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- Identified Basin Planning and Management Concerns
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Section 6

Concerns and Priority Issues

The assessments in Section 5 present a number of water quality and quantity concerns within the Ocmulgee River basin. This section aggregates the assessment data to identify priority issues for development of management strategies.

6.1 Identified Basin Planning and Management Concerns

Section 4 and 5 identified both site-specific and generalized sources of water quality stressors. Some issues are limited to specific segments, but a number of water quality concerns apply throughout the basin. The criterion listed most frequently in the Georgia 2002 305(b)/303(d) List as contributor to not supporting or partial supporting status in streams and rivers was fecal coliform bacteria followed biota impacts, dissolved oxygen and fish consumption issues. Fecal coliform bacteria are associated primarily with urban runoff or nonpoint sources. Biota impacts are due primary to nonpoint sources such as urban runoff, development, and agriculture. Low dissolved oxygen conditions were primarily associated with natural drought conditions. Three lakes and portions of the South and Ocmulgee Rivers were listed due to fish consumption issues. Fish consumption issues on the river segments and two of the lakes are associated with PCBs (which are no longer manufactured but persist in the aquatic environment for some time). Mercury was the issue with fish tissue at the third lake. Five segments were listed due to pH exceedances, one segment was listed for mercury exceedance, and two segments were listed as a result of aquatic toxicity testing results on municipal or industrial water pollution control plant effluent, which predicted toxicity in the receiving stream at critical low 7Q10 stream flows.

Within some individual stream reaches, other sources may be of greater importance (e.g., WPCP effluent); however, urban runoff and general nonpoint sources represent a basinwide concern. Further, strong population growth and development pressure in parts of the basin will tend to increase the importance of urban runoff as a stressor of concern. For such widespread concerns, basinwide management strategies will be needed.

Major water quality and quantity concerns for the Ocmulgee River basin are summarized by geographic area in terms of the concerns and sources of these concerns in

Table 6-1. Table 6-2 summarizes the pollutants identified as causing impairment of designated uses in the basin; however, not all identified concerns are related to pollutant loads. Ongoing control strategies are expected to result in support of designated uses in a number of waters. In other waters, however, the development of additional management strategies may be required or implemented in order to achieve water quality standards.

Table 6-1. Summary of Concerns in the Ocmulgee River Basin

Stressors of Concern	Potential Source of the Stressor by HUC		
	HUC 03070103	HUC 03070104	HUC 03070105
Fecal Coliform Bacteria	Multiple source potential	Multiple source potential	Multiple source potential
Erosion and Sedimentation	Urban and Rural NPS	Urban and Rural NPS	Urban and Rural NPS
Dissolved Oxygen	Natural Inputs, Urban and Rural NPS, WPCP and Industrial effluent	Natural Inputs, Urban and Rural NPS, WPCP effluent	Natural Inputs, Urban and Rural NPS, WPCP effluent
Fish Consumption Guidelines	PCBs persisting in environment	PCBs persisting in environment	Nonpoint Mercury
pH	Natural inputs, Urban and Rural NPS	Natural inputs, Urban and Rural NPS, WPCP effluent	Natural inputs, Urban and Rural NPS
Metals		Nonpoint Mercury	
Toxicity	Municipal or Industrial effluent		

Table 6-2. Summary of Pollutants Causing Water Quality Impairment in the Ocmulgee River Basin

Use Classification of Water Body Segments	Pollutants Causing Impairment by HUC		
	HUC 03070103	HUC 03070104	HUC 03070105
Fishing (Support for Aquatic Life)	Sediment, pH, low DO, toxicity	Sediment, pH, low DO, metals	Sediment, pH, low DO
Fishing (Fish Consumption)	PCBs	PCBs	Mercury
Fishing (Secondary Contact Recreation)	Fecal coliform bacteria	Fecal coliform bacteria	Fecal coliform bacteria
Drinking Water	Fecal coliform bacteria		
Recreation	Fecal coliform bacteria		

In the following pages, priority water quality and quantity concerns are presented by Hydrologic Unit. For some water quality and quantity concerns, problem statements are identical for each HUC, while others differ between HUCs. Detailed strategies for addressing these concerns are then supplied in Section 7.

Each concern is listed in the form of a “Problem Statement” which summarizes the linkage between stressor sources and water quality impacts. The order in which concerns are listed for each HUC should not be considered to be significant. Prioritization of basin concerns requires consensus among all stakeholders and has not been finalized; however, short-term water quality action priorities for EPD are summarized in Section 6.2.

6.1.1 Problem Statements

Upper Ocmulgee River Subbasin (HUC 03070103)

Erosion and Sedimentation

The water use classifications of fishing, recreation, and drinking water are potentially threatened in waterbodies by erosion and loading of sediment, which can alter stream morphology, impact habitat, and reduce water clarity. Potential sources include urban runoff and development (particularly construction), unpaved rural roads, forestry practices, and agriculture. There are 39 stream segments listed in this subbasin as not fully supporting designated water uses due to poor fish communities or sedimentation.

Fecal Coliform Bacteria

The water use classification of fishing and/or drinking water was not fully supported in one Ocmulgee River mainstem segment, 58 tributary stream segments, and a 650 acre portion of Jackson Lake due to exceedances of the water quality standard for fecal coliform bacteria. These may be attributed to a combination of urban runoff, septic systems, sanitary sewer overflows, rural nonpoint sources, and/or animal wastes.

Fish Tissue

The water use classification of fishing was not fully supported in two segments of the Ocmulgee River (flathead catfish), one segment of the South River (largemouth bass), and in Jackson (channel catfish) and High Falls Lakes (largemouth bass and channel catfish) based on PCB residues in fish tissue.

The water use classification of drinking water was not fully supported in Big Haynes Reservoir in Rockdale County based on mercury residues in fish tissue. The assessment for mercury in fish tissue is based on the Trophic-Weighted Residue Value being in excess of 0.3 mg of mercury per kilogram of fish tissue. See Box 5-2 in Section 5 for details regarding assessment of mercury in fish tissue.

Low Dissolved Oxygen

The water use classification of fishing was not fully supported in two tributary stream segments due to dissolved oxygen concentrations less than standards. Low dissolved oxygen concentrations coincided primarily with low or zero flows, slow stream velocities, shallow water depths and high temperatures. Natural conditions may contribute to the cause of low dissolved oxygen in streams in the Ocmulgee River basin.

Nutrients

The water use classifications of fishing or recreation are potentially threatened in Lakes Jackson, Juliette, Tobesobkee and High Falls Lake due to inputs of nutrients, which may cause excess algal growths in the lakes. Nutrient sources include water pollution control plant discharges, lake fertilization and nonpoint sources from urban and agricultural areas.

pH

The water use classification of fishing was not fully supported in one tributary stream segment due to pH levels below the minimum pH standard of 6.0. It is not known whether the pH violations are due to nonpoint source influences or natural conditions.

Toxicity

The water use classification of fishing was not fully supported in two tributary stream segments due to toxicity. Aquatic toxicity tests of effluent from dischargers predicted toxicity in the receiving streams at critical, low flow conditions.

Lower Ocmulgee River Subbasin (HUC 03070104)

Erosion and Sedimentation

The water use classifications of fishing, recreation, and drinking water are potentially threatened in waterbodies by erosion and loading of sediment, which can alter stream morphology, impact habitat, and reduce water clarity. Potential sources include urban runoff and development (particularly construction), unpaved rural roads, forestry practices, and agriculture. There are 15 stream segments listed in this subbasin as not fully supporting designated water uses due to poor fish communities or sedimentation.

Fecal Coliform Bacteria

The water use classification of fishing and/or drinking water was not fully supported in one Ocmulgee River mainstem segment and three tributary stream segments due to exceedances of the water quality standard for fecal coliform bacteria. These may be attributed to a combination of urban runoff, septic systems, sanitary sewer overflows, rural nonpoint sources, and/or animal wastes.

Fish Consumption Guidelines

The water use classification of fishing was not fully supported in one Ocmulgee River mainstem segment due to PCB residues in fish tissue. The guidelines are for flathead catfish.

Low Dissolved Oxygen

The water use classification of fishing was not fully supported in four tributary stream segments due to dissolved oxygen concentrations less than standards. Low dissolved oxygen concentrations coincided primarily with low or zero flows, slow stream velocities, shallow water depths and high temperatures. Horse Creek in Houston County was also affected by effluent from a municipal water pollution control plant. The plant relocated its discharge point from Horse Creek to the Ocmulgee River on August 31, 1999. Natural conditions may contribute to or be the cause of low dissolved oxygen in many streams in the Ocmulgee River basin.

Metals

The water use classification of fishing was not fully supported in one Ocmulgee River mainstem segment due to exceedance of metals standards (mercury) from nonpoint sources.

pH

The water use classification of fishing was not fully supported in two tributary streams due to pH levels below the minimum pH standard of 6.0. It is not known whether the pH violations are due to point source influences, nonpoint source influences, or natural conditions.

Little Ocmulgee River Subbasin (HUC 03070105)

Erosion and Sedimentation

The water use classifications of fishing, recreation, and drinking water are potentially threatened in waterbodies by erosion and loading of sediment, which can alter stream morphology, impact habitat, and reduce water clarity. Potential sources include urban runoff and development (particularly construction), unpaved rural roads, forestry practices, and agriculture. There is one stream segment listed in this subbasin as not fully supporting designated water uses due to poor fish communities or sedimentation.

Fecal Coliform Bacteria

The water use classification of fishing was not fully supported in two tributary stream segments due to exceedances of the water quality standard for fecal coliform bacteria. These may be attributed to a combination of urban runoff, septic systems, sanitary sewer overflows, rural nonpoint sources and/or animal wastes.

Fish Consumption Guidelines

The water use classification of fishing was not fully supported in Little Ocmulgee State Park Lake (Gum Creek Swamp) in Telfair and Wheeler Counties based on mercury residues in fish tissue. The assessment for mercury is based on the Trophic-Weighted Residue Value being in excess of 0.3 mg of mercury per kilogram of fish tissue. See Box 5-2 in Section 5 for details regarding assessment of mercury in fish tissue.

Low Dissolved Oxygen

The water use classification of fishing was not fully supported in one Little Ocmulgee River mainstem segment and four tributary stream segments due to dissolved oxygen concentrations less than standards. Low dissolved oxygen concentrations coincided primarily with low or zero flows, slow stream velocities, shallow water depths and high temperatures. Natural conditions may contribute to or be the cause of low dissolved oxygen in many streams in the Ocmulgee River basin.

pH

The water use classification of fishing was not fully supported in two tributary stream segments due to pH levels below the minimum pH standard of 6.0. It is not known whether the pH violations are due to point source influences, nonpoint source influences, or natural conditions.

6.2 Priorities for Water Quality Concerns

6.2.1 Short-Term Water Quality Action Priorities for EPD

Section 6.1 identifies known priority concerns for which management and planning are needed in the Ocmulgee River basin. Because of limited resources and, in some cases, limitations to technical knowledge, not all of these concerns can be addressed at the same level of detail within the current 5-year cycle of basin management. It is therefore necessary to assign action priorities for the short term based on where the greatest return for available effort can be expected.

Current priorities for action by EPD (2002) are summarized in Table 6-3 and discussed below. These reflect EPD's assessment of where the greatest short-term return can be obtained from available resources. The priorities were public noticed and approved by the USEPA as part of the Georgia CWA 303(d) listing process in 2001-2002 and discussed in the report, *Water Quality in Georgia, 2000-2001*.

Table 6-3. EPD's Short-Term Priorities for Addressing Waters Not Fully Supporting Designated Use

Priority	Type
1	Segments where ongoing pollution control strategies are expected to result in achieving support of designated uses; active special projects.
2	Segments with multiple data points that showed metals or other toxic substances in excess of water quality standards and segments in which dissolved oxygen is an issue.
3	Waters for which urban runoff and generalized nonpoint sources have resulted in violations of standards for fecal coliform bacteria, pH, and/or impairment of biological resources, and waters for which fish consumption guidelines are in place due to air deposition of mercury.

Assigning Priorities for Stream Segments

For several waters in the Ocmulgee River basin and other river basins around the state, currently planned control strategies are expected to result in attainment of designated uses. EPD resources will be directed to ensure that the ongoing pollution control strategies are implemented as planned and water quality improvements are achieved. These waters on the Georgia 2002 305(b)/303(d) List are identified as active 305(b) waters and are the highest priority waters, as these segments will continue to require resources to complete actions and ensure standards are achieved. These stream segments have been assigned priority one (See Appendix D).

Second priority was allocated to segments with multiple data points which showed metals concentrations from nonpoint sources in excess of water quality standards and to segments in which dissolved oxygen concentration was an issue.

Third priority was assigned to waters where air deposition, urban runoff, or general nonpoint sources caused standards violations for pH, fecal coliform bacteria or issues with biota (sedimentation) or fish tissue. Waters added to the Georgia 303(d) list by USEPA were also assigned to third priority.

Several issues helped forge the rationale for priorities. First, strategies are currently in place to address the significant water quality problems in the Ocmulgee River basin and significant resources will be required to ensure that these actions are completed. Second, many of the waters for which no control strategy is currently in place are listed due to fish consumption issues or as a result of exceedance of fecal coliform bacteria due to urban runoff or nonpoint sources. At the present time, the efficacy of the standards for fecal coliform bacteria standard are in question in the scientific community. Also, there is no national strategy in place to address air deposition of mercury, thought to be the source of mercury that contributes to the fish tissue issues.

The EPD finalized total maximum daily loads (TMDLs) for waters on the 2002 303(d) list in the Ocmulgee River basin in 2003. The waters with final TMDLs are identified in Appendix D with a “3” in the column labeled 303(d). Implementation plans for each of the TMDLs are to be completed in 2003.

6.2.2 General Long-Term Priorities for Water Quality Concerns

Long-term priorities for water quality management in the Ocmulgee River basin will need to be developed by EPD and all other stakeholders during the next iteration of the basin management cycle. Long-term priorities must seek a balance between a number of different basinwide objectives. These objectives include:

- Protecting water quality in lakes, rivers, streams, and estuaries through attainment of water quality standards and support for designated uses;
- Providing adequate, high quality water supply for municipal, agricultural, industrial, 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.

6.3 Priorities for Water Quantity Concerns

Drought conditions during the 1998-2000 period impacted the south central region of the state which includes the Ocmulgee River basin. According to EPD's 1998-2000 Georgia Drought Report, rainfall shortages in this region amounted to almost 23 inches. The report summarizes the environmental, economic, and social impacts of the drought; evaluates the management actions implemented by state and local authorities during the drought; and presents a clear set of recommendations for improving drought preparedness and response.

Among the recommendations, include the following:

- 1) **Emergency Relief:** The State of Georgia should provide emergency grants and loans to assist local governments with critical or threatened water supplies.
- 2) **Water Conservation:** The State of Georgia must develop a comprehensive water conservation plan to address a wide range of water conserving measures that can be implemented to reduce water demand in Georgia.
- 3) **Agricultural Water Use:** The State of Georgia must develop an effective method to evaluate consumptive use of water for agricultural irrigation, and implement programs for reducing water use while protecting the prosperity of farmers and agricultural communities. (Note: Starting in FY04 the GSWCC will embark on a program to provide irrigation audits and a follow-up metering program of Georgia's 21,000 agricultural permit holders, of which about 2,333 permits are in the Ocmulgee River basin.)
- 4) **State Water Plan:** The State of Georgia must perform a detailed review of existing water policy and laws, and develop a comprehensive state water plan that will provide the framework and support for effective management of Georgia's water resources.
- 5) **State Drought Plan:** The State of Georgia must continue developing a comprehensive drought plan and drought management process in order to implement appropriate drought response, preparedness and mitigation measures in future droughts. (Note: Georgia completed and adopted a Drought Plan in March 2003.)

6.3.1 Priorities for Competing Demands

With regard to the priority placed on meeting competing demands for future water use, the EPD (in conjunction with a broad group of stakeholders from north, central, and southwest Georgia) has established a set of "guiding principles" which will be followed in developing the state's position regarding the allocation of water. These principles are partially based upon the prioritization given to meeting categories of water needs under Georgia law (i.e., municipal needs are the first priority, and agricultural water needs are second; all other water needs follow these two). The principles are summarized below:

- 1) Municipal and Industrial (M&I) demands have the highest priority.
- 2) Agriculture needs must be satisfied.
- 3) Minimum instream flow rates must be met in order to preserve water quality.
- 4) If other demands (e.g., industrial, recreation, hydropower, navigation, and environment) cannot be met under conditions of water shortage, efforts will be made to optimize the mix of economic and environmental values.

References

EPD. 2002. Water Quality in Georgia, 2000-2001. Georgia Department of Natural Resources, Environmental Protection Division, Atlanta, Georgia.

Georgia Environmental Protection Division. 2000. 1998-2000 Georgia Drought Report.