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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 Oconee River basin. This section aggregates the assessment data to identify priority issues for development of management strategies. Water quality and quantity issues are discussed separately, although the connection between quantity and quality should not be overlooked.

6.1 Identified Basin Planning and Management Concerns

Section 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 *Water Quality in Georgia, 1996-1997* as a contributor to non-supporting or partially-supporting status was fecal coliform bacteria (345 out of 893 miles, or 39 percent of the stream miles which were assessed within the basin), followed by impaired fish communities as measured by the Index of Biotic Integrity (134 out of 893 miles, or 15 percent of the stream miles which were assessed within the basin), followed by the metals zinc, copper, mercury, and lead (66 out of 893 miles, or 7 percent of assessed stream miles). Note that some segments are assessed as not fully supporting as a result of multiple criteria, so there is some overlap in the figures stated above. Non-support due to the criteria discussed above is most often attributed to “urban runoff” as a primary source or one among several sources (150 miles for fecal coliforms, 9 miles for impaired fish communities, 38 miles for metals) or “nonpoint or unknown” sources (210 miles for fecal coliforms, 134 miles for impaired fish communities, 36 miles for metals). Within some individual stream reaches, other sources may be of greater importance; however, urban runoff and general nonpoint sources represent a basin-wide concern.

Major water quality and quantity concerns for the Oconee 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 relationship between specific designated uses and stressors causing lack of full support for those uses. Ongoing control strategies are expected to result in support of designated uses in a number of waters. In other waters, however, the

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

Stressors of Concern	Source of the Stressor by HUC	
	Above Lake Sinclair Dam HUC 03070101	Below Lake Sinclair Dam HUC 03070102
Metals	Urban and rural NPS, Industrial effluent	Nonpoint sources
Fecal Coliform Bacteria	Urban and rural NPS, WPCP effluent	Urban and rural NPS
Erosion and Sedimentation	Urban and rural NPS	Urban and rural NPS
Fish Consumption Guidelines	Nonpoint mercury	
Nutrients	Point and nonpoint phosphorus load	
Dissolved Oxygen	Urban and rural NPS WPCP effluent	Nonpoint sources
Water Temperature	Effluent from power plant	
Threatened and Endangered Species	Listed species	Listed species
Flooding		Floodplain management
Source Water Protection	Surface water sources in need of protection	Surface water sources in need of protection

Table 6-2. Summary of Stressors Contributing to Lack of Full Support for Classified Uses in the Oconee River Basin

Use Classification of Waterbody Segments	Geographic Area	
	Above Lake Sinclair Dam HUC 03070101	Below Lake Sinclair Dam HUC 03070102
Fishing (Support for Aquatic Life)	Metals, pH, temperature, DO, impaired fish community	Mercury, DO, toxicity, impaired fish community
Fishing (Fish Consumption)	Mercury	
Fishing (Secondary Contact Recreation)	Fecal coliform bacteria	Fecal coliform bacteria
Drinking Water	Fecal coliform bacteria	

development of additional management strategies might be required or implemented in order to achieve water quality standards.

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; 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” that summarizes the linkage between stressor sources and water quality impacts. The order in which concerns are listed 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. Priorities for addressing water quantity issues within the Oconee basin are summarized in Section 6.3.

6.1.1 Problem Statements

Oconee River Above Sinclair Dam (HUC 03070101)



Metals

The water use classification of fishing or drinking water was not fully supported in one Oconee River mainstem segment and in seventeen tributary stream segments due to exceedances of the water quality standards for metals. Lead standards were exceeded in the river due to a water pollution control plant discharge; lead, copper, zinc, and/or mercury were exceeded in tributary streams due primarily to nonpoint sources in eight segments, urban runoff in six segments, and to water pollution control plant discharges in three segments.

Fecal Coliform Bacteria

The water use classification of fishing or drinking water was not fully supported in two Oconee River mainstem segments and 46 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.

Erosion and Sedimentation

The water use classification of fishing is potentially threatened in many segments by erosion and loading of sediment, which can alter stream morphology, impact habitat, and reduce water clarity. Sediment may be a factor influencing fish communities in these areas. Potential sources include urban runoff and development (particularly construction), unpaved rural roads, forestry practices, and agriculture. There are 12 stream segments listed in this subbasin as partially supporting and one segment listed as not supporting designated uses due to poor fish communities.

Fish Consumption Guidelines

The water use classification of fishing was not fully supported in one Oconee River mainstem segment (from Athens to Barnett Shoals Dam, one tributary stream segment (Apalachee River), and Lake Oconee due to the presence of fish consumption guidelines. The guidelines were put in place as a result of mercury detected in fish tissues in these segments. The guidelines are for largemouth bass and silver redhorse in the mainstem segment and largemouth bass in the tributary and lake.

Nutrients

The water use classifications of fishing, drinking water, or recreation are potentially threatened in Lake Oconee, Lake Sinclair, Lake Brantley, and Rock Eagle 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.

Low Dissolved Oxygen

The fishing water use classification was not fully supported in five tributary stream segments due to dissolved oxygen concentrations less than standards. Low dissolved oxygen in the tributaries was due to nonpoint sources, urban runoff and water pollution control plant discharges.

Elevated Water Temperature

The water use classification of fishing and recreation was not fully supported in Lake Sinclair due to exceedances of the temperature water quality standard. The elevated water temperature is associated with the discharge of cooling process water from a power plant operation.

Protection of Threatened and Endangered Species

The Oconee basin is home to a number of aquatic species which have been listed as threatened or endangered and require protection.

Source Water Protection for Drinking Water Sources

All streams with municipal water intakes need to have watershed assessments and protection plans developed, and implemented. All streams and existing lakes with plans being considered for public water supply should have a source water assessment made early in the planning process.

Oconee River Below Sinclair Dam (HUC 03070102)

Metals

The water use classification of fishing was not fully supported in one tributary stream segment due to exceedances of the water quality standards for metals. Mercury standards were exceeded in the tributary segment due to nonpoint sources.

Fecal Coliform Bacteria

The water use classification of fishing was not fully supported in two Oconee River mainstem segments and in one tributary stream segment 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 animal wastes.

Erosion and Sedimentation

The water use classification of fishing is potentially threatened in many segments by erosion and loading of sediment, which can alter stream morphology, affect habitat, and reduce water clarity. Sediment may be a factor influencing fish communities in these areas. Potential sources include urban runoff and development (particularly construction), unpaved rural roads, forestry practices, and agriculture. There are 14 stream segments listed in this basin as partially supporting designated uses due to poor fish communities.



Low Dissolved Oxygen

The fishing water use classification was not fully supported in one tributary stream segment due to dissolved oxygen concentrations less than standards. Low dissolved oxygen in the tributary was due to nonpoint sources.

Protection of Threatened and Endangered Species

The Oconee basin is home to a number of aquatic species which have been listed as threatened or endangered and require protection.

Source Water Protection for Drinking Water Sources

All streams with municipal water intakes need to have watershed assessments and protection plans developed, and implemented. All streams and existing lakes with plans being considered for public water supply should have a source water assessment made early in the planning process.

Flooding

Flooding in Dublin continues to be a major factor associated with property loss in the basin.

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. 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 (1998) 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. These priorities were presented to and discussed with the local advisory committee in February 1998. In addition, these priorities were presented to the public in a stakeholder meeting in Athens and Dublin in February 1998. The priorities were also public noticed and approved by the USEPA as part of the Georgia CWA 303(d) listing process in 1998 and discussed in the report, *Water Quality in Georgia, 1996-1997*.

Table 6-3. EPD's Short-Term Priorities for Addressing Waters Not Fully Supporting 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 which showed metals 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 metals or fecal coliform bacteria.

Assigning Priorities for Stream Segments

For many waters in the Oconee River basin, currently planned control strategies are expected to result in attainment of designated uses. The majority of 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 (see Appendix E) 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 Table 6-3).

Second priority was allocated to segments with multiple data points that showed metals concentrations from nonpoint sources in excess of water quality standards and to segments in which dissolved oxygen concentration was an issue (see Table 6-3).

Third priority was assigned to waters where urban runoff and general nonpoint sources caused metal or fecal coliform bacteria standards violations. Waters added to the Georgia 303(d) list by EPA were also assigned to third priority. Within the current round of basin planning these sources will be addressed primarily through general strategies of encouraging best management practices for control of stressor loading (see Table 6-3).

Several issues helped forge the rationale for priorities. First, strategies are currently in place to address the significant water quality problems in the Oconee River basin and significant resources will be required to ensure that these actions are completed. Second, the vast majority of waters for which no control strategy is currently in place are listed as impaired as a result of exceedance of the criteria for metals or fecal coliform bacteria due to urban runoff or nonpoint sources. At the present time, the viability of the standards for metals and the efficacy of the fecal coliform bacteria standard are in question in the scientific community, as described in Section 4.2. Also, in many cases, the metals database was minimal with as few as one data point showing a concentration in excess of standards placing a stream reach or area of a lake on the partial support lists.

6.2.2 General Long-Term Priorities for Water Quality Concerns

Long-term priorities for water quality management in the Oconee 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 and streams 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

Section 5 also identified a number of concerns for water quantity in the Oconee basin, including existing problems with minimum instream flows and potential future problems for competing demands on water quantity.

6.3.1 Priorities for Competing Demands

With regard to the priority to be placed on meeting competing demands for future water use, EPD (in conjunction with a broad group of stakeholders from north, central, and southwest Georgia) has established a set of “guiding principles”. 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 (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.

Although these “guiding principles” were specifically developed to give expression to Georgia’s water needs priorities in those areas of Georgia within the study area of the Alabama-Coosa-Tallapoosa/Apalachicola-Chattahoochee-Flint Comprehensive Study, it is likely that they characterize water needs priorities throughout the state. Thus, Georgia places highest value on the use of water for its citizens to use in drinking and water for agricultural needs. It is also extremely important to address needs for sufficient instream flows to maintain acceptable quality of aquatic habitat.

6.3.2 Regional Water Supply Options

In managing Georgia’s surface waters, EPD’s approach is to meet as many of the identified water needs to the highest extent practicable, while minimizing adverse impacts associated with meeting those needs. Of foremost importance in meeting those needs is maximizing use of already developed water resources along with aggressive water conservation.

Expected population growth in the Oconee basin over the next several decades is likely to result in exhaustion of the water supplies available from already developed sources, even with the employment of very aggressive water conservation measures. New sources will have to be identified and developed. As the population of county and sub-county political jurisdictions in the Oconee River basin continues to expand, the need for water resources is likely to grow beyond the capability of single political jurisdictions to meet demand from the water resources within their political boundaries. Currently available regional sources in the Oconee basin will also likely be found to have real limits in providing the water resources to meet portions of the expected increases in water demand. Economic growth may be limited by the capabilities of existing local and regional water resources. An alternative strategy is to form cooperative efforts among adjoining political jurisdictions to plan and construct larger water resources projects. This type of approach would minimize the number of smaller water resources projects, and encourage development of new regional water resources in a more cost-effective and

environmentally sensitive manner. Such an approach will require much more inter-jurisdictional cooperation on water supply issues than has been evident to date. Failure to pursue such increased cooperation might very well result in unacceptable water supply-based restrictions on regional growth.