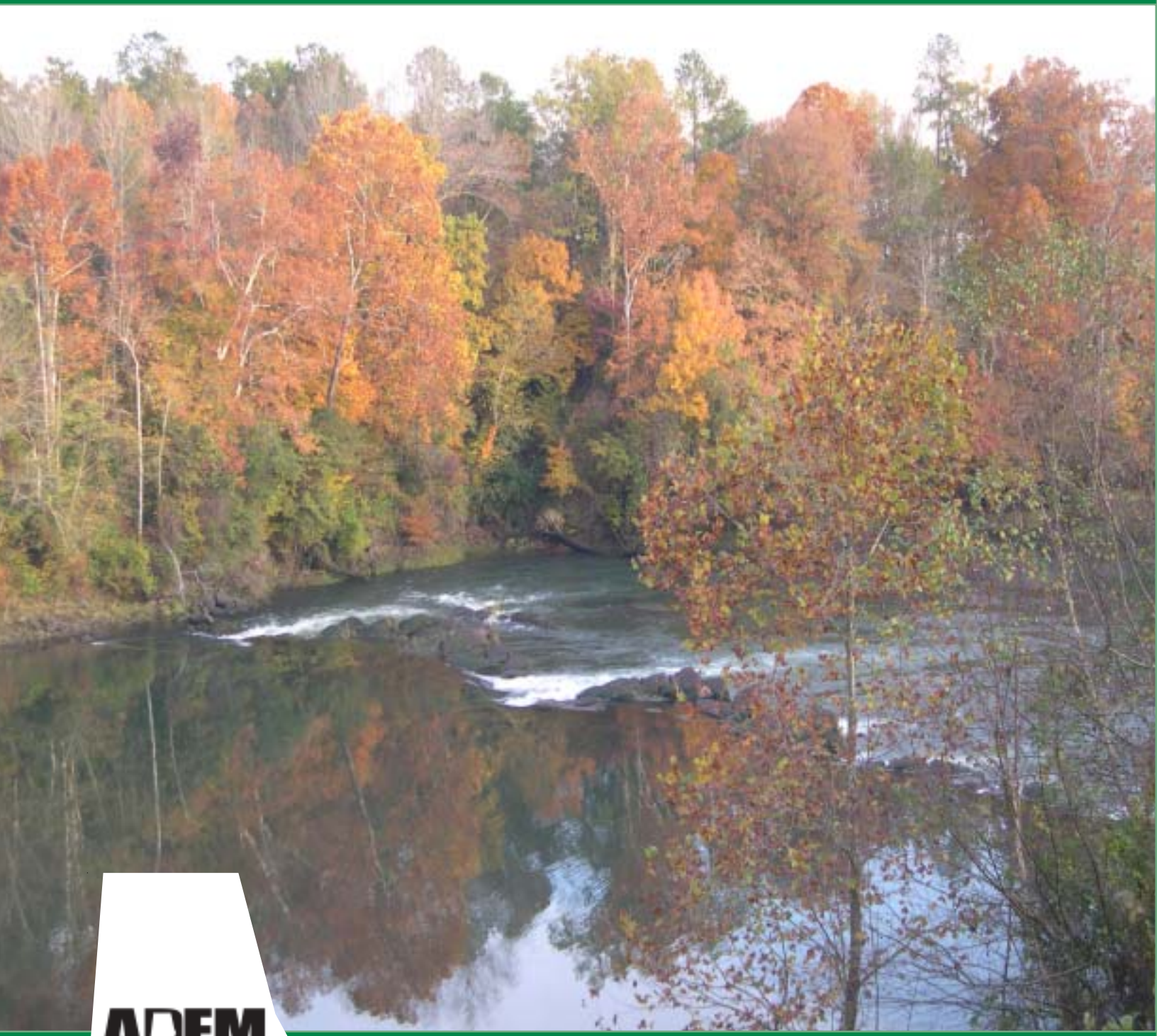
Alabama Nonpoint Source Management Program



ADEM

2008 Annual Report

Copies of this report are also available on the ADEM Website at: adem.alabama.gov

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

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Tributary to Little River in the Upper Coosa Subwatershed

THE ALABAMA NONPOINT SOURCE MANAGEMENT PROGRAM

Executive Summary

Nonpoint source pollution (NPS), also known as polluted runoff, has an adverse impact on our State's water resources. Unlike pollutants from point sources that enter the environment from well-defined discharge points, NPS pollution occurs when water washes over the land, whether from rainfall or the watering of crops or lawns, and picks up pollutants and deposits them into rivers, lakes, and coastal waters. It may also come from atmospheric deposition when pollutants settle onto water from the air. NPS pollution also includes adverse changes to the vegetation, shape, and flow of streams and other aquatic systems, called hydrologic modification.

Cahaba River

Polluted runoff may contain sediment, nutrients, metals, bacteria, or toxic materials. These pollutants can threaten human health and can be toxic to livestock, wildlife, and aquatic organisms. Runoff from the following land use can have negative impact on water quality: agriculture, forestry, mining, construction activities, urban runoff, and hydrologic modifications. The Alabama Nonpoint Source Management Program seeks to assist with reducing or eliminating polluted runoff that degrades water quality in Alabama.

Alabama's NPS Management Program utilizes a combination of regulatory and non-regulatory efforts to achieve water quality standards, protect natural resources, and balance environmental protection with economic sustainability. Some of the activities regulated through permitting and enforcement actions include construction, stormwater, mining, and hydrologic modifications. The implementation of non-regulatory activities relies primarily on the voluntary cooperation of stakeholders and is supported financially through federal assistance programs such as Section 319. The strategy for addressing NPS pollution on a statewide level includes education/outreach, assessment and monitoring, Best Management Practices (BMPs) implementation, technology transfer, consensus building, and partnering.

The NPS grant program, often referred to as the Section 319 program, is an integral part of ADEM's NPS pollution management strategy. These grants are offered to public and private entities for projects that relate to implementation of nonpoint source pollution prevention or reduction. Federal funds can pay up to 60% of eligible project costs while the remaining 40% non-federal match is the responsibility of the applicant. These watershed-based projects primarily target implementation of TMDLs for waterbodies included on Alabama's Section 303(d) List of Impaired Waters. These projects address the nonpoint source TMDL causes and sources as listed on the Section 303(d) List or found in the approved TMDLs, and must be designed to implement, in whole or part, a watershed management plan.

This report highlights several accomplishments from the fiscal year of 2008 that directly relate to the action strategies identified in the State's NPS Management Program. Stream restoration was the focus of several successful projects in 2008, including a restoration in conjunction with Natural Channel Design Workshops in both the Cities of Auburn and Jasper. Additional stream restoration projects are in various stages of planning and completion, including a stream restoration in the Catoma Creek Watershed in Montgomery, Moore's Mill Creek in Auburn, and Harrand Creek in Enterprise. In addition, ADEM recently entered into an agreement with the Alabama Forestry Commission to provide education and coordination of forestry BMPs on a watershed basis, along with urban forestry and low impact development training workshops for state foresters. ADEM also worked with EPA to establish the first Center of Excellence for Watershed Management at Auburn University. Other major accomplishments include the development of 155 TMDLs, the development of nutrient criteria standards, and the continued success of partnerships with the Soil and Water Conservation Districts and the Alabama Clean Water Partnerships.

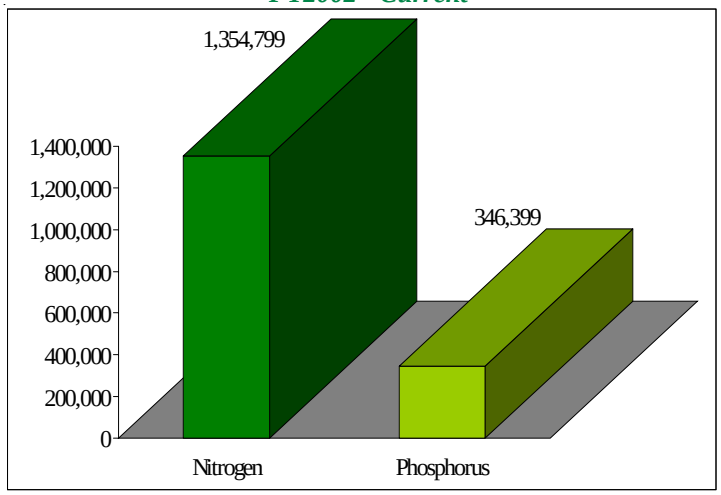
MEASURES OF SUCCESS

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.

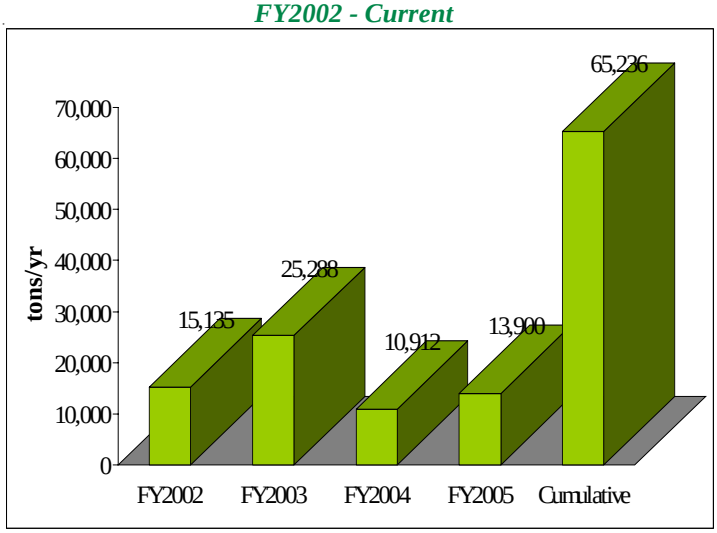
Pollutant Load Reduction Estimates for Current Implementation:

- **Catoma Creek Watershed Project**
  - Nitrogen 6,020 LBS/YR
  - Phosphorus 964 LBS/YR
- **Goose Creek Watershed Project**
  - Nitrogen 4,371 LBS/YR
  - Phosphorus 1,560 LBS/YR
  - Sedimentation-Siltation 2,591 TONS/YR
- **Middle Coosa River Watershed Project**
  - Nitrogen 225,284 LBS/YR
  - Phosphorus 113,315 LBS/YR
  - Sedimentation-Siltation 16,038 TONS/YR
- **Yellow Bank Creek Watershed Project**
  - Nitrogen 14,314 LBS/YR
  - Phosphorus 5,075 LBS/YR
  - Sedimentation-Siltation 4,241 TONS/YR
- **Brier Fork/Beaverdam Creek Watershed Project**
  - Sedimentation-Siltation 8,136 TONS/YR
- **Dry Creek Watershed Project**
  - Nitrogen 2,694 LBS/YR
  - Phosphorus 465 LBS/YR
  - Sedimentation-Siltation 191 TONS/YR
- **West Fork Creek Riparian Zone Protection**
  - Nitrogen 93,062 LBS/YR
  - Phosphorus 10,077 LBS/YR
  - Sedimentation-Siltation 1,529 TONS/YR
- **Town Creek Stream Project**
  - Nitrogen 2,429 LBS/YR
  - Phosphorus 671 LBS/YR
  - Sedimentation-Siltation 155 TONS/YR
- **Juniper Creek Watershed Project**
  - Nitrogen 16,449 LBS/YR
  - Phosphorus 3,405 LBS/YR
  - Sedimentation-Siltation 862 TONS/YR
- **Indian Creek Watershed Project**
  - Sedimentation-Siltation 12,233 TONS/YR
- **Moore's Mill Creek Stream Restoration Project**
  - Sedimentation-Siltation 675 TONS/YR
- **Cotaco Creek Watershed Project**
  - Nitrogen 34,821 LBS/YR
  - Phosphorus 3,034 LBS/YR
  - Sedimentation-Siltation 294 TONS/YR

Reported Nutrient Load Reductions FY2002 - Current



Reported Sediment Load Reductions FY2002 - Current

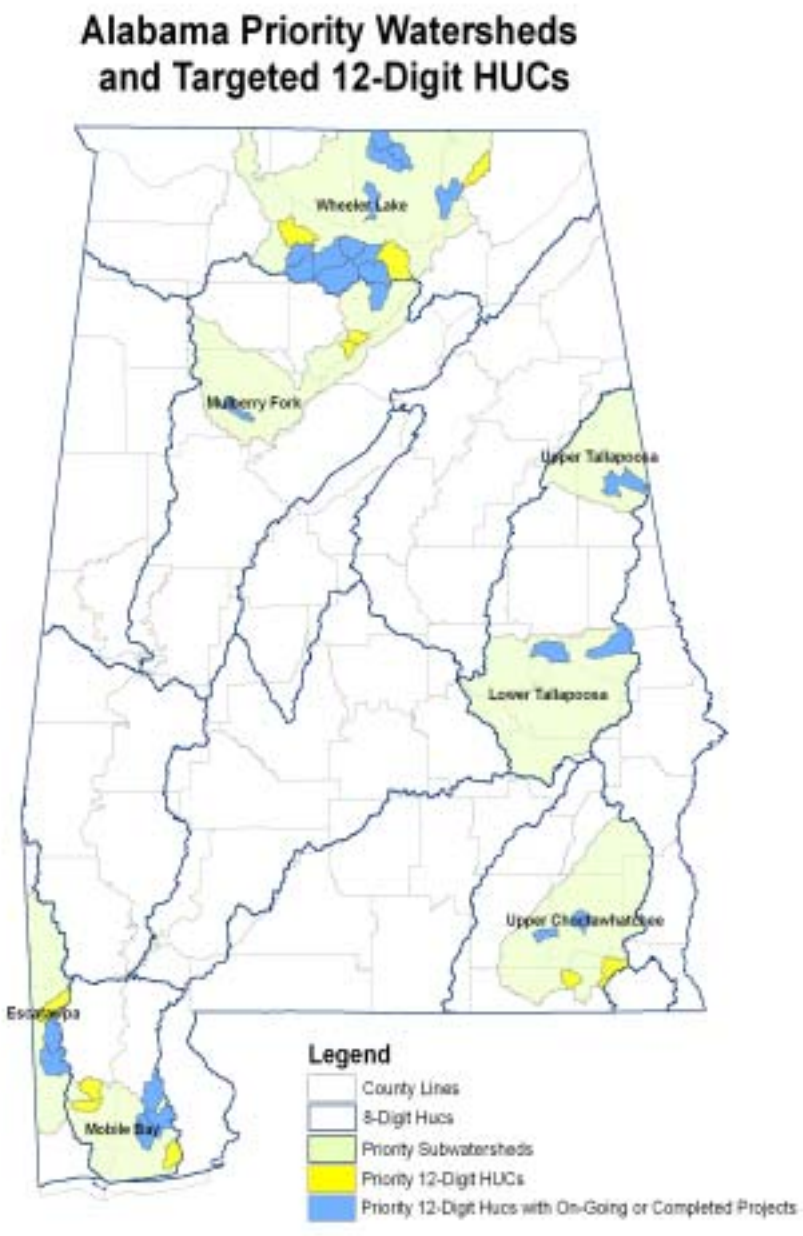


- **Harris Creek Watershed Project**
  - Nitrogen 2,883 LBS/YR
  - Phosphorus 501 LBS/YR
  - Sedimentation-Siltation 190 TONS/YR
- **Sougahatchee Watershed Project**
  - Nitrogen 13,552 LBS/YR
  - Phosphorus 2,702 LBS/YR
  - Sedimentation-Siltation 570 TONS/YR

EPA - ADEM RESTORATION PARTNERSHIP PROGRESS

The ADEM Nonpoint Source Program and the EPA Region 4 Watershed Management Office have partnered to identify and restore "priority" watersheds in Alabama. The objective of the partnership is to prioritize the restoration of stream segments on Alabama's 303(d) List that have been impacted by nonpoint sources of pollution, identify stakeholders who are willing to participate in the restoration effort, and provide funding and other resources to support the restoration efforts. While this partnership establishes these "priority" watersheds, it does not prevent resources from being targeted to other areas where NPS TMDL implementation is required and additional data/information documents the need to implement projects in other watersheds.

In FY2008, significant progress was made in identifying project cooperators and establishing projects that will begin to address water quality problems in these priority watersheds. The map and information below shows the priority watersheds and the accomplishments to date regarding the restoration activities to address nonpoint source pollution in these areas.



Priority 12-Digit HUCs with On-Going or Completed Projects:

Upper Tallapoosa HUC – 03150109
- **1004 Coppers Rock Creek**

Lower Tallapoosa HUC – 03150110
- **0201 Upper Sougahatchee**
- **0204 Lower Sougahatchee**
- **0301 Moore's Mill Creek**

Upper Choctawhatchee HUC – 03140201
- **1001 Harrand Creek**
- **0704 Hurricane Creek**

Escawtawba Watershed - 03170008
- **0401 Upper Big Creek**
- **0402 Big Creek Lake**

Mobile Bay Watershed – 03160205
- **0304 Upper Fish River**
- **0306 Middle Fish River**
- **0307 Lower Fish River**

Mulberry Fork Watershed - 03160109
- **0103 Upper Duck River**
- **0404 Cane Creek**

Wheeler Lake Watershed - 06030002
- **1004 No Business Creek**
- **1002 Crowdabout Creek**
- **0604 Town Creek**
- **0603 Middle Cotaco Creek**
- **0602 West Fork Cotaco Creek**
- **0505 Lower Indian Creek**
- **0405 Lower Flint River**
- **0404 Middle Flint River**
- **0307 Lower Brier Fork**
- **0306 Beaverdam Creek**
- **0305 Upper Brier Fork**

NPS DATA COLLECTION, ASSESSMENT, AND WATERSHED PLAN DEVELOPMENT

Alabama Nonpoint Source Locally-Led Watershed Assessments

ADEM and the Alabama Soil and Water Conservation Committee (SWCC) have completed the most recent watershed assessments of every county with the support and cooperation of the local Soil and Water Conservation Districts and locally-led citizen advisory groups. The Districts assessed the potential for nonpoint source pollution within their watersheds, conducted public meetings, and compiled a narrative report. At the completion of the assessment, each District held a public meeting to help set priorities and rank the watersheds. The consolidated data from all of the Districts was then placed into a single, comprehensive statewide watershed assessment report. The assessments are completed periodically and the data is used as an evaluative tool for resource needs/concerns, to meet the goal of the NRCS to address resource concerns on a watershed basis, and to provide vital information to ADEM to help identify water monitoring needs.

All 67 Districts in Alabama have held citizen informational meetings, completed their watershed assessments, and submitted their records to the SWCC. A collective report has been received from each District containing assessment data, effective partnership efforts, and water quality priorities used to identify and improve education and outreach efforts through water quality protection implementation activities. These reports are on file with the SWCC and in each District office and are available for public use. Also, all assessment data and maps have been collated into a single electronic report and transferred to the new SWCC web site for use by the general public.

IBI Biomonitoring Tool

The goal of this project is to create a comprehensive fish community bioassessment tool using the Index of Biotic Integrity (IBI) methodology to help agencies better assign designated water-use classifications, manage water quality more efficiently and effectively, understand aquatic resources more broadly, better manage aquatic habitat, and communicate to the public the benefits of strong water resources protection and management.

For the second year of this Project, procedures and software for logging data in the field have been developed. The second year of field sampling has been completed in the Southern Plains ichthyoregion – Chipola, Choctawhatchee, Perdido, Escambia, Chattahoochee, Yellow, and Blackwater Rivers systems by the Geological Survey of Alabama (GSA) (40 sites), ADEM (40 sites), and the Alabama Department of Conservation and Natural Resources (ADCNR) (20 sites). Data collected from this study was used to select IBI metrics and determine metric scoring criteria for the Southern Plains ichthyoregion based on the observed fish community variation, distribution patterns, and level of disturbance in each watershed sampled. Using preliminary criteria for the Southern Plains ichthyoregion, it was determined that out of 81 sites sampled, one site (1.24%) scored very poor biological condition, 36 sites (44.4%) scored poor, 36 sites (44.4%) scored fair, and 8 sites (9.88%) scored good. No sites scored in the excellent biological condition category. These results are not outside of expectations since many Southern Plains streams have been significantly impaired by the effects of nonpoint source pollution which include excessive sediment and nutrient runoff along with substantial habitat degradation.

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. This list, referred to as 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 that will ensure water quality standards are met for each listed water, considering seasonal variations and a margin of safety that accounts for uncertainty.

Fiscal Year 2008 was a very successful year for Alabama's TMDL Program. Major accomplishments included EPA approval of Alabama's 2008 Integrated Report which includes the 2008 303(d) List of Impaired Waters. The Department also finalized and received EPA approval of nine TMDLs, comprising eight waterbody segments. The approved TMDLs include the Puppy Creek Nutrient TMDL, the Buxahatchee Creek Nutrient TMDL, the Sougahatchee Creek Embayment Nutrient & OE/DO TMDLs, the Pepperell Branch Nutrient TMDL, the Flint River Pathogen TMDL, the West Fork Cotaco Creek Pathogen TMDL, the Cotaco Creek Pathogen TMDL, and the Dowling Branch Pathogen TMDL. Including the 9 TMDLs approved in FY2008, the total number of waterbody-pollutant combinations with approved TMDLs in Alabama is 155. The 2008 303(d) List, Fact Sheet and TMDL documents can be found on the ADEM website at http://www.adem.state.al.us/WaterDivision/WQuality/WQMainInfo.htm.

Nine TMDLs were approved by EPA in FY08.

Waterbody Name	River Basin	County	Pollutant
Puppy Creek	Escatawpa	Mobile	Nutrients
Buxahatchee Creek	Coosa	Shelby/Chilton	Nutrients
Sougahatchee Creek Embayment	Tallapoosa	Tallapoosa	Nutrients
Sougahatchee Creek Embayment	Tallapoosa	Tallapoosa	OE/DO
Pepperell Branch	Tallapoosa	Lee	Nutrients
Flint River	Tennessee	Madison	Pathogens
West Fork Cotaco Creek	Tennessee	Morgan	Pathogens
Cotaco Creek	Tennessee	Morgan	Pathogens
Dowling Branch	Choctawhatchee	Geneva	Pathogens

Cheaha State Park

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 ww.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**
  (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

Subbasin Management Plans

The Department is continuing to work with stakeholders in the following Alabama watersheds to develop sub-basin management plans. These sub-basin watershed management plans are in various stages of completion, but each plan will incorporate, as applicable, EPA's nine key elements (a-i) and will encompass 1,847,466 acres of Alabama waterways.

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
• Eight-Mile Creek (03160109-0106)	1,140 acres
• Dollarhide Creek (03160-113-0140)	55,040 acres
Total acres addressed	**129,250 acres**

Choctawhatchee-Pea-Yellow River Basin:

• Dowling Branch (031402010704)	15,647 acres
Total acres addressed	**15,647 acres**

Coosa Basin

• Middle Coosa

The Middle Coosa Plan targets the following subwatersheds:

o Towne Creek (03150106-040)	24,636 acres
o Big Cove Creek (03150106-030)	51,203 acres
o Greens Creek (03150106-130)	26,911 acres
o Dye Creek (03150106-200)	79,680 acres
o Upper Big Canoe Creek (03150106-100)	24,917 acres
o Upper Kelly Creek (03150106-300)	111,565 acres
o Easonville Creek (03150106-290)	24,619 acres
Total acres addressed	**443,531 acres**

Mobile Basin

• Wolf Bay
• Weeks Bay

Tallapoosa Basin

• Wolf Creek (Copper's Rock)	321,280 acres
• Town Creek	150 acres
• Sougahatchee Creek	108,482 acres
• Moore's Mill Creek (031501100201, 031501100204, 031501100203)	7,360 acres
Total acres addressed	**437,272 acres**

Tennessee Basin:

• Cotaco Creek (060300020601, 060300020603)	76,376 acres
• Cypress Creek (06060005-180/060605-200)	96,077 acres
• Short-Scarham Creek (060300010803)	75,672 acres
• Mack Creek-Robinson Creek (060300021001)	35,446 acres
• Paint Rock (06030002-100)	3,154 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 (060300020307, 060300020305, 06030002-180)	67,290 acres
• Upper Bear Creek (060300060103)	78,220 acres
• Middle Flint River (060300021003)	1,783 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
Total acres addressed	**835,849 acres**

Cahaba River Watershed

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.

Cole Spring Branch Watershed Restoration Project

Vegetation has been established along the new stream channel of Cole Spring Branch.

Cole Spring Branch is a small headwater stream with a relatively small drainage area of 11.5 square miles located in Jackson County. It is a tributary to the Paint Rock River and is located within the Tennessee River Basin. Cole Spring Branch has a linear distance of 4.96 miles and is listed as impaired by organic loading for a length of 2.1 miles. The major sources of organic enrichment are from the pastures, animal operations, row crops, improper land application of animal wastes, and animals with uncontrolled access to streams.

Restoration and enhancement activities along the riparian zones is the main goal of this project. The restoration has stabilized critical habitat and created a buffer and filter for sources of stress that originate on the adjacent land. The actual construction of the new stream channel is now complete, extending the channel length by approximately 650 feet. Native grasses, soil stabilization grasses, and over 800 native hardwood trees were planted in 2008.

Yellow Bank Creek & Goose Creek Watershed Projects

Yellow Bank Creek and Goose Creek are located in Madison County and are tributaries of the Flint River in the Tennessee River Basin. Yellow Bank Creek has a drainage area of 9.27 square miles and Goose Creek has a drainage area of 11.8 square miles. The primary land uses within both watersheds are agriculture and urban with about 50% of the watershed forested. The main goal of the Goose Creek and Yellow Bank Creek Projects is to implement BMPs for enhancing water quality.

A continuous sign-up for cost-share assistance for landowners and farmers within the watersheds has led to many on the ground best management practices. To date, 11 heavy use areas, 14 alternative watering facilities, and 18,986 feet of exclusion and cross-fencing have been installed. In addition, 495 acres of pasture have been planted and 1,927 acres of cropland are using conservation tillage and have been improved in a winter cover crop. Also, six livestock producers have implemented rotational grazing on their farms and 19 livestock producers are completing annual soil testing.

Outreach and education has continued throughout the watershed. The Madison County Drinking Water Festival was held in May, 2008. Elementary schools located in both watersheds attend the festival each year and learn about watersheds, nonpoint source pollution and conservation practices.

A livestock producer in the Yellow Bank Creek Watershed stands by his new heavy use area.

Indian Creek Watershed Restoration Project

Indian Creek is located on the west side of Huntsville in Madison County. The watershed lies within the Wheeler Lake Watershed in the Tennessee River Basin. Indian Creek is identified on the Section 303(d) List of Impaired Waterbodies due to low dissolved oxygen/ organic enrichment and for sediment. 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 restore Indian Creek.

A public meeting was held in January 2008 in order to kickoff the project and to advertise the availability of funding for agricultural producers in the watershed. Twenty-two people attended the meeting including county commissioners and school officials. A success story of the grant and meeting was published on the NRCS website.

During 2008, nine farmers signed up for conservation tillage with winter cover on 1,495 acres. The typical farming operations were cotton and soybean/corn rotation planted conventionally. The winter cover with conservation tillage reduced the soil erosion over 50%.

The Madison County SWCD has implemented several educational activities in order to increase stakeholder awareness regarding watershed restoration. The Indian Creek Coordinator and the Tennessee Basin Clean Water Partnership supported the Madison County Drinking Water Festival in May, with over 2,500 students attending. In addition, 25 teachers attended the Madison County SWCD Teacher Workshop in June, with schools from the Indian Creek Watershed participating. Teachers learned about watersheds and how to use water test kits.

In July, a tour of the Indian Creek Watershed was arranged for EPA, ADEM, and TVA. The impacts of development were looked at along with the success of conservation tillage reducing sedimentation. Also in July, a workshop was held to demonstrate urban BMP's. Twenty-three contractors and developers in the watershed attended the training. Monrovia Middle School allowed the BMP's to be demonstrated on the school grounds. Hydro seeding, polymers, mulching, walking trail treatments, pervious parking, and rock retention dams were demonstrated.

Information about the Indian Creek Watershed Project and partnership has been posted on the Madison County SWCD website at www.madisoncountyalswcd.org/.

West Fork Cotaco Creek Watershed Project

Project Manager Brian Brown assists students in identifying the taxa of samples.

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, with 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.

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 City Park. Project cooperators have met to view the potential project area and recommend which urban best management practices best fit the needs of the city while reducing the high sediment loads currently coming from the Eva City Park.

Educational outreach programs are being conducted by the Project Manager, Brian Brown, to the biology classes at Calhoun Community College. The students are lectured in the classroom about watersheds and macroinvertebrate stream sampling techniques, followed by an outdoor hands-on lab. In May 2008, Brian also worked with the NRCS and the U.S. Fish and Wildlife Service to deliver the Forestry Awareness Week Now (FAWN) program at Wheeler Wildlife Refuge Visitors Center to approximately 200 fifth graders.

Agricultural Efforts in 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.

Farm tour particpants view the installed best management practices on the Cotaco Creek Watershed Demonstration Farm.

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.

A forty-acre field surrounded on three sides by mountains is the center of the project area. The project began by enlisting the aid of the Natural Resource Conservation Service State Grazing Specialist, Eddie Jolley and District Conservationist, Foy Kirkland to offer input as to paddock layout design, forage needs, livestock stocking rates, livestock watering system, irrigation system and fencing recommendations. A fencing representative was also brought to the farm to assist with proper energizer size and fencing needs and other essential aspects of electric fence construction. 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 Cotaco Creek Watershed Coordinator, Brian Brown, speaks to the tour participants about the demonstration project.

A very successful farm tour was held in October 2008, with 122 attendees from ADEM, EPA, NRCS, SWCD, ALFA Farmers Federation, RC&D, State Legislators, Cattleman's Association, Farm Magazines, Radio Show Host, local farmers, and other interested parties. The day started with a few words from each of the supporting agencies and ended with most everyone climbing aboard one of the two trailers and touring the project area. Additional farm tours will be held in the future.

Brier Fork & Beaverdam Creek Watershed Projects

Livestock exclusion fencing in the Brier Fork Watershed

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.

Cost-sharing continues to be available for cropland and livestock practices as well as other practices that address sediment reduction. To date, over 6,000 acres have been treated using cover crops as well as conservation tillage. Nine sediment basins have been installed and 54,270 feet of broad-based terraces to address gulley erosion have been implemented. A 2,900-foot grassed waterway and 4,604 feet of underground outlet has been installed. Cropland has been converted to permanent hay on 65 acres and 113 acres of pastures have been planted and improved by five different cattle producers. Four watering facilities, two heavy use areas, two livestock stream crossings, and 600 feet of exclusion fencing has been completed.

The second phase of this project started in 2008. A kickoff meeting was held in May at the Alabama A&M University Experiment Station. To date, the Madison County SWCD has accepted twenty-two applications for BMPs to include conservation tillage and winter cover crops, terrace projects to address gulley erosion on crop land, grazing land requests, and cropland conversion to permanent vegetation.

Education and outreach activities have included the 2008 environmental education teacher workshop, the 2008 Madison County Drinking Water Festival, the 2008 Madison County Land Judging Contest, the 2008 Earth Day festival, and two Flint River Canoe Cleanups.

The Tennessee Valley Authority have also conducted an Index of Biological Integrity survey on two sites within the targeted area of the Brier Fork Watershed. Sampling revealed that fish and benthic populations and diversity have improved since the last sample period. This may be a partial result of the first Brier Fork and Beaverdam Creek 319 project which started in 2006.

Newly installed sediment basin in the Brier Fork Watershed

Harris Creek Watershed Restoration Project

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 for sedimentation and low dissolved oxygen, with the TMDLs completed in 2002. High levels of organic enrichment combined with low flow and high water temperatures contribute to the depletion of dissolved oxygen in the creek. In addition, unrestricted livestock access to the creek has resulted in unstable stream banks. Loss of riparian vegetation, use of conventional tillage practices, and lack of vegetated filter zones in row crop fields also add to the erosion and sedimentation problems 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. Best management practices are chosen for their impact on nutrient management, by providing a barrier along the waterways, or reducing the quantity of runoff into the creek. In 2008, several contracts with landowners were completed that include exclusion fencing, tree planting, pasture planting, cross-fencing, residue and nutrient management, alternative watering facilities, and pest management. In June 2008, a public meeting was held in order to educate landowners regarding the project and to stimulate additional interest.

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. In 2008, Belgreen High School won the State Envirothon Competition and went on to attend the National Envirothon in Arizona, with assistance and training from the Franklin County SWCD.

Installation of a watering trough with a pad for cattle in the Harris Creek Watershed

Dry Creek Watershed Restoration Project

Stream crossing for cattle in the Dry Creek Watershed

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.

In the later part of 2008, the Blount County SWCD received and approved six applicants for cost share funding. All six have begun work on their BMPs. One participating farm has completed a cattle stream crossing with a heavy use area at both ends of the crossing, has installed 4,567 feet of exclusion fencing to prevent cattle access, and has constructed a gravity-fed pipeline to a watering trough and pad for cattle.

As part of their educational objectives, the Blount County SWCD has purchased an EnviroScape and materials to build a Soil Tunnel. With the aid of the EnviroScape, the NRCS and Blount County SWCD has provided educational demonstrations to students on the source and treatment of drinking water in addition to showing stormwater runoff and how it can affect the community's water sources. The Soil Tunnel has been built and used at several educational events. The students have been able to crawl through the tunnel in order to learn about soil functions and its connection with both surface and ground waters.

Dowling Branch Watershed Project

Exclusion fencing along Dowling Branch

Dowling Branch is a 2.1 mile stream segment originating within the city limits of Hartford in Geneva County. The stream is on ADEM's 303(d) List for 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. The Upper Choctawhatchee has been designated as an EPA Region 4 Priority Watershed.

A project goal of developing a subwatershed plan has been completed. Currently, agricultural BMPs such as exclusion fencing, alternative water sources, and heavy use area protection are being implemented at two local farm sites. In addition, three new ditch sites along a nearby dirt road and several adjacent agricultural fields have been identified as contributing significant amounts of sediment to Dowling Branch. 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, to include farm site and BMP tours. Project effectiveness will be determined by using water quality monitoring and assessments based on EPA/ADEM approved methodologies.

Harrand Creek Watershed Project

A 3.45 mile Unnamed Tributary (UT) to Harrand Creek has been on ADEM's 303(d) List since 1998. The causes of water quality impairment are currently listed as nutrients, pathogens, and siltation. The sources of impairment listed are urban runoff/storm sewers and land development. A significant segment of the creek is located in an urban area, with the headwaters beginning in downtown Enterprise and flowing northeast through business, residential, and agricultural areas. Water quality monitoring at various locations indicates that the stream has undergone significant physical, chemical, streambank, and habitat deterioration.

In September 2007 and January 2008, a general site habitat evaluation was performed on the UT to Harrand Creek with visual evidence of impairment observed from an on-the-ground survey of the stream. A few of the uppermost headwater ephemeral tributary channels were not surveyed, but visual observations were noted of potential disturbances in these streams. Evidence of visual impairment included active bank erosion, sediment deposition, channel alteration, and compromised riparian zones. This has led to problems with floodplain connectivity, fish passage, and other habitat alterations. General Site Habitat Evaluation Data Sheets were completed for each identified site, and digital photographs and GPS coordinates were collected. The report included management and BMP efficiency recommendations. A final project report has been completed and is on file. Since project completion, significant efforts have been made to implement a BMP project targeting the nonpoint source pollution problems have been made.

Riparian zone issues on the UT to Harrand Creek

Moore's Mill Creek Stream Restoration Project

The Moore's Mill Creek Restoration Project will stabilize stream banks and improve fish habitat on Moore's Mill Creek and several of its tributary streams, which will lead to improved water quality within and downstream of the project site. Moore's Mill Creek is on Alabama's 303(d) List for sediment pollution from its confluence with Chewacla Creek to its source. The reaches of Moore's Mill Creek and its tributaries within the Moore's Mill Golf Club are major contributors of sediment to the system. Historic manipulation of the stream channels, the lack of riparian buffers, and urbanization effects within the watershed have all led to instability with the proposed project area. Efforts to fix the erosion problems using traditional channel engineering methods have proven unsuccessful. Stream restoration will reduce sediment loading into Moore's Mill Creek and improve its chances for being removed from the 303(d) List.

Greg Smith (Wildlands Environmental) discusses restoration plans with Matt Dunn (City of Auburn).

In 2008, a comprehensive watershed plan was developed by Acer Environmental, Inc. (now Wildlands Environmental, Inc.). A watershed survey, baseline assessment, gage station analysis/ bankfull verification have also been completed. Permitting applications for construction have been filed and are currently pending. Natural channel design plans are also currently underway, with construction to begin in 2009.

As part of this contract, a Lee County Business Partners for Clean Water Program is being implemented that will target golf courses, landscapers, and developers, in order to educate them on BMPs targeting nutrient management and erosion and sediment control. The Alabama Clean Water Partnership is currently cooperating with the Alabama Cooperative Extension System (ACES) to coordinate related seminars, trainings, and meetings to effectively leverage funding and expertise. Additionally, ACES will help promote the program through website announcements and professional contacts. A local project coordinator has been hired, receiving support from partners listed above, in order to coordinate needed workshops, assist with program development, and carry out required public relations. A Lee County Business Partners for Clean Water logo has also been developed by Auburn University students that will be used to promote the program and to recognize program participants.

Juniper Creek Watershed Project

The Juniper Creek Watershed is a 5,936 acre watershed located in Mobile County within the Upper Big Creek Lake subwatershed of the Escatawpa River in southwestern Alabama. It is a tributary to Big Creek Lake, the drinking water source for the City of Mobile. The watershed is comprised of forested lands (66%), pasture land (18%), and cropland (11%). A small portion is low residential area or transitional zones (5%). Juniper Creek has been on Alabama's Section 303(d) List for pathogens (fecal coliform) since 1998. The land uses in the watershed indicate that the primary probable sources of fecal coliform bacteria are from forested and agricultural areas. A pollutant load from leaking septic systems was also estimated.

The purpose of this project is to implement BMPs to prevent nonpoint sources of fecal coliform from going into Juniper Creek. This includes the pump out of a dairy lagoon adjacent to the creek, septic tank workshops, and BMPs preventing cattle access to the creek.

A Lagoon Pumpout Field Day was held at Ching Dairy on July 10, 2008 with 24 people in attendance. Randall East, NRCS West Team Engineer, gave a brief history of the Ching Dairy while Marty Wooten, High Tech Equipment Sales, explained the agitation and pumpout process. Kelvin Stokes, Agri-Alliance LLC, talked about the results, advantages, and fertilizer savings of the pumpout. The pumpout process was then demonstrated.

Catoma Creek Watershed Project

The Catoma Creek Watershed Project has been very successful in implementing both agricultural and urban best management practices. The project was contracted through the Montgomery Water Works and Sanitary Sewer Board, in partnership with several stakeholders, including Montgomery County SWCD, the Natural Resources Conservation Service, the City of Montgomery, Auburn University Montgomery, CH2M Hill, the Alabama Department of Public Health, the Montgomery County Cooperative Extension System, and the Upper Alabama Clean Water Partnership. Catoma Creek is impaired from organic enrichment and pathogens from Ramer Creek to the Alabama River, for a total of 23.1 miles. TMDLs have been completed with the primary sources of impairments listed as pasture grazing and urban runoff.

A dairy lagoon that was pumped out and renovated through the Catoma Creek Project

In the rural areas, approximately 40,000 feet of exclusion fencing have been installed, with 20 alternative watering sources, 13 heavy-use protection areas, 1 stream crossing, 161 acres of stream habitat and pasture improvements, and 1,700 acres of rotational grazing practices implemented to reduce cattle access to the creeks. The largest BMP completed on one farm is the pump-out, renovation, and closure of 3 five acre dairy lagoons with spillways next to the creek, and subsequent manure transfer and wastewater irrigation to over 400 acres. Cover crops, conservation crop rotation, residue management, and contour farming were also implemented on 385.4 acres adjoining the creek. In addition, a retention pond and recycling system was installed on the Alabama Sports Fish Hatchery Farm to prevent the former direct withdrawal and release of pond water to Catoma Creek.

The dairy lagoon after the pumpout was complete

A riparian tree planting is planned for the winter along a one mile stretch of drainage ditch in Baldwin Slough, an urban tributary in the City of Montgomery. The City of Montgomery Urban Forester is planning the planting in order to add riparian covers to this cleared segment of stream. The over-widened ditch will benefit through filtration from the vegetation and reduced stream temperatures.

As part of the educational component of the project, the City of Montgomery is planning to install 100 manhole covers stating "Dump No Waste, Drains to Catoma Creek". The campaign will target the washing and dumping of fertilizers, detergents, lawn clippings, and pet wastes into storm drains. Also, a water quality program was recently kicked off targeting 7th grade students in the basin. The first event was held in October 2008 with students participating in water chemistry sampling, bioassessments, and designing ponds using a GPS. The program partners included the City of Montgomery Stormwater Program, the NRCS, and the Montgomery County Cooperative Extension. This program has been advertised to all of the schools in Montgomery County and will continue to be held as requested. In addition, the Montgomery County Water Festival continued to be planned and supported by the Catoma stakeholders. In March 2008, over 2,800 4th grade students participated and approximately 150 high school students volunteered to help as classroom instructors. Many of this year's 11th grade students that served as classroom instructors had attended the first Montgomery Water Festival.

Sougahatchee Watershed Project

The Sougahatchee Watershed Project involves the implementation of the stakeholder-driven Sougahatchee Watershed Management Plan (SWaMP). The Sougahatchee Creek Embayment (Yates Lake) is listed on the 303(d) List for nutrients and organic enrichment. Pepperell Branch, also within the Sougahatchee Watershed, is listed for nutrients. The Project is coordinated through the Auburn University Department of Fisheries and Allied Aquacultures. The goal of Phase 1 Implementation of SWaMP is to achieve a 15% reduction in nutrients (primarily phosphorus) entering the Sougahatchee Embayment from nonpoint sources. The goal of implementation of the entire 9-year SWaMP plan is a 39% nutrient load reduction into the embayment and restoration of its waters to fully support its use classifications of Public Water Supply, Swimming, and Fish and Wildlife.

Riparian enhancement project in Opelika City Park with help from Opelika Middle School students

The SWaMP Director and Coordinators gave presentations at a Clean Water Partnership meeting, at six community outreach meetings (League of Women Voters, Opelika Middle School, Society for the Advancement of Management, Save Our Sougahatchee, Inc., Treasure Foresters and Cattlemen Association) and at two conferences – the 2008 ADEM Nonpoint Source Pollution Conference in Montgomery and the Alabama Rivers Alliance 2008 Watershed Leadership Conference at Weeks Bay. Additional outreach efforts included hosting an education/outreach booth at a community event - the 2007 Loachapoka Syrup Soppin'. Other efforts included participation at various meetings, launch of a revamped SWaMP website (www.swamp.auburn.edu), and assisting in community-based watershed management efforts (watershed-level E. coli sampling in December 2007 and an Auburn-Opelika area stream clean up in March 2008). Publication efforts included the printing of SWaMP tri-fold brochures, writing an article for a newspaper insert that was submitted to the Alabama Clean Water Partnership for distribution/publication in area newspapers, and interviews and submissions for articles in the Opelika- Auburn News.

SWaMP funding of strategic on-the-ground best management practices has been initiated and four projects have been approved for funding by the SWaMP Steering Committee. Primary project collaborators include the City of Auburn, AU Biosystems Engineering, Opelika Middle School, and North Woods, Inc. Projects are both structural and nonstructural, addressing stream bank restoration, wetland construction, rain catchment, and education/outreach. SWaMP coordinators have held meetings and communications regarding four additional projects to include a silviculture BMP workshop, an unpaved-roads BMP workshop, and a lawn care workshop.

The Auburn University School of Forestry and Wildlife Sciences (AUSFWS) continued the water quality study (ten sample events) of select catchments experiencing varying degrees of development to document effects of conversions of land use in the Auburn/Opelika area, and as a basis for an outreach program to educate stakeholders regarding the benefits of the water quality services approach to maintaining clean water. Reconnaissance of additional catchments to include in the study was done, and Solinst gages were installed in streams for measuring stream discharge.

Priority Watersheds of the Middle Coosa River

The 1998 Watershed Assessment Advisory Groups ranked several Middle Coosa subwatersheds within their counties as Priority Subwatersheds. Calhoun, St. Clair, Etowah and Talladega Counties ranked the Middle Coosa as the most degraded watershed in their counties. Primary watershed concerns cited by the locally-led advisory group included excessive animal waste applied to land, livestock water inadequate for proper rotation of grazing animals, nutrients, bacteria, low dissolved oxygen in surface waters, sedimentation from cropland areas. The group also raised concerns related to urbanization of the watershed dealing with sediment and bacteria. These advisory groups chose the following subwatersheds within the Middle Coosa as high priority for either protection or improvement: Towne Creek, Big Cove Creek, and Greens Creek in Etowah County; Dye Creek, Upper Big Canoe Creek, Upper Kelly Creek, Beaver Creek, and Easonville Creek in St. Clair County.

Etowah County District Conservationist Ken Howell is checking the cotton in a field that was planted using no-till conservation methods.

This project with the Etowah and St. Clair Counties SWCDs provides resources to prioritize, identify and implement needed BMPs, and to provide education/outreach for landowners on how their actions can impact water quality. To date, 75 applications have been submitted to the SWCD for BMP installation, with many applications already approved. Twenty practices have been completed. Implemented BMPs include exclusion fencing, conservation tillage, pasture improvement, tree planting, heavy use areas, and nutrient management.

The project was also able to address nitrogen and phosphorous load reduction with a successful Septic Tank Voucher Program. As of September 30, 188 vouchers have been given to homeowners to assist with having their septic system pumped and 90 homeowners have already had their septic system pumped. Those vouchers have led to additional work such as added field lines, filters, and even replacing a faulty system with a new one. Estimates for pollutant load reduction for household septic tanks pumped as a result of the Septic Tank Pump-Out Program are taken from EPA's "*Onsite Wastewater Treatment Systems Manual*".

The following educational events and activities were also held in the Middle Coosa River Basin in 2008:

- The "Message in a Bottle Symposium" was held on October 22 in Gadsden for all elementary school children in Etowah County.
- The Etowah County Water Festival was held on December 7 with almost 1,400 4th graders and 200 volunteers attending.
- The St. Clair County Water Festival was held on April 17th with over 1,000 4th graders and almost 150 volunteers attending.
- On January 10, 2008, a Nonpoint Source Education for Municipal Officials (NEMO) training was held in St. Clair County. Every Etowah County Commissioner, Mayor, Water Authority Manager, and many professionals working for municipalities were invited. Every municipality responded and sent at least one representative. Everyone in attendance commented on the value of the information they received and requested another meeting to expand on what they learned as well as allow others to attend. Follow-up trainings will be held.
- The Project Coordinator has also delivered presentations about the project to several groups within the watershed including the Etowah County Cattleman's Association, the St. Clair County Farmer's Federation, and the Pell City Kiwanis Club.

Town Creek Stream Restoration

Town Creek is a perennial tributary of Cane Creek, which flows southeast into Mulberry Fork, then into Bankhead Lake and then into the Black Warrior River. A significant portion of Town Creek fronting Maddox Middle School had been channelized and has no cover for habitat. This contributes to the stormwater pollutants entering Town Creek and thus, Cane Creek, which is a 303(d) listed stream. This increased stormwater then immediately flows through the most constricted portion of the stream through downtown Jasper. The City of Jasper and Cawaco Resource Conservation and Development Council are partners on this project to coordinate the restoration of approximately 1,100 linear feet of Town Creek. The restoration effort included the development of a new floodplain, planting of vegetation and creation of a pocket wetland. An ongoing biological assessment is being conducted by the Geological Survey of Alabama.

Town Creek prior to construction activities

Phase 1 of the restoration was completed in May 2008. This included streambank grading and stabilization with native grass seeding and temporary matting, removal of mid-channel sediment bars and establishment of inner berm benches, and installation of seven in-stream boulder and log structures to direct flow away from streambanks. Phase 1 construction also provided a narrow low-flow channel and grade control, improved bedload sediment transport, and improved fish habitat. In addition, this project included the excavation and planting of a stormwater wetland to retain and treat stormwater flows from two pipes that previously discharged directly into Town Creek.

A Stream Restoration Construction Workshop was held May 29, 2008. Thirty attendees, representing consulting, engineering, federal, state, and local agencies, received training on plan sheet development, construction specifications, permitting, and construction oversight while observing channel grading and structure installation.

Phase 2 of the restoration is planned for December 2008, to include planting of native riparian trees and shrubs along the streambanks to provide stability, shade and food for aquatic habitat improvements, and improved aesthetics.

Town Creek after construction, at the Stream Restoration Construction Workshop

NPS EDUCATION, OUTREACH, & TECHNOLOGY TRANSFER

One of the many goals of Alabama's Nonpoint Source program is to educate Alabama citizens about NPS pollution and best management practices that can be implemented to reduce and control stormwater runoff. Throughout the years, various outreach programs have been developed and implemented to support this goal. This section provides an update of some of the most successful and enduring education/ outreach programs.

Erosion and Sediment Control on Construction Sites

Distribution of the Erosion and Sediment Control (ESC) Handbook is continuing with the assistance of the Jefferson County Soil and Water Conservation Foundation. The updating process was initiated by the project coordinator following the Field Days of September 2007. Substantial work has been done in revising materials and the ESC Handbook mailing list has been updated. The revision is projected to be finished, printed, and distributed during the early part of 2009. A plan to make copies of the Spanish version available to the public through Soil and Water Conservation Districts and to place a copy in all public libraries in Alabama was completed in December 2007. To date, 15,950 copies of the ESC Handbook, including 1,250 copies of the Spanish version, have been printed and most have been distributed.

The *"Clear Water Alabama Field Day"* was held on September 18, 2008 in Bessemer. Approximately 160 people attended. The Field Day provided an opportunity for attendees to learn about the of the latest installation methods for erosion and sediment control practices, to see related demonstrations on construction sites, and to have an opportunity to visit on-site with subject experts. The latest sediment basin technology with baffles, a skimmer, and the use of polyacrylamide (PAM) were highlights at the event. Preparation of additional training modules will be initiated as soon as the ESC Handbook update is completed.

Field Day participants in Bessemer view and discuss a demonstration of the latest sediment basin technology.

Demonstration of Low Impact Development (LID) Practices to Reduce NPS Runoff from a Residential Development

The goal of this project is to address nonpoint source runoff associated with suburban expansion by demonstrating sensible examples of Low Impact Development (LID) techniques and practices in a "real-world" suburban residential setting. This project will accomplish its goal by providing the City of Auburn, the Alabama Clean Water Partnership, the Alabama Cooperative Extension System, developers, planners, and other watershed stakeholders with "showcase" demonstration examples of new or "retrofit" LID best management practices. It complements and enhances ongoing Alabama Clean Water Partnership efforts to implement environmentally-protective and economically-sensible water quality protection projects useful for education and training.

To date, project partners have created several teams to implement the project. These teams will work in partnership to identify and design appropriate BMPs for the LID subdivision. Teams include Planning and Design, Implementation and Construction, and Evaluation/Monitoring. At this time, the Design Team and Evaluation Team are working together to propose BMPs to the land owner/developer. A charette is being planned to seek input from stakeholders to recommend BMPs that will meet a variety of needs and goals. Tours will be offered throughout the project including construction and completion. Residential construction costs (economics) and pollutant removal estimates (benefits) will be assessed once the BMPs have been designed and installed. In addition, a website will be created that will include LID information, project overview, and project status/success updates, costs estimates of LID implementation practices, LID stormwater quality information, and City of Auburn Conservation Subdivision regulations.

The Alabama Clean Water Partnership

The Alabama Clean Water Partnership (ACWP), based on the watershed approach, works across political boundaries linking point and nonpoint source interests together to safeguard water quality. ACWP facilitators, supported by ADEM in conjunction with individual basin sponsors, are in place across the state, coordinating activities in ten major watersheds, including the Coosa, Tallapoosa, Cahaba, Alabama-Tombigbee, Chattahoochee-Chipola, Choctawhatchee-Pea-Yellow, Conecuh-Sepulga-Blackwater, Tennessee, Black Warrior, and Coastal-Escatawpa basins. A statewide, nonprofit organization, the ACWP has been established to promote watershed efforts and identify funding for on the ground projects across the state in order to meet or exceed the goals of the Clean Water Act and the Alabama Water Quality Standards.

Project Highlights: On-the-ground projects in the river basins are key to the success of the Alabama Clean Water Partnership project, improving water quality, increasing the visibility of the ACWP and providing 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 ACWP basins across the state:

Statewide:

- **What's in *YOUR* Water?" 5th Grade Curriculum –** This project, targeting Alabama's 5th grade students and teachers, involves a week-long classroom activity designed to reinforce concepts currently being introduced to fourth grade students at water festivals across the state. The activities, correlated to the 5th Grade Courses of Study, cover topics on the water cycle, watersheds, personal pollution, sediment pollution and ecosystems, concluding in a writing activity. The ACWP has received two challenge grants from the Alabama Forests Forever Foundation totaling $17,500, which provides half the cost of the workbooks for teachers, with local donors providing the other half. Local donors have included the Coosa Valley RC&D Council, Gadsden State Community College, various Soil & Water Conservation Districts, MeadWestvaco, the Alabama Bass Federation and assorted others. A project is currently underway to distribute notebooks to all 5th grade teachers in the basin in conjunction with the distribution of the Waters to the Sea: The Chattahoochee River CD to all teachers K – 8 in the Chattahoochee River Basin (AL), with a teacher workshop to be held in Eufaula in January 2008.
- **Basin Newspaper Inserts –** Previously published by the Alabama Clean Water Partnership and inserted into thousands of newspapers in the Lower Coosa, Alabama and Tombigbee basins as a public educational document and follow-up synopsis of the basin management planning process, these low-cost inserts have proven a cost-effective way to educate the public and recruit new stakeholders to the water quality arena. While linking water quality with economic and land use information across the basin, the inserts offer a unique opportunity to publicize local water quality remediation efforts and highlight unique partnerships and opportunities within the basin. 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. Easy tips for homeowners are also included so that they can decrease their personal contributions to polluted runoff. The ACWP is currently identifying additional sources of funding to publish inserts in eight of the ACWP delineated river basins across the state (Alabama, Coastal, and Tombigbee to follow in 2009). Completed inserts include the Chattahoochee, Coosa, and Tallapoosa, with others following shortly. To date, funds in the amount of $110,000 have been committed to the project, with additional grants and commitments pending.
- ***Waters to the Sea: Discovering Alabama* -** *Waters to the Sea: Discovering Alabama* will be the newest addition to the award winning *Waters to the Sea* CD ROM Series. Based on the previously developed *Waters to the Sea: The Chattahoochee River*, the new Alabama version of the CD is eagerly awaited. The tool will engage students (grades 3-8) in learning about the workings of the rivers as well as the history, culture and ecology of Alabama and Georgia watersheds. When complete, the CD will contain 12+ hours of interactive, interdisciplinary information combining ecology with a high tech virtual water quality lab and virtual river journeys hosted by historical guides telling the story of how humans have lived along the great waterways of Alabama (as well as in the shared watersheds of Florida, Mississippi and Tennessee). Embedded in the program are interactive elements that challenge students while they learn, providing background information on watersheds, the water cycle, water quality testing, the human history of the watershed, the impact of primary land use activities on terrestrial and aquatic ecosystems, basic principals of river hydrology, and water conservation strategies. The estimated budget for this dynamic project is $500,000 with a finish date in late 2009. An agreement is being signed between the ACWP, Hamline University, and Dr. Doug Phillips/ Discovering Alabama, and work is currently underway on project promotion and fundraising, with major fundraising scheduled to begin in late 2008. A $5,000 grant from Legacy, a $10,000 grant from the Alabama Forests Forever Foundation, a $10,000 grant from Mobile Bay NEP, and a $10,000 donation from the GA Forestry Association have been received.
- **ACWP Web Site –** Continued development of the new ACWP website, which also hosts sites for each individual ACWP river basin, is underway, with the addition of content for each basin currently in process. The site is editable by facilitators, providing stakeholders with access to all pertinent basin information and will be a great tool with multiple uses for the ACWP.

- **Alabama Department of Transportation (ALDOT) Stream/Wetland Mitigation –** 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 DOT 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.
- **Monofilament Recycling Units (MRUs) –** Through partnering with Alabama Department of Conservation and Natural Resources and the AL – MS Seagrant, this project promotes fishing line recycling units on docks and at boat launches across the state. Currently, interested parties include the Alabama Power Company (Lower Tallapoosa), Lower Coosa stakeholders (Lakes Lay, Mitchell and Jordan), and Power South in the Conecuh-Sepulga Basin. This project, recently initiated by the Tennessee Basin CWP, brought much positive promotion to this basin group.

Alabama-Tombigbee

- **Montgomery Business Partners for Clean Water Kick-Off Project - Southern Homes and Gardens Riparian Zone -** The Alabama-Tombigbee Clean Water Partnership, the Tallapoosa Clean Water Partnership, Auburn University Department of Landscape Architecture, and the City of Montgomery are pursuing a riparian zone restoration project at a Southern Homes & Gardens (SH&G) site in Montgomery. The Auburn University Landscape Architecture Department have designed an attractive, educational riparian zone at the SH&G property and a World Wildlife Fund grant will fund the design installation. The design and eventual installation of the riparian zone will be used to publicize and kickoff the Montgomery Business Partners for Clean Water, with SH&G being the first business to receive the designation. Native riparian plantings have been on hold due to the continuing drought, but planting is anticipated before the end of 2008.
- **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 "Dispute Resolution: Erosion and Property Loss along the Tombigbee River" project. 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 press 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. The study, completed in the spring of 2008, provides suspected causes of riverbank failure (and the associated sedimentation issues), a list of the worst sites along the 186-mile stretch of the river, the order in which the sites should be addressed and what methods should be used, and the associated cost of the project. A total of $50,000 was raised to fund this study. A $5,000 grant was also received from the Tombigbee RC&D Council to fund additional time of Wade Riggs, to include expanding the stakeholder list and having two follow-up stakeholder meetings, one of which was held in the winter of 2007 and the most recent in March of 2008. A November 17th workshop is planned at Ezell's Fish Camp in Butler, AL, to release the Sed Lab study to the public, bringing all stakeholders up to date on the project. Project funding identification continues in order to put a riverbank stabilization on the ground in late 2008. An additional grant in the amount of $5,477 has been awarded to the ACWP to cover additional time for Wade Riggs for continued project coordination, and an another application has been submitted to the Curtis & Edith Munson Foundation for funding over three years to support a facilitator for the Tombigbee Basin, splitting out those duties from the Alabama due to time and travel constraints of the AL Basin Facilitator.
- **Hooked on the Alabama River –** The "Hooked on the Alabama River" Festival of Fishing Lures was a coordinated effort, displaying 30 large (6 feet long, 4 feet tall) fishing lure sculptures decorated by local artisans and art students in order to bring attention to the Alabama River and to educate watershed citizens and businesses. The Festival began with an opening day event on September 15, 2007 at Montgomery River Front Park, where all sponsored sculptures were displayed together. The event included activities related to the river, fishing, boating, water safety and other outdoor activities. Participants were able to sign a personal pollution pledge that outlines behaviors that prevent personal pollution by logging onto the Festival's website (www.hookedonthealabamariver.com) to input answers and become eligible for additional prizes. The project netted $40,000. Additional funds in the amount of $4,500 was raised through an online auction in early May 2008. There is also interest to replicate the project in the Tennessee Valley, and in the City of Mobile an in Gulf Shores. Currently, ten of the lures are on display at the 5 Rivers Coastal Resource Center in Spanish Fort.
- **Coca-Cola Partnership** – World Wildlife Fund has provided a connection with Coca-Cola of Montgomery, who is participating as a business partner within the Alabama Basin. Additional facilitation funds are being provided for the Alabama Basin CWP Facilitator's time in design of stormwater control strategies on the 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, and is going to be providing barrels for rain catchment devices.

Black Warrior

- **Town Creek (City of Jasper, Walker County) Restoration -** The 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. Town Creek is a major tributary to the impaired Cane Creek Watershed, a subwatershed of the Mulberry Fork Watershed. It flows directly through the downtown portion of the City of Jasper and fronts Maddox Middle School. The project will serve as a demonstration of natural channel design and innovative storm water management specific to urban streams in the southeast. Additional public workshops are planned at the site.

Cahaba

- **Newspaper Inserts -** A sub-committee has been developed to provide direction and input into the Cahaba Newspaper Insert. Meetings are currently underway to discuss the newspaper insert and provide information relevant to the Cahaba River Basin. Additional funding for the insert will be provided by the Alabama Soil & Water Conservation Committe. To support the goal of the grant, which also represents a large portion of the Cahaba River Basin population, a larger section will be developed to address septic tank maintenance.
- **Cahaba Canoe Trails Prototype -** Using the Cahaba River Basin as a framework, an interactive GIS web page is being developed that willprovide information necessary for local or distance travelers to determine their paddling adventure. With satellite imagery in a scrolling format, a person will be able to 'fly over' the river as it meanders through our state and find locations to launch and take out, along with the information they will need to determine their trip. Photos will give them visual knowledge on parking and access to the river, video for whitewater areas, upcoming clean-ups they can engage in, and camping sites and trails along the river. Additional layers can be added such as stream restorations or BMP installations and monitoring locations and related data. Willing landowners, and corporate sponsors have been identified by The Nature Conservancy to purchase and install canoe sites on the Cahaba. There is an opportunity to revisit the map (Canoe Access Points) created by the Cahaba River Society. Partners include: The University of Alabama Center for Economic Development, Alabama Power Company, Office of Surface Mining, USX, and The Nature Conservancy.

Chattahoochee-Chipola

- **" What's In YOUR Water?"/Waters to the Sea: The Chattahoochee River -** This outreach program for elementary and middle school students in communities throughout the basin will utilize the ACWP's 5th Grade "Water YOU Doing?" nonpoint source curriculum and the Georgia developed "Waters to the Sea" CD for schools in Phenix City and Eufaula. A project is currently with the distribution of the Waters to the Sea: The Chattahoochee River CD to all teachers K – 8 in the Chattahoochee River Basin (AL). A teacher workshop was held in Eufaula in January 2008.
- **Low Impact Development Project, City of Eufaula** - A class of graduate students from the Auburn University Landscape Architecture Department have submitted landscaping drawings utilizing rain gardens and other retention structures. Designs have been selected, and the basin Steering Committee has approved the use of some basin donations for implementation of the designs. Design parameters at one particular site of interest have changed, due to parking lot changes at a school. The AU Landscape Architecture Class returned to the site in the summer of 2008 to reassess and update the design, and have resubmitted to the city, with plans being made to complete the structure by the end of the year.
- **NEMO** – The Basin Facilitator worked with ADEM to organize a NEMO workshop in Phenix City in order to educate local policy makers regarding water quality issues.
- **Mill Creek, Phenix City, AL** – The Facilitator continues to assist with possible implementation of a 319 project on the Mill Creek Watershed in Phenix City. Mill Creek is listed for unknown causes on the 303(d) list of Impaired Waters.

Choctawhatchee-Pea-Yellow

- **Covington County Groundwater Festival** - The Covington County Groundwater Festival was held in March 2008 at the Lurleen B. Wallace Community College in Andalusia. Over 500 fourth graders, 20 teachers, and 50 volunteers participated in the event. The students were reminded that 100% of the water in Covington County comes from groundwater. Lisa Harris represents the Choctawhatchee, Pea, and Yellow Rivers Clean Water Partnership on the Festival Committee.
- **"Crawl About" Watershed Models** - Funding was secured from Wiregrass RC&D council to install two watershed models approximately 12 ft. by 12 ft. in size. The models will be permanent, colorful sculptures showing local geography. The project is designed to help citizens/students understand how to prevent pollution of rivers and streams by demonstrating the effects of runoff pollution and teaching watershed concepts, map reading skills, the water cycle, local history and geology. The Florala High School Science Club, the City of Ozark and GW Long High School's FFA are partners to install these models, with one model completed.
- **UT to Harrand Creek (Enterprise) Stream Restoration Project –** The Basin Facilitator is working with ADEM and partners in Enterprise to put together a workplan targeting the restoration of an unnamed tributary to Harrand Creek, currently on the 303(d) list for sediment and nutrients.

Coastal - Escatawpa

- **Little Dolphin Island Restoration** - The Mobile Bay National Estuary Program in partnership with the Coastal Alabama Clean Water Partnership, the Alabama Coastal Foundation and the U.S. Fish and Wildlife Service, has initiated a restoration project on Little Dauphin Island. Little Dauphin Island aides the larger Dauphin Island in erosion prevention and provides habitat for neo-tropical migratory birds and also many indigenous shore birds. Over 45 volunteers planted 325 trees on the hurricane battered island in December 2007. The trees are being monitored by volunteers and are growing well. A second tree planting was held in April 2008.

Conecuh-Sepulga

- **Groundwater Festivals** - The Conecuh-Sepulga Facilitator 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. This year high school students from Opp, Andalusia, Red Level, Straughn, Florala, and Lurleen B. Wallace Community College served as volunteers. The Facilitator also worked with "at-risk" high school students in the JAG program (Jobs for Alabama Graduates), and made numerous presentations to civic groups, businesses, and foundations, seeking sponsors for the event.
- **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 AL Geological Survey, developed a basin-wide water monitoring and assessment project. This project has also been shared with members of the Pensacola Bay Watershed Partnership. The facilitator has been responsible for the development of at least 20 different grant application packages seeking funding for this project. Funds to monitor 12 sites were received in 2005 from private businesses or foundations, with the exception of the cost-share provided by AL Geological Survey. The study is now complete. The group has met to review the study results and discuss possible 319 projects in the basin.

Coosa

- **Upper Coosa NEMO Workshop -** In response to Cherokee County stakeholder requests, the Coosa Basin Facilitator worked with ADEM and local stakeholders to organize a NEMO Workshop for Cherokee County officials, who are interested in ordinance development for the county due to the large population growth rate of the county. The county currently has no rules in place to protect their "economic engine" – Weiss Lake.
- **Buxahatchee Creek 319 Project –** The Facilitator is currently working with local stakeholders and ADEM to identify ACWP educational opportunities in conjunction with the possible implementation of a 319 project on Buxahatchee Creek in Calera, including "What's in YOUR Water?" workshops and a Business Partners for Clean Water Program.
- **Spring/Mud Creek 319 Project –** The Facilitator is currently working with local stakeholders and ADEM to identify ACWP educational opportunities in conjunction with the possible implementation of a 319 project on Spring and Mud Creek in Calera, including "What's in YOUR Water?" workshops, a Business Partners for Clean Water Program and a water festival.

Tallapoosa

- The Lower Tallapoosa CWP Stakeholder Committee is partnering with the Upper Alabama CWP to implement an on-the-ground stormwater demonstration and native plant display project at the new Southern Homes and Gardens on Vaughan Road in Montgomery. The project is part of the Business Partners for Clean Water Program that is being promoted by the Alabama River CWP, but it is located in the Lower Tallapoosa watershed. A grant from the World Wildlife Fund was awarded, but project implementation was put on hold due to the drought, with plantings expected to be complete before 2009.
- Efforts are underway to organize an Erosion and Sediment Control Workshop in conjunction with Russell Lands and other partners, to be held in Alex City in the spring of 2009.
- The facilitator continues to work with Middle Tallapoosa CWP to support their ongoing fundraising efforts and with the Upper Tallapoosa in an attempt to reorganize Upper CWP meetings to be more inclusive of stakeholders.

Tennessee

- **Green Mountain Low Impact Development Meeting** – A meeting was held in October 2007 to discuss Low Impact Development techniques with stakeholders regarding development on Green Mountain, which is on the southeast side of Huntsville in the Flint River basin. Development on the steep terrain of this mountain poses a serious threat of erosion into the Flint River, as well as the Tennessee River.
- **Monofilament Line Recycling Units –** The Tennessee Basin CWP is in the process of installing 200 fishing line recycling units across the TN Valley. This low cost, high profile project has turned out to be an incredible promotional opportunity for the ACWP and will be fostered in other basins statewide.

Town Creek Stream Restoration Workshops - Applied Fluvial Geomorphology

The Town Creek Stream Restoration Workshop series followed a stream restoration project on an urban tributary located in Town Creek Park, in the City of Auburn. Introductory and advanced workshops covered stream restoration using natural channel design. Time was split between classroom and field work, including project/data summaries and evening work sessions. This was a coordinated effort with the Alabama Cooperative Extension System, Auburn University, the City of Auburn, North Carolina State University, USDA CSREES Southern Region Water Program, Stantec, ADEM, and EPA.

Darrell Westmoreland, North State Environmental, Inc., describes placement of a log vane structure in the newly constructed stream channel.

The workshops focused on Town Creek, a degraded urban stream flowing through the City of Auburn's Town Creek Park. Greg Jennings of North Carolina State University, served as the primary instructor, emphasizing urban stream conditions specific to the Southeastern United States.

The second workshop in the series, "*Stream Restoration Design*", was held November 28-29, 2007. This workshop taught principles of natural channel design for various types of stream restoration projects. Participants used reference reach information to develop design parameters for the urban stream restoration. They worked through the process of designing stream channel dimension, pattern/profile, and preliminary channel layout. Other topics included sediment transport calculations, applications of in-stream structures, and habitat enhancements.

Five stream restoration workshops focusing on natural channel design principles have been completed. A workshop covering "Stream Restoration Construction" and a tour by ADEM personnel was held in February 2008. A Wetland Vegetation Workshop was held in May 2008. A follow-up workshop on stream restoration monitoring /evaluation is planned for late 2008 and early spring 2009. Each workshop, with the exception of the ADEM Stream Restoration Overview and Tour, provided continuing education units awarded from Auburn University. Additional information about these workshops can be found online at www.aces.edu/waterquality/towncreek.htm#morph.

ADEM Nonpoint Source Conference

The ADEM NPS Conference attracted more than 200 environmental engineers, biologists, geologists, municipal leaders, and water quality specialists. The 19th Annual Nonpoint Source Pollution Conference was held on January 30, 2008 at Montgomery's Embassy Suites and Conference Center. The conference offered attendees a variety of updates on efforts supported by the Alabama Department of Environmental Management to achieve water quality improvements. It focused on a variety of projects such as stream restoration, effective best management practices, education and outreach efforts, and the development of watershed management plans that enable citizens and stakeholders to play an active role in protecting water quality. Organizations and agencies participating in the conference included the Alabama Department of Agriculture and Industries, Alabama Forestry Commission, Auburn University, and the Alabama Clean Water Partnership.

Alabama Envirothon

The Alabama Department of Environmental Management 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, and leading many of the training events, judging, and overall program implementation. This year's state competition was held April 3-5, 2008 at the 4-H Camp in Columbiana.

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 Flagstaff, Arizona in July.

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 105 training sessions which were attended by 444 people. A total of 521 certifications were earned and 665 were conducted by or with a citizen trainer. Twenty-five Water Chemistry Workshops (184 people attending), 29 Recertification Sessions (111 people attending), 25 Bacteriological Workshops (150 people attending), two Bacteriological Monitoring Recertification Sessions (five people attending), and two Stream Biomonitoring Workshops (42 people attending) were conducted. Further, one Water Chemistry Trainer of Trainers, two Trainer refreshers, nine Water Chemistry Monitoring Trainer Internships, and nine Bacteriological Monitoring Trainer Internships were conducted during this period. In addition, 65 citizen groups submitted water chemistry data from ten major watersheds.

Volunteers representing several monitoring groups practice their skills while pursuing AWW recertification in water chemistry monitoring in Huntsville.

Six new groups were formed and submitted 94 records from 19 sites. Most AWW groups monitored in the Tennessee Basin (23%), while the Warrior and Tallapoosa Basins each had 22% of groups, and the Coosa 20%. Twenty-seven groups submitted bacteriological monitoring data from seven watersheds. A combined total of 4,557 (3,524 chemistry and 1,033 bacteriological) data records were received. Overall, most monitoring activity was located in the Tallapoosa, Tennessee, Coastal Plains Streams and Warrior Basins (23%, 21% 17% and 16% of data respectively). Since 1993, AWW has received almost 55,000 (44,684 water chemistry and 9,870 bacteriological) data records. Over 2,000 sites have been monitored on 700 waterbodies.

Four Data Interpretation Sessions, comparing AWW citizen data with other sources of data, were conducted for groups in Smith Lake, Lake Wedowee and the Auburn area. AWW staff attended numerous outreach activities as well as several AWW monitoring group meetings such as those of Save Our Saugahatchee and Friends of Chewacla-Uphapee Watershed. AWW responded to several official requests for data from other organizations such as ADEM, EPA, TetraTech, North Carolina State University, the City of Auburn and from AWW groups. AWW personnel attended several Conferences and Seminars including the 19th Annual Nonpoint Source Conference, the Alabama Rivers Alliance Watershed Leadership Conference, and the National Science Teachers Regional Conference.

Program accomplishments and initiatives for this period include the revision and updating of the AWW Data Forms, both printed and posted on the website. Certification Cards and Certification Letters for monitors were enhanced in the office database. Online tracking of reagents distribution to monitors and ordering of AWW materials improved shipping efficiency. Online web tools for monitors and office usage has been greatly upgraded and expanded. The AWW website and the Water Data Section have been visited over 100,000 times and 22,000 times respectively; about 92% of AWW data received during the report period was entered online and about 600 people were subscribed to the AWW Listserve. The AWW program personnel submitted 14 proposals for additional funding and presently have eight related projects that involve and greatly enhance the impact of citizen volunteer water monitoring groups. AWW also began to establish a wet chemistry laboratory with plans to provide additional water quality tests for citizen monitors, governmental agencies, private organizations, business and industry.

Alabam Water Watch has also standardized the electronic version of 5 volumes of the *Citizen's Guides to Alabama Rivers* according to the most advanced volume. Four thousand copies of the Alabama, Coosa, and Tallapoosa (ACT) Citizen Guide, 4,000 copies of the Black Warrior/Cahaba Citizen Guide and 1,500 copies of the Tennessee Citizen Guide were sent to press. A PDF version of all five updated *Guides* was placed on the AWW website for public access.

Environmental Coordinator & Education/Outreach Specialist

This project provides resources to support the Soil and Water Conservation Committee (SWCC) and the 67 Soil and Water Conservation Districts (SWCDs) in their efforts to protect water quality and enhance watershed protection through locally-led conservation programs. Through the support of a Water Quality Coordinator (WQC) and an Education/Outreach Specialist (EOS), this project fosters citizen input into watershed assessment, planning, and implementation. It also assists stakeholders and SWCDs in identifying and correcting problems in support of the conservation program.

The EOS continues to work with the SWCDs by assisting them with the new web-managed program for processing new and annual CAFO registrations. The CAFO workload continues with more than 613 registrations being processed from January 2008 through October 2008. The increase is the result of reminder letters being sent from ADEM to encourage re-registrations. In addition, the WQC has received all Watershed Assessment Data from the 67 counties throughout the state, and is working to help solve problems occurring with collating the data and posting it to the website. The individual counties will be updated to the website as soon as the maps are completed. The new website has been completed and the transfer of information is being finalized so that it can be made available to the public.

Both the WQC and the EOS attended meetings on a regular basis during this time period. Some of the meetings include Erosion and Sediment Control meetings, meetings to resolve CAFO registration problems, and out-of-state Southeast Regional meetings. Further, the WQC and EOS continue to support educational activities at the District level.

Alabama Groundwater Festivals

Volunteers teach about the water cycle at the Covington County Water Festival.

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 the 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.

This is the 10th year of Groundwater and Water Festivals in Alabama. Since the first festival in Madison County, approximately 151,000 students, 4,100 teachers, and 1,1000 volunteers have participated across the state. In 2008, 24 counties participated. Henry County has signed on with the program and will hold their first Groundwater Festival in 2009. An Alabama Groundwater Festival website (www.alabamawaterfestival.com) has also been developed.

Wildland Urban Interface (WUI) Project

The project provides funding to support interagency partnering and cooperation between the Alabama Forestry Commission (AFC) and ADEM in order to assure that NPS silviculture management efforts in Alabama are focused and sustainable. A holistic watershed-based management approach provides the technical underpinning for defining the problems and designing the solutions to Alabama's most pressing silvicultural management issues, concerns, and needs. This includes both on-the-ground projects and broader educational programs designed to promote broad awareness and implementation of activities that can help protect waters from degradation by new and changing land use activities which cause nonpoint source pollution. This project will provide an appropriate and effective programmatic framework for Alabama to continue to develop and implement NPS watershed plans, and strengthens the link between the Section 319 Grant Program and other state and federal forestry resource programs.

In 2008, seven internal training sessions have been conducted across the state regarding urban forestry issues, low impact development, and Firewise Training, making the information available to all the state foresters in Alabama. The trainings and the projects focus on the impact of the rural and urban interface and the need to combine goals to conserve the trees in urban areas but still be safe regarding the spread of fires. The AFC has also completed 157 Firewise Assessments, 20 Community Wildfire Protection Plans, and 40 Urban Forestry technical tree care assists. Future goals of this project include implementation of a WUI cost-share financial assistance program that will fund the installation of 50,000 linear feet of fuelbreaks, construction of 250,000 linear feet of permanent fire breaks, treatment of hazardous fuels on 50 acres in the interface, and creation of defensible space on 150 homes in the interface.

Alabama Yards and Neighborhoods Project

The Alabama Yards and Neighborhood Program (AYN) is working to create a statewide educational program that can be utilized by local garden clubs, watershed groups, Master Gardeners, Clean Water Partnerships, Extension agents, and others to improve awareness of watershed wise landscaping. AYN is a cooperative program developed by the Alabama Cooperative Extension System (ACES), ADEM, the Alabama Nursery and Landscape Association (ALNLA), and the Alabama Master Gardeners Association.

An Alabama Yards and Neighborhood BMP manual has been developed that includes neighborhood scale measures of designs for rain gardens adapted from Florida Yards and Neighborhood Programs and other similar programs. It is available online at www.ag.auburn.edu/landscape. A PowerPoint presentation has been completed giving an overview of the AYN and is also available for use by downloading from the online site.

The Master Gardener's Program and ALNLA, in cooperation with the Sougahatchee Watershed Management Plan Implementation Project, have developed and delivered educational materials. Meeting the stated outputs of the grant, a presentation to AU Horticulture Department's Fall Master Gardener School and the Alabama Landscape School was conducted. A rain garden design and demonstration is being completed on the AU campus behind the new Building Science facility as an easily accessible site to facilitate outdoor training of this landscape feature.

The Nursery Best Management Practices Manual has also been improved, revised, reprinted and distributed to interested nursery producers in three regions of Alabama at specially designed workshops. Dr. Charles Gilliam, Nursery Extension Specialist, held workshops in Mobile, Auburn, and Athens, representing the three major production areas. Additional manuals have been distributed to Regional Extension Specialists to be distributed as serious producers entered the business in their region.

Additional resources have been dedicated to try to make this program successful and additional resources are being aggressively pursued for this program to have the envisioned impact. The following additional activities have or are being implemented with this goal in mind.

- An interdisciplinary team from Landscape Architecture, Biosystems Engineering, Agronomy and Soils, and Horticulture has been assembled to continue to review, adapt and create BMPs for the landscape similar to our successful efforts with Nursery BMPs.
- To facilitate the statewide effort, Home Horticulture Regional Specialists from ACES have been recruited from around the state to help develop a formal targeted educational program to disseminate the new web-based product. An Extension Team Project has been written for 2009 to promote the program.
- An additional PowerPoint program, which coincides with each section of the Manual, has been developed and is available for use. One agent has taken this project as part of his master's degree to improve and develop additional teaching resources during 2009.
- AU Department of Landscape Architecture has volunteered to develop and represent "rain garden" designs as examples for home gardeners and landscape designers. These have been included in the manual. Also, a graduate student's project has been developed to research screening native plants for use in rain gardens.
- Plant materials suited for Alabama's clientele have been selected with a special emphasis on utilizing Alabama native plants and sources of those plants.
- The ALNLA has agreed to help sponsor and promote the program in its educational efforts to landscape professionals and home horticulture programs.
- The new AYN program and information source has been developed to be included in Master Gardeners' training throughout the state.
- Participants in the AYN program are now forming an alliance with Lee County Rain Barrel Group and with Lee County Business Partners for Clean Water to combine efforts and resources
- A program was presented on AYN to a Save our Saugahatchee meeting.
- An educational booth was developed for Sun Belt Expo in Moultrie, GA. These educational materials were used as an educational demo at the annual Syrup Sop event in Lochapoka and for an Ag Roundup event on AU campus.
- A corresponding written version of the online AYN manual has been edited and revised for printing in the future.

ALABAMA'S COASTAL NONPOINT POLLUTION CONTROL PROGRAM

During the past year, ADEM's Alabama Coastal Nonpoint Pollution Control Program (ACNPCP) continued to coordinate with the EPA-Region 4 and the ADEM Nonpoint Source Unit to develop programmatic approaches in order to address many aspects of coastal NPS impacts and issues. During this past year, the ACNPCP focused on the development of eight new projects, along with the implementation and completion of six major projects that are slated for completion at the end of 2008.

ADEM's ACNPCP utilizes a *NPS Projects Template* that outlines development of future ACNPCP projects designed to address the designated Coastal NPS Program land-use categories. This approach has allowed the ACNPCP to monitor the program's progress for each category of interest (e.g., marinas, agriculture or onsite sewage disposal systems). The ACNPCP 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 efforts are complemented by baseline information derived from both the *Prioritization Analysis Tool (PAT)* and the specific *BMP Surveys* that are crucial to efficiently targeting resources for the implementation of each *Targeted Water Quality Study*. These projects, along with the development of Technical Assistance Workshops, comprise the core of Alabama's long-term efforts to address and/or track coastal NPS issues.

Coastal Alabama Regional Curve Workshop

A *Coastal Alabama Regional Curve Workshop*, held in April 2008, was designed to educate participants about Alabama's first *Riparian Reference Reach and Regional Curve Study* that was developed for the Lower Coastal Plain. Over 35 participants from throughout the Southeast were trained on the application of the *Regional Curve Study* and regional *Riparian Reference Reaches* information that should be utilized as a vital project design tool for stream restoration or large stormwater projects within the management area. This project provides approaches to the information needed to approximate natural conditions that benefit associated stream functions for Southwestern Alabama and/or areas within the Lower Coastal Plain.

Agriculture Targeted Water Quality Study

The *Agriculture Targeted Water Quality Study*, completed in September 2008, was designed as a publication to address specific conditions the ACNPCP needed in order to gain program approval and to provide federally-requested agricultural information for the Coastal ACNPCP Management Area. This project also describes the interactive coordination efforts and the agriculture-related projects that have been implemented and monitored since 2003 in order to address the agricultural category issues for Coastal Alabama.

Coastal Alabama Hydromodification & Wetlands, Riparian Areas Technical Update for Nonpoint Source Pollution

The *Coastal Alabama Hydromodification & Wetlands, Riparian Areas Technical Update for Nonpoint Source Pollution*, completed September 2008, was developed by ADEM's Coastal Section in cooperation with ADEM-319 and EPA-Region 4 as an ACNPCP publication to address hydromodification, wetland/riparian areas management measures, and approval criteria for Alabama's Coastal Nonpoint Pollution Control Program. This project provided responses to recommended actions that detailed the broad efforts, including the coordination of management plans, technical workshops, resource surveys, and related projects that have been implemented and monitored to address these category issues for the subwatersheds of southwest Alabama.

Coastal Alabama Marina Atlas Project

The *Coastal Alabama Marina Atlas Project*, to be completed in December 2008, consists of creating topographic cartography information and geographic information system data layers that are to be published in the form of a *Coastal Alabama Marinas and Watersheds Atlas*. The Atlas will contain scaled topographic maps with all known waterbodies, designated subwatersheds, coastal marinas, Clean Marinas/recreational boating facilities, and any other related marina best management practices/amenities information. This project has been developed to aid local resource managers and inspectors, as well as provide information and outreach to the public that addresses important marina category issues.

Onsite Sewage Disposal Systems Technical Update and Operation & Maintenance Workshops

The Onsite Sewage Disposal Systems (OSDS) Technical Update publication, to be completed in December 2008, is designed to address specific conditions the ACNPCP needs to gain program approval and to provide federally-requested OSDS-related information for subwatersheds within the ACNPCP Management Area. This project also provides information on interactive coordination efforts and the OSDS-related projects since 2003 that have been implemented and monitored to address OSDS issues for coastal Alabama. In addition, two local OSDS operation and management workshops will be presented targeting the highest density subwatershed in each coastal county.

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 (including any tracts with forestry road or streamside management zone construction activities being conducted) 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 Headwater Stream Survey - Phase I

Phase I of the *Coastal Alabama Headwater Stream Survey* is a project designed to access baseline conditions for a subset of first order stream-types within Mobile and Baldwin Counties. When completed, this project will document specific water quality conditions, along with basic survey data for local headwater streams. The survey will also correlate management measures as BMPs in close proximity to headwater streams within the two coastal counties. In 2008, the field reconnaissance of approximately seventy 12-digit subwatersheds was recorded. This is a two-year project that is in process and will be continued through 2009.

Coastal Alabama Pilot Onsite Disposal Systems Inventory Project - Mobile County Phase I

The pilot *Coastal Alabama OSDS Inventory for Mobile County* is a Phase I project designed to define and map GIS layers of private septic tank information. This will provide an efficient subwatershed-based desktop inventory of local onsite sewage disposal systems. This valuable planning tool will define the OSDS resources for approximately 399,000 people within an area of 1644 square miles. This is an innovative two-year project that is making excellent progress and will be continued through 2009.

NPS PROGRAM GOALS

— ADEM continued to partner with the SWCC in maintaining a statewide CAFO notice of registration 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 litter including technical standards and guidelines related to animal waste and nutrient standards. ADEM also partnered with the Alabama Department of Agriculture and Industries on the implementation of the Certified Animal Waste Vendor Program.

— ADEM continued to partner with ACES, NRCS, and the National Weather Service to assist farmers with implementation of applicable regulatory BMP requirements by providing a FORECAST and FARMERS Map website for land application of litter in order to meet NRCS technical standards and guidelines and to comply with applicable ADEM requirements.

— ADEM continued to leverage interagency support for a statewide NPS agricultural water quality coordinator and a statewide erosion and sediment control coordinator position with the Alabama Soil and Water Conservation.

— The ADEM NPS Unit continued to partner with the Alabama Clean Water Partnership in identifying and leveraging Section 319 grant funding as well as providing funds for a Statewide Facilitator, River Basin Facilitators, and watershed protection activities.

— The ADEM NPS Unit continued to provide coordination and support for hydrologic/habitat modification projects to protect water quality (stream restoration projects).

— The ADEM NPS Unit continued to promote the National NEMO Program including s coordinating/offering several statewide presentations and local targeted presentations.

— ADEM continued to partner with several agencies and public/private stakeholders to present "hands-on" Erosion and Sediment Control Training Workshops.

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 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 River Basins
10) Conecuh-Sepulga River Basins
11) Chattahoochee-Chipola River Basins

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)

— Section 319 cooperative agreements continued to be executed to implement watershed management plans for Section 303(d) listed waters. The plans target the sources and causes of impairments identified in a TMDL.

— ADEM partnered to develop and implement the following subwatershed protection plans:

- Black Warrior Clean Water Partnership — Town Creek Stream Restoration Plan
- The Tennessee Valley Clean Water Partnership — Harris Creek Watershed Management Plan
- The Tennessee Valley Authority, the Tennessee Valley Clean Water Partnership, and The Nature Conservancy —Cole Spring Branch Stream Restoration Plan
- The Tennessee Valley Clean Water Partnership/Madison County SWCD — Indian Creek Watershed Project
- The Baldwin County SWCD — Baker Branch Watershed Management Project

- Acer Environmental, Inc./Alabama Clean Water Partnership – Moore's Mill Creek Watershed Project
- Randolph County SWCD – Wolf Creek Watershed Project

— ADEM continued to partner with the Geneva County Soil and Water Conservation District to develop a subwatershed plan for Dowling Branch. A Draft plan was completed and addresses NPS pollutant sources and causes identified on the Section 303(d) List.

— ADEM is partnering with the Mobile Bay National Estuary Program to develop a watershed management plan for D'Olive Bay in Baldwin County.

— ADEM continued to partner with the Wiregrass RC&D to complete the development of a subwatershed plan for an unnamed tributary to Harrand Creek located in Coffee County. The plan will address NPS pollutant sources and causes as listed on the Section 303(d) List of Impaired Waters.

— ADEM continued to partner with the CAWACO RC & D to complete the development of a subwatershed plan for Buxahatchee Creek located in Chilton/Shelby County. The plan will address NPS pollutant sources and causes as listed on the Section 303(d) List of Impaired Waters and applicable TMDLs.

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 serving on the Board of Directors. The ADEM NPS Unit continued to be closely involved with all major river basin, sub-basin, and watershed ACWP advisory, technical and education and outreach committees so that watershed stakeholders "work off the same page." Meetings are generally conducted quarterly.

— ADEM continued to partner with the Alabama Clean Water Partnership by providing Section 319 grant assistance to fund 9 River Basin Facilitators and one Statewide Program Facilitator.

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 financial and staff support for education and outreach efforts of the Alabama Clean Water Partnership. ADEM also participated on the ACWP statewide committee dedicated to identifying, developing, and/or disseminating applicable environmental/water quality protection materials and resources.

— ADEM presented its Annual NPS Conference in January 2008. Over 250 NPS stakeholders attended the event.

— The NPS Unit provided floor and tabletop displays and presentations targeting specific and crosscutting NPS categories at the Alabama Water Resources Conference, Career Days, Earth Day Events, and technical conferences.

— Erosion and Sediment Control Workshops targeting construction runoff have been conducted statewide through a Section 319 project coordinated by the SWCD and Soil and Water Conservation Society.

— Alabama's Nonpoint Source Education for Municipal Officials (NEMO) Project continued with a second tier of training focusing on Growth Readiness.

— Urban stream restoration workshops were presented in Auburn and Jasper. These workshops featured classroom and field work that introduced basic concepts of fluvial geomorphology and classification based on the Rosgen Stream Classification System.

— Alabama Water Watch is a statewide program dedicated to developing citizen volunteer monitoring of Alabama's lakes, streams, and coasts. AWW conducted 105 training sessions attended by 444 people. Twenty-five Water Chemistry Workshops (184 people), 29 Recertification Sessions, (111 people), 25 Bacteriological Workshops (150 people) and 2 Stream Biomonitoring Workshops (42 people) were conducted. Further, one Water Chemistry Trainer of Trainers, two Trainer refreshers, nine Water Chemistry Monitoring Trainer Internships, and nine Bacteriological Monitoring Trainer Internships were conducted during this period. In addition, 65 citizen groups submitted water chemistry data from ten major watersheds.

— ADEM, in cooperation with other entities, supported the Alabama Envirothon competition by helping to plan, develop testing materials, teaching, and judging various events.

— Nonpoint source pollution and its relationship to groundwater protection have been demonstrated to over 151,000 students who participated in Alabama Groundwater Festivals. Currently, twenty-four counties conduct these festivals on an annual basis. The ADEM NPS Unit will coordinate all future ADEM activities associated with this successful statewide program.

— ADEM is partnering with the Alabama Forestry Commission to present a series of training sessions to state foresters across the state regarding urban forestry issues, low impact development, and Firewise training, making the information available to all the state foresters in Alabama. Future goals of this project include implementation of a WUI cost-share financial assistance program that will fund the installation of 50,000 linear feet of fuel breaks, construction of 250,000 linear feet of permanent fire breaks, treatment of hazardous fuels on 50 acres in the interface, and creation of defensible space on 150 homes in the interface.

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 are summarized earlier in this report.

— The ADEM NPS Unit continued to provide applicable pollutant load reduction data (nitrogen, phosphorus, and sediment) in the Grants Reporting and Tracking System (GRTS).

— The ADEM NPS Unit staff will attend the Annual GRTS Meeting in Denver, CO. to be trained on the updates to this national reporting database system.

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

— The Department's Alabama Coastal Nonpoint Pollution Control Program (ACNPCP) continues to coordinate programmatic efforts between EPA-R4 and ADEM.

— The Coastal NPS Management Program documents and submissions have been reviewed by NOAA and EPA. Based on their comments and using Section 319 grant set-aside and other funding for coastal programs, document approval "exception" projects have been finalized and contracts are being executed that should achieve program approval.

— Additional administrative activities include:
- The ADEM ACNPCP staff continues to engage in coordination activities with ADCNR, NOAA-OCRM and EPA regarding outstanding program approval issues.
- The ADEM staff has expended much time and effort with ongoing ACNPCP projects and proposals; and in developing new projects, study plans and scopes of services. The ADEM staff also provides technical advice and coordinates ACNPCP projects with various coastal entitles.
- ADEM ACNPCP staff continues to coordinate with ADCNR to engage the "MATRIX", "Technical Advisory Committee (TAC)" and "Program Review Committee" recommendations consistent with the July 2003 and October 2003 program submissions.
- ADEM ACNPCP staff participates in and promotes activities of the Coastal Alabama Clean Water Partnership.
- ADEM staff are developing and maintaining preliminary databases and are further exploring the development of projects with GIS capabilities to track various aspects of program performance.

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

— ADEM continues to try to expedite grant funding in a timely and responsible manner.

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

— ADEM continued to provide applicable project update data and information to GRTS.

— ADEM maintains an in-house Section 319 project/budget-tracking database for all ongoing fiscal year grant awards.

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

— ADEM continued to facilitate development of watershed management plans in order to obligate incremental grant funding and to implement the NPS components of TMDLs.

— ADEM continues to provide at least 20% incremental grant funds to develop watershed plans/acquire water quality data, while targeting about 80% of incremental grant funds for TMDL/watershed protection implementation projects.

— ADEM continues to leverage Farm Bill funding for BMP implementation to TMDL watershed/Section 319 projects. BMP implementation continues to be closely coordinated with the SWCDs and the NRCS.

Goal 11. *Utilize a flexible, targeted, iterative, and broad-based approach to support EPA's 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 an ACWP river basin coordinator and several statewide CWP basin facilitators to assist stakeholders in watershed restoration and protection activities.

— ADEM partners with many public and private agencies to provide required Section 319 non-federal grant match. Although final figures are not available to date, non-federal match is expected to exceed the 40% minimum grant requirement.

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

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

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

— ADEM continues to hold an annual statewide NPS Cooperators Conference (19^{th}) to enhance stakeholder communications.

— ADEM promotes a voluntary NPS compliance approach, but coordinates the regulatory aspect of citizen complaints with the ADEM Field Operations Mining and Nonpoint Section.

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

- 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
- Mobile Bay National Estuary Program
- National Oceanic & Atmospheric Administration

State Agencies

- 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
- Alabama Department of Education
- Mississippi State University Cooperative Extension System
- 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 - State Lands Division
- North Carolina State University Cooperative Extension System

Local Agencies/Organizations

- Forest Service Agency
- Alabama Water Watch Association
- Storm Water Management Authority
- Alabama Clean Water Partnership
- Alabama Pulp and Paper Council
- Montgomery Water Works and Sanitary Sewer Board
- Shelby County Commission
- CAWACO RC&D
- Alabama Power Foundation
- Dee Rivers Ranch
- Tri-River Water Watch
- 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, & Covington)
- 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, Covington, 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, Randoph, Tallapoosa, and Talledega)
- 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
- City of Montgomery
- City of Auburn
- Wildlands Environmental, Inc.