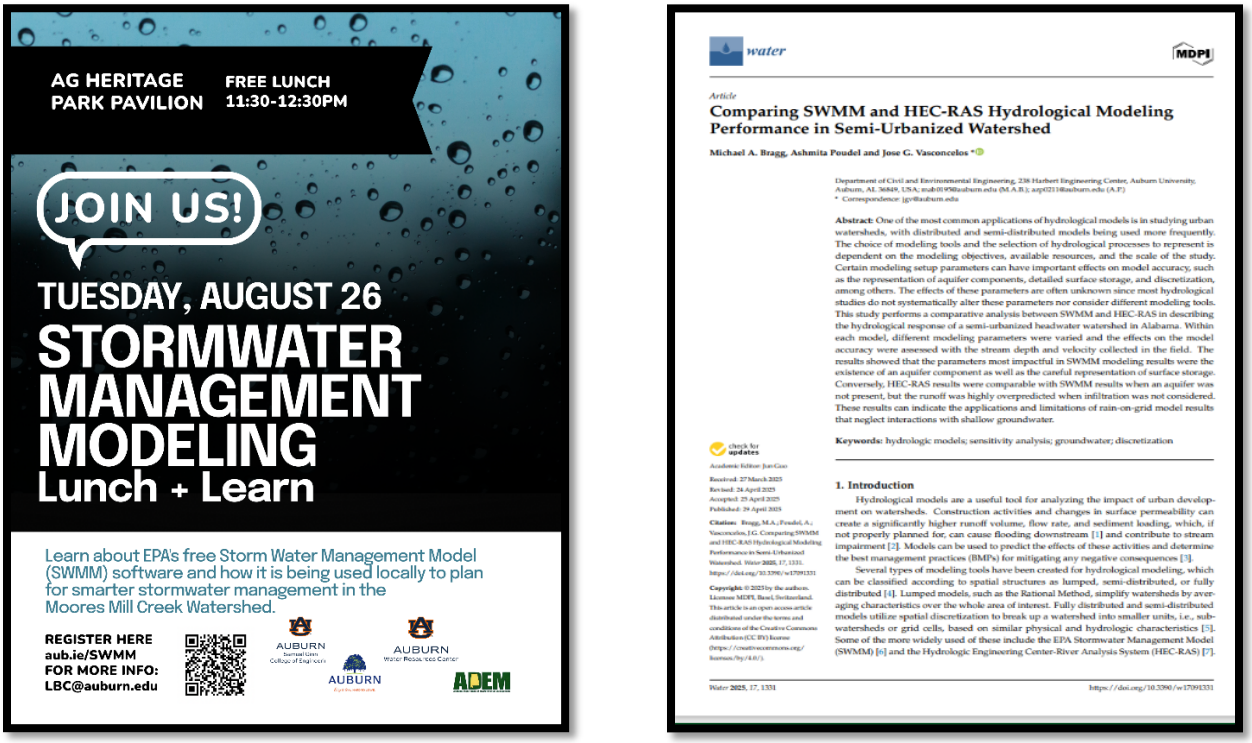

Figure 108 - SWMM Workshop and Journal Article

Outreach and Education: Public education and community engagement were integral to the project's mission throughout 2025. The Water Resources Center, led by Laura Bell Cooley with support from Mona Dominguez and the AWW program, implemented a series of outreach initiatives designed to raise awareness about local water quality issues and encourage community participation in watershed stewardship.

The team completed and analyzed a watershed outreach survey with 46 responses, gathering valuable insights into public perceptions and priorities for the updated management plan. A range of peer-reviewed Extension publications was developed and distributed, including *Sediment's Impact on Waterways and Aquatic Life in Alabama*, *Plant Solutions for Eroding Stream Banks*, and *Aquatic Species of the Tallapoosa Watershed*. These materials served as educational resources during outreach events and workshops.

The project's outreach presence expanded through participation in community markets, local events, and professional networks. A public information booth was hosted at the Ag Heritage Park Market, and articles were published in the Municipal Journal of Alabama and the League of Municipalities, emphasizing BMPs and the value of citizen water quality monitoring. The team also secured Chrysalis Fund support for a community Bioblitz, planned to engage volunteers in

environmental monitoring and biological surveys. Partnerships with Chewacla State Park further enhanced educational impact, enabling AWW water testing and training opportunities, litter cleanups, and youth education activities.

Figure 109 -Examples of Education and Outreach

Communication and Information Management: The project invested in improving information accessibility and communication tools to support public engagement and data dissemination. The Moores Mill Creek website was successfully migrated to an ArcGIS Online platform (aub.ie/mooresmill), offering interactive mapping and updated project information for stakeholders and residents. The Water Resources Center developed new educational and visual materials for events, improving consistency in outreach messaging. Additionally, the team coordinated and published the Water Resource Center (WRC) Newsletter, which highlighted the Moores Mill Creek project's progress and connected it with broader regional water resource initiatives.

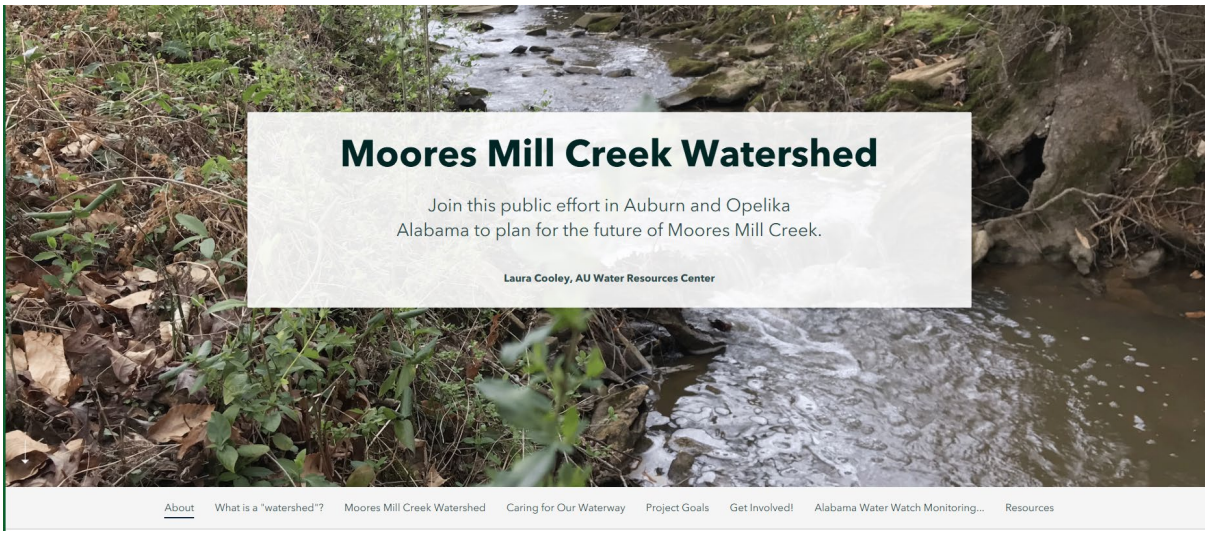

Figure 110 - Story Map Introduction Page

Looking Ahead: As the Moores Mill Creek Watershed Management Plan Update enters its final stages, the focus will shift toward integrating the refined watershed model with new monitoring data and finalizing the plan document. Future efforts will emphasize the identification and prioritization of BMPs for erosion and sediment control, habitat restoration, and stormwater management. Continued collaboration with the City of Auburn, ADEM, and community partners will be critical to ensuring that the plan's recommendations are both scientifically sound and publicly supported. The 2025 accomplishments have laid a strong foundation for completing the updated watershed plan and advancing sustainable management of the Moores Mill Creek watershed.

Shumulla Creek – Sucarnoochee River Watershed Management Plan (FY23)

Project Overview

The Shumulla Creek-Sucarnoochee River watershed HUC (031602020404) is in the Tombigbee River Basin in Sumter County, AL. The watershed has an area of 23,527 acres. The Sucarnoochee River is located in the Shumulla Creek – Sucarnoochee River watershed. The Sucarnoochee River originates near Porterville, Mississippi, and discharges into the Tombigbee River north of Dean Road near the Sumter County/Marengo County line. The river is 49.5 miles long and drains an area of 607 miles^2.

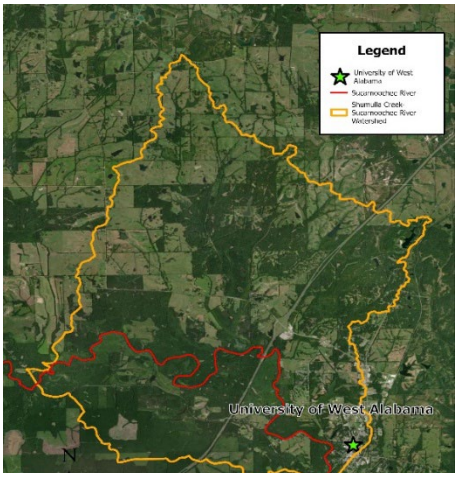

Figure 111 - Shumulla Creek-Sucarnoochee River watershed

The UWA is in the southeast portion of the Shumulla Creek – Sucarnoochee River watershed in Livingston, AL. UWA is sponsoring this WMP and is a key leader and stakeholder within the watershed. The university was chartered in 1835, and its mission is to enrich lives

through education, service, and outreach by providing opportunities for students to pursue a quality education through associate, baccalaureate, master's, education specialist and doctoral degrees in liberal arts, natural sciences and mathematics, nursing, technology, business and education (www.uwa.edu).

Figure 112- Sucarnoochee River

Water Quality Challenges

The Sucarnoochee River was listed as impaired for pathogens under the CWA Section 303(d) in 2020. The primary source of impairment has been identified as NPS pollution from pasture grazing.

Project Objectives

Figure 113- UWA logo

The goal of the Shumulla Creek-Sucarnoochee River WMP is to devise a strategy that targets critical areas and implements BMPs to reduce the cumulative effects of NPS polluted runoff within the watershed to address the goal of meeting or exceeding state water quality standards and criteria for a F&W, Public Water Supply (PWS), and Swimming (S) water use classification. This plan will also include building partnerships, watershed characterization, as well as outline timelines, indicators, milestones, a monitoring component, and define how to measure success during the process. The project will also conduct outreach and education to engage stakeholders in the process and demonstrate measures that reduce NPS pollutant loadings in the impaired watershed.

The development of this WMP will be accomplished by using the EPA's 9 key elements and will be a guide in developing a systematic, partnership-based approach to further restoration efforts in this watershed. The plan will identify critical areas contributing to NPS pollution and develop a plan of action to address these sources through BMPs implementation and E&O events. Strategies can be prioritized to reduce NPS pollutant loadings to the impaired Sucarnoochee River. The plan will engage stakeholders, landowners, and the community in participating, not only in the development process, but also in coming up with solutions to improve water quality in this watershed.

Yellow Leaf Creek Watershed Management Plan Update

Project Overview

The Yellow Leaf Creek watershed is in the northeastern part of Chilton County in the Coosa River Basin. Yellow Leaf Creek watershed drains an area approximately 79.5 square miles. The creek flows for 31.3 miles. Yellow Leaf Creek has a use classification of F&W. The Yellow Leaf Creek watershed is identified by the HUC 03150107-0801. It is part of the larger Walnut Creek-Coosa River watershed (HUC 0315010708).

Water Quality Challenges

In 2010 the ADEM designated Yellow Leaf Creek (AL03150107-0801-100) as being impaired due to siltation (habitat alteration) due to agricultural sources. Water quality sampling including a macroinvertebrate assessment at station YLCC-1 in 2005 provided a poor score. Bioassessment results also indicated the macroinvertebrate community to be in *poor* condition. Habitat assessment results were scored as *marginal* due to sedimentation, bank instability, a lack of instream habitat and absence of riparian buffer. Results of intensive water quality sampling suggest nutrient enrichment, higher than expected metal concentrations and sedimentation to be potential causes for the lower biological conditions of the reach.

Project Objectives

The goal of the Yellow Leaf Creek WMP update is to devise a strategy that targets critical areas and implements BMPs to reduce the cumulative effects of NPS polluted runoff within the watershed to address the goal of meeting or exceeding state water quality standards and criteria for a F&W water use classification. Updating this plan to an EPA 9-key element plan will also include building partnerships, watershed characterization, as well as outlining timelines, indicators, milestones, a monitoring component, and defining how to measure success during the process. The project will also conduct outreach and education to engage stakeholders in the process and demonstrate measures that reduce NPS pollutant loadings in the impaired watershed.

Implementation of Watershed Management Plans

National Water Quality Initiative (FY19)

The USDA NRCS launched NWQI, in collaboration with the EPA and state water quality agencies, in 2012 to reduce NPS of nutrients, sediment, and pathogens related to agriculture in small high-priority watersheds in each state. NWQI provides a means to accelerate voluntary, private lands conservation investments to improve water quality with dedicated financial assistance through multiple federal, state, and local programs to focus state water quality monitoring and assessment efforts where they are most needed to track change. A key part of the NWQI targeting effort includes the implementation of conservation systems that avoid, trap, and control run-off in these high-priority watersheds.

In FY 2017, NWQI piloted a “readiness” phase where States could include watersheds in NWQI and receive technical assistance for conservation planning, outreach, and coordination with partners prior to receiving financial assistance. This is now the “planning” phase. In FY 2019, NWQI was expanded to include source water protection for ground and surface waters that may not face water pollution challenges that would otherwise make them eligible for NWQI. Each year, state technical committees consult with State water quality agencies and partners, including drinking water providers, to evaluate the status of NWQI watersheds and source water protection areas and propose to add or withdraw them based on NWQI criteria, State priorities, and NRCS leadership approval. All States are required to participate in NWQI with a minimum of three watersheds (HUC12) to address impaired or threatened surface waters.

This project provided ADEM with resources to estimate the status of ecological conditions of priority future NWQI sub-watersheds identified within the Black Warrior, Choctawhatchee, and Tennessee River Basins. Monitoring wadeable rivers and streams in these targeted basins coordinated with monitoring conducted by ADEM's Rivers and Reservoirs Monitoring Program, TVA, GSA, and ARSN to make the most of available resources by providing better monitoring coverage within these basins from headwaters to downstream reservoirs.

Sub-watershed priorities within targeted basins were identified jointly by NRCS State Technical Water Quality Sub-committee members using multiple sources of information, including WMP status, assessment categories 4a (impaired water with an approved TMDL) and 5 (impaired), as well as sub-watersheds prioritized by sister agencies and stakeholders. The process incorporates several factors measuring watershed disturbance, ecological health, recovery potential, and program status. Sub-committee members include ADEM, Alabama Soil & Water Conservation Committee, EPA Gulf of America Program, USFWS, Alabama Forestry Commission, ADCNR, Alabama Water Resources Research Institute, Alabama Water Resources Conference planning committee, and Alabama A&M University.

Water quality data will be used to support on-going efforts by ADEM to establish and evaluate trends or changes in ecological conditions over extended periods of time. Trend data is useful in assessing long-term water quality improvements, to document CWA Section 319(h) grant-funded water quality improvements in terms of achieving NPS pollutant load reductions and meeting state water quality standards. In addition, trend data can reveal progress in mitigating priority TMDL pollutants of concern and protecting and restoring source waters relative to surface and groundwater drinking water sources and recharge areas.

This project will provide data for ADEM to categorize sampling reaches as required by Alabama's Assessment and Listing Methodology and information to categorize assessed sites in the biennial CWA Section 305(b) Integrated Water Quality Assessment and Monitoring Report. It will also provide data to develop and apply indicators and assessment criteria that link chemical, physical, and biological conditions within each stream / river reach to conditions throughout the watershed, and to predict conditions expected with different types of landuse. Data will be used to identify pollution impacts from a variety of sources, develop nutrient and sediment criteria, identify biological condition gradients, revise biological assessment indices, and enhance other metrics and methods used by the state to holistically assess water quality conditions of wadeable rivers and streams. The Alabama Water Quality Monitoring Strategy and ADEM Surface Water Quality Monitoring Program present strategies to be used by this project to monitor wadeable water resources and assess their designated use support status. Table 4 below provides information on those watersheds chosen for FY2019 funding.

Table 4. Targeted HUC-12 Watersheds.

Station ID	Waterbody	COUNTY	HUC-12	Ecoregion
2020				
LFKB-14	Locust Fork	Blount	031601110107	68D

BLFB-1	Blackburn Fork	Blount	031601110107	67F
SLAM-3	Slab Creek	Marshall	031601110106	68D
LCPB-23A	Calvert Prong	Blount	031601110205	68D
2022				
FLIM-6	Flint River	Madison	060300020405	71G
BFFM-4	Brier Fork	Madison	060300020306	71G
FLTM-1	Flint River	Madison	060300020307	71G
BENJ-1	Bengis Creek	Jackson	060300010307	68B
DC-4	Drum Creek	Marshall	060300010805	68D
TK-3	Turkey Creek	Marshall	060300010804	68D
LCRJ-1	Little Crow Creek	Jackson	060300010303	68C
FLIM-2A	Flint River	Madison	060300020403	71G
HURM-1	Hurricane Creek	Madison	060300020402	71G
FLTM-4	Flint River	Madison	060300020301	71G
CRWJ-3	Crow Creek	Jackson	060300010304	68B
FLIM5	Flint River	Madison	060300020404	71G
2024				
CSPJ-69	Cole Spring Branch	Jackson	060300020201	71G
CSPL-70	Cole Spring Branch	Jackson	060300020203	71G
DOWG-1	Dowling Branch	Geneva	031402011004	65G
DOWG-2	Dowling Branch	Geneva	031402011004	65G
GOOM-1	Goose Creek	Madison	060300020404	71G
MBFB-10	Mulberry Fork	Blount	031601090101	68D
MBFB-7	Mulberry Fork	Cullman	031601090103	68D
PRRJ-1	Paint Rock River	Jackson	060300020203	71G

PRRJ-4	Paint Rock River	Jackson	060300020203	71G
SLAM-22C	Slab Creek	Marshall	031601110105	68D
WFFM-1	West Fork Flint River	Madison	060300020302	71G
WPHM-1	West Fork Pinhook Creek	Madison	060300020502	71G
YBCM-3	Yellow Bank Creek	Madison	060300020405	71G
2025				
BCNJ-1	Big Coon Creek	Jackson	060300010305	68B
CSC-1	Cross Creek	Dekalb	060300010801	68D
LFKB-1	Locust Fork	Blount	031601110208	68D
SHM-3A	Short Creek	Marshall	060300010805	68D
SRTM-2	Short Creek	Marshall	060300010804	68D
TK-3	Turkey Creek	Marshall	060300010804	68D

Alabama River Basin

Crump Community Center Low Impact Development (FY21)

Figure 114- Rain Garden at the Crump Community Center in Montgomery, AL

The Crump Community Center is in the central portion of the Gailbraith Mill Creek watershed near the western boundary of the watershed. It is a fully accessible center that offers programs designed specifically for senior adults. The center provides exercise classes, financial assistance, games, a computer lab, music room, auditorium, and special events. The Alabama Herb Society designed and currently maintains a community garden directly adjacent to the Crump Community Center.

The Gailbraith Mill Creek watershed (HUC 03150201-0104) is in the Alabama River Basin. It has an area of 29,394 acres with 5,382 acres located in Elmore County and 24,012 acres located in Montgomery County, AL. Three Mile Branch is one of the major tributaries of Gailbraith Mill Creek watershed. Three Mile Branch flows north for 7.65 miles from its headwaters to its confluence with Gailbraith Mill Creek and has a total drainage area of 12.79 square miles. The Gailbraith Mill Creek watershed has an area of 29,394 acres.

Three Mile Branch has been listed as impaired since 1999. Major sources of impairments to Three Mile Branch have been identified as NPS pollution (specifically pesticides, siltation, and pathogens) 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 this watershed. Three Mile Branch was listed for pathogens and siltation (habitat alteration) on the CWA Section 303(d) list of impaired waters in 2010. A TMDL for pathogens was approved in 2019.

Figure 115- Native trees planted at the Crump Community Center in Montgomery, AL

Water quality data from 1999 by the U.S. Geological Survey (USGS) indicated that out of seven samples, six (85.7 percent) exceeded the freshwater chronic criterion for aquatic life. As such, Three Mile Branch was listed for pesticides due to Dieldrin on CWA Section 303(d) list of impaired waters in 2002. Water quality data from 2005 by ADEM at monitoring stations TMBM-1 and TMBM-2 showed that the macroinvertebrate assessment had a very poor Intensive Multi-habitat Bioassessment methodology score. In addition, monthly fecal coliform sampling at station TMBM-1 showed two out of eight samples had exceeded the single sample criterion. At station TMBM-2, three out of eight samples exceeded the single sample criterion.

The Gailbraith Mill Creek WMP (2022) was used as a guide in the restoration efforts of Three Mile Branch. The Crump Community Center LID project implemented a systematic, partnership-based approach to advance conservation efforts in the watershed. The plan identified areas for stormwater management to reduce erosive flows and sediment accumulation in Three Mile Branch. Technology transfer workshops provided for instruction on rainwater harvesting, nutrient management, bioretention design and implementation, and LID/GI. The workshops accompanied onsite implementation of associated LID/GI BMPs.

Figure 116- Dorris Skipper presenting at the Rain Barrel Workshop in Montgomery, AL

The overall goal of this project was to incrementally improve water quality within Three Mile Branch through implementation of BMPs and education/outreach efforts so that it may attain state water quality standards for its use classification of F&W. Priority NPS pollution load reductions were estimated as part of the evaluation of BMPs and their effectiveness in the area.

The Crump Community Center Low Impact Development cooperative agreement between the Alabama Herb Society and ADEM began on June 20, 2023, and ended on September 14, 2025. A time extension was requested to allow for full implementation of the bioretention area and a green roof. Not all of the originally allocated funding could be expended during the cooperative agreement period due to delays with implementation of the green roof. However, successful progress was made during the project, and the Alabama Herby Society was able to capture more than the required 40 percent project match.

Figure 117- ASA Table Talks flyer

The Alabama Herb Society attended and spoke about the project in partnership with ADEM at the ASA Table Talks on April 15, 2025. A booth promoting the project was hosted at the Alabama Herb Society's annual Herb Day on April 26, 2025. Design and implementation of the rain garden has been completed. Native trees were planted, rain chain and rain barrel installation, as well as installation of the porous walkways also was accomplished. A Nature Based Solutions workshop to teach stakeholders about NPS pollution and a rain barrel workshop to encourage stakeholders to help reduce pollutants into Three Mile Branch was also held.

The project is complete, but the Alabama Herb Society plans to promote the success of the project in a future article in the *Boom!* magazine. They also plan to help partners in the Gailbraith Mill Creek watershed with their education efforts and stream cleanups.

<u>Cumulative Load Reductions</u>:

Nitrogen: 0.67 lbs/year

Phosphorus: 0.06 lbs/year

Sediment: 0.01 tons/year

Whites Slough Watershed Restoration and Management Project – Phase II (FY22)

The Baldwin Slough watershed (HUC 03150201-0309) drains 27 square miles (17,280 acres) and is a subwatershed of the 360-square mile Catoma Creek (HUC 03150201-03) watershed. Catoma Creek flows west to east through the southern portion of the Baldwin Slough watershed. Catoma Creek was initially listed on the CWA Section 303(d) list of impaired waters in 1996 for OE/DO due to streambank destabilization and poor nutrient management practices. An additional impairment for pathogens in Catoma Creek was added to the CWA Section 303(d) list of impaired waters in 2002 due to municipal storm sewers and pasture grazing. Catoma Creek is impaired for 21.3 miles, from Ramer Creek to its source. In July 2005, a TMDL was finalized for OE/DO impairments to Catoma Creek. In September 2009, a TMDL was finalized for pathogen impairments to Catoma Creek.

Figure 118- White Slough

In October 1998, a WMP was developed for the larger Catoma Creek watershed. To target pollutants and possible contributing sources more effectively, a WMP was developed for the Baldwin Slough watershed in 2005. This WMP was the foundation for implementing the FY2006 Whites Slough Watershed Restoration and Management Project. As a tributary to Catoma Creek within the Baldwin Slough watershed, Whites Slough provided the opportunity to directly address the OE/DO impairment and streambank destabilization. The FY2006 project focused on Ida Bell Young Park within the City of Montgomery in the Baldwin Slough watershed.

The project included a stream and floodplain restoration and stormwater management in a degraded stream system. The project restored 2,100 linear feet of stream and two acres of floodplain. The project also provided education to the surrounding public and professional community by providing education on the importance of stream and floodplain protection and innovative stormwater management practices while maintaining natural stream channel design.

In ongoing attempts to reduce NPS pollution from the Baldwin Slough watershed and thus Catoma Creek, NPS Unit staff have been in discussions with the original stakeholders for the Whites Slough Watershed Restoration and Management Project as well as conducting an onsite meeting. The current focus is to continue the original FY2006 project into a Phase II for CWA Section 319(h) funding to be utilized on the Ida Bell Young Park project for stream realignment and restoration of riparian buffers.

Faulkner University Campus Restoration (FY24)

Faulkner University is in the southeastern portion of the Gailbraith Mill Creek watershed in Montgomery, AL. The mission of Faulkner University is to provide an education anchored by not only intellect, but also character and service. The Faulkner experience aims to educate the whole person. The university has been helping students earn degrees and advance their careers in Montgomery since 1942. Degrees are available in the Arts & Sciences, Biblical Studies, Business & Executive, Education, Health Sciences, and Faulkner Law.

The Gailbraith Mill Creek WMP (2022) will be used as a guide in the restoration efforts of Three Mile Branch. The plan identified areas for stormwater management to reduce erosive flows and sediment accumulation in Three Mile Branch. The Faulkner University Campus Restoration will implement a partnership-based approach to advance conservation efforts in the watershed. Technology transfer workshops will be provided for instruction on LID/GI BMPs. These workshops will accompany onsite implementation of associated LID/GI BMPs. This project focuses on reducing pollutants to Three Mile Branch. The LID/GI BMPs will enable citizens in the watershed to see other options to mitigate stormwater issues that also provides reductions of pollutants to nearby streams as well as reductions on water quantity.

The overall goal of this project is to incrementally improve water quality within Three Mile Branch through implementation of BMPs and E&O efforts so that it may attain state water quality standards for its use classification of Fish and Wildlife. Priority NPS pollution load reductions will be estimated as part of the evaluation of BMPs and their effectiveness in the area.

Figure 119 - Flooding on the campus of Faulkner University

The Gailbraith Mill Creek watershed (HUC 03150201-0104) is in the Alabama River Basin. It has an area of 29,394 acres with 5,382 acres located in Elmore County and 24,012 acres located in Montgomery County, AL. Three Mile Branch is one of the major tributaries of Gailbraith Mill Creek watershed. Three Mile Branch flows north for 7.65 miles from its headwaters to its confluence with Gailbraith Mill Creek and has a total drainage area of 12.79 square miles. The Gailbraith Mill Creek watershed has an area of 29,394 acres.

Three Mile Branch has been listed as impaired since 1999. Major sources of impairments to Three Mile

Branch have been identified as NPS (specifically pesticides, siltation, and pathogens) 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 this watershed. Three Mile Branch was listed for pathogens and siltation (habitat alteration) on the CWA Section 303(d) list of impaired waters in 2010. A TMDL for pathogens was approved in 2019.

Discussions are ongoing to work towards a cooperative agreement between Faulkner University and ADEM.

Lagoon Park Trails Improvement (FY25)

Figure 120- Trailway at Lagoon Park

Lagoon Park is in the southeastern portion of the Gailbraith Mill Creek watershed. Gailbraith Mill Creek flows through Lagoon Park. Gailbraith Mill Creek flows north to then connects with Three Mile Branch in the northern part of the watershed. Lagoon Park consists of approximately 432 acres of forests, wetlands, meadows, and creeks. The park has a trail system that extends about five miles around the park. The park also includes disc golf, a softball complex, tennis courts, a golf course, restaurant, lodge, picnic shelters, and playgrounds. Around 5,000 people use the trails annually providing opportunities to educate stakeholders and the community on NPS pollution, the Gailbraith Mill Creek watershed, watershed impairments, and voluntary best management practices.

The Gailbraith Mill Creek WMP (2022) identified areas for stormwater management to reduce erosive flows and sediment accumulation in Three Mile Branch. The Lagoon Park Trails Improvement project will implement a partnership-based approach to advance conservation efforts in the watershed. Rainwater harvesting devices, a constructed wetland, and erosion control BMPs will be implemented at the park. The LID/GI BMPs will enable citizens in the watershed and visitors to the trails to see innovative techniques to mitigate stormwater issues that also provide reductions of pollutants to nearby streams.

Figure 121 - Flooding issues along trailway

Three Mile Branch has been listed as impaired since 1999. Major sources of impairments to Three Mile Branch have been identified as NPS (specifically pesticides, siltation, and pathogens) 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 this watershed. Three Mile Branch was listed for pathogens and siltation (habitat alteration) on the CWA Section 303(d) list of impaired waters in 2010. A TMDL for pathogens was approved in 2019.

Water quality data from 1999 by the USGS indicated that out of seven samples, six (85.7 percent) exceeded the freshwater chronic criterion for aquatic life. As such, Three Mile Branch was listed for pesticides due to Dieldrin on CWA Section 303(d) list of impaired waters in 2002. Water quality data from 2005 by the ADEM at ADEM monitoring stations TMBM-1 and TMBM-2 showed that the macroinvertebrate assessment had a very poor Intensive Multi-habitat Bioassessment methodology score.

The overall goal of this project is to incrementally improve water quality within Three Mile Branch through implementation of BMPs and E&O efforts so that it may attain state water quality standards for its use classification of F&W. Priority NPS pollution load reductions will be estimated as part of the evaluation of BMPs and their effectiveness in the area.

Discussions are ongoing to work towards a cooperative agreement between the City of Montgomery and ADEM.

Montgomery Zoo Restoration (FY23)

The Montgomery Zoo is in the central portion of the Gailbraith Mill Creek Watershed near the western border. Thousands of people visit the Montgomery Zoo each year.

The Gailbraith Mill Creek watershed (HUC 03150201-0104) is in the Alabama River Basin. It has an area of 29,394 acres with 5,382 acres located in Elmore County and 24,012 acres located in Montgomery County, AL. Three Mile Branch is one of the major tributaries of Gailbraith Mill Creek watershed. Three Mile Branch flows north for 7.65 miles from its headwaters to its confluence with Gailbraith Mill Creek and has a total drainage area of 12.79 square miles. The Gailbraith Mill Creek watershed has an area of 29,394 acres.

Three Mile Branch has been listed as impaired since 1999. Major sources of impairments to Three Mile Branch have been identified as NPS (specifically pesticides, siltation, and pathogens) 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 this watershed. Three Mile Branch was listed for pathogens and siltation (habitat alteration) on the CWA Section 303(d) list of impaired waters in 2010. A TMDL for pathogens was approved in 2019.

Water quality data from 1999 by the USGS indicated that out of seven samples, six (85.7 percent) exceeded the freshwater chronic criterion for aquatic life. As such, Three Mile Branch was listed for pesticides due to Dieldrin on CWA Section 303(d) list of impaired waters in 2002. Water quality data from 2005 by ADEM at monitoring stations TMBM-1 and TMBM-2 showed that the macroinvertebrate assessment had a very poor Intensive Multi-habitat Bioassessment methodology score. In addition, monthly fecal coliform sampling at station TMBM-1 showed two out of eight samples had exceeded the single sample criterion. At station TMBM-2, three out of eight samples exceeded the single sample criterion.

The Gailbraith Mill Creek WMP (2022) will be used as a guide in the restoration efforts of Three Mile Branch. The plan identified areas for stormwater management to reduce erosive flows and sediment accumulation in Three Mile Branch. The Montgomery Zoo restoration project will implement a partnership-based approach to advance conservation efforts in the watershed. The plan identified areas for stormwater management to reduce erosive flows and sediment accumulation in Three Mile Branch. Technology transfer workshops will be provided for instruction on rainwater harvesting, nutrient management, bioretention design and implementation, and LID/GI. The LID/GI BMPs will enable citizens in the watershed to see other options to mitigate stormwater issues that also provide reductions of pollutants to nearby streams.

The overall goal of this project is to incrementally improve water quality within Three Mile Branch through implementation of BMPs and E&O efforts so that it may attain state water quality standards for its use classification of F&W. Priority NPS pollution load reductions will be estimated as part of the evaluation of BMPs and their effectiveness in the area.

Figure 122- Litter Cleanup in the Gailbraith Mill Creek watershed hosted by the Montgomery Zoo

Specific goals for this project include installation of rainwater harvesting devices at the service buildings and hoofstock buildings, two rain garden areas, and stabilization of slopes in two regions of the zoo. Implemented BMPs will reduce nutrient and sediment loss and generate pollutant load reductions that will improve the water quality in Three Mile Branch.

The cooperative agreement between the City of Montgomery and ADEM began on July 30, 2025. Montgomery Zoo staff were able to attend a partner workshop to learn about Nature Based Solutions to NPS pollution on August 12th of this year. A professor from Auburn University traveled to the project site on August 29, 2025, to help them select location sites for the future rain gardens. The Montgomery Zoo also hosted a very successful watershed cleanup at Lagoon Park on September 27, 2025, in the Gailbraith Mill creek watershed with over 40 volunteers cleaning up 674.4 lbs. of litter! On November 12, the Auburn Biosystems Engineering students traveled to the zoo and surveyed the sites for the rain gardens. An AWW training is scheduled for March 19, 2026.

Veteran's Memorial Park Low Impact Development Project (FY25)

The Veteran's Memorial Park will be built in the center of the Gailbraith Mill Creek Watershed. The park will honor our veterans and will provide essential recreational resources for the community. The park will provide residents with a safe, accessible space for physical activity and leisure, which will foster community engagement and promote health and wellness. The park will have a walking trail, playground, exercise area, splash pad, community center, and a skate park. BMPs including a rain garden, porous pavement and bioswales are planned for implementation in the park.

The goal of this project is to reduce urban NPSs of siltation, nutrients, and pathogens entering Gailbraith Mill Creek watershed. This will help to improve water quality through the implementation of the Gailbraith Mill Creek WMP, including the installation of BMPs to reduce nutrients, sediment loss, and pathogen input into Three Mile Branch.

The Gailbraith Mill Creek watershed (HUC-12 03150201-0104) is in the Alabama River Basin. It has an area of 29,394 acres with 5,382 acres located in Elmore County and 24,012 acres are in Montgomery County, AL. Three Mile Branch is one of the major tributaries of Gailbraith Mill Creek watershed. Three Mile Branch flows north for 7.65 miles from its headwaters to its confluence with Gailbraith Mill Creek and has a total drainage area of 12.79 square miles. Three Mile Branch has been listed as impaired since 1999. Major sources of impairments to Three Mile Branch have been identified as NPS (specifically pesticides, siltation, and pathogens) 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 this watershed. Three Mile Branch was listed for pathogens and siltation (habitat alteration) on the CWA Section 303(d) list of impaired waters in 2010. A TMDL for pathogens was approved in 2019. Water quality data from 1999 by the USGS indicated that out of seven samples, six (85.7 percent) exceeded the freshwater chronic criterion for aquatic life. As such, Three Mile Branch was listed for pesticides due to Dieldrin on the CWA Section 303(d) list of impaired waters in 2002. Water quality data from 2005 by the ADEM at ADEM monitoring stations TMBM-1 and TMBM-2 showed that the macroinvertebrate assessment had a very poor Intensive Multi-habitat Bioassessment methodology score. In addition, monthly fecal coliform sampling at station TMBM-1

showed two out of eight samples had exceeded the single sample criterion. At station TMBM-2, three out of eight samples exceeded the single sample criterion.

Discussions between ADEM and the City of Montgomery are ongoing for this project.

Figure 123- Community Listening Session

Black Warrior River Basin

Black Creek Stream Restoration Project (FY25)

Project Overview

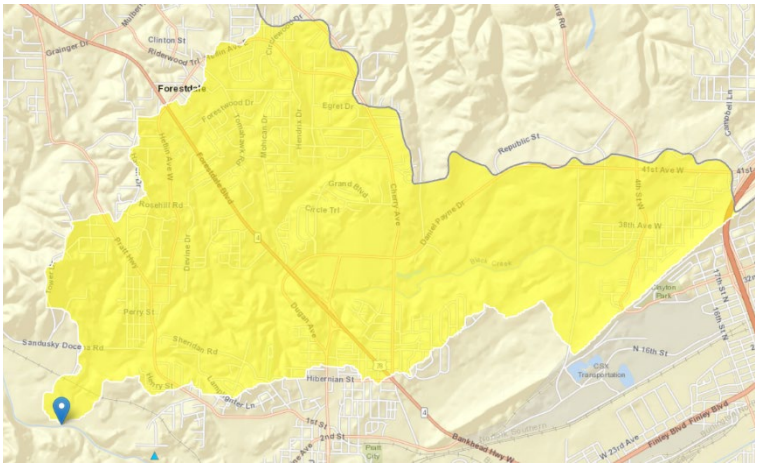

Figure 124- Black Creek is a Subwatershed of Upper Village Creek Watershed

Black Creek, located in the Hooper City neighborhood of Birmingham, AL, serves as a significant tributary to Village Creek within the Black Warrior River Basin (HUC 03160111-0408, -0409). The Village Creek watershed, characterized by extensive urban development, has been identified as impaired due to NPS pollution stemming from urban runoff. The high percentage of impervious surfaces, combined with limited stream buffers, has adversely affected water quality. Village Creek is currently impaired for metals, pH, siltation, pathogens, pesticides, and nutrients, with TMDLs established for these impairments between 2005 and 2017.

Guiding Framework

The 2017 Village Creek Watershed Improvement Strategy, developed with support from the City of Birmingham, various agencies, and local stakeholders, outlines a comprehensive approach to watershed restoration. This nine-element WMP highlights Black Creek as a contributor to TSS and total nitrogen, establishing the framework for targeted restoration efforts.

Project Goals and Activities

The primary objective of this project is to improve water quality in the Village Creek watershed through the implementation of BMPs and E&O. The specific actions include:

• **Culvert Removal**: The City of Birmingham plans to remove approximately 800 feet of culvert along Black Creek between 37th Avenue West and Coalburg Road. This removal aims to restore and stabilize the stream using natural stream design principles, thereby increasing sinuosity and enhancing aquatic habitat.

• **Constructed Wetland**: Adjacent to a 12-acre grassed field, a constructed stormwater wetland may be established to enhance water quality through increased filtration.

Figure 125 - Example of what constructed stormwater wetlands could look like (picture taken from water.phila.gov)

• **Bioswales and Rain Gardens**: Implementation of bioswales and rain gardens on city-owned residential lots will promote stormwater filtration, with the rain gardens serving as practical demonstrations of effective BMPs for local homeowners.

Figure 126 - Picture of a bioswale from Boston Landscape Company

• **Community Engagement**: Community engagement is crucial in watershed projects because it ensures that the project is tailored to specific needs of the community it aims to serve. This engagement fosters a sense of ownership and accountability, leading to more effective sustainable outcomes. It is the hopes to engage this community heavily in stakeholder involvement and watershed stewardship activities.

Figure 127- People working together to change their community for the better

Implementation and Coordination

The City of Birmingham will lead the project, working alongside various agencies and partners. The focus will be on completing streambank restoration and protection practices, removing debris, and achieving measurable pollutant load reductions to demonstrate the effectiveness of these interventions.

Although staffing changes within the City have caused delays, negotiations for cooperative agreements are ongoing. Currently, the vision of the Roebuck project is being addressed with partners, with plans for prioritizing the Black Creek restoration project to proceed thereafter.

Broglen River Watershed Management Plan Update (FY24)

Project Overview

The Broglen River watershed covers a mix of agricultural, forested, and urban lands, including the City of Cullman, AL. The Broglen River and its main tributary, Eightmile Creek, have long struggled with water quality issues caused by runoff from farming, livestock operations, and developed areas. These issues include nutrient buildup, sedimentation, and low dissolved oxygen, all of which threaten fish and aquatic habitats.

To address these problems, the City of Cullman received funding through a CWA Section 319(h) Grant administered by ADEM. This grant was executed May 27, 2025. The project supports the Broglen River WMP by implementing LID and BMPs that help reduce runoff, filter pollutants, and restore more natural water flow patterns in the watershed.

Water Quality Challenges

Water monitoring and field observations show that the Broglen River and Eightmile Creek continue to face several interconnected challenges:

- Nutrient and organic pollution that fuels algal growth and depletes oxygen in the water.
- Erosion and sedimentation that degrade streambanks and aquatic habitat.
- Increased stormwater runoff from paved and developed areas that overwhelm drainage systems and contribute to downstream flooding. These conditions underscore the need for effective, site-appropriate stormwater solutions that balance engineering feasibility with ecological restoration.

Figure 128- Current picture of stream conditions from TTL's September 2025 Progress Report

Overall Project Goals

The Broglen River Watershed Implementation Project is designed to improve water quality and restore ecological health within the Broglen River and its tributaries, particularly Eightmile Creek, by addressing sources of NPS pollution. The project brings together local, state, and federal partners—including the City of Cullman and the ADEM—under the CWA Section 319(h) Program.

The primary goals of the project are to:

- Reduce nutrients, sediment, and organic pollutant loads entering the Broglen River and Eightmile Creek.
- Stabilize and restore degraded stream channels and banks to prevent erosion and improve aquatic habitat.
- Implement LID and BMPs that promote natural infiltration, reduce stormwater runoff, and enhance groundwater recharge.
- Increase DO and overall water quality to support designated fish and wildlife uses.
- Promote community awareness and engagement in watershed protection through education and demonstration of sustainable stormwater practices.

Together, these efforts aim to create a resilient, sustainable watershed system that supports cleaner water, healthier ecosystems, and long-term environmental stewardship within the City of Cullman and the surrounding region.

Changes to the Original Plan

When the project began, the team's original design focused on installing porous pavement and subsurface infiltration systems in the Heritage Park parking area. These features were intended to allow rainwater to soak into the ground rather than flow directly into nearby streams. However, field testing revealed two major challenges:

1. Very low soil permeability – The soil at the site does not readily absorb water, meaning infiltration systems would not function as intended.
2. Shallow bedrock – Rock layers were found just 2 to 3 feet below the surface, making it impossible to construct large underground systems. Additionally, the sloping terrain and large paved area of the parking lot made porous pavement difficult to install and maintain. Based on these findings, the porous pavement and infiltration system components were removed from the implementation plan. This change ensures that project resources are directed toward solutions that are both technically feasible and environmentally effective.

Revised and Current Practices

In response to the site limitations, the project team developed a new, more practical approach that still meets the original water quality goals. The revised design focuses on enhancing stormwater management, stabilizing streams, and improving natural infiltration where conditions allow.

Figure 129- Overview of Heritage Park and associated stream reaches and branches from TTL's September 2025 Progress Report

Instead of installing porous pavement, the team is improving how rainwater moves across Heritage Park. Drainage patterns will be adjusted so that runoff from the parking area flows more gently into nearby streams, reducing erosion and allowing water to settle and filter naturally.

Streambank restoration is now a central part of the project. Several segments of the park's creeks—known as Reaches A and Branches A and B—have experienced heavy erosion over time. These areas will be reshaped, stabilized, and planted with native vegetation to strengthen the banks, reduce sediment entering the water, and improve aquatic habitat. The design will also add natural features that help increase DO levels and overall stream health.

The southeast stormwater basin will be upgraded to act as a multi-purpose infiltration and detention area. Although the soil in this basin has only moderate infiltration potential, the project will include soil improvements and grading changes to help water soak in more effectively. A smaller infiltration area near the park's dog park and baseball fields is also being evaluated for minor grading and vegetation improvements to slow runoff and enhance water absorption.

Together, these updates create a comprehensive stormwater strategy that makes the best use of existing site conditions while protecting the Broglen River and Eightmile Creek from excess sediment and nutrient pollution.

Current Progress

During FY2024, TTL, Inc. completed detailed field assessments, soil testing, and hydraulic analyses to confirm the feasibility of these revised measures. Conceptual designs for stream restoration and stormwater improvements have been developed and are now under review. Coordination with ADEM and the City of Cullman is ongoing to ensure the project remains consistent with the CWA Section 319(h) program objectives.

Construction is anticipated to continue into FY2026, marking a key milestone toward reducing NPS pollution and improving the long-term health of the Broglen River Watershed. Stakeholder involvement and E&O will also be a focus in the FY2026 period.

Roebuck Municipal Golf Course Stream Restoration and Demonstration Projects – Phase 1 & 2 (FY21/24)

Project Overview

Village Creek, located in the Black Warrior River Basin in Jefferson County, AL, traverses the City of Birmingham, where the upper portion features extensive impervious surfaces and limited stream buffers. These conditions have detrimental effects on water quality within the watershed. Village Creek is currently impaired for metals, pH, siltation, pathogens, pesticides, and nutrients. TMDLs have been established for these impairments: for metals (zinc), pH, and siltation in 2005; for pathogens in 2015; and for nutrients in 2017.

Significance of Roebuck Municipal Golf Course

Figure 130- Sign for the site

Roebuck Municipal Golf Course, an 18-hole public facility established in 1911, holds significant cultural and historical value as one of Alabama's oldest municipal golf courses. It is notably recognized as the site where famed golfer Bobby Jones won his first tournament in 1915. The course has played a pivotal role in the early integration efforts within Birmingham. Stakeholders in this area seek to maintain a high-quality, unpolluted environment for recreational activities.

Ecologically, Village Creek flows through the golf course and is linked to Roebuck Spring, a tributary that is one of the few remaining habitats for the endangered watercress darter. Enhancing water quality in Village Creek could subsequently benefit Roebuck Springs and improve habitat conditions for this species.

Restoration Strategy

The Village Creek Watershed Improvement Strategy (2017) will guide the restoration initiatives aimed at reducing sediment loss, phosphorus, and nitrogen levels in the streams that flow through Roebuck Municipal Golf Course. This effort will be implemented in phases through a series of BMP demonstrations, including:

Figure 131 - Picture overview of the golf course

- Establishing buffer zones and riparian areas.
- Selecting adapted plant species to minimize fertilizer and pesticide use.
- Restoring and stabilizing severely eroded streambanks to reduce sediment and nutrient runoff.

• Organizing trash clean-up events in collaboration with local environmental stakeholder groups.

Community Engagement and Collaboration

Engaging stakeholders is crucial for fostering stewardship of water resources and deepening their connection to the watershed's history and ecology. Project partners will conduct tours and educational workshops to facilitate community involvement.

Although staffing changes among partnering organizations have caused delays in project contracting, discussions resumed in October 2023, reaffirming the commitment of all partners to advance this important initiative. Plans for an onsite meeting are underway to assess additional updates and determine the financial and technical requirements necessary for successful implementation.

The Village Creek Watershed Improvement Strategy (2017) will guide restoration work to reduce sediment loss, phosphorus, and nitrogen from the streams that run through Roebuck Municipal Golf Course. This will be done in phases through a series of BMP demonstrations, including installed examples of buffer zones, riparian areas, and adapted species selection, which will result in reduced fertilizer and pesticide applications. Restoration and stabilization of the highly eroded streambanks that run through the course will be a key objective of these projects, as this will reduce sediment movement and nutrient loss from the course. Additionally, trash clean up in the creeks will be achieved through collaborative efforts with local environmental stakeholder groups. Project partners will host tours and short courses.

ADEM NPS Unit staff met with the City of Birmingham on July 7, 2025, to discuss continued movement on this project. The project has been stalled due to staffing changes spanning multiple partners, but it was a promising meeting. The next steps discussed are reconnecting with various partners and establishing a new scope of work with a re-envisioned budget. Partners are working hard to make this project a great example of collaboration and watershed restoration. On October 21, 2025, ADEM NPS Unit staff met with members of TNC to discuss how to move the project forward as this is a common shared vision. Potential next steps were identified and currently are being pursued.

Figure 132- Roebuck Golf Course advertisement

Cahaba River Basin

Cahaba Valley Creek Watershed Implementation Project (FY23)

Cahaba Valley Creek watershed (HUC 03150202-0202), located in the Cahaba River Basin within Shelby County in AL, flows southwest for 14.98 miles from its source to its confluence with Buck Creek, which then flows an additional 2.92 miles before joining the Cahaba River. It has a drainage area of 17,492 acres and runs through both urban and agricultural lands. Cahaba Valley Creek was first listed on the CWA Section 303(d) list of impaired waters in 2004 for pathogens (fecal coliform) based on USGS water quality data from 1999-2000. A pathogen TMDL for Cahaba Valley Creek was drafted by the ADEM and approved by EPA in 2009. As a tributary to Buck Creek and subsequently the Cahaba River, water quality conditions within Cahaba Valley Creek can influence conditions downstream; therefore, stream restoration efforts and water quality improvements in the Cahaba Valley watershed can potentially improve conditions in Buck Creek and the Cahaba River, which would amplify the effect from leveraged resources on water quality restoration in the area.

Figure 133 - A critical area of NPS pollution identified in the WMP

The 2021 Cahaba Valley Creek WMP will be used as a guide in developing a systematic, partnership-based approach to advance conservation efforts in the watershed. Shelby County will lead restoration efforts in the watershed including a stakeholder-identified stream bank stabilization/enhancement on the unnamed tributary to Cahaba Valley Creek. Sediment input stems from unstable and eroding banks, resulting in loss of streambank stability, degradation of the aquatic habitat, sedimentation in the stream channel, and the resultant deposition of the bedload materials downstream. The stabilization project will improve natural stabilization of the streambank and enhance the function of the floodplain. Stream bank stabilization/enhancement BMPs will include bank shaping to reconnect the stream with the floodplain and potential installation of streambank stabilization structures, which move the flows away from the bank, thereby halting lateral movement of the stream channel and reducing sediment loading. A bioretention cell uphill of the stabilization area and enhanced riparian vegetation adjacent to Cahaba Valley Creek at the rear parking lot of the Briarwood Christian Junior High School campus will slow and treat stormwater drainage and will alleviate some pressure on the stabilization practice. In addition to being protective of water quality, restoration efforts may be protective of water quality, restoration efforts may be protective of infrastructure and human health by preventing/reducing flooding on the road in front of the school.

Suspected pathogen contributions on agricultural (pasture) land areas have also been identified and landowners will be encouraged to implement BMPs on these pastures. Conservation organizations, such as NRCS and the ACES (among others), will be asked to provide technical information on their programs that can be shared with willing agricultural landowners and, as appropriate, will execute a site-specific comprehensive conservation plan for each landowner to facilitate agricultural BMP implementation within the watershed to NRCS specifications. Strategic BMP design, implementation, and maintenance approaches may include watershed restoration approaches aimed at meeting water quality standards directly; iterative, technology-based measures applied on either a categorical or site-specific basis; or an appropriate mix of these approaches. Although the County has experienced recent staffing changes, project contract negotiations continue.

Coosa River Basin

Eastaboga Creek Watershed Implementation Project (FY20)

Eastaboga Creek watershed (HUC 03150106-0513), in the Coosa River Basin within Calhoun and Talladega Counties in Alabama, flows southwest for 6.85 miles from its source to its confluence with Choccolocco Creek. It has a drainage area of 18,286 acres and runs through both urban and agricultural lands. The Eastaboga Creek watershed is a subwatershed of the larger 10-digit HUC, Choccolocco Creek watershed. Eastaboga Creek was first listed on the CWA Section 303(d) list of impaired waters in 2020 for pathogens (*E. coli*) due to collection systems failure, pasture grazing, and urban runoff/storm sewers from its source to Choccolocco Creek. Water quality data collected by the ADEM in 2017-2018 showed the *E. coli* criterion for F&W use classification was exceeded in four out of eight samples in 2017 at ADEM sample site ESBT-1 and in three out of eight samples in 2018 at ESBT-3, which suggests a pathogen impairment exists for Eastaboga Creek.

The 2020 Eastaboga Creek WMP was used as a guide in developing a systematic, partnership-based approach to advance conservation efforts in the watershed. The Choccolocco Creek Watershed Conservancy District executed a site-specific comprehensive conservation plan for each landowner. After development of the plan, BMPs were targeted for pathogen reduction in accordance with NRCS specifications. Conservation organizations, such as NRCS and ACES (among others), were asked to provide technical information on their programs that could be shared with willing landowners. Strategic BMP design, implementation, and maintenance approaches included watershed restoration approaches aimed at meeting water quality standards directly; iterative, technology-based measures applied on either a categorical or site-specific basis; or an appropriate mix of these approaches.

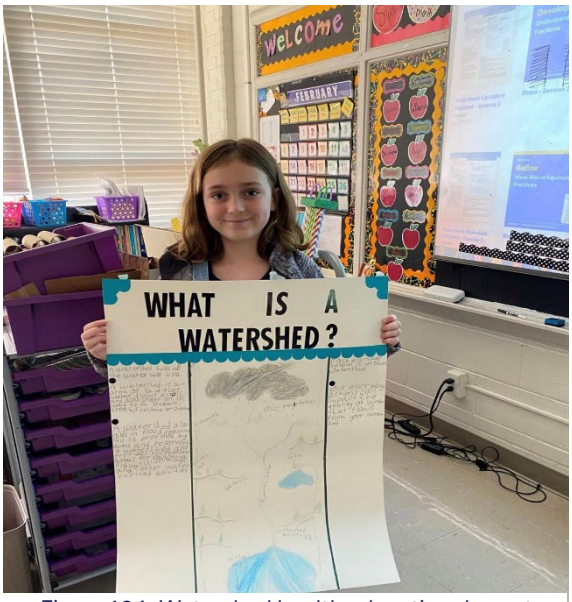

Figure 134- Watershed health educational event

The goal of the Eastaboga Creek Watershed Implementation Project was to reduce the cumulative effects of NPS polluted runoff to improve water quality in Eastaboga Creek. This effort, combined with other efforts, assisted the watershed in meeting state water quality standards and criteria for the F&W use classification. For this goal to be realized, pathogen sources will be addressed through BMP identification and implementation. The project coordinator, additional staff, and partner organizations hosted a clean-up day, school education days, and several advisory committee meetings to discuss the project. The Bats of Alabama program in October of 2023 discussed the Eastaboga project with attendees. A cleanup in Munford, AL was held in December of 2023 as well. In January of 2024, A Basics of Farms and Forest Recordkeeping meeting with local landowners was held where the project was also discussed. The project coordinator was able to attend the Nonpoint Source Conference that month as well to learn more about the program and network with other attendees. The project was brought up again in February of 2024 at the Love and Protect event. Several informational flyers were given out about the Eastaboga watershed at this event as well. A Watershed Update meeting was held in March of 2024 for residents and property owners to learn about the Eastaboga project and gather more interest with landowners. The project coordinator also held an Introduction to Forestry, Forest Management, and Riparian Buffer workshop to garner interest in the implementation of BMPS with local landowners.

Unfortunately, not all of the allocated federal funding could be expended during the cooperative agreement period due to lack of landowner participation. BMPS were not implemented during this contract period, therefore load reductions were not garnered. Match was garnered in the amount of $8,895.90 and the project did include many education events teaching stakeholders about NPS pollution and the importance of keeping these pollutants out of their waterways. The project ended on May 22, 2024.

Escambia River Basin

Feagin Creek Watershed Implementation Project (FY21)

Figure 135- Faegin Creek

The Gantt Millpond-Feagin Creek (HUC 03140301-0403) is in the Escambia River Basin within Covington County. The Gantt Millpond-Feagin Creek watershed is a subwatershed of the larger 10-digit HUC Middle Conecuh River. The watershed is northeast of Andalusia and just south of Gantt Lake. Feagin Creek flows northwest for 7.76 miles to its confluence with the Conecuh River at Gantt Lake. The Gantt Millpond-Feagin Creek watershed has a drainage area of 12,064 acres and runs through forestry and agricultural lands, which influence water quality within the watershed. Feagin Creek was first listed on the CWA Section 303(d) list of impaired waters in 2018 from its source to Gantt Lake for pathogens (*E. coli*) due to pasture grazing

and animal feeding operations. Water quality data collected by ADEM in 2014, showed the *E. coli* criterion for Feagin Creek's use classification of F&W was exceeded in 4 out of 8 samples at ADEM sampling location FEGC-1. This identifies a pathogen impairment exists in Feagin Creek.

The 2020 Gantt Millpond-Feagin Creek WMP will be used as a guide in developing a systematic, partnership-based approach to advance restoration efforts in the watershed. The Feagin Creek Watershed Implementation Project will provide Section 319(h) funding for landowners to voluntary implement incentive-based mechanisms that reduce NPS loadings in the impaired Gantt Millpond-Feagin Creek watershed. Conservation organizations such as NRCS will be asked to provide technical information on their programs that can be shared with landowners. Strategic BMP design, implementation, and maintenance approaches may include watershed restoration approaches aimed at meeting water quality standards directly or through technology-based measures applied on either a categorical or site-specific basis.

Figure 136- Gantt Millpond – Feagin Creek Watershed

The goal of the Feagin Creek Watershed Implementation Project is to reduce the cumulative effects of NPS polluted runoff to improve water quality in Feagin Creek. This project, combined with other partnering efforts, will assist the watershed in meeting state water quality standards and criteria for the F&W use classification. For this goal to be realized, pathogen causes and sources will be addressed through BMP identification and implementation. Pollutant load reductions of nitrogen, phosphorus, and sediment will be estimated through PLET modeling to help assess the impact of project implementation efforts on water quality within the watershed. Conversations are ongoing with NRCS and the Covington County SWCD for further development of the project.

Mobile River Basin

Tiawasee Creek Watershed Implementation Project (FY19)

Project Overview

Figure 137- View of the Project Area

Tiawasee Creek (HUC 03160204-0505) serves as a tributary to the D'Olive Creek watershed, primarily located in the City of Daphne, AL. This creek discharges into D'Olive Bay and subsequently into Mobile Bay. The Tiawasee Creek watershed encompasses approximately 9.1 square miles, including parts of the City of Daphne and Baldwin County.

Since 2008, the ADEM has included the entire length of Tiawasee Creek, along with one of its unnamed tributaries, on the CWA Section 303(d) list of impaired waters. The identified cause of this impairment is siltation (habitat alteration) resulting from land development activities. In August 2010, a WMP was developed for the D'Olive Creek, Tiawasee Creek, and Joe's Branch watersheds to address the critical water quality issues in this area.

Current Challenges

The health of the Tiawasee Creek watershed continues to deteriorate due to the adverse effects of urbanization. Impacts from residential subdivisions, individual construction projects, municipal facilities, commercial development, and other land uses have significantly altered the watershed's natural morphology, function, and hydrology. Development in upland regions has led to increased stormwater runoff from impermeable surfaces, altered hydrology, loss of natural wetlands and riparian zones, insufficient floodplain areas, and threats to the survival and habitat of aquatic and terrestrial species.

Restoration Approach

The restoration project adhered to natural channel design principles, taking into account existing stream conditions and surrounding land uses. A critical focus was on reestablishing floodplain access for high-flow events, as floodplains dissipate energy during such events, allowing water to spread and decrease in velocity. This process significantly reduces shear stress in the active channel, thereby minimizing bed scour and streambank erosion.

The Tiawasee Creek restoration employed a Priority 3 approach due to the infrastructure constraints. It utilized recommended restoration plans that include the installation of in-stream structures for grade control, bank stability, and habitat enhancement. Techniques such as toe wood revetments, root wads, log j-hook vanes, and log sill riffles will be implemented to stabilize the stream while promoting the establishment of deep-rooted vegetation.

Enhancing the riparian corridor with native vegetation will further benefit water quality and habitat. This vegetation regulates temperature, adds organic matter, assists in pollution reduction, stabilizes streambanks, and provides wildlife habitat. A robust native vegetation plan will be integral to the restoration project, incorporating a diverse array of native trees, shrubs, grasses, and herbs to create functional plant communities.

Project Goals

The overarching goal of the restoration effort is to reduce sediment loads in Tiawasee Creek, thereby improving water quality and facilitating the eventual removal of Tiawasee Creek from Alabama's CWA Section 303(d) impaired waters list. The project aims to effectively remove sediment from the system and enhance the overall health of the waterbody.

Project Progress Update

Jason Kudulis, Deputy Director for MBNEP stated that "The Montclair Place project is designed to help restore the natural hydrologic function of a severely degraded stream channel, prevent further damage, and reduce the transport of NPS pollutants (primarily sediment) via the impaired Tiawasee Creek, and ultimately to help improve the quality of the water that is discharged from the impaired Tiawasee Creek into D'Olive Bay and Mobile Bay. The project was completed in September 2025 and included 433 linear feet of stream bank stabilization and channel repair at an unnamed tributary to Tiawasee Creek at Stream Reach TD-1. This project, near the Tiawasee Montclair project (ADEM supported), will add additional sediment reduction investments in the watershed. Implementation will include the establishment of native upland and wetland plants throughout the project site to help create a functional riparian floodplain; stabilize stream banks; reduce erosion and sedimentation. The project is expected to reclaim many of the ecological features and services of these stream segments that have been lost to urbanization. A unique part of this project was the leveraging of City of Daphne funds provided to MBNEP for watershed plan implementation. These dollars were leveraged as 319 matching funds."

Designed by GMC and 5020 Engineering

Constructed by Streamline Environmental

Figure 138- Pictures of the Restoration at Montclair Place

Cummulative Load Reductions:

Nitrogen:	1,500 lbs/yr
Phosphorus:	640 lbs/yr
Sediment:	495 tons/yr

Jubilee Square Low Impact Development Implementation Project (FY23)

Project Overview

Figure 139- View of Jubilee Square Shopping Center in Daphne, AL

D'Olive Creek (HUC 03160204-0505) is a primary tributary of the D'Olive Creek sub-watershed located in Baldwin County, AL. The creek discharges into D'Olive Bay and subsequently into Mobile Bay. The D'Olive Creek sub-watershed spans approximately 3.5 square miles and encompasses portions of the Cities of Daphne and Spanish Fort, as well as unincorporated areas of Baldwin County. Since 2008, the ADEM has listed the entire length of D'Olive Creek and one of its unnamed tributaries on the CWA Section 303(d) list of impaired waters, primarily due to siltation (habitat alteration) linked to land development. In 2018, the creek was additionally listed for pathogens (E. coli) attributed to collection system failures and urban runoff from storm sewers.

In August 2010, a WMP was developed for the D'Olive Creek, Tiawasee Creek, and Joe's Branch watersheds to address the ongoing water quality challenges in this critical area. An update to the WMP in 2020 evaluated changes and restoration efforts from 2010 to 2020 and outlined a strategic restoration plan for the upcoming decade.

Project Objectives

This project aims to implement LID and GI practices within the City of Daphne, specifically at Jubilee Square. Proposed practices include the installation of porous pavers, bioswales, a rain garden, and curb cuts, all designed to reduce sediment, oil, grease, and nutrient inputs into D'Olive Creek.

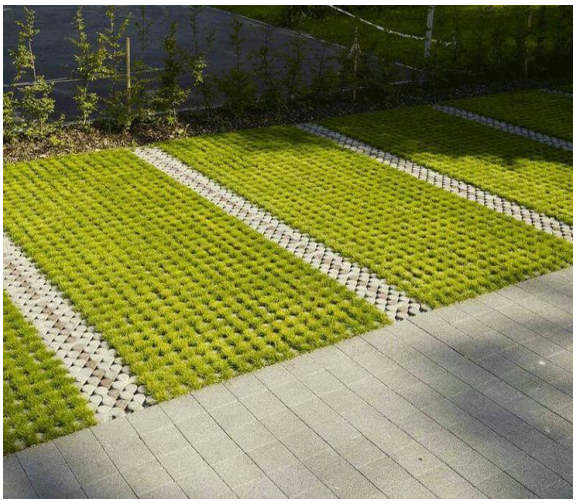

Figure 140 - Pictures of parking spaces with geogrid and permeable pavers

Implementation Details

Figure 141 - Bioretention cells along store fronts

The City of Daphne plans to renovate a portion of the city-owned parking lot at Jubilee Square, which directly borders D'Olive Creek (in an area known as Lake Forest), by replacing sections of traditional pavement with permeable pavers. This will facilitate stormwater infiltration and filtration, reducing the transport of oil, grease, and organic matter into the creek.

Additionally, the incorporation of bioswales, curb cuts, a rain garden, and vegetated buffers will enhance water quality through effective stormwater management. These practices are expected to lower both the quantity and velocity of stormwater runoff from the site, allowing vegetative buffers to filter pollutants before runoff reaches D'Olive Creek.

The rain gardens will also serve as demonstration sites for BMPs that local businesses and homeowners can implement in their own properties. Furthermore, the project will include collaborative efforts with local environmental stakeholders to conduct stream trash clean-up initiatives, contributing to overall watershed health.

Through these efforts, the Jubilee Square project aims to significantly improve water quality in D'Olive Creek while providing a model for sustainable urban stormwater management.

Discussions are ongoing between the City of Daphne and ADEM.

Figure 142 - Example of a Bioretention Infiltration Swale in Parking Lots

Upper Three Mile Creek Watershed Implementation Project – LID on USA Campus (FY24)

Project Overview

The Three Mile Creek watershed (HUC 031602040504) encompasses an area of 30.1 square miles, primarily located within the cities of Mobile and Prichard, AL. Originating just west of the University of South Alabama (USA) campus, the creek flows 14 miles eastward to its confluence with the Mobile River, just north of downtown Mobile. Notably, the portion of the watershed within Mobile accounts for nearly 20% of the city's total land area.

Figure 143- View of South Alabama Campus and Potential Locations for Rain Gardens

Water Quality Challenges

The Three Mile Creek WMP has identified significant water quality impairments due to insufficient implementation of stormwater BMPs in this urban setting. Key pollutants contributing to the degradation of Three Mile Creek include trash and litter, bacteria from sewage and sewage overflows, excessive nitrogen and phosphorus from fertilizers, and sediment.

The WMP provides a framework for stakeholders to effectively mitigate these sources of impairment while also addressing the six most valued aspects of living in coastal Alabama. The plan aims to facilitate collaboration between public and private sectors in the implementation of environmentally protective BMPs throughout the watershed, thereby enhancing water quality and offering additional benefits to both the environment and the community.

Challenges and Contributions

The primary challenges identified for the health of the Three Mile Creek watershed include urban stormwater runoff—both in terms of quantity and quality—and altered geomorphology, such as streambank erosion and sedimentation. With an enrollment exceeding 16,000 students, USA occupies approximately 1,200 acres in the upper reaches of the watershed and has been recognized in the WMP as a contributor to sediment loading in Three Mile Creek.

Sediment accumulation not only impairs stream habitat but also reduces the stream's storage and stormwater conveyance capacities. Furthermore, sediment buildup in the streambed decreases water depth, leading to elevated summertime temperatures and reduced DO levels. Organic components of the sediment further increase oxygen demand, exacerbating DO decline. Areas on campus with steep slopes (>5 percent) and poor vegetation are particularly prone to erosion during heavy rainfall events. Current campus stormwater management practices primarily involve curb and gutter systems and ground inlets that direct runoff to traditional underground storm sewers, which discharge directly into Three Mile Creek, leading to evident sediment accumulation at these outlets.

Previous Successes and Future Implementation

USA has successfully executed two prior Section 319(h) grants, which funded the installation of bio-infiltration swales on campus to mitigate NPS pollutants entering Three Mile Creek. These initiatives improved DO levels reduced OE and minimized sediment flow into the creek. The current project aims to build upon these successes by leveraging established partnerships and resources from the previous phases.

Figure 144 - Examples of Rain Garden Implementation for Other LID Projects

During this phase, USA plans to install eight rain gardens and two bioretention cells at strategically identified locations throughout the campus. The implementation of LID techniques, including bioretention cells and rain gardens, will be enhanced with suitable soil, gravel, and mulch to effectively reduce stormwater runoff and prevent soil erosion and sediment loading in the upper Three Mile Creek watershed. These LID features will be planted with appropriate vegetation to minimize NPS pollutants, require low maintenance, and enhance campus aesthetics. Overflow structures from these systems will be connected to the existing underground storm sewer system, ensuring efficient stormwater management. At this time, this project is on hold due to other numerous priorities that facilities has in process.

Three Mile Creek – West Side of Langan Park Low Impact Development Project (FY21&FY23)

Figure 145- Site Map of the project area at Langan Municipal Park

The Three Mile Creek Watershed (HUC 03160204-0504) drains a total area of 30.1 square miles within the cities of Mobile and Prichard, AL. The State of Alabama first identified Three Mile Creek's inability to meet its water use classification of an Agriculture and Industry (A&I) stream (the lowest use classification) on the 1996 CWA 303(d) list of impaired waters. At that time, it was identified for impairments in nutrients, pH, OE/DO, and pathogens with potential sources including municipal issues, storm sewers, highway/road/bridges, and land development. In December of 2006, a TMDL was developed for all three segments of TMC for OE/DO.

The Three Mile Creek WMP calls for LID structures to be placed up gradient of storm drains to help reduce the peak flows that are degrading the stream. This urban stormwater runoff is currently causing excessive sediment and organic matter to enter the stream, leading to further damage to aquatic habitats by filling in the natural stream channel's pools, creating less oxygen as more

Figure 146- Examples of bioswales and permeable paver installations that could mimic what is implemented at the park.

organisms are needed to breakdown organic debris, and creating a layer of sediment covering spawning grounds. Additionally, increased volume and velocity are added to the stream, but due to the impervious areas the stream temperature can increase as well. When the temperature in the stream increases, there is less available DO for the stream environment.

This project will target LID implementation at the City of Mobile's Langan Municipal Park. ADEM is coordinating with the City of Mobile to utilize CWA Section 319(h) funding from EPA to install LID demonstration projects at the park. The park is located adjacent to Three Mile Creek, and this project will provide a much-needed way to reduce NPS pollutants to the stream. These LID practices could involve permeable pavers in coordination with bioswales in the parking lots directly adjacent to the stream. Other potential LID demonstrations could include rain gardens, removal of regular concrete to a porous option, etc.

Currently, this project is split between two grant years for funding and timing purposes. At this time, the project is delayed because of the Resources and Ecosystems Sustainability, Tourist Opportunities, and Revised Economies (RESTORE) Act of the Gulf States dredging project as this area is being used as a dewatering site for the dredged sediments.

Three Mile Creek Watershed: Langan Park Storm Water Low Impact Development Implementation Project (FY22)

Project Overview

Figure 147- Educational signage that discusses the Stormwater Improvements Project Funded by Section 319 Grant Funds

The Three Mile Creek Watershed (HUC 03160204-0504) spans 30.1 square miles within the cities of Mobile and Prichard, AL. The state first recognized Three Mile Creek's failure to meet its water use classification as an A&I stream—the lowest classification—on the 1996 CWA Section 303(d) list of impaired waters. At that time, the creek was identified as impaired due to excess nutrients, pH fluctuations, OE and OE/DO issues, and pathogens, with potential sources including municipal discharges, storm sewers, highways, and land development. A TMDL for OE/DO was developed in December 2006 for the creek's three segments.

Water Quality Challenges

The Three Mile Creek WMP advocates for the implementation of LID structures positioned upstream of storm drains to mitigate peak flows that contribute to stream degradation. Urban stormwater runoff currently introduces excessive sediment and organic matter into the creek, further damaging aquatic habitats by filling natural stream pools, creating low-oxygen conditions, and covering vital spawning grounds. Additionally, the increased volume and velocity of runoff exacerbate stream temperature fluctuations, leading to reduced DO levels.

Project Objectives

This project will focus on LID implementation at Langan Municipal Park in the City of Mobile. The ADEM is collaborating with the City of Mobile to utilize CWA Section 319(h) funding from the EPA for the installation of LID demonstration projects at the park, which is adjacent to Three Mile Creek. These initiatives aim to significantly reduce NPS pollutants entering the stream.

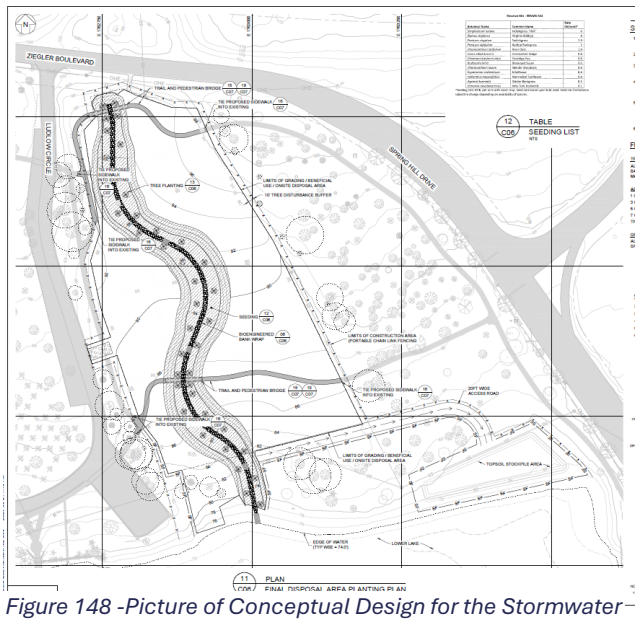

Figure 148 -Picture of Conceptual Design for the Stormwater Improvements Project

Proposed LID Practices

The City of Mobile plans to daylight the concrete drainage ditch in the northeast section of the park, enhancing its sinuosity and adding other proposed LID practices.

The primary objective of this project is to mitigate pollutant loadings to alleviate the impairments associated with OE and low DO levels in Three Mile Creek. To achieve this, the

City of Mobile plans to redevelop and modernize existing drainage features within Langan Park through the implementation of LID and GI practices that replicate natural stormwater treatment and infiltration methods.

Key proposed LID practices include:

- **Daylighting the Concrete Drainage Ditch**: In the northeast section of the park, the existing concrete drainage ditch will be daylighted to enhance its sinuosity. Boulder step pools will be added to increase DO levels and provide habitat enhancements for macroinvertebrates and other aquatic organisms.

Figure 149 - Picture of concrete drainage structures that will be daylighted and a bioretention swale with sinuosity will be constructed in its place

- **Bioswale Integration**: Existing concrete stormwater conveyances will be converted into natural LID bioswales, which will slow and treat stormwater before it discharges into Three Mile Creek and Langan Lake.
- **Boulder Step Pools:** These BMPs will be used to increase DO levels. These boulder steps will also provide habitat enhancements for macroinvertebrates and other aquatic organisms.
- **Geotubes**: These are large, flexible, tubular containers made from geotextile fabrics, which are permeable and designed to retain sediments while allowing water to pass through. Geotubes filled with beneficial dredged material present a practical and sustainable solution for stabilizing drainage way slopes, effectively addressing erosion while repurposing materials that would otherwise go to waste.

These LID strategies are expected to improve water quality in Three Mile Creek and its surrounding environment while providing valuable demonstration projects for future urban stormwater management efforts.

Progress to Date

On March 11, 2025, the Cooperative Agreement between ADEM and the City of Mobile was executed. On June 5, 2025, a groundbreaking press conference was presented to highlight both the RESTORE project that entails dredging and restoration of Langan Lake as well as the stormwater improvements. City of Mobile leaders and RESTORE officials discussed the projects and how they are a major part in restoring Three Mile Creek. It was definitely a celebration of a realized long-term goal of improving Three Mile Creek and restoring Langan Lake back to its recreation and original use for the City and its citizens.

Figure 150- Groundbreaking Ceremony

Upper Halls Mill Creek Watershed Implementation Project (FY25)

Project Overview: The Upper Halls Mill Creek Watershed Implementation Project is an anticipated strategic initiative led by the Marine Environmental Sciences Consortium through the MBNEP. Located in Mobile County, AL, the project will focus on Milkhouse Creek, a tributary of Halls Mill Creek, within the Mobile River Basin. The effort is designed to address urban runoff and stormwater pollution in a rapidly developing area of West Mobile, particularly around Airport Boulevard and Schillinger Road. The project will implement LID practices, engage community stakeholders, and promote watershed stewardship to improve water quality and reduce NPS pollution.

Water Quality Challenges: Halls Mill Creek has been listed on Alabama's CWA Section 303(d) List of Impaired Waters since 2012 due to siltation caused by land development. Milkhouse Creek, a tributary within the watershed, exhibits sedimentation issues in its upper segment, exacerbated by urbanization and impervious surfaces. The watershed faces multiple NPS pollution challenges, including OE, nutrient loading, sedimentation, and litter. Urban runoff and stormwater are identified

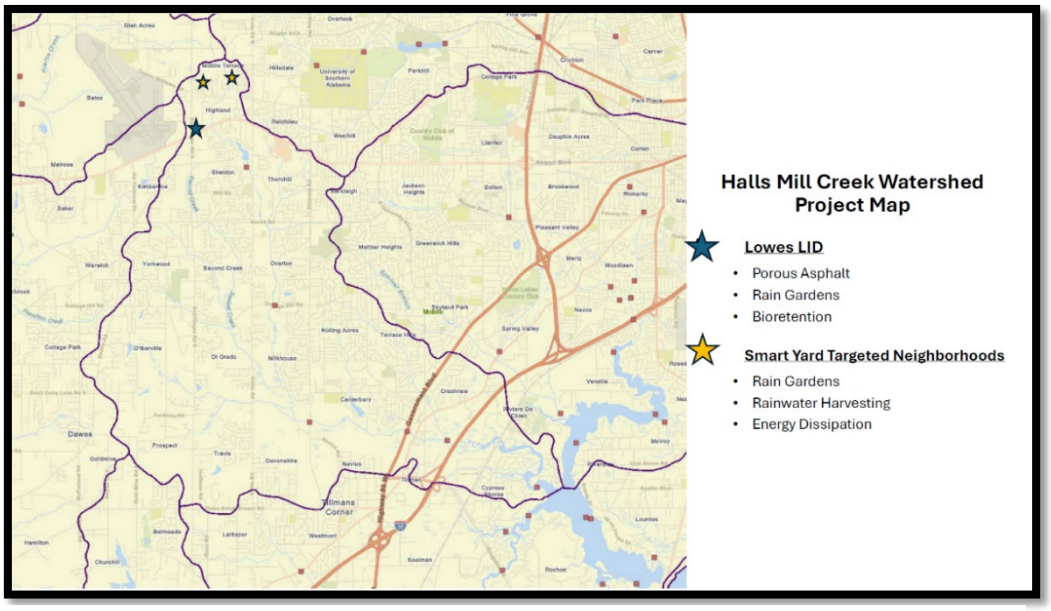

Figure 151- Halls Mill Creek Watershed Project Map

as the sole contributors to these impairments. Historical assessments by ADEM revealed poor macroinvertebrate scores and a substrate dominated by sand, indicating degraded habitat conditions. With over 130 construction stormwater permits previously issued in the area, the cumulative impact of development has significantly altered hydrology and increased pollutant loads.

Project Goals: The primary goal of the project is to reduce sedimentation, stormwater volume, and velocity in the Upper Halls Mill Creek Watershed through the implementation of GI and BMPs. Specific objectives include promoting infiltration to mitigate runoff, reducing NPS pollutant loads such as nitrogen, phosphorus, and sediment, and helping the impaired waterbody meet its designated water quality standards. The project also aims to remediate post-construction stormwater impacts and foster community engagement through E&O. By integrating technical solutions with stakeholder collaboration, the initiative seeks to create a replicable model for watershed restoration and long-term environmental stewardship.

Proposed Implementation Practices: To achieve its goals, the project will deploy a suite of LID techniques, including bioretention areas, rain gardens, and pervious asphalt installations. These practices will be showcased at demonstration sites such as commercial properties (e.g., Lowes, At Home store), religious institutions (e.g., West Mobile Baptist Church), and residential areas. The project will also promote the Smart Yard Program, offering workshops and technical support to help homeowners adopt landscape-based BMPs that reduce runoff and pollution. Educational signage will be installed to raise public awareness, and MBNEP will host webinars and outreach events to engage stakeholders. Two community cleanup events will further reinforce the importance of watershed health.

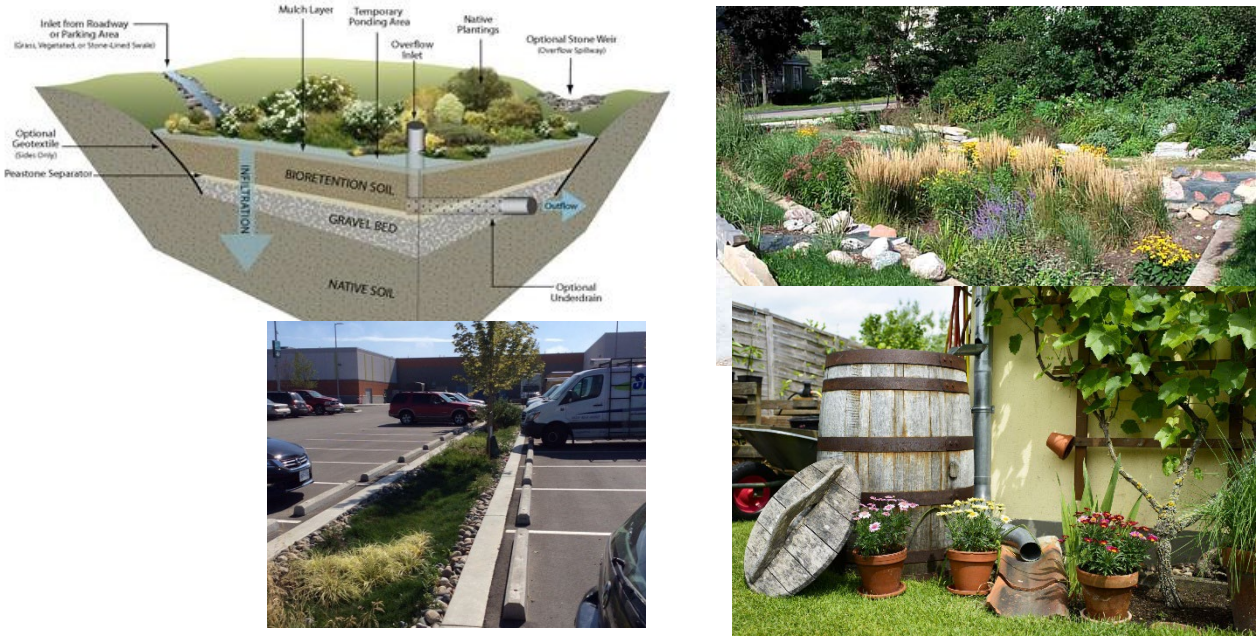

Figure 152- Bioretention examples

Upper Three Mile Creek: Ephemeral Gully Restoration Project (FY21)

Project Overview

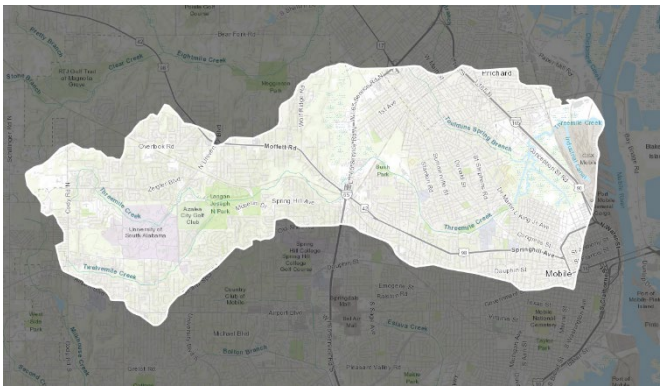

Figure 153- Map of the Three Mile Creek Watershed with Location Designation of Project

The Upper Three Mile Creek Watershed (HUC 031602040504) spans approximately 30.1 square miles across the urban landscapes of Mobile and Prichard, AL. The watershed originates just west of the USA's campus and flows east for 14 miles before emptying into the Mobile River. Encompassing nearly 20 percent of the City of Mobile's total land area, this watershed is a vital natural system for the region, providing hydrological, ecological, and recreational benefits.

However, increasing urban development has significantly impacted the watershed's condition, leading to hydrologic alterations, habitat loss, and degraded water quality. As part of a broader watershed management strategy, this project led by the University of South Alabama aims to restore critical areas within the watershed through the implementation of targeted LID practices and ecological restoration methods.

Water Quality Challenges

Three Mile Creek faces several water quality impairments, primarily driven by urbanization and associated stormwater runoff. The watershed receives substantial inputs of pollutants from impervious surfaces such as rooftops, roads, and parking lots. These pollutants include trash, nutrients like nitrogen and phosphorus from lawn fertilizers, bacteria from failing sewer infrastructure, and sediment from erosion and land disturbance.

Erosion and stream channel degradation are particularly severe within the USA campus, where a rapidly expanding network of impervious surfaces contributes to gully formation and destabilized streambanks. These features serve as significant sources of sediment, which not only degrade aquatic habitats but also reduce the channel's capacity for stormwater conveyance. Additionally, the accumulation of organic material and nutrients in the creek has led to elevated oxygen demand, resulting in periodic low DO levels that negatively impact aquatic life.

The USA, home to over 16,000 students, plays a prominent role in the watershed's hydrology. Runoff from its large, paved areas exacerbates stormwater-related problems, making the campus a strategic focal point for restoration efforts aimed at reducing pollutant loads and improving stream function.

Project Objectives

The primary goal of this project is to reduce pollutant loading and restore the ecological function of impaired stream segments within the Upper Three Mile Creek Watershed. Restoration activities are designed to reduce sediment and nutrient inputs, stabilize eroding landforms, and improve water quality conditions—particularly DO levels—to support healthier aquatic ecosystems.

A secondary, but equally important, objective is to use this restoration work as a foundation for environmental education. By integrating project components into the campus environment, the University aims to create opportunities for student engagement and public outreach that promote long-term watershed stewardship.

Proposed LID Practices and Restoration Activities

The project includes a suite of LID practices and restoration strategies that address stormwater management, erosion control, and stream enhancement. One of the most critical components involves the stabilization and restoration of a severely eroded gully located between the Humanities Building and the University Library. This gully, formed by uncontrolled stormwater discharge, will be regraded and reinforced with structural and vegetative measures to prevent further erosion. Native plants will be introduced to stabilize soils and improve habitat value.

In addition to gully restoration, the project will enhance existing GI features on campus. Previously, bioswales were installed in the Humanities Parking Lot through a Section 319(h) grant. Building on this success, additional bioswales and vegetated infiltration areas will be constructed to intercept and treat stormwater runoff. These systems will help to slow down water flow, promote infiltration, and filter out pollutants before the water enters nearby stream channels.

A major component of the project also involves retrofitting an existing detention pond located downstream of the gully. This retrofit will increase the pond's capacity to remove pollutants and will include modifications such as a forebay for sediment capture, a wetland shelf for nutrient uptake, and flow-control structures to promote water retention. In addition, the design will incorporate aeration features to improve oxygen levels, ensuring that treated water supports aquatic life once discharged into Three Mile Creek.

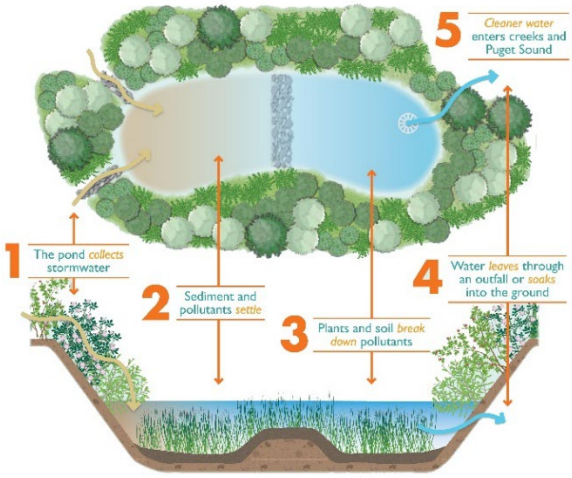

Figure 154- Stormwater collection diagram

Riparian restoration efforts will focus on reestablishing native vegetation along degraded streambanks within the project area. These plantings will help reduce erosion, improve biodiversity, and create a more resilient stream corridor. Finally, the project will include educational elements such as an outdoor classroom and interpretive signage. These features will provide hands-on learning opportunities for students and raise awareness among the campus community about the

importance of watershed health and sustainable stormwater practices. Currently, this project is on hold as it is connected to a RESTORE funded project.

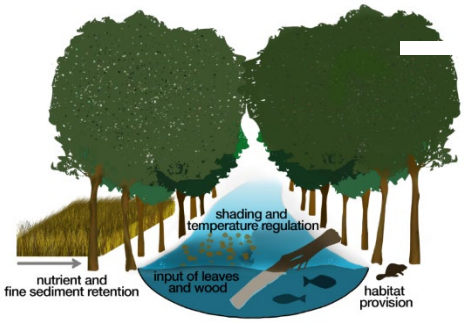

Figure 155- Benefits of a riparian buffer

Perdido River Basin

Low Impact Development for the Protection of Wolf Bay at Wind & Water Learning Center (FY22)

Project Overview

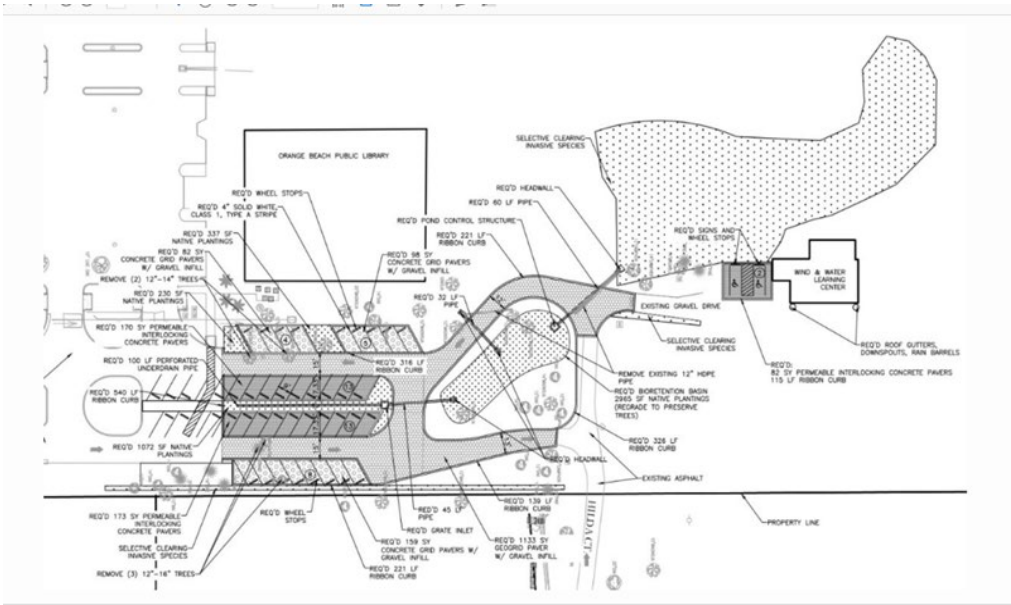

Figure 156- Design Plan for the Implementation of LID at the Wind and Water Learning Center in Orange Beach

The Wolf Bay Watershed is in Baldwin County, AL, encompassing the Cities of Foley and Orange Beach. The watershed covers approximately 44,700 acres and includes several major tributaries, such as Wolf Creek, Sandy Creek, Miflin Creek, Graham Creek, Owens Bayou, Moccasin Bayou, and Hammock Creek. This dynamic estuary is home to a rich diversity of habitats and supports a wide range of wildlife, including black bears, bald eagles, manatees, sea turtles, Gulf sturgeons, red-cockaded woodpeckers, American alligators, Alabama red-bellied turtles, and Eastern indigo snakes. The ADEM classifies Wolf Bay and its tributaries for multiple uses, including swimming and

whole-body contact, F&W support, shellfish harvesting, and as an Outstanding Alabama Water (OAW). Wolf Bay received its OAW designation in April 2007, the highest classification for water quality in the state.

Water Quality Challenges

Wolf Bay faces a variety of water quality challenges, including pollution from NPS and sedimentation, which can negatively impact its diverse aquatic habitats. These issues are exacerbated by urbanization, stormwater runoff, and land development in the surrounding areas. Additionally, elevated nutrient levels and altered hydrology contribute to degradation of water quality, affecting the bay's ability to support its diverse wildlife populations and recreational uses.

Project Objectives

This project aims to protect and restore the water quality of Wolf Bay by implementing a series of water quality improvement measures designed to reduce pollution and enhance habitat conservation efforts. These measures will focus on reducing nutrient and sediment runoff, improving stormwater management, and enhancing riparian buffers within the watershed.

Proposed Practices

Key components of the project will include the implementation of BMPs such as the restoration of riparian buffers, stabilization of eroding shorelines, and the introduction of LID strategies to manage stormwater runoff. Specific proposed actions include:

- **Riparian Buffer Restoration**: Enhancing vegetative cover along critical waterways to filter pollutants and reduce sedimentation into Wolf Bay.
- **Stormwater Management Solutions**: Installing bioswales, vegetated filter strips, and permeable surfaces in areas prone to runoff, such as parking lots and roadways, to reduce NPS pollution.
- **Erosion Control**: Using sustainable methods like coir logs and native vegetation to stabilize shoreline areas and reduce the risk of further erosion.
- **Native Plant Restoration**: Removing invasive species and replacing them with native plants to improve biodiversity and restore natural ecosystems within the watershed.

Current Progress

Although work has not started at the Wind and Water Learning Center yet due to its heavy use during the summer months, the City of Orange Beach liked the design and concept so much that it implemented a permeable parking lot at their Orange Beach Coastal Arts Center. Construction started in July and was completed in September of 2025. This project shows that the City finds value in LID for their community. The groundbreaking for the Wind and Water Learning Center LID started in September and is currently on-going in construction.

Figure 157 - City of Orange Beach's Coastal Arts Center LID Parking Lot Construction

Ms. Jackie McGonigal, the Wind & Water Learning Center Coordinator, has been actively educating local community stakeholders, hosting events to reduce hazardous and electronic waste, and presenting about the project to spread knowledge of watershed stewardship activities and BMPs that can be implemented in coastal communities and throughout Alabama. She has hosted two AWW volunteer trainings, an E-cycle and shred day, hazardous waste takeback event, hosted a site for the Alabama Coastal Cleanup, presentations at events such as Bays and Bayous 2025, Wolf Bay Water Watch, AWW Annual Meeting, Baldwin County Environmental Advisory Committee, and Alabama Coastal Foundation's Sustainability Summit. Ms. McGonigal has conducted education using Baldwin County Extension's Master Environmental Education Courses in local schools with stormwater and AWW, as well as conducting education with garden clubs and other community organizations for native/invasive plant education and watershed stewardship.

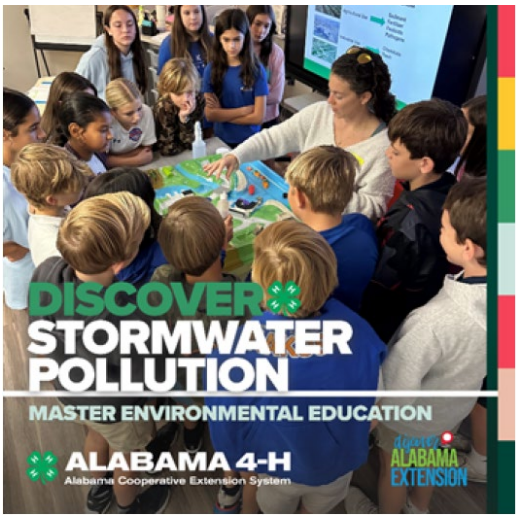

Figure 158 - Pictures of education and outreach that Jackie McGonigal with City of Orange Beach has completed as part of this project

Expected Outcomes

The project is expected to improve water quality in Wolf Bay by mitigating the impacts of stormwater runoff, reducing sedimentation, and enhancing the natural environment of the watershed. In addition to improving water quality, these measures will help maintain Wolf Bay's designation as an OAW, ensuring its protection for future generations. By employing and demonstrating these BMPs, the project also aims to set a precedent for similar conservation efforts in other coastal areas of Alabama.

Wolf Bay Watershed Protection Project – Beaulah Heights Regional Stormwater Facility Enhancement (FY25)

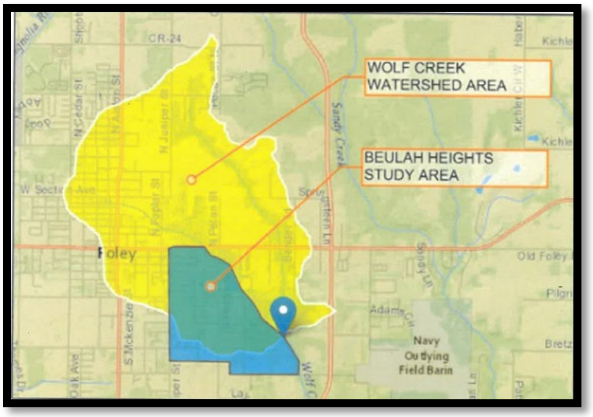

Figure 159- Watershed Map and Drainage Area for the Project

Project Overview: The Beulah Heights Stormwater Improvement Project is a collaborative initiative by the City of Foley designed to reduce sediment, litter, and nutrient loads entering Wolf Creek, a tributary within the Wolf Bay Frontal Watershed (HUC 0314010702). The project supports implementation of the Wolf Bay WMP (2020) by addressing identified restoration priorities in the highly urbanized upper reaches of the watershed.

Located upstream of the existing regional stormwater facility in Beulah Heights, the project integrates LID and GI BMPs to manage stormwater at its source, improve downstream water quality, and enhance community awareness of NPS pollution.

This multi-faceted project combines local, state, and federal resources—including support from the MBNEP and City of Foley Capital Improvements—to implement both infrastructure and community engagement components.

Water Quality Challenges: Wolf Creek is a major tributary to Wolf Bay, which is classified as an OAW, the highest water quality designation in the state. Protecting this high-quality waterbody is a primary objective of the Beulah Heights Stormwater Improvement Project. Wolf Bay supports diverse aquatic habitats, recreational uses, and coastal ecosystem functions that depend on maintaining exceptional water quality and minimizing pollutant inputs from upstream urban and agricultural sources.

Wolf Creek drains the eastern portion of the City of Foley and represents one of the most urbanized subwatersheds within the Wolf Bay Frontal Watershed (HUC 0314010702). As the community continues to develop, the conversion of agricultural and undeveloped land to impervious surfaces has increased the potential for flashy, high-velocity runoff, streambank erosion, and pollutant transport. The 2017 Sediment Assessment Study (Cook Hydrology) identified Wolf Creek at Doc McDuffie Road as having the highest total sediment load (10,931 tons per year) within the watershed, highlighting the creek's vulnerability to NPS pollution.

The water quality concerns being addressed through this project include excess sedimentation, nutrient enrichment, and litter accumulation—all of which can degrade aquatic habitat, reduce dissolved oxygen, and impact the ecological integrity of Wolf Bay. Aging stormwater infrastructure in the Beulah Heights neighborhood, developed prior to modern stormwater standards, contributes to these problems by providing limited detention and inadequate pollutant removal capacity. In addition, increasing rainfall intensity associated with climate change has resulted in the regional facility overtopping during large storm events, compounding localized flooding and pollutant discharge.

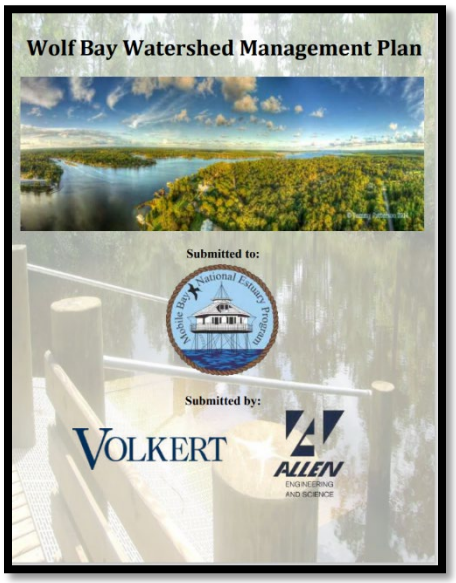

Figure 160- Wolf Bay Watershed Management Plan Cover that shows the road map to protection of the watershed

By implementing targeted BMPs, including a sediment forebay, bioretention swales, and native vegetation, the project directly addresses these sources of impairment. These measures will protect Wolf Bay's OAW designation by reducing pollutant loading from its headwaters, stabilizing hydrology, and maintaining the long-term ecological health of one of Alabama's most valuable coastal water resources.

Project Goals: The primary goals of the Beulah Heights Stormwater Improvement Project are to reduce NPS pollutant loadings—specifically sediment, nutrients, and litter—to Wolf Creek through the implementation of LID and GI BMPs. The project also seeks to improve stormwater volume management by promoting infiltration and attenuation of runoff, thereby mitigating flashy flows and reducing downstream flooding impacts within the watershed. Equally important, the project emphasizes community education and engagement by fostering public awareness of watershed processes and stormwater management practices. Through targeted outreach initiatives, such as

workshops, cleanup events, and interpretive signage, the City of Foley aims to promote behavioral changes that support long-term maintenance of the installed BMPs and encourage residents to implement infiltration-based stormwater solutions on their own properties.

Implementation and Project Activities: A sediment forebay will be constructed upstream of the existing regional stormwater pond. Designed to capture coarse sediment and floatable debris, the forebay will occupy approximately 10% of the pond's modified area and be 5 feet deep. Flow diversion berms and an overflow weir will regulate flow paths and extend detention time, enhancing sedimentation and nutrient uptake.

- Benefits:
    - Removes suspended solids before water enters the primary pond.
    - Reduces downstream sediment transport to Wolf Creek.
    - Facilitates maintenance by isolating accumulated materials for periodic cleanout.

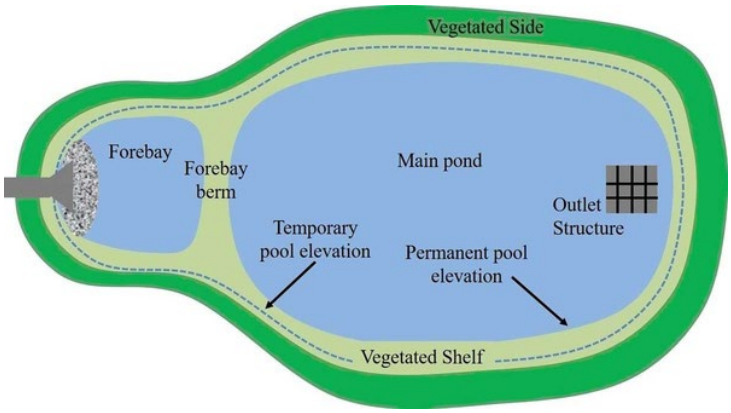

Figure 161- Graphic borrowed from North Carolina State University to show basic structure of the sediment forebay

LID and GI techniques will be integrated throughout Beulah Heights to reduce runoff volumes and improve water quality:

Bioretention Swales: Capture and infiltrate runoff, reducing flow velocity and nutrient concentrations through filtration and biological uptake.

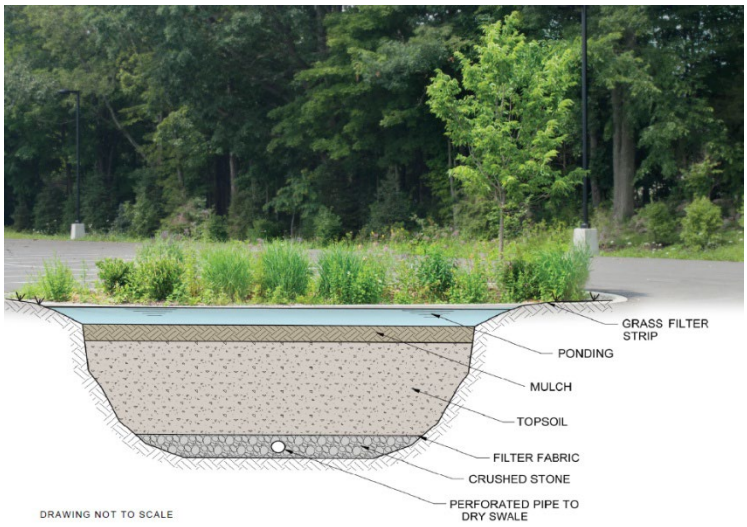

Figure 162 - Example from the internet about bioretention swales

- Native Plantings: Stabilize soils, promote infiltration, and provide pollutant removal via uptake of nitrogen and phosphorus.
- Smart Yards: Encourage residential-scale stormwater management through rain gardens, rain barrels, and native landscaping.

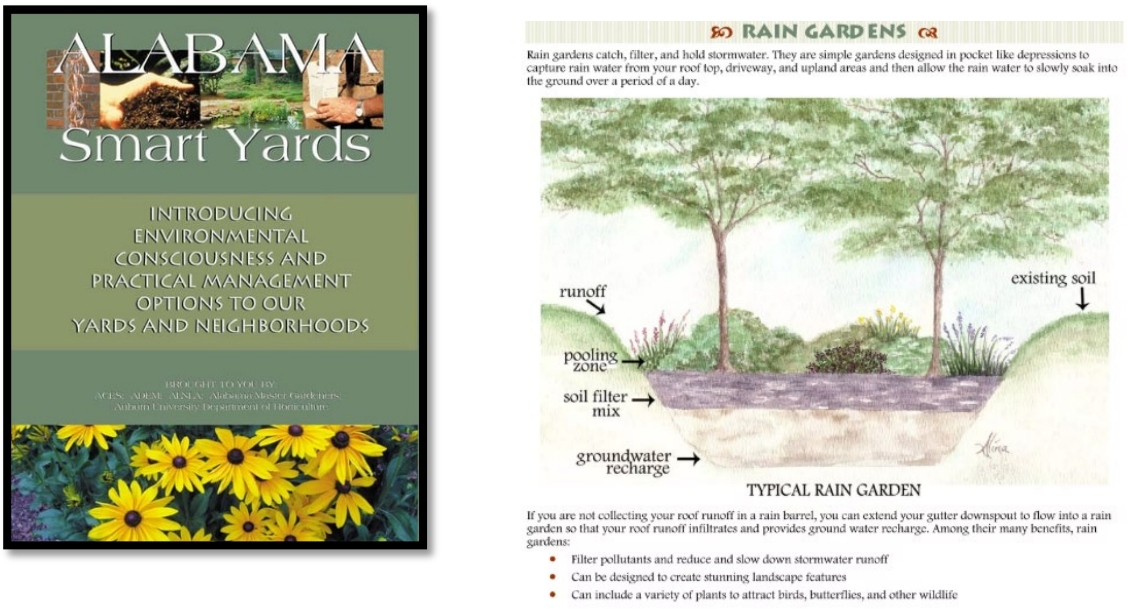

Figure 163- Images from Smart Yards Manual

- Interior Berms and Littoral Plantings: Within the regional pond, these features enhance nutrient reduction and provide habitat benefits.

Implementation of the project is expected to yield measurable reductions in sediment, nutrient, and litter loads delivered to Wolf Creek. Specific benefits include:

- Enhanced sediment captured through the forebay, reducing downstream siltation.
- Nutrient uptake and retention via bioretention and vegetated swales.
- Reduced runoff volumes through infiltration-based GI.
- Improved aquatic habitat and stream health due to stabilized hydrology.
- Increased public awareness and participation in watershed stewardship activities.

Education and Outreach: Public education is integral to achieving long-term water quality improvements. The City of Foley will implement a comprehensive outreach strategy that combines workshops, community engagement, and interpretive tools:

- LID/GI Workshops: Provide technical training to city staff, contractors, and the public on design, installation, and maintenance of LID systems.
- Smart Yard and Rain Barrel Demonstrations: Promote homeowner-scale stormwater reduction techniques.
- Community Stream Clean-Up Days: Engage local volunteers in litter removal and foster community stewardship of Wolf Creek.
- Interpretive Signage: Installed in Beulah Heights Community Park to educate residents on NPS pollution, watershed functions, and stormwater best practices.
- School Field Trips at Graham Creek Nature Preserve: Support youth education on watershed science and pollution prevention.
- Water Quality Monitoring: In partnership with Wolf Bay Watershed Watch, volunteer monitoring will continue to track long-term improvements in water quality.

Next Steps:

- Finalize Engineering Design: Complete hydraulic modeling and construction documents for the forebay and pond modifications.
- Construction and BMP Installation: Implement structural BMPs in coordination with capital improvement work.
- Conduct Workshops and Community Events: Launch education programs concurrent with construction.
- Establish Maintenance Protocols: Train city staff and develop a long-term inspection and sediment removal schedule.
- Monitor Performance: Track sediment removal and water quality improvements through continued partnership with Wolf Bay Watershed Watch.

The Beulah Heights project represents an innovative retrofit approach to stormwater management in an older, urbanized area. By coupling engineered solutions (e.g., sediment forebay) with decentralized LID techniques and community education, the project delivers a holistic strategy for managing stormwater, improving water quality, and enhancing public engagement in watershed protection. This project is in the initial stages of completing the cooperative agreement with ADEM.

Tallapoosa River Basin

Emuckfaw Creek Watershed Implementation Project (FY25)

The Emuckfaw Creek watershed (HUC 031501090308) is located in the Coosa River basin, in rural portions of Clay and Tallapoosa Counties in Alabama. Emuckfaw Creek is 23.51 miles long and has a drainage area of about 49.81 square miles. The watershed is highly forested. There are small portions of pasture lands that are inter spaced in the watershed. Emuckfaw Creek was first listed on the CWA Section 303(d) list of impaired waters in 2016. During their sampling, monthly from March to October at station EMKT-14, the E. coli criterion was exceeded two out of eight times. This caused the water quality branch to assess the creek as impaired for pathogens on the CWA Section 303(d) List of Impaired Waters.

The Emuckfaw Creek WMP will be used as a guide in developing systematic, stakeholder-based approach to advance restoration efforts in the watershed. The Emuckfaw Creek Watershed Implementation Project will use Section 319 NPS watershed project funding to work with stakeholders and landowners to install conservation practices that will reduce pathogens in the watershed and help restore the water quality in Emuckfaw Creek. The Clay County SWCD will focus on promoting the implementation of BMPs that will include exclusion fencing, stream crossings, alternative watering sources, riparian buffers, and educational workshops to address these impairment concerns. The SWCD will also purchase a no till grain drill, that will allow stakeholder to use the equipment to implement BMPs throughout the watershed.

This project brings together local landowners, Clay County SWCD, NRCS, and other key stakeholders interested in the betterment of water quality in the watershed. These implemented projects will be on a voluntary basis, with provided technical assistance, financial assistance, and educational material for knowledge transfer of best practices. The project is currently pending due to ongoing conversations.

Figure 164- Alternative watering facility

Implementation of Low Impact Development Stormwater Practices Across Lee County, AL (FY19)

Figure 165- Crews working on implementation of LID in the park

Lee County, AL, is home to several urban and peri-urban streams that are critically impaired due to stormwater runoff, nutrient loading, and pathogen contamination. Within the cities of Auburn and Opelika, key waterbodies-including Sougahatchee Creek, Parkerson Mill Creek, Moores Mill Creek, and Pepperell Branch- are listed on the ADEM 303(d) list. These streams are ecologically significant and serve essential functions, including wildlife habitat, recreational use, and public water supply (e.g., Yates Lake fed by Sougahatchee Creek). However, decades of urban expansion, aging infrastructure, and insufficient stormwater controls have contributed to water quality degradation.

To address these problems, Auburn University received funding through a CWA Section 319(h) Grant administered by the ADEM. This grant was executed July 29, 2025, and it had a two-month period. This project is a connector piece to not only demonstrate LID and stormwater management practices, but was able to add E&O connecting stakeholders to other Section 319(h) projects that are either in process like the Moores Mill Creek WMP Update, implementation projects that are close to starting like Pepperell Branch Watershed in Opelika, AL, as well as future projects including Post Construction E&O and the Low Impact Development Manual Update.

Water Quality Challenges

This project encompasses several watersheds within Lee County with water quality challenges. Sougahatchee Creek flows over 33 miles through three counties and has been listed for pathogens due to sanitary sewer failures and pasture runoff. It is a high-priority watershed, feeding directly into Yates Lake, a designated public water supply. Parkerson Mill Creek, a 6.9-mile urban stream originating on Auburn University's campus, was listed for *E. coli* in 2008. With a heavily urbanized watershed, it faces runoff pressures from residential, recreational, and commercial developments. Moores Mill Creek**,** a 10.5-mile tributary to Chewacla Creek, was listed for siltation in 2000 and for pathogens in 2022. It drains diverse land uses including industrial and residential zones, contributing to its complex pollution profile. Pepperell Branch originates in Opelika and is impaired due to nutrient enrichment. It forms part of the Upper Sougahatchee system and feeds into the broader Lower Tallapoosa River Basin.

Project Goals

The project team had three major goals when pursuing this project. These are listed below:

Implement LID and Stormwater Practices to help demonstrate BMPs and improve Water Quality

REDUCE PATHOGEN IMPAIRMENTS

Education and Outreach, as well as increasing Watershed Stewardship

Implementation and Coordination

HICKORY DICKORY PARK

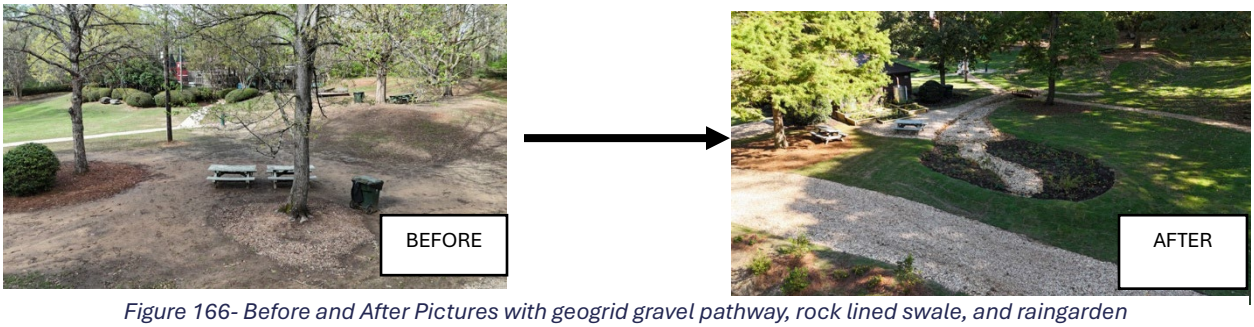

Figure 166- Before and After Pictures with geogrid gravel pathway, rock lined swale, and raingarden

Hickory Dickory Park is located at 1399 Hickory Ln. in the north part of the City of Auburn. The park is best known as the home of a unique 12,000 ft^2 playground. The park is heavily shaded by mature trees around the perimeter. Shading has made it difficult to maintain turf grass resulting in poor vegetation establishment and density. This has resulted in substantial soil loss from raindrop and sheet erosion. This is particularly evident following rainfall events where sediment is deposited along sidewalks and hardscapes. Runoff concentrates into shallow concentrated low, leading to the development of rills that discharge into the stream. This has contributed to streambank erosion along several points within the park.

LID and stormwater practices to improve the water quaity in the Sougahatchee Creek Watershed at Hickory Dickory Park in Auburn, AL included re-grading the slope of the streambanks, installing a floodplain to spread energy, and planting native vegetation to stabilize the banks. The entire park received more hardy, shade-tolerant zoysia, replacing the struggling Bermuda grass, greatly improving sediment stabilization. To treat stormwater runoff from the park, bioretention cells, permeable walking paths, infiltration swales, pet waste stations, and rainwater harvesting cisterns were installed. Informational signage was placed strategically around the park, discussing how each LID measure treats stormwater within Hickory Dickory Park before entering the adjacent stream. Informational videos were also recorded throughout the park, with access through QR-codes on the signs.

Figure 167- Before and After Pictures of Hickory Dickory Park with stabilization of slopes and flood plain creation as well as implementation of a bioretention area

Pathogen Reduction BMPs

The project partners purchased and installed 50 pet waste stations throughout Lee County, AL, providing increased resources for dog walkers cleaning up after their pets and ultimately reducing NPS pathogen pollution from watersheds throughout the county.

Education and Outreach for Improving Watershed Stewardship in Several Lee County, AL Watersheds

The four free community rain barrel workshops covered rain barrel installation, maintenance, and troubleshooting, and provided attendees with a free rain barrel to use at home. These workshops were educational seminars and hosted by the City of Auburn at Kiesel Park, a cornerstone used by the community for recreation, events, and celebrations. AU-SRF graduate students and City of Auburn staff helped coordinate the workshops, which had over one hundred and fifty attendees at over four events. Interest in the workshops was very high, with almost one thousand people registering all together.

Five cisterns were also installed throughout Lee County. At Hickory Dickory Park, two 300-gal cisterns are to be used by the public for watering a nearby butterfly garden that was installed as part of this project. A 500-gal cistern has been installed at CSP next to an educational nature center, which will be used as an educational device for kids on field trips, as well as to water a newly installed butterfly garden. Kiesel Park, the staging ground for the rain barrel workshops, also received a 500-gal cistern for their butterfly garden. Auburn Fire Station received a 500-gal cistern to offset lawn irrigation water use. Opelika High School, the final recipient of a cistern through this project, will use their 500-gal cistern as an educational device for students in the agricultural program who help run the school's greenhouses. The cistern will also be used to water vegetation within the greenhouses.

An exciting component of this grant was to allow for real workforce training for future engineers in the field of Civil Engineering. Because of its logistical complexity and direct applicability to LID construction, graduate students received academic credit for the hours dedicated to Hickory Dickory Park's completion through an Independent Study program in the Department of Civil and Environmental Engineering at Auburn University. The students oversaw different portions of the project and self-performed some of the work, giving them hands-on, real-world experience. Graduate students coordinated with business partners and stakeholders and provided physical labor and equipment operation for earthwork grading, landscaping and transporting rain barrels, cisterns, and pet waste stations. This allowed for real life experience to help shape the future of implementation and design with LID and stormwater management practices in urban watersheds.

Figure 168- Pictures of Education and Outreach, Work Force Development, and Watershed Stewardship

<u>Cummulative Load Reductions:</u>

Nitrogen:	5,706 lbs/yr
Phosphorus:	838 lbs/yr
Sediment:	19 tons/yr

Pepperell Branch Watershed Implementation Project (FY20)

Figure 169 - Pepperell Branch Partnership logo

Project Overview: Pepperell Branch, a 6.67-mile stream in central Lee County, AL, drains a 14.58-square-mile area into Sougahatchee Creek, part of the Tallapoosa River Basin. Initially classified for A&I use, the ADEM upgraded its classification to F&W in April 2002. Multiple TMDLs have been established for the stream, addressing issues related to OE/DO, nutrients, and pathogens.

Watershed Management Plan: The Pepperell Branch WMP was developed in August 2019 through a collaborative effort involving the City of Opelika, AUWRC, AWW, ADEM, ACES, and local stakeholders. This WMP followed the EPA's 9-key element process, identifying management measures to combat NPS pollution and improve water quality.

Project Goals and Activities: The primary goal of this implementation project is to target critical areas identified in the WMP and implement BMPs to mitigate NPS pollution in the Pepperell Branch watershed. Key activities include:

- **Implementation of BMPs***:* The focus for this project at this time remains stream bank stabilization, LID, and innovative stormwater management strategies.
- **E&O**: A priority goal is to foster collaboration between public and private sectors to develop and implement BMP strategies. E&O will involve community stakeholders (individuals, commercial, industrial, municipal, etc.) to raise awareness about watershed stewardship to take action for better water quality in the Pepperell Branch Watershed.
- **Smart Yards**: Smart yards will be highlighted as a way to help promote environmentally sustainable landscapes in areas where subdivisions were implemented before common day permitted stormwater practices. This will help the area become more sustainable and be able to manage quality and quantity of stormwater.

Recent Developments: On March 5, 2025, the City of Opelika was able to secure a Resolution from the City Council to make changes and submit an updated application for funding with the Section 319 (h) grant. Previously it was sponsored by Auburn University.

On April 8, 2025, representatives from AUWRC, the City of Opelika, ADEM, and Creekline Trails convened to discuss the next steps for the project. Potential ideas for implementation were brainstormed, focusing on streambank stabilization, LID, and effective stormwater management techniques. The City's Engineering and Public Works Departments contributed insights on potential municipal projects, including plans to collaborate on streambank stabilization along the new trail.

Discussions included integrating Smart Yards practices in older neighborhoods that lack current stormwater management requirements, especially in areas identified for targeted improvements. Participants also expressed interest in engaging commercial developers to implement LID techniques, aiming to reduce impervious surfaces and manage stormwater flow to nearby streams.

This project aims to significantly improve water quality in Pepperell Branch through targeted actions, community engagement, and the establishment of sustainable practices that address NPS pollution in the watershed.

This project has made strides, but the budget and final workplan have not been submitted with final project activities. This is a priority for partners, but the project activities have yet to be cemented for implementation. The Department now expects an updated budget and workplan by the end of January 2026.

Figure 170- Potential Project Along Pepperell Branch - Waverly Trail with Streambank Stabilization

Tennessee River Basin

City of Athens Sunrise Park (FY19/20/23)

Figure 171 - Architectural rendering of Sunrise Park

The Swan Creek (HUC 06030002-1101) watershed is in the larger HUC-10 watershed Upper Wheeler Lake. Upper Wheeler Lake is part of the Tennessee River basin located south of the City of Athens. The Swan Creek watershed includes the towns of Elkmont and Tanner and the City of Athens. The watershed is in Limestone County positioned in the northern portion of the state and the central portion of the Tennessee River basin. The Swan Creek watershed has a total area of 35,925.61 acres and a drainage area of 55.2

square miles. Swan Creek has been listed as impaired since 1998 on the CWA Section 303(d) list for siltation, and OE/DO. Sources for the impaired 7.9 miles segment contributed to non-irrigated crop production, urban runoff, storm sewers, and pasture grazing. In 2002, a TMDL was developed for Swan Creek for DO and organic loading. Also in 2002, a TMDL was developed for 22 segments in the Lower Tennessee River basin. This included Swan Creek.

In 1994-1995, the TVA collected macroinvertebrate/EPT and fish biological/IBI data at two Swan Creek stations, 1208 and 1208-13. For both stations, TVA concluded that the bug health was fair to very poor/poor and the fish health was fair/poor to very poor/poor. TVA attributed the impairment to the following: silt, nutrients, and OE (algal growth). In 1997, TVA sampled two stations, 11146-2 and 11146-3, once a month during the months of June through September. In 1998, ADEM sampled three stations: SWNL-390, SWNL- 391, and SWNL-392, on Swan Creek once a month during the months of May, July, and September. There are no DO requirements for Swan Creek currently.

Biological assessment data or information collected in 1994 and 1995 identified habitat alteration impairments for the 22 segments listed in the Lower Tennessee River basin. Biological assessment data from the TVA macroinvertebrate/EPT and fish biological/IBI data in 1994 and 1995 provided IBI scoring of the system health. The 22 listed segments scored IBI ratings below acceptable with fair to poor ratings. The TMDL requires a 23 percent reduction in the total annual average load.

The former location of Pilgrim's Pride (2009), the 32-acre property is now owned by the City of Athens and will become Sunrise Park. Located east of Athens University, Sunrise Park will be home to multi-use development including townhomes, single-use residential homes, commercial development, an outdoor classroom, walking trails, rain gardens, and additional green space. Restoration and riparian enhancement will also be provided for the unnamed tributary to Swan Creek that flows through the middle of the property.

The Swan Creek WMP (2015) will be used as a guide in the restoration efforts of the unnamed tributary to Swan Creek. The Sunrise Park project will be used to implement a systematic, partnership-based approach to advance conservation efforts in the watershed. The WMP identified areas for stormwater management to reduce erosive flows and sediment accumulation in Swan Creek. Technology transfer workshops will be provided for instruction on nutrient management, bioretention design and implementation, and GI. These workshops will accompany onsite implementation of associated BMPs.

The City of Athens Sunrise Park Project is a multi-fiscal year project, receiving funds from the Fiscal Years 2018, 2019, 2020, and 2023. During the Fiscal Year 2018 portion of the project, the City of Athens completed design plans for Phase I of Sunrise Park and identified where BMPs will be implemented. The City of Athens has prepared the site for BMP installation, awarded a competitive bid for the implementation, and purchased materials to be installed in accordance with the project's implementation schedule. Currently, the site preparation has been completed, and roadways are being constructed throughout the site. Once roadway construction is completed porous pavers are scheduled to begin installation in January of 2026, and bioswales, native plant installation, and stream stabilization are expected to be completed by spring of 2026. The project has experienced delays due to competitive bidding delays and site preparation requiring additional work, regarding ground stability. During the FY2019 portion of the project several educational events were hosted such as litter removal days, Enviroscape model demonstrations, and waste pickup days. Porous

pavers were purchased during the project period and are expected to be fully implemented in the subsequent phase. In phase 2 of the project, the City of Athens will implement additional BMPs, such as porous asphalt in parking areas, LID, native species planting, and additional stream stabilization throughout Sunrise Park.

Shoal Creek Watershed Implementation Project (FY20)

The Sleighton Branch-Shoal Creek (06030002-1005) subwatershed is in the Flint Creek watershed, which flows into Wheeler Lake and is part of the Tennessee River Basin. Shoal Creek is in west-central Morgan County and includes portions of Hartselle, Brooksville, Georgia, and Tanner Heights. Shoal Creek drains approximately 15.8 square miles and is a tributary to Flint Creek. Major sources of impairment in the Shoal Creek watershed have been identified as NPS pollution from urban runoff/storm sewers. The significant percentage of impervious surface area, combined with limited stream buffers, has had direct impacts to the water quality within the watershed.

In 1998, ADEM placed a 10.9-mile segment of Shoal Creek on the CWA Section 303(d) list of impaired waters due to OE/DO and pathogens from 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 under the larger Flint Creek watershed TMDL.

The Shoal Creek WMP will be used as a guide in the restoration efforts in the Shoal Creek Phase II Project, and it will be used to implement a systematic, partnership-based approach to advance conservation efforts in the watershed. Phase II of the Shoal Creek Watershed Implementation Project will concentrate restoration efforts in the highly urbanized areas of Shoal Creek in the City of Hartselle. This project will focus on management measures such as enhanced natural stream buffers, floodplain connections, enhanced bioswales, green roofs, pervious pavement, and bioretention areas in parking lots. The City of Hartselle Parks and Recreation, The Alabama Mountains, Rivers and Valleys Resource and Conservation Development Council, and the City of Hartselle in partnership with ADEM continue to take steps towards Phase II with special emphasis on the unnamed tributary to Shoal Creek that bisects Sparkman Park and the downtown improvement project along Town Branch and a unnamed tributary to Town Branch. NPS Unit staff continue to coordinate onsite meetings and project reconnaissance to move forward with BMP assessment and feasibility.

Figure 172 - Examples of potential LID BMPs for project

Alabama Coastal Nonpoint Pollution Control Program (ACNPCP)

The State of Alabama is actively advancing its Coastal Zone Management Program in compliance with the Coastal Zone Management Act (CZMA) of 1972. As part of this program, Alabama is required to develop and implement the ACNPCP under Section 6217 of the Coastal Zone Act Reauthorization Amendments (CZARA) of 1990. The CWA Section 319(h) funds play a critical role in supporting the implementation of the management measures outlined in the ACNPCP.

The NPS Unit staff work in close collaboration with coastal nonpoint program personnel to integrate and align the ACNPCP with the broader Alabama NPS Management Program. The ACNPCP is being developed and implemented regionally within the federally defined ACNPCP Management Area, which spans eight 8-digit HUCs within the geopolitical boundaries of Baldwin and Mobile Counties in southwestern Alabama.

Program Objectives and Use of CWA Section 319(h) Funds

CWA Section 319(h) funds allocated for the coastal region are essential for addressing the priorities of the ACNPCP. These funds help identify coastal problem areas, provide the necessary resources to plan and implement NPS management measures, and implement corrective actions within identified categories or issues.

The targeted use of CWA Section 319(h) funding advances the overarching goal of achieving full program approval under CZARA Section 6217. The key objectives of this initiative include:

- **Identifying NPS Stressor Locations**: Mapping and analyzing specific locations of NPS stressors using GIS tools and data layers, while ensuring citizen privacy is maintained.
- **Implementing BMPs**: Strategically focusing efforts on the implementation of BMPs that are designed to meet state water quality standards and address specific NPS issues.
- **Leveraging Resources**: Integrating planning, prioritization, and funding to maximize the use of available human and financial capital in controlling NPS pollution.
- **Stakeholder Engagement**: Encouraging local stakeholder involvement and ownership of NPS problems by balancing program staffing and resources to achieve measurable environmental results.
- **Outreach and Technical Assistance**: Providing targeted E&O, as well as technical assistance, to key audiences, particularly those responsible for land management and water quality improvements.
- **Project Accountability**: Partnering with relevant stakeholders to improve project accountability, tracking, and reporting, including documenting success stories to demonstrate the progress and effectiveness of implemented projects.

Regional and Local Coordination

At both the local and regional levels, the ACNPCP continues to facilitate the implementation of NPS management measures by providing technical assistance to various partners. This collaboration is particularly important as Resources and Ecosystems Sustainability, Tourist Opportunities, and RESTORE Act projects are developed and executed by ACNPCP's partner agencies and local stakeholders.

Key partners involved in the implementation of NPS control measures include:

- County and Municipal Governments
- ADCNR
- MBNEP
- WBNERR
- Mobile County SWCD
- Baldwin County SWCD
- NRCS
- USFWS
- USACE
- Mississippi-Alabama Sea Grant Consortium (MS-AL Sea Grant)
- Dauphin Island Sea Lab
- Alabama Coastal Foundation
- TNC
- PPBEP
- Other local, state, and federal entities

These collaborations are integral to the development and implementation of the ACNPCP, ensuring a coordinated approach to managing and mitigating NPS pollution along Alabama's coast. On October 23, 2024, ADCNR and ADEM received the final approval for the ACNPCP with acknowledgement from EPA and NOAA that they had satisfied all criteria and have now reached full approval. While the program is approved the work is far from complete, so ADEM personnel in both the Coastal Section and NPS Unit continue to work with partners to meet Management Measures.

The ACNPCP continues to collaborate closely with regional and state partners to address key environmental challenges, particularly focusing on coastal communities in Mobile and Baldwin Counties. Current efforts concentrate on the creation and implementation of WMPs to enhance coastal health and sustainability. Key ongoing initiatives include:

- **Stakeholder Engagement and Collaborative Forums:** ACNPCP is actively participating in various regional forums to support coastal health initiatives. Notable collaborations include the Coastal States Organization, Alabama Soil and Water Conservation Society, Wetland

Training and Classifications, Gulf of America Alliance, MBNEP PIC, and the WBNERR, among others.

- **Community Empowerment and Education:** Currently, the NPS Unit staff sits on a taskforce for the Town of Magnolia Springs in association with Magnolia River which is an OAW. This community has embraced volunteer monitoring and watershed stewardship to reduce NPS pollutants entering their waterways. They are currently working with NFWF and MBNEP to maintain stream restoration on School House Branch and continue to implement further projects to protect our waterways. They received a GOMESA grant for restoration on Magnolia River near the Cold Hole. They have Natural Resource Damage Assessment (NRDA) money that may be used for bacterial source tracking and on the ground implementation in agricultural areas of the watershed. ADEMs NPS Unit staff has also allocated money to the watershed for LID practices and potentially stream restoration. Auburn University is working to monitor groundwater in the area through a grant as well.
- **Watershed Management Planning:** As a member of the Eastern Delta WMP Steering Committee, ADEM is facilitating stormwater management discussions, with a particular focus on the City of Bay Minette.
- **LID Projects:** ADEM is exploring potential projects with Lillian Recreation Park to implement LID BMPs to reduce stormwater runoff, enhance environmental stewardship, and promote zoning and stormwater ordinance improvements. Additionally, ADEM is working with the City of Orange Beach to integrate LID solutions into their stormwater management strategy for the protection of Wolf Bay, highlighting a hybrid approach to water quality management.
- **Urban Stormwater Management:** In partnership with the City of Foley, ADEM is addressing stormwater management in highly urbanized communities, focusing on the implementation of LID BMPs to reduce NPS pollution and protect the Wolf Bay Watershed, an OAW.
- **Post Construction Guidance and Education Collaboration:** ADEM is collaborating with Auburn University to strengthen post-construction management practices across various sectors of urban planning and development. This partnership may lead to the creation of a post-construction manual, with a particular emphasis on coastal communities, though applicable statewide.
- **CCMP:** NPS Unit staff hold a co-chair role in the MBNEP PIC, contributing to the development and implementation of the next iteration of the CCMP for coastal areas. On November 7, 2024, NPS Unit staff was elected to a co-chair role in the PPBEP's E&O Committee.
- **Stormwater and Stream Restoration in Mobile:** ADEM is working with the City of Mobile to manage stormwater through LID and stream restoration projects and is exploring additional collaborative opportunities to improve water quality in the region.

Efforts in 2025 to Achieve Alabama NPS Management Program Goals and Objectives

Goal 1: Continue To Collect Surface Water and Groundwater Data Using a Three-Year Rotational Major River Basin Monitoring Approach To Assess Whether State Waters Meet State Water Quality Standards and Use Classifications.			
Objectives	**Status**	**Implementation Strategies to Ensure Continued Statewide Program Progress**	**NPS Success Measures and Indicators Targeted** (Derived from Table 8.8 of the 2014 AL NPS Management Program)
Long-term Objective 1: Continue to collect WQ monitoring data to characterize the chemical, physical, and biological conditions of subwatersheds in a priority major river basin and to help evaluate whether waters fully or partially meet state water quality standards and water use classifications. **Timeline**: Annual	Thirty-eight main stem reservoir stations on the Coosa, Escatawpa and Tombigbee River basins, as well as the Guntersville Lake portion of the Tennessee River basin, were scheduled to be intensely monitored in FY2025. Fifty-four locations on wadeable flowing streams and rivers were sampled in FY2025.	FY2025 Program Workplan Project 2 (Statewide Surface Water Quality Monitoring of Priority Wadeable Streams and Rivers). FY2025 Program Workplan Project 3 (Surface Water Quality Assessment of Rivers, Reservoirs and Tributary Embayments on a Statewide Rotation).	**I. Water Quality Improvements from NPS Controls:** a: …WQ standards attainment b: …impairments and threats c: …N, P, and sediment loadings d: …303(d) delisting e: …leveraged funds/ resources f: …USDA-NWQI priorities h: …CZARA 6217/Coastal NPS i: ...lakes/reservoirs/ shorelines j: …marine, coastal, wetlands l: ...drinking water sources m: ...fish/shellfish advisories **II. Interim Water Quality Protection and Restoration** a: …results of installed BMPs b: …success story documentation c. … watershed plan progress d: …priority NPS/TMDL pollutant f: …WQ trend data and tracking g: …trophic data
Short-term Objective 1.1: Continue to collect WQ data to identify, list, and categorize NPS threats and impacts to surface waters and groundwaters of the state in the latest CWA Section 305(b)/Integrated Water Quality Monitoring and Assessment Report (IR). **Timeline**: Biennial CWA Section 305(b) Report; 303(d) List	Continuing Current Integrated Report 4/1/2024. The 2024 Section 303(d) list of impaired waterways was approved by EPA and final on 4/1/2024.	FY2025 Program Workplan Projects 2 and 3	
Short-term Objective 1.2: Continue to collect or assess WQ data from a priority CWA Section 303(d) listed HUC-12 subwatershed to support the development or implementation of a watershed-based management plan	WQ data continued to support the development or updating of requisite	FY19 Watershed-based Projects: 13 – Sunrise Park 16 – Implementation of LID Development Stormwater Practices Across Lee County, AL	

that incorporates Section 319 grant guideline nine-key watershed-based plan elements. **Timeline**: Annual	watershed-based plans to apply for Section 319 funding. In 2025, thirty-five sites were monitored to develop TMDLs, or to assess the effectiveness of TMDLs after implementation. Six locations were monitored to document water quality conditions at high risk for nonpoint source impairment. Twenty-four established and candidate reference reaches were monitored to characterize least-impaired conditions within ten Level 4 and four Level 3 Ecoregions and to identify waterbodies impaired by NPS pollution.	17 – NWQI Statewide Targeted Water Quality Surveys of Wadeable Rivers and Streams FY20 Watershed-based Projects: 6 – Shoal Creek Watershed Implementation Project Phase II 8 – Pepperell Branch Watershed Implementation Project 11 – Sunrise Park FY21 Watershed-based Projects: 6 – Upper Three Mile Creek: Ephemeral Gully Restoration Project 8 – Roebuck Municipal Golf Course Stream Restoration and Demonstration Project Phase II 11 – Crump Community Center Low Impact Development 12 – Three Mile Creek LID Implementation Project FY22 Watershed-based Projects: 8 – Whites Slough Watershed Restoration and Management Project – Phase II 12 – Threemile Creek Watershed: Langan Park Storm Water LID FY23 Watershed-based Projects: 7 – Three Mile Creek – Langan Park LID Project 12 – Sunrise Park 14 – Cahaba Valley Creek Watershed Implementation Project 15 – Montgomery Zoo Restoration FY24 Watershed-based Projects: 6 – Broglen River Watershed Implementation Project – LID in the City of Cullman 7 – Upper Three Mile Creek Watershed Implementation Project – LID on USA Campus 8 – Faulkner University Campus Restoration 11 - Roebuck Creek Watershed Implementation Project – Phase 2	h: …Coastal plan/ implementation **III. Protection of High-Quality Waters** a: …ensure continued high quality b: …threat prevention c: …valid data collection process d: …high quality water listing **VI. NPS Education and Outreach** c: …enhance partnerships d: …specific audiences targeted f: …enhance data collection g: …TMDL/water-shed plan based

Short-term Objective 1.3: Continue to collect or assess Section 319 grant-funded watershed project WQ data to track restoration progress and successes (e.g., achieve priority TMDL and Section 319 pollutant load reductions; meeting state water quality standards, etc.). **Timeline:** Annual	Continuing	FY2024 Program Workplan Project 1 (Administration) FY2025 Program Project 2 (Statewide Surface Water Quality Monitoring of Priority Wadeable Streams and Rivers) FY2025 Program Project 3 (Surface Water Quality Assessment of Rivers, Reservoirs and Tributary Embayments on a Statewide Rotation) The 2025 Surface Water Quality Monitoring Plan and the 2025 water Quality Monitoring Strategy implement a coordinated, 3-year basin rotation for the Rivers and Streams Monitoring Program, Rivers and Reservoirs Monitoring Program, and the Coastal Monitoring Program.	
Short-term Objective 1.4: Collect data to target and leverage Section 319 and other public and private funds and resources to gain NOAA/EPA final program approval of the ACNPCP (including meeting and sustaining implementation of Interim Decision Document recommendations) relative to Section 6217 of the Coastal Zone Act Reauthorization Amendments of 1990. **Timeline**: Annual	Completed	Alabama has fully satisfied all remaining management measure categories for development of the ACNPCP. Final approval was received on October 23, 2024. The ADEM coastal NPS coordinator has continued to provide technical assistance for various RESTORE projects being developed and implemented through partnerships with various entities including AWW, ADCNR, MBNEP, WBNERR, NRCS, USFWS, USCOE-Mobile District, MS-AL Sea Grant, Dolphin Island Sea Lab, Alabama Coastal Foundation, TNC, GSA, USGS, and local municipalities.	
Short-term Objective 1.5: Continue to partner with USDA-NRCS to monitor priority NWQI watersheds to help document pre- and post-conservation practice implementation effectiveness. **Timeline**: Annual	Continuing 8 sampling locations were monitored in NWQI watersheds to help track water quality improvements over time.	FY2024 Program Project 1 (Administration) FY2025 Program Project 2 (Statewide Surface Water Quality Monitoring of Priority Wadeable Streams and Rivers) NWQI Statewide Targeted Water Quality Surveys of Wadeable Rivers and Streams. Monitoring	

		will continue for the Scarham/Guntersville watershed. The State Technical Committee Meetings was held virtually on June 26, 2025.	

<u>Goal 2</u>: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**)**
<u>Long-term Objective 2</u>: 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: • CWA Section 319 • Alabama Water Pollution Control Act • Other relevant NPS pollution federal and state laws, rules, regulations, ordinances, or policies and guidelines. **Timeline**: (Sustain, Replicate Annually)	Continuing	FY2024 Program Project 1 (Administration) FY2019 – Watershed Implementation Projects 13, 15-17 FY20 Watershed Implementation Project 10 FY21 Program Project 5a Alabama Watershed Stewards – Phase 3 FY21 Watershed Implementation Project 11 FY22 Program Project 5a Moores Mill Creek Watershed Management Plan Update FY22 Watershed Implementation Projects 12 and 13 FY23 Program Project 5a AL State QCP Program Initiation and Administration Project and 5b Shumulla Creek-Sucarnoochee River Watershed Management Plan FY23 Watershed Implementation Project 15 FY24 Watershed Implementation Project 6 Basin Teams continued to improve communication among	**I. Water Quality Improvements from NPS Controls:** g: ... riparian areas/filter buffers h: …CZARA 6217 implementation i: …lakes/reservoirs/ shorelines j: …marine, estuaries, wetlands k: …beaches/ human contact l: …groundwater, drinking water m: ... fish/shellfish advisories n: …threats to shellfish beds o: …LID/GI **II. Interim Water Quality and Protection and Restoration** b: …incremental restoration progress c: …incremental plan implementation d: …incremental load reductions e: …phased implementation h: …coastal program approval **III:** Protection of High-Quality Waters a: … protection against treats

		project managers, field staff, and ADEM management within Field Operations, the Water Quality Branch, and the NPS Unit. Meetings were held in November 2025 to discuss 2024 and 2025 sampling results and requested FY2026 monitoring. ADEM, ADPH, ADCNR, and TVA continued to cooperatively assess waterbodies to determine the support of healthy fish populations and their consumption through the Fish Tissue Monitoring Program. NPS Unit staff have assisted in this effort by presenting the fish consumption advisory information to stakeholder groups.	b: …regulations/ criteria/ programs c: …science-based data d: …verification and listings **IV. NPS Pollutant Load Reductions** a: …Section 303(d)/ TMDLs b: …N, P, and sediment c: …BMPs target critical areas d: …meet water quality standards e: …lakes and reservoirs f: …pollution prevention g: …major river basins
Short-term Objective 2.1: Continue to develop the NPS components of nine-key element watershed plans that will not/do not require or request a commitment of implementation resources. **Timeline**: Annual	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.	ADEM partnered with the MBNEP to develop WMPs that are being funded through RESTORE and NFWF grant dollars. Several of the waterbodies are not in impaired areas and will not require a CWA Section 319(h) implementation commitment. However, ADEM has sat on committees and provided technical assistance where possible and asked for any WMP. Components of watershed plans are continually being implemented through local municipalities, NRCS, ADCNR, RESTORE, NFWF, NRDA, public and private fund leveraging.	
Short-term Objective 2.2: 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. **Timeline**: Annual	There is 1 project that is being used to protect high quality waters at the time of this report.	FY2024 Program Project 1 (Admin.) FY2022 Watershed Implementation Project: 11 – LID for the Protection of Wolf Bay at Wind and Water Learning Center (It is an Outstanding Alabama Waterway.) ADEM collaborated with multiple agencies to provide	

		WQ monitoring data for the EPA/MBNEP science advisory, government networks, and PICs to help prevent future threats to WQ. 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.	
Short-term Objective 2.3: Continue to leverage Section 319 grant resources to achieve priority NPS (i.e., nitrogen, phosphorus, and sediment) and TMDL pollutant of concern load reductions. **Timeline:** Annual	Continuing	FY2024 Program Project 1 (Administration) FY2019 Watershed Implementation Projects 15, 16 FY2021 Watershed Implementation Project 11 FY2024 Watershed Implementation Project 6 All CWA Section 319(h) funded watershed-based projects target priority NPS components of TMDLs (when completed). N, P, and Sediment pollutant load reductions are reported in GRTS prior to Feb and Oct, annually.	
Short-term Objective 2.4: Continue to place strong emphasis on restoring NPS impaired HUC-12 delineated watersheds by facilitating and leveraging funding, BMP implementation, E&O, technology transfer, and technical assistance resources. **Timeline**: Annual	Continuing	FY2024 Program Project 1 (Administration) FY2019 Watershed Implementation Projects 13, 15, 16 FY2021 Watershed Implementation Project 11 FY2022 Program Project 10 FY2022 Watershed Implementation Project 12, 13 FY2023 Watershed Implementation Project 15 FY2024 Watershed Implementation Project 6 Examples of technology transfer/E&O activities	

		conducted with partners to target impaired waterbodies include: • ARSN meeting in Millbrook, AL • ARSN Regional Working Groups (4) • Alabama Water Watch trainings • Groundwater Festivals in Chilton, Conecuh, Crenshaw, Cullman, Lamar, Madison, Mobile and Tallapoosa counties, AL • Envirothon in Columbiana, AL • Alabama Herb Day in Montgomery, AL • Earth Day Safari in Montgomery, AL • Three Mile Branch Cleanup in Montgomery • Riverfront Rendezvous in Montgomery, AL • Nature Camp in Cullman, AL • Montgomery Lions Club Sensory Trail event in Montgomery, AL • State of Agriculture Meeting in Oxford, AL • Auburn Water Resources Conference in Orange Beach, AL • Keep Alabama Beautiful State Meeting in Selma, AL • Choctawhatchee River Basin Meeting Hartford, AL • ACF Sustainability Summit in Gulf Shores, AL • Urban Darter Metting in Birmingham, AL • University of South Alabama's ASCE, Biology Club, and Gulf Scholars Presentation in Mobile, AL • Alabama Water Rally in Fairhope, AL • ASA Alabama River Basin Table Talks in Montgomery, AL • PPBEP Management Conference Meeting in Pensacola, FL • MBNEP Management Conference Workshop in Mobile, AL	

		• Cullman Teacher Workshop in Cullman, AL • Tallapoosa Watershed Coalition Meeting in Opelika, AL • Magnolia River Task Force in Magnolia Springs, AL • Clear Water Alabama in Pell City, AL • From Soil to Safety: A Small Farmer's Workshop in Tallasee, AL • Appalachian Festival in Oak Mountain, AL • AUM Science and Engineering Fair • Legacy Mountains to Gulf Workshop • Conecuh SWCD Working Group Meeting in XX, AL • Pollinate and Celebrate – Bee Festival in Montgomery, AL All Section 319 watershed-based projects targeted "manageable" HUC-12 scale watersheds to best ensure improved WQ and project implementation success.	

<u>Goal 3</u>: 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**)**
<u>Long-term Objective 3</u>: Continue to facilitate a partnership approach to implement NPS measures and practices to restore watersheds and water quality and protect human health from NPS pollution. **Timeline**: (Replicate Successes per five-year Programmatic Update Iterations)	Continuing	FY2024 Program Project 1 (Admin) FY2019 Watershed Implementation Projects 13, 15, 16 FY2021 Watershed Implementation Project 11 FY2022 Watershed Implementation Project 12, 13 FY2023 Watershed Implementation Project 15	**I. Water Quality Improvements from NPS Controls** g: ... riparian areas/filter buffers h: …CZARA 6217 implementation i: …lakes/ reservoirs/shorelines j: …marine, estuaries, wetlands k: …beaches/human contact l: …groundwater, drinking water

		FY2024 Watershed Implementation Project 6 Worked closely with basin partners to assist in meeting program and project goals. Staff attended and/or presented at several basin and watershed meetings. Staff held the Choctawhatchee River Basin Conference.	m: ... fish/shellfish advisories n: …threats to shellfish beds o: …LID/GI **II. Interim Water Quality and Protection and Restoration** g: …Riparian areas/filter buffers **IV. NPS Pollutant Load Reductions** a: …Section 303(d)/ TMDLs b: …N, P, and sediment c: …BMPs target critical areas d: …meet water quality standards e: …lakes and reservoirs f: …pollution prevention g: …major river basins **V. Implementation of NPS Controls** a: …project planning b: inclusive partnerships c: …statewide and coastal d: …local funds/capacity e: …priority impaired areas f: …USDA Farm Bill/ NWQI g: …Coastal Program approval h: …National Estuary Program i: …Clean Water Revolving Fund j: ... pervious surfaces k: ...T&E species and habitat l: …invasive species m: ...LID n: ...resources integrated/ leveraged o: …BMP maintenance p: …locally led and implemented q: …fiscal accountability
Short-term Objective 3.1: Implement BMPs in at least one HUC-12 subwatershed, exclusive of Section 319 grant funding, to restore water quality and watershed productivity and resilience. **Timeline**: Annual	Continuing	NRCS targeted BMPs in the Guntersville Lake – Scarham Creek (HUC 06030001080) Watersheds as part of the NWQI NRCS targets GOMI funds in the NPS impaired Weeks Bay (Upper/Middle/Lower Fish River/Magnolia River Watersheds). NRCS targets the NPS impaired Turkey Branch, Fish River, and Magnolia River with funds from National Resource Damage Assessment resulting from Deep Water Horizon oil spill. RESTORE Funding for Coastal Watersheds – Eastern Delta, Western Delta, Western Perdido, Grand Bay etc.	
Short-term Objective 3.2: Employ a suite of measures (including retrofits) to protect, maintain and restore the ecological integrity of aquatic systems in the state's rivers, lakes, wetlands, streams, and estuarine waters. **Timeline**: Annual	Continuing No specific wetland or estuarine restoration projects were funded by Section 319 in FY2024. FY2025 had not been received by EPA at the time of this report.	FY2019 Watershed Implementation Projects 13, 15, 16 FY2020 Watershed Implementation Projects 10 FY2021 Watershed Implementation Project 11 FY2022 Watershed Implementation Project 12, 13 FY2023 Watershed Implementation Project 15 FY2024 Watershed Implementation Project 6 The Deepwater Horizon (BP) Oil Spill Liability Trust Fund	

		continues to target restoration of natural resources along the coast. Watershed-based projects employ a suite of BMPs to mitigate NPS runoff to impaired streams, rivers, and lakes. ADEM works with GOMA to address coastal water issues on a multistate/regional basis.	

<u>Goal 4</u>: 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**)**
<u>Long-term Objective 4</u>: Continue to enhance programmatic efficiency and effectiveness by updating programmatic Goals and Objectives by September 30, 2025. **Timeline**: (Replicate every five years.)	The updated AL NPS Management Program was received by EPA and acknowledged in June 12, 2020, satisfactory progress determination. The updated draft Alabama NPS Management Program Plan will be submitted to EPA by 1/30/2026 for review and comments.	Completed. Staff continues to discuss and document revisions needed to the AL NPS Management Program.	**I. Water Quality Improvements from NPS Controls:** e: …leverage Section 106 and other WQ resources f: …leverage NWQI resources h: …coordinate CZARA 6217 **V. Implementation of NPS Controls** e: …voluntary citizen approach f: …align with USDA-Farm Bill g: …coordinate with CZARA h: …coordinate with NEP i: …Clean Water Revolving Fund n: …resource integration and leveraging p: …local solutions to local problems using local resources. q: ... fiscally responsible **VI. NPS Education and Outreach**
Short-term Objective 4.1: Continue to enhance Section 319 grant transparency, program accountability, and fiscal management by implementing iterative technology-based approaches. **Timeline**: Annual	Continuing	FY2024 Program Project 1. All required Section 319 grant and project data are entered into GRTS in October and February, annually. ADEM NPS Unit staff provided technical assistance and program transparency to existing and potential project cooperators and partners during the cooperators meeting and targeted basin meeting. ADEM NPS Unit staff develop and update dedicated Section	

		319 grant and project specific tracking systems to help ensure accountability and provide timely information.	a: …targets watershed and WQ b: …increases 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 4.2: Continue to track the diversity of watershed planning and implementation partnerships. (e.g., agency, university, advisory, others). **Timeline**: Annual	Continuing	ADEM (Project 1) partners with the basin partnership groups to identify, sustain, and support many and varied NPS partners, interest, and input. FY2025 Section 319 (h) workplans were submitted on 9/30/2024. FY2026 Section 319(h) workplans were submitted on 9/30/2025. The NPS annual report documents and highlights the project partners 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. ADEM NPS watershed planning and implementation efforts in Alabama were strengthened through the partnership with Auburn University with the further development and implementation of the AWS program in watersheds throughout the State.	
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	FY2024 Program Project 1 Specific Section 319 project outputs are presented in interim and closeout reports. Final reports are submitted to EPA Region 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	FY2024 Program Project 1. Submitted a Threemile Creek Type 1 success story to EPA-Region 4 on 08/14/2024 for review and comments. It is in review with EPA. Submitted a Little Paint Rock Creek Creek Type 1 success story to EPA-Region 4 on 08/15/2025 for review and	

		comments. It is in review with EPA.	

<u>Goal 5</u>: 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** (Derived from Table 8.8 of the 2014 AL NPS Management Program**)**
<u>Long-term Objective 5</u>: Continue to facilitate the delivery of statewide and coastal zone NPS program communication materials and actions to enhance citizen education (e.g. awareness and knowledge; decision-making, problem solving, etc.) and outreach (e.g., dissemination of information; seeking input and active participation.) **Timeline**: (Replicate Processes Every five years.)	Continuing	The ACNPCP continues to utilize partnerships with federal, state, and local organizations to educate individuals about NPS pollution reduction and coastal watershed health. ACNPCP continues to work with partners to implement its ACNPCP strategy. The Department received full approval of the ACNPCP on October 23, 2024.	**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: … increases awareness and knowledge c: …Partnerships d: …Specific and target audiences e: …pollution prevention f: …enhance data monitoring g: …TMDLs, watershed-based plan, public health and safety
Short-term Objective 5.1: Continue to leverage Section 319 grant resources to plan, produce, or disseminate water quality-based E&O products that target specific audiences (e.g., NPS pollution category or place-based issues). **Timeline**: Annual	Continuing	FY2024 Program Project 1. FY2021 Program Project 5a. FY2022 Program Project 5a. FY2023 Program Project 5a and 5b.	
Short-term Objective 5.2: Continue to leverage public and private sector resources to develop and deliver E&O presentations, models, documents, and technologies. **Timeline**: Annual	Continuing	FY2024 Section 319 Program Workplan Project 1.	
Short-term Objective 5.3: Continue to deliver E&O activities that target specific Section 319 and TMDL priority pollutants in at least one NPS impaired HUC-12 subwatershed. **Timeline:** Annual	Continuing	FY2024 Program Project 1. FY2019 Watershed Implementation Projects 13 and 16 FY2021 Watershed Implementation Project 11	

		FY2022 Watershed Implementation Project 13 FY2023 Watershed Implementation Project 15 FY2024 Watershed Implementation Project 6	
Short-term Objective 5.4: Continue to facilitate E&O activities to strengthen working relationships and linkages to appropriate interstate, state, regional, and local entities (i.e., everyone "works-off-the-same-page"). **Timeline**: Annual	Continuing	FY2024 Program Project 1 FY2021 Program Project 5a. FY2022 Program Project 5a. FY2023 Program Project 5a and 5b.	

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

(1) Statewide NPS Programmatic Water Quality Annual Milestones	**Year 2025**		
Measure: Water Quality Monitoring Data Indicates a Primarily NPS Impaired Waterbody or Segment Is Now Fully or Partially Meeting State Water Quality Standards			
(Baseline is 2013)	**Indicator**	**Waterbody / HUC**	**Comments**
a) Number of Waterbodies identified in AL's 2000 or later year Integrated Reports (IR) as being primarily NPS impaired that now meets state water quality standards and designated uses (WQ-10): (Goal is minimum 1/year): (i.e., Category 5/ Section 303(d) listed Impaired Waters):	1	Little Paint Rock Creek/ 060300002-0204-302	Based on available data, ADEM's Water Quality Branch determined that an impairment for OE does not currently exist. Little Paint Rock Creek (assessment unit 0603000020-204-302) now meets its water quality use classification for this parameter, and an Assessment Decision Report was completed in December of 2023.
Number of WQ-10 Waterbodies Fully/Partially Restored or Meets State Water Quality Standards or Designated Uses:	1	Little Paint Rock Creek/ 060300002-0204-302	Little Paint Rock Creek watershed was addressed with CWA Section 319 funding in cooperation with other leveraged funding opportunities with a multitude of partners. After multiple of diverse projects, the assessment unit 060300002-0204-302 no longer is impaired for OE.

Number of WQ-10 NPS/Section 319 Success Stories Developed as a Result of Full/Partial Restoration:	0	Little Paint Rock Creek/ 060300002-0204-302	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	Little Paint Rock Creek/ 060300002-0204-302	Submitted a Little Paint Rock Creek Creek (WQ-10) success story to EPA-Region 4 on 08/15/2025 for review and comments. It is still in the review process.
Number of WQ-10 NPS/Section 319 Success Stories Submitted to EPA Region 4 as a Result of Full/Partial Restoration:	1	Little Paint Rock Creek/ 060300002-0204-302	Submitted a Little Paint Rock Creek Creek (WQ-10) success story to EPA-Region 4 on 08/15/2025 for review and comments. It is still in the review process.
Number of WQ-10 NPS/Section 319 Success Stories Listed by EPA-HQ as Result of Full/Partial Restoration:	0	Little Paint Rock Creek/ 060300002-0204-302	Submitted a Little Paint Rock Creek Creek (WQ-10) success story to EPA-Region 4 on 08/15/2025 for review and comments. It is still in the review process.
b) Number of Waterbodies identified in AL's 2002 IR as not attaining water quality (WQ) standards where state water quality standards are now partially attained using a watershed-based approach (SP-12): (Goal is minimum 1/year): (i.e., Category 5/ Section 303(d) listed Impaired Waters):	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 2025	
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):	131,539 lbs./year	Cumulative "N" for all ongoing Section 319 grants (FY2019-2024). 2019-2024 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"):	30	
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):	44,067 lbs./year	Cumulative "P" Total for all "open" Section 319 grants (FY2019-2024) reported in GRTS. 2019- 2024 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"):	30	
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):	14,088 tons/year	Cumulative "S" Total for all "open" Section 319 grants (FY2019-2024) reported in GRTS. 2019- 2024 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"):	28	
Load Reductions Entered in GRTS by Feb 15	Yes	
d) Number of Impaired Waterbodies/Segments Where "Other" NPS Pollutant Load Reductions are Achieved (#):	1	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	

(3) Project-Level Water Quality Planning and Restoration and Activities	Year 2025	
Measure: Watershed Project Funds Target NPS Impaired or Mixed Source Impaired Section 303(d) Listed Waters		
Baseline is FY202013 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 FY2025 include: • Shumulla Creek-Sucarnoochee River WMP • Western Delta WMP Draft was submitted to MBNEP on Sept. 25, 2025. • Eastern Delta WMP was finalized in February of 2025. • Caney Branch WMP drafted September 2025 Nine-key element Watershed-based Plans beginning implementation during FY2025 include: • Gailbraith Mill Creek WMP • Soughatchee Creek WMP • Moores Mill Creek WMP • Parkerson Mill Creek WMP • Three Mile Creek WMP Nine-key element Watershed-based Plans continuing implementation during FY2025 include: • Swan Creek WMP • Gailbraith Mill Creek WMP • D'Olive Creek WMP • Gulf Frontal WMP • Three Mile Branch WMP Collaboration and coordination continue 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, 2025.
At least two (2) EPA nine-key Element Watershed-based Plans are Drafted or Final Plans Developed Annually:	4	
At least two (2) EPA nine-key Element Watershed-based Plans Begin Implementation Annually:	5	
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 2025	
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 2025 Section 319 Request for Proposals notice as well as the Inter-governmental Clearinghouse Review was executed.

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	Watershed Implementation Projects were selected for FY2025 funding. Final EPA budget had not be received at the time of this report. The ADEM NPS Unit uses/refines dedicated Section 319 grant/project tracking databases as well as coordinates invoice payments with the Fiscal Office. All mandated data elements are entered into GRTS as grant and project-specific information is acquired by ADEM staff. ADEM NPS Unit staff facilitates or participates in multiple E&O activities monthly. The ADEM NPS Unit staff participated/attended the following training and education workshops/conferences: • NWQI Monitoring Questionnaire Info Session Q&A for States Webinar that was produced in 12/4/2023 – watched on January 2, 2025 • U.S. EPA Webinar for States and U.S. Territories Only on Three Draft Chapters of the WQS Handbook • EPA Webinar: Managing Your Roadway Stormwater Assets to Reduce Pollution, Achieve Water Quality Objectives, and Protect Communities from Flooding September 17, 2025 • National Nonpoint Source Conference in Baton Rouge, LA on October 26-29 • EPA Success Story Q&A Session July 15, 2025 Data continues to be QA'd and entered into ADEM-specific and national /EPA reporting databases. NRCS targeted BMPs in the Guntersville Lake – Scarham Creek (HUC 06030001-080) Watersheds as part of the NWQI. This Watershed has been monitored by ADEM, as needed, as an NWQI priority.
Previous Year Section 319 funds were obligated by ADEM within one (1) year of the date of receipt from EPA Region 4:	Yes	
Programmatic and financial systems are developed, evaluated, revised, or updated to enhance project tracking and reporting:	Yes	
Mandated project elements entered into GRTS at least biannually:	Yes	
NPS Unit staff facilitate or participate in at least one (1) NPS related E&O 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	

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