SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL

WATERSHED WATER QUALITY ASSESSMENT

EDISTO RIVER BASIN

OCTOBER 2004

Watershed Water Quality Assessment

Edisto River Basin

Technical Report No.005-04

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PREFACE

In 1993, the South Carolina Department of Health and Environmental Control (SCDHEC) published the first in a series of five watershed management documents. The first in that series, Watershed Water Quality Management Strategy: Savannah-Salkehatchie Basin communicated SCDHEC's innovative watershed approach, summarizing water programs and water quality in the basins. The approach continues to evolve and improve.

The watershed documents facilitate broader participation in the water quality management process. Through these publications, SCDHEC shares water quality information with internal and external partners, providing a common foundation for water quality improvement efforts at the local watershed or large-scale, often interstate, river basin level.

Water quality data from the Edisto River Basin was collected from 1991 to 2001 and assessed during this third five-year watershed management cycle. This updated atlas provides summary information on a watershed basis, as well as geographical presentations of all permitted watershed activities. A waterbody index and facility indices allow the reader to locate information on specific waters and facilities of interest.

A brief summary of the water quality assessments included in the body of this document is provided following the Table of Contents. This summary lists all waters within the Edisto River Basin that fully support recreational and aquatic life uses, followed by those waters not supporting uses. In addition, the summaries list changes in use support status; those that have improved or degraded over the five years since the last strategy was written. More comprehensive information can be found in the individual watershed sections. The information provided is accurate to the best of our knowledge at the time of writing and will be updated in five years.

General information on Edisto River Basin Watershed Protection and Restoration Strategies can be found under that section on page 26, and more detailed information is located within the individual watershed evaluations.

As SCDHEC continues basinwide and statewide water quality protection and improvement efforts, we are counting on the support and assistance of all stakeholders in the Edisto River Basin to participate in bringing about water quality improvements. We look forward to working with you.

If you have questions or comments regarding this document, or if you are seeking further information on the water quality in the Edisto Basin, please contact:

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Water Quality Assessment Summary

Edisto River Basin

TERMS USED IN TABLES

AQUATIC LIFE USE SUPPORT (AL) - The degree to which aquatic life is protected is assessed by comparing important water quality characteristics and the concentrations of potentially toxic pollutants with standards. Aquatic life use support is based on the percentage of standards excursions at a sampling site.

For **dissolved oxygen** and **pH**:

If the percentage of standard excursions is 10% or less, then uses are ***fully supported***.

If the percentage of standard excursions is greater than 10% and less than or equal to 25%, then uses are ***partially supported***.

If the percentage of standard excursions is greater than 25%, uses are ***not supported*** (see p.12 for further information).

For **toxins** (heavy metals, priority pollutants, chlorine, ammonia):

If the acute aquatic life standard for any individual toxicant is not exceeded more than once, uses are ***fully supported***.

If the acute aquatic life standard is exceeded more than once (ie. $\geq$ 2), but is less than or equal to 10% of the samples, uses are ***partially supported***.

If the acute aquatic life standard is exceeded more than once (ie. $\geq$2), and is greater than 10% of the samples, aquatic life uses are ***not supported*** (see p.12 for further information).

For **turbidity** and waters with **numeric total phosphorus, total nitrogen, and cholorphyll-a**:

If the percentage of standard excursions is 25% or less, then uses are ***fully supported***.

If the percentage of standard excursions is greater than 25%, then uses are ***not supported*** (see p.13 for further information).

RECREATIONAL USE SUPPORT (REC) - The degree to which the swimmable goal of the Clean Water Act is attained (recreational use support) is based on the frequency of fecal coliform bacteria excursions, defined as greater than 400/100 ml for all surface water classes.

If 10% or less of the samples are greater than 400/100 ml, then recreational uses are said to be ***fully supported***.

If the percentage of standards excursions is greater than 10% and less than or equal to 25%, then recreational uses are said to be ***partially supported***.

If the percentage of standards excursions is greater than 25%, then recreational uses are said to be ***nonsupported*** (see p.14 for further information).

Excursion - The term excursion is used to describe a measurement that does not comply with the appropriate water quality standard.

Table 1. Fully Supported Sites in the Edisto River Basin

* = Station not evaluated for Recreational Support

Watershed	Waterbody Name	Station #	Improving Trends	Other Trends
03050203-010	Lightwood Knot Creek	E-101	Decreasing Fecal Coliform	Decreasing Dissolved Oxygen; Increasing BOD5, Total Nitrogen
		E-600*		
03050203-020	North Fork Edisto River	E-102		
		E-084		
03050203-030	Black Creek	E-599*		
		E-103/ RS-01298		
03050203-040	North Fork Edisto River	E-092	Increasing Dissolved Oxygen; Decreasing BOD_5	Increasing Fecal Coliform
		E-104		
03050203-050	Bull Swamp Creek	E-035	Decreasing BOD_5, Total Phosphorus	
		E-042*		
03050203-070	Caw Caw Swamp	E-105		
	Mack Branch	RS-01021		
03050203-080	North Fork Edisto River	E-007B		Increasing BOD_5
		E-008	Increasing Dissolved Oxygen; Decreasing BOD_5	
		E-008A		
03050204-010	South Fork Edisto River	E-002	Decreasing BOD5, Turbidity	
		E-090	Increasing Dissolved Oxygen; Decreasing BOD_5, Turbidity, Total Nitrogen	Decreasing pH
		E-021/E-113		

Table 1. Fully Supported Sites in the Edisto River Basin

* = Station not evaluated for Recreational Support

Watershed	Waterbody Name	Station #	Improving Trends	Other Trends
03050204-010	First Branch	E-001	Decreasing BOD_5, Turbidity, Total Phosphorus, Fecal Coliform	Decreasing pH
	McTier Creek	E-578*		
	Rocky Springs Creek	RS-01034		
03050204-020	Shaw Creek	E-579*		
		E-106		
03050204-030	South Fork Edisto River	E-011		
	Yarrow Branch	E-595*		
03050204-040	Dean Swamp Creek	E-107	Decreasing Turbidity	
03050204-050	South Fork Edisto River	E-011		
		E-012		Decreasing pH; Increasing Fecal Coliform
	Scratchnose Swamp	RS-01059		
03050205-010	Edisto River	E-013	Decreasing BOD_5, Total Nitrogen	
		E-013A		
03050205-030	Edisto River	E-014	Decreasing BOD_5	Increasing pH, Turbidity
		E-086	Decreasing BOD_5, Total Nitrogen, Turbidity; Increasing Dissolved Oxygen	Increasing pH
03050205-040	Indian Field Swamp	E-597*		
03050205-050	Edisto River	E-015	Decreasing BOD_5, Total Nitrogen	Increasing Turbidity, Total Suspended Solids, pH
03050205-060	Edisto River	E-015	Decreasing BOD_5, Total Nitrogen	Increasing Turbidity, Total Suspended Solids, pH
		RS-01040		

Table 1. Fully Supported Sites in the Edisto River Basin

* = Station not evaluated for Recreational Support

Watershed	Waterbody Name	Station #	Improving Trends	Other Trends
03050205-060	Edisto River	MD-119	Decreasing BOD5, Total Nitrogen	Increasing pH, Turbidity
	South Edisto River	MD-260		
		MD-244	Decreasing BOD5, Fecal Coliform	
03050205-070	North Edisto River	MD-262		
		MD-211	Decreasing BOD5, Fecal Coliform	Decreasing pH, Turbidity
	Ocella Creek Tributary	RT-01652		
	Bohicket Creek	RO-01145		
		MD-210	Decreasing BOD5	
03050206-060	Dean Swamp	E-030		
	Cedar Swamp	E-596*		
03050206-070	Four Hole Swamp	E-015A	Decreasing BOD5	

‡ For the most current station status, consult www.scdhec.gov\eqc\water and click on Watersheds & TMDLs; TMDL; and 303(d) list.

Table 2. Impaired Sites in the Edisto River Basin

REC=Recreational; AL=Aquatic Life; PS=Partially Supported Standards; NS=Nonsupported Standards; *=Station not evaluated for Recreational Support; T=TMDL Developed

Watershed	Waterbody Name	Station #	Use	Status	Water Quality Indicator	Improving Trends	Other Trends
03050203-010	Chinquapin Creek	E-091	REC	NS	Fecal Coliform	Decreasing BOD_5, Turbidity	Increasing Total Nitrogen
	Horsepen Creek	RS-01004	REC	NS	Fecal Coliform		
03050203-050	Bull Swamp Creek	E-034	AL	NS	Dissolved Oxygen	Increasing Dissolved Oxygen	Increasing BOD_5
03050203-060	North Fork Edisto River	E-099	REC	PS	Fecal Coliform	Increasing Dissolved Oxygen; Decreasing BOD_5	Increasing Fecal Coliform
03050203-080	North Fork Edisto River	E-007	AL	NS	pH	Decreasing Turbidity	Decreasing pH
		E-007A	REC	PS	Fecal Coliform		Increasing Fecal Coliform
		E-007C	AL	NS	pH	Decreasing BOD_5	Decreasing pH
03050204-020	Shaw Creek	E-094	AL	NS	pH		Increasing Total Phosphorus; Decreasing pH
03050204-050	Windy Hill Creek	E-029*	AL	PS	Macroinvertebrates		
03050204-060	Goodland Creek	E-0336/ E-598	REC	NS	Fecal Coliform	Decreasing BOD_5	Increasing Fecal Coliform; Decreasing pH
03050204-070	Roberts Swamp	E-039	AL	PS	Macroinvertebrates		
03050205-020	Cattle Creek	E-108	REC	PS	Fecal Coliform		
03050205-040	Indian Field Swamp	E-032	AL	PS	Dissolved Oxygen	Decreasing BOD_5	Decreasing Dissolved Oxygen; Increasing pH
			REC	PS	Fecal Coliform		

Table 2. Impaired Sites in the Edisto River Basin

REC=Recreational; AL=Aquatic Life; PS=Partially Supported Standards; NS=Nonsupported Standards; *=Station not evaluated for Recreational Support; T=TMDL Developed

Watershed	Waterbody Name	Station #	Use	Status	Water Quality Indicator	Improving Trends	Other Trends
03050205-040	Polk Swamp	E-016	AL	NS	Dissolved Oxygen	Decreasing Total Nitrogen	Decreasing Dissolved Oxygen
			REC	NS	Fecal Coliform		
		E-109	AL	NS	Dissolved Oxygen/ Macroinvertebrates	Decreasing Fecal Coliform	Decreasing Dissolved Oxygen
			REC	PS	Fecal Coliform		
03050205-060	South Edisto River	RO-01123	AL	NS	Turbidity		
03050205-070	Younges Island Creek	MD-261	AL	NS	Turbidity		
	Dawho River	RT-01665	AL	NS	Dissolved Oxygen, Turbidity		
		MD-120	AL	NS	Dissolved Oxygen, Turbidity	Decreasing BOD_5, Total Nitrogen	
	Church Creek	MD-195	AL	NS	Dissolved Oxygen	Decreasing BOD_5, Total Nitrogen	Increasing Turbidity
	Bohicket Creek	MD-209	AL	NS	Dissolved Oxygen	Decreasing BOD_5, Total Phosphorus, Fecal Coliform	Decreasing pH
03050206-010	Gramling Creek	E-022	AL	NS	Dissolved Oxygen	Decreasing BOD_5, Turbidity	Decreasing pH
			REC	NS	Fecal Coliform		
	Little Bull Swamp	E-076	AL	NS	Dissolved Oxygen	Decreasing BOD_5, Turbidity	Decreasing Dissolved Oxygen, pH
			REC	PS	Fecal Coliform		
		E-589*	AL	PS	Macroinvertebrates		
03050206-020	Four Hole Swamp	E-059	REC	PS	Fecal Coliform	Decreasing BOD_5, Turbidity, Total Suspended Solids	

Table 2. Impaired Sites in the Edisto River Basin

REC=Recreational; AL=Aquatic Life; PS=Partially Supported Standards; NS=Nonsupported Standards; *=Station not evaluated for Recreational Support; T=TMDL Developed

Watershed	Waterbody Name	Station #	Use	Status	Water Quality Indicator	Improving Trends	Other Trends
03050206-020	Four Hole Swamp	E-111	AL	NS	Dissolved Oxygen		
			REC	PS	Fecal Coliform		
	Goodbys Swamp	RS-01036	REC	NS	Fecal Coliform		
03050206-030	Cow Castle Creek	E-050	REC	PS	Fecal Coliform		
03050206-040	Four Hole Swamp	E-112	AL	NS	Dissolved Oxygen		
03050206-050	Providence Swamp	E-051	AL	PS	Dissolved Oxygen	Decreasing BOD_5	Decreasing pH
	Horse Range Swamp	E-052	REC	PS	Fecal Coliform		
03050206-030	Cow Castle Creek	E-050	REC	PS	Fecal Coliform		
03050206-070	Four Hole Swamp	E-100	AL	PS	Chromium	Decreasing BOD_5, Total Nitrogen	Increasing pH, Turbidity, Total Suspended Solids
			REC	PS	Fecal Coliform		

‡ For the most current station status, consult www.scdhec.gov\eqc\water and click on Watersheds & TMDLs; TMDL; and 303(d) list.

Table 3. Changes in Use Support Status

Edisto River Basin Sites that Improved from 1997 to 2001

REC= Recreational; AL=Aquatic Life; FS=Fully Supported Standards; PS=Partially Supported Standards; NS=Nonsupported Standards

Watershed	Waterbody Name	Station #	Use	Status		Water Quality Indicator	
				1997	2001	1997	2001
03050203-010	Lightwood Knot Creek	E-101	REC	PS	FS	Fecal Coliform	
03050203-040	North Fork Edisto River	E-092	AL	NS	FS	Copper, Zinc	
			REC	PS	FS	Fecal Coliform	
03050203-050	Bull Swamp Creek	E-034	REC	PS	FS	Fecal Coliform	
		E-035	REC	PS	FS	Fecal Coliform	
03050203-060	North Fork Edisto River	E-099	AL	NS	FS	Copper	
03050203-080	North Fork Edisto River	E-007A	AL	PS	FS	pH	
		E-007B	AL	PS	FS	pH	
			REC	PS	FS	Fecal Coliform	
03050204-010	South Fork Edisto River	E-021/ E-113	REC	PS	FS	Fecal Coliform	
	First Branch	E-001	REC	PS	FS	Fecal Coliform	
03050204-020	Shaw Creek	E-094	REC	PS	FS	Fecal Coliform	
03050204-030	South Fork Edisto River	E-011	REC	PS	FS	Fecal Coliform	
03050205-010	Edisto River	E-013	AL	PS	FS	Copper	
03050205-020	Cattle Creek	E-108	AL	PS	FS	Macroinvertebrates	
			REC	NS	PS	Fecal Coliform	Fecal Coliform
03050205-040	Polk Swamp	E-109	REC	NS	PS	Fecal Coliform	Fecal Coliform
03050205-050	Edisto River	E-015	AL	NS	FS	Copper	
03050205-060	Edisto River	E-015	AL	NS	FS	Copper	
03050205-070	Dawho River	MD-120	REC	PS	FS	Fecal Coliform	
03050206-010	Little Bull Swamp	E-076	REC	NS	PS	Fecal Coliform	Fecal Coliform
03050206-020	Four Hole Swamp	E-059	AL	NS	FS	Copper, Zinc	
03050206-060	Dean Swamp	E-030	REC	PS	FS	Fecal Coliform	

‡ For the most current station status, consult www.scdhec.gov\eqc\water and click on Watersheds & TMDLs; TMDL; and 303(d) list.

Table 4. Changes in Use Support Status

Edisto River Basin Sites that Degraded from 1997 to 2001

REC= Recreational; AL=Aquatic Life; FS=Fully Supported Standards; PS=Partially Supported Standards; NS=Nonsupported Standards

Watershed	Waterbody Name	Station #	Use	Status		Water Quality Indicator	
				1997	2001	1997	2001
03050203-080	North Fork Edisto River	E-007	AL	FS	NS		pH
		E-007C	AL	FS	NS		pH
03050204-020	Shaw Creek	E-094	AL	FS	NS		pH
03050205-040	Indian Field Swamp	E-032	AL	FS	PS		Dissolved Oxygen
			REC	FS	PS		Fecal Coliform
	Polk Swamp	E-016	AL	FS	NS		Dissolved Oxygen
		E-109	AL	FS	NS		Dissolved Oxygen/ Macroinvertebrates
03050205-070	Church Creek	MD-195	AL	FS	NS		Dissolved Oxygen
03050206-010	Little Bull Swamp	E-076	AL	PS	NS	Macroinvertebrates	Dissolved Oxygen
	Gramling Creek	E-022	AL	FS	NS		Dissolved Oxygen
03050206-020	Four Hole Swamp	E-111	AL	FS	NS		Dissolved Oxygen
			REC	FS	PS		Fecal Coliform
03050206-030	Cow Castle Creek	E-050	REC	FS	PS		Fecal Coliform
03050206-040	Four Hole Swamp	E-112	AL	FS	NS		Dissolved Oxygen
03050206-050	Providence Swamp	E-051	AL	FS	PS		Dissolved Oxygen
03050206-070	Four Hole Swamp	E-100	AL	FS	PS		Chromium

‡ For the most current station status, consult www.scdhec.gov\eqc\water and click on Watersheds & TMDLs; TMDL; and 303(d) list.

Introduction

The South Carolina Department of Health and Environmental Control (SCDHEC or the Department) initiated its first watershed planning activities as a result of a U.S. Environmental Protection Agency (USEPA) grant in June of 1972. These activities were soon extended by requirements for a Continuing Planning Process under §303(e), "Federal Water Pollution Control Act Amendments of 1972", U.S. Public Law 92-500. In 1975, the SCDHEC published basin-planning reports for the four major basins in South Carolina. A related planning activity resulted from §208 of the Federal Water Pollution Control Act, which required states to prepare planning documents on an areawide basis. Areawide plans were completed in the late 1970's for the five designated areas of the State and for the nondesignated remainder of the State. The updated versions serve as information sources and guides for water quality management. The Continuing Planning Process, watershed assessments, and 208 plans are elements of South Carolina's overall water quality management plan.

The Bureau of Water emphasizes watershed planning to better coordinate river basin planning and water quality management. Watershed-based management allows the Department to address Congressional and Legislative mandates in a coordinated manner and to better utilize current resources. The watershed approach also improves communication between the Department, the regulated community, and the public on existing and future water quality issues.

Purpose of the Watershed Water Quality Assessment

A watershed is a geographic area into which the surrounding waters, sediments, and dissolved materials drain, and whose boundaries extend along surrounding topographic ridges. Watershed-based water quality management recognizes the interdependence of water quality related activities associated with a drainage basin including: monitoring, problem identification and prioritization, water quality modeling, planning, permitting, and other activities. The Bureau of Water's watershed approach integrates these and other activities by watershed, resulting in appropriately focused water quality protection efforts. While an important aspect of the program is water quality problem identification and solution, the emphasis is on problem prevention.

The Department has divided the State into five regions (areas consisting of one or more river basins), along hydrologic lines, which contain approximately the same number of NPDES permitted dischargers. A Watershed Water Quality Assessment (WWQA) will be created for each major river basin within the five regions and will be updated on a five-year rotational basis. This will allow for effective allocation and coordination of water quality activities and efficient use of available resources. The Edisto River Basin is subdivided into 29 watersheds or hydrologic units within the State of South Carolina, which includes the North Fork Edisto River, the South Fork Edisto River, the Edisto River, and Four Hole Swamp. The hydrologic units used are from the 1999 USGS Hydrologic Unit Code for South Carolina, made in cooperation with the USDA Natural Resources Conservation Service and SCDHEC. In an effort to make these units more representative of actual hydrology, SCDHEC has proposed changes to the 1999 map affecting some boundaries in the Edisto River Basin. These changes

have been provisionally approved by USGS pending a future statewide update. Appendix A. lists all SCDHEC geographic features (ie. stations, facilities) and any watershed boundary changes that may have occurred as a result of these provisional changes. All water quality related evaluations are made at the 11-digit watershed level. The stream names used are derived from USGS topographic maps. The National Hydrography Dataset (NHD) was the system used in the development of the digital hydrography and stream length estimates. NHD is based on the content of the USGS 1:100,000 scale Digital Line Graph (DLG) hydrography data, integrated with reach (stream) related information from the USEPA Reach File Version 3.0 (RF3) data. Based on the blue line streams of the USGS topo maps, it is likely that portions of the stream network in terms of perennial, intermittent, and ephemeral streams are not represented.

The watershed-based assessments fulfill a number of USEPA reporting requirements including various activities under §303(d), §305(b), §314, and §319 of the Clean Water Act (CWA). Section 303(d) requires a listing of waters located within a watershed that do not meet applicable water quality standards. Section 305(b) requires that the State biennially submit a report that includes a water quality description and analysis of all navigable waters to estimate environmental impacts. Section 314 requires that the State submit a biennial report that identifies, classifies, describes, and assesses the status and trends in water quality of publicly owned lakes. The watershed plan is also a logical evaluation, prioritization, and implementation tool for nonpoint source (§319) requirements. Nonpoint source best management practices (BMPs) can be selected by identifying water quality impairments and necessary controls, while considering all the activities occurring in the drainage basin.

The assessment also allows for more efficient issuance of National Pollutant Discharge Elimination System (NPDES) and State wastewater discharge permits. Proposed permit issuances within a watershed may be consolidated and presented to the public in groups, rather than one at a time, allowing the Department to realize a resource savings, and the public to realize an information advantage.

The Watershed Water Quality Assessment (WWQA) is a geographically-based document that describes, at the watershed level, water quality related activities that may potentially have an adverse impact on water quality. The Watershed Implementation Staff investigates the impaired streams mentioned in the WWQA to determine, where possible, the source of the impairment and recommends solutions to correct the problems. As part of this effort, the watershed staff is forging partnerships with various federal and state agencies, local governments, and community groups. In particular, the Department's Watershed Program and the Natural Resource Conservation Service (NRCS) district offices are working together to address some of the nonpoint source (NPS) concerns in the basin. By combining NRCS's local knowledge of land use and the Department's knowledge of water quality, we are able to build upon NRCS's close relationships with landowners and determine where NPS projects are needed. These projects may include educational campaigns or special water quality studies.

Factors Assessed in Watershed Evaluations

Surface Water Quality

SCDHEC's Bureau of Water and Bureau of Environmental Services ensure that the water in South Carolina is safe for drinking and recreation, and that it is suitable to support and maintain aquatic flora and fauna. Functions include planning, permitting, compliance assurance, enforcement, and monitoring. This section provides an overview of water quality evaluation and protection activities.

Monitoring

In an effort to evaluate the State's water quality, the Department operates and collects data from a statewide network of ambient monitoring sites. The ambient monitoring network is directed toward determining long-term water quality trends, assessing attainment of water quality standards, identifying locations in need of additional attention, and providing background data for planning and evaluating stream classifications and standards.

Ambient monitoring data are also used in the process of formulating permit limits for wastewater discharges with the goal of maintaining State and Federal water quality standards and criteria in the receiving streams in accordance with the goals of the Clean Water Act. These standards and criteria define the instream chemical concentrations that provide for protection and reproduction of aquatic flora and fauna, help determine support of the classified uses of each waterbody, and serve as instream limits for the regulation of wastewater discharges or other activities. In addition, by comparing the ambient monitoring network data to the State Water Quality Standards, these data are used in the preparation of the biennial §305(b) report to Congress, which provides a general summary of statewide water quality, and the §303(d) list of impaired waters with respect to attainment of classified uses.

Extensive revisions to SCDHEC's ambient water quality monitoring network were implemented in 2001. One of the primary purposes of the changes was to establish a network of permanent sites with a greater focus on watersheds. Another goal was to establish a more consistent sampling frequency and parameter coverage at the permanent sites. Thus while most of the previous sampling locations were maintained, the sampling frequency and parameter coverage at each may have changed.

The previous monitoring design was comprised of four main station types: primary (P), secondary (S), watershed (W), and biological (BIO) stations. The new station types include: Integrator (INT), Special Purpose (SPRP), Summer-Only (SUMM), Sediment-Only (SEDM), Random Stream for year ## (RS##), Random Lake for year ## (RL##), Random Tide Creek for year ## (RT##), or Random Open Water for year ## (RO##). *The station descriptions depicting any transition in station types and/or coverage during the study period are located in each watershed evaluation.*

Primary stations are sampled on a monthly basis year round. The static primary station network is operated statewide, and receives the most extensive parameter coverage, thus making it best suited for detecting long-term trends. Integrator Sites are the approximate equivalent under the new design. Integrator Sites target the furthest downstream access of each of the 11-digit watershed units in the state,

as well as the major waterbodies that occur within these watershed units. Special Purpose Sites are also permanent, fixed-location sites, but represent locations of special interest to the Department that do not meet the location criteria of Integrator Sites.

Secondary stations are sampled monthly from May through October, a period critical to aquatic life, and characterized by higher water temperatures and lower flows. Secondary stations are located in areas where specific monitoring is warranted due to point source discharges, or in areas with a history of water quality problems. Secondary station parameter coverage is less extensive and more flexible than primary or watershed station coverages. The number and locations of secondary stations have greater annual variability than do those in the primary station network, and during a basin's target year may have parameter coverage and sampling frequency duplicating that of primary or watershed stations. Summer-Only Sites are the equivalent under the new design. There are very few Summer-Only Sites as they are intended to track specific reservoir eutrophication concerns.

Watershed stations are sampled on a monthly basis, year round, during a basin's target year. Additional watershed stations may be sampled monthly from May through October to augment the secondary station network. Watershed stations are located to provide more complete and representative coverage within the larger drainage basin, and to identify additional monitoring needs. Watershed stations have the same parameter coverage as primary stations. Under the new design, Watershed stations are locations with extensive historic monitoring data (e.g. primary or secondary monitoring sites under the previous design). Changes in water quality can be identified by comparison of the new data to the historic data.

A statewide Probability-Based, or random sampling, component is part of the new monitoring design. A probability-based monitoring design is a type of a survey design in which the population of interest is sampled in a fashion that allows statements to be made about the whole population based on a subsample, and produces an estimate of the accuracy of the assessment results. The advantage of the probability-based sampling design is that statistically valid statements about water quality can be made about large areas based on a relatively small subsample. Separate monitoring schemes have been developed for stream, lake/reservoir, and estuarine resources. Each year a new statewide set of probability-based random sites is selected for each waterbody type. Random Sites are sampled on a monthly basis for one year with the same parameter coverage as Integrator Sites. The data from those Random Sites located within this basin are included in this assessment.

Ambient biological trend monitoring is conducted to collect data to indicate general biological conditions of State waters that may be subject to a variety of point and nonpoint source impacts. Ambient biological sampling is also used to establish regional reference or "least impacted" sites from which to make comparisons in future monitoring. Additionally, special macroinvertebrate studies, in which stream specific comparisons among stations located upstream and downstream from a known discharge or nonpoint source area, are used to assess impact.

Qualitative sampling of macroinvertebrate communities is the primary bioassessment technique used in ambient biological trend monitoring. A habitat assessment of general stream habitat availability and a substrate characterization is conducted at each site. Annual ambient biological monitoring is

conducted during low flow "worst case" conditions in July - September. Some coastal plain streams that have no flow conditions in the summer months may be sampled in the winter (January-March). This technique may also be used in special studies for the purpose of determining if, and to what extent, a wastewater discharge or nonpoint source runoff is impacting the receiving stream. A minimum of two sample locations, one upstream and one downstream from a discharge or runoff area, is collected. At least one downstream recovery station is also established when appropriate. Sampling methodology follows procedures described in Standard Operating Procedures, Biological Monitoring. Only sites described as 'BIO' will collect information on the macroinvertebrate communities used in the ambient biological trend monitoring.

Many pollutants may be components of point source discharges, but may be discharged in a discontinuous manner, or at such low concentrations that water column sampling for them is impractical. Some pollutants are also common in nonpoint source runoff, reaching waterways only after a heavy rainfall; therefore, in these situations, the best media for the detection of these chemicals are sediment and fish tissue where they may accumulate over time. Their impact may also affect the macroinvertebrate community.

Aquatic sediments represent a historical record of chronic conditions existing in the water column, and sediment samples are analyzed at selected monitoring sites. Pollutants bind to particulate organic matter in the water column and settle to the bottom where they become part of the sediment "record". Accumulated sediments not only reflect the impact of point source discharges, but also incorporate nonpoint source pollution washed into the stream during rain events. As a result, contaminant concentrations originating from irregular and highly variable sources are recorded in the sediment. The sediment concentrations at a particular location do not vary as rapidly with time as do the water column concentrations. Thus, the sediment record may be read at a later time, unrelated to the actual release time. Lakes act as settling basins for materials entering the lake system directly from a discharge or indirectly from the land surface washed into streams. Therefore, it is not unusual for lake sediment concentrations to be higher than sediment concentrations found in streams.

The ambient monitoring program has the capability of sampling a wide range of media and analyzing them for the presence or effects of contaminants. Ambient monitoring data from 71 stations were reviewed for the Edisto River Basin.

Natural Swimming Areas

Although all waters of the State are protected for swimming, some areas are more popular than others and may require closer monitoring. Currently monitored areas are located and discussed in the appropriate watershed evaluations.

Classified Waters, Standards, and Natural Conditions

The waters of the State have been classified in regulation based on the desired uses of each waterbody. State standards for various parameters have been established to protect all uses within each classification. The water-use classifications that apply to this basin are as follows.

Class ORW, or "outstanding resource waters", are freshwaters or saltwaters that constitute an outstanding recreational or ecological resource, or those freshwaters suitable as a source for drinking water supply purposes, with treatment levels specified by the Department.

Class A were freshwaters that were suitable for primary contact recreation. This class was also suitable for uses listed as Class B. As of April 1992, Class A and Class B waters were reclassified as Class FW, which protects for primary contact recreation.

Class B were freshwaters that were suitable for secondary contact recreation and as a source for drinking water supply, after conventional treatment, in accordance with the requirements of the Department. These waters were suitable for fishing, and the survival and propagation of a balanced indigenous aquatic community of fauna and flora. This class was also suitable for industrial and agricultural uses. The main difference between the Class A and B freshwater was the fecal coliform standard. Class A waters were not to exceed a geometric mean of 200/100ml, based on 5 consecutive samples during any 30 day period; nor were more than 10% of the total samples during any 30 day period to exceed 400/100ml. Class B waters were not to exceed a geometric mean of 1000/100ml, based on 5 consecutive samples during any 30 day period; nor were more than 20% of the total samples during any 30 day period to exceed 2000/100ml. As of April 1992, Class A and Class B waters were reclassified as Class FW, which protects for primary contact recreation.

Class FW, or "freshwaters", are freshwaters that are suitable for primary and secondary contact recreation and as a source for drinking water supply, after conventional treatment, in accordance with the requirements of the Department. These waters are suitable for fishing, and the survival and propagation of a balanced indigenous aquatic community of fauna and flora. This class is also suitable for industrial and agricultural uses.

Class SFH, or "shellfish harvesting" waters, are tidal saltwaters protected for shellfish harvesting, and are suitable also for uses listed in Classes SA and SB.

Class SA comprises "tidal saltwaters" suitable for primary and secondary contact recreation, crabbing and fishing. These waters are not protected for harvesting of clams, mussels, or oysters for market purposes or human consumption. The waters are suitable for the survival and propagation of a balanced indigenous aquatic community of marine fauna and flora.

Class SB are "tidal saltwaters" suitable for the same uses listed in SA. The difference between the Class SA and SB saltwater concerns the DO limitations. Class SA waters must maintain daily DO averages not less than 5.0 mg/l, with a minimum of 4.0 mg/l, and Class SB waters maintain DO levels not less than 4.0 mg/l.

Class GB, or "groundwaters", include all groundwaters of the State, unless classified otherwise, which meet the definition of underground sources of drinking water.

Site specific numeric standards (*) for surface waters may be established by the Department to replace the numeric standards found in Regulation 61-68 or to add new standards not contained in R.61-68. Establishment of such standards shall be subject to public participation and administrative procedures for adopting regulations. In addition, such site specific numeric standards shall not apply to tributary or downstream waters unless specifically described in the water classification listing in R.61-69.

The standards are used as instream water quality goals to maintain and improve water quality and also serve as the foundation of the Bureau of Water's program. They are used to determine permit limits for treated wastewater dischargers and any other activities that may impact water quality. Using mathematical Wasteload Allocation Models, the impact of a wastewater discharge on a receiving stream is predicted under critical conditions following R.61-68. These predictions are then used to set limits for

different pollutants on the National Pollutant Discharge Elimination System (NPDES) permits issued by the Department. The NPDES permit limits are set so that, as long as a permittee (wastewater discharger) meets the established permit limits, the discharge should not cause a standards violation in the receiving stream. All discharges to the waters of the State are required to have an NPDES permit and must abide by those limits, under penalty of law.

Classifications are based on desired uses, not on natural or existing water quality, and are a legal means to obtain the necessary treatment of discharged wastewater to protect designated uses. Actual water quality may not have a bearing on a waterbody's classification. A waterbody may be reclassified if desired or existing public uses justify the reclassification and the water quality necessary to protect these uses is attainable. A classification change is an amendment to a State regulation and requires public participation, SCDHEC Board approval, and General Assembly approval.

Natural conditions may prevent a waterbody from meeting the water quality goals as set forth in the standards. The fact that a waterbody does not meet the specified numeric standards for a particular classification does not mean the waterbody is polluted or of poor quality. Certain types of waterbodies (ie. swamps, lakes, tidal creeks) may naturally have water quality lower than the numeric standards. A waterbody can have water quality conditions below standards due to natural causes and still meet its use classification. A site specific numeric standard may be established by the Department after being subjected to public participation and administrative procedures for adopting regulations. Site specific numeric standards apply only to the stream segment described in the water classification listing, not to tributaries or downstream unspecified waters.

Water Quality Indicators

Water quality data are used to describe the condition of a waterbody, to help understand why that condition exists, and to provide some clues as to how it may be improved. Water quality indicators include physical, chemical, and biological measurements. Copies of the Standard Operating Procedures used for these measurements are available from the Department's Bureau of Water and the Bureau of Environmental Services. The current State of S.C. Monitoring Strategy is available on our website at www.scdhec.gov/eqc/admin/html/eqcpubs.html#wqreports and describes what parameters are sampled, where they are sampled, and how frequently.

MACROINVERTEBRATE COMMUNITY

Macroinvertebrates are aquatic insects and other aquatic invertebrates associated with the substrates of waterbodies (including, but not limited to, streams, rivers, tidal creeks, and estuaries). Macroinvertebrates can be useful indicators of water quality because these communities respond to integrated stresses over time that reflect fluctuating environmental conditions. Community responses to various pollutants (e.g. organic, toxic, and sediment) may be assessed through interpretation of diversity, known organism tolerances, and in some cases, relative abundances and feeding types.

Fish Tissue

Many pollutants occur in such low concentrations in the water column that they are usually below analytical detection limits. Over time many of these chemicals may accumulate in fish tissue to levels that are easily measured. By analyzing fish tissue it is possible to see what pollutants may be present in waterbodies at very low levels. This information can also be used to determine if consumption of the fish poses any undue human health concerns and to calculate consumption rates that are safe.

Dissolved Oxygen

Oxygen is essential for the survival and propagation of aquatic organisms. If the amount of oxygen dissolved in water falls below the minimum requirements for survival, aquatic organisms or their eggs and larvae may die. A severe example is a fish kill. Dissolved oxygen (DO) varies greatly due to natural phenomena, resulting in daily and seasonal cycles. Different forms of pollution also can cause declines in DO.

Changes in DO levels can result from temperature changes or the activity of plants and other organisms present in a waterbody. The natural diurnal (daily) cycle of DO concentration is well documented. Dissolved oxygen concentrations are generally lowest in the morning, climbing throughout the day due to photosynthesis and peaking near dusk, then steadily declining during the hours of darkness.

There is also a seasonal DO cycle in which concentrations are greater in the colder, winter months and lower in the warmer, summer months. Streamflow (in freshwater) is generally lower during the summer and fall, and greatly affects flushing, reaeration, and the extent of saltwater intrusion, all of which affect dissolved oxygen values.

Biochemical Oxygen Demand

Five-day biochemical oxygen demand (BOD_5) is a measure of the amount of dissolved oxygen consumed by the decomposition of carbonaceous and nitrogenous matter in water over a five-day period. The BOD_5 test indicates the amount of biologically oxidizable carbon and nitrogen that is present in wastewater or in natural water. Matter containing carbon or nitrogen uses dissolved oxygen from the water as it decomposes, which can result in a dissolved oxygen decline. The quantity of BOD_5 discharged by point sources is limited through the National Pollutant Discharge Elimination System (NPDES) permits issued by the Department. The discharge of BOD_5 from a point source is restricted by the permits so as to maintain the applicable dissolved oxygen standard.

pH

pH is a measure of the hydrogen ion concentration of water, and is used to indicate degree of acidity. The pH scale ranges from 0 to 14 standard units (SU). A pH of 7 is considered neutral, with values less than 7 being acidic, and values greater than 7 being basic.

Low pH values are found in natural waters rich in dissolved organic matter, especially in Coastal Plain swamps and black water rivers. The tannic acid released from the decomposition of vegetation causes the tea coloration of the water and low pH.

High pH values in lakes during warmer months are associated with high phytoplankton (algae) densities. The relationship between phytoplankton and daily pH cycles is well established. Photosynthesis by phytoplankton consumes carbon dioxide during the day, which results in a rise in pH. In the dark, phytoplankton respiration releases carbon dioxide. In productive lakes, carbon dioxide decreases to very low levels, causing the pH to rise to 9-10 SU.

Fecal Coliform Bacteria

Fecal coliform bacteria are present in the digestive tract and feces of all warm-blooded animals, including humans, poultry, livestock, and wild animal species. Fecal coliform bacteria are themselves generally not harmful, but their presence indicates that surface waters may contain pathogenic microbes. Diseases that can be transmitted to humans through water contaminated by improperly treated human or animal waste are the primary concern. At present, it is difficult to distinguish between waters contaminated by animal waste and those contaminated by human waste.

Public health studies have established correlations between fecal coliform numbers in recreational and drinking waters and the risk of adverse health effects. Based on these relationships, the USEPA and SCDHEC have developed enforceable standards for surface waters to protect against adverse health effects from various recreational or drinking water uses. Proper waste disposal or sewage treatment prior to discharge to surface waters minimizes this type of pollution.

Nutrients

Oxygen demanding materials and plant nutrients are common substances discharged to the environment by man's activities, through wastewater facilities and by agricultural, residential, and stormwater runoff. The most important plant nutrients, in terms of water quality, are phosphorus and nitrogen. In general, increasing nutrient concentrations are undesirable due to the potential for accelerated growth of aquatic plants, including algae.

The forms of nitrogen routinely analyzed at SCDHEC stations are ammonia and ammonium nitrogen (NH_3/NH_4), total Kjeldahl nitrogen (TKN), and nitrite and nitrate nitrogen (NO_2/NO_3). Ammonia and ammonium are readily used by plants. TKN is a measure of organic nitrogen and ammonia in a sample. Nitrate is the product of aerobic transformation of ammonia, and is the most common form used by aquatic plants. Nitrite is usually not present in significant amounts. Total nitrogen is the sum of TKN and NO_2/NO_3.

Total phosphorus (TP) is commonly measured to determine phosphorus concentrations in surface waters. TP includes all of the various forms of phosphorus (organic, inorganic, dissolved, and particulate) present in a sample.

CHLOROPHYLL *a*

Nuisance plant growth can create imbalances in the aquatic community, as well as aesthetic and access issues. Invasive growth of rooted aquatic vegetation can clog boat motors and create disagreeable conditions for swimming and water skiing. High densities of microscopic algae (phytoplankton) can cause wide fluctuations in pH and dissolved oxygen, and can cause undesirable shifts in the composition of aquatic life, or even fish kills. Chlorophyll *a* is a dominant photosynthetic pigment in plants and is used as an indicator of the density of phytoplankton in the water column. The process of cultural eutrophication, from increased plant nutrients, is particularly noticeable in lakes. Continuous flushing in streams prevents the development of significant phytoplankton populations and the resultant chemical changes in water quality.

TURBIDITY

Turbidity is an expression of the scattering and absorption of light through water. The presence of clay, silt, fine organic and inorganic matter, soluble colored organic compounds, and plankton and other microscopic organisms increases turbidity. Increasing turbidity can be an indication of increased runoff from land. It is an important consideration for drinking water as finished water has turbidity limits.

TOTAL SUSPENDED SOLIDS

Total Suspended Solids (TSS) are the suspended organic and inorganic particulate matter in water. Although increasing TSS can also be an indication of increased runoff from land, TSS differs from turbidity in that it is a measure of the mass of material in, rather than light transmittance through, a water sample. High TSS can adversely impact fish and fish food populations and damage invertebrate populations. There are no explicit State standards for TSS.

HEAVY METALS

Concentrations of cadmium, chromium, copper, lead, mercury, and nickel in water are routinely measured by the Department to compare to State standards intended to protect aquatic life and human health. These metals occur naturally in the environment, and many are essential trace elements for plants and animals. Human activities, such as land use changes and industrial and agricultural processes have resulted in an increased flux of metals from land to water. Atmospheric inputs are also recognized as important sources of metals to aquatic systems. Metals are released to the atmosphere from the burning of fossil fuels (coal, oil, gasoline), wastes (medical, industrial, municipal), and organic materials. The metals are then deposited on land and in waterways from the atmosphere via rainfall and attached to particulates (dry deposition).

Assessment Methodology

The Watershed Water Quality Assessment is a geographically-based document that describes, at the watershed level, water quality as well as conditions and activities related to water quality. Significant revisions to South Carolina's Water Quality Standards were effective on June 22, 2001. USEPA approved these standards for use in implementing the Clean Water Act on November 28, 2001. This section provides an explanation of the information assessment methodology used to generate the watershed-level summaries. Water quality data summaries used in this assessment are presented in Appendix B.

USE SUPPORT DETERMINATION

Physical, chemical, and biological data were evaluated, as described below, to determine if water quality met the water quality criteria established to protect the State classified uses defined in S.C. Regulation 61-68, *Water Classifications and Standards*. Some waters may exhibit characteristics outside the appropriate criteria due to natural conditions. Such natural conditions do not constitute a violation of the water quality criteria. To determine the appropriate classified uses and water quality criteria for specific waterbodies and locations, refer to S.C. Regulation 61-69, *Classified Waters*, in conjunction with S.C. Regulation 61-68.

At the majority of SCDHEC's surface water monitoring stations, samples for analysis are collected as surface grabs once per month, quarter, or year, depending on the parameter. Grab samples collected at a depth of 0.3 meters are considered to be a surface measurement. At most stations sampled by boat, dissolved oxygen and temperature are sampled as a water column profile, with measurements being made at a depth of 0.3 meters below the water surface and at one-meter intervals to the bottom or at 0.3 meters, mid-depth, and bottom. At stations sampled from bridges, these parameters are measured only at a depth of 0.3 meters. For the purpose of assessment, only surface samples are used in standards comparisons and trend assessments. Because of the inability to target individual high or low flow events on a statewide basis these data are considered to represent typical physical conditions and chemical concentrations in the waterbodies sampled. All water and sediment samples are collected and analyzed according to standard procedures (SCDHEC 1997, 2001).

Results from water quality samples can be compared to State and USEPA criteria, with some restrictions due to time of collection and sampling frequency. For certain parameters, the monthly sampling frequency employed in the ambient monitoring network is insufficient for strict interpretation of the standards. The USEPA does not define the sampling method or frequency other than indicating that it should be "representative". The grab sample method is considered to be representative for the purpose of indicating excursions relative to criteria, within certain considerations. A single grab sample is more representative of a one-hour average than a four-day average, more representative of a one-day average than a one-month average, and so on; thus, when inferences are drawn from grab samples relative to criteria, sampling frequency and the intent of the criteria must be weighed. When the sampling method or frequency does not agree with the intent of the particular criterion, any conclusion

about water quality should be considered as only an indication of conditions, not as a proven circumstance.

Macroinvertebrate community structure is analyzed routinely, at selected stations, as a means of detecting adverse biological impacts on the aquatic fauna of the state's waters due to water quality conditions that may not be readily detectable in the water column chemistry.

This water quality assessment is based on the last complete five years of available quality assured physical, chemical, and biological data (1997 - 2001). Because of the data quality assurance and quality control process outcome, only total phosphorus data collected from 1996 through June 1998 were included in this assessment.

AQUATIC LIFE USE SUPPORT

One important goal of the Clean Water Act, the South Carolina Pollution Control Act, and the State Water Quality Classifications and Standards is to maintain the quality of surface waters to provide for the survival and propagation of a balanced indigenous aquatic community of fauna and flora. The degree to which aquatic life is protected (Aquatic Life Use Support) is assessed by comparing important water quality characteristics and the concentrations of potentially toxic pollutants with numeric criteria.

Support of aquatic life uses is determined based on the percentage of numeric criteria excursions and, where data are available, the composition and functional integrity of the biological community. The term excursion is used to describe a measured pollutant concentration that is outside of the acceptable range as defined by the appropriate criterion. Some waters may exhibit characteristics outside the appropriate criteria due to natural conditions. Such natural conditions do not constitute a violation of the water quality criteria. A number of waterbodies have been given waterbody-specific criteria for pH and dissolved oxygen, which reflect natural conditions. To determine the appropriate numeric criteria and classified uses for specific waterbodies and locations, please refer to S.C. Regulation 61-68, *Water Classifications and Standards* and S.C. Regulation 61-69, *Classified Waters*.

If the appropriate criterion for **dissolved oxygen and pH** are contravened in 10 percent or less of the samples, the criterion is said to be fully supported. If the percentage of criterion excursions is greater than 10 percent, but less than or equal to 25 percent, the criterion is partially supported, unless excursions are due to natural conditions. If there are more than 25 percent excursions, the criterion is not supported, unless excursions are due to natural conditions. The decision that criteria excursions are due to natural conditions is determined by consensus and/or the professional judgment of SCDHEC staff with specific local knowledge.

If the appropriate acute aquatic life criterion for any individual **toxicant (e.g. heavy metals, priority pollutants, ammonia)** is exceeded more than once in five years, representing more than 10 percent of the samples collected, the criterion is not supported. If the acute aquatic life criterion is exceeded more than once, but in less than or equal to 10 percent of the samples, the criterion is partially supported. The USEPA criteria to protect aquatic life for most toxicants are specified as a four-day average and a one-hour average, and have been adopted as state criteria. Because samples are collected as grab samples, and because of sampling frequency, comparisons to chronic toxicity criteria (four-day

average concentration) are considered inappropriate; therefore, only the acute criterion (one-hour average) for the protection of aquatic life is used in the water quality assessment.

The total recoverable metals criteria for **heavy metals** are adjusted to account for solids partitioning following the approach set forth in the Office of Water Policy and Technical Guidance on Interpretation and Implementation of Aquatic Life Metals Criteria, October 1, 1993, by Martha G. Prothro, Acting Assistant Administrator for Water, available from the Water Resource center, USEPA, 401 M St., SW, mail code RC4100, Washington, DC 20460; and 40CFR0131.36(b)(1). Under this approach, a default TSS value of 1 mg/L is used. Where the metals criteria are hardness based, a default value of 25 mg/L is used for waters where hardness is 25 mg/l or less.

If the appropriate criterion for **turbidity** in all waters, and for waters with **numeric total phosphorus, total nitrogen, and chlorophyll-a** criteria is exceeded in more than 25 percent of the samples, the criterion is not supported. If the criterion is exceeded in 25 percent of the samples or less, then the criterion is fully supported.

If the conclusion for any single parameter is that the criterion is "not supported", then it is concluded that aquatic life uses are not supported for that waterbody, at that monitoring location. If there are no criteria that are "not supported", but the conclusion for at least one parameter criterion is "partially supported", then the conclusion is aquatic life uses are partially supported. Regardless of the number of samples, no monitoring site will be listed as partially or not supporting for any pollutant based a single sample result because of the possibility of an anomalous event.

The goal of the standards for aquatic life uses is the protection of a balanced indigenous aquatic community; therefore, biological data is the ultimate deciding factor, regardless of chemical conditions. If biological data shows a healthy, balanced community, the use is considered supported even if chemical parameters do not meet the applicable criteria.

MACROINVERTEBRATE DATA INTERPRETATION

Macroinvertebrate community assessment data are used to directly determine Aquatic Life Use Support and to support determinations based on water chemistry data. Macroinvertebrate community data may also be used to evaluate potential impacts from the presence of sediment contaminants. Aquatic and semi-aquatic macroinvertebrates are identified to the lowest practical taxonomic level depending on the condition and maturity of specimens collected. The EPT Index and the North Carolina Biotic Index are the main indices used in analyzing macroinvertebrate data. To a lesser extent, taxa richness and total abundance may be used to help interpret data.

The EPT Index or the Ephemeroptera (mayflies) - Plecoptera (stoneflies) - Trichoptera (caddisflies) Index is the total taxa richness of these three generally pollution-sensitive orders. EPT values are compared with least impacted regional sites. The Biotic Index for a sample is the average pollution tolerance of all organisms collected, based on assigned taxonomic tolerance values. A database is currently being developed to establish significant EPT index levels to be used in conjunction with the Biotic Index to address aquatic life use support.

Taxa richness is the number of distinct taxa collected and is the simplest measure of diversity. High taxa richness is generally associated with high water quality. Increasing levels of pollution progressively eliminate the more sensitive taxa, resulting in lower taxa richness. Total abundance is the enumeration of all macroinvertebrates collected at a sampling location. When gross differences in abundance occur between stations, this metric may be considered as a potential indicator.

RECREATIONAL USE SUPPORT

Recreational use support is defined as the degree to which the swimmable goal of the Clean Water Act is attained and is based on the frequency of fecal coliform bacteria excursions. A fecal coliform excursion is defined as an occurrence of a bacteria concentration greater than 400/100 ml for all surface water classes. Comparisons to the bacteria geometric mean standard are not considered appropriate based on sampling frequency and the intent of the standard. If 10 percent or less of the samples are greater than 400/100 ml, then recreational uses are said to be fully supported. If the percentage of standards excursions is greater than 10 percent, but less than or equal to 25 percent, then recreational uses are said to be partially supported. If the percentage of excursions is greater than 25 percent, then it is considered to represent nonsupport of recreational uses.

FISH CONSUMPTION USE SUPPORT

The Department uses a risk-based approach to evaluate fish tissue data and to issue consumption advisories in affected waterbodies. This approach contrasts the average daily exposure dose to the reference dose (RfD). Using these relationships, fish tissue data are interpreted by determining the consumption rates that would not be likely to pose a health threat to adult males and nonpregnant adult females. Because an acceptable RfD for developmental neurotoxicity has not been developed, pregnant women, infants, and children are advised to avoid consumption of fish from any waterbody where a mercury advisory was issued.

Fish consumption use support is determined by the occurrence of advisories or bans on consumption for a waterbody. For the support of fish consumption uses, a fish consumption advisory indicates partial use support, a consumption ban indicates nonsupport of uses.

DRINKING WATER USE SUPPORT

Nonattainment of drinking water use is indicated if the median concentration of the ambient surface water data for any pollutant exceeds the appropriate drinking water Maximum Contaminant Level (MCL), based on a minimum of three samples. Where MCLs do not exist, SCDHEC may use or develop other criteria such that pollutant concentrations or amounts do not interfere with drinking water use, actual or intended, as determined by SCDHEC.

Additional Screening and Prioritization Tools

Evaluation of water quality data and other supplemental information facilitates watershed planning. Information from the following sources is used to develop watershed-based protection and prevention strategies.

LONG-TERM TREND ASSESSMENT

As part of the watershed water quality assessments, surface data from each station are analyzed for statistically significant long-term trends using the Seasonal Kendall Test Without Correction (SKWOC) for significant serial correlation, using procedures in the WQHYDRO computer package developed by Eric Aroner of WQHYDRO Consulting. Flows are not available for most stations, and the parametric concentrations are not flow-corrected. Seasonal Kendall's Tau Analysis is used to test for the presence of a statistically significant trend of a parameter, either increasing or decreasing, over a fifteen-year period. It indicates whether the concentration of a given parameter is exhibiting consistent change in one direction over the specified time period. A two sided test at $p=0.1$ is used to determine statistically significant trends, and the direction of trend. An estimate of the magnitude of any statistically significant trend is calculated.

A rigorous evaluation for trends in time-series data usually includes a test for autocorrelation. The data are not tested for autocorrelation prior to the trend analysis. It is felt that autocorrelation would not seriously compromise a general characterization of water quality trends based on such a long series of deseasonalized monthly samples.

One of the advantages of the seasonal Kendall test is that values reported as being below detection limits (DL) are valid data points in this nonparametric procedure, since they are all considered to be tied at the DL value. When the DL changed during the period of interest, all values are considered to be tied at the highest DL occurring during that period. Since it is possible to measure concentrations equal to the value of the DL, values less than DL are reduced by subtraction of a constant so that they remain tied with each other, but are less than the values equal to the DL. Since fecal coliform bacteria detection limits vary with sample dilution, there is no set DL; therefore, for values reported as less than some number, the value of the number is used.

For the purposes of this assessment, long-term trends in selected parameters were examined using data collected from 1986 through 2000. In 1992, a phosphate detergent ban was instituted in South Carolina; therefore, for total phosphorus, a second trend assessment is included for the available data from 1992 through 2000. For total phosphorus, it is this second time period that is reported in the text.

SEDIMENT SCREENING

There are no sediment standards; therefore, in order to identify sediments with elevated metals concentrations, percentiles are constructed using five years of statewide sediment data. Only values greater than the detection limit were used for chromium, copper, nickel, lead, and zinc. Because so few concentrations of cadmium and mercury are measured above the detection limit, all samples were pooled for these metals. A sediment metal concentration is considered to be high if it is in the top 10% of the

pooled results, and very high if it is in the top 5%. Any analytical result above detection limits is flagged for pesticides, PCBs, and other priority pollutants. Sites with noted high metals concentrations or the occurrence of other contaminants above detection limits are prioritized for the collection of biological data, or additional monitoring and investigation, to verify the true situation.

For saltwater sediments, national studies have been conducted by the National Oceanic and Atmospheric Administration (NOAA) and the State of Florida that have developed Sediment Quality Guidelines (SQGs) for the United States and the southeastern region. These SQGs summarize all published toxicology and biomonitoring studies for a given contaminant and ranked them from lowest to highest concentration where an adverse effect was observed. The tenth percentile of the ranked data, from all published studies that reported an adverse effect, is termed the Effects Range Low (ERL) or Threshold Effects Level (TEL) and represents the threshold concentration for toxicity to occur. The median concentration where adverse effects in benthos are observed (the fiftieth percentile) is termed the Effects Range Median (ERM) or Probable Effects Levels (PEL). Measured sediment contaminant levels may be compared with ERLs/ERMs or TELs/PELs to predict potential probability for sediment bound contaminants to cause toxicity in benthic faunal communities. Saltwater sediment contaminant levels were compared with existing sediment quality guidelines by individual compound. Sites with sediments which had individual chemical contaminant concentrations which exceeded ERL/TEL and ERM/PEL guideline levels are identified to indicate that trace metal, pesticide, PAH or PCB concentrations exceeded levels potentially toxic to estuarine organisms.

Ocean Water Quality

SCDHEC's Ocean Water Quality Monitoring Program allows the public to make informed decisions concerning recreating in waters with the potential to cause adverse health effects. Routine monitoring of ocean front beaches by SCDHEC began in 1998 in Horry and Georgetown counties and was expanded to include all coastal counties in 2000. Beginning in 2002, SCDHEC has been awarded grant monies by EPA under the Beaches Environmental Assessment and Coastal Health (BEACH) Act. This grant money has allowed South Carolina to continue and to enhance a comprehensive monitoring and public notification program. To effectively allocate available resources, EPA required all monitoring and notification efforts be based on potential risk and intensity of use. An initial evaluation and classification of all beaches was performed to establish a three-tier monitoring program with Tier 1 beaches being highest priority. All beaches within the Edisto River Basin were classified as either Tier 2 or 3 due to limited risk and/or use. Edisto Island is classified as a Tier 2 beach and is routinely sampled twice per month, April 15 - October 15, at eleven monitoring sites. Edisto Island has consistently maintained low bacterial counts with very few samples exceeding the EPA recommended single sample limit of 104 enterococcus bacteria per 100 milliliters of water. Edingsville Beach and Botany Bay are considered Tier 3 beaches due to low use and are currently not sampled. In future years, it is hoped that resources will allow for routine sampling of all beaches according to the established tiered sampling plan.

Groundwater Quality

The state of South Carolina depends upon its groundwater resources to supply an estimated 40 percent of its residents. To monitor the ambient quality of this valuable resource, a network of existing public and private water supply wells has been established that provides groundwater quality data representing all of the State's major aquifers (see SCDHEC's Ambient Groundwater Quality Monitoring Network Report for listing of groundwater quality data). A great deal of monitoring is also being carried out at regulated sites with known or potential groundwater contamination (see SCDHEC's South Carolina Groundwater Contamination Inventory).

The ambient monitoring network has been designed to avoid wells in areas of known or potential contamination in order to analyze natural aquifer conditions. Information collected can then be used to identify variations in water chemistry among the major aquifers of South Carolina and give a general understanding of the groundwater conditions throughout the state at varying depths.

Wells sampled in the Edisto River Basin were drilled into one of four major aquifers. The most prominent aquifers utilized are the Middendorf, Black Creek, Floridan, and Surficial Sands. All well samples met state standards for Class GB groundwater (see section on Classified Waters, Standards, and Natural Conditions). The ambient monitoring well sites are indicated in the appropriate watershed evaluations and depicted on the watershed maps.

Middendorf Aquifer

The Middendorf Aquifer directly overlies the Bedrock Aquifer and stretches from the Fall Line, where it outcrops, to the Atlantic coast, where it exceeds depths of 3000 feet. The Middendorf Aquifer is the main provider of groundwater to numerous private and public wells in the upper portion of the Edisto River Basin. It is generally composed of fairly coarse sands and therefore is capable of yielding considerable amounts of water.

The sands that make up the Middendorf Aquifer are typically clean, containing relatively few heavy minerals or organics. The aquifer, especially in the exposed recharge areas, is highly leached of soluble minerals and recharge water approaches the chemistry of distilled water. Water tends to be soft, acidic, and low in dissolved solids, with locally high iron content. This tendency changes toward the coast due to minute amounts of minerals that slowly dissolve in the water as it flows and ages. As it reaches the coastal areas, the concentration is high enough to affect the water quality; however, the Middendorf Aquifer now lies beneath waters of similar quality and more easily reached aquifers.

Floridan Aquifer

The Floridan aquifer is composed of solid limestone and is capable of yielding great quantities of water. Wells drilled in this aquifer are similar to those drilled in bedrock in that they do not use screens, but utilize open holes with a solid case up to the surface.

Water from the Floridan Aquifer is easily distinguished from all other aquifers in the state by its high concentration of calcium and its alkaline pH, ranging from 7.4 to 9.0. The hardness of this

aquifer's groundwater can approach 2000 mg/l. While many aquifers tend to be low in necessary fluoride, levels in the Floridan often fall within the optimum range of 0.8 to 1.2 mg/l.

Surficial Sands Aquifer

The Surficial Sands Aquifer is a shallow, coastal aquifer that is utilized mainly by relatively shallow private wells. As its name implies, the aquifer consists mainly of sands and is the water table aquifer in most of its extent. Due to its close proximity to both the surface and the ocean, the water is predictably high in dissolved solids, has a widely varied pH ranging from 6.2 to 8.6, and has elevated levels of sodium and chloride. Amounts of dissolved solids are also widely varied, ranging from 80 to 2400 mg/l. Water pumped from this aquifer may have an obvious odor and distinct taste, but is still within standards for drinking water. Despite the higher levels of dissolved solids, this aquifer is frequently used because of its proximity to the surface and its decent yields.

NPDES Program

The Water Facilities Permitting Division and the Industrial, Agricultural, and Stormwater Permitting Division are responsible for drafting and issuing National Pollutant Discharge Elimination System (NPDES) permits. Facilities are defined as either "major" or "minor". For municipal permits, a facility is considered a "major" if it has a permitted flow of 1 MGD or more and is not a private facility. The determination for industrial facilities is based on facility and stream characteristics, including toxicity, amount of flow, BOD (biological oxygen demand) loading, proximity of drinking water source, potential to exceed stream standards, and potential effect on coastal waters.

Permitting Process

A completed draft permit is sent to the permittee, the SCDHEC District office, and if it is a major permit, to the USEPA for review. A public notice is issued when the permit draft is finalized. Comments from the public are considered and, if justified, a public hearing is arranged. Both oral and written comments are collected at the hearing, and after considering all information, the Department staff makes the decision whether to issue the permit as drafted, issue a modified permit, or to deny the permit. Everyone who participated in the process receives a notice of the final decision. A copy of the final permit will be sent to anyone who requests it. Staff decisions may be appealed according to the procedures in R.61-72 and the rule of the Administrative Law Court of South Carolina.

The permitting Divisions use general permits with statewide coverage for certain categories of discharges. Discharges covered under general permits include utility water, potable surface water treatment plants, potable groundwater treatment plants with iron removal, petroleum contaminated groundwater, mine dewatering activities, aquaculture facilities, bulk oil and gas terminals, hydrostatic test waters (oil & gas lines), and vehicle wash waters. Additional activities proposed for general permits include ready-mix concrete/concrete products and concentrated animal feeding operations. State Land application systems for land disposal and lagoons are also permitted.

Wasteload Allocation Process

A wasteload allocation (WLA) is the portion of a stream's assimilative capacity for a particular pollutant that is allocated to an existing or proposed point source discharge. Existing WLAs are updated during the basin review process and included in permits during the normal permit expiration and reissuance process. New WLAs are developed for proposed projects seeking a discharge permit or for existing discharges proposing to increase their effluent loading at the time of application. Wasteload allocations for oxygen demanding parameters and nutrients are developed by the Water Quality Modeling Section, and WLAs for toxic pollutants and metals are developed by the appropriate permitting division.

The ability of a stream to assimilate a particular pollutant is directly related to its physical and chemical characteristics. Various techniques are used to estimate this capacity. Simple mass balance/dilution calculations may be used for a particular conservative (nondecaying) pollutant while complex models may be used to determine the fate of nonconservative pollutants that degrade in the environment. Waste characteristics, available dilution, and the number of discharges in an area may, along with existing water quality, dictate the use of a simple or complex method of analysis. Projects that generally do not require complex modeling include: groundwater remediation, noncontact cooling water, mine dewatering, air washers, and filter backwash.

Streams are designated either effluent limited or water quality limited based on the level of treatment required of the dischargers to that particular portion of the stream. In cases where the USEPA published effluent guidelines and the minimum treatment levels required by law are sufficient to maintain instream water quality standards, the stream is said to be effluent limited. Streams lacking the assimilative capacity for a discharge at minimum treatment levels are said to be water quality limited. In cases where better than technology limits are required, water quality, not minimum requirements, controls the permit limits. The Department's Water Quality Modeling Section develops limits for numerous parameters including ammonia nitrogen (NH3-N), dissolved oxygen (DO), and five-day biochemical oxygen demand (BOD5). Limits for other parameters, including metals, toxics (including total residual chlorine), and nutrients are developed by the Water Facilities Permitting Division or the Industrial, Agricultural, and Stormwater Permitting Division in conjunction with support groups within the Department.

Nonpoint Source Management Program

Nonpoint source (NPS) water pollution, sometimes called "runoff pollution" or "polluted runoff" does not result from a discharge at a specific, single location (or point), but generally comes from diffuse, numerous sources. Runoff occurring after a rain event may transport sediment from plowed fields, construction sites, or logging operations, pesticides and fertilizers from farms and lawns, motor oil and grease deposited on roads and parking lots, or bacteria containing waste from agricultural animal facilities or malfunctioning septic systems. The rain moves the pollutants across the land to the nearest waterbody or storm drain where they may impact the water quality in creeks, rivers, lakes, estuaries, and wetlands. NPS pollution may also impact groundwater when it is allowed to seep or

percolate into aquifers. Adverse effects of NPS pollution include physical destruction of aquatic habitat, fish kills, interference with or elimination of recreational uses of a waterbody (particularly lakes), closure of shellfish beds, reduced water supply or taste and odor problems in drinking water, and increased potential for flooding because waterbodies become choked with sediment.

Congress recognized the growing problem of nonpoint source pollution in the late 1980s, and added NPS provisions to the federal law. Section 319 of the 1987 Amendments to the Clean Water Act required states to assess the nonpoint source water pollution associated with surface and groundwater within their borders and then develop and implement a management strategy to control and abate the pollution. The first Assessment of Nonpoint Source Pollution in South Carolina accomplished this purpose. The Department's Bureau of Water manages the ongoing State NPS Management Program, which develops strategies and targets waterbodies for priority implementation of management projects. Section 319 funds various voluntary efforts, including watershed projects, which address many aspects of the pollution prevention management measure and provide education, outreach and technical assistance to various groups and agencies. Most of the projects are implemented by cooperating agencies.

Many land activities can individually or cumulatively contribute to NPS pollution. Eight categories of NPS pollution sources have been identified as contributing to water quality degradation in South Carolina: agriculture, forestry, urban areas, marinas and recreational boating, mining, hydrologic modification, wetlands and riparian areas disturbance, land disposal, and groundwater contamination. There are programs, both regulatory and voluntary, in-place that address all eight categories.

Agriculture

In South Carolina, pesticides, fertilizers, animal waste, and sediment are potential sources of agricultural NPS pollution. Agricultural activities also have the potential to directly impact the habitat of aquatic species through physical disturbances caused by livestock or equipment, and through the management of water. The State has laws and regulations that prevent NPS pollution from several agricultural sources including pesticides and animal waste. Funding programs including those under §319 grants from EPA, cost share funds from USDA under EQIP and CRP are used to implement best management practices that are not covered under regulations. Agriculture land acreage is quantified in the basin-wide and individual watershed evaluations.

Silviculture

Forests comprise a major portion of South Carolina's land base. Sixty-six percent, or 12.6 million acres, of the State's total land area is in timberland. Silvicultural practices associated with road access, harvest, and regeneration of timber present the most significant potential for NPS pollution. Silvicultural activities have the potential to degrade the State's waters through the addition of sediment, nutrients, organics, elevated temperature, and pesticides. Erosion and subsequent sedimentation are the most significant and widespread NPS problems associated with forestry practices. Sudden removal of large quantities of vegetation through harvesting or silvicultural practices can also increase leaching of nutrients from the soil system into surface waters and groundwaters. Programs to abate or control NPS

pollution from forestry activities are primarily the responsibility of the S.C. Forestry Commission (SCFC) and the United States Department of Agriculture's Forest Service (USFS), with other agencies having supplementary programs. S.C. Forestry Commission provides monthly courtesy exams to SCDHEC's Division of Water Quality and to forest industries. If water quality was impacted by a forestry operation, SCDHEC may institute enforcement action under the South Carolina Pollution Control Act. The United States Department of Agriculture's Natural Resources Conservation Service (USDA-NRCS) also provides technical assistance to government, landowners, and land users. Forest land acreage is quantified in the basin-wide and individual watershed evaluations.

Urban Areas

Urbanization has been linked to the degradation of urban waterways. The major pollutants found in runoff from urban areas include sediment, nutrients, oxygen-demanding substances, heavy metals, petroleum hydrocarbons, pathogenic bacteria, and viruses. Suspended sediments constitute the largest mass of pollutant loadings to receiving waters from urban areas. Construction sites are a major source of sediment erosion. Nutrient and bacterial sources of contamination include fertilizer usage, pet wastes, leaves, grass clippings, and faulty septic tanks. Petroleum hydrocarbons result mostly from automobile sources. In the 1980's, the average statewide population growth was 11.7 percent, while the coastal counties had an increase of 22 percent, nearly double the State rate during the same time period. This continuing development and population growth has the potential to make urban runoff the most significant source of pollution in waters of the State in the future. Urban land acreage is quantified in the basin-wide and individual watershed evaluations.

SCDHEC has a number of statewide programs that address components of urban NPS pollution. The Bureau of Water administers four permitting programs that control runoff from new and existing urban sources. These include the Stormwater and Sediment Reduction program, Municipal Separate Storm Sewer System (MS4), Industrial NPDES Stormwater Permits, and the §401 water quality certification program (see p.26). Additional controls for urban runoff in the coastal zone are implemented by SCDHEC's Oceans and Coastal Resources Management (OCRM) through the State Coastal Zone Management Plan.

SCDHEC's Bureau of Environmental Health's Division of Onsite Wastewater Management administers the Onsite Sewage Disposal System program for the entire State, and oversees the permitting for the installation and management of septic systems. Although not associated with urban land use, this Division permits the septic systems of camping facilities if the facility is not on public sewer. The camp sewage is discharged into a public collection, treatment and disposal system if available, or an onsite wastewater treatment and disposal system (septic tank) is used.

Marinas and Recreational Boating

Potential adverse environmental impacts associated with marinas include dissolved oxygen deficiencies, high concentrations of toxic metals in aquatic organisms, and the potential to cause bacterial contamination of shellfish harvesting areas. In addition, marina construction activities can lead to the

physical destruction of sensitive ecosystems and bottom-dwelling aquatic communities. Presently, there are more than 100 marinas in South Carolina, with 68 of them in the coastal zone. The U.S. Army Corps of Engineers and the SCDHEC are responsible for permitting marinas in South Carolina. Within SCDHEC, the two offices that have marina permitting authority are the Office of Ocean and Coastal Resource Management (SCDHEC OCRM) and the Office of Environmental Quality Control (SCDHEC Bureau of Water). SCDHEC OCRM issues critical area permits for marinas within the critical area of the coastal zone. SCDHEC Bureau of Water issues permits for marinas at all other locations within the State and issues §401 Water Quality Certifications (see p.27) for marinas statewide. The U.S. Coast Guard and the S.C. Department of Natural Resources are responsible for managing recreational boating activity.

Mining

South Carolina's mineral production consists of non-fuel minerals that provide raw materials for construction products and a precious metal industry. Portland cement clays (kaolin and brick), sand and gravel, and crushed stone represent the majority of the total mineral value. At the end of FY 2001-2002, there were 540 mining operations in South Carolina affecting more than 23,000 acres. Surface mining has the potential to generate NPS pollution during mineral exploration, mine development extraction, transportation, mining and processing, product storage, waste disposal, or reclamation. Potential nonpoint source impacts related to mining activities generally include hydrologic modification, erosion and sedimentation, water quality deterioration, fish and wildlife disturbances, and public nuisances.

The Department's Bureau of Land and Waste Management has primary regulatory responsibility for mining activities. Within the Bureau, the Division of Mining and Solid Waste Permitting is responsible for administering and implementing the S.C. Mining Act and its associated regulations. The Mining Act serves as part of an overall management plan for NPS pollution from active mines. Mining activities and locations are identified in the appropriate watershed evaluations.

Hydromodification

Hydrologic modification (or hydromodification) is defined as stream channelization, channel modification, and dam construction. These activities can negatively impact water quality, destroy or modify in-stream habitat and increase streambank and shoreline erosion. Two State permits, implemented by the SCDHEC, are involved in the implementation of management measures for hydromodification. A critical area permit is required for coastal waters, saltwater wetlands, and beaches defined as critical areas. A navigable waters permit is required for the remainder of the State. Implementation of State policy for dam construction is similar to control of other hydromodification projects in South Carolina, requiring the same State permits and certifications. In addition, dams require a State dam safety permit or a State stormwater management and sediment reduction permit. The Department must also issue Water Quality Certifications pursuant to §401 of the Federal Clean Water Act for dam construction and hydropower operations licensed by the Federal Energy Regulatory Commission.

Wetlands

Twenty-three percent of South Carolina is covered by 4.5 million acres of wetlands. The U.S. Army Corps of Engineers implements the federal program for regulating development in wetlands with guidelines established by EPA. The Corps delineates wetlands and determines which wetlands fall under regulatory jurisdiction and require a federal permit for development. The Wetlands Reserve Program, administered by the NRCS, is designed to restore and protect wetlands. At the state level, the primary focus of wetland regulation is the §401 Water Quality Certification. In the §401 certification process, applications for wetland alterations may be denied or modified due to the special nature of a wetland or the functions that a wetland provides. Wetland impacts must be compensated through restoration, enhancement, preservation, or creation and protected in perpetuity. Future development would be prohibited in these mitigated and legally protected areas. Knowledge of areas that are restricted from development due to mitigation or special water classification is useful in planning future development in a watershed. Wetland acreage is quantified in the basin-wide and individual watershed evaluations.

Land Disposal

Although modern solid waste disposal sites are considered point sources of pollution and regulated, leachate from sanitary landfills and dumps have the potential to pollute large portions of adjacent groundwater aquifers. Toxic compounds are commonly a part of the overall composition of landfill leachate, especially when the landfill has been used for the disposal of toxic chemicals. There are currently 140 permitted landfills in South Carolina. This total represents 35 municipal solid waste landfills (MSWLF), 62 industrial waste landfills, 41 construction and demolition (C&D) landfills, one sludge monofill, and one ash monofill. Regulatory authority over solid waste disposal activities resides with SCDHEC's Bureau of Land and Waste Management. All active and closed industrial and municipal solid waste landfills are identified in the appropriate watershed evaluations.

Land application of wastewater or its by products is a form of recycling because it allows recovery of elements needed for crop production. Land application of biosolids may be beneficial and environmentally sound when applied at the correct agronomic rate. Land applying biosolids can benefit farmers by offsetting the costs of fertilizer and lime while reducing the pressure on existing landfills. SCDHEC's Bureau of Water, Division of Water Monitoring, Assessment and Protection, Groundwater Quality Section conducts a program to prevent, monitor, and correct groundwater contamination from nonpoint source pollution from land application of wastewater biosolids, solids, animal manures, biosolids, and sewage sludge. Land application, which is not a discharge, requires a "no discharge" permit (ND). All active industrial and municipal land applications are identified in the appropriate watershed evaluations.

Groundwater Contamination

All aquifers in the State are potential Underground Sources of Drinking Water and are protected under the S.C. Water Classifications and Standards. Groundwaters are thus protected in a manner consistent with the SCDHEC groundwater protection strategy. Staff hydrogeologists implement a

screening program for nonpoint source impacts from pits, ponds, and lagoons associated with the permitted storage, treatment, and disposal of industrial and municipal wastewaters. In cases where a groundwater impact has been identified in violation of S.C. Water Classifications and Standards, appropriate actions will be coordinated with the facility owner to ensure regulatory compliance. The hydrogeologist coordinates with the facility owner to implement source identification, contaminant extent assessments, initiation of contaminant remediation systems, and performance evaluations of corrective actions. In addition to releases from wastewater treatment systems, the staff evaluates releases from other nonpoint sources such as above ground tanks, nonregulated fuel oil tanks, spills and/or leaks. Sites with confirmed groundwater impact will be placed under a Consent Agreement or an Order. SCDHEC's South Carolina Groundwater Contamination Inventory quantifies the status of groundwater quality in South Carolina. The sites in the inventory are known groundwater contamination cases in the State, and are referenced by name and county, and updated annually.

Water Quantity

Any withdrawal of surface water or groundwater over 3 million gallons in any month is required to be reported to the Department (per the *Surface Water Withdrawal and Reporting Act* 49-4-10 and the *Groundwater Use and Reporting Act* 49-5-10). These data are compiled into an annual report of total water usage in the state (see SCDHEC's South Carolina Water Use Report). The report also breaks down water usage into categories of interest such as water supply, hydropower, agriculture, and irrigation. In Capacity Use Areas, which are of concern due to the significant groundwater use and subsequent lowering of groundwater levels in major aquifers, withdrawals over 3 million gallons in any month must receive a permit from the Department. Currently, no quantity permit is required for surface water withdrawals.

Interbasin Transfer of Water

According to The State Interbasin Transfer of Water Act, an interbasin transfer of water permit is required when any entity desires to withdraw, divert, pump, or cause directly the transfer of either 5% of the 7Q10 (seven day, ten year low flow), or one million gallons or more of water a day on any day, whichever is less, from one river basin and use or discharge all or any part of the water in a different river basin. The SCDHEC Board is empowered to negotiate agreements, accords, or compacts on behalf of and in the name of the State of South Carolina with other states or the United States, or both, with any agency, department, or commission of either, or both, relating to transfers of water that impact waters of this State, or are connected to or flowing into those waters. The Board is further empowered to represent this State in connection with water withdrawals, diversions, or transfers occurring in other states, which may affect this State.

Capacity Use Program

As authorized under the Groundwater Use and Reporting Act, the Department may declare a capacity use area if the resource is threatened by increasing demand or the potential problems of saltwater intrusion. The Capacity Use Program requires large groundwater users to obtain a permit in capacity use areas. Permits are required for groundwater withdrawn in excess of 3 million gallons in a month. Permit owners are required to report the amount of groundwater withdrawn per month on an annual basis. As part of the Capacity Use Program, the Department monitors a large number of wells to determine the relationship between water levels and pumpage in order to determine regional impacts and evaluate reserve supply. A reserve supply is maintained to offset drought conditions. Colleton County is within the Low Country Capacity Use Area in the Edisto River Basin.

Growth Potential and Planning

Land use and management can define the impacts to water quality in relation to point and nonpoint sources. Assessing the potential for an area to expand and grow allows for water quality planning to occur and, if appropriate, increased monitoring for potential impairment of water quality. Indicators used to predict growth potential include water and sewer service, road and highway accessibility, and population trends. These indicators and others were used as tools to determine areas within the Edisto River Basin having the greatest potential for impacts to water quality as a result of development.

SCDHEC's Strategic Plan for 2000-2005 (www.scdhec.gov/news/releases/pdf files/Stratpln.pdf) acknowledges that growth issues are best handled at the local government level. SCDHEC's role is to work with local governments and communities to help them understand the importance of planning for smart growth: buffers, greenspaces, mass transit, subdivision and roadway planning, bike paths and bike lanes, and park and ride lots. SCDHEC can also provide assistance in helping local entities access information and provide consultation on technical issues such as the establishment of buffers and watershed stormwater planning. Many counties in the Edisto River Basin lack countywide zoning ordinances; therefore, there is little local regulatory power to influence the direction or magnitude of regional growth. The majority of municipalities have zoning ordinances in place; however, much of the growth takes place just outside the municipal boundaries, where infrastructure is inadequate. Section 208 of the Clean Water Act serves to encourage and facilitate the development and implementation of areawide waste treatment management plans. The §208 Areawide Water Quality Management Plans were completed in great detail during the 1970's and have recently been updated. Information from the updated reports is used in the individual watershed evaluations. South Carolina's water quality management plans support consolidation of wastewater treatment facilities into larger regional systems.

Watershed boundaries extend along topographic ridges and drain surrounding surface waters. Roads are commonly built along ridge tops with the best drainage conditions. Cities often develop in proximity to ridges as a result of their plateau terrain. It is not uncommon, then, to find cities or road corridors located along watershed boundaries, and thus influencing or impacting several watersheds.

Watershed Protection and Restoration Strategies

SCDHEC's Bureau of Water is responsible for ensuring that South Carolina's water is safe for drinking and recreation, and suitable to support aquatic life. This section provides an overview of other important Bureau programs and strategies applied statewide to protect and restore water quality. The point and nonpoint source controls described previously assist with achieving these goals.

Under §303(d) of the Federal Clean Water Act, each state is required to provide a comprehensive inventory of impaired waters for which existing required pollution controls are not stringent enough to achieve State water quality standards or Federal Clean Water Act goals. This biennial list, commonly referred to as the "303(d) list", is the basis for targeting waterbodies for watershed-based solutions. A copy of the current §303(d) list can be obtained by contacting the Bureau of Water. Several Bureau programs address these impaired streams in an effort to restore them.

Total Maximum Daily Load

A Total Maximum Daily Load (TMDL) is the calculated maximum allowable pollutant loading to a waterbody at which water quality standards are maintained. A TMDL is made up of two main components, a load allocation and a wasteload allocation. A load allocation is the portion of the receiving water's loading capacity attributed to existing or future nonpoint sources or to natural background sources. The waste load allocation is the portion of a receiving water's loading capacity allocated to an existing or future point source.

A TMDL is a means for recommending controls needed to meet water quality standards in a particular water or watershed. Historically, the typical TMDL has been developed as a wasteload allocation, considering a particular waterbody segment, for a particular point source, to support setting effluent limitations. In order to address the combined cumulative impacts of all sources, broad watershed-based TMDLs are now being developed.

The TMDL process is linked to all other State water quality activities. Water quality impairments are identified through monitoring and assessment. Watershed-based investigations result in source identification and TMDL development. TMDLs form links between water quality standards and point and nonpoint source controls. Where TMDLs are established, they constitute the basis for NPDES permits and for strategies to reduce nonpoint source pollution. The effectiveness and adequacy of applied controls are evaluated through continued monitoring and assessment.

Funding for TMDL implementation is currently available with USEPA's §319 of the Clean Water Act grants. For more information, see the Bureau of Water web page www.scdhec.gov/water or call the Watershed Program at (803) 898-4300.

Antidegradation Implementation

The State's Antidegradation Policy as part of S.C. Regulation 61-68 is represented by a three-tiered approach to maintaining and protecting various levels of water quality and uses; streams included

on the §303(d) list are addressed under Tier 1. Tier 1 antidegradation policies apply to all waters of the State and require that existing uses and the minimum level of water quality for those uses be maintained and protected. Tier 2 policies apply to high quality water where the water quality exceeds the mandatory minimum levels to support the Clean Water Act's goals of propagation of fish, shellfish, wildlife, and recreation in and on the water. The Department considers all the waters of the State as high quality waters. Tier 3 policies apply to the maintenance of water quality in waters that constitute an Outstanding National Resource Water and do not allow for any permanent permitted dischargers. Outstanding Resource Waters of the State are provided a higher level of protection than Tier 2, but do not meet the requirements of Tier 3.

Tier 1 protection will be implemented when applying numeric standards included in Regulation 61-68 for human health, aquatic life, and organoleptic protection as follows: if a waterbody has been affected by a parameter of concern causing it to be on the §303(d) list, then the Department will not allow a permitted net increase of loading for the parameter of concern unless the concentration will not contribute to a violation of water quality standards. This no net increase will be achieved by reallocation of existing total load(s) or by meeting applicable water quality standard(s) at the end-of-pipe. No discharge will be allowed to cause or contribute to further degradation of a §303(d) listed waterbody.

The Antidegradation Rules apply to both nonpoint source pollution and for point sources into impaired waters. Many activities contributing to nonpoint source pollution are controlled with voluntary measures. The Department implements permitting or certification programs for some of these activities and has the opportunity to ensure compliance with the Antidegradation Rules. The activities of primary concern are land development projects which are immediately adjacent to and discharge runoff or stormwater into impaired waters.

401 Water Quality Certification Program

If a Federal permit for a discharge into waters of the State, including wetlands, is required, the Department must issue Water Quality Certification pursuant to §401 of the Federal Clean Water Act. Certification is required for permits issued by the U.S. Army Corps of Engineers for construction in navigable waters and for deposition of dredged or fill material.

Regulation 61-101 presents administrative and technical guidance for the water quality certification program and requires SCDHEC to consider whether or not a project is water dependent; whether or not there are feasible alternatives which will have less adverse consequences on water quality and classified uses; the intended purpose of the project; and all potential water quality impacts of the project, both direct and indirect, over the life of the project. Any project with the potential to affect waters of the State must be conducted in such a manner to maintain the specified standards and classified and existing water uses.

As a routine part of the §401 Water Quality Certification review process, the waterbody in question is identified as impaired or not impaired according to the §303(d) list. If it is impaired, the parameter of concern is noted, along with any steps required to prevent further degradation of the water

quality of that waterbody. In an effort to facilitate watershed restoration where appropriate, mitigation for unavoidable wetland impacts is encouraged in areas that improve §303(d) listed waters.

Stormwater Program

Stormwater discharges result from precipitation during rain events. Runoff washes pollutants associated with industrial activities (including construction activity), agricultural operations, and commercial and household sites directly into streams, or indirectly into drainage systems that eventually drain into streams. The SCDHEC Stormwater Permitting Program focuses on pollution prevention to reduce or eliminate stormwater pollution. The Department has general permitting authority for stormwater discharges associated with industrial activity, including construction. General NPDES permits SCR000000 and SCR100000 for industrial and construction activities, respectively, require permittees to develop and implement stormwater pollution prevention plans that establish best management practices to effectively reduce or eliminate the discharge of pollutants via stormwater runoff.

The Stormwater and Agricultural Permitting Section is responsible for issuing NPDES stormwater permits to prevent degradation of water quality as well as for issuing state sediment and erosion control permits for construction sites. The NPDES permit are issued under the authority of the federal Clean Water Act and the SC Pollution Control Act. The state sediment and erosion control permits are issued under the authority of two SC laws. The SC Erosion and Sediment Reduction Act of 1983 addresses construction on state owned or managed land. The SC Stormwater Management and Sediment Reduction Act of 1991 addresses construction on land that is not state owned or managed. Currently, NPDES permits are required for: construction sites 1 acre and greater; construction sites in the coastal area that are within 1/2 mile of a receiving water body; and construction sites less than 1 acre on a case-by-case basis where water quality is a concern. Permits are required under the state sediment and erosion control for construction sites that are greater than 2 acres; however, there are exemptions under the law and regulation. The State Sediment and Erosion Program is somewhat duplicative of the NDPES Stormwater Program. The state program created by the 1991 Act can be delegated to local governments. Until a local government becomes delegated, SCDHEC's Office of Ocean and Coastal Resource Management is delegated the State Sediment and Erosion Control Program in the coastal area. The Stormwater and Agricultural Permitting Section manages the NPDES Stormwater Program in all areas of the state and the State Sediment and Erosion Control Program in the areas of the state where the program is not delegated to another entity.

Regulation 61-9 requires a compilation of all existing State water quality data with STORET data being used as a baseline. If analysis indicates a decrease in water quality then corrective measures must be taken. The permittee will identify all impaired water bodies in a Stormwater Management Plan (SWMP). In addition, existing pollution discharge control methods will be identified and incorporated into the SWMP. Procedures, processes, and methods to control the discharge of pollutants from the municipal separate storm sewer system (MS4) into impaired waterbodies and publicly owned lakes

included on the §303(d) list will be described in the SWMP. The effectiveness of these controls will be assessed and necessary corrective measures, if any, shall be developed and implemented.

Permits for municipal systems allow communities to design stormwater management programs that are suited for controlling pollutants in their jurisdiction. There are three population-based categories of municipal separate storms sewers: large municipal (population of 250,000 or greater), medium municipal (population of 100,000 or more but less than 250,000), and small municipal (population less than 100,000). Large and medium MS4s have been regulated since the 1990s. Those small MS4s within the boundaries of an urbanized area are called Regulated Small MS4s and were required to submit MS4 NPDES applications on or before March 10, 2003. MS4 NPDES Permits are required for all large, medium, and regulated small MS4s.

South Carolina Animal Feeding Operations Strategy

Among the general categories of pollution sources, agriculture ranks as the number one cause of stream and lake impairment nationwide. Many diseases can potentially be contracted from drinking water or coming into contact with waters contaminated with animal wastes. The Department uses S.C. Regulation 61-43: *Standards for the Permitting of Agricultural Animal Facilities* to address the permitting of animal feeding operations (AFOs). Implementing these regulations and their corresponding compliance efforts are a priority for the Department in order to reduce public health and environmental impacts from AFOs. There are approximately 1,100 active AFOs in S.C. While previously, there were no federally defined concentrated animal feeding operations (CAFOs) in operation in South Carolina, EPA modified the definition of a CAFO in the NPDES regulations in December 2002. These regulations have now been adopted in S.C. Based on the new federal CAFO definition, S.C. has approximately 200 CAFOs that require NPDES permits. Using the Watershed Program cycle and the division of the State into five regions, AFOs will be monitored and inspected by region. The §303(d) list will be used to prioritize the inspections. After all the inspections have been made in a region, the Department will move to the river basins in the next region in the watershed cycle. The Department is continuing to work in cooperation and coordination with the U.S. Department of Agriculture, the Natural Resources Conservation Service, the S.C. Department of Agriculture, the S.C. Soil and Water Conservation Districts, and the Clemson Extension Service.

Sanitary Sewer Overflow Strategy

Sanitary sewers are designed to collect municipal and industrial wastewater, with the allowance for some acceptable level of infiltration and inflow, and transport these flows to a treatment facility. When the sewer system is unable to carry these flows, the system becomes surcharged and an overflow will occur. Sanitary sewer overflows (SSOs) have existed since the introduction of separate sanitary sewers and most are caused by inadequate operation, maintenance, or management of the collection system.

The Department encourages utilities to embrace the principals of EPA's capacity Management, Operations, and Maintenance (cMOM) program. Through this program utilities can ensure adequate funding and capacity as well as a proactive approach to operations and maintenance. Those that have implemented cMOM programs have been able to significantly reduce or eliminate overflows from their collection systems. Additionally, the Department has adopted requirements for operation and maintenance of sewer systems in Regulation 61-9, Water Pollution Control Permits.

The Department's approach has been to shift resources historically applied to treatment plant inspections to include evaluations of pump stations and collection systems where problems are suspected. To assist evaluators in identifying water quality violations related to SSOs, staff have utilized the 303(d) list of impaired waters to identify waters impacted by fecal coliform or other appropriate pollutants and correlate those with collection systems with incidences of SSOs. The Department's Enforcement Referral Procedures Document is to be used to determine when a collection system should be referred to enforcement for SSOs. The enforcement process allows for the Department to consider actions taken by the collection system such as: timely and proper notification, containment and mitigation of discharge, voluntarily conducting self evaluations, and requests for compliance assistance. The Department will take immediate action where it has been determined that SSOs have occurred and the collection system has not made timely and proper notification.

Referral Strategy for Effluent Violations

The Department has developed referral effluent violation guidelines to specifically address discharges into impaired waters. The goal of the referral guidelines is to reduce pollutant discharges into impaired waters in order to ultimately restore them to their full potential usage. To achieve this goal, enforcement actions are initiated earlier in an effort to improve the quality of waters that do not meet standards. If a stream is impaired by a pollutant and the permit limit for that pollutant is exceeded more than once in a running annual reporting period, formal enforcement action will be initiated against the discharger.

SCDHEC's Watershed Stewardship Programs

Public participation is an important component of the Department's Watershed Water Quality Management Program. Benefits to this interaction on the local level include improved public awareness about SCDHEC water programs, and increased local interest and participation in water quality improvement. Described below are some of the Department's water programs that encourage public interest and involvement in water quality. These programs and their contacts are listed on the Department's website at www.scdhec.gov/water.

Source Water Assessment Program

A safe, adequate source of drinking water is key to development of communities and the health of citizens. The Safe Drinking Water Act (SDWA) provides authority to protect sources of drinking water. As a result of the 1996 amendments to the SDWA, source water protection has become a national priority. States are required to develop a plan for assessment of source waters for all federally defined public groundwater and surface water systems.

The Source Water Assessment Program (SWAP) involves determining the boundaries of the areas that are the source of waters for public water systems. For groundwater systems, these areas are defined using groundwater flow models. For surface water systems, the 14-digit Hydrologic Unit Code watershed is the designated protection area (although certain areas within the basin will be segmented as being of greater vulnerability to contamination from overland flow, groundwater contributions to surface water, and direct spills into the surface water). Known and potential sources of contamination in the delineated area must be identified, and the inventoried sources evaluated to determine the susceptibility of public water systems to such contaminants. Assessments must be made available to the public.

Local involvement will be a critical factor in the success of the SWAP, and local government, citizen groups, environmental groups, water suppliers, and the Department must all work together to increase the general public's awareness of where drinking water comes from and how to better protect sources of drinking water. Implementation of source water protection activities will occur at the local level, and local authorities may wish to base zoning and land-use planning on the source water assessments. The SWAP will be a key part of the Department's watershed management approach. To avoid duplication, information gathered from existing regulatory programs and/or watershed protection efforts will be utilized (e.g., ambient monitoring programs, TMDLs, etc.).

Consumer Confidence Reports

The Consumer Confidence Report (CCR) is an annual water quality report required of all Community water systems. The rationale behind the CCR is that consumers have a right to know what is in their drinking water and where it comes from. These reports are to educate consumers and help them make informed choices that affect the health of themselves and their families. It is believed that educated consumers are more likely to protect their drinking water sources. All CCRs are to include the following basic components:

- the water source, its location, and the availability of source water assessment plan;
- information about the water system (name and telephone number of a contact person, opportunities for public participation, and information for non-English speaking populations if applicable);
- definitions of terms and abbreviations used in the report;
- table of detected contaminants including the known or likely source of the contaminants;
- the health effects language for Maximum Contaminant Level violations and an explanation of the violation;
- information on cryptosporidium, radon, and other contaminants if applicable; and
- educational information that includes an explanation of contaminants and their presence in drinking water, an advisory for immuno-compromised people, the Safe Drinking Water Hotline telephone number, and other statements about lead, arsenic, and nitrate if applicable.

Nonpoint Source Education

The goal of the Nonpoint Source Outreach Program is to educate the citizens of South Carolina about the sources of polluted runoff and techniques that can be used to reduce this runoff. The Program provides presentations on runoff pollution to community, church, civic, or professional groups; a variety of technical and nontechnical publications on runoff pollution and reduction techniques; *Turning the Tide*, a free, quarterly Nonpoint Source newsletter; and teacher training that includes the *Action for a Cleaner Tomorrow* curriculum and information on reducing polluted runoff. To arrange a presentation, order publications, or ask questions, contact the Nonpoint Source Education coordinator at 803-898-4300 or visit our website.

South Carolina Water Watch

South Carolina Water Watch is a unique effort to involve the public and local communities in water quality protection. The Water Watch program was developed to encourage South Carolina's citizens to become stewards of the State's lakes, rivers, streams, estuaries, and wetlands. Volunteers select a water resource on which to focus and perform activities aimed at protecting water quality, such as shoreline surveys, public education, and litter cleanups. The Water Watch coordinator assists participants with materials and training to help make projects successful. SCDHEC invites individuals, school groups, civic organizations, businesses, and local governments to learn about and protect the quality of our waterways by contacting the Water Watch coordinator at 803-898-4300 or visit our website.

Champions of the Environment

Champions of the Environment is a student recognition program that raises awareness of environmental issues. Nationally recognized for its innovative approach to environmental education, the program promotes hands-on learning by recognizing students working on exemplary environmental projects beyond the realm of the classroom. With scholarships and media coverage, Champions of the Environment encourages student initiative and self-esteem. The program promotes environmental awareness, leadership, conservation, creativity, and self-confidence through activities such as group projects, public speaking, and environmental research. Champions of the Environment is jointly

sponsored by Dupont, International Paper, WIS-TV, and SCDHEC. For more information contact the Champions of the Environment coordinator at 803-898-4300 or visit our website.

Clean Water State Revolving Fund

Congress created the Clean Water State Revolving Fund (SRF) in 1987, to replace the §201 Construction Grants program. In doing so, 'state banks' were created to lend money for virtually any type of water pollution control infrastructure project. Project types include construction of wastewater treatment systems and nonpoint source pollution control. The interest rate on the loans is always below the current market rate. As repayments are made on the loans, funds are recycled to fund additional water protection projects. The vast majority of the SRF funds have been used for the construction of traditional municipal wastewater treatment systems. Because of its inherent flexibility, the SRF program is well suited to accommodate the watershed approach.

SRF loans are available to units of state, local, and regional government, and special purpose districts. South Carolina law prevents loans from being made directly to private organizations and individuals. Local governments such as cities and counties and other units of government such as Soil and Water Conservation Districts, Councils of Government, and Water and Sewer Districts are encouraged to apply for SRF loans for nonpoint source projects. Nonpoint source projects may include construction and maintenance of stormwater management facilities, establishment of a stormwater utility, purchase of land for wetlands and riparian zones, and implementation of source water protection assessments. For more information, contact the State Revolving Fund coordinator at 803-898-4300 or visit our website.

Citizen-Based Watershed Stewardship Programs

Friends of the Edisto (FRED)

The mission of the Friends of the Edisto is to protect and enhance the natural and cultural character and resources of the Edisto River Basin through conservation and responsible use. FRED is a non-profit organization that was established in 1998 to facilitate conservation of natural resources and to encourage and support sustainable economic development within the Edisto River Basin in South Carolina. FRED supports the implementation of the recommendations from the Edisto River Basin Task Force. The 200 plus member organization uses a variety of educational and advocacy tools to support the implementation of the recommendations from the Edisto River Basin Task Force. Board members include representatives of S.C. Department of Natural Resources, Francis Beidler Forest, Westvaco Corporation, University of South Carolina, South Carolina State University, and Westinghouse - SRS. See *www.edistofriends.org*.

Ace Basin National Estuarine Research Reserve (NERR)

The Ace Basin (Ashepoo River - Combahee River - Edisto River) comprises approximately 4 million acres, and extends across a portion of the Edisto River Basin. Since the ACE Basin National Estuarine Research Reserve (NERR) was designated in 1992, research has focused on monitoring efforts to determine trends in water quality and biological communities. NERR staff integrates information produced by research efforts into the Reserve's education program that includes boat trips, trail walks, coastal managers' workshops, and a variety of outreach activities for public and educational institutions. Tours and interpretive messages for school groups, civic organizations and the general public are provided. The Reserve is managed by the Marine Resources Division of the S. C. Department of Natural Resources in cooperation with the National Oceanographic and Atmospheric Administration. A volunteer steering committee comprised of local citizens guides the Reserve's development of research, education, and training activities. For more information, see ***www.inlet.geol.sc.edu/ACE/***.

Edisto River Basin Description

The ***Edisto River Basin*** originates in the Sandhills region and flows through the Upper and Lower Coastal Plain Regions and into the Coastal Zone region. The Edisto River Basin encompasses 30 watersheds and some 2 million acres of which 44.7% is forested land, 29.1% is agricultural land, 15.1% is forested wetland, 4.9% is barren land, 2.7% is water, 2.0% is nonforested wetland, and 1.5% is urban land. The urban land percentage is comprised chiefly of the City of Orangeburg and a portion of the City of Aiken. There are a total of 2,780.1 stream miles, 8,401.5 acres of lake waters, and 20,283.5 acres (31.7 square miles) of estuarine areas in the Edisto River Basin.

The confluence of Chinquapin Creek and Lightwood Knot Creek form the North Fork Edisto River, which is joined downstream by Black Creek, Bull Swamp Creek, and Caw Caw Swamp. The South Fork Edisto River accepts drainage from Shaw Creek, Dean Swamp Creek, Goodland Creek, and Roberts Swamp before merging with the North Fork Edisto River to form the Edisto River. Downstream from the confluence, the Edisto River is joined by Cattle Creek, Indian Field Swamp, and Four Hole Swamp. Prior to joining the Edisto River, Four Hole Swamp accepts drainage from Cow Castle Creek, Providence Swamp, Horse Range Swamp, and Dean Swamp. Downstream from Four Hole Swamp, the Dawho River enters the Edisto River, and their confluence forms the South Edisto River and the North Edisto River, which drain to the Atlantic Ocean.

Physiographic Regions

The State of South Carolina has been divided into six Major Land Resource Areas (MLRAs) by the USDA Soil Conservation Service. The MLRAs are physiographic regions that have soils, climate, water resources and land uses in common. The physiographic regions that define the Edisto Basin are as follows:

The **Sand Hills** are an area of gently sloping to strongly sloping uplands with a predominance of sandy areas and scrub vegetation; elevations range from 250 to 450 feet.

The **Upper Coastal Plain** is an area of gentle slopes with increased dissection and moderate slopes in the northwestern section that contain the state's major farming areas; elevations range from 100 to 450 feet.

The **Lower Coastal Plain** is an area that is mostly nearly level and is dissected by many broad, shallow valleys with meandering stream channels; elevations range from 25 to 125 feet.

The **Coastal Zone** is a mostly tidally-influenced area that is nearly level and dissected by many broad, shallow valleys with meandering stream channels; most of the valleys terminate in tidal estuaries along the coast; elevations range from sea level to about 25 feet.

Land Use/Land Cover

General land use/land cover mapping for South Carolina was derived from the U.S. Geological Survey's National Land Cover Data (NLCD), based on nationwide Landsat Thematic Mapper (TM)

multispectral satellite images (furnished through the Multi-Resolution Land Characteristics (MRLC) consortium, coordinated by USEPA) using image analysis software to inventory the Nation's land classes. The NLCD are developed by the USGS (EROS Data Center) using TM image interpretation, air photo interpretation, National Wetland Inventory data analysis, and ancillary data analysis.

Urban land is characterized by man-made structures and artificial surfaces related to industrial, commercial, and residential uses, and vegetated portions of urban areas such as recreational grass lands and industrial facility lawns.

Agricultural/Grass land is characterized by row crops, pastures, orchards, vineyards, and hay land, and includes grass cover in fallow, scrub/shrub, forest clearcut and urban areas.

Forest land is characterized by deciduous and evergreen trees (or a mix of these), not including forests in wetland settings, generally greater than 6 meters (approximately 20 feet) in height, with tree canopy of 25-100% cover.

Forested Wetland is saturated bottomland, mostly hardwood, forests primarily composed of wooded swamps occupying river floodplains, moist marginal forests, and isolated low-lying wet areas, located predominantly in the Coastal Plain.

Nonforested Wetland is saturated marshland, most commonly located in coastal tidelands and in isolated freshwater inland areas, found predominantly in the Coastal Plain.

Barren land is characterized by a nonvegetated condition of the land, both natural (rock, beaches, nonvegetated flats) and man-induced (rock quarries, mines, and areas cleared for construction in urban areas or clearcut forest areas).

Water (non-land) includes both fresh (inland) and saline (tidal) waters.

Soil Types

The dominant soil associations, or those soil series comprising, together, over 40% of the land area, were recorded for each watershed in percent descending order. The individual soil series for the Edisto River Basin are described as follows.

Ailey soils are well drained loamy and sandy soils with clayey or loamy subsoil.

Albany soils are deep, somewhat poorly drained soils with sandy to loamy subsoil on nearly level terrain.

Blaney soils are nearly level to strongly sloping, excessively drained and well drained soils, some sandy throughout and some with a loamy subsoil and a fragipan on coastal plains.

Bohicket soils are very poorly drained soils, clayey throughout or mucky and underlain with clayey layers, frequently flooded.

Chipley soils are moderately to excessively well drained soils, sandy throughout, on high ridges.

Chisolm soils are deep, well to moderately drained soils with sandy to loamy subsoil on nearly level to gently sloping terrain.

Daleville soils are nearly level, poorly drained soils, with silty loam in slight depressions and drainageways on upland terraces.

Dorovan soils are deep, level, very poorly drained, organic soils on floodplains adjacent to upland.

Foxworth soils are well drained, sandy marine sediment derived, with acidic soils.

Fuquay soils are well drained, loamy and sandy soils with clayey or loamy subsoil.

Goldsboro soils are moderately well to poorly drained soils with loamy subsoil on nearly level ridges and in shallow depressions.

Hobcaw soils are nearly level, very poorly drained soils in depressions.

Johnston soils are nearly level, moderately well drained to very poorly drained soils, loamy throughout with a sandy surface layer on floodplains.

Kiawah soils are deep, somewhat poorly drained to poorly drained, acidic soils, sandy throughout, with a surface soil and subsoil of loamy fine sand.

Lakeland soils are well drained, sandy soils with a loamy subsoil and excessively drained soils.

Leon soils are somewhat poorly drained to poorly drained, level to nearly level, sandy soils with weakly cemented layers stained by organic matter.

Lumbee soils are poorly drained and very poorly drained, sandy and loamy soils with a loamy subsoil.

Lynchburg soils are moderately well to poorly drained soils, with loamy subsoil, on nearly level ridges and in shallow depressions.

Meggett soils are poorly drained to very poorly drained, level to nearly level soils with a loamy to sandy surface layer and a loamy to clayey subsoil.

Mouzon soils are poorly drained, loamy and sandy soils with a loamy subsoil.

Noboco soils are well drained, sandy soils with a loamy or clayey subsoil.

Ogeechee soils are poorly drained and moderately well drained, loamy soils with clayey or loamy subsoil, on terraces.

Orangeburg soils are well drained soils that have a sandy or loamy surface layer and a loamy or clayey subsoil.

Rains soils are moderately well to poorly drained soils, with a loamy subsoil, on nearly level ridges and in shallow depressions.

Troup soils are well drained, sandy soils with loamy subsoil and excessively drained soils.

Varina soils are nearly level to sloping, well drained soils, with a sandy surface layer and a clayey or loamy subsoil.

Vaucluse soils are well drained, loamy and sandy soils with clayey or loamy subsoil.

Wadmalaw soils are poorly drained to very poorly drained, level to nearly level soils with a loamy to sandy surface layer and a loamy to clayey subsoil.

Wagram soils are well drained to very poorly drained, depressional to nearly level and gently sloping soils with a loamy to sandy surface layer and a clayey to loamy subsoil.

Yauhannah soils are poorly drained to moderately well drained soils with a loamy subsoil, on nearly level ridges and in shallow depressions.

Yonges soils are moderately well drained to poorly drained, nearly level soils with a sandy surface layer and a predominantly loamy subsoil.

Slope and Erodibility

The definition of soil erodibility differs from that of soil erosion. Soil erosion may be more influenced by slope, rainstorm characteristics, cover, and land management than by soil properties. Soil erodibility refers to the properties of the soil itself, which cause it to erode more or less easily than others when all other factors are constant.

The soil erodibility factor, K, is the rate of soil loss per erosion index unit as measured on a unit plot, and represents an average value for a given soil reflecting the combined effects of all the soil properties that significantly influence the ease of soil erosion by rainfall and runoff if not protected. The K values closer to 1.0 represent higher soil erodibility and a greater need for best management practices to minimize erosion and contain those sediments that do erode. The range of K-factor values in the Edisto River Basin is from 0.14 to 0.16.

Fish Consumption Advisory

At the time of publication, a fish consumption advisory issued by SCDHEC is in effect for portions of the North Fork Edisto River, the South Fork Edisto River, and the Edisto River advising people to limit the amount of some types of fish consumed from these waters. Fish consumption advisories are updated annually in March. For background information and the most current advisories please visit the Bureau of Water homepage at http://www.scdhec.gov/water and click on "Advisories". For more information or a hard copy of the advisories, call SCDHEC's Division of Health Hazard Evaluation toll-free at (888) 849-7241.

Climate

Normal yearly rainfall in the Edisto River area during the period of 1971 to 2000 was 48.52 inches, according to South Carolina's **30-year** climatological record. Data compiled from National Weather Service stations in Aiken, Blackville, Bamberg, Orangeburg, Branchville, Walterboro, Pelion, and Springfield were used to determine the general climate information for the Edisto River area. The highest seasonal rainfall occurred in the summer with 15.75 inches; 9.88, 11.94, and 10.95 inches of rain fell in the fall, winter, and spring, respectively. The average annual daily temperature was 63.9°F. Summer temperatures averaged 79.4 °F, and fall, winter, and spring mean temperatures were 64.8 °F, 47.8 °F, and 63.7 °F, respectively.

Watershed Evaluations

03050203-010

(Chinquapin Creek/Lightwood Knot Creek)

General Description

Watershed 03050203-010 is located in Lexington and Aiken Counties and consists primarily of ***Chinquapin Creek and Lightwood Knot Creek*** and their tributaries. The watershed occupies 50,803 acres of the Sandhills and Upper Coastal Plain regions of South Carolina. The predominant soil types consist of an association of the Lakeland-Blaney-Troup series. The erodibility of the soil (K) averages 0.15 and the slope of the terrain averages 7%, with a range of 0-15%. Land use/land cover in the watershed includes: 57.7% forested land, 29.3% agricultural land, 7.9% forested wetland (swamp), 2.7% urban land, 1.4% water, 0.8% barren land, and 0.2% nonforested wetland (marsh).

Chinquapin Creek and Lightwood Knot Creek join to form the North Fork Edisto River. Chinquapin Creek originates near the Town of Monetta and accepts drainage from Duncan Creek, Horsepen Creek, Mare Creek, Rock Creek, and Shirley Branch before merging with Lightwood Knot Creek. The Town of Batesburg lies near the headwaters of Duncan Creek and uses a small lake associated with the drainage for its water supply. Lightwood Knot Creek flows through several ponds including Abells Millpond and Brodie Millpond, before accepting drainage from Hellhole Creek (Mill Creek, Rocky Ford Creek, Tanker Branch), Marlowe Creek, Thasher Branch, Mill Creek, and Long Branch. There are a total of 78.4 stream miles and 379.2 acres of lake waters in this watershed, all classified FW.

Surface Water Quality

Station	Type	Class	Description
RS-01004	RS01	FW	HORSEPEN CREEK AT US SIDE OF S.C. 391, 1.5 MI S OF BATESBURG
E-091	P/W	FW	CHINQUAPIN CREEK AT SC 391 5.5 MI S BATESBURG
E-101	S/W	FW	LIGHTWOOD KNOT CREEK OFF S-32-77, AT BATESBURG WATER INTAKE
E-600	BIO	FW	LIGHTWOOD KNOT CREEK AT UNNAMED ROAD W OF SR160

Chinquapin Creek (E-091) - *A*quatic life uses are fully supported; however, there is a significant increasing trend in total nitrogen concentration. Significant decreasing trends in five-day biochemical oxygen demand and turbidity suggest improving conditions for these parameters. Recreational uses are not supported due to fecal coliform bacteria excursions.

Horsepen Creek (RS-01004) – Aquatic life uses are fully supported. Recreational uses are not supported due to fecal coliform bacteria excursions.

Lightwood Knot Creek – There are two SCDHEC monitoring sites along Lightwood Knot Creek. At the upstream site (***E-101***), aquatic life uses are fully supported, however, there is a significant decreasing trend in dissolved oxygen concentration and significant increasing trends in five-day biochemical oxygen demand and total phosphorus concentration. Prior to 2001, this was a secondary monitoring station and sampling was intentionally biased towards periods with potentially low dissolved oxygen concentrations. This is also a blackwater system, characterized by naturally low pH and dissolved oxygen concentration. Although pH excursions were noted, they were typical of values seen in such systems and considered natural, not standards violations. Recreational uses are fully supported at this site and a significant decreasing trend in fecal coliform bacteria concentration suggests improving conditions for this parameter. Aquatic life uses are fully supported at the downstream site **(E-600)** based on macroinvertebrate community data.

NPDES Program

Active NPDES Facilities

RECEIVING STREAM *FACILITY NAME* *PERMITTED FLOW @ PIPE (MGD)*	*NPDES#* *TYPE* *COMMENT*
DUNCAN CREEK TOWN OF BATESBURG-LEESVILLE WWTP PIPE #: 001 FLOW: 2.5	SC0024465 MAJOR DOMESTIC

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

LANDFILL NAME *FACILITY TYPE*	*PERMIT #* *STATUS*
LEXINGTON COUNTY LANDFILL #2 DOMESTIC	DWP-013 CLOSED
UNION CAMP C&D	413313-1201 (CWP-021) ----------
UNION CAMP INDUSTRIAL	413313-1601 (IWP-215) ----------

Mining Activities

MINING COMPANY *MINE NAME*	*PERMIT #* *MINERAL*
B&T SAND COMPANY, INC. SUMMIT	1215-63 SAND; SAND/CLAY
WILSON BROTHERS SAND CO., INC. RICARD MINE	0639-63 SAND

WILSON BROTHERS SAND CO., INC.	0718-63
FRICK MINE	SAND

Water Quantity

WATER USER *WATERBODY*	*REGULATED CAPACITY (MGD)* *PUMPING CAPACITY (MGD)*
TOWN OF BATESBURG-LEESVILLE	2.1
LIGHTWOOD KNOT CREEK	4.3
TOWN OF BATESBURG -LEESVILLE	1.2
DUNCAN CREEK	2.5

Growth Potential

There is a low potential for growth in this rural, undeveloped watershed containing portions of the Towns of Batesburg/Leesville and Summit. The Town of Batesburg/Leesville has the only water and sewer service in the area.

03050203-020

(North Fork Edisto River)

General Description

Watershed 03050203-020 is located in Aiken and Lexington Counties and consists primarily of the ***North Fork Edisto River*** and its tributaries from its origin to Black Creek. The watershed occupies 59,318 acres of the Sandhills region of South Carolina. The predominant soil types consist of an association of the Lakeland-Troup-Fuquay series. The erodibility of the soil (K) averages 0.11 and the slope of the terrain averages 5%, with a range of 0-15%. Land use/land cover in the watershed includes: 61.2% forested land, 18.6% agricultural land, 12.3% barren land, 6.2% forested wetland (swamp), 0.9% water, 0.5% urban land, and 0.3% nonforested wetland (marsh).

The North Fork Edisto River accepts drainage from the Chinquapin Creek and Lightwood Knot Creek watershed, Carneys Creek, Crooker Branch, and Goose Platter Creek in the upper portion of the watershed. Other tributaries that enter the river as it moves downstream include Chalk Hill Creek (Tom Branch), Marrow Bone Swamp Creek (Juniper Creek), Wolf Pit Branch, Big Branch, Hood Branch (Church Branch), Rambo Branch, and Giddy Swamp Creek. There are numerous small recreational ponds or lakes including Steedman Pond, Chalk Hill Millpond, Collums Millpond, and Amelia Lake. There are a total of 73.6 stream miles and 483.9 acres of lake waters in this watershed, all classified FW.

Surface Water Quality

Station #	Type	Class	Description
E-084	W/INT	FW	NORTH FORK EDISTO RIVER AT S-02-74
E-102	W/INT	FW	NORTH FORK EDISTO RIVER AT S-02-110

North Fork Edisto River – There are two SCDHEC monitoring sites along this section of the North Fork Edisto River. Aquatic life and recreational uses are fully supported at both sites **(E-102, E-084)**. Both sites are part of a blackwater system, characterized by naturally low pH and dissolved oxygen concentrations. Although pH excursions were noted, they were typical of values seen in such systems and considered natural, not standards violations.

Groundwater Quality

Well #	Class	Aquifer	Location
AMB-026	GB	MIDDENDORF	WAGENER

NPDES Program

There are currently no NPDES dischargers in this watershed.

Nonpoint Source Management Program

Mining Activities

MINING COMPANY *MINE NAME*	*PERMIT #* *MINERAL*
WILSON BROTHERS SAND CO., INC. AIKEN MINE	1006-03 SAND

Growth Potential

There is a low potential for growth in this watershed, which contains a portion of the Town of Wagener.

03050203-030

(Black Creek)

General Description

Watershed 03050203-030 is located in Lexington County and consists primarily of ***Black Creek*** and its tributaries. The watershed occupies 43,711 acres of the Sandhills region of South Carolina. The predominant soil types consist of an association of the Lakeland-Fuquay series. The erodibility of the soil (K) averages 0.11 and the slope of the terrain averages 7%, with a range of 2-15%. Land use/land cover in the watershed includes: 58.2% forested land, 32.0% agricultural land, 4.2% forested wetland (swamp), 3.7% barren land, 1.1% water, 0.7% urban land, and 0.1% nonforested wetland (marsh).

Black Creek originates near the Town of Gilbert and drains into the North Fork Edisto River. Black Creek flows through Taylor Pond and several other ponds before accepting the drainage of Pond Branch and flowing into Paxton Millpond. Downstream of the millpond, Little Black Creek enters Black Creek, which then flows through Clarks Millpond to accept drainage from Cedar Pond Branch, Spring Branch, Big Branch, McCartha Branch, and Coney Branch. There are a total of 46.9 stream miles and 248.7 acres of lake waters in this watershed; all classified FW.

Surface Water Quality

Station #	Type	Class	Description
E-599	BIO	FW	BLACK CREEK AT SR 278
E-103/RS-01298	W/INT/RS01	FW	BLACK CREEK AT S-32-53 (RAMBO BRIDGE), 3.5 MI SE OF PELION

Black Creek – There are two SCDHEC monitoring sites along Black Creek. At the upstream site **(E-599)**, aquatic life uses are fully supported based on macroinvertebrate community data. Aquatic life and recreational uses are fully supported at the downstream site **(E-103/RS-01298)**. This is a blackwater system, which are often characterized by naturally low pH and dissolved oxygen concentrations. Although pH excursions were noted, they were typical of values seen in such systems and considered natural, not standards violations.

Groundwater Quality

Well #	Class	Aquifer	Location
AMB-063	GB	PIEDMONT BEDROCK	GILBERT

NPDES Program

There are currently no NPDES dischargers in this watershed.

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

LANDFILL NAME / *FACILITY TYPE*	*PERMIT #* / *STATUS*
SMI OWEN INDUSTRIAL PRODUCTS	323328-1601 (IWP-241, IWP-172)
INDUSTRIAL	ACTIVE

Land Application Sites

LAND APPLICATION SYSTEM / *FACILITY NAME*	*ND#* / *TYPE*
SPRAY IRRIGATION	ND0013587
GILBERT ELEMENTARY SCHOOL	DOMESTIC

Mining Activities

MINING COMPANY / *MINE NAME*	*PERMIT #* / *MINERAL*
B & T SAND COMPANY, INC.	1311-63
OLD CHARLESTON HWY/I-20	SAND, SAND/CLAY
BOWERS LEASING COMPANY	0637-63
HUGHES MINE	SAND

Growth Potential

There is a low potential for growth in this watershed, which contains a portion of the Town of Gilbert.

03050203-040

(North Fork Edisto River)

General Description

Watershed 03050203-040 is located in Lexington, Aiken, and Orangeburg Counties and consists primarily of the ***North Fork Edisto River*** and its tributaries from Black Creek to Bull Swamp Creek. The watershed occupies 115,489 acres of the Sandhills and Upper Coastal Plain regions of South Carolina. The predominant soil types consist of an association of the Fuquay-Dothan-Vaucluse-Lakeland-Troup series. The erodibility of the soil (K) averages 0.13 and the slope of the terrain averages 5%, with a range of 0-25%. Land use/land cover in the watershed includes: 50.9% forested land, 32.8% agricultural land, 7.9% forested wetland (swamp), 6.0% barren land, 1.7% urban land, 0.5% water, and 0.2% nonforested wetland (marsh).

This section of the North Fork Edisto River accepts drainage from Cedar Creek (Lynch Branch, Rast Pond, Fort Pond, Thrasher Branch, Crawford Branch), Jackson Branch, Hollow Creek (Ritter Branch, Little Hollow Creek), Pond Branch (Hunter Branch), Salem Creek, Penn Branch, and Big Beaver Creek (Little Beaver Creek). Further downstream, Turkey Branch (Gibson Branch, Hutto Mill Pond) enters the river. There are a total of 115.7 stream miles and 545.7 acres of lake waters in this watershed, all classified FW. As a reach of the North Fork Edisto River, this watershed accepts the drainage of all streams entering the river upstream of the watershed.

Surface Water Quality

Station #	Type	Class	Description
E-092	P/W	FW	NORTH FORK EDISTO RIVER AT SC 3, 5.5 MI NW OF NORTH
E-104	W/INT	FW	NORTH FORK EDISTO RIVER AT S-38-73

North Fork Edisto River – There are two SCDHEC monitoring sites along this section of the North Fork Edisto River. This is a blackwater system, characterized by naturally low pH and dissolved oxygen concentrations. Although pH excursions were noted at both sites, they were typical of values seen in such systems and considered natural, not standards violations. At the upstream site ***(E-092)***, aquatic life uses are fully supported. P,P'DDE (a metabolite of DDT) was detected in the 1997 and 1998 sediment samples. Although the use of DDT was banned in 1973, it is very persistent in the environment. Significant increasing trends in dissolved oxygen concentration and decreasing trends in five-day biochemical oxygen demand suggest improving conditions for these parameters. Recreational uses are fully supported; however, there is a significant increasing trend in fecal coliform bacteria concentration. Aquatic life and recreational uses are fully supported at the downstream site ***(E-104.***

A fish consumption advisory has been issued by the Department for mercury and includes portions of streams within this watershed (see advisory p.38).

Groundwater Quality

Well #	Class	Aquifer	Location
AMB-104	GB	TERTIARY SANDS	NORTH

NPDES Program

Active NPDES Facilities

RECEIVING STREAM *FACILITY NAME* *PERMITTED FLOW @ PIPE (MGD)*	*NPDES#* *TYPE* *COMMENT*
NORTH FORK EDISTO RIVER TOWN OF NORTH PIPE #:001 FLOW: M/R PIPE #:002 FLOW: 0.2/0.3	SC0047821 MINOR DOMESTIC SPRAYFIELD

Nonpoint Source Management Program

Land Disposal Activities

Land Application Sites

LAND APPLICATION SYSTEM *FACILITY NAME*	*ND#* *TYPE*
SPRAY IRRIGATION PELION ELEM. SCHOOL	ND0013561 DOMESTIC
SEPTAGE INJECTION CE TAYLOR PUMPING, INC.	ND0070149 DOMESTIC

Growth Potential

There is a low potential for growth in this watershed, which contains the Towns of Pelion, North, and Livingston and portions of the Towns of Woodford and Neeses. There is a small industrial park north of the Town of Pelion that may attract future industrial prospects, but there is currently no industry in the watershed. S.C. Highway 302 and a rail line pass through the area.

03050203-050

(Bull Swamp Creek)

General Description

Watershed 03050207-050 is located in Lexington, Orangeburg, and Calhoun Counties and consists primarily of ***Bull Swamp Creek*** and its tributaries. The watershed occupies 62,229 acres of the Sandhills and Upper Coastal Plain regions of South Carolina. The predominant soil types consist of an association of the Fuquay-Dothan-Lakeland-Vaucluse series. The erodibility of the soil (K) averages 0.14 and the slope of the terrain averages 8%, with a range of 0-25%. Land use/land cover in the watershed includes: 51.7% forested land, 34.8% agricultural land, 6.3% forested wetland (swamp), 4.5% barren land, 1.8% urban land, 0.7% water, and 0.2% nonforested wetland (marsh).

Bull Swamp Creek originates near the Town of Gaston and flows through the Town of Swansea before draining into the North Fork Edisto River. Bull Swamp Creek flows through Spires Pond before accepting drainage from Boggy Branch, Fourth Creek, Third Creek (Redmond Pond), Cow Branch, Gardner Branch, and Little Bull Swamp Creek (Cowpen Swamp, Turkey Branch). Bull Swamp Creek then flows through Etheridge Mill Pond (100 acres) and into the North Fork Edisto River. There are a total of 67.5 stream miles and 411.1 acres of lake waters in this watershed, all classified FW.

Surface Water Quality

Station #	Type	Class	Description
E-034	S/W	FW	BULL SWAMP CREEK AT CULVERT, 1.1 MI NW OF SWANSEA
E-035	S/W	FW	BULL SWAMP CREEK AT US 321, 0.9 MI S OF SWANSEA
E-042	W/INT/BIO	FW	BULL SWAMP CREEK AT S-38-189

Bull Swamp Creek - There are three monitoring sites along Bull Swamp Creek and recreational uses are supported at all sites. All sites are part of a blackwater system, characterized by naturally low pH and dissolved oxygen concentrations. Although pH excursions were noted, they were typical of values seen in such systems. At the upstream site **(E-034)**, aquatic life uses are not supported due to dissolved oxygen excursions. There is a significant increasing trend in five-day biochemical oxygen demand. Prior to 2001, this was a secondary monitoring station and sampling was intentionally biased towards periods with potentially low dissolved oxygen concentrations. A significant increasing trend in dissolved oxygen concentration suggests improving conditions for this parameter.

Further downstream **(E-035)**, aquatic life uses are fully supported. Prior to 2001, this was a secondary monitoring station and sampling was intentionally biased towards periods with potentially low dissolved oxygen concentrations. Significant decreasing trends in five-day biochemical oxygen demand and total phosphorus concentration suggest improving conditions for these parameters. At the furthest downstream site **(E-042)**, aquatic life uses are fully supported based on macroinvertebrate community data.

Groundwater Quality

Well #	Class	Aquifer	Location
AMB-040	GB	MIDDENDORF	SWANSEA

NPDES Program

Active NPDES Facilities

RECEIVING STREAM / *FACILITY NAME* / *PERMITTED FLOW @ PIPE (MGD)*	*NPDES#* / *TYPE* / *COMMENT*
BOGGY BRANCH GASTON COPPER RECYCLING CORP. PIPE #: 001 FLOW: MR	SC0034541 MINOR INDUSTRIAL

Growth Potential

There is a low potential for growth in this watershed, which contains the Town of Swansea and portions of the Towns of Gaston and Woodford. The construction of a sewer line from the Town of Swansea to the City of Cayce WWTP may provide growth to the area.

03050203-060

(North Fork Edisto River)

General Description

Watershed 03050203-060 is located in Orangeburg and Calhoun Counties and consists primarily of the ***North Fork Edisto River*** and its tributaries from Bull Swamp Creek to Caw Caw Swamp. The watershed occupies 53,222 acres of the Upper Coastal Plain region of South Carolina. The predominant soil types consist of an association of the Dothan-Fuquay-Noboco-Johnston series. The erodibility of the soil (K) averages 0.15 and the slope of the terrain averages 3%, with a range of 0-6%. Land use/land cover in the watershed includes: 48.8% forested land, 29.5% agricultural land, 12.9% forested wetland (swamp), 6.1% barren land, 1.3% urban land, 1.1% water, and 0.3% nonforested wetland (marsh).

This section of the North Fork Edisto River incorporates a total of 59.3 stream miles, all classified FW. Tributaries that drain into the river include: Long Branch, Double Branch, Great Branch (Grape Branch, Moss Pond), Limestone Creek (Little Limestone Creek), Mill Branch, and Fourmile Creek. There are numerous recreational ponds in this watershed. There are a total of 59.9 stream miles and 238.4 acres of lake waters in this watershed, all classified FW. As a reach of the North Fork Edisto River, this watershed accepts the drainage of all streams entering the river upstream.

Surface Water Quality

Station #	Type	Class	Description
E-099	P/INT	FW	NORTH FORK EDISTO RIVER AT S-38-74, NW ORANGEBURG

North Fork Edisto River (E-099) – Aquatic life uses are fully supported. This is a blackwater system, characterized by naturally low pH and dissolved oxygen concentrations. Although pH excursions were noted, they were typical of values seen in such systems and considered natural, not standards violations. Significant increasing trends in dissolved oxygen concentration and decreasing trends in five-day biochemical oxygen demand suggest improving conditions for these parameters. Recreational uses are partially supported due to fecal coliform bacteria excursions, compounded by a significant increasing trend in fecal coliform bacteria concentration.

A fish consumption advisory has been issued by the Department for mercury and includes portions of streams within this watershed *(see advisory p.38)*.

NPDES Program

There are currently no NPDES dischargers in this watershed.

Growth Potential

There is a low potential for growth in this watershed, which contains a portion of the Town of Edisto. The existing infrastructure of U.S. 178 out of Orangeburg may encourage some growth.

03050203-070

(Caw Caw Swamp)

General Description

Watershed 03050203-070 is located in Calhoun and Orangeburg Counties and consists primarily of ***Caw Caw Swamp*** and its tributaries. The watershed occupies 51,454 acres of the Upper Coastal Plain region of South Carolina. The predominant soil types consist of an association of the Noboco-Wagram-Lakeland-Dothan series. The erodibility of the soil (K) averages 0.12 and the slope of the terrain averages 3%, with a range of 0-6%. Land use/land cover in the watershed includes: 58.0% forested land, 25.7% agricultural land, 6.1% forested wetland (swamp), 4.8% barren land, 4.0% urban land, 1.1% water, and 0.3% nonforested wetland (marsh).

Caw Caw Swamp flows through Redmond Pond and is joined by Murph Mill Creek (Mack Branch, Crim Creek), Sweetwater Lake, Burke Creek, Saddler Swamp, Early Branch, Cooner Branch, and Turkey Hill Branch. Downstream of Turkey Hill Branch, the swamp flows through a 100 acre-lake and drains into the North Fork Edisto River. There are a total of 56.7 stream miles and 348.5 acres of lake waters in this watershed. Caw Caw Swamp is classified FW* (DO not less than 4 mg/l, pH 5.0-8.5) and the remaining streams in the watershed are classified FW.

Surface Water Quality

Station #	Type	Class	Description
RS-01021	RS01	FW	MACK BRANCH AT S.C. 6, 5.5 MI W OF ST. MATTHEWS
E-105	W	FW*	CAW CAW SWAMP AT S-38-1032

Caw Caw Swamp (E-105) - Aquatic life uses and recreational uses are fully supported.

Mack Branch (RS-01021) - Aquatic life uses and recreational uses are fully supported. This is a blackwater system, characterized by naturally low pH and dissolved oxygen concentration. Although pH excursions were noted, they were typical of values seen in such systems and considered natural, not standards violations.

Nonpoint Source Management Program

Mining Activities

MINING COMPANY *MINE NAME*	*PERMIT #* *MINERAL*
REA CONSTRUCTION CO. MINE #8	0536-75 SAND
LIMESTONE PRODUCTS DUNLAP RODDEY SOIL MINE	1246-75 SAND; SAND/CLAY

Growth Potential

There is a low to moderate potential for urban growth in the northwest section of the City of Orangeburg. Interstate 26 bisects the watershed and includes four interchanges near the Town of St. Matthews. U.S. Highway 601 and a rail line run along the eastern watershed border connecting Orangeburg to St. Matthews.

03050203-080

(North Fork Edisto River)

General Description

Watershed 03050203-080 is located in Orangeburg County and consists primarily of the lowest reach of the ***North Fork Edisto River*** and its tributaries from Caw Caw Swamp to its confluence with the South Fork Edisto River. The watershed occupies 49,833 acres of the Lower Coastal Plain region of South Carolina. The predominant soil types consist of an association of the Johnston-Goldsboro-Noboco-Meggett-Dorovan series. The erodibility of the soil (K) averages 0.17 and the slope of the terrain averages 2%, with a range of 0-6%. Land use/land cover in the watershed includes: 33.7% agricultural land, 31.7% forested land, 22.8% forested wetland (swamp), 7.1% urban land, 3.8% barren land, 0.7% water, and 0.2% nonforested wetland (marsh).

This section of the North Fork Edisto River originates at the City of Orangeburg, and accepts drainage from Pen Branch, Anderson Branch, Whirlwind Creek, Dry Swamp, and Cooper Swamp before merging with the South Fork Edisto River. Whirlwind Creek flows through a 40 acre-lake used for water supply and as a county fish hatchery. There are a total of 75.7 stream miles and 210.5 acres of lake waters in this watershed, all classified FW. As a reach of the North Fork Edisto River, this watershed accepts the drainage of all streams entering the river upstream of the watershed.

Surface Water Quality

Station #	Type	Class	Description
E-007	P/W	FW	NORTH FORK EDISTO RIVER AT US 601 AT ORANGEBURG
E-007A	S/W	FW	N. FORK EDISTO RIVER AT POWER LINE CROSSING, 2 MI BELOW E-007
E-007B	S/W	FW	NORTH FORK EDISTO RIVER, 4 MILES BELOW E-007 AT A CABIN
E-007C	P/W	FW	N. FORK EDISTO RIVER AT POLICEMAN CAMP, 6 MILES BELOW E-007
E-008	P/W/BIO	FW	NORTH FORK EDISTO RIVER AT S-38-39, WSW OF ROWESVILLE
E-008A	W/INT	FW	NORTH FORK EDISTO RIVER AT S-38-63

North Fork Edisto River - There are six SCDHEC monitoring sites along this section of the North Fork Edisto River. At the furthest upstream site **(E-007)**, aquatic life uses are not supported due to pH excursions. There is a significant decreasing trend in pH. A significant decreasing trend in turbidity suggests improving conditions for this parameter. Recreational uses are fully supported at this site.

At the next site downstream **(E-007A)**, aquatic life uses are fully supported. P,P'DDE (a metabolite of P,P'DDT) was detected in the 1997 and 1999 sediment samples, and P,P'DDD (another metabolite of P,P'DDT) was detected in the 1999 sample. Although the use of DDT was banned in 1973, it is very persistent in the environment. Prior to 2001, this was a secondary monitoring station and sampling was intentionally biased towards periods with potentially low dissolved oxygen concentrations. Recreational uses are partially supported at this site due to fecal coliform bacteria excursions, compounded by a significant increasing trend in fecal coliform bacteria concentration.

Further downstream **(E-007B)**, aquatic life and recreational uses are fully supported; however, there is a significant increasing trend in five-day biochemical oxygen demand. Prior to 2001, this was a secondary monitoring station and sampling was intentionally biased towards periods with potentially low dissolved oxygen concentrations. At the next site downstream **(E-007C)**, aquatic life uses are not supported due to pH excursions. There is a significant decreasing trend in pH. A significant decreasing trend in five-day biochemical oxygen demand suggests improving conditions for this parameter. Recreational uses are fully supported at this site.

At **E-008**, aquatic life uses are fully supported based on macroinvertebrate community data. A very high concentration of lead was measured in the 1997 sediment sample. Also in sediment, P,P'DDE was detected in 1998 and PCB-1242 was detected in 1999. Although the use of DDT was banned in 1973 and the manufacture and use of PCBs was banned in 1979, they are very persistent in the environment. Significant increasing trends in dissolved oxygen concentration and significant decreasing trends in five-day biochemical oxygen demand suggest improving conditions for these parameters. Recreational uses are fully supported at this site. At the furthest downstream site **(E-008A)**, aquatic life and recreational uses are fully supported.

This is a blackwater system, characterized by naturally low pH and dissolved oxygen concentrations. Although pH excursions were noted at each of these stations, they were typical of values seen in such systems; however, the decreasing trends in pH at E-007 and E-007C suggest changing conditions for those portions of the stream.

A fish consumption advisory has been issued by the Department for mercury and includes a stream within this watershed (see advisory p.38).

Groundwater Quality

Well #	Class	Aquifer	Location
AMB-044	GB	MIDDENDORF	ORANGEBURG FISH HATCHERY (1)
AMB-101	GB	TERTIARY LIMESTONE	ORANGEBURG FISH HATCHERY (2)

NPDES Program

Active NPDES Facilities

RECEIVING STREAM *FACILITY NAME* *PERMITTED FLOW @ PIPE (MGD)*	*NPDES#* *TYPE* *COMMENT*
NORTH FORK EDISTO RIVER ALBEMARLE CORP./ORANGEBURG PIPE #: 001 FLOW: 1.057	SC0001180 MAJOR INDUSTRIAL
NORTH FORK EDISTO RIVER CITY OF ORANGEBURG WWTP PIPE #: 001 FLOW: 9.000	SC0024481 MAJOR DOMESTIC

NORTH FORK EDISTO RIVER CITY OF ORANGEBURG/PEARSON WTP PIPE #: 001 FLOW: 0.35	SCG641002 MINOR DOMESTIC
NORTH FORK EDISTO RIVER SOUTHSIDE ASSOCIATES PIPE #: 001 FLOW: 0.03	SC0029751 MINOR DOMESTIC
NORTH FORK EDISTO RIVER VELCOREX INC. PIPE #: 001 FLOW: 1.14	SC0043419 MAJOR INDUSTRIAL
NORTH FORK EDISTO RIVER COUNCIL ENERGY PIPE #: 001, 002 FLOW: M/R	SC0045560 MINOR INDUSTRIAL
DITCH TO NORTH FORK EDISTO RIVER ORANGEBURG NATIONAL FISH HATCHERY PIPE #: 001 FLOW: M/R	SCG130009 MINOR INDUSTRIAL
DITCH TO NORTH FORK EDISTO RIVER ORANGEBURG NATIONAL FISH HATCHERY PIPE #: 002 FLOW: M/R	SCG130008 MINOR INDUSTRIAL
WHIRLWIND CREEK TRIBUTARY EDISTO HIGH SCHOOL PIPE #: 001 FLOW: 0.017	SC0040185 MINOR DOMESTIC TO BE ELIMINATED

Nonpoint Source Management Program

Land Disposal Activities

Land Application Sites

LAND APPLICATION SYSTEM *FACILITY NAME*	*ND#* *TYPE*
APPLICATION TO POND ORANGEBURG SAUSAGE CO.	ND0080730 INDUSTRIAL

Water Quantity

WATER USER *WATERBODY*	*REGULATED CAPACITY (MGD)* *PUMPING CAPACITY (MGD)*
ORANGEBURG DPU NORTH FORK EDISTO RIVER	44.5 56.5

Growth Potential

There is a low to moderate potential for growth in this watershed, which contains the Town of Cordova and portions of the Town of Edisto and the City of Orangeburg. The western portion of the City of Orangeburg is located in this watershed and U.S. 601 connects it to the Towns of Bamberg and St. Matthews. The U.S. 21 corridor runs from Orangeburg to the Town of Rowesville and is paralleled by a rail line.

03050204-010

(South Fork Edisto River)

General Description

Watershed 03050204-010 is located in Aiken, Edgefield, and Saluda Counties and consists primarily of the ***South Fork Edisto River*** and its tributaries from its origin to Shaw Creek. The watershed occupies 137,081 acres of the Sandhills and Upper Coastal Plain regions of South Carolina. The predominant soil types consist of an association of the Troup-Fuquay-Lakeland series. The erodibility of the soil (K) averages 0.11 and the slope of the terrain averages 6%, with a range of 0-25%. Land use/land cover in the watershed includes: 56.7% forested land, 30.3% agricultural land, 6.6% forested wetland (swamp), 4.2% barren land, 1.1% water, 0.8% urban land, and 0.3% nonforested wetland (marsh).

The South Fork Edisto River originates near the Town of Johnston and incorporates the drainage of First Branch, Hall Branch, and Temples Creek (Flat Rock Branch). The river then flows through Holmes Pond and accepts drainage from Satcher Branch, Long Branch, Beech Creek (Spann Branch, Bog Branch), Mill Creek (Flat Rock Creek, Pitts Branch, Lotts Creek), Easter Branch, Bulls Branch, Long Branch, Jumping Gut Creek, Mile Branch, and Kalop Branch. Further downstream, the river accepts drainage from Bridge Creek (Reedy Fork, Mill Branch), McTier Creek (Gully Creek, Harrison High Pond, Sawyer Pond, Boggy Branch, Holston Branch), Little Branch, Sandy Branch, Big Branch, Muddy Branch, and Beaverdam Branch (Smith Branch). In the lower portion of the watershed, Rocky Springs Creek (Wildcat Branch, Long Branch, Huttos Pond, Pitman Branch, Poplar Branch) enters the river followed by Purvis Branch, Clarks Mill Creek, and Cedar Creek (Neeses Lake). There are a total of 225.3 stream miles and 1,153.8 acres of lake waters in this watershed, all classified FW.

Surface Water Quality

Station #	Type	Class	Description
E-001	S/W	FW	First Branch at S-19-41, beside water plant at Johnston
E-002	S/W	FW	South Fork Edisto River at S-19-57, below Johnston WWTP
E-090	P/W/BIO	FW	South Fork Edisto River at US 1, 12 mi NE of Aiken
E-578	BIO	FW	McTier Creek at S-02-209
RS-01034	RS01/BIO	FW	Rocky Springs Creek at Moore off S-020264, 7mi NE of Aiken
E-021	W/Inactive	FW	South Fork Edisto River at SC 302
E-113	INT	FW	South Fork Edisto River at S-02-152 (replaces E-021)

South Fork Edisto River – There are three SCDHEC monitoring sites along this section of the South Fork Edisto River, and recreational uses are fully supported at all sites. At the upstream site **(E-002)**, aquatic life uses are fully supported. Prior to 2001, this was a secondary monitoring station and sampling was intentionally biased towards periods with potentially low dissolved oxygen concentrations. Significant decreasing trends in five-day biochemical oxygen demand and turbidity suggest improving conditions for these parameters.

At the midstream site **(E-090)**, aquatic life uses are fully supported based on macroinvertebrate community data. There is a significant decreasing trend in pH. A high concentration of mercury was detected in the1997 sediment sample. Significant increasing trends in dissolved oxygen concentration and decreasing trends in five-day biochemical oxygen demand, turbidity, and total nitrogen concentration suggest improving conditions for these parameters. At the downstream site ***(E-021/E-113)***, aquatic life uses are fully supported. This is a blackwater system, characterized by naturally low pH and dissolved oxygen concentrations. Although pH excursions were noted at ***E-090*** and ***E-021***, they were typical of values seen in such systems and considered natural, not standards violations.

First Branch (E-001) - Aquatic life uses are fully supported. There is a significant decreasing trend in pH. This is a blackwater system, characterized by naturally low pH and dissolved oxygen concentrations. Although pH and dissolved oxygen excursions were noted, they were typical of values seen in such systems and considered natural, not standards violations. Prior to 2001, this was a secondary monitoring station and sampling is intentionally biased towards periods with potentially low dissolved oxygen concentrations. Significant decreasing trends in five-day biochemical oxygen demand, turbidity, and total phosphorus concentration suggest improving conditions for these parameters. Recreational uses are fully supported, and a significant decreasing trend in fecal coliform concentration suggests improving conditions for this parameter.

McTier Creek (E-578) - Aquatic life uses are fully supported based on macroinvertebrate community data.

Rocky Springs Creek (RS-01034) - Aquatic life uses are fully supported based on macroinvertebrate community data. This is a blackwater system, characterized by naturally low pH and dissolved oxygen concentration. Although pH excursions were noted, they were typical of values seen in such systems and considered natural, not standards violations. Recreational uses are fully supported.

Natural Swimming Areas

FACILITY NAME *RECEIVING STREAM*	*PERMIT #* *STATUS*
CAMP GRAVATT MCTIER CREEK	02-N06 ACTIVE
LONG 4-H CENTER BIG BRANCH	02-N03 ACTIVE

NPDES Program

Active NPDES Facilities

RECEIVING STREAM *FACILITY NAME* *PERMITTED FLOW @ PIPE (MGD)*	*NPDES#* *TYPE* *COMMENT*
SOUTH FORK EDISTO RIVER ECW&SA/JOHNSTON #1 PLT PIPE #: 001 FLOW: 0.968	SC0025691 MINOR DOMESTIC
SOUTH FORK EDISTO RIVER JM HUBER CORP./EDISTO PLANT PIPE #: 001 FLOW: MR	SC0024341 MINOR INDUSTRIAL
BEAVERDAM BRANCH KENTUCKY-TENNESSEE CLAY CO./GENTRY PIT PIPE #: 001 FLOW: MR	SC0046388 MINOR INDUSTRIAL

Nonpoint Source Management Program

Mining Activities

MINING COMPANY *MINE NAME*	*PERMIT #* *MINERAL*
JAMES HENRY BLEDSOE CONSTRUCTION CO. MONETTA CLAYPIT	0956-03 SAND; SAND/CLAY
HOLMES TIMBER, INC. ABNEY MINE	0954-03 SAND; SAND/CLAY
GL WILLIAMS & SON TRUCKING PIT 49	0978-03 SAND
JM HUBER CORP. CORDER MINE	0406-03 KAOLIN
BLEECK ENTERPRISES, INC. ENTERPRISE MINE	1086-03 KAOLIN CLAY
SOUTHEASTERN CLAY COMPANY SHADE MINE	0071-03 KAOLIN
WR GRACE & CO. SCOTT MINE	0072-03 KAOLIN
KENTUCKY-TENNESSEE CLAY CO. GENTRY MINE	0594-03 KAOLIN
JM HUBER CORP. BRODIE MINE	0038-03 KAOLIN
JM HUBER CORP. LAUGHLIN WEST MINE	1136-03 KAOLIN

Growth Potential

There is a low to moderate potential for growth in this agricultural-based watershed, which contains portions of the Towns of Johnston, Ward, and Ridge Spring. The greatest potential for growth surrounds the three interchanges of Interstate 20: U.S. Hwy 1, S.C. Hwy 391, and S.C. Hwy 39. A rail line runs between the Towns of Johnston and Monetta, both of which show slightly increasing populations. The Town of Johnston has the ability to connect into the Regional Sewer Collection System in the future. Other growth potentials for the area included the industrial park at the interchange of S.C. Hwys 23 and 121 in Johnston, and the addition of both a federal and a state prison in the area.

03050204-020

(Shaw Creek)

General Description

Watershed 03050204-020 is located in Aiken and Edgefield Counties and consists primarily of ***Shaw Creek*** and its tributaries. The watershed occupies 86,484 acres of the Sandhills and Upper Coastal Plain regions of South Carolina. The predominant soil types consist of an association of the Fuquay-Troup-Lakeland-Orangeburg-Wagram series. The erodibility of the soil (K) averages 0.15 and the slope of the terrain averages 5%, with a range of 0-25%. Land use/land cover in the watershed includes: 46.9% forested land, 34.8% agricultural land, 8.0% barren land, 6.2% forested wetland (swamp), 2.9% urban land, 0.9% water, and 0.3% nonforested wetland (marsh).

Shaw Creek originates near the Town of Trenton and flows past the City of Aiken to drain into the South Fork Edisto River. Shaw Creek receives drainage from Buck Branch and Tiger Creek before flowing through Lone Pond and accepting drainage from Hillyer Branch, Paces Branch, Beaverdam Branch, Hall Branch, Melton Branch, Curry Branch, Mason Branch, Boggy Branch, Brogdon Branch, Dairy Branch, and Long Branch. The river then accepts drainage from Bradley Mill Branch, Joyce Branch, Redds Branch, Clearwater Branch, Chavous Branch, and Cedar Branch (Cedar Lake). There are a total of 153.1 stream miles and 648.0 acres of lake waters in this watershed, all classified FW.

Surface Water Quality

Station #	Type	Class	Description
E-579	BIO	FW	SHAW CREEK AT S-02-153
E-094	P/W	FW	SHAW CREEK AT S-02-26, 4.2 MILES NE OF AIKEN
E-106	W/INT	FW	SHAW CREEK AT S-02-576

Shaw Creek – There are three SCDHEC monitoring sites along Shaw Creek. Aquatic life uses are fully supported at the upstream site **(E-579)** based on macroinvertebrate community data. At the midstream site **(E-094)**, aquatic life uses are not supported due to pH excursions. There is a significant increasing trend in total phosphorus concentration and a significant decreasing trend in pH. Recreational uses are fully supported. Aquatic life and recreational uses are fully supported at the downstream site **(E-106)**. This is a blackwater system, characterized by naturally low pH and dissolved oxygen concentrations. Although pH excursions were noted at E-094 and E-106, they were typical of values seen in such systems; however, the decreasing trends in pH at E-094 suggest changing conditions for that portion of the stream.

Groundwater Quality

Well #	Class	Aquifer	Location
AMB-028	GB	MIDDENDORF	MONTMORENCI COUCHTON

NPDES Program

Active NPDES Facilities

RECEIVING STREAM *FACILITY NAME* *PERMITTED FLOW @ PIPE (MGD)*	*NPDES#* *TYPE* *COMMENT*
SHAW CREEK KENTUCKY-TENNESSEE CLAY CO. PIPE #: 001 FLOW: M/R	SCG730046 MINOR INDUSTRIAL
SHAW CREEK CITY OF AIKEN/SHAW CREEK WTP PIPE #: 001 FLOW: M/R	SCG641003 MINOR DOMESTIC
PACES BRANCH ECW&SA/TRENTON WWTP PIPE #: 001 FLOW: 0.073	SC0025682 MINOR DOMESTIC

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

LANDFILL NAME *FACILITY TYPE*	*PERMIT #* *STATUS*
CITY OF AIKEN LANDFILL MUNICIPAL	DWP-037 CLOSED
OWENS CORNING INDUSTRIAL	022431-1601 ACTIVE

Land Application Sites

LAND APPLICATION *FACILITY NAME*	*PERMIT #* *TYPE*
SPRAYFIELD SHREE OF AIKEN/INN OF AIKEN	ND0065871 DOMESTIC
SPRAYFIELD SC FORESTRY/TAYLOR TREE NURSERY	ND0076830 INDUSTRIAL
SPRAYFIELD OWENS CORNING/AIKEN PLANT	ND0070963 INDUSTRIAL

Mining Activities

MINING COMPANY *MINING NAME*	*PERMIT #* *STATUS*
EC CULBREATH & SON, INC. CULBREATH ASPHALT PLANT	0152-03 SAND
GL WILLIAMS & SON TRUCKING, INC. APAC MINE	1142-03 SAND; SAND/CLAY

Water Quantity

WATER USER / *WATERBODY*	*REGULATED CAPACITY (MGD)* / *PUMPING CAPACITY (MGD)*
CITY OF AIKEN	6.0
SHAW CREEK	12.8

Growth Potential

There is a moderate potential for growth in this watershed, which contains the Town of Trenton and a portion of the City of Aiken. There is a high potential for commercial growth surrounding the interchanges of I-20 and U.S. 1 and S.C. 19; both Highways 1 and 19 have plans for widening to four lanes. S.C. 19 runs through the City of Aiken and intersects with several rail lines that would increase industrial potential. The Town of Trenton has tied into the Edgefield County Water and Sewer Authority's Regional Sewer Collection System, which should enhance industrial growth.

03050204-030

(South Fork Edisto River)

General Description

Watershed 03050204-030 is located in Aiken, Barnwell, and Orangeburg Counties and consists primarily of the ***South Fork Edisto River*** and its tributaries from Shaw Creek to Dean Swamp Creek. The watershed occupies 77,490 acres of the Sandhills and Upper Coastal Plain regions of South Carolina. The predominant soil types consist of an association of the Fuquay-Lakeland-Troup-Varina-Dothan series. The erodibility of the soil (K) averages 0.12 and the slope of the terrain averages 5%, with a range of 0-15%. Land use/land cover in the watershed includes: 41.6% forested land, 28.5% agricultural land, 18.4% barren land, 10.7% forested wetland (swamp), 0.4% urban land, 0.3% water, and 0.1% nonforested wetland (marsh).

As a reach of the South Fork Edisto River, this watershed accepts the drainage from all streams entering the river upstream. This section of the South Fork Edisto River also accepts drainage from Burcalo Creek, Hunter Branch (Tylers Pond), Pond Branch (Buzzard Branch, Long Branch, Spring Branch), and Yarrow Branch. There are a total of 75.5 stream miles and 137.5 acres of lake waters in this watershed, all classified FW. Another natural resource is Aiken State Park, located near the top of the watershed.

Surface Water Quality

Station #	Type	Class	Description
E-595	BIO	FW	YARROW BRANCH AT SR 161
E-011*	W/INT	FW	SOUTH FORK EDISTO RIVER AT SC 39

* THIS SITE IS LOCATED IN 03050204-050

South Fork Edisto River (E-011) – This site is located in 03050204-050 and was used to represent the water quality in this watershed. Aquatic life and recreational uses are fully supported. This is a blackwater system, characterized by naturally low pH and dissolved oxygen concentration. Although pH excursions were noted, they were typical of values seen in such systems and considered natural, not standards violations.

Yarrow Branch (E-595) - Aquatic life uses are fully supported based on macroinvertebrate community data.

Aiken State Park Cabin Lake - Cabin Lake was treated from 1992-1995 by the Water Resources Division of the SCDNR with aquatic herbicides in an attempt to control the aquatic plants that prevent access to the lake for fishing and boating. In addition, grass carp, a biological control agent, were introduced in 1992 at the stocking rate of 20 fish/vegetated acre for a total of 200 fish. These efforts have been successful and further treatments have not been necessary.

Aiken State Park Swimming Lake -Swimming Lake was treated with herbicides from 1992-1995 by the SCDNR to provide access for swimming and boating. Grass carp were introduced to the swimming lake in 1993 at the stocking rate of 10 fish/vegetated acre for a total of 30 fish. These efforts have been successful and further treatments have not been necessary.

Aiken State Park Childs Fishing Lake - Childs Fishing Lake was treated with herbicides in 1992, 1993, and 1994 by the SCDNR to provide access for bank fishing. Grass carp were also introduced to this lake in 1992. These efforts have been successful and further treatments have not been necessary.

A fish consumption advisory has been issued by the Department for mercury and includes streams within this watershed (see advisory p.38.

NPDES Program

Active NPDES Facilities

There are currently no point source dischargers in this watershed.

Growth Potential

There is a low potential for growth projected for this watershed, which contains the Town of Windsor and a portion of the Town of Williston. A rail line and U.S. 78 run along the western edge of the watershed through the Town of Windsor to the City of Aiken, and provide potential for industrial growth.

03050204-040

(Dean Swamp Creek)

General Description

Watershed 03050204-040 is located in Aiken and Orangeburg Counties and consists primarily of ***Dean Swamp Creek*** and its tributaries. The watershed occupies 41,074 acres of the Sandhills and Upper Coastal Plain regions of South Carolina. The predominant soil types consist of an association of the Fuquay-Troup-Ailey series. The erodibility of the soil (K) averages 0.12 and the slope of the terrain averages 7%, with a range of 0-25%. Land use/land cover in the watershed includes: 52.5% forested land, 30.5% agricultural land, 8.4% barren land, 6.9% forested wetland (swamp), 1.2% urban land, 0.4% water, and 0.1% nonforested wetland (marsh).

Dean Swamp Creek originates near the Town of Crossroads, and flows through several millponds before accepting drainage from Jordan Creek, Abrams Branch, and Bratcher Branch. Dean Swamp Creek then flows through Dean Swamp Pond (100 acres) and drains into the South Fork Edisto River. There are a total of 44.6 stream miles and 196.4 acres of lake waters in this watershed, all classified FW.

Surface Water Quality

Station #	Type	Class	Description
E-107	W/INT	FW	DEAN SWAMP CREEK AT SC 4

Dean Swamp Creek (E-107) – Aquatic life and recreational uses are fully supported. A significant decreasing trend in turbidity suggests improving conditions for this parameter. This is a blackwater system, characterized by naturally low pH and dissolved oxygen concentration. Although pH excursions were noted, they were typical of values seen in such systems and considered natural, not standards violations.

NPDES Program

Active NPDES Facilities

RECEIVING STREAM *FACILITY NAME* *PERMITTED FLOW @ PIPE (MGD)*	*NPDES#* *TYPE* *COMMENT*
DEAN SWAMP CREEK TRIBUTARY TOWN OF WAGENER PIPE #: 001 FLOW: 0.13	SC0026204 MINOR DOMESTIC

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

LANDFILL NAME	*PERMIT #*
FACILITY TYPE	*STATUS*
AIKEN COUNTY LANDFILL	021001-1101
MUNICIPAL	ACTIVE

Growth Potential

There is a low potential for growth in this watershed, which contains portions of the Towns of Wagener, Perry, and Salley. Some industrial growth is possible due to the rail line that runs along the eastern edge of the watershed from the Town of Springfield to the Towns of Salley and Perry. However, there is a decreasing population trend in the towns located within this watershed.

03050204-050

(South Fork Edisto River)

General Description

Watershed 03050204-050 is located in Barnwell, Orangeburg, and Bamberg Counties and consists primarily of the ***South Fork Edisto River*** and its tributaries from Dean Swamp Creek to its confluence with the North Fork Edisto River. The watershed occupies 164,149 acres of the Upper and Lower Coastal Plain regions of South Carolina. The predominant soil types consist of an association of the Fuquay-Varina-Dothan-Johnston-Meggett series. The erodibility of the soil (K) averages 0.17 and the slope of the terrain averages 3%, with a range of 0-6%. Land use/land cover in the watershed includes: 41.7% agricultural land, 32.9% forested land, 18.7% forested wetland (swamp), 4.8% barren land, 1.0% urban land, 0.6% water, and 0.3% nonforested wetland (marsh).

As a reach of the South Fork Edisto River, this watershed accepts the drainage from all streams entering the river upstream. Spur Branch enters the river at the top of the watershed, followed by Whaley Creek (Matthews Millpond), Dry Branch, and the Goodland Creek watershed. Further downstream, Windy Hill Creek (Sheepford Branch) enters the river near the Town of Blackville, followed by Rocky Swamp Creek (Campbell Branch, Pleasant Branch), Rogers Branch, Snake Branch, and Little River (Willow Swamp) near the Town of Norway. Sykes Swamp enters the river next, followed by Hays Mill Creek (Stout Creek), Scratchnose Swamp (Reed Branch), Sucksand Branch, and the Roberts Swamp watershed. Snake Swamp (Sam Branch) and Isaac Jennings Canal flow past the Town of Cope at the base of the watershed to enter the river. There are a total of 333.3 stream miles and 755.3 acres of lake waters in this watershed, all classified FW.

Surface Water Quality

Station #	Type	Class	Description
E-011	W/INT	FW	South Fork Edisto River at SC 39
E-029	BIO	FW	Windy Hill Creek at SR 38
RS-01059	RS01	FW	Scratchnose Swamp at S-38-162, 3.4 mi SE of Norway
E-012	S/BIO	FW	South Fork Edisto River at S-38-39 Bridge

South Fork Edisto River – There are two SCDHEC monitoring stations along this reach of the South Fork Edisto River. This is a blackwater system, characterized by naturally low pH and dissolved oxygen concentration. Although pH excursions were noted at both sites, they were typical of values seen in such systems and considered natural, not standards violations. Aquatic life and recreational uses are fully supported at the upstream site ***(E-011)***. At the downstream site ***(E-012)***, aquatic life uses are fully supported based on macroinvertebrate community data. There is a significant decreasing trend in pH. Prior to 2001, this was a secondary monitoring station and sampling was intentionally biased towards periods with potentially low dissolved oxygen concentrations. Recreational uses are fully supported; however, there is a significant increasing trend in fecal coliform bacteria concentration.

Scratchnose Swamp (RS-01059) – Aquatic life uses fully supported. This is a blackwater system, characterized by naturally low pH and dissolved oxygen concentrations. Although pH excursions were noted, they were typical of values seen in such systems and considered natural, not standards violations. Recreational uses are fully supported.

Windy Hill Creek (E-029) - Aquatic life uses are partially supported based on macroinvertebrate community data.

A fish consumption advisory has been issued by the Department for mercury and includes streams within this watershed (see advisory p.38).

Groundwater Quality

Well #	Class	Aquifer	Location
AMB-100	GB	TERTIARY LIMESTONE	COPE
AMB-002	GB	BLACK CREEK	WILLISTON
AMB-102	GB	TERTIARY SANDS	BLACKVILLE

NPDES Program

Active NPDES Facilities

RECEIVING STREAM *FACILITY NAME* *PERMITTED FLOW @ PIPE (MGD)*	*NPDES#* *TYPE* *COMMENT*
SOUTH FORK EDISTO RIVER TOWN OF SPRINGFIELD/PLANT #1 PIPE #: 001 FLOW: 0.120	SC0023272 MINOR DOMESTIC
SOUTH FORK EDISTO RIVER SCE&G/COPE POWER PLANT PIPE #: 001 FLOW: 0.57	SC0045772 MINOR INDUSTRIAL
WINDY HILL CREEK TOWN OF BLACKVILLE WWTP PIPE #: 001 FLOW: 0.80	SC0026417 MINOR DOMESTIC
WINDY HILL CREEK EXCEL COMFORT SYSTEMS, INC. PIPE #: 001 FLOW: M/R	SCG250187 MINOR INDUSTRIAL
WILLOW SWAMP TOWN OF NORWAY PIPE #: 001 FLOW: 0.165	SC0045993 MINOR DOMESTIC WETLAND

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

LANDFILL NAME	*PERMIT #*
FACILITY TYPE	*STATUS*
SCE&G COPE STATION	383320-1601
INDUSTRIAL	ACTIVE

Growth Potential

There is a low potential for growth in this watershed, which contains the Towns of Norway and Cope, and portions of the Towns of Springfield, Blackville, Denmark, Bamberg, and Neeses. Slight increases in commercial growth would be possible with the proposed widening of U.S. 78, which runs from the Town of Denmark to the Town of Bamberg. Industrial growth is possible due to the rail lines already in place. One rail line runs from the Town of Blackville to the Town of Springfield, and another from Denmark to the Town of Norway and on upstate to the City of Columbia. U.S. 321 parallels the rail line that bisects the watershed. The Town of Denmark shows declining population trends, but the Town of Bamberg shows slightly increasing population growth. The SCE&G Cope Power Plant could boost residential and commercial growth in the area, primarily for the Town of Bamberg.

03050204-060

(Goodland Creek)

General Description

Watershed 03050204-060 is located in Orangeburg and Aiken Counties and consists primarily of ***Goodland Creek*** and its tributaries. The watershed occupies 26,714 acres of the Upper Coastal Plain region of South Carolina. The predominant soil types consist of an association of the Fuquay-Dothan-Troup series. The erodibility of the soil (K) averages 0.12 and the slope of the terrain averages 4%, with a range of 0-10%. Land use/land cover in the watershed includes: 43.4% agricultural land, 37.3% forested land, 11.2% forested wetland (swamp), 6.4% barren land, 0.8% urban land, 0.6% water, and 0.3% nonforested wetland (marsh).

Goodland Creek flows through Capers Mill Pond and accepts drainage from Gin Branch and Tampa Creek before draining into the South Fork Edisto River. There are a total of 31.1 stream miles and 117.2 acres of lake waters in this watershed, all classified FW.

Surface Water Quality

Station #	Type	Class	Description
E-036/E-598	S/INT/BIO	FW	GOODLAND CREEK AT SC 4, 2.1 MILES E OF SPRINGFIELD

Goodland Creek (E-036 and E-598) - Aquatic life uses are fully supported based on macroinvertebrate community data. Prior to 2001, this was a secondary monitoring station and sampling was intentionally biased towards periods with potentially low dissolved oxygen concentrations. There is a significant decreasing trend in pH. This is a blackwater system, characterized by naturally low pH and dissolved oxygen concentrations. Although pH excursions were noted, they were typical of values seen in such systems and considered natural, not standards violations. A significant decreasing trend in five-day biochemical oxygen demand suggests improving conditions for this parameter. Recreational uses are not supported due to fecal coliform bacteria excursions. In addition, there was a significant increasing trend in fecal coliform bacteria concentration.

NPDES Program

Active NPDES Facilities

RECEIVING STREAM *FACILITY NAME* *PERMITTED FLOW @ PIPE (MGD)*	*NPDES#* *TYPE* *COMMENT*
GOODLAND CREEK TOWN OF SPRINGFIELD/PLANT #2 PIPE #: 001 FLOW: 0.06	SC0023281 MINOR DOMESTIC

Growth Potential

There is a low potential for growth in this watershed, which contains portions of the Towns of Salley, Perry, and Springfield.

03050204-070

(Roberts Swamp)

General Description

Watershed 03050204-070 is located in Orangeburg County and consists primarily of ***Roberts Swamp*** and its tributaries. The watershed occupies 21,742 acres of the Upper and Lower Coastal Plain regions of South Carolina. The predominant soil types consist of an association of the Dothan-Fuquay-Noboco series. The erodibility of the soil (K) averages 0.12 and the slope of the terrain averages 3%, with a range of 0-6%. Land use/land cover in the watershed includes: 48.2% agricultural land, 32.3% forested land, 12.3% forested wetland (swamp), 5.6% barren land, 1.4% water, and 0.2% nonforested wetland (marsh).

Roberts Swamp flows through Twin Lakes and accepts drainage from Deadfall Swamp and Twomile Swamp, before flowing past the Town of Cope and into the South Fork Edisto River Watershed. There are a total of 43.0 stream miles and 258.8 acres of lake waters in this watershed, all classified FW.

Surface Water Quality

Station #	Type	Class	Description
E-039	W/BIO/INT	FW	ROBERTS SWAMP AT SC 332

Roberts Swamp (E-039) - Aquatic life uses are partially supported based on macroinvertebrate community data. Recreational uses are fully supported.

NPDES Program

Active NPDES Facilities

There are currently no point source dischargers in this watershed.

Growth Potential

The SCE&G Cope Power Plant, near the Town of Cope, may provide some growth in the lower portion of this watershed.

03050205-010

(Edisto River)

General Description

Watershed 03050205-010 is located in Bamberg, Orangeburg, Dorchester, and Colleton Counties and consists primarily of the ***Edisto River*** and its tributaries, from its origin to Cattle Creek. The watershed occupies 80,967 acres of the Lower Coastal Plain region of South Carolina. The predominant soil types consist of an association of the Rains-Lynchburg-Goldsboro-Johnston-Lumbee series. The erodibility of the soil (K) averages 0.20 and the slope of the terrain averages 1%, with a range of 0-2%. Land use/land cover in the watershed includes: 50.6% forested land, 27.3% forested wetland (swamp), 17.8% agricultural land, 2.7% barren land, 0.7% urban land, 0.5% water, and 0.4% nonforested wetland (marsh).

The headwaters of the Edisto River are formed from the confluence of the North Fork Edisto River and the South Fork Edisto River near the Town of Bamberg. This section of the Edisto River accepts drainage from Betty Branch (Staley Branch, Mill Branch), Broad Branch, Pen Branch, Brier Creek, Bush Branch, and Box Branch. There are a total of 121.5 stream miles and 200.3 acres of lake waters in this watershed, all classified FW.

Surface Water Quality

Station #	Type	Class	Description
E-013	P/W	FW	EDISTO RIVER AT U.S. 78, W OF BRANCHVILLE
E-013A	W/INT	FW	EDISTO RIVER AT U.S. 21

Edisto River – There are two SCDHEC monitoring sites along this section of the Edisto River, and recreational uses are fully supported at both sites. This is a blackwater system, characterized by naturally low pH and dissolved oxygen concentrations. Although pH excursions were noted at both sites, they were typical of values seen in such systems and considered natural, not standards violations. At the upstream site **(E-013)**, aquatic life uses are fully supported. Significant decreasing trends in five-day biochemical oxygen demand and total nitrogen concentration suggest improving conditions for these parameters. Aquatic life uses are also fully supported at the downstream site **(E-013A)**.

A fish consumption advisory has been issued by the Department for mercury and includes portions of streams within this watershed (see advisory p.38).

NPDES Program

Active NPDES Facilities

RECEIVING STREAM *FACILITY NAME* *PERMITTED FLOW @ PIPE (MGD)*	*NPDES#* *TYPE* *COMMENT*
EDISTO RIVER TOWN OF BRANCHVILLE PIPE #: 001 FLOW: 0.15 PIPE #: 001 FLOW: 0.40	SC0047333 MINOR DOMESTIC PHASE I PHASE II (NOT IMPLEMENTED YET)

Growth Potential

There is a low to moderate potential for growth in this watershed, which contains the Towns of Branchville and Rowesville. The Town of Branchville is located in the center of the watershed with U.S. 78 and a rail line connecting it to the Towns of Bamberg and St. George, and U.S. 21 and another rail line connecting it to the City of Orangeburg. The infrastructure is in place, but census data shows a 37% decline in population over the last decade.

03050205-020

(Cattle Creek)

General Description

Watershed 03050205-020 is located in Orangeburg and Dorchester Counties and consists primarily of ***Cattle Creek*** and its tributaries. The watershed occupies 42,089 acres of the Lower Coastal Plain region of South Carolina. The predominant soil types consist of an association of the Rains-Lynchburg-Goldsboro series. The erodibility of the soil (K) averages 0.19 and the slope of the terrain averages 1%, with a range of 0-2%. Land use/land cover in the watershed includes: 48.4% forested land, 26.0% agricultural land, 21.9% forested wetland (swamp), 3.2% barren land, 0.4% nonforested wetland (marsh), and 0.1% water.

Cattle Creek originates near the Town of Bowman and accepts drainage from Sandy Run, Murray Branch, Mill Branch, and Big Branch before flowing into the Edisto River. There are a total of 55.9 stream miles and 20.5 acres of lake waters in this watershed, all classified FW.

Surface Water Quality

Station #	Type	Class	Description
E-108	W/BIO/INT	FW	CATTLE CREEK AT S-18-19

Cattle Creek (E-108) - Aquatic life uses are fully supported based on macroinvertebrate community and physiochemical data. Recreational uses are partially supported due to fecal coliform bacteria excursions.

NPDES Program

Active NPDES Facilities

RECEIVING STREAM *FACILITY NAME* *PERMITTED FLOW @ PIPE (MGD)*	*NPDES#* *TYPE* *COMMENT*
CATTLE CREEK R. WHALEY DURR/HARTZOG PIT PIPE #: 001 FLOW: MR	SCG730091 MINOR INDUSTRIAL

Nonpoint Source Management Program

Mining Activities

MINING COMPANY *MINE NAME*	*PERMIT #* *MINERAL*
DORCHESTER COUNTY HARTZOG PIT	0412-35 SAND; SAND/CLAY

Growth Potential

There is a low potential for growth in this watershed.

03050205-030

(Edisto River)

General Description

Watershed 03050205-030 is located in Colleton and Dorchester Counties and consists primarily of the ***Edisto River*** and its tributaries from Cattle Creek to Indian Field Swamp. The watershed occupies 46,571 acres of the Lower Coastal Plain region of South Carolina. The predominant soil types consist of an association of the Chipley-Rains-Leon-Hobcaw-Lynchburg series. The erodibility of the soil (K) averages 0.15 and the slope of the terrain averages 1%, with a range of 0-2%. Land use/land cover in the watershed includes: 53.9% forested land, 24.9% forested wetland (swamp), 14.8% agricultural land, 4.4% barren land, 1.3% water, 0.4% nonforested wetland (marsh), and 0.3% urban land.

This watershed accepts the drainage from the upstream reach of the Edisto River. This section of the river flows past Colleton State Park and accepts drainage from Brickhouse Branch, Crooked Creek, and Skull Branch. There are a total of 69.5 stream miles and 166.3 acres of lake waters in this watershed, all classified FW.

Surface Water Quality

Station #	Type	Class	Description
E-014	S/W	FW	EDISTO RIVER AT US 15, S OF ST. GEORGE
E-086	P/INT	FW	EDISTO RIVER AT S-18-29

Edisto River – There are two SCDHEC monitoring sites along this section of the Edisto River. Aquatic life and recreational uses are fully supported at the upstream site **(E-014)**; however, there is a significant increasing trend in turbidity. There is an increasing trend in pH. Prior to 2001, this was a secondary monitoring station and sampling was intentionally biased towards periods with potentially low dissolved oxygen concentrations. Significant decreasing trends in five-day biochemical oxygen demand and total phosphorus suggests improving conditions for this parameter.

Aquatic life and recreational uses are also fully supported at the downstream site **(E-086)**. There is a significant increasing trend in pH. A significant increasing trend in dissolved oxygen concentration and significant decreasing trends in five-day biochemical oxygen demand, turbidity, and total nitrogen concentration suggest improving conditions for these parameters.

A fish consumption advisory has been issued by the Department for mercury and includes streams within this watershed (see advisory p.38).

NPDES Program

Active NPDES Facilities

RECEIVING STREAM *FACILITY NAME* *PERMITTED FLOW @ PIPE (MGD)*	*NPDES#* *TYPE* *COMMENT*
EDISTO RIVER SCE&G/CANADYS STATION PIPE #: 001,002,04A, 04B, 005 FLOW: MR PIPE #: 003 FLOW: 1.18 PIPE #: 006 FLOW: 3.79	SC0002020 MAJOR INDUSTRIAL

Growth Potential

There is a low potential for growth in this watershed.

03050205-040

(Indian Field Swamp)

General Description

Watershed 03050205-040 is located in Dorchester and Orangeburg Counties and consists primarily of ***Indian Field Swamp*** and its tributaries. The watershed occupies 101,992 acres of the Lower Coastal Plain region of South Carolina. The predominant soil types consist of an association of the Goldsboro-Lynchburg-Rains-Hobcaw-Mouzon series. The erodibility of the soil (K) averages 0.19, and the slope of the terrain averages 1%, with a range of 0-2%. Land use/land cover in the watershed includes: 42.2% forested land, 30.7% agricultural land, 21.8% forested wetland (swamp), 3.3% barren land, 1.3% urban land, 0.5% nonforested wetland (marsh), and 0.2% water.

Mill Branch and Snell Branch combine to form Indian Field Swamp, which eventually drains into the Edisto River. Downstream from the confluence, Dove Branch and Wadboo Branch enter the swamp, followed by Spring Branch, Big Branch, Tom and Kate Branch, Pineland Branch, Millpond Branch, and Gum Branch. Polk Swamp (Bear Branch, Cowtail Creek) flows past the Town of St. George and drains into Indian Field Swamp at the base of the watershed. There are a total of 163.3 stream miles and 87.4 acres of lake waters in this watershed. Indian Field Swamp and Polk Swamp are classified FW* (Site specific standards - DO not less than 4.0 mg/l, pH between 5.0-8.5 SU), and the remaining streams are classified FW.

Surface Water Quality

Station #	Type	Class	Description
E-016	P/W	FW*	POLK SWAMP AT S-18-180, 2 MILES S OF ST. GEORGE
E-109	W/INT/BIO	FW*	POLK SWAMP AT S-18-19
E-597	BIO	FW*	INDIAN FIELD SWAMP AT US 78
E-032	W/INT	FW*	INDIAN FIELD SWAMP AT S-18-19

Indian Field Swamp – There are two SCDHEC monitoring sites along Indian Field Swamp. Aquatic life uses are fully supported at the upstream site **(E-597)** based on macroinvertebrate community data. At the downstream site **(E-032)**, aquatic life uses are partially supported due to dissolved oxygen excursions, compounded by a significant decreasing trend in dissolved oxygen concentration. There is a significant increasing trend in pH. A significant decreasing trend in five-day biochemical oxygen demand suggests improvements for this parameter. Recreational uses are partially supported due to fecal coliform excursions.

Polk Swamp - There are two SCDHEC monitoring sites along Polk Swamp. At the upstream site **(E-016)**, aquatic life uses are not supported due to dissolved oxygen excursions, compounded by a significant decreasing trend in dissolved oxygen concentration. A significant decreasing trend in total nitrogen concentration suggests improving conditions for this parameter. Recreational uses are not supported at this site due to fecal coliform bacteria excursions.

At the downstream site **(E-109)**, aquatic life uses are not supported due to dissolved oxygen excursions supported by impacts to the macroinvertebrate community. In addition, there is a significant decreasing trend in dissolved oxygen concentration. Recreational uses are partially supported at this site due to fecal coliform bacteria excursions; however, a significant decreasing trend in fecal coliform bacteria concentration suggests improving conditions for this parameter.

NPDES Program

Active NPDES Facilities

RECEIVING STREAM *FACILITY NAME* *PERMITTED FLOW @ PIPE (MGD)*	*NPDES#* *TYPE* *COMMENT*
TOM AND KATE BRANCH LAFARGE MATERIALS, INC. PIPE #: 001 FLOW: 3.0	SC0022586 MINOR INDUSTRIAL
TOM AND KATE BRANCH TOWN OF HARLEYVILLE PIPE #: 001 FLOW: 0.15	SC0038504 MINOR DOMESTIC WETLAND
POLK SWAMP TOWN OF ST. GEORGE PIPE #: 001 FLOW: 0.80	SC0025844 MINOR DOMESTIC WETLAND

Nonpoint Source Management Program

Mining Activities

MINING COMPANY *MINE NAME*	*PERMIT #* *MINERAL*
PAUL W. JONES HAULING P&M MINE	0950-35 SAND
LAFARGE MATERIALS, INC. HARLEYVILLE QUARRY	0110-35 LIME
PALMETTO SAND COMPANY INDIAN FIELD CREEK PLANT	0786-35 SAND

Growth Potential

Portions of this watershed, which contains the Towns of Reevesville and St. George, and a portion of the Town of Harleyville, have a moderate to high potential for growth. Interstate 95 crosses U.S. 78 near St. George in the center of the watershed. This interchange area has a high growth potential, particularly if U.S. 78 is widened as proposed. The I-95 interchange with U.S. 178 is another growth area. A rail line parallels U.S. 78 through St. George and together with the presence of I-95, provides a high industrial growth potential.

03050205-050

(Edisto River)

General Description

Watershed 03050205-050 is located in Dorchester and Colleton Counties and consists primarily of the ***Edisto River*** and its tributaries from Indian Field Swamp to Four Hole Swamp. The watershed occupies 10,059 acres of the Lower Coastal Plain region of South Carolina. The predominant soil types consist of an association of the Chipley-Ogeechee-Leon-Albany-Rains series. The erodibility of the soil (K) averages 0.15 and the slope of the terrain averages 1%, with a range of 0-2%. Land use/land cover in the watershed includes: 41.0% forested wetland (swamp), 40.3% forested land, 11.6% agricultural land, 3.7% barren land, 2.6% water, and 0.8% nonforested wetland (marsh).

As a reach of the Edisto River, this watershed accepts the drainage from all streams entering the river upstream. This section of the Edisto River also accepts drainage from Poorly Branch. There are a total of 15.0 stream miles and 8.6 acres of lake waters in this watershed, all classified FW.

Surface Water Quality

Station #	Type	Class	Description
E-015	P/INT	FW	EDISTO RIVER AT SC 61, AT GIVHANS FERRY STATE PARK

Edisto River – This watershed was inaccessible for monitoring purposes, so the uppermost site in watershed 03050205-060 **(E-015)** was used to represent the water quality of 03050205-050. Aquatic life uses are fully supported; however, there are significant increasing trends in turbidity and total suspended solids. There is a significant increasing trend in pH. Significant decreasing trends in five-day biochemical oxygen demand and total nitrogen concentration suggest improving conditions for these parameters. Recreational uses are fully supported.

A fish consumption advisory has been issued by the Department for mercury and includes streams within this watershed (see advisory p.38).

NPDES Program

Active NPDES Facilities

There are currently no point source dischargers in this watershed.

Growth Potential

There is a low potential for growth in this watershed.

03050205-060

(Edisto River and South Edisto River)

General Description

Watershed 03050205-060 is located in Colleton, Dorchester, and Charleston Counties and consists primarily of the ***Edisto River*** and the ***South Edisto River*** and their tributaries from Four Hole Swamp to the Atlantic Ocean. The watershed occupies 159,521 acres of the Lower Coastal Plain and Coastal Zone regions of South Carolina. The predominant soil types consist of an association of the Bohicket-Chipley-Rains-Chisolm-Yauhannah series. The erodibility of the soil (K) averages 0.15 and the slope of the terrain averages 1%, with a range of 0-6%. Land use/land cover in the watershed includes: 46.4% forested land, 21.6% forested wetland (swamp), 13.8% nonforested wetland (marsh), 9.0% water, 6.1% agricultural land, 2.6% barren land, and 0.5% urban land.

This lowest reach of the Edisto River receives the drainage from the upper reaches of the Edisto River and Four Hole Swamp. The Edisto River joins the Dawho River, which also drains into 03050205-070, and forms the South Edisto River, which drains into the Atlantic Ocean. The Edisto River is classified FW from its origin downstream to its intersection with U.S. 17, and below this point to its confluence with the Dawho River, the river is classified ORW. Cold Water Branch, Deep Creek (Maple Cane Swamp, Horse Pen Branch), and Sandy Run (Big Bay Swamp, Craven Branch, Boston Branch) drain into the Edisto River at the top of the watershed. Further downstream near the Town of Jacksonboro, the Edisto River accepts drainage from Spooler Swamp, Bull Bridge Creek, Allen Meadow, Penny Creek (Adams Run), Horse Creek, and Ashe Creek.

The South Edisto River is classified ORW from its headwaters to Mud Creek, and below Mud Creek to the Atlantic Ocean the river is classified SFH. Mosquito Creek, Sampson Island Creek, and Alligator Creek are all classified ORW and drain into the upper portion of the South Edisto River. Mosquito Creek connects to the Ashepoo River (Salkehatchie River Basin) through Bull Cut, and the Edisto River connects to watershed 03050205-070 through the Dawho River and Watts Cut (SFH). Further downstream, St. Pierre Creek accepts drainage from Bailey Creek, Shingle Creek (Milton Creek), Store Creek, and Fishing Creek (Sandy Creek) before draining into the South Edisto River. Big Bay Creek (SFH) enters downstream from Fishing Creek and accepts drainage from Mud Creek (ORW) and Scott Creek (ORW) near The Mound. Scott Creek also drains into the Atlantic Ocean via Jeremy Inlet (SFH).

There are a total of 143.3 stream miles, 132.1 acres of lake waters, and 8,683.1 acres of estuarine areas in this watershed. Additional natural resource areas in the watershed include Givhans Ferry State Park near the top of the watershed and Edisto Beach State Park at the base of the watershed.

Surface Water Quality

Station #	Type	Class	Description
E-015	P/INT	FW	EDISTO RIVER AT SC 61 AT GIVHANS FERRY STATE PARK
RS-01040	RS01	FW	EDISTO RIVER DOWNSTREAM OF S.C. 61, 7 MI NE OF COTTAGEVILLE
MD-119	P/W	FW/ORW	EDISTO RIVER AT US 17, 12.5 MILES NW OF RAVENEL
MD-260	INT	SFH	S. EDISTO R. AT NORTHERN CONFLUENCE WITH ALLIGATOR CREEK
MD-244	W/SPRP	SFH	SOUTH EDISTO RIVER BELOW ST. PIERRE CREEK
RO-01123	RO01	SFH	SOUTH EDISTO RIVER MOUTH, 1 MI NW OF EDISTO BEACH

Edisto River – There are three SCDHEC monitoring sites along this section of the Edisto River and recreational uses are fully supported at all sites. At the upstream site ***(E-015)***, aquatic life uses are fully supported; however, there are significant increasing trends in turbidity and total suspended solids. There is a significant increasing trend in pH. Significant decreasing trends in five-day biochemical oxygen demand and total nitrogen concentration suggest improving conditions for these parameters. Aquatic life uses are also fully supported further downstream at ***RS-01040***.

At the furthest downstream site ***(MD-119)***, aquatic life uses are again fully supported; however, there is a significant increasing trend in turbidity. There is a significant increasing trend in pH. A high concentration of lead was measured in the 1997 sediment sample, and P,P'DDD was detected in the 1998 sample. Although the use of DDT was banned in 1973, it is very persistent in the environment. Significant decreasing trends in five-day biochemical oxygen demand and total nitrogen concentration suggest improving conditions for these parameters.

South Edisto River - There are three SCDHEC sites along the South Edisto River. At the upstream site ***(MD-260)***, aquatic life and recreational uses are fully supported. Further downstream ***(MD-244)***, aquatic life uses are fully supported and a significant decreasing trend in five-day biochemical oxygen demand suggests improving conditions for this parameter. Recreational uses are fully supported and a significant decreasing trend in fecal coliform bacteria concentration suggests improving conditions for this parameter. This is a tidally influenced system with significant marsh drainage, characterized by naturally low dissolved oxygen concentrations. Although dissolved oxygen excursions occurred at MD-260 and MD-244, they were typical of values seen in such systems and considered natural, not standards violations. At the furthest downstream location ***(RS-01123)***, aquatic life uses are not supported due to occurrences of turbidity in excess of the aquatic life standard. Recreational uses are fully supported.

A fish consumption advisory has been issued by the Department for mercury and includes portions of streams within this watershed (see advisory p.38).

Shellfish Monitoring Stations

Station #	Description
13-01	SCOTT CREEK AT THE MOUND
13-02	MOUTH OF BIG BAY CREEK
13-03	MOUTH OF ST. PIERRE CREEK

Station #	Description
13-04	ST. PIERRE CREEK AT PETERS PT.
13-05	FISHING CREEK AT SANDY CREEK
13-05A	UPPER REACHES OF SANDY CREEK
13-06	CONFLUENCE OF SHINGLE CREEK AND BAILEY CREEK
13-07	STORE CREEK OPPOSITE HOUSE WITH DOCKS ON RIGHT
13-08	EDISTO RIVER AT ASHEPOO RIVER
13-09	FISHING CREEK AT OYSTER PLANT
13-10	FISHING CREEK AT POLLUTION LINE
13-12	HEADWATERS OF FISHING CREEK PAST OYSTER PLANT
13-17	CONFLUENCE OF WATTS CUT AND SOUTH EDISTO RIVER
13-18	CONFLUENCE OF RUSSELL CK AND WATTS CUT
13-20	NORTHERN CONFLUENCE OF ALLIGATOR CK AND S. EDISTO RIVER
13-21	BIG BAY CREEK HEADWATERS AT FIRST BEND TO RIGHT PAST THE NECK
13-22	HEADWATERS OF SCOTT CREEK AT JEREMY INLET AT THE BOAT LANDING
13-23	JEREMY INLET AT ATLANTIC OCEAN
13-24	FRAMPTON INLET AT NORTH END OF JEREMY CAY
13-25	FRAMPTON INLET AT ATLANTIC OCEAN
13-27	FRAMPTON INLET UPSTREAM OF BOAT RAMP PAST FIRST BEND
13-28	CONFLUENCE OF SHINGLE CREEK AND MILTON CREEK
13-29	BAILEY CREEK, FIRST BEND ADJACENT TO BLUFF ON BAILEY ISLAND (NEAR CONFL. WITH ST. PIERRE CREEK)
13-30	BAILEY CREEK AT CONFLUENCE WITH UNNAMED TRIBUATARY NEAR SW POINT OF SCANAWAH ISLAND
13-31	BAILEY CREEK AT CONFLUENCE WITH SOUTH EDISTO RIVER

Groundwater Quality

Well #	Class	Aquifer	Location
AMB-095	GB	TERTIARY LIMESTONE	EDISTO BEACH WELL 4

NPDES Program

Active NPDES Facilities

RECEIVING STREAM *FACILITY NAME* *PERMITTED FLOW @ PIPE (MGD)*	*NPDES#* *TYPE* *COMMENT*
SANDY RUN FOSTER DIXIANA CORP./SANDY RUN MINE PIPE #: 001 FLOW: M/R	SCG730261 MINOR INDUSTRIAL

Nonpoint Source Management Program

Land Disposal Activities

Land Application Sites

LAND APPLICATION SYSTEM *FACILITY NAME*	*ND#* *TYPE*
SPRAY IRRIGATION TOWN OF EDISTO BEACH/FAIRFIELD GOLF COURSE	ND0063789 DOMESTIC
SPRAYFIELD JEREMY CAY	ND0071510 DOMESTIC

Mining Activities

MINING COMPANY *MINE NAME*	*PERMIT #* *MINERAL*
FOSTER DIXIANA CORP. SANDY RUN MINE	0755-29 SAND
BANKS CONSTRUCTION CO. SANDPIT ROAD MINE	1076-35 SAND
BOHICKET CONSTRUCTION CO., INC. EDINGSVILLE ONE	1090-19 SAND; SAND/CLAY
TRI-COUNTY INVESTMENTS LLC. MAD DOG #3 MINE	1105-35 SAND
POWERS MINING CO. POWERS PIT	1378-29 SAND; SAND/CLAY
BANKS CONSTRUCTION CO., INC. BIVENS MINE	1273-35 SAND; SAND/CLAY
ROGERS & SON CONSTRUCTION CONE TRACT/ASHLEY DISTRICT	1350-35 SAND; SAND/CLAY

Water Quantity

WATER USER (TYPE) *WATERBODY*	*REGULATED CAPACITY (MGD)* *PUMPING CAPACITY (MGD)*
CITY OF CHARLESTON EDISTO RIVER	100.00 150.00

Growth Potential

A high growth potential is projected for the upper portion of the watershed surrounding the Cottageville area. The Cottageville growth along U.S. Highway 17A to Charleston is one of the fastest growing areas in the state. There is a low to moderate growth potential for the lower portion of the watershed, primarily in the unincorporated areas centered around the Town of Edisto Beach. Much of the growth is tourism-based and thus elicits primarily seasonal influence on the area. Only a small proportion of the town is sewered and there are no plans to expand the sewer service area. However, the Town of Edisto Beach will extend sewer lines to serve areas where septic systems have failed (at owner expense). The ORW classification of most of the waters in this watershed prohibits new point source discharges of wastewater to surface waters. Growth that occurs will have to rely primarily on septic tanks and/or land application systems.

03050205-070

(North Edisto River)

General Description

Watershed 03050205-070 is located in Charleston County and consists primarily of the ***North Edisto River*** and its tributaries. The watershed occupies 110,311 acres of the Coastal Zone region of South Carolina. The predominant soil types consist of an association of the Bohicket-Yonges-Kiawah-Foxworth-Wadmalaw series. The erodibility of the soil (K) averages 0.15, and the slope of the terrain averages 1%, with a range of 0-6%. Land use/land cover in the watershed includes: 33.8% forested land, 26.5% water, 15.0% agricultural land, 12.4% nonforested wetland (marsh), 8.4% forested wetland (swamp), 2.6% barren land, and 1.3% urban land.

The Dawho River joins the Wadmalaw River to form the North Edisto River (ORW), which drains into the Atlantic Ocean. There are a total of 381.1 acres of lake waters, and 11,600.4 acres of estuarine areas in this watershed. The Dawho River accepts drainage from the Edisto River watershed (03050205-060), Fishing Creek, and North Creek before merging with the Wadmalaw River. With the exception of North Creek (SFH), all these streams are classified ORW.

Upstream from the confluence, Church Creek (Raven Point Creek) flows into Wadmalaw Sound and is also connected to Bohicket Creek near Hoopstick Island. Also draining into the sound are the Stono River and Oyster House Creek. New Cut connects the Stono River to Church Creek. The Wadmalaw River flows out of Wadmalaw Sound and accepts drainage from Gibson Creek, Toogoodoo Creek (Lower Toogoodoo Creek, Swinton Creek), Wee Creek, and Tom Point Creek (also known as McLeod Creek) before merging with the Dawho River. Tom Point Creek is connected to Toogoodoo Creek through Garden Creek. Church Creek is classified ORW from Wadmalaw Sound to Raven Point Creek, and SFH from Raven Point Creek to Hoopstick Island. All the remaining streams are classified ORW.

Downstream from the confluence, Whooping Island Creek (Sand Creek) and Russel Creek join to form Steamboat Creek (Long Creek), which drains into the North Edisto River. Also draining into the North Edisto River are Westbank Creek, Leadenwah Creek, Bohicket Creek (Adams Creek, Fickling Creek), Ocella Creek, South Creek (Townsend River, Frampton Creek), and Privateer Creek. Frampton Creek and Townsend Creek (ORW) also drain directly into the ocean via Frampton Inlet (ORW). The Atlantic Intracoastal Waterway runs through Watts Cut and North Creek, down the Dawho River, up into the Wadmalaw River, through Wadmalaw Sound, and into the Stono River and the Santee River Basin.

Surface Water Quality

Station #	Type	Class	Description
RT-01665	RT01	SFH	DAWHO RIVER, 0.8 MI DOWNSTREAM OF S.C. 174
MD-120	P/INT	ORW	DAWHO RIVER AT SC 174, 9 MILES N OF EDISTO BEACH STATE PARK
MD-261	INT	SFH	YONGES ISLAND CREEK; MARKER #90

MD-195	P/W	SFH	CHURCH CREEK AT SC 700, 1 MILE SW OF CEDAR SPRINGS
MD-209	P/INT	ORW	BOHICKET CREEK AT FICKLING CREEK
RO-01145	RO01	SFH	BOHICKET CREEK NEAR CHERRY POINT LANDING NEAR ROCKVILLE
MD-210	S/W	ORW	BOHICKET CREEK MOUTH AT NORTH EDISTO RIVER
MD-262	INT	SFH	NORTH EDISTO RIVER AT LEADENWAH CREEK
RT-01652	RT01	SFH	TRIBUTARY TO OCELLA CREEK, 3 MI SW OF ROCKVILLE
MD-211	S/W	ORW	NORTH EDISTO RIVER MOUTH BETWEEN KIAWAH ISLAND & BOTANY BAY ISLAND

North Edisto River – There are two SCDHEC monitoring sites along the North Edisto River. This is a tidally influenced system with significant marsh drainage, characterized by naturally low dissolved oxygen concentrations. Although dissolved oxygen excursions were noted at both sites, they were typical of values seen in such systems and considered natural, not standards violations. Aquatic life and recreational uses are fully supported at the upstream site ***(MD-262)***. At the downstream site ***(MD-211)***, aquatic life uses are fully supported; however, there is a significant increasing trend in turbidity. There is a significant decreasing trend in pH. Prior to 2001, this was a secondary monitoring station and sampling was intentionally biased towards periods with potentially low dissolved oxygen concentrations. A significant decreasing trend in five-day biochemical oxygen demand suggests improving conditions for this parameter. Recreational uses are fully supported, and a significant decreasing trend in fecal coliform bacteria concentration suggests improving conditions for this parameter.

Yonges Island Creek (MD-261) – Aquatic life uses are not supported due to turbidity excursions. This is a tidally influenced system with significant marsh drainage, characterized by naturally low dissolved oxygen concentration. Although dissolved oxygen excursions were noted, they were typical of values seen in such systems and are considered natural, not standards violations. Recreational uses are fully supported.

Tributary to Ocella Creek (RT-01652) – Aquatic life uses and recreational uses are fully supported. This is a tidally influenced system with significant marsh drainage, characterized by naturally low dissolved oxygen concentration. Although dissolved oxygen excursions were noted, they were typical of values seen in such systems and are considered natural, not standards violations.

Dawho River - There are two SCDHEC monitoring sites along the Dawho River, and recreational uses are fully supported at both sites. At the site outside of the main channel ***(RT-01665)***, aquatic life uses are not supported due to dissolved oxygen and turbidity excursions. At the site along the main channel ***(MD-120)***, aquatic life uses are again not supported due to dissolved oxygen and turbidity excursions. A very high concentration of lead and high concentrations of chromium and nickel were measured in the 2000 sediment sample. Lead exceeded the Effects Range Low (ERL) concentration but was less than the Effects Range Median (ERM) concentration. In the 1997 sediment sample, Chlordane exceeded the ERM concentration. Significant decreasing trends in five-day biochemical oxygen demand and total nitrogen concentration suggest improving conditions for these parameters at this site.

Church Creek (MD-195) - Aquatic life uses are not supported due to dissolved oxygen excursions, and there is also a significant increasing trend in turbidity. This is a tidally influenced system with significant marsh drainage, characterized by naturally low dissolved oxygen concentrations. Natural conditions in this stream may have contributed to the observed low dissolved oxygen values. Significant decreasing trends in five-day biochemical oxygen demand and total nitrogen concentration suggest improving conditions for these parameters. Recreational uses are fully supported.

Bohicket Creek - There are three SCDHEC monitoring sites along Bohicket Creek, and recreational uses are fully supported at all sites. At the upstream site ***(MD-209)***, aquatic life uses are not supported due to dissolved oxygen excursions. There is a significant decreasing trend in pH. Significant decreasing trends in five-day biochemical oxygen demand and total phosphorus concentration suggest improving conditions for these parameters. High concentrations of chromium, lead and nickel were measured in the 1999 sediment sample. Lead exceeded the Effects Range Low (ERL) concentration but was less than the Effects Range Median (ERM) concentration. A significant decreasing trend in fecal coliform concentration suggests improving conditions for this parameter at this site. Further downstream ***(RO-01145)***, aquatic life uses are fully supported.

Near the confluence with the North Edisto River ***(MD-210)***, aquatic life uses are fully supported. Prior to 2001, this was a secondary monitoring station and sampling was intentionally biased towards periods with potentially low dissolved oxygen concentrations. A significant decreasing trend in five-day biochemical oxygen demand suggests improving conditions for this parameter. A very high concentration of cadmium was measured in the 1998 sediment sample. Cadmium exceeded the Effects Range Low (ERL) concentration but was less than the Effects Range Median (ERM) concentration. P,P' DDT was detected in the 1997 sediment sample. The measurement exceeded the ERL concentration, but was less than the ERM concentration. Although the use of DDT was banned in 1973, it is very persistent in the environment. This is a tidally influenced system with significant marsh drainage, which are often characterized by naturally low dissolved oxygen concentrations. Although dissolved oxygen excursions were noted, they were typical of values seen in such systems and considered natural, not standards violations.

Shellfish Monitoring Stations

Station #	Description
11-15	STONO RIVER (AIWW) AT MARKER #63
12-48	FIRST STORMWATER OUTFALL IN HTWTRS OF SAND CR (1998-98)
12-49	DOCK MIDWAY STATIONS 48&50 (1996-96)
12A-09	ADAMS CREEK AT BOHICKET CREEK
12A-10	ROCKVILLE BOAT LANDING
12A-11	ADAMS CREEK BETWEEN ADAMS CREEK MARINA AND SHRIMP DOCK
12A-13	BOHICKET CREEK AT FICKLING CREEK
12A-14	S.C. 700 BRIDGE OVER BOHICKET CREEK
12A-20	BOHICKET CREEK OPPOSITE HOOPSTICK ISLAND
12A-21	OPPOSITE OLD DAM BEHIND RAST HOUSE RESTAURANT

Station #	Description
12A-22	Opposite Boy Scout Camp
12A-29	Raven Point Creek at confluence with Church Creek
12A-31	Southwest boundary of Prohibited Area at Bohicket Marina
12A-32	Privateer Creek up mile at fork
12A-38	Drainage discharge 1/8 mi E of power lines, N bank of Church Creek
12A-39	Confl. of Church Creek and small tidal Ck – 350 yds W S.C. 700 bridge, N side of Church Ck
12A-40	Pine Creek at first fork
12A-41	Confluence of Church Creek and New Cut
12A-46	Bohicket Creek midway between Sta.. 21 and 22 at small unnamed tributary on west bank
12B-01	Mouth of Church Creek, Marker #77
12B-02	Goshen Point, Marker #69
12B-03	Yonges Island Creek, at center of metal trade dock
12B-04	Toogoodoo Creek at confluence with AIWW, Marker #102
12B-05	Dawho Creek, Marker #110
12B-06	Steamboat Creek, Marker #2
12B-07	Westbank Creek at North Edisto River, opposite Leadenwah Creek
12B-08	Leadenwah Creek at North Edisto River
12B-09	Dawho Creek, Marker #119
12B-10	South boundary of Protected Area at Metal Trades Dock
12B-12	Leadenwah Creek 1 mile from confluence with North Edisto River
12B-30	Tom Point Creek at Park Island
12B-33	Confluence of Ocella Creek and South Creek
12B-34	Toogoodoo Creek SSG at last creek before fork
12B-35	Public boat ramp, Lower Toogoodoo Creek
12B-36	Confluence of Tom Point Creek and North Edisto River
12B-37	Confluence of Steamboat Creek and Russell Creek
12B-42	Headwaters of Ocella Creek
12B-43	Russell Creek at estuary entering Sunbelt Clam Farms
12B-44	Toogoodoo Creek midway between Stations 4 and 34
12B-45	Toogoodoo Creek at the second bend past the confluence with Lower Toogoodoo Creek
12B-47	Sand Creek bridge at Hwy 174
12B-50	Sand Creek at intake to Westendorf Clam Farm
12B-51	Wadmalaw Sound at day beacon #80
12B-52	Confluence of Whooping Island Creek and Steamboat Creek
12B-53	Dawho River, Marker #126
12B-54	Tom Point Creek, 3 bends upstream of Station #30
13-16	Highway 174 bridge over North creek (1993-98)
13-19	Russell Creek at Area 12/13 boundary (1993-98)

NPDES Program

Active NPDES Facilities

RECEIVING STREAM *FACILITY NAME* *PERMITTED FLOW @ PIPE (MGD)*	*NPDES#* *TYPE* *COMMENT*
NORTH CREEK (AIWW & WHOOPING IS. CK) PARADISE SHRIMP FARMS OF S.C. PIPE #: 001 & 002 FLOW: M/R	SC0040401 MINOR INDUSTRIAL

BOHICKET CREEK TRIBUTARY THREE OAKS/CHICKEN FARM MINE PIPE #: 001 FLOW: M/R	SCG730083 MINOR INDUSTRIAL
WEE CREEK BEARS BLUFF NATIONAL FISH HATCHERY PIPE #: 001 FLOW: M/R	SC0047848 MINOR INDUSTRIAL

Nonpoint Source Management Program

Land Disposal Activities

Land Application Sites

LAND APPLICATION SYSTEM *FACILITY NAME*	*ND#* *TYPE*
SPRAY IRRIGATION ON GOLF COURSES TOWN OF SEABROOK ISLAND	ND0063347 DOMESTIC

Mining Activities

MINING COMPANY *MINE NAME*	*PERMIT #* *MINERAL*
GUY L. BUCKNER JOHNS ISLAND #1	0122-19 SAND
JOHNNY R. FREEMAN PRIVATE PROPERTY	1258-19 SAND; SAND/CLAY
RENTZ LANDCLEARING RENTZ MINE	0994-19 SAND; SAND/CLAY
LOIS CRIST TLC SERVICES TLC1 - BRODIE LAKE	1263-19 SAND; SAND/CLAY
CHARLESTON CO. PUBLIC WORKS DEPT. EDISTO PIT	1038-19 SAND; SAND/CLAY
LAFARGE MATERIALS, INC. JAMISON	0206-75 CLAY

Growth Potential

There is a low potential for growth in this rural agricultural-based watershed, which contains the Towns of Rockville, Seabrook Island and Meggett, and portions of the Town of Hollywood and the City of Charleston. The ORW classification of most of the waters in this watershed prohibits new point source discharges of wastewater to surface waters. Growth that occurs will have to rely on septic tanks and/or land application (ND) systems.

03050206-010

(Four Hole Swamp)

General Description

Watershed 03050206-010 is located in Orangeburg and Calhoun Counties and consists primarily of ***Four Hole Swamp*** and its tributaries from its origin to Bull Swamp. The watershed occupies 51,523 acres of the Upper Coastal Plain region of South Carolina. The predominant soil types consist of an association of the Noboco-Dothan-Rains-Wagram-Lakeland series. The erodibility of the soil (K) averages 0.15 and the slope of the terrain averages 3%, with a range of 0-6%. Land use/land cover in the watershed includes: 48.0% agricultural land, 36.4% forested land, 8.9% forested wetland (swamp), 2.9% urban land, 2.8% barren land, 0.7% water, and 0.3% nonforested wetland (marsh).

This section of Four Hole Swamp originates near the Town of St. Matthews and flows through Bull Pond before accepting drainage from Bay Branch, Flea Bite Creek, Cook Branch, Gin Branch, and Bull Swamp (Little Bull Swamp, Gramling Creek). There are a total of 63.8 stream miles and 114.5 acres of lake waters in this watershed. Four Hole Swamp, Bull Swamp, and Gramling Creek are classified FW* (site specific classification requires DO not less than 4.0 mg/l and pH between 5.0-8.5), and the remaining streams are classified FW.

Surface Water Quality

Station #	Type	Class	Description
E-022	S/W	FW*	GRAMLING CREEK AT CULVERT ON SC 33, 2 MILES E OF ORANGEBURG
E-076	S/W	FW	LITTLE BULL SWAMP AT SC 33 BELOW UTICA TOOL CO.
E-589	BIO	FW*	LITTLE BULL SWAMP AT SR 154

Gramling Creek (E-022) - Aquatic life uses are not supported due to dissolved oxygen excursions. There is a significant decreasing trend in pH. This is a blackwater system, characterized by naturally low pH and dissolved oxygen concentrations. Natural conditions in this stream may have contributed to the observed low dissolved oxygen values. This is also a secondary monitoring station and sampling is intentionally biased towards periods with potentially low dissolved oxygen concentrations. Significant decreasing trends in five-day biochemical oxygen demand and turbidity suggest improving conditions for these parameters. Recreational uses are not supported due to fecal coliform bacteria excursions.

Little Bull Swamp – There are two SCDHEC monitoring sites along Little Bull Swamp. Aquatic life uses are not supported at the upstream site ***(E-076)*** due to dissolved oxygen excursions, compounded by significant decreasing trends in dissolved oxygen concentration. There is a significant decreasing trend in pH. This is a blackwater system, characterized by naturally low pH and dissolved oxygen values. Natural conditions in this stream may have contributed to observed low pH and dissolved oxygen values. This is also a secondary monitoring station and sampling is intentionally biased towards periods with potentially low dissolved oxygen concentrations. A high concentration of chromium was detected in the

1998 sediment sample. Significant decreasing trends in five-day biochemical oxygen demand and turbidity suggest improving conditions for these parameters. Recreational uses are partially supported at this site due to fecal coliform bacteria excursions. At the downstream site ***(E-589)***, aquatic life uses are partially supported based on macroinvertebrate community data.

NPDES Program

Active NPDES Facilities

RECEIVING STREAM *FACILITY NAME* *PERMITTED FLOW @ PIPE (MGD)*	*NPDES#* *TYPE* *COMMENT*
GRAMBLING CREEK CWS/ROOSEVELT GARDEN APTS PIPE #: 001 FLOW: 0.0676	SC0029645 MINOR DOMESTIC
GRAMBLING CREEK ELECTROLUX HOME PRODUCTS PIPE #: 001-005 FLOW: M/R	SCG250130 MINOR INDUSTRIAL

Nonpoint Source Management Program

Land Disposal Activities

Land Application Sites

LAND APPLICATION SYSTEM *FACILITY NAME*	*ND#* *TYPE*
TILE FIELD EASTWOOD SD	ND0067288 DOMESTIC

Mining Activities

MINING COMPANY *MINE NAME*	*PERMIT #* *MINERAL*
LAFARGE MATERIALS, INC. JAMISON CLAY PIT	0206-75 CLAY
T&N ENTERPRISES ELLOREE MINE	0942-75 CLAY

Growth Potential

There is a low potential for growth in this watershed, which contains the Town of Cameron and a portion of the City of Orangeburg. Interstate 26 bisects the watershed with interchanges at U.S. 601 and S.C. 33 and should encourage some growth around the interchanges. Rail lines parallel U.S. 601 and S.C. 33, which run out of the City of Orangeburg. U.S. 176 parallels I-26 and runs through the Town of Cameron.

03050206-020

(Four Hole Swamp)

General Description

Watershed 03050206-020 is Orangeburg and Calhoun Counties and consists primarily of ***Four Hole Swamp*** and its tributaries from Bull Swamp to Cow Castle Creek. The watershed occupies 72,553 acres of the Upper and Lower Coastal Plain regions of South Carolina. The predominant soil types consist of an association of the Rains-Goldsboro-Hobcaw-Lynchburg-Mouzon series. The erodibility of the soil (K) averages 0.15 and the slope of the terrain averages 1%, with a range of 0-2%. Land use/land cover in the watershed includes: 51.4% agricultural land, 27.1% forested land, 14.5% forested wetland (swamp), 4.1% urban land, 2.3% barren land, 0.3% water, and 0.3% nonforested wetland (marsh).

As a reach of Four Hole Swamp, this watershed accepts the drainage from all streams entering the swamp system upstream. This section of Four Hole Swamp also accepts drainage from Middle Pen Swamp, Polk Spring Creek, Indian Camp Branch, Goodbys Swamp (Keller Branch), Mill Branch, and Bush Branch. There are a total of 120.3 stream miles and 145.4 acres of lake waters in this watershed. Four Hole Swamp and Middle Pen Swamp are classified FW* (site specific classification requires DO not less than 4.0 mg/l and pH between 5.0-8.5), and the remaining streams are classified FW.

Surface Water Quality

Station #	Type	Class	Description
E-059	P/INT	FW	FOUR HOLE SWAMP AT S-38-50, 5.2 MILES SE OF CAMERON
RS-01036	RS01/BIO	FW*	GOODBYS SWAMP AT U.S. 176, 6 MI SW OF ELLOREE
E-111	W/INT	FW*	FOUR HOLE SWAMP AT SC 210

Four Hole Swamp – There are two SCDHEC monitoring sites along this section of Four Hole Swamp, and recreational uses are partially supported at both sites due to fecal coliform bacteria excursions. At the upstream site ***(E-059)***, aquatic life uses are fully supported. P,P'DDE and P,P'DDE (metabolites of DDT) were detected in the 1998 sediment sample. Although the use of DDT was banned in 1973, it is very persistent in the environment. Significant decreasing trends in five-day biochemical oxygen demand, turbidity, and total suspended solids suggest improving conditions for these parameters. At the downstream site ***(E-111)***, aquatic life uses are not supported due to dissolved oxygen excursions.

Goodbys Swamp (RS-01036) – Aquatic life uses are fully supported based on macroinvertebrate community. Recreational uses are not supported due to fecal coliform excursions.

NPDES Program

Active NPDES Facilities

RECEIVING STREAM *FACILITY NAME* *PERMITTED FLOW @ PIPE (MGD)*	*NPDES#* *TYPE* *COMMENT*
MIDDLE PEN SWAMP CONNIE MAXWELL CHILDRENS HOME PIPE #: 001 FLOW: 0.009	SC0032671 MINOR DOMESTIC

Nonpoint Source Management Program

Mining Activities

MINING COMPANY *MINE NAME*	*PERMIT #* *MINERAL*
LAFARGE MATERIALS, INC. FELKEL MINE	0939-75 CLAY

Growth Potential

There is a low to moderate potential for growth in selected areas of this watershed, which contains portions of the City of Orangeburg and the Town of Elloree. Interstate 26 crosses this watershed and should promote some growth around the interchange of U.S. 301 out of the City of Orangeburg. U.S. 176 also crosses U.S. 301 as it parallels I-26.

03050206-030

(Cow Castle Creek)

General Description

Watershed 03050206-030 is located in Orangeburg County and consists primarily of ***Cow Castle Creek*** and its tributaries. The watershed occupies 43,495 acres of the Lower Coastal Plain region of South Carolina. The predominant soil types consist of an association of the Goldsboro-Lynchburg-Rains series. The erodibility of the soil (K) averages 0.17 and the slope of the terrain averages 1%, with a range of 0-2%. Land use/land cover in the watershed includes: 44.2% agricultural land, 35.6% forested land, 14.3% forested wetland (swamp), 3.7% barren land, 1.7% urban land, 0.3% nonforested wetland (marsh), and 0.2% water.

Cow Castle Creek originates near the City of Orangeburg and accepts drainage from Crum Branch, Buck Branch, and Patrick Branch before flowing into Four Hole Swamp. There are a total of 77.2 stream miles and 302.5 acres of lake waters in this watershed, all classified FW.

Surface Water Quality

Station #	Type	Class	Description
E-050	W/INT	FW	COW CASTLE CREEK AT S-38-170

Cow Castle Creek (E-050) – Aquatic life uses are fully supported. This is a blackwater system, characterized by naturally low pH and dissolved oxygen concentrations. Natural conditions in this stream may have contributed to the observed low dissolved oxygen values. Recreational uses are partially supported due to fecal coliform bacteria excursions.

Groundwater Quality

Well #	Class	Aquifer	Location
AMB-004	GB	BLACK CREEK	BOWMAN

NPDES Program

Active NPDES Facilities

RECEIVING STREAM *FACILITY NAME* *PERMITTED FLOW @ PIPE (MGD)*	*NPDES#* *TYPE* *COMMENT*
COW CASTLE CREEK TOWN OF BOWMAN PIPE #: 001 FLOW: 0.236	SC0040037 MINOR DOMESTIC

Growth Potential

Interstate 26 crosses this watershed and should promote some growth around the two interchanges near the Town of Bowman. U.S. 178 parallels I-26 and runs through Bowman.

03050206-040

(Four Hole Swamp)

General Description

Watershed 03050206-040 is located in Orangeburg and Dorchester Counties and consists primarily of ***Four Hole Swamp*** and its tributaries from Cow Castle Creek to Dean Swamp. The watershed occupies 66,545 acres of the Lower Coastal Plain region of South Carolina. The predominant soil types consist of an association of the Goldsboro-Rains-Lynchburg-Hobcaw series. The erodibility of the soil (K) averages 0.17 and the slope of the terrain averages 1%, with a range of 0-2%. Land use/land cover in the watershed includes: 33.9% forested land, 33.4% forested wetland (swamp), 26.0% agricultural land, 3.9% barren land, 1.6% urban land, 0.7% water, and 0.5% nonforested wetland (marsh).

As a reach of Four Hole Swamp, this watershed accepts the drainage from all streams entering the swamp system upstream. This section of Four Hole Swamp also receives drainage from the Cow Castle Creek watershed, the Providence Swamp watershed, Target Swamp, Spring Branch, and Mill Branch. Further downstream Huttos Lake and Rowser Lake drain into Four Hole Swamp. Home Branch originates near the Town of Holly Hill and flows past the Town of Four Holes before entering the swamp. Mill Run and Dam Branch drain into the swamp at the base of the watershed. There are a total of 127.8 stream miles and 391.4 acres of lake waters in this watershed. Four Hole Swamp is classified FW* (site specific classification requires DO not less than 4.0 mg/l and pH between 5.0-8.5), and the remaining streams are classified FW.

Surface Water Quality

Station #	Type	Class	Description
E-112	W/INT	FW*	FOUR HOLE SWAMP AT SC 453

Four Hole Swamp (E-112) - Aquatic life uses are not supported due to dissolved oxygen excursions. Recreational uses are fully supported.

NPDES Program

Active NPDES Facilities

RECEIVING STREAM *FACILITY NAME* *PERMITTED FLOW @ PIPE (MGD)*	*NPDES#* *TYPE* *COMMENT*
FOUR HOLE SWAMP GIANT CEMENT COMPANY, INC. PIPE #: 001 FLOW: 0.0073 PIPE #: 002 FLOW: 2.494 PIPE #: 004 FLOW: 0.140 PIPE #: 005 FLOW: M/R	SC0022667 MINOR INDUSTRIAL

FOUR HOLE SWAMP GA PACIFIC/HOLLY HILL FIBERBOARD PIPE #: 002 FLOW: 1.000	SC0001147 MINOR INDUSTRIAL
HUTTOS LAKE GIANT CEMENT COMPANY, INC. PIPE #: 003 FLOW: 0.545	SC0022667 MINOR INDUSTRIAL
HOME BRANCH HOLCIM (US) INC./HOLLY HILL PLT PIPE #: 001 FLOW: 8.000 PIPE #: 001A FLOW: 0.002	SC0002992 MINOR INDUSTRIAL

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

LANDFILL NAME *FACILITY TYPE*	*PERMIT#* *STATUS*
GIANT CEMENT COMPANY, INC. INDUSTRIAL	IWP-244 ----------
CITY OF HOLLY HILL INDUSTRIAL	IWP-205 (381003-1201; CWP-042); ---------- IWP-024
GA PACIFIC INDUSTRIAL	383304-1601 (IWP-221; CWP-008) ACTIVE

Land Application Sites

LAND APPLICATION SYSTEM *FACILITY NAME*	*ND#* *TYPE*
SPRAY IRRIGATION CITY OF HOLLY HILL	ND0063380 DOMESTIC

Mining Activities

MINING COMPANY *MINE NAME*	*PERMIT #* *MINERAL*
GIANT CEMENT COMPANY, INC. HARLEYVILLE MINE	0120-35 LIMESTONE
HOLNAM, INC. MARL & CLAY QUARRY	0054-75 LIMESTONE

Growth Potential

Interstates 95 and 26 cross in this watershed and should promote some growth around the following interchanges: I-95 & I-26, I-95 & U.S. 178, and I-26 & S.C. 15; U.S. 176 crosses a rail line in the City of Holly Hill.

03050206-050

(Providence Swamp)

General Description

Watershed 03050206-050 is located in Orangeburg County and consists primarily of ***Providence Swamp*** and its tributaries. The watershed occupies 38,641 acres of the Upper and Lower Coastal Plain regions of South Carolina. The predominant soil types consist of an association of the Rains-Goldsboro-Dothan-Noboco-Hobcaw series. The erodibility of the soil (K) averages 0.16 and the slope of the terrain averages 1%, with a range of 0-2%. Land use/land cover in the watershed includes: 55.1% agricultural land, 22.6% forested land, 18.5% forested wetland (swamp), 2.7% barren land, 0.6% urban land, 0.3% nonforested wetland (marsh), and 0.2% water.

The Providence Swamp accepts drainage from White Cane Branch, Cantey Branch (Ball Branch), Buck Branch, Jack Branch, and Horse Range Swamp (Kettle Branch, Bachelor Branch) before flowing into Four Hole Swamp. There are a total of 62.8 stream miles and 88.5 acres of lake waters in this watershed, all classified FW.

Surface Water Quality

Station #	Type	Class	Description
E-051	P/INT	FW	PROVIDENCE SWAMP AT EAST FRONTAGE ROAD TO I-95
E-052	W/INT	FW	HORSE RANGE SWAMP AT U.S. 176

Providence Swamp (E-051) - Aquatic life uses are partially supported due to dissolved oxygen excursions. There is a significant decreasing trend in pH. A significant decreasing trend in five-day biochemical oxygen demand suggests improving conditions for this parameter. Recreational uses are fully supported.

Horse Range Swamp (E-052) – Aquatic life uses are fully supported. This is a blackwater system, which are often characterized by naturally low pH and dissolved oxygen concentrations. Although dissolved oxygen excursions were noted, they were typical of values seen in such systems and considered natural, not standards violations. Recreational uses are partially supported due to fecal coliform bacteria excursions.

Nonpoint Source Management Program

Land Disposal Activities

Land Application Sites

LAND APPLICATION SYSTEM FACILITY NAME	*ND# TYPE*
TILE FIELD I-95 TRUCK STOP	ND0067130 DOMESTIC

Growth Potential

There is a low potential for growth in this watershed, which contains portions of the Towns of Santee and Vance. I-95 crosses the watershed and some growth may occur around the interchanges of I-95 & U.S. 176 and I-95 & U.S. 15.

Watershed Protection and Restoration Strategies

Special Studies

S.C. State University is the lead organization in a study of Horse Range Swamp, which is threatened by concentrations of fecal coliform bacteria. No permitted discharge facilities are located in the impaired watershed, and it is highly probable that the high concentrations of fecal coliform bacteria are associated with nonpoint source (NPS) pollution. Forestry and agriculture are the prevailing land uses in the watershed. Virtually all of the homes in the watershed are old and use individual septic tanks. Other potential sources include a horse ranch and stable and a racetrack. Preliminary studies of the area showed that many residents are frequently unaware of the ways that their farms, homes, and homestead practices contribute to water quality impairments. The objective of the project is to reduce NPS pollution from the homes and agricultural land uses in the impaired watershed. The project was initiated in 2001 and will conclude in 2004.

The strategies of the project are to investigate specific sources of water quality impairments and to reduce NPS contamination of fecal coliform bacteria by: (1) monitoring water quality in watershed streams and inventorying land uses to identify potential sources of fecal coliform; (2) educating and assisting landowners with livestock, poultry and other animals on their property to implement BMP manure and litter fertilizer application practices, and BMP methods designed to control animal waste from compromising adjacent stream systems; (3) educating and assisting homeowners to implement responsible management of home septic systems, yards and gardens; (4) implementing an education program for the youth in the watershed to promote their "early" awareness of, motivation/interest and skills in, and practice of BMPs, responsible homestead practices, and other water pollution prevention practices.

03050206-060

(Dean Swamp)

General Description

Watershed 03050206-060 is located in Orangeburg and Berkeley Counties and consists primarily of ***Dean Swamp*** and its tributaries. The watershed occupies 66,753 acres of the Upper and Lower Coastal Plain regions of South Carolina. The predominant soil types consist of an association of the Rains-Lynchburg-Goldsboro-Hobcaw series. The erodibility of the soil (K) averages 0.17 and the slope of the terrain averages 1%, with a range of 0-2%. Land use/land cover in the watershed includes: 46.5% forested land, 33.2% agricultural land, 14.9% forested wetland (swamp), 4.4% barren land, 0.7% urban land, and 0.3% nonforested wetland (marsh).

Sandy Run (Moon Savanna) originates near the Town of Eutawville and accepts the drainage of Cedar Swamp (Toney Bay) before merging with Black Creek (Little Black Creek) to form Dean Swamp, which also accepts the drainage of Briner Branch before draining into Four Hole Swamp. There are a total of 127.5 stream miles and 52.8 acres of lake waters in this watershed, all classified FW.

Surface Water Quality

Station #	Type	Class	Description
E-596	BIO	FW	CEDAR SWAMP AT CEMENT BRIDGE ROAD OFF SR 640
E-030	W/INT	FW	DEAN SWAMP AT U.S. 176

Dean Swamp (E-030) - Aquatic life uses are fully supported. This is a blackwater system, which are often characterized by naturally low pH and dissolved oxygen concentrations. Although dissolved oxygen excursions were noted, they were typical of values seen in such systems and considered natural, not standards violations. Recreational uses are fully supported.

Cedar Swamp (E-596) - Aquatic life uses are fully supported based on macroinvertebrate community data.

Groundwater Quality

Well #	Class	Aquifer	Location
AMB-052	GB	PEE DEE	EUTAW SPRINGS

NPDES Program

Active NPDES Facilities

RECEIVING STREAM *FACILITY NAME* *PERMITTED FLOW @ PIPE (MGD)*	*NPDES#* *TYPE* *COMMENT*
SANDY RUN TRIBUTARY MARTIN MARIETTA/ORANGEBURG PIPE #: 001 FLOW: M/R	SCG730268 MINOR INDUSTRIAL
SANDY RUN TRIBUTARY MARTIN MARIETTA/BERKELEY QUARRY PIPE #: 001 FLOW: M/R	SCG730058 MINOR INDUSTRIAL

Nonpoint Source Management Program

Mining Activities

MINING COMPANY *MINE NAME*	*PERMIT #* *MINERAL*
MARTIN MARIETTA AGGREGATES BERKELEY QUARRY	0098-15 LIMESTONE
MARTIN MARIETTA AGGREGATES ORANGEBURG QUARRY	0802-75 LIMESTONE

Growth Potential

There is a low potential for growth in this watershed, which contains portions of the City of Holly Hill and the Town of Eutawville. A rail line and S.C. 453 runs from Holly Hill to the Eutawville. This road is bisected by U.S.176 in Holly Hill.

03050206-070

(Four Hole Swamp)

General Description

Watershed 03050206-070 is located in Dorchester and Berkeley Counties and consists primarily of ***Four Hole Swamp*** and its tributaries from Dean Swamp to its confluence with the Edisto River. The watershed occupies 78,723 acres of the Lower Coastal Plain region of South Carolina. The predominant soil types consist of an association of the Hobcaw-Mouzon-Albany-Daleville-Rains series. The erodibility of the soil (K) averages 0.20 and the slope of the terrain averages 1%, with a range of 0-2%. Land use/land cover in the watershed includes: 51.5% forested land, 28.6% forested wetland (swamp), 13.7% agricultural land, 1.0% urban land, 4.5% barren land, 0.4% nonforested wetland (marsh), and 0.3% water.

As a reach of Four Hole Swamp, this watershed accepts the drainage from all streams entering the swamp system upstream. This section of Four Hole Swamp accepts drainage from Merkel Branch (Lake Merkel), Santee Branch (Rock Branch), and Walnut Branch (Coldwater Branch, Little Walnut Branch, Cane Branch, Crawford Branch, Lang Branch, Deep Branch, Marshall Branch) near the Town of Dorchester. Halfway Gut Creek enters the swamp next, followed by Timothy Creek, which flows past the Town of Ridgeville. Powder Horn Branch drains into the swamp at the base of the watershed. There are a total of 151.9 stream miles and 177.2 acres of lake waters in this watershed. Four Hole Swamp is classified FW* (site specific classification requires DO not less than 4.0 mg/l and pH between 5.0-8.5), and the remaining streams are classified FW. The Francis Beidler Forest, a nature preserve, is another natural resource in the watershed.

Surface Water Quality

Station #	Type	Class	Description
E-100	P/W	FW*	FOUR HOLE SWAMP AT US 78, E. OF DORCHESTER
E-015A	W/INT	FW*	FOUR HOLE SWAMP AT S-18-19

Four Hole Swamp - There are two SCDHEC monitoring sites along this section of Four Hole Swamp. At the upstream site **(E-100)**, aquatic life uses are partially supported due to chromium excursions, compounded by significant increasing trends in turbidity and total suspended solids. There is a significant increasing trend in pH. Significant decreasing trends in five-day biochemical oxygen demand and total nitrogen concentration suggest improving conditions for these parameters. The phthalate ester di-n-butylphthalate was detected in the 1998 sediment sample. Recreational uses are partially supported at this site due to fecal coliform bacteria excursions. At the downstream site **(E-015A)**, aquatic life and recreational uses are fully supported. A significant decreasing trend in five-day biochemical oxygen demand suggests improving conditions for this parameter.

NPDES Program

Active NPDES Facilities

RECEIVING STREAM *FACILITY NAME* *PERMITTED FLOW @ PIPE (MGD)*	*NPDES#* *TYPE* *COMMENT*
TIMOTHY CREEK SHOWA DENKO CARBON INDUSTRIES PIPE #: 001 FLOW: 0.086	SC0038555 MAJOR INDUSTRIAL
TIMOTHY CREEK D&A PARTNERSHIP/RIDGEVILLE PIT PIPE #: 001 FLOW: M/R	SCG730073 MINOR INDUSTRIAL
DEEP BRANCH GIANT CEMENT CO./WASHIE RD SAND MINE PIPE #: 001 FLOW: M/R	SCG730224 MINOR INDUSTRIAL
MARSHALL BRANCH D&A PARTNERSHIP/CARTER PIT PIPE #: 001 FLOW: M/R	SCG730021 MINOR INDUSTRIAL
FOUR HOLE SWAMP SANDERS BROTHERS CONSTR./BIG OAK MINE PIPE #: 001 FLOW: M/R	SCG730024 MINOR INDUSTRIAL

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

LANDFILL NAME *FACILITY TYPE*	*PERMIT#* *STATUS*
SANDY PINES LANDFILL MUNICIPAL	182401-1101 CLOSED
OAKRIDGE LANDFILL DOMESTIC	182400-1101 (DWP-130) ACTIVE
DORCHESTER COUNTY LANDFILL/DEE LEE SITE MUNICIPAL	DWP-080 CLOSED

Mining Activities

MINING COMPANY *MINE NAME*	*PERMIT #* *MINERAL*
DORCHESTER DIRT CO., INC. DIAMOND MINE #3	1027-35 SAND; SAND/CLAY
D&A PARTNERSHIP CARTER MINE	1047-35 SAND; SAND/CLAY

D&A PARTNERSHIP GIVENS MINE	1085-35 SAND; SAND/CLAY
SANDERS BROTHERS BIG OAK MINE	1031-35 SAND
LAFARGE MATERIALS, INC. HARLEYVILLE QUARRY	0110-35 LIMESTONE
GIANT CEMENT CO. WASHIE ROAD SAND MINE	1163-35 SAND
DORCHESTER MINING, INC. DORCHESTER MINE	0923-35 SAND; SAND/CLAY
MORGAN CORPORATION MORGAN MINE	1000-35 SAND; SAND/CLAY
D&A PARTNERSHIP RIDGEVILLE MINE	0870-35 CLAY

Growth Potential

Interstate 26 bisects this watershed and some growth may occur near the interchanges at the Towns of Harleyville and Ridgeville. A rail line and U.S. 178/78 parallels I-26; another rail line crosses U.S.78 at S.C. 453.

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APPENDIX A.

Watershed Boundary Changes

Watershed Boundary Changes

SCDHEC Geographic Features		Original 11-digit HU Code	Revised 11-digit HU Code
NPDES	*Pipe #*		
SC0002992	001	03050202070	03050206040

APPENDIX B.

Edisto River Basin

Ambient Water Quality Monitoring Site Descriptions

Station #	Type	Class	Description
03050203-010			
E-091	P	FW	CHINQUAPIN CREEK AT SC 391 5.5 MI S BATESBURG
E-601	BIO	FW	CHINQUAPIN CREEK AT SR 210
E-101	S	FW	LIGHTWOOD KNOT CREEK OFF S-32-77, AT BATESBURG WATER INTAKE
E-600	BIO	FW	LIGHTWOOD KNOT CREEK AT UNNAMED ROAD W OF SR160
03050203-020			
E-084	W	FW	NORTH FORK EDISTO RIVER AT S-02-74
E-102	W	FW	NORTH FORK EDISTO RIVER AT S-02-110
03050203-030			
E-599	BIO	FW	BLACK CREEK AT SR 278
E-103	W	FW	BLACK CREEK AT S-32-53 (RAMBO BRIDGE)
03050203-040			
E-092	P	FW	NORTH FORK EDISTO RIVER AT SC 3, 5.5 MI NW OF NORTH
E-104	W	FW	NORTH FORK EDISTO RIVER AT S-38-73
03050203-050			
E-591	BIO	FW	BULL SWAMP CREEK AT SC 6
E-034	S	FW	BULL SWAMP CREEK AT CULVERT, 1.1 MI NW OF SWANSEA
E-035	S	FW	BULL SWAMP CREEK AT US 321, 0.9 MI S OF SWANSEA
E-042	W/BIO	FW	BULL SWAMP CREEK AT S-38-189
03050203-060			
E-593	BIO	FW	GREAT BRANCH AT SC 4
E-099	P	FW	NORTH FORK EDISTO RIVER AT S-38-74, NW ORANGEBURG
03050203-070			
E-105	W	FW*	Caw Caw Swamp at S-38-1032
03050203-080			
E-007	P	FW	NORTH FORK EDISTO RIVER AT US 601 AT ORANGEBURG
E-007A	S	FW	NORTH FORK EDISTO RIVER AT POWER LINE CROSSING, 2 MI BELOW E-007
E-007B	S	FW	NORTH FORK EDISTO RIVER, 4 MILES BELOW E-007 AT A CABIN
E-007C	P	FW	NORTH FORK EDISTO RIVER AT POLICEMAN CAMP, 6 MILES BELOW E-007
E-008	P	FW	NORTH FORK EDISTO RIVER AT S-38-39, WSW OF ROWESVILLE
E-008A	W	FW	NORTH FORK EDISTO RIVER AT S-38-63
03050204-010			
E-001	S	FW	FIRST BRANCH AT S-19-41, BESIDE WATER PLANT AT JOHNSTON
E-002	S	FW	SOUTH FORK EDISTO RIVER AT S-19-57, BELOW JOHNSTON WWTP
E-090	P/BIO	FW	SOUTH FORK EDISTO RIVER AT US 1, 12 MI NE OF AIKEN
E-578	BIO	FW	MCTIER CREEK AT S-02-209
E-021	W	FW	SOUTH FORK EDISTO RIVER AT SC 302
03050204-020			
E-579	BIO	FW	SHAW CREEK AT S-02-153
E-094	P	FW	SHAW CREEK AT S-02-26, 4.2 MILES NE OF AIKEN
E-106	W	FW	SHAW CREEK AT S-02-576

Station #	Type	Class	Description
03050204-030			
E-595	BIO	FW	YARROW BRANCH AT SR 161
E-011	W	FW	SOUTH FORK EDISTO RIVER AT SC 39
03050204-040			
E-107	W	FW	DEAN SWAMP CREEK AT SC 4
03050204-050			
E-029	BIO	FW	WINDY HILL CREEK AT SR 38
E-012	S	FW	SOUTH FORK EDISTO RIVER AT S-38-39 BRIDGE
03050204-060			
E-036/E-598	S/BIO	FW	GOODLAND CREEK AT SC 4, 2.1 MILES E OF SPRINGFIELD
03050204-070			
E-592	BIO	FW	ROBERTS SWAMP AT SR 690
E-039	W	FW	ROBERTS SWAMP AT SC 332
03050205-010			
E-013	P	FW	EDISTO RIVER AT US 78, W OF BRANCHVILLE
E-013A	W	FW	EDISTO RIVER AT US 21
03050205-020			
E-108	W	FW	CATTLE CREEK AT S-18-19
03050205-030			
E-014	S	FW	EDISTO RIVER AT US 15, S OF ST. GEORGE
E-086	P	FW	EDISTO RIVER AT S-18-29
03050205-040			
E-016	P	FW*	POLK SWAMP AT S-18-180, 2 MILES S OF ST. GEORGE
E-109	W	FW*	POLK SWAMP AT S-18-19
E-597	BIO	FW*	INDIAN FIELD SWAMP AT US 78
E-032	W	FW*	INDIAN FIELD SWAMP AT S-18-19
03050205-050			
E-015	P	FW	EDISTO RIVER AT SC 61, AT GIVHANS FERRY STATE PARK
03050205-060			
E-015	P	FW	EDISTO RIVER AT SC 61 AT GIVHANS FERRY STATE PARK
MD-119	P	FW/ORW	EDISTO RIVER AT US 17, 12.5 MILES NW OF RAVENEL
MD-244	W	SFH	SOUTH EDISTO RIVER BELOW ST. PIERRE CREEK
03050205-070			
MD-120	P	ORW	DAWHO RIVER AT SC 174, 9 MILES N OF EDISTO BEACH STATE PARK
MD-195	P	SFH	CHURCH CREEK AT SC 700, 1 MILE SW OF CEDAR SPRINGS
MD-209	P	ORW	BOHICKET CREEK AT FICKLING CREEK
MD-210	S	ORW	BOHICKET CREEK MOUTH AT NORTH EDISTO RIVER
MD-211	S	ORW	NORTH EDISTO RIVER MOUTH BETWEEN KIAWAH IS. & BOTANY BAY IS.
03050206-010			
E-022	S	FW*	GRAMLING CREEK AT CULVERT ON SC 33, 2 MILES E OF ORANGEBURG
E-076	S	FW	LITTLE BULL CREEK AT SC 33 BELOW UTICA TOOL CO.
E-590	BIO	FW*	BULL SWAMP AT SR 154

Station #	Type	Class	Description
03050206-010 (CONTINUED)			
E-589	BIO	FW*	GRAMLING CREEK AT SR 154
E-059	P	FW*	FOUR HOLE SWAMP AT S-38-50, 5.2 MILES SE OF CAMERON
03050206-020			
E-111	W	FW*	FOUR HOLE SWAMP AT SC 210
03050206-030			
E-050	W	FW	COW CASTLE CREEK AT S-38-170
03050206-040			
E-112	W	FW*	FOUR HOLE SWAMP AT SC 453
03050206-050			
E-051	P	FW	PROVIDENCE SWAMP AT EAST FRONTAGE ROAD TO I-95
E-052	W	FW	HORSE RANGE SWAMP AT US 176
03050206-060			
E-596	BIO	FW	CEDAR SWAMP AT CEMENT BRIDGE ROAD OFF SR 640
E-030	W	FW	DEAN SWAMP AT US 176
03050206-070			
E-100	P	FW*	FOUR HOLE SWAMP AT US 78, E. OF DORCHESTER
E-015A	W	FW*	FOUR HOLE SWAMP AT S-18-19

For further details concerning sampling frequency and parameters sampled, please visit our website at *www.scdhec.gov/eqc/admin/html/eqcpubs.html#wqreports* for the current State of S.C. Monitoring Strategy.

Water Quality Data

Spreadsheet Legend

Station Information:

STATION NUMBER Station ID

TYPE SCDHEC station type code

- **P** = Primary station, sampled monthly all year round
- **S** = Secondary station, sampled monthly May - October
- **P*** = Secondary station upgraded to primary station parameter coverage and sampling frequency for basin study
- **W** = Special watershed station added for the Saluda River Basin study
- **BIO** = Indicates macroinvertebrate community data assessed
- **INT** = Integrator Station (approximates a Primary station)
- **RL** = Random Lake station
- **RO** = Random Open water station
- **RS** = Random Stream station
- **RT** = Random Tide Creek station

WATERBODY NAME Stream or Lake Name

CLASS Stream classification at the point where monitoring station is located

Parameter Abbreviations and Parameter Measurement Units:

DO	Dissolved Oxygen (mg/l)	**NH3**	Ammonia (mg/l)
BOD	Five-Day Biochemical Oxygen Demand (mg/l)	**CD**	Cadmium (ug/l)
pH	pH (SU)	**CR**	Chromium (ug/l)
TP	Total Phosphorus (mg/l)	**CU**	Copper (ug/l)
TN	Total Nitrogen (mg/l)	**PB**	Lead (ug/l)
TURB	Turbidity (NTU)	**HG**	Mercury (ug/l)
TSS	Total Suspended Solids (mg/l)	**NI**	Nickel (ug/l)
BACT	Fecal Coliform Bacteria (#/100 ml)	**ZN**	Zinc (ug/l)

Statistical Abbreviations:

N	For *standards compliance*, number of surface samples collected between January 1997 and December 2001. For *trends*, number of surface samples collected between January 1984 and December 2001. For total phosphorus, an additional trend period of January 1992 to December 2001 is also reported.
EXC.	Number of samples contravening the appropriate standard
%	Percentage of samples contravening the appropriate standard
MEAN EXC.	Mean of samples that contravened the applied standard
MED	For *heavy metals with a human health criterion*, this is the median of all surface samples between January 1997 and December 2001. DL indicates that the median was the detection limit.
MAG	Magnitude of any statistically significant trend, ave. change/yr, expressed in parameter measurement units
GEO MEAN	Geometric mean of fecal coliform bacteria samples collected between January 1997 and December 2001

Key to Trends:

D	Statistically significant decreasing trend in parameter concentration
I	Statistically significant increasing trend in parameter concentration
*	No statistically significant trend
Blank	Insufficient data to test for long term trends

EDISTO RIVER BASIN WATER QUALITY SUMMARY

STATION				DO	DO	DO	MEAN	TRENDS (87 -2001)					
NUMBER	TYPE	WATERBODY NAME	CLASS	N	EXC.	%	EXC.	DO	N	MAG	BOD	N	MAG
03050203010													
RS-01004	RS01	HORSE PEN CK	FW	6	1	17	1.80						
E-091	P	CHINQUAPIN CK	FW	60	2	3	3.850	*	180	0	D	178	-0.071
E-101	S	LIGHTWOOD KNOT CK	FW	34	2	6	4.845	D	92	-0.082	I	87	0.05
E-600	BIO	LIGHTWOOD KNOT CK	FW										
03050203020													
E-084	SE	N FORK EDISTO RVR	FW	21	0	0							
E-102	SE	N FORK EDISTO RVR	FW	21	0	0							
03050203030													
E-599	BIO	BLACK CREEK	FW										
E-103/ RS-01298	SE/RS01	BLACK CREEK	FW	32	0	0							
03050203040													
E-092	P	N FORK EDISTO RVR	FW	59	0	0		I	177	0.034	D	175	-0.017
E-104	SE	N FORK EDISTO RVR	FW	19	0	0							
03050203050													
E-034	S	BULL SWAMP CK	FW	33	24	73	3.673	I	91	0.083	I	87	0.017
E-035	S	BULL SWAMP CK	FW	32	0	0		*	92	0.008	D	87	-0.044
E-042	SE/BIO	BULL SWAMP CK	FW	19	0	0							
03050203060													
E-099	P	N FORK EDISTO RVR	FW	57	0	0		I	178	0.027	D	176	-0.022
03050203070													
RS-01021	RS01	MACK BRANCH	FW	10	0	0							
E-105	SE	CAW CAW SWAMP	FW*	19	0	0							
03050203080													
E-007	P	N FORK EDISTO RVR	FW	58	0	0		*	141	0.013	*	143	0
E-007A	S	N FORK EDISTO RVR	FW	35	0	0		*	94	0.004	*	94	0
E-007B	S	N FORK EDISTO RVR	FW	35	0	0		*	93	0	I	92	0.014
E-007C	P	N FORK EDISTO RVR	FW	57	0	0		*	142	0.006	D	142	-0.013
E-008	P/BIO	N FORK EDISTO RVR	FW	59	0	0		I	178	0.05	D	177	-0.033
E-008A	SE	N FORK EDISTO RVR	FW	21	0	0							
03050204010													
E-001	S	FIRST BRANCH	FW	24	3	13	3.900	*	77	0	D	78	-0.149
E-002	S	S FORK EDISTO RVR	FW	33	0	0		*	91	0	D	90	-0.129
E-090	P/BIO	S FORK EDISTO RVR	FW	59	1	2	0.40	I	179	0.037	D	178	-0.017
E-578	BIO	MCTIER CK	FW										
RS-01034	RS01/BIO	ROCKY SPRINGS CK	FW	11	0	0							
E-021	SE	S FORK EDISTO RVR	FW	20	0	0							

EDISTO RIVER BASIN WATER QUALITY SUMMARY

STATION				pH	pH	pH	MEAN	TRENDS (87-2001)			TURB	TURB	TURB	MEAN	TRENDS (87-2001)		
NUMBER	TYPE	WATERBODY NAME	CLASS	N	EXC.	%	EXC.	PH	N	MAG	N	EXC.	%	EXC.	TURB	N	MAG
03050203010																	
RS-01004	RS01	HORSE PEN CK	FW	6	1	17	5.62				7	1	14	80			
E-091	P	CHINQUAPIN CK	FW	59	3	5	5.863	*	179	0	59	1	2	65	D	177	-0.201
E-101	S	LIGHTWOOD KNOT CK	FW	34	4	12	6.345	*	92	0.017	34	0	0		*	86	-0.044
E-600	BIO	LIGHTWOOD KNOT CK	FW														
03050203020																	
E-084	SE	N FORK EDISTO RVR	FW	21	10	48	5.752				21	0	0				
E-102	SE	N FORK EDISTO RVR	FW	21	14	67	5.449				21	0	0				
03050203030																	
E-599	BIO	BLACK CREEK	FW														
E-103/ RS-01298	SE/RS01	BLACK CREEK	FW	32	19	59	5.521				31	0	0				
03050203040																	
E-092	P	N FORK EDISTO RVR	FW	59	38	64	5.561	*	178	-0.005	59	0	0		*	176	-0.029
E-104	SE	N FORK EDISTO RVR	FW	19	10	53	5.565				19	0	0				
03050203050																	
E-034	S	BULL SWAMP CK	FW	33	30	91	5.513	*	91	0	35	0	0		*	91	0.033
E-035	S	BULL SWAMP CK	FW	32	3	9	5.477	*	92	0.004	35	0	0		*	92	-0.011
E-042	SE/BIO	BULL SWAMP CK	FW	19	7	37	5.621				19	0	0				
03050203060																	
E-099	P	N FORK EDISTO RVR	FW	57	31	54	5.699	*	178	0.011	57	0	0		*	177	0
03050203070																	
RS-01021	RS01	MACK BRANCH	FW	9	6	67	5.193				12	0	0				
E-105	SE	CAW CAW SWAMP	FW*	19	0	0					19	0	0				
03050203080																	
E-007	P	N FORK EDISTO RVR	FW	59	30	51	5.547	D	143	-0.044	59	0	0		D	143	-0.088
E-007A	S	N FORK EDISTO RVR	FW	35	19	54	5.631	*	94	-0.01	35	0	0		*	94	-0.079
E-007B	S	N FORK EDISTO RVR	FW	35	16	46	5.604	*	93	0	35	0	0		*	93	-0.042
E-007C	P	N FORK EDISTO RVR	FW	58	18	31	5.671	D	143	-0.025	58	0	0		*	143	-0.082
E-008	P/BIO	N FORK EDISTO RVR	FW	60	12	20	5.860	*	179	-0.008	59	1	2	111	*	178	-0.025
E-008A	SE	N FORK EDISTO RVR	FW	21	4	19	5.683				21	0	0				
03050204010																	
E-001	S	FIRST BRANCH	FW	25	1	4	5.60	D	78	-0.043	26	1	4	100	D	78	-0.395
E-002	S	S FORK EDISTO RVR	FW	34	1	3	5.87	*	92	-0.003	35	0	0		D	91	-0.55
E-090	P/BIO	S FORK EDISTO RVR	FW	58	12	21	5.882	D	178	-0.027	59	0	0		D	176	-0.11
E-578	BIO	MCTIER CK	FW														
RS-01034	RS01/BIO	ROCKY SPRINGS CK	FW	11	11	100	5.253				11	0	0				
E-021	SE	S FORK EDISTO RVR	FW	20	10	50	5.608				20	0	0				

EDISTO RIVER BASIN WATER QUALITY SUMMARY

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	TP N	TP EXC.	TP %	MEAN EXC.	TRENDS (92-2001) TP	TRENDS (92-2001) N	TRENDS (92-2001) MAG	TRENDS (87-2001) TP	TRENDS (87-2001) N	TRENDS (87-2001) MAG
03050203010													
RS-01004	RS01	HORSE PEN CK	FW										
E-091	P	CHINQUAPIN CK	FW					*	74	-0.003	D	131	-0.011
E-101	S	LIGHTWOOD KNOT CK	FW					I	31	0.001	D	60	-0.005
E-600	BIO	LIGHTWOOD KNOT CK	FW										
03050203020													
E-084	SE	N FORK EDISTO RVR	FW										
E-102	SE	N FORK EDISTO RVR	FW										
03050203030													
E-599	BIO	BLACK CREEK	FW										
E-103/ RS-01298	SE/RS01	BLACK CREEK	FW										
03050203040													
E-092	P	N FORK EDISTO RVR	FW					*	75	0	*	133	0
E-104	SE	N FORK EDISTO RVR	FW										
03050203050													
E-034	S	BULL SWAMP CK	FW					*	36	0	*	64	0
E-035	S	BULL SWAMP CK	FW					D	36	-0.003	D	65	-0.003
E-042	SE/BIO	BULL SWAMP CK	FW										
03050203060													
E-099	P	N FORK EDISTO RVR	FW					*	73	0	*	128	0
03050203070													
RS-01021	RS01	MACK BRANCH	FW										
E-105	SE	CAW CAW SWAMP	FW*										
03050203080													
E-007	P	N FORK EDISTO RVR	FW					*	67	0	D	96	-0.001
E-007A	S	N FORK EDISTO RVR	FW					*	35	-0.001	D	63	-0.002
E-007B	S	N FORK EDISTO RVR	FW					*	35	0	D	62	-0.006
E-007C	P	N FORK EDISTO RVR	FW					*	69	0.001	D	96	-0.005
E-008	P/BIO	N FORK EDISTO RVR	FW					*	73	0	D	130	-0.008
E-008A	SE	N FORK EDISTO RVR	FW										
03050204010													
E-001	S	FIRST BRANCH	FW					D	36	-0.006	D	58	-0.004
E-002	S	S FORK EDISTO RVR	FW					*	35	-0.016	D	61	-0.026
E-090	P/BIO	S FORK EDISTO RVR	FW					*	78	0	D	131	-0.002
E-578	BIO	MCTIER CK	FW										
RS-01034	RS01/BIO	ROCKY SPRINGS CK	FW										
E-021	SE	S FORK EDISTO RVR	FW										

EDISTO RIVER BASIN WATER QUALITY SUMMARY

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	TN N	TN EXC.	TN %	MEAN EXC.	TRENDS (87-2001) TN	TRENDS (87-2001) N	TRENDS (87-2001) MAG	CHL N	CHL EXC.	CHL %	MEAN EXC.	TRENDS (87-2001) TSS	TRENDS (87-2001) N	TRENDS (87-2001) MAG
03050203010																	
RS-01004	RS01	HORSE PEN CK	FW														
E-091	P	CHINQUAPIN CK	FW					I	139	0.052							
E-101	S	LIGHTWOOD KNOT CK	FW														
E-600	BIO	LIGHTWOOD KNOT CK	FW														
03050203020																	
E-084	SE	N FORK EDISTO RVR	FW														
E-102	SE	N FORK EDISTO RVR	FW														
03050203030																	
E-599	BIO	BLACK CREEK	FW														
E-103/ RS-01298	SE/RS01	BLACK CREEK	FW														
03050203040																	
E-092	P	N FORK EDISTO RVR	FW					*	141	0.003							
E-104	SE	N FORK EDISTO RVR	FW														
03050203050																	
E-034	S	BULL SWAMP CK	FW														
E-035	S	BULL SWAMP CK	FW														
E-042	SE/BIO	BULL SWAMP CK	FW														
03050203060																	
E-099	P	N FORK EDISTO RVR	FW					*	135	0.007							
03050203070																	
RS-01021	RS01	MACK BRANCH	FW														
E-105	SE	CAW CAW SWAMP	FW*														
03050203080																	
E-007	P	N FORK EDISTO RVR	FW					*	75	-0.01							
E-007A	S	N FORK EDISTO RVR	FW														
E-007B	S	N FORK EDISTO RVR	FW														
E-007C	P	N FORK EDISTO RVR	FW					*	81	-0.002							
E-008	P/BIO	N FORK EDISTO RVR	FW					*	140	-0.002					*	159	-0.015
E-008A	SE	N FORK EDISTO RVR	FW														
03050204010																	
E-001	S	FIRST BRANCH	FW														
E-002	S	S FORK EDISTO RVR	FW														
E-090	P/BIO	S FORK EDISTO RVR	FW					D	138	-0.018							
E-578	BIO	MCTIER CK	FW														
RS-01034	RS01/BIO	ROCKY SPRINGS CK	FW								1	0	0				
E-021	SE	S FORK EDISTO RVR	FW														

EDISTO RIVER BASIN WATER QUALITY SUMMARY

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	GEO MEAN	BACT N	BACT EXC.	BACT %	MEAN EXC.	TRENDS (87-2001) BACT	TRENDS (87-2001) N	TRENDS (87-2001) MAG	NH3 N	NH3 EXC.	NH3 %	CD N	CD EXC.	CD %	MEAN EXC.
03050203010																		
RS-01004	RS01	HORSE PEN CK	FW	378.1	8	3	38	2900.0				3	0	0	2	0	0	
E-091	P	CHINQUAPIN CK	FW	382.3	60	36	60	909.7	*	178	2.406	51	0	0	20	0	0	
E-101	S	LIGHTWOOD KNOT CK	FW	31.9	36	1	3	1300.0	D	89	-15.018	6	0	0	12	0	0	
E-600	BIO	LIGHTWOOD KNOT CK	FW															
03050203020																		
E-084	SE	N FORK EDISTO RVR	FW	66.0	21	0	0					15	0	0	7	0	0	
E-102	SE	N FORK EDISTO RVR	FW	85.8	21	1	5	600.0				14	0	0	7	0	0	
03050203030																		
E-599	BIO	BLACK CREEK	FW															
E-103/ RS-01298	SE/RS01	BLACK CREEK	FW	99.7	32	3	9	1480.0				21	0	0	11	0	0	
03050203040																		
E-092	P	N FORK EDISTO RVR	FW	118.0	59	0	0		I	176	5.128	52	0	0	20	0	0	
E-104	SE	N FORK EDISTO RVR	FW	74.8	18	0	0					14	0	0	7	0	0	
03050203050																		
E-034	S	BULL SWAMP CK	FW	121.9	37	2	5	710.0	*	93	2.313	6	0	0	4	0	0	
E-035	S	BULL SWAMP CK	FW	141.7	37	2	5	860.0	*	94	2.283	6	0	0	11	0	0	
E-042	SE/BIO	BULL SWAMP CK	FW	63.6	19	0	0					14	0	0	7	0	0	
03050203060																		
E-099	P	N FORK EDISTO RVR	FW	134.8	57	6	11	713.3	I	177	4.372	50	0	0	20	0	0	
03050203070																		
RS-01021	RS01	MACK BRANCH	FW	283.7	13	1	8	510.0				6	0	0	4	0	0	
E-105	SE	CAW CAW SWAMP	FW*	150.2	19	1	5	450.0				13	0	0	7	0	0	
03050203080																		
E-007	P	N FORK EDISTO RVR	FW	96.3	59	3	5	483.3	*	142	0	51	0	0	20	0	0	
E-007A	S	N FORK EDISTO RVR	FW	110.9	35	5	14	562.0	I	93	4.153	6	0	0	4	0	0	
E-007B	S	N FORK EDISTO RVR	FW	74.1	35	2	6	435.0	*	92	0	6	0	0	4	0	0	
E-007C	P	N FORK EDISTO RVR	FW	76.9	58	5	9	554.0	*	142	-1.668	52	0	0	20	0	0	
E-008	P/BIO	N FORK EDISTO RVR	FW	82.1	59	0	0		*	177	0	52	0	0	19	1	5	13
E-008A	SE	N FORK EDISTO RVR	FW	93.2	21	0	0					15	0	0	7	0	0	
03050204010																		
E-001	S	FIRST BRANCH	FW	39.5	26	1	4	570.0	D	77	-6.022	3	0	0	2	0	0	
E-002	S	S FORK EDISTO RVR	FW	92.2	35	2	6	525.0	*	92	0	7	0	0	4	0	0	
E-090	P/BIO	S FORK EDISTO RVR	FW	125.0	59	2	3	460.0	*	177	-0.607	51	0	0	20	0	0	
E-578	BIO	MCTIER CK	FW															
RS-01034	RS01/BIO	ROCKY SPRINGS CK	FW	91.3	11	1	9	540.0				6	0	0	4	0	0	
E-021	SE	S FORK EDISTO RVR	FW	109.2	21	2	10	900.0				13	0	0	7	0	0	

EDISTO RIVER BASIN WATER QUALITY SUMMARY

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	CR N	CR EXC.	CR %	MEAN EXC.	CU N	CU EXC.	CU %	MEAN EXC.	PB N	PB EXC.	PB %	MEAN EXC.	HG N	HG EXC.	HG %
03050203010																		
RS-01004	RS01	HORSE PEN CK	FW	2	0	0		2	0	0		2	0	0		2	0	0
E-091	P	CHINQUAPIN CK	FW	20	0	0		19	0	0		20	0	0		20	0	0
E-101	S	LIGHTWOOD KNOT CK	FW	12	0	0		12	0	0		12	0	0		12	0	0
E-600	BIO	LIGHTWOOD KNOT CK	FW															
03050203020																		
E-084	SE	N FORK EDISTO RVR	FW	7	0	0		7	0	0		7	0	0		7	0	0
E-102	SE	N FORK EDISTO RVR	FW	7	0	0		7	0	0		7	0	0		7	0	0
03050203030																		
E-599	BIO	BLACK CREEK	FW															
E-103/ RS-01298	SE/RS01	BLACK CREEK	FW	11	0	0		11	0	0		11	0	0		11	0	0
03050203040																		
E-092	P	N FORK EDISTO RVR	FW	20	0	0		20	0	0		20	0	0		20	0	0
E-104	SE	N FORK EDISTO RVR	FW	7	0	0		7	0	0		7	0	0		7	0	0
03050203050																		
E-034	S	BULL SWAMP CK	FW	4	0	0		4	0	0		4	0	0		4	0	0
E-035	S	BULL SWAMP CK	FW	11	0	0		11	1	9	22	11	0	0		10	0	0
E-042	SE/BIO	BULL SWAMP CK	FW	7	0	0		7	0	0		7	0	0		7	0	0
03050203060																		
E-099	P	N FORK EDISTO RVR	FW	20	0	0		20	0	0		20	0	0		20	0	0
03050203070																		
RS-01021	RS01	MACK BRANCH	FW	4	0	0		4	0	0		4	0	0		4	0	0
E-105	SE	CAW CAW SWAMP	FW*	7	0	0		6	0	0		7	0	0		7	0	0
03050203080																		
E-007	P	N FORK EDISTO RVR	FW	20	0	0		20	1	5	14	20	0	0		20	0	0
E-007A	S	N FORK EDISTO RVR	FW	4	0	0		4	1	25	16	4	0	0		4	0	0
E-007B	S	N FORK EDISTO RVR	FW	4	0	0		4	1	25	14	4	0	0		4	0	0
E-007C	P	N FORK EDISTO RVR	FW	20	0	0		20	1	5	14	20	0	0		20	0	0
E-008	P/BIO	N FORK EDISTO RVR	FW	19	0	0		19	1	5	27	19	0	0		20	0	0
E-008A	SE	N FORK EDISTO RVR	FW	7	0	0		7	1	14	15	7	0	0		7	0	0
03050204010																		
E-001	S	FIRST BRANCH	FW	2	0	0		2	0	0		2	0	0		2	0	0
E-002	S	S FORK EDISTO RVR	FW	4	0	0		4	0	0		4	0	0		4	0	0
E-090	P/BIO	S FORK EDISTO RVR	FW	20	0	0		20	0	0		20	0	0		20	0	0
E-578	BIO	MCTIER CK	FW															
RS-01034	RS01/BIO	ROCKY SPRINGS CK	FW	4	0	0		4	0	0		4	0	0		4	0	0
E-021	SE	S FORK EDISTO RVR	FW	7	0	0		7	1	14	16	7	0	0		7	0	0

EDISTO RIVER BASIN WATER QUALITY SUMMARY

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	NI N	NI EXC.	NI %	MEAN EXC.	ZN N	ZN EXC.	ZN %	MEAN EXC.
	03050203010										
RS-01004	RS01	HORSE PEN CK	FW	2	0	0		2	0	0	
E-091	P	CHINQUAPIN CK	FW	20	0	0		20	0	0	
E-101	S	LIGHTWOOD KNOT CK	FW	12	0	0		12	0	0	
E-600	BIO	LIGHTWOOD KNOT CK	FW								
	03050203020										
E-084	SE	N FORK EDISTO RVR	FW	7	0	0		7	0	0	
E-102	SE	N FORK EDISTO RVR	FW	7	0	0		7	0	0	
	03050203030										
E-599	BIO	BLACK CREEK	FW								
E-103/ RS-01298	SE/RS01	BLACK CREEK	FW	11	0	0		11	0	0	
	03050203040										
E-092	P	N FORK EDISTO RVR	FW	20	0	0		20	0	0	
E-104	SE	N FORK EDISTO RVR	FW	7	0	0		7	0	0	
	03050203050										
E-034	S	BULL SWAMP CK	FW	4	0	0		4	0	0	
E-035	S	BULL SWAMP CK	FW	11	0	0		11	0	0	
E-042	SE/BIO	BULL SWAMP CK	FW	7	0	0		7	0	0	
	03050203060										
E-099	P	N FORK EDISTO RVR	FW	20	0	0		20	0	0	
	03050203070										
RS-01021	RS01	MACK BRANCH	FW	4	0	0		4	0	0	
E-105	SE	CAW CAW SWAMP	FW*	7	0	0		7	0	0	
	03050203080										
E-007	P	N FORK EDISTO RVR	FW	20	0	0		20	0	0	
E-007A	S	N FORK EDISTO RVR	FW	4	0	0		4	0	0	
E-007B	S	N FORK EDISTO RVR	FW	4	0	0		4	0	0	
E-007C	P	N FORK EDISTO RVR	FW	20	0	0		20	0	0	
E-008	P/BIO	N FORK EDISTO RVR	FW	19	0	0		19	0	0	
E-008A	SE	N FORK EDISTO RVR	FW	7	0	0		7	0	0	
	03050204010										
E-001	S	FIRST BRANCH	FW	2	0	0		2	0	0	
E-002	S	S FORK EDISTO RVR	FW	4	0	0		4	0	0	
E-090	P/BIO	S FORK EDISTO RVR	FW	20	0	0		20	0	0	
E-578	BIO	MCTIER CK	FW								
RS-01034	RS01/BIO	ROCKY SPRINGS CK	FW	4	0	0		4	0	0	
E-021	SE	S FORK EDISTO RVR	FW	7	0	0		7	0	0	

EDISTO RIVER BASIN WATER QUALITY SUMMARY

STATION				DO	DO	DO	MEAN	TRENDS (87 -2001)					
NUMBER	TYPE	WATERBODY NAME	CLASS	N	EXC.	%	EXC.	DO	N	MAG	BOD	N	MAG
03050204020													
E-579	BIO	SHAW CK	FW										
E-094	P	SHAW CK	FW	59	0	0		*	177	0.025	*	175	0
E-106	SE	SHAW CK	FW	20	0	0							
03050204030													
E-595	BIO	YARROW BRANCH	FW										
E-011	SE	S FORK EDISTO RVR	FW	21	0	0							
03050204040													
E-107	SE	DEAN SWAMP CK	FW	21	0	0					*	30	0.004
03050204050													
E-029	BIO	WINDY HILL CK	FW										
RS-01059	RS01	SCRATCHNOSE SWAMP	FW	10	1	10	4.40						
E-012	S/BIO	S FORK EDISTO RVR	FW	39	0	0		*	100	-0.008	*	100	-0.009
03050204060													
E-036	S/BIO	GOODLAND CK	FW	39	1	3	2.60	*	100	-0.036	D	101	-0.025
03050204070													
E-039	SE/BIO	ROBERTS SWAMP	FW	20	1	5	4.90						
03050205010													
E-013	P	EDISTO RVR	FW	58	1	2	3.50	*	179	0.029	D	177	-0.025
E-013A	SE	EDISTO RVR	FW	21	0	0							
03050205020													
E-108	SE/BIO	CATTLE CK	FW	19	1	5	4.60						
03050205030													
E-014	S	EDISTO RVR	FW	29	0	0		*	85	0.023	D	83	-0.05
E-086	P	EDISTO RVR	FW	56	1	2	4.50	I	108	0.1	D	108	-0.086
03050205040													
E-016	P	POLK SWAMP	FW*	57	30	53	1.363	D	133	-0.362	*	129	0
E-109	SE/BIO	POLK SWAMP	FW*	26	15	58	1.815	D	34	-0.523	*	34	0.23
E-597	BIO	INDIAN FIELD SWAMP	FW*										
E-032	SE	INDIAN FIELD SWAMP	FW*	26	4	15	2.753	D	34	-0.281	D	35	-0.171
03050205060													
E-015	P	EDISTO RVR	FW	56	1	2	4.30	*	171	0.02	D	168	-0.046
RS-01040	RS01	EDISTO RVR	FW	10	0	0							
MD-119	P	EDISTO RVR	FW/ORW	57	4	7	4.390	*	172	-0.02	D	168	-0.055
MD-260	INT	SOUTH EDISTO RVR	ORW	10	3	30	4.457						
MD-244	SE	SOUTH EDISTO RVR	SFH	23	3	13	4.747	*	32	0.08	D	30	-0.098
RO-01123	RO01	SOUTH EDISTO RIVER	SFH	11	1	9	4.83						

EDISTO RIVER BASIN WATER QUALITY SUMMARY

STATION				pH	pH	pH	MEAN	TRENDS (87-2001)			TURB	TURB	TURB	MEAN	TRENDS (87-2001)		
NUMBER	TYPE	WATERBODY NAME	CLASS	N	EXC.	%	EXC.	PH	N	MAG	N	EXC.	%	EXC.	TURB	N	MAG
	03050204020																
E-579	BIO	SHAW CK	FW														
E-094	P	SHAW CK	FW	58	29	50	5.652	D	176	-0.033	59	0	0		*	175	0.042
E-106	SE	SHAW CK	FW	20	10	50	5.563				21	1	5	61			
	03050204030																
E-595	BIO	YARROW BRANCH	FW														
E-011	SE	S FORK EDISTO RVR	FW	21	9	43	5.402				22	0	0				
	03050204040																
E-107	SE	DEAN SWAMP CK	FW	21	9	43	5.508				22	0	0		D	30	-0.173
	03050204050																
E-029	BIO	WINDY HILL CK	FW														
RS-01059	RS01	SCRATCHNOSE SWAMP	FW	10	5	50	5.856				11	0	0				
E-012	S/BIO	S FORK EDISTO RVR	FW	39	14	36	5.741	D	100	-0.02	38	0	0		*	99	0
	03050204060																
E-036	S/BIO	GOODLAND CK	FW	39	8	21	5.730	D	100	-0.014	40	0	0		*	101	0
	03050204070																
E-039	SE/BIO	ROBERTS SWAMP	FW	20	0	0					21	0	0				
	03050205010																
E-013	P	EDISTO RVR	FW	57	13	23	5.835	*	178	-0.008	58	0	0		*	177	-0.008
E-013A	SE	EDISTO RVR	FW	21	3	14	5.883				20	0	0				
	03050205020																
E-108	SE/BIO	CATTLE CK	FW	19	0	0					19	0	0				
	03050205030																
E-014	S	EDISTO RVR	FW	29	1	3	5.94	I	84	0.049	28	0	0		I	83	0.25
E-086	P	EDISTO RVR	FW	56	2	4	5.910	I	108	0.041	55	0	0		D	107	-0.153
	03050205040																
E-016	P	POLK SWAMP	FW*	57	0	0		*	132	0	56	0	0		*	131	-0.16
E-109	SE/BIO	POLK SWAMP	FW*	26	0	0		*	34	0.026	26	0	0		*	34	0.51
E-597	BIO	INDIAN FIELD SWAMP	FW*														
E-032	SE	INDIAN FIELD SWAMP	FW*	26	0	0		I	34	0.089	27	0	0		*	35	-0.028
	03050205060																
E-015	P	EDISTO RVR	FW	56	2	4	5.870	I	170	0.032	55	0	0		I	168	0.175
RS-01040	RS01	EDISTO RVR	FW	10	0	0					11	0	0				
MD-119	P	EDISTO RVR	FW/ORW	57	5	9	6.900	I	170	0.038	54	0	0		I	167	0.242
MD-260	INT	SOUTH EDISTO RVR	ORW	10	0	0					10	2	20	51.5			
MD-244	SE	SOUTH EDISTO RVR	SFH	23	0	0		*	32	-0.015	22	5	23	56.6			
RO-01123	RO01	SOUTH EDISTO RIVER	SFH	11	0	0					11	4	36	33.0			

EDISTO RIVER BASIN WATER QUALITY SUMMARY

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	TP N	TP EXC.	TP %	MEAN EXC.	TRENDS (92-2001) TP	TRENDS (92-2001) N	TRENDS (92-2001) MAG	TRENDS (87-2001) TP	TRENDS (87-2001) N	TRENDS (87-2001) MAG
03050204020													
E-579	BIO	SHAW CK	FW										
E-094	P	SHAW CK	FW					I	72	0	*	128	0
E-106	SE	SHAW CK	FW										
03050204030													
E-595	BIO	YARROW BRANCH	FW										
E-011	SE	S FORK EDISTO RVR	FW										
03050204040													
E-107	SE	DEAN SWAMP CK	FW										
03050204050													
E-029	BIO	WINDY HILL CK	FW										
RS-01059	RS01	SCRATCHNOSE SWAMP	FW										
E-012	S/BIO	S FORK EDISTO RVR	FW					*	39	0	*	68	0
03050204060													
E-036	S/BIO	GOODLAND CK	FW					*	42	0.004	*	70	0
03050204070													
E-039	SE/BIO	ROBERTS SWAMP	FW										
03050205010													
E-013	P	EDISTO RVR	FW					*	75	0.002	D	133	-0.003
E-013A	SE	EDISTO RVR	FW										
03050205020													
E-108	SE/BIO	CATTLE CK	FW										
03050205030													
E-014	S	EDISTO RVR	FW					*	35	0	D	60	-0.004
E-086	P	EDISTO RVR	FW					*	66	0	*	66	0
03050205040													
E-016	P	POLK SWAMP	FW*					*	64	0.006	*	86	-0.008
E-109	SE/BIO	POLK SWAMP	FW*										
E-597	BIO	INDIAN FIELD SWAMP	FW*										
E-032	SE	INDIAN FIELD SWAMP	FW*										
03050205060													
E-015	P	EDISTO RVR	FW					*	70	0	D	126	-0.003
RS-01040	RS01	EDISTO RVR	FW										
MD-119	P	EDISTO RVR	FW/ORW					*	74	-0.002	D	129	-0.003
MD-260	INT	SOUTH EDISTO RVR	ORW										
MD-244	SE	SOUTH EDISTO RVR	SFH										
RO-01123	RO01	SOUTH EDISTO RIVER	SFH										

EDISTO RIVER BASIN WATER QUALITY SUMMARY

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	TN N	TN EXC.	TN %	MEAN EXC.	TRENDS (87-2001) TN	TRENDS (87-2001) N	TRENDS (87-2001) MAG	CHL N	CHL EXC.	CHL %	MEAN EXC.	TRENDS (87-2001) TSS	TRENDS (87-2001) N	TRENDS (87-2001) MAG
03050204020																	
E-579	BIO	SHAW CK	FW														
E-094	P	SHAW CK	FW					*	128	0.005							
E-106	SE	SHAW CK	FW														
03050204030																	
E-595	BIO	YARROW BRANCH	FW														
E-011	SE	S FORK EDISTO RVR	FW														
03050204040																	
E-107	SE	DEAN SWAMP CK	FW														
03050204050																	
E-029	BIO	WINDY HILL CK	FW														
RS-01059	RS01	SCRATCHNOSE SWAMP	FW														
E-012	S/BIO	S FORK EDISTO RVR	FW														
03050204060																	
E-036	S/BIO	GOODLAND CK	FW														
03050204070																	
E-039	SE/BIO	ROBERTS SWAMP	FW														
03050205010																	
E-013	P	EDISTO RVR	FW					D	139	-0.01							
E-013A	SE	EDISTO RVR	FW														
03050205020																	
E-108	SE/BIO	CATTLE CK	FW														
03050205030																	
E-014	S	EDISTO RVR	FW														
E-086	P	EDISTO RVR	FW					D	74	-0.022							
03050205040																	
E-016	P	POLK SWAMP	FW*					D	64	-0.044							
E-109	SE/BIO	POLK SWAMP	FW*														
E-597	BIO	INDIAN FIELD SWAMP	FW*														
E-032	SE	INDIAN FIELD SWAMP	FW*														
03050205060																	
E-015	P	EDISTO RVR	FW					D	132	-0.013					I	158	0.017
RS-01040	RS01	EDISTO RVR	FW														
MD-119	P	EDISTO RVR	FW/ORW					D	131	-0.012							
MD-260	INT	SOUTH EDISTO RVR	ORW														
MD-244	SE	SOUTH EDISTO RVR	SFH														
RO-01123	RO01	SOUTH EDISTO RIVER	SFH								6	0	0				

EDISTO RIVER BASIN WATER QUALITY SUMMARY

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	GEO MEAN	BACT N	BACT EXC.	BACT %	MEAN EXC.	TRENDS (87-2001) BACT	TRENDS (87-2001) N	TRENDS (87-2001) MAG	NH3 N	NH3 EXC.	NH3 %	CD N	CD EXC.	CD %	MEAN EXC.
03050204020																		
E-579	BIO	SHAW CK	FW															
E-094	P	SHAW CK	FW	93.7	59	2	3	890.0	*	175	0	51	0	0	20	0	0	
E-106	SE	SHAW CK	FW	99.0	21	0	0					14	0	0	7	0	0	
03050204030																		
E-595	BIO	YARROW BRANCH	FW															
E-011	SE	S FORK EDISTO RVR	FW	79.3	21	2	10	540.0				15	0	0	7	0	0	
03050204040																		
E-107	SE	DEAN SWAMP CK	FW	100.2	21	0	0					16	0	0	7	0	0	
03050204050																		
E-029	BIO	WINDY HILL CK	FW															
RS-01059	RS01	SCRATCHNOSE SWAMP	FW	206.1	11	0	0					5	0	0	4	1	25	14
E-012	S/BIO	S FORK EDISTO RVR	FW	103.8	38	1	3	520.0	I	99	4.641	16	0	0	7	0	0	
03050204060																		
E-036	S/BIO	GOODLAND CK	FW	247.1	39	11	28	560.9	I	98	15.662	17	0	0	7	0	0	
03050204070																		
E-039	SE/BIO	ROBERTS SWAMP	FW	123.3	20	0	0					15	0	0	6	0	0	
03050205010																		
E-013	P	EDISTO RVR	FW	87.5	58	2	3	430.0	*	178	1.01	50	0	0	19	0	0	
E-013A	SE	EDISTO RVR	FW	62.7	21	0	0					13	0	0	7	0	0	
03050205020																		
E-108	SE/BIO	CATTLE CK	FW	159.9	19	4	21	1050.0				17	0	0	7	0	0	
03050205030																		
E-014	S	EDISTO RVR	FW	57.7	28	0	0		*	82	-1.977	5	0	0	4	0	0	
E-086	P	EDISTO RVR	FW	76.5	54	2	4	711.0	*	106	-2.678	51	0	0	20	0	0	
03050205040																		
E-016	P	POLK SWAMP	FW*	215.1	57	18	32	1583.3	*	132	-4.591	51	0	0	20	0	0	
E-109	SE/BIO	POLK SWAMP	FW*	120.0	25	5	20	1034.0	D	33	-30.37	22	0	0	10	0	0	
E-597	BIO	INDIAN FIELD SWAMP	FW*															
E-032	SE	INDIAN FIELD SWAMP	FW*	105.0	26	4	15	2320.0	*	34	0	21	0	0	9	0	0	
03050205060																		
E-015	P	EDISTO RVR	FW	64.2	56	1	2	700.0	*	168	0	52	0	0	20	0	0	
RS-01040	RS01	EDISTO RVR	FW	40.8	11	0	0					6	0	0	4	0	0	
MD-119	P	EDISTO RVR	FW/ORW	79.5	57	2	4	1600.0	*	168	0.883	52	0	0	19	0	0	
MD-260	INT	SOUTH EDISTO RVR	ORW	6.6	10	0	0					3	0	0	4	0	0	
MD-244	SE	SOUTH EDISTO RVR	SFH	2.9	23	0	0		D	30	-0.495	16	0	0	8	0	0	
RO-01123	RO01	SOUTH EDISTO RIVER	SFH	1.3	11	0	0					5	0	0	4	0	0	

EDISTO RIVER BASIN WATER QUALITY SUMMARY

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	CR N	CR EXC.	CR %	MEAN EXC.	CU N	CU EXC.	CU %	MEAN EXC.	PB N	PB EXC.	PB %	MEAN EXC.	HG N	HG EXC.	HG %
03050204020																		
E-579	BIO	SHAW CK	FW															
E-094	P	SHAW CK	FW	20	0	0		20	0	0		20	0	0		20	0	0
E-106	SE	SHAW CK	FW	7	0	0		7	1	14	16	7	0	0		7	0	0
03050204030																		
E-595	BIO	YARROW BRANCH	FW															
E-011	SE	S FORK EDISTO RVR	FW	7	0	0		7	1	14	14	7	0	0		7	0	0
03050204040																		
E-107	SE	DEAN SWAMP CK	FW	7	0	0		7	1	14	14	7	0	0		7	0	0
03050204050																		
E-029	BIO	WINDY HILL CK	FW															
RS-01059	RS01	SCRATCHNOSE SWAMP	FW	4	0	0		4	1	25	28	4	0	0		4	0	0
E-012	S/BIO	S FORK EDISTO RVR	FW	7	0	0		7	2	29	17.5	6	0	0		7	0	0
03050204060																		
E-036	S/BIO	GOODLAND CK	FW	7	0	0		7	1	14	14	7	0	0		7	0	0
03050204070																		
E-039	SE/BIO	ROBERTS SWAMP	FW	6	0	0		6	1	17	16	6	0	0		6	0	0
03050205010																		
E-013	P	EDISTO RVR	FW	19	0	0		19	0	0		19	0	0		19	0	0
E-013A	SE	EDISTO RVR	FW	7	0	0		7	0	0		7	0	0		7	0	0
03050205020																		
E-108	SE/BIO	CATTLE CK	FW	7	0	0		7	0	0		7	0	0		7	0	0
03050205030																		
E-014	S	EDISTO RVR	FW	4	0	0		4	0	0		4	0	0		4	0	0
E-086	P	EDISTO RVR	FW	20	0	0		20	0	0		20	0	0		20	0	0
03050205040																		
E-016	P	POLK SWAMP	FW*	20	0	0		20	0	0		20	0	0		20	0	0
E-109	SE/BIO	POLK SWAMP	FW*	10	0	0		10	1	10	12	10	0	0		10	0	0
E-597	BIO	INDIAN FIELD SWAMP	FW*															
E-032	SE	INDIAN FIELD SWAMP	FW*	9	0	0		9	0	0		9	0	0		9	0	0
03050205060																		
E-015	P	EDISTO RVR	FW	20	0	0		20	0	0		20	0	0		20	0	0
RS-01040	RS01	EDISTO RVR	FW	4	0	0		4	0	0		4	0	0		4	0	0
MD-119	P	EDISTO RVR	FW/ORW	19	0	0		19	0	0		19	0	0		19	0	0
MD-260	INT	SOUTH EDISTO RVR	ORW	4	0	0		4	1	25	14	4	0	0		4	0	0
MD-244	SE	SOUTH EDISTO RVR	SFH	8	0	0		8	0	0		8	0	0		8	0	0
RO-01123	RO01	SOUTH EDISTO RIVER	SFH	4	0	0		4	0	0		4	0	0		4	0	0

EDISTO RIVER BASIN WATER QUALITY SUMMARY

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	NI N	NI EXC.	NI %	MEAN EXC.	ZN N	ZN EXC.	ZN %	MEAN EXC.
03050204020											
E-579	BIO	SHAW CK	FW								
E-094	P	SHAW CK	FW	20	0	0		20	0	0	
E-106	SE	SHAW CK	FW	7	0	0		7	0	0	
03050204030											
E-595	BIO	YARROW BRANCH	FW								
E-011	SE	S FORK EDISTO RVR	FW	7	0	0		7	0	0	
03050204040											
E-107	SE	DEAN SWAMP CK	FW	7	0	0		7	0	0	
03050204050											
E-029	BIO	WINDY HILL CK	FW								
RS-01059	RS01	SCRATCHNOSE SWAMP	FW	4	0	0		4	0	0	
E-012	S/BIO	S FORK EDISTO RVR	FW	7	0	0		7	1	14	100
03050204060											
E-036	S/BIO	GOODLAND CK	FW	7	0	0		7	0	0	
03050204070											
E-039	SE/BIO	ROBERTS SWAMP	FW	6	0	0		6	0	0	
03050205010											
E-013	P	EDISTO RVR	FW	19	0	0		18	1	6	150
E-013A	SE	EDISTO RVR	FW	7	0	0		7	0	0	
03050205020											
E-108	SE/BIO	CATTLE CK	FW	7	0	0		7	0	0	
03050205030											
E-014	S	EDISTO RVR	FW	4	0	0		4	0	0	
E-086	P	EDISTO RVR	FW	20	0	0		20	0	0	
03050205040											
E-016	P	POLK SWAMP	FW*	20	0	0		20	0	0	
E-109	SE/BIO	POLK SWAMP	FW*	10	0	0		10	0	0	
E-597	BIO	INDIAN FIELD SWAMP	FW*								
E-032	SE	INDIAN FIELD SWAMP	FW*	9	0	0		9	0	0	
03050205060											
E-015	P	EDISTO RVR	FW	20	0	0		20	0	0	
RS-01040	RS01	EDISTO RVR	FW	4	0	0		4	0	0	
MD-119	P	EDISTO RVR	FW/ORW	19	0	0		19	1	5	82
MD-260	INT	SOUTH EDISTO RVR	ORW	4	0	0		4	0	0	
MD-244	SE	SOUTH EDISTO RVR	SFH	8	0	0		8	0	0	
RO-01123	RO01	SOUTH EDISTO RIVER	SFH	4	0	0		4	0	0	

EDISTO RIVER BASIN WATER QUALITY SUMMARY

STATION				DO	DO	DO	MEAN	TRENDS (87 -2001)					
NUMBER	TYPE	WATERBODY NAME	CLASS	N	EXC.	%	EXC.	DO	N	MAG	BOD	N	MAG
03050205070													
MD-120	P	DAWHO RVR	ORW	55	13	24	4.338	*	168	0.035	D	163	-0.075
RT-01665	RT01	DAWHO RIVER	ORW	12	5	42	4.530						
MD-261	INT	YONGES ISL CK	ORW	11	3	27	4.480						
MD-195	P	CHURCH CK	SFH	53	18	34	4.181	*	171	-0.018	D	171	-0.05
MD-209	P	BOHICKET CK	ORW	55	16	29	4.241	*	134	0	D	115	-0.051
RO-01145	RO01	BOHICKET CREEK	ORW	12	1	8	4.42						
MD-210	S	BOHICKET CK	ORW	31	7	23	4.586	*	87	0.007	D	74	-0.034
MD-262	INT	NORTH EDISTO RVR	ORW	11	2	18	4.625						
RT-01652	RT01	TRIB TO OCELLA CREEK	ORW	12	2	17	3.905						
MD-211	S	NORTH EDISTO RVR	ORW	37	3	8	4.907	*	94	0.007	D	86	-0.025
03050206010													
E-022	S	GRAMLING CK	FW*	16	5	31	2.630	*	74	-0.064	D	74	-0.15
E-076	S	LITTLE BULL CK	FW	30	16	53	3.603	D	91	-0.113	D	91	-0.067
E-589	BIO	LITTLE BULL SWAMP	FW*										
03050206020													
E-059	P	FOUR HOLE SWAMP	FW*	57	4	7	2.963	*	174	-0.01	D	172	-0.04
RS-01036	RS01/BIO	GOODBYS SWAMP	FW	9	0	0							
E-111	SE	FOUR HOLE SWAMP	FW*	19	2	11	2.650						
03050206030													
E-050	SE	COW CASTLE CK	FW	20	3	15	3.800						
03050206040													
E-112	SE	FOUR HOLE SWAMP	FW*	19	6	32	2.950						
03050206050													
E-051	P	PROVIDENCE SWAMP	FW	47	10	21	3.810	*	160	0.025	D	160	-0.05
E-052	SE	HORSE RANGE SWAMP	FW	18	4	22	3.338						
03050206060													
E-596	BIO	CEDAR SWAMP	FW										
E-030	SE	DEAN SWAMP	FW	19	6	32	3.667						
03050206070													
E-100	P	FOUR HOLE SWAMP	FW*	57	4	7	2.913	*	168	-0.033	D	167	-0.062
E-015A	SE	FOUR HOLE SWAMP	FW*	26	0	0		*	34	-0.015	D	34	-0.125

EDISTO RIVER BASIN WATER QUALITY SUMMARY

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	pH N	pH EXC.	pH %	MEAN EXC.	TRENDS (87-2001) PH	TRENDS (87-2001) N	TRENDS (87-2001) MAG	TURB N	TURB EXC.	TURB %	MEAN EXC.	TRENDS (87-2001) TURB	TRENDS (87-2001) N	TRENDS (87-2001) MAG
03050205070																	
MD-120	P	DAWHO RVR	ORW	54	3	6	8.330	*	166	0	55	17	31	47.9	*	166	0.144
RT-01665	RT01	DAWHO RIVER	ORW	12	0	0					12	4	33	35.5			
MD-261	INT	YONGES ISL CK	ORW	11	0	0					11	4	36	43.0			
MD-195	P	CHURCH CK	SFH	53	0	0		*	170	0	54	3	6	37.0	I	170	0.218
MD-209	P	BOHICKET CK	ORW	55	1	2	8.66	D	134	-0.014	48	3	6	30.0	*	118	0.151
RO-01145	RO01	BOHICKET CREEK	ORW	12	1	8	8.63				12	1	8	53			
MD-210	S	BOHICKET CK	ORW	31	1	3	8.77	*	87	-0.011	26	4	15	39.0	*	75	0.095
MD-262	INT	NORTH EDISTO RVR	ORW	11	1	9	8.59				11	2	18	37.0			
RT-01652	RT01	TRIB TO OCELLA CREEK	ORW	12	1	8	8.59				12	1	8	28			
MD-211	S	NORTH EDISTO RVR	ORW	38	2	5	8.655	D	95	-0.013	32	4	13	42.0	I	85	0.463
03050206010																	
E-022	S	GRAMLING CK	FW*	16	0	0		D	74	-0.025	16	0	0		D	74	-1.015
E-076	S	LITTLE BULL CK	FW	30	10	33	5.740	D	91	-0.024	30	0	0		D	91	-0.282
E-589	BIO	LITTLE BULL SWAMP	FW*														
03050206020																	
E-059	P	FOUR HOLE SWAMP	FW*	57	0	0		*	174	-0.006	57	0	0		D	173	-0.14
RS-01036	RS01/BIO	GOODBYS SWAMP	FW	9	0	0					9	0	0				
E-111	SE	FOUR HOLE SWAMP	FW*	19	0	0					19	0	0				
03050206030																	
E-050	SE	COW CASTLE CK	FW	20	0	0					20	0	0				
03050206040																	
E-112	SE	FOUR HOLE SWAMP	FW*	19	0	0					19	0	0				
03050206050																	
E-051	P	PROVIDENCE SWAMP	FW	47	1	2	5.35	D	160	-0.017	47	1	2	60	*	160	-0.091
E-052	SE	HORSE RANGE SWAMP	FW	18	1	6	5.80				18	0	0				
03050206060																	
E-596	BIO	CEDAR SWAMP	FW														
E-030	SE	DEAN SWAMP	FW	19	0	0					18	0	0				
03050206070																	
E-100	P	FOUR HOLE SWAMP	FW*	57	0	0		I	168	0.023	56	1	2	56	I	166	0.1
E-015A	SE	FOUR HOLE SWAMP	FW*	26	0	0		*	34	0.039	25	0	0		*	33	-0.039

EDISTO RIVER BASIN WATER QUALITY SUMMARY

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	TP N	TP EXC.	TP %	MEAN EXC.	TRENDS (92-2001) TP	TRENDS (92-2001) N	TRENDS (92-2001) MAG	TRENDS (87-2001) TP	TRENDS (87-2001) N	TRENDS (87-2001) MAG
03050205070													
MD-120	P	DAWHO RVR	ORW					*	71	0.003	*	125	0
RT-01665	RT01	DAWHO RIVER	ORW										
MD-261	INT	YONGES ISL CK	ORW										
MD-195	P	CHURCH CK	SFH					*	73	0	D	130	-0.003
MD-209	P	BOHICKET CK	ORW					D	59	-0.003	*	81	0
RO-01145	RO01	BOHICKET CREEK	ORW										
MD-210	S	BOHICKET CK	ORW					*	33	-0.002	D	56	-0.003
MD-262	INT	NORTH EDISTO RVR	ORW										
RT-01652	RT01	TRIB TO OCELLA CREEK	ORW										
MD-211	S	NORTH EDISTO RVR	ORW					*	41	0	D	64	-0.002
03050206010													
E-022	S	GRAMLING CK	FW*					*	36	0	D	64	-0.006
E-076	S	LITTLE BULL CK	FW					*	37	0.006	D	67	-0.003
E-589	BIO	LITTLE BULL SWAMP	FW*										
03050206020													
E-059	P	FOUR HOLE SWAMP	FW*					*	75	0	*	131	0
RS-01036	RS01/BIO	GOODBYS SWAMP	FW										
E-111	SE	FOUR HOLE SWAMP	FW*										
03050206030													
E-050	SE	COW CASTLE CK	FW										
03050206040													
E-112	SE	FOUR HOLE SWAMP	FW*										
03050206050													
E-051	P	PROVIDENCE SWAMP	FW					*	67	0.004	I	120	0.002
E-052	SE	HORSE RANGE SWAMP	FW										
03050206060													
E-596	BIO	CEDAR SWAMP	FW										
E-030	SE	DEAN SWAMP	FW										
03050206070													
E-100	P	FOUR HOLE SWAMP	FW*					*	70	0.001	*	124	0
E-015A	SE	FOUR HOLE SWAMP	FW*										

EDISTO RIVER BASIN WATER QUALITY SUMMARY

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	TN N	TN EXC.	TN %	MEAN EXC.	TRENDS (87-2001) TN	TRENDS (87-2001) N	TRENDS (87-2001) MAG	CHL N	CHL EXC.	CHL %	MEAN EXC.	TRENDS (87-2001) TSS	TRENDS (87-2001) N	TRENDS (87-2001) MAG
03050205070																	
MD-120	P	DAWHO RVR	ORW					D	121	-0.009							
RT-01665	RT01	DAWHO RIVER	ORW								6	0	0				
MD-261	INT	YONGES ISL CK	ORW														
MD-195	P	CHURCH CK	SFH					D	64	-0.014							
MD-209	P	BOHICKET CK	ORW														
RO-01145	RO01	BOHICKET CREEK	ORW								6	0	0				
MD-210	S	BOHICKET CK	ORW														
MD-262	INT	NORTH EDISTO RVR	ORW														
RT-01652	RT01	TRIB TO OCELLA CREEK	ORW								6	0	0				
MD-211	S	NORTH EDISTO RVR	ORW														
03050206010																	
E-022	S	GRAMLING CK	FW*														
E-076	S	LITTLE BULL CK	FW														
E-589	BIO	LITTLE BULL SWAMP	FW*														
03050206020																	
E-059	P	FOUR HOLE SWAMP	FW*					*	139	-0.007					D	103	-0.124
RS-01036	RS01/BIO	GOODBYS SWAMP	FW														
E-111	SE	FOUR HOLE SWAMP	FW*														
03050206030																	
E-050	SE	COW CASTLE CK	FW														
03050206040																	
E-112	SE	FOUR HOLE SWAMP	FW*														
03050206050																	
E-051	P	PROVIDENCE SWAMP	FW					*	118	0.002							
E-052	SE	HORSE RANGE SWAMP	FW														
03050206060																	
E-596	BIO	CEDAR SWAMP	FW														
E-030	SE	DEAN SWAMP	FW														
03050206070																	
E-100	P	FOUR HOLE SWAMP	FW*					D	102	-0.027					I	155	0.017
E-015A	SE	FOUR HOLE SWAMP	FW*														

EDISTO RIVER BASIN WATER QUALITY SUMMARY

STATION				GEO	BACT	BACT	BACT	MEAN	TRENDS (87-2001)			NH3	NH3	NH3	CD	CD	CD	MEAN
NUMBER	TYPE	WATERBODY NAME	CLASS	MEAN	N	EXC.	%	EXC.	BACT	N	MAG	N	EXC.	%	N	EXC.	%	EXC.
03050205070																		
MD-120	P	DAWHO RVR	ORW	51.5	55	5	9	800.0	*	162	-0.335	47	1	2	20	0	0	
RT-01665	RT01	DAWHO RIVER	ORW	34.1	12	1	8	900.0				6	1	17	4	0	0	
MD-261	INT	YONGES ISL CK	ORW	5.6	11	0	0					5	0	0	4	0	0	
MD-195	P	CHURCH CK	SFH	44.2	54	3	6	5666.7	*	168	-0.461	43	1	2	20	0	0	
MD-209	P	BOHICKET CK	ORW	8.3	50	1	2	500.0	D	119	-0.454	29	0	0	17	0	0	
RO-01145	RO01	BOHICKET CREEK	ORW	3.0	12	0	0					1	0	0	4	0	0	
MD-210	S	BOHICKET CK	ORW	2.7	26	0	0		*	76	0	2	0	0	4	0	0	
MD-262	INT	NORTH EDISTO RVR	ORW	3.0	11	0	0					4	0	0	4	0	0	
RT-01652	RT01	TRIB TO OCELLA CREEK	ORW	4.7	12	0	0					3	0	0	4	0	0	
MD-211	S	NORTH EDISTO RVR	ORW	2.2	34	0	0		D	86	0	20	0	0	10	0	0	
03050206010																		
E-022	S	GRAMLING CK	FW*	200.4	16	5	31	606.0	*	73	7.488	3	0	0	2	0	0	
E-076	S	LITTLE BULL CK	FW	77.5	30	6	20	783.3	*	90	-0.716	3	0	0	3	0	0	
E-589	BIO	LITTLE BULL SWAMP	FW*															
03050206020																		
E-059	P	FOUR HOLE SWAMP	FW*	159.6	57	14	25	603.6	*	173	0	50	0	0	20	0	0	
RS-01036	RS01/BIO	GOODBYS SWAMP	FW	226.1	9	5	56	572.0				3	0	0	4	0	0	
E-111	SE	FOUR HOLE SWAMP	FW*	76.1	19	3	16	716.7				15	0	0	6	0	0	
03050206030																		
E-050	SE	COW CASTLE CK	FW	84.5	20	4	20	692.5				15	0	0	6	0	0	
03050206040																		
E-112	SE	FOUR HOLE SWAMP	FW*	59.3	19	0	0					15	0	0	6	0	0	
03050206050																		
E-051	P	PROVIDENCE SWAMP	FW	139.1	47	4	9	582.5	*	159	-2.333	43	0	0	13	0	0	
E-052	SE	HORSE RANGE SWAMP	FW	118.2	18	3	17	833.3				13	0	0	4	0	0	
03050206060																		
E-596	BIO	CEDAR SWAMP	FW															
E-030	SE	DEAN SWAMP	FW	99.7	19	1	5	600.0				15	0	0	6	0	0	
03050206070																		
E-100	P	FOUR HOLE SWAMP	FW*	124.0	55	6	11	660.0	*	164	1.598	54	0	0	20	0	0	
E-015A	SE	FOUR HOLE SWAMP	FW*	99.5	26	1	4	600.0	*	34	-4.863	20	0	0	9	0	0	

EDISTO RIVER BASIN WATER QUALITY SUMMARY

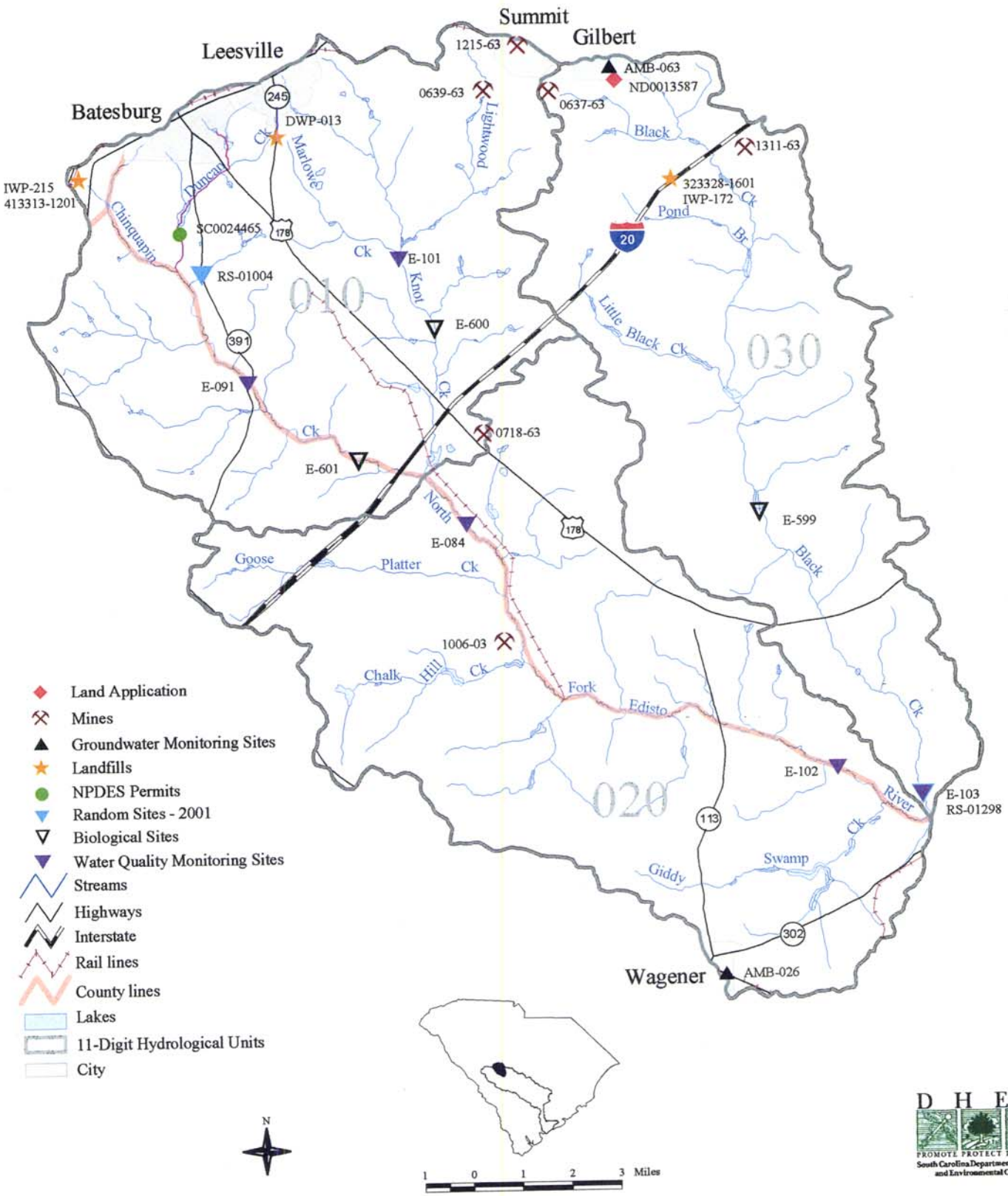
STATION NUMBER	TYPE	WATERBODY NAME	CLASS	CR N	CR EXC.	CR %	MEAN EXC.	CU N	CU EXC.	CU %	MEAN EXC.	PB N	PB EXC.	PB %	MEAN EXC.	HG N	HG EXC.	HG %
03050205070																		
MD-120	P	DAWHO RVR	ORW	20	0	0		20	0	0		20	0	0		20	0	0
RT-01665	RT01	DAWHO RIVER	ORW	4	0	0		4	1	25	20	4	0	0		4	0	0
MD-261	INT	YONGES ISL CK	ORW	4	0	0		4	0	0		4	0	0		4	0	0
MD-195	P	CHURCH CK	SFH	20	0	0		20	0	0		20	0	0		20	0	0
MD-209	P	BOHICKET CK	ORW	17	0	0		17	0	0		17	0	0		17	0	0
RO-01145	RO01	BOHICKET CREEK	ORW	4	0	0		4	0	0		4	0	0		4	0	0
MD-210	S	BOHICKET CK	ORW	4	0	0		4	1	25	20	4	0	0		4	0	0
MD-262	INT	NORTH EDISTO RVR	ORW	4	0	0		4	0	0		4	0	0		4	0	0
RT-01652	RT01	TRIB TO OCELLA CREEK	ORW	4	0	0		4	0	0		4	0	0		4	0	0
MD-211	S	NORTH EDISTO RVR	ORW	10	0	0		10	0	0		10	0	0		10	0	0
03050206010																		
E-022	S	GRAMLING CK	FW*	2	0	0		2	0	0		2	0	0		2	0	0
E-076	S	LITTLE BULL CK	FW	3	0	0		3	0	0		3	0	0		3	0	0
E-589	BIO	LITTLE BULL SWAMP	FW*															
03050206020																		
E-059	P	FOUR HOLE SWAMP	FW*	20	0	0		20	0	0		20	0	0		20	0	0
RS-01036	RS01/BIO	GOODBYS SWAMP	FW	4	0	0		4	0	0		4	0	0		4	0	0
E-111	SE	FOUR HOLE SWAMP	FW*	6	0	0		6	0	0		6	0	0		6	0	0
03050206030																		
E-050	SE	COW CASTLE CK	FW	6	0	0		6	0	0		6	0	0		6	0	0
03050206040																		
E-112	SE	FOUR HOLE SWAMP	FW*	6	0	0		6	0	0		6	0	0		6	0	0
03050206050																		
E-051	P	PROVIDENCE SWAMP	FW	13	0	0		13	0	0		13	0	0		13	0	0
E-052	SE	HORSE RANGE SWAMP	FW	4	0	0		4	0	0		4	0	0		4	0	0
03050206060																		
E-596	BIO	CEDAR SWAMP	FW															
E-030	SE	DEAN SWAMP	FW	6	0	0		6	0	0		6	0	0		6	0	0
03050206070																		
E-100	P	FOUR HOLE SWAMP	FW*	20	2	10	345	20	1	5	20	20	0	0		20	0	0
E-015A	SE	FOUR HOLE SWAMP	FW*	9	0	0		9	0	0		9	0	0		9	0	0

EDISTO RIVER BASIN WATER QUALITY SUMMARY

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	NI N	NI EXC.	NI %	MEAN EXC.	ZN N	ZN EXC.	ZN %	MEAN EXC.
03050205070											
MD-120	P	DAWHO RVR	ORW	20	0	0		20	0	0	
RT-01665	RT01	DAWHO RIVER	ORW	4	0	0		4	0	0	
MD-261	INT	YONGES ISL CK	ORW	4	0	0		4	0	0	
MD-195	P	CHURCH CK	SFH	20	0	0		20	0	0	
MD-209	P	BOHICKET CK	ORW	17	0	0		17	0	0	
RO-01145	RO01	BOHICKET CREEK	ORW	4	0	0		4	0	0	
MD-210	S	BOHICKET CK	ORW	4	0	0		4	0	0	
MD-262	INT	NORTH EDISTO RVR	ORW	4	0	0		4	0	0	
RT-01652	RT01	TRIB TO OCELLA CREEK	ORW	4	0	0		4	0	0	
MD-211	S	NORTH EDISTO RVR	ORW	10	0	0		10	0	0	
03050206010											
E-022	S	GRAMLING CK	FW*	2	0	0		2	0	0	
E-076	S	LITTLE BULL CK	FW	3	0	0		3	0	0	
E-589	BIO	LITTLE BULL SWAMP	FW*								
03050206020											
E-059	P	FOUR HOLE SWAMP	FW*	20	0	0		20	0	0	
RS-01036	RS01/BIO	GOODBYS SWAMP	FW	4	0	0		4	0	0	
E-111	SE	FOUR HOLE SWAMP	FW*	6	0	0		6	0	0	
03050206030											
E-050	SE	COW CASTLE CK	FW	6	0	0		6	0	0	
03050206040											
E-112	SE	FOUR HOLE SWAMP	FW*	6	0	0		6	0	0	
03050206050											
E-051	P	PROVIDENCE SWAMP	FW	13	0	0		13	0	0	
E-052	SE	HORSE RANGE SWAMP	FW	4	0	0		4	0	0	
03050206060											
E-596	BIO	CEDAR SWAMP	FW								
E-030	SE	DEAN SWAMP	FW	6	0	0		6	0	0	
03050206070											
E-100	P	FOUR HOLE SWAMP	FW*	20	1	5	240	20	1	5	96
E-015A	SE	FOUR HOLE SWAMP	FW*	9	0	0		9	0	0	

Chinguapin Creek/Lightwood Knot Creek, North Fork Edisto River, and Black Creek Watersheds

(03050203-010, -020, -030)



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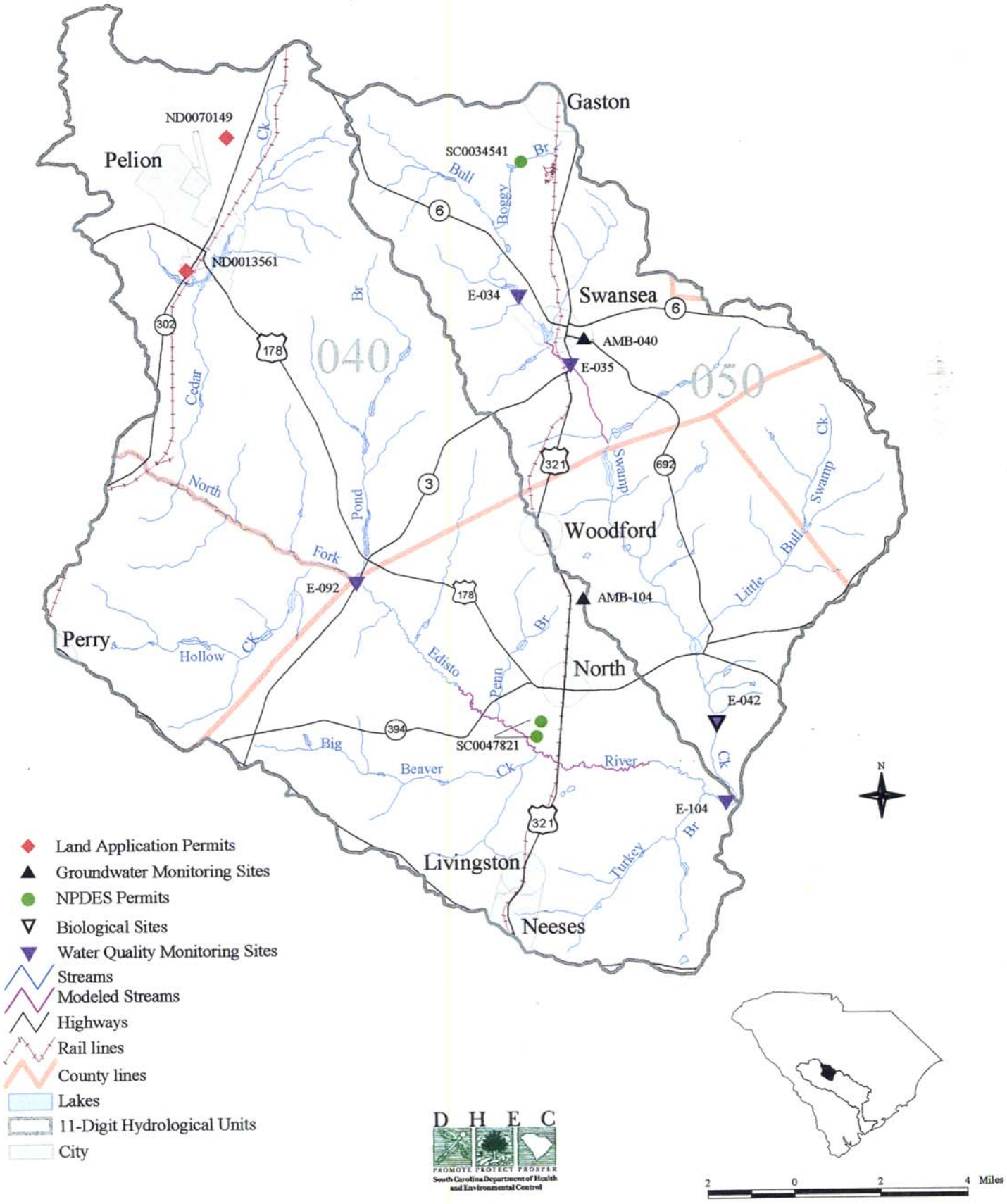
PROMOTE PROTECT PROSPER
South Carolina Department of Health and Environmental Control

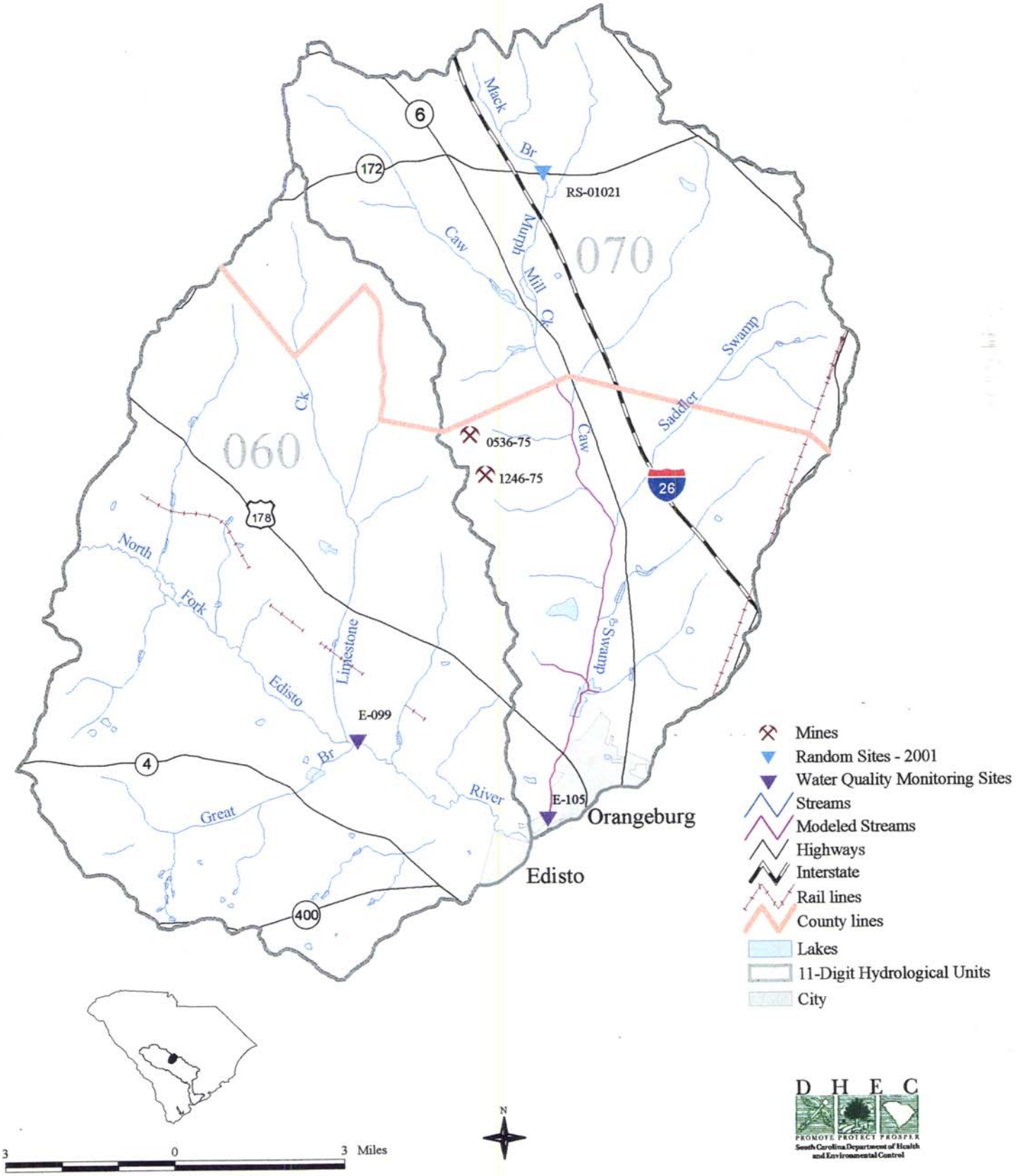
North Fork Edisto River and Bull Swamp Creek Watersheds

(03050203-040, -050)



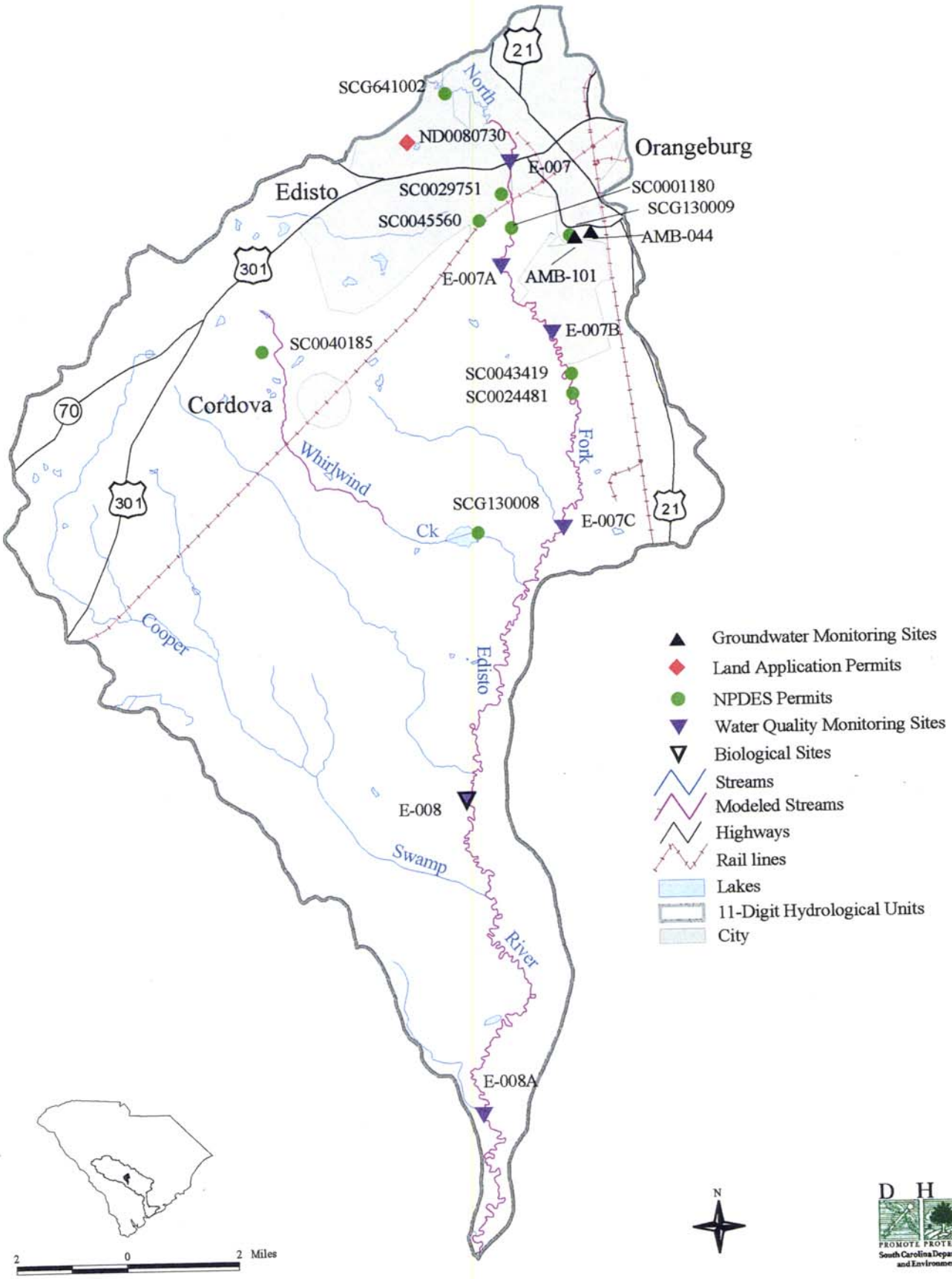
North Fork Edisto River and Caw Caw Swamp Watersheds

(03050203-060, -070)



North Fork Edisto River Watershed

(03050203-080)



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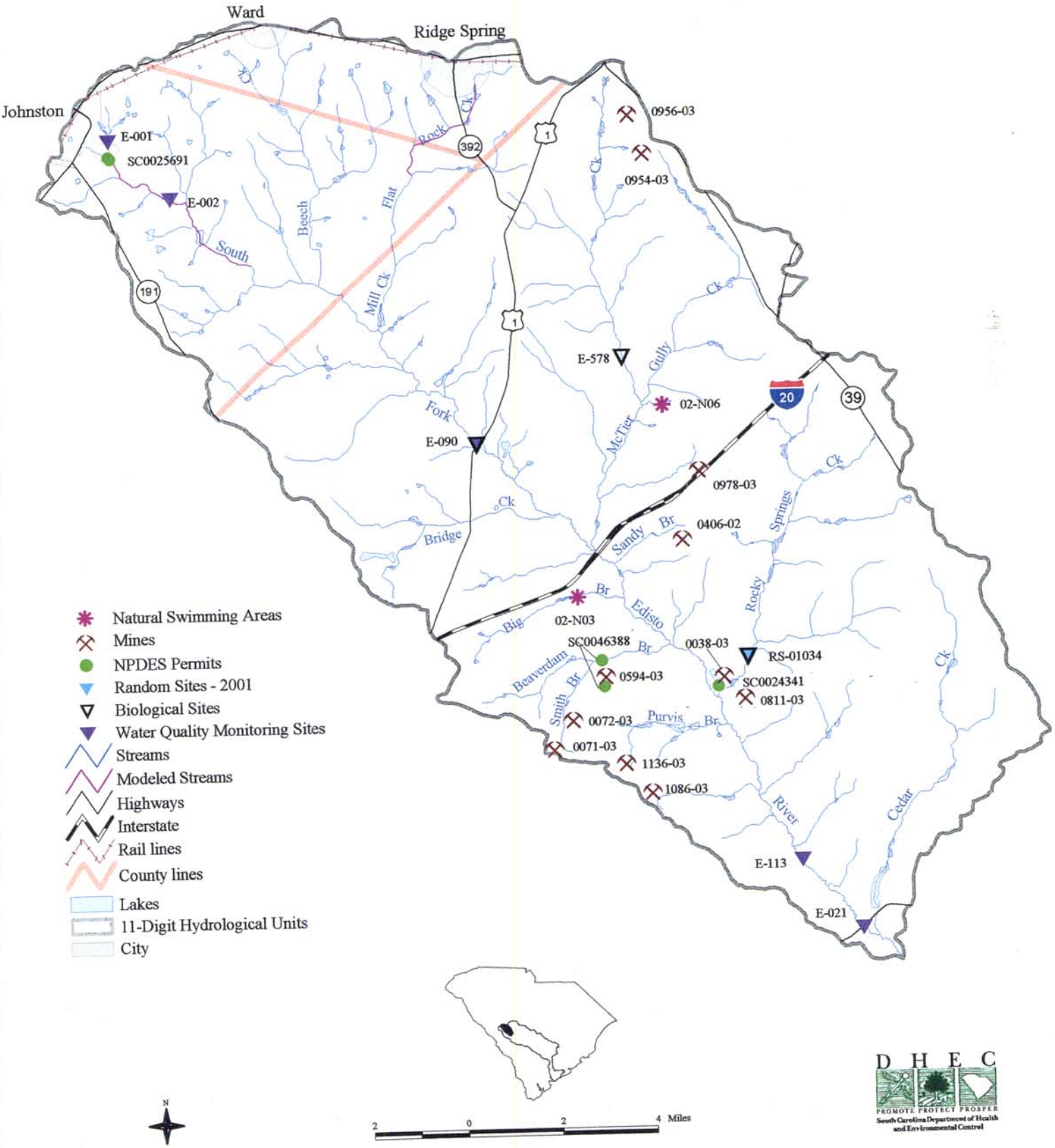
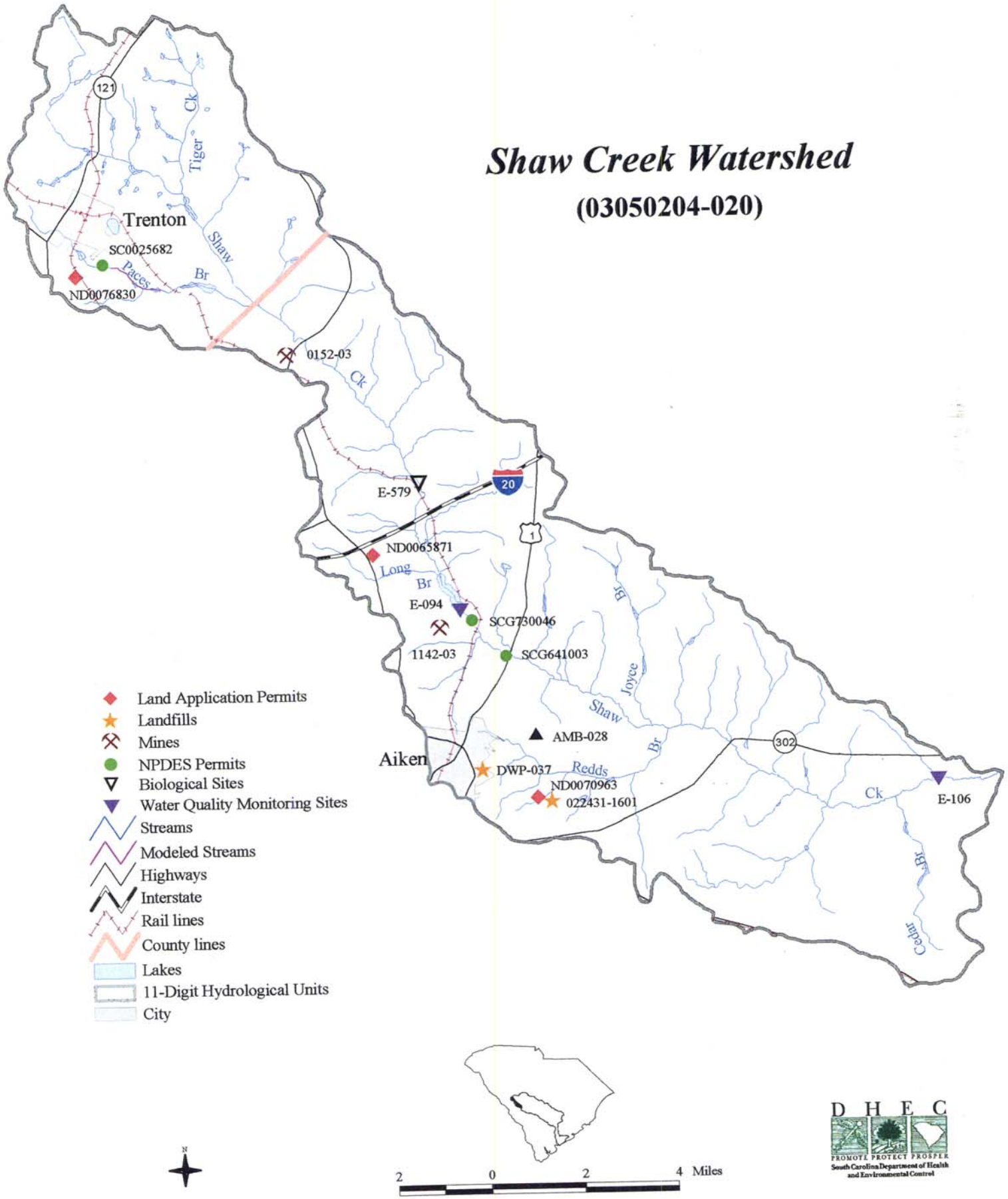
PROMOTE PROTECT PROSPER

South Carolina Department of Health and Environmental Control

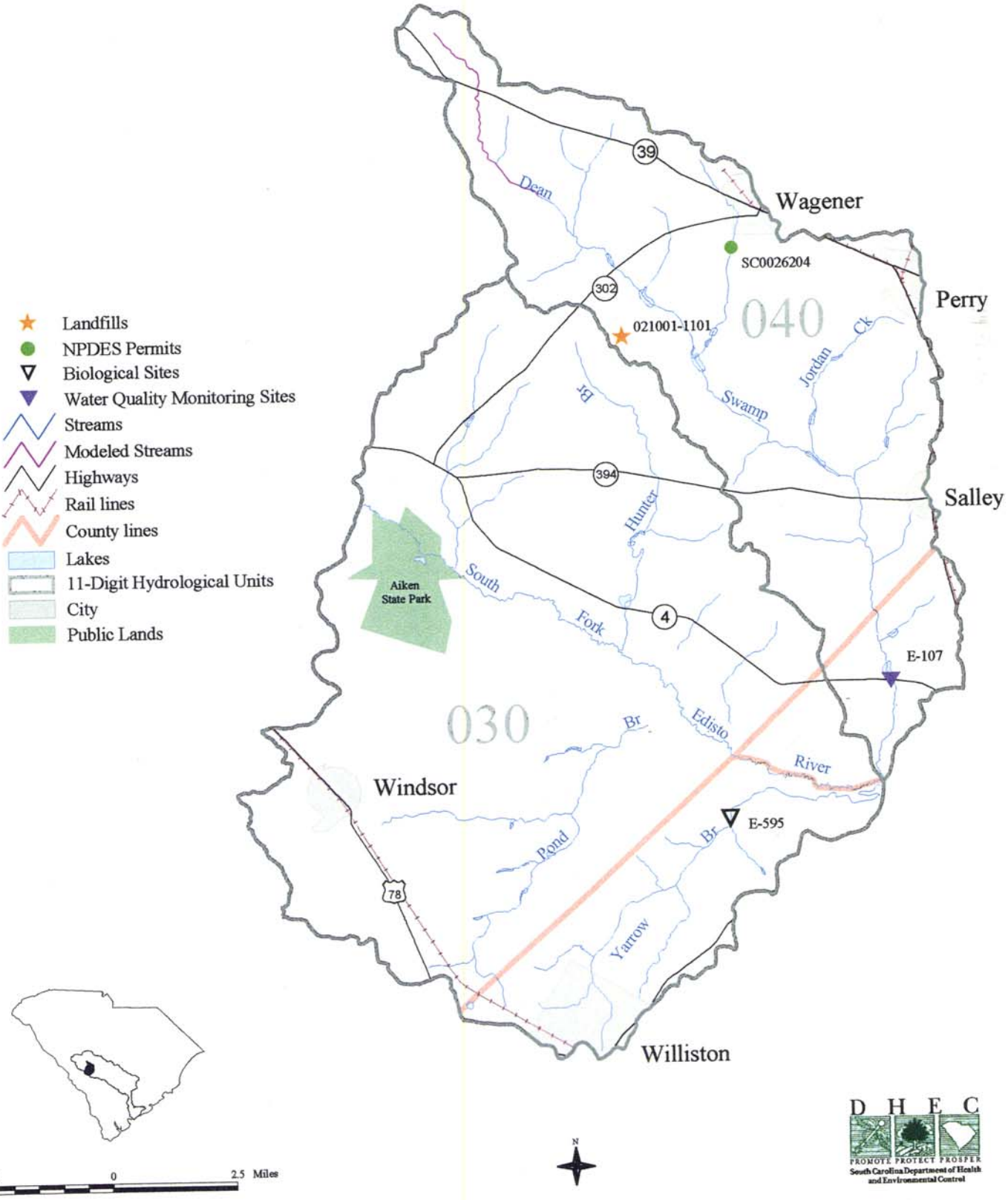
South Fork Edisto River Watershed
(03050204-010)

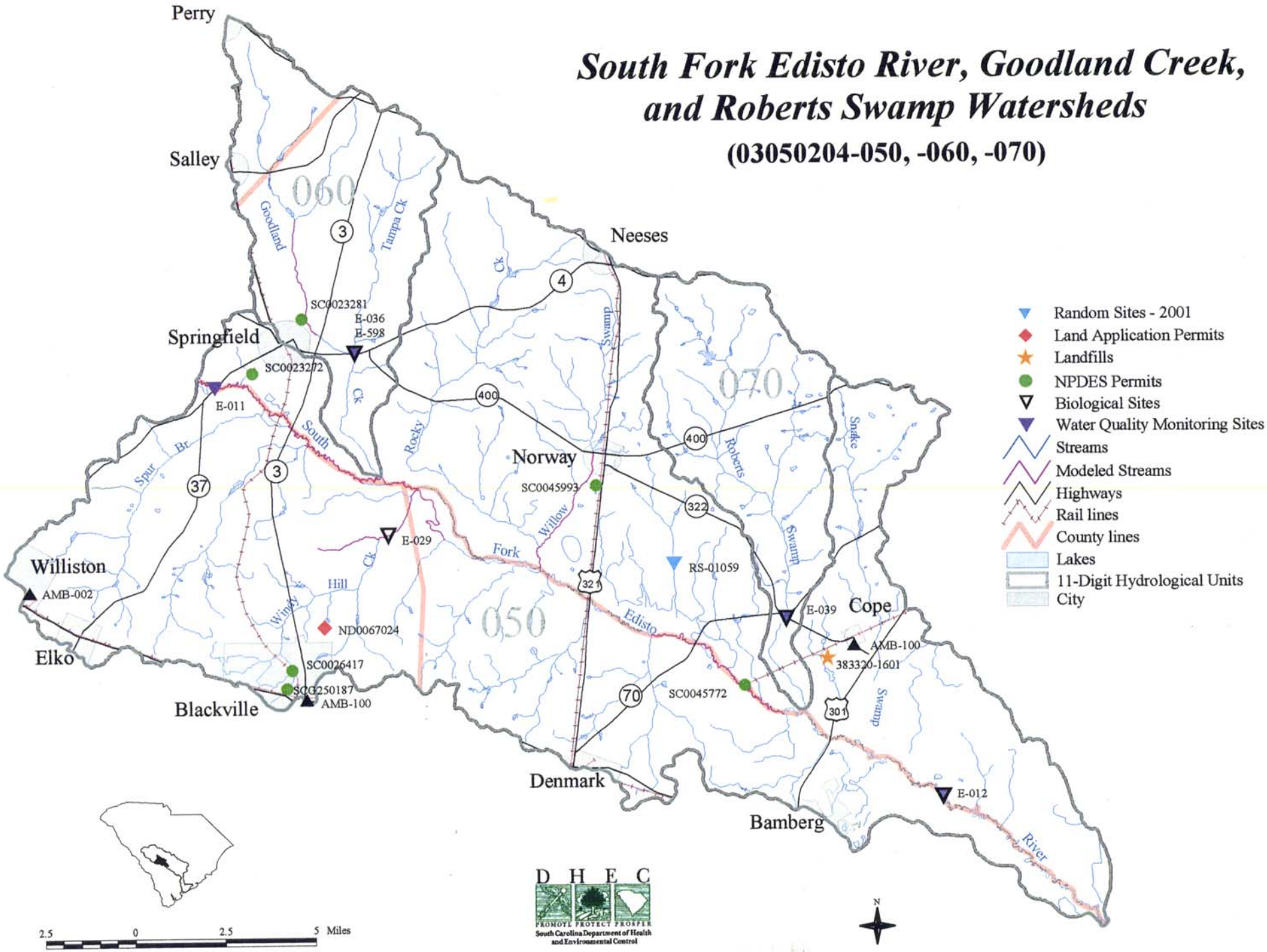



Shaw Creek Watershed
(03050204-020)
Trenton
SC0025682
ND0076830
Paces Br
Tiger Ck
Shaw Ck
121
0152-03
E-579
20
1
ND0065871
Long Br
E-094
SCG730046
1142-03
SCG641003
Aiken
AMB-028
DWP-037
ND0070963
022431-1601
Redds Br
Joyce Br
Shaw Br
302
E-106
Ck
Cedar Br
Land Application Permits
Landfills
Mines
NPDES Permits
Biological Sites
Water Quality Monitoring Sites
Streams
Modeled Streams
Highways
Interstate
Rail lines
County lines
Lakes
11-Digit Hydrological Units
City
N
2 0 2 4 Miles
D H E C
PROMOTE PROTECT PROSPER
South Carolina Department of Health and Environmental Control

South Fork Edisto River and Dean Swamp Creek Watersheds

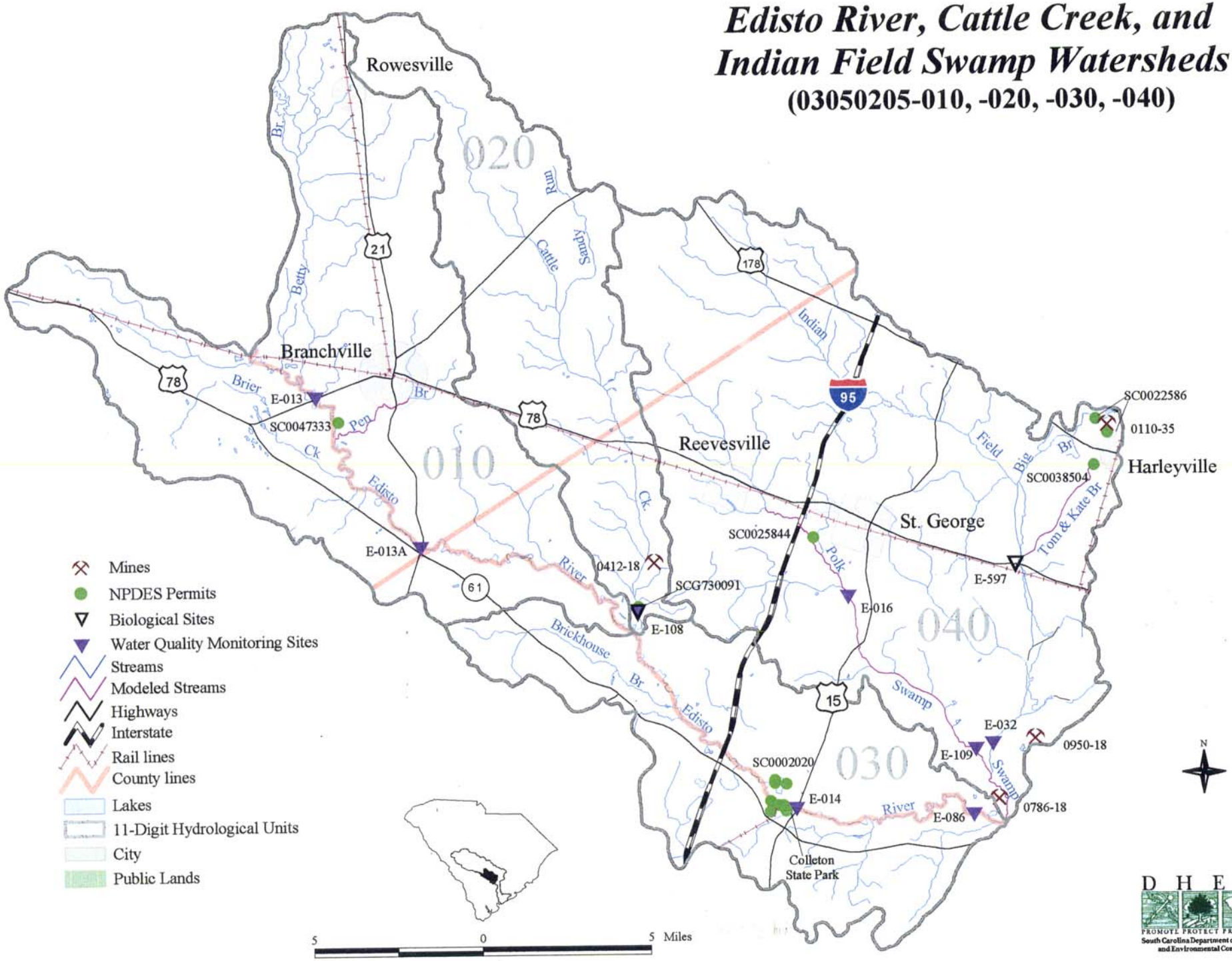
(03050204-030, -040)




South Fork Edisto River, Goodland Creek, and Roberts Swamp Watersheds
(03050204-050, -060, -070)
Perry
Salley
Springfield
Neeses
Norway
Williston
Elko
Blackville
Denmark
Cope
Bamberg
060
050
070
Goodland
Tampa Ck
Rocky
Ck
Swamp
Roberts
Snake
South
Fork
Willow
Hill
Edisto
River
Spur Br
SC0023281
E-036
E-598
SC0023272
E-011
SC0045993
E-029
RS-01059
ND0067024
SC0026417
SCG250187
AMB-100
AMB-002
E-039
AMB-100
383320-1601
SC0045772
E-012
3
4
37
400
321
322
70
301
Random Sites - 2001
Land Application Permits
Landfills
NPDES Permits
Biological Sites
Water Quality Monitoring Sites
Streams
Modeled Streams
Highways
Rail lines
County lines
Lakes
11-Digit Hydrological Units
City
2.5 0 2.5 5 Miles
D H E C
PROMOTE PROTECT PROSPER
South Carolina Department of Health and Environmental Control
N

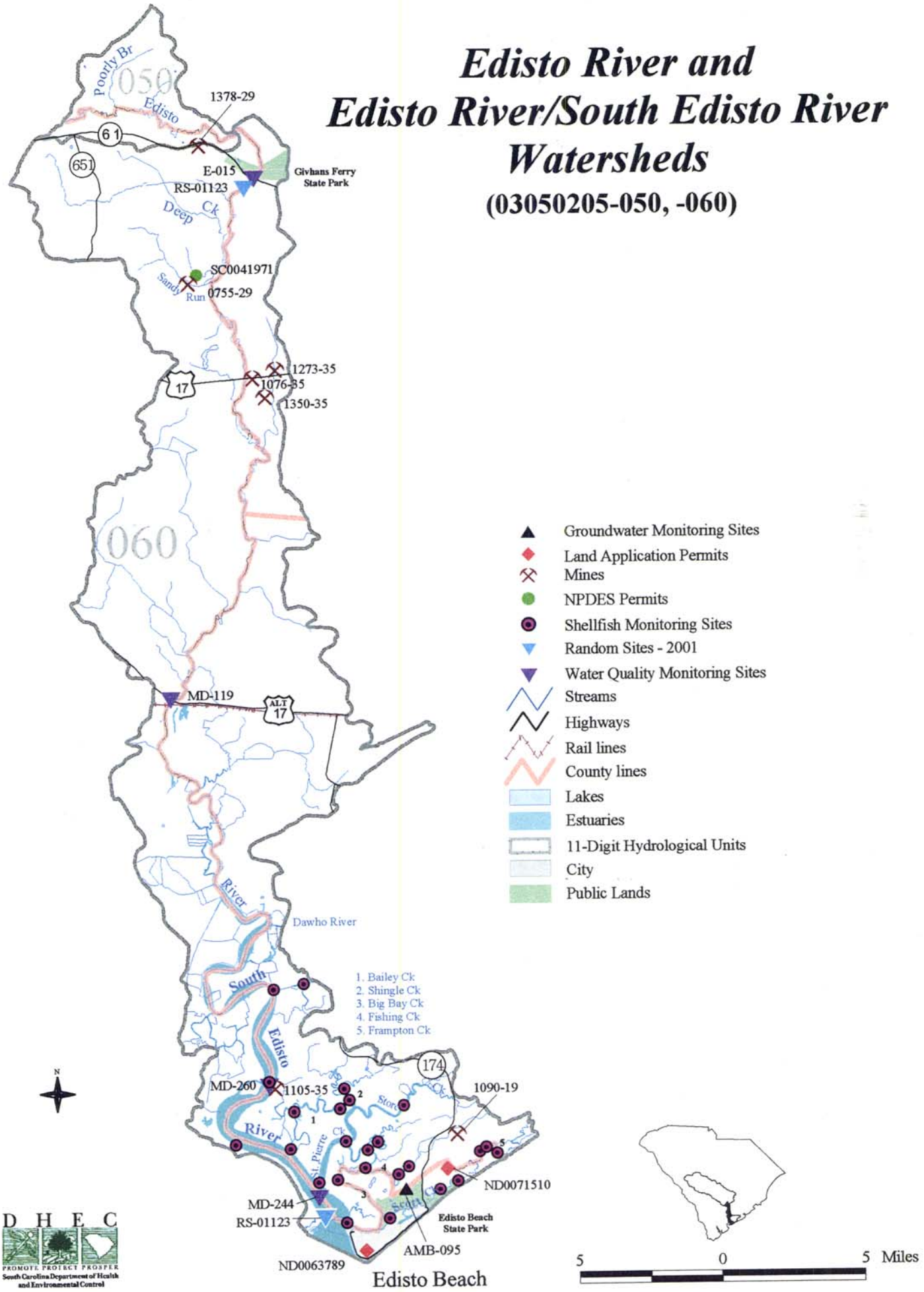
Edisto River, Cattle Creek, and Indian Field Swamp Watersheds

(03050205-010, -020, -030, -040)



Edisto River and Edisto River/South Edisto River Watersheds

(03050205-050, -060)



D H E C

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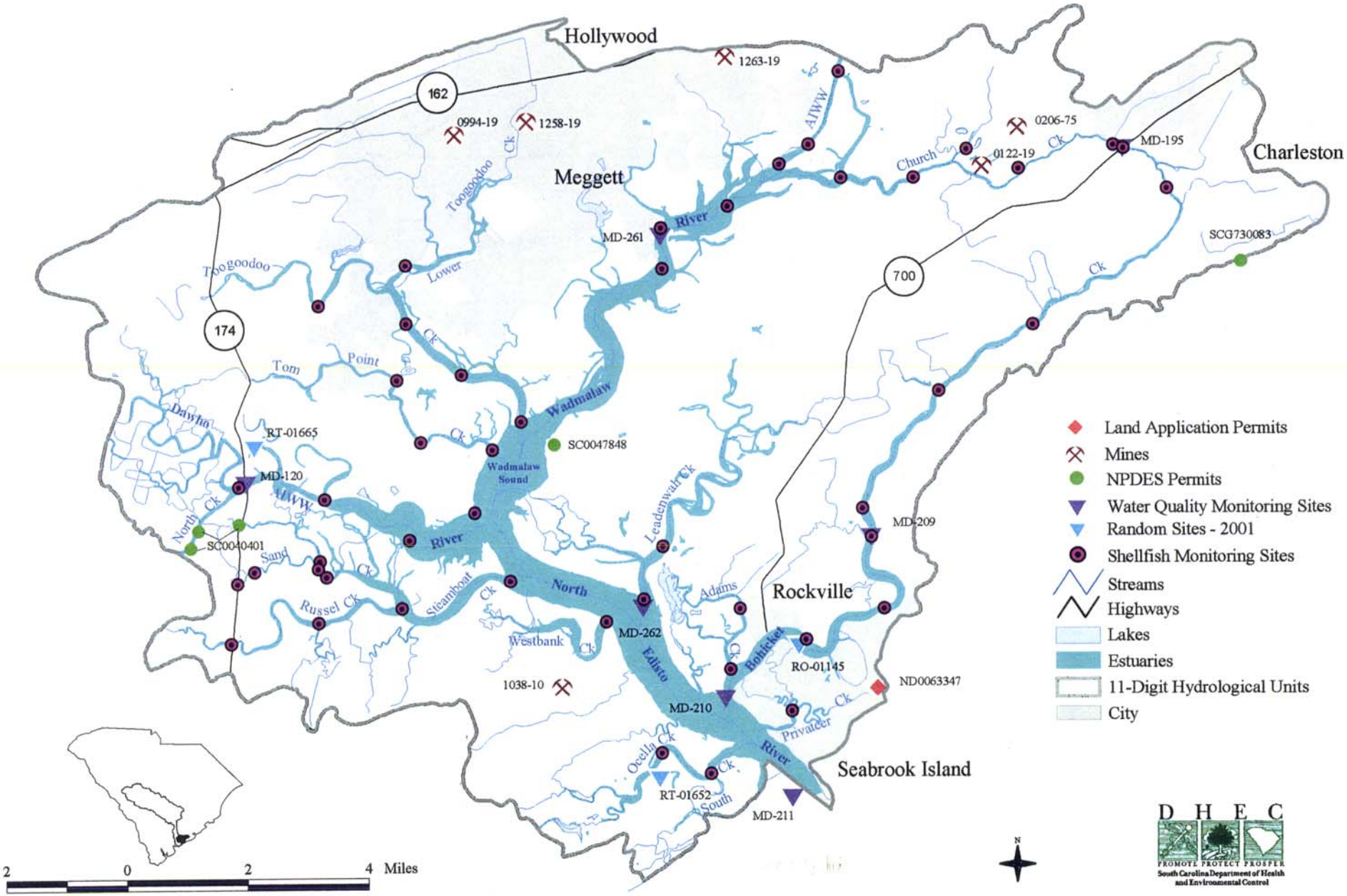
South Carolina Department of Health and Environmental Control

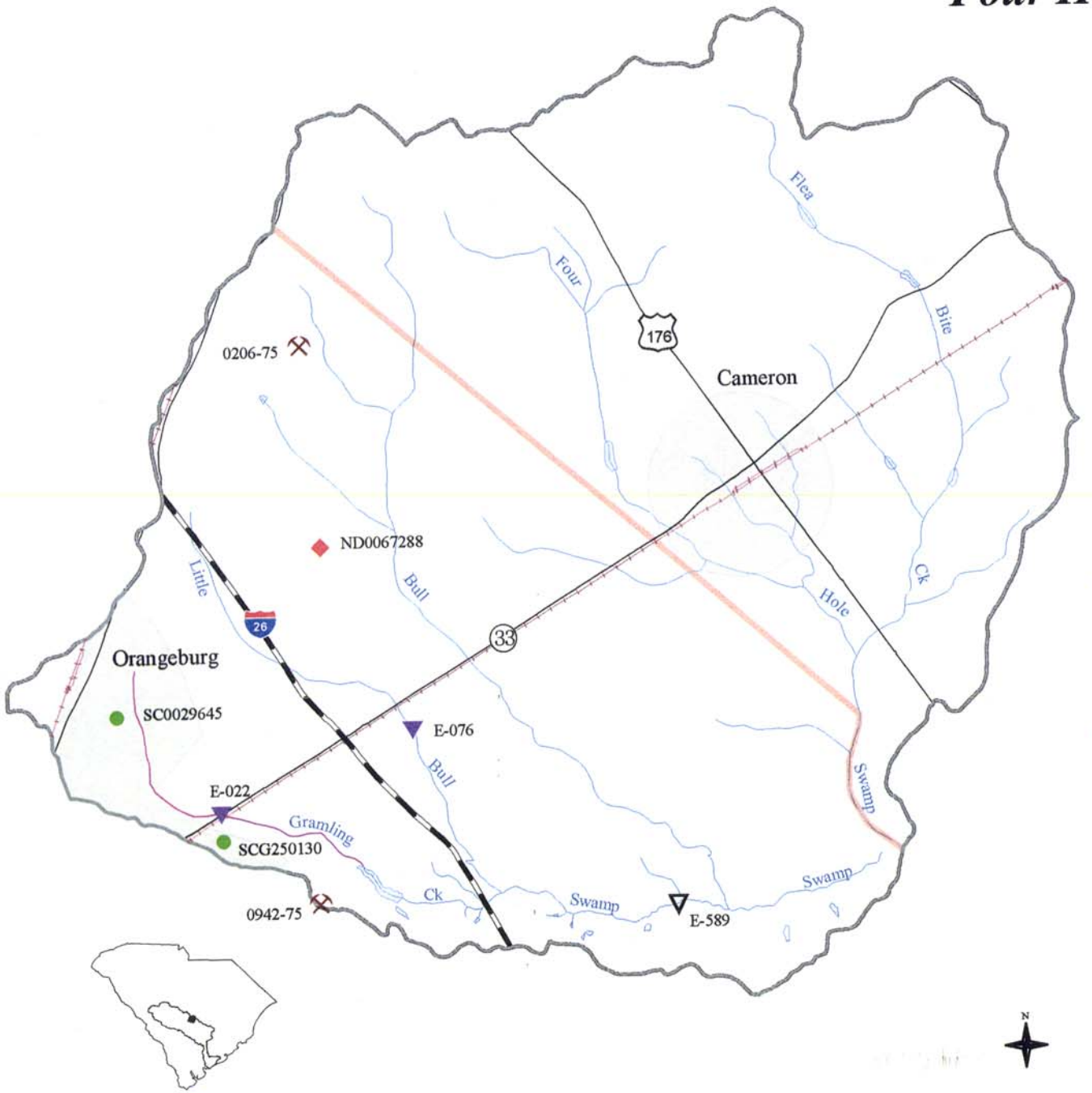
North Edisto River Watershed

(03050205-070)



Four Hole Swamp Watershed

(03050206-010)



- Land Application Permits
- Mines
- NPDES Permits
- Biological Sites
- Water Quality Monitoring Sites
- Streams
- Modeled Streams
- Highways
- Interstate
- Rail lines
- County lines
- Lakes
- 11-Digit Hydrological Units
- City

D H E C

PROMOTE PROTECT PROSPER

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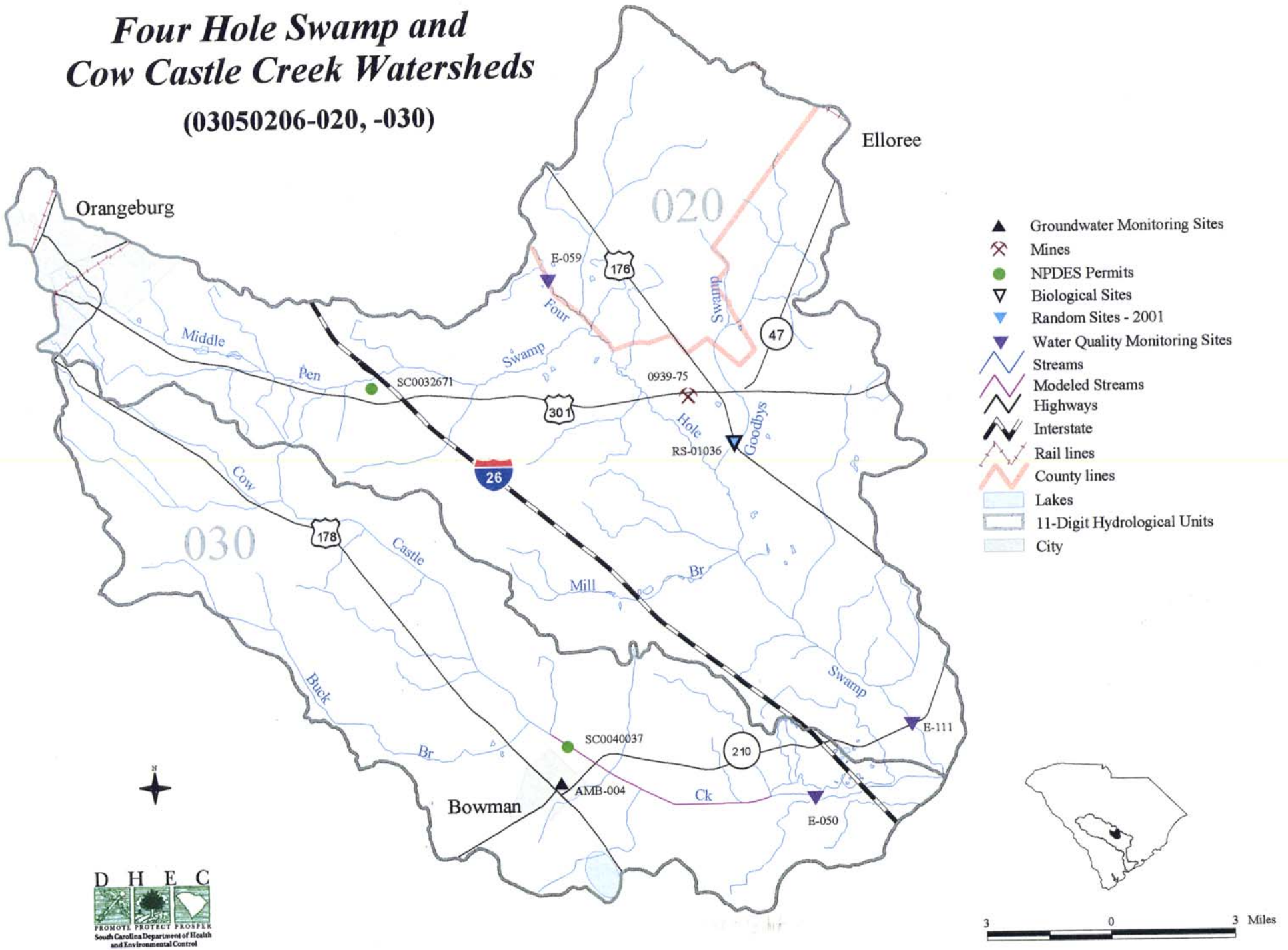
Four Hole Swamp and Cow Castle Creek Watersheds

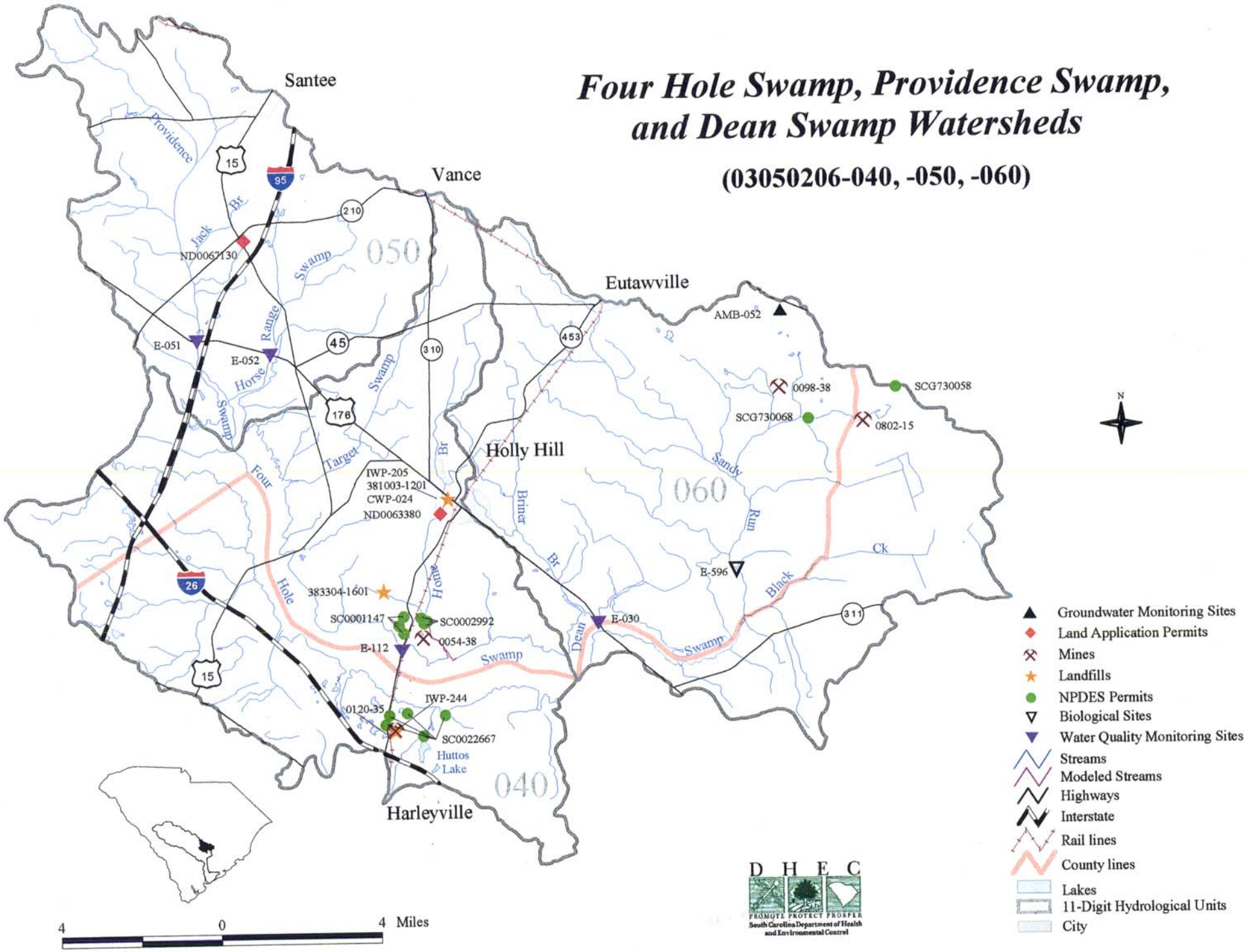
(03050206-020, -030)



D H E C

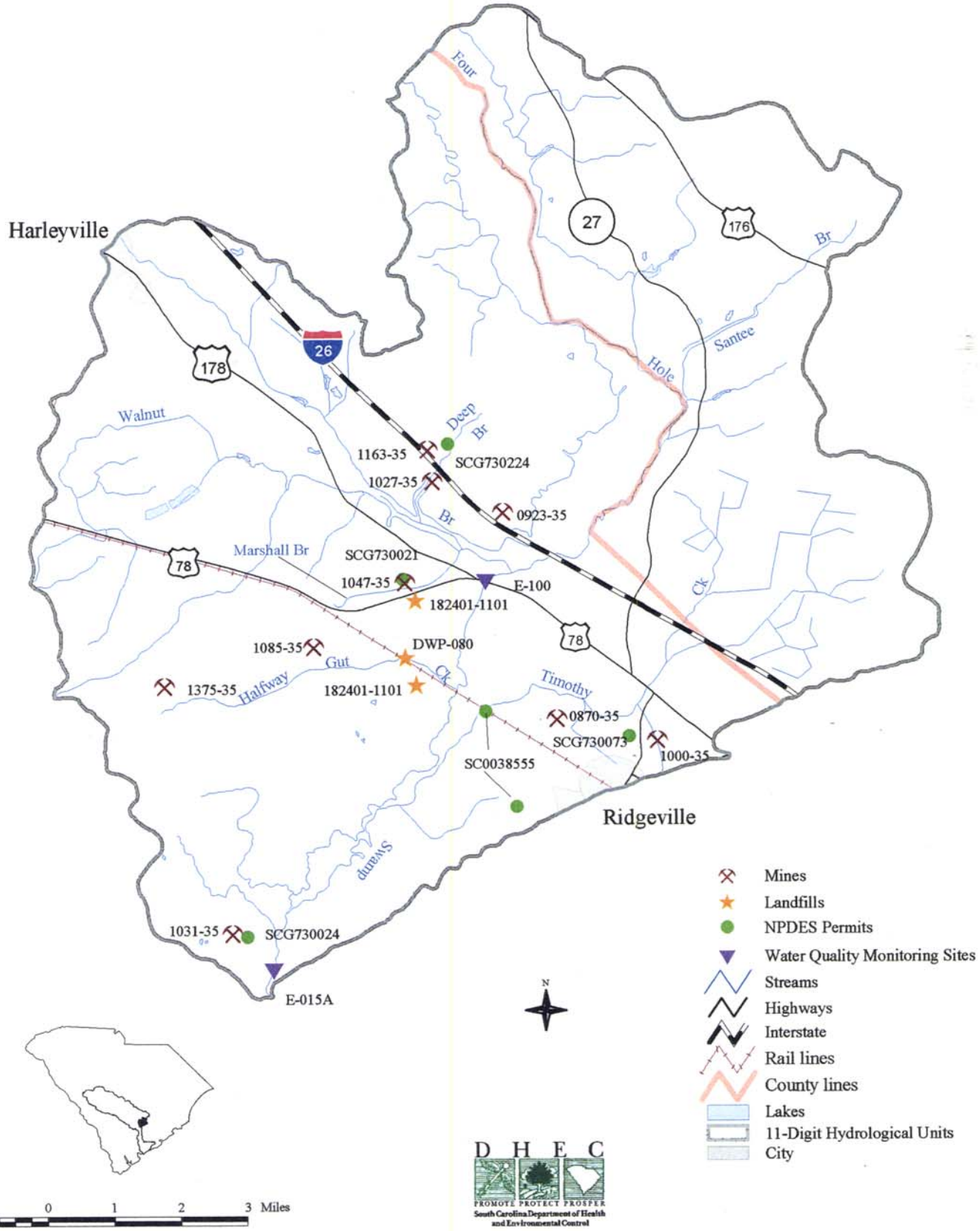
PROMOTE PROTECT PROSPER

South Carolina Department of Health and Environmental Control


Four Hole Swamp, Providence Swamp, and Dean Swamp Watersheds
(03050206-040, -050, -060)
Santee
Vance
Eutawville
Holly Hill
Harleyville
050
060
040
Providence
Jack Br
Swamp
Range
Horse
Swamp
Four
Hole
Swamp
Target
Swamp
Br
Briner
Br
Dean
Swamp
Sandy
Run
Ck
Black
Swamp
Huttos
Lake
ND0067130
E-051
E-052
IWP-205
381003-1201
CWP-024
ND0063380
383304-1601
SC0001147
SC0002992
0054-38
E-112
IWP-244
0120-35
SC0022667
AMB-052
0098-38
SCG730058
SCG730068
0802-15
E-596
E-030
15
95
210
45
310
176
453
26
311
15
N
4 0 4 Miles
Groundwater Monitoring Sites
Land Application Permits
Mines
Landfills
NPDES Permits
Biological Sites
Water Quality Monitoring Sites
Streams
Modeled Streams
Highways
Interstate
Rail lines
County lines
Lakes
11-Digit Hydrological Units
City
D H E C
PROMOTE PROTECT PROSPER
South Carolina Department of Health and Environmental Control

Four Hole Swamp Watershed

(03050206-070)



Waterbody Index

Facility Index

Facility Permit Number Index