

## 03050201-060

(Back River)

### General Description

Watershed 03050201-060 is located in Berkeley County and consists primarily of the *Back River* and its tributaries. The watershed occupies 49,168 acres of the Lower Coastal Plain region of South Carolina. The predominant soil types consist of an association of the Bladen-Wahee-Bohicket-Hobcaw series. The erodibility of the soil (K) averages 0.17 and the slope of the terrain averages 1%, with a range of 0-2%. Land use/land cover in the watershed includes: 70.7% forested land, 11.9% urban land, 7.5% forested wetland, 5.1% agricultural land, 3.0% scrub/shrub land, 1.4% water, and 0.3% barren land.

The Back River forms from swamp drainage and flows into the Cooper River. Laurel Swamp (Gants Mill Branch, Tillmans Branch, Poplar Branch, Daisy Swamp, King Branch, Huckhole Swamp), Sophia Swamp (Lindsey Branch, Brick Bound Swamp), and Canterhill Swamp flow into the Back River, which is joined downstream by Chicken Creek. The Back River is dammed further downstream to create the Back River Reservoir (also know as the Bushy Park Reservoir) and insure freshwater storage for industrial purposes. Water is not released from the dam but is pumped into the Cooper River near Bushy Industrial Park. The waters downstream from the dam are essentially backflow from the Cooper River (SB). Prioleau Creek (Long Field Pond, Crane Pond) enters Back River Reservoir in the upper lake region and Foster Creek enters the reservoir near the dam. There are a total of 87.3 stream miles, 287.1 acres of lake waters, and 80.3 acres of estuarine areas in this watershed.

### Surface Water Quality

<u>Station #</u>	<u>Type</u>	<u>Class</u>	<u>Description</u>
MD-240	P/W	FW	FOSTER CREEK AT CHARLESTON CPW WATER INTAKE
CSTL-124	INT	FW	BACK RIVER RESERVOIR IN FOREBAY EQUIDISTANT FROM DAM AND SHORELINES
MD-217	P/W	FW	DURHAM CREEK AT S-08-9 BRIDGE

**Foster Creek (MD-240)** – Aquatic life uses are not supported due to dissolved oxygen excursions. Significant decreasing trends in five-day biochemical oxygen demand, turbidity, and total nitrogen concentration suggest improving conditions for these parameters. 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.

**Back River Reservoir (CSTL-124)** – Aquatic life uses are not supported due to occurrences of copper in excess of the aquatic life acute criterion and dissolved oxygen excursions. Recreational uses are fully supported. Aquatic macrophytes have proliferated and public access has been restricted on the reservoir. Aquatic herbicides were applied from 1998-2005 in order to reduce aquatic plant growth, enhance water quality and public access and use, maintain electric power generation, and minimize impacts to water intakes.

*Durham Creek (MD-217)* – Aquatic life and recreational uses are fully supported. Significant decreasing trends in five-day biochemical oxygen demand and total nitrogen concentration suggest improving conditions for these parameters. There is a significant increasing trend in pH.

*A fish consumption advisory has been issued by the Department for mercury and includes the Back River Reservoir and Durham Creek within this watershed (see advisory p.69).*

## **NPDES Program**

### **Active NPDES Facilities**

<i>RECEIVING STREAM FACILITY NAME PERMITTED FLOW @ PIPE (MGD)</i>	<i>NPDES# TYPE COMMENT</i>
LINDSEY BRANCH JW ALUMINUM CO. PIPE #: 001 FLOW: M/R	SCG250105 MINOR INDUSTRIAL
POPLAR BRANCH THOMAS DANIELS 17A BORROW PIT PIPE #: 001 FLOW: M/R	SCG730005 MINOR INDUSTRIAL
LAUREL SWAMP STRAWBERRY MHP PIPE #: 001 FLOW: 0.015	SC0032859 MINOR DOMESTIC (KC MHP #3)

## **Nonpoint Source Management Program**

### **Land Disposal Activities**

#### **Landfill Facilities**

<i>LANDFILL NAME FACILITY TYPE</i>	<i>PERMIT # STATUS</i>
SANTEE RIVER RUBBER CORP. INDUSTRIAL	082623-5201 -----

### **Mining Activities**

<i>MINING COMPANY MINE NAME</i>	<i>PERMIT # MINERAL</i>
ACRE MAKER, A PARTNERSHIP 17A MINE PIT	0743-15 SAND; SAND/CLAY

## **Water Quantity**

<i>WATER USER STREAM</i>	<i>REGULATED CAPACITY (MGD) PUMPING CAPACITY (MGD)</i>
CHARLESTON CPW	125.0
FOSTER CREEK	150.0

## **Growth Potential**

There is a moderate potential for growth in the form of scattered low density development, in this watershed containing a large portion of the Town of Goose Creek. Water and sewer service is available to most of the watershed. Fresh water is a vital necessity to the area's economy. The Back River and its tributaries are a major source of fresh water for the public water supply and many of the large industries located along the Cooper River. Another source is the interbasin transfer via a pipeline connecting the Edisto River to the Hanahan WTP.

## **Watershed Protection and Restoration**

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

Two TMDLs addressing dissolved oxygen were developed by SCDHEC for the *Charleston Harbor Estuary*: one covering the Ashley River and the other covering the Charleston Harbor, the Cooper River, and the Wando River. The Harbor/Cooper River/Wando River portion of the system (consisting of the Tail Race Canal, West Branch Cooper River, East Branch Cooper River, Shipyard Creek, Town Creek, Back River, Goose Creek, Wando River and Charleston Harbor) is not considered to be impaired with respect to dissolved oxygen (with the exception of the Wando River monitoring site MD-115); however, available information indicates much of the system does not meet the applicable water quality standard for dissolved oxygen for significant periods of time and is considered water quality limited for the purposes of wasteload allocation (WLA) development. WLAs are an integral part of a TMDL, and although not always developed through the TMDL process, the Department and EPA have chosen to use the TMDL process to develop WLAs for the Charleston Harbor system (see following section). Results of a water quality model indicate the need for a 70% reduction in discharge of oxygen demanding substances to the overall system. A phased approach to achieving these reductions is proposed with an initial Phase I reduction of 60%. For more detailed information on TMDLs, please visit the SCDHEC's Bureau of Water homepage at <http://www.scdhec.gov/water> and click on "Watersheds and TMDLs" and then "TMDL Program".

### ***Special Models***

#### **Charleston Harbor System TMDLs**

The modeling efforts for Charleston Harbor and its tributaries have been completed and phased TMDLs for the Ashley and the Cooper systems have been issued by the Department and approved by EPA Region 4. Interim TMDL limits were included in NPDES permits for a number of dischargers while final TMDL limits were included for some dischargers who were already meeting the final limits. Permits included compliance schedules that allowed the opportunity for additional modeling work to be completed before compliance with final limits is required. A group of dischargers working through the local Councils of Government has initiated another modeling effort that is currently underway. If this effort is successfully completed within the allotted time, the existing TMDLs will be revised and, as appropriate, new limits incorporated into NPDES permits for discharges covered by the TMDL.

# Back River Watershed (03050201-060)

