# Chapter 3 -
# Summary of Water Quality Information for the Savannah River Basin

## 3.1 General Sources of Pollution

Human activities can negatively impact surface water quality, even when the activity is far removed from the waterbody. With proper management of wastes and land use activities, these impacts can be minimized. Pollutants that enter waters can be grouped into two general categories: *point sources* and *nonpoint sources*.

***Point Sources***

Piped discharges from:

- Municipal wastewater treatment plants
- Industrial facilities
- Small package treatment plants
- Large urban and industrial stormwater systems

Point sources are typically piped discharges and are controlled through regulatory programs administered by the state. All regulated point source discharges in North Carolina must apply for and obtain a National Pollutant Discharge Elimination System (NPDES) permit from the state.

***Nonpoint Sources***

- Construction activities
- Roads, parking logs and rooftops
- Agriculture
- Failing septic systems and straight pipes
- Timber harvesting
- Hydrologic modifications

Nonpoint sources are from a broad range of land use activities. Nonpoint source pollutants are typically carried to waters by rainfall, runoff or snowmelt. Sediment and nutrients are most often associated with nonpoint source pollution. Other pollutants associated with nonpoint source pollution include fecal coliform bacteria, oil and grease, pesticides and any other substance that may be washed off the ground or deposited from the atmosphere into surface waters.

Unlike point sources of pollution, nonpoint pollution sources are diffuse in nature and occur intermittently, depending on rainfall events and land disturbance. Given these characteristics, it is difficult and resource intensive to quantify nonpoint contributions to water quality degradation in a given watershed. While nonpoint source pollution control often relies on voluntary actions, the state has many programs designed to reduce nonpoint source pollution.

Every person living in or visiting a watershed contributes to impacts on water quality. Therefore, each individual should be aware of these contributions and take actions to reduce them.

***Cumulative Effects***

While any one activity may not have a dramatic effect on water quality, the cumulative effect of land use activities in a watershed can have a severe and long-lasting impact.

## 3.2 Description of Surface Water Classifications and Standards

North Carolina's Water Quality Standards program adopted classifications and water quality standards for all the state's river basins by 1963. The program remains consistent with the Federal Clean Water Act and its amendments. Water quality classifications and standards have also been modified to promote protection of surface water supply watersheds, high quality waters, and the protection of unique and special pristine waters with outstanding resource values.

**Surface Water Classifications**

All surface waters in the state are assigned a *primary* classification that is appropriate to the best uses of that water. In addition to primary classifications, surface waters may be assigned a *supplemental* classification. Most supplemental classifications have been developed to provide special protection to sensitive or highly valued resource waters. Table A-14 briefly describes the best uses of each classification. A full description is available in the document titled: *Classifications and Water Quality Standards Applicable to Surface Waters of North Carolina*. Information on this subject is also available at DWQ's website: http://h2o.enr.state.nc.us/wqhome.html.

Table A-14 Primary and Supplemental Surface Water Classifications

| PRIMARY FRESHWATER AND SALTWATER CLASSIFICATIONS | |
|---|---|
| **Class** | **Best Uses** |
| **C and SC** | Aquatic life propagation/protection and secondary recreation. |
| **B and SB** | Primary recreation and Class C uses. |
| **SA** | Waters classified for commercial shellfish harvesting. |
| **WS** | *Water Supply watershed*. There are five WS classes ranging from WS-I through WS-V. WS classifications are assigned to watersheds based on land use characteristics of the area. Each water supply classification has a set of management strategies to protect the surface water supply. WS-I provides the highest level of protection and WS-IV provides the least protection. A Critical Area (CA) designation is also listed for watershed areas within a half-mile and draining to the water supply intake or reservoir where an intake is located. |
| **SUPPLEMENTAL CLASSIFICATIONS** | |
| **Class** | **Best Uses** |
| **Sw** | *Swamp Waters*: Recognizes waters that will naturally be more acidic (have lower pH values) and have lower levels of dissolved oxygen. |
| **Tr** | *Trout Waters*: Provides protection to freshwaters for natural trout propagation and survival of stocked trout. |
| **HQW** | *High Quality Waters*: Waters possessing special qualities including excellent water quality, Native or Special Native Trout Waters, Critical Habitat areas, or WS-I and WS-II water supplies. |
| **ORW** | *Outstanding Resource Waters*: Unique and special surface waters which are unimpacted by pollution and have some outstanding resource values. |
| **NSW** | *Nutrient Sensitive Waters*: Areas with water quality problems associated with excessive plant growth resulting from nutrient enrichment. |

* Primary classifications beginning with "S" are assigned to saltwaters.

## Statewide Water Quality Standards

Each primary and supplemental classification is assigned a set of water quality *standards* that establish the level of water quality that must be maintained in a waterbody to support the uses associated with each classification. Some of the standards, particularly for HQW and ORW waters, outline protective management strategies aimed at controlling point and nonpoint source pollution. These strategies are discussed briefly below. The standards for C waters establish the basic protection level for all state surface waters. All of the other primary and supplemental classifications presented in Table A-14 have more stringent standards than for C, and therefore, require higher levels of protection.

Some of North Carolina's surface waters are relatively unaffected by pollution sources and have water quality higher than the standards that are applied to the majority of the waters of the state. In addition, some waters provide habitat for sensitive biota such as trout, juvenile fish, or rare and endangered aquatic species.

## Trout Waters

Different water quality standards for some parameters, such as dissolved oxygen, temperature and turbidity, have been developed to protect freshwaters for natural trout propagation and survival of stocked trout. These water quality standards result in more restrictive limits for wastewater discharges to trout waters (Tr). There are no watershed development restrictions associated with the Tr classification. However, the NC Division of Land Resources does require a 25-foot vegetated buffer between Tr waters and graded construction sites.

A state fishery management classification, Designated Public Mountain Trout Waters, is administered by the NC Wildlife Resources Commission. It provides for public access to streams for fishing and regulates fishing activities (seasons, size limits, creel limits, and bait and lure restrictions). Although many of these waters are also classified Tr by DWQ, this is not the same classification.

## High Quality Waters

Special HQW protection management strategies are intended to prevent degradation of water quality below present levels from both point and nonpoint sources. HQW requirements for new wastewater discharge facilities and facilities which expand beyond their currently permitted loadings address oxygen-consuming wastes, total suspended solids, disinfection, emergency requirements, volume, nutrients (in nutrient sensitive waters) and toxic substances.

***Criteria for HQW Classification***

- Waters rated as Excellent based on DWQ's chemical and biological sampling.
- Streams designated as native and special native trout waters or primary nursery areas by the Wildlife Resources Commission.
- Waters designated as primary nursery areas by the Division of Marine Fisheries.
- Waters classified by DWQ as WS-I, WS-II and SA are HQW by definition, but these waters are not specifically assigned the HQW classification because the standards for WS-I, WS-II and SA waters are at least as stringent as those for waters classified HQW.

For nonpoint source pollution, development activities which require a Sedimentation and Erosion Control Plan and which drain to and are within one mile of HQWs are required to control

stormwater runoff from the development using either a low density or high density option. The low density option requires a 30-foot vegetated buffer between development activities and the stream; the high density option requires structural stormwater controls. In addition, the Division of Land Resources requires more stringent erosion controls for land-disturbing projects within one mile and draining to HQWs.

## Outstanding Resource Waters

A small percentage of North Carolina's surface waters have excellent water quality (received an Excellent bioclassification) and an associated outstanding resource.

***The ORW rule defines outstanding resource values as including one or more of the following:***

- an outstanding fisheries resource;
- a high level of water-based recreation;
- a special designation such as National Wild and Scenic River or a National Wildlife Refuge;
- location within a state or national park or forest; or
- a special ecological or scientific significance.

The requirements for ORW waters are more stringent than those for HQWs. Special protection measures that apply to North Carolina ORWs are set forth in 15A NCAC 2B .0225. At a minimum, no new discharges or expansions are permitted and a 30-foot buffer or stormwater controls for most new developments are required. In some circumstances, the unique characteristics of the waters and resources that are to be protected require that a customized ORW management strategy be developed.

## Classifications and Standards in the Savannah River Basin

The waters of the Savannah River basin have a variety of surface water quality classifications applied to them. Several waterbodies including the Chattooga River, Horsepasture River and Lake Toxaway are classified for primary recreation (Class B). Many streams throughout the basin are classified Trout Waters (Tr). Figure A-10 presents areas where streams are classified HQW or ORW throughout the Savannah River basin. The Bearwallow Creek and a portion of the Whitewater River watersheds in subbasin 03-13-02 are classified High Quality Waters.

In subbasin 03-13-01, the Chattooga River along with many of its tributaries including the Scotsman, Overflow and Big Creek watersheds are classified Outstanding Resource Waters. Although, not adequately portrayed on Figure A-10, the entire Chattooga River watershed falls under an ORW management strategy. Chapter 1 of Section B contains a more detailed map and description of the Chattooga River watershed ORW area and regulations that apply (page 60).

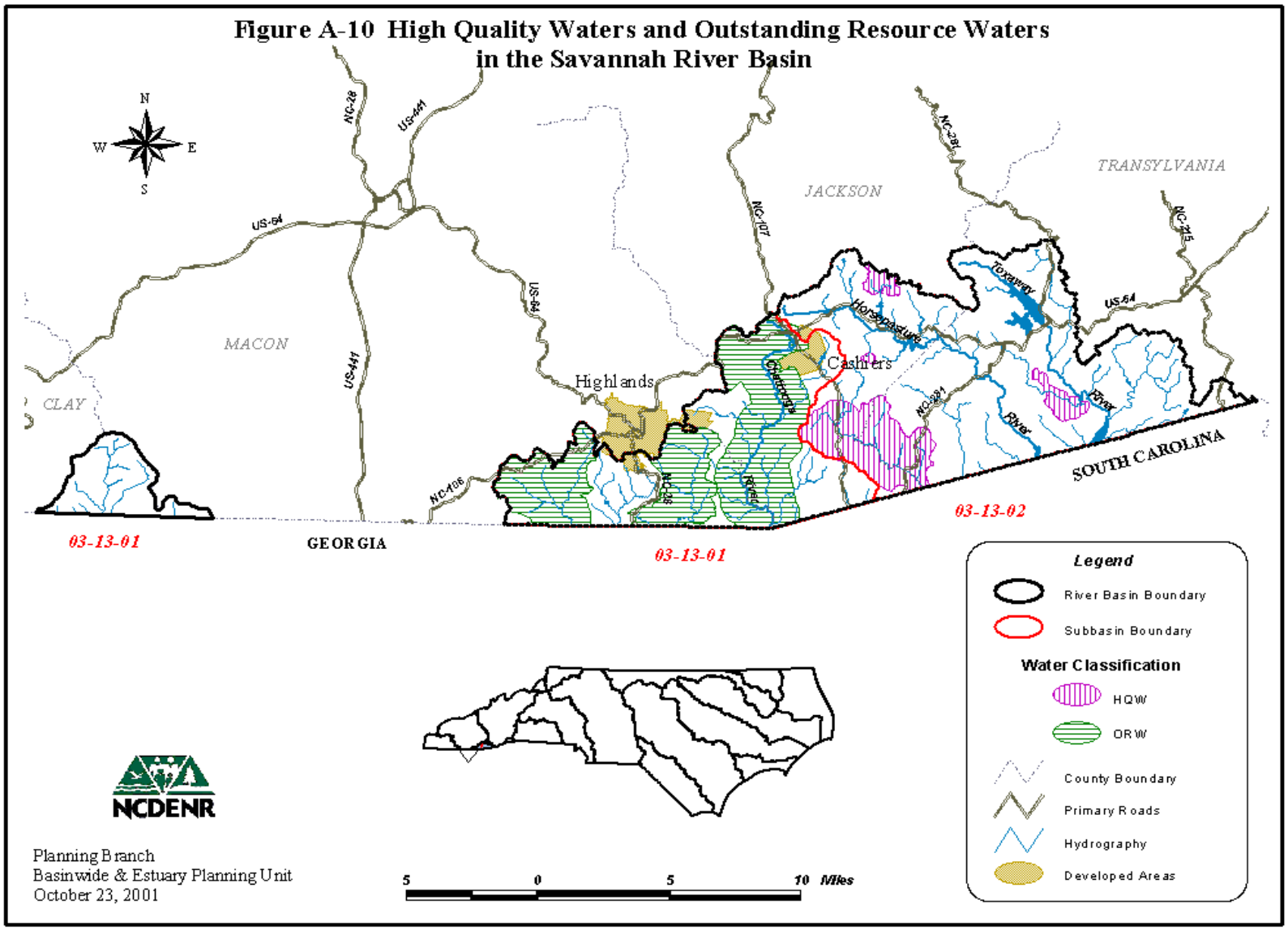



Figure A-10 High Quality Waters and Outstanding Resource Waters in the Savannah River Basin

## 3.3 DWQ Water Quality Monitoring Programs in the Savannah River Basin

Staff in the Environmental Sciences Branch and Regional Offices of DWQ collect a variety of biological, chemical and physical data. The following discussion contains a brief introduction to each program, followed by a summary of water quality data in the Savannah River basin for that program. For more detailed information on sampling and assessment of streams in this basin, refer to the *Basinwide Assessment Report* for the Savannah River basin, available from the Environmental Sciences Branch website at http://www.esb.enr.state.nc.us/bar.html or by calling (919) 733-9960.

***DWQ monitoring programs for the Savannah River Basin include:***

- Benthic Macroinvertebrates (Section 3.3.1)
- Fish Assessments (Section 3.3.2)
- Aquatic Toxicity Monitoring (Section 3.3.3)
- Ambient Monitoring System (Section 3.3.4)
- Lakes Assessment (Section 3.3.5)

### 3.3.1 Benthic Macroinvertebrates

Benthic macroinvertebrates are organisms that live in and on the bottom substrates of rivers and streams. These organisms are primarily aquatic insect larvae. The use of benthic macroinvertebrate data has proven to be a reliable monitoring tool, as benthic macroinvertebrates are sensitive to subtle changes in water quality. Since macroinvertebrates have life cycles of six months to over one year, the effects of short-term pollution (such as a spill) will generally not be overcome until the following generation appears. The benthic community also integrates the effects of a wide array of potential pollutant mixtures.

Criteria have been developed to assign a bioclassification to each benthic sample based on the number of different species present in the pollution intolerant groups of Ephemeroptera (Mayflies), Plecoptera (Stoneflies) and Trichoptera (Caddisflies), commonly referred to as EPTs; and a Biotic Index value, which gives an indication of overall community pollution tolerance. Different benthic macroinvertebrate criteria have been developed for different ecoregions (mountains, piedmont and coastal plain) within North Carolina. Bioclassifications fall into five categories ranging from Poor to Excellent.

**Overview of Benthic Macroinvertebrate Data**

Appendix II lists all of the benthic macroinvertebrate collections in the Savannah River basin between 1983 and 1999, giving site location, collection date, taxa richness, biotic index values and bioclassifications. Forty-six benthic macroinvertebrate samples have been collected from 23 sites since 1984 in the Savannah River basin. Approximately 85 percent of all samples collected since sampling began received Excellent or Good bioclassifications. Table A-15 presents a summary of benthic macroinvertebrate data for the Savannah River basin using the most recent bioclassification for each site.

Table A-15 Summary of Most Recent Benthic Macroinvertebrate Bioclassifications for All Sites in the Savannah River Basin

| Subbasin | Excellent | Good | Good-Fair | Fair | Poor | Total |
|---|---|---|---|---|---|---|
| 03-13-01 | 11 | 2 | 0 | 0 | 0 | 13 |
| 03-13-02 | 5 | 3 | 2 | 0 | 0 | 10 |
| **Total (#)** | **16** | **5** | **2** | **0** | **0** | **23** |
| **Total (%)** | **70%** | **22%** | **8%** | **0%** | **0%** | **100%** |

Five sites were sampled during routine 1999 basinwide surveys. For the 1999 collection, Figure A-11 presents the following bioclassifications: Excellent – 4 (80%), Good – 1 (20%).

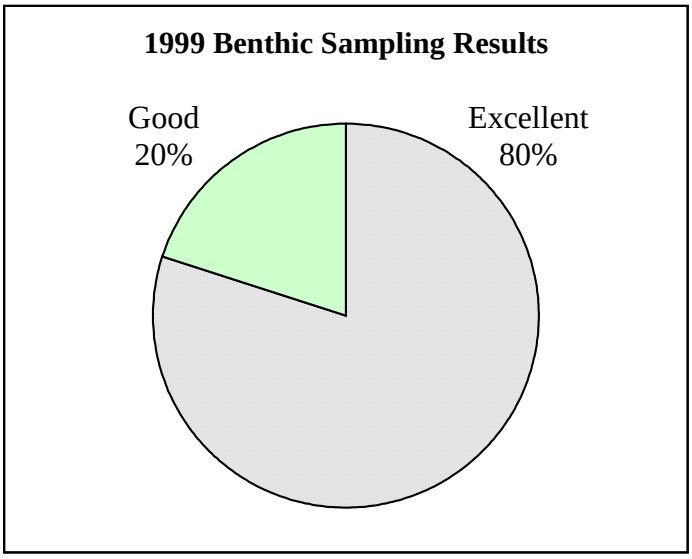



Figure A-11 Bioclassifications for Five Savannah River Basin Benthic Macroinvertebrate Sites Sampled by DWQ in 1999

### 3.3.2 Fish Assessments

Forty-three fish species have been collected from the Savannah River basin in North Carolina (NCWRC, June 1998). Special status has been granted to four of these species by the US Department of the Interior, the NC Wildlife Resources Commission, or the NC Natural Heritage Program under the North Carolina State Endangered Species Act (G.S. 113-311 to 113-337).

The North Carolina Index of Biotic Integrity is one of the tools DWQ uses which summarizes all classes of factors such as water and habitat quality, flow regime and energy sources which influence the freshwater fish communities of wadeable streams throughout the state. No fish community basinwide monitoring was conducted during 1999 in the Savannah River basin because of recent revisions and a reexamination of the criteria and metrics.

No fish tissue contaminant monitoring was conducted between 1994 and 1999 by DWQ because of the lack of any significant contaminant concerns in the Savannah River basin. Currently, there are no fish consumption advisories specific to the North Carolina portion of the basin.

### 3.3.3 Aquatic Toxicity Monitoring

Acute and/or chronic toxicity tests are used to determine toxicity of discharges to sensitive aquatic species (usually fathead minnows or the water flea, *Ceriodaphnia dubia*). Results of these tests have been shown by several researchers to be predictive of discharge effects on receiving stream populations. Many facilities are required to monitor whole effluent toxicity by their NPDES permit or by administrative letter. Other facilities may be tested by DWQ's Aquatic Toxicology Laboratory.

The Aquatic Toxicology Unit maintains a compliance summary (Figure A-12) for all facilities required to perform tests and provides a monthly update of this information to regional offices and DWQ administration. Ambient toxicity tests can be used to evaluate stream water quality relative to other stream sites and/or a point source discharge.

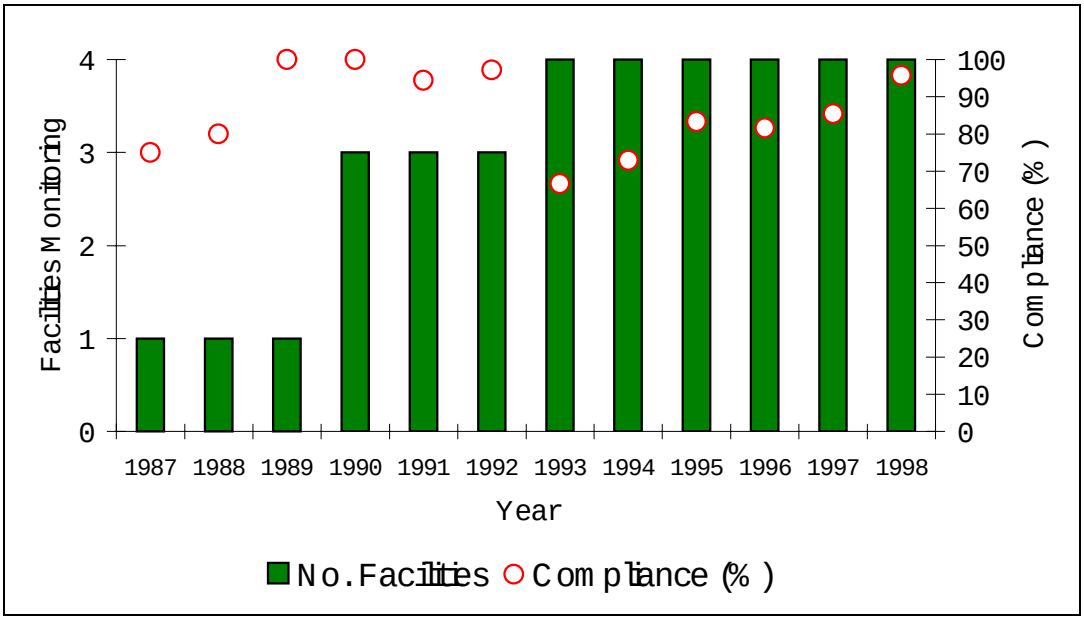



Figure A-12 Summary of Compliance with Aquatic Toxicity Tests in the Savannah River Basin (1999)

Four facilities in the Savannah River basin have NPDES permits which require whole effluent toxicity (WET) testing. Facilities with toxicity problems during the most recent two-year review period are discussed in the subbasin chapters in Section B.

### 3.3.4 Ambient Monitoring System Program

The Ambient Monitoring System is a network of stream, lake and estuarine stations strategically located for the collection of physical and chemical water quality data. North Carolina has more

than 400 monitoring stations statewide, including one station in the Savannah River basin presented in Table A-16 and shown on the subbasin (03-13-02) map on page 64. This station on the Horsepasture River is sampled monthly for 27 parameters.

Table A-16 Ambient Monitoring System Stations within the Savannah River Basin

| Station Number | Station Name | Subbasin | County | Classification* |
|---|---|---|---|---|
| H6000000 | Horsepasture River near Union | 03-13-02 | Transylvania | B Tr |

* An index for DWQ freshwater classifications can be found in Part 3.2 of this section (Table A-14).

Water quality in the Horsepasture River, based on ambient monitoring data, is good. Dissolved oxygen concentrations continue to remain above 7.0 mg/l, and high turbidity values are only associated with large precipitation events. Fecal coliform concentrations are well below the 200 colonies/100ml water quality standard for all samples collected. No temporal patterns could be observed for nutrients or metals and concentrations are not considered indicative of water quality problems.

### 3.3.5 Lakes Assessment

Lake Toxaway and Cashiers Lake were sampled in the past as part of a special study to be used for modeling purposes. Because the land around lakes in the Savannah River basin is privately owned (i.e., no public access), DWQ does not plan to sample any of them as part of the lakes monitoring program. If DWQ receives a request for lake sampling based on a specific water quality concern, access from the appropriate owners will be pursued.

## 3.4 Other Water Quality Research

North Carolina actively solicits "existing and readily available" data and information for each basin as part of the basinwide planning process. Data meeting DWQ quality assurance objectives are used in making use support determinations. Data and information indicating possible water quality problems are investigated further. Both quantitative and qualitative information are accepted during the solicitation period. High levels of confidence must be present in order for outside quantitative information to carry the same weight as information collected by DWQ. This is particularly the case when considering waters for the 303(d) list. Methodology for soliciting and evaluating outside data is presented in *North Carolina's 2000 §303(d) List* (NCDENR-DWQ, May 2001).

***DWQ data solicitation includes the following:***

- Information, letters and photographs regarding the uses of surface waters for boating, drinking water, swimming, aesthetics and fishing.
- Raw data submitted electronically and accompanied by documentation of quality assurance methods used to collect and analyze the samples. Maps showing sampling locations must also be included.
- Summary reports and memos, including distribution statistics and accompanied by documentation of quality assurance methods used to collect and analyze the data.

*Contact information must accompany all data and information submitted.*

The only information received for the Savannah River basin during the data solicitation period (ending February 5, 1999) was from the South Carolina Department of Health and Environmental Control (SCDHEC), Bureau of Water. Physical/chemical ambient water quality monitoring data were submitted along with a copy of the *Watershed Water Quality Assessment* for the Savannah and Salkehatchie River basins (SCDHEC, 1997). Data DWQ is most interested in are collected by SCDHEC from the Chattooga River watershed. No temporal patterns could be observed for nutrients or metals, and concentrations are not considered indicative of water quality problems. Fecal coliform averaged only 44 colonies/100ml between 1995 and 1998 and turbidity was less than 10 mg/l in all samples collected over the same period.

Research on Fairfield Lake in the Savannah River basin in Jackson County was conducted by faculty and staff of the Geosciences and Natural Resource Management Department at Western Carolina University between March 2000 and February 2001. The purpose of the research is to begin to provide basic information on which a regional approach to controlling sedimentation can be based. The specific objectives are to (1) determine the natural rates of sedimentation in watersheds prior to significant disturbance by examining reservoir sediments, (2) quantify the relative contributions of sediment from specific land-cover types, and identify the most important sediment sources, and (3) to determine how human activity has affected sediment yields and sources during the past several decades. Knowledge gained through this research can be used to focus limited financial resources on controlling sediment from the most important sources to the streams, rivers and reservoirs of western North Carolina (Miller, *et. al.*, 2000). DWQ will more thoroughly review this study prior to the next round of lakes monitoring and assessment (2004). More specific information and results will be presented in the next Savannah River Basinwide Water Quality Plan.

## 3.5 Use Support Summary

### 3.5.1 Introduction to Use Support

Surface waters are classified according to their best intended uses. Determining how well a waterbody supports its uses (*use support* status) is an important method of interpreting water quality data and assessing water quality. Surface waters are rated *fully supporting* (FS), *partially supporting* (PS) or *not supporting* (NS). The ratings refer to whether the classified uses of the water (i.e., aquatic life protection, primary recreation and water supply) are being met.

For example, waters classified for fish consumption, aquatic life protection and secondary recreation (Class C for freshwater or SC for saltwater) are rated FS if data used to determine use support meet certain criteria. However, if these criteria were not met, then the waters would be rated as PS or NS, depending on the degree of degradation. Waters rated PS or NS are considered to be impaired. Waters lacking data, having inconclusive data, or for which assessment criteria have not yet been developed, are listed as not rated (NR). More specific methods are presented in Appendix III.

***Use support ratings for surface waters:***

- *fully supporting (FS)*
- *partially supporting (PS)*
- *not supporting (NS)*
- *not rated (NR)*

***Impaired waters categories:***

- Partially Supporting
- Not Supporting

Historically, the non-impaired category was subdivided into fully supporting and fully supporting but threatened (ST). ST was used to identify waters that were fully supporting but had some notable water quality concerns and could represent constant, degrading or improving conditions. North Carolina's past use of ST was very different from that of the US Environmental Protection Agency (EPA), which uses it to identify waters that demonstrate declining water quality (EPA Guidelines for Preparation of the Comprehensive State Water Quality Assessments [305(b) Reports] and Electronic Updates, 1997). Given the difference between the EPA and North Carolina definitions of ST and the resulting confusion that arises from this difference, North Carolina no longer subdivides the non-impaired category. However, these waters and the specific water quality concerns remain identified in the basin plans so that data, management and the need to address the identified concerns are not lost.

Beginning in 2000 with the *Roanoke River Basinwide Water Quality Plan*, DWQ assesses ecosystem health and human health risk through the development of use support ratings for six categories: aquatic life and secondary recreation, fish consumption, shellfish harvesting, primary recreation, water supply and "other" uses. These categories are tied to the uses associated with the primary classifications applied to NC rivers and streams. A single water could have more than one use support rating corresponding to one or more of the six use support categories. For many waters, a use support category will not be applicable (N/A) to the use classification of that water (e.g., water supply is only applied to Class WS waters). This method of determining use support differs from that done prior to 2000; in that, there is no longer an *overall* use support rating for a water. For more detailed information regarding use support methodology, refer to Appendix III.

### 3.5.2 Comparison of Use Support Ratings to Streams on the 303(d) List

Section 303(d) of the Clean Water Act requires states to identify waters not meeting water quality standards. A list of waters not meeting standards is submitted to EPA biennially. EPA must then provide review and approval of the listed waters. Waters placed on this list, termed the 303(d) list, require the establishment of total maximum daily loads (TMDLs) intended to guide the restoration of water quality. See Appendix IV for a description of 303(d) listing methodology.

Waters are placed on North Carolina's 303(d) list primarily due to a partially or not supporting use support rating. These use support ratings are based on biological and chemical data. When the state water quality standard is exceeded, then this constituent is listed as the problem parameter. TMDLs must be developed for problem parameters on the 303(d) list. Other strategies may be implemented to restore water quality; however, the waterbody must remain on the 303(d) list until improvement has been realized based on either bioclassifications or water quality standards.

The 303(d) list and accompanying data are updated as the basinwide plans are revised. In some cases, the new data will demonstrate water quality improvement and waters may receive a better use support rating. These waters may be removed from the 303(d) list since water quality

improvement has been attained. In other cases, the new data may show a stable or decreasing trend in overall water quality resulting in the same, or lower, use support rating. Attention remains focused on these waters until water quality standards are being met.

### 3.5.3 Use Support Ratings for the Savannah River Basin

**Aquatic Life/Secondary Recreation**

The aquatic life/secondary recreation use support category is applied to all waters in North Carolina. Therefore, this category is applied to the total number of stream miles (176.2) and lake acres (1,366) in the North Carolina portion of the Savannah River basin. Table A-17 presents use support ratings by subbasin for both monitored and evaluated waters in the aquatic life/secondary recreation category. A basinwide summary of current aquatic life/secondary recreation use support ratings is presented in Table A-18.

Approximately 23 percent of stream miles (40.4) were monitored for the protection of aquatic life and secondary recreation by DWQ during this basinwide planning cycle. No lakes were monitored by DWQ over the past five years; therefore, 1,366 acres of lakes are not rated. In this category, there are currently no impaired waters in the North Carolina portion of the Savannah River basin.

Table A-17 Aquatic Life/Secondary Recreation Use Support Ratings for Monitored and Evaluated Waters Listed by Subbasin (1995-1999)

| Subbasin | Fully Supporting | Partially Supporting | Not Supporting | Not Rated | Total |
|---|---|---|---|---|---|
| 03-13-01 | 69.5 mi<br>0.0 ac | 0.0 mi<br>0.0 ac | 0.0 mi<br>0.0 ac | 7.1 mi<br>21 ac | 76.6 mi<br>21 ac |
| 03-13-02 | 39.1 mi<br>0.0 ac | 0.0 mi<br>0.0 ac | 0.0 mi<br>0.0 ac | 60.5 mi<br>1,345 ac | 99.6 mi<br>1,345 ac |
| **TOTAL** | **108.6 mi<br>0.0 ac** | **0.0 mi<br>0.0 ac** | **0.0 mi<br>0.0 ac** | **67.6 mi<br>1,366 ac** | **176.2 mi<br>1,366 ac** |
| Percent Miles | 62% | 0% | 0% | 38% | 100% |
| Percent Acres | 0% | 0% | 0% | 100% | 100% |

Table A-18 Aquatic Life/Secondary Recreation Use Support Summary Information for Waters in the Savannah River Basin (1999)

| Aquatic Life/Secondary Recreation Use Support Ratings | Monitored and Evaluated Waters* | | | Monitored Waters Only** | |
|---|---|---|---|---|---|
| | Miles or Acres | % | | Miles or Acres | % |
| **Fully Supporting** | **108.6 mi** | **62%** | | **40.4 mi** | **100%** |
| **Partially Supporting** | **0.0 mi** | **0%** | | **0.0 mi** | **0%** |
| **Not Supporting** | **0.0 mi** | **0%** | | **0.0 mi** | **0%** |
| **Not Rated** | **67.6 mi**<br>**1,366 ac** | **38%**<br>**100%** | | **0.0 mi** | **0%** |
| **TOTAL** | **176.2 mi**<br>**1,366 ac** | | | **40.4 mi** | |

* = Percent based on total of all waters, both monitored and evaluated. ** = Percent based on total of all monitored waters.

## Fish Consumption

Like the aquatic life/secondary recreation use support category, fish consumption is also applied to all waters in the state. Fish consumption use support ratings are based on fish consumption advisories issued by the NC Department of Health and Human Services (NCDHHS). Currently, there are no fish consumption advisories specific to the NC portion of the basin. Therefore, all waters are considered to be fully supporting the fish consumption category. No waters were monitored for the fish consumption category during this basinwide cycle because of the lack of any significant contaminant concerns in the Savannah River basin.

## Primary Recreation

There are 24.5 stream miles and 1,366 lake acres currently classified for primary recreation in the Savannah River basin. Approximately 19 percent of stream (4.6 miles) were monitored by DWQ over the past five years; all are fully supporting the primary recreation use. No lakes were monitored by DWQ over the past five years. Table A-19 presents use support ratings by subbasin for both monitored and evaluated streams in the primary recreation category. A basinwide summary of current primary recreation use support ratings is presented in Table A-20.

Table A-19 Primary Recreation Use Support Ratings for Monitored and Evaluated Waters Listed by Subbasin (1995-1999)

| Subbasin | Fully Supporting | Partially Supporting | Not Supporting | Not Rated | Total |
|---|---|---|---|---|---|
| 03-13-01 | 0.0 mi<br>0.0 ac | 0.0 mi<br>0.0 ac | 0.0 mi<br>0.0 ac | 13.2 mi<br>21 ac | 13.2 mi<br>21 ac |
| 03-13-02 | 4.6 mi<br>0.0 ac | 0.0 mi<br>0.0 ac | 0.0 mi<br>0.0 ac | 6.7 mi<br>1,345 ac | 11.3 mi<br>1,345 ac |
| **TOTAL** | **4.6 mi<br>0.0 ac** | **0.0 mi<br>0.0 ac** | **0.0 mi<br>0.0 ac** | **19.9 mi<br>1,366 ac** | **24.5 mi<br>1,366 ac** |
| Percent Miles | 18.8% | 0% | 0% | 81.2% | 100% |
| Percent Acres | 0% | 0% | 0% | 100% | 100% |

Table A-20 Primary Recreation Use Support Summary Information for Waters in the Savannah River Basin (1999)

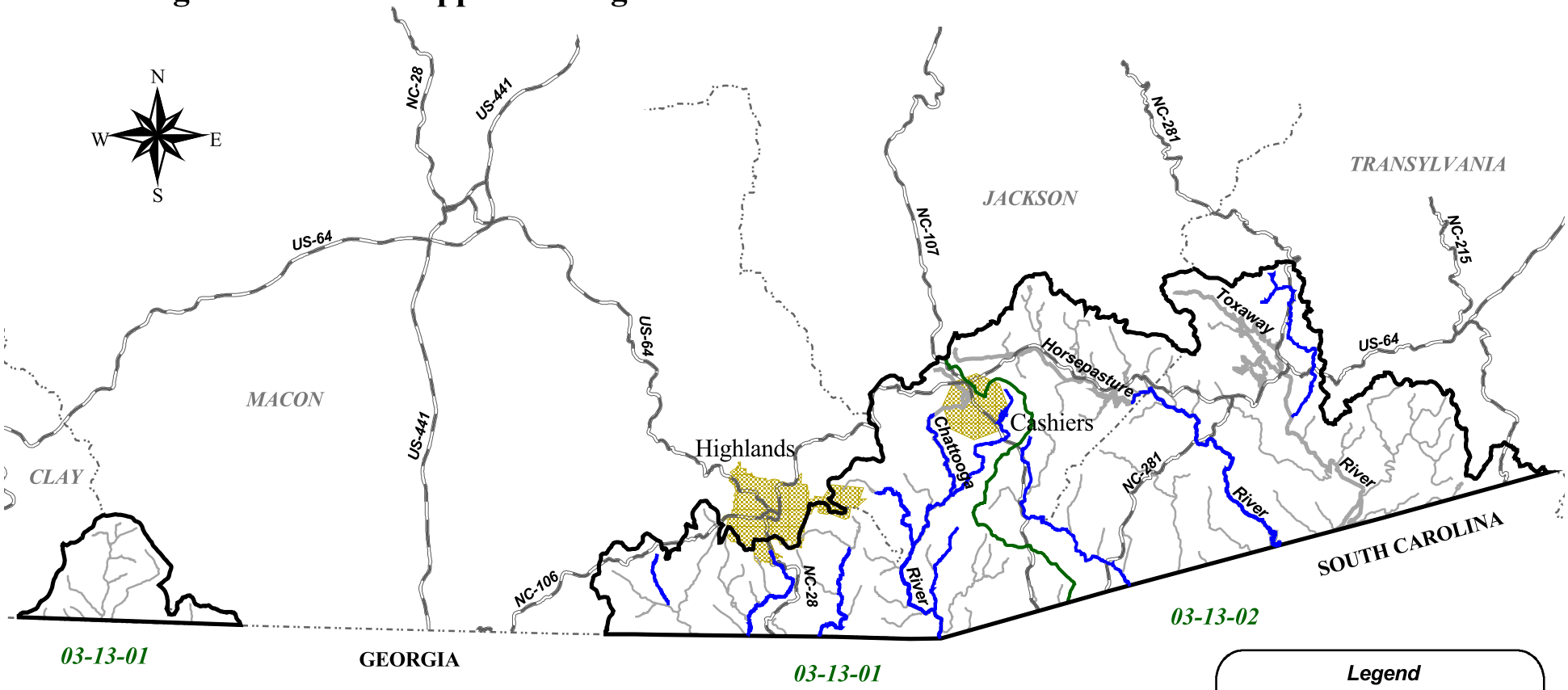
| Primary Recreation Use Support Ratings | Monitored and Evaluated Waters* | | | Monitored Waters Only** | |
|---|---|---|---|---|---|
| | Miles | % | | Miles | % |
| **Fully Supporting** | **4.6 mi** | **18.8%** | | **4.6 mi** | **100%** |
| **Partially Supporting** | **0.0 mi** | **0%** | | **0.0 mi** | **0%** |
| **Not Supporting** | **0.0 mi** | **0%** | | **0.0 mi** | **0%** |
| **Not Rated** | **19.9 mi<br>1,366 ac** | **81.2%<br>100%** | | **0.0 mi** | **0%** |
| **TOTAL** | **24.5 mi<br>1,366 ac** | | | **4.6 mi** | |

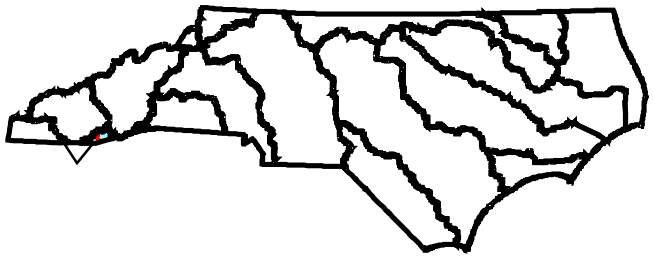
* = Percent based on total of all streams, both monitored and evaluated. ** = Percent based on total of all monitored streams.

## Use Support Summary

There are currently no impaired waters in the North Carolina portion of the Savannah River basin. A color map showing use support ratings for monitored waters in the basin is presented in Figure A-13.

# Figure A-13 Use Support Ratings for Monitored Waters in the Savannah River Basin



Legend

- River Basin Boundary
- Subbasin Boundary
- County Boundary
- Primary Roads
- Developed Areas

Use Support Ratings

- Fully Supporting
- Partially Supporting
- Not Supporting
- Not Rated
- Not Monitored

5 0 5 10 Miles

NCDENR

Planning Branch
Basinwide & Estuary Planning Unit
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