

## **03050206-03**

**(Edisto River/South Edisto River)**

### **General Description**

Watershed 03050206-03 (formerly 03050205-050, 060) is located in Colleton, Dorchester, and Charleston Counties and consists primarily of the **Edisto River** and the **South Edisto River** and their tributaries from Indian Field Swamp to the Atlantic Ocean. The watershed occupies 174,109 acres of the Lower Coastal Plain and Coastal Zone regions of South Carolina. Land use/land cover in the watershed includes: 37.2% forested land, 26.9% forested wetland (swamp), 14.4% nonforested wetland (marsh), 11.1% agricultural land, 7.5% water, 2.6% urban land, and 0.3% barren land.

This lowest reach of the Edisto River receives the drainage from Poorly Branch, the Four Hole Swamp Watershed, Cold Water Branch, Deep Creek (Maple Cane Swamp, Horse Pen Branch), and Sandy Run (Big Bay Swamp, Craven Branch, Boston Branch). Further downstream near the Town of Jacksonboro, the Edisto River accepts drainage from Spooler Swamp. Bull Bridge Creek, Burden Swamp, Green Meadow, and Allen Meadow drain into the Edisto in the Big Swamp region. Penny Creek (Adams Run), Hope Creek, and Ashe Creek drain into the Edisto River before it joins the Dawho River to form the South Edisto River. The Edisto River is classified FW from its origin downstream to its intersection with U.S. 17, and below this point to its confluence with the Dawho River, the river is classified ORW.

The South Edisto River accepts drainage from Watts Cut (AIWW), North Creek, Mosquito Creek, Sampson Island Creek, and Alligator Creek. Further downstream below Fenwick Cut, the river accepts drainage from St. Pierre Creek (Shingle Creek, Milton Creek, Bailey Creek, Store Creek, Fishing Creek, Sandy Creek), Big Bay Creek (Scott Creek, Mud Creek), and Fish Creek (Jefford Creek, Pine Island Creek, Otter Creek) before draining to the Atlantic Ocean. Scott Creek drains to the Atlantic Ocean via Jeremy Inlet, and Frampton Creek and a portion of the Townsend River drain to the ocean via Frampton Inlet.

Jeremy Inlet and Watts Cut are classified SFH, and Frampton Inlet is ORW. The South Edisto River is classified ORW from its headwaters to Mud Creek, and below Mud Creek to the Atlantic Ocean the river is classified SFH. The Dawho River, Mosquito Creek, Sampson Island Creek, Alligator Creek, St. Pierre Creek, Shingle Creek, Milton Creek, Bailey Creek, Store Creek, Fishing Creek, Mud Creek, Big Bay Creek, and Scott Creek are all classified ORW. Mosquito Creek connects to the Ashepoo River (Salkehatchie River Basin) through Bull Cut. Also connecting the Ashepoo River and the South Edisto River are Fenwick Cut, Jeffords Creek and Otter Creek. The South Edisto River connects to the North Edisto River through the Dawho River, Fishing Creek, and Watts Cut/North Creek. There are a total of 309.6 stream miles, 211.8 acres of lake waters, and 8,195.1 acres of estuarine areas in this watershed. The lower portion of this watershed is within the ACE Basin and is a National Estuarine Research Reserve (NERR) site. Additional natural resource areas in the watershed

include Givhans Ferry State Park near the top of the watershed and Edisto Beach State Park and a portion of the Botany Bay Wildlife Management Area at the base of the watershed.

## Surface Water Quality

<u>Station #</u>	<u>Type</u>	<u>Class</u>	<u>Description</u>
E-015	INT	FW	EDISTO RIVER AT SC 61, AT GIVHANS FERRY STATE PARK
RS-05584	RS05	FW	EDISTO R. AT END OF BOAT LANDING RD, 13.3 MI W SUMMERVILLE
MD-119	W	FW/ORW	EDISTO RIVER AT US 17, 12.5 MILES NW OF RAVENEL
MD-260	INT	ORW	S. EDISTO R. AT NORTHERN CONFLUENCE WITH ALLIGATOR CREEK
RO-036043	RO03	ORW	SOUTH EDISTO RIVER, 1.7 MI NE FENWICK CUT
MD-244	W	SFH	SOUTH EDISTO RIVER BELOW ST. PIERRE CREEK
RO-06311	RO06	SFH	SOUTH EDISTO RIVER, 2.2 MI NW OF EDISTO BEACH
RT-052105	RT05	ORW	SCOTT CK NEAR EDISTO BEACH SP, 1 MI NE CONFL. WITH BIG BAY CK
RT-02019	RT02	SFH	PINE ISLAND CREEK TRIBUTARY, W OF PINE ISLAND
RT-06007	RT06	SFH	PINE ISLAND CREEK, 3.3 MI NW OF EDISTO BEACH

**Edisto River** – There are three SCDHEC monitoring stations along this section of the Edisto River. At the upstream site (**E-015**), aquatic life and recreational 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 increasing trends in dissolved oxygen concentration and decreasing trends in total phosphorus concentration and fecal coliform bacteria concentration suggest improving conditions for these parameters. Aquatic life and recreational uses are fully supported at the midstream site (**RS-05584**). Aquatic life and recreational uses are again fully supported at the downstream site (**MD-119**); however, there is a significant increasing trend in turbidity. There is a significant increasing trend in pH. Significant decreasing trends in total phosphorus concentration and total nitrogen concentration suggest improving conditions for these parameters. *Fish tissue analyses on species caught from the Edisto River downstream of Highway 17 indicate no advisories or restrictions on consumption of fish from these waters.*

**South Edisto River** - There are four SCDHEC monitoring stations along the South Edisto River. This is a tidally influenced system with significant marsh drainage, characterized by naturally low dissolved oxygen concentrations. Although dissolved oxygen excursions occurred at the two upstream sites, they were typical of values seen in such systems and were considered natural, not standards violations. At the furthest upstream site (**MD-260**), aquatic life uses are not supported due to turbidity excursions and occurrences of copper in excess of the aquatic life chronic criterion. Recreational uses are fully supported. Aquatic life and recreational uses are fully supported at the next site downstream (**RO-036043**). Further downstream (**MD-244**), aquatic life and recreational uses are fully supported; however, there are significant increasing trends in five-day biochemical oxygen demand and total phosphorus concentration. There is a significant decreasing trend in pH. A significant increasing trend in total nitrogen concentration suggests improving conditions for this parameter. At the furthest downstream site (**RO-06311**), aquatic life and recreational uses are fully supported.

**Scott Creek (RT-052105)** - This is a tidally influenced system with significant marsh drainage, characterized by naturally low dissolved oxygen concentrations. Although dissolved oxygen excursions occurred, they were typical of values seen in such systems and were considered natural, not standards violations. Aquatic life and recreational uses are fully supported.

**Pine Island Creek Tributary (RT-02019)** - This is a tidally influenced system with significant marsh drainage, characterized by naturally low dissolved oxygen concentrations. Although dissolved oxygen excursions occurred, they were typical of values seen in such systems and were considered natural, not standards violations. Aquatic life uses are not supported due to occurrences of copper in excess of the aquatic life chronic criterion. Recreational uses are fully supported.

**Pine Island Creek (RT-06007)** - This is a tidally influenced system with significant marsh drainage, characterized by naturally low dissolved oxygen concentrations. Although dissolved oxygen excursions occurred, they were typical of values seen in such systems and were considered natural, not standards violations. Aquatic life and recreational uses are fully supported.

*A fish consumption advisory has been issued by the Department for mercury and includes portions of the Edisto River within this watershed (see advisory p.41).*

## **Shellfish Monitoring Stations**

<b><u>Station #</u></b>	<b><u>Description</u></b>
13-01	SCOTT CREEK AT THE MOUND
13-02	MOUTH OF BIG BAY CREEK
13-03	MOUTH OF ST. PIERRE CREEK
13-04	ST. PIERRE CREEK AT PETERS PT.
13-05	FISHING CREEK AT SANDY CREEK
13-05A	UPPER REACHES OF SANDY CREEK
13-06	CONFLUENCE OF SHINGLE CREEK AND BAILEY CREEK
13-07	STORE CREEK OPPOSITE HOUSE WITH DOCKS ON RIGHT
13-08	EDISTO RIVER AT ASHEPOO RIVER
13-09	FISHING CREEK AT OYSTER PLANT
13-10	FISHING CREEK AT POLLUTION LINE
13-12	HEADWATERS OF FISHING CREEK PAST OYSTER PLANT
13-17	CONFLUENCE OF WATTS CUT AND SOUTH EDISTO RIVER
13-18	CONFLUENCE OF RUSSELL CK AND WATTS CUT
13-20	NORTHERN CONFLUENCE OF ALLIGATOR CK AND S. EDISTO RIVER
13-21	BIG BAY CREEK HEADWATERS AT FIRST BEND TO RIGHT PAST THE NECK
13-22	HEADWATERS OF SCOTT CREEK AT JEREMY INLET AT THE BOAT LANDING
13-23	JEREMY INLET AT ATLANTIC OCEAN
13-24	FRAMPTON INLET AT NORTH END OF JEREMY CAY
13-25	FRAMPTON INLET AT ATLANTIC OCEAN
13-27	FRAMPTON INLET UPSTREAM OF BOAT RAMP PAST FIRST BEND
13-28	CONFLUENCE OF SHINGLE CREEK AND MILTON CREEK
13-29	BAILEY CREEK, 1ST BEND ADJACENT TO BLUFF ON BAILEY ISLAND (NEAR CONFL. WITH ST. PIERRE CK)
13-30	BAILEY CREEK AT CONFLUENCE WITH UNNAMED TRIBUATARY NEAR SW POINT OF SCANAWAH ISLAND

Station locations can be found at [http://www.scdhec.gov/environment/water/docs/SFMA\\_13.pdf](http://www.scdhec.gov/environment/water/docs/SFMA_13.pdf) and information from the Shellfish Annual Report for Section 13 can be found at <http://www.scdhec.gov/environment/water/sfreports.htm>.

## Groundwater Quality

<u>Well #</u>	<u>Class</u>	<u>Aquifer</u>	<u>Location</u>
AMB-095	GB	TERTIARY LIMESTONE	EDISTO BEACH WELL 4

All water samples collected from ambient monitoring well **AMB-095** met standards for Class GB groundwater.

## NPDES Permitted Activities

### *Active NPDES Facilities*

<i>RECEIVING STREAM FACILITY NAME</i>	<i>NPDES# TYPE</i>
SANDY RUN TRIBUTARY SC MINERALS/SANDY RUN MINE	SCG730261 MINOR INDUSTRIAL
POORLY BRANCH MEM LLC/MIXSON MINE	SCG730385 MINOR INDUSTRIAL
EDISTO RIVER TRIBUTARY MURRAY MINES INC./PRINCIP MINE	SCG730773 MINOR INDUSTRIAL
BOSTON BRANCH GLOVER REAL ESTATE LLC/COTTAGEVILLE MINE	SCG731055 MINOR INDUSTRIAL
SANDY RUN SEAFREE EDISTO INC./GOOD HOPE MINE	SCG731086 MINOR INDUSTRIAL
EDISTO RIVER TRIBUTARY DANNY LEE CONSTRUCTION/PIT SAND HILL MINE	SCG730976 MINOR INDUSTRIAL
SPOOLER SWAMP PALMETTO SAND CO. INC./BINLAW HWY 17A	SCG730408 MINOR INDUSTRIAL
SPOOLER SWAMP ROGERS & SONS CONSTR. INC./SULLIVANS LANDING	SCG730643 MINOR INDUSTRIAL
ADAMS RUN TRIBUTARY JOE WEEKS/DEEP SOUTH MINE	SCG731049 MINOR INDUSTRIAL
SANDY RUN WEST BANK CONSTR. CO., INC./RED HOUSE POND	SCG730657 MINOR INDUSTRIAL
EDISTO RIVER TRIBUTARY MALPHRUS CONSTR.CO./CRYSTAL LAKES MINE	SCG730990 MINOR INDUSTRIAL

## Nonpoint Source Permitted Activities

### *Land Disposal Activities*

#### **Landfill Facilities**

<i>LANDFILL NAME</i>	<i>PERMIT#</i>
<i>FACILITY TYPE</i>	<i>STATUS</i>
SHEPPARD C&D LANDFILL	-----
C&D	PROPOSED

#### **Land Application Sites**

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

### *Mining Activities*

<i>MINING COMPANY</i>	<i>PERMIT #</i>
<i>MINE NAME</i>	<i>MINERAL</i>
RED BAY CONSTRUCTORS	1447-19
CAW CAW BURROW	SAND
WEST BANK CONSTRUCTION CO., INC.	1568-19
RED HOUSE POND	SAND
BOHICKET CONSTRUCTION CO., INC.	1090-19
EDINGSVILLE ONE	SAND/CLAY
TRI-COUNTY INVESTMENTS LLC.	1105-35
MAD DOG #3 MINE	SAND
EDISTO MINING LLC	1615-35
EDISTO #1	SAND; TOPSOIL
CECIL M. LACHICOTTE, INC.	1705-19
DURANT SHELL HOUSE ROAD MINE	SAND; TOPSOIL
GL BUCKNER LLC	1770-19
ADAMS RUN #1 MINE	SAND; TOPSOIL
MEM LLC	1398-35
MIXSON MINE	SAND/CLAY
PALMETTO SAND CO., INC.	1492-35
HPT BINLAW MINE	SAND; S/CLAY; TOPSOIL
PETER J KUHNS	1539-29
-----	-----
ROGERS & SONS CONSTRUCTION INC.	1556-35
SULLIVANS LANDING MINE #2	SAND; SAND/CLAY
MURRAY MINES INC.	1620-29
PRINCIP MINE	SAND; SAND/CLAY

PALMETTO SAND CO., INC.  
PINE BLUFF MINE

1654-35  
SAND/CLAY

## Water Quantity

*WATER USER (TYPE)*  
*WATERBODY*

*REG. CAPACITY (MGD)*  
*PUMP. CAPACITY (MGD)*

CITY OF CHARLESTON  
EDISTO RIVER

150.00  
100.00

## Growth Potential

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

## Watershed Protection and Restoration Strategies

### *Special Studies*

#### **Edisto Beach Ocean Water Monitoring Station Tier Re-assessment**

In 2009, eight advisories were issued at the ocean water monitoring stations along the riverfront of Edisto Island. Because there were no obvious or known sources of pollution, and because advisories were a rare occurrence on Edisto, SCDHEC staff devised a study to determine if a change in the tier status of these stations was warranted. Of the 14 ocean water monitoring stations on Edisto Island, 3 are along the South Edisto River before it drains into the Atlantic Ocean. The eight advisories seen in 2009 were from these stations. All eight samples exceeded the bacteria standard of 104 CFU/100ml and four of the samples exceeded 500 CFU/100 ml, which resulted in the issuance of the swimming advisories.

A special monitoring study was conducted in 2011 attempting to identify the cause of these standards excursions. Nineteen stations were sampled for enterococcus bacteria in Big Bay Creek, Scott Creek, and from lagoons. The bacteria samples were collected twice per month from May to October on the same day as the routine ocean water monitoring stations. Study results indicate a correlation between rainfall and higher enterococcus bacteria concentrations. There also appears to be a correlation between higher enterococcus bacteria concentrations at the study sites in Big Bay Creek and the riverfront ocean monitoring stations. Due to the elevation of the discharge pipes, some of the lagoons that were sampled have a tidal exchange with Big Bay Creek, reducing the amount of retention time necessary to reduce bacteria concentrations within the lagoons. The preliminary study results identify “hot spots” where bacteria concentrations frequently exceed the ocean water standards. Investigation of these “hot spots” is ongoing.

# Edisto River/South Edisto River Watershed

## (03050206-03)

