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- Identified Basin Planning and Management Concerns
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- Priorities for Water Quantity Concerns

Section 6

Concerns and Priority Issues

The assessments in Section 5 present a number of water quality and quantity concerns within the Ogeechee 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

Sections 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 assessment report.

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 2000 305(b)/303(d) List as contributor to nonsupporting or partial supporting status was fish consumption guidelines (274 out of 452, or 61% of stream miles within the basin assessed as not fully supporting), followed by fecal coliform bacteria (109 out of 452, or 24% of stream miles within the basin assessed as not fully supporting). Fish consumption issues are associated primarily with mercury as a result of air deposition and possibly naturally occurring sources and fecal coliform is associated primarily with urban runoff or nonpoint sources.

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 basin-wide 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, basin-wide management strategies will be needed.

Major water quality and quantity concerns for the Ogeechee 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 Ogeechee River Basin

Stressors of Concern	Potential Source of the Stressor by HUC			
	Upper Ogeechee River HUC 03060201	Lower Ogeechee River HUC 03060202	Canoochee River HUC 03060203	Ogeechee Coastal River HUC 03060204
Metals				Urban and rural NPS
Fecal Coliform Bacteria	Multiple source potential	Multiple source potential	Multiple source potential	Multiple source potential
Erosion and Sedimentation	Urban and Rural NPS	Urban and Rural NPS	Agricultural NPS	Urban and Rural NPA
Dissolved Oxygen		Urban and rural NPS	Urban and rural NPS, WPCP effluent	Urban and rural NPS
Nutrients			Agricultural NPS	
Fish Consumption Guidelines	Nonpoint mercury	Nonpoint mercury	Nonpoint mercury	Nonpoint dieldrin
Water Quantity		Groundwater availability for residential and commercial growth		
Source Water Protection		Groundwater Potentially threatened		

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

Use Classification of Waterbody Segments	Geographic Area			
	Upper Ogeechee River HUC 03060201	Lower Ogeechee River HUC 03060202	Canoochee River HUC 03060203	Ogeechee Coastal River HUC 03060204
Fishing (Support for Aquatic Life)		DO	DO	DO, metals
Fishing (Fish Consumption)	Mercury	Mercury	Mercury	Dieldrin
Drinking Water				

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” 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 Ogeechee River Subbasin (HUC 03060201)

Fecal Coliform Bacteria

The water use classification of fishing was not fully supported in one Ogeechee River mainstem segment and six tributary stream segments due to exceedences 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 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 no stream segments listed at this time in this subbasin as not fully supporting designated water uses due to poor fish communities or sedimentation.

Fish Consumption Guidelines

The water use classification of fishing was not fully supported in one segment of the Ogeechee River mainstem due to fish consumption guidelines recommended because of mercury residues. The guidelines are for largemouth bass, spotted sucker and redbreast sunfish. The water use classifications was not fully supported in Short Creek, a tributary to the Ogeechee River, due to fish consumption guidelines recommended because of mercury residue in sunfish.

Lower Ogeechee River Subbasin (HUC 03060202)

Fecal Coliform Bacteria

The water use classification of fishing was not fully supported in five tributary stream segments due to exceedences 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 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 no stream segments listed at this time in this subbasin as not fully supporting designated water uses due to poor fish communities or sedimentation.

Fish Consumption Guidelines

The water use classification of fishing was not fully supported in two Ogeechee River mainstem segments based on fish consumption guidelines due to mercury. The guidelines are for largemouth bass in one river segment and largemouth bass and redbreast sunfish in the second river segment.

Low Dissolved Oxygen

The water use classification of fishing was not fully supported in five tributaries due to dissolved oxygen concentrations less than standards. Low dissolved oxygen in the tributaries was due to nonpoint sources. Dissolved oxygen may be lower in these areas due to natural conditions.

Groundwater Quality and Quantity

Water needs for residential and commercial development growth is a concern for Southeast Bryan County. The limit on availability of groundwater is having an impact on continued development, especially with pressures to reduce usage of the Floridian aquifer and without any other convenient source of water.

Groundwater levels are also threatened due to high rates of pumpage of groundwater for agricultural irrigation. USGS presented evidence that agricultural groundwater usage may be responsible for a lower groundwater table and less recharge to streams. The data suggested that preagricultural irrigation 7Q10s in the Lower Ogeechee River were higher than 7Q10s since irrigation pressures began.

Canoochee River Subbasin (HUC 03060203)

Fecal Coliform Bacteria

The water use classification of fishing was not fully supported in one Canoochee River mainstem segment and three tributary stream segments due to exceedences 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 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 no stream segments listed at this time in this subbasin as not fully supporting designated water use due to poor fish communities or sedimentation.

Fish Consumption Guidelines

The water use classification of fishing was not fully supported in the Canoochee River mainstem and the Evans County Public Fishing Area (PFA) due to fish consumption guidelines recommended because of mercury residues. The guidelines are for largemouth bass, redbreast sunfish, and channel catfish in the river and largemouth bass in the PFA.

Low Dissolved Oxygen

The water use classification of fishing was not fully supported in one Canoochee River mainstem segment and seven tributaries due to dissolved oxygen concentrations less than standards. Low dissolved oxygen in the mainstem segment was due to urban runoff and low dissolved oxygen in the tributaries was due to nonpoint sources, urban runoff and a water pollution control plant discharge. Dissolved oxygen may be lower in these areas due to natural conditions.

Nutrients

The water use classifications of fishing; potentially threatened due to input of nutrients from agricultural runoff.

Ogeechee Coastal Subbasin (HUC 03060204)

Metals

The water use classification of fishing was not fully supported in one segment of the Newport River due to an exceedance of the water quality standard for selenium due to nonpoint sources.

Fecal Coliform Bacteria

The water use classification of fishing was not fully supported in six tributary stream segments due to exceedences 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 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 no stream segments listed at this time in this subbasin as not fully supporting designated water uses due to poor fish communities or sedimentation.

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 in the tributaries was due to urban runoff. Dissolved oxygen may be lower in these areas due to natural conditions.

Fish Consumption Guidelines

The water use classification of fishing was not fully supported in Casey Canal due to fish consumption conditions recommended because of dieldrin residues in striped mullet.

Prohibited Shellfish Harvesting Areas

The water use classification of fishing was not fully supported in several estuarine waters including Doboy Sound, Medway River, Ossabaw Estuary, Sapelo Sound, St. Catherines Sound and Wassaw Sound due to prohibited shellfish harvesting areas. These are administrative in nature and not based on water quality data.

Georgia's one-hundred linear mile coastline contains approximately 700,000 acres of potential shellfish habitat. Only about 10% of that area, however, actually produces viable shellfish stocks. Lack of suitable clutch, tidal amplitudes, littoral slope, and other geomorphological features contribute to the limited occurrence of natural shellfish resources along the Georgia coast. Most shellfish in Georgia grow in the narrow inter-tidal zone and are exposed between high water and low water tidal periods. Very few shellfish are naturally produced in sub-tidal waters.

Georgia maintains approximately 32,000 acres approved for the harvest of shellfish for commercial and/or personal consumption. In order to classify any growing area as "Approved" for the harvest of shellfish, the National Shellfish Sanitation Program's (NSSP) Manual of Operations (Part 1, Section 3,a) requires that Georgia show that the growing area "is not subject to contamination from human and/or animal fecal matter in amounts that in the judgement of the SSCA [State Shellfish Control Authority] may present an actual or potential hazard to public health." Georgia currently has three harvest areas comprised of commercial leases and public recreational plots. Table 5-5 indicates

the location and size of those areas approved for shellfish harvest. Only those areas designated for Public Recreational Harvest or those areas under commercial lease are classified as “Approved”. Approved areas are monitored regularly as discussed below. All other waters of the state are classified “Prohibited”, are not monitored and are closed to the taking of shellfish due to the presence of human activities.

Standards of the NSSP further require the state to regularly collect water samples from each approved harvest area and to perform certain analytical procedures to ensure that the area is free from fecal matter as indicated by the absence of coliform bacteria. Georgia is vigorous in its approach to protecting the health of shellfish consumers. Although the guidelines of the National Shellfish Sanitation Program call for testing shellfish growing waters for contaminants on six occasions per year, the Coastal Resources Division doubles that effort by testing the waters twelve times per year.

During FY97 the Growing Area Element of the Georgia Shellfish Sanitation Project was evaluated by the Federal Food and Drug Administration. The project administered by Georgia Department of Natural Resources Coastal Resources Division was found to be in full compliance with the National Shellfish Sanitation Program (NSSP) requirements.

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 Ogeechee 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 (2000) 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 March 2000. The priorities were also public noticed and approved by the USEPA as part of the Georgia CWA 303(d) listing process in 2000 and discussed in the report, *Water Quality in Georgia, 1998-1999*.

Assigning Priorities for Stream Segments

For several waters in the Ogeechee 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.

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 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 fecal coliform bacteria and waters for which fish consumption guidelines are in place due to air deposition of mercury.

These waters on the Georgia 2000 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.

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 (See Appendix E).

Third priority was assigned to waters where air deposition, urban runoff or general nonpoint sources caused fish consumption guidelines listings, and/or 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 loadings. In addition, additional work will be initiated to implement approved TMDLs on waters in this group. TMDLs have been completed on those waters in Appendix E that have a “3” in the column labeled 303(d).

Several issues helped forge the rationale for priorities. First, strategies are currently in place to address the significant water quality problems in the Ogeechee 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 due to fish consumption guidelines or as a result of exceedance of fecal coliform bacteria due to urban runoff or nonpoint. At the present time, the efficacy of the standards for fecal coliform bacteria standard are in question in the scientific community, as described in Section 4.2. Also, there is no national strategy in place to address air deposition of mercury which is thought to cause the mercury which contributes to the fish tissue guidance listings.

6.2.2 General Long-Term Priorities for Water Quality Concerns

Long-term priorities for water quality management in the Ogeechee 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

Section 5 identified groundwater overuse and saltwater intrusion as a major concern for water quantity in the Ogeechee basin. GAEPD has placed limitations on additional withdrawals of groundwater in the affected areas. This has effectively slowed the rate of

additional contamination. In April, 1997, GAEPD implemented an Interim Strategy to protect the Upper Floridan Aquifer in the 24 coastal counties from salt-water intrusion which includes 12 counties in the Ogeechee basin. The strategy, developed in consultation with South Carolina and Florida, will continue until December 31, 2005 at which time GAEPD plans to implement a Final Strategy that will (a) stop salt-water intrusion before municipal water supply wells on Hilton Head Island, South Carolina and Savannah, Georgia are contaminated and (b) prevent an existing salt-water problem at Brunswick, Georgia from worsening. To accomplish this objective, GAEPD will do the following:

- (1) Assuming the General Assembly provides funds, conduct expanded scientific and feasibility studies to determine with certainty how to permanently stop the salt-water intrusion moving towards Hilton Head Island, South Carolina and Savannah, Georgia and how to prevent the existing salt-water intrusion at Brunswick, Georgia from worsening.
- (2) Require the development of comprehensive local water supply plans in a 24 county area of southeast Georgia. These are required by December 31, 2000 from all 24 counties as a condition of issuing any future proposed public water, agriculture, or industry water withdrawal permits.
- (3) Impose caps on groundwater use in Glynn County, Chatham County, and portions of Bryan and Effingham Counties, to avoid worsening the rate of salt-water intrusion at HiltonHead-Savannah and at Brunswick.
- (4) Reduce groundwater use in Chatham County by at least 10 million gallons per day by December 31, 2005 through conservation and substitution of surface water for groundwater. This will be affirmed through reductions in groundwater use permits.
- (5) Allow, on an interim basis, increases in groundwater withdrawals in the areas of southeast Georgia that have little impact on salt-water intrusion problems.
- (6) Encourage and promote water conservation and reduced groundwater usage wherever feasible, throughout southeast Georgia.

Some wells in Georgia produce water containing relatively high levels of naturally occurring iron and manganese. Another natural source of contamination is from radioactive minerals that are a minor rock constituent in some Georgia aquifers. While natural radioactivity may occur anywhere in Georgia, the most significant problems have occurred at some locations near the Gulf Trough, a geologic feature of the Floridan Aquifer in Coastal Plain. Wells can generally be constructed to seal off the rocks producing the radioactive elements to provide safe drinking water. Radon, a radioactive gas produced by the radioactive minerals mentioned above, also has been noted in highly variable amounts in groundwater from some Georgia wells, especially in the Piedmont region. Treatment systems may be used to remove radon from groundwater.

Tritium, a radioactive isotope of hydrogen, in excess of expected background levels, was found in 1991 by GAEPD sampling in Burke County aquifers. While the greatest amount of tritium found lie across the Savannah River from the Savannah River Plant in South Carolina, where tritium was produced for nuclear weapons. The tritium does not exceed MCLs for drinking water, therefore it does not represent a health threat to Georgia citizens at the present time.

6.3.1 Priorities for Competing Demands

With regard to the priority to be 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 (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) can not be met under conditions of water shortage, efforts will be made to optimize the mix of economic and environmental values.

While 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/Appalachicola-Chattahoochee-Flint (ACT/ACF) 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.