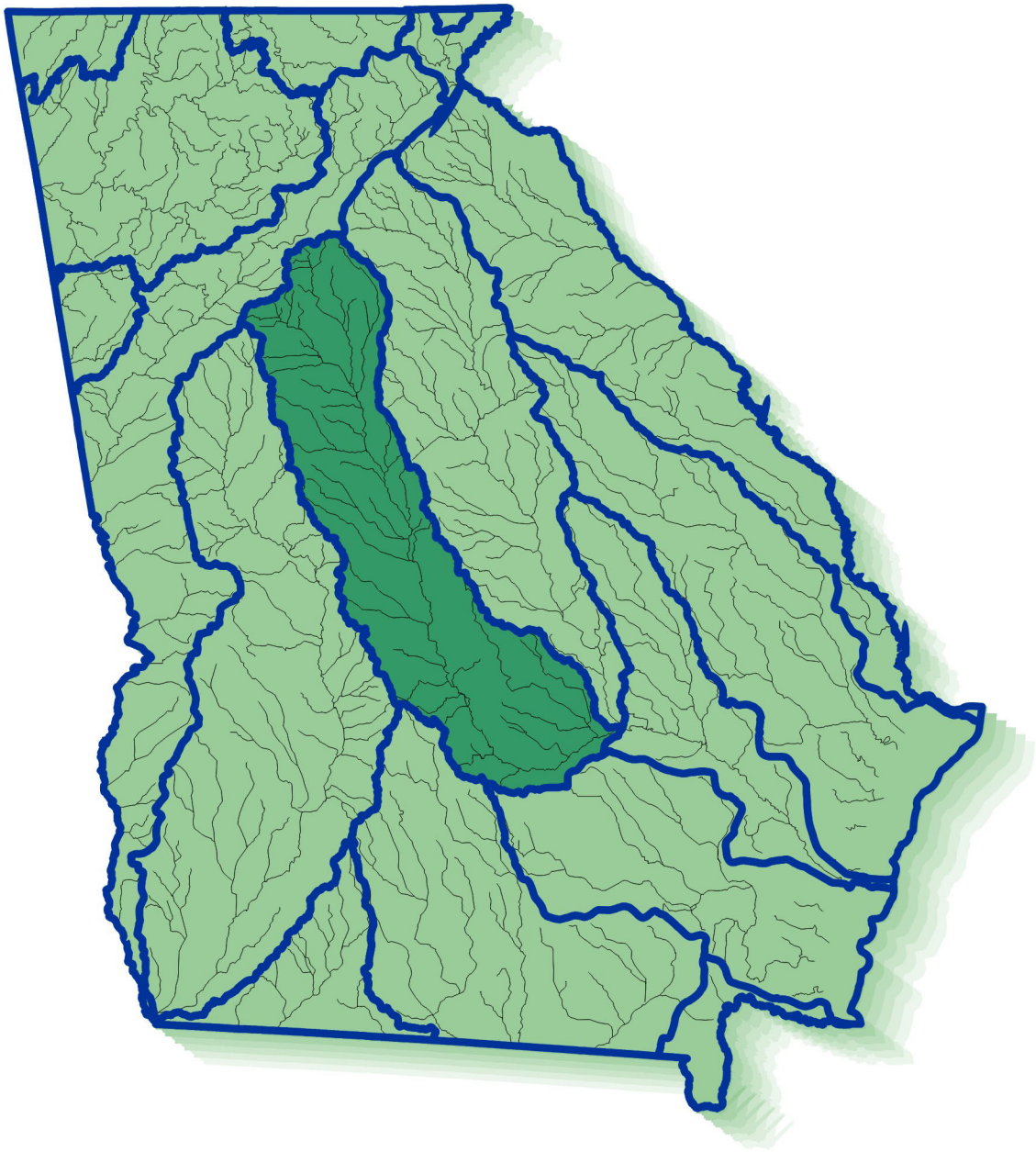
Ocmulgee River Basin Management Plan 2003



Georgia Department of Natural Resources
Environmental Protection Division

Georgia River Basin Management Planning Vision, Mission, and Goals

What is the VISION for the Georgia RBMP Approach?

Clean water to drink, clean water for aquatic life, and clean water for recreation, in adequate amounts to support all these uses in all river basins in the State of Georgia.

What is the RBMP MISSION?

To develop and implement a river basin planning program to protect, enhance, and restore the waters of the State of Georgia, that will provide for effective monitoring, allocation, use, regulation, and management of water resources.

[Established January 1994 by a joint basin advisory committee workgroup.]

What are the GOALS to Guide RBMP?

1) To meet or exceed local, state, and federal laws, rules, and regulations, and be consistent with other applicable plans.
2) To identify existing and future water quality issues, emphasizing nonpoint sources of pollution.
3) To propose water quality improvement practices encouraging local involvement to reduce pollution, and monitor and protect water quality.
4) To involve all interested citizens and appropriate organizations in plan development and implementation.
5) To coordinate with other river plans and regional planning.
6) To facilitate local, state, and federal activities to monitor and protect water quality.
7) To identify existing and potential water availability problems and to coordinate development of alternatives.
8) To provide for education of the general public on matters involving the environment and ecological concerns specific to each river basin.
9) To provide for improving aquatic habitat and exploring the feasibility of re-establishing native species of fish.
10) To provide for restoring and protecting wildlife habitat.
11) To provide for recreational benefits.
12) To identify and protect flood prone areas within each river basin, and encourage local and state compliance with federal flood plain management guidelines.

[Established January 1994 by a joint basin advisory committee workgroup.]

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Preface

This report was prepared by the Environmental Protection Division (EPD), Georgia Department Natural Resources (EPD), as required by O.C.G.A. 12-5-520 and as a public information document. It represents a synoptic extraction of the EPD files and, in certain cases, information has been presented in summary form from those files. The reader is therefore advised to use this condensed information with the knowledge that it is a summary document and more detailed information is available in the EPD files.

Comments or questions related to the content of this report are invited and should be addressed to:

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List of Acronyms and Abbreviations

Ac	acre
Ac-ft	acre-feet
ACCG	Association of County Commissioners of Georgia
ACF	Apalachicola-Chattahoochee-Flint Basin
ACT/ACF	Alabama-Coosa-Tallapoosa/Apalachicola-Chattahoochee Flint Basin
ADEM	Alabama Department of Environmental Management
ARC	Atlanta Regional Commission
ARS	USDA Agricultural Research Service
ASR	aquifer storage and recovery
BMPs	best management practices
BOD	biochemical oxygen demand
CAES	University of Georgia College of Agricultural and Environmental Sciences
Cd	cadmium
CFR	Code of Federal Regulations
COE	U.S. Army Corps of Engineers
CPUE	catch per unit effort (fishing)
CRMP	Chattahoochee River Modeling Project
CRP	Conservation Reserve Program
CSGWPP	Comprehensive State Ground Water Protection Plan
CSMTF	Community Stream Management Task Force
CSO	Combined Sewer Overflow
Cu	copper
CWA	U.S. Clean Water Act
DCA	Georgia Department of Community Affairs
DNR	Georgia Department of Natural Resources
DO	dissolved oxygen
EPA	U.S. Environmental Protection Agency
EPD	Georgia Environmental Protection Division
EQIP	Environmental Quality Incentives Program
E&SC	Erosion and Sedimentation Control Act
FEMA	Federal Emergency Management Agency
FFY	Federal fiscal year
FIP	Forestry Incentives Program
FSA	Farm Service Agency
ft	feet
ft^2/d	square feet per day
ft^3/s	cubic feet per second
gal/m	gallons per minute
GDA	Georgia Department of Agriculture
GEMA	Georgia Emergency Management Agency
GFA	Georgia Forestry Association
GFC	Georgia Forestry Commission
GMA	Georgia Municipal Association
GPC	Georgia Power Company
GPD	gallons per day
GPM	gallons per minute
GSWCC	Georgia Soil and Water Conservation Commission
Hg	mercury
HUC	Hydrologic unit code (USGS)
IBI	Index of Biotic Integrity
kg	kilogram

km^2	square kilometer
kW	kilowatt
LAS	land application system for wastewater
LUST	leaking undeground storage tank
MCL	Maximum Contaminant Level for drinking water
meq/l	milliequivalent
mg/l	milligrams per liter
MG	million gallons
MGD	million gallons per day
mi^2	square miles
ml	milliliter
MLMP	Major Lakes Monitoring Project
MLRA	major land resource area
MOU	memorandum of understanding
MPN	most probable number (for quantification of fecal coliform bacteria)
MSA	Atlanta Metropolitan Statistic Area
MS4	municipal separate stormwater system
M&I	municipal and industrial
NFIP	National Flood Insurance Program
ng/L	nanograms per liter
NOI	notice of intent
NPDES	National Pollution Discharge Elimination System
NPS	nonpoint source
NRCS	Natural Resources Conservation Service of USDA
NSSP	National Shellfish Sanitation Program
NURE	National Uranium Resource Evaluation
NWI	National Wetlands Inventory (USF&WS)
Pb	lead
PCB	polychlorinated biphenyl
PFA	public fishing area
ppm	parts per million; equivalent to mg/l
RBMP	River Basin Management Planning
RBP	Rapid Bioassessment Protocol
RC&D	Resource Conservation and Development Council
RDC	Regional Development Center
RM	river mile
SCS	Soil Conservation Service (now NRCS)
SMZs	Streamside Management Zones
SOCs	Synthetic Organic Chemicals
STATSGO	State Soil Geographic Database (USDA)
SWCD	Soil and Water Conservation District
TMDL	Total Maximum Daily Load, as specified in the CWA
TTSI	Georgia combined lake trophic state index
UGA	University of Georgia
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USEPA	U.S. Environmental Protection Agency
USF&WS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WET	whole effluent toxicity
WHIP	Wildlife Habitat Incentives Program
WPCP	water pollution control plant
WRD	Georgia Wildlife Resources Division
WRP	Wetland Reserve Program
WWTP	wastewater treatment plant
Zn	zinc
µg/l	micrograms per liter
7Q10	7-day average low flow with a once-in-ten-year recurrence interval

Executive Summary

This document presents Georgia's management plan for the Ocmulgee River basin, which is being produced as a part of Georgia's River Basin Management Planning (RBMP) approach. The Georgia Environmental Protection Division (EPD) has developed this plan in cooperation with several other agency partners including the USDA Natural Resources Conservation Commission, Georgia Soil and Water Conservation Commission, Georgia Forestry Commission, U.S. Geological Survey, Georgia Geological Survey, and Georgia Wildlife Resources Division. The RBMP approach provides the framework for identifying, assessing, and prioritizing water resources issues, developing management strategies, and providing opportunities for targeted, cooperative actions to reduce pollution, enhance aquatic habitat, and provide a dependable water supply.

Purpose of the Basin Plan

The purpose of this plan is to provide relevant information on the characteristics of the Ocmulgee River basin, describe the status of water quality and quantity in the Ocmulgee River basin, identify present and future water resource demands, present and facilitate the implementation of water quality protection efforts, and enhance stakeholder understanding and involvement in basin planning.

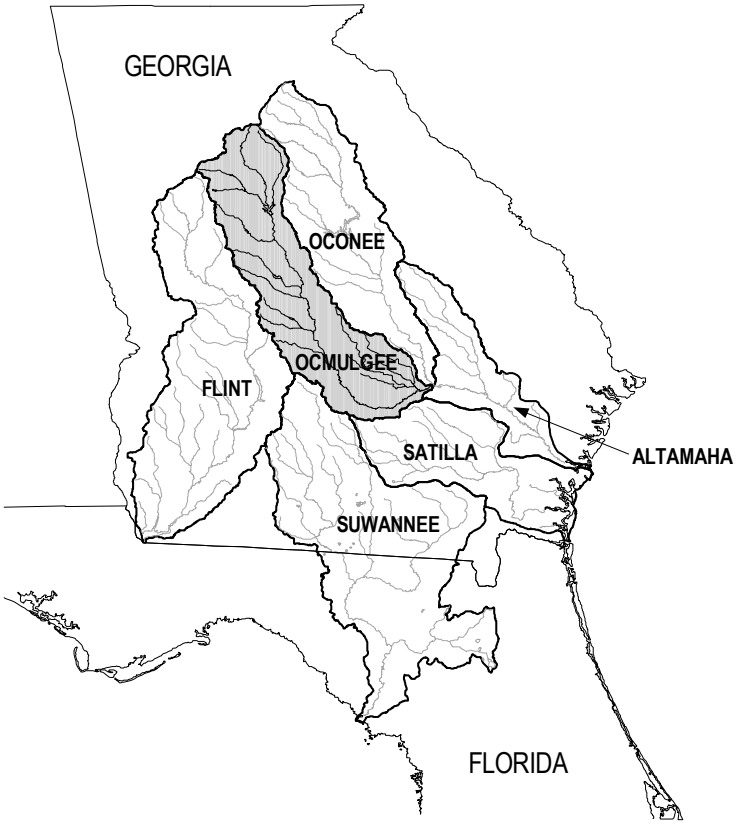
This Ocmulgee River Basin Management Plan includes strategies to address a number of different basinwide objectives. These include:

- Protecting water quality in lakes, rivers, streams, estuaries, and coastal waters through attainment of water quality standards and support for designated uses;
- Providing adequate, high quality water supply for municipal, agricultural, industrial, environmental, and other human activities;
- Preserving habitat suitable for the support of healthy aquatic and riparian ecosystems;
- Protecting human health and welfare through prevention of water-borne disease; minimization of risk from contaminated fish tissue, and reduction of risks from flooding; and
- Ensuring opportunities for economic growth, development, and recreation in the region.

Achieving these objectives is the responsibility of a variety of state and federal agencies, local governments, business, industry, and individual citizens. Coordination among these many partners can be challenging, and impacts of actions in one locale by one partner on conditions elsewhere in the basin are not always understood or considered. River Basin Management Planning is an attempt to bring together stakeholders in the basin to increase coordination and to provide a mechanism for communication and consideration of actions on a broad scale to support water resource objectives for the

entire basin. RBMP provides the framework to begin to understand the consequences of local decisions on basinwide water resources.

This river basin plan will serve as the road map for managing the water resources in the Ocmulgee River basin over the next five years. It contains useful information on the health of the Ocmulgee River basin and recommended strategies to protect the basin now and into the future.



Ocmulgee River Basin Characteristics

The Ocmulgee River basin is located in the central part of Georgia, occupying an area of approximately 6,085 square miles. The basin occupies parts of the Piedmont and Coastal Plain physiographic provinces, which extend throughout the southeastern United States. The Ocmulgee River joins the Oconee River to form the Altamaha River, which drains into the Atlantic Ocean.

Water Resources

The surface water resources of the basin are divided into three major watersheds or hydrologic units: the upper Ocmulgee River subbasin, the lower Ocmulgee River subbasin and the Little Ocmulgee River subbasin.

Biological Resources

The Ocmulgee River watershed crosses four major land resource areas including the Southern Piedmont, the Southern Coastal Plain, the Carolina and Georgia Sand Hills and the Black Lands providing many different ecosystem types. These ecosystems provide

habitat for diverse species of aquatic and terrestrial wildlife. Several of the species are currently threatened or endangered.

Population and Land Use Characteristics

The major population centers in the Ocmulgee River basin include portions of metropolitan Atlanta in the upper portion of the basin and Macon in the central portion of the basin. The population is expected to increase at an average growth rate through 2050.

More than 54 percent of the basin is covered by forests and forestry-related activities account for a major part of the basin's economy. Agriculture is also a significant land use activity supporting a variety of animal operations and commodity production.

Local Governments and Planning Authorities

The local governments in the basin consist of counties and incorporated municipalities. The Ocmulgee basin includes part or all of 30 Georgia counties. These counties are members of seven different Regional Development Centers.

Water Quantity Conditions

Surface water supplies in the basin include water in rivers, ponds, and reservoirs. Surface water is the primary source in the Piedmont province, while within the Coastal Plain Province, aquifer yields are higher and groundwater withdrawals make up the majority of the total water budget.

The primary demands for water supply in the basin include municipal and industrial use, agricultural use, and recreation. The demand for drinking water is expected to remain stable in the near future due to average population growth rates. Agricultural water demand in the Ocmulgee River basin has increased over the last two decades and is expected to increase significantly in the future.

Water Quality Conditions

The major environmental stressors that impair or threaten water quality in the Ocmulgee River basin include traditional chemical stressors, such as oxygen demanding substances, metals, and bacterial contamination, as well as less traditional stressors, such as stream channel modifications and alteration of physical habitat.

Significant potential sources of environmental stressors in the basin include point source discharges such as municipal and industrial wastewater and storm sewers; and nonpoint sources that result from diffuse runoff from urban and rural land uses. Based on EPD's 2000-2001 water quality assessment, urban runoff and rural nonpoint sources are now the major sources of failure to support designated uses of water bodies in the Ocmulgee basin.

Point Sources

Point sources are defined as the permitted discharges of treated wastewater to river and tributaries that are regulated under the National Pollutant Discharge Elimination System (NPDES). These permits are issued by EPD for wastewater discharges and storm water discharges.

Municipal discharges. There are currently 26 permitted major municipal treated wastewater discharges with flows greater than 1 MGD in the Ocmulgee River basin. There are also 37 minor public discharges. EPD monitors compliance of these permits and takes appropriate enforcement action for violations. As of the 2000-2001 water quality assessment, there were no stream segments identified in which municipal discharges contributed to a failure to support designated uses.

Industrial and federal discharges. There are a number of industrial and federal treated wastewater dischargers in the basin including 4 major and 44 minor facilities. As of the 2000-2001 water quality assessment, there were two stream segments (18 miles) identified in which industrial discharges contributed to a failure to support designated uses.

Permitted stormwater discharges. Urban stormwater runoff in the Ocmulgee basin has been identified as a source of water quality impairment. Urban runoff which is collected by storm sewers is now subject to NPDES permitting and control.

Nonpoint Sources

Nonpoint sources of pollution include a variety of pollutants that are carried across the ground with rainwater or snowmelt and are deposited in water bodies. The 2000-2001water quality assessment results for the Ocmulgee basin indicate that urban and rural nonpoint sources contribute significantly to failure to support designated uses of water bodies. The major categories of nonpoint source pollution in the basin include the following:

- Urban, industrial, and residential sources, which may contribute stormwater runoff, unauthorized discharges, oxygen-demanding waste, oil and grease, nutrients, metals, bacteria, and sediments.
- Agricultural sources, which may contribute nutrients from animal wastes and fertilizers, sediment, herbicides/pesticides, and bacteria and pathogens.
- Forestry activities, which may contribute sediments and herbicides/pesticides.

Support of Designated Uses

Under Georgia regulations, designated uses and associated water quality standards provide goals for water quality protection. EPD assessed waters in the Ocmulgee basin and reported the results in the *Georgia 2002 305(b)/303(d) List*. The criteria listed most frequently in the 2002 list as contributing to not supporting or partially supporting status was fecal coliform bacteria followed by biota impacts, dissolved oxygen and fish consumption issues.

Key Environmental Stressors

The major threats to water quality in the Ocmulgee River basin are summarized below.

Fecal coliform bacteria. The 2000-2001 water quality assessments indicated that fecal coliform bacteria was the most commonly listed cause of failure to support designated uses. Fecal coliform bacteria may arise from point and nonpoint sources, such as wastewater treatment plants, agricultural nonpoint sources, leaking septic systems, and stormwater runoff. As point sources have been brought under control in the basin, nonpoint sources have become increasingly important as potential sources of fecal coliform bacteria.

Sediment loading and habitat degradation. A healthy aquatic ecosystem requires a healthy physical habitat. One major cause of disturbance to stream habitats is erosion and sedimentation. As sediment is carried into the stream, it can change the stream bottom, and may smother sensitive organisms. Turbidity associated with sediment loading also may potentially impair recreational and drinking water uses. Sediment loading is of greatest concern in developing areas and major transportation corridors. The rural areas of the basin are of lesser concern with the exception of rural unpaved road systems, areas where cultivated cropland exceeds 20 percent of the total land cover, and areas in which foresters are not following appropriate management practices.

Dissolved oxygen. The 2000-2001 water quality assessments indicated low dissolved oxygen was one of the most commonly listed causes of failure to fully support designated uses. Oxygen consuming substances may be discharged to streams from point and nonpoint sources. In general, nonpoint sources are the most significant sources at this time. Severe drought conditions across Georgia during the 1999-2002 period were a significant contributing factor to the low dissolved oxygen concentrations documented in the Ocmulgee River and its tributaries.

Fish tissue contamination. Fish consumption issues for individual fish species are also a concern in the Ocmulgee River basin and contributed to the listing of a number of waters as not fully supporting designated uses. The fish consumption issues are associated with mercury, primarily from air deposition, or PCBs from legacy sources.

Strategies for Water Supply

At this time, water quantity appears to be adequate for all uses in the Ocmulgee River basin. There are, however, several water quantity concerns in the Ocmulgee basin, including drought response planning which is of significance to decision makers.

Strategies for Water Quality

Water quality in the Ocmulgee River basin is generally good at this time, although problems remain to be addressed and proactive planning is needed to protect water quality into the future. Many actions have already been taken to protect water quality. Programs implemented by federal, state, and local governments, farmers, foresters, and other individuals have greatly helped to protect and improve water quality in the basin over the past 20 years.

The primary source of pollution that continues to affect waters of the Ocmulgee River basin results from nonpoint sources. These problems result from the cumulative effect of activities of many individual landowners or managers. Population is growing every year, increasing the potential risks from nonpoint source pollution. Growth is essential to the economic health of the Ocmulgee River basin, yet growth without proper land use planning and implementation of best management practices to protect streams and rivers can create harmful impacts on the environment.

Because there are many small sources of nonpoint loading spread throughout the watershed, nonpoint sources of pollution cannot effectively be controlled by state agency permitting and enforcement, even where regulatory authority exists. Rather, control of nonpoint loading will require the cooperative efforts of many partners, including state and federal agencies, individual landowners, agricultural and forestry interests, local county and municipal governments, and Regional Development Centers. A combination of regulatory and voluntary land management practices will be necessary to maintain and improve the water quality of rivers, streams, and lakes in the Ocmulgee River basin.

Key Actions by EPD. The Georgia EPD Water Protection Branch has responsibility for establishing water quality standards, monitoring water quality, river basin planning, water quality modeling, permitting and enforcement of point source NPDES permits, and developing Total Maximum Daily Loads (TMDLs) and implementation plans where ongoing actions are not sufficient to achieve water quality standards. Much of this work is regulatory. EPD is also one of several agencies responsible for facilitating, planning, and educating the public about management of nonpoint source pollution. Nonpoint source programs implemented by Georgia and by other states across the nation are voluntary in nature. The Georgia EPD Water Resources Branch regulates the use of Georgia's surface and groundwater resources for municipal and agricultural uses, which includes source water assessment and protection activities in compliance with the Safe Drinking Water Act.

Actions being taken by EPD at the state level to address water quality problems in the Ocmulgee River basin include the following:

- **Watershed Assessments and Watershed Protection Implementation Plans.** When local governments propose to expand an existing wastewater facility, or propose a new facility, EPD requires a comprehensive watershed assessment and development of a watershed protection implementation plan.
- **Total Maximum Daily Loads (TMDLs).** Where water quality sampling has documented standards violations and ongoing actions are not sufficient to achieve water quality standards, a TMDL will be established for a specific pollutant on the specific stream segment in accordance with EPA guidance. TMDLs were established for 303(d) listed waters in the Ocmulgee River basin in 2002. Implementation plans were also finalized in 2002. This work represents a significant step in advancing the watershed approach in Georgia. Work was done to develop a TMDL for each individual pollutant not achieving water quality standards. The TMDL was public noticed and comments were considered prior to finalizing the TMDL. In those situations where point sources caused the water quality problem, the results of the TMDL will be implemented through the NPDES permitting program. NPDES permit conditions will be modified to support the implementation of the TMDL. Where nonpoint sources were the cause of the problem, in many cases the EPD contracted with the local Regional Development Center (RDC) to develop an implementation plan to address the problem. Each RDC brought together local stakeholder groups familiar with the individual watersheds to provide input and insight in developing each TMDL implementation plan. In this manner, the development of the plans can be locally led and implemented.
- **Source Water Protection.** Most of the public water supply in the Ocmulgee basin is drawn from groundwater. To provide for the protection of public water supplies, Georgia EPD is developing a Source Water Assessment Program in alignment with the 1996 amendments to the Safe Drinking Water Act and corresponding EPA guidelines.
- **Fish Consumption Guidelines.** EPD and the Wildlife Resources Division work to protect public health by testing fish tissue and issuing fish consumption guidelines as needed, indicating the recommended rates of consumption of fish from specific waters. The guidelines are based on conservative assumptions and provide the public with factual information for use in making rational decisions regarding fish consumption.

Key Actions by Resource Management Agencies. Nonpoint source pollution from agriculture and forestry activities in Georgia is managed and controlled with a statewide non-regulatory approach. This approach is based on cooperative partnerships with various agencies and a variety of programs. Agriculture in the Ocmulgee River basin is a mixture of livestock and poultry operations and commodity production. Key partners for controlling agricultural nonpoint source pollution are the Soil and Water Conservation Districts, Georgia Soil and Water Conservation Commission, and the USDA Natural Resources Conservation Service. These partners promote the use of environmentally sound Best Management Practices (BMPs) through education, demonstration projects, and financial assistance.

One program, the Environmental Quality Incentive Program (EQUIP), authorized by the Farm Bill provides incentive payments and cost-sharing for conservation projects through 5- to 10-year contracts. An individual producer can receive as much as $450,000 (federal cost share up to 50 percent) in EQUIP funds over 10 years for contracts initiated between FY 2002 and FY 2007.

Forestry is a major part of the economy in the Ocmulgee basin and commercial forestlands represent over 54 percent of the total basin land area. The Georgia Forestry Commission (GFC) is the lead agency for controlling silvicultural nonpoint source pollution. The GFC develops forestry practice guidelines, encourages BMP implementation, conducts education, investigates and mediates complaints involving forestry operations, and conducts BMP compliance surveys.

Key Actions by Local Governments. Addressing water quality problems resulting from nonpoint source pollution will primarily depend on actions taken at the local level. Particularly for nonpoint sources associated with urban and residential development, it is only at the local level that regulatory authority exists for zoning and land use planning, control of erosion and sedimentation from construction activities, and regulation of septic systems.

Local governments are increasingly focusing on water resource issues. In many cases, the existence of high quality water has not been recognized and managed as an economic resource by local governments. That situation is now changing due to a variety of factors, including increased public awareness, high levels of population growth in many areas resulting in a need for comprehensive planning, recognition that high quality water supplies are limited, and new state-level actions and requirements. The latter include:

- Requirements for Watershed Assessments and Watershed Protection Implementation Plans when permits for expanded or new municipal wastewater discharges are requested;
- Development of Source Water Protection Plans to protect public drinking water supplies;
- Requirements for local comprehensive planning, including protection of natural and water resources, as promulgated by the Georgia Department of Community Affairs.
- Development of Total Maximum Daily Loads (TMDLs) and the development of implementation plans by RDCs and local stakeholder groups.

In sum, it is the responsibility of local governments to implement planning for future development, which takes into account management and protection of the water quality of rivers, streams, and lakes within their jurisdiction. One of the most important actions that local governments should take to ensure recognition of local needs while protecting water resources is to participate in the basin planning process, either directly or through Regional Development Centers.

Continuing RBMP in the Ocmulgee River Basin

This basin plan represents one step in managing the water resources in the Ocmulgee basin. EPD, its resource management agency partners, local governments, and basin stakeholders will need to work together to implement the plan in the coming months and years. Additionally, the basin planning cycle provides the opportunity to update management priorities and strategies every five years. Agencies and organizations with technical expertise, available resources, and potential implementation responsibilities are encouraged to continue to contribute to the planning and implementation processes. Other stakeholders can stay involved through working with state and local agencies, and participating in locally initiated watershed planning and TMDL implementation activities. An update of the Ocmulgee River basin plan is planned for 2007.