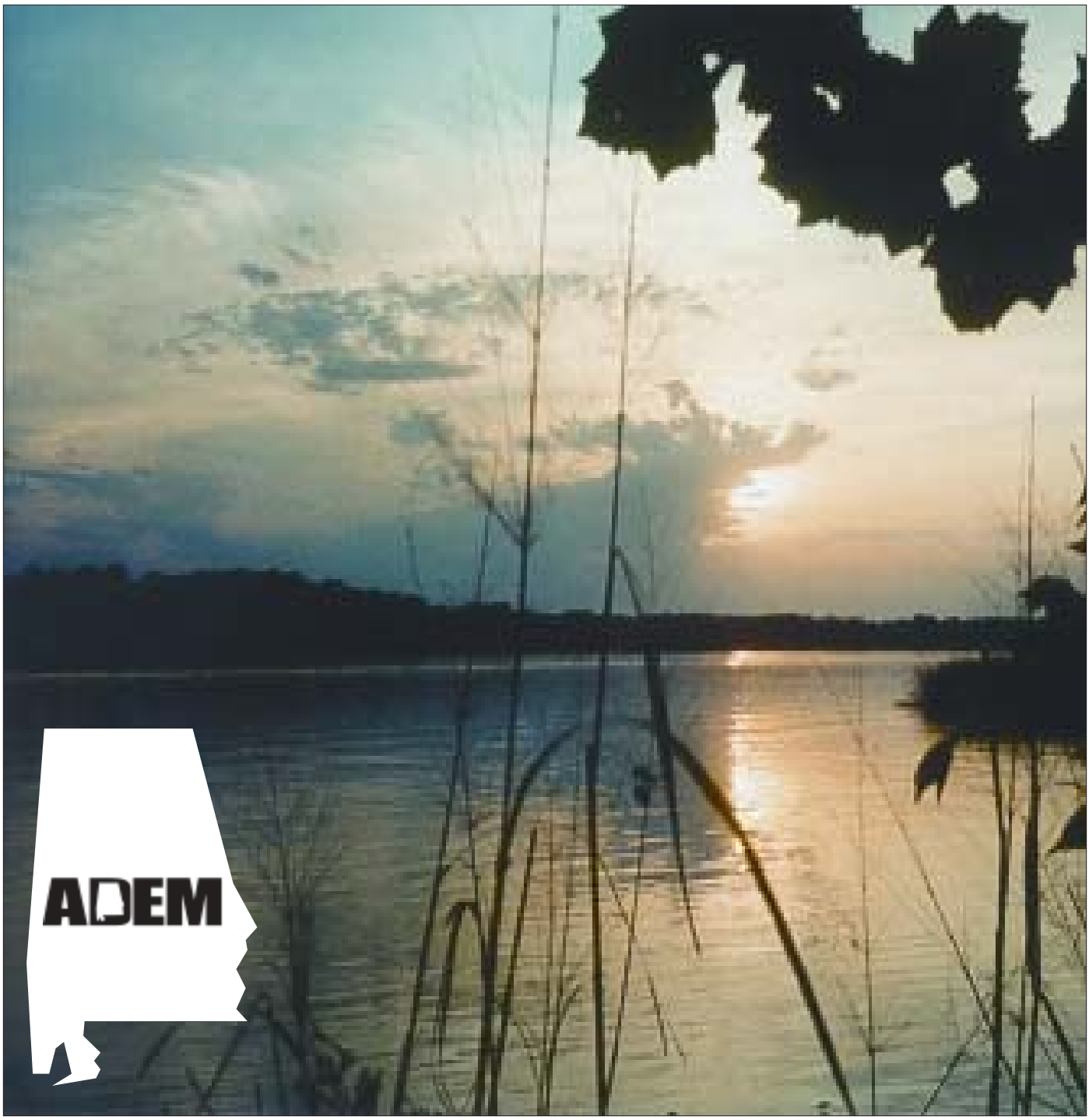
Alabama Nonpoint Source Management Program

2009 Annual Report



Tallapoosa River

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Table of Contents

Coosa River in Mentone

Alabama's Nonpoint Source Program is funded in part by a Section 319 Clean Water Act Grant from the U.S. EPA.

The Alabama Nonpoint Source Management Program

The purpose of the Alabama Nonpoint Source (NPS) Management Program Annual Report is to highlight the yearly progress made toward fulfilling the Alabama NPS Management Program goals. The Alabama Nonpoint Source Management Program seeks to assist with reducing or eliminating polluted runoff that degrades water quality by utilizing a combination of regulatory and non-regulatory efforts to achieve water quality standards, protect natural resources, and balance environmental protection with economic sustainability.

2009 Nonpoint Source Management Program Highlights

- The ADEM NPS Unit closed out the Fiscal Years 2001 and 2002 Section 319 grants. All open grants and related tasks are on schedule.
- ADEM expended $5,454,172 in Section 319 funds in 2009, exceeding its goal of $3,788,400..
- ADEM awarded $50,586 in 2009 for watershed plan development. This brings the total number of watershed plans developed or in progress to 48.
- ADEM awarded $1,163,839 in 2009 for two watershed plan implementation projects and three education/ outreach projects in 2009.
- The ADEM Water Quality Section finalized and received EPA approval on 40 TMDLs for various pollutant/waterbody combinations located throughout Alabama in 2009. All TMDL requirements associated with the 1998 Consent Decree were also completed in 2009.
- ADEM Field Operations completely assessed 50 sites in the Tennessee River Basin in 2009, and initiated 21 NPS Intensive Watershed Surveys.
- Urban stormwater runoff BMPs and stream restoration continued to be a focus in 2009. Major stream restoration projects are ongoing in Montgomery and Auburn to address issues due to urban development. Several projects have implemented bioretention basins and are conducting education on low impact development practices such as rain barrels, rain gardens, and urban forestry outreach.
- ADEM continues to successfully partner with the Alabama Soil and Water Conservations Districts and the Alabama Clean Water Partnerships to develop and implement projects across the state.

Warrior-Tombigbee Waterway

NPS Data Collection, Assessment, and Watershed Plan Development

IBI Monitoring Tool

This project provides information needed to develop a comprehensive bioassessment tool useful in helping state agencies assign designated use classifications for all the State's waters. This tool will help in managing water quality, aquatic habitat, and aquatic resources more efficiently, and will also assist in communicating to the public the benefits of strong water resource protection and management.

ADEM Field Operations staff collect bioassessment data.

Sampling has been completed in two of the five ichthyoregions initially delineated and IBI metrics and metric scoring criteria have been created for these regions. Three ichthyoregions remain to be sampled and the focus of this project will be to complete sampling in two of the remaining three ichthyoregions using the wadeable stream sampling protocol. The recently completed EPA Tiered Aquatic Life Use (TALU) concept is being used to guide this process to ensure that samples are collected from watersheds that reflect a full range of human disturbance, from highly impaired to least impaired, and that samples are collected from streams representing the range of natural geographic variation and watershed size within an ichthyoregion. This project requires multiple years to complete because of staff and funding limitations. Ichthyoregions are expected to be sampled roughly in accordance with the ADEM schedule for assessing the State's waters during the next three years.

Alabama's Total Maximum Daily Load (TMDL) Program Update

Section 303(d) of the Clean Water Act (CWA) requires states to list waters for which technology-based limits alone do not ensure attainment of applicable water quality standards. The 303(d) List includes priority rankings set by the State for the listed waters. Once the impaired waters are identified, states are required to establish total maximum daily loads (TMDLs) that will ensure water quality standards are met for each listed waterbody, considering seasonal variations and a margin of safety that accounts for uncertainty.

During fiscal year 2009, ADEM finalized and received EPA approval on 40 TMDLs for various pollutant/waterbody combinations located throughout Alabama. In addition, EPA completed three TMDLs for two waterbodies in Alabama, namely Weiss Lake (two segments) located in Cherokee County and the Aliceville Reservoir located in Pickens County. Including the 43 TMDLs completed in FY2009, the total number of waterbody-pollutant combinations with approved TMDLs in Alabama is 198. A more detailed description of all completed TMDLs is provided at www.adem.state.al.us/WaterDivision/WQuality/TMDL/ApprovedTMDLs.htm.

An additional major accomplishment during 2009 is that all TMDL requirements associated with the 1998 Consent Decree have been completed. The Consent Decree has been terminated and the case has been officially closed by the U.S. Northern District Court of Alabama.

Field Operations Watershed Assessments

The ADEM Nonpoint Source Program continued the 5-year rotational river basin assessment approach in FY09. Water quality assessment efforts targeted the Tennessee River Basin in FY09. Please contact Lisa Huff at esh@adem.state.al.us or (334) 260-2752 to obtain completed NPS water quality assessment reports or other data.

2009 Assessment of the Wadeable Streams in the Tennessee River Basin

The objectives of each Basin Assessment Monitoring Project are to assess the biological integrity of each monitoring location and to estimate overall water quality within the basin. Fifty locations were selected to represent the range in watershed conditions throughout the Tennessee River Basin. At each location in situ measurements, stream flow, intensive water samples, water-column Chlorophyll a, and fecal coliform samples were collected monthly, March through October. Metals were collected semi-monthly, March through October. Pesticides, semi-volatiles, and atrazine were collected twice during this same timeframe.

Macroinvertebrate and habitat assessments were planned once at each station in May-early July. Fish IBI and periphyton bioassessments were also planned at a subset of stations representing a gradient in watershed conditions.

Habitat and macroinvertebrate community assessments were completed at 45 of the 50 sampling locations. Assessments could not be completed at five locations due to low flow or unwadeable conditions. Fish community assessments were completed at 25 sampling locations. Six additional fish community assessments could not be completed due to nonwadeable or nonflowing conditions at the site. Periphyton bioassessments were completed at 10 sampling locations.

2009 Nonpoint Source Intensive Watershed Surveys

Twenty-one NPS Intensive Watershed Surveys were initiated during 2009. Twenty-nine stations were selected for monitoring in the nineteen watersheds. At each location in situ measurements, stream flow, and intensive water samples were collected monthly, March through October. Collection of other parameters is dependent on the nature of the impairment and best management practices within the watershed. Monthly sampling was affected by the heavy rains in June and July and no flow conditions in the smaller watersheds, particularly towards the end of the sampling season.

Habitat and macroinvertebrate community assessments were completed at 14 sampling locations. Assessments could not be completed at an additional six locations due to low flow or unwadeable conditions. Fish community assessments were completed at seven sampling locations. Fish community assessments could not be completed at three additional locations due to nonwadeable or dry conditions at the site. Periphyton bioassessments were completed at four sampling locations. Diurnal dissolved oxygen studies were completed at 13 sites affected by organic enrichment/dissolved oxygen or nutrient impairments.

2009 Tennessee River and Tributary Embayment Intensive Monitoring

Thirty-three stations located on Guntersville, Wheeler, Wilson, and Pickwick Reservoirs of the Tennessee River Basin were intensively monitored. At each location in situ measurements, intensive water samples, and water-column Chlorophyll a samples were collected monthly, April through October. Hardness was collected semi-monthly, April through October. Fecal colifom samples were collected three times during that same time frame. AGPT samples were collected once in August at all stations.

River Basin Management Plans

The Department has provided technical resources and oversight to complete the development of river basin management plans for all of the major river basin across the state. Listed below are the river basins that have management plans, which encompasses a total of 30,204,799 acres of Alabama waterways. The basin plans are available on ADEM's website at www.adem.state.al.us/Education%20Div/Nonpoint%20Program/WSNPSProgram.htm#Basin_Management_Plans.

- **Lower Coosa River Basin** (03150107)
  1,963.29 sq. miles/1,256,511 acres
- **Middle Coosa River Basin** (03150109)
  1,654,373 acres
- **Upper Coosa River/Weiss Lake** (03150105)
  852 sq. miles/545,259 acres
- **Tennessee Valley River Basins**
  (06020001, 06030001, 06030002, 06030003, 06030005, 06030006)
  6,825.85 sq. miles/4,368,535 acres
- **Cahaba River Basin** (03150202)
  1,818.08 sq. miles/1,163,571 acres
- **Black Warrior River Basin**
  (03160109, 03160110, 3160111, 03160112, 03160113)
  6,288.19 sq. miles/4,024,423 acres
- **Coastal Alabama Basins**
  (03160204, 03160205, 03170002, 03170003, 03170008, 03170009, 03140106, 03140107)
  3,695.51 sq. miles/2,365,315 acres
- **Tallapoosa River Basin**
  (03150108, 03150109, 03150110)
  4,023.86 sq. miles/2,575,265 acres
- **Alabama River Basin**
  (03150201, 03150203, 03150204)
  4,747.42 sq. miles/3,038,361 acres
- **Upper and Lower Tombigbee River Basins**
  (03160103, 03160105, 03160106, 03160201, 03160202, 03160203, 03160107, 03160108)
  7,570 sq. miles/4,844,648 acres
- **Choctawhatchee/Pea/Yellow River Basins**
  (03140201, 03140203, 03140204, 03140103)
  3,637.28 sq. miles/2,327,855 acres
- **Conecuh, Sepulga, & Blackwater River Basins**
  (3140104, 3140301, 3140304, 3140302, 3140305, 3140303)
  3,996.33 sq. miles/2,557,667 acres
- **Chattahoochee/Chipola River Basins**
  (3130002, 3130003, 3130004, 3130012)
  2,829.5 sq. miles/1,810,871 acres

Lake Guntersville at sunset

Subwatershed Management Plans

The Department is continuing to work with stakeholders to develop and implement subwatershed management plans. These subwatershed management plans are in various stages of completion, but each plan will incorporate EPA's nine key elements (a-i) and will encompass **2,042,474** acres of Alabama waterways.

Alabama River Basin
- Baldwin Slough (03150201-0307) 19,752 acres

Total acres addressed **19,752 acres**

Black Warrior Basin
- Long Branch (03160109-0303) 19,752 acres
- Dry Creek (03160111-0203) 12,648 acres
- Black Branch/Cane Creek (03160109-0602) 40,670 acres
- Rock-CrookedCreek (03160109-0106) 1,140 acres
- Dollarhide Creek (03160-113-0140) 55,040 acres
- North River 121,967 acres
(03160112-0401, 03160112-0402, 03160112-0404)

Total acres addressed **251,217 acres**

Cahaba River Basin
- Little Shades Creek (03150202-0201) 39,908 acres

Total acres addressed **39,908 acres**

Chattahoochee River Basin
- Mill Creek (03130003-0101) 60,160 acres

Total acres addressed **60,160 acres**

Choctawhatchee-Pea-Yellow River Basin:
- Dowling Branch (031402010704) 15,647 acres

Total acres addressed **15,647 acres**

Coosa Basin
- Buxahatchee Creek (03150107-0502) 45,663 acres
- Spring and Mud Creek (03150105-0807) 10,880 acres
- Middle Coosa

The Middle Coosa Plan targets the following subwatersheds:
  - Towne Creek (03150106-040) 24,636 acres
  - Big Cove Creek (03150106-030) 51,203 acres
  - Greens Creek (03150106-130) 26,911 acres
  - Dye Creek (03150106-200) 79,680 acres
  - Upper Big Canoe Creek (03150106-100) 24,917 acres
  - Upper Kelly Creek (03150106-300) 111,565 acres
  - Easonville Creek (03150106-290) 24,619 acres

Total acres addressed **400,074 acres**

Mobile Basin
- D'Olive Creek (03160204-0505) 20,480 acres

Total acres addressed **20,480 acres**

Tallapoosa Basin
- Wolf Creek (Copper's Rock) 321,280 acres
- Town Creek 150 acres
- Sougahatchee Creek 108,482 acres
- Parkerson Mill Creek (03150001-0301) 59,002 acres
- Moore's Mill Creek 7,360 acres
(031501100201, 031501100204, 031501100203)

Total acres addressed **496,274 acres**

Tennessee Basin:
- Cotaco Creek (060300020601, 060300020603) 176,376 acres
- Mack Creek-Robinson Creek (060300021001) 35,446 acres
- Paint Rock (06030002-100) 93,154 acres
- Guess Creek (060300020105) 21,818 acres
- Little Paint Rock (060300020203) 36,196 acres
- Cole Spring Branch (060300020201) 3,110 acres
- Brier Fork and Beaverdam Creek 67,290 acres
(060300020307, 060300020305, 06030002-180)
- Upper Bear Creek (060300060103) 78,220 acres
- Middle Flint River (060300021003) 41,783 acres
- Harris Creek (060300060201) 6,392 acres
- West Fork Creek (06030002270) 4,528 acres
- Indian Creek (060300020505) 24,847 acres
- Yellow Bank Creek (06030002-210) 6,208 acres
- Goose Creek (06030002-210) 7,552 acres
- Crowdabout Creek (06030002-340) 31,180 acres
- Town Creek (06030002-0604) 23,443 acres
- Lower Flint Creek (06030002-1009) 33.458 acres
- Upper and Middle West Flint Creek 56,260 acres
(06030002-1009)
- Hester Creek/Mountain Fork 53,838 acres
(06030002-1009)

Total acres addressed **738,962 acres**

Noccalula Falls in the Coosa River Basin

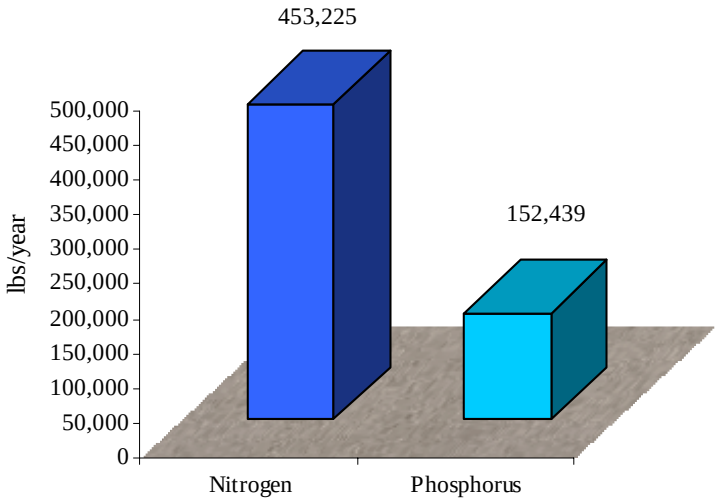
Load Reductions

The projects/activities outlined in this report provide a brief overview of the Department's efforts to address nonpoint source pollution in Alabama. However, in order to provide a numerical measure of the effectiveness of these efforts, EPA 319 guidance calls for a report of the "annual reduction in lbs/tons of nitrogen, phosphorus, and sediment from nonpoint sources to waterbodies." In cooperation with its 319 partnerships, pollutant load reductions have been estimated using developed methodologies for past and ongoing projects. The list below contains data from EPA's Grant Reporting Tracking System (GRTS) database and gives an estimate of the positive impact these efforts have made on water quality in Alabama.

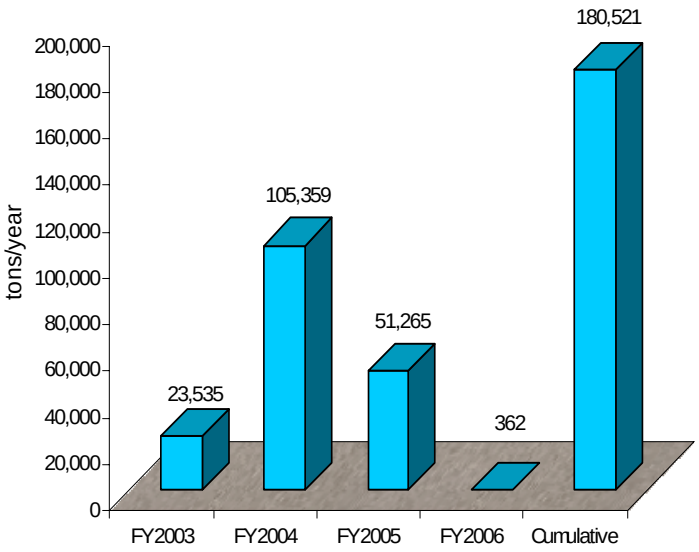
Pollutant Load Reductions for Current Project Implementation:

- **Middle Coosa River Watershed Project**
  - Nitrogen 231,948 LBS/YR
  - Phosphorus 115,282 LBS/YR
  - Sediment-Siltation 16,879 TONS/YR
- **West Fork Creek Riparian Zone Protection**
  - Nitrogen 119,323 LBS/YR
  - Phosphorus 12,498.5
  - Sediment-Siltation 1,872 TONS/YR
- **Dry Creek Watershed Project**
  - Nitrogen 3,544 LBS/YR
  - Phosphorus 590 LBS/YR
  - Sediment-Siltation 253 TONS/YR
- **Sougahatchee Watershed Project**
  - Nitrogen 1,208 LBS/YR
  - Phosphorus 425 LBS/YR
  - Sediment-Siltation 549 TONS/YR
- **Harris Creek Watershed Project**
  - Nitrogen 7,180 LBS/YR
  - Phosphorus 1,164.6 LBS/YR
  - Sediment-Siltation 390 TONS/YR
- **Moore's Mill Creek Restoration Project**
  - Sediment-Siltation 675 TONS/YR
- **Cotaco Creek Watershed Ag Project**
  - Nitrogen 34,822 LBS/YR
  - Phosphorus 3,034 LBS/YR
  - Sediment-Siltation 294 TONS/YR
- **Hurricane Creek (Dowling Branch) Project**
  - Nitrogen 4,215 LBS/YR
  - Phosphorus 968 LBS/YR
  - Sediment-Siltation 570 TONS/YR
- **Juniper Creek Watershed Project**
  - Nitrogen 16,450 LBS/YR
  - Phosphorus 3,406 LBS/YR
  - Sediment-Siltation 862 TONS/YR
- **Indian Creek Watershed Project**
  - Sediment-Siltation 12,233 TONS/YR
- **Brier Fork/Beaverdam Watershed Project**
  - Nitrogen 3,246 LBS/YR
  - Phosphorus 1,166 LBS/YR
  - Sediment-Siltation 37,856 TONS/YR
- **Hester Creek/Mountain Fork Watershed Project**
  - Sediment-Siltation 232 TONS/YR

Reported Nutrient Load Reductions FY 2003-Current



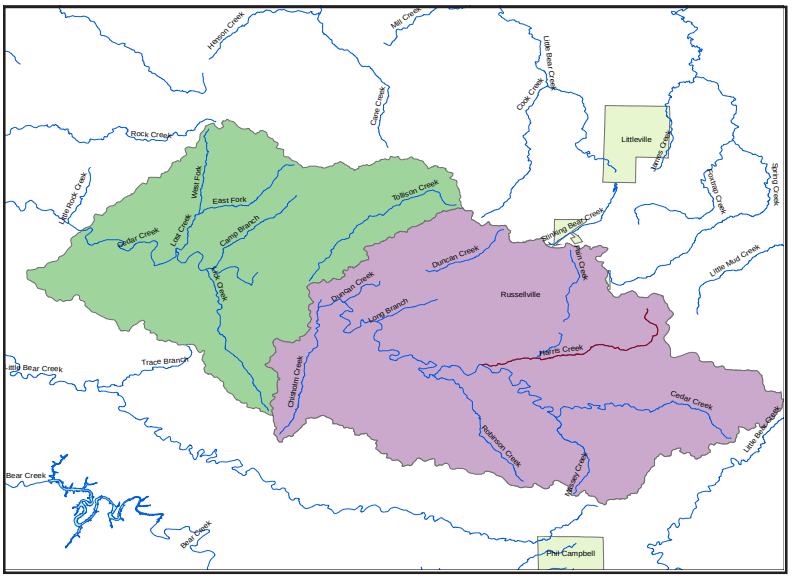
Reported Sediment Load Reductions FY 2003-Current



Watershed Implementation Activities

The Nonpoint Source Management Program continues to focus on the development and implementation of watershed management plans. The implementation of these watershed management plans is the cornerstone of the Department's effort to enhance water quality and facilitate the removal of water bodies from the 303(d) List. The projects identified in this section are the culmination of numerous meetings between ADEM staff and a wide-range of stakeholders and landowners to identify problem areas and initiate restoration activities to enhance water quality.

Harris Creek Watershed Project



Harris Creek Watershed Map

The Harris Creek Watershed, located in Franklin County near the City of Russellville, is within the Tennessee River Basin. It is approximately 6,400 acres with a linear distance of roughly 5.8 miles, and a total drainage area of nearly 10 square miles. Harris Creek was placed on the Section 303(d) List of Impaired Waterbodies in 1998 for sedimentation and low dissolved oxygen, with the TMDLs completed in 2002. Agricultural lands are the primary sources of impairment in the watershed. The goal of this project with the Franklin County SWCD is to reduce the overall sedimentation and nutrient loading into the creek.

Agricultural BMPs that were implemented in 2009 include exclusion fencing, tree planting, pasture planting, cross-fencing, residue and nutrient management, alternative watering facilities, pest management, pervious pavement, dry stack, and a stream crossing. In April 2009, the working area was expanded to include all the watershed of the Cedar Creek Reservoir.

Livestock exclusion fencing prevents livestock from going into the creek.

Students learn about water quality in the Cool Runnings Program.

The Franklin County Soil and Water Conservation District continues to promote nonpoint source pollution education through a variety of ongoing programs including the Alabama Envirothon, Alabama Water Watch, and Cool Runnings. The Franklin County SWCD distributed water quality test kits for every 6th grade class in the county. In 2009, Belgreen High School won the State Envirothon Competition and went on to attend the National Envirothon in Asheville, North Carolina, with assistance and training from the Franklin County SWCD.

Agricultural Efforts in the Cotaco Creek Watershed

The Cotaco Creek Watershed comprises an area of 172,859 acres in Morgan and Marshall Counties within the Tennessee River Basin. Five creek segments within the Cotaco Creek Watershed are on the 303(d) List, including Town Creek (8.4 miles), West Fork Cotaco Creek (7.5 miles), Mill Pond Creek (1.3 miles), Hughes Creek (2.9 miles), and Cotaco Creek (5.1 miles). During storm events, Cotaco Creek and its tributaries carry a heavy silt load from critically eroding stream banks, road banks, and farmland. Mostly agricultural activities are conducted in the watershed, including beef cattle, dairy operations, poultry operations, and forestry. The lack of adequate livestock waste control measures along with animal access to streams cause bacterial levels in local tributaries to become elevated during storm events. Consequently, these actions degrade aquatic habitat and threaten protected species and human health.

The Diamond S Farm is the primary Cotaco Creek Watershed Project Demonstration Farm and will be the site used in promoting an *Irrigated Managed Grazing System*. The demonstration farm site will show how more cattle can graze on less land while decreasing nutrient and sediment loadings to Cotaco Creek through improved management techniques. To date, several best management practices have been installed, including alternative watering sources, critical area planting, access road stabilization, intensive rotational grazing fencing, stream crossings, and irrigation systems. The project manager is currently working on an interactive CD for distribution highlighting strip grazing management techniques and other BMPs on the Diamond S Demonstration Farm.

Irrigated Managed Grazing System allows grass to grow and decreases the need for fertilizer.

West Fork Cotaco Creek Riparian Zone Protection Project

The West Fork Cotaco Creek Watershed is comprised of 34,528 acres in Morgan and Cullman Counties. The watershed is rural, with mostly forest and pasture lands, and a few small scattered developments. The West Fork Cotaco Creek is listed on the Section 303(d) List of Impaired Waterbodies due to organic enrichment/low dissolved oxygen and pathogens. Agriculture is listed as a source of these problems.

This goal of this project is to improve and protect water quality within Cotaco Creek Watershed by reducing sediment, nutrient, and bacterial loadings caused by nonpoint source pollution. To date, five landowners have signed up for cost share assistance. On the ground BMPs include exclusion fencing, alternative watering sources, rotational grazing fencing, streambank restoration, and riparian buffers.

Gully was filled and reshaped prior to hydroseeding and installlation of erosion control blankets.

The Town of Eva, which approximately one-half lies within the West Fork Cotaco Creek Watershed, has also requested assistance in dealing with stormwater runoff at the Town of Eva's Municpal Park. The project at the Eva City Park has been implemented which will reduce the high sediment loads that were going into West Fork Creek, especially during high rain events. The urban best management practices that were installed include hydro-seeding of disturbed areas, vegetated filter stripts, erosion control blankets, culverts of increased size and installation of concrete curb and drop inlets.

Lower Flint Creek Watershed Project

The Lower Flint Creek Watershed is a 33,365-acre watershed located within the Tennessee River Basin drainage, in Morgan County near Hartselle. The project area comprises about 11% of the Flint Creek Watershed. The Lower Flint Creek (included in Flint Creek) is identified on the Section 303 (d) List for organic enrichment/low dissolved oxygen. A TMDL was completed for Flint Creek in 1996, targeting nutrient loadings from beef cattle, failing septic systems, sediment from cropland/pastureland, and urban construction.

Outdoor wetland cells help treat stormwater runoff in the WaterWorks project.

This project will demonstrate the use of wetland cells to treat the impaired waters of Flint Creek. The Alabama Mountain Rivers Valley-RC&D has acquired the City of Hartselle's abandoned water treatment facility on the banks of the Flint Creek. Water will be pumped from the creek through the facility where wetland cells will treat the water naturally and then discharge the clean water back into the creek. The inside wetland cells, educational lab, and outside wetland cells are 90% complete. The on-site sewage wetlands and mound system have been completed and a vermi-composting for on-site waste disposal is 90% complete. Green roof and water collection/recycling bids are being evaluated and a porous pavement stormwater demonstration is also in the planning stage.

The Lower Flint Creek Watershed project is also being used to educate municipal officials, septic tank installers, and the public, especially school children, on the value of natural and constructed wetlands as related to water quality improvements, flood prevention, water storage in droughts, groundwater recharging, wildlife habitat, riparian zone protection, and aesthetic values.

In addition to the urban BMPs, this project also contains an agriculture component. The watershed coordinator has been able to get a landowner to participate in the project by enlisting 30 acres of pasture planting and 3,000 feet of fencing. Conservation plans will be developed for all partipating landowners.

The project coordinators have met with the Tennessee River Clean Water Partnership about the project in order to solicit input. A Field Day has been held for approximately 40 RC&D Council members and supporting agency individuals, and numerous presentations have been made on the WaterWorks project.

Pasture planting provides a better forage crop while reducing soil erosion.

Brier Fork and Beaverdam Creek Watershed Project

A gully is corrected with a series of sediment basins and an underground outlet.

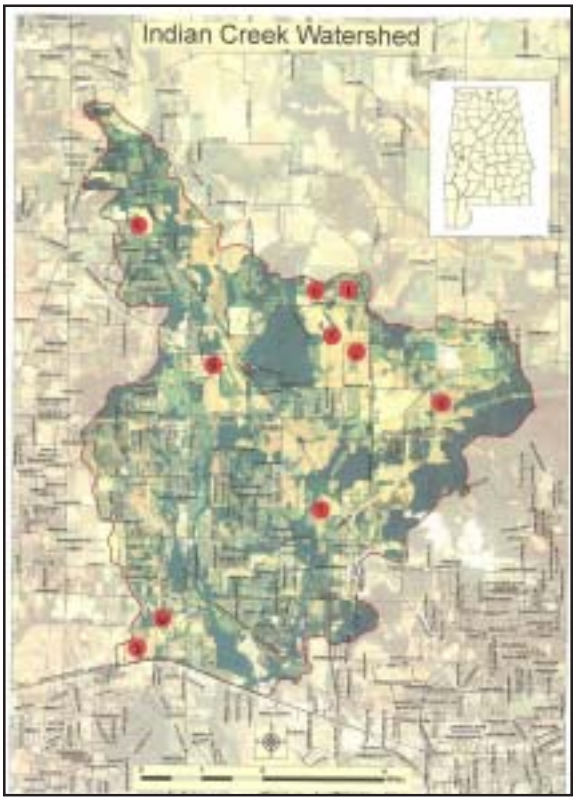
Located in Madison County, the Brier Fork/Beaverdam Creek Watershed is just north of Huntsville. The watershed lies within the Wheeler Lake Watershed in the Tennessee River Basin. Both Brier Fork and Beaverdam Creek are tributaries to the Flint River. Brier Fork is listed on the Section 303(d) List as impaired from the Flint River to the Alabama-Tennessee State line (20-mile segment), while Beaverdam Creek is listed on the Section 303(d) List as impaired from Brier Fork to its source (19-mile segment). The main goal of the Brier Fork and Beaverdam Creek Project is to develop watershed management plans and implement BMPs to approve water quality. These projects are designed to bring Brier Fork and Beaverdam Creek into compliance with state water quality standards.

To date, the Madison County SWCD has accepted twenty-two applications for this program and has closed the sign-up until further notice. Additional funding for this targeted watershed has been approved and a second application batching period will be announced later. The breakdown of applications to date are: 12 landowners requesting conservation tillage and winter cover crops, three large terrace projects to address gulley erosion on crop land, six grazing land requests, and one cropland conversion to permanent vegetation request for more than 200 acres.

Farm visits have been performed, cost estimates have been calculated, contracts and conservation plans have been created, the Madison County SWCD district board has tentatively approved the requests, and implementation of these projects is complete. The BMPs that have been implemented include approximately 19,860 feet of broad based terraces that have been constructed on four farms to address gully erosion, 1,320 feet of livestock fencing that was constructed at a beef cattle operation which serves as partial exclusion on a tributary stream and also serves as cross fencing for rotational grazing, 35 acres of permanent vegetation planted on highly erodible soils, and 2,000 acres of winter cover crops. Conservation Plans were written for twelve applicants on 1,315 acres and funding incentives were paid to these applicants for 931 acres.

Cross fencing allows for the rotational grazing of livestock and can serve as exclusion fencing.

Indian Creek Watershed Restoration Project



This map shows the locations of BMPs implemented in the watershed.

Project Logo

Indian Creek is located on the west side of Huntsville within the Wheeler Lake Watershed (USGS hydrologic cataloging unit Al/06030002-tennessee river) and is impaired due to low dissolved oxygen/organic enrichment and sedimentation. A draft TMDL has been developed that identifies pollutants from failing septic systems, agricultural practices, and wildlife as possible sources of impairments to Indian Creek, as well as sediment from agricultural practices and construction activities. The goal of this project is to develop a watershed management plan and implement BMPs in order to enhance water quality in Indian Creek.

A continuous signup has been announced and applications continue to be taken. Sixteen applications have been received and farm visits and conservation plans are being developed for these landowners. Nine applications are for conservation tillage and two for grazing land practices. A winter cover crop, which normally would have been planted conventionally without a cover crop, has been planned and contracted on 1,495.2 acres. In addition, the Project Manager is currently working with Monrovia Middle School and Madison County to implement urban BMPs in the watershed.

Hester Creek and Mountain Fork Restoration Project

The Hester Creek and Mountain Fork Watershed (06030002-160) comprises approximately 41,639 acres northeast of Huntsville in Madison County. The designated use of these streams is Fish and Wildlife and the area is primarily pasture, row crop, and forestland with some residential areas. Cattle farms are located throughout the watershed on soils that are highly erodible. The southwest part of the watershed is under pressure from development related to urban sprawl from the City of Huntsville.

The goal of the Hester Creek and Mountain Fork project is to address the causes of stream impairment through development and implementation of conservation plans that will result in the removal of Hester Creek and Mountain Fork from ADEM's 303(d) list. A kick off meeting for the project was held in April where seven people attended and three applications for participation were accepted.

The Flint River Watershed Coordinator speaks to landowners about the project.

To date, the Madison County SWCD has accepted 15 applications for the following BMPs: conservation tillage and winter cover crops, terrace projects to address gully erosion on crop land, grazing land requests, and request of conversion of cropland to permanent vegetation for 20 acres. Approximately 18 acres of conventional row crop land was converted to permanent vegetation in the spring of 2009.

Little Shades Creek Restoration Project

Little Shades Creek is a sub-watershed of the Shades Creek Watershed (HUC 3150202-060) within the Cahaba River Basin. This project is located within the City of Vestavia Hills. The Little Shades Creek Watershed has an area of almost eight square miles and is over 35% developed. Increased development and impervious surfaces has increased the volume and velocity of stormwater entering Little Shades Creek. This stormwater has created severe erosion near the Ashley Woods Subdivision. This increased erosion makes a significant stormwater contribution to the Cahaba River which is identified on the 303(d) List as being impaired due to sediment.

The project coordinator talks about the restoration of Little Shades Creek.

As a result of the erosion and stream degradation, a project will be implemented on Little Shades Creek which will improve the water quality and aquatic habitat of the stream. In addition, the project will provide two "hands-on" training workshops that will focus on design and construction techniques implemented in the project and vegetation for stream restoration. The partners of this project include the Alabama Department of Environmental Management, CAWACO Resource Conservation & Development Council, the City of Vestavia Hills, the Cahaba Clean Water Partnership, Goodwyn, Mills, & Cawood, Incorporated, North State Environmental, the Alabama Cooperative Extension System, the Ashley Woods Homeowners Association, and the North Carolina Cooperative Extension System.

Trey Glenn, the Director of ADEM, speaks to the Ashley Woods Homeowners Association at the Groundbreaking Ceremony.

The groundbreaking ceremony of the Little Shades Creek Stream Restoraton Project was held in September at the Ashley Woods Subdivision in Vestavia Hills. Many of the homeowners came to learn about the project implementation. The speakers at the ceremony included some of the partners of the project in addition to various Alabama Legislators.

Dry Creek Watershed Project

The Dry Creek Watershed is located in the Middle Locust Fork Watershed of the Black Warrior River Basin. The watershed is entirely within Blount County and covers 12,648 acres, including the Town of Cleveland and a portion of the Town of Rosa. The purpose of the Dry Creek Watershed Project is to develop and implement agricultural BMPs that address nutrients, ammonia, and pathogens in order for the stream to be removed from the 303(d) List.

Thus far, the Blount County SWCD has received and approved four landowner applications. On the ground BMPs include a stream crossing for cattle, spring development and alternative watering sources, heavy use protection areas, cross-fencing, and exclusion fencing. As part of their educational objectives, the NRCS and Blount County SWCD have continued to provide educational demonstrations to students using the Enviroscape and the Soil Tunnel. The Blount County SWCD has also revived the annual Groundwater Festival, which had been idle since 2004. With the assistance of the local watershed coordinator, SWCD staff, and other participating groups, 700 Blount County 4th grade students were able to attend the recent Groundwater Festival. A teacher workshop has also been held utilizing water quality test kits along with the Enviroscape to emphasize the harmful effects of polluted runoff.

The Middle Coosa Watershed Project

This project concentrated on seven primary subwatersheds identified as the most degraded in the Middle Coosa Watershed by the 1998 Soil & Water Conservation District Watershed Assessments. The St. Clair and Etowah County Soil and Water Conservation Districts were designated as the project leads. Primary watershed concerns included excessive animal waste applied to land, livestock water inadequate for proper rotation of grazing animals, nutrients, bacteria, low dissolved oxygen in surface and ground waters, and erosion from cropland areas.

Numerous education and outreach activities have taken place thus far, including "What's in your Water?" Teacher Training workshops, NEMO presentations, stream cleanups, presentations at local schools, citizen advisory committee meetings, and Water Festivals. Three septic tank workshops were conducted in St. Clair County, with 242 vouchers being awarded to local citizens for free pump-outs or to be used towards repairs. News media's coverage complemented outreach efforts along with periodic nonpoint source articles submitted to the local newspapers.

Citizens attend one of the St. Clair County septic tank workshops.

The project involved various partners while implementing several different urban BMPs. These projects included three bioretention areas, a Filterra stormwater treatment unit, and a lined waterway. The pollutant load reduction from these BMPs is notable, but also the demonstration aspects added to their value.

The Middle Coosa Watershed Project had two Citizen Advisory Committees (CAC) that met to plan and facilitate projects, one for the Neely Henry Lake Section and one for the Logan Martin Lake Section. Each CAC was active in identifying priority Education and Outreach projects to be carried out. The Logan Martin CAC implemented a NEMO, four Septic Tank Pump-out Workshops and partners in urban BMP identification. The Neely Henry CAC focused on a NEMO Program, the "What's in your Water" program, and a very successful Septic Tank Pump-out Workshop which was held October 14, 2008, along with other urban BMP implementation projects.

The project approved 96 BMP applications with a total of 56 that were completed on numerous farms in the project area. The Watershed Coordinator provided accurate load reductions utilizing the STEPL (Spreadsheet Tool for the Estimation of Pollutant Loading) model. This modeling program employs simple algorithms to calculate nutrients and sediment loads from different land uses and the load reductions that would result form the implementation of various BMPs. It creates a customized spreadsheet-based model in Microsoft Excel. Geo-referencing data for best management practices installed was also provided.

A biorention area in Ragland treats stormwater runoff from adjacent parking lot.

A successful ALUM treatment cost-share program was implemented. Twenty-six applications for ALUM treatments were approved and applied in poultry houses in the watershed. These applications totaled 73,900 lbs of ALUM. The ALUM chemically binds the phosphorus and makes it unavailable when applied to the soil and thus, less likely to enter nearby waterways.

Buxahatchee Creek Watershed Restoration Project

Buxahatchee Creek is a sub-watershed is the Coosa River Basin. The watershed is approximately 70 square miles and flows through Shelby and Chilton Counties. Buxahatchee Creek is impaired for nutrients and organic enrichment/dissolved oxygen. The Buxahatchee Creek Watershed Restoration Project will identify landowners interested in installing agricultural and urban BMPs to address nonpoint source pollution. Additionally, the project will provide local education to raise awareness of nonpoint source issues.

Thinking differently about our water

By Scott Mims

You probably agree that water quality is important. But have you thought about how you impact the water supply?

An ongoing series of workshops aims to educate both community leaders and private citizens about water quality.

The workshops are hosted by the Buxahatchee Creek Watershed Restoration Project and funded by a 319(h) Clean Water Act Grant through the Alabama Department of Environmental Management (ADEM) and Environmental Protection Agency.

What is a watershed, you might ask? It is the land area that drains into a particular body of water. In this case, much of north Chilton County and south Shelby County drain into the Buxahatchee Creek basin.

WATER continued on page 6

Proper planning: Kay Dennis, Glenn Barnett, Stan Franklin, Leigh Ann Meadows, Christine Olsenius, Betty Giles and others discuss land use planning for water quality.

A press release was issued to local newspapers in Shelby and Chilton Counties advertising the watershed project and seeking landowner participation.

To date, a coordinator has been hired by the CAWACO RC&D that will work with Shelby County and Chilton County Soil and Water Conservation Districts to identify landowners interested in installing appropriate BMP practices. Thus far, one application has been received requesting funds for cross-fencing to remove livestock access to the creek. Also, management measures are being developed for nutrient management; a retention pond, constructed wetlands, and riparian buffers at Timberline Golf Course, which lies adjacent to Buxahatchee Creek.

This alternative watering source receives its water from a natural spring source.

In August 2009, a workshop was held titled "*Planning for Quality Growth in Chilton and Shelby Counties*" which was facilitated by Christine Olsenius, Executive Director of the Southeast Watershed Forum. Additional educational activities to be implemented in the watershed include a septic tank workshop/voucher program, hands-on training/ installation of an advanced peat/bio-filter waste-water system, placement of stormwater treatment systems, and signage at a multi-use sports complex. In addition, several water quality workshops will be conducted throughout the project period.

Teachers attend a workshop to learn about water quality and conservation in Shelby County.

Whites Slough Stream Restoration Project

Whites Slough is an urban tributary to Catoma Creek within the Baldwin Slough Watershed. The Baldwin Slough Watershed is a subwatershed of the 360 square mile impaired Catoma Creek Watershed. This project will address a portion of Whites Slough within a local city park (Young Park), and is designed to improve watershed functions through a holistic watershed restoration project that includes stream and floodplain restoration and stormwater management in a degraded stream system. This project will also be designed to build watershed restoration capacity and expertise in Alabama by educating a broad community on the importance of stream and floodplain protection, and by demonstrating innovative stormwater management practices.

To date, 1,400 linear feet of stream and two acres of floodplain have been constructed and temporary seeding and other erosion/sediment control measures have been implemented. The final 700 linear feet of stream and associated floodplain will be completed by the December 9-10, 2009 Vegetation Workshop. Three stream restoration workshops have also been held, covering morphology assessment, design, and construction. In addition, presentations have been given to local neighborhood associations, master gardeners, and local schools regarding the project. These volunteers will be assisting with planting vegetation along the stream and in the wetlands.

Whites Slough during a workshop prior to stream restoration.

Whites Slough after restoration.

Saugahatchee Watershed Management Plan (SWaMP) Implementation Project

The Saugahatchee Creek Watershed encompasses a 220-square mile area located within the Lower Tallapoosa River Basin. Saugahatchee Creek Watershed has two segments, the Pepperell Branch and the Saugahatchee Creek Embayment (Yates Lake), currently on the 303(d) List of Impaired Waters for receiving excess nutrients, primarily phosphorus. The embayment is also listed for receiving excessive organic matter and problems with low dissolved oxygen.

The recent projects implemented include a Tallapoosa Basin insert in local newspapers, six community rain barrel workshops, a living streams workshop at Cary Woods School, two forest BMP workshops, and a rainwater harvest project demonstration. A "Green for Life!" project has also been recently approved that will demonstrate low impact development practices at a highly impervious community center. BMP installations throughout the watershed will be represented in an interactive map on the SWaMP website.

Participants make their own rain barrels at a workshop.

Moore's Mill Creek Stream Restoration Project

Moore's Mill Creek, within the Lower Tallapoosa Watershed, is on the 303(d) List for sediment pollution from its confluence with Chewacla Creek to its source. The Moore's Mill Creek Stream Restoration Project will address stream stability problems on Moore's Mill Creek and several of its unnamed tributaries. The primary goal of this project is to reduce sediment loss from 12,400 feet of Moore's Mill Creek and its tributaries by 90% from current conditions, which represents a reduction of 675 tons of sediment loss annually.

The first objective to develop a watershed plan for Moore's Mill Creek has been completed. Construction of the stream restoration has been completed on five reaches of the stream. As work has progressed, FEMA flood maps were redrawn, which then required revisions to the stream construction plans. The FEMA-related changes, in addition to multiple heavy rainfall events, have led to several delays on the construction of the remaining portion of the restoration and to stabilization of the existing structures. Reconstruction and completion of the remainder of the restoration is on-going between rainfall events.

A cross-vane has been implemented as part of the stabilization techniques.

Three workshops targeting golf course managers, commercial and residential developers, landscaping companies, and homeowners have been held to kick off the Lee County Business Partners for Clean Water. In addition, tours of the stream restoration were held in August and September to display construction and design techniques and discuss field changes.

Wolf Creek Watershed Project

Wolf Creek, within the Upper Tallapoosa Watershed, is on the 303(d) List for pathogens from agricultural sources. The purpose of this project is to reduce the cumulative effects of the polluted runoff from agricultural lands. This will be accomplished through development and implementation of farm conservation plans.

A volunteer with the Upper Tallapoosa Clean Water Partnership teaches 4th graders about water quality.

An announcement for continuous signup for the project has been made by the Randolph County Soil and Water Conservation District. There have been 6 signups and several farm visits to date and one application has been approved for fencing out cattle, improved grazing practices, and alternative watering sources. In addition, an Enviroscape has been purchase and was used at the Young Farmer's Field Day in April 2009. The Wolf Creek Project had two booths in partnership with the Upper Tallapoosa Clean Water Partnership and ADEM. The booths educated all of the 4th - 6th graders in the county about watersheds and nonpoint source pollution, macroinvertebrates, and volunteer water monitoring.

Dowling Branch Watershed Project

Dowling Branch is a 2.1-mile stream segment that originates within the city limits of Hartford in Geneva County. The stream has been on ADEM's 303(d) List since 1991 with the causes of water quality impairment listed as organic enrichment/low dissolved oxygen and pathogens. The sources of impairment are listed as municipal, urban runoff/storm sewers, and agriculture. Dowling Branch is located in the Hurricane Creek Watershed within the larger Upper Choctawhatchee Watershed.

Hurricane Creek Watershed Map


A winter cover crop is planted in late summer or fall to provide soil cover during the winter.

The initial BMP implementation began in February 2008 with two landowners participating. Currently, BMPs are being implemented at seven local farms as prescribed by Geneva County NRCS. Exclusion fencing, winter cover crops, dug ponds, heavy use areas, and an alternative water source are BMPs that have been installed. The exclusion fencing and alternative water source addresses the pathogen problem at Dowling Branch while the winter cover crops address sediment issues. Further, STEPL modeling to estimate nitrogen, phosphorus, and sediment load reductions that have resulted from BMP installation have been completed and are on file. The ditch work will address sediment coming from Dundee Road and entering Dowling Branch.


Livestock exclusion fencing prevents cows from entering the creek.

Stakeholder awareness is expected to increase as a result of education and outreach activities conducted by the Choctawhatchee, Pea, and Yellow Rivers Clean Water Partnership and the Geneva County SWCD. One educational activity will include a spring 2010 farm site/BMP tour.

Pike County Poultry Litter Project

This project will concentrate on enhancing and improving water quality in the uppermost segment of the Conecuh River in Pike County. The first objective is to reduce the amount of phosphorus and nitrogen which enter the stream in the form of runoff from fields which have had excessive applications of poultry litter. The second objective is to reduce the amount of poultry litter that is being applied to the land. The third objective will facilitate smarter land application and the fourth objective is to assist farmers with the reduction of trucking expenses of the poultry litter.

Pike County is a major poultry producing county in Southeast Alabama. According to soil tests, many of the pasture and hay land fields confirm high to very high levels of soil phosphorus. Fields where chicken litter has historically been applied have the highest soil phosphorus levels. Because of the volumes of litter being generated annually and the cost of moving this material, the litter is usually land applied near the house of origin. By recycling this litter at least two times, the volume that actually gets land applied is cut by 50%. Therefore, farmers and vendors have reduced costs. This allows the transportation of the litter away from the fields with heavy phosphorus levels to fields that need the phosphorus. The equipment will be transported to farms within the watershed for educational demonstrations.

Restoration of Unnamed Tributaries to Persimmon Branch in the Walnut Creek Watershed

The Persimmon Branch Watershed lies within the Choctawhatchee River Basin and is located near the City of Troy in Pike County. The project site encompasses approximately 23+/- acres along an unnamed tributary to Persimmon Branch. Persimmon Branch drains to Walnut Creek which is a Section 303(d) listed impaired water body that drains a large portion of east Troy. Walnut Creek was first added to Alabama's §303(d) List of Impaired Waters in 1998 for unknown toxicity. Supplementary site reconnaissance conducted by various stakeholders have suggested that organic loading, stream bank destabilization, and improper nutrient management practices may be contributing factors to nonpoint source pollution.

The Persimmon Branch Watershed

To initiate the project, Troy University received a Green Infrastructure Demonstration Project grant from the Alabama Forestry Commission to perform invasive species management, the construction of a bio-retention basin, and to perform educational workshops for community stakeholders. Due to the amount of storm water that flows through the park, the streams and wetlands accumulated a large amount of sediment and trash. The park was in need of invasive species removal and storm water control through bio-retention/rain gardens. In a cooperative effort to combine agency resources, the stream restoration project restored ~ ±600 linear feet of an unnamed tributary at Janice B. Hawkins Park. The streams are fed from campus storm water flow and a spring located within the park. Excessive sedimentation is occurring within the channelized streams due to the lack of floodplain connectivity. The 600 linear feet stream restoration was considered a Priority 1 channel restoration which included replacing the existing incised channel with a new, stable stream at a higher elevation. The new channels and appropriate floodplain was excavated with the appropriate dimension, pattern, and profile to fit the watershed and valley type.

Stream restoration of the Unnamed Tributary nears completion.

On September 14, 2009 a project demonstration field day/tour for interested stakeholders was held which provided stakeholders with a "real world" opportunity to experience the stages of a natural design project through each step (morphology, assessment, design, construction, vegetation, and evaluation) - thus offering a unique opportunity to "learn by doing."

NPS Education, Outreach, and Technology Transfer

Erosion and Sediment Control on Constuction Sites

The project provides resources to establish a framework for an Erosion and Sediment Control Program for construction sites and urban areas. Participants of the project include the Alabama Soil and Water Conservation Committee, the Natural Resources Conservation Service, ADEM, and the Alabama Association of Conservation Districts. Non-formal partners include the Alabama Department of Transportation, the Home Builders Association of Alabama and the Associated General Contractors of Alabama. Earl L. Norton, CPESC, serves as program coordinator and the committee meets 3-4 times a year to review an action plan for technology transfer in erosion and sediment control on construction sites.

Attendees learn about various erosion and sediment control BMPs.

In 2009, the "Alabama Handbook for Erosion Control, Sediment Control and Stormwater Management" was updated and distributed to all Handbook holders of record. Updated Handbooks are available for distribution when requested and an electronic version is available to the public through the Alabama Soil and Water Committee website. An updated "Field Guide for Erosion and Sediment Control on Construction Sites" has also been printed and is distributed at training events. Approximately 180 people attended the recent statewide Erosion and Sediment Control Field Days in Bessemer. The first day of the workshop included topics covering regulatory updates, BMP updates, and low impact development practices. On the second day attendees toured several construction sites to demonstrate correct installation of BMPs.

Envirothon

The ADEM NPS Unit, in a joint effort with other agencies, continued to play a supporting role in the Alabama Envirothon competition by helping in event planning, developing test materials, leading many of the training events, judging, and overall program implementation. This year's state competition was held April 2-4, 2009 at the 4-H Camp in Columbiana.

Students learn about macroinvertebrates during the aquatics training session.

Envirothon teams from across the state took part in the competition with Belgreen High School of Franklin County being the overall event winner. They attended the National Canon Envirothon in Asheville, North Carolina in August.

Students enjoy their free time by canoeing.

The Alabama Clean Water Partnership

The Alabama Clean Water Partnership is a coordinated effort of public and private stakeholders to restore and protect the state's water quality in accordance with the goals of the Clean Water Act. An outgrowth of the Federal Clean Water Action Plan, announced in February 1998 and coordinated by the Alabama Department of Environmental Management , the Alabama Clean Water Partnership encourages the involvement of local stakeholders in addressing the protection and restoration of Alabama's water resources. Working for the Board of Directors, Allison Jenkins serves as Statewide ACWP coordinator, facilitating daily Board business, administering associated projects and grants, transferring information between basins, and assisting ACWP Basin Facilitators across the state.

Alabama Clean Water Partnership Board of Directors

On-the-ground projects in the river basins across the state are vital to the success of the Alabama Clean Water Partnership. These projects, improve water quality, increase the visibility of the ACWP, and provide stakeholders with ownership of the process. The following are project highlights from both the statewide level (in support of all basins) and from the ten Clean Water Partnership basins across the state:

Statewide Efforts

- **What's in *YOUR* Water? 5th Grade Curriculum**

The goal of this project is to encourage environmental responsibility and behavioral change among Alabama's citizenry, targeting Alabama's 5th grade students and teachers. The activities, correlated to the Science, Social Studies, and Language Arts 5th Grade Courses of Study, cover topics on the water cycle, watersheds, personal pollution, sediment pollution, and ecosystems. The curriculum provides environmental education across a broad spectrum of socio-economic groups, also serving as an avenue for Phase I and Phase II storm water entities to meet their public education permit requirements.

The information used on the curriculum bulletin board is provided to teachers.

- ***Waters to the Sea: Discovering Alabama***

Waters to the Sea: Discovering Alabama will be the newest addition to the internationally acclaimed, award winning Waters to the Sea CD ROM Series-the definitive watershed education tool for inspiring informed river stewardship in the next generation. The tool (to be offered online as well as on disk) will engage young people (grades 3 - adult) in learning about the workings of the continent's rivers as well as the history, culture and ecology of Alabama and Georgia watersheds.

- **Basin Newspaper Inserts**

The many uses of water and sources of nonpoint source pollution are highlighted in the inserts, along with specific information on local watersheds and watershed success stories. Through this project, a total of 850,000 16-page, full color educational inserts were provided to Alabama citizens through their local newspapers. All totaled, 903,301 inserts were distributed through this project, in an effort to educate Alabama and Georgia citizens about nonpoint source pollution, with the overarching goal of healthier streams and better water quality.

Approximately 850,000 inserts were inserted into local newspapers and distrubuted to citizens in their watersheds.

- **Alabama Department of Transportation (ALDOT) Stream/Wetland Mitigation & Materials Provision**

Anytime ALDOT builds a road and alters wetlands or stream segments, the agency is charged with mitigating the impact at other locations. To this end, a representative from ALDOT has been added to the ACWP Board of Directors. All basin facilitators and stakeholders of ACWP Basin Steering Committees are being urged to report possible mitigation sites (either stream or wetland) in their basins to ALDOT. If streams with identified problems meet ALDOT mitigation criteria, on the ground projects might be possible to increase water quality and stakeholder involvement in the watershed. ALDOT has also agreed to provide free materials, where appropriate, for stream restoration projects, which could include boulders, root wads, tree trunks, and other appropriate materials.

- **Monofilament Recycling Units (MRUs)**

The ACWP is working with Berkley International, the Alabama Department of Conservation and Natural Resources, and the Mississippi Alabama Sea Grant Clean Marina Program to place MRUs at "fishing holes" on water bodies across the state. These PVC structures allow for the collection & recycling of used fishing line and and are receiving rave reviews.

- **Strategic Habitat Unit Project**

The ACWP is assisting the Mobile River Basin Coalition, U.S. Fish & Wildlife Service, Geological Survey of Alabama, Alabama Department of Conservation and Natural Resources, Alabama Aquatic Biodiversity Center, and U.S. Geological Survey in outreach efforts educating the public in designated watersheds where habitat protection efforts, including species delisting and/or reintroduction of species, are anticipated. The North River of the Black Warrior Basin has been suggested as the possible location for the initial test effort, with Canoe and Terrapin Creeks (Coosa) and the Locust Fork (Black Warrior) also on the list.

Basin Efforts

Alabama-Tombigbee Basin

- **Sedimentation and Property Loss in the Lower Tombigbee River Basin**

In 2006, the Laura Jane Musser Fund awarded the statewide ACWP and the Alabama-Tombigbee Clean Water Partnership a $30,000 grant to fund a project called "Dispute Resolution: Erosion and Property Loss along the Tombigbee River." An additional facilitator, Wade Riggs, has been hired to undertake this project. The project to date has consisted of a series of nine public meetings to educate stakeholders about all issues that are related to erosion along the Lower Tombigbee River and a lunch meeting/river trip to educate the media and elected officials about the issue. An action plan written by the stakeholders is currently near completion, and a study by the USDA National Sedimentation Laboratory - ARS has been commissioned.

- **Coca-Cola Partnership**

World Wildlife Fund has provided a connection with Coca Cola of Montgomery, who is participating as a business partner with the basin. Additional facilitation funds are being provided for Ashley Henderson's time in design of storm water control strategies on Coca Cola property, as well as the development of an environmental tour of the company grounds. In return, Coca Cola wants to become involved in community environmental events in the Alabama River Basin, including providing barrels for rain catchment devices.

- **Alabama Rain Barrel Project**

This "make and take" workshop is popular in the Montgomery and Auburn areas and will begin soon in other areas of the state. Funding is currently being identified and ACWP Basin Facilitators are being trained, with support of the ACES Master Gardener Program. Project partners include the Alabama Clean Water Partnership, Alabama Cooperative Extension System, Alabama Department of Environmental Management, Coca-Cola Enterprises, Rain Catchers, Legacy, World Wildlife Fund, and Soil & Water Conservation Society.

Black Warrior Basin

Volunteers help clean up Holt Lake.

- **Renew Our Rivers: Holt Lake Clean Up**

118 volunteers removed 2.48 tons of trash and debris from Holt Lake. The clean up was sponsored by a coalition of local citizens, industries, County, State and Federal agencies, including the U.S. Army Corps of Engineers and Alabama Power's Renew Our Rivers campaign.

Students plant vegetation for streambank stabilization.

- **Vegetation for Stream Restoration Workshop**

The workshop, Vegetation for Stream Restoration drew 25 attendees and focused on Town Creek, an urban stream in the City of Jasper bordering Maddox Middle School. Participants were provided information about riparian plant selection, planting techniques for wetland and stream bank vegetation, bioengineering techniques, and monitoring of riparian vegetation.

- **Stream Assessment Workshop**

A two-day workshop was held providing information to assist in assessing stream conditions. Using the information provided in the workshop, participants can develop a plan of action for the protection and restoration of stream segments. This information may be used to assist communities in addressing issues such as water quality, water quantity, flooding, storm water management, and habitat. Twenty-one natural resource professionals, state/local government representatives, and industry professionals attended.

A stream restoration Construction Workshop was conducted on Town Creek.

- **Town Creek Restoration Project**

The Basin Facilitator, on behalf of the City of Jasper, assisted in the development of a 319 proposal to improve water quality and habitat quality in approximately 1000+/- linear feet of Town Creek. The project serves as a demonstration of natural channel design and innovative storm water management specific to urban streams in the southeast.

Cahaba Basin

- **Operation Clean Sweep**

The project will restore approximately 1,900+/- feet of stream channel using natural channel design and enhance an existing constructed wetland. In addition, the project will host a workshop to promote the use of natural channel design techniques as a management tool for improving water quality and aquatic habitat.

Chattahoochee-Chipola Basin

- **Waters to the Sea: The Chattahoochee River**

Stakeholders are busily distributing copies of the Georgia developed "Waters to the Sea – The Chattahoochee River" CD to stakeholders across the basin (both in Alabama and Georgia). Private donations from sponsors within the basin were successfully sought for this specific project. The "Waters to the Sea" interactive CD has been correlated to the Alabama Course of Study for use in the Alabama side of the Chattahoochee Basin.

- **Low Impact Development Projects, City of Eufaula**

A class of graduate students from within the Landscape Architecture Department of the School of Architecture at Auburn University visited the City of Eufaula to view proposed sites for storm water remediation projects. Students submitted landscaping drawings which were evaluated for implementation within the City of Eufaula, utilizing rain gardens and other retention structures. A site at the Sanford School was chosen and the basin Steering Committee has approved the use of basin donations for the rain garden project once final budgets are determined.

Mill Creek in Phenix City is impaired from unknown sources.

- **NEMO (Nonpoint Source Education for Municipal Officials)**

The Basin Facilitator continues to work with ADEM to organize NEMO workshops in high growth areas of the basin.

- **319 Project Identification**

Work continues by the Basin Facilitator to assist in possible implementation of a 319 project on Mill Creek in Phenix City and Barbour Creek in Eufaula.

Choctawhachee-Pea-Yellow Basin

♦ Groundwater Festivals

All ten CPYRCWP counties are planning Groundwater Festivals for 2009. The mission of the festival is to teach fourth graders the importance of our groundwater resources and to educate them on the need to conserve and protect these resources. The Basin Facilitator represents the Choctawhatchee, Pea, and Yellow Rivers Clean Water Partnership on the Festival Committees and has been instrumental in getting each of these festivals organized.

Students attend the Dale County Groundwater Festival.

♦ "Country Crossings" Low Impact Development

The Basin Facilitator has made contact with developers involved in the Country Crossings development in Houston County, hoping to initiate low impact development practices in conjunction with the project. The project area drains to the Chipola River Basin, so project will be done jointly with the Chattahoochee-Chipola CWP if and when it moves forward.

♦ UT to Harrand Creek

The Basin Facilitator is working with ADEM, ACWP and partners in Enterprise to put together components for restoration of an Unnamed Tributary to Harrand Creek, which is currently on the 303(d) List for sediment and nutrients. Development of the work plan is in progress.

Unnamed Tributary to Harrand Creek

Coastal - Escatawpa Basin

♦ Economic Benefits of Conservation Planning Educational Packet

The Coastal Alabama Clean Water Partnership in conjunction with the SE Watershed Forum held a workshop entitled Economic Benefits of Conservation Planning. Other partners included Weeks Bay Reserve Coastal Training Program, the City of Mobile, Baldwin County Planning Commission, ADEM, the City of Fairhope, NOAA, Auburn University, Mobile Bay National Estuary Program, EPA, and the Curtis and Edith Munson Foundation. The program concentrated on the economic benefits communities gain through the conservation of their natural resources infrastructure.

♦ Mobile County Grasses in Classes

Based on the successful Baldwin County Program, Grasses in Classes has expanded to Mobile County. Many of the same stakeholders have come together, headed by the Mobile Bay National Estuary Program, to establish a Grasses in Classes Program on the western shore of Mobile Bay. The Grasses in Classes Program in Baldwin County was established to satisfy a need for sea grasses in restoration initiatives along the Baldwin County coast. There are four Mobile County Public Schools participating this year.

♦ Prichard Watershed Plan

The Mobile Bay National Estuary Program in partnership with the Coastal Alabama Clean Water Partnership has begun to outline a process for coordinated watershed planning for the community of Prichard. Stakeholders met in April for the initial planning meeting.

Conecuh-Sepulga Basin

- **Groundwater Festivals**

In an effort to develop a broader community interest in water quality and an appreciation of our dependence on groundwater, the Conecuh-Sepulga CWP has taken a lead role in the development, organization, and promotion of Groundwater Festivals across the basin. Concentration has been on those counties lacking festivals. Organization of the festivals, recruitment of sponsors and fundraising efforts are being coordinated by the Basin Facilitator.

- **Basin Wide Water Quality Data Gathering Project**

The shortage and/or lack of water quality data for the Conecuh, Sepulga, and Blackwater Rivers Watershed has been an ongoing concern of the steering committee. In an effort to address this matter, the committee, in a joint effort with the Geological Survey of Alabama, developed a monitoring plan. Now complete and undergoing final internal approval at GSA, the results will be used to guide new project development in the basin.

- **Pike County Poultry Litter Project**

The project supports the purchase of a windrow turner for use in the watershed in order to minimize need for the land application of chicken litter to improve water quality of local streams. Two demonstration tours are planned.

Coosa Basin

- **Upper Coosa TARCOG Project**

The Coosa River Clean Water Partnership continues to offer support and facilitation services in conjunction with efforts underway by TARCOG in the Upper Coosa Basin, centered on high growth in the Little River Canyon area. In 2009, four meetings and two workshops were held to educate stakeholders about nonpoint source pollution.

Little River Canyon stakeholders meet to discuss future projects and workshops.

- **Buxahatchee Creek 319 Project Support (Shelby & Chilton Counties)**

The Coosa River CWP facilitator is working with local stakeholders and ADEM to implement educational components of this 319 project, including local workshops for educators (ACWP's "What's in YOUR Water?"), SE Watershed Forum Growth Readiness Workshop, and a planned Business Partners for Clean Water Program.

- **Monofilament Recycling Units (MRUs)**

Fishing line recycling bins (MRUs) are being mounted on docks and at boat launches and marinas in the Coosa Basin.

MRU was installed at a boat launch on Lay Lake.

Tallapoosa Basin

- **Business Partners for Clean Water Workshops**

The Basin Facilitator helped to coordinate and implement several Lee County Business Partners for Clean Water workshops, targeting landscapers, builders and homeowners.

Stakeholders participate in a Business Partners for Clean Water Workshop.

- **Erosion and Sediment Control Workshop**

The Basin Facilitator helped to plan and implements an Erosion and Sediment Control Workshop in the Middle Tallapoosa River Basin with the help of the Middle Tallapoosa Stakeholder Committee. The workshop was held at Central Alabama Community College and over 40 people participated.

- **Moore's Mill Restoration**

The project will reduce sediment loss from ~12,400 feet of Moore's Mill Creek and its tributaries by 90% from current conditions.

- **Monofilament Fishing Line Recycling Units (MRUs)**

The Basin Facilitator helped to implement a monofilament recycling project with the Middle and Upper Tallapoosa Stakeholder groups. Several units have been placed at boat ramps and landings on Lake Martin and Lake Wedowee.

- **Renew Our Rivers**

The Basin Facilitator continues to serve on the Renew Our Rivers Planning Committee for the Lake Martin Cleanup and also attended the Lake Wedowee Cleanup.

- **Ongoing Activities**

Educational activities occurring across the Tallapoosa Basin include the Living Streams Program, Alabama Water Watch Monitoring, Water Festivals, and Forest in a Classroom.

Tennessee Basin

- **Monofilament Fishing Line Recycling Units**

The Tennessee CWP is in the process of installing 200 fishing line recycling units across the Tennessee Valley. This low cost, high profile project which was brought to the ACWP's attention by the Tennessee CWP has turned out to be an incredible public relations opportunity and is being fostered in other basins across the state.

The Cotaco Creek watershed coordinator installs a MRU.

- **Lake Guntersville Lure Walk**

In April, the City of Guntersville with support of the Tennessee CWP, welcomed a special art display of eight five-foot fishing lure-shaped sculptures along the shoreline walking trail between Kiwanis Pier and the City Recreation Center beside Sunset Drive. At Art on the Lake, over 1,000 Marshall County artists assisted in painting one of the lures as a gift from the citizens to the City of Guntersville. Some of the lures created during the project have been offered to the Tennessee River Basin Division to be displayed in Guntersville as a community beautification and environmental educational project. Some of the lures will be permanently located at Lake Guntersville.

Groundwater Festivals

A key to providing protection for our groundwater resources is education. The goal of a Groundwater Festival is to educate 4th grade students, and indirectly their parents and community, on groundwater issues including what it is, how it is used, and its susceptibility to contamination. The Groundwater and Water Festivals are a culmination of classroom study and hands-on activities. Children have the opportunity to experience first hand through experimentation and problem solving, the complexity of groundwater and its relationship to nature in general.

Students participate in an activity at the Covington County Groundwater Festival.

This is the 11th year of Groundwater and Water Festivals in Alabama. Since the first festival in Madison County, approximately 177,000 students, 4,250 teachers, and 1,900 volunteers have participated across the state. In 2009, 27 counties participated and Henry County and Mobile County held their first Groundwater Festival. An Alabama Groundwater Festival website (www.alabamawaterfestival.com) has also been developed.

20th Annual NPS Conference

ADEM held its 20th Annual Nonpoint Source Pollution Conference on January 20-21 at the Renaissance Hotel in downtown Montgomery. Attendees included over 225 environmental engineers, biologists, geologists, municipal leaders, elected officials, and water quality specialists. This year's event was entitled "Are We There Yet?" and included a summary of Alabama's 20-year journey of the state's Nonpoint Source Program. The conference also included more than 30 exhibitors with displays and informative hand-outs.

The various sessions and discussions offered attendees a variety of updates on the Department's efforts to achieve water quality improvements through its support of projects such as stream restorations, best management practices, education/outreach, and the development of watershed management plans that enable local stakeholders to play an active role in protecting water quality.

Participants were able to choose between concurrent sessions to hear the latest on NPS educational programs, historical watershed projects, university involvement in NPS management, and restoring streams through public involvement. Also, other sessions covered advances in the identification of stream impairments, protecting waterways from rural and urban development, and water quality assessment in Alabama.

A large number of organizations and agencies participated in the conference including the U.S. Environmental Protection Agency, the Alabama Department of Agriculture and Industries, the Alabama Forestry Commission, Auburn University, and the Alabama Clean Water Partnership.

Conference attendees look at the ADEM display.

Water Quality Coordinator and Education/Outreach Specialist

The WQC and the EOS administer several 319 grants provided to the State Soil & Water Conservation Committee. The WQC acted as a facilitator of an interagency team (ADEM, NRCS, AFC, SWCC, and ADPH) that developed program content for the Statewide Watershed Assessment that was completed in late 2008. All 67 Districts have completed the collection of data and have submitted it on the online database. The submitted data has been complied into reports and maps created to reflect the data entered. Both the reports and the maps have been uploaded on the SWCC web site at (http://www.swcc.state.al.us/. The WQC and the EOS completed design modifications to the web site and it is now available for the general public to use. The online Watershed Assessment data provides Districts and their Citizen Advisory Committees (CAC) with a tool for identifying and correcting water quality problems thereby improving overall conservation in their areas.

Within the past year the WQC also completed the Community-Based Watershed Evaluation and Management Grant which evaluated 12-digit HUC sub watersheds for 303(d) impaired streams in five Districts in Alabama. The five Districts, Madison, Marshall, Pike, Baldwin and Mobile were chosen because they contained at least one 303(d) listed stream on which a TMDL had been approved.

A major part of the WQC and EOS's time has been spent as facilitators for the registration of Confined Animal Feeding Operations (CAFOs). The SWCDs assist producers who initially register and those who must register annually. All SWCDs are now processing CAFO registrations online at the AFOIS website and scanning, uploading maps and reports to the FTP website.

The watershed assessment data can now be found at the SWCC website.

Alabama Water Watch

Alabama Water Watch (AWW) is a statewide program dedicated to developing volunteer monitoring of Alabama's lakes, streams, and coasts. It's coordinated through the Auburn University Department of Fisheries and Allied Aquacultures. During this report period, AWW conducted 104 training sessions which were attended by 459 people. A total of 608 certifications were earned and 69% were conducted by or with a citizen trainer. Twenty-nine Water Chemistry Workshops (184 people attending), 29 Recertification Sessions (232 people attending), 22 Bacteriological Workshops (157 people attending), and three Stream Biomonitoring Workshops (18 people attending) were conducted. Further, one Water Chemistry Trainer of Trainers and two Trainer refreshers attended by 17 citizens. Five Water Chemistry Monitoring Trainer Internships were conducted during the report period. Three *Exploring Alabama's Living Streams* workshops certified 59 educators on the AWW-developed curricula for aquatic science.

In addition, 61 citizen groups submitted water chemistry data from nine of the ten major watersheds, excluding only the Tombigbee. Data received during the report period originated mostly from AWW groups located in the Warrior, Tallapoosa, Tennessee, and Coosa watersheds (14, 13, 12 and 11 groups respectively). Overall, most monitoring activity was located in the Tallapoosa, Warrior, Costal Plain, and Tennessee watesheds (20%, 20%, 18% and 17% of data respectively). Twenty-six groups submitted bacteriological monitoring data from seven watersheds. A combined total of 4,241 data records (3,385 chemistry and 856 bacteriological) were received. Since 1993, AWW has received almost 48,000 water chemistry and 11,000 bacteriological data records. Over 2,000 sites have been monitored on 700 waterbodies.

Three Data Interpretation Sessions, two for Smith Lake and one for Lake Wedowee, were conducted comparing AWW citizen data with other sources of data, and numerous outreach activities were held for citizen groups. AWW responded to several official requests for data from other organizations such as ADEM, EPA, TetraTech, North Carolina State University, individual monitors and from AWW groups. AWW staff attended several AWW monitoring group meetings such as those of Wolf Bay Watershed Watch and Lake Watch of Lake Martin. AWW personnal attended several Conferences and Seminars including the 20th Annual ADEM Nonpoint Source Conference, the Alabama Rivers Alliance Watershed Leadership Conference, the Alabama Fisheries Association Annual Meeting, the AU Costal Roundup and the Clean Water Partnership Annual Meeting.

Program accomplishments and initiatives for this report period include the revision of the Alabama Water Watch website, with the addition of an online blog newsletter and a new one-button option for certified monitors to access all data for their testing sites. The AWW website and the Water Data Section have been visited over 115,000 times and 26,000 times respectively. Almost 93% of AWW data received during the report period was entered online and over 700 people were subscribed to the AWW Listserve. The final version of the Three *Exploring Alabama's Living Streams* aquatic science curriculum was printed.

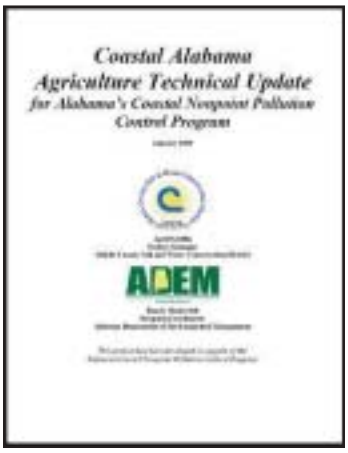
Group learns about macroinvertebrates during AWW training.

Alabama's Coastal Nonpoint Source Pollution Control Program

During the past year, the ADEM Coastal Nonpoint Pollution Control Program (ACNPCP) continuted to coordinate with the EPA-Region 4 and the ADEM Nonpoint Source Unit to develop and implement programmatic approaches for the ACNPCP. In 2009, the ACNPCP focused on the continued development, implementation, and final completion of seven major projects in order to address important NPS issues.

The ADEM ACNPCP staff utilizes a NPS Projects Template that outlines development of future ACNPCP projects in order to address the designated Coastal NPS Program Land-Use Categories (LUC). This approach has allowed the ACNPCP to monitor progress for each category of interest (e.g., marinas, agriculture or OSDS). This Program utilizes category-related projects that will allow the State to depict synoptic baseline conditions with the goal to discern long-term measurable results for coastal waters. These projects, along with the development of Technical Assistance Workshops and Reports, comprise the core of Alabama's long-term efforts to address and/or track coastal NPS issues that will provide full implementation and continuity of Alabama's Coastal NPS Program.

Coastal Alabama Agricultural Technical Update



This first Land Use Category (LUC) Technical Update Report was contracted through the Mobile County Soil and Water Conservation District and was designed to provide federally requested agriculture-related information for coastal Alabama. This completed project details and describes the active interagency coordination efforts for agriculture-related projects, since 2003, that have been implemented and monitored to address agricultural NPS issues for our coastal Alabama subwatersheds.

Coastal Alabama Forestry PreHarvest Planning Workshops

The ADEM Coastal Alabama Forestry Preharvest Planning Workshops are designed as two half-day classroom instruction sessions with application examples presented as planning tools for silvicultural activities. The workshops are designed to assist the Alabama Forestry Commission (AFC) in providing site-specific preharvest planning technical assistance to participating landowner/attendees with timber parcels or tracts greater than five acres as a part of anticipated silvicultural practices. The AFC is assisting in targeting the attendance of private forestry landowners for these two local workshops.

Coastal Alabama Pilot OSDS Inventory Project: Mobile County

This innovative OSDS Inventory Project was designed to create GIS layers of onsite septic tanks with reference Onsite Sewage Disposal Systems (OSDS) maps for Mobile County. This project identified the local Soil and Water Conservation Districts as neutral partners that could help negotiate and secure crucial GIS layers and database information for designing project base maps. This project will create a valuable planning product that will define the OSDS resources for approximately 406,000 people within an area of 1,233 square miles. This two-year project is making excellent progress and will be finished in December 2009. This project has been contracted with the Mobile County Soil and Water Conservation District and partnered through the Alabama Power Company.

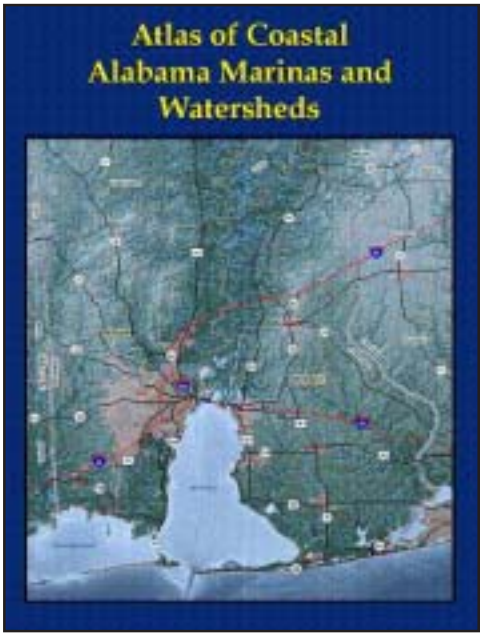
Coastal Alabama Hydromodification & Wetlands, Riparian Areas Technical Update

This extensive Land Use Category (LUC) Technical Update Report was implemented to address specific local conditions and to provide federally requested information for two related LUC categories: Hydromodification; as well as Wetlands and Riparian Areas. This Report relates the progress that coastal Alabama has achieved in the hydromodification, and wetland and riparian areas categories by describing the many efforts undertaken to deal with these issues in coastal Alabama for the past five years. In addition, it also detailed the broad efforts, including the extensive interagency coordination of technical workshops, resource surveys, watershed management planning and related projects that have been implemented and monitored to address these related category issues for the subwatersheds of Southwest Alabama. This Report was developed in cooperation with the Alabama Coastal Foundation (ACF), including assistance from ADEM-319 and EPA-Region 4 staff and was contracted through the Mobile County Soil and Water Conservation District.

Atlas for Coastal Alabama Marinas and Watersheds

This useful field handbook consists of detailed cartography information and Geographic Information System (GIS) data layers published in the form of a spiral-bound Marinas and Watersheds Atlas containing scaled topographic maps, which includes known waterbodies, sub-watersheds, coastal marinas, 'Clean Marinas', boat ramp facilities, and any other related amenities information.

This project was developed to help local resource managers and Department inspectors, while also providing information and outreach to the public that addresses important marina category issues. This very successful ACNPCP project was contracted thru the Baldwin County Soil and Water Conservation District. Continued publication of this product has been adopted by the Coastal Alabama Clean Water Partnership as a cooperative Program project.



This atlas provides detailed data which includes maps, waterbodies, subwatersheds, and marinas.

Coastal Alabama HeadWater Stream Survey / Year 2 of 3

This local HeadWater Stream Survey is an ADEM project that will locate, identify, and survey representative first order streams that exist within the two coastal counties. This project will document specific existing water quality conditions and basic survey data for local headwater streams, both urban and rural. This project will attempt to correlate LUC management measures as best management practices (BMPs) in close proximity to headwater streams within the coastal Alabama area. In addition, this project will also gather baseline data that relates to conditional approval issues cited in the Alabama Coastal Findings and Conditions document that relate to the Agriculture, Forestry, Urban Runoff, Hydromodification, and Wetlands, Riparian Areas, and Vegetated Treatment Systems (VTS) category sections.

In FY2009 reconnaissance and preliminary data of approximately 362 stream sites, in seventy-five 12-digit subwatersheds, have been recorded. This is part of a three-year project that is in process and will be continued through until December of 2010.

OSDS Technical Update and O&M Workshops

This in-depth Land Use Category (LUC) Technical Update Report product was implemented to address specific local conditions and to provide federally requested OSDS-related information for the Alabama's Coastal NPS Management Area. This project described the interactive interagency coordination efforts and the OSDS-related projects that have been implemented since 2003 to address these OSDS category issues for coastal Alabama.

In addition, this information was folded into two local OSDS Operation and Maintenance (O&M) Workshops that were presented; one in each county (targeting the sub-watersheds with the highest density for OSDS sites in each coastal County). The OSDS workshops were designed to educate participants about proper operation and maintenance of Onsite Sewage Disposal Systems located in southwest Alabama subwatersheds. This project was contracted thru the Baldwin County Soil and Water Conservation District.

Coastal Alabama

Agency Cooperators

As the lead state agency of the Alabama Nonpoint Source Management Program, the Alabama Department of Environmental Management works with many cooperators across the state along with adjoining state and local agencies. The Department has established a unique partnership with each of the following agencies/organizations to implement projects and enhance water quality in Alabama.

Federal Agencies

- U.S. Environmental Protection Agency
- USDA - Natural Resources Conservation Service
- U.S. Fish and Wildlife Service
- Weeks Bay National Estuarine Research Reserve
- USDA-Farm Service Agency
- Tennessee Valley Authority
- U.S. Space and Rocket Center
- U.S. Geological Survey

State Agencies/Universities

- Mobile Bay National Estuary Program
- National Oceanic & Atmospheric Administration
- Alabama Soil and Water Conservation Committee
- Auburn University
- Alabama Cooperative Extension System
- AU Marine Education and Research Center
- Alabama Agricultural Experiment Station
- Choctawhatchee, Pea and Yellow Rivers Watershed Management Authority
- Geological Survey of Alabama
- University of West Alabama
- University of Alabama
- Shelton State Community College
- Auburn University Montgomery
- Alabama Department of Agriculture and Industries
- University of North Alabama
- Alabama A&M University
- Alabama Forestry Commission
- Alabama Department of Public Health
- Alabama Department of Conservation & Natural Resources
- North Carolina State University Cooperative Extension System
- Troy University

Local Agencies/Organizations

- Alabama Water Watch Association
- Alabama Clean Water Partnership
- Alabama Pulp and Paper Council
- Montgomery Water Works and Sanitary Board
- Shelby County Commission
- CAWACO RC&D
- Alabama Power Foundation
- Tombigbee RC&D
- Save Our Saugahatchee
- Shelby County Commission
- Morgan County Commission
- Alabama Chapter Soil and Water Conservation Society
- Soil and Water Conservation Districts (counties of Franklin, DeKalb, & Morgan)
- Soil and Water Conservation Districts (counties of Baldwin & Mobile)
- Madison County Soil & Water Conservation District
- Alabama Association of Conservation Districts
- Tri Rivers Waterway Development Association
- Flint River Conservation Association
- Alabama Mountains, Rivers, and Valleys RC&D
- Madison County Watershed Advisory Committee
- Barbour County Soil and Water Conservation District
- Bullock County Soil and Water Conservation District
- Soil and Water Conservation Districts (counties of Coffee, Crenshaw, Dale, Geneva, Henry, Houston, & Pike)
- Coosa Valley RC&D
- Lake Wedowee Property Owners Association
- Soil and Water Conservation Districts (counties of Chambers, Clay, Cleburne, Coosa, Elmore, Lee, Macon, Montgomery, Randolph, Tallapoosa, and Talladega)
- Lauderdale County SWCD
- Cullman County SWCD
- Blount County Soil and Water Conservation District
- Winston County Soil and Water Conservation District
- Cullman County Poultry and Egg Association
- Cullman County Cattlemen's Association
- Cullman County Commission
- Marshall County Commission
- Sand Mountain Research and Extension Center
- Sand Mountain Lake Guntersville Watershed Conservancy District
- Soil and Water Conservation Districts (counties of Marshall, Jackson, and Etowah)
- Pickens County School System
- Madison County Department of Public Health
- Madison County Cooperative Extension System
- Goodwyn, Mills and Caywood, Inc.
- City of Montgomery
- City of Auburn
- Wildlands Environmental, Inc.

NPS Program Goals

Goal 1: *Collect reliable water quality data and information in order to ascertain the extent, degree, and potential for NPS pollution to surface and groundwaters* (Endpoint: 2015)

— ADEM used the 5-year rotational river basin approach to assess water quality in the Tennessee River Basin in 2009. Laboratory and field data analyses and report development is continuing.

— ADEM continued laboratory analyses and reporting of water quality monitoring data collected during 2008 from the Choctawhatchee, Pea, and Yellow River Basins. Severe statewide drought conditions in the TN Basin resulted in the Choctawhatchee, Pea, and Yellow River Basins being substitute in the 5-year basin rotation for assessment during 2008.

— ADEM NPS Unit, Water Division, and Field Operations Division staff coordinated water quality monitoring for the Alabama, Coosa, and Tallapoosa River Basins to be conducted during 2010.

— ADEM continued Section 319 funding for the Section 314 Clean Lakes Program by supporting reservoir and lake embayment monitoring, TMDL development/implementation, and nutrient criteria development.

— ADEM continued to coordinate fish collection activities with state agencies such as the Alabama Department of Conservation and Natural Resources and the Alabama Department of Public Health to establish the need to issue fish consumption warnings or advisories to protect public health.

— ADEM continued to populate STORET and various in-house water quality databases with NPS water quality data.

— ADEM continued to improve upon benthic macroinvertebrate methodologies as indicators of water quality using Section 319 funding to increase timely identification; refine the macroinvertebrate bioassessment index to improve accuracy, precision, and sensitivity in detecting changes in water quality before and after BMP implementation; and providing stakeholders with greater and timely access to taxonomic data.

— ADEM continued to improve the ORACLE web-based Alabama Water Quality Assessment and Monitoring Data Repository (ALA-WADR) database with a Section 319 funded Alabama Ecological Data Analyses Reporting System (AEDARS) module developed by the Geological Survey of Alabama to better manage and report NPS and other water quality data.

— ADEM updated NPS management program water quality data in the Integrated Water Quality Monitoring and Assessment Report.

— ADEM continued to collect NPS water quality data according to an EPA-approved ADEM Quality Assurance Management Plan.

Goal 2: *Integrate the Alabama NPS Source Management Program and CWA Section 319 grant funding with development and implementation of Total Maximum Daily Loads (TMDLs*). (Endpoint: 2015)

— Section 319 incremental grant funding continued to target Section 303(d) listed waterbodies and the development of watershed-based management plans in Parkinson's Mill Creek, West Flint Creek (Elam and McDaniel); Spring and Mud Creeks; Buxahatchee; Rock and Crooked Creek, D'Olive, and the North River watersheds. These subwatershed management plans are designed to address FY03 Section 319 grant guideline "a-i" watershed plan elements.

— The ADEM NPS Unit, Water Division, and Field Operations Division, during the annual December planning meeting, continued to coordinate Department-wide monitoring priorities and needs, and to identify watersheds with good potential to be Section 303(d) de-listed, as a result of implementation of Section 319 and other resource agency's best management practices or activities.

— ADEM submitted the Section 319-funded Dry Creek (Dallas County) project to EPA-HQ as a potential WQ-10 success story relevant to implementation of BMPs on an impaired Section 303(d) listed waterbody.

— ADEM submitted the Section 319-funded Brier Fork–Beaverdam Creek (Madison County) project to EPA as a Region-4 success story relevant to implementation of BMPs on an impaired Section 303(d) listed waterbody.

Goal 3: *Coordinate and leverage federal, state, and local funding and other resources to design, install, or maintain appropriate NPS management practices needed to attain water quality standards.* (*Endpoint: 2015)*

— ADEM continued to coordinate watershed management plan development with the Center for Watershed Excellence – a consortium of watershed/water quality protection entities founded upon a MOU and comprised of EPA, ADEM, Auburn University and Alabama A&M University.

— ADEM continued its Memorandum of Agreement partnership with the Alabama Forestry Commission to assure silvicultural BMPs are adequate and citizen complaints are appropriately resolved. In addition, improved avenues of communication continued to be realized. For example, AFC's Wildland Urban Interface (WUI) initiative and management of urban forests to address nonpoint source polluted stormwater runoff provide two mutually beneficial opportunities for interagency collaboration. Collaborative grant funding initiatives (e.g. Troy University Steam Restoration Project) helped to reduce duplication of efforts and wasteful use of limited resources.

— ADEM continued to participate in a cooperative agreement with the Alabama Department of Transportation to assure implementation of effective BMPs associated with road building and maintenance activities.

— ADEM continued to participate on the State Technical Committee in relation to the USDA/NRCS Farm Bill Cost-Share Program and in development and approval of BMP technical standards and guidelines.

— ADEM continued to partner with the SWCC in maintaining a statewide CAFO Notice Of Registration (NOR) tracking database. ADEM continued to partner with the Alabama Cooperative Extension System to disseminate information needed to meet or exceed AFO/CAFO rules through the ACES website. ADEM continued to partner with the NRCS concerning land application of poultry litter and in technical standards and guidelines related to animal waste and nutrient standards. In addition, ADEM partnered with the Alabama Department of Agriculture and Industries in helping to implement a statewide Certified Animal Waste Vendor Program.

— ADEM continued to partner with ACES, NRCS, and the National Weather Service in providing to farmers a weather FORECAST and FARMERS Map website useful for land application of animal waste litter. The website helps farmers meet NRCS technical standards and guidelines and to comply with ADEM AFO/CAFO requirements

— ADEM continued to use Section 319 funding to leverage interagency funding support for a statewide agricultural NPS water quality coordinator to reside at the Alabama Soil and Water Conservation Commission.

— ADEM continued to use Section 319 funding to leverage interagency funding support for a statewide NPS erosion and sediment control coordinator to reside at the Alabama Soil and Water Conservation Commission.

— The ADEM NPS Unit continued to partner with the Alabama Clean Water Partnership in leveraging Section 319 grant funding to fund a Statewide Coordinator, River Basin Facilitators, and the planning and implementation of watershed protection activities.

— The ADEM NPS Unit continued to take a lead in the demonstration of hydrologic/habitat modification projects needed to restore, maintain, and protect water quality [e.g., Stream Restoration including: Moore's Mill Creek (Auburn), Town Creek (Jasper), Town Creek (Auburn), Catoma Creek/Ida Bell Young Park (Montgomery), Tributary to Walnut Creek (Troy), and Saugahatchee, (Auburn)].

— The ADEM NPS Unit continued to promote the National NEMO Program with staff coordinating/offering several statewide presentations.

— ADEM continued to partner with Soil and Water Conservation Districts and public/private stakeholders to present hands-on "Clear Water Alabama Field Days" - erosion and sediment control training events.

— ADEM partnered with the Alabama Cooperative Extension System, Alabama Clean Water Partnership, the City of Auburn, and Habitat for Humanity to plan implementation of potential low impact development (LID) practices.

Goal 4: *Develop 10 river basin management plans (8-digit Hydrologic Unit Code Cataloging Unit) that present practical "big-picture" goals, objectives, and milestones to protect impaired or threatened waters. (*Endpoint: 2015) (Complete)

The following major River Basin Management Plans have been developed:

1) Tennessee
2) Cahaba

3) Mobile River (Coastal)
4) Black Warrior River (including Locust Fork, Mulberry Fork, and Five Mile Creek)
5) Alabama
6) Tombigbee
7) Tallapoosa
8) Coosa (including Upper, Middle, and Lower)
9) Choctawhatchee, Pea, and Yellow
10) Conecuh-Sepulga
11) Chattahoochee-Chipola

Goal 5. *Develop or implement 10 subwatershed protection plans (11-14 digit Hydrologic Unit Code subwatershed number) to provide reasonable assurance that load allocations for targeted sources and causes of NPS pollution are being addressed and water use classifications and standards can be restored as expeditiously as possible.* (Endpoint: 2015)

— ADEM continued to partner with local stakeholders to develop or implement approximately 30 subwatershed management plans (11-12 digit HUC) that target Section 303(d) listed waters (refer to Subwatershed Management Plans in this document). The plans (in various stages of development or implementation) focus upon NPS pollutant sources and causes of impairments as identified in a draft or final TMDL; or upon Section 319/NPS Management Program pollution load reduction priorities such as nitrogen, phosphorus, and/or sediment.

— Section 319 incremental grant funding was used to provide reasonable assurance that nonpoint pollutant load reduction sources and causes are being targeted and water use classifications and standards are being restored as expeditiously as possible through development of subwatershed management plans for Section 303(d) listed Parkinson's Mill Creek, West Flint (Elam Creek and McDaniel Creek); Spring Creek and Mud Creek; Buxahatchee Creek; Rock Creek and Crooked Creek, D'Olive Creek, and the North River watersheds. The subwatershed management plans address FY03 Section 319 grant guideline "a-i" watershed plan elements.

— ADEM continued to enter Section 319 NPS Management Program pollutant load reduction data into the EPA National Grant Reporting and Tracking System (GRTS) database in order to provide reasonable assurance that nonpoint pollutant load reduction sources and causes are being targeted and water use classifications and standards are being restored as expeditiously as possible. In addition, no mandatory GRTS data entry and reporting exceptions for ADEMs NPS Unit were cited by EPA as of December 2009.

Goal 6. *Support the efforts of the Alabama Clean Water Partnership (ACWP) Program* (Endpoint: 2015, or until the ACWP program is institutionalized and self-supporting).

— ADEM continued to partner with the Alabama Clean Water Partnership by providing Section 319 financial assistance for a Statewide Coordinator and 9 River Basin Facilitators. ADEM also serves as a sustaining member of the ACWP Board of Directors.

— ADEM NPS Unit continued to be closely involved with ACWP advisory, technical, and education/outreach committees to help insure that basin wide and local subwatershed stakeholders "work off the same page." Meetings are generally conducted quarterly.

— ADEM NPS Unit worked closely with the ACWP to help sponsor the 21st Annual Nonpoint Source Management Program Conference in January 2009 attended by approximately 250 stakeholders.

Goal 7. *Plan, sustain, or expand statewide NPS education and outreach to target agriculture, silviculture, urban, construction, resource extraction, and hydrologic/habitat modification.* (Endpoint: 2015)

— ADEM continued to provide Section 319 financial and Department staff support for several education and outreach activities in which the Alabama Clean Water Partnership was involved (e.g., constructing rain barrels; distributing river-basin specific newspaper inserts; NEMO, monofilament line recycling, groundwater festivals, the ACWP website, etc.)

— ADEM presented the 21st Annual NPS Conference in January 2009 with approximately 250 in attendance in order to sustain and expand stakeholder interest in protecting water quality from real and potential NPS threats.

— The NPS Unit provided specific and crosscutting NPS category displays and presentations to various schools, civic organizations, agencies, and other public forums.

— The Clear Water Alabama Field Days (erosion and sediment control) program targeting stormwater runoff have been extremely well received by the construction industry and continued to be conducted through a Section 319 project in cooperation with the SWCD and Soil and Water Conservation Society.

— The Nonpoint Source Education for Municipal Officials (NEMO) program continued with increasing impetus on presenting Low Impact Development and growth readiness information in stormwater Phase II areas.

— Urban stream restoration workshops were presented in Auburn and Montgomery. The workshops featured classroom and field work that introduced the basic concepts of fluvial geomorphology and stream classifications based upon the Rosgen Stream Classification System.

— The Alabama Water Watch program continued to develop certified citizen volunteer water quality monitoring capabilities for Alabama's lakes, rivers, streams, and coasts.

— ADEM and other entities continued to support the Alabama Envirothon competition by helping with planning, development of test materials, teaching, and judging of the various events.

— The relationship between NPS pollution and groundwater protection continued to be demonstrated with over 131,000 4th grade students educated to date. Twenty-eight counties in Alabama conduct Groundwater Festivals on an annual basis.

Goal 8. *Report as applicable, monitored or modeled estimates of nitrogen (lbs.), phosphorus (lbs.) or sediment (tons) load reductions to help quantify the effectiveness of Section 319 projects in protecting water quality and attaining applicable water quality standards.* (Endpoint: 2015)

— Pollutant load reductions for various Section 319 funded watershed projects are presented under "Measures of Success" in this Annual Report.

— The ADEM NPS Unit continued to provide pollutant load reduction data (nitrogen, phosphorus, and sediment) in EPAs Grants Reporting and Tracking System (GRTS) to help quantify the effectiveness of Section 319 projects in protecting water quality and in attaining water quality standards.

— The ADEM NPS Unit staff assisted watershed stakeholders with pre and/or post BMP implementation modeled estimates of nitrogen (lbs.), phosphorus (lbs.), or sediment (tons) load reductions (also see "Measures of Success" in this Annual Report). Examples of NPS Unit staff modeled load reduction assistance includes West Flint (Elam Creek and McDaniel Creek); Spring Creek and Mud Creek; Buxahatchee Creek; and Catoma Creek/Ida Bell Young).

Goal 9. *Obtain NOAA and EPA Final Approval of the Alabama Coastal Zone NPS Management Program (CZARA) (*Endpoint: 2003).

— See information on Page 33 (Alabama's Coastal Nonpoint Source Pollution Control Program).

Goal 10. *Report annual Section 319 grants Program Administrative Efficiency Measures* (Endpoint: 2015)

— Per EPA HQ and R-4 request, ADEM expedited the drawdown of previous Section 319 fiscal year grant funds that exceeded the FY09 grant allocation. FY09 grant award = $1,378,400; Drawdown = $5,454,172 (Oct 2008 – Sept 2009).

— ADEM continues to try to reduce cooperative agreement duration (e.g., watershed management projects) from five-years to three-years.

— ADEM continued to provide required project update data and information to the EPA – GRTS database. No reporting exceptions were noted by EPA as of December 2009.

— ADEM continues to support the 5-year rotational river basin assessment approach.

— ADEM continues to partner with ADPH by collecting and analyzing fish to protect human health (consumption advisories).

— ADEM continued to maintain an in-house Section 319 project/budget-tracking database and a cooperative agreement database to efficiently track project status.

— ADEM submitted the FY09 Application for Federal Assistance and Section 319 workplans to EPA prior to due dates. Ongoing grants continue to be administered and managed according to EPA grant guidelines.

— ADEM submitted the Mid-Year Report and this Annual Report as required per grant guidelines.

— ADEM continued to facilitate development of watershed-based management plans that meet EPA grant guideline "a-i" watershed plan elements as a in order to commitment for incremental grant funding and to implement the NPS components of TMDLs.

Goal 11. *Utilize a flexible, targeted, iterative, and broad-based approach to support EPAs long-term National Vision that, "All States Are Implementing Dynamic and Effective Nonpoint Source Programs Designed to Achieve and Maintain Beneficial Uses of Water*." (Endpoint: 2015)

— ADEM continued to provide financial and technical support to the Alabama Clean Water Partnership. Financial support was provided for a ACWP Statewide Coordinator and several Basin Facilitators to assist stakeholders in watershed restoration and protection activities.

— ADEM partners with many public and private entities to address nonpoint source pollution.

— ADEM continues to provide financial assistance and advisory support for statewide citizen-volunteer water quality monitoring and associated database maintenance/reporting.

— ADEM continued to provide an annual statewide NPS Cooperators Conference to enhance stakeholder education and partnering opportunities.

— ADEM promotes a voluntary NPS compliance approach, but coordinates the regulatory aspect of citizen complaints with other ADEM programs to assure abatement of water quality threats or impairments.