

## 03040207-02

(Great Pee Dee River/Winyah Bay)

### General Description

Watershed 03040207-02 is located in Marion, Florence, Williamsburg, Georgetown, and Horry Counties and consists primarily of the final segment of the *Great Pee Dee River* from the Lynches River through *Winyah Bay* and their tributaries. The watershed occupies 223,613 acres of the Lower Coastal Plain and Coastal Zone regions of South Carolina. Land use/land cover in the watershed includes: 37.4% forested wetland, 28.6% forested land, 8.6% water, 11.0% agricultural land, 10.9% nonforested wetland, 3.0% urban land, and 0.5% barren land.

This lowest section of the Great Pee Dee River accepts drainage from its upper reaches, and with Flax Patch Swamp and Negro Lake Run (Maple Swamp) together with numerous oxbow lakes, including Hodge Lake, Balloon Lake, Thomas Lake, Big Ben Port Lake, Little Ben Port Lake, Johnson Lake, and Wildhorse Lake. Clark Creek accepts drainage from Muddy Creek (Snow Lake, Mill Creek, Soccee Swamp, Island Branch, Cedar Branch, Shaler Branch) before draining into the river. Apple Orchard Slough also connects Clark Creek to the river through Staple Lake. Further downstream, the river accepts drainage from Jacobs Creek, Port Creek (Flat Run Swamp, Boser Swamp, Squirrel Run Bay, Pennyroyal Swamp, Bells Swamp, Tyler Creek), Larrimore Gully, Gravel Gully Branch, and Jordan Lake (Jordan Creek). Dog Lake and several unnamed oxbow lakes drain into the river. Conch Creek (Sally Branch) enters the river next, followed by Bradley Branch (Sheep Pen Branch), and Bull Creek (Cowford Swamp, Horsepen Branch). Also draining into the Great Pee Dee River are Vandross Bay, Yauhannah Creek (Tupelo Bay), Pole Castle Branch, St. Pauls Branch, Cypress Creek, and Chapel Creek. Little Bull Creek connects Bull Creek to the Great Pee Dee River and Cooter Creek (Joe Bay) connects Little Bull Creek to Thoroughfare Creek. Streams that connect the Great Pee Dee River to the Waccamaw River include Bull Creek, Thoroughfare Creek, Guendalose Creek/Bullins Creek, Squirrel Creek, Jericho Creek, and Middleton Cut. Carr Creek and Little Carr Creek connect the Great Pee Dee River to Jericho Creek. The streams are classified FW from the beginning of the watershed to the Great Pee Dee River's confluence with Thoroughfare Creek. Downstream of the confluence, the river is classified SB\* (dissolved oxygen not less than daily average of 5.0 mg/l with a minimum of 4.0 mg/l) and its tributaries are classified SB. Clark Creek and Muddy Creek are classified FW\* (dissolved oxygen not less than 4.0 mg/l and pH between 5.0 and 8.5) and the remaining streams mentioned above are classified FW.

The Great Pee Dee River Watershed accepts drainage from the Sampit River Watershed and the Waccamaw River Watershed to form Winyah Bay, which is classified SB and drains into the Atlantic Ocean. The section of the AIWW that flows into Winyah Bay from the Waccamaw River flows out through the Esterville Minim Canal and is classified SA. White Oak Bay drains into the upper portion of Winyah Bay, and Kinloch Creek and Mosquito Creek (Lagoon Creek) drain into both Winyah Bay and North Santee Bay (in Santee River Basin), all classified SB. Esterville Minim Creek Canal (SA) runs along Cat Island and connects the North Santee Bay to Winyah Bay through the Western Channel (SB). Mud Bay (SB) drains into Winyah Bay and accepts drainage from No Mans Friend Creek (SB), Haulover Creek (SB), Sign Creek (SB), Jones Creek (Dividing Creek-SB, Nancy Creek-SB, Little Jones Creek-SFH, -ORW, Noble Slough-SB), and Cotton Patch Creek (SB). Jones Creek (SB, SFH, ORW) connects Mud Bay to North Inlet. Oyster Bay (SB) connects Jones Creek to Town Creek (Sawmill Creek-SB,

Cutoff Creek-SFH), both draining to Winyah Bay and North Inlet. There are a total of 351.9 stream miles, 629.6 acres of lake waters, and 16,642.3 acres of estuarine areas in this watershed.

## Surface Water Quality

<u>Station #</u>	<u>Type</u>	<u>Class</u>	<u>Description</u>
RS-04377	RS04	FW	GREAT PEE DEE RIVER AT PORTS HILL LANDING, 9.5MI SE OF HEMMINGWAY
PD-060	INT	FW	GREAT PEE DEE RIVER AT PETERS FIELD LANDING OFF S-22-36
PD-061	P/W	FW	GREAT PEE DEE RIVER AT US 701 2.75 MI NE OF YAUHANNAH
RS-06013	RS06	FW	CYPRESS CREEK AT BRIDGE ON S-22-264, 1.5MI SE OF PLANTERSVILLE
MD-275	INT	SB*	GREAT PEE DEE RIVER AT WHITE HOUSE PLANTATION
MD-080	P/W	SB	WINYAH BAY AT MARKER 92 AT MOUTH OF PEE DEE AND WACCAMAW RIVERS
RO-08348	RO08	SB	WINYAH BAY, 0.8 MI W OF HORSE ISLAND
RO-10380	RO10	SB	WINYAH BAY, 1.7MI W OF WESTERN MOST MARSH ISLANDS; 5.4 MI S OF WACCAMAW PT.
RO-07332	RO07	SB	WINYAH BAY, MAIN CHANNEL, APPROX. 0.75 MI WNW OF BUOY 19A RANGE E
MD-278	INT	SB	WINYAH BAY MAIN CHANNEL, BUOY 19A RANGE E
RO-06317	RO06	SB	WINYAH BAY, 0.8 MI S OF LIGHT HOUSE

**Great Pee Dee River** - There are four SCDHEC monitoring sites along this lowest section of the Great Pee Dee River. At the furthest upstream site (**RS-04377**), aquatic life and recreational uses are fully supported; however, there is a significant increasing trend in fecal coliform bacteria. At the next site downstream (**PD-060**), aquatic life and recreational uses are fully supported; however, there is a significant decreasing trend in dissolved oxygen concentration. A significant decreasing trend in total phosphorus concentration suggests improving conditions for this parameter. Aquatic life and recreational uses are fully supported at the midstream site (**PD-061**). At the downstream site (**MD-275**), aquatic life and recreational uses are fully supported. There is a significant increasing trend in pH. This monitoring site is located in the freshwater-saltwater mixing zone. Although dissolved oxygen excursions occurred, they were typical of values seen in tidally influenced systems with significant marsh drainage. As such they were considered natural, not standards violations. A significant decreasing trend in fecal coliform bacteria suggests improving conditions for this parameter.

**Cypress Creek (RS-06013)** – Aquatic life uses are fully supported. Although pH and dissolved oxygen excursions occurred, they were typical of values seen in swamps and blackwater systems and were considered natural, not standards violations. Recreational uses are not supported due to fecal coliform bacteria excursions.

**Winyah Bay** – There are six SCDHEC monitoring sites along Winyah Bay and recreational uses are fully supported at all sites. At the furthest upstream site (**MD-080**), aquatic life uses are partially supported due to dissolved oxygen and pH excursions. There is a significant increasing trend in pH. Stations **RO-08348**, **RO-10380**, **RO-07332**, **MD-278**, and **RO-06317** all fully support aquatic life uses. Although dissolved oxygen excursions occurred at **RO-08348**, they were typical of values seen in such systems and were considered natural, not standards violations.

*A fish consumption advisory has been issued by the Department for mercury and includes **Clark Creek**, the **Great Pee Dee River**, the **Atlantic Intracoastal Waterway**, and **Winyah Bay** within this watershed (see advisory p.144).*

## Shellfish Monitoring Stations

<u>Station #</u>	<u>Description</u>
05-01	JONES CREEK AT NANCY CREEK
05-02	NOBLE SLOUGH
05-05	OYSTER BAY NEAR CUTOFF CREEK
05-06	NO MAN'S FRIEND CREEK AT MUD BAY
05-07	JONES CREEK AT MUD BAY
05-20	WINYAH BAY MAIN CHANNEL, BUOY 19A, RANGE E
05-21	WINYAH BAY MAIN CHANNEL, BUOY 17, RANGE E
05-24	WINYAH BAY MAIN CHANNEL, COAST GUARD DOCK, RANGE C
05-25	WINYAH BAY, TIP OF WESTERN CHANNEL ISLAND

Station locations from the Shellfish Annual Report for Section 5 can be found at <http://www.scdhec.gov/FoodSafety/ShellfishMonitoring/Map> and [http://www.scdhec.gov/foodsafety/docs/SFMA\\_05](http://www.scdhec.gov/foodsafety/docs/SFMA_05) . Information from the Shellfish Annual Report for Section 5 can be found at <http://www.scdhec.gov/FoodSafety/ShellfishMonitoring/MonitoringStationReports>.

## NPDES Program

### Active NPDES Facilities

<i>RECEIVING STREAM FACILITY NAME</i>	<i>NPDES# TYPE</i>
FLAT RUN SWAMP GCSD/PLEASANT HILL ELEM SCHOOL	SC0039101 MINOR DOMESTIC
MAPLE SWAMP CAROLINA SAND, INC./BRITTONS NECK	SCG730043 MINOR INDUSTRIAL
CLARK CREEK TOWN OF HEMINGWAY/WWTP	SC0039934 MINOR DOMESTIC
WINYAH BAY TRIBUTARY WACCAMAW RENTALS/PARTNERS PIT MINE	SCG731134 MINOR INDUSTRIAL
GREAT PEE DEE RIVER TRIBUTARY GSW&SA/YAUHANNAH TREE FARM	SC0048461 MINOR MUNICIPAL
CHAPEL CREEK TRIBUTARY GCW&SD/PLANTERSVILLE EDR	SCG645051 MINOR DOMESTIC

## Nonpoint Source Management Program

### Land Disposal Activities

#### Landfill Facilities

<i>LANDFILL NAME FACILITY TYPE</i>	<i>PERMIT # STATUS</i>
TOWN OF HEMINGWAY DUMP MUNICIPAL	----- CLOSED
TOWN OF HEMMINWAY COMPOSTING SITE COMPOSTING	451003-3001 ACTIVE
THOMPSONS LAND CLEARING COMPOSTING	222678-3001 ACTIVE
GEORGETOWN COUNTY AIRPORT INDUSTRIAL	IWP-194 INACTIVE

## ***Mining Activities***

<b><i>MINING COMPANY MINE NAME</i></b>	<b><i>PERMIT # MINERAL</i></b>
CAROLINA SAND, INC. GRESHAM MINE NECK SAND MINE #2	0899-67 SAND
AMERICAN MATERIALS CO. RICHARDSON MINE	1765-67 SAND/GRAVEL
WACCAMAW RENTALS PARTNERS PIT MINE	1948-43 SAND/TOP SOIL

## **Water Quantity**

Portions of this watershed fall within the Pee Dee and Waccamaw Capacity Use Areas and large groundwater uses must be reported (see Capacity Use Program p.22).

<b><i>WATER USER STREAM</i></b>	<b><i>REGULATED CAPACITY (MGD) PUMPING CAPACITY (MGD)</i></b>
CITY OF GEORGETOWN GREAT PEE DEE RIVER	5.2 11.6
GSW&SA/BULL CREEK REGIONAL WTP BULL CREEK	52.0 61.4

## **Growth Potential**

There is an overall low potential for growth in this watershed, which contains the Towns of Hemingway, Bucksport, and Pawleys Island, the City of Johnsonville, and a portion of the City of Georgetown. Hemingway and Johnsonville have water and sewer infrastructure, but outside of the area, the Pee Dee River area is rural with primarily agricultural uses and timberlands. The Williamsburg County Master Wastewater Plan lists South Hemingway area as a designated Priority Area for Economic Development. The area surrounding the City of Georgetown is expected to grow. The Georgetown treatment facility expanded to 12.0 MGD to allow more growth. Water and sewer infrastructure is located in the Plantersville community. The portion of the Georgetown area within this watershed should see primarily commercial and residential growth. The northern most area is expected to experience a high population increase, a medium increase is expected along the south side of Winyah Bay and the remaining area is only expected to experience a low increase due to lands protected from development by land trusts.

## **Watershed Restoration and Protection**

### ***Special Studies***

#### **Winyah Bay Nutrient Study**

In 2014, SCDHEC initiated a special nutrient study in Winyah Bay. Weekly grab samples for nutrients and chlorophyll a were collected from June through October 2014. Continuous monitoring instrumentation was deployed by SCDHEC Water Quality Monitoring Section and EPA Region 4 Science and Ecosystem Support Division for the three weeks of July 16-August 6, 2014. This data is to be utilized as the state develops appropriate numeric standards for nutrients in estuarine systems.

