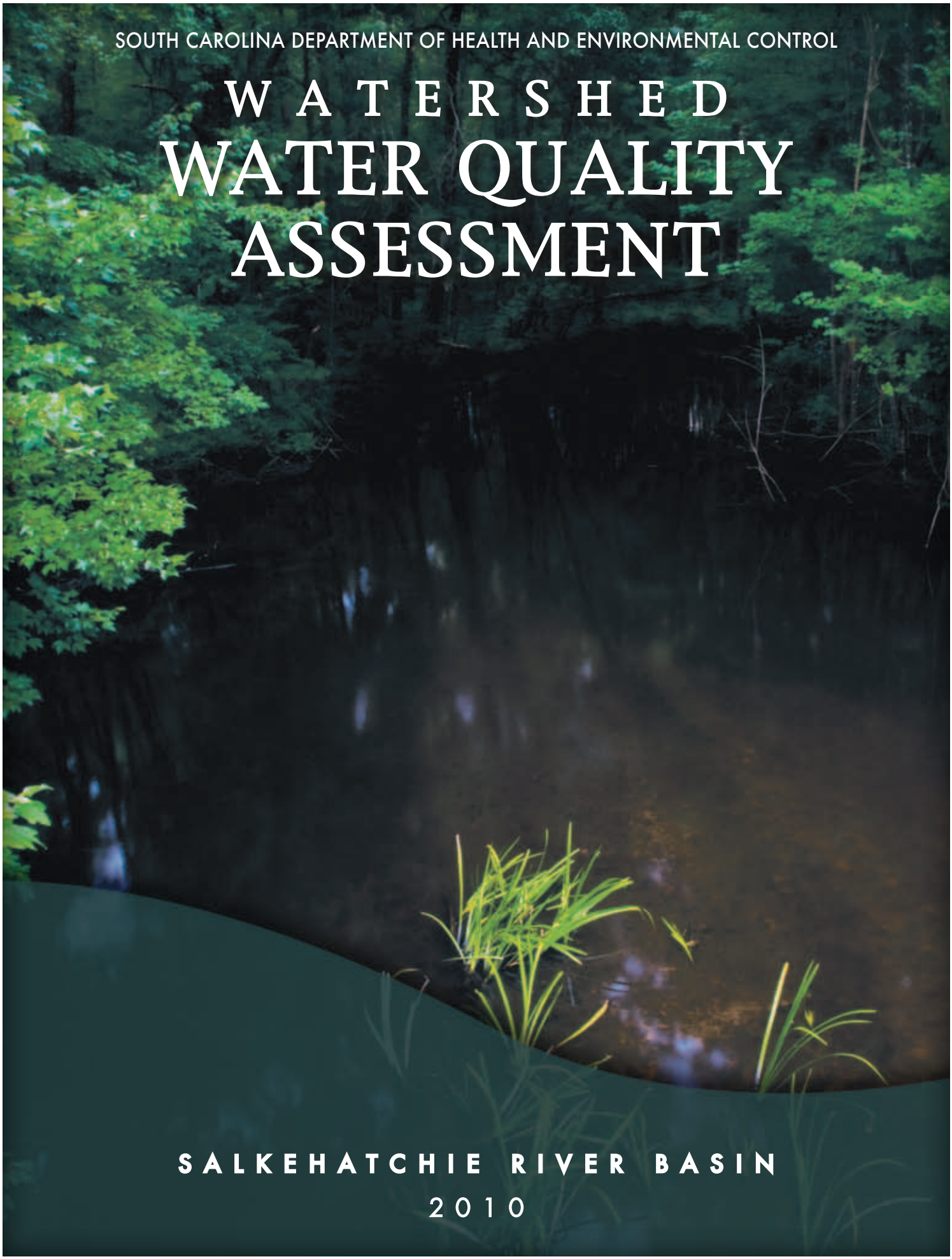


SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL

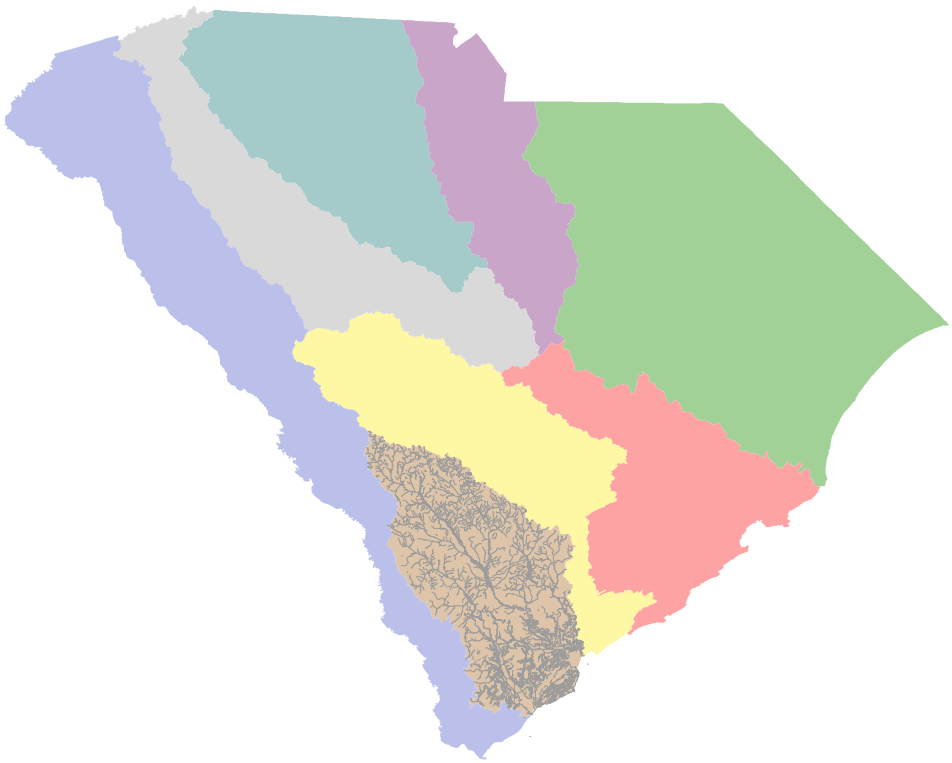
# WATERSHED WATER QUALITY ASSESSMENT

## SALKEHATCHIE RIVER BASIN

2010

# *Watershed Water Quality Assessment*

## *Salkehatchie River Basin*
## *2010*



**South Carolina Department of Health and Environmental Control**

**Bureau of Water**

**2600 Bull Street**

**Columbia, SC 29201**

**803-898-4300**

**www.scdhec.gov/water**

## 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 Salkehatchie River Basin was collected during 2002 through 2006 and assessed during this fourth, 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 Salkehatchie 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 assessment 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 Salkehatchie 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.**

***A major change to this newest assessment is the use of the National Watershed Boundary dataset using the 8-, 10-, 12-Digit Hydrologic Unit Codes for South Carolina. This more accurate hydrologic unit code's use changes numerous boundaries in the basin and introduces a new numbering system for the watersheds. For comparison, each watershed evaluation will state the prior hydrologic code.***

***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 Salkehatchie River Basin to participate in 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 Salkehatchie Basin, please contact:***

**Watershed Manager, Salkehatchie River Basin**
**SCDHEC Bureau of Water**
**2600 Bull St.**
**Columbia, SC 29201**
**(803) 898-4300**
**www.scdhec.gov/watershed**

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This document should be cited as:

South Carolina Department of Health and Environmental Control. 2010. Watershed Water Quality Assessment: Salkehatchie River Basin. Technical Report No.03F-10. Bureau of Water, Columbia, S.C.

# Water Quality Assessment Summary

## *Salkehatchie River Basin*

**Table 1. Fully Supported Sites –** ***Sites with No Impairments from 2002-2006***
**Table 2. Impaired Sites –** ***Partially Supported or Not Supported sites from 2002-2006***
**Table 3. Changes in Use Support Status -** ***Sites that Improved from 2002-2006***
**Table 4. Changes in Use Support Status -** ***Sites that Degraded from 2002-2006***

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

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

If the appropriate acute or chronic aquatic life standard is exceeded more than once (i.e.$\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 chlorophyll-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 Salkehatchie River Basin 2002--2006

***** = Station not evaluated for Recreational Support; TD=TMDL Developed; TI=TMDL Implementation; TI*=TMDL Implementation after 2006; Trend Data 1992-2006

| Watershed | Waterbody Name | Station # | Improving Trends | Other Trends |
|---|---|---|---|---|
| **03050207-01** | Lake Edgar Brown | RL-06437 | | |
| | Toby Creek | CSTL-577* | | |
| | Birds Branch | CSTL-579* | | |
| **03050207-02** | Jackson Creek | CSTL-051* | | |
| **03050207-04** | Little Salkehatchie River | RS-06012 | | |
| **03050207-05** | Sandy Run | CSTL-585* | | |
| **03050207-06** | Salkehatchie River | CSTL-048 | Increasing Dissolved Oxygen; Decreasing Turbidity, Fecal Coliform | Increasing $BOD_5$, Total Phosphorus, pH |
| | | CSTL-104 | Increasing Dissolved Oxygen; Decreasing Turbidity | Increasing $BOD_5$ |
| **03050207-07** | Black Creek | CSTL-583* | | |
| | Combahee River | CSTL-111 | Decreasing Turbidity | |
| | | MD-252 | | |
| | Chehaw River | RT-06019 | | |
| **03050207-08** | Wolf Creek | RS-03356 | | |
| | Ashepoo River | RS-03520 | | |
| **03050207-09** | Chessey Creek | CSTL-580* | | |
| **03050207-11** | McCalleys Creek | RT-06010 | | |
| | | RT-042069 | | |

# Table 1. Fully Supported Sites in the Salkehatchie River Basin 2002--2006

***** = Station not evaluated for Recreational Support; TD=TMDL Developed; TI=TMDL Implementation; TI*=TMDL Implementation after 2006; Trend Data 1992-2006

| Watershed | Waterbody Name | Station # | Improving Trends | Other Trends |
|---|---|---|---|---|
| **03050207-11 (continued)** | Coosaw River | RO-06314 | | |
| | | RO-02007 | | |
| | | RO-056101 | | |
| | | RO-046073 | | |
| | | RO-056095 | | |
| | | RO-06303 | | |
| | | MD-168 | | |
| | | RO-046069 | | |
| | Coosaw River Tributary | RT-032041 | | |
| | Wimbee Creek Tributary | RT-032031 | | |
| | South Wimbee Creek | RT-052093 | | |
| | William Creek Tributary | RT-06003 | | |
| | St. Helena Sound | RO-046067 | | |
| | Jenkins Creek Tributary | RT-042067 | | |
| | Jenkins Creek | MD-255 | | Increasing Fecal Coliform |
| | Bass Creek Tributary | RT-052113 | | |
| | Eddings Point Creek | RT-032045 | | |
| | Village Creek | RO-056099 | | |
| **03050208-02** | Blood Hill Creek | RS-03360 | | |

# Table 1. Fully Supported Sites in the Salkehatchie River Basin 2002--2006

***** = Station not evaluated for Recreational Support; TD=TMDL Developed; TI=TMDL Implementation; TI*=TMDL Implementation after 2006; Trend Data 1992-2006

| Watershed | Waterbody Name | Station # | Improving Trends | Other Trends |
|---|---|---|---|---|
| **03050208-03** | Cypress Creek | CSTL-582* | | |
| **03050208-05** | Broomfield Creek | RT-02013 | | |
| | Beaufort River | MD-001[TD] | | Increasing $BOD_5$ |
| | | MD-002 [TD] | Increasing Dissolved Oxygen | |
| | | RO-02003 [TD] | | |
| | | MD-003 [TD] | Increasing Dissolved Oxygen | Increasing Turbidity |
| | | MD-004 [TD] | | Increasing $BOD_5$, Total Phosphorus |
| | | MD-005 | Increasing Dissolved Oxygen; Decreasing Total Nitrogen, Fecal Coliform | Increasing $BOD_5$, Total Phosphorus; Decreasing pH |
| | Factory Creek | RT-032039 | | |
| | | RO-056105 | | |
| | Battery Creek Tributary | RT-032043 | | |
| | Distant Island Creek | RO-036033 | | |
| | Morse Island Creek | RT-06002 | | |
| | Morse Island Creek Trib. | RT-052104 | | |
| **03050208-06** | Broad River | RO-036031 | | |
| | | RO-056103 | | |
| | | RO-06309 | | |
| | | RO-046075 | | |
| | | RO-06306 | | |

# Table 1. Fully Supported Sites in the Salkehatchie River Basin 2002--2006

***** = Station not evaluated for Recreational Support; TD=TMDL Developed; TI=TMDL Implementation; TI*=TMDL Implementation after 2006; Trend Data 1992-2006

| Watershed | Waterbody Name | Station # | Improving Trends | Other Trends |
|---|---|---|---|---|
| **03050208-06 (continued)** | Broad River (continued) | RO-056097 | | |
| | | MD-172 | | Increasing Total Phosphorus |
| | | RO-046063 | | |
| | | MD-012 | | |
| | South Haulover Creek | RT-042061 | | |
| | Whale Branch Tributary | RT-02007 | | |
| | Whale Branch | MD-279 | | |
| | Boyd Creek | RT-02009 | | |
| | West Branch Boyd Creek | RO-036035 | | |
| | Euhaw Creek | RT-052097 | | |
| | Chechessee River | MD-117 | | |
| | | RO-056104 | | |
| | | RO-036036 | | |
| | Colleton River | MD-245 | | |
| | Colleton River Tributary | RT-06013 | | |
| | Port Royal Sound | RO-06302 | | |
| | | MD-006 | Increasing Dissolved Oxygen; Decreasing Fecal Coliform | Increasing Total Phosphorus |
| **03050210-01** | Trenchards Inlet | RO-06310 | | |
| | Skull Creek | RT-02002 | | |

# Table 1. Fully Supported Sites in the Salkehatchie River Basin 2002--2006

***** = Station not evaluated for Recreational Support; TD=TMDL Developed; TI=TMDL Implementation; TI*=TMDL Implementation after 2006; Trend Data 1992-2006

| Watershed | Waterbody Name | Station # | Improving Trends | Other Trends |
|---|---|---|---|---|
| **03050210-01 (continued)** | Trenchards Inlet Trib. | RT-06018 | | |
| | Story River | RO-056096 | | |
| | Unnamed Creek between Harbor R. and Story R. | MD-256 | Increasing Dissolved Oxygen | Increasing Fecal Coliform |
| | Station Creek | RO-046074 | | |
| | Scott Creek Tributary | RT-032056 | | |
| | Harbor River | RT-06006 | | |
| | Story River Tributary | RT-042074 | | |
| | Old House Creek Trib. | RT-052096 | | |
| | Old House Creek | RO-02006 | | |

# Table 2. Impaired Sites in the Salkehatchie River Basin 2002-2006

REC=Recreational; AL=Aquatic Life; DW= Drinking Water; PS=Partially Supported Standards; NS=Nonsupported Standards; *=Station not evaluated for Recreational Support; TD=TMDL Developed; TI=TMDL Implementation; TI*=TMDL Implementation after 2006; Trend Data 1992-2006

| Watershed | Waterbody Name | Station # | Use | Status | Water Quality Indicator | Improving Trends | Other Trends |
|---|---|---|---|---|---|---|---|
| **03050207-01** | Salkehatchie River | CSTL-028 | REC | PS | Fecal Coliform | Decreasing Turbidity, Total Phosphorus | Increasing $BOD_5$ |
| | | CSTL-003 | REC | PS | Fecal Coliform | Decreasing Turbidity | Increasing $BOD_5$, pH |
| | Lake Edgar Brown | CL-064 | AL | NS | Total Phosphorus, Chlorophyll | | |
| | Turkey Creek | CSTL-001B | REC | PS | Fecal Coliform | Decreasing Turbidity | Increasing $BOD_5$ |
| | Wells Branch | RS-02472 | REC | NS | Fecal Coliform | | |
| **03050207-03** | Lemon Creek | CSTL-116 | REC | PS | Fecal Coliform | Increasing Dissolved Oxygen; Decreasing Turbidity, Total Nitrogen, Fecal Coliform | Increasing $BOD_5$, pH |
| **03050207-04** | Little Salkehatchie River | CSTL-115 | REC | PS | Fecal Coliform | Decreasing Total Nitrogen | Increasing $BOD_5$, pH |
| **03050207-05** | Buckhead Creek | CSTL-119 | REC | NS | Fecal Coliform | Decreasing Turbidity | |
| | Little Salkehatchie River | CSTL-117 | REC | PS | Fecal Coliform | Decreasing Turbidity | |
| | | CSTL-120 | AL | NS | Copper, Zinc | Decreasing Turbidity | Decreasing pH |
| | Willow Swamp | CSTL-118 | AL | NS | Copper | Decreasing Turbidity | Increasing Total Phosphorus |
| | | | REC | PS | Fecal Coliform | | |
| **03050207-06** | Salkehatchie River | CSTL-006 | REC | PS | Fecal Coliform | Decreasing Turbidity, Total Nitrogen, Fecal Coliform | Increasing pH |

# Table 2. Impaired Sites in the Salkehatchie River Basin 2002-2006

REC=Recreational; AL=Aquatic Life; DW= Drinking Water; PS=Partially Supported Standards; NS=Nonsupported Standards; *=Station not evaluated for Recreational Support; TD=TMDL Developed; TI=TMDL Implementation; TI*=TMDL Implementation after 2006; Trend Data 1992-2006

| Watershed | Waterbody Name | Station # | Use | Status | Water Quality Indicator | Improving Trends | Other Trends |
|---|---|---|---|---|---|---|---|
| **03050207-07** | Combahee River | CSTL-098 | AL | NS | Dissolved Oxygen | Decreasing Fecal Coliform | Decreasing Dissolved Oxygen; Increasing Turbidity, Total Suspended Solids, pH |
| | Chehaw River | RT-02017 | AL | NS | Zinc | | |
| **03050207-08** | Ireland Creek | CSTL-044 | AL | NS | Dissolved Oxygen, pH | | |
| | | | REC | NS | Fecal Coliform | | |
| **03050207-09** | Horseshoe Creek | CSTL-071 | AL | NS | Zinc | Decreasing Turbidity | |
| | | | REC | PS | Fecal Coliform | | |
| **03050207-10** | Ashepoo River | CSTL-068 | AL | NS | Zinc | | Increasing $BOD_5$, Total Phosphorus |
| | | | REC | PS | Fecal Coliform | | |
| | | CSTL-069 | AL | NS | Dissolved Oxygen | | Decreasing Dissolved Oxygen |
| | | | REC | PS | Fecal Coliform | | |
| | | MD-251 | AL | NS | Turbidity | | |
| | | RO-046071 | AL | NS | Turbidity | | |
| | | MD-253 | AL | NS | Turbidity | Decreasing Total Phosphorus | |
| | Rock Creek | RT-032035 | AL | NS | Turbidity | | |
| **03050207-11** | Wimbee Creek | RO-036037 | AL | NS | Turbidity | | |
| | Tidal Creek | RT-02015 | AL | NS | Turbidity, Copper | | |

# Table 2. Impaired Sites in the Salkehatchie River Basin 2002-2006

REC=Recreational; AL=Aquatic Life; DW= Drinking Water; PS=Partially Supported Standards; NS=Nonsupported Standards; *=Station not evaluated for Recreational Support; TD=TMDL Developed; TI=TMDL Implementation; TI*=TMDL Implementation after 2006; Trend Data 1992-2006

| Watershed | Waterbody Name | Station # | Use | Status | Water Quality Indicator | Improving Trends | Other Trends |
|---|---|---|---|---|---|---|---|
| **03050207-11 (continued)** | Coosaw River | RO-02005 | AL | NS | Turbidity, Copper | | |
| | | RO-02001 | AL | NS | Turbidity | | |
| | Sparrow Nest Creek Tributary | RT-02027 | AL | NS | Copper | | |
| | Coffin Creek | RT-032033 | AL | NS | Turbidity | | |
| **03050208-01** | Lake Warren | CSTL-075 | AL | NS | Zinc | | |
| | | RL-03331 | AL | NS | Total Phosphorus, Total Nitrogen, Chlorophyll, Zinc | | |
| | | CL-062 | AL | NS | Zinc | | Decreasing pH |
| **03050208-02** | Coosawhatchie River | CSTL-110 | AL | PS | Dissolved Oxygen | Decreasing Turbidity, Total Phosphorus, Total Nitrogen | Decreasing Dissolved Oxygen |
| | | | REC | PS | Fecal Coliform | | |
| | | CSTL-121 | AL | NS | Dissolved Oxygen, Zinc | | |
| | | | REC | PS | Fecal Coliform | | |
| **03050208-03** | Cypress Creek | CSTL-122 | AL | NS | Zinc | Increasing Dissolved Oxygen; Decreasing Turbidity | |
| **03050208-04** | Sanders Branch | CSTL-108[TD] | REC | NS | Fecal Coliform | | Increasing pH |
| | | RS-02488 | AL | NS | Macroinvertebrates, Zinc | | |
| | | | REC | NS | Fecal Coliform | | |
| | | CSTL-010[TD] | REC | PS | Fecal Coliform | | Increasing pH |

# Table 2. Impaired Sites in the Salkehatchie River Basin 2002-2006

REC=Recreational; AL=Aquatic Life; DW= Drinking Water; PS=Partially Supported Standards; NS=Nonsupported Standards; *=Station not evaluated for Recreational Support; TD=TMDL Developed; TI=TMDL Implementation; TI*=TMDL Implementation after 2006; Trend Data 1992-2006

| Watershed | Waterbody Name | Station # | Use | Status | Water Quality Indicator | Improving Trends | Other Trends |
|---|---|---|---|---|---|---|---|
| **03050208-04 (continued)** | Sanders Branch (continued) | CSTL-011[TD] | REC | PS | Fecal Coliform | Increasing Dissolved Oxygen; Decreasing $BOD_5$, Turbidity | Increasing pH |
| | Coosawhatchie River | CSTL-109[TD] | AL | NS | Zinc | Decreasing Turbidity, Total Phosphorus, Total Nitrogen, Total Suspended Solids, Fecal Coliform | Increasing $BOD_5$, pH |
| | | CSTL-107 | AL | NS | Dissolved Oxygen, pH, Zinc | Decreasing Fecal Coliform | Increasing pH |
| | | | REC | PS | Fecal Coliform | | |
| | Bees Creek | MD-280 | AL | NS | Dissolved Oxygen, Turbidity | | |
| | | | REC | PS | Fecal Coliform | | |
| **03050208-06** | Pocotaligo River | MD-007 | AL | NS | Turbidity | Decreasing Fecal Coliform | Increasing pH |
| | | | REC | NS | Fecal Coliform | | |
| | Huspah Creek | MD-254 | AL | NS | Copper | Decreasing Turbidity | Decreasing pH; Increasing Fecal Coliform |
| | Broad River | MD-116 | AL | NS | Copper | Increasing Dissolved Oxygen; Decreasing Total Nitrogen | Increasing $BOD_5$, Turbidity, Total Phosphorus; Decreasing pH |
| | Colleton River | MD-176 | AL | PS | Dissolved Oxygen | | Increasing $BOD_5$, Fecal Coliform; Decreasing pH |
| | Chechessee River | RO-036032 | AL | PS | Dissolved Oxygen | | |
| | Port Royal Sound | RO-036034 | AL | NS | Copper | | |

# Table 3. Changes in Use Support Status

## *Salkehatchie River Basin Sites that Improved from 2002 to 2006*

REC= Recreational; AL=Aquatic Life; FS=Fully Supported Standards; PS=Partially Supported Standards; NS=Nonsupported Standards; TD=TMDL Developed; TI=TMDL Implementation; TI*=TMDL Implementation after 2006

| Watershed | Waterbody Name | Station # | Use | Status | | Water Quality Indicator | |
|---|---|---|---|---|---|---|---|
| | | | | 2002 | 2006 | 2002 | 2006 |
| **03050207-05** | Willow Swamp | CSTL-118 | REC | NS | PS | Fecal Coliform | Fecal Coliform |
| | Little Salkehatchie River | CSTL-120 | REC | PS | FS | Fecal Coliform | |
| **03050207-06** | Salkehatchie River | CSTL-048 | REC | PS | FS | Fecal Coliform | |
| **03050207-08** | Chessey Creek | CSTL-580 | AL | NS | FS | Macroinvertebrates | |
| **03050208-03** | Cypress Creek | CSTL-122 | REC | PS | FS | Fecal Coliform | |
| **03050208-04** | Sanders Branch | CSTL-011[TD] | AL | PS | FS | Macroinvertebrates, Dissolved Oxygen | |
| | | | REC | NS | PS | Fecal Coliform | Fecal Coliform |
| **03050208-05** | Beaufort River | MD-001 [TD] | AL | NS | FS | Dissolved Oxygen | |
| | | MD-002 [TD] | AL | NS | FS | Dissolved Oxygen | |
| | | MD-003 [TD] | AL | NS | FS | Dissolved Oxygen | |
| | | MD-004 [TD] | AL | NS | FS | Dissolved Oxygen | |
| **03050208-06** | Chechessee River | MD-117 | AL | NS | FS | Dissolved Oxygen | |
| | Broad River | MD-172 | AL | PS | FS | Dissolved Oxygen | |

# Table 4. Changes in Use Support Status

## *Salkehatchie River Basin Sites that Degraded from 2002 to 2006*

REC= Recreational; AL=Aquatic Life; FS=Fully Supported Standards; PS=Partially Supported Standards; NS=Nonsupported Standards; TD=TMDL Developed; TI=TMDL Implementation; TI*=TMDL Implementation after 2006

| Watershed | Waterbody Name | Station # | Use | Status | | Water Quality Indicator | |
|---|---|---|---|---|---|---|---|
| | | | | 2002 | 2006 | 2002 | 2006 |
| **03050207-01** | Salkehatchie River | CSTL-028 | REC | FS | PS | | Fecal Coliform |
| **03050207-04** | Little Salkehatchie River | CSTL-115 | REC | FS | PS | | Fecal Coliform |
| **03050207-05** | Willow Swamp | CSTL-118 | AL | FS | NS | | Copper |
| | Little Salkehatchie River | CSTL-120 | AL | FS | NS | | Copper, Zinc |
| **03050207-07** | Combahee River | CSTL-098 | AL | FS | NS | | Dissolved Oxygen |
| **03050207-08** | Ireland Creek | CSTL-044 | AL | FS | NS | | Dissolved Oxygen, pH |
| **03050207-09** | Horseshoe Creek | CSTL-071 | AL | FS | NS | | Zinc |
| | | | REC | FS | PS | | Fecal Coliform |
| **03050207-10** | Ashepoo River | CSTL-068 | AL | FS | NS | | Zinc |
| | | CSTL-069 | AL | FS | NS | | Dissolved Oxygen |
| | | | REC | FS | PS | | Fecal Coliform |
| **03050208-01** | Lake George Warren | CSTL-075 | AL | FS | NS | | Zinc |
| | | CSTL-062 | AL | FS | NS | | Zinc |
| **03050208-02** | Coosawhatchie River | CSTL-110 | REC | FS | PS | | Fecal Coliform |
| | | CSTL-121 | REC | FS | PS | | Fecal Coliform |
| **03050208-03** | Cypress Creek | CSTL-122 | AL | FS | NS | | Zinc |
| **03050208-04** | Coosawhatchie River | CSTL-107 | AL | FS | NS | | Dissolved Oxygen, pH, Zinc |
| | | | REC | FS | PS | | Fecal Coliform |
| **03050208-06** | Broad River | MD-116 | AL | FS | NS | | Copper |
| | Colleton River | MD-176 | AL | FS | PS | | Dissolved Oxygen |

# 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. The Continuing Planning Process, watershed assessments, and 208 plans are elements of South Carolina's overall water quality management plan. In 1992, SCDHEC's Bureau of Water initiated its Watershed Water Quality Management program 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 Department's Salkehatchie River Basin is subdivided into 18 watersheds or hydrologic units within South Carolina, which include the Salkehatchie River Basin, the Coosaw River/Ashepoo River/St. Helena Sound Basin, the Broad River/Beaufort River/Port Royal Sound Basin, and the Salkehatchie Coastal Frontage Basin. The Salkehatchie River Basin is subdivided into 6 watersheds and includes the Salkehatchie River, Whippy Swamp, Lemon Creek, and the Little Salkehatchie River. The Coosaw River/Ashepoo River/St. Helena Sound Basin is subdivided into 5 watersheds and includes the Combahee River, Great Swamp, Horseshoe Creek, Ashepoo River, Coosaw River, and St. Helena Sound. The Broad

River/Beaufort River/Port Royal Sound Basin is subdivided into 6 watersheds and includes Black Creek, the Coosawhatchie River, Cypress Creek, the Beaufort River, the Broad River, and Port Royal Sound. The Salkehatchie Coastal Frontage Basin is contained in a watershed and includes Trenchards Inlet, Fripp Inlet, and the Harbor River.

The hydrologic units are based on the National Watershed Boundary dataset using the 8-, 10-, 12-Digit Hydrologic Unit Codes for South Carolina. All water quality related evaluations are made at the 10-digit watershed level. The stream names used are derived from USGS topographic maps. The National Hydrography Dataset (NHD) served as the basemap for streams and lakes. The dataset was used to calculate stream length estimates, and lake acreages. NHD is the digital database of the USGS 1:24,000 scale hydrography, integrated with reach (stream) related information from the USEPA. Based on the blue line streams of the USGS topographic maps, it is likely that portions of the stream network in terms of perennial, intermittent, and ephemeral streams are not accurately 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 a resource savings and the public 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 NRCS (Natural Resources Conservation Service) 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 work to 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.

There are several major components to SCDHEC's ambient surface water quality monitoring activities, including ongoing fixed-location monitoring, cyclic watershed monitoring, and statewide probability-based monitoring, each designed to provide data for water quality assessment of major water resource types at different spatial and temporal scales. In addition to sites sampled specifically as part of the cyclical watershed activities (W), the ambient surface water quality monitoring program includes several different monitoring station types: Integrator (INT), Special Purpose (SPRP), Summer-Only (SUMM), Random Stream for year ## (RS##), Random Lake for year ## (RL##), Random Tide Creek for year ## (RT##), Random Open Water for year ## (RO##), biological (BIO) stations. Special Study Sites (SSS) are designed to investigate specific activities at a station.

Integrator Sites are fixed-location sites sampled on a monthly basis, year-round, every year, and target the furthest downstream access of each of the 10-digit watershed units in the state, as well as the major waterbodies that occur within these watershed units. Special Purpose Sites are also permanent, monthly, year-round, fixed-location sites, but represent locations of special interest to the Department that do not meet the location criteria of Integrator Sites.

Summer-Only stations are sampled monthly from May through October, a period critical to aquatic life, and characterized by higher water temperatures and lower flows. 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. 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 Integrator Sites. 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 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.

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 (2002-2006) and trend data (1992- 2006) from 130 stations were reviewed for the Salkehatchie River Basin: 20 from the Salkehatchie River Basin, 43 from the Coosaw River/Ashepoo River/St. Helena Sound Basin, 56 from the Broad River/Beaufort River/Port Royal Sound Basin, and 11 from the Salkehatchie Coastal Frontage 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 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 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 (i.e. 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. The current State of S.C. Monitoring Strategy describes what parameters are sampled, where they are sampled, and how frequently. It is available on our website at www.scdhec.gov/environment/water/docs/strategy.pdf .

### 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 (i.e. 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. 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 Appendices A through D.

#### 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. 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 ***(2002-2006).***

**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 or chronic aquatic life criterion for any individual **toxicant** (**heavy metals, priority pollutants, ammonia**) is exceeded more than once, representing more than 10 percent of the samples collected, the criterion is not supported. If the acute or chronic 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 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 40CFR131.36(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.

The calculation of the appropriate criterion value for **ammonia** requires the values of several associated field parameters measured concurrent with the ammonia sample collection. Where direct measurements of any of the parameters are lacking the ammonia value will not be used to determine compliance with the standards.

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 more than 10 but less than 25 percent, sites are evaluated on a case-by-case basis to determine if local conditions indicate that classified uses are impaired. Among the characteristics considered are: hydrology and morphometry of the waterbody, existing and projected trophic state, characteristics of pollutant loadings and ongoing pollutant control mechanisms. If the criterion is exceeded in less than 10 percent of the samples, 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. Fish consumption advisories are updated annually in the spring. 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 Fish Consumption Advisory toll-free hotline at (888) 849-7241.

#### 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 a program written in-house using SAS. 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 **1992 through 2006**.

# 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 Salkehatchie River Basin were drilled into one of four major aquifers. The most prominent aquifer, providing over 80% of the groundwater in this area, is the Tertiary Limestone Aquifer or the Floridan Aquifer. The other three aquifers utilized are the Middendorf, Black Creek, 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.

### Floridan Aquifer

The Floridan aquifer is the primary source of groundwater for most of the lower portion of the basin. It 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.

## 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 Salkehatchie 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 water is generally leached of most minerals and approaches the chemistry of distilled water. There is a tendency for the water 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 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.

## Black Creek Aquifer

The Black Creek Aquifer is an important source of water in the central Coastal Plain region of South Carolina; however, only one well in the network utilizes this aquifer in the Salkehatchie River Basin. Due to this lack of data points, the summary will be more applicable to this particular part of the Black Creek Aquifer and may not necessarily apply to the aquifer as a whole. Generally the Black Creek Aquifer consists of sands interbedded with clays and many excess minerals can be present, increasing the chance of dissolved solids and elevated levels of minerals such as fluoride, or iron and other metals. In the study area, the sands are generally clean and conditions are similar to those in the deeper Middendorf Aquifer. Water sampled was soft and acidic with a pH of 6.5, and was relatively low in dissolved solids. As the water migrates towards the coast, there is a trend towards increasing pH and dissolved solids.

## 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 chlorine. Amounts of dissolved solids are also widely varied, ranging from 80 to 2400 mg/l. Water pumped from this aquifer typically has 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 is 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 (million gallons per day) 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 (biochemical 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. 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 Department's modeling staff, 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 that have been modeled are indicated on the watershed maps.

Streams are considered 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 treatment requirements, controls the permit limits. The Department's modeling staff develops limits for numerous parameters including ammonia nitrogen (NH3-N), dissolved oxygen (DO), and five-day biochemical oxygen demand ($BOD_5$). Limits for other parameters, including metals, toxics (including total residual chlorine), and nutrients are developed by the Water Facilities 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-based

improvement 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 in place, both regulatory and voluntary to 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 such as the Environmental Quality Incentives Program (EQIP) and the Conservation Reserve Program (CRP), cost share funds from USDA and 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. As of 2009, 67% (12.9 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 nonpoint source 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 nonpoint source 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. Most water quality impacts from forestry are temporary or short-lived, can be minimized or mitigated when Best Management Practices (BMPs) are applied, and the site recovers within 2-3 years as vegetation is re-established.

Overall compliance with South Carolina's Best Management Practices for Forestry is 98.6% for timber harvesting operations. Programs to abate or control nonpoint source 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. SCFC provides the results of courtesy exams of forestry operations monthly to both SCDHEC's Division of Water Quality and to forest industries. Impacts from silviculture can be significant if BMPs are not properly applied. 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 and pesticide usage, pet wastes, leaves, grass clippings, and faulty septic tanks. Petroleum hydrocarbons result mostly from automobile sources. From April 2000 through July 2008, statewide population growth was 11.7 percent, while the coastal counties had an increase of 19.7 percent, 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, particularly in South Carolina's coastal communities. 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.27). 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*

As with any human activity, marinas and associated recreational boating activities have the potential to impact the natural environment. Marine sanitation devices and illicit discharges can be sources of bacteria and oxygen demanding substances. Antifouling paints, exhausts, and maintenance activities can be sources of toxic metals, hydrocarbons, and other pollutants. Construction and maintenance activities, such as dredging, can negatively impact aquatic habitats and ecosystems. The physical characteristics of marinas (basin verses open water, high tidal flushing verses low or no tidal flushing, etc.) have the potential to impact water quality. To ensure that impacts associated with existing and proposed marinas are minimized to the greatest extent possible, 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. As of June 30, 2009 there were 615 permitted mining operations in South Carolina totaling 76,546 acres (includes acreage for excavation, buffer, and mine reserves). There were 335.8 acres of mine land reclaimed during the past fiscal year, which brings the cumulative total of mine land reclaimed since the beginning of the mining and reclamation program to 17,271 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*

The U.S. Fish and Wildlife Service is the principal Federal agency that provides information to the public on the extent and status of the Nation's wetlands. According to the most recent survey by the U.S. Fish and Wildlife Service (Dahl 1999), twenty-one percent of South Carolina is covered by 4,104,805 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. At the state level, the primary focus of wetland regulation is through the §401 Water Quality Certification. In accordance with §401 of the Federal Clean Water Act, a certification is required by the state for any Federal permit that may result in a discharge to waters of the state, including wetlands. 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 for through restoration, enhancement, preservation, or creation and protected in perpetuity. Future development would be legally protected in these 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*

Solid Waste Landfills are permitted by the Bureau of Land and Waste Management under Regulation 61-107.19. There are three classifications of Solid Waste Landfills in South Carolina: Class One Landfills, Class Two Landfills, and Class Three Landfills. The landfill classifications are based upon the physical and chemical characteristics of the waste that is disposed in each landfill. There are currently 171 permitted landfills in South Carolina. This total represents 56 Class One Landfills that are limited to

disposal of land-clearing debris; 91 Class Two Landfills that receive construction and demolition debris and waste streams that characterize at less than ten times the maximum contamination limits for drinking water; and 24 Class Three Landfill that receive municipal solid wastes and other nonhazardous waste streams that must be characterized prior to acceptance. Solid Waste Landfills are considered point sources of pollution and are thereby required to have BOW industrial storm water permits. Storm water runoff from these landfills may have an impact on the watershed if it is not managed correctly. Regulatory authority over solid waste disposal activities resides with SCDHEC's Bureau of Land and Waste Management. All active and closed 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 Management Section conducts a program to prevent and monitor 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, non-regulated 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 (IBT) 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.

In June 2010, Senate Bill 452 or the Surface Water Withdrawal Act was signed into law and it will supercede the State Interbasin Transfer of Water Act after January 1, 2011. It covers all surface water withdrawals that are 3 million gallons per month. Any existing surface water withdrawals will be grandfathered in for the amount of water they can remove at the date the law goes into effect. IBT's are included as existing surface water withdrawers, and are grandfathered in for the amount listed in their IBT permits. Any applications that are administratively complete as of January 1, 2011 will be considered existing users and be grandfathered in for the amount their intakes are designed to pump.

## *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. The Low Country Capacity Use Area includes Beaufort, Colleton, Hampton, and Jasper Counties and all are included in the Salkehatchie 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 having the greatest potential for impacts to water quality as a result of development.

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.

SCDHEC's Strategic Plan for 2005-2010 (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 Savannah River Basin lack county wide 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. South Carolina's water quality management plans support consolidation of wastewater treatment facilities into larger regional systems.

The regional Councils of Government (COGs) located in the Salkehatchie River Basin include the the Lower Savannah COG and the Lowcountry COG. Growth potential reported in the individual watershed evaluations are updated by the COGs active in that watershed.

# 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 (803-898-4300) or online at www.scdhec.gov/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 TMDL 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 as 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.

## 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 Construction, Stormwater and Agricultural Division 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.

NPDES permits are issued under the authority of the federal Clean Water Act and the S.C. Pollution Control Act. The state sediment and erosion control permits are issued under the authority of two S.C. laws. The S.C. 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. SCDHEC's Office of Ocean and Coastal Resource Management (OCRM) oversees stormwater permitting in the coastal area. The Stormwater Permitting Section manages the program in the remainder of the state.

SCDHEC is assisted in implementing these regulations by many cities and counties that have been delegated to run a stormwater program under provisions of the 1991 Act and/or are owners of Municipal Separate Storm Sewer Systems (MS4) and required to run stormwater management programs under the NPDES program. MS4 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 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.

NPDES MS4 permits allow communities to design SWMP that are suited for controlling pollutants in their jurisdiction. There are three population-based categories of MS4: large (population of 250,000 or greater), medium (population of 100,000 or more but less than 250,000), and small (population less than 100,000). Large and medium MS4 have been regulated since the 1990s. Those small MS4 within the boundaries of an urbanized area are called Regulated Small MS4. MS4 NPDES Permits are required for all large, medium, and regulated small MS4. MS4 can extend over more than one 10-digit watershed or even 8-digit river basin as it follows municipal boundaries, so the same permit can be listed in multiple watersheds. The MS4 receiving stream listed in the individual watershed evaluations is the mainline stream of the 10-digit hydrologic unit. The initial receiving source of the MS4 may be a smaller tributary upstream.

## 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. There are no federally defined concentrated animal feeding operations (CAFOs) in operation in South Carolina based on the EPA definition of a CAFO in the NPDES regulations. 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.

## 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 may occur. Sewer overflows (SSOs) have existed since the introduction of separate sanitary sewers, and most overflows are caused by inadequate operation, maintenance, and 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 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.

# 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) places an emphasis on protection of 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, a distance of 15 miles upstream from the surface water intake 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 is a critical factor in the success of the SWAP, and local governments, 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 largely occur at the local level, and local authorities may wish to base zoning and land-use planning on the source water assessments. The SWAP is a key part of the Department's watershed management approach. To avoid duplication, information gathered from existing regulatory programs and/or watershed protection efforts is 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. 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 Outreach Assistance

The Bureau's Nonpoint Source (NPS) Outreach program is an integral component of the State's NPS management program. The NPS Outreach program supports South Carolina's NPS water quality improvement goals through a capacity building approach. The NPS Outreach program provides outreach resources and materials to communities, organizations and municipalities as they develop their NPS outreach plans. Available resources include a Web-based NPS outreach toolbox tailored for South Carolina specific NPS issues, and consultation in best outreach practices. For more information please call 803-898-4300 or go to www.scdhec.gov/environment/water/or.htm.

## Swimming Advisory Outreach

SCDHEC tests rivers, lakes and streams all over the State. Sometimes these tests show high amounts of bacteria for some streams and rivers. DHEC puts up a swimming advisory sign where high amounts of bacteria have been found and people commonly swim. The NPS Outreach program uses this as a springboard for awareness of NPS issues and steps citizens can take to reduce their contributions to runoff pollution. For more information on the swimming advisories call the hotline at 1-800-360-5655. Information and tips on reducing NPS can be found on the swimming advisory website at www.scdhec.gov/environment/water/swim.htm.

## Fish Advisory Outreach

Based on fish tissue monitoring results assessing mercury levels, SCDHEC and the Department of Natural Resources work together to provide annual fish consumption advisories that tell you the right amounts and types of fish to eat in South Carolina. The advisories particularly focus on providing statewide advice for at-risk women and children. For more information and the most current advisories, please visit http://www.scdhec.gov/fish. If you have further questions or would like a hard copy of the advisories, call SCDHEC's toll-free Fish Consumption Advisory hotline at (888) 849-7241.

## Champions of the Environment

Champions of the Environment encourages, enables and recongnizes youth environmental education projects that develop awareness, promote behavior change or improve and protect our water, air and land. Champions has been rewarding South Carolina's kindergarten through twelfth-grade students and teachers since 1993. Grants and cash awards enabled schools and communities to participate in activities such as protecting nesting sea turtles, reducing a school's carbon footprint, and protecting water quality; all positively impacting the environment and developing young, environmental stewards. Champions is a unique public-private partnership between DHEC, industry partners, and the media. For more information contact the Champions of the Environment coordinator at 803-898-4300 or visit www.scdhec.gov/environment/water/champion.htm.

## Water Efficiency Outreach

In South Carolina, a growing population has placed greater demands on water supplies. Reducing household water use becomes part of the solution to maintaining adequate water supplies and protecting water resources. DHEC's Bureau of Water Outreach program is committed to increasing household water use efficiency through the promotion of EPA's WaterSense program. WaterSense encourages water-efficient behaviors and the purchase of quality products that use less water. For more information about WaterSense call the Bureau of Water at (803) 898-4300 or go to http://www.scdhec.gov/environment/water/or.htm.

## 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, view the State Revolving Fund web site www.scdhec.gov/srf .

# Citizen-Based Watershed Stewardship Programs

Throughout the Salkehatchie River Basin, water quality is a common interest among citizen groups. The issues and membership of these groups vary widely. Some of the citizen groups interested in water quality in the Salkehatchie River Basin are described below. To view the most current listing, visit our webpage at http://www.scdhec.gov/environment/water/shed/org.htm.

## *Friends of the Rivers*

Friends of the Rivers is an environmental advocacy group based in Beaufort County with a focus on water quality. Their stated mission "… is to protect the quality of our water resources by providing water quality education and information to residents of the South Carolina Lowcountry as it relates to a community's cultural, social, economic, or scientific concerns." They are a participant in the Port Royal Sound Conservancy, a consortium of private and public organizations working together to target funding and research to the area. For more information, visit http://www.friendsoftherivers.com/.

## *Low Country Institute*

Based in Okatie SC, the Low Country Institute (LCI) works to educate the community on a broad range of environmental issues in and around the Port Royal Sound area. Their educational efforts include events held by their master naturalist. The LCI also collaborates with local and state resource management authorities to implement progressive environmental protection policies. For more information, visit http://www.lowcountryinstitute.org/

## *Coastal Conservation League*

Since 1989, the Coastal Conservation League (CCL) has been working with communities, businesses and citizen groups to protect the South Carolina coastal plain and to enhance the quality of life of its communities. CCL actively promotes the protection of coastal habitats and water quality through legislative action and grassroots citizen involvement. Headquartered in Charleston, the CCL maintains an office in Beaufort (South Coast). Learn more at http://coastalconservationleague.org.

## *Ace Basin National Estuarine Research Reserve*

Located 45 minutes south of Charleston, SC, the Ace Basin (Ashepoo River/Combahee River/ Edisto River) is one of the largest undeveloped estuaries on the east coast of the United States. The ACE Basin National Estuarine Research Reserve (NERR) was designated in 1992 as a partnership program between the National Oceanic and Atmospheric Administration (NOAA) and the South Carolina Department of Natural Resources (SCDNR). The ACE Basin NERR aims to protect the natural beauty, abundant wildlife and unique cultural heritage of the area through long-term research, water-quality monitoring, education and coastal stewardship. For more information, visit http://www.dnr.sc.gov/marine/NERR/.

# Salkehatchie River Basin Description

The ***Salkehatchie River Basin (a portion of hydrologic unit 03050207)*** is located in Barnwell, Bamberg, Allendale, Hampton, and Colleton Counties, and encompasses 1,023 square miles that extends across the Upper and Lower Coastal Plain and Coastal Zone regions of the State. The Salkehatchie River Basin encompasses 6 watersheds and 654,449 acres, of which 43.7% is forested land, 26.0% is forested wetland, 24.6% is agricultural land, 4.7% is urban land, 0.7% is nonforested wetland, 0.2% is water, and 0.1% is barren land. There are approximately 2,354 stream miles and 3,566 acres of lake waters in this basin.

The Salkehatchie River originates near the City of Barnwell and accepts drainage from Whippy Swamp before merging with the Little Salkehatchie River (Lemon Creek) to form the Combahee River.

## *Physiographic Regions*

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

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 2006 National Land Cover Data (NLCD). The dataset is 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, as well as vegetated portions of urban areas.

**Agricultural/Grass land** is characterized by cropland, pasture, and orchards and may include some grass cover in urban, scrub/shrub, and forest areas.

**Forest land** is characterized by deciduous and evergreen trees not including forests in wetland settings.

**Forested Wetland (swampland)** is the saturated bottomland, mostly hardwood forests that are primarily composed of wooded swamps occupying river floodplains and isolated low-lying wet areas, primarily located in Coastal Plain.

**Nonforested Wetland (marshland)** is dependent on soil moisture to distinguish it from Scrub/Shrub since both classes contain grasses and low herbaceous cover; nonforested wetlands are most common along the coast and isolated freshwater areas found in the Coastal Plain.

**Barren land** is characterized by an unvegetated condition of the land, both natural (rock, beaches, unvegetated 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 and tidal waters.

## *Soil Types*

The individual soil series for the Salkehatchie River Basin are described as follows.

**Blanton** soils are excessively drained soils that have loamy subsoil or are sandy throughout.

**Coxville** soils are deep, poorly drained soils in thick beds of clayey sediment, nearly level.

**Dothan** soils are well drained, sandy soils with loamy subsoil.

**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 or nearly level ridges and in shallow depressions.

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

**Norfolk** soils are deep, well drained soils, with loamy subsoil, nearly level and gently sloping elevated uplands.

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

**Torhunta** soils are poorly drained soils, prone to flooding and ponding, with a loamy surface layer and subsoil, or are sandy throughout, on level areas.

**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.

## *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 Salkehatchie 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 the Little Salkehatchie River and portions of the Salkehatchie River advising people to limit the amount of some types of fish consumed from these waters. Fish consumption advisories are updated annually in the spring. 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 Fish Consumption Advisory toll-free hotline at (888) 849-7241.

## *Climate*

Normal yearly rainfall in the Salkehatchie River area during the period of 1971 to 2000 was 48.61 inches, according to South Carolina's 30-year climatological record. Data from National Weather Service stations in Allendale, Blackville, Hampton, Bamburg, and Yemassee were compiled to determine general climatic information for the Salkehatchie River area. The highest seasonal rainfall occurred in the summer with 16.40 inches; 9.75, 11.56, and 10.90 inches of rain fell in the fall, winter, and spring, respectively. The average annual daily temperature was 64.6°F. Summer temperatures averaged 79.5 °F, and fall, winter, and spring mean temperatures were 65.6 °F, 49.1 °F, and 64.4 °F, respectively.

# Watershed Evaluations

## *03050207-01*

### *(Salkehatchie River)*

## General Description

Watershed 03050207-01 (formerly 03050207-010, 020, 030) is located in Barnwell, Bamberg, and Allendale Counties and consists primarily of the ***Salkehatchie River*** and its tributaries from its origin to Wells Branch. The watershed occupies 168,165 acres of the Sand Hills and Upper and Lower Coastal Plain regions of South Carolina. Land use/land cover in the watershed includes: 51.3% forested land, 24.4% agricultural land, 17.7% forested wetland, 5.3% urban land, 0.7% nonforested wetland, 0.4% water, and 0.2% barren land. A map depicting this watershed is found in Appendix A, page A-11.

Rosemary Creek (Folk Pond) and Buck Creek (Bolen Pond) join to form the Salkehatchie River, which accepts drainage from Turkey Creek (Shrub Branch, Long Branch, Lake Edgar A. Brown), Pen Branch (Fuller Pond), Hurricane Creek (Riley Mill Branch), Toby Creek (Jordan Branch), Parker Branch, Hercules Creek, Georges Creek (Juniper Creek), Birds Branch (Horsepen Bay, Chitty Pond), and Wells Branch. There are a total of 302.2 stream miles and 1,351.9 acres of lake waters in this watershed, all classified FW. Barnwell State Park resides near the headwaters of Toby Creek, just south of the Town of Blackville.

## Surface Water Quality

| Station # | Type | Class | Description |
|---|---|---|---|
| CSTL-028 | INT | FW | SALKEHATCHIE RIVER AT SC 64, 2MI W OF BARNWELL |
| RL-06437 | RL06 | FW | LAKE EDGAR BROWN, 0.3 MI NNE OF BRIDGE AT S-06-488 |
| CL-064 | W | FW | LAKE EDGAR BROWN IN FOREBAY NEAR DAM |
| CSTL-001B | INT | FW | TURKEY CREEK 1MI BELOW MILLIKEN/BARNWELL OUTFALL AT CLINTON ST. |
| CSTL-003 | W | FW | SALKEHATCHIE RIVER AT SC 278, 2.5MI S OF BARNWELL |
| CSTL-577 | BIO | FW | TOBY CREEK AT S-06-29 |
| CSTL-579 | BIO | FW | BIRDS BRANCH AT S-05-567 |
| RS-02472 | RS02 | FW | WELLS BRANCH AT SC 300 |

***Salkehatchie River*** – There are two SCDHEC monitoring stations along this portion of the Salkehatchie River. Recreational uses are partially supported at both sites due to fecal coliform bacteria excursions. At the upstream site ***(CSTL-028)***, aquatic life uses are fully supported; however, there is a significant increasing trend in five-day biochemical oxygen demand. This is a blackwater system, characterized by naturally low pH conditions. Although pH excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations. Significant decreasing trends in turbidity and total phosphorus concentration suggest improving conditions for these parameters. At the downstream site ***(CSTL-003)***, aquatic life uses are fully supported; however, there is a significant

increasing trend in five-day biochemical oxygen demand. There is a significant increasing trend in pH. A significant decreasing trend in turbidity suggests improving conditions for this parameter.

***Lake Edgar Brown*** – There are two SCDHEC monitoring stations along Lake Edgar Brown. At the uplake site ***(RL-06437)***, aquatic life and recreational uses are fully supported. At the downlake site ***(CL-064)***, aquatic life uses are not supported due total phosphorus concentration and chlorophyll excursions. Recreational uses are fully supported.

***Turkey Creek (CSTL-001B)*** – Aquatic life uses are fully supported; however, there is a significant increasing trend in five-day biochemical oxygen demand. This is a blackwater system, characterized by naturally low pH conditions. Although pH excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations. A significant decreasing trend in turbidity suggests improving conditions for this parameter. Recreational uses are partially supported due to fecal coliform bacteria excursions.

***Toby Creek (CSTL-577)*** **–** Aquatic life uses are fully supported based on macroinvertebrate community data.

***Birds Branch (CSTL-579)*** **–** Aquatic life uses are fully supported based on macroinvertebrate community data.

***Wells Branch (RS-02472)*** **-** Aquatic life uses are fully supported based on macroinvertebrate community data. Recreational uses are not supported due to fecal coliform bacteria excursions.

## NPDES Program

### *Active NPDES Facilities*

| ***RECEIVING STREAM*** / ***FACILITY NAME*** | ***NPDES#*** / ***TYPE*** |
|---|---|
| TURKEY CREEK | SC0003093 |
| MILLIKEN & CO./BARNWELL PLT | MAJOR INDUSTRIAL |
| SALKEHATCHIE RIVER | SC0047872 |
| CITY OF BARNWELL WWTP | MAJOR DOMESTIC |

## Nonpoint Source Management Program

### *Land Disposal Activities*

**Land Application Sites**

| ***LAND APPLICATION SYSTEM*** / ***FACILITY NAME*** | ***ND#*** / ***TYPE*** |
|---|---|
| SPRAYFIELD | ND0063061 |
| WILLISTON/ROSEMARY CREEK WWTP | DOMESTIC |

**Landfill Facilities**

| *LANDFILL NAME*<br>*FACILITY TYPE* | *PERMIT #*<br>*STATUS* |
|---|---|
| BARNWELL CO. TRANSFER STA.<br>TRANSFER STA. | 061001-6001<br>ACTIVE |
| BARNWELL COUNTY LANDFILL<br>DOMESTIC | 061001-1101<br>INACTIVE |
| BARNWELL CO. C&D LANDFILL<br>C & D | 061001-1201<br>ACTIVE |

## Growth Potential

There is a low to moderate potential for growth in this watershed, which contains the Town of Olar, portions of the Towns of Snelling, Elko, Williston, Blackville, Hilda, Govan, and Kline, the City of Barnwell, and the Savannah River Site (SRS). The Town of Snelling is located directly adjacent to SRS where SC 64 terminates at a controlled access/employee entrance to SRS. The Town of Snelling and the area adjacent to SC 64 (including a portion of Barnwell) are expected to continue experiencing slight growth due to their location to SRS's entrance. The junction of SC 64 and US 278, en route to SRS, is an area of potential commercial growth. There are plans and funding in place to create 6-ft paved shoulders for safety and bicycle lanes along US 78 between Bamberg and Denmark. The existing rail lines running through the Town of Blackville may encourage industrial growth. Bamberg and Allendale Counties have adopted a zoning ordinance that includes River and Streamside Management Areas restricting development within 100 feet of a river and 50 feet from perennial streams, which flow directly into the river.

## *03050207-02*

### *(Whippy Swamp)*

## General Description

Watershed 03050207-02 (formerly 03050207-050) is located in Allendale and Hampton Counties and consists primarily of ***Whippy Swamp*** and its tributaries. The watershed occupies 86,829 acres of the Lower Coastal Plain region of South Carolina. Land use/land cover in the watershed includes: 35.5% forested land, 35.3% agricultural land, 23.5% forested wetland, 4.9% urban land, 0.5% nonforested wetland, 0.2% water, and 0.1% barren land. A map depicting this watershed is found in Appendix A, page A-12.

Jackson Branch (Log Branch, Tutens Millpond, Miller Swamp) originates near the Town of Allendale and merges with Caw Caw Swamp to form Whippy Swamp. Downstream of the confluence, Whippy Swamp accepts drainage from Calico Branch, Hog Branch, Bings Branch, and Sandy Run (Maulding Millpond). There are a total of 238.9 stream miles and 414.7 acres of lake waters in this watershed, all classified FW, with the exception of Caw Caw Swamp, which is classifed FW* (DO not less than 4 mg/l, pH 5.0-8.5).

## Surface Water Quality

| Station # | Type | Class | Description |
|---|---|---|---|
| CSTL-051 | BIO | FW | JACKSON BRANCH AT S-03-18 |

***Jackson Branch (CSTL-051)*** **–** Aquatic life uses are fully supported based on macroinvertebrate community data.

## Nonpoint Source Management Program

***Land Disposal Activities***

**Landfill Facilities**

| *LANDFILL NAME* / *FACILITY TYPE* | *PERMIT #* / *STATUS* |
|---|---|
| APPLETON SHORT TERM C&D LANDFILL<br>DOMESTIC | 032900-1301<br>INACTIVE |
| APPLETON LANDFILL (WASTEMASTERS LF)<br>DOMESTIC | 032484-1101<br>INACTIVE |
| WASTEMASTER C&D LANDFILL<br>C & D | 032608-1201<br>INACTIVE |

## Growth Potential

There is a low potential for growth in this watershed, which contains the Town of Sycamore and portions of the Towns of Allendale, Fairfax, and Brunson. Half of Allendale County's population lives in the Towns of Allendale and Fairfax. US 278 runs between the towns and is projected to support increased commercial growth. Due to growth in the Allendale-Fairfax area, the Town of Allendale's treatment facility has been expanded and there is a rail line that could support future industry. Allendale County has adopted a zoning ordinance that includes River and Streamside Management Areas, restricting development within 100 feet of a river and 50 feet from perennial streams, which flow directly into the river.

## *03050207-03*

### *(Lemon Creek)*

## General Description

Watershed 03050207-03 (formerly 03050207-070) is located in Bamberg County and consists primarily of ***Lemon Creek*** and its tributaries. The watershed occupies 44,290 acres of the Lower Coastal Plain region of South Carolina. Land use/land cover in the watershed includes: 42.9% forested land, 28.0% forested wetland, 19.9% agricultural land, 8.1% urban land, 1.0% nonforested wetland, and 0.1% water. A map depicting this watershed is found in Appendix A, page A-13.

Lemon Creek originates in the City of Denmark and accepts drainage from Grapevine Branch, Halfmoon Branch, Colt Branch, Hog Bay, and Tony Hill Bay before flowing into the Little Salkehatchie River. There are a total of 200.7 stream miles and 721.6 acres of lake waters in this watershed. Lemon Creek is classified FW* (DO not less than 4mg/l and pH 5.0-8.5) and its tributaries are classified FW.

## Surface Water Quality

| Station # | Type | Class | Description |
|---|---|---|---|
| CSTL-116 | INT | FW* | LEMON CREEK AT S-05-541 |

## Groundwater Quality

| Well # | Class | Aquifer | Location |
|---|---|---|---|
| AMB-001 | GB | BLACK CREEK | BAMBERG |

***Lemon Creek (CSTL-116) -*** Aquatic life uses are fully supported; however, there is a significant increasing trend in five-day biochemical oxygen demand. There is a significant increasing trend in pH. Significant decreasing trends in turbidity and total nitrogen concentration and increasing trends in dissolved oxygen concentration suggest improving conditions for these parameters. Recreational uses are partially supported 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*<br>*FACILITY NAME* | *NPDES#*<br>*TYPE* |
|---|---|
| LEMON CREEK<br>BAMBERG CO./CAMP SAND PIT | SCG730213<br>MINOR INDUSTRIAL |

## Nonpoint Source Management Program

### *Land Disposal Activities*

**Landfill Facilities**

| *LANDFILL NAME*<br>*FACILITY TYPE* | *PERMIT #*<br>*STATUS* |
|---|---|
| BAMBERG COUNTY LANDFILL<br>TRANSFER STATION | 051001-6001<br>ACTIVE |
| BAMBERG COUNTY LANDFILL<br>DOMESTIC | 051001-1101<br>INACTIVE |
| BAMBERG COUNTY C&D LANDFILL<br>C & D | 051001-1201<br>ACTIVE |
| BAMBERG COUNTY COMPOSTING LANDFILL<br>COMPOSTING | 051001-3001<br>INACTIVE |

**Land Application Sites**

| *LAND APPLICATION SYSTEM*<br>*FACILITY NAME* | *ND#*<br>*TYPE* |
|---|---|
| SPRAYFIELD<br>TOWN OF BAMBERG | ND0063398<br>DOMESTIC |

### *Mining Activities*

| *MINING COMPANY*<br>*MINE NAME* | *PERMIT #*<br>*MINERAL* |
|---|---|
| BAMBERG COUNTY<br>CAMP SAND PIT | 0287-09<br>SAND/CLAY |

## Growth Potential

There is a low potential for growth in this watershed, which contains a portion of the City of Denmark and a portion of the Town of Bamberg. The only commerce in the area is along US 78, which is projected to be widened and could serve to increase commerce. Rail lines run through Bamberg to Denmark, and another through Denmark to the City of Columbia in one direction and toward the Savannah River in the other; the rail system already in place may encourage industrial growth. Growth is currently limited by the treatment system capacity. Bamberg County has adopted a zoning ordinance that includes River and Streamside Management Areas, restricting development within 100 feet of a river and 50 feet from perennial streams, which flow directly into the river.

## *03050207-04*

### *(Little Salkehatchie River)*

## General Description

Watershed 03050207-04 (formerly 03050207-060) is located in Barnwell and Bamberg Counties and consists primarily of the upper ***Little Salkehatchie River*** and its tributaries from its origin to Lemon Creek. The watershed occupies 70,207 acres of the Upper and Lower Coastal Plain regions of South Carolina. Land use/land cover in the watershed includes: 41.4% forested land, 27.1% agricultural land, 26.1% forested wetland, 4.6% urban land, 0.4% water, and 0.4% nonforested wetland. A map depicting this watershed is found in Appendix A, page A-13.

The Little Salkehatchie River originates in the Town of Blackville and accepts drainage from Lake Cynthia, Guess Pond, Brooker Pond, Ghents Branch, Halfmoon Branch, and Long Gall Branch. Further downstream, the river accepts drainage from Long Pond, Ben Rice Bay, Colston Branch (Ben Rice Branch, Doussoss Bay, Indian Camp Branch, McMillian Branch), and Long Branch (Little Clear Pond, Clear Pond). There are a total of 263.8 stream miles and 494.3 acres of lake waters in this watershed, all classified FW.

## Surface Water Quality

| Station # | Type | Class | Description |
|---|---|---|---|
| RS-06012 | RS06 | FW | LITTLE SALKEHATCHIE R. AT BRIDGE ON S-5-41, 7.2MI NNW OF EHRHARDT |
| CSTL-115 | W | FW | LITTLE SALKEHATCHIE RIVER AT US 601 |

***Little Salkehatchie River*** – There are two SCDHEC monitoring stations along this portion of the Little Salkehatchie River. At the upstream site ***(RS-06012)*** aquatic life and recreational uses are fully supported. At the downstream site ***(CSTL-115)*** aquatic life uses are fully supported; however, there is a significant increasing trend in five-day biochemical oxygen demand. There is a significant increasing trend in pH. A significant decreasing trend in total nitrogen concentration suggests improving conditions for this parameter. Recreational uses are partially supported due to fecal coliform bacteria excursions.

*A fish consumption advisory has been issued by the Department for mercury and includes the Little Salkehatchie River within this watershed (see advisory p.37).*

## NPDES Program

### *Active NPDES Facilities*

| *RECEIVING STREAM*<br>*FACILITY NAME* | *NPDES#*<br>*TYPE* |
|---|---|
| LITTLE SALKEHATCHIE RIVER<br>CITY OF DENMARK | SC0040215<br>MINOR DOMESTIC |

| | |
|---|---|
| LITTLE SALKEHATCHIE RIVER | SCG730192 |
| JR WILSON CONSTRUCTION/KIRKLAND MINE | MINOR INDUSTRIAL |

## Nonpoint Source Management Program

### *Land Disposal Activities*

**Landfill Facilities**

| ***LANDFILL NAME*** | ***PERMIT #*** |
|---|---|
| ***FACILITY TYPE*** | ***STATUS*** |
| UNION CAMP | IWP-198 |
| INDUSTRIAL | INACTIVE |

### *Mining Activities*

| ***MINING COMPANY*** | ***PERMIT #*** |
|---|---|
| ***MINE NAME*** | ***MINERAL*** |
| JR WILSON CONSTRUCTION, INC. | 0498-09 |
| KIRKLAND MINE | LIMESTONE; SAND/CLAY |

## Growth Potential

There is a low potential for growth in this watershed, which contains portions of the City of Denmark and the Towns of Blackville, Hilda, Govan, and Ehrhardt. The rail lines and sewer systems already in place may encourage slight growth. Bamberg County has adopted a zoning ordinance that includes River and Streamside Management Areas, restricting development within 100 feet of a river and 50 feet from perennial streams, which flow directly into the river.

## *03050207-05*

### *(Little Salkehatchie River)*

## General Description

Watershed 03050207-05 (formerly 03050207-080, -090, -100, and -110) is located in Bamberg and Colleton Counties and consists primarily of the lower ***Little Salkehatchie River*** and its tributaries from Lemon Creek to its confluence with the Salkehatchie River. The watershed occupies 183,421 acres of the Lower Coastal Plain region of South Carolina. Land use/land cover in the watershed includes: 43.1% forested land, 30.1% forested wetland, 22.0% agricultural land, 3.8% urban land, 0.8% nonforested wetland, 0.1% water, and 0.1% barren land. A map depicting this watershed is found in Appendix A, page A-14.

This section of the Little Salkehatchie River accepts drainage from its upstream reach together with Drawdy Branch, Hurricane Branch, Little Swamp (Bull Bay), Buckhead Creek (Steedley Branch, Bear Branch, Hog Branch, and Deep Bottom Creek, Deep Bottom Bay, Fosters Bay), Oldfield Creek, and Bryans Lake. Further downstream, Willow Swamp (Fender Creek, McCuren Branch, Ashton Branch, Dry Branch, Moselle Swamp, Cedar Branch, Rum Gully) flows into the river followed by Indian Creek (Horse Bay), Deep Creek, and Sandy Run. The Little Salkehatchie River joins with the Salkehatchie River to form the Combahee River. There are a total of 828.8 stream miles and 303.0 acres of lake waters in this watershed, all classified FW.

## Surface Water Quality

| Station # | Type | Class | Description |
|---|---|---|---|
| CSTL-119 | INT | FW | BUCKHEAD CREEK AT SC 212 |
| CSTL-117 | INT | FW | LITTLE SALKEHATCHIE RIVER AT SC 64 |
| CSTL-118 | INT | FW | WILLOW SWAMP AT S-15-27 |
| CSTL-120 | INT | FW | LITTLE SALKEHATCHIE RIVER AT SC 63 |
| CSTL-585 | BIO | FW | SANDY RUN AT US 21 |

***Buckhead Creek (CSTL-119) –*** Aquatic life uses are fully supported. This is a blackwater system, characterized by naturally low pH and dissolved oxygen conditions. Although pH and dissolved oxygen excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations. A significant decreasing trend in turbidity suggests improving conditions for this parameter. Recreational uses are not supported due to fecal coliform bacteria excursions.

***Little Salkehatchie River -*** There are two SCDHEC monitoring stations along this portion of the Little Salkehatchie River. This is a blackwater system, characterized by naturally low pH and dissolved oxygen conditions. Significant decreasing trends in turbidity at both sites suggest improving conditions for this parameter. At the upstream site ***(CSTL-117)*** aquatic life uses are fully supported. Although pH excursions occurred, they were typical of values seen in blackwater systems and were considered

natural, not standards violations. Recreational uses are partially supported due to fecal coliform bacteria excursions. At the downstream site ***(CSTL-120),*** aquatic life uses are not supported due to occurrences of copper and zinc in excess of the aquatic life chronic criterion. There is a significant decreasing trend in pH. Although pH and dissolved oxygen excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations. Recreational uses are fully supported.

***Willow Swamp (CSTL-118)*** **–** Aquatic life uses are not supported due to occurrences of copper in excess of the aquatic life chronic criterion. There is also a significant increasing trend in total phosphorus concentration. This is a blackwater system, characterized by naturally low pH and dissolved oxygen conditions. Although pH and dissolved oxygen excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations. A significant decreasing trend in turbidity suggests improving conditions for this parameter. Recreational uses are partially supported due to fecal coliform bacteria excursions.

***Sandy Run (CSTL-585)*** **–** Aquatic life uses are fully supported based on macroinvertebrate community data.

*A fish consumption advisory has been issued by the Department for mercury and includes the Little Salkehatchie River within this watershed (see advisory p.37).*

## NPDES Program

### *Active NPDES Facilities*

| ***RECEIVING STREAM*** / ***FACILITY NAME*** | ***NPDES#*** / ***TYPE*** |
|---|---|
| BUCKHEAD CREEK | SC0033766 |
| RUFFIN HIGH SCHOOL/COLLETON CSD | MIN0R DOMESTIC |

## Nonpoint Source Management Program

### *Land Disposal Activities*

**Landfill Facilities**

| ***LANDFILL NAME*** / ***FACILITY TYPE*** | ***PERMIT #*** / ***STATUS*** |
|---|---|
| SOUTHEASTERN RESEARCH AND RECOVERY | 052632-2001 |
| INDUSTRIAL | INACTIVE |

### *Mining Activities*

| ***MINING COMPANY*** / ***MINE NAME*** | ***PERMIT #*** / ***MINERAL*** |
|---|---|
| TA-MONS DIRT | 1753-29 |
| TA-MONS DIRT MINE | SAND |

## Growth Potential

There is a low potential for growth in this watershed, which contains the Towns of Smoaks and Williams, and portions of the Towns of Lodge and Ehrhardt. Bamberg County has adopted a zoning ordinance that includes River and Streamside Management Areas, restricting development within 100 feet of a river and 50 feet from perennial streams, which flow directly into the river.

## *03050207-06*

### *(Salkehatchie River)*

## General Description

Watershed 03050207-06 (formerly 03050207-040) is located in Bamberg, Allendale, Hampton, and Colleton Counties and consists primarily of the ***Salkehatchie River*** and its tributaries from Wells Branch to its confluence with the Little Salkehatchie River. The watershed occupies 101,537 acres of the Lower Coastal Plain region of South Carolina. Land use/land cover in the watershed includes: 41.1% forested land, 33.5% forested wetland, 20.7% agricultural land, 3.6% urban land, 1.0% nonforested wetland, and 0.2% water. A map depicting this watershed is found in Appendix A, page A-12.

This lower section of the Salkehatchie River accepts drainage from its upstream reach, together with Gin Branch, Kirkland Creek (Cypress Pond, Alligator Bay), Bear Branch, Pretty Creek, Hog Branch, and Threemile Creek (Ocean Pond, Church Branch, Meadow Branch, Big Branch). Savannah Creek (Long Branch) enters the river next, followed by Moselle Swamp, the Whippy Swamp watershed, Ricepatch Creek, and Tennants Branch. The Salkehatchie River joins with the Little Salkehatchie River to form the Combahee River. There are a total of 519.8 stream miles and 280.4 acres of lake waters in this watershed, all classified FW. The Rivers Bridge State Historic Site is located in this watershed near the Threemile Creek confluence with the Salkehatchie River.

## Surface Water Quality

| Station # | Type | Class | Description |
|---|---|---|---|
| CSTL-048 | INT | FW | SALKEHATCHIE RIVER AT US 301 & US 321 |
| CSTL-006 | W | FW | SALKEHATCHIE RIVER AT US 601, 9MI NE OF HAMPTON |
| CSTL-104 | INT | FW | SALKEHATCHIE RIVER AT SC 63 |

***Salkehatchie River –*** There are three SCDHEC monitoring stations along this portion of the Salkehatchie River. At the upstream site ***(CSTL-048)***, aquatic life uses are fully supported; however, there is a significant increasing trend in five-day biochemical oxygen demand and total phosphorus concentration. There is a significant increasing trend in pH. Significant decreasing trends in turbidity and increasing trends in dissolved oxygen concentration suggest improving conditions for these parameters. Recreational uses are fully supported at this site and a significant decreasing trend in fecal coliform bacteria concentration suggests improving conditions for this parameter. At the midstream site ***(CSTL-006)***, aquatic life uses are fully supported. There is a significant increasing trend in pH. Significant decreasing trends in turbidity and total nitrogen concentration suggest improving conditions for these parameters. Recreational uses are partially supported due to fecal coliform bacteria excursions; however, a significant decreasing trend in fecal coliform bacteria concentration suggests improving conditions for this parameter. At the downstream site ***(CSTL-104)***, aquatic life and recreational uses are fully supported; however, there is a significant increasing trend in five-day biochemical oxygen demand. This is a blackwater system, characterized by naturally low pH conditions. Although pH excursions

occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations. Significant decreasing trends in turbidity and increasing trends in dissolved oxygen concentration suggest improving conditions for these parameters.

*A fish consumption advisory has been issued by the Department for mercury and includes the Salkehatchie River within this watershed (see advisory p.37).*

## NPDES Program

### *Active NPDES Facilities*

| ***RECEIVING STREAM*** <br> ***FACILITY NAME*** | ***NPDES#*** <br> ***TYPE*** |
|---|---|
| SALKEHATCHIE RIVER | SCG730653 |
| REA CONTRACTING LLC/056 ULMER PIT | MINOR INDUSTRIAL |
| TENNANTS BRANCH | SCG730458 |
| MANOR TRUST PROPERTIES LCC/RAM HORN MINE | MINOR INDUSTRIAL |

### *Mining Activities*

| ***MINING COMPANY*** <br> ***MINE NAME*** | ***PERMIT*** <br> ***MINERAL*** |
|---|---|
| REA CONTRACTING LLC | 0075-09 |
| MINE #2 | SAND |
| MANOR TRUST PROPERTIES LCC | 1591-49 |
| RAM HORN MINE | SAND |

## Growth Potential

There is a low potential for growth in this watershed, which contains the Town of Ulmer and a portion of Ehrhardt. Bamberg and Allendale Counties have adopted a zoning ordinance that includes River and Streamside Management Areas, restricting development within 100 feet of a river and 50 feet from perennial streams, which flow directly into the river.

# Coosaw/Ashepoo/St. Helena Sound Basin Description

The ***Coosaw River/Ashepoo River/St. Helena Sound Basin (portion of hydrologic unit 03050207)*** is located in Colleton, Hampton, and Beaufort Counties and encompasses 5 watersheds and 830 square miles. The Coosaw River/Ashepoo River/St. Helena Sound Basin flows through the Lower Coastal Plain and Coastal Zone regions. Of the 531,261 acres, 36.0% is forested land, 25.4% is forested wetland, 16.2% is nonforested wetland, 8.9% is agricultural land, 8.8% is water, 4.3% is urban land, and 1.2% is barren land. There are approximately 1,426 stream miles, 1,331 acres of lake waters, and 38,505 acres of estuarine areas in this basin.

The Combahee River is formed from the confluence of the Salkehatchie and Little Salkehatchie River and flows into the Coosaw River. The Coosaw River joins the Ashepoo River and the Morgan River to form St. Helena Sound. The Ashepoo River originates near the City of Walterboro and accepts drainage from the Great Swamp and Horseshoe Creek before flowing into St. Helena Sound.

## *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 region that defines the Coosaw River/Ashepoo River/St. Helena Sound Basin is as follows:

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 2006 National Land Cover Data (NLCD). The dataset is 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.

**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 individual soil series for the Coosaw River/Ashepoo River/St. Helena Sound Basin:

**Argent** soils are poorly drained soils on low, nearly level areas and low ridges.

**Bladen** soils are poorly drained soils on low, nearly level areas and low ridges.

**Blanton** soils are excessively drained soils that have loamy subsoil or are sandy throughout.

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

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

**Coosaw** soils are somewhat to poorly drained soils, with a moderately thick sandy surface layer and loamy subsoil, on ridges and in depressions.

**Echaw** soils are well drained soils, sandy throughout on broad, nearly level to gently sloping ridges.

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

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

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

**Lynnhaven** soils are poorly drained sandy soils, with sandy subsoil, in low areas, and prone to ponding.

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

**Pungo** soils are very poorly drained soils, mucky throughout or loamy and underlain with clayey layers, rarely or frequently flooded with freshwater.

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

**Santee** soils are very poorly drained soils on low nearly level areas.

**Wahee** soils are poorly drained soils on low, nearly level areas and low ridges.

## *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 Coosaw River/Ashepoo River/St. Helena Sound Basin is from 0.08 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 Ashepoo River, Chessey Creek, Combahee River, Cuckolds Creek, and Horseshoe Creek advising people to limit the amount of some types of fish consumed from these waters. Fish consumption advisories are updated annually in the spring. 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 Fish Consumption Advisory toll-free hotline at (888) 849-7241.

## *Climate*

Normal yearly rainfall in the Coosaw River/Ashepoo River/St. Helena Sound area during the period of 1971 to 2000 was 49.83 inches, according to South Carolina's 30-year climatological record. Data from National Weather Service stations in Yemassee, Beaufort MCAS, Beaufort WWTP, Edisto Island, and Walterboro were compiled to determine general climatic information for the Coosaw River/Ashepoo River/St. Helena Sound area. The highest seasonal rainfall occurred in the summer with 17.81 inches; 10.86, 10.78, and 10.37 inches of rain fell in the fall, winter, and spring, respectively. The average annual daily temperature was 65.2°F. Summer temperatures averaged 80.1 °F, and fall, winter, and spring mean temperatures were 66.7 °F, 49.6 °F, and 64.6 °F, respectively.

# Watershed Evaluations

## *03050207-07*

### *(Combahee River)*

## General Description

Watershed 03050207-07 (formerly 03050208-010) is located in Colleton and Beaufort Counties and consists primarily of the ***Combahee River*** and its tributaries. This watershed occupies 167,088 acres of the Lower Coastal Plain and Coastal Zone regions of South Carolina. Land use/land cover in the watershed includes: 36.8% forested land, 31.8% forested wetland, 15.0% nonforested wetland, 7.7% agricultural land, 5.2% water, 3.4% urban land, and 0.1% barren land. A map depicting this watershed is found in Appendix B, page B-21.

The Combahee River is formed by the confluence of the Salkehatchie River and the Little Salkehatchie River watersheds. Downstream of the confluence, the Combahee River accepts drainage from Bull Creek, Black Creek, and Cuckolds Creek (Bluehouse Swamp, Folly Creek). Further downstream, the Chehaw River (Social Hall Creek) enters the Combahee River followed by the New Chehaw River. The Combahee River drains into the Coosaw River, which drains into St. Helena Sound. There are a total of 533.5 stream miles, 550.9 acres of lake waters, and 4,849.0 estuarine acres in this watershed. Upstream of the saltwater intrusion (in the vicinity of U.S. Hwy 17), the Combahee River and its tributaries are classified FW; downstream of the intrusion, the Combahee River and its tributaries are classified SFH. The Chehaw and New Chehaw Rivers are classified SFH.

## Surface Water Quality

| Station # | Type | Class | Description |
|---|---|---|---|
| CSTL-583 | BIO | FW | BLACK CREEK AT U.S. HWY 21 |
| CSTL-111 | W | FW | COMBAHEE RIVER BELOW YEMASSEE SEWAGE OUTFALL |
| CSTL-098 | W | FW/SFH | COMBAHEE RIVER AT U.S. HWY 17, 10MI ESE OF YEMASSEE |
| MD-252 | INT | SFH | COMBAHEE RIVER OFF FIELDS POINT LANDING OFF END OF S-15-161 |
| RT-06019 | RT06 | SFH | CHEHAW RIVER, 1.3MI NE OF OLD CHEHAW BOAT LANDING ON S-15-161 |
| RT-02017 | RT02 | SFH | CHEHAW RIVER AT OLD CHEHAW BOAT LANDING ON S-15-161 |

***Black Creek (CSTL-583)*** **–** Aquatic life uses are fully supported based on macroinvertebrate community data.

***Combahee River*** **–** There are three SCDHEC monitoring stations along the Combahee River. This is a blackwater system, characterized by naturally low pH and dissolved oxygen conditions. At the upstream site ***(CSTL-111)***, aquatic life and recreational uses are fully supported. Although dissolved oxygen excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations. A significant decreasing trend in turbidity suggests improving conditions for

this parameter. At the midstream site ***(CSTL-098)***, aquatic life uses are not supported due to dissolved oxygen excursions; which is compounded by a significant decreasing trend in dissolved oxygen concentration. In addition, there are significant increasing trends in turbidity and total suspended solids. There is a significant increasing trend in pH. Recreational uses are fully supported and a significant decreasing trend in fecal coliform bacteria concentration suggests improving conditions for this parameter. At the downstream site ***(MD-252)***, aquatic life and recreational uses are fully supported. Although dissolved oxygen excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations. *Fish tissue analyses on species caught from the Combahee River downstream of Highway 17 indicate no advisories or restrictions on consumption of fish from these waters.*

***Chehaw River –*** There are two SCDHEC monitoring stations along the Chehaw River. This is a blackwater system, characterized by naturally low dissolved oxygen conditions. Although dissolved oxygen excursions occurred at both sites, they were typical of values seen in blackwater systems and were considered natural, not standards violations. At the upstream site ***(RT-06019)***, aquatic life and recreational uses are fully supported. At the downstream site ***(RT-02017)***, aquatic life uses are not supported due to occurrences of zinc in excess of the aquatic life chronic criterion. Recreational uses are fully supported.

*A fish consumption advisory has been issued by the Department for mercury and includes the Combahee River and Cuckolds Creek within this watershed (see advisory p.54).*

## Shellfish Monitoring Stations

| Station # | Description |
|---|---|
| 14-05 | COMBAHEE RIVER INLET AND COOSAW RIVER |

## NPDES Program

### *Active NPDES Facilities*

| *RECEIVING STREAM*<br>*FACILITY NAME* | *NPDES#*<br>*TYPE* |
|---|---|
| COMBAHEE RIVER<br>TOWN OF YEMASSEE | SC0025950<br>MINOR DOMESTIC |

## Growth Potential

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

## *03050207-08*

### *(Ashepoo River)*

## General Description

Watershed 03050207-08 (formerly 03050208-020) is located in Colleton County and consists primarily of the ***Ashepoo River*** and its tributaries from its origin to Bluehouse Swamp. The watershed occupies 91,357 acres of the Lower Coastal Plain region of South Carolina. Land use/land cover in the watershed includes: 46.8% forested land, 25.6% forested wetland, 17.7% agricultural land, 8.6% urban land, 0.9% nonforested wetland, 0.3% water, and 0.1% barren land. A map depicting this watershed is found in Appendix B, page B-22.

Jones Swamp Creek (Big Bay, Wolf Creek) joins with Doctors Creek (Perry Creek) near the City of Walterboro to form Great Swamp. Great Swamp joins Ireland Creek (Allen Creek) to form the Ashepoo River. The river flows through the Great Swamp braided drainage and accepts drainage from Bluehouse Swamp (Remick Swamp) at the base of the watershed. Bluehouse Swamp also drains into the Combahee River. There are a total of 440.0 stream miles and 333.8 acres of lake waters in this watershed, all classified FW.

## Surface Water Quality

| Station # | Type | Class | Description |
|---|---|---|---|
| RS-03356 | RS03/BIO | FW | WOLF CREEK AT S-15-24, 2.7 MI NW OF WALTERBORO |
| CSTL-044 | W | FW | IRELAND CREEK AT S-15-116, 5.5MI N OF WALTERBORO |
| RS-03520 | RS03/BIO | FW | ASHEPOO RIVER AT UNPAVED S-15-88 |

***Wolf Creek (RS-03356)*** **–** Although there were zinc excursions, aquatic life uses are fully supported based on macroinvertebrate community data. This is a blackwater system, characterized by naturally low pH and dissolved oxygen conditions. Although pH and dissolved oxygen excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations. Recreational uses are fully supported.

***Ireland Creek (CSTL-044))*** **–** Aquatic life uses are not supported due to dissolved oxygen and pH excursions. Recreational uses are not supported due to fecal coliform bacteria excursions.

***Ashepoo River (RS-03520)*** **–** Although there were zinc excursions, aquatic life uses are fully supported based on macroinvertebrate community data. This is a blackwater system, characterized by naturally low pH and dissolved oxygen conditions. Although pH and dissolved oxygen excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations. Recreational uses are fully supported.

## Groundwater Quality

| Well # | Class | Aquifer | Location |
|---|---|---|---|
| AMB-031 | GB | MIDDENDORF | WALTERBORO |
| AMB-094 | GB | TERTIARY LIMESTONE | WALTERBORO |

All water samples collected from ambient monitoring wells ***AMB-031*** and ***AMB-094*** met standards for Class GB groundwater.

## NPDES Program

### *Active NPDES Facilities*

| *RECEIVING STREAM*<br>*FACILITY NAME* | *NPDES#*<br>*TYPE* |
|---|---|
| IRELAND CREEK<br>ASTEN JOHNSON INC. | SCG250037<br>MINOR INDUSTRIAL |
| IRELAND CREEK<br>CITY OF WALTERBORO WWTP | SC0040436<br>MAJOR DOMESTIC |
| JONES SWAMP CREEK TRIBUTARY<br>PALMETTO CONSTRUCTION/DRIGGERS MINE | SCG730344<br>MINOR INDUSTRIAL |
| JONES SWAMP CREEK<br>ALLEN BUTLER ENTERPRISES/PINCKNEY PIT | SCG730667<br>MINOR INDUSTRIAL |
| JONES SWAMP CREEK<br>JR WILSON CONSTRUCTION/BEACH MINE | SCG730677<br>MINOR INDUSTRIAL |
| JONES SWAMP CREEK<br>BRUCE GILLISPIE/GILLISPIE POND | SCG730633<br>MINOR INDUSTRIAL |
| IRELAND CREEK<br>JH HIERS CONSTRUCTION/NETTLES PIT #2 | SCG730493<br>MINOR INDUSTRIAL |
| GREAT SWAMP TRIBUTARY<br>WOOD BROTHERS/WALKER PIT | SCG730708<br>MINOR INDUSTRIAL |
| DOCTORS CREEK TRIBUTARY<br>JH HIERS CONSTRUCTION/HIOTT PIT | SCG730492<br>MINOR INDUSTRIAL |
| GREAT SWAMP TRIBUTARY<br>WOOD BROTHERS/FRIPP MINE | SCG730345<br>MINOR INDUSTRIAL |

## Nonpoint Source Management Program

### *Land Disposal Activities*

**Land Application Sites**

| *LAND APPLICATION SYSTEM*<br>*FACILITY NAME* | *ND#*<br>*TYPE* |
|---|---|
| SPRAYFIELD<br>BENNETT TRAILER PARK | ND0067423<br>DOMESTIC |

## Landfill Facilities

| *LANDFILL NAME*<br>*FACILITY TYPE* | *PERMIT #*<br>*STATUS* |
|---|---|
| COLLETON CO. SANITARY LANDFILL<br>DOMESTIC | ---------<br>INACTIVE |
| COLLETON COUNTY LANDFILL #2<br>DOMESTIC | ---------<br>INACTIVE |
| COLLETON CO. SANITARY LANDFILL #2<br>DOMESTIC | ---------<br>INACTIVE |
| COLLETON COUNTY LANDFILL #3<br>DOMESTIC | ---------<br>INACTIVE |
| COLLETON COUNTY LANDFILL #4<br>DOMESTIC | ---------<br>INACTIVE |
| COLLETON COUNTY TRANSFER STATION<br>TRANSFER STATION | 151001-6002<br>ACTIVE |
| CMEG INC. SOLID WASTE PROCESSING<br>SWP-INDUSTRIAL | 152609-2001<br>ACTIVE |
| AMERICAN BIO-MASS PROCESSING FACILITY<br>SWP-INDUSTRIAL | 152630-2001<br>ACTIVE |

## *Mining Activities*

| *MINING COMPANY*<br>*MINE NAME* | *PERMIT #*<br>*MINERAL* |
|---|---|
| REA CONSTRUCTION COMPANY<br>MINE #9 | 0602-29<br>SAND |
| JR WILSON CONSTRUCTION CO., INC.<br>BEACH MINE | 1576-29<br>SAND |
| PALMETTO CONSTRUCTION CO., INC.<br>DRIGGERS MINE | 1300-29<br>SAND; SAND/CLAY |
| NETTLES SAND COMPANY, INC.<br>NETTLES PIT #2 | 1071-29<br>SAND |
| BRUCE W. GILLISPIE<br>GILLISPIE POND | 1260-29<br>SAND/CLAY |
| COLLETON COUNTY<br>SIMMONS BORROW PIT | 1668-29<br>SAND/CLAY |
| ALLEN BUTLER ENTERPRISES<br>PICKNEY PIT | 1570-29<br>SAND |
| JH HIERS CONSTRUCTION LLC<br>HIOTT PIT | 1582-29<br>SAND |

| | |
|---|---|
| WOOD BROTHERS CONSTRUCTION | 1193-29 |
| WALKER PIT | SAND/CLAY |
| LOWCOUNTRY SAND & GRAVEL INC. | 1264-29 |
| WALKER MINE | SAND |
| WOOD BROTHERS CONSTRUCTION | 0881-29 |
| FRIPP MINE | SAND |
| LOWCOUNTRY CONCRETE OF RIDGELAND INC. | 1641-29 |
| LOWCOUNTRY SAND MINE | SAND |

## Growth Potential

There is a low to moderate potential for growth in this watershed, which contains a large portion of the City of Walterboro. Existing rail lines, the new Colleton County Commerce Park outside of Walterboro, and the city's proximity to I-95 make industrial growth a possibility in this watershed.

## *03050207-09*

### *(Horseshoe Creek)*

## General Description

Watershed 03050207-09 (formerly 03050208-030) is located in Colleton County and consists primarily of ***Horseshoe Creek*** and its tributaries. The watershed occupies 82,333 acres of the Lower Coastal Plain and Coastal Plain regions of South Carolina. Land use/land cover in the watershed includes: 46.5% forested land, 34.0% forested wetland, 11.8% agricultural land, 5.0% urban land, 2.2% nonforested wetland, 0.4% water, and 0.1% barren land. A map depicting this watershed is found in Appendix B, page B-23.

Fuller Swamp Creek and Chessey Creek (Logging Savanna, Oats Hole, Warrens Savanna) join to form Horseshoe Lead Creek, which in turn merges with Baptist Church Branch to form Horseshoe Creek near the Town of Cottageville. Shereau Branch and Sandy Dam Branch join to form another Chessey Creek (Pringle Creek), which flows into Horseshoe Creek at the base of the watershed. There are a total of 214.6 stream miles and 205.5 acres of lake waters in this watershed, all classified FW.

## Surface Water Quality

| Station # | Type | Class | Description |
|---|---|---|---|
| CSTL-580 | BIO | FW | CHESSEY CREEK AT S-15-45 |
| CSTL-071 | INT | FW | HORSESHOE CREEK AT SC 64 |

***Chessey Creek (CSTL-580) –*** Aquatic life uses are fully supported based on macroinvertebrate community data.

***Horseshoe Creek (CSTL-071) –*** Aquatic life uses are not supported due to occurrences of zinc in excess of the aquatic life chronic criterion. This is a blackwater system, characterized by naturally low pH and dissolved oxygen conditions. Although pH and dissolved oxygen excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations. A significant decreasing trend in turbidity suggests improving conditions for this parameter. Recreational uses are partially supported due to fecal coliform bacteria excursions.

*A fish consumption advisory has been issued by the Department for mercury and includes Chessey Creek and Horseshoe Creek within this watershed (see advisory p.54).*

## NPDES Program

### *Active NPDES Facilities*

| *RECEIVING STREAM*<br>*FACILITY NAME* | *NPDES#*<br>*TYPE* |
|---|---|
| LOGGING SAVANNA TRIBUTARY<br>CAROLINA CLEARING/CLYDEVILLE PIT | SCG730680<br>MINOR INDUSTRIAL |
| SHEREAU BRANCH<br>SMITHS BACKHOE SVC/SMITH PIT | SCG730626<br>MINOR INDUSTRIAL |
| HORSESHOE CREEK<br>BONNIE DOONE PLANTATION | SC0048305<br>MINOR DOMESTIC |

## Nonpoint Source Management Program

### *Land Disposal Activities*

**Landfill Facilities**

| *LANDFILL NAME*<br>*FACILITY TYPE* | *PERMIT #*<br>*STATUS* |
|---|---|
| COLLETON COUNTY C&D LANDFILL<br>C & D | 151001-1201<br>ACTIVE |

### *Mining Activities*

| *MINING COMPANY*<br>*MINE NAME* | *PERMIT #*<br>*MINERAL* |
|---|---|
| TUTEN ENTERPRISES LLC<br>VAUGHN MINE | 1782-29<br>SAND |
| CAROLINA CLEARING & CONSTRUCTION<br>CLYDEVILLE PIT | 1580-29<br>SAND |
| WOOD BROTHERS CONSTRUCTION, INC.<br>BROOKS PIT | 1587-29<br>SAND |
| SMITHS BACKHOE SERVICES, INC.<br>SMITH PIT | 1060-29<br>SAND/CLAY |

## Growth Potential

There is a moderate potential for growth in this watershed, which contains the Town of Cottageville and a portion of the City of Walterboro. Existing rail lines, the new Colleton County Commerce Park outside of Walterboro, and the city's proximity to I-95 make industrial growth a possibility in this portion of the watershed. Cottageville is projected to continue experiencing residential and commercial growth, spilling over from the City of Summerville. However, the current and proposed growth lies in areas with inadequate sewer service. Less than 25% of the total land area is suitable for septic system installations; and another 25-50% or less is classified as marginally suitable.

## *03050207-10*

### *(Ashepoo River/St. Helena Sound)*

## General Description

Watershed 03050207-10 (formerly 03050208-040) is located in Colleton County and consists primarily of the ***Ashepoo River*** and its tributaries from Bluehouse Swamp to its discharge into the ***St. Helena Sound***. The watershed occupies 81,191 acres of the Coastal Zone region of South Carolina. Land use/land cover in the watershed includes: 31.4% forested land, 26.1% nonforested wetland, 25.8% forested wetland, 9.0% water, 5.0% agricultural land, 2.5% urban land, 0.2% barren land. A map depicting this watershed is found in Appendix B, page B-23.

This lower watershed of the Ashepoo River accepts drainage from Johno Creek, the Horseshoe Creek Watershed, Deer Creek (Tupelo Swamp), Snuggedy Swamp, Hole in the Wall, Rock Creek, Crooked Creek, Mosquito Creek (Musselboro Creek, Bull Cut), Jefford Creek, Long Ashepoo Creek, and Otter Creek before flowing into St. Helena Sound. The Ashepoo-Coosaw Cut (AIWW) connects the Ashepoo River to Rock Creek and over to the Coosaw River. Fenwick Cut, Jefford Creek and Otter Creek connect the Ashepoo River to the Edisto River Watershed. Rock Creek drains into the both the Ashepoo River and St. Helena Sound. Also draining directly into the sound are Two Sisters Creek and Bank Creek. There are a total of 238.0 stream miles, 240.3 acres of lake waters, and 5,439.5 estuarine acres in this watershed. The Ashepoo River and its tributaries are classified FW above the saltwater intrusion (approximately US 17) and SFH below the intrusion.

## Surface Water Quality

| Station # | Type | Class | Description |
|---|---|---|---|
| CSTL-068 | INT | FW/SFH | ASHEPOO RIVER AT SC 303, 10MI SSW OF WALTERBORO |
| CSTL-069 | W | SFH | ASHEPOO RIVER AT US 17, 3.4MI ESE OF GREEN POND |
| MD-251 | W | SFH | ASHEPOO RIVER AT S-15-26 |
| RO-046071 | RO04 | SFH | ASHEPOO RIVER AT HOLE-IN-THE-WALL OXBOW, 0.5MI SW OF S-15-26 |
| RT-032035 | RT03 | SFH | ROCK CREEK, 0.75 MI SW OF CONFLUENCE WITH ASHEPOO RIVER |
| MD-253 | INT | SFH | ASHEPOO RIVER AT PUBLIC OYSTER GROUND (14-19) |

***Ashepoo River –*** There are five SCDHEC monitoring stations along the Ashepoo River. At the furthest upstream site ***(CSTL-068)***, aquatic life uses are not supported due to occurrences of zinc in excess of the aquatic life chronic criterion. In addition, there are significant increasing trends in five-day biochemical oxygen demand and total phosphorus concentration. Although pH and dissolved oxygen excursions occurred, they were typical of values seen in such transitional areas and are considered natural, not standards violations. Recreational uses are partially supported at this site due to fecal coliform bacteria excursions. Further downstream ***(CSTL-069)***, aquatic life uses are not supported due to dissolved oxygen excursions; which is compounded by a significant decreasing trend in dissolved oxygen. Although pH excursions occurred, they were considered natural, not standards violations. Recreational

uses are partially supported due to fecal coliform bacteria excursions. At the next two downstream sites ***(MD-251, RO-046071)***, aquatic life uses are not supported due to turbidity excursions. Recreational uses are fully supported at these sites. At the furthest downstream site ***(MD-253)***, aquatic life uses are not supported due to turbidity excursions. A significant decreasing trend in total phosphorus concentration suggests improving conditions for this parameter. Although dissolved oxygen excursions occurred, they were typical of values seen in such transitional areas and are considered natural, not standards violations. Recreational uses are fully supported.

***Rock Creek (RT-032035) -*** Aquatic life uses are not supported due to turbidity excursions. Although dissolved oxygen excursions occurred, they were typical of values seen in such transitional areas and are considered natural, not standards violations. Recreational uses are fully supported.

*A fish consumption advisory has been issued by the Department for mercury and includes the Ashepoo River within this watershed (see advisory p.54).*

## Shellfish Monitoring Stations

| Station # | Description |
|---|---|
| 14-08 | ASHEPOO RIVER AT ST. HELENA SOUND – BLACK CAN BUOY |
| 14-19 | ASHEPOO RIVER POG |
| 14-20 | CUT BETWEEN SOUTH EDISTO RIVER AND THE ASHEPOO RIVER |
| 14-21 | CONFLUENCE OF MOSQUITO CREEK AND THE ASHEPOO RIVER |

## Groundwater Quality

| Well # | Class | Aquifer | Location |
|---|---|---|---|
| AMB-086 | GB | SURFICIAL SANDS | BENNETTS POINT |

All water samples collected from ambient monitoring well ***AMB-086*** met standards for Class GB groundwater.

## NPDES Program

### *Active NPDES Facilities*

| *RECEIVING STREAM*<br>*FACILITY NAME* | *NPDES#*<br>*TYPE* |
|---|---|
| ASHEPOO RIVER TRIBUTARY<br>IVENIA BROWN ELEMENTARY | SC0038989<br>MINOR DOMESTIC |
| ASHEPOO RIVER<br>BOLEN POINT SD/CARGILSELL & CO. | SC0037788<br>MINOR DOMESTIC |
| ASHEPOO RIVER TRIBUTARY<br>ASHEPOO CONSTRUCTION/GREEN POND #1 MINE | SCG730520<br>MINOR INDUSTRIAL |
| TUPELO SWAMP<br>LANE CONSTRUCTION/ROWE BORROW SITE | SCG731124<br>MINOR INDUSTRIAL |

| | |
|---|---|
| JOHNO CREEK | SCG731123 |
| LANE CONSTRUCTION/MWV COOKS HILL MINE | MINOR DOMESTIC |

## Nonpoint Source Management Program

### *Land Disposal Activities*

**Landfill Facilities**

| ***LANDFILL NAME*** | ***PERMIT #*** |
|---|---|
| ***FACILITY TYPE*** | ***STATUS*** |
| COLLETON COUNTY | --------- |
| C/C LANDFILL | INACTIVE |
| COLLETON COUNTY WOOD CHIPPING FACILITY | 151001-3001 |
| COMPOSTING | INACTIVE |

### *Mining Activities*

| ***MINING COMPANY*** | ***PERMIT #*** |
|---|---|
| ***MINE NAME*** | ***MINERAL*** |
| ASHEPOO CONSTRUCTION | 1123-29 |
| GREEN POND #1 MINE | SAND; SAND/CLAY |
| HB LIMEHOUSE | 1152-29 |
| AIRY HALL PEAT MINE | PEAT |

## Growth Potential

There is a low potential for growth in this watershed.

## *03050207-11*

### *(Coosaw River/ St. Helena Sound)*

## General Description

Watershed 03050207-11 (formerly a portion of 03050208-100) is located in Beaufort and Colleton Counties and consists primarily of the ***Coosaw River*** and ***St. Helena Sound*** and their tributaries, which include the ***Bull River*** and the ***Morgan River***. The watershed occupies 109,292 acres of the Coastal Zone region of South Carolina. Land use/land cover in the watershed includes: 34.1% nonforested wetland, 28.0% water, 21.4% forested land, 8.7% forested wetland, 4.2% agricultural land, 3.2% urban land, and 0.4% barren land. A map depicting this watershed is found in Appendix B, page B-24.

Whale Branch (Campbell Creek, Halfmoon Creek) and Brickyard Creek (McCalleys Creek) join together to form the Coosaw River. Downstream from the confluence, the Coosaw River accepts drainage from Broomfield Creek, Lucy Point Creek (Rock Spring Creek), Parrot Creek (Bass Creek, Duck Pond Creek), the Bull River, the Combahee River Watershed, and Morgan Back Creeks before flowing into St. Helena Sound. The Bull River is formed by the confluence of Wimbee Creek (Branford Creek, True Blue Creek, Briars Creek, Barnwell Creek, South Wimbee Creek) and Williman Creek. Schooner Channel connects Wimbee Creek and Williman Creek. Brickyard Creek and Broomfield Creek connect the Coosaw River to the Beaufort River Watershed. The Morgan River accepts drainage from Lucy Point Creek, Warsaw Flats, Jenkins Creek (Doe Point Creek), Parrot Creek, Eddings Point Creek, Village Creek (Pine Island Creek), and Coffin Creek. Lucy Point Creek and Parrot Creek connect the Coosaw River to the Morgan River. All of these streams, including St. Helena Sound are classified SFH. Bass Creek is classified ORW. There are a total of 28,216.8 estuarine acres in this watershed.

## Surface Water Quality

| Station # | Type | Class | Description |
|---|---|---|---|
| RT-06010 | RT06 | SFH | McCalleys Creek, 1.1 mi SE of US 21 bridge over Whale Branch |
| RT-042069 | RT04 | SFH | McCalleys Creek, 6.8 mi NNW of Beaufort |
| RO-06314 | RO06 | SFH | Coosaw River, 5.1 mi NNE of Beaufort |
| RO-02007 | RO02 | SFH | Coosaw River, 2.0 mi E of AIWW |
| RO-056101 | RO05 | SFH | Coosaw River, 3.5 mi W of confluence with BullRiver |
| RO-046073 | RO04 | SFH | Coosaw River, 1.3 mi N of mouth of Lucy Point Creek |
| RT-032041 | RT03 | SFH | Coosaw River Trib, 0.2 mi N of confl w/Coosaw R. at E tip of Chisholm Is. |
| RO-056095 | RO05 | SFH | Coosaw River, 12 mi WSW of mouth of Bull River |
| RT-032031 | RT03 | SFH | Wimbee Creek Tributary near Wimbee Creek headwaters |
| RT-052093 | RT05 | SFH | South Wimbee Creek, 8.0 mi NNE of Beaufort |
| RO-036037 | RO03 | SFH | Wimbee Creek, 0.7 mi SE of mouth of S. Wimbee Creek |
| RT-06003 | RT06 | SFH | Williman Creek Tributary, 1.0 mi NE of confl with William Creek |
| RT-02015 | RT02 | SFH | Tidal Creek near confl of Coosaw and Bull Rivers |
| RO-02005 | RO02 | SFH | Coosaw River near mouth of BullRiver |
| RO-06303 | RO06 | SFH | Coosaw River, 4.9 mi ENE of SC 802 bridge over Lucy Point Creek |
| MD-168 | W | SFH | Coosaw River at confluence of Combahee River, near buoy 186 |

| | | | |
|---|---|---|---|
| RO-02001 | RO02 | SFH | COOSAW RIVER, NEAR MOUTH OF COMBAHEE RIVER |
| RO-046069 | RO04 | SFH | MOUTH OF COOSAW RIVER AT ST. HELENA SOUND |
| RO-046067 | RO04 | SFH | MIDDLE OF ST. HELENA SOUND |
| RT-042067 | RT04 | SFH | JENKINSCREEK TRIBUTARY, 4.2 MI SE OF BEAUFORT |
| MD-255 | INT | SFH | JENKINS CREEK AT UNNAMED TRIB N SIDE OF WARSAW ISALND (16-25) |
| RT-02027 | RT02 | SFH | SPARROW NEST CREEK TRIBUTARY NEAR DATHA ISLAND |
| RT-052113 | RT05 | SFH | BASS CREEK TRIB OFF PARROT CK BETW COOSAW AND MORGAN RIVERS |
| RT-032045 | RT03 | SFH | EDDINGS POINT CK, 1.3MI SW CONFL MORGAN RIVER & 3.3 MI NE FROGMORE |
| RO-056099 | RO05 | SFH | VILLAGE CREEK, 4.5 MI NE TOWN OF ST. HELENA ISLAND |
| RT-032033 | RT03 | SFH | COFFIN CREEK, 0.7 MI SE OF CONFL WITH MORGAN RIVER |

***McCalleys Creek*** **–** There are two SCDHEC monitoring stations along McCalleys Creek ***(RT-06010, RT-042069)*** and aquatic life and recreational uses are fully supported at both sites. This is a tidally influenced system, which are often characterized by naturally low pH and dissolved oxygen concentrations. Although dissolved oxygen excursions were noted at RT-06010, they were typical of values seen in such systems and are considered natural, not standards violations.

***Coosaw River*** **–** There are ten SCDHEC monitoring stations along the Coosaw River. This is a tidally influenced system, which are often characterized by naturally low pH and dissolved oxygen concentrations. Although dissolved oxygen excursions were noted at all site except ***RO-046073, MD-168***, and ***RO-046069***, they were typical of values seen in such systems and are considered natural, not standards violations. At the furthest upstream sites ***(RO-06314, RO-02007, RO-056101, RO-046073, RO-056095)***, aquatic life and recreational uses are fully supported. At the next station downstream ***(RO-02005)***, aquatic life uses are not supported due to turbidity excursions and occurrences of copper in excess of the aquatic life chronic criterion. Aquatic life and recreational uses are fully supported at the next two sites downstream ***(RO-06303, MD-168)***. Further downstream ***(RO-02001)***, aquatic life uses are not supported due to turbidity excursions; recreational uses are fully supported. At the furthest downstream site ***(RO-046069)***, aquatic life and recreational uses are fully supported.

***Coosaw River Tributary (RT-032041)*** **–** Aquatic life and recreational uses are fully supported. This is a tidally influenced 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 are considered natural, not standards violations.

***Wimbee Creek Tributary (RT-032031)*** **–** Aquatic life and recreational uses are fully supported. This is a tidally influenced 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 are considered natural, not standards violations.

***South Wimbee Creek (RT-052093)*** **–** Aquatic life and recreational uses are fully supported. This is a tidally influenced 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 are considered natural, not standards violations.

***Wimbee Creek (RO-036037)*** **–** Aquatic life uses are not supported due to turbidity excursions. This is a tidally influenced 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 are considered natural, not standards violations. Recreational uses are fully supported.

***Williman Creek Tributary (RT-06003)*** **–** Aquatic life and recreational uses are fully supported. This is a tidally influenced 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 are considered natural, not standards violations.

***Tidal Creek (RT-02015)*** **–** Aquatic life uses are not supported due to turbidity excursions and occurrences of copper in excess of the aquatic life chronic criterion. This is a tidally influenced 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 are considered natural, not standards violations. Recreational uses are fully supported.

***St. Helena Sound (RO-046067)*** **–** Aquatic life and recreational uses are fully supported.

***Jenkins Creek Tributary (RT-042067)*** **–** Aquatic life and recreational uses are fully supported.

***Jenkins Creek (MD-255)*** **–** Aquatic life and recreational uses are fully supported; however, there is a significant increasing trend in fecal coliform bacteria concentration. This is a tidally influenced 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 are considered natural, not standards violations.

***Sparrow Nest Creek Tributary (RT-02027)*** **–** Aquatic life uses are not supported due to occurrences of copper in excess of the aquatic life chronic criterion. This is a tidally influenced 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 are considered natural, not standards violations. Recreational uses are fully supported.

***Bass Creek Tributary (RT-052113)*** **–** Aquatic life and recreational uses are fully supported. This is a tidally influenced 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 are considered natural, not standards violations.

***Eddings Point Creek (RT-032045)*** **–** Aquatic life and recreational uses are fully supported. This is a tidally influenced 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 are considered natural, not standards violations.

***Village Creek (RO-056099)*** **–** Aquatic life and recreational uses are fully supported. This is a tidally influenced 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 are considered natural, not standards violations.

***Coffin Creek (RT-032033)*** **–** Aquatic life uses are not supported due to turbidity excursions. This is a tidally influenced 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 are considered natural, not standards violations. Recreational uses are fully supported.

## Shellfish Monitoring Stations

| Station # | Description |
|---|---|
| 14-02 | CAMPBELL CREEK AT WHALE BRANCH |
| 14-04 | BULL RIVER INLET AND COOSAW RIVER |
| 14-09 | ST. HELENA SOUND AT MORGAN BACK CREEK |
| 14-10 | PARROT CREEK AND COOSAW RIVER, MARKER #1 |
| 14-11 | SAM'S POINT AND COOSAW RIVER |
| 14-12A | CONFLUENCE OF COOSAW RIVER AND WHALE BRANCH |
| 14-13 | HALFMOON CREEK AT WHALE BRANCH |
| 14-16A | 2000 FT SOUTHEAST OF MOUTH OF FISH CREEK |
| 15-01 | BRICKYARD CREEK AT RANGE MARKER |
| 15-01A | MCCALLEYS CREEK AT PAWKIE ISLAND |
| 15-33 | MCCALLEYS CREEK, 0.5 MI UPSTREAM OF STATION 15-01A |
| 16A-08 | MORGAN RIVER AT VILLAGE CREEK |
| 16A-09 | EDDING CREEK AT MORGAN RIVER |
| 16A-10 | PARROT CREEK AT MORGAN RIVER |
| 16A-11 | JENKINS CREEK AT MORGAN RIVER |
| 16A-13 | LUCY POINT CREEK AT MORGAN RIVER |
| 16A-13A | S. EDGE OF LUCY POINT CREEK CSZ AT POLLUTION LINE |
| 16A-13B | N. EDGE OF LUCY POINT CREEK CSZ AT POLLUTION LINE |
| 16A-14 | DOE CREEK BEHIND COASTAL SEAFOOD AND DATAW ISLAND |
| 16A-18 | EDDING CREEK AT SHRIMP DOCK |
| 16A-19 | UPPER REACHES ROCK SPRINGS CREEK |
| 16A-23 | EDDINGS CREEK AT TRIBUTARY BETWEEN STATIONS 9 AND 18 |
| 16A-24 | JENKINS CREEK AT TURN BETWEEN STATIONS 11 AND 14 |
| 16A-25 | JENKINS CREEK AT TRIBUTARY NORTH OF WARSAW ISLAND |
| 16A-27 | MOUTH OF COFFIN CREEK AT MORGAN RIVER |

| | |
|---|---|
| 16A-28 | HEADWATERS OF COFFIN CREEK AT SHRIMP DOCKS |
| 16A-32 | VILLAGE CREEK AT FRIPP POINT COMMUNITY DOCK |
| 16A-33 | LUCY POINT CREEK, APPROX. 3100 FEET WEST OF STATION 16A-13 |
| 16A-34 | LUCY POINT CREEK, APPROX. 1900 FEET SOUTH OF STATION 16A-13 |
| 16A-35 | WARSAW FLATS AT CONFLUENCE WITH MORGAN RIVER |
| 16A-36 | JENKINS CREEK AT SOUTHERN POINT OF DATAW ISLAND |
| 16A-37 | JENKINS CREEK AT POLAWANA ISLAND BOAT RAMP |
| 16A-38 | VILLAGE CREEK AT CONFLUENCE WITH SMALL UNNAMED TRIBUTARY ON WEST BANK |
| 16A-39 | MOUTH OF SPARROW NEST CREEK AT CONFLUENCE WITH MORGAN RIVER |

## Groundwater Quality

| Well # | Class | Aquifer | Location |
|---|---|---|---|
| AMB-090 | GB | TERTIARY LIMESTONE | FROGMORE |

All water samples collected from ambient monitoring well ***AMB-090*** met standards for Class GB groundwater.

## NPDES Program

### *Active NPDES Facilities*

| ***RECEIVING STREAM*** / ***FACILITY NAME*** / ***PERMITTED FLOW @ PIPE (MGD)*** | ***NPDES#*** / ***TYPE*** / ***COMMENT*** |
|---|---|
| HALFMOON CREEK<br>JAMES J. DAVIS ELEM. SCHOOL | SC0027481<br>MINOR DOMESTIC |
| CAMPBELL CREEK TO WHALE BRANCH<br>ARRMAZ CUSTOM CHEMICALS | SC0000914<br>MAJOR INDUSTRIAL |
| MCCALLEYS CREEK<br>SPRINGS INDUSTRIES/WAMCHEM NPL SITE | SC0046701<br>MINOR INDUSTRIAL |

### *Municipal Separate Storm Sewer Systems (MS4)*

| ***RECEIVING STREAM*** / ***MUNICIPALITY*** / ***RESPONSIBLE PARTY*** / ***IMPLEMENTING PARTY*** | ***NPDES#*** / ***MS4 PHASE*** / ***MS4 SIZE*** |
|---|---|
| COOSAW RIVER<br>CITY OF BEAUFORT<br>CITY OF BEAUFORT<br>CITY OF BEAUFORT | ----------<br>PHASE II<br>SMALL MS4 |

## Nonpoint Source Management Program

### *Land Disposal Activities*

**Land Application Sites**

| *LAND APPLICATION SYSTEM*<br>*FACILITY NAME* | *ND#*<br>*TYPE* |
|---|---|
| PONDS<br>KALAMA SPECIALTY CHEMICALS, INC. | ND0076287<br>INDUSTRIAL |
| SPRAY SITES<br>BJW&SA/ST. HELENA WWTP | ND0083429<br>DOMESTIC |

### *Mining Activities*

| *MINING COMPANY*<br>*MINE NAME* | *PERMIT #*<br>*MINERAL* |
|---|---|
| JOCO CONSTRUCTION LLC<br>SANDYS HICKORY HILL POND | 1783-13<br>SAND |

## Growth Potential

There is a moderate potential for growth in this watershed, with the exception of the area surrounding the City of Beaufort. The City of Beaufort and Lady's Island, Burton, and Shell Point are projected to continue experiencing residential and commercial growth. Less than 25% of the total land area of Lady's Island, Burton or Shell Point is suitable for septic system installations; and another 25% or less is classified as marginally suitable. The majority of the watershed includes a collection of sea islands and Hunting Island State Park.

# Broad River/Beaufort River/Port Royal Sound Basin Description

The ***Broad River/Beaufort River/Port Royal Sound Basin (hydrologic unit 03050208)*** is located in Allendale, Hampton, Jasper, and Beaufort Counties, and encompasses 6 watersheds and 935 square miles. The Broad River/Beaufort River/Port Royal Sound Basin flows through the Coastal Zone region. Of the 598,127 acres, 37.5% is forested land, 20.6% is forested wetland (swamp), 13.0% is agricultural land, 10.8% is water, 10.7% is nonforested wetland (marsh), 7.1% is urban land, and 0.3% is barren land. The urban land percentage is comprised chiefly of a portion of Hilton Head Island and the Beaufort area. There are approximately 1,482 stream miles, 1,129 acres of lake waters, and 54,485 acres of estuarine areas in this basin.

The Coosawhatchie River originates near the Town of Allendale, and accepts drainage from Black Creek (Lake George Warren) and Cypress Creek before merging with the Pocotaligo River to form the Broad River. The Broad River joins the Chechessee River and the Beaufort River to form Port Royal Sound.

## *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 region that defines the Broad River/Beaufort River/Port Royal Sound Basin is as follows:

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 2006 National Land Cover Data (NLCD). The dataset is 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 individual soil series for the Broad River/Beaufort River/Port Royal Sound Basin are described as follows.

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

**Argent** soils are poorly drained soils on low, nearly level areas and low ridges.

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

**Bonneau** soils are deep, moderately well drained soils with loamy subsoil on ridges.

**Capers** 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.

**Coosaw** soils are somewhat to poorly drained soils, with a moderately thick sandy surface layer and loamy subsoil, on ridges and in depressions.

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

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

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

**Lynnhaven** soils are poorly drained sandy soils, with sandy subsoil, in low areas, and prone to ponding.

**Norfolk** soils are deep, well drained soils, with loamy subsoil, nearly level and gently sloping elevated uplands.

**Ocilla** soils are somewhat poorly to moderately well drained soils with a thick sandy surface layer and a loamy subsoil, or sandy throughout.

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

**Okeetee** soils are deep, somewhat poorly drained soils, with clayey subsoil, on broad low ridges.

**Pelham** soils are deep, poorly drained soils, with a loamy subsoil, on broad flats and in depressions.

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

## *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 Broad River/Beaufort River/Port Royal Sound Basin is from 0.08 to 0.15.

## *Fish Consumption Advisory*

At the time of publication, a fish consumption advisory issued by SCDHEC is in effect for portions of the Combahee River and the Coosawhatchie River advising people to limit the amount of some types of fish consumed from these waters. Fish consumption advisories are updated annually in the spring. For background information and the most current advisories please visit our web page at http://www.scdhec.gov/water and click on "Advisories." For more information or a hard copy of the advisories, call SCDHEC's Fish Consumption Advisory toll-free hotline at (888) 849-7241.

## *Climate*

Normal yearly rainfall in the Broad River/Beaufort River/Port Royal Sound area during the period of 1971 to 2000 was 50.89 inches, according to South Carolina's 30-year climatological record. Data from National Weather Service stations in Yemassee, Hilton Head, Beaufort MCAS, Beaufort WWTP, and Ridgeland were compiled to determine general climatic information for the Broad River/Beaufort River/Port Royal Sound area. The highest seasonal rainfall occurred in the summer with 18.53 inches; 11.15, 10.81, and 10.41 inches of rain fell in the fall, winter, and spring, respectively. The average annual daily temperature was 65.4$^{o}$F. Summer temperatures averaged 79.9 $^{o}$F, and fall, winter, and spring mean temperatures were 66.8 $^{o}$F, 50.0 $^{o}$F, and 64.8 $^{o}$F, respectively.

# Watershed Evaluations

## *03050208-01*

### *(Black Creek)*

## General Description

Watershed 03050208-01 (formerly 03050208-060) is located in Allendale and Hampton Counties and consists primarily of ***Black Creek*** and its tributaries. The watershed occupies 40,363 acres of the Lower Coastal Plain region of South Carolina. Land use/land cover in the watershed includes 37.3% forested land, 30.6% agricultural land, 23.2% forested wetland, 7.2% urban land, 0.8% water, 0.8% nonforested wetland, and 0.1% barren land. A map depicting this watershed is found in Appendix C, page C-22.

Black Creek accepts drainage from Filly Branch, Hurricane Branch, and Trowells Mill Branch before flowing through Lake George Warren (Brier Creek) and into the Coosawhatchie River. There are a total of 199.7 stream miles and 291.3 acres of lake waters in this watershed, all classified FW.

## Surface Water Quality

| Station # | Type | Class | Description |
|---|---|---|---|
| CSTL-075 | INT | FW | LAKE WARREN, BLACK CREEK ARM, AT S-25-41, 5MI SW OF HAMPTON |
| RL-03331 | RL03 | FW | LAKE WARREN, 0.2MI W OF SPILLWAY NE CORNER OF LAKE |
| CL-062 | W | FW | LAKE WARREN IN FOREBAY NEAR DAM |

***Lake George Warren -*** There are three SCDHEC monitoring stations along Lake Warren and recreational uses are fully supported at all sites. This is a blackwater system, characterized by naturally low pH and dissolved oxygen conditions. Although pH and dissolved oxygen excursions occurred at all sites, they were typical of values seen in blackwater systems and were considered natural, not standards violations. At the uplake site ***(CSTL-075)***, aquatic life uses are not supported due to occurrences of zinc in excess of the aquatic life chronic criterion. At the midlake site ***(RL-03331)***, aquatic life uses are not supported due to total phosphorus concentration, total nitrogen concentration, and chlorophyll excursions, and occurrences of zinc in excess of the aquatic life chronic criterion. At the downlake site ***(CL-062)***, aquatic life uses are not supported due to occurrences of zinc in excess of the aquatic life chronic criterion. There is a significant decreasing trend in pH at this site.

## Nonpoint Source Management Program

### *Land Disposal Activities*

**Land Application Sites**

| *LAND APPLICATION SYSTEM FACILITY NAME* | *ND# TYPE* |
|---|---|
| SPRAYFIELD<br>TOWN OF ESTILL | ND0069701<br>DOMESTIC |

**Landfill Facilities**

| *LANDFILL NAME FACILITY TYPE* | *PERMIT # STATUS* |
|---|---|
| HAMPTON COUNTY LANDFILL<br>DOMESTIC | 251001-1101<br>INACTIVE |
| HAMPTON COUNTY SANITARY LANDFILL<br>DOMESTIC | ----------<br>INACTIVE |
| HAMPTON COUNTY SANITARY LANDFILL<br>DOMESTIC | ----------<br>INACTIVE |
| HAMPTON COUNTY LANDFILL #3<br>DOMESTIC | --------<br>INACTIVE |
| HAMPTON COUNTY C&D & LCD LANDFILL<br>C & D | 251001-1201<br>ACTIVE |
| HAMPTON COUNTY COMPOSTING FACILITY<br>COMPOSTING | 251001-3001<br>ACTIVE |

### *Mining Activities*

| *MINING COMPANY MINE NAME* | *PERMIT # MINERAL* |
|---|---|
| J.R. WILSON CONSTRUCTION COMPANY<br>J.R. WILSON CONSTRUCTION | 1028-49<br>SAND, SAND/CLAY |

## Growth Potential

There is a low potential for growth in this watershed, which contains the Towns of Luray and Estill. Slight growth is projected associated with the Federal Correctional Institution. Allendale County has adopted a zoning ordinance that includes River and Streamside Management Areas, restricting development within 100 feet of a river and 50 feet from perennial streams, which flow directly into the river.

## *03050208-02*

### *(Coosawhatchie River)*

## General Description

Watershed 03050208-02 (formerly 03050208-050) is located in Allendale and Hampton Counties and consists primarily of the upper ***Coosawhatchie River*** and its tributaries from its origin to Black Creek. The watershed occupies 80,614 acres of the Lower Coastal Plain region of South Carolina. Land use/land cover in the watershed includes: 42.2% forested land, 23.7% agricultural land, 26.6% forested wetland, 6.1% urban land, 0.9% nonforested wetland, 0.4% water, and 0.1% barren land. A map depicting this watershed is found in Appendix C, page C-22.

The Coosawhatchie River originates near the Towns of Allendale and Fairfax and accepts drainage from Swallow Savanna, Harters Pond, Little Duck Branch, Duck Branch, Beech Branch (Levy Bay), Blood Hill Creek, and Cedar Branch. There are a total of 203.0 stream miles and 163.3 acres of lake waters in this watershed, all classified FW.

## Surface Water Quality

| Station # | Type | Class | Description |
|---|---|---|---|
| CSTL-110 | W | FW | COOSAWHATCHIE RIVER AT S-03-47 |
| RS-03360 | RS03 | FW | BLOOD HILL CREEK AT S-25-69, 2.4MI NE OF GIFFORD |
| CSTL-121 | INT | FW | COOSAWHATCHIE RIVER AT SC 363 |

***Coosawhatchie River –*** There are two SCDHEC monitoring stations along this portion of the Coosawhatchie River. At the upstream site ***(CSTL-110)***, aquatic life uses are partially supported due to dissolved oxygen excursions; which are compounded by a significant decreasing trend in dissolved oxygen concentration. Significant decreasing trends in turbidity, total phosphorus concentration, and total nitrogen concentration suggest improving conditions for these parameters. Recreational uses are partially supported due to fecal coliform bacteria excursions. At the downstream site ***(CSTL-121)***, aquatic life uses are not supported due to dissolved oxygen excursions and occurrences of zinc in excess of the aquatic life chronic criterion. This is a blackwater system, characterized by naturally low pH conditions. Although pH excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations. Recreational uses are partially supported due to fecal coliform bacteria excursions.

***Blood Hill Creek (RS-03360) –*** Aquatic life and recreational uses are fully supported. This is a blackwater system, characterized by naturally low pH conditions. Although pH excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations.

## Groundwater Quality

| Well # | Class | Aquifer | Location |
|---|---|---|---|
| AMB-051 | GB | PEE DEE/BLACK CREEK | ALLENDALE |
| AMB-089 | GB | TERTIARY LIMESTONE | FAIRFAX |

All water samples collected from ambient monitoring wells ***AMB-051*** and ***AMB-089*** met standards for Class GB groundwater.

## NPDES Program

### *Active NPDES Facilities*

| *RECEIVING STREAM*<br>*FACILITY NAME* | *NPDES#*<br>*TYPE* |
|---|---|
| COOSAWHATCHIE RIVER<br>TOWN OF BRUNSON | SC0042382<br>MINOR DOMESTIC |

## Nonpoint Source Management Program

### *Land Disposal Activities*

**Landfill Facilities**

| *LANDFILL NAME*<br>*FACILITY TYPE* | *PERMIT #*<br>*STATUS* |
|---|---|
| TOWN OF ALLENDALE COMPOSTING<br>COMPOSTING | 031001-3001<br>ACTIVE |

## Growth Potential

There is a low potential for growth in this watershed, which contains the portions of the Towns of Allendale, Fairfax, and Brunson, and the Town of McColl. Half of Allendale County's population lives in the Towns of Allendale and Fairfax. US 278 runs between the towns and is projected to support increased commercial growth. There is no indication of industrial growth, but Allendale and Fairfax are the only towns in the county with sewer systems and a rail line to support industry. Allendale County has adopted a zoning ordinance that includes River and Streamside Management Areas, restricting development within 100 feet of a river and 50 feet from perennial streams, which flow directly into the river.

## *03050208-03*

### *(Cypress Creek)*

## General Description

Watershed 03050208-03 (formerly 03050208-080) located in Hampton and Jasper Counties and consists primarily of the ***Cypress Creek*** and its tributaries. The watershed occupies 54,122 acres of the Lower Coastal Plain region of South Carolina. Land use/land cover in the watershed includes: 50.3% forested land, 23.7% forested wetland, 21.9% agricultural land, 3.4% urban land, 0.5% nonforested wetland, and 0.2% water. A map depicting this watershed is found in Appendix C, page C-23.

Cypress Creek originates near the Town of Furman and accepts drainage from Cane Gall, Johns Pen Creek (Zigzag Branch) and Beaverdam Branch before flowing into the Coosawhatchie River. There are a total of 255.9 stream miles and 77.4 acres of lake waters in this watershed, all classified FW.

## Surface Water Quality

| Station # | Type | Class | Description |
|---|---|---|---|
| CSTL-582 | BIO | FW | CYPRESS CREEK AT SC 3 |
| CSTL-122 | INT | FW | CYPRESS CREEK AT S-27-108 |

***Cypress Creek –*** There are two SCDHEC monitoring stations along Cypress Creek. At the upstream site ***(CSTL-582)***, aquatic life uses are fully supported based on macroinvertebrate community data. At the downstream site ***(CSTL-122)***, aquatic life uses are not supported due to occurrences of zinc in excess of the aquatic life chronic criterion. This is a blackwater system, characterized by naturally low pH and dissolved oxygen conditions. Although pH and dissolved oxygen excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations. Significant decreasing trends in turbidity and increasing trends in dissolved oxygen concentration suggest improving conditions for these parameters. Recreational uses are fully supported.

## Groundwater Quality

| Well # | Class | Aquifer | Location |
|---|---|---|---|
| AMB-099 | GB | TERTIARY LIMESTONE | GRAYS |
| AMB-114 | GB | TERTIARY LIMESTONE | WSBH RADIO |

All water samples collected from ambient monitoring wells ***AMB-099*** and ***AMB-144*** met standards for Class GB groundwater.

## Growth Potential

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

## *03050208-04*

### *(Coosawhatchie River)*

## General Description

Watershed 03050208-04 (formerly 03050208-070) is located in Hampton and Jasper Counties and consists primarily of the lower ***Coosawhatchie River*** and its tributaries from Black Creek to its confluence with the Pocotaligo River to form the Broad River. The watershed occupies 139,936 acres of the Lower Coastal Plain and Coastal Zone regions of South Carolina. Land use/land cover in the watershed includes: 44.8% forested land, 29.1% forested wetland, 14.9% agricultural land, 6.0% urban land, 3.9% nonforested wetland, and 1.3% water. A map depicting this watershed is found in Appendix C, page C-23.

This section of the Coosawhatchie River accepts drainage from Horse Pond, Mill Creek, Sanders Branch (House Fork), Camp Branch, Cowpen Branch, Horsegall Creek, Lowndes Lake, McPherson Creek, Broadway Branch, Big Branch, the Cypress Creek Watershed, and Early Branch. The Tulifiny River (Buckfield Backwater) breaks away from the Coosawhatchie downstream of Early Branch, and rejoins it at the base of the watershed before flowing into the Broad River. Buckfield Backwater connects the Tulifiny River to the Pocotaligo River. Downstream of the division, the Coosawhatchie River accepts drainage from Bay Swamp, Little Bees Creek, and Bees Creek (Captain Bill Creek). There are a total of 590.0 stream miles, 376.4 acres of lake waters, and 947.1 estuarine acres in this watershed. The Coosawhatchie River and its tributaries, with the exception of Sanders Branch and Bees Creek are classified FW above the saltwater intrusion and SFH below the intrusion (in the vicinity of U.S. Hwy 17). Sanders Branch is classified FW* (DO no less than 4 mg/l and pH 5.0-8.5) and Bees Creek is classified SB. Captain Bill Creek is classified FW.

## Surface Water Quality

| Station # | Type | Class | Description |
|---|---|---|---|
| CSTL-108 | W | FW* | SANDERS BRANCH AT SC 363 |
| RS-02488 | RS02/BIO | FW | SANDERS BR FROM BRIDGE AT PAVED RD FROM SC 363 N |
| CSTL-010 | W | FW* | SANDERS BRANCH AT SC 278 |
| CSTL-011 | W/BIO | FW* | SANDERS BRANCH AT S-25-50 |
| CSTL-109 | INT | FW | COOSAWHATCHIE RIVER AT S-25-27, 2.5MI SW OF CUMMINGS |
| CSTL-107 | W | FW/SFH | COOSAWHATCHIE RIVER AT US 17 AT COOSAWHATCHIE |
| MD-280 | W | SB | BEES CREEK AT WALL FAMILY CAMP FLOATING DOCK |

***Sanders Branch*** – There are four SCDHEC monitoring stations along Sanders Branch. At the furthest upstream site ***(CSTL-108)***, aquatic life uses are fully supported. There is a significant increasing trend in pH. Recreational uses are not supported due to fecal coliform bacteria excursions. Further downstream ***(RS-02488)***, aquatic life uses are not supported based on macroinvertebrate community data and occurrences of zinc in excess of the aquatic life chronic criterion. Recreational uses are not supported due to fecal coliform bacteria excursions. At the next site downstream ***(CSTL-010)***, aquatic life uses are fully

supported. There is a significant increasing trend in pH. Recreational uses are partially supported due to fecal coliform bacteria excursions. Although there were occurrences of zinc in excess of the aquatic life chronic criterion at the furthest downstream site ***(CSTL-011)***, aquatic life uses are fully supported based on macroinvertebrate community data. There is a significant increasing trend in pH. Significant increasing trends in dissolved oxygen concentration and decreasing trends in five-day biochemical oxygen demand and turbidity suggest improving conditions for these parameters at this site. Recreational uses are partially supported due to fecal coliform bacteria excursions.

***Coosawhatchie River –*** There are two SCDHEC monitoring stations along this portion of the Coosawhatchie River. At the upstream site ***(CSTL-109)***, aquatic life uses are not supported due to occurrences of zinc in excess of the aquatic life chronic criterion. In addition, there is a significant increasing trend in five-day biochemical oxygen demand. There is a significant increasing trend in pH. Significant decreasing trends in turbidity, total phosphorus and total nitrogen concentration, total suspended solids, and fecal coliform bacteria concentration suggest improving conditions for these parameters. Recreational uses are fully supported. At the downstream site ***(CSTL-107)***, aquatic life uses are not supported due to dissolved oxygen and pH excursions and occurrences of zinc in excess of the aquatic life chronic criterion. There is a significant increasing trend in pH. Recreational uses are partially supported due to fecal coliform bacteria excursions; however, a significant decreasing trend in fecal coliform bacteria concentration suggests improving conditions for this parameter.

***Bees Creek (MD-128) –*** Aquatic life uses are not supported due to dissolved oxygen and turbidity excursions. Although pH excursions occurred, they were considered natural, not standards violations. Recreational uses are partially supported due to fecal coliform bacteria excursions.

*A fish consumption advisory has been issued by the Department for mercury and includes the Coosawhatchie River within this watershed (see advisory p.74).*

## Groundwater Quality

| Well # | Class | Aquifer | Location |
|---|---|---|---|
| AMB-098 | GB | TERTIARY LIMESTONE | RIDGELAND |

All water samples collected from ambient monitoring well ***AMB-098*** met standards for Class GB groundwater.

## NPDES Program

### *Active NPDES Facilities*

| *RECEIVING STREAM*<br>*FACILITY NAME* | *NPDES#*<br>*TYPE* |
|---|---|
| SANDERS BRANCH<br>TOWN OF HAMPTON | SC0021318<br>MAJOR DOMESTIC |

| | |
|---|---|
| SANDERS BRANCH<br>NEVAMAR COMPANY, LLC | SC0001830<br>MAJOR INDUSTRIAL |
| LITTLE BEES CREEK<br>COOSAWHATCHIE LAND COMPANY, LLC | SC0035394<br>MINOR DOMESTIC |
| LITTLE BEES CREEK TRIBUTARY<br>STUCKEYS PECAN SHOPPE #083 | SC0034550<br>MINOR DOMESTIC |
| COOSAWHATCHIE RIVER TRIBUTARY<br>NATHAN WILSON/JASPER MINE | SCG730415<br>MINOR INDUSTRIAL |

## Nonpoint Source Management Program

### *Land Disposal Activities*

#### Land Application Sites

| ***LAND APPLICATION SYSTEM***<br>***FACILITY NAME*** | ***ND#***<br>***TYPE*** |
|---|---|
| LAND APPLICATION<br>DEGLER SEPTIC TANK & GREASE | ND0073954<br>DOMESTIC |

#### Landfill Facilities

| ***LANDFILL NAME***<br>***FACILITY TYPE*** | ***PERMIT #***<br>***STATUS*** |
|---|---|
| TOWN OF RIDGELAND DUMP<br>DOMESTIC | ----------<br>INACTIVE |
| TOWN OF RIDGELAND DUMP #3<br>DOMESTIC | ----------<br>INACTIVE |

### *Mining Activities*

| ***MINING COMPANY***<br>***MINE NAME*** | ***PERMIT #***<br>***MINERAL*** |
|---|---|
| JERRY KERBY INC.<br>KERBY POND MINE | 1679-53<br>SAND |
| DARRELL THOMAS JOHNSON JR.<br>SLATER MINE | 1784-53<br>SAND |
| NATHAN WILSON<br>JASPER MINE | 1484-53<br>SAND |
| DOUBLE B CONSTRUCTION<br>SPRING HILL MINE | 1680-53<br>SAND |

## Growth Potential

There is a low to moderate potential for growth in this watershed, which contains the Town of Varnville and a portion of the Town of Ridgeland. There is a high potential for residential growth in the Ridgeland area. Ridgeland has expanded its regional treatment facility, which was built to address the needs of Del Webb's Sun City and Hilton Head. I-95 crosses the Town of Ridgeland and may provide some growth to the area.

## Watershed Protection and Restoration Strategies

### *Total Maximum Daily Loads (TMDLs)*

Dissolved oxygen (DO) TMDLs were developed by SCDHEC and approved by EPA for **Sanders Branch** and the **Coosawhatchie River** at water quality monitoring sites CSTL-108, CSTL-010, CSTL-011, and CSTL-109. TMDLs determine the maximum amount of biochemical oxygen demand (BOD) that water bodies can receive and still meet the dissolved oxygen water quality standard. Two continuous NPDES dischargers and one intermittent NPDES discharger are permitted to discharge BOD into Sanders Branch. The TMDL provides $BOD_5$ and $NH_3$-N limits for the two NPDES dischargers so that the streams can meet the dissolved oxygen standards. No reductions are required for nonpoint sources.

## *03050208-05*

### *(Beaufort River/Port Royal Sound)*

## General Description

Watershed 03050208-05 (formerly portions of 03050208-090, -100) is located in Beaufort County and consists primarily of the ***Beaufort River*** and its tributaries as it flows into ***Port Royal Sound***. The watershed occupies 56,305 acres of the Coastal Zone region of South Carolina. Land use/land cover in the watershed includes: 29.6% nonforested wetland, 25.6% forested land, 21.7% water, 14.4% urban land, 3.7% agricultural land, 4.3% forested wetland, and 0.7% barren land. A map depicting this watershed is found in Appendix C, page C-24.

Brickyard Creek (Mulligan Creek) and Albergottie Creek (Salt Creek) join to form the Beaufort River, which accepts drainage from Pigeon Point Creek, Broomfield Creek, Factory Creek, Battery Creek, Cat Island Creek, Archers Creek, Cowen Creek (Distant Island Creek, Capers Creek), and Ballast Creek before draining into Port Royal Sound. Cowen Creek is also described as Chowan Creek, and Capers Creek is also known as Wallace Creek. Cat Island Creek connects the Beaufort River to Cowen Creek. Archers Creek and Ballast Creek connect the Beaufort River to the Broad River. Station Creek and Morse Island Creek drain directly into Port Royal Sound. There are a total of 10,790.5 estuarine acres in this watershed. The Beaufort River and its tributaries from the confluence of Albergottie Creek and Brickyard Creek (SFH) to a point between Battery Creek and Cat Island Creek are classified SA; and from that point to its confluence with Port Royal Sound they are classified SFH. Cat Island Creek and Cowen Creek are classified SFH. Battery Creek is classified SA from the two unnamed headwater creeks down to a point 100 feet below their confluence at Rabbits Island (which includes Jericho Creek) and SFH from that point to its confluence with the Beaufort River. Archers Creek and Ballast Creek are classified SA in this watershed.

## Surface Water Quality

| Station # | Type | Class | Description |
|---|---|---|---|
| RT-02013 | RT02 | SA | BROOMFIELD CREEK, 0.8 MI N OF BEAUFORT |
| MD-001 | INT | SA | BEAUFORT RIVER ABOVE BEAUFORT AT CHANNEL MARKER 231 |
| RT-032039 | RT03 | SA | FACTORY CREEK, 0.7 MI E OF WHITE HALL LANDING |
| MD-002 | W | SA | BEAUFORT RIVER AT DRAWBRIDGE ON US 21 |
| RO-02003 | RO02 | SA | BEAUFORT RIVER NEAR SPANISH POINT |
| MD-003 | W | SA | BEAUFORT RIVER BELOW BEAUFORT AT CHANNEL MARKER 244 |
| RT-032043 | RT03 | SFH | BATTERY CREEK TRIB., 0.1 MI N CONFL & 1.25MI N SC 802 BRIDGE |
| MD-004 | INT | SFH | BEAUFORT RIVER AT JUNCTION WITH BATTERY CREEK NEAR MARKER 42 |
| RO-036033 | RO03 | SFH | DISTANT ISLAND CREEK, 0.7 MI E OF WHITE HALL LANDING |
| RO-056105 | RO05 | SFH | FACTORY CREEK, 0.1 MI NW CONFLUENCE WITH COWEN CREEK |
| MD-005 | W | SFH | BEAUFORT RIVER BELOW OUTFALL OF PARRIS IS. MARINE BASE AT BUOY 29 |
| RT-06002 | RT06 | SFH | MORSE ISLAND CREEK, 1.2 MI ENE CONFLUENCE WITH PORT ROYAL SOUND |
| RT-052104 | RT05 | SFH | MORSE ISLAND CREEK TRIB, 0.7 MI ESE CONFL WITH PORT ROYAL SOUND |

***Broomfield Creek (RT-02013) -*** Aquatic life and recreational uses are fully supported. This is a tidally influenced 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 are considered natural, not standards violations.

***Beaufort River –*** There are six SCDHEC monitoring stations along the Beaufort River. At the furthest upstream site ***(MD-001),*** aquatic life and recreational uses are fully supported; however, there is a significant increasing trend in five-day biochemical oxygen demand. At the next site downstream (***MD-002),*** aquatic life and recreational uses are fully supported and a significant increasing trend in dissolved oxygen concentration suggests improving conditions for this parameter. Aquatic life and recreational uses are also fully supported at the next site, ***RO-02003.*** Further downstream ***(MD-003),*** aquatic life and recreational uses are fully supported; however, there is a significant increasing trend in turbidity. A significant increasing trend in dissolved oxygen concentration suggests improving conditions for this parameter at this site. Continuing downstream ***(MD-004),*** aquatic life and recreational uses are fully supported; however, there is a significant increasing trend in five-day biochemical oxygen demand and total phosphorus concentration. At the furthest downstream site ***(MD-005),*** aquatic life and recreational uses are fully supported; however, there is a significant increasing trend in five-day biochemical oxygen demand and total phosphorus concentration. There is a significant decreasing trend in pH. Significant increasing trends in dissolved oxygen concentration and decreasing trends in total nitrogen concentration and fecal coliform bacteria concentration suggest improving conditions for these parameters.

***Factory Creek –*** There are two SCDHEC monitoring stations along Factory Creek ***(RT-032039, RO-056105)*** and aquatic life and recreational uses are fully supported at both sites. This is a tidally influenced system, which are often characterized by naturally low pH and dissolved oxygen concentrations. Although dissolved oxygen excursions were noted at ***RO-056105***, they were typical of values seen in such systems and are considered natural, not standards violations.

***Battery Creek Tributary (RT-032043) –*** Aquatic life and recreational uses are fully supported. This is a tidally influenced 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 are considered natural, not standards violations.

***Distant Island Creek (RO-036033) –*** Aquatic life and recreational uses are fully supported. This is a tidally influenced 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 are considered natural, not standards violations.

***Morse Island Creek (RT-06002)*** **–** Aquatic life and recreational uses are fully supported. This is a tidally influenced 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 are considered natural, not standards violations.

***Morse Island Creek Tributary (RT-052104)*** **–** Aquatic life and recreational uses are fully supported.

*As of 2010, fish tissue analyses on species caught from Port Royal Sound indicate no advisories or restrictions on consumption of fish from these waters. See* http://www.scdhec.gov/fish *for current details.*

## Shellfish Monitoring Stations

| Station # | Description |
|---|---|
| 15-02 | Mulligan Creek at Brickyard Creek |
| 15-10 | Battery Creek at Five Points Creek |
| 15-14 | Parris Island at WWTP outfall |
| 15-15 | Ballast Creek at Beaufort River |
| 15-16 | Station Creek at Beaufort River |
| 15-17 | Cat Island Creek at Cowen Creek |
| 15-18 | Second Middle Marsh in Cowen Creek |
| 15-19 | Battery Creek 1000 feet below Rabbit Island |
| 15-20 | Capers Creek SSG at Penn Community Services Retreat Center |
| 15-21 | Unnamed creek at (former) discharge of BC High and Cherry Hill High |
| 15-23 | Distant Island State Shellfish Ground |
| 15-24 | Battery Creek – SC Hwy 280 bridge |
| 15-25 | Battery Creek – Dowlingwood tributary |
| 15-26 | Battery Creek – Picket Fence tributary |
| 15-27 | Battery Creek – Cherry Hill tributary |
| 15-28 | Battery Creek – storm water outfall under RR track |
| 15-29 | Battery Creek – Tributary on right side before Battery Shores |
| 15-30 | Battery Creek – Cottage Farms Community Dock |
| 15-31 | Battery Creek – Battery Point Community Dock |
| 15-32 | Battery Creek – under power line |
| 17-14 | Port Royal Sound at Parris Island spit |

## NPDES Program

### *Active NPDES Facilities*

| ***RECEIVING STREAM*** <br> ***FACILITY NAME*** | ***NPDES#*** <br> ***TYPE*** |
|---|---|
| BEAUFORT RIVER <br> U.S. MARINES/PARRIS ISLAND DEPOT | SC0002577 <br> MINOR INDUSTRIAL |
| ALBERGOTTI CREEK <br> U.S. MARINES/BEAUFORT AIR STATION | SC0000825 <br> MINOR INDUSTRIAL |

| | |
|---|---|
| BATTERY CREEK | SCG750015 |
| OC WELCH FORD & LINCOLN MERCURY | MINOR INDUSTRIAL |
| BEAUFORT RIVER | SC0048348 |
| BJW&SA/PORT ROYAL | MINOR DOMESTIC |
| BEAUFORT RIVER | SC0048976 |
| BJW&SA/PARRIS ISLAND RECRUIT DEPOT WWTP | MINOR DOMESTIC |
| BEAUFORT RIVER TRIBUTARY | SCG730283 |
| FRED TRASK/TRASK MINE | MINOR INDUSTRIAL |

### *Municipal Separate Storm Sewer Systems (MS4)*

| ***RECEIVING STREAM*** | ***NPDES#*** |
|---|---|
| ***MUNICIPALITY*** | ***MS4 PHASE*** |
| ***RESPONSIBLE PARTY*** | ***MS4 SIZE*** |
| ***IMPLEMENTING PARTY*** | |
| BEAUFORT RIVER | ---------- |
| CITY OF BEAUFORT | PHASE II |
| CITY OF BEAUFORT | SMALL MS4 |
| CITY OF BEAUFORT | |

## Nonpoint Source Management Program

### *Land Disposal Activities*

#### Landfill Facilities

| ***LANDFILL NAME*** | ***PERMIT #*** |
|---|---|
| ***FACILITY TYPE*** | ***STATUS*** |
| ASSOCIATED MATERIALS WOOD GRIND SITE | 072731-3001 |
| COMPOSTING | ACTIVE |
| BEAUFORT WOOD CHIPPING FACILITY | 071002-3001 |
| COMPOSTING | INACTIVE |
| SHANKLIN ROAD MULCHING FACILITY | 072700-3002 |
| COMPOSTING | INACTIVE |
| HURRICANE GRACIE LANDFILL | --------- |
| DOMESTIC | INACTIVE |
| OLD BEAUFORT DUMP | -------- |
| DOMESTIC | INACTIVE |
| BARNWELL RESOURCES, INC. LAND CLEARING | 072410-3001 |
| COMPOSTING | ACTIVE |
| BARNWELL RESOURCES, INC. WOOD COMPOSTING | 072410-3002 |
| COMPOSTING | INACTIVE |
| BARNWELL RESOURCES, INC. | ---------- |
| INDUSTRIAL | INACTIVE |

| | |
|---|---|
| BARNWELL RESOURCES, INC. C&D LANDFILL | 072410-1201 |
| C & D | ACTIVE |

**Land Application Sites**

| *LAND APPLICATION SYSTEM FACILITY NAME* | *ND# TYPE* |
|---|---|
| SPRAYSITE | ND0067091 |
| BEACHWOOD MHP | DOMESTIC |
| GOLF COURSE | ND0067393 |
| TJ BARNWELL UTILITIES, INC. | DOMESTIC |

## Growth Potential

There is a high potential for growth in this watershed, which contains the Town of Port Royal and a large portion of the City of Beaufort. The City of Beaufort and Lady's Island, Burton, and Shell Point are projected to continue experiencing residential and commercial growth. Less than 25% of the total land area of Lady's Island, Burton or Shell Point is suitable for septic system installations; and another 25% or less is classified as marginally suitable.

The Town of Bluffton is an area experiencing substantial growth. Del Webb's Sun City retirement community development near Bluffton has added tremendous residential and commercial growth to the area. Between 25 and 50% of the total land area is suitable for septic system installations; and another 25% or less is classified as marginally suitable. Beaufort-Jasper Water and Sewer Authority has extended water and sewer services to the area to provide for the growth. They were then able to extend the services over to Hilton Head, where the natural aquifer is becoming shallow and salty. The area along US 278 en route from Bluffton to Hilton Head is a high growth commercial corridor. There are numerous golf and/or residential developments, and plans to develop nearby areas in a similar fashion. The new toll road that by-passes a portion of US 278 diverts the heavy commercial tourism traffic to more residential areas and the beaches. Calawassie Island on the Colleton River is currently being developed and a bridge has been built to Spring Island, which has allowed for residential development to occur.

## Watershed Protection and Restoration Strategies

### *Total Maximum Daily Loads (TMDLs)*

Dissolved oxygen (DO) TMDLs were developed by SCDHEC and approved by EPA for the **Beaufort River** at water quality monitoring sites MD-001, MD-002, MD-003, MD-004, and RO-02003. TMDLs determine the maximum amount of ultimate oxygen demand (UOD) that water bodies can receive and still meet water quality standards for dissolved oxygen. Three NPDES facilities are permitted to discharge oxygen demanding constituents into the Beaufort River watershed. The TMDLs require reductions in the UOD WLA (wasteload allocation) to the Beaufort River from the NPDES dischargers to meet the target of dissolved oxygen depression of no more than 0.1 mg/L. Two scenarios are provided to accomplish the goal. No reductions are required for nonpoint sources.

## *03050208-06*

### *(Broad River/Port Royal Sound)*

## General Description

Watershed 03050208-06 (formerly a portion of 03050208-090) is located in Hampton, Jasper, and Beaufort Counties and consists primarily of the ***Broad River*** and ***Port Royal Sound*** and their tributaries. The watershed occupies 226,787 acres of the Coastal Zone region of South Carolina. Land use/land cover in the watershed includes: 31.3% forested land, 21.9% water, 17.8% nonforested wetland, 16.2% forested wetland, 7.2% urban land, 5.1% agricultural land, and 0.5% barren land. A map depicting this watershed is found in Appendix C, page C-25.

The Coosawhatchie River Watershed and the Pocotaligo River (Buckfield Backwater, Haulover Creek) join to form the Broad River. Downstream from the confluence, the Broad River accepts drainage from South Haulover Creek and Whale Branch (Huspa Creek, Haulover Creek, Big Island Creek). Whale Branch connects the Broad River to the Coosaw River. Downstream from Whale Branch, the river accepts drainage from Boyd Creek (West Branch Boyd Creek, East Branch Boyd Creek, Coles Creek, Big Pond, Middle Pond, River Pond), Habersham Creek, Euhaw Creek (White Hall Pond, Gregory Pond, Hazzard Creek, Bird Island Creek), Archers Creek, Ribbon Creek, and Ballast Creek before flowing into Port Royal Sound. Archers Creek and Ballast Creek connect the Broad River to the Beaufort River. The Chechessee River accepts drainage from Hazzard Creek (Whig Swamp, Sandy Hill Backwater), Chechessee Creek, the Colleton River (Okatie River, Callawassie Creek, Sawmill Creek), Mackay Creek, and Skull Creek (AIWW) before flowing into Port Royal Sound. Hazzard Creek drains into both Euhaw Creek and the Chechessee River. Mackay Creek and
Skull Creek connect Port Royal Sound to Calibogue Sound. There are a total of 233.9 stream miles, 220.6 acres of lake waters, and 42,747.8 estuarine acres in this watershed.

The Broad River and its tributaries are classified SFH, as is Port Royal Sound. The Chechessee River and its tributaries, except for the Colleton River, are classified SFH. The Colleton River and its tributaries including the Okatie River, Callawassie Creek, and Sawmill Creek are classified ORW.

## Surface Water Quality

| Station # | Type | Class | Description |
|---|---|---|---|
| MD-007 | W | SFH | POCOTALIGO RIVER AT US 17 AT POCOTALIGO |
| RO-036031 | RO03 | SFH | BROAD RIVER, 0.6MI NW OF OLD SEABOARD COAST LINE RR CROSSING |
| RT-042061 | RT04 | SFH | SOUTH HAULOVER CREEK, 5.5MI SSW OF SHELDON |
| MD-254 | INT | SFH | HUSPA CREEK AT RAILROAD TRESTLE |
| RO-056103 | RO05 | SFH | BROAD RIVER, 1.0MI W OF COTTON ISLAND |
| RT-02007 | RT02 | SFH | WHALE BRANCH TRIB., 0.3MI E OF CONFLUENCE WITH BROAD RIVER |
| MD-279 | SSS | SFH | WHALE BRANCH AT CONFLUENCE WITH BROAD RIVER |
| RO-06309 | RO06 | SFH | BROAD RIVER, 5.8MI N OF SC 170 BRIDGE OVER BROAD RIVER |
| RT-02009 | RT09 | SFH | BOYD CREEK, 3.3MI NW FROM CONFLUENCE WITH BROAD RIVER |
| RO-036035 | RO03 | SFH | WEST BRANCH BOYD CREEK, 1.3MI NWCONFL W/EAST BRANCH BOYD CREEK |

| | | | |
|---|---|---|---|
| RO-046075 | RO04 | SFH | BROAD RIVER, 2MI NNW (UPRIVER) OF SC 170 |
| RO-06306 | RO06 | SFH | BROAD RIVER, 1.8MI N SC 170 BRIDGE OVER BROAD RIVER |
| RO-056097 | RO05 | SFH | BROAD RIVER, 1.2MI N SC 170 |
| RT-052097 | RT05 | SFH | EUHAW CREEK, 1.5MI N SC 170 BRIDGE OVER BROAD RIVER |
| MD-116 | INT | SFH | BROAD RIVER AT SC 170, 7.5MI SW OF BEAUFORT |
| MD-172 | W | SFH | BROAD RIVER AT MOUTH OF ARCHER CREEK ON SW SIDE OF USMC |
| RO-046063 | RO04 | SFH | BROAD RIVER OFF PARRIS IS. BETW BALLAST AND RIBBON CREEKS |
| MD-012 | W | SFH | MOUTH OF BROAD RIVER OPPOSITE BALLAST CREEK |
| MD-117 | W | SFH | CHECHESSEE RIVER AT SC 170, 10.5MI SW OF BEAUFORT |
| MD-176 | INT | ORW | COLLETON RIVER AT COLLETON NECK AT JCT WITH CHECHESSEE RIVER |
| RT-06013 | RT06 | ORW | COLLETON RIVER TRIB, 5.1MI SSE OF SC 170 BRIDGE OVER CHECHESSEE R. |
| MD-245 | W | ORW | COLLETON RIVER NEAR MOUTH (SHELLFISH STATION 18-5) |
| RO-036032 | RO03 | SFH | CHECHESSEE RIVER, 1.4MI SE CONFL WITH COLLETON RIVER |
| RO-056104 | RO05 | SFH | CHECHESSEE RIVER, 6.2MI SE OF SC 170 NEAR DAWS ISLAND |
| RO-036036 | RO03 | SFH | CHECHESSEE RIVER, 1.4MI N OF MACKAY CREEK MOUTH |
| RO-036034 | RO03 | SFH | PORT ROYAL SOUND, 1.8MI SW OF TIP OF PARRIS ISLAND |
| RO-06302 | RO06 | SFH | PORT ROYAL SOUND,2.3MI SE OF DAWS ISLAND |
| MD-006 | W | SFH | PORT ROYAL BETWEEN BUOY 25&24, W OF BAY POINT ISLAND |

***Pocotaligo River (MD-007)*** **–** Aquatic life uses are not supported due to turbidity excursions. This is a tidally influenced system, which are often characterized by naturally low dissolved oxygen concentrations and pH levels. Although dissolved oxygen and pH excursions were noted, they were typical of values seen in such systems and are considered natural, not standards violations. There is a significant increasing trend in pH. Recreational uses are not 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.

***Broad River*** **–** There are ten SCDHEC monitoring stations along the Broad River. This is a tidally influenced system, which are often characterized by naturally low dissolved oxygen concentrations and pH levels. At the furthest upstream site ***(RO-036031)***, aquatic life and recreational uses are fully supported. Although dissolved oxygen excursions were noted, they were typical of values seen in such systems and are considered natural, not standards violations. Further downstream (***RO-056103***), aquatic life and recreational uses are fully supported. At the next site downstream ***(RO-06309)***, aquatic life and recreational uses are fully supported. Although dissolved oxygen excursions were noted, they were typical of values seen in such systems and are considered natural, not standards violations. Aquatic life and recreational uses are also fully supported at the next few sites downstream ***(RO-046075, RO-06306, RO-056097)***.

Further downstream ***(MD-116)***, aquatic life uses are not supported due to occurrences of copper in excess of the aquatic life chronic criterion. In addition, there are significant increasing trends in five-day biochemical oxygen demand, turbidity, and total phosphorus concentration. There is a significant decreasing trend in pH. Significant increasing trends in dissolved oxygen concentration and decreasing trends in total nitrogen concentration suggest improving conditions for these parameters. Recreational uses are fully supported. Aquatic life and recreational uses are fully supported at the next site

downstream ***(MD-172)***; however, there is a significant increasing trend in total phosphorus concentration. At the furthest downstream sites ***(RO-046063, MD-012)***, aquatic life and recreational uses are fully supported.

***South Haulover Creek (RT-042061)*** – Aquatic life and recreational uses are fully supported.

***Huspa Creek (MD-254)*** – Aquatic life uses are not supported due to occurrences of copper in excess of the aquatic life chronic criterion. This is a tidally influenced system, 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 are considered natural, not standards violations. 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; however, there is a significant increasing trend in fecal coliform bacteria concentration.

***Tributary to Whale Branch (RT-02007)*** – Aquatic life and recreational uses are fully supported.

***Whale Branch (MD-279)*** – Aquatic life and recreational uses are fully supported. This is a tidally influenced system, 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 are considered natural, not standards violations.

***Boyd Creek (RT-02009)*** – Aquatic life and recreational uses are fully supported. This is a tidally influenced system, 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 are considered natural, not standards violations.

***West Branch Boyd Creek (RO-036035)*** – Aquatic life and recreational uses are fully supported. This is a tidally influenced system, 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 are considered natural, not standards violations.

***Euhaw Creek (RT-052097)*** – Aquatic life and recreational uses are fully supported. This is a tidally influenced system, 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 are considered natural, not standards violations.

***Chechessee River*** – There are four SCDHEC monitoring stations along the Chechessee River ***(MD-117, RO-036032, RO-056104, RO-036036)***. Aquatic life and recreational uses are fully supported

at ***MD-117, RO-056104,*** and ***RO-036036.*** At ***RO-036032***, aquatic life uses are partially supported due to dissolved oxygen excursions. Recreational uses are fully supported.

***Colleton River –*** There are two SCDHEC monitoring stations along the Colleton River. At the upstream site ***(MD-176)***, aquatic life uses are partially supported due to dissolved oxygen excursions. In addition, there is a significant increasing trend in five-day biochemical oxygen demand. There is a significant decreasing trend in pH. Recreational uses are fully supported; however, there is a significant increasing trend in fecal coliform bacteria concentration. At the downstream site ***(MD-245)***, aquatic life and recreational uses are fully supported and a significant decreasing trend in total nitrogen concentration suggests improving conditions for this parameter.

***Tributary to Colleton River (RT-06013) –*** Aquatic life and recreational uses are fully supported. This is a tidally influenced system, 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 are considered natural, not standards violations.

***Port Royal Sound –*** There are three SCDHEC monitoring stations along Port Royal Sound. At the upstream site ***(RO-036034)***, aquatic life uses are not supported due to occurrences of copper in excess of the aquatic life chronic criterion. Recreational uses are fully supported. At the midstream site ***(RO-06302)***, aquatic life and recreational uses are fully supported. Aquatic life and recreational uses are also fully supported at the downstream site ***(MD-006)***; however, there is a significant increasing trend in total phosphorus concentration. Significant increasing trends in dissolved oxygen concentration and decreasing trends in fecal coliform bacteria concentration suggest improving conditions for these parameters. *As of 2010, fish tissue analyses on species caught from Port Royal Sound indicate no advisories or restrictions on consumption of fish from these waters.*

*A fish consumption advisory has been issued by the Department for mercury and includes the Coosawhatchie River within this watershed (see advisory p.74).*

## Shellfish Monitoring Stations

| Station # | Description |
|---|---|
| 14-14 | HUSPA CREEK AT RAILROAD TRESTLE |
| 14-18 | HUSPA CREEK AT BULL POINT- WHALE BRANCH POG |
| 17-01 | BROAD RIVER AT S.A.L. RR BRIDGE |
| 17-02 | BOYD CREEK AT BROAD RIVER |
| 17-03 | BROAD RIVER AT WHALE BRANCH |
| 17-04A | USMC LAUREL BAY WWTP OUTPUT |
| 17-07 | MOUTH OF CHECHESSEE CREEK AT CHECHESSEE RIVER |
| 17-08 | CHECHESSEE RIVER BRIDGE |
| 17-09 | MOUTH OF EUHAW CREEK AT HAZZARD CREEK |
| 17-10A | ARCHERS CREEK 1000 FEET WEST OF BRIDGE |

| | |
|---|---|
| 17-12A | BALLAST CREEK NEAR PAGE FIELD ROAD CAUSEWAY |
| 17-13 | BROAD RIVER AT CREEK BELOW BALLAST CREEK |
| 17-16 | BROAD RIVER AT CORN ISLAND – MOUTH OF CREEK |
| 17-16A | FIRST SPLIT IN HABERSHAM CREEK ABOVE STATION #16 |
| 17-17 | HAZZARD CREEK AT CHECHESSEE RIVER |
| 17-18 | HAZZARD CREEK AT CHELSEA PLANTATION CLUBHOUSE |
| 17-21 | CONFLUENCE OF MIDDLE CREEK AND WHALE BRANCH |
| 17-22 | CONFLUENCE OF EAST AND WEST BRANCH OF BOYD CREEK |
| 17-23 | HEADWATERS OF EUHAW CREEK ONE MILE ABOVE BOLIN HALL LANDING |
| 17-25 | HAZZARD CREEK AT SECOND RIGHT BEND ABOVE STATION 17-17 AND 17-18 |
| 18-01 | OKATIE RIVER AT CAMP ST. MARY'S DOCK |
| 18-02 | OKATIE RIVER BEHIND BAILEY'S OYSTER DOCK |
| 18-03 | CHECHESSEE CREEK AT OKATIE RIVER |
| 18-04 | CALLAWASSIE CREEK AT COLLETON RIVER, MOUTH OF CREEK |
| 18-05 | CALLAWASSIE CREEK AT COLLETON CREEK AT TREE LINE |
| 18-06 | SAWMILL CREEK AT COLLETON CREEK |
| 18-07 | OKATIE RIVER AT INDIGO PLANTATION |
| 18-08 | OKATIE RIVER AT DOCK WITHOUT HOUSE |
| 18-09 | FIRST UNNAMED TRIBUTARY IN CHECHESSEE CREEK FROM COLLETON RIVER |
| 18-10 | SECOND BRIDGE TO CALLAWASSIE ISLAND |
| 18-11 | FIRST BRIDGE TO CALLAWASSIE ISLAND |
| 18-12 | SERIES OF UNNAMED TRIBUTARIES IN CHECHESSEE CREEK |
| 18-13 | FIRST UNNAMED TRIBUTARY TO CHECHESSEE POINT IN CHECHESSEE CREEK |
| 18-14 | TRIBUTARY FROM SPRING ISLAND SHRIMP POND |
| 18-15 | DOCK AT WADDELL MARICULTURE CENTER |
| 18-16 | OKATIE RIVER AT CONFLUENCE OF PINKNEY COLONY TRIBUTARY |
| 18-17 | OKATIE RIVER AT CONFLUENCE OF CHERRY POINT TRIBUTARY |
| 20-09 | MACKEY CREEK AND CHECHESSEE RIVER |
| 20-13 | SKULL CREEK AND PORT ROYAL SOUND |
| 20-27 | FISH HAUL CREEK AT PORT ROYAL SOUND |

## Groundwater Quality

| Well # | Class | Aquifer | Location |
|---|---|---|---|
| AMB-029 | GB | MIDDENDORF | PARRIS ISLAND |
| AMB-091 | GB | TERTIARY LIMESTONE | SHELDON |
| AMB-093 | GB | TERTIARY LIMESTONE | BLUFFTON |

All water samples collected from ambient monitoring wells ***AMB-029, AMB-091,*** and ***AMB-093*** met standards for Class GB groundwater.

## NPDES Program

### *Active NPDES Facilities*

| ***RECEIVING STREAM*** <br> ***FACILITY NAME*** | ***NPDES#*** <br> ***TYPE*** |
|---|---|
| BROAD RIVER <br> USMC/MARINE CORPS AIR STATION | SC0000825 <br> MINOR INDUSTRIAL |
| HUSPA CREEK <br> BRAYS ISLAND PLANTATION WWTP | SC0047228 <br> MINOR DOMESTIC |

| | |
|---|---|
| PALMETTO HALL PLANTATION WETLANDS<br>HILTON HEAD NO.1 PSD WWTP | SC0046191<br>MAJOR DOMESTIC |
| BUCKFIELD BACKWATER DRAINAGE<br>NATHAN WILSON/EARLY BRANCH MINE | SCG730366<br>MINOR INDUSTRIAL |
| EUHAW CREEK DRAINAGE<br>COASTAL CONCRETE INC./BEES CREEK MINE | SCG730670<br>MINOR INDUSTRIAL |
| DEL WEBB WETLAND<br>BJW&SA/OKATIE WATER RECLAIM. FACILITY | SC0047279<br>MAJOR DOMESTIC |
| WHALE BRANCH TRIBUTARY<br>REA CONTRACTING/BEAUFORT PIT | SCG730609<br>MINOR INDUSTRIAL |
| HAZZARD CREEK<br>OKEETEE CLUB/CROWFIELD ROAD MINE | SCG730325<br>MINOR INDUSTRIAL |
| HAZZARD CREEK TRIBUTARY<br>MALPHRUS UTILITIES/R&M PLANTATION MINE | SCG731109<br>MINOR INDUSTRIAL |
| COLLETON RIVER TRIBUTARY<br>NEIGHBORS CAR WASH | SCG750028<br>MINOR INDUSTRIAL |

### *Municipal Separate Storm Sewer Systems (MS4)*

| ***RECEIVING STREAM***<br>***MUNICIPALITY***<br>***RESPONSIBLE PARTY***<br>***IMPLEMENTING PARTY*** | ***NPDES#***<br>***MS4 PHASE***<br>***MS4 SIZE*** |
|---|---|
| BROAD RIVER<br>CITY OF BEAUFORT<br>CITY OF BEAUFORT<br>CITY OF BEAUFORT | ----------<br>PHASE II<br>SMALL MS4 |
| BROAD RIVER<br>CITY OF HILTON HEAD ISLAND<br>CITY OF HILTON HEAD ISLAND<br>CITY OF HILTON HEAD ISLAND | ----------<br>PHASE II<br>SMALL MS4 |

## Nonpoint Source Management Program

### *Land Disposal Activities*

#### Landfill Facilities

| ***LANDFILL NAME***<br>***FACILITY TYPE*** | ***PERMIT #***<br>***STATUS*** |
|---|---|
| HICKORY HILL LANDFILL & RECYCLING CTR<br>DOMESTIC | 272401-1101<br>ACTIVE |
| HICKORY HILL LANDFILL & RECYCLING CTR<br>DOMESTIC | 272401-1102<br>INACTIVE |
| HICKORY HILL YT WASTE PROCESSING CTR<br>COMPOSTING | 272401-3001<br>INACTIVE |

| | |
|---|---|
| TOWN OF RIDGELAND DUMP #2 | ---------- |
| DOMESTIC | INACTIVE |
| US MARINE CORP. RECRUITING DEPOT | ---------- |
| INDUSTRIAL | INACTIVE |
| US MARINE CORP. RECRUITING DEPOT | ---------- |
| --------- | INACTIVE |
| US MARINE CORP. RECRUITING DEPOT CC LANDFILL | 075001-1201 |
| INDUSTRIAL | INACTIVE |
| US MARINE CORP. RECRUITING DEPOT | ---------- |
| --------- | INACTIVE |
| BEAUFORT COUNTY SANITARY LANDFILL | ---------- |
| DOMESTIC | INACTIVE |
| CITY OF BEAUFORT WWPT | ---------- |
| INDUSTRIAL | INACTIVE |
| OAKWOOD C&D WOOD GRINDING SITE | 272438-3001 |
| COMPOSTING | ACTIVE |
| OAKWOOD C&D RECYCLING CENTER | 272438-1201 |
| C&D | INACTIVE |
| OAKWOOD C&D RECYCLING CENTER CELL 2 | 272438-1202 |
| C&D | ACTIVE |
| SNAKE ROAD C&D LANDFILL | 272742-1201 |
| C & D | ACTIVE |
| TOWN OF YEMASSEE SHREDDING FACILITY | 251002-3001 |
| COMPOSTING | ACTIVE |
| MRR SOUTHERN, LLC | --------- |
| INDUSTRIAL | PROPOSED |
| ASSOCIATED MATERIALS WOOD GRINDING SITE#2 | 072731-3002 |
| COMPOSTING | ACTIVE |
| SHANKLIN ROAD MULCHING FACILITY | 072700-3002 |
| COMPOSTING | INACTIVE |
| COASTAL DEBRIS CO. AIR CURTAIN INCENERATOR | 272770-4001 |
| INCENERATOR | ACTIVE |
| CLELAND RIDGELAND WOOD CHIPPING FACILITY | 272605-3001 |
| COMPOSTING | ACTIVE |
| WASTECO SERVICES AIR CURTAIN INCENERATOR | 272773-4001 |
| INCENERATOR | ACTIVE |
| BEAUFORT CO. – BLUFFTON RD COMPOSTING FACILITY | 072700-3001 |
| COMPOSTING | INACTIVE |

| | |
|---|---|
| ULMER BROTHERS AIR CURTAIN INCENERATOR<br>INCENERATOR | 072711-4001<br>ACTIVE |
| HILTON HEAD PLANTATION P.O.A. WOOD CHIPPING<br>COMPOSTING | 072413-3001<br>ACTIVE |
| SEA PINES PUBLIC SERVICE DISTRICT<br>INDUSTRIAL | --------<br>INACTIVE |
| EVERGREEN TREE & TURF CARE WOOD CHIPPING FAC.<br>COMPOSTING | 272705-3001<br>ACTIVE |
| CLELAND CONSTR. DAVIS RD WOOD CHIPPING FACILITY<br>COMPOSTING | 272605-3002<br>INACTIVE |
| MALPHRUS CONSTR. CO. AIR CURTAIN INCENERATOR<br>INCENERATOR | 272716-4001<br>ACTIVE |

## Land Application Sites

| ***LAND APPLICATION SYSTEM***<br>***FACILITY NAME*** | ***ND#***<br>***TYPE*** |
|---|---|
| SPRAYFIELD<br>BJW&SA/POINT SOUTH WWTP | ND0068781<br>DOMESTIC |
| SPRAYSITES<br>BJW&SA/PALM KEY WWTP | ND0064513<br>DOMESTIC |
| GOLF COURSE<br>CALLAWASSIE DEVELOPMENT | ND0062235<br>DOMESTIC |
| SPRAYSITE<br>BEACHWOOD MHP | ND0067091<br>DOMESTIC |
| GOLF COURSE<br>TJ BARNWELL UTILITIES, INC. | ND0067393<br>DOMESTIC |
| GOLF COURSE AND SPRAYSITES<br>HILTON HEAD #1 PSD | ND0068462<br>DOMESTIC |
| GOLF COURSE<br>SPRING ISLAND CO./SPRING ISLAND WWTP | ND0077828<br>DOMESTIC |

## *Mining Activities*

| ***MINING COMPANY***<br>***MINE NAME*** | ***PERMIT #***<br>***MINERAL*** |
|---|---|
| FREDERICK G. TRASK<br>TRASK MINE | 1248-13<br>SAND |
| NATHAN WILSON<br>EARLY BRANCH MINE | 1352-49<br>SAND/SANDCLAY |
| CLELAND SITE PREP INC.<br>SANDHILL TRACT MINE | 1629-13<br>SAND |

| | |
|---|---|
| REA CONTRACTING LLC | 0890-13 |
| JETER BORROW PIT | SAND |
| | |
| COASTAL CONCRETE INC. | 1471-53 |
| BEES CREEK MINE | SAND |
| | |
| OKEETEE CLUB INC. | 0078-53 |
| MINE #4-A | SAND |
| | |
| MALPHRUS CONSTRUCTION COMPANY, INC. | 1141-53 |
| MALPHRUS | SAND |
| | |
| CLELAND CONSTRUCTION COMPANY | 1108-13 |
| CLELAND – D.R. MINE | SAND |

## Growth Potential

There is a high potential for growth in this watershed, which contains portions of the City of Beaufort and the Towns of Yemassee, Bluffton, and Hilton Head. The City of Beaufort and the Communities of Lady's Island, Burton, and Shell Point are projected to continue experiencing residential and commercial growth. Less than 25% of the total land area of Lady's Island, Burton or Shell Point is suitable for septic system installations; and another 25% or less is classified as marginally suitable.

The Town of Bluffton is an area experiencing substantial growth. Del Webb's Sun City retirement community development near Bluffton has added tremendous residential and commercial growth to the area. Between 25 and 50% of the total land area is suitable for septic system installations; and another 25% or less is classified as marginally suitable. Beaufort-Jasper Water and Sewer Authority has extended water and sewer services to the area to provide for the growth. They were then able to extend the services over to Hilton Head, where the natural aquifer is becoming shallow and salty. The area along US 278 en route from Bluffton to Hilton Head is a high growth commercial corridor. There are numerous golf and/or residential developments, and plans to develop nearby areas in a similar fashion. The new toll road that by-passes a portion of US 278 diverts the heavy commercial tourism traffic to more residential areas and the beaches. Calawassie Island on the Colleton River is currently being developed and a bridge has been built over to Spring Island, which has allowed for residential development to occur there.

## Watershed Protection and Restoration Strategies

### *Special Projects*

SCDHEC awarded the Lowcountry Council of Governments (LCOG) a Section 319 grant to implement a watershed-based plan to restore the Okatie River. LCOG, along with a host of local partners, will work to reduce fecal coliform levels in the Okatie River, specifically at stations 18-07, 18-08, 18-16, 18-17, in order to reopen shellfish beds for harvesting. Project cooperators aim to reduce pollutant loadings from all sources of fecal coliform in the watershed. To that end, the project will include a watershed-wide septic rehabilitation program, stormwater and other low-impact retrofits, buffer plantings,

institutional BMPs, livestock management measures, and educational efforts targeted to pet owners and recreational boaters. Currently, the project is scheduled to be completed in July 2013.

# Salkehatchie Coastal Frontage Basin Description

The ***Salkehatchie Coastal Frontage Basin*** encompasses 1 watershed and 73 square miles that flow through the Coastal Zone region of Beaufort County. Of the 46,481 acres, 47.7% is nonforested wetland (marsh), 25.9% is water, 14.2% is forested land, 3.8% is agricultural land, 3.1% is barren land, 2.8% is forested wetland (swamp), and 2.5% is urban land. There are approximately 7,682.7 estuarine acres in this basin.

The Salkehatchie Coastal Frontage Basin consists of the Harbor River and a series of inlets that drain directly into the Atlantic Ocean. These inlets include Trenchards Inlet, Pritchards Inlet, Skull Inlet, and Fripp Inlet.

## *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 region that defines the Salkehatchie Coastal Frontage Basin is as follows:

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 2006 National Land Cover Data (NLCD). The dataset is 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 individual soil series for the Salkehatchie Coastal Frontage Basin are described as follows.

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

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

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

**Lynnhaven** soils are poorly drained sandy soils, with sandy subsoil, in low areas, and prone to ponding.

## *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 erodibility of the soil (K-factor) averages 0.08 in the Salkehatchie Coastal Frontage Basin.

## *Fish Consumption Advisory*

At the time of publication, there is no fish consumption advisory issued by SCDHEC in effect for the Salkehatchie Coastal Frontage Basin. Fish consumption advisories are updated annually in the spring. 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 Fish Consumption Advisory toll-free hotline at (888) 849-7241.

## *Climate*

Normal yearly rainfall in the Salkehatchie Coastal Frontage Basin area during the period of 1971 to 2000 was 49.98 inches, according to South Carolina's 30-year climatological record. Data from National Weather Service stations in Hilton Head, Beaufort MCAS, Beaufort WWTP, and Edisto Island were compiled to determine general climatic information for the Salkehatchie Coastal Frontage Basin area. The highest seasonal rainfall occurred in the summer with 18.19 inches; 11.45, 10.54, and 9.80 inches of rain fell in the fall, winter, and spring, respectively. The average annual daily temperature was 65.4°F. Summer temperatures averaged 80.1 °F, and fall, winter, and spring mean temperatures were 67.2 °F, 49.8 °F, and 64.6 °F, respectively.

# Watershed Evaluations

## *03050210-01*

***(Trenchards Inlet/Fripp Inlet/Harbor River)***

### General Description

Watershed 03050210-01 (formerly a portion of 03050208-100) is located in Beaufort County and consists primarily of the ***Harbor River*** and tributaries that drain directly to the Atlantic Ocean. The watershed occupies 46,481 acres of the Coastal Zone region of South Carolina. Land use/land cover in the watershed includes: 47.7% nonforested wetland (marsh), 25.9% water, 14.4% forested land, 3.8% agricultural land, 3.1% barren land, 2.8% forested wetland (swamp), and 2.5% urban land.
A map depicting this watershed is found in Appendix D, page D-11.

The Harbor River (Club Bridge Creek, Johnson Creek, Ward Creek) joins Station Creek (Scott Creek) and flows into Trenchards Inlet (Story River, Skull Creek, Turtle Creek, Moon Creek) to the Atlantic Ocean. The Harbor River also flows into St. Helena Sound. The Story River connects Trenchards Inlet to Fripp Inlet. Old House Creek also drains into Fripps Inlet. Station Creek connects the Beaufort River Watershed to Trenchards Inlet. Skull Creek connects Trenchards Inlet to Skull Inlet. Pritchards Inlet connects to Trenchards Inlet via Moon Creek. Trenchards Inlet, Pritchards Inlet, Skull Inlet, and Fripps Inlet drain directly to the Atlantic Ocean. There are a total of 7,682.7 estuarine acres in this watershed. The Harbor River, Johnson Creek, and Fripps Inlet are classified ORW and the remaining streams are classified SFH. Hunting Island State Park is a natural resource in this watershed, located between Fripps Inlet and St. Helena Sound.

### Surface Water Quality

| Station # | Type | Class | Description |
|---|---|---|---|
| RO-06310 | RO06 | SFH | TRENCHARDS INLET, 0.6 MI E OF MOUTH OF MORSE CREEK |
| RT-02002 | RT02 | SFH | SKULL CREEK, 1.0 MI E OF CONFLUENCE WITH TRENCHARDS INLET |
| RT-06018 | RT06 | SFH | TRENCHARDS INLET TRIBUTARY, 7.7 MI SE OF PORT ROYAL |
| RO-056096 | RO05 | SFH | STORY RIVER, 2.2. MI NE OF CONFLUENCE WITH TRENCHARDS INLET |
| MD-256 | INT | SFH | UNNAMED CREEK BETWEEN HARBOR RIVER AND STORY RIVER |
| RO-046074 | RO04 | SFH | STATION CREEK BETWEEN PORT ROYAL SOUND AND TRENCHARDS INLET |
| RT-032056 | RT03 | SFH | SCOTT CREEK TRIBUTARY, 1.0 MI N OF CONFLUENCE WITH STATION CREEK |
| RT-06006 | RT06 | ORW | HARBOR RIVER, 4.5 MI SW OF US 21 BRIDGE OVER HARBOR RIVER |
| RT-042074 | RT04 | SFH | STORY RIVER TRIBUTARY, 2 MI W OF RUSS POINT |
| RT-052096 | RT05 | SFH | UNNAMED CREEK FROM FRIPP ISLAND TO OLD HOUSE CREEK |
| RO-02006 | RO02 | SFH | OLD HOUSE CREEK, 0.4 MI W OF CONFLUENCE WITH FRIPP INLET |

***Trenchards Inlet (RO-06310)*** – Aquatic life and recreational uses are fully supported.

***Skull Creek (RT-02002)*** - Aquatic life and recreational uses are fully supported. This is a tidally influenced system, 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 are considered natural, not standards violations.

***Trenchards Inlet Tributary (RT-06018)*** - Aquatic life and recreational uses are fully supported. This is a tidally influenced system, 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 are considered natural, not standards violations.

***Story River (RO-056096) -*** Aquatic life and recreational uses are fully supported. This is a tidally influenced system, 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 are considered natural, not standards violations.

***Unnamed creek between Harbor River and Story River (MD-256)*** - Aquatic life and recreational uses are fully supported; however, there is a significant increasing trend in fecal coliform bacteria concentration. This is a tidally influenced system, 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 are considered natural, not standards violations. A significant increasing trend in dissolved oxygen concentration suggests improving conditions for this parameter.

***Station Creek (RO-046074)*** - Aquatic life and recreational uses are fully supported.

***Scott Creek Tributary (RT-032056)*** - Aquatic life and recreational uses are fully supported. This is a tidally influenced system, 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 are considered natural, not standards violations.

***Harbor River (RT-06006)*** - Aquatic life and recreational uses are fully supported. This is a tidally influenced system, 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 are considered natural, not standards violations.

***Story River Tributary (RT-042074)*** - Aquatic life and recreational uses are fully supported.

***Unnamed creek from Fripp Island to Old House Creek (RT-052096)*** - Aquatic life and recreational uses are fully supported.

***Old House Creek (RO-02006)*** - Aquatic life and recreational uses are fully supported. This is a tidally influenced system, 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 are considered natural, not standards violations.

## Shellfish Monitoring Stations

| Station # | Description |
|---|---|
| 16B-02 | TRENCHARDS INLET AT MOUTH OF STATION CREEK |
| 16B-03 | CLUB BRIDGE CREEK AT HARBOR RIVER SOUND |
| 16B-04 | STORY RIVER AT FRIPP ISLAND |
| 16B-05 | OLD HOUSE CREEK AT FRIPP ISLAND |
| 16B-06 | HARBOR RIVER AT MARKER #A13 |
| 16B-06F | UNNAMED CREEK IN FRIPP CANAL AT OLD HOUSE CREEK |
| 16B-17 | STATION CREEK SSG AT BEAUFORT COUNTY LANDING |
| 16B-20 | TWO MILES NORTH OF CONFLUENCE OF STORY RIVER AND TRENCHARDS INLET |
| 16B-21 | UNNAMED CREEK BETWEEN HARBOR RIVER AND STORY RIVER |
| 16B-22 | SKULL CREEK AT CONFLUENCE WITH CREEK TOWARD PRICHARDS INLET |
| 16B-26 | OLD HOUSE CREEK AT 2 TRIBUTARIES NW OF FRIPP ISLAND MARINA |
| 16B-29 | MIDWAY STATIONS 3 AND 6 AT CREEK BETWEEN STORY RIVER AND HARBOR RIVER |
| 16B-31 | JOHNSON CREEK AT SC HWY 21 BRIDGE |
| 16B-33 | SKULL CREEK AT CONFLUENCE WITH TRENCHARDS INLET |
| 16B-34 | TRENCHARDS EST.INLET AT CONFLUENCE WITH LARGE TRIBUTARY ON NW SIDE OF SKULL CREEK |
| 16B-35 | SKULL CREEK AT CONFLUENCE WITH FIRST MAJOR CREEK ON RIGHT HEADING INLAND FROM SKULL INLET |

## NPDES Program

### *Active NPDES Facilities*

| *RECEIVING STREAM*<br>*FACILITY NAME* | *NPDES#*<br>*TYPE* |
|---|---|
| HARBOR RIVER TRIBUTARY<br>HENRY FARMS INC. | SCG731058<br>MINOR INDUSTRIAL |

## Nonpoint Source Management Program

### *Land Disposal Activities*

#### Landfill Facilities

| *LANDFILL NAME*<br>*FACILITY TYPE* | *PERMIT #*<br>*STATUS* |
|---|---|
| STANSELL WOOD CHIPPING/SHREDDING<br>COMPOSTING | 072615-3001<br>ACTIVE |

#### Land Application Sites

| *LAND APPLICATION SYSTEM*<br>*FACILITY NAME* | *ND#*<br>*TYPE* |
|---|---|
| SPRAY SITES<br>BJW&SA/ST. HELENA WWTP | ND0083429<br>DOMESTIC |

| | |
|---|---|
| DRAINFIELD | ND0080870 |
| SCPRT/HUNTING ISLAND STATE PARK | DOMESTIC |

## Growth Potential

There is a low potential for growth in this watershed, with the exception of the area surrounding the City of Beaufort. The City of Beaufort and the Communities of Lady's Island, Burton, and Shell Point are projected to continue experiencing residential and commercial growth. Less than 25% of the total land area of Lady's Island, Burton or Shell Point is suitable for septic system installations; and another 25% or less is classified as marginally suitable. The majority of the watershed includes a collection of sea islands and Hunting Island State Park.

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# *APPENDIX A.*

**Salkehatchie River Basin**

# Monitoring Site Descriptions

## *Ambient Water Quality Monitoring Sites*

| Station # | Type | Class | Description |
|---|---|---|---|
| **03050207-01** | | | |
| CSTL-028 INT | | FW | SALKEHATCHIE RIVER AT SC 64, 2MI W OF BARNWELL |
| RL-06437 RL06 | | FW | LAKE EDGAR BROWN, 0.3 MI NNE OF BRIDGE AT S-06-488 |
| CL-064 | W | FW | LAKE EDGAR BROWN IN FOREBAY NEAR DAM |
| CSTL-001B INT | | FW | TURKEY CREEK 1MI BELOW MILLIKEN/BARNWELL OUTFALL AT CLINTON ST. |
| CSTL-003 W | | FW | SALKEHATCHIE RIVER AT SC 278, 2.5MI S OF BARNWELL |
| CSTL-577 BIO | | FW | TOBY CREEK AT S-06-29 |
| CSTL-579 BIO | | FW | BIRDS BRANCH AT S-05-567 |
| RS-02472 RS02 | | FW | WELLS BRANCH AT SC 300 |
| **03050207-02** | | | |
| CSTL-051 BIO | | FW | JACKSON BRANCH AT S-03-18 |
| **03050207-03** | | | |
| CSTL-116 INT | | FW* | LEMON CREEK AT S-05-541 |
| **03050207-04** | | | |
| RS-06012 RS06 | | FW | LITTLE SALKEHATCHIE R. AT BRIDGE ON S-5-41, 7.2MI NNW OF EHRHARDT |
| CSTL-115 W | | FW | LITTLE SALKEHATCHIE RIVER AT US 601 |
| **03050207-05** | | | |
| CSTL-119 INT | | FW | BUCKHEAD CREEK AT SC 212 |
| CSTL-117 INT | | FW | LITTLE SALKEHATCHIE RIVER AT SC 64 |
| CSTL-118 INT | | FW | WILLOW SWAMP AT S-15-27 |
| CSTL-120 INT | | FW | LITTLE SALKEHATCHIE RIVER AT SC 63 |
| CSTL-585 BIO | | FW | SANDY RUN AT US 21 |
| **03050207-06** | | | |
| CSTL-048 INT | | FW | SALKEHATCHIE RIVER AT US 301 & US 321 |
| CSTL-006 W | | FW | SALKEHATCHIE RIVER AT US 601, 9MI NE OF HAMPTON |
| CSTL-104 INT | | FW | SALKEHATCHIE RIVER AT SC 63 |

**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 Savannah 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)

**BOD** Five-Day Biochemical Oxygen Demand (mg/l)

**pH** pH (SU)

**TP** Total Phosphorus (mg/l)

**TN** Total Nitrogen (mg/l)

**TURB** Turbidity (NTU)

**TSS** Total Suspended Solids (mg/l)

**BACT** Fecal Coliform Bacteria (#/100 ml)

**NH3** Ammonia (mg/l)

**CD** Cadmium (ug/l)

**CR** Chromium (ug/l)

**CU** Copper (ug/l)

**PB** Lead (ug/l)

**HG** Mercury (ug/l)

**NI** Nickel (ug/l)

**ZN** Zinc (ug/l)

**Statistical Abbreviations:**

**N** For *standards compliance*, number of surface samples collected between January 2002 and December 2006.

For *trends*, number of surface samples collected between January 1992 and December 2006.

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 2002 and December 2006. DL indicates that the median was the detection limit.

**MAG** Magnitude of any statistically significant trend, average change per year, expressed in parameter measurement units

**GEO MEAN** Geometric mean of fecal coliform bacteria samples collected between January 2002 and December 2006

**Key to Trends**:

**D** Statistically significant decreasing trend in parameter concentration

**I** Statistically significant increasing trend in parameter concentration

***** No statistically significant trend

| STATION | | | | DO | DO | DO | MEAN | TRENDS (92-2006) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | TYPE | WATERBODY NAME | CLASS | N | EXC. | % | EXC. | DO | N | MAG | BOD | N | MAG |
| **03050207-01** | | | | | | | | | | | | | |
| CSTL-028 | INT | SALKEHATCHIE RVR | FW | 54 | 0 | 0 | 0 | NS | 183 | 0.0222 | I | 184 | 0.0714 |
| RL-06437 | RL06 | LAKE BROWN | FW | 11 | 0 | 0 | 0 | | | | | | |
| CL-064 | SS | LAKE EDGAR BROWN | FW | 12 | 0 | 0 | 0 | | | | | | |
| CSTL-001B | INT | TURKEY CK | FW | 54 | 3 | 6 | 4.83 | NS | 136 | -0.0333 | I | 137 | 0.0571 |
| CSTL-003 | SS | SALKEHATCHIE RVR | FW | 11 | 0 | 0 | 0 | NS | 129 | 0.0125 | I | 129 | 0.0437 |
| CSTL-577 | | TOBY CK | | | | | | | | | | | |
| CSTL-579 | | BIRDS BRANCH | | | | | | | | | | | |
| RS-02472 | RS02 | WELLS BRANCH | FW | 11 | 0 | 0 | 0 | | | | | | |
| **03050207-02** | | | | | | | | | | | | | |
| CSTL-051 | | JACKSON CK | | | | | | | | | | | |
| **03050207-03** | | | | | | | | | | | | | |
| CSTL-116 | INT | LEMON CK | FW-SP | 57 | 1 | 2 | 2.7 | I | 92 | 0.158 | I | 89 | 0 |
| **03050207-04** | | | | | | | | | | | | | |
| RS-06012 | RS06 | LITTLE SALKAHATCHIE RVR | FW | 12 | 0 | 0 | 0 | | | | | | |
| CSTL-115 | INT | LITTLE SALKEHATCHIE RVR | FW | 58 | 3 | 5 | 4.17 | NS | 94 | 0.105 | I | 91 | 0 |
| **03050207-05** | | | | | | | | | | | | | |
| CSTL-119/ RS-04388 | INT | BUCKHEAD CK | FW | 54 | 24 | 44 | 4.2913 | NS | 85 | 0.1429 | NS | 82 | 0 |
| CSTL-117 | INT | LITTLE SALKEHATCHIE RVR | FW | 58 | 1 | 2 | 3.6 | NS | 90 | 0.0571 | NS | 90 | 0 |
| CSTL-118 | INT | WILLOW SWAMP | FW | 55 | 18 | 33 | 4.015 | NS | 87 | -0.0138 | NS | 86 | 0 |
| CSTL-120 | INT | LITTLE SALKEHATCHIE RVR | FW | 51 | 23 | 45 | 4.2457 | NS | 84 | 0.05 | NS | 85 | 0 |
| CSTL-585 | | SANDY RUN | | | | | | | | | | | |
| **03050207-06** | | | | | | | | | | | | | |
| CSTL-048 | INT | SALKEHATCHIE RVR | FW | 56 | 1 | 2 | 4.5 | I | 92 | 0.0833 | I | 92 | 0 |
| CSTL-006 | SS | SALKEHATCHIE RVR | FW | 12 | 0 | 0 | 0 | NS | 127 | 0 | NS | 124 | 0 |
| CSTL-104 | INT | SALKEHATCHIE RVR | FW | 54 | 2 | 4 | 4.575 | I | 88 | 0.11 | I | 88 | 0 |

Appendix A. Salkehatchie River Basin

| STATION | | | | pH | pH | pH | MEAN | TRENDS (92-2006) | | | TURB | TURB | TURB | MEAN | TRENDS (92-2006) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | TYPE | WATERBODY NAME | CLASS | N | EXC. | % | EXC. | PH | N | MAG | N | EXC. | % | EXC. | TURB | N | MAG |
| **03050207-01** | | | | | | | | | | | | | | | | | |
| CSTL-028 | INT | SALKEHATCHIE RVR | FW | 57 | 10 | 18 | 6.167 | NS | 186 | -0.012 | 58 | 0 | 0 | 0 | D | 187 | -0.2 |
| RL-06437 | RL06 | LAKE BROWN | FW | 11 | 1 | 9 | 8.85 | | | | 11 | 0 | 0 | 0 | | | |
| CL-064 | SS | LAKE EDGAR BROWN | FW | 12 | 4 | 33 | 9.08 | | | | 12 | 1 | 8 | 38 | | | |
| CSTL-001B | INT | TURKEY CK | FW | 57 | 8 | 14 | 5.6325 | NS | 139 | -0.015 | 57 | 0 | 0 | 0 | D | 138 | -0.275 |
| CSTL-003 | SS | SALKEHATCHIE RVR | FW | 12 | 0 | 0 | 0 | I | 130 | 0.02 | 12 | 0 | 0 | 0 | D | 128 | -0.2134 |
| CSTL-577 | | TOBY CK | | | | | | | | | | | | | | | |
| CSTL-579 | | BIRDS BRANCH | | | | | | | | | | | | | | | |
| RS-02472 | RS02 | WELLS BRANCH | FW | 11 | 0 | 0 | 0 | | | | 11 | 0 | 0 | 0 | | | |
| **03050207-02** | | | | | | | | | | | | | | | | | |
| CSTL-051 | | JACKSON CK | | | | | | | | | | | | | | | |
| **03050207-03** | | | | | | | | | | | | | | | | | |
| CSTL-116 | INT | LEMON CK | FW-SP | 58 | 0 | 0 | 0 | I | 92 | 0.0667 | 58 | 0 | 0 | 0 | D | 93 | -0.22 |
| **03050207-04** | | | | | | | | | | | | | | | | | |
| RS-06012 | RS06 | LITTLE SALKAHATCHIE RVR | FW | 12 | 0 | 0 | 0 | | | | 12 | 0 | 0 | 0 | | | |
| CSTL-115 | INT | LITTLE SALKEHATCHIE RVR | FW | 58 | 4 | 7 | 5.5575 | I | 93 | 0.0363 | 58 | 0 | 0 | 0 | NS | 93 | -0.1127 |
| **03050207-05** | | | | | | | | | | | | | | | | | |
| CSTL-119/ RS-04388 | INT | BUCKHEAD CK | FW | 55 | 49 | 89 | 5.3337 | NS | 86 | -0.035 | 56 | 0 | 0 | 0 | D | 87 | -0.3633 |
| CSTL-117 | INT | LITTLE SALKEHATCHIE RVR | FW | 59 | 10 | 17 | 5.499 | NS | 91 | 0.0037 | 60 | 1 | 2 | 130 | D | 92 | -0.25 |
| CSTL-118 | INT | WILLOW SWAMP | FW | 56 | 6 | 11 | 5.4983 | NS | 88 | -0.0073 | 57 | 0 | 0 | 0 | D | 90 | -0.275 |
| CSTL-120 | INT | LITTLE SALKEHATCHIE RVR | FW | 52 | 12 | 23 | 5.5617 | D | 85 | -0.035 | 53 | 0 | 0 | 0 | D | 86 | -0.2611 |
| CSTL-585 | | SANDY RUN | | | | | | | | | | | | | | | |
| **03050207-06** | | | | | | | | | | | | | | | | | |
| CSTL-048 | INT | SALKEHATCHIE RVR | FW | 57 | 5 | 9 | 5.656 | I | 92 | 0.0229 | 58 | 0 | 0 | 0 | D | 93 | -0.1 |
| CSTL-006 | SS | SALKEHATCHIE RVR | FW | 12 | 0 | 0 | 0 | I | 126 | 0.0201 | 12 | 0 | 0 | 0 | D | 126 | -0.1845 |
| CSTL-104 | INT | SALKEHATCHIE RVR | FW | 55 | 6 | 11 | 5.77 | NS | 89 | -0.0012 | 56 | 0 | 0 | 0 | D | 90 | -0.28 |

| STATION | | | | TP | TP | TP | MEAN | TRENDS (92-2006) | | | TN | TN | TN | MEAN | TRENDS (92-2006) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | TYPE | WATERBODY NAME | CLASS | N | EXC. | % | EXC. | TP | N | MAG | N | EXC. | % | EXC. | TN | N | MAG |
| **03050207-01** | | | | | | | | | | | | | | | | | |
| CSTL-028 | INT | SALKEHATCHIE RVR | FW | | | | | D | 149 | -0.001 | | | | | NS | 160 | -0.005 |
| RL-06437 | RL06 | LAKE BROWN | FW | 11 | 2 | 18 | 0.06 | | | | 11 | 0 | 0 | 0 | | | |
| CL-064 | SS | LAKE EDGAR BROWN | FW | 12 | 9 | 75 | 0.1011 | | | | 12 | 1 | 8 | 2.42 | | | |
| CSTL-001B | INT | TURKEY CK | FW | | | | | NS | 109 | 0 | | | | | NS | 78 | 0.005 |
| CSTL-003 | SS | SALKEHATCHIE RVR | FW | | | | | NS | 103 | 0 | | | | | NS | 124 | 0.0057 |
| CSTL-577 | | TOBY CK | | | | | | | | | | | | | | | |
| CSTL-579 | | BIRDS BRANCH | | | | | | | | | | | | | | | |
| RS-02472 | RS02 | WELLS BRANCH | FW | | | | | | | | | | | | | | |
| **03050207-02** | | | | | | | | | | | | | | | | | |
| CSTL-051 | | JACKSON CK | | | | | | | | | | | | | | | |
| **03050207-03** | | | | | | | | | | | | | | | | | |
| CSTL-116 | INT | LEMON CK | FW-SP | | | | | NS | 70 | 0.0011 | | | | | D | 76 | -0.0179 |
| **03050207-04** | | | | | | | | | | | | | | | | | |
| RS-06012 | RS06 | LITTLE SALKAHATCHIE RVR | FW | | | | | | | | | | | | | | |
| CSTL-115 | INT | LITTLE SALKEHATCHIE RVR | FW | | | | | NS | 69 | 0.0005 | | | | | D | 75 | -0.0185 |
| **03050207-05** | | | | | | | | | | | | | | | | | |
| CSTL-119/ RS-04388 | INT | BUCKHEAD CK | FW | | | | | NS | 64 | 0.0001 | | | | | NS | 66 | -0.0014 |
| CSTL-117 | INT | LITTLE SALKEHATCHIE RVR | FW | | | | | NS | 68 | -0.0002 | | | | | NS | 67 | 0.0017 |
| CSTL-118 | INT | WILLOW SWAMP | FW | | | | | I | 66 | 0.015 | | | | | NS | 68 | 0.0097 |
| CSTL-120 | INT | LITTLE SALKEHATCHIE RVR | FW | | | | | NS | 62 | -0.0009 | | | | | NS | 62 | -0.0043 |
| CSTL-585 | | SANDY RUN | | | | | | | | | | | | | | | |
| **03050207-06** | | | | | | | | | | | | | | | | | |
| CSTL-048 | INT | SALKEHATCHIE RVR | FW | | | | | I | 67 | 0.0024 | | | | | NS | 73 | -0.0062 |
| CSTL-006 | SS | SALKEHATCHIE RVR | FW | | | | | NS | 102 | 0 | | | | | D | 124 | -0.0129 |
| CSTL-104 | INT | SALKEHATCHIE RVR | FW | | | | | NS | 63 | 0.0003 | | | | | NS | 69 | -0.005 |

| STATION NUMBER | TYPE | WATERBODY NAME | CLASS | CHL N | CHL EXC. | CHL % | MEAN EXC. | TRENDS (92-2006) TSS | N | MAG |
|---|---|---|---|---|---|---|---|---|---|---|
| **03050207-01** | | | | | | | | | | |
| CSTL-028 | INT | SALKEHATCHIE RVR | FW | | | | | | | |
| RL-06437 | RL06 | LAKE BROWN | FW | 6 | 1 | 17 | 46.56 | | | |
| CL-064 | SS | LAKE EDGAR BROWN | FW | 5 | 2 | 40 | 144.535 | | | |
| CSTL-001B | INT | TURKEY CK | FW | | | | | | | |
| CSTL-003 | SS | SALKEHATCHIE RVR | FW | | | | | | | |
| CSTL-577 | | TOBY CK | | | | | | | | |
| CSTL-579 | | BIRDS BRANCH | | | | | | | | |
| RS-02472 | RS02 | WELLS BRANCH | FW | | | | | | | |
| **03050207-02** | | | | | | | | | | |
| CSTL-051 | | JACKSON CK | | | | | | | | |
| **03050207-03** | | | | | | | | | | |
| CSTL-116 | INT | LEMON CK | FW-SP | | | | | | | |
| **03050207-04** | | | | | | | | | | |
| RS-06012 | RS06 | LITTLE SALKAHATCHIE RVR | FW | | | | | | | |
| CSTL-115 | INT | LITTLE SALKEHATCHIE RVR | FW | | | | | | | |
| **03050207-05** | | | | | | | | | | |
| CSTL-119/ RS-04388 | INT | BUCKHEAD CK | FW | | | | | | | |
| CSTL-117 | INT | LITTLE SALKEHATCHIE RVR | FW | | | | | | | |
| CSTL-118 | INT | WILLOW SWAMP | FW | | | | | | | |
| CSTL-120 | INT | LITTLE SALKEHATCHIE RVR | FW | | | | | | | |
| CSTL-585 | | SANDY RUN | | | | | | | | |
| **03050207-06** | | | | | | | | | | |
| CSTL-048 | INT | SALKEHATCHIE RVR | FW | | | | | | | |
| CSTL-006 | SS | SALKEHATCHIE RVR | FW | | | | | | | |
| CSTL-104 | INT | SALKEHATCHIE RVR | FW | | | | | | | |

Appendix A. Salkehatchie River Basin

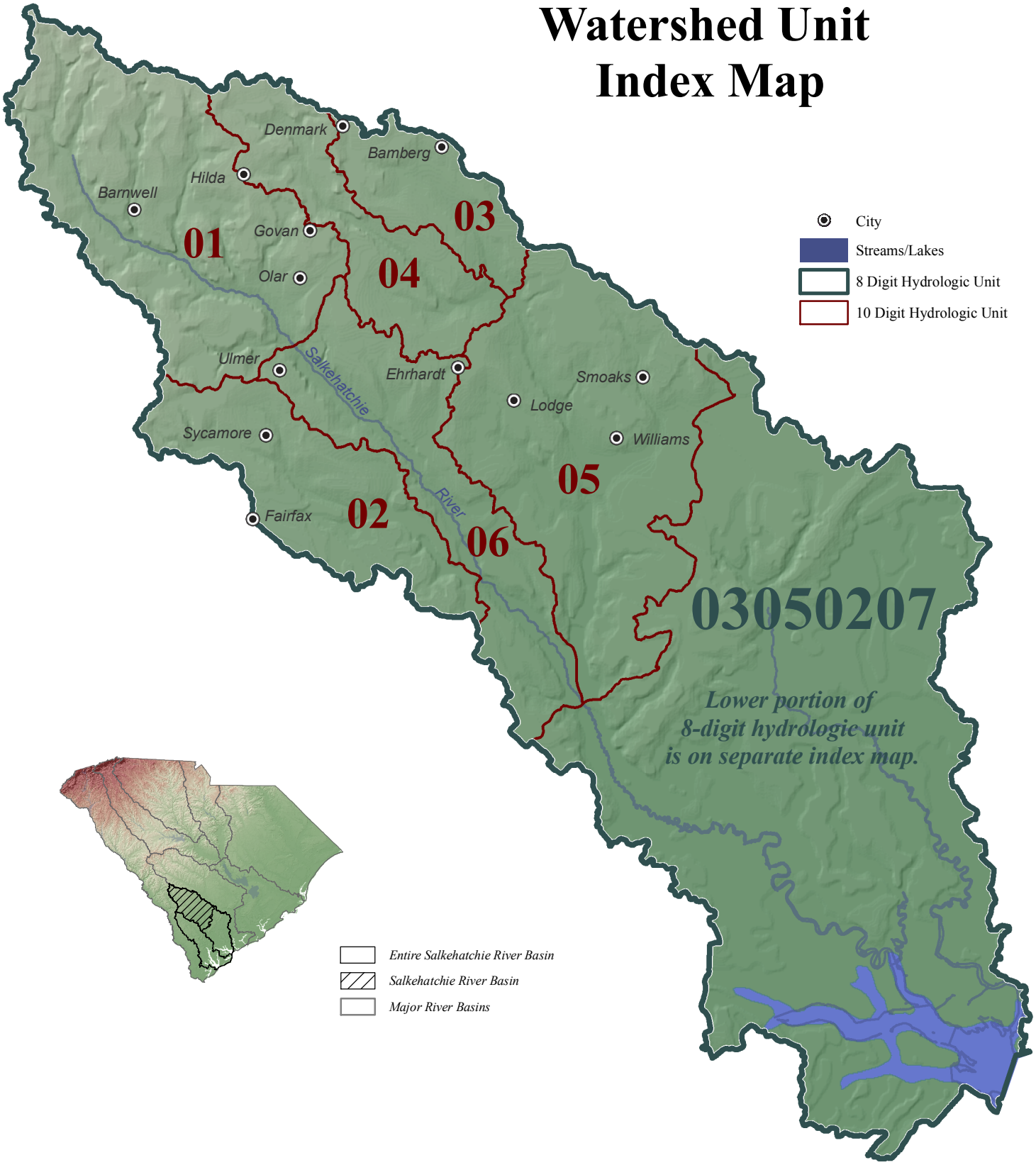
| STATION NUMBER | TYPE | WATERBODY NAME | CLASS | GEO MEAN | BACT N | BACT EXC. | BACT % | MEAN EXC. | TRENDS (92-2006) BACT | N | MAG |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **03050207-01** | | | | | | | | | | | |
| CSTL-028 | INT | SALKEHATCHIE RVR | FW | 144.2977 | 58 | 7 | 12 | 758.5714 | NS | 186 | 0 |
| RL-06437 | RL06 | LAKE BROWN | FW | 5.0938 | 11 | 0 | 0 | 0 | | | |
| CL-064 | SS | LAKE EDGAR BROWN | FW | 29.4875 | 12 | 0 | 0 | 0 | | | |
| CSTL-001B | INT | TURKEY CK | FW | 138.6356 | 58 | 11 | 19 | 597.2727 | NS | 140 | -1.4286 |
| CSTL-003 | SS | SALKEHATCHIE RVR | FW | 148.1043 | 12 | 2 | 17 | 900 | NS | 129 | 0 |
| CSTL-577 | | TOBY CK | | | | | | | | | |
| CSTL-579 | | BIRDS BRANCH | | | | | | | | | |
| RS-02472 | RS02 | WELLS BRANCH | FW | 407.8985 | 11 | 5 | 45 | 700 | | | |
| **03050207-02** | | | | | | | | | | | |
| CSTL-051 | | JACKSON CK | | | | | | | | | |
| **03050207-03** | | | | | | | | | | | |
| CSTL-116 | INT | LEMON CK | FW-SP | 143.2913 | 58 | 7 | 12 | 554.2857 | D | 93 | -9.375 |
| **03050207-04** | | | | | | | | | | | |
| RS-06012 | RS06 | LITTLE SALKAHATCHIE RVR | FW | 71.194 | 12 | 0 | 0 | 0 | | | |
| CSTL-115 | INT | LITTLE SALKEHATCHIE RVR | FW | 151.3905 | 58 | 6 | 10 | 630 | NS | 94 | -7.5 |
| **03050207-05** | | | | | | | | | | | |
| CSTL-119/ RS-04388 | INT | BUCKHEAD CK | FW | 197.7454 | 56 | 15 | 27 | 748.6667 | NS | 87 | -0.8333 |
| CSTL-117 | INT | LITTLE SALKEHATCHIE RVR | FW | 193.2446 | 60 | 10 | 17 | 774 | NS | 92 | -2.5 |
| CSTL-118 | INT | WILLOW SWAMP | FW | 143.5082 | 57 | 10 | 18 | 834 | NS | 90 | -5 |
| CSTL-120 | INT | LITTLE SALKEHATCHIE RVR | FW | 101.9379 | 53 | 3 | 6 | 1066.6667 | NS | 86 | -5.2778 |
| CSTL-585 | | SANDY RUN | | | | | | | | | |
| **03050207-06** | | | | | | | | | | | |
| CSTL-048 | INT | SALKEHATCHIE RVR | FW | 141.1374 | 58 | 3 | 5 | 600 | D | 94 | -10 |
| CSTL-006 | SS | SALKEHATCHIE RVR | FW | 222.4861 | 12 | 3 | 25 | 600 | D | 127 | -12.8571 |
| CSTL-104 | INT | SALKEHATCHIE RVR | FW | 118.1625 | 56 | 5 | 9 | 682 | NS | 89 | 0 |

| STATION NUMBER | TYPE | WATERBODY NAME | CLASS | NH3 N | NH3 EXC. | NH3 % | MEAN EXC. | CD N | CD EXC. | CD % | MEAN EXC. | CR N | CR EXC. | CR % | MEAN EXC. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **03050207-01** | | | | | | | | | | | | | | | |
| CSTL-028 | INT | SALKEHATCHIE RVR | FW | 44 | 0 | 0 | 0 | 18 | 0 | 0 | 0 | 18 | 0 | 0 | 0 |
| RL-06437 | RL06 | LAKE BROWN | FW | 10 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 3 | 0 | 0 | 0 |
| CL-064 | SS | LAKE EDGAR BROWN | FW | 12 | 1 | 8 | 0.1 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| CSTL-001B | INT | TURKEY CK | FW | 41 | 0 | 0 | 0 | 19 | 0 | 0 | 0 | 19 | 0 | 0 | 0 |
| CSTL-003 | SS | SALKEHATCHIE RVR | FW | 12 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| CSTL-577 | | TOBY CK | | | | | | | | | | | | | |
| CSTL-579 | | BIRDS BRANCH | | | | | | | | | | | | | |
| RS-02472 | RS02 | WELLS BRANCH | FW | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| **03050207-02** | | | | | | | | | | | | | | | |
| CSTL-051 | | JACKSON CK | | | | | | | | | | | | | |
| **03050207-03** | | | | | | | | | | | | | | | |
| CSTL-116 | INT | LEMON CK | FW-SP | 46 | 0 | 0 | 0 | 19 | 0 | 0 | 0 | 19 | 0 | 0 | 0 |
| **03050207-04** | | | | | | | | | | | | | | | |
| RS-06012 | RS06 | LITTLE SALKAHATCHIE RVR | FW | 11 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| CSTL-115 | INT | LITTLE SALKEHATCHIE RVR | FW | 46 | 0 | 0 | 0 | 19 | 0 | 0 | 0 | 19 | 0 | 0 | 0 |
| **03050207-05** | | | | | | | | | | | | | | | |
| CSTL-119/ RS-04388 | INT | BUCKHEAD CK | FW | 42 | 0 | 0 | 0 | 19 | 0 | 0 | 0 | 19 | 0 | 0 | 0 |
| CSTL-117 | INT | LITTLE SALKEHATCHIE RVR | FW | 44 | 0 | 0 | 0 | 20 | 0 | 0 | 0 | 20 | 0 | 0 | 0 |
| CSTL-118 | INT | WILLOW SWAMP | FW | 42 | 0 | 0 | 0 | 19 | 0 | 0 | 0 | 19 | 0 | 0 | 0 |
| CSTL-120 | INT | LITTLE SALKEHATCHIE RVR | FW | 38 | 0 | 0 | 0 | 18 | 0 | 0 | 0 | 18 | 0 | 0 | 0 |
| CSTL-585 | | SANDY RUN | | | | | | | | | | | | | |
| **03050207-06** | | | | | | | | | | | | | | | |
| CSTL-048 | INT | SALKEHATCHIE RVR | FW | 43 | 0 | 0 | 0 | 19 | 0 | 0 | 0 | 19 | 0 | 0 | 0 |
| CSTL-006 | SS | SALKEHATCHIE RVR | FW | 12 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| CSTL-104 | INT | SALKEHATCHIE RVR | FW | 42 | 0 | 0 | 0 | 18 | 0 | 0 | 0 | 18 | 0 | 0 | 0 |

| STATION NUMBER | TYPE | WATERBODY NAME | CLASS | CU N | CU EXC. | CU % | MEAN EXC. | PB N | PB EXC. | PB % | MEAN EXC. | HG N | HG EXC. | HG % | MEAN EXC. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **03050207-01** | | | | | | | | | | | | | | | |
| CSTL-028 | INT | SALKEHATCHIE RVR | FW | 18 | 0 | 0 | 0 | 18 | 0 | 0 | 0 | 18 | 0 | 0 | 0 |
| RL-06437 | RL06 | LAKE BROWN | FW | 3 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 3 | 0 | 0 | 0 |
| CL-064 | SS | LAKE EDGAR BROWN | FW | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| CSTL-001B | INT | TURKEY CK | FW | 19 | 0 | 0 | 0 | 19 | 0 | 0 | 0 | 19 | 0 | 0 | 0 |
| CSTL-003 | SS | SALKEHATCHIE RVR | FW | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| CSTL-577 | | TOBY CK | | | | | | | | | | | | | |
| CSTL-579 | | BIRDS BRANCH | | | | | | | | | | | | | |
| RS-02472 | RS02 | WELLS BRANCH | FW | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| **03050207-02** | | | | | | | | | | | | | | | |
| CSTL-051 | | JACKSON CK | | | | | | | | | | | | | |
| **03050207-03** | | | | | | | | | | | | | | | |
| CSTL-116 | INT | LEMON CK | FW-SP | 19 | 1 | 5 | 58 | 19 | 0 | 0 | 0 | 19 | 0 | 0 | 0 |
| **03050207-04** | | | | | | | | | | | | | | | |
| RS-06012 | RS06 | LITTLE SALKAHATCHIE RVR | FW | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| CSTL-115 | INT | LITTLE SALKEHATCHIE RVR | FW | 19 | 1 | 5 | 15 | 19 | 0 | 0 | 0 | 19 | 0 | 0 | 0 |
| **03050207-05** | | | | | | | | | | | | | | | |
| CSTL-119/ RS-04388 | INT | BUCKHEAD CK | FW | 19 | 0 | 0 | 0 | 19 | 0 | 0 | 0 | 19 | 0 | 0 | 0 |
| CSTL-117 | INT | LITTLE SALKEHATCHIE RVR | FW | 20 | 1 | 5 | 59 | 20 | 0 | 0 | 0 | 20 | 0 | 0 | 0 |
| CSTL-118 | INT | WILLOW SWAMP | FW | 19 | 2 | 11 | 88.5 | 19 | 0 | 0 | 0 | 19 | 0 | 0 | 0 |
| CSTL-120 | INT | LITTLE SALKEHATCHIE RVR | FW | 18 | 2 | 11 | 141 | 18 | 0 | 0 | 0 | 18 | 0 | 0 | 0 |
| CSTL-585 | | SANDY RUN | | | | | | | | | | | | | |
| **03050207-06** | | | | | | | | | | | | | | | |
| CSTL-048 | INT | SALKEHATCHIE RVR | FW | 19 | 0 | 0 | 0 | 19 | 0 | 0 | 0 | 19 | 0 | 0 | 0 |
| CSTL-006 | SS | SALKEHATCHIE RVR | FW | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| CSTL-104 | INT | SALKEHATCHIE RVR | FW | 18 | 0 | 0 | 0 | 18 | 0 | 0 | 0 | 18 | 0 | 0 | 0 |

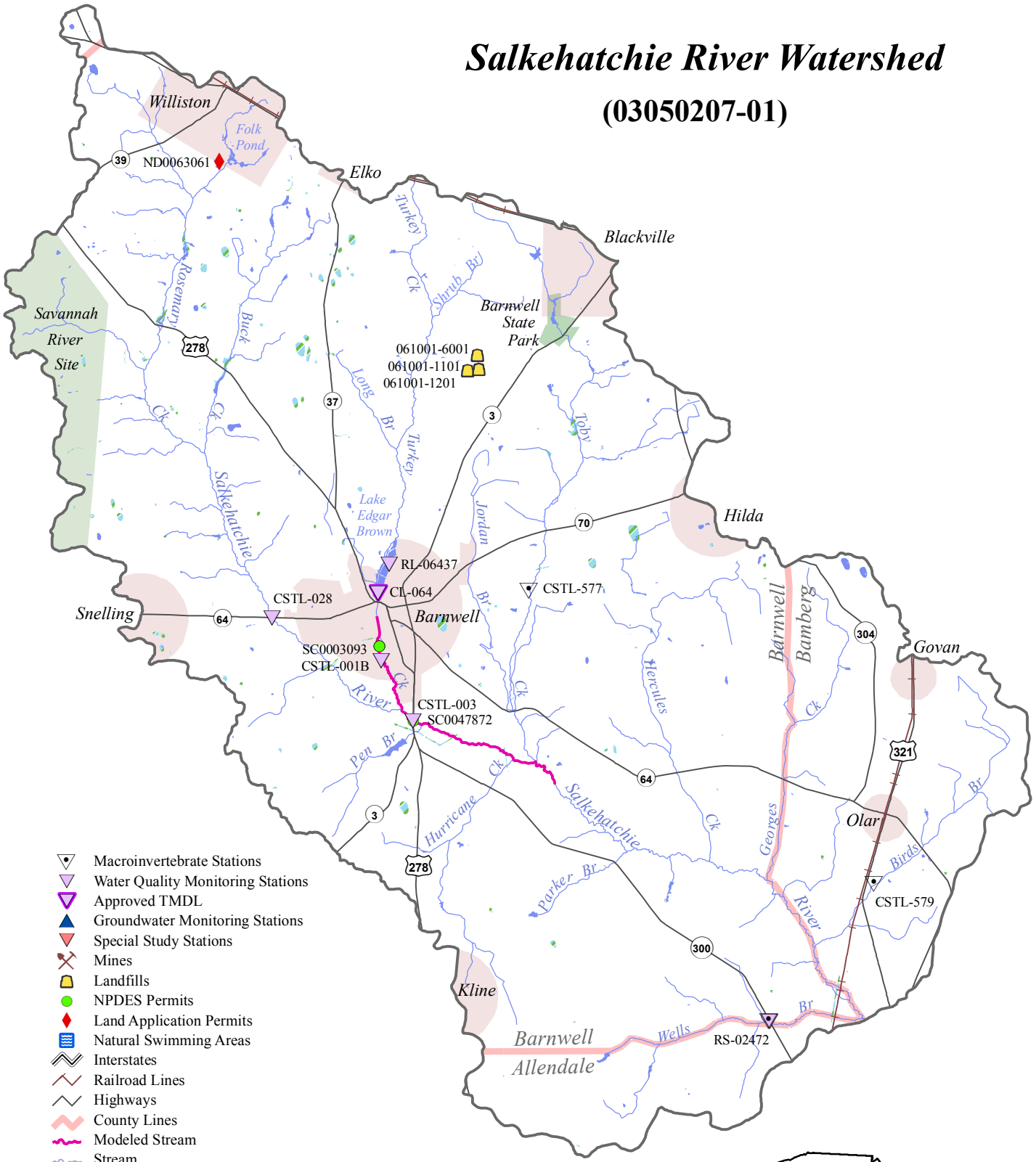
| STATION NUMBER | TYPE | WATERBODY NAME | CLASS | NI N | NI EXC. | NI % | MEAN EXC. | ZN N | ZN EXC. | ZN % | MEAN EXC. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **03050207-01** | | | | | | | | | | | |
| CSTL-028 | INT | SALKEHATCHIE RVR | FW | 18 | 0 | 0 | 0 | 18 | 0 | 0 | 0 |
| RL-06437 | RL06 | LAKE BROWN | FW | 3 | 0 | 0 | 0 | 3 | 0 | 0 | 0 |
| CL-064 | SS | LAKE EDGAR BROWN | FW | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| CSTL-001B | INT | TURKEY CK | FW | 19 | 0 | 0 | 0 | 18 | 1 | 6 | 140 |
| CSTL-003 | SS | SALKEHATCHIE RVR | FW | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| CSTL-577 | | TOBY CK | | | | | | | | | |
| CSTL-579 | | BIRDS BRANCH | | | | | | | | | |
| RS-02472 | RS02 | WELLS BRANCH | FW | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| **03050207-02** | | | | | | | | | | | |
| CSTL-051 | | JACKSON CK | | | | | | | | | |
| **03050207-03** | | | | | | | | | | | |
| CSTL-116 | INT | LEMON CK | FW-SP | 19 | 0 | 0 | 0 | 19 | 0 | 0 | 0 |
| **03050207-04** | | | | | | | | | | | |
| RS-06012 | RS06 | LITTLE SALKAHATCHIE RVR | FW | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| CSTL-115 | INT | LITTLE SALKEHATCHIE RVR | FW | 19 | 0 | 0 | 0 | 19 | 0 | 0 | 0 |
| **03050207-05** | | | | | | | | | | | |
| CSTL-119/ RS-04388 | INT | BUCKHEAD CK | FW | 19 | 0 | 0 | 0 | 19 | 0 | 0 | 0 |
| CSTL-117 | INT | LITTLE SALKEHATCHIE RVR | FW | 20 | 0 | 0 | 0 | 20 | 0 | 0 | 0 |
| CSTL-118 | INT | WILLOW SWAMP | FW | 19 | 0 | 0 | 0 | 19 | 0 | 0 | 0 |
| CSTL-120 | INT | LITTLE SALKEHATCHIE RVR | FW | 18 | 0 | 0 | 0 | 18 | 2 | 11 | 200 |
| CSTL-585 | | SANDY RUN | | | | | | | | | |
| **03050207-06** | | | | | | | | | | | |
| CSTL-048 | INT | SALKEHATCHIE RVR | FW | 19 | 0 | 0 | 0 | 19 | 0 | 0 | 0 |
| CSTL-006 | SS | SALKEHATCHIE RVR | FW | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| CSTL-104 | INT | SALKEHATCHIE RVR | FW | 18 | 0 | 0 | 0 | 18 | 0 | 0 | 0 |

# Salkehatchie River Basin Watershed Unit Index Map



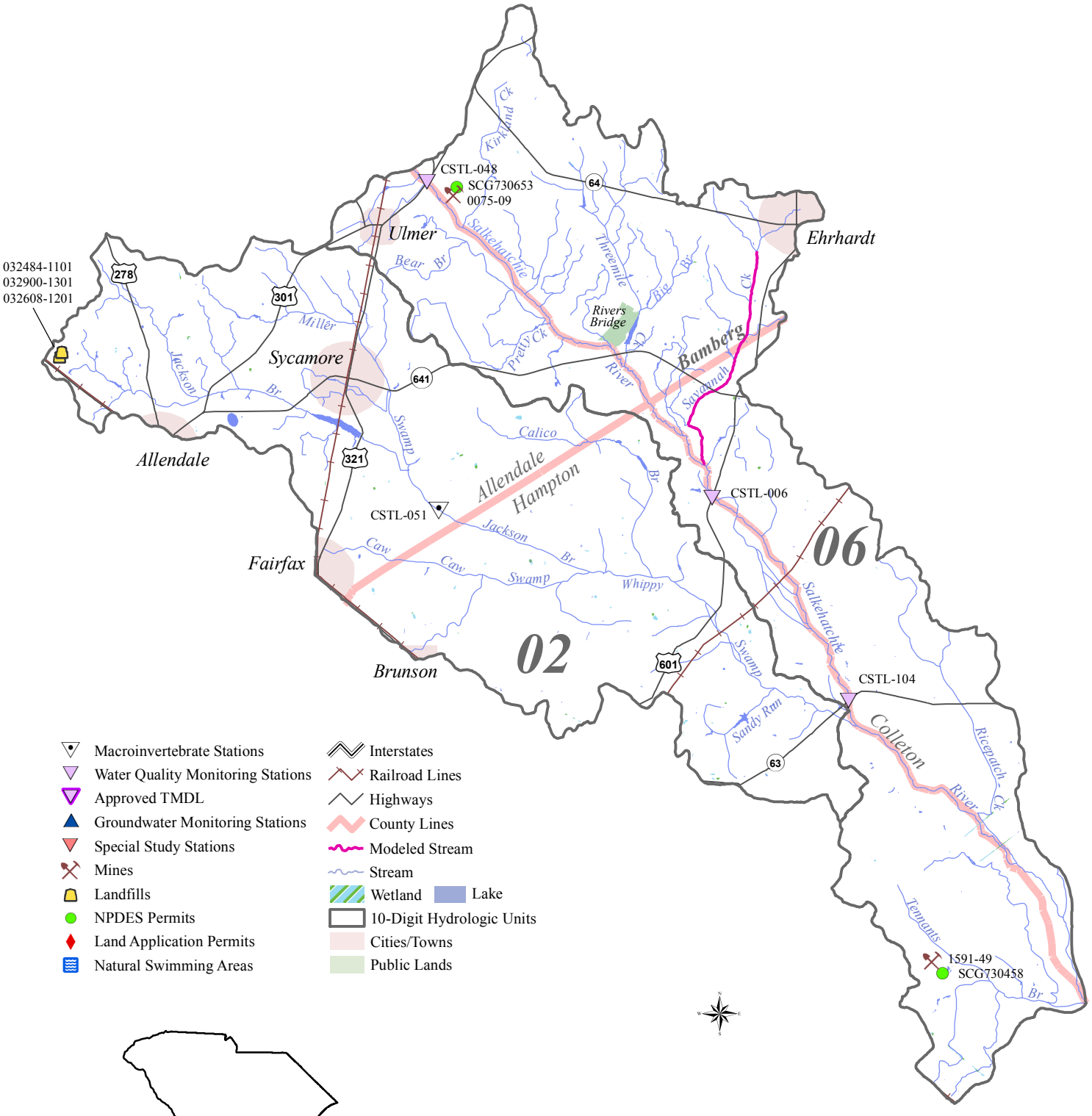
# Salkehatchie River Watershed

## (03050207-01)



# *Whippy Swamp/Salkehatchie River Watersheds*

## (03050207-02, -06)



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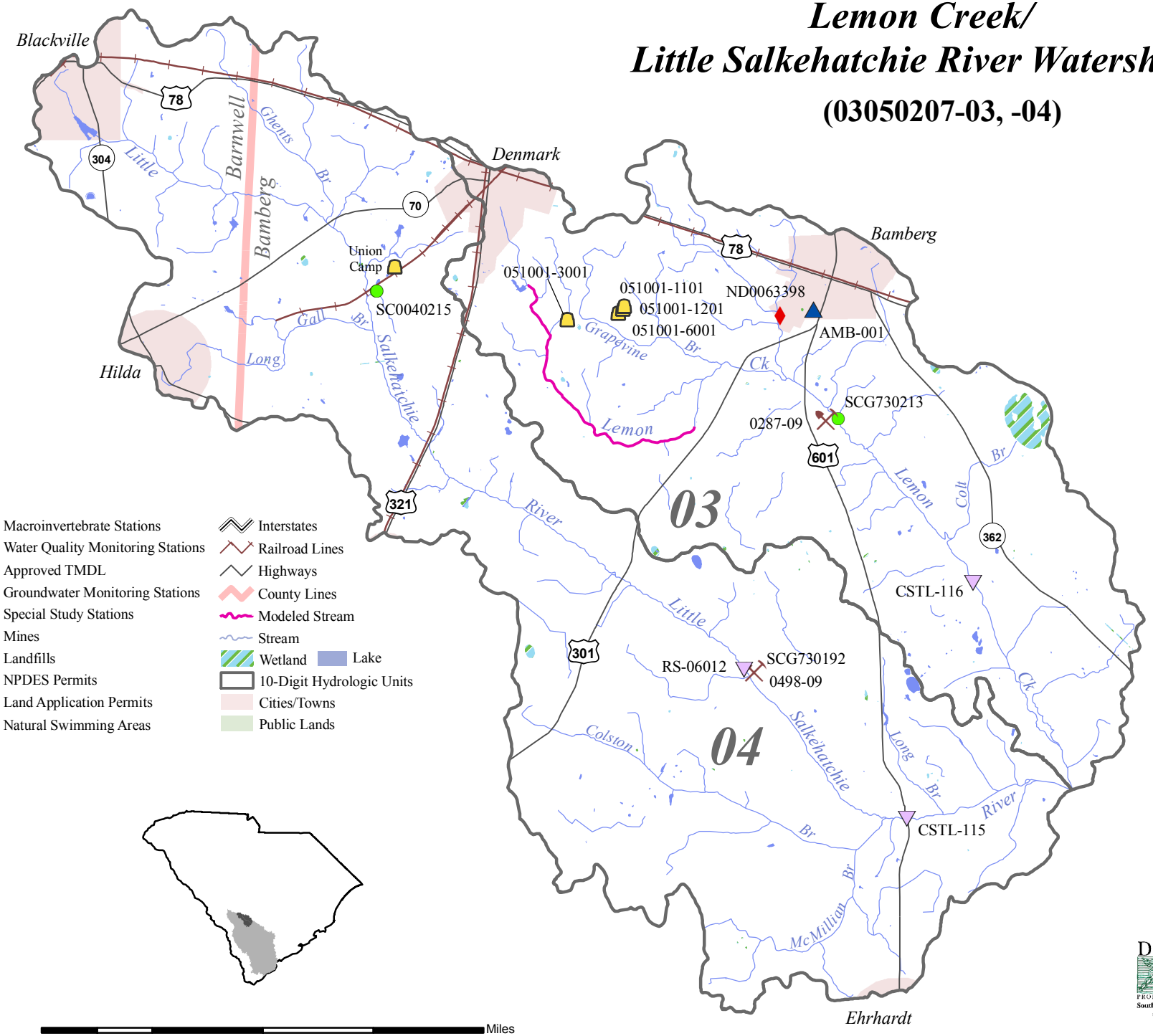
PROMOTE PROTECT PROSPER
South Carolina Department of Health and Environmental Control

# Lemon Creek/ Little Salkehatchie River Watersheds

## (03050207-03, -04)



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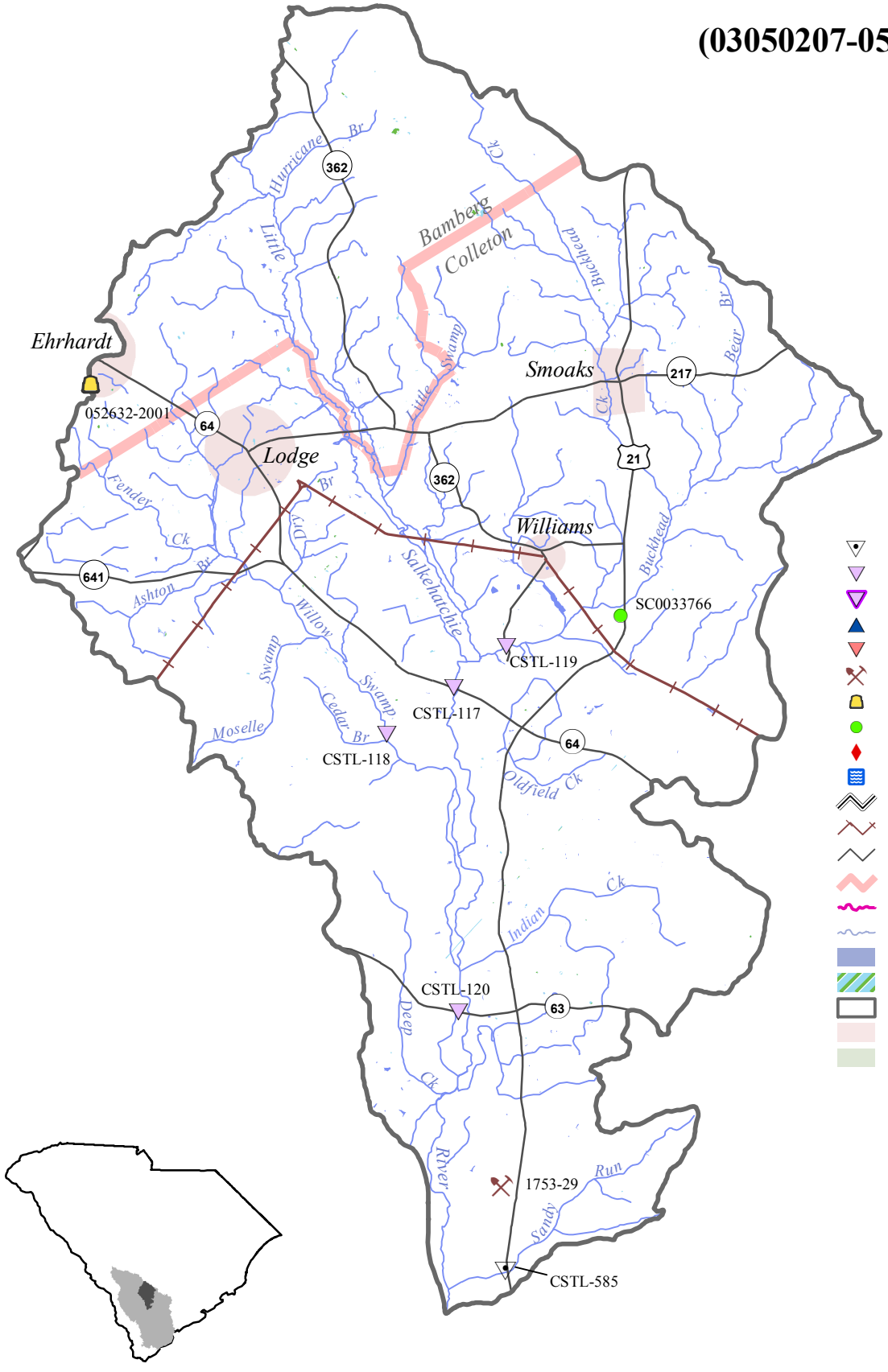
PROMOTE PROTECT PROSPER
South Carolina Department of Health and Environmental Control

# *Little Salkehatchie River Watershed*

## (03050207-05)




- Macroinvertebrate Stations
- Water Quality Monitoring Stations
- Approved TMDL
- Groundwater Monitoring Stations
- Special Study Stations
- Mines
- Landfills
- NPDES Permits
- Land Application Permits
- Natural Swimming Areas
- Interstates
- Railroad Lines
- Highways
- County Lines
- Modeled Stream
- Stream
- Lake
- Wetland
- 10-Digit Hydrologic Units
- Cities/Towns
- Public Lands

0 1 2 4 6 8 10 Miles



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South Carolina Department of Health and Environmental Control

# *APPENDIX B.*

**Coosaw River/Ashepoo River/St. Helena Sound Basin**

# Monitoring Site Descriptions

## *Ambient Water Quality Monitoring Sites*

| Station # | Type | Class | Description |
|---|---|---|---|
| **03050207-07** | | | |
| CSTL-583 BIO | | FW | BLACK CREEK AT U.S. HWY 21 |
| CSTL-111 W | | FW | COMBAHEE RIVER BELOW YEMASSEE SEWAGE OUTFALL |
| CSTL-098 | W | FW/SFH | COMBAHEE RIVER AT U.S. HWY 17, 10MI ESE OF YEMASSEE |
| MD-252 | INT | SFH | COMBAHEE RIVER OFF FIELDS POINT LANDING OFF END OF S-15-161 |
| RT-06019 RT06 | | SFH | CHEHAW RIVER, 1.3MI NE OF OLD CHEHAW BOAT LANDING ON S-15-161 |
| RT-02017 RT02 | | SFH | CHEHAW RIVER AT OLD CHEHAW BOAT LANDING ON S-15-161 |
| **03050207-08** | | | |
| RS-03356 | RS03/BIO | FW | WOLF CREEK AT S-15-24, 2.7 MI NW OF WALTERBORO |
| CSTL-044 W | | FW | IRELAND CREEK AT S-15-116, 5.5MI N OF WALTERBORO |
| RS-03520 | RS03/BIO | FW | ASHEPOO RIVER AT UNPAVED S-15-88 |
| **03050207-09** | | | |
| CSTL-580 BIO | | FW | CHESSEY CREEK AT S-15-45 |
| CSTL-071 INT | | FW | HORSESHOE CREEK AT SC 64 |
| **03050207-10** | | | |
| CSTL-068 | INT | FW/SFH | ASHEPOO RIVER AT SC 303, 10MI SSW OF WALTERBORO |
| CSTL-069 | W | SFH | ASHEPOO RIVER AT US 17, 3.4MI ESE OF GREEN POND |
| MD-251 | W | SFH | ASHEPOO RIVER AT S-15-26 |
| RO-046071 | RO04 | SFH | ASHEPOO RIVER AT HOLE-IN-THE-WALL OXBOW, 0.5MI SW OF S-15-26 |
| RT-032035 | RT03 | SFH | ROCK CREEK, 0.75 MI SW OF CONFLUENCE WITH ASHEPOO RIVER |
| MD-253 | INT | SFH | ASHEPOO RIVER AT PUBLIC OYSTER GROUND (14-19) |
| **03050207-11** | | | |
| RT-06010 | RT06 | SFH | MCCALLEYS CREEK, 1.1 MI SE OF US 21 BRIDGE OVER WHALE BRANCH |
| RT-042069 | RT04 | SFH | MCCALLEYS CREEK, 6.8 MI NNW OF BEAUFORT |
| RO-06314 RO06 | | SFH C | OOSAW RIVER, 5.1 MI NNE OF BEAUFORT |
| RO-02007 | RO02 | SFH | COOSAW RIVER, 2.0 MI E OF AIWW |
| RO-056101 | RO05 | SFH | COOSAW RIVER, 3.5 MI W OF CONFLUENCE WITH BULLRIVER |
| RO-046073 | RO04 | SFH | COOSAW RIVER, 1.3 MI N OF MOUTH OF LUCY POINT CREEK |
| RT-032041 RT03 | | SFH C | OOSAW RIVER TRIB, 0.2 MI N OF CONFL W/COOSAW R. AT E TIP OF CHISHOLM IS. |
| RO-056095 | RO05 | SFH | COOSAW RIVER, 12 MI WSW OF MOUTH OF BULL RIVER |
| RT-032031 | RT03 | SFH | WIMBEE CREEK TRIBUTARY NEAR WIMBEE CREEK HEADWATERS |
| RT-052093 | RT05 | SFH | SOUTH WIMBEE CREEK, 8.0 MI NNE OF BEAUFORT |
| RO-036037 | RO03 | SFH | WIMBEE CREEK, 0.7 MI SE OF MOUTH OF S. WIMBEE CREEK |
| RT-06003 | RT06 | SFH | WILLIMAN CREEK TRIBUTARY, 1.0 MI NE OF CONFL WITH WILLIAM CREEK |
| RT-02015 | RT02 | SFH | TIDAL CREEK NEAR CONFL OF COOSAW AND BULL RIVERS |
| RO-02005 | RO02 | SFH | COOSAW RIVER NEAR MOUTH OF BULLRIVER |
| RO-06303 | RO06 | SFH | COOSAW RIVER, 4.9 MI ENE OF SC 802 BRIDGE OVER LUCY POINT CREEK |
| MD-168 | W | SFH | COOSAW RIVER AT CONFLUENCE OF COMBAHEE RIVER, NEAR BUOY 186 |
| RO-02001 | RO02 | SFH | COOSAW RIVER, NEAR MOUTH OF COMBAHEE RIVER |
| RO-046069 | RO04 | SFH | MOUTH OF COOSAW RIVER AT ST. HELENA SOUND |
| RO-046067 | RO04 | SFH | MIDDLE OF ST. HELENA SOUND |
| RT-042067 | RT04 | SFH | JENKINSCREEK TRIBUTARY, 4.2 MI SE OF BEAUFORT |
| MD-255 | INT | SFH | JENKINS CREEK AT UNNAMED TRIB N SIDE OF WARSAW ISALND (16-25) |
| RT-02027 | RT02 | SFH | SPARROW NEST CREEK TRIBUTARY NEAR DATHA ISLAND |

| Station # | Type | Class | Description |
|---|---|---|---|
| **03050207-11 (continued)** | | | |
| RT-052113 | RT05 | SFH | BASS CREEK TRIB OFF PARROT CK BETW COOSAW AND MORGAN RIVERS |
| RT-032045 | RT03 | SFH | EDDINGS POINT CK, 1.3MI SW CONFL MORGAN RIVER & 3.3 MI NE FROGMORE |
| RO-056099 | RO05 | SFH | VILLAGE CREEK, 4.5 MI NE TOWN OF ST. HELENA ISLAND |
| RT-032033 | RT03 | SFH | COFFIN CREEK, 0.7 MI SE OF CONFL WITH MORGAN RIVER |

## Groundwater Monitoring Sites

| Well # | Class | Aquifer | Location |
|---|---|---|---|
| **03050207-08** | | | |
| AMB-031 | GB | MIDDENDORF | WALTERBORO |
| AMB-094 | GB | TERTIARY LIMESTONE | WALTERBORO |
| **03050207-10** | | | |
| AMB-086 | GB | SURFICIAL SANDS | BENNETTS POINT |
| **03050207-11** | | | |
| AMB-090 | GB | TERTIARY LIMESTONE | FROGMORE |

## Shellfish Monitoring Stations

| Station # | Description |
|---|---|
| **03050207-07** | |
| 14-05 | COMBAHEE RIVER INLET AND COOSAW RIVER |
| **03050207-10** | |
| 14-08 | ASHEPOO RIVER AT ST. HELENA SOUND – BLACK CAN BUOY |
| 14-19 | ASHEPOO RIVER POG |
| 14-20 | CUT BETWEEN SOUTH EDISTO RIVER AND THE ASHEPOO RIVER |
| 14-21 | CONFLUENCE OF MOSQUITO CREEK AND THE ASHEPOO RIVER |
| **03050207-11** | |
| 14-02 | CAMPBELL CREEK AT WHALE BRANCH |
| 14-04 | BULL RIVER INLET AND COOSAW RIVER |
| 14-09 | ST. HELENA SOUND AT MORGAN BACK CREEK |
| 14-10 | PARROT CREEK AND COOSAW RIVER, MARKER #1 |
| 14-11 | SAM'S POINT AND COOSAW RIVER |
| 14-12A | CONFLUENCE OF COOSAW RIVER AND WHALE BRANCH |
| 14-13 | HALFMOON CREEK AT WHALE BRANCH |
| 14-16A | 2000 FT SOUTHEAST OF MOUTH OF FISH CREEK |
| 15-01 | BRICKYARD CREEK AT RANGE MARKER |
| 15-01A | MCCALLEYS CREEK AT PAWKIE ISLAND |
| 15-33 | MCCALLEYS CREEK, 0.5 MI UPSTREAM OF STATION 15-01A |
| 16A-08 | MORGAN RIVER AT VILLAGE CREEK |
| 16A-09 | EDDING CREEK AT MORGAN RIVER |
| 16A-10 | PARROT CREEK AT MORGAN RIVER |
| 16A-11 | JENKINS CREEK AT MORGAN RIVER |
| 16A-13 | LUCY POINT CREEK AT MORGAN RIVER |
| 16A-13A | S. EDGE OF LUCY POINT CREEK CSZ AT POLLUTION LINE |

| Station # | Description |
|---|---|
| **03050207-11 (continued)** | |
| 16A-13B | N. EDGE OF LUCY POINT CREEK CSZ AT POLLUTION LINE |
| 16A-14 | DOE CREEK BEHIND COASTAL SEAFOOD AND DATAW ISLAND |
| 16A-18 | EDDING CREEK AT SHRIMP DOCK |
| 16A-19 | UPPER REACHES ROCK SPRINGS CREEK |
| 16A-23 | EDDINGS CREEK AT TRIBUTARY BETWEEN STATIONS 9 AND 18 |
| 16A-24 | JENKINS CREEK AT TURN BETWEEN STATIONS 11 AND 14 |
| 16A-25 | JENKINS CREEK AT TRIBUTARY NORTH OF WARSAW ISLAND |
| 16A-27 | MOUTH OF COFFIN CREEK AT MORGAN RIVER |
| 16A-28 | HEADWATERS OF COFFIN CREEK AT SHRIMP DOCKS |
| 16A-32 | VILLAGE CREEK AT FRIPP POINT COMMUNITY DOCK |
| 16A-33 | LUCY POINT CREEK, APPROX. 3100 FEET WEST OF STATION 16A-13 |
| 16A-34 | LUCY POINT CREEK, APPROX. 1900 FEET SOUTH OF STATION 16A-13 |
| 16A-35 | WARSAW FLATS AT CONFLUENCE WITH MORGAN RIVER |
| 16A-36 | JENKINS CREEK AT SOUTHERN POINT OF DATAW ISLAND |
| 16A-37 | JENKINS CREEK AT POLAWANA ISLAND BOAT RAMP |
| 16A-38 | VILLAGE CREEK AT CONFLUENCE WITH SMALL UNNAMED TRIBUTARY ON WEST BANK |
| 16A-39 | MOUTH OF SPARROW NEST CREEK AT CONFLUENCE WITH MORGAN RIVER |

**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 Savannah 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)

**BOD** Five-Day Biochemical Oxygen Demand (mg/l)

**pH** pH (SU)

**TP** Total Phosphorus (mg/l)

**TN** Total Nitrogen (mg/l)

**TURB** Turbidity (NTU)

**TSS** Total Suspended Solids (mg/l)

**BACT** Fecal Coliform Bacteria (#/100 ml)

**NH3** Ammonia (mg/l)

**CD** Cadmium (ug/l)

**CR** Chromium (ug/l)

**CU** Copper (ug/l)

**PB** Lead (ug/l)

**HG** Mercury (ug/l)

**NI** Nickel (ug/l)

**ZN** Zinc (ug/l)

**Statistical Abbreviations:**

**N** For *standards compliance*, number of surface samples collected between January 2002 and December 2006.

For *trends*, number of surface samples collected between January 1992 and December 2006.

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 2002 and December 2006. DL indicates that the median was the detection limit.

**MAG** Magnitude of any statistically significant trend, average change per year, expressed in parameter measurement units

**GEO MEAN** Geometric mean of fecal coliform bacteria samples collected between January 2002 and December 2006

**Key to Trends**:

**D** Statistically significant decreasing trend in parameter concentration

**I** Statistically significant increasing trend in parameter concentration

***** No statistically significant trend

Appendix B. Coosaw River/Ashepoo River/St. Helena Sound Basin

| STATION | | | | DO | DO | DO | MEAN | TRENDS (92-2006) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | TYPE | WATERBODY NAME | CLASS | N | EXC. | % | EXC. | DO | N | MAG | BOD | N | MAG |
| **03050207-07** | | | | | | | | | | | | | |
| CSTL-583 | | BLACK CK | | | | | | | | | | | |
| CSTL-111 | SS | COMBAHEE RVR | FW | 12 | 5 | 42 | 4.694 | NS | 53 | -0.0509 | NS | 53 | 0 |
| CSTL-098 | SS | COMBAHEE RVR | FW/SFH | 12 | 5 | 42 | 3.544 | D | 123 | -0.0613 | NS | 124 | 0 |
| CSTL-098 | SS | COMBAHEE RVR | SFH/FW | 12 | 5 | 42 | 3.544 | D | 123 | -0.0613 | NS | 124 | 0 |
| MD-252 | INT | COMBAHEE RVR | SFH | 43 | 8 | 19 | 4.2038 | NS | 53 | -0.0975 | NS | 68 | 0 |
| RT-06019 | RT06 | CHEHAW RVR | SFH | 12 | 7 | 58 | 2.6857 | | | | | | |
| RT-02017 | RT02 | CHEHAW RVR | SFH | 12 | 4 | 33 | 2.9 | | | | | | |
| **03050207-08** | | | | | | | | | | | | | |
| RS-03356 | RS03 | WOLF CREEK | FW | 12 | 4 | 33 | 4.09 | | | | | | |
| CSTL-044 | SS | IRELAND CK | FW | 12 | 8 | 67 | 1.8625 | NS | 59 | -0.0225 | NS | 57 | -0.075 |
| RS-03520 | RS03 | ASHEPOO RIVER | FW | 12 | 5 | 42 | 4.124 | | | | | | |
| **03050207-09** | | | | | | | | | | | | | |
| CSTL-580 | | CHESSEY CK | | | | | | | | | | | |
| CSTL-071/ RS-05564 | INT | HORSESHOE CK | FW | 54 | 25 | 46 | 3.5032 | NS | 88 | -0.1128 | NS | 93 | 0 |
| **03050207-10** | | | | | | | | | | | | | |
| CSTL-068 | INT | ASHEPOO RVR | FW/SFH | 54 | 27 | 50 | 3.147 | NS | 166 | -0.0211 | I | 170 | 0.0392 |
| CSTL-068 | INT | ASHEPOO RVR | SFH/FW | 54 | 27 | 50 | 3.147 | NS | 166 | -0.0211 | I | 170 | 0.0392 |
| CSTL-069 | SS | ASHEPOO RVR | SFH | 12 | 8 | 67 | 2.9188 | D | 59 | -0.0919 | NS | 58 | 0 |
| MD-251 | SS | ASHEPOO RVR | SFH | 9 | 1 | 11 | 4.53 | NS | 33 | 0.0167 | NS | 36 | 0.03 |
| RO-046071 | RO04 | ASHEPOO RVR | SFH | 7 | 1 | 14 | 4 | | | | | | |
| RT-032035 | RT03 | ROCK CREEK | SFH | 11 | 5 | 45 | 4.192 | | | | | | |
| MD-253 | INT | ASHEPOO RVR | SFH | 43 | 7 | 16 | 4.41 | NS | 53 | 0.02 | NS | 69 | 0 |

| STATION | | | | pH | pH | pH | MEAN | TRENDS (92-2006) | | | TURB | TURB | TURB | MEAN | TRENDS (92-2006) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | TYPE | WATERBODY NAME | CLASS | N | EXC. | % | EXC. | PH | N | MAG | N | EXC. | % | EXC. | TURB | N | MAG |
| **03050207-07** | | | | | | | | | | | | | | | | | |
| CSTL-583 | | BLACK CK | | | | | | | | | | | | | | | |
| CSTL-111 | SS | COMBAHEE RVR | FW | 11 | 0 | 0 | 0 | NS | 52 | 0.006 | 12 | 0 | 0 | 0 | D | 52 | -0.19 |
| CSTL-098 | SS | COMBAHEE RVR | FW/SFH | 12 | 0 | 0 | 0 | I | 124 | 0.03 | 11 | 0 | 0 | 0 | I | 120 | 0.3 |
| CSTL-098 | SS | COMBAHEE RVR | SFH/FW | 12 | 0 | 0 | 0 | I | 124 | 0.03 | 11 | 0 | 0 | 0 | I | 120 | 0.3 |
| MD-252 | INT | COMBAHEE RVR | SFH | 43 | 0 | 0 | 0 | NS | 53 | -0.0354 | 57 | 10 | 18 | 45 | NS | 67 | 0 |
| RT-06019 | RT06 | CHEHAW RVR | SFH | 12 | 1 | 8 | 6.46 | | | | 12 | 0 | 0 | 0 | | | |
| RT-02017 | RT02 | CHEHAW RVR | SFH | 12 | 1 | 8 | 6.17 | | | | 11 | 2 | 18 | 39 | | | |
| **03050207-08** | | | | | | | | | | | | | | | | | |
| RS-03356 | RS03 | WOLF CREEK | FW | 12 | 12 | 100 | 4.9375 | | | | 12 | 1 | 8 | 56 | | | |
| CSTL-044 | SS | IRELAND CK | FW | 12 | 12 | 100 | 5.2358 | NS | 59 | -0.0245 | 11 | 0 | 0 | 0 | NS | 55 | -0.1508 |
| RS-03520 | RS03 | ASHEPOO RIVER | FW | 12 | 10 | 83 | 5.569 | | | | 12 | 0 | 0 | 0 | | | |
| **03050207-09** | | | | | | | | | | | | | | | | | |
| CSTL-580 | | CHESSEY CK | | | | | | | | | | | | | | | |
| CSTL-071/ RS-05564 | INT | HORSESHOE CK | FW | 54 | 7 | 13 | 5.7414 | NS | 88 | 0.0362 | 56 | 1 | 2 | 55 | D | 89 | -0.6667 |
| **03050207-10** | | | | | | | | | | | | | | | | | |
| CSTL-068 | INT | ASHEPOO RVR | FW/SFH | 54 | 25 | 46 | 5.5628 | NS | 167 | 0.0137 | 57 | 0 | 0 | 0 | NS | 167 | -0.0333 |
| CSTL-068 | INT | ASHEPOO RVR | SFH/FW | 54 | 48 | 89 | 5.8731 | NS | 167 | 0.0137 | 57 | 1 | 2 | 47 | NS | 167 | -0.0333 |
| CSTL-069 | SS | ASHEPOO RVR | SFH | 12 | 9 | 75 | 6.1422 | NS | 59 | -0.001 | 11 | 0 | 0 | 0 | NS | 57 | -0.0333 |
| MD-251 | SS | ASHEPOO RVR | SFH | 9 | 0 | 0 | 0 | NS | 33 | 0.0222 | 12 | 6 | 50 | 32 | NS | 34 | -0.1 |
| RO-046071 | RO04 | ASHEPOO RVR | SFH | 7 | 0 | 0 | 0 | | | | 13 | 6 | 46 | 32.6667 | | | |
| RT-032035 | RT03 | ROCK CREEK | SFH | 11 | 0 | 0 | 0 | | | | 12 | 4 | 33 | 47.75 | | | |
| MD-253 | INT | ASHEPOO RVR | SFH | 43 | 0 | 0 | 0 | NS | 53 | -0.01 | 58 | 16 | 28 | 35 | NS | 68 | -0.3967 |

Appendix B. Coosaw River/Ashepoo River/St. Helena Sound Basin

| STATION | | | | TP | TP | TP | MEAN | TRENDS (92-2006) | | | TN | TN | TN | MEAN | TRENDS (92-2006) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | TYPE | WATERBODY NAME | CLASS | N | EXC. | % | EXC. | TP | N | MAG | N | EXC. | % | EXC. | TN | N | MAG |
| **03050207-07** | | | | | | | | | | | | | | | | | |
| CSTL-583 | | BLACK CK | | | | | | | | | | | | | | | |
| CSTL-111 | SS | COMBAHEE RVR | FW | | | | | NS | 43 | -0.0013 | | | | | | | |
| CSTL-098 | SS | COMBAHEE RVR | FW/SFH | | | | | NS | 98 | 0 | | | | | NS | 121 | 0.0067 |
| CSTL-098 | SS | COMBAHEE RVR | SFH/FW | | | | | NS | 98 | 0 | | | | | NS | 121 | 0.0067 |
| MD-252 | INT | COMBAHEE RVR | SFH | | | | | NS | 56 | 0.0058 | | | | | NS | 47 | 0.0386 |
| RT-06019 | RT06 | CHEHAW RVR | SFH | | | | | | | | | | | | | | |
| RT-02017 | RT02 | CHEHAW RVR | SFH | | | | | | | | | | | | | | |
| **03050207-08** | | | | | | | | | | | | | | | | | |
| RS-03356 | RS03 | WOLF CREEK | FW | | | | | | | | | | | | | | |
| CSTL-044 | SS | IRELAND CK | FW | | | | | NS | 48 | 0.0009 | | | | | | | |
| RS-03520 | RS03 | ASHEPOO RIVER | FW | | | | | | | | | | | | | | |
| **03050207-09** | | | | | | | | | | | | | | | | | |
| CSTL-580 | | CHESSEY CK | | | | | | | | | | | | | | | |
| CSTL-071/ RS-05564 | INT | HORSESHOE CK | FW | | | | | NS | 65 | 0 | | | | | NS | 74 | -0.0012 |
| **03050207-10** | | | | | | | | | | | | | | | | | |
| CSTL-068 | INT | ASHEPOO RVR | FW/SFH | | | | | I | 135 | 0.0025 | | | | | NS | 148 | 0.0096 |
| CSTL-068 | INT | ASHEPOO RVR | SFH/FW | | | | | I | 135 | 0.0025 | | | | | NS | 148 | 0.0096 |
| CSTL-069 | SS | ASHEPOO RVR | SFH | | | | | NS | 50 | 0.0015 | | | | | | | |
| MD-251 | SS | ASHEPOO RVR | SFH | | | | | | | | | | | | NS | 33 | 0.0053 |
| RO-046071 | RO04 | ASHEPOO RVR | SFH | | | | | | | | | | | | | | |
| RT-032035 | RT03 | ROCK CREEK | SFH | | | | | | | | | | | | | | |
| MD-253 | INT | ASHEPOO RVR | SFH | | | | | D | 56 | -0.0105 | | | | | NS | 47 | -0.0075 |

Appendix B. Coosaw River/Ashepoo River/St. Helena Sound Basin

| STATION | | | | | CHL | CHL | CHL | MEAN | | TRENDS (92-2006) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | TYPE | WATERBODY NAME | CLASS | | N | EXC. | % | EXC. | | TSS | N | MAG |
| **03050207-07** | | | | | | | | | | | | |
| CSTL-583 | | BLACK CK | | | | | | | | | | |
| CSTL-111 | SS | COMBAHEE RVR | FW | | | | | | | | | |
| CSTL-098 | SS | COMBAHEE RVR | FW/SFH | | | | | | | I | 84 | 1 |
| CSTL-098 | SS | COMBAHEE RVR | SFH/FW | | | | | | | I | 84 | 1 |
| MD-252 | INT | COMBAHEE RVR | SFH | | | | | | | | | |
| RT-06019 | RT06 | CHEHAW RVR | SFH | | | | | | | | | |
| RT-02017 | RT02 | CHEHAW RVR | SFH | | | | | | | | | |
| **03050207-08** | | | | | | | | | | | | |
| RS-03356 | RS03 | WOLF CREEK | FW | | | | | | | | | |
| CSTL-044 | SS | IRELAND CK | FW | | | | | | | | | |
| RS-03520 | RS03 | ASHEPOO RIVER | FW | | | | | | | | | |
| **03050207-09** | | | | | | | | | | | | |
| CSTL-580 | | CHESSEY CK | | | | | | | | | | |
| CSTL-071/ RS-05564 | INT | HORSESHOE CK | FW | | | | | | | | | |
| **03050207-10** | | | | | | | | | | | | |
| CSTL-068 | INT | ASHEPOO RVR | FW/SFH | | | | | | | | | |
| CSTL-068 | INT | ASHEPOO RVR | SFH/FW | | | | | | | | | |
| CSTL-069 | SS | ASHEPOO RVR | SFH | | | | | | | | | |
| MD-251 | SS | ASHEPOO RVR | SFH | | | | | | | | | |
| RO-046071 | RO04 | ASHEPOO RVR | SFH | | | | | | | | | |
| RT-032035 | RT03 | ROCK CREEK | SFH | | | | | | | | | |
| MD-253 | INT | ASHEPOO RVR | SFH | | | | | | | | | |

Appendix B. Coosaw River/Ashepoo River/St. Helena Sound Basin

| STATION NUMBER | TYPE | WATERBODY NAME | CLASS | GEO MEAN | BACT N | BACT EXC. | BACT % | MEAN EXC. | TRENDS (92-2006) BACT | N | MAG |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **03050207-07** | | | | | | | | | | | |
| CSTL-583 | | BLACK CK | | | | | | | | | |
| CSTL-111 | SS | COMBAHEE RVR | FW | 49.0501 | 12 | 0 | 0 | 0 | NS | 53 | -2 |
| CSTL-098 | SS | COMBAHEE RVR | FW/SFH | 17.709 | 12 | 0 | 0 | 0 | D | 122 | -1.55 |
| CSTL-098 | SS | COMBAHEE RVR | SFH/FW | 17.709 | 12 | 0 | 0 | 0 | D | 122 | -1.55 |
| MD-252 | INT | COMBAHEE RVR | SFH | 3.8708 | 58 | 0 | 0 | 0 | NS | 69 | 0 |
| RT-06019 | RT06 | CHEHAW RVR | SFH | 120.8315 | 13 | 0 | 0 | 0 | | | |
| RT-02017 | RT02 | CHEHAW RVR | SFH | 129.4081 | 13 | 0 | 0 | 0 | | | |
| **03050207-08** | | | | | | | | | | | |
| RS-03356 | RS03 | WOLF CREEK | FW | 118.0328 | 12 | 0 | 0 | 0 | | | |
| CSTL-044 | SS | IRELAND CK | FW | 467.6652 | 12 | 6 | 50 | 1366.6667 | NS | 59 | 25 |
| RS-03520 | RS03 | ASHEPOO RIVER | FW | 80.8259 | 12 | 1 | 8 | 640 | | | |
| **03050207-09** | | | | | | | | | | | |
| CSTL-580 | | CHESSEY CK | | | | | | | | | |
| CSTL-071/ RS-05564 | INT | HORSESHOE CK | FW | 113.9857 | 60 | 9 | 15 | 592.2222 | NS | 92 | -2.8333 |
| **03050207-10** | | | | | | | | | | | |
| CSTL-068 | INT | ASHEPOO RVR | FW/SFH | 164.2959 | 60 | 12 | 20 | 1012.5 | NS | 169 | 0 |
| CSTL-068 | INT | ASHEPOO RVR | SFH/FW | 164.2959 | 60 | 12 | 20 | 1012.5 | NS | 169 | 0 |
| CSTL-069 | SS | ASHEPOO RVR | SFH | 127.5013 | 12 | 2 | 17 | 1050 | NS | 58 | -0.5 |
| MD-251 | SS | ASHEPOO RVR | SFH | 49.3699 | 12 | 0 | 0 | 0 | NS | 36 | -5 |
| RO-046071 | RO04 | ASHEPOO RVR | SFH | 99.0224 | 13 | 1 | 8 | 900 | | | |
| RT-032035 | RT03 | ROCK CREEK | SFH | 35.9004 | 14 | 0 | 0 | 0 | | | |
| MD-253 | INT | ASHEPOO RVR | SFH | 10.7918 | 59 | 0 | 0 | 0 | NS | 70 | 0 |

| STATION NUMBER | TYPE | WATERBODY NAME | CLASS | NH3 N | NH3 EXC. | NH3 % | MEAN EXC. | CD N | CD EXC. | CD % | MEAN EXC. | CR N | CR EXC. | CR % | MEAN EXC. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **03050207-07** | | | | | | | | | | | | | | | |
| CSTL-583 | | BLACK CK | | | | | | | | | | | | | |
| CSTL-111 | SS | COMBAHEE RVR | FW | 12 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| CSTL-098 | SS | COMBAHEE RVR | FW/SFH | 12 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| CSTL-098 | SS | COMBAHEE RVR | SFH/FW | 12 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| MD-252 | INT | COMBAHEE RVR | SFH | 39 | 0 | 0 | 0 | 19 | 0 | 0 | 0 | 19 | 0 | 0 | 0 |
| RT-06019 | RT06 | CHEHAW RVR | SFH | 10 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RT-02017 | RT02 | CHEHAW RVR | SFH | 6 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| **03050207-08** | | | | | | | | | | | | | | | |
| RS-03356 | RS03 | WOLF CREEK | FW | 6 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| CSTL-044 | SS | IRELAND CK | FW | 12 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RS-03520 | RS03 | ASHEPOO RIVER | FW | 6 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| **03050207-09** | | | | | | | | | | | | | | | |
| CSTL-580 | | CHESSEY CK | | | | | | | | | | | | | |
| CSTL-071/ RS-05564 | INT | HORSESHOE CK | FW | 44 | 0 | 0 | 0 | 20 | 0 | 0 | 0 | 20 | 0 | 0 | 0 |
| **03050207-10** | | | | | | | | | | | | | | | |
| CSTL-068 | INT | ASHEPOO RVR | FW/SFH | 43 | 0 | 0 | 0 | 20 | 0 | 0 | 0 | 20 | 0 | 0 | 0 |
| CSTL-068 | INT | ASHEPOO RVR | SFH/FW | 43 | 0 | 0 | 0 | 20 | 0 | 0 | 0 | 20 | 0 | 0 | 0 |
| CSTL-069 | SS | ASHEPOO RVR | SFH | 12 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| MD-251 | SS | ASHEPOO RVR | SFH | 10 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RO-046071 | RO04 | ASHEPOO RVR | SFH | 10 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RT-032035 | RT03 | ROCK CREEK | SFH | 7 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 1 | 25 | 330 |
| MD-253 | INT | ASHEPOO RVR | SFH | 44 | 0 | 0 | 0 | 19 | 0 | 0 | 0 | 19 | 0 | 0 | 0 |

Appendix B. Coosaw River/Ashepoo River/St. Helena Sound Basin

| STATION NUMBER | TYPE | WATERBODY NAME | CLASS | CU N | CU EXC. | CU % | MEAN EXC. | PB N | PB EXC. | PB % | MEAN EXC. | HG N | HG EXC. | HG % | MEAN EXC. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **03050207-07** | | | | | | | | | | | | | | | |
| CSTL-583 | | BLACK CK | | | | | | | | | | | | | |
| CSTL-111 | SS | COMBAHEE RVR | FW | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| CSTL-098 | SS | COMBAHEE RVR | FW/SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| CSTL-098 | SS | COMBAHEE RVR | SFH/FW | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| MD-252 | INT | COMBAHEE RVR | SFH | 19 | 1 | 5 | 38 | 19 | 0 | 0 | 0 | 19 | 0 | 0 | 0 |
| RT-06019 | RT06 | CHEHAW RVR | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RT-02017 | RT02 | CHEHAW RVR | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| **03050207-08** | | | | | | | | | | | | | | | |
| RS-03356 | RS03 | WOLF CREEK | FW | 4 | 1 | 25 | 11 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| CSTL-044 | SS | IRELAND CK | FW | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RS-03520 | RS03 | ASHEPOO RIVER | FW | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| **03050207-09** | | | | | | | | | | | | | | | |
| CSTL-580 | | CHESSEY CK | | | | | | | | | | | | | |
| CSTL-071/ RS-05564 | INT | HORSESHOE CK | FW | 20 | 1 | 5 | 12 | 20 | 0 | 0 | 0 | 20 | 0 | 0 | 0 |
| **03050207-10** | | | | | | | | | | | | | | | |
| CSTL-068 | INT | ASHEPOO RVR | FW/SFH | 20 | 0 | 0 | 0 | 20 | 0 | 0 | 0 | 20 | 0 | 0 | 0 |
| CSTL-068 | INT | ASHEPOO RVR | SFH/FW | 20 | 0 | 0 | 0 | 20 | 0 | 0 | 0 | 20 | 0 | 0 | 0 |
| CSTL-069 | SS | ASHEPOO RVR | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| MD-251 | SS | ASHEPOO RVR | SFH | 4 | 1 | 25 | 13 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RO-046071 | RO04 | ASHEPOO RVR | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RT-032035 | RT03 | ROCK CREEK | SFH | 4 | 1 | 25 | 88 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| MD-253 | INT | ASHEPOO RVR | SFH | 19 | 1 | 5 | 35 | 19 | 0 | 0 | 0 | 19 | 0 | 0 | 0 |

| STATION NUMBER | TYPE | WATERBODY NAME | CLASS | NI N | NI EXC. | NI % | MEAN EXC. | ZN N | ZN EXC. | ZN % | MEAN EXC. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **03050207-07** | | | | | | | | | | | |
| CSTL-583 | | BLACK CK | | | | | | | | | |
| CSTL-111 | SS | COMBAHEE RVR | FW | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| CSTL-098 | SS | COMBAHEE RVR | FW/SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| CSTL-098 | SS | COMBAHEE RVR | SFH/FW | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| MD-252 | INT | COMBAHEE RVR | SFH | 19 | 0 | 0 | 0 | 19 | 0 | 0 | 0 |
| RT-06019 | RT06 | CHEHAW RVR | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RT-02017 | RT02 | CHEHAW RVR | SFH | 4 | 0 | 0 | 0 | 4 | 3 | 75 | 296.6667 |
| **03050207-08** | | | | | | | | | | | |
| RS-03356 | RS03 | WOLF CREEK | FW | 4 | 0 | 0 | 0 | 4 | 4 | 100 | 287.5 |
| CSTL-044 | SS | IRELAND CK | FW | 4 | 0 | 0 | 0 | 4 | 1 | 25 | 180 |
| RS-03520 | RS03 | ASHEPOO RIVER | FW | 4 | 0 | 0 | 0 | 4 | 4 | 100 | 171.25 |
| **03050207-09** | | | | | | | | | | | |
| CSTL-580 | | CHESSEY CK | | | | | | | | | |
| CSTL-071/ RS-05564 | INT | HORSESHOE CK | FW | 20 | 0 | 0 | 0 | 20 | 14 | 70 | 172.0714 |
| **03050207-10** | | | | | | | | | | | |
| CSTL-068 | INT | ASHEPOO RVR | FW/SFH | 20 | 0 | 0 | 0 | 20 | 12 | 60 | 182.25 |
| CSTL-068 | INT | ASHEPOO RVR | SFH/FW | 20 | 0 | 0 | 0 | 20 | 12 | 60 | 182.25 |
| CSTL-069 | SS | ASHEPOO RVR | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| MD-251 | SS | ASHEPOO RVR | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RO-046071 | RO04 | ASHEPOO RVR | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RT-032035 | RT03 | ROCK CREEK | SFH | 4 | 1 | 25 | 450 | 4 | 0 | 0 | 0 |
| MD-253 | INT | ASHEPOO RVR | SFH | 19 | 1 | 5 | 21 | 19 | 0 | 0 | 0 |

Appendix B. Coosaw River/Ashepoo River/St. Helena Sound Basin

| STATION | | | | | DO | DO | DO | MEAN | TRENDS (92-2006) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | TYPE | WATERBODY NAME | CLASS | | N | EXC. | % | EXC. | DO | N | MAG | BOD | N | MAG |
| **03050207-11** | | | | | | | | | | | | | | |
| RT-06010 | RT06 | MCCALLEYS CK | SFH | | 8 | 4 | 50 | 3.7875 | | | | | | |
| RT-042069 | RT04 | MCCALLEYS CK | SFH | | 7 | 1 | 14 | 4.08 | | | | | | |
| RO-06314 | RO06 | COOSAW RVR | SFH | | 10 | 3 | 30 | 4.27 | | | | | | |
| RO-02007 | RO02 | COOSAW RVR | SFH | | 12 | 5 | 42 | 4.624 | | | | | | |
| RO-056101 | RO05 | COOSAW RVR | SFH | | 10 | 3 | 30 | 4.8267 | | | | | | |
| RO-046073 | RO04 | COOSAW RVR | SFH | | 7 | 1 | 14 | 4.44 | | | | | | |
| RT-032041 | RT03 | COOSAW RIVER TRIB | SFH | | 13 | 3 | 23 | 4.2833 | | | | | | |
| RO-056095 | RO05 | COOSAW RVR | SFH | | 10 | 2 | 20 | 4.025 | | | | | | |
| RT-032031 | RT03 | WIMBEE CREEK TRIB | SFH | | 11 | 5 | 45 | 3.954 | | | | | | |
| RT-052093 | RT05 | SOUTH WIMBEE CREEK | SFH | | 9 | 3 | 33 | 4.2167 | | | | | | |
| RO-036037 | RO03 | WIMBEE CREEK | SFH | | 12 | 3 | 25 | 4.0633 | | | | | | |
| RT-06003 | RT06 | UNNAMED CK TO WILLIAM CK | SFH | | 9 | 3 | 33 | 3.6967 | | | | | | |
| RT-02015 | RT02 | UNNAMED CK ON CHISOLM ISLANDS | SFH | | 11 | 4 | 36 | 4.0725 | | | | | | |
| RO-02005 | RO02 | COOSAW RVR | SFH | | 11 | 4 | 36 | 4.5125 | | | | | | |
| RO-06303 | RO06 | COOSAW RVR | SFH | | 9 | 3 | 33 | 4.6633 | | | | | | |
| MD-168 | SS | COOSAW RVR | SFH | | 9 | 1 | 11 | 4.67 | NS | 105 | 0.04 | NS | 102 | 0 |
| RO-02001 | RO02 | COOSAW RVR | SFH | | 11 | 3 | 27 | 4.4067 | | | | | | |
| RO-046069 | RO04 | COOSAW RVR | SFH | | 7 | 1 | 14 | 4.93 | | | | | | |
| RO-046067 | RO04 | ST HELENA SOUND | SFH | | 8 | 0 | 0 | 0 | | | | | | |
| RT-042067 | RT04 | TRIB TO JENKINS CK | SFH | | 8 | 1 | 13 | 3.58 | | | | | | |
| MD-255 | INT | JENKINS CK | SFH | | 45 | 12 | 27 | 4.3 | NS | 56 | 0.15 | NS | 71 | 0 |
| RT-02027 | RT02 | TRIB TO SPARROW NEST CK | SFH | | 12 | 4 | 33 | 4.4875 | | | | | | |
| RT-052113 | RT05 | UNNAMED CK TO BASS CK | SFH | | 10 | 2 | 20 | 4 | | | | | | |
| RT-032045 | RT03 | EDDINGS POINT CREEK | SFH | | 10 | 4 | 40 | 4.385 | | | | | | |
| RO-056099 | RO05 | VILLAGE CK | SFH | | 10 | 3 | 30 | 3.23 | | | | | | |
| RT-032033 | RT03 | COFFIN CREEK | SFH | | 10 | 3 | 30 | 4.35 | | | | | | |

| STATION | | | | | pH | pH | pH | MEAN | TRENDS (92-2006) | | | | TURB | TURB | TURB | MEAN | TRENDS (92-2006) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | TYPE | WATERBODY NAME | CLASS | | N | EXC. | % | EXC. | PH | N | MAG | | N | EXC. | % | EXC. | TURB | N | MAG |
| **03050207-11** | | | | | | | | | | | | | | | | | | | |
| RT-06010 | RT06 | MCCALLEYS CK | SFH | | 8 | 0 | 0 | 0 | | | | | 13 | 1 | 8 | 33 | | | |
| RT-042069 | RT04 | MCCALLEYS CK | SFH | | 7 | 0 | 0 | 0 | | | | | 13 | 1 | 8 | 34 | | | |
| RO-06314 | RO06 | COOSAW RVR | SFH | | 10 | 0 | 0 | 0 | | | | | 13 | 0 | 0 | 0 | | | |
| RO-02007 | RO02 | COOSAW RVR | SFH | | 12 | 0 | 0 | 0 | | | | | 12 | 2 | 17 | 31 | | | |
| RO-056101 | RO05 | COOSAW RVR | SFH | | 10 | 0 | 0 | 0 | | | | | 13 | 0 | 0 | 0 | | | |
| RO-046073 | RO04 | COOSAW RVR | SFH | | 7 | 0 | 0 | 0 | | | | | 13 | 2 | 15 | 40.5 | | | |
| RT-032041 | RT03 | COOSAW RIVER TRIB | SFH | | 13 | 0 | 0 | 0 | | | | | 12 | 1 | 8 | 30 | | | |
| RO-056095 | RO05 | COOSAW RVR | SFH | | 10 | 0 | 0 | 0 | | | | | 13 | 2 | 15 | 33.5 | | | |
| RT-032031 | RT03 | WIMBEE CREEK TRIB | SFH | | 11 | 0 | 0 | 0 | | | | | 12 | 0 | 0 | 0 | | | |
| RT-052093 | RT05 | SOUTH WIMBEE CREEK | SFH | | 9 | 0 | 0 | 0 | | | | | 12 | 3 | 25 | 34.6667 | | | |
| RO-036037 | RO03 | WIMBEE CREEK | SFH | | 12 | 0 | 0 | 0 | | | | | 12 | 5 | 42 | 35.4 | | | |
| RT-06003 | RT06 | UNNAMED CK TO WILLIAM CK | SFH | | 9 | 0 | 0 | 0 | | | | | 13 | 0 | 0 | 0 | | | |
| RT-02015 | RT02 | UNNAMED CK ON CHISOLM ISLANDS | SFH | | 11 | 0 | 0 | 0 | | | | | 12 | 6 | 50 | 48.1667 | | | |
| RO-02005 | RO02 | COOSAW RVR | SFH | | 11 | 0 | 0 | 0 | | | | | 11 | 3 | 27 | 33.3333 | | | |
| RO-06303 | RO06 | COOSAW RVR | SFH | | 9 | 0 | 0 | 0 | | | | | 12 | 0 | 0 | 0 | | | |
| MD-168 | SS | COOSAW RVR | SFH | | 9 | 0 | 0 | 0 | NS | 109 | -0.0004 | | 12 | 1 | 8 | 28 | NS | 103 | 0.3636 |
| RO-02001 | RO02 | COOSAW RVR | SFH | | 11 | 0 | 0 | 0 | | | | | 11 | 3 | 27 | 44 | | | |
| RO-046069 | RO04 | COOSAW RVR | SFH | | 7 | 0 | 0 | 0 | | | | | 13 | 0 | 0 | 0 | | | |
| RO-046067 | RO04 | ST HELENA SOUND | SFH | | 8 | 0 | 0 | 0 | | | | | 13 | 3 | 23 | 39.6667 | | | |
| RT-042067 | RT04 | TRIB TO JENKINS CK | SFH | | 8 | 0 | 0 | 0 | | | | | 13 | 0 | 0 | 0 | | | |
| MD-255 | INT | JENKINS CK | SFH | | 45 | 0 | 0 | 0 | NS | 56 | -0.0133 | | 60 | 4 | 7 | 40 | NS | 71 | -0.1975 |
| RT-02027 | RT02 | TRIB TO SPARROW NEST CK | SFH | | 12 | 0 | 0 | 0 | | | | | 12 | 0 | 0 | 0 | | | |
| RT-052113 | RT05 | UNNAMED CK TO BASS CK | SFH | | 10 | 0 | 0 | 0 | | | | | 13 | 1 | 8 | 46 | | | |
| RT-032045 | RT03 | EDDINGS POINT CREEK | SFH | | 10 | 0 | 0 | 0 | | | | | 12 | 2 | 17 | 43.5 | | | |
| RO-056099 | RO05 | VILLAGE CK | SFH | | 10 | 0 | 0 | 0 | | | | | 13 | 3 | 23 | 43.3333 | | | |
| RT-032033 | RT03 | COFFIN CREEK | SFH | | 10 | 0 | 0 | 0 | | | | | 12 | 4 | 33 | 45.75 | | | |

| STATION | | | | | TP | TP | TP | MEAN | TRENDS (92-2006) | | | | TN | TN | TN | MEAN | TRENDS (92-2006) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | TYPE | WATERBODY NAME | CLASS | | N | EXC. | % | EXC. | TP | N | MAG | | N | EXC. | % | EXC. | TN | N | MAG |
| **03050207-11** | | | | | | | | | | | | | | | | | | | |
| RT-06010 | RT06 | MCCALLEYS CK | SFH | | | | | | | | | | | | | | | | |
| RT-042069 | RT04 | MCCALLEYS CK | SFH | | | | | | | | | | | | | | | | |
| RO-06314 | RO06 | COOSAW RVR | SFH | | | | | | | | | | | | | | | | |
| RO-02007 | RO02 | COOSAW RVR | SFH | | | | | | | | | | | | | | | | |
| RO-056101 | RO05 | COOSAW RVR | SFH | | | | | | | | | | | | | | | | |
| RO-046073 | RO04 | COOSAW RVR | SFH | | | | | | | | | | | | | | | | |
| RT-032041 | RT03 | COOSAW RIVER TRIB | SFH | | | | | | | | | | | | | | | | |
| RO-056095 | RO05 | COOSAW RVR | SFH | | | | | | | | | | | | | | | | |
| RT-032031 | RT03 | WIMBEE CREEK TRIB | SFH | | | | | | | | | | | | | | | | |
| RT-052093 | RT05 | SOUTH WIMBEE CREEK | SFH | | | | | | | | | | | | | | | | |
| RO-036037 | RO03 | WIMBEE CREEK | SFH | | | | | | | | | | | | | | | | |
| RT-06003 | RT06 | UNNAMED CK TO WILLIAM CK | SFH | | | | | | | | | | | | | | | | |
| RT-02015 | RT02 | UNNAMED CK ON CHISOLM ISLANDS | SFH | | | | | | | | | | | | | | | | |
| RO-02005 | RO02 | COOSAW RVR | SFH | | | | | | | | | | | | | | | | |
| RO-06303 | RO06 | COOSAW RVR | SFH | | | | | | | | | | | | | | | | |
| MD-168 | SS | COOSAW RVR | SFH | | | | | | NS | 83 | 0.0006 | | | | | | NS | 102 | -0.01 |
| RO-02001 | RO02 | COOSAW RVR | SFH | | | | | | | | | | | | | | | | |
| RO-046069 | RO04 | COOSAW RVR | SFH | | | | | | | | | | | | | | | | |
| RO-046067 | RO04 | ST HELENA SOUND | SFH | | | | | | | | | | | | | | | | |
| RT-042067 | RT04 | TRIB TO JENKINS CK | SFH | | | | | | | | | | | | | | | | |
| MD-255 | INT | JENKINS CK | SFH | | | | | | NS | 55 | -0.004 | | | | | | NS | 47 | 0.0042 |
| RT-02027 | RT02 | TRIB TO SPARROW NEST CK | SFH | | | | | | | | | | | | | | | | |
| RT-052113 | RT05 | UNNAMED CK TO BASS CK | SFH | | | | | | | | | | | | | | | | |
| RT-032045 | RT03 | EDDINGS POINT CREEK | SFH | | | | | | | | | | | | | | | | |
| RO-056099 | RO05 | VILLAGE CK | SFH | | | | | | | | | | | | | | | | |
| RT-032033 | RT03 | COFFIN CREEK | SFH | | | | | | | | | | | | | | | | |

| STATION | | | | | CHL | CHL | CHL | MEAN | | TRENDS (92-2006) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | TYPE | WATERBODY NAME | CLASS | | N | EXC. | % | EXC. | | TSS | N | MAG |
| **03050207-11** | | | | | | | | | | | | |
| RT-06010 | RT06 | MCCALLEYS CK | SFH | | | | | | | | | |
| RT-042069 | RT04 | MCCALLEYS CK | SFH | | | | | | | | | |
| RO-06314 | RO06 | COOSAW RVR | SFH | | | | | | | | | |
| RO-02007 | RO02 | COOSAW RVR | SFH | | | | | | | | | |
| RO-056101 | RO05 | COOSAW RVR | SFH | | | | | | | | | |
| RO-046073 | RO04 | COOSAW RVR | SFH | | | | | | | | | |
| RT-032041 | RT03 | COOSAW RIVER TRIB | SFH | | | | | | | | | |
| RO-056095 | RO05 | COOSAW RVR | SFH | | | | | | | | | |
| RT-032031 | RT03 | WIMBEE CREEK TRIB | SFH | | | | | | | | | |
| RT-052093 | RT05 | SOUTH WIMBEE CREEK | SFH | | | | | | | | | |
| RO-036037 | RO03 | WIMBEE CREEK | SFH | | | | | | | | | |
| RT-06003 | RT06 | UNNAMED CK TO WILLIAM CK | SFH | | | | | | | | | |
| RT-02015 | RT02 | UNNAMED CK ON CHISOLM ISLANDS | SFH | | | | | | | | | |
| RO-02005 | RO02 | COOSAW RVR | SFH | | | | | | | | | |
| RO-06303 | RO06 | COOSAW RVR | SFH | | | | | | | | | |
| MD-168 | SS | COOSAW RVR | SFH | | | | | | | | | |
| RO-02001 | RO02 | COOSAW RVR | SFH | | | | | | | | | |
| RO-046069 | RO04 | COOSAW RVR | SFH | | | | | | | | | |
| RO-046067 | RO04 | ST HELENA SOUND | SFH | | | | | | | | | |
| RT-042067 | RT04 | TRIB TO JENKINS CK | SFH | | | | | | | | | |
| MD-255 | INT | JENKINS CK | SFH | | | | | | | | | |
| RT-02027 | RT02 | TRIB TO SPARROW NEST CK | SFH | | | | | | | | | |
| RT-052113 | RT05 | UNNAMED CK TO BASS CK | SFH | | | | | | | | | |
| RT-032045 | RT03 | EDDINGS POINT CREEK | SFH | | | | | | | | | |
| RO-056099 | RO05 | VILLAGE CK | SFH | | | | | | | | | |
| RT-032033 | RT03 | COFFIN CREEK | SFH | | | | | | | | | |

| STATION | | | | | GEO | BACT | BACT | BACT | MEAN | TRENDS (92-2006) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | TYPE | WATERBODY NAME | CLASS | | MEAN | N | EXC. | % | EXC. | BACT | N | MAG |
| **03050207-11** | | | | | | | | | | | | |
| RT-06010 | RT06 | MCCALLEYS CK | SFH | | 11.7336 | 13 | 0 | 0 | 0 | | | |
| RT-042069 | RT04 | MCCALLEYS CK | SFH | | 3.1668 | 13 | 0 | 0 | 0 | | | |
| RO-06314 | RO06 | COOSAW RVR | SFH | | 2.1481 | 13 | 0 | 0 | 0 | | | |
| RO-02007 | RO02 | COOSAW RVR | SFH | | 1.7466 | 13 | 0 | 0 | 0 | | | |
| RO-056101 | RO05 | COOSAW RVR | SFH | | 3.3229 | 13 | 0 | 0 | 0 | | | |
| RO-046073 | RO04 | COOSAW RVR | SFH | | 1.6869 | 13 | 0 | 0 | 0 | | | |
| RT-032041 | RT03 | COOSAW RIVER TRIB | SFH | | 2.8609 | 13 | 0 | 0 | 0 | | | |
| RO-056095 | RO05 | COOSAW RVR | SFH | | 3.7189 | 13 | 0 | 0 | 0 | | | |
| RT-032031 | RT03 | WIMBEE CREEK TRIB | SFH | | 17.7863 | 14 | 0 | 0 | 0 | | | |
| RT-052093 | RT05 | SOUTH WIMBEE CREEK | SFH | | 7.334 | 12 | 0 | 0 | 0 | | | |
| RO-036037 | RO03 | WIMBEE CREEK | SFH | | 4.1207 | 14 | 0 | 0 | 0 | | | |
| RT-06003 | RT06 | UNNAMED CK TO WILLIAM CK | SFH | | 3.2482 | 13 | 0 | 0 | 0 | | | |
| RT-02015 | RT02 | UNNAMED CK ON CHISOLM ISLANDS | SFH | | 2.5307 | 12 | 0 | 0 | 0 | | | |
| RO-02005 | RO02 | COOSAW RVR | SFH | | 1.3348 | 12 | 0 | 0 | 0 | | | |
| RO-06303 | RO06 | COOSAW RVR | SFH | | 1.2377 | 13 | 0 | 0 | 0 | | | |
| MD-168 | SS | COOSAW RVR | SFH | | 5.4002 | 12 | 0 | 0 | 0 | NS | 99 | 0 |
| RO-02001 | RO02 | COOSAW RVR | SFH | | 3.1806 | 12 | 0 | 0 | 0 | | | |
| RO-046069 | RO04 | COOSAW RVR | SFH | | 1.7288 | 13 | 0 | 0 | 0 | | | |
| RO-046067 | RO04 | ST HELENA SOUND | SFH | | 3.2092 | 13 | 0 | 0 | 0 | | | |
| RT-042067 | RT04 | TRIB TO JENKINS CK | SFH | | 15.1807 | 13 | 0 | 0 | 0 | | | |
| MD-255 | INT | JENKINS CK | SFH | | 8.3554 | 60 | 0 | 0 | 0 | I | 71 | 1 |
| RT-02027 | RT02 | TRIB TO SPARROW NEST CK | SFH | | 5.9653 | 13 | 0 | 0 | 0 | | | |
| RT-052113 | RT05 | UNNAMED CK TO BASS CK | SFH | | 4.0894 | 13 | 0 | 0 | 0 | | | |
| RT-032045 | RT03 | EDDINGS POINT CREEK | SFH | | 8.4991 | 12 | 0 | 0 | 0 | | | |
| RO-056099 | RO05 | VILLAGE CK | SFH | | 16.95 | 13 | 0 | 0 | 0 | | | |
| RT-032033 | RT03 | COFFIN CREEK | SFH | | 7.7534 | 12 | 0 | 0 | 0 | | | |

| STATION NUMBER | TYPE | WATERBODY NAME | CLASS | NH3 N | NH3 EXC. | NH3 % | MEAN EXC. | CD N | CD EXC. | CD % | MEAN EXC. | CR N | CR EXC. | CR % | MEAN EXC. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **03050207-11** | | | | | | | | | | | | | | | |
| RT-06010 | RT06 | MCCALLEYS CK | SFH | 11 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RT-042069 | RT04 | MCCALLEYS CK | SFH | 10 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RO-06314 | RO06 | COOSAW RVR | SFH | 12 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RO-02007 | RO02 | COOSAW RVR | SFH | 4 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 3 | 0 | 0 | 0 |
| RO-056101 | RO05 | COOSAW RVR | SFH | 13 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RO-046073 | RO04 | COOSAW RVR | SFH | 11 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RT-032041 | RT03 | COOSAW RIVER TRIB | SFH | 7 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RO-056095 | RO05 | COOSAW RVR | SFH | 13 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RT-032031 | RT03 | WIMBEE CREEK TRIB | SFH | 7 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 1 | 25 | 140 |
| RT-052093 | RT05 | SOUTH WIMBEE CREEK | SFH | 11 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RO-036037 | RO03 | WIMBEE CREEK | SFH | 7 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RT-06003 | RT06 | UNNAMED CK TO WILLIAM CK | SFH | 10 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RT-02015 | RT02 | UNNAMED CK ON CHISOLM ISLANDS | SFH | 5 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 3 | 0 | 0 | 0 |
| RO-02005 | RO02 | COOSAW RVR | SFH | 3 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 3 | 0 | 0 | 0 |
| RO-06303 | RO06 | COOSAW RVR | SFH | 10 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| MD-168 | SS | COOSAW RVR | SFH | 12 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RO-02001 | RO02 | COOSAW RVR | SFH | 4 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| RO-046069 | RO04 | COOSAW RVR | SFH | 11 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RO-046067 | RO04 | ST HELENA SOUND | SFH | 11 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RT-042067 | RT04 | TRIB TO JENKINS CK | SFH | 11 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| MD-255 | INT | JENKINS CK | SFH | 42 | 0 | 0 | 0 | 20 | 0 | 0 | 0 | 20 | 0 | 0 | 0 |
| RT-02027 | RT02 | TRIB TO SPARROW NEST CK | SFH | 5 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RT-052113 | RT05 | UNNAMED CK TO BASS CK | SFH | 13 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RT-032045 | RT03 | EDDINGS POINT CREEK | SFH | 6 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RO-056099 | RO05 | VILLAGE CK | SFH | 13 | 0 | 0 | 0 | 4 | 1 | 25 | 14 | 4 | 0 | 0 | 0 |
| RT-032033 | RT03 | COFFIN CREEK | SFH | 6 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |

Appendix B. Coosaw River/Ashepoo River/St. Helena Sound Basin

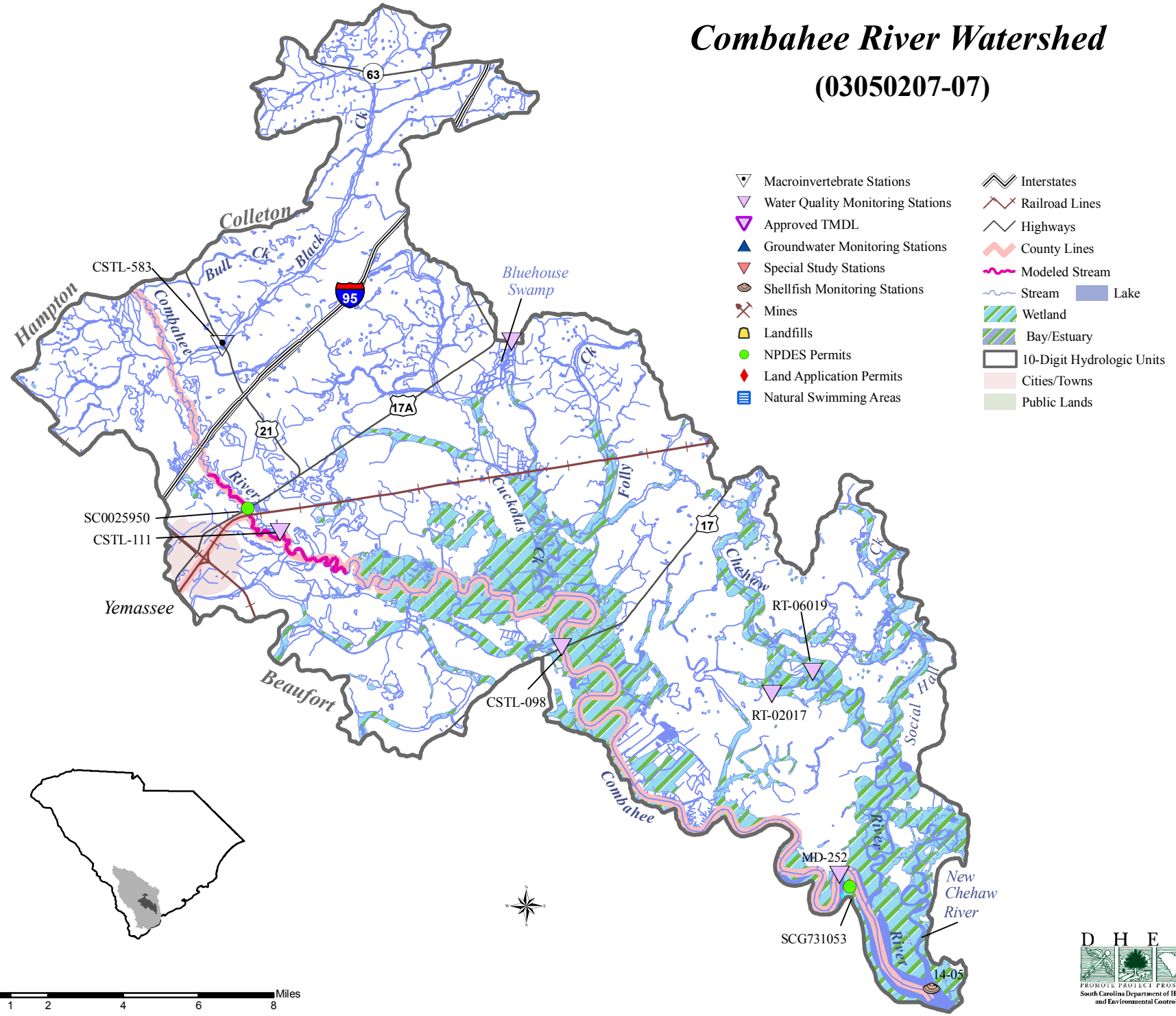
| STATION NUMBER | TYPE | WATERBODY NAME | CLASS | CU N | CU EXC. | CU % | MEAN EXC. | PB N | PB EXC. | PB % | MEAN EXC. | HG N | HG EXC. | HG % | MEAN EXC. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **03050207-11** | | | | | | | | | | | | | | | |
| RT-06010 | RT06 | MCCALLEYS CK | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RT-042069 | RT04 | MCCALLEYS CK | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RO-06314 | RO06 | COOSAW RVR | SFH | 4 | 1 | 25 | 26 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RO-02007 | RO02 | COOSAW RVR | SFH | 3 | 1 | 33 | 34 | 3 | 0 | 0 | 0 | 3 | 0 | 0 | 0 |
| RO-056101 | RO05 | COOSAW RVR | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RO-046073 | RO04 | COOSAW RVR | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RT-032041 | RT03 | COOSAW RIVER TRIB | SFH | 4 | 1 | 25 | 16 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RO-056095 | RO05 | COOSAW RVR | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RT-032031 | RT03 | WIMBEE CREEK TRIB | SFH | 4 | 1 | 25 | 35 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RT-052093 | RT05 | SOUTH WIMBEE CREEK | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RO-036037 | RO03 | WIMBEE CREEK | SFH | 4 | 1 | 25 | 17 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RT-06003 | RT06 | UNNAMED CK TO WILLIAM CK | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RT-02015 | RT02 | UNNAMED CK ON CHISOLM ISLANDS | SFH | 3 | 2 | 67 | 24.5 | 3 | 0 | 0 | 0 | 3 | 0 | 0 | 0 |
| RO-02005 | RO02 | COOSAW RVR | SFH | 3 | 2 | 67 | 31 | 3 | 0 | 0 | 0 | 3 | 0 | 0 | 0 |
| RO-06303 | RO06 | COOSAW RVR | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| MD-168 | SS | COOSAW RVR | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RO-02001 | RO02 | COOSAW RVR | SFH | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 3 | 0 | 0 | 0 |
| RO-046069 | RO04 | COOSAW RVR | SFH | 4 | 1 | 25 | 11 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RO-046067 | RO04 | ST HELENA SOUND | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RT-042067 | RT04 | TRIB TO JENKINS CK | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| MD-255 | INT | JENKINS CK | SFH | 20 | 1 | 5 | 18 | 19 | 0 | 0 | 0 | 20 | 0 | 0 | 0 |
| RT-02027 | RT02 | TRIB TO SPARROW NEST CK | SFH | 4 | 2 | 50 | 15 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RT-052113 | RT05 | UNNAMED CK TO BASS CK | SFH | 4 | 1 | 25 | 18 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RT-032045 | RT03 | EDDINGS POINT CREEK | SFH | 4 | 1 | 25 | 11 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RO-056099 | RO05 | VILLAGE CK | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RT-032033 | RT03 | COFFIN CREEK | SFH | 4 | 1 | 25 | 11 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |

| STATION NUMBER | TYPE | WATERBODY NAME | CLASS | NI N | NI EXC. | NI % | MEAN EXC. | ZN N | ZN EXC. | ZN % | MEAN EXC. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **03050207-11** | | | | | | | | | | | |
| RT-06010 | RT06 | MCCALLEYS CK | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RT-042069 | RT04 | MCCALLEYS CK | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RO-06314 | RO06 | COOSAW RVR | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RO-02007 | RO02 | COOSAW RVR | SFH | 3 | 0 | 0 | 0 | 3 | 0 | 0 | 0 |
| RO-056101 | RO05 | COOSAW RVR | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RO-046073 | RO04 | COOSAW RVR | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RT-032041 | RT03 | COOSAW RIVER TRIB | SFH | 4 | 1 | 25 | 48 | 4 | 0 | 0 | 0 |
| RO-056095 | RO05 | COOSAW RVR | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RT-032031 | RT03 | WIMBEE CREEK TRIB | SFH | 4 | 1 | 25 | 190 | 4 | 0 | 0 | 0 |
| RT-052093 | RT05 | SOUTH WIMBEE CREEK | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RO-036037 | RO03 | WIMBEE CREEK | SFH | 4 | 1 | 25 | 53 | 4 | 0 | 0 | 0 |
| RT-06003 | RT06 | UNNAMED CK TO WILLIAM CK | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RT-02015 | RT02 | UNNAMED CK ON CHISOLM ISLANDS | SFH | 3 | 0 | 0 | 0 | 3 | 0 | 0 | 0 |
| RO-02005 | RO02 | COOSAW RVR | SFH | 3 | 0 | 0 | 0 | 3 | 0 | 0 | 0 |
| RO-06303 | RO06 | COOSAW RVR | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| MD-168 | SS | COOSAW RVR | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RO-02001 | RO02 | COOSAW RVR | SFH | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| RO-046069 | RO04 | COOSAW RVR | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RO-046067 | RO04 | ST HELENA SOUND | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RT-042067 | RT04 | TRIB TO JENKINS CK | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| MD-255 | INT | JENKINS CK | SFH | 20 | 0 | 0 | 0 | 20 | 0 | 0 | 0 |
| RT-02027 | RT02 | TRIB TO SPARROW NEST CK | SFH | 4 | 0 | 0 | 0 | 4 | 1 | 25 | 180 |
| RT-052113 | RT05 | UNNAMED CK TO BASS CK | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RT-032045 | RT03 | EDDINGS POINT CREEK | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RO-056099 | RO05 | VILLAGE CK | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RT-032033 | RT03 | COFFIN CREEK | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |

# Coosaw River/Ashepoo River/ St. Helena Sound Basin Watershed Unit Index Map

# Combahee River Watershed

## (03050207-07)



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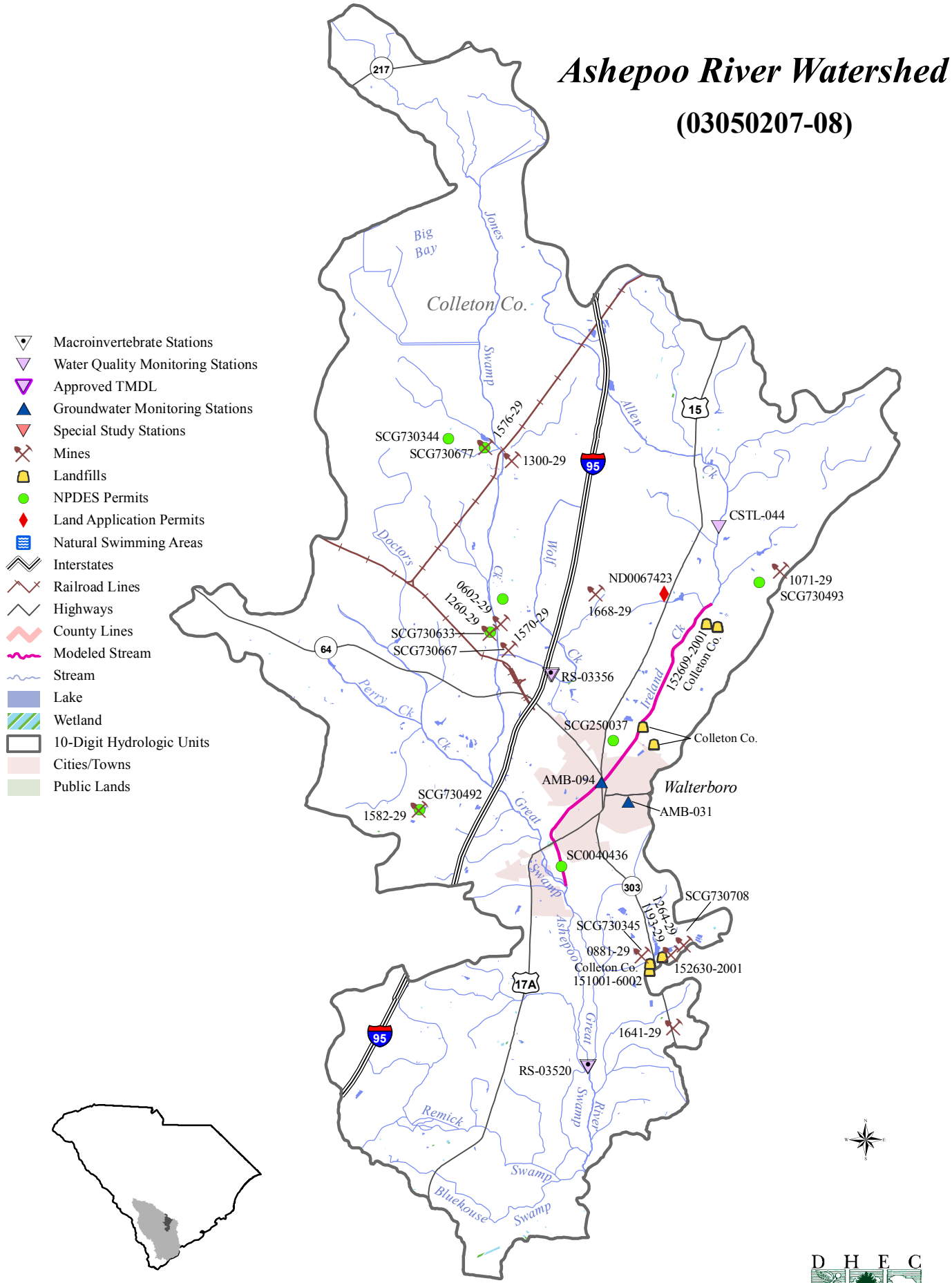
South Carolina Department of Health and Environmental Control

# *Ashepoo River Watershed*

## (03050207-08)

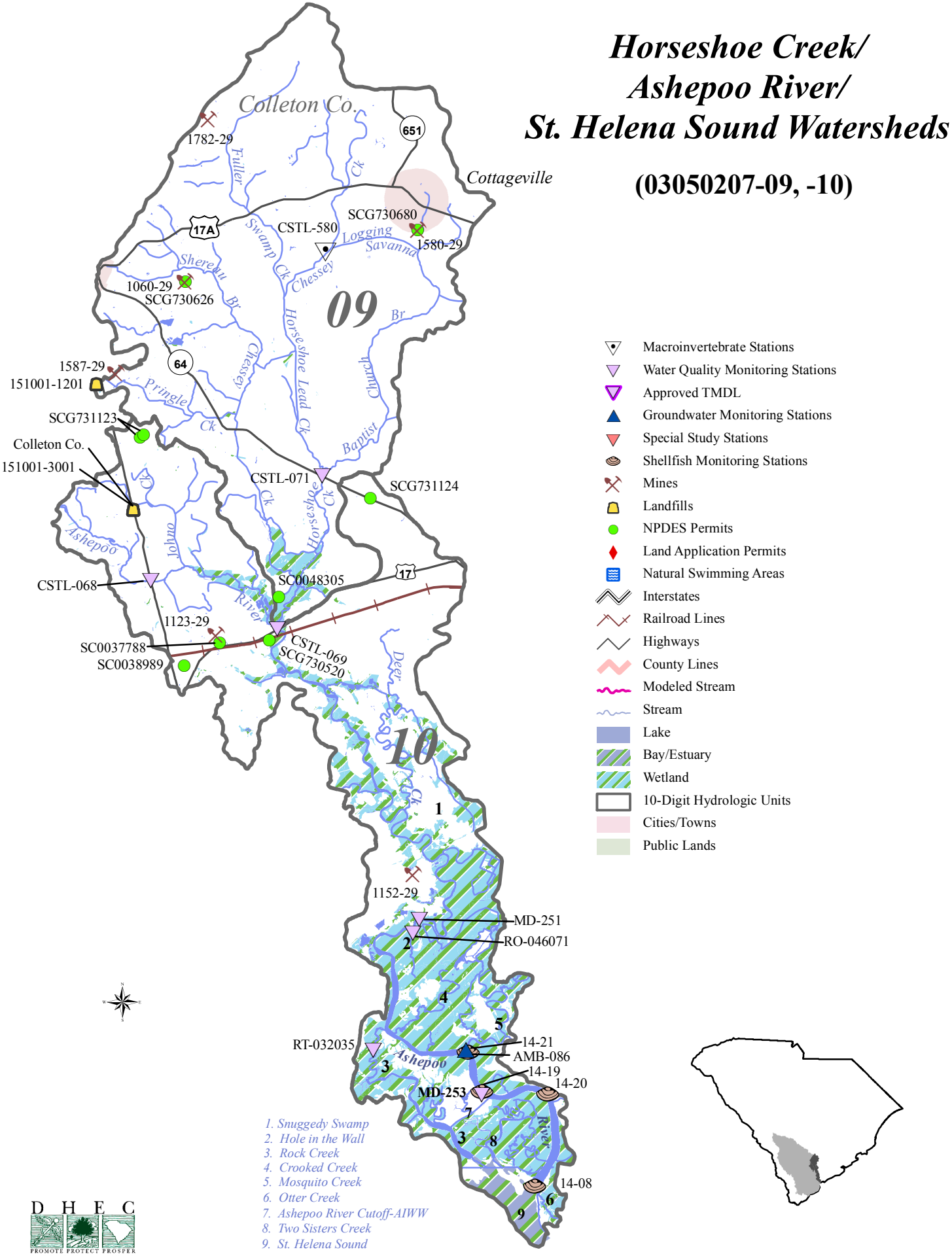





D H E C
PROMOTE PROTECT PROSPER
South Carolina Department of Health and Environmental Control

# *Horseshoe Creek/ Ashepoo River/ St. Helena Sound Watersheds*

## (03050207-09, -10)

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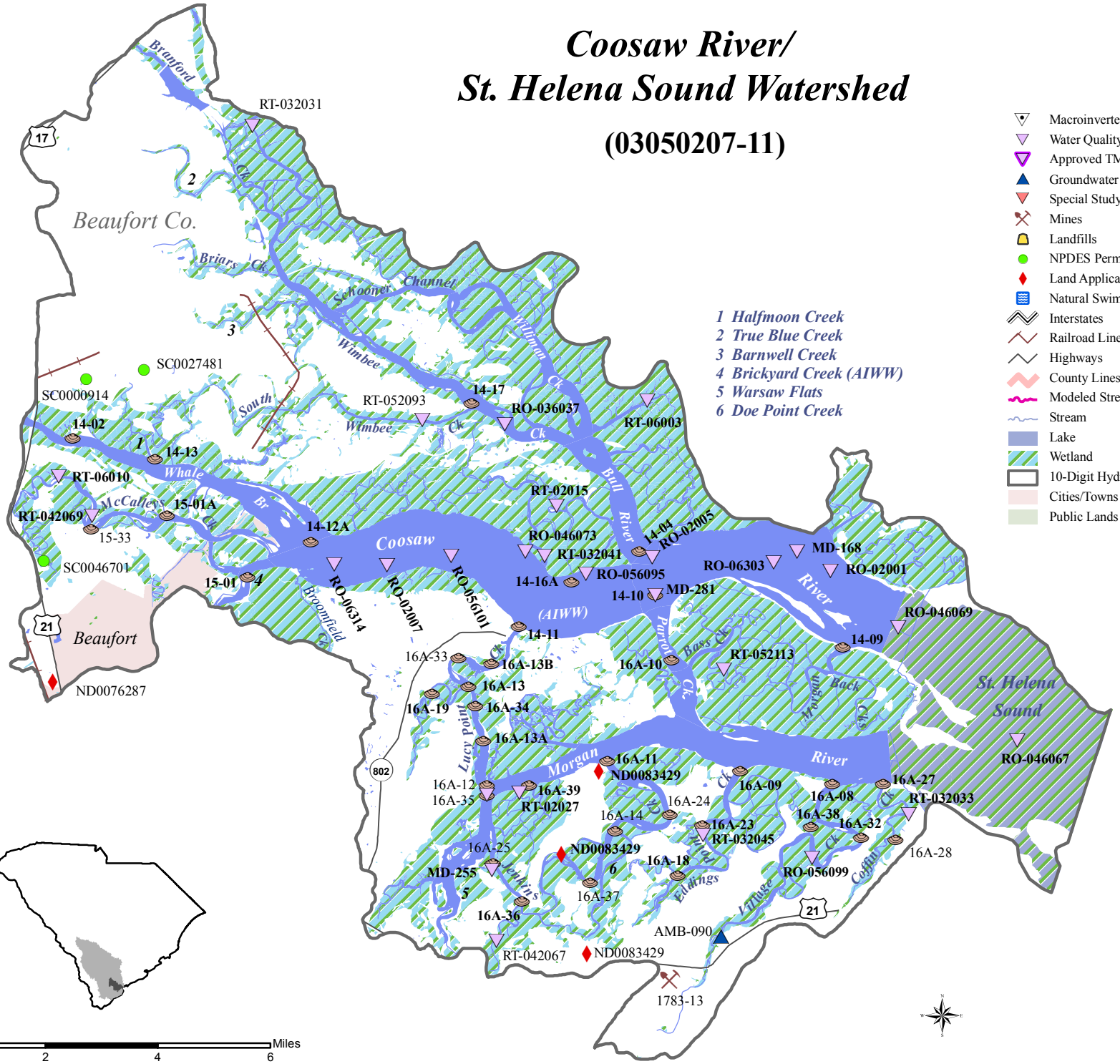
# Coosaw River/ St. Helena Sound Watershed

## (03050207-11)






Miles
0 1 2 4 6

- Macroinvertebrate Stations
- Water Quality Monitoring Stations
- Approved TMDL
- Groundwater Monitoring Stations
- Special Study Stations
- Mines
- Landfills
- NPDES Permits
- Land Application Permits
- Natural Swimming Areas
- Interstates
- Railroad Lines
- Highways
- County Lines
- Modeled Stream
- Stream
- Lake
- Wetland
- 10-Digit Hydrologic Units
- Cities/Towns
- Public Lands

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# *APPENDIX C.*

**Broad River/Beaufort River/Port Royal Sound Basin**

# Monitoring Site Descriptions

## *Ambient Water Quality Monitoring Sites*

| Station # | Type | Class | Description |
|---|---|---|---|
| **03050208-01** | | | |
| CSTL-075 INT | | FW | LAKE WARREN, BLACK CREEK ARM, AT S-25-41, 5MI SW OF HAMPTON |
| RL-03331 RL03 | | FW | LAKE WARREN, 0.2MI W OF SPILLWAY NE CORNER OF LAKE |
| CL-062 | W | FW | LAKE WARREN IN FOREBAY NEAR DAM |
| **03050208-02** | | | |
| CSTL-110 W | | FW | COOSAWHATCHIE RIVER AT S-03-47 |
| RS-03360 RS03 | | FW | BLOOD HILL CREEK AT S-25-69, 2.4MI NE OF GIFFORD |
| CSTL-121 INT | | FW | COOSAWHATCHIE RIVER AT SC 363 |
| **03050208-03** | | | |
| CSTL-582 BIO | | FW | CYPRESS CREEK AT SC 3 |
| CSTL-122 INT | | FW | CYPRESS CREEK AT S-27-108 |
| **03050208-04** | | | |
| CSTL-108 W | | FW* | SANDERS BRANCH AT SC 363 |
| RS-02488 RS02/BIO | | FW | SANDERS BR FROM BRIDGE AT PAVED RD FROM SC 363 N |
| CSTL-010 W | | FW* | SANDERS BRANCH AT SC 278 |
| CSTL-011 W/BIO | | FW* | SANDERS BRANCH AT S-25-50 |
| CSTL-109 INT | | FW | COOSAWHATCHIE RIVER AT S-25-27, 2.5MI SW OF CUMMINGS |
| CSTL-107 | W | FW/SFH | COOSAWHATCHIE RIVER AT US 17 AT COOSAWHATCHIE |
| MD-280 | W | SB | BEES CREEK AT WALL FAMILY CAMP FLOATING DOCK |
| **03050208-05** | | | |
| RT-02013 RT02 | | SA | BROOMFIELD CREEK, 0.8 MI N OF BEAUFORT |
| MD-001 | INT | SA | BEAUFORT RIVER ABOVE BEAUFORT AT CHANNEL MARKER 231 |
| RT-032039 RT03 | | SA | FACTORY CREEK, 0.7 MI E OF WHITE HALL LANDING |
| MD-002 | W | SA | BEAUFORT RIVER AT DRAWBRIDGE ON US 21 |
| RO-02003 RO02 | | SA | BEAUFORT RIVER NEAR SPANISH POINT |
| MD-003 | W | SA | BEAUFORT RIVER BELOW BEAUFORT AT CHANNEL MARKER 244 |
| RT-032043 RT03 | SFH | | BATTERY CREEK TRIB., 0.1 MI N CONFL & 1.25MI N SC 802 BRIDGE |
| MD-004 | INT | SFH | BEAUFORT RIVER AT JUNCTION WITH BATTERY CREEK NEAR MARKER 42 |
| RO-036033 RO03 | | SFH | DISTANT ISLAND CREEK, 0.7 MI E OF WHITE HALL LANDING |
| RO-056105 RO05 | | SFH | FACTORY CREEK, 0.1 MI NW CONFLUENCE WITH COWEN CREEK |
| MD-005 | W | SFH | BEAUFORT RIVER BELOW OUTFALL OF PARRIS IS. MARINE BASE AT BUOY 29 |
| RT-06002 RT06 | | SFH | MORSE ISLAND CREEK, 1.2 MI ENE CONFLUENCE WITH PORT ROYAL SOUND |
| RT-052104 RT05 | | SFH | MORSE ISLAND CREEK TRIB, 0.7 MI ESE CONFL WITH PORT ROYAL SOUND |
| **03050208-06** | | | |
| MD-007 W | SFH | | POCOTALIGO RIVER AT US 17 AT POCOTALIGO |
| RO-036031 RO03 | | SFH | BROAD RIVER, 0.6MI NW OF OLD SEABOARD COAST LINE RR CROSSING |
| RT-042061 RT04 | | SFH | SOUTH HAULOVER CREEK, 5.5MI SSW OF SHELDON |
| MD-254 INT | SFH | | HUSPA CREEK AT RAILROAD TRESTLE |
| RO-056103 RO05 | | SFH | BROAD RIVER, 1.0MI W OF COTTON ISLAND |

| Station # | Type | Class | Description |
|---|---|---|---|
| **03050208-06 (continued)** | | | |
| RT-02007 RT02 | | SFH | WHALE BRANCH TRIB., 0.3MI E OF CONFLUENCE WITH BROAD RIVER |
| MD-279 SSS | SFH | | WHALE BRANCH AT CONFLUENCE WITH BROAD RIVER |
| RO-06309 RO06 | | SFH | BROAD RIVER, 5.8MI N OF SC 170 BRIDGE OVER BROAD RIVER |
| RT-02009 RT09 | | SFH | BOYD CREEK, 3.3MI NW FROM CONFLUENCE WITH BROAD RIVER |
| RO-036035 RO03 | | SFH | WEST BRANCH BOYD CREEK, 1.3MI NWCONFL W/EAST BRANCH BOYD CREEK |
| RO-046075 RO04 | | SFH | BROAD RIVER, 2MI NNW (UPRIVER) OF SC 170 |
| RO-06306 RO06 | | SFH | BROAD RIVER, 1.8MI N SC 170 BRIDGE OVER BROAD RIVER |
| RO-056097 RO05 | | SFH | BROAD RIVER, 1.2MI N SC 170 |
| RT-052097 RT05 | | SFH | EUHAW CREEK, 1.5MI N SC 170 BRIDGE OVER BROAD RIVER |
| MD-116 INT | SFH | | BROAD RIVER AT SC 170, 7.5MI SW OF BEAUFORT |
| MD-172 W | SFH | | BROAD RIVER AT MOUTH OF ARCHER CREEK ON SW SIDE OF USMC |
| RO-046063 RO04 | | SFH | BROAD RIVER OFF PARRIS IS. BETW BALLAST AND RIBBON CREEKS |
| MD-012 W | SFH | | MOUTH OF BROAD RIVER OPPOSITE BALLAST CREEK |
| MD-117 W | SFH | | CHECHESSEE RIVER AT SC 170, 10.5MI SW OF BEAUFORT |
| MD-176 INT | ORW | | COLLETON RIVER AT COLLETON NECK AT JCT WITH CHECHESSEE RIVER |
| RT-06013 RT06 | | ORW | COLLETON RIVER TRIB, 5.1MI SSE OF SC 170 BRIDGE OVER CHECHESSEE R. |
| MD-245 W | ORW | | COLLETON RIVER NEAR MOUTH (SHELLFISH STATION 18-5) |
| RO-036032 RO03 | | SFH | CHECHESSEE RIVER, 1.4MI SE CONFL WITH COLLETON RIVER |
| RO-056104 RO05 | | SFH | CHECHESSEE RIVER, 6.2MI SE OF SC 170 NEAR DAWS ISLAND |
| RO-036036 RO03 | | SFH | CHECHESSEE RIVER, 1.4MI N OF MACKAY CREEK MOUTH |
| RO-036034 RO03 | | SFH | PORT ROYAL SOUND, 1.8MI SW OF TIP OF PARRIS ISLAND |
| RO-06302 RO06 | | SFH | PORT ROYAL SOUND,2.3MI SE OF DAWS ISLAND |
| MD-006 W | SFH | | PORT ROYAL BETWEEN BUOY 25&24, W OF BAY POINT ISLAND |

## Groundwater Monitoring Sites

| Well # | Class | Aquifer | Location |
|---|---|---|---|
| **03050208-02** | | | |
| AMB-051 | GB | PEE DEE/BLACK CREEK | ALLENDALE |
| AMB-089 | GB | TERTIARY LIMESTONE | FAIRFAX |
| **03050208-03** | | | |
| AMB-099 | GB | TERTIARY LIMESTONE | GRAYS |
| AMB-114 | GB | TERTIARY LIMESTONE | WSBH RADIO |
| **03050208-04** | | | |
| AMB-098 | GB | TERTIARY LIMESTONE | RIDGELAND |
| **03050208-06** | | | |
| AMB-029 | GB | MIDDENDORF | PARRIS ISLAND |
| AMB-091 | GB | TERTIARY LIMESTONE | SHELDON |
| AMB-093 | GB | TERTIARY LIMESTONE | BLUFFTON |

## Shellfish Monitoring Stations

| Station # | Description |
|---|---|
| **03050208-05** | |
| 15-02 | MULLIGAN CREEK AT BRICKYARD CREEK |
| 15-10 | BATTERY CREEK AT FIVE POINTS CREEK |
| 15-14 | PARRIS ISLAND AT WWTP OUTFALL |
| 15-15.1.1 | BALLAST CREEK AT BEAUFORT RIVER |

| Station # | Description |
|---|---|
| **03050208-05 (continued)** | |
| 15-16 | STATION CREEK AT BEAUFORT RIVER |
| 15-17 | CAT ISLAND CREEK AT COWEN CREEK |
| 15-18 | SECOND MIDDLE MARSH IN COWEN CREEK |
| 15-19 | BATTERY CREEK 1000 FEET BELOW RABBIT ISLAND |
| 15-20 | CAPERS CREEK SSG AT PENN COMMUNITY SERVICES RETREAT CENTER |
| 15-21 | UNNAMED CREEK AT (FORMER) DISCHARGE OF BC HIGH AND CHERRY HILL HIGH |
| 15-23 | DISTANT ISLAND STATE SHELLFISH GROUND |
| 15-24 | BATTERY CREEK – SC HWY 280 BRIDGE |
| 15-25 | BATTERY CREEK – DOWLINGWOOD TRIBUTARY |
| 15-26 | BATTERY CREEK – PICKET FENCE TRIBUTARY |
| 15-27 | BATTERY CREEK – CHERRY HILL TRIBUTARY |
| 15-28 | BATTERY CREEK – STORM WATER OUTFALL UNDER RR TRACK |
| 15-29 | BATTERY CREEK – TRIBUTARY ON RIGHT SIDE BEFORE BATTERY SHORES |
| 15-30 | BATTERY CREEK – COTTAGE FARMS COMMUNITY DOCK |
| 15-31 | BATTERY CREEK – BATTERY POINT COMMUNITY DOCK |
| 15-32 | BATTERY CREEK – UNDER POWER LINE |
| 17-14 | PORT ROYAL SOUND AT PARRIS ISLAND SPIT |
| **03050208-06** | |
| 14-14 | HUSPA CREEK AT RAILROAD TRESTLE |
| 14-18 | HUSPA CREEK AT BULL POINT- WHALE BRANCH POG |
| 17-01 | BROAD RIVER AT S.A.L. RR BRIDGE |
| 17-02 | BOYD CREEK AT BROAD RIVER |
| 17-03 | BROAD RIVER AT WHALE BRANCH |
| 17-04A | USMC LAUREL BAY WWTP OUTPUT |
| 17-07 | MOUTH OF CHECHESSEE CREEK AT CHECHESSEE RIVER |
| 17-08 | CHECHESSEE RIVER BRIDGE |
| 17-09 | MOUTH OF EUHAW CREEK AT HAZZARD CREEK |
| 17-10A | ARCHERS CREEK 1000 FEET WEST OF BRIDGE |
| 17-12A | BALLAST CREEK NEAR PAGE FIELD ROAD CAUSEWAY |
| 17-13 | BROAD RIVER AT CREEK BELOW BALLAST CREEK |
| 17-16 | BROAD RIVER AT CORN ISLAND – MOUTH OF CREEK |
| 17-16A | FIRST SPLIT IN HABERSHAM CREEK ABOVE STATION #16 |
| 17-17 | HAZZARD CREEK AT CHECHESSEE RIVER |
| 17-18 | HAZZARD CREEK AT CHELSEA PLANTATION CLUBHOUSE |
| 17-21 | CONFLUENCE OF MIDDLE CREEK AND WHALE BRANCH |
| 17-22 | CONFLUENCE OF EAST AND WEST BRANCH OF BOYD CREEK |
| 17-23 | HEADWATERS OF EUHAW CREEK ONE MILE ABOVE BOLIN HALL LANDING |
| 17-25 | HAZZARD CREEK AT SECOND RIGHT BEND ABOVE STATION 17-17 AND 17-18 |
| 18-01 | OKATIE RIVER AT CAMP ST. MARY'S DOCK |
| 18-02 | OKATIE RIVER BEHIND BAILEY'S OYSTER DOCK |
| 18-03 | CHECHESSEE CREEK AT OKATIE RIVER |
| 18-04 | CALLAWASSIE CREEK AT COLLETON RIVER, MOUTH OF CREEK |
| 18-05 | CALLAWASSIE CREEK AT COLLETON CREEK AT TREE LINE |
| 18-06 | SAWMILL CREEK AT COLLETON CREEK |
| 18-07 | OKATIE RIVER AT INDIGO PLANTATION |
| 18-08 | OKATIE RIVER AT DOCK WITHOUT HOUSE |
| 18-09 | FIRST UNNAMED TRIBUTARY IN CHECHESSEE CREEK FROM COLLETON RIVER |
| 18-10 | SECOND BRIDGE TO CALLAWASSIE ISLAND |
| 18-11 | FIRST BRIDGE TO CALLAWASSIE ISLAND |
| 18-12 | SERIES OF UNNAMED TRIBUTARIES IN CHECHESSEE CREEK |
| 18-13 | FIRST UNNAMED TRIBUTARY TO CHECHESSEE POINT IN CHECHESSEE CREEK |
| 18-14 | TRIBUTARY FROM SPRING ISLAND SHRIMP POND |
| 18-15 | DOCK AT WADDELL MARICULTURE CENTER |

| Station # | Description |
|---|---|
| **03050208-06 (continued)** | |
| 18-16 | OKATIE RIVER AT CONFLUENCE OF PINKNEY COLONY TRIBUTARY |
| 18-17 | OKATIE RIVER AT CONFLUENCE OF CHERRY POINT TRIBUTARY |
| 20-09 | MACKEY CREEK AND CHECHESSEE RIVER |
| 20-13 | SKULL CREEK AND PORT ROYAL SOUND |
| 20-27 | FISH HAUL CREEK AT PORT ROYAL SOUND |

**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 Savannah 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)

**BOD** Five-Day Biochemical Oxygen Demand (mg/l)

**pH** pH (SU)

**TP** Total Phosphorus (mg/l)

**TN** Total Nitrogen (mg/l)

**TURB** Turbidity (NTU)

**TSS** Total Suspended Solids (mg/l)

**BACT** Fecal Coliform Bacteria (#/100 ml)

**NH3** Ammonia (mg/l)

**CD** Cadmium (ug/l)

**CR** Chromium (ug/l)

**CU** Copper (ug/l)

**PB** Lead (ug/l)

**HG** Mercury (ug/l)

**NI** Nickel (ug/l)

**ZN** Zinc (ug/l)

**Statistical Abbreviations:**

**N** For *standards compliance*, number of surface samples collected between January 2002 and December 2006.

For *trends*, number of surface samples collected between January 1992 and December 2006.

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 2002 and December 2006. DL indicates that the median was the detection limit.

**MAG** Magnitude of any statistically significant trend, average change per year, expressed in parameter measurement units

**GEO MEAN** Geometric mean of fecal coliform bacteria samples collected between January 2002 and December 2006

**Key to Trends**:

**D** Statistically significant decreasing trend in parameter concentration

**I** Statistically significant increasing trend in parameter concentration

***** No statistically significant trend

| STATION | | | | DO | DO | DO | MEAN | TRENDS (92-2006) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | TYPE | WATERBODY NAME | CLASS | N | EXC. | % | EXC. | DO | N | MAG | BOD | N | MAG |
| **03050208-01** | | | | | | | | | | | | | |
| CSTL-075/ RL-05415 | INT | LAKE WARREN | FW | 52 | 20 | 38 | 3.509 | NS | 123 | 0.044 | NS | 126 | 0 |
| RL-03331 | RL03 | LAKE WARREN | FW | 11 | 4 | 36 | 3.1075 | | | | | | |
| CL-062/ RL-02451 | SS | LAKE WARREN | FW | 23 | 6 | 26 | 4.0583 | NS | 32 | -0.0789 | | | |
| **03050208-02** | | | | | | | | | | | | | |
| CSTL-110 | SS | COOSAWHATCHIE RVR | FW | 12 | 3 | 25 | 4.4033 | D | 132 | -0.1151 | NS | 128 | 0 |
| RS-03360 | RS03 | BLOOD HILL CK | FW | 11 | 0 | 0 | 0 | | | | | | |
| CSTL-121 | INT | COOSAWHATCHIE RVR | FW | 52 | 20 | 38 | 3.169 | NS | 88 | 0.0325 | NS | 95 | 0 |
| **03050208-03** | | | | | | | | | | | | | |
| CSTL-582 | | CYPRESS CK | | | | | | | | | | | |
| CSTL-122 | INT | CYPRESS CK | FW | 53 | 22 | 42 | 3.2495 | I | 86 | 0.145 | NS | 93 | 0 |
| **03050208-04** | | | | | | | | | | | | | |
| CSTL-108 | SS | SANDERS BRANCH | FW-SP | 12 | 0 | 0 | 0 | NS | 58 | 0.0363 | NS | 58 | -0.031 |
| RS-02488 | RS02 | SANDERS BRANCH | FW | 11 | 0 | 0 | 0 | | | | | | |
| CSTL-010 | SS | SANDERS BRANCH | FW-SP | 12 | 1 | 8 | 3.8 | NS | 59 | -0.051 | NS | 59 | -0.0792 |
| CSTL-011 | SS | SANDERS BRANCH | FW-SP | 12 | 0 | 0 | 0 | I | 61 | 0.14 | D | 61 | -0.1833 |
| CSTL-109 | INT | COOSAWHATCHIE RVR | FW | 48 | 18 | 38 | 3.4317 | NS | 180 | -0.0242 | I | 186 | 0.025 |
| CSTL-107 | SS | COOSAWHATCHIE RVR | FW/SFH | 12 | 2 | 17 | 3.845 | NS | 126 | 0 | NS | 125 | 0 |
| CSTL-107 | SS | COOSAWHATCHIE RVR | SFH/FW | 12 | 2 | 17 | 3.845 | NS | 126 | 0 | NS | 125 | 0 |
| MD-280 | SS | BEES CK | SB | 11 | 4 | 36 | 3.25 | | | | | | |
| **03050208-05** | | | | | | | | | | | | | |
| RT-02013 | RT02 | BROOMFIELD CK | SA | 13 | 6 | 46 | 4.35 | | | | | | |
| MD-001 | INT | BEAUFORT RVR | SA | 43 | 13 | 30 | 4.4531 | NS | 104 | 0.025 | I | 114 | 0 |
| RT-032039 | RT03 | FACTORY CREEK | SA | 10 | 3 | 30 | 4.73 | | | | | | |
| MD-002 | SS | BEAUFORT RVR | SA | 8 | 2 | 25 | 4.625 | I | 59 | 0.0667 | NS | 57 | 0.0143 |
| RO-02003 | RO02 | BEAUFORT RVR | SA | 12 | 5 | 42 | 4.616 | | | | | | |
| MD-003 | SS | BEAUFORT RVR | SA | 8 | 2 | 25 | 4.635 | I | 112 | 0.05 | NS | 109 | 0 |
| RT-032043 | RT03 | BATTERY CREEK TRIB | SFH | 10 | 4 | 40 | 4.3425 | | | | | | |
| MD-004 | INT | BEAUFORT RVR | SFH | 43 | 11 | 26 | 4.7027 | NS | 105 | 0.0347 | I | 115 | 0 |
| RO-036033 | RO03 | DISTANT ISLAND CREEK | SFH | 11 | 5 | 45 | 4.616 | | | | | | |
| RO-056105 | RO05 | COWEN CK | SFH | 9 | 2 | 22 | 3.86 | | | | | | |
| MD-005 | SS | BEAUFORT RVR | SFH | 8 | 1 | 13 | 4.31 | I | 112 | 0.05 | I | 105 | 0.05 |
| RT-06002 | RT06 | MORSE ISLAND CK | SFH | 8 | 2 | 25 | 4.33 | | | | | | |
| RT-052104 | RT05 | UNNAMED TRIB TO MORSE ISLAND CK | SFH | 9 | 1 | 11 | 3.2 | | | | | | |

| STATION | | | | pH | pH | pH | MEAN | TRENDS (92-2006) | | | TURB | TURB | TURB | MEAN | TRENDS (92-2006) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | TYPE | WATERBODY NAME | CLASS | N | EXC. | % | EXC. | PH | N | MAG | N | EXC. | % | EXC. | TURB | N | MAG |
| **03050208-01** | | | | | | | | | | | | | | | | | |
| CSTL-075/ RL-05415 | INT | LAKE WARREN | FW | 52 | 25 | 48 | 5.526 | NS | 123 | -0.0118 | 59 | 0 | 0 | 0 | NS | 130 | 0.0333 |
| RL-03331 | RL03 | LAKE WARREN | FW | 11 | 2 | 18 | 5.885 | | | | 12 | 0 | 0 | 0 | | | |
| CL-062/ RL-02451 | SS | LAKE WARREN | FW | 23 | 3 | 13 | 6.9567 | D | 32 | -0.07 | 24 | 0 | 0 | 0 | | | |
| **03050208-02** | | | | | | | | | | | | | | | | | |
| CSTL-110 | SS | COOSAWHATCHIE RVR | FW | 12 | 1 | 8 | 5.75 | NS | 132 | 0 | 11 | 0 | 0 | 0 | D | 130 | -0.2472 |
| RS-03360 | RS03 | BLOOD HILL CK | FW | 11 | 2 | 18 | 5.685 | | | | 12 | 0 | 0 | 0 | | | |
| CSTL-121 | INT | COOSAWHATCHIE RVR | FW | 52 | 6 | 12 | 5.0983 | NS | 88 | -0.01 | 59 | 0 | 0 | 0 | NS | 95 | -0.0333 |
| **03050208-03** | | | | | | | | | | | | | | | | | |
| CSTL-582 | | CYPRESS CK | | | | | | | | | | | | | | | |
| CSTL-122 | INT | CYPRESS CK | FW | 53 | 44 | 83 | 5.4555 | NS | 87 | -0.0206 | 59 | 0 | 0 | 0 | D | 93 | -0.3 |
| **03050208-04** | | | | | | | | | | | | | | | | | |
| CSTL-108 | SS | SANDERS BRANCH | FW-SP | 12 | 0 | 0 | 0 | I | 57 | 0.0533 | 12 | 0 | 0 | 0 | NS | 57 | -0.1464 |
| RS-02488 | RS02 | SANDERS BRANCH | FW | 11 | 0 | 0 | 0 | | | | 12 | 0 | 0 | 0 | | | |
| CSTL-010 | SS | SANDERS BRANCH | FW-SP | 12 | 0 | 0 | 0 | I | 58 | 0.0508 | 12 | 0 | 0 | 0 | NS | 58 | -0.1 |
| CSTL-011 | SS | SANDERS BRANCH | FW-SP | 11 | 0 | 0 | 0 | I | 60 | 0.0525 | 12 | 0 | 0 | 0 | D | 60 | -0.2667 |
| CSTL-109 | INT | COOSAWHATCHIE RVR | FW | 48 | 1 | 2 | 5.92 | I | 180 | 0.025 | 55 | 0 | 0 | 0 | D | 184 | -0.4268 |
| CSTL-107 | SS | COOSAWHATCHIE RVR | FW/SFH | 12 | 2 | 17 | 5.825 | I | 126 | 0.031 | 12 | 0 | 0 | 0 | NS | 124 | 0.02 |
| CSTL-107 | SS | COOSAWHATCHIE RVR | SFH/FW | 12 | 6 | 50 | 6.17 | I | 126 | 0.031 | 12 | 0 | 0 | 0 | NS | 124 | 0.02 |
| MD-280 | SS | BEES CK | SB | 11 | 3 | 27 | 6.13 | | | | 11 | 3 | 27 | 43.3333 | | | |
| **03050208-05** | | | | | | | | | | | | | | | | | |
| RT-02013 | RT02 | BROOMFIELD CK | SA | 13 | 0 | 0 | 0 | | | | 12 | 1 | 8 | 26 | | | |
| MD-001 | INT | BEAUFORT RVR | SA | 43 | 0 | 0 | 0 | NS | 105 | -0.01 | 59 | 1 | 2 | 35 | NS | 114 | 0.3333 |
| RT-032039 | RT03 | FACTORY CREEK | SA | 10 | 0 | 0 | 0 | | | | 12 | 0 | 0 | 0 | | | |
| MD-002 | SS | BEAUFORT RVR | SA | 8 | 0 | 0 | 0 | NS | 60 | 0 | 12 | 0 | 0 | 0 | NS | 57 | -0.075 |
| RO-02003 | RO02 | BEAUFORT RVR | SA | 12 | 0 | 0 | 0 | | | | 12 | 0 | 0 | 0 | | | |
| MD-003 | SS | BEAUFORT RVR | SA | 8 | 0 | 0 | 0 | NS | 116 | 0.0017 | 12 | 0 | 0 | 0 | I | 111 | 0.425 |
| RT-032043 | RT03 | BATTERY CREEK TRIB | SFH | 10 | 0 | 0 | 0 | | | | 12 | 2 | 17 | 29 | | | |
| MD-004 | INT | BEAUFORT RVR | SFH | 43 | 0 | 0 | 0 | NS | 105 | -0.0106 | 59 | 2 | 3 | 26.5 | NS | 115 | 0.2 |
| RO-036033 | RO03 | DISTANT ISLAND CREEK | SFH | 11 | 0 | 0 | 0 | | | | 12 | 1 | 8 | 28 | | | |
| RO-056105 | RO05 | COWEN CK | SFH | 9 | 0 | 0 | 0 | | | | 13 | 0 | 0 | 0 | | | |
| MD-005 | SS | BEAUFORT RVR | SFH | 8 | 0 | 0 | 0 | D | 114 | -0.01 | 12 | 1 | 8 | 44 | NS | 108 | 0.1813 |
| RT-06002 | RT06 | MORSE ISLAND CK | SFH | 8 | 0 | 0 | 0 | | | | 13 | 1 | 8 | 53 | | | |
| RT-052104 | RT05 | UNNAMED TRIB TO MORSE ISLAND CK | SFH | 9 | 0 | 0 | 0 | | | | 13 | 3 | 23 | 42 | | | |

| STATION NUMBER | TYPE | WATERBODY NAME | CLASS | TP N | TP EXC. | TP % | MEAN EXC. | TRENDS (92-2006) TP | TRENDS (92-2006) N | TRENDS (92-2006) MAG | TN N | TN EXC. | TN % | MEAN EXC. | TRENDS (92-2006) TN | TRENDS (92-2006) N | TRENDS (92-2006) MAG |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **03050208-01** | | | | | | | | | | | | | | | | | |
| CSTL-075/ RL-05415 | INT | LAKE WARREN | FW | 59 | 8 | 14 | 0.125 | NS | 99 | 0 | 44 | 7 | 16 | 1.89 | NS | 71 | 0 |
| RL-03331 | RL03 | LAKE WARREN | FW | 12 | 4 | 33 | 0.105 | | | | 6 | 3 | 50 | 2.0167 | | | |
| CL-062/ RL-02451 | SS | LAKE WARREN | FW | 24 | 4 | 17 | 0.34 | | | | 18 | 2 | 11 | 5.01 | | | |
| **03050208-02** | | | | | | | | | | | | | | | | | |
| CSTL-110 | SS | COOSAWHATCHIE RVR | FW | | | | | D | 104 | -0.0033 | | | | | D | 126 | -0.025 |
| RS-03360 | RS03 | BLOOD HILL CK | FW | | | | | | | | | | | | | | |
| CSTL-121 | INT | COOSAWHATCHIE RVR | FW | | | | | NS | 68 | 0.0022 | | | | | NS | 71 | -0.0042 |
| **03050208-03** | | | | | | | | | | | | | | | | | |
| CSTL-582 | | CYPRESS CK | | | | | | | | | | | | | | | |
| CSTL-122 | INT | CYPRESS CK | FW | | | | | NS | 66 | 0.002 | | | | | NS | 70 | -0.0192 |
| **03050208-04** | | | | | | | | | | | | | | | | | |
| CSTL-108 | SS | SANDERS BRANCH | FW-SP | | | | | NS | 49 | -0.0003 | | | | | | | |
| RS-02488 | RS02 | SANDERS BRANCH | FW | | | | | | | | | | | | | | |
| CSTL-010 | SS | SANDERS BRANCH | FW-SP | | | | | NS | 49 | 0.0001 | | | | | | | |
| CSTL-011 | SS | SANDERS BRANCH | FW-SP | | | | | NS | 50 | 0.0125 | | | | | | | |
| CSTL-109 | INT | COOSAWHATCHIE RVR | FW | | | | | D | 145 | -0.0016 | | | | | D | 158 | -0.0088 |
| CSTL-107 | SS | COOSAWHATCHIE RVR | FW/SFH | | | | | NS | 98 | 0.0007 | | | | | NS | 119 | -0.0014 |
| CSTL-107 | SS | COOSAWHATCHIE RVR | SFH/FW | | | | | NS | 98 | 0.0007 | | | | | NS | 119 | -0.0014 |
| MD-280 | SS | BEES CK | SB | | | | | | | | | | | | | | |
| **03050208-05** | | | | | | | | | | | | | | | | | |
| RT-02013 | RT02 | BROOMFIELD CK | SA | | | | | | | | | | | | | | |
| MD-001 | INT | BEAUFORT RVR | SA | | | | | NS | 92 | 0.0011 | | | | | NS | 45 | -0.0117 |
| RT-032039 | RT03 | FACTORY CREEK | SA | | | | | | | | | | | | | | |
| MD-002 | SS | BEAUFORT RVR | SA | | | | | NS | 51 | 0 | | | | | | | |
| RO-02003 | RO02 | BEAUFORT RVR | SA | | | | | | | | | | | | | | |
| MD-003 | SS | BEAUFORT RVR | SA | | | | | NS | 88 | 0 | | | | | NS | 106 | -0.0067 |
| RT-032043 | RT03 | BATTERY CREEK TRIB | SFH | | | | | | | | | | | | | | |
| MD-004 | INT | BEAUFORT RVR | SFH | | | | | I | 94 | 0.0025 | | | | | NS | 50 | 0.0362 |
| RO-036033 | RO03 | DISTANT ISLAND CREEK | SFH | | | | | | | | | | | | | | |
| RO-056105 | RO05 | COWEN CK | SFH | | | | | | | | | | | | | | |
| MD-005 | SS | BEAUFORT RVR | SFH | | | | | I | 85 | 0.0017 | | | | | D | 99 | -0.0108 |
| RT-06002 | RT06 | MORSE ISLAND CK | SFH | | | | | | | | | | | | | | |
| RT-052104 | RT05 | UNNAMED TRIB TO MORSE ISLAND CK | SFH | | | | | | | | | | | | | | |

| STATION NUMBER | TYPE | WATERBODY NAME | CLASS | CHL N | CHL EXC. | CHL % | MEAN EXC. | TRENDS (92-2006) TSS | N | MAG |
|---|---|---|---|---|---|---|---|---|---|---|
| **03050208-01** | | | | | | | | | | |
| CSTL-075/ RL-05415 | INT | LAKE WARREN | FW | 28 | 5 | 18 | 70.324 | | | |
| RL-03331 | RL03 | LAKE WARREN | FW | 5 | 2 | 40 | 64.25 | | | |
| CL-062/ RL-02451 | SS | LAKE WARREN | FW | 9 | 0 | 0 | 0 | | | |
| **03050208-02** | | | | | | | | | | |
| CSTL-110 | SS | COOSAWHATCHIE RVR | FW | | | | | | | |
| RS-03360 | RS03 | BLOOD HILL CK | FW | | | | | | | |
| CSTL-121 | INT | COOSAWHATCHIE RVR | FW | | | | | | | |
| **03050208-03** | | | | | | | | | | |
| CSTL-582 | | CYPRESS CK | | | | | | | | |
| CSTL-122 | INT | CYPRESS CK | FW | | | | | | | |
| **03050208-04** | | | | | | | | | | |
| CSTL-108 | SS | SANDERS BRANCH | FW-SP | | | | | | | |
| RS-02488 | RS02 | SANDERS BRANCH | FW | | | | | | | |
| CSTL-010 | SS | SANDERS BRANCH | FW-SP | | | | | | | |
| CSTL-011 | SS | SANDERS BRANCH | FW-SP | | | | | | | |
| CSTL-109 | INT | COOSAWHATCHIE RVR | FW | | | | | D | 95 | -0.6667 |
| CSTL-107 | SS | COOSAWHATCHIE RVR | FW/SFH | | | | | | | |
| CSTL-107 | SS | COOSAWHATCHIE RVR | SFH/FW | | | | | | | |
| MD-280 | SS | BEES CK | SB | | | | | | | |
| **03050208-05** | | | | | | | | | | |
| RT-02013 | RT02 | BROOMFIELD CK | SA | | | | | | | |
| MD-001 | INT | BEAUFORT RVR | SA | | | | | | | |
| RT-032039 | RT03 | FACTORY CREEK | SA | | | | | | | |
| MD-002 | SS | BEAUFORT RVR | SA | | | | | | | |
| RO-02003 | RO02 | BEAUFORT RVR | SA | | | | | | | |
| MD-003 | SS | BEAUFORT RVR | SA | | | | | | | |
| RT-032043 | RT03 | BATTERY CREEK TRIB | SFH | | | | | | | |
| MD-004 | INT | BEAUFORT RVR | SFH | | | | | | | |
| RO-036033 | RO03 | DISTANT ISLAND CREEK | SFH | | | | | | | |
| RO-056105 | RO05 | COWEN CK | SFH | | | | | | | |
| MD-005 | SS | BEAUFORT RVR | SFH | | | | | | | |
| RT-06002 | RT06 | MORSE ISLAND CK | SFH | | | | | | | |
| RT-052104 | RT05 | UNNAMED TRIB TO MORSE ISLAND CK | SFH | | | | | | | |

| STATION NUMBER | TYPE | WATERBODY NAME | CLASS | GEO MEAN | BACT N | BACT EXC. | BACT % | MEAN EXC. | TRENDS (92-2006) BACT | N | MAG |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **03050208-01** | | | | | | | | | | | |
| CSTL-075/ RL-05415 | INT | LAKE WARREN | FW | 16.4989 | 59 | 4 | 7 | 725 | NS | 130 | 0 |
| RL-03331 | RL03 | LAKE WARREN | FW | 14.4882 | 12 | 0 | 0 | 0 | | | |
| CL-062/ RL-02451 | SS | LAKE WARREN | FW | 6.259 | 23 | 0 | 0 | 0 | | | |
| **03050208-02** | | | | | | | | | | | |
| CSTL-110 | SS | COOSAWHATCHIE RVR | FW | 99.804 | 12 | 2 | 17 | 550 | NS | 132 | 0 |
| RS-03360 | RS03 | BLOOD HILL CK | FW | 93.6281 | 12 | 2 | 17 | 610 | | | |
| CSTL-121 | INT | COOSAWHATCHIE RVR | FW | 152.851 | 59 | 8 | 14 | 541.25 | NS | 95 | -4.7222 |
| **03050208-03** | | | | | | | | | | | |
| CSTL-582 | | CYPRESS CK | | | | | | | | | |
| CSTL-122 | INT | CYPRESS CK | FW | 88.1671 | 60 | 6 | 10 | 958.3333 | NS | 94 | -4 |
| **03050208-04** | | | | | | | | | | | |
| CSTL-108 | SS | SANDERS BRANCH | FW-SP | 342.3017 | 12 | 5 | 42 | 1020 | NS | 58 | 13.8182 |
| RS-02488 | RS02 | SANDERS BRANCH | FW | 257.5574 | 11 | 3 | 27 | 746.6667 | | | |
| CSTL-010 | SS | SANDERS BRANCH | FW-SP | 164.6252 | 12 | 2 | 17 | 500 | NS | 58 | -2.9286 |
| CSTL-011 | SS | SANDERS BRANCH | FW-SP | 157.1022 | 12 | 2 | 17 | 1600 | NS | 61 | -5 |
| CSTL-109 | INT | COOSAWHATCHIE RVR | FW | 85.5499 | 55 | 4 | 7 | 580 | D | 187 | -7.9375 |
| CSTL-107 | SS | COOSAWHATCHIE RVR | FW/SFH | 218.2874 | 12 | 3 | 25 | 1366.6667 | D | 128 | -7 |
| CSTL-107 | SS | COOSAWHATCHIE RVR | SFH/FW | 218.2874 | 12 | 3 | 25 | 1366.6667 | D | 128 | -7 |
| MD-280 | SS | BEES CK | SB | 132.2596 | 11 | 2 | 18 | 1250 | | | |
| **03050208-05** | | | | | | | | | | | |
| RT-02013 | RT02 | BROOMFIELD CK | SA | 7.4317 | 13 | 0 | 0 | 0 | | | |
| MD-001 | INT | BEAUFORT RVR | SA | 8.2468 | 59 | 0 | 0 | 0 | NS | 115 | 0 |
| RT-032039 | RT03 | FACTORY CREEK | SA | 4.3117 | 12 | 0 | 0 | 0 | | | |
| MD-002 | SS | BEAUFORT RVR | SA | 5.5035 | 12 | 0 | 0 | 0 | NS | 57 | -0.4 |
| RO-02003 | RO02 | BEAUFORT RVR | SA | 3.497 | 13 | 0 | 0 | 0 | | | |
| MD-003 | SS | BEAUFORT RVR | SA | 5.8437 | 12 | 0 | 0 | 0 | NS | 109 | 0 |
| RT-032043 | RT03 | BATTERY CREEK TRIB | SFH | 8.7494 | 12 | 0 | 0 | 0 | | | |
| MD-004 | INT | BEAUFORT RVR | SFH | 2.1661 | 59 | 0 | 0 | 0 | NS | 116 | 0 |
| RO-036033 | RO03 | DISTANT ISLAND CREEK | SFH | 4.1018 | 11 | 0 | 0 | 0 | | | |
| RO-056105 | RO05 | COWEN CK | SFH | 2.6625 | 13 | 0 | 0 | 0 | | | |
| MD-005 | SS | BEAUFORT RVR | SFH | 1.1225 | 12 | 0 | 0 | 0 | D | 107 | 0 |
| RT-06002 | RT06 | MORSE ISLAND CK | SFH | 3.3707 | 13 | 0 | 0 | 0 | | | |
| RT-052104 | RT05 | UNNAMED TRIB TO MORSE ISLAND CK | SFH | 2.4277 | 13 | 0 | 0 | 0 | | | |

| STATION NUMBER | TYPE | WATERBODY NAME | CLASS | NH3 N | NH3 EXC. | NH3 % | MEAN EXC. | CD N | CD EXC. | CD % | MEAN EXC. | CR N | CR EXC. | CR % | MEAN EXC. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **03050208-01** | | | | | | | | | | | | | | | |
| CSTL-075/ RL-05415 | INT | LAKE WARREN | FW | 44 | 0 | 0 | 0 | 19 | 0 | 0 | 0 | 19 | 0 | 0 | 0 |
| RL-03331 | RL03 | LAKE WARREN | FW | 6 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| CL-062/ RL-02451 | SS | LAKE WARREN | FW | 18 | 0 | 0 | 0 | 8 | 0 | 0 | 0 | 8 | 0 | 0 | 0 |
| **03050208-02** | | | | | | | | | | | | | | | |
| CSTL-110 | SS | COOSAWHATCHIE RVR | FW | 12 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RS-03360 | RS03 | BLOOD HILL CK | FW | 6 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| CSTL-121 | INT | COOSAWHATCHIE RVR | FW | 44 | 0 | 0 | 0 | 19 | 0 | 0 | 0 | 19 | 0 | 0 | 0 |
| **03050208-03** | | | | | | | | | | | | | | | |
| CSTL-582 | | CYPRESS CK | | | | | | | | | | | | | |
| CSTL-122 | INT | CYPRESS CK | FW | 45 | 0 | 0 | 0 | 19 | 0 | 0 | 0 | 19 | 0 | 0 | 0 |
| **03050208-04** | | | | | | | | | | | | | | | |
| CSTL-108 | SS | SANDERS BRANCH | FW-SP | 12 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RS-02488 | RS02 | SANDERS BRANCH | FW | 6 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| CSTL-010 | SS | SANDERS BRANCH | FW-SP | 12 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| CSTL-011 | SS | SANDERS BRANCH | FW-SP | 12 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| CSTL-109 | INT | COOSAWHATCHIE RVR | FW | 42 | 0 | 0 | 0 | 18 | 0 | 0 | 0 | 18 | 0 | 0 | 0 |
| CSTL-107 | SS | COOSAWHATCHIE RVR | FW/SFH | 12 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| CSTL-107 | SS | COOSAWHATCHIE RVR | SFH/FW | 12 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| MD-280 | SS | BEES CK | SB | 10 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 3 | 0 | 0 | 0 |
| **03050208-05** | | | | | | | | | | | | | | | |
| RT-02013 | RT02 | BROOMFIELD CK | SA | 5 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| MD-001 | INT | BEAUFORT RVR | SA | 38 | 0 | 0 | 0 | 20 | 0 | 0 | 0 | 20 | 0 | 0 | 0 |
| RT-032039 | RT03 | FACTORY CREEK | SA | 6 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| MD-002 | SS | BEAUFORT RVR | SA | 12 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RO-02003 | RO02 | BEAUFORT RVR | SA | 5 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| MD-003 | SS | BEAUFORT RVR | SA | 11 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RT-032043 | RT03 | BATTERY CREEK TRIB | SFH | 5 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| MD-004 | INT | BEAUFORT RVR | SFH | 41 | 0 | 0 | 0 | 20 | 0 | 0 | 0 | 20 | 0 | 0 | 0 |
| RO-036033 | RO03 | DISTANT ISLAND CREEK | SFH | 6 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RO-056105 | RO05 | COWEN CK | SFH | 9 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| MD-005 | SS | BEAUFORT RVR | SFH | 9 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RT-06002 | RT06 | MORSE ISLAND CK | SFH | 10 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RT-052104 | RT05 | UNNAMED TRIB TO MORSE ISLAND CK | SFH | 10 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |

| STATION NUMBER | TYPE | WATERBODY NAME | CLASS | CU N | CU EXC. | CU % | MEAN EXC. | PB N | PB EXC. | PB % | MEAN EXC. | HG N | HG EXC. | HG % | MEAN EXC. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **03050208-01** | | | | | | | | | | | | | | | |
| CSTL-075/ RL-05415 | INT | LAKE WARREN | FW | 19 | 0 | 0 | 0 | 19 | 0 | 0 | 0 | 19 | 0 | 0 | 0 |
| RL-03331 | RL03 | LAKE WARREN | FW | 4 | 1 | 25 | 29 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| CL-062/ RL-02451 | SS | LAKE WARREN | FW | 8 | 1 | 13 | 12 | 8 | 0 | 0 | 0 | 8 | 0 | 0 | 0 |
| **03050208-02** | | | | | | | | | | | | | | | |
| CSTL-110 | SS | COOSAWHATCHIE RVR | FW | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RS-03360 | RS03 | BLOOD HILL CK | FW | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| CSTL-121 | INT | COOSAWHATCHIE RVR | FW | 19 | 1 | 5 | 47 | 19 | 0 | 0 | 0 | 19 | 0 | 0 | 0 |
| **03050208-03** | | | | | | | | | | | | | | | |
| CSTL-582 | | CYPRESS CK | | | | | | | | | | | | | |
| CSTL-122 | INT | CYPRESS CK | FW | 19 | 1 | 5 | 11 | 19 | 0 | 0 | 0 | 19 | 0 | 0 | 0 |
| **03050208-04** | | | | | | | | | | | | | | | |
| CSTL-108 | SS | SANDERS BRANCH | FW-SP | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RS-02488 | RS02 | SANDERS BRANCH | FW | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| CSTL-010 | SS | SANDERS BRANCH | FW-SP | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| CSTL-011 | SS | SANDERS BRANCH | FW-SP | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| CSTL-109 | INT | COOSAWHATCHIE RVR | FW | 18 | 0 | 0 | 0 | 18 | 0 | 0 | 0 | 18 | 0 | 0 | 0 |
| CSTL-107 | SS | COOSAWHATCHIE RVR | FW/SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| CSTL-107 | SS | COOSAWHATCHIE RVR | SFH/FW | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| MD-280 | SS | BEES CK | SB | 3 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 3 | 0 | 0 | 0 |
| **03050208-05** | | | | | | | | | | | | | | | |
| RT-02013 | RT02 | BROOMFIELD CK | SA | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| MD-001 | INT | BEAUFORT RVR | SA | 20 | 1 | 5 | 42 | 20 | 0 | 0 | 0 | 20 | 0 | 0 | 0 |
| RT-032039 | RT03 | FACTORY CREEK | SA | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| MD-002 | SS | BEAUFORT RVR | SA | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RO-02003 | RO02 | BEAUFORT RVR | SA | 4 | 1 | 25 | 18 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| MD-003 | SS | BEAUFORT RVR | SA | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RT-032043 | RT03 | BATTERY CREEK TRIB | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| MD-004 | INT | BEAUFORT RVR | SFH | 20 | 0 | 0 | 0 | 20 | 0 | 0 | 0 | 20 | 0 | 0 | 0 |
| RO-036033 | RO03 | DISTANT ISLAND CREEK | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RO-056105 | RO05 | COWEN CK | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| MD-005 | SS | BEAUFORT RVR | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RT-06002 | RT06 | MORSE ISLAND CK | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RT-052104 | RT05 | UNNAMED TRIB TO MORSE ISLAND CK | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |

| STATION NUMBER | TYPE | WATERBODY NAME | CLASS | NI N | NI EXC. | NI % | MEAN EXC. | ZN N | ZN EXC. | ZN % | MEAN EXC. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **03050208-01** | | | | | | | | | | | |
| CSTL-075/ RL-05415 | INT | LAKE WARREN | FW | 19 | 0 | 0 | 0 | 19 | 4 | 21 | 106.75 |
| RL-03331 | RL03 | LAKE WARREN | FW | 4 | 0 | 0 | 0 | 4 | 3 | 75 | 136.6667 |
| CL-062/ RL-02451 | SS | LAKE WARREN | FW | 8 | 0 | 0 | 0 | 8 | 2 | 25 | 405.5 |
| **03050208-02** | | | | | | | | | | | |
| CSTL-110 | SS | COOSAWHATCHIE RVR | FW | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RS-03360 | RS03 | BLOOD HILL CK | FW | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| CSTL-121 | INT | COOSAWHATCHIE RVR | FW | 19 | 0 | 0 | 0 | 19 | 5 | 26 | 121.4 |
| **03050208-03** | | | | | | | | | | | |
| CSTL-582 | | CYPRESS CK | | | | | | | | | |
| CSTL-122 | INT | CYPRESS CK | FW | 19 | 0 | 0 | 0 | 19 | 5 | 26 | 159.6 |
| **03050208-04** | | | | | | | | | | | |
| CSTL-108 | SS | SANDERS BRANCH | FW-SP | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RS-02488 | RS02 | SANDERS BRANCH | FW | 4 | 0 | 0 | 0 | 4 | 4 | 100 | 160 |
| CSTL-010 | SS | SANDERS BRANCH | FW-SP | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| CSTL-011 | SS | SANDERS BRANCH | FW-SP | 4 | 0 | 0 | 0 | 4 | 2 | 50 | 95 |
| CSTL-109 | INT | COOSAWHATCHIE RVR | FW | 18 | 0 | 0 | 0 | 18 | 2 | 11 | 103.5 |
| CSTL-107 | SS | COOSAWHATCHIE RVR | FW/SFH | 4 | 0 | 0 | 0 | 4 | 2 | 50 | 101.5 |
| CSTL-107 | SS | COOSAWHATCHIE RVR | SFH/FW | 4 | 0 | 0 | 0 | 4 | 1 | 25 | 120 |
| MD-280 | SS | BEES CK | SB | 3 | 0 | 0 | 0 | 3 | 1 | 33 | 100 |
| **03050208-05** | | | | | | | | | | | |
| RT-02013 | RT02 | BROOMFIELD CK | SA | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| MD-001 | INT | BEAUFORT RVR | SA | 20 | 0 | 0 | 0 | 20 | 0 | 0 | 0 |
| RT-032039 | RT03 | FACTORY CREEK | SA | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| MD-002 | SS | BEAUFORT RVR | SA | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RO-02003 | RO02 | BEAUFORT RVR | SA | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| MD-003 | SS | BEAUFORT RVR | SA | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RT-032043 | RT03 | BATTERY CREEK TRIB | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| MD-004 | INT | BEAUFORT RVR | SFH | 20 | 0 | 0 | 0 | 20 | 0 | 0 | 0 |
| RO-036033 | RO03 | DISTANT ISLAND CREEK | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RO-056105 | RO05 | COWEN CK | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| MD-005 | SS | BEAUFORT RVR | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RT-06002 | RT06 | MORSE ISLAND CK | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RT-052104 | RT05 | UNNAMED TRIB TO MORSE ISLAND CK | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |

Appendix C. Broad River/Beaufort River/Port Royal Sound Basin

| STATION | | | | | DO | DO | DO | MEAN | TRENDS (92-2006) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | TYPE | WATERBODY NAME | CLASS | | N | EXC. | % | EXC. | DO | N | MAG | BOD | N | MAG |
| **03050208-06** | | | | | | | | | | | | | | |
| MD-007 | SS | POCOTALIGO RVR | SFH | | 12 | 9 | 75 | 3.5478 | NS | 125 | -0.0217 | NS | 123 | 0.0167 |
| RO-036031 | RO03 | BROAD RIVER | SFH | | 12 | 3 | 25 | 4.41 | | | | | | |
| RT-042061 | RT04 | SOUTH HAULOVER CK | SFH | | 8 | 1 | 13 | 4.44 | | | | | | |
| MD-254 | INT | HUSPAH CK | SFH | | 45 | 10 | 22 | 4.103 | NS | 55 | -0.03 | NS | 69 | 0 |
| RO-056103 | RO05 | BROAD RVR | SFH | | 9 | 1 | 11 | 4.78 | | | | | | |
| RT-02007 | RT02 | WHALE BRANCH | SFH | | 1 | 0 | 0 | 0 | | | | | | |
| MD-279 | | WHALE BRANCH | SFH | | 12 | 2 | 17 | 4.68 | | | | | | |
| RO-06309 | RO06 | BROAD RVR | SFH | | 8 | 2 | 25 | 4.41 | | | | | | |
| RT-02009 | RT02 | BOYD CK TIDAL CK | SFH | | 12 | 4 | 33 | 3.93 | | | | | | |
| RO-036035 | RO03 | WEST BRANCH BOYD CREEK | SFH | | 12 | 3 | 25 | 4.2133 | | | | | | |
| RO-046075 | RO04 | BROAD RVR | SFH | | 8 | 0 | 0 | 0 | | | | | | |
| RO-06306 | RO06 | BROAD RVR | SFH | | 8 | 1 | 13 | 4.97 | | | | | | |
| RO-056097 | RO05 | BROAD RVR | SFH | | 9 | 1 | 11 | 3.28 | | | | | | |
| RT-052097 | RT05 | EUHAW CK | SFH | | 9 | 2 | 22 | 3.745 | | | | | | |
| MD-116 | INT | BROAD RVR | SFH | | 45 | 2 | 4 | 4.7 | I | 158 | 0.06 | I | 166 | 0.07 |
| MD-172 | SS | BROAD RVR | SFH | | 8 | 1 | 13 | 3.74 | NS | 56 | 0.02 | NS | 56 | 0 |
| RO-046063 | RO04 | BROAD RVR | SFH | | 8 | 0 | 0 | 0 | | | | | | |
| MD-012 | SS | BROAD RVR | SFH | | 8 | 1 | 13 | 4.79 | | | | | | |
| MD-117 | SS | CHECHESSEE RVR | SFH | | 8 | 1 | 13 | 4.63 | NS | 56 | 0.0556 | NS | 54 | -0.0111 |
| MD-176 | INT | COLLETON RVR | ORW | | 45 | 6 | 13 | 4.515 | NS | 80 | 0.04 | I | 90 | 0 |
| RT-06013 | RT06 | UNNAMED CK TO COLLETON RVR | ORW | | 9 | 4 | 44 | 4.2625 | | | | | | |
| MD-245 | SS | COLLETON RVR | ORW | | 8 | 0 | 0 | 0 | NS | 109 | -0.0268 | NS | 106 | 0 |
| RO-036032 | RO03 | CHECHESSEE RIVER | SFH | | 12 | 2 | 17 | 4.745 | | | | | | |
| RO-056104 | RO05 | CHECHESSEE RVR | SFH | | 9 | 0 | 0 | 0 | | | | | | |
| RO-036036 | RO03 | CHECHESSEE RIVER | SFH | | 12 | 1 | 8 | 4.55 | | | | | | |
| RO-036034 | RO03 | PORT ROYAL SOUND | SFH | | 12 | 0 | 0 | 0 | | | | | | |
| RO-06302 | RO06 | PORT ROYAL SOUND | SFH | | 8 | 1 | 13 | 4.92 | | | | | | |
| MD-006 | SS | PORT ROYAL SOUND | SFH | | 8 | 1 | 13 | 4.32 | I | 58 | 0.05 | NS | 55 | 0.0214 |

| STATION | | | | | pH | pH | pH | MEAN | TRENDS (92-2006) | | | | TURB | TURB | TURB | MEAN | TRENDS (92-2006) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | TYPE | WATERBODY NAME | CLASS | | N | EXC. | % | EXC. | PH | N | MAG | | N | EXC. | % | EXC. | TURB | N | MAG |
| **03050208-06** | | | | | | | | | | | | | | | | | | | |
| MD-007 | SS | POCOTALIGO RVR | SFH | | 12 | 3 | 25 | 5.9267 | I | 125 | 0.034 | | 12 | 8 | 67 | 45.375 | NS | 123 | -0.1313 |
| RO-036031 | RO03 | BROAD RIVER | SFH | | 12 | 0 | 0 | 0 | | | | | 13 | 2 | 15 | 30.5 | | | |
| RT-042061 | RT04 | SOUTH HAULOVER CK | SFH | | 8 | 0 | 0 | 0 | | | | | 13 | 1 | 8 | 26 | | | |
| MD-254 | INT | HUSPAH CK | SFH | | 45 | 0 | 0 | 0 | D | 55 | -0.0371 | | 58 | 3 | 5 | 39.6667 | D | 68 | -0.95 |
| RO-056103 | RO05 | BROAD RVR | SFH | | 9 | 0 | 0 | 0 | | | | | 13 | 0 | 0 | 0 | | | |
| RT-02007 | RT02 | WHALE BRANCH | SFH | | 1 | 0 | 0 | 0 | | | | | 1 | 0 | 0 | 0 | | | |
| MD-279 | | WHALE BRANCH | SFH | | 12 | 0 | 0 | 0 | | | | | 13 | 1 | 8 | 27 | | | |
| RO-06309 | RO06 | BROAD RVR | SFH | | 8 | 0 | 0 | 0 | | | | | 13 | 0 | 0 | 0 | | | |
| RT-02009 | RT02 | BOYD CK TIDAL CK | SFH | | 12 | 0 | 0 | 0 | | | | | 12 | 1 | 8 | 32 | | | |
| RO-036035 | RO03 | WEST BRANCH BOYD CREEK | SFH | | 12 | 0 | 0 | 0 | | | | | 13 | 2 | 15 | 37.5 | | | |
| RO-046075 | RO04 | BROAD RVR | SFH | | 8 | 0 | 0 | 0 | | | | | 13 | 0 | 0 | 0 | | | |
| RO-06306 | RO06 | BROAD RVR | SFH | | 8 | 0 | 0 | 0 | | | | | 13 | 0 | 0 | 0 | | | |
| RO-056097 | RO05 | BROAD RVR | SFH | | 9 | 0 | 0 | 0 | | | | | 13 | 0 | 0 | 0 | | | |
| RT-052097 | RT05 | EUHAW CK | SFH | | 9 | 0 | 0 | 0 | | | | | 13 | 0 | 0 | 0 | | | |
| MD-116 | INT | BROAD RVR | SFH | | 45 | 0 | 0 | 0 | D | 160 | -0.0133 | | 60 | 0 | 0 | 0 | I | 170 | 0.1 |
| MD-172 | SS | BROAD RVR | SFH | | 8 | 0 | 0 | 0 | NS | 57 | -0.008 | | 12 | 0 | 0 | 0 | NS | 57 | 0.2182 |
| RO-046063 | RO04 | BROAD RVR | SFH | | 8 | 0 | 0 | 0 | | | | | 13 | 0 | 0 | 0 | | | |
| MD-012 | SS | BROAD RVR | SFH | | 8 | 0 | 0 | 0 | | | | | 12 | 1 | 8 | 35 | | | |
| MD-117 | SS | CHECHESSEE RVR | SFH | | 8 | 0 | 0 | 0 | NS | 57 | 0 | | 11 | 0 | 0 | 0 | NS | 55 | 0.2 |
| MD-176 | INT | COLLETON RVR | ORW | | 45 | 0 | 0 | 0 | D | 80 | -0.031 | | 59 | 2 | 3 | 34 | NS | 92 | 0.3036 |
| RT-06013 | RT06 | UNNAMED CK TO COLLETON RVR | ORW | | 9 | 0 | 0 | 0 | | | | | 13 | 0 | 0 | 0 | | | |
| MD-245 | SS | COLLETON RVR | ORW | | 8 | 0 | 0 | 0 | NS | 112 | -0.0125 | | 11 | 1 | 9 | 38 | NS | 107 | 0.15 |
| RO-036032 | RO03 | CHECHESSEE RIVER | SFH | | 12 | 0 | 0 | 0 | | | | | 13 | 0 | 0 | 0 | | | |
| RO-056104 | RO05 | CHECHESSEE RVR | SFH | | 9 | 0 | 0 | 0 | | | | | 12 | 0 | 0 | 0 | | | |
| RO-036036 | RO03 | CHECHESSEE RIVER | SFH | | 12 | 0 | 0 | 0 | | | | | 13 | 1 | 8 | 26 | | | |
| RO-036034 | RO03 | PORT ROYAL SOUND | SFH | | 12 | 0 | 0 | 0 | | | | | 13 | 0 | 0 | 0 | | | |
| RO-06302 | RO06 | PORT ROYAL SOUND | SFH | | 8 | 0 | 0 | 0 | | | | | 13 | 0 | 0 | 0 | | | |
| MD-006 | SS | PORT ROYAL SOUND | SFH | | 8 | 0 | 0 | 0 | NS | 59 | -0.012 | | 12 | 1 | 8 | 27 | NS | 55 | 0.275 |

| STATION | | | | | TP | TP | TP | MEAN | TRENDS (92-2006) | | | | TN | TN | TN | MEAN | TRENDS (92-2006) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | TYPE | WATERBODY NAME | CLASS | | N | EXC. | % | EXC. | TP | N | MAG | | N | EXC. | % | EXC. | TN | N | MAG |
| **03050208-06** | | | | | | | | | | | | | | | | | | | |
| MD-007 | SS | POCOTALIGO RVR | SFH | | | | | | NS | 102 | 0 | | | | | | NS | 124 | -0.02 |
| RO-036031 | RO03 | BROAD RIVER | SFH | | | | | | | | | | | | | | | | |
| RT-042061 | RT04 | SOUTH HAULOVER CK | SFH | | | | | | | | | | | | | | | | |
| MD-254 | INT | HUSPAH CK | SFH | | | | | | NS | 56 | -0.0032 | | | | | | NS | 47 | 0.0207 |
| RO-056103 | RO05 | BROAD RVR | SFH | | | | | | | | | | | | | | | | |
| RT-02007 | RT02 | WHALE BRANCH | SFH | | | | | | | | | | | | | | | | |
| MD-279 | | WHALE BRANCH | SFH | | | | | | | | | | | | | | | | |
| RO-06309 | RO06 | BROAD RVR | SFH | | | | | | | | | | | | | | | | |
| RT-02009 | RT02 | BOYD CK TIDAL CK | SFH | | | | | | | | | | | | | | | | |
| RO-036035 | RO03 | WEST BRANCH BOYD CREEK | SFH | | | | | | | | | | | | | | | | |
| RO-046075 | RO04 | BROAD RVR | SFH | | | | | | | | | | | | | | | | |
| RO-06306 | RO06 | BROAD RVR | SFH | | | | | | | | | | | | | | | | |
| RO-056097 | RO05 | BROAD RVR | SFH | | | | | | | | | | | | | | | | |
| RT-052097 | RT05 | EUHAW CK | SFH | | | | | | | | | | | | | | | | |
| MD-116 | INT | BROAD RVR | SFH | | | | | | I | 129 | 0.0016 | | | | | | D | 131 | -0.0126 |
| MD-172 | SS | BROAD RVR | SFH | | | | | | I | 45 | 0.0023 | | | | | | | | |
| RO-046063 | RO04 | BROAD RVR | SFH | | | | | | | | | | | | | | | | |
| MD-012 | SS | BROAD RVR | SFH | | | | | | | | | | | | | | | | |
| MD-117 | SS | CHECHESSEE RVR | SFH | | | | | | NS | 46 | 0 | | | | | | | | |
| MD-176 | INT | COLLETON RVR | ORW | | | | | | NS | 61 | 0.0024 | | | | | | NS | 57 | 0.006 |
| RT-06013 | RT06 | UNNAMED CK TO COLLETON RVR | ORW | | | | | | | | | | | | | | | | |
| MD-245 | SS | COLLETON RVR | ORW | | | | | | NS | 86 | 0 | | | | | | D | 108 | -0.015 |
| RO-036032 | RO03 | CHECHESSEE RIVER | SFH | | | | | | | | | | | | | | | | |
| RO-056104 | RO05 | CHECHESSEE RVR | SFH | | | | | | | | | | | | | | | | |
| RO-036036 | RO03 | CHECHESSEE RIVER | SFH | | | | | | | | | | | | | | | | |
| RO-036034 | RO03 | PORT ROYAL SOUND | SFH | | | | | | | | | | | | | | | | |
| RO-06302 | RO06 | PORT ROYAL SOUND | SFH | | | | | | | | | | | | | | | | |
| MD-006 | SS | PORT ROYAL SOUND | SFH | | | | | | I | 47 | 0.0023 | | | | | | | | |

| STATION NUMBER | TYPE | WATERBODY NAME | CLASS | CHL N | CHL EXC. | CHL % | MEAN EXC. | TRENDS (92-2006) TSS | N | MAG |
|---|---|---|---|---|---|---|---|---|---|---|
| **03050208-06** | | | | | | | | | | |
| MD-007 | SS | POCOTALIGO RVR | SFH | | | | | | | |
| RO-036031 | RO03 | BROAD RIVER | SFH | | | | | | | |
| RT-042061 | RT04 | SOUTH HAULOVER CK | SFH | | | | | | | |
| MD-254 | INT | HUSPAH CK | SFH | | | | | | | |
| RO-056103 | RO05 | BROAD RVR | SFH | | | | | | | |
| RT-02007 | RT02 | WHALE BRANCH | SFH | | | | | | | |
| MD-279 | | WHALE BRANCH | SFH | | | | | | | |
| RO-06309 | RO06 | BROAD RVR | SFH | | | | | | | |
| RT-02009 | RT02 | BOYD CK TIDAL CK | SFH | | | | | | | |
| RO-036035 | RO03 | WEST BRANCH BOYD CREEK | SFH | | | | | | | |
| RO-046075 | RO04 | BROAD RVR | SFH | | | | | | | |
| RO-06306 | RO06 | BROAD RVR | SFH | | | | | | | |
| RO-056097 | RO05 | BROAD RVR | SFH | | | | | | | |
| RT-052097 | RT05 | EUHAW CK | SFH | | | | | | | |
| MD-116 | INT | BROAD RVR | SFH | | | | | | | |
| MD-172 | SS | BROAD RVR | SFH | | | | | | | |
| RO-046063 | RO04 | BROAD RVR | SFH | | | | | | | |
| MD-012 | SS | BROAD RVR | SFH | | | | | | | |
| MD-117 | SS | CHECHESSEE RVR | SFH | | | | | | | |
| MD-176 | INT | COLLETON RVR | ORW | | | | | | | |
| RT-06013 | RT06 | UNNAMED CK TO COLLETON RVR | ORW | | | | | | | |
| MD-245 | SS | COLLETON RVR | ORW | | | | | | | |
| RO-036032 | RO03 | CHECHESSEE RIVER | SFH | | | | | | | |
| RO-056104 | RO05 | CHECHESSEE RVR | SFH | | | | | | | |
| RO-036036 | RO03 | CHECHESSEE RIVER | SFH | | | | | | | |
| RO-036034 | RO03 | PORT ROYAL SOUND | SFH | | | | | | | |
| RO-06302 | RO06 | PORT ROYAL SOUND | SFH | | | | | | | |
| MD-006 | SS | PORT ROYAL SOUND | SFH | | | | | | | |

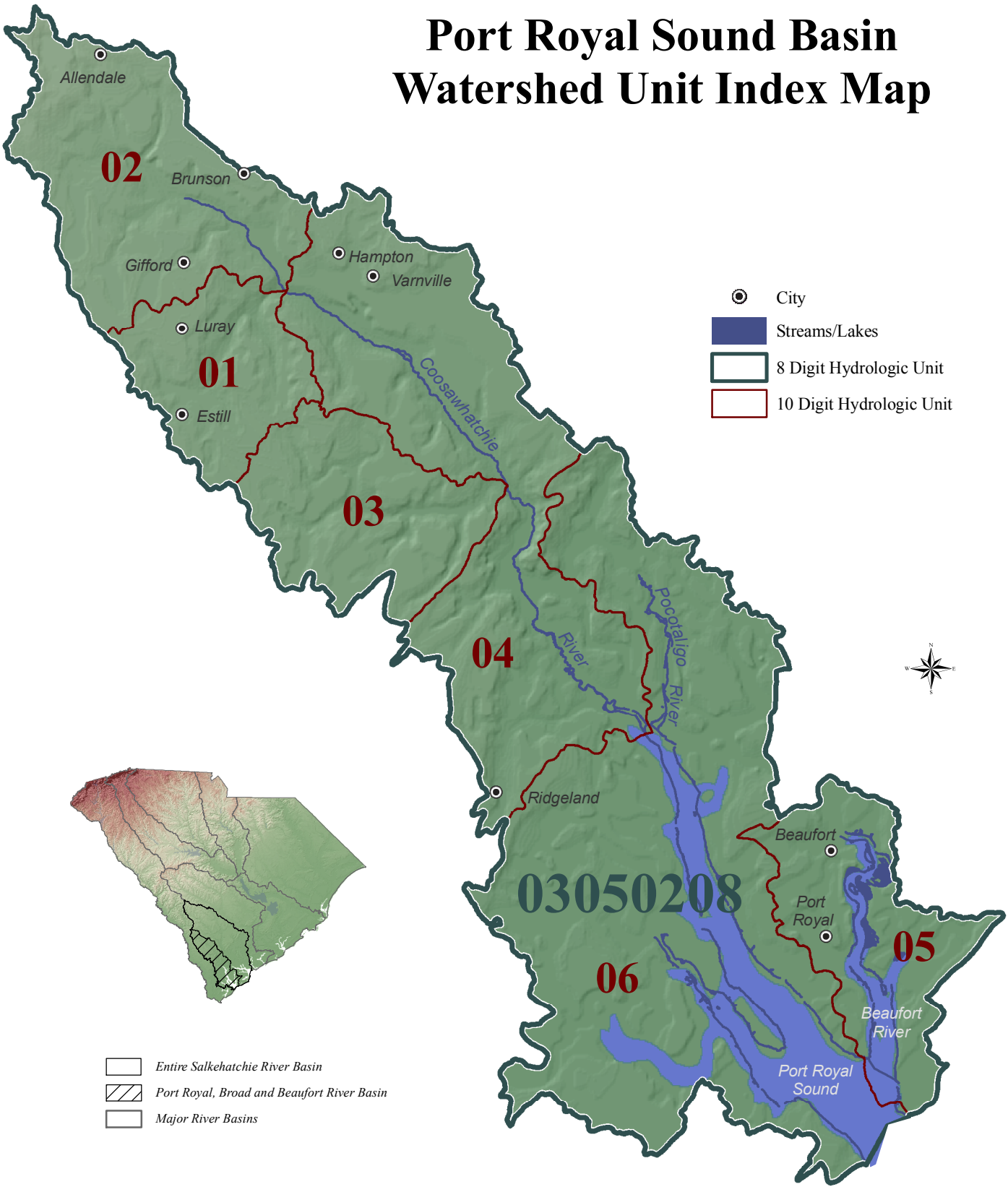
| STATION NUMBER | TYPE | WATERBODY NAME | CLASS | GEO MEAN | BACT N | BACT EXC. | BACT % | MEAN EXC. | TRENDS (92-2006) BACT | N | MAG |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **03050208-06** | | | | | | | | | | | |
| MD-007 | SS | POCOTALIGO RVR | SFH | 464.7747 | 12 | 6 | 50 | 1600 | D | 126 | -7.5089 |
| RO-036031 | RO03 | BROAD RIVER | SFH | 6.1613 | 12 | 0 | 0 | 0 | | | |
| RT-042061 | RT04 | SOUTH HAULOVER CK | SFH | 8.4643 | 13 | 0 | 0 | 0 | | | |
| MD-254 | INT | HUSPAH CK | SFH | 11.2119 | 59 | 0 | 0 | 0 | I | 70 | 1 |
| RO-056103 | RO05 | BROAD RVR | SFH | 3.4416 | 13 | 0 | 0 | 0 | | | |
| RT-02007 | RT02 | WHALE BRANCH | SFH | 2 | 1 | 0 | 0 | 0 | | | |
| MD-279 | | WHALE BRANCH | SFH | 3.4497 | 13 | 0 | 0 | 0 | | | |
| RO-06309 | RO06 | BROAD RVR | SFH | 3.1058 | 12 | 0 | 0 | 0 | | | |
| RT-02009 | RT02 | BOYD CK TIDAL CK | SFH | 2.6975 | 13 | 0 | 0 | 0 | | | |
| RO-036035 | RO03 | WEST BRANCH BOYD CREEK | SFH | 4.4804 | 12 | 0 | 0 | 0 | | | |
| RO-046075 | RO04 | BROAD RVR | SFH | 2.7215 | 13 | 0 | 0 | 0 | | | |
| RO-06306 | RO06 | BROAD RVR | SFH | 2.2798 | 12 | 0 | 0 | 0 | | | |
| RO-056097 | RO05 | BROAD RVR | SFH | 3.9605 | 13 | 0 | 0 | 0 | | | |
| RT-052097 | RT05 | EUHAW CK | SFH | 3.9699 | 13 | 0 | 0 | 0 | | | |
| MD-116 | INT | BROAD RVR | SFH | 2.0019 | 58 | 0 | 0 | 0 | NS | 168 | 0 |
| MD-172 | SS | BROAD RVR | SFH | 2.0538 | 12 | 0 | 0 | 0 | NS | 55 | 0 |
| RO-046063 | RO04 | BROAD RVR | SFH | 4.024 | 13 | 0 | 0 | 0 | | | |
| MD-012 | SS | BROAD RVR | SFH | 1.6632 | 12 | 0 | 0 | 0 | | | |
| MD-117 | SS | CHECHESSEE RVR | SFH | 4.4194 | 12 | 0 | 0 | 0 | NS | 55 | 0 |
| MD-176 | INT | COLLETON RVR | ORW | 3.0817 | 59 | 0 | 0 | 0 | I | 92 | 0 |
| RT-06013 | RT06 | UNNAMED CK TO COLLETON RVR | ORW | 5.0853 | 13 | 0 | 0 | 0 | | | |
| MD-245 | SS | COLLETON RVR | ORW | 2.3139 | 12 | 0 | 0 | 0 | NS | 108 | 0 |
| RO-036032 | RO03 | CHECHESSEE RIVER | SFH | 1.6903 | 12 | 0 | 0 | 0 | | | |
| RO-056104 | RO05 | CHECHESSEE RVR | SFH | 1.532 | 13 | 0 | 0 | 0 | | | |
| RO-036036 | RO03 | CHECHESSEE RIVER | SFH | 1.4142 | 12 | 0 | 0 | 0 | | | |
| RO-036034 | RO03 | PORT ROYAL SOUND | SFH | 1.2599 | 12 | 0 | 0 | 0 | | | |
| RO-06302 | RO06 | PORT ROYAL SOUND | SFH | 1.1225 | 12 | 0 | 0 | 0 | | | |
| MD-006 | SS | PORT ROYAL SOUND | SFH | 1.2599 | 12 | 0 | 0 | 0 | D | 56 | 0 |

| STATION NUMBER | TYPE | WATERBODY NAME | CLASS | NH3 N | NH3 EXC. | NH3 % | MEAN EXC. | CD N | CD EXC. | CD % | MEAN EXC. | CR N | CR EXC. | CR % | MEAN EXC. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **03050208-06** | | | | | | | | | | | | | | | |
| MD-007 | SS | POCOTALIGO RVR | SFH | 11 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RO-036031 | RO03 | BROAD RIVER | SFH | 7 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RT-042061 | RT04 | SOUTH HAULOVER CK | SFH | 11 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| MD-254 | INT | HUSPAH CK | SFH | 45 | 0 | 0 | 0 | 19 | 0 | 0 | 0 | 19 | 0 | 0 | 0 |
| RO-056103 | RO05 | BROAD RVR | SFH | 11 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RT-02007 | RT02 | WHALE BRANCH | SFH | 1 | 0 | 0 | 0 | | | | | | | | |
| MD-279 | | WHALE BRANCH | SFH | 5 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RO-06309 | RO06 | BROAD RVR | SFH | 6 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RT-02009 | RT02 | BOYD CK TIDAL CK | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RO-036035 | RO03 | WEST BRANCH BOYD CREEK | SFH | 7 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RO-046075 | RO04 | BROAD RVR | SFH | 11 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RO-06306 | RO06 | BROAD RVR | SFH | 10 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RO-056097 | RO05 | BROAD RVR | SFH | 13 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RT-052097 | RT05 | EUHAW CK | SFH | 10 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| MD-116 | INT | BROAD RVR | SFH | 37 | 0 | 0 | 0 | 19 | 0 | 0 | 0 | 19 | 0 | 0 | 0 |
| MD-172 | SS | BROAD RVR | SFH | 10 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RO-046063 | RO04 | BROAD RVR | SFH | 10 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| MD-012 | SS | BROAD RVR | SFH | 11 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| MD-117 | SS | CHECHESSEE RVR | SFH | 12 | 0 | 0 | 0 | 4 | 1 | 25 | 13 | 4 | 0 | 0 | 0 |
| MD-176 | INT | COLLETON RVR | ORW | 41 | 0 | 0 | 0 | 19 | 0 | 0 | 0 | 19 | 0 | 0 | 0 |
| RT-06013 | RT06 | UNNAMED CK TO COLLETON RVR | ORW | 10 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| MD-245 | SS | COLLETON RVR | ORW | 12 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RO-036032 | RO03 | CHECHESSEE RIVER | SFH | 7 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RO-056104 | RO05 | CHECHESSEE RVR | SFH | 11 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RO-036036 | RO03 | CHECHESSEE RIVER | SFH | 7 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RO-036034 | RO03 | PORT ROYAL SOUND | SFH | 7 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RO-06302 | RO06 | PORT ROYAL SOUND | SFH | 9 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| MD-006 | SS | PORT ROYAL SOUND | SFH | 7 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |

| STATION NUMBER | TYPE | WATERBODY NAME | CLASS | CU N | CU EXC. | CU % | MEAN EXC. | PB N | PB EXC. | PB % | MEAN EXC. | HG N | HG EXC. | HG % | MEAN EXC. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **03050208-06** | | | | | | | | | | | | | | | |
| MD-007 | SS | POCOTALIGO RVR | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RO-036031 | RO03 | BROAD RIVER | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RT-042061 | RT04 | SOUTH HAULOVER CK | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| MD-254 | INT | HUSPAH CK | SFH | 19 | 2 | 11 | 26 | 19 | 0 | 0 | 0 | 19 | 0 | 0 | 0 |
| RO-056103 | RO05 | BROAD RVR | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RT-02007 | RT02 | WHALE BRANCH | SFH | | | | | | | | | | | | |
| MD-279 | | WHALE BRANCH | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RO-06309 | RO06 | BROAD RVR | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RT-02009 | RT02 | BOYD CK TIDAL CK | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RO-036035 | RO03 | WEST BRANCH BOYD CREEK | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RO-046075 | RO04 | BROAD RVR | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RO-06306 | RO06 | BROAD RVR | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RO-056097 | RO05 | BROAD RVR | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RT-052097 | RT05 | EUHAW CK | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| MD-116 | INT | BROAD RVR | SFH | 19 | 2 | 11 | 13 | 19 | 0 | 0 | 0 | 20 | 0 | 0 | 0 |
| MD-172 | SS | BROAD RVR | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RO-046063 | RO04 | BROAD RVR | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| MD-012 | SS | BROAD RVR | SFH | 4 | 1 | 25 | 12 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| MD-117 | SS | CHECHESSEE RVR | SFH | 4 | 1 | 25 | 20 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| MD-176 | INT | COLLETON RVR | ORW | 19 | 0 | 0 | 0 | 19 | 0 | 0 | 0 | 20 | 0 | 0 | 0 |
| RT-06013 | RT06 | UNNAMED CK TO COLLETON RVR | ORW | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| MD-245 | SS | COLLETON RVR | ORW | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RO-036032 | RO03 | CHECHESSEE RIVER | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RO-056104 | RO05 | CHECHESSEE RVR | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RO-036036 | RO03 | CHECHESSEE RIVER | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RO-036034 | RO03 | PORT ROYAL SOUND | SFH | 4 | 2 | 50 | 22 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RO-06302 | RO06 | PORT ROYAL SOUND | SFH | 4 | 1 | 25 | 12 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| MD-006 | SS | PORT ROYAL SOUND | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |

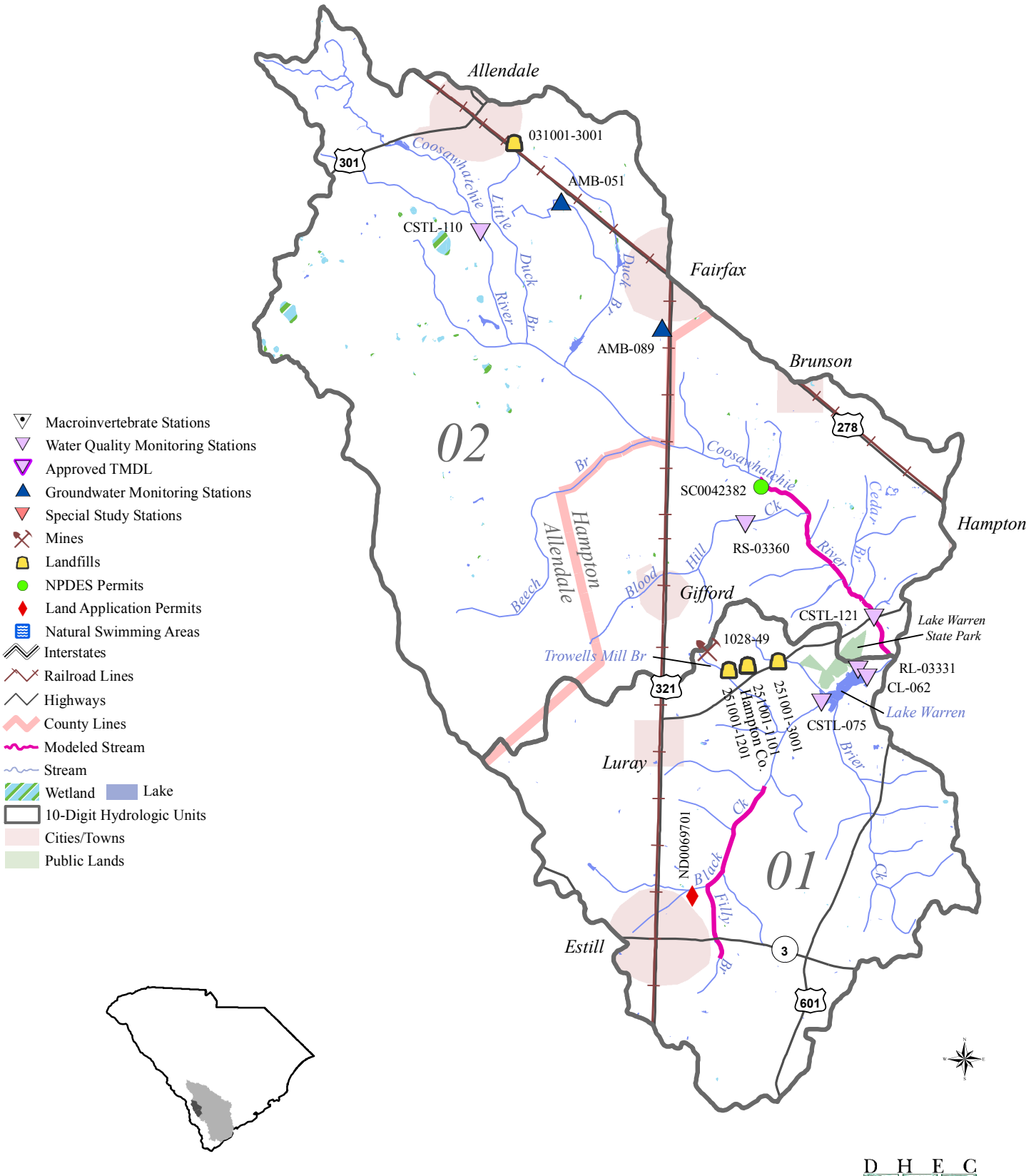
| STATION NUMBER | TYPE | WATERBODY NAME | CLASS | NI N | NI EXC. | NI % | MEAN EXC. | ZN N | ZN EXC. | ZN % | MEAN EXC. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **03050208-06** | | | | | | | | | | | |
| MD-007 | SS | POCOTALIGO RVR | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RO-036031 | RO03 | BROAD RIVER | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RT-042061 | RT04 | SOUTH HAULOVER CK | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| MD-254 | INT | HUSPAH CK | SFH | 19 | 1 | 5 | 34 | 19 | 0 | 0 | 0 |
| RO-056103 | RO05 | BROAD RVR | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RT-02007 | RT02 | WHALE BRANCH | SFH | | | | | | | | |
| MD-279 | | WHALE BRANCH | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RO-06309 | RO06 | BROAD RVR | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RT-02009 | RT02 | BOYD CK TIDAL CK | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RO-036035 | RO03 | WEST BRANCH BOYD CREEK | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RO-046075 | RO04 | BROAD RVR | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RO-06306 | RO06 | BROAD RVR | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RO-056097 | RO05 | BROAD RVR | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RT-052097 | RT05 | EUHAW CK | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| MD-116 | INT | BROAD RVR | SFH | 19 | 0 | 0 | 0 | 19 | 0 | 0 | 0 |
| MD-172 | SS | BROAD RVR | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RO-046063 | RO04 | BROAD RVR | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| MD-012 | SS | BROAD RVR | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| MD-117 | SS | CHECHESSEE RVR | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| MD-176 | INT | COLLETON RVR | ORW | 19 | 0 | 0 | 0 | 19 | 0 | 0 | 0 |
| RT-06013 | RT06 | UNNAMED CK TO COLLETON RVR | ORW | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| MD-245 | SS | COLLETON RVR | ORW | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RO-036032 | RO03 | CHECHESSEE RIVER | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RO-056104 | RO05 | CHECHESSEE RVR | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RO-036036 | RO03 | CHECHESSEE RIVER | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RO-036034 | RO03 | PORT ROYAL SOUND | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RO-06302 | RO06 | PORT ROYAL SOUND | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| MD-006 | SS | PORT ROYAL SOUND | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |

# Broad River/Beaufort River/ Port Royal Sound Basin Watershed Unit Index Map



# *Black Creek/Coosawhatchie River Watersheds*

## (03050208-01,-02)



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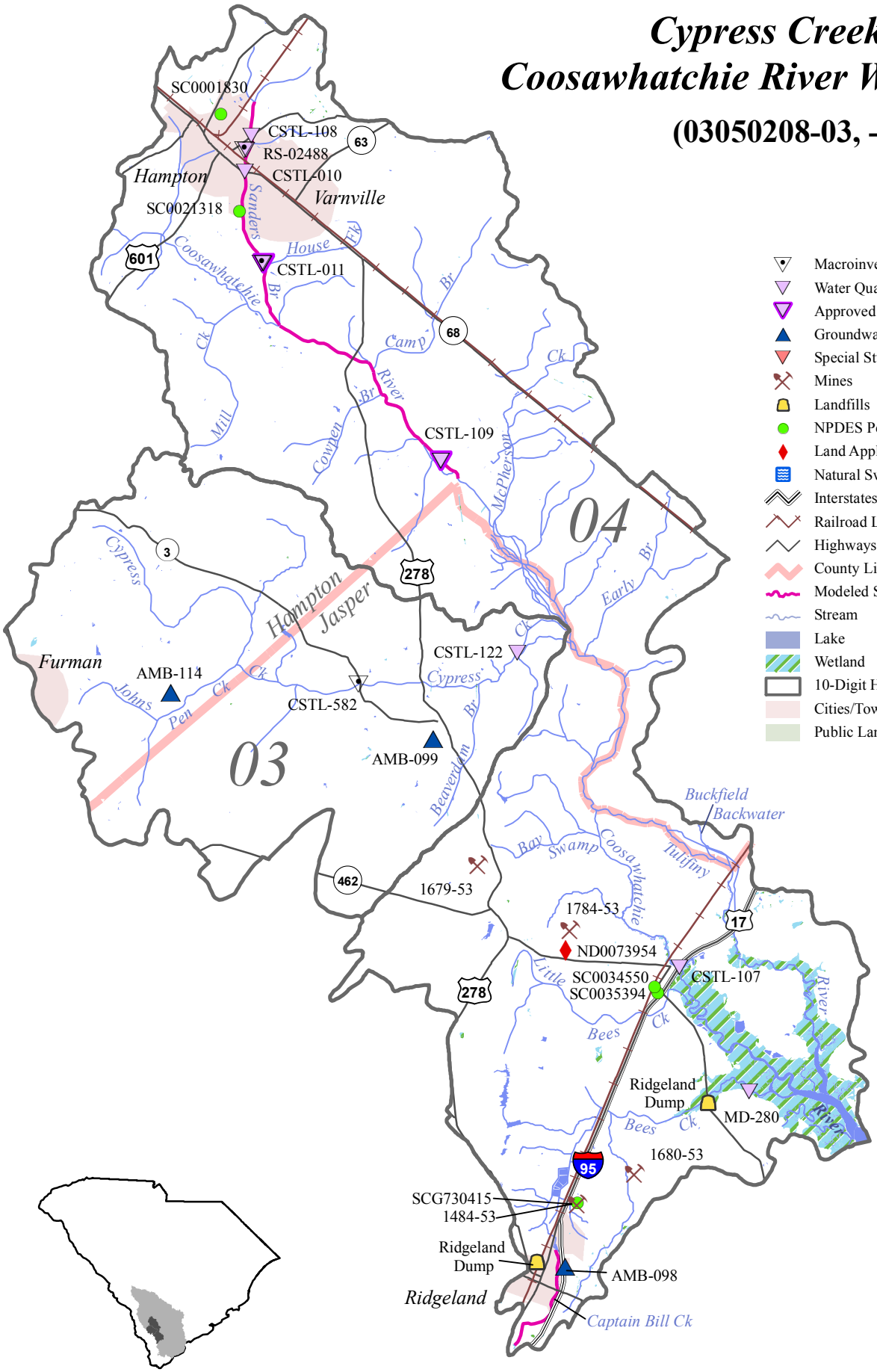
South Carolina Department of Health and Environmental Control

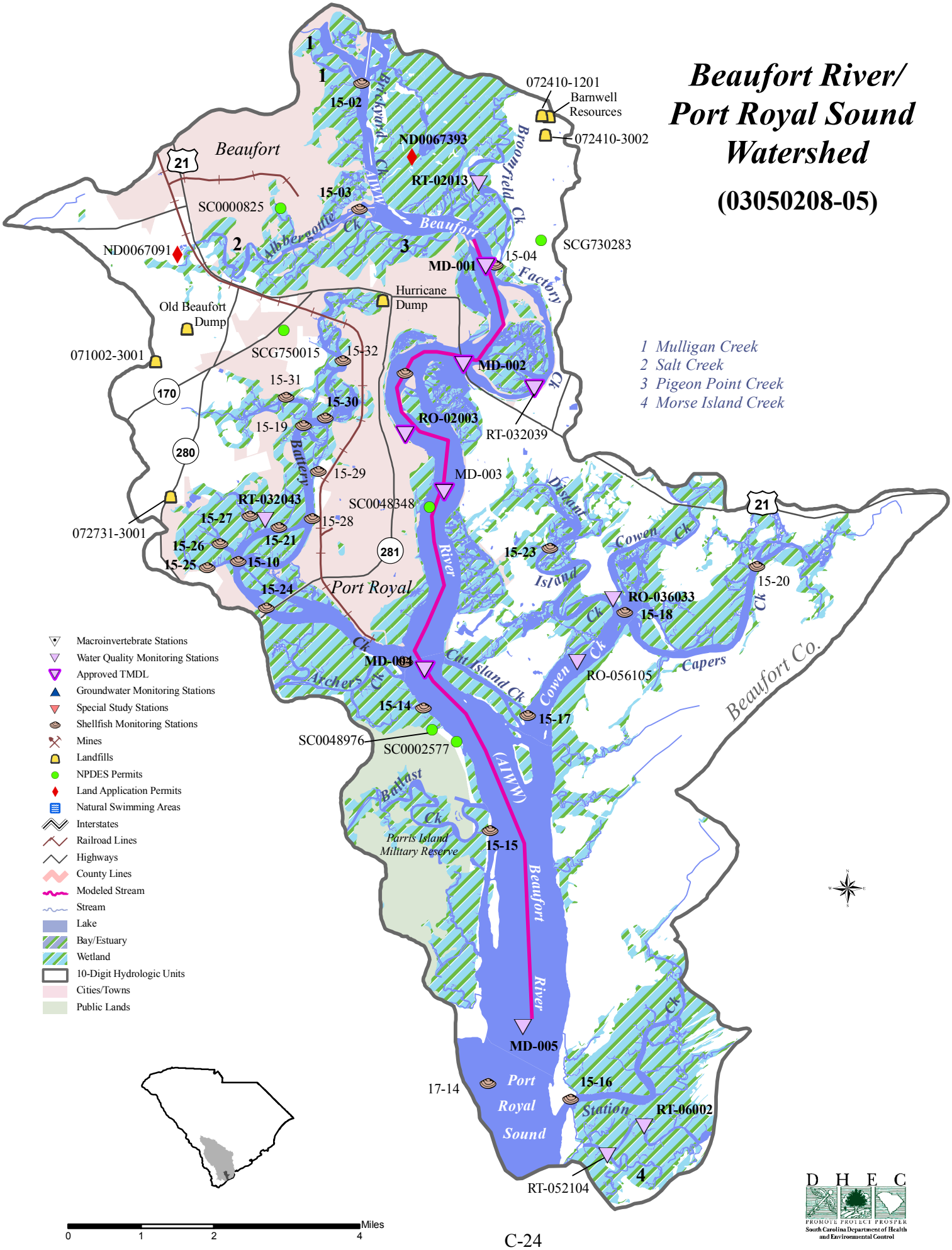
# *Cypress Creek/ Coosawhatchie River Watersheds*

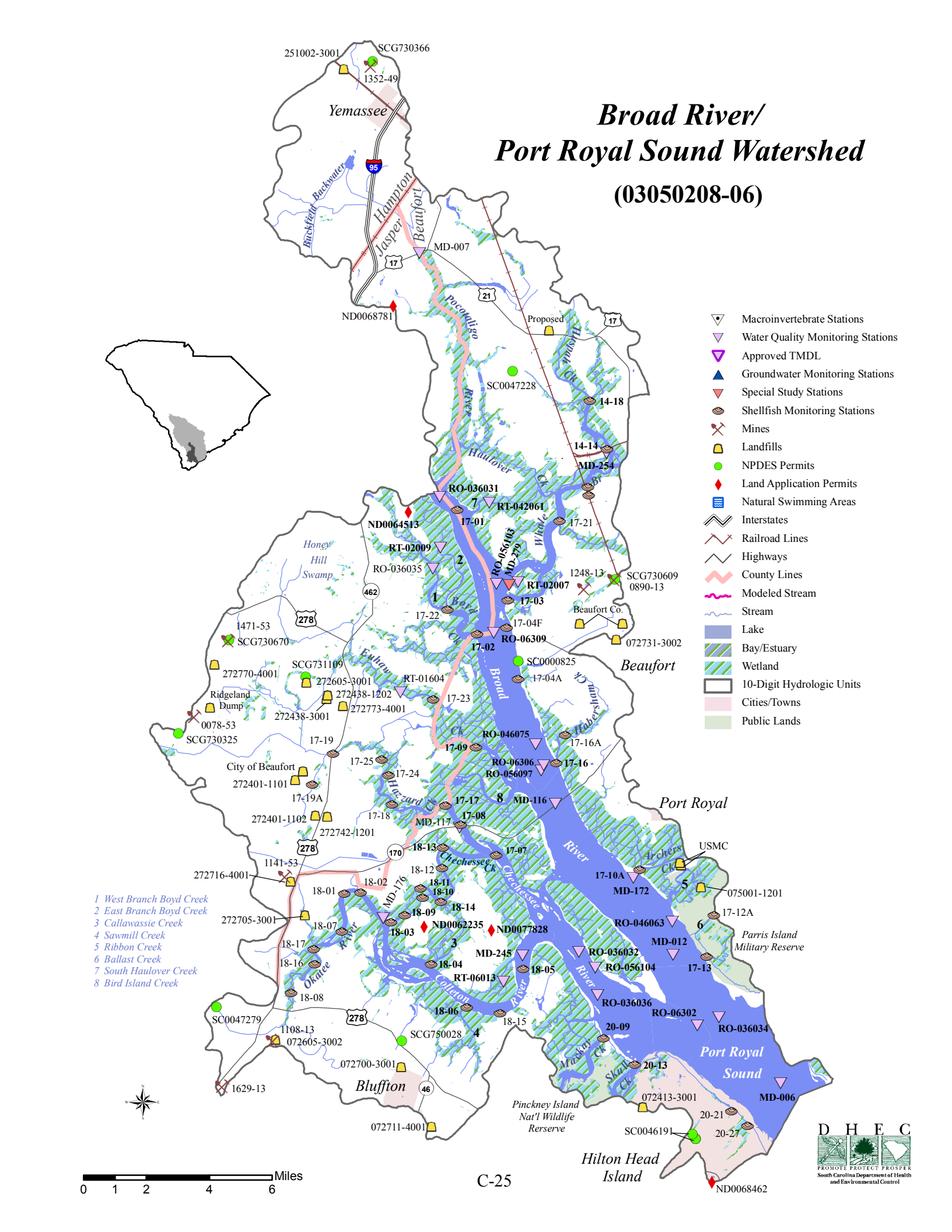
## (03050208-03, -04)






D H E C
PROMOTE PROTECT PROSPER
South Carolina Department of Health and Environmental Control


Beaufort River/
Port Royal Sound
Watershed
(03050208-05)
1 Mulligan Creek
2 Salt Creek
3 Pigeon Point Creek
4 Morse Island Creek
Beaufort
Port Royal
Parris Island
Military Reserve
Port
Royal
Sound
Station
Beaufort Co.
Barnwell
Resources
Hurricane
Dump
Old Beaufort
Dump
Macroinvertebrate Stations
Water Quality Monitoring Stations
Approved TMDL
Groundwater Monitoring Stations
Special Study Stations
Shellfish Monitoring Stations
Mines
Landfills
NPDES Permits
Land Application Permits
Natural Swimming Areas
Interstates
Railroad Lines
Highways
County Lines
Modeled Stream
Stream
Lake
Bay/Estuary
Wetland
10-Digit Hydrologic Units
Cities/Towns
Public Lands
Miles
0
1
2
4
D H E C
PROMOTE PROTECT PROSPER
South Carolina Department of Health and Environmental Control


Broad River/
Port Royal Sound Watershed
(03050208-06)
Yemassee
Bluffton
Beaufort
Port Royal
Port Royal Sound
Parris Island Military Reserve
Pinckney Island Nat'l Wildlife Rerserve
Hilton Head Island
Hampton
Jasper
Beaufort
Buckfield Backwater
Pocotaligo River
Haulover Ck
Broad River
Chechessee River
Colleton River
Okatee River
Whale Branch
Harbor River
Skull Ck
Archers Ck
Mackay Ck
Habersham Ck
Hazzard Ck
Honey Hill Swamp
Ridgeland Dump
City of Beaufort
Beaufort Co.
USMC
251002-3001
SCG730366
1352-49
MD-007
ND0068781
Proposed
SC0047228
14-18
14-14
MD-254
RO-036031
RT-042061
17-01
17-21
ND0064513
RT-02009
RO-036035
RO-056103
MD-279
RT-02007
17-03
1248-13
SCG730609
0890-13
17-22
17-04F
RO-06309
072731-3002
1471-53
SCG730670
SC0000825
17-04A
272770-4001
SCG731109
272605-3001
RT-01604
17-23
272438-1202
272773-4001
272438-3001
0078-53
SCG730325
17-19
RO-046075
17-09
17-16A
17-16
RO-06306
RO-056097
17-25
17-24
272401-1101
17-19A
272401-1102
17-18
17-17
17-08
MD-116
MD-117
272742-1201
18-13
17-07
1141-53
272716-4001
18-12
18-11
18-10
18-14
18-02
18-01
MD-176
18-09
ND0062235
ND0077828
272705-3001
18-07
18-03
18-17
18-16
18-08
MD-245
18-04
RT-06013
18-05
18-06
18-15
SC0047279
1108-13
072605-3002
SCG750028
072700-3001
1629-13
072711-4001
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MD-172
075001-1201
17-12A
RO-046063
MD-012
17-13
RO-036032
RO-056104
RO-036036
RO-06302
RO-036034
20-09
20-13
MD-006
072413-3001
20-21
20-27
SC0046191
ND0068462
1 West Branch Boyd Creek
2 East Branch Boyd Creek
3 Callawassie Creek
4 Sawmill Creek
5 Ribbon Creek
6 Ballast Creek
7 South Haulover Creek
8 Bird Island Creek
Macroinvertebrate Stations
Water Quality Monitoring Stations
Approved TMDL
Groundwater Monitoring Stations
Special Study Stations
Shellfish Monitoring Stations
Mines
Landfills
NPDES Permits
Land Application Permits
Natural Swimming Areas
Interstates
Railroad Lines
Highways
County Lines
Modeled Stream
Stream
Lake
Bay/Estuary
Wetland
10-Digit Hydrologic Units
Cities/Towns
Public Lands
0 1 2 4 6
Miles
C-25
D H E C
PROMOTE PROTECT PROSPER
South Carolina Department of Health and Environmental Control

# *APPENDIX D.*

**Salkehatchie Coastal Frontage Basin**

# Monitoring Site Descriptions

## *Ambient Water Quality Monitoring Sites*

| Station # | Type | Class | Description |
|---|---|---|---|
| **03050210-01** | | | |
| RO-06310 RO06 | | SFH | TRENCHARDS INLET, 0.6 MI E OF MOUTH OF MORSE CREEK |
| RT-02002 RT02 | | SFH | SKULL CREEK, 1.0 MI E OF CONFLUENCE WITH TRENCHARDS INLET |
| RT-06018 RT06 | | SFH | TRENCHARDS INLET TRIBUTARY, 7.7 MI SE OF PORT ROYAL |
| RO-056096 RO05 | | SFH | STORY RIVER, 2.2. MI NE OF CONFLUENCE WITH TRENCHARDS INLET |
| MD-256 | INT | SFH | UNNAMED CREEK BETWEEN HARBOR RIVER AND STORY RIVER |
| RO-046074 RO04 | | SFH | STATION CREEK BETWEEN PORT ROYAL SOUND AND TRENCHARDS INLET |
| RT-032056 RT03 | | SFH | SCOTT CREEK TRIBUTARY, 1.0 MI N OF CONFLUENCE WITH STATION CREEK |
| RT-06006 RT06 | | ORW | HARBOR RIVER, 4.5 MI SW OF US 21 BRIDGE OVER HARBOR RIVER |
| RT-042074 RT04 | | SFH | STORY RIVER TRIBUTARY, 2 MI W OF RUSS POINT |
| RT-052096 RT05 | | SFH | UNNAMED CREEK FROM FRIPP ISLAND TO OLD HOUSE CREEK |
| RO-02006 RO02 | | SFH | OLD HOUSE CREEK, 0.4 MI W OF CONFLUENCE WITH FRIPP INLET |

## Shellfish Monitoring Stations

| Station # | Description |
|---|---|
| **03050210-01** | |
| 16B-02 | TRENCHARDS INLET AT MOUTH OF STATION CREEK |
| 16B-03 | CLUB BRIDGE CREEK AT HARBOR RIVER SOUND |
| 16B-04 | STORY RIVER AT FRIPP ISLAND |
| 16B-05 | OLD HOUSE CREEK AT FRIPP ISLAND |
| 16B-06 | HARBOR RIVER AT MARKER #A13 |
| 16B-06F | UNNAMED CREEK IN FRIPP CANAL AT OLD HOUSE CREEK |
| 16B-17 | STATION CREEK SSG AT BEAUFORT COUNTY LANDING |
| 16B-20 | TWO MILES NORTH OF CONFLUENCE OF STORY RIVER AND TRENCHARDS INLET |
| 16B-21 | UNNAMED CREEK BETWEEN HARBOR RIVER AND STORY RIVER |
| 16B-22 | SKULL CREEK AT CONFLUENCE WITH CREEK TOWARD PRICHARDS INLET |
| 16B-26 | OLD HOUSE CREEK AT 2 TRIBUTARIES NW OF FRIPP ISLAND MARINA |
| 16B-29 | MIDWAY STATIONS 3 AND 6 AT CREEK BETWEEN STORY RIVER AND HARBOR RIVER |
| 16B-31 | JOHNSON CREEK AT SC HWY 21 BRIDGE |
| 16B-33 | SKULL CREEK AT CONFLUENCE WITH TRENCHARDS INLET |
| 16B-34 | TRENCHARDS EST.INLET AT CONFLUENCE WITH LARGE TRIBUTARY ON NW SIDE OF SKULL CREEK |
| 16B-35 | SKULL CREEK AT CONFLUENCE WITH FIRST MAJOR CREEK ON RIGHT HEADING INLAND FROM SKULL INLET |

**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 Savannah 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)

**BOD** Five-Day Biochemical Oxygen Demand (mg/l)

**pH** pH (SU)

**TP** Total Phosphorus (mg/l)

**TN** Total Nitrogen (mg/l)

**TURB** Turbidity (NTU)

**TSS** Total Suspended Solids (mg/l)

**BACT** Fecal Coliform Bacteria (#/100 ml)

**NH3** Ammonia (mg/l)

**CD** Cadmium (ug/l)

**CR** Chromium (ug/l)

**CU** Copper (ug/l)

**PB** Lead (ug/l)

**HG** Mercury (ug/l)

**NI** Nickel (ug/l)

**ZN** Zinc (ug/l)

**Statistical Abbreviations:**

**N** For *standards compliance*, number of surface samples collected between January 2002 and December 2006.

For *trends*, number of surface samples collected between January 1992 and December 2006.

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 2002 and December 2006. DL indicates that the median was the detection limit.

**MAG** Magnitude of any statistically significant trend, average change per year, expressed in parameter measurement units

**GEO MEAN** Geometric mean of fecal coliform bacteria samples collected between January 2002 and December 2006

**Key to Trends**:

**D** Statistically significant decreasing trend in parameter concentration

**I** Statistically significant increasing trend in parameter concentration

***** No statistically significant trend

Appendix D. Salkehatchie Coastal Frontage Basin

| STATION | | | | | DO | DO | DO | MEAN | TRENDS (92-2006) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | TYPE | WATERBODY NAME | CLASS | | N | EXC. | % | EXC. | DO | N | MAG | BOD | N | MAG |
| **03050210-01** | | | | | | | | | | | | | | |
| RO-06310 | RO06 | TRENCHARDS INLET | SFH | | 8 | 0 | 0 | 0 | | | | | | |
| RT-02002 | RT02 | SKULL CK | SFH | | 14 | 7 | 50 | 4.0043 | | | | | | |
| RT-06018 | RT06 | TRIB TO TRENCHARDS INLET | SFH | | 8 | 3 | 38 | 3.4167 | | | | | | |
| RO-056096 | RO05 | STORY RVR | SFH | | 9 | 2 | 22 | 4 | | | | | | |
| MD-256 | INT | UNNAMED CK | SFH | | 43 | 6 | 14 | 4.6383 | I | 53 | 0.115 | NS | 69 | 0 |
| RO-046074 | RO04 | STATION CK | SFH | | 7 | 1 | 14 | 3.53 | | | | | | |
| RT-032056 | RT03 | SCOTT CREEK TRIB | SFH | | 9 | 2 | 22 | 3.745 | | | | | | |
| RT-06006 | RT06 | HARBOR RVR | ORW | | 8 | 3 | 38 | 3.73 | | | | | | |
| RT-042074 | RT04 | TRIB TO STORY RVR | SFH | | 7 | 1 | 14 | 4.19 | | | | | | |
| RT-052096 | RT05 | UNNAMED CK TO OLD HOUSE CK | SFH | | 9 | 1 | 11 | 2.52 | | | | | | |
| RO-02006 | RO02 | OLD HOUSE CK | SFH | | 13 | 3 | 23 | 4.63 | | | | | | |

Appendix D. Salkehatchie Coastal Frontage Basin

| STATION | | | | pH | pH | pH | MEAN | TRENDS (92-2006) | | | TURB | TURB | TURB | MEAN | TRENDS (92-2006) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | TYPE | WATERBODY NAME | CLASS | N | EXC. | % | EXC. | PH | N | MAG | N | EXC. | % | EXC. | TURB | N | MAG |
| **03050210-01** | | | | | | | | | | | | | | | | | |
| RO-06310 | RO06 | TRENCHARDS INLET | SFH | 8 | 0 | 0 | 0 | | | | 13 | 3 | 23 | 46.6667 | | | |
| RT-02002 | RT02 | SKULL CK | SFH | 14 | 0 | 0 | 0 | | | | 12 | 0 | 0 | 0 | | | |
| RT-06018 | RT06 | TRIB TO TRENCHARDS INLET | SFH | 8 | 0 | 0 | 0 | | | | 13 | 1 | 8 | 28 | | | |
| RO-056096 | RO05 | STORY RVR | SFH | 9 | 0 | 0 | 0 | | | | 13 | 1 | 8 | 73 | | | |
| MD-256 | INT | UNNAMED CK | SFH | 43 | 0 | 0 | 0 | NS | 53 | -0.02 | 59 | 5 | 8 | 45.2 | NS | 69 | -0.0333 |
| RO-046074 | RO04 | STATION CK | SFH | 7 | 0 | 0 | 0 | | | | 13 | 3 | 23 | 34 | | | |
| RT-032056 | RT03 | SCOTT CREEK TRIB | SFH | 9 | 0 | 0 | 0 | | | | 11 | 2 | 18 | 27.5 | | | |
| RT-06006 | RT06 | HARBOR RVR | ORW | 8 | 0 | 0 | 0 | | | | 13 | 1 | 8 | 26 | | | |
| RT-042074 | RT04 | TRIB TO STORY RVR | SFH | 7 | 0 | 0 | 0 | | | | 13 | 2 | 15 | 43.5 | | | |
| RT-052096 | RT05 | UNNAMED CK TO OLD HOUSE CK | SFH | 9 | 0 | 0 | 0 | | | | 13 | 3 | 23 | 43.6667 | | | |
| RO-02006 | RO02 | OLD HOUSE CK | SFH | 13 | 0 | 0 | 0 | | | | 12 | 0 | 0 | 0 | | | |

| STATION | | | | | TP | TP | TP | MEAN | TRENDS (92-2006) | | | | TN | TN | TN | MEAN | TRENDS (92-2006) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | TYPE | WATERBODY NAME | CLASS | | N | EXC. | % | EXC. | TP | N | MAG | | N | EXC. | % | EXC. | TN | N | MAG |
| **03050210-01** | | | | | | | | | | | | | | | | | | | |
| RO-06310 | RO06 | TRENCHARDS INLET | SFH | | | | | | | | | | | | | | | | |
| RT-02002 | RT02 | SKULL CK | SFH | | | | | | | | | | | | | | | | |
| RT-06018 | RT06 | TRIB TO TRENCHARDS INLET | SFH | | | | | | | | | | | | | | | | |
| RO-056096 | RO05 | STORY RVR | SFH | | | | | | | | | | | | | | | | |
| MD-256 | INT | UNNAMED CK | SFH | | | | | | NS | 57 | 0.005 | | | | | | NS | 41 | -0.04 |
| RO-046074 | RO04 | STATION CK | SFH | | | | | | | | | | | | | | | | |
| RT-032056 | RT03 | SCOTT CREEK TRIB | SFH | | | | | | | | | | | | | | | | |
| RT-06006 | RT06 | HARBOR RVR | ORW | | | | | | | | | | | | | | | | |
| RT-042074 | RT04 | TRIB TO STORY RVR | SFH | | | | | | | | | | | | | | | | |
| RT-052096 | RT05 | UNNAMED CK TO OLD HOUSE CK | SFH | | | | | | | | | | | | | | | | |
| RO-02006 | RO02 | OLD HOUSE CK | SFH | | | | | | | | | | | | | | | | |

| STATION NUMBER | TYPE | WATERBODY NAME | CLASS | CHL N | CHL EXC. | CHL % | MEAN EXC. | TRENDS (92-2006) TSS | N | MAG |
|---|---|---|---|---|---|---|---|---|---|---|
| **03050210-01** | | | | | | | | | | |
| RO-06310 | RO06 | TRENCHARDS INLET | SFH | | | | | | | |
| RT-02002 | RT02 | SKULL CK | SFH | | | | | | | |
| RT-06018 | RT06 | TRIB TO TRENCHARDS INLET | SFH | | | | | | | |
| RO-056096 | RO05 | STORY RVR | SFH | | | | | | | |
| MD-256 | INT | UNNAMED CK | SFH | | | | | | | |
| RO-046074 | RO04 | STATION CK | SFH | | | | | | | |
| RT-032056 | RT03 | SCOTT CREEK TRIB | SFH | | | | | | | |
| RT-06006 | RT06 | HARBOR RVR | ORW | | | | | | | |
| RT-042074 | RT04 | TRIB TO STORY RVR | SFH | | | | | | | |
| RT-052096 | RT05 | UNNAMED CK TO OLD HOUSE CK | SFH | | | | | | | |
| RO-02006 | RO02 | OLD HOUSE CK | SFH | | | | | | | |

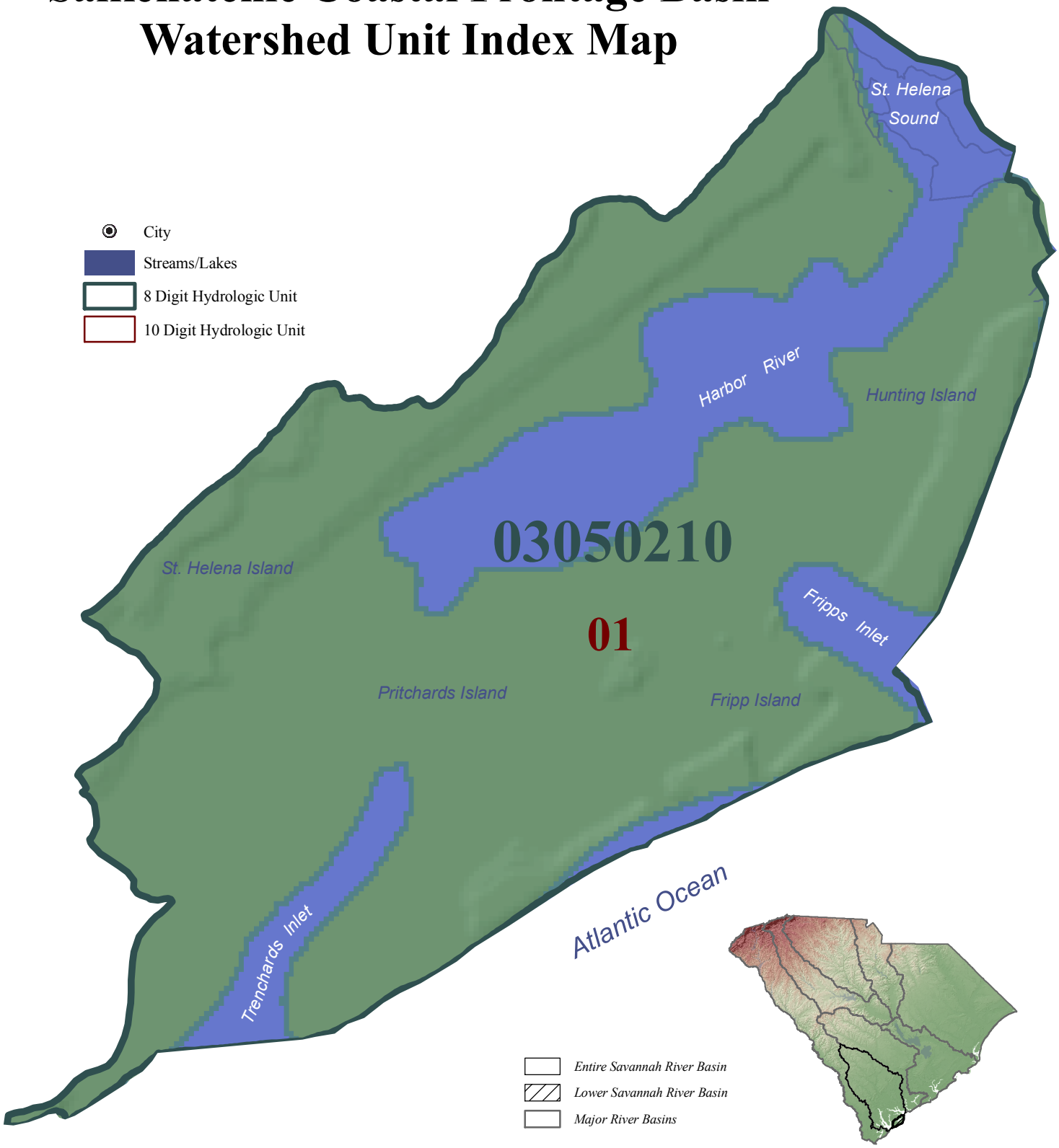
| STATION NUMBER | TYPE | WATERBODY NAME | CLASS | GEO MEAN | BACT N | BACT EXC. | BACT % | MEAN EXC. | TRENDS (92-2006) BACT | N | MAG |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **03050210-01** | | | | | | | | | | | |
| RO-06310 | RO06 | TRENCHARDS INLET | SFH | 1.1125 | 13 | 0 | 0 | 0 | | | |
| RT-02002 | RT02 | SKULL CK | SFH | 4.6806 | 14 | 0 | 0 | 0 | | | |
| RT-06018 | RT06 | TRIB TO TRENCHARDS INLET | SFH | 2.355 | 13 | 0 | 0 | 0 | | | |
| RO-056096 | RO05 | STORY RVR | SFH | 2.7022 | 13 | 0 | 0 | 0 | | | |
| MD-256 | INT | UNNAMED CK | SFH | 2.1013 | 60 | 0 | 0 | 0 | I | 70 | 0.4 |
| RO-046074 | RO04 | STATION CK | SFH | 2.2355 | 13 | 0 | 0 | 0 | | | |
| RT-032056 | RT03 | SCOTT CREEK TRIB | SFH | 1.6555 | 11 | 0 | 0 | 0 | | | |
| RT-06006 | RT06 | HARBOR RVR | ORW | 1.7404 | 13 | 0 | 0 | 0 | | | |
| RT-042074 | RT04 | TRIB TO STORY RVR | SFH | 2.3469 | 13 | 0 | 0 | 0 | | | |
| RT-052096 | RT05 | UNNAMED CK TO OLD HOUSE CK | SFH | 1.6159 | 13 | 0 | 0 | 0 | | | |
| RO-02006 | RO02 | OLD HOUSE CK | SFH | 4.2198 | 13 | 0 | 0 | 0 | | | |

| STATION NUMBER | TYPE | WATERBODY NAME | CLASS | NH3 N | NH3 EXC. | NH3 % | MEAN EXC. | CD N | CD EXC. | CD % | MEAN EXC. | CR N | CR EXC. | CR % | MEAN EXC. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **03050210-01** | | | | | | | | | | | | | | | |
| RO-06310 | RO06 | TRENCHARDS INLET | SFH | 8 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RT-02002 | RT02 | SKULL CK | SFH | 7 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RT-06018 | RT06 | TRIB TO TRENCHARDS INLET | SFH | 10 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RO-056096 | RO05 | STORY RVR | SFH | 9 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| MD-256 | INT | UNNAMED CK | SFH | 34 | 0 | 0 | 0 | 20 | 0 | 0 | 0 | 20 | 0 | 0 | 0 |
| RO-046074 | RO04 | STATION CK | SFH | 10 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RT-032056 | RT03 | SCOTT CREEK TRIB | SFH | 7 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| RT-06006 | RT06 | HARBOR RVR | ORW | 9 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RT-042074 | RT04 | TRIB TO STORY RVR | SFH | 10 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RT-052096 | RT05 | UNNAMED CK TO OLD HOUSE CK | SFH | 11 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RO-02006 | RO02 | OLD HOUSE CK | SFH | 5 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |

| STATION NUMBER | TYPE | WATERBODY NAME | CLASS | CU N | CU EXC. | CU % | MEAN EXC. | PB N | PB EXC. | PB % | MEAN EXC. | HG N | HG EXC. | HG % | MEAN EXC. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **03050210-01** | | | | | | | | | | | | | | | |
| RO-06310 | RO06 | TRENCHARDS INLET | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RT-02002 | RT02 | SKULL CK | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RT-06018 | RT06 | TRIB TO TRENCHARDS INLET | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RO-056096 | RO05 | STORY RVR | SFH | 4 | 1 | 25 | 12 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| MD-256 | INT | UNNAMED CK | SFH | 20 | 1 | 5 | 20 | 20 | 0 | 0 | 0 | 20 | 0 | 0 | 0 |
| RO-046074 | RO04 | STATION CK | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RT-032056 | RT03 | SCOTT CREEK TRIB | SFH | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| RT-06006 | RT06 | HARBOR RVR | ORW | 4 | 1 | 25 | 12 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RT-042074 | RT04 | TRIB TO STORY RVR | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RT-052096 | RT05 | UNNAMED CK TO OLD HOUSE CK | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RO-02006 | RO02 | OLD HOUSE CK | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |

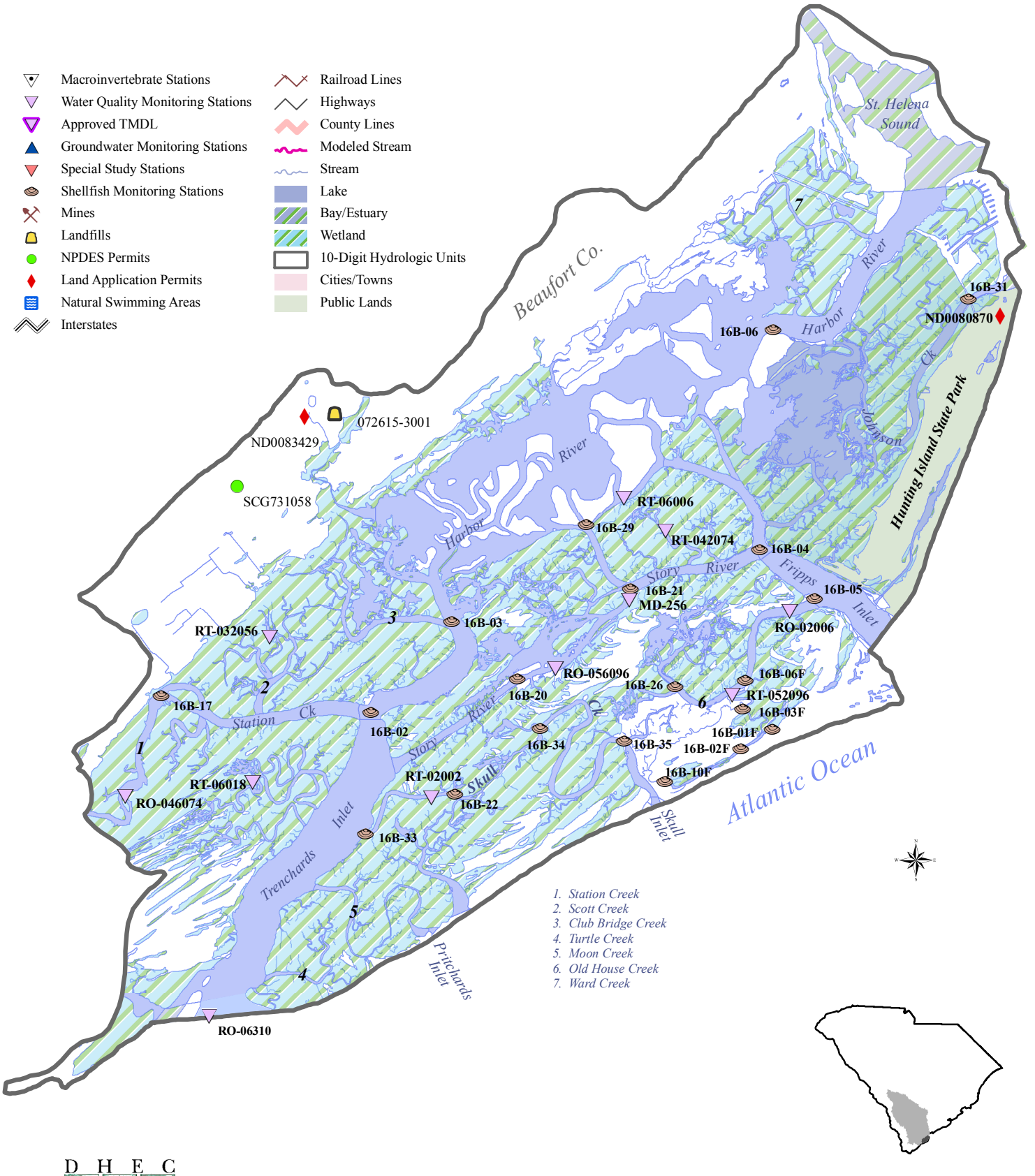
| STATION NUMBER | TYPE | WATERBODY NAME | CLASS | NI N | NI EXC. | NI % | MEAN EXC. | ZN N | ZN EXC. | ZN % | MEAN EXC. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **03050210-01** | | | | | | | | | | | |
| RO-06310 | RO06 | TRENCHARDS INLET | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RT-02002 | RT02 | SKULL CK | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RT-06018 | RT06 | TRIB TO TRENCHARDS INLET | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RO-056096 | RO05 | STORY RVR | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| MD-256 | INT | UNNAMED CK | SFH | 20 | 0 | 0 | 0 | 20 | 1 | 5 | 170 |
| RO-046074 | RO04 | STATION CK | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RT-032056 | RT03 | SCOTT CREEK TRIB | SFH | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| RT-06006 | RT06 | HARBOR RVR | ORW | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RT-042074 | RT04 | TRIB TO STORY RVR | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RT-052096 | RT05 | UNNAMED CK TO OLD HOUSE CK | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| RO-02006 | RO02 | OLD HOUSE CK | SFH | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |

# Salkehatchie Coastal Frontage Basin Watershed Unit Index Map



# *Salkehatchie Coastal Frontage Basin*

## (03050210-01)






Miles
0 0.5 1 2 3

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