

1.0 INTRODUCTION

The value of water is no secret to Alabama. In fact, Alabama ranks seventh in the United States for its number of stream miles, with 77,274 miles. It also boasts 337 miles of coastline and approximately 610 miles of estuarine shoreline along the Gulf of Mexico. Alabama has over 3.5 million acres of wetlands, both freshwater and tidal. There are also 490,472 acres of lakes, reservoirs and ponds; some of which are associated with 16 hydroelectric dams and 16 navigational dams (5 of which are also power-generating).

Whether it is the Mobile Bay, the Tombigbee River or Luxapallila Creek, many Alabamians live, play and work on the water. We are all dependent on water for food and energy. And, because of our reliance on this resource, we all have a vested interest in protecting it for ourselves and our grandchildren and their grandchildren. The basin management planning process is a very important step to protect Alabama's water. It is an all-inclusive process that encourages all interested parties to participate. It consists of people working together to create guidelines for the management of the State's water resources based on their beliefs and the best scientific information available. The ultimate result of this process is a basin management plan that guides the activities of individuals and organizations to protect and restore Alabama's creeks, rivers, ponds, lakes, estuaries, and bays.

A basin or watershed is made up of all of the land that drains into a particular body of water like a stream, river or lake. Any body of water and its drainage make up a distinct hydrologic unit (the "watershed") in which all living things are interconnected by a basic and dynamic element: *water*. All waterbodies, large and small, have distinct watersheds. For the sake of

Graphical illustration of a watershed



classification, watersheds for large rivers are actually referred to as *river basins* or simply, *basins*. Basins are made up of *subbasins*. Subbasins are made up of *watersheds*. And, watersheds are made up of *sub-watersheds*, which are at the tributary scale.

How we impact the land where we live has a direct effect on the quality of water in our local streams. Rain carries soil from erosion along with pollutants over the land and into our creeks, rivers and lakes. We commonly refer to this volume of water as **stormwater** and we refer to this type of pollution as **nonpoint source pollution** because it does not come from any one **point source** or an end of a sewer or discharge pipe. Industrial practices like forest operations, mining, constructing roads and buildings, and farming can cause nonpoint source pollution and negatively impact water quality. Common residential uses like, washing the car, applying fertilizers and pesticides, and curbing the family dog, can also lead to nonpoint source pollution. When unchecked or mismanaged, these activities can lead to serious water quality problems. However, when practicing sound and careful management, plus a little common sense and courtesy for others, we can minimize and control the impact we have on the land and the water.

The prevention of water pollution by managing activities that impact the land and water occurs by regulatory and non-regulatory means. In the United States, the Clean Water Act² (CWA) mandates the designation of water quality standards and addresses activities that lead to water pollution. Water quality standards are determined by factoring in the known uses³ of the water (*e.g.*, swimming, fishing), chemical and biological criteria (*e.g.*, lead, arsenic, bacteria) and a quality protection clause known as, the “anti-degradation policy.” Using the standards as benchmarks, the CWA calls for the management of a wide range of water quality issues either by regulation, as is the case with wetland impacts, dredging, and point source pollution (*e.g.*, end-of-pipe discharges, sewer outfalls), or voluntary strategies such as, providing technical and financial assistance to industry, farmers, and municipalities. Section 319 of the CWA calls for a voluntary approach to protecting and restoring water quality and it is the main body of the CWA that authorizes programs and strategies such as this basin management plan to manage nonpoint source pollution and to protect watersheds.

² 33 U.S.C. 1251 - 1376

³ Alabama’s use classification system contains the following use classifications: Public Water Supply (PWS), Swimming and Other Whole Body Water Contact (S), Shellfish Harvesting (SH), Fish and Wildlife (F&W), Limited Warmwater Fishery, Outstanding Alabama Water (OAW), and Agricultural and Industrial Water Supply (A&I).

Administration of the various water quality protection programs under the CWA, including Section 319, fall into the hands of federal and state environmental agencies. The United States Environmental Protection Agency (EPA) is the federal agency charged with issuing and enforcing rules and regulations under the Clean Water Act. EPA frequently delegates authority to state environmental agencies in order to execute the various provisions of the CWA. Therefore, the State agencies typically occupy the lead role in the implementation of regulatory and non-regulatory programs by working directly with municipalities, industries, businesses and individuals. Table 1.1 below provides a summary of the primary water quality programs and the governmental agencies responsible for overseeing their implementation.

Table 1.1. Summary of Water Quality Regulations and Management Authorities

Program & Authorized Agency	Description
Nonpoint Source Pollution Control	
Water Quality Inventory – State of the State’s Waters (ADEM)	Documents the quality of all of Alabama’s waters
303(d) List of Impaired Waters (ADEM)	Information on waters that are polluted or degraded and do not meet their designated and existing uses.
Water Quality Restoration Planning/Total Maximum Daily Load (ADEM)	Developed for the waters listed under 303(d), these plans limit the amount of a pollutant(s) into impaired waters
National Pollution Discharge Elimination System (NPDES) – CWA Section 402	
Point Source Discharges (ADEM)	Individual and group permits to discharge pollutants into surface waters from municipal wastewater treatment plants, large storm sewer outfalls, construction sites over 5 acres, utilities, industrial discharges, aquaculture operations, certain animal feeding operations (AFO) and surface mining operations.
Stormwater Phase I & Phase II (ADEM)	Permits to limit runoff and pollution from municipal separate storm sewer systems and construction sites
Concentrated Animal Feeding Operations (CAFO)/Animal Feeding Operations(AFO) (ADEM)	AFO that qualify as CAFOs must obtain a NPDES permit from ADEM. Also, AFO in certain, priority watersheds must register with ADEM too.
State Indirect Discharge Permits (ADEM)	Permits for industrial discharges into a publicly-owned wastewater treatment system.
Surface Mining Rules (ADEM)	In addition to NPDES permits, surface mines must submit pollution prevention plans to ADEM.
Other Programs related to Water Quality	
Freshwater Wetlands (ACOE & ADEM)	Authorized through Section 404 of the Clean Water Act, certain activities that may impact to waterways and wetlands must be permitted.
Ground Water Protection (ADEM)	Regulations for underground storage tanks (UST) and underground injection (UIC)
Water Withdrawals (ADECA-OWR)	ADECA issues 5 to 10 year “Certificates of Use” for water withdrawals/diversions permits; a “Declaration of Beneficial Use” must be filed

Program & Authorized Agency	Description
	with ADECA
Drought Management (ADECA-OWR)	The state maintains the Alabama Drought Management Plan which contains the State's strategies for handling a drought.
Onsite Sewage Disposal Systems (ALDPH)	Property owners must obtain a permit from the county health agency before they install an onsite sewage disposal system or septic tank.
Local land use controls (Municipal governments*)	The use of zoning, easements and building codes to minimize the impact of development on water quality.
Innovative and Market-based Approaches.	
Water Quality Trading (EPA & ADEM)	EPA has issued the Water Quality Trading Assessment Handbook as guidance to explore this market-based approach
Watershed-based Permitting (EPA & ADEM)	An extension of the NPDES program to cover multiple sources within a watershed under one permit.
* Very few Alabama counties and towns maintain zoning laws. Those that do are typically associated with the major cities.	

The Alabama Department of Environmental Management (ADEM) is the primary agency responsible for executing the water protection mandates of the CWA for the State of Alabama. These responsibilities include, but are not limited to, the development of water quality standards;⁴ monitoring and reporting the state and condition of Alabama's waters⁵; creating a list of impaired waters⁶; regulating point sources of pollution (i.e. Section 402 - National Pollution Discharge Elimination System (NPDES)); setting limits to concentrations and volumes of pollutant inputs (Total Maximum Daily Loads (TMDLs)); and providing technical and financial assistance to landowners, municipalities and business to reduce nonpoint source pollution (Section 319). An excellent summary of these authorities can be found in the State's Nonpoint Source Management Program (NSMP).⁷

Alabama's NSMP sets forth ADEM's vision, goals, objectives and strategies to protect and restore the waters of the State by effectively managing nonpoint source pollution through a community-based, watershed-specific and cooperative approach (ADEM, 2003). The ADEM Office of Communication, Planning, and Outreach is charged with updating and coordinating the

⁴ Alabama's surface water quality standards are found in Chapters 335-6-10 and 335-6-11 of the ADEM Administrative Code. The *Antidegradation Policy* of the ADEM Water Quality Program is found in the ADEM Administrative Code Rule 335-6-10-04(3) is perhaps the most comprehensive enforcement mechanism because it requires management measures to prevent the decrease (degradation) of the State's waters.

⁵ ADEM completed the *Integrated Water Quality Monitoring and Assessment Report* in 2004, also commonly known as the 'State of the State's Waters Report, which is a biannual report to Congress mandated by Section 305(b) of the CWA.

⁶ Section 303(d) of the CWA mandates that the states must develop a list of impaired (not attaining water quality standards) waters every even-numbered year.

⁷ See 'Chapter 4 - Management Program Implementation Mechanisms and Authorities' for a summary of the regulatory and non-regulatory mechanisms and legal foundation on many water quality related programs.

implementation of the NSMP. The Program is periodically updated and was last updated in August of 2003. This latest Program update highlights the important elements of a watershed approach to nonpoint source pollution management in Alabama:

“In 1997, Alabama began implementation of a watershed management approach as a tool for assessment and prioritization of water quality issues, development of strategies and solutions, and opportunities for targeted, cooperative actions to achieve water quality goals. Among the key elements of the watershed management approach are: stakeholder involvement; watershed monitoring; watershed assessment; prioritization and targeting development of management strategies; development of watershed management plans; and, plan implementation.”

- ADEM Nonpoint Source Management Program, 2004

More specifically, basin management plans for Alabama’s river basins are explicitly state in the NSMP’s Goals:

“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. Goal 5. Develop 10 sub-watershed 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. Goal 6. Support the efforts of the Alabama Clean Water Partnership (CWP) Program.”

- Chapter 1 of the Alabama Nonpoint Source Management Program
August 2003, ADEM Nonpoint Source Unit. Pages 1-5.

Development of this basin management plan for the Tombigbee River Basin constitutes another successful step for the State of Alabama to meet its nonpoint source pollution management goals. The next section will explain the origin of this basin management plan and how it was created. It will also discuss the many people involved in the planning process.