

03050201-04

(Wando River)

General Description

Watershed 03050201-04 (formerly 03050201-080) is located in Berkeley and Charleston Counties and consists primarily of the **Wando River** and its tributaries. The watershed occupies 72,370 acres of the Coastal Zone region of South Carolina. Land use/land cover in the watershed includes: 33.1% forested land, 22.6% forested wetland, 17.0% nonforested wetland, 16.8% urban land, 7.7% water, 2.4% agricultural land, and 0.4% barren land.

The Wando River headwaters flow through I'on Swamp (Mayrants Reserve) and accepts drainage from Alston Creek (SFH), Darrell Creek (SFH), Deep Creek, Toomer Creek (SFH), and Wagner Creek (SFH) before receiving Guerin Creek (SFH) drainage (Lachicotte Creek, Old House Creek, Fogarty Creek) near Cat Island. I'on Swamp and Guerin Creek drainages flow through the Francis Marion National Forest. Johnfield Creek enters the river downstream followed by Horlbeck Creek (SFH) (Boone Hall Creek-SFH), Foster Creek (SFH), Beresford Creek (Martin Creek, Sanders Creek, Hopewell Creek), Ralston Creek (SFH), Rathall Creek (SFH), Bermuda Creek, Hobcaw Creek (SFH), and Molasses Creek (SFH). The Wando River then drains into the Cooper River, which flows into the Charleston Harbor. The Wando River is classified SFH from its headwaters to a point 2.5 miles north of its confluence with the Cooper River, and is classified SA downstream of this point to its confluence with the Cooper River. Beresford Creek drains into both the Wando River and Clouter Creek and is classified SFH from its confluence with the Wando River to a point 4 miles away from the confluence, and classified SA from that point to the confluence with Clouter Creek. There are a total of 46.3 stream miles, 38.7 acres of lake waters, and 5,408.6 acres of estuarine areas in this watershed

Surface Water Quality

<u>Station #</u>	<u>Type</u>	<u>Class</u>	<u>Description</u>
RT-08076	RT-08	SFH	750 YARDS UPSTREAM DEEP CREEK OFF OF WANDO RIVER
RT-06012	RT-06	SFH	TOOMER CREEK, 2.5MI E OF SC 41 BRIDGE OVER WANDO RIVER
MD-115	P/INT	SFH	WANDO RIVER AT S.C. 41
RT-07056	RT-07	SFH	JOHNFIELD CREEK, 0.25MI FROM MOUTH
RT-052100	RT-05	SFH	BOONE HALL CREEK, 1.5MI WNW OF US 17/SC 41 INTERSECTION
RO-056092	RO-05	SFH	BERESFORD CREEK, 5.3 MI NNE OF WANDO & COOPER RIVER CONFLUENCE
MD-264	INT	SFH	WANDO RIVER AT I-526 MARK CLARK EXPRESSWAY
MD-198	P/W	SFH	WANDO RIVER BETWEEN RATHALL & HOBCAW CREEKS

Deep Creek (RT-08076) - Aquatic life and recreational uses are fully supported. Although dissolved oxygen excursions occurred, they were typical of values seen in such systems and were considered natural, not standard violations.

Toomer Creek (RT-06012) - Aquatic life uses are not supported due to dissolved oxygen excursions. Recreational uses are fully supported.

Wando River - There are three monitoring stations along the Wando River and recreational uses are fully supported at all sites. Aquatic life uses are fully supported at the upstream site

(*MD-115*). There is a significant decreasing trend in pH. Although dissolved oxygen excursions occurred, they were typical of values seen in such systems and were considered natural, not standard violations. Significant decreasing trends in turbidity, total phosphorus concentration, and total nitrogen concentration suggest improving conditions for these parameters. At the midstream site (*MD-264*), aquatic life uses are fully supported; however, there is a significant increasing trend in five-day biochemical oxygen demand. At the downstream site (*MD-198*), aquatic life uses are fully supported. In addition, significant decreasing trends in five-day biochemical oxygen demand, turbidity, total phosphorus concentration, total nitrogen concentration, and fecal coliform bacteria concentration suggest improving conditions for these parameters.

Johnfield Creek (RT-07056) - Aquatic life and recreational uses are fully supported. Although dissolved oxygen excursions occurred, they were typical of values seen in such systems and were considered natural, not standard violations.

Boone Hall Creek (RT-052100) - Aquatic life uses are fully supported. Although dissolved oxygen excursions occurred, they were typical of values seen in such systems and were considered natural, not standard violations. Recreational uses are partially supported due to fecal coliform bacteria excursions.

Beresford Creek (RO-056092) – Aquatic life uses are partially supported due to dissolved oxygen excursions. Recreational uses are fully supported.

Fish tissue samples from the lower Wando River indicate no advisories are needed at this time.

Shellfish Monitoring Stations

<u>Station #</u>	<u>Description</u>
09B-01	WANDO RIVER AT NOWELL CREEK
09B-02	WANDO RIVER AT HORLBECK CREEK
09B-03	WANDO RIVER AT SC HWY 41 BRIDGE
09B-04	WANDO RIVER AT DEEP CREEK
09B-05	WANDO RIVER OPPOSITE BIG PARADISE ISLAND
09B-06	WANDO RIVER AT PARADISE BOAT LANDING
09B-07	BOONE HALL CREEK OPPOSITE COUNTY RECREATION AREA
09B-08	WANDO RIVER AT MARKER #29
09B-09	DEEP CREEK – 1 MI FORM CONFLUENCE WITH WANDO RIVER
09B-10	WANDO RIVER AT ALSTON CREEK CONFLUENCE
09B-11	WANDO RIVER AT GUERIN CREEK
09B-12	GUERIN CREEK AT OLD HOUSE CREEK
09B-13	CONFLUENCE OF WANDO RIVER AND COOPER RIVER
09B-14	NORTH EDGE OF SC PORT AUTHORITY/WANDO TERMINAL
09B-15	NEW BRIDGE- ROUTE I-526
09B-16	CONFLUENCE OF MARTIN CREEK AND NOWELL CREEK
09B-17	WANDO RIVER MIDWAY BETWEEN STATIONS 3 AND 11 (AT OLD DRY DOCK)
09B-18	RATHALL CREEK AT CONFLUENCE WITH WANDO RIVER
09B-19	FOSTER CREEK AT CONFLUENCE WITH WANDO RIVER
09B-21	HORLBECK CREEK AT POWER LINE CROSSING
09B-22	WANDO RIVER @ FOSTER CREEK

09B-23 WANDO RIVER @ MARKER #20
09B-24 WANDO RIVER @ MARKER #13

NPDES Program

Active NPDES Facilities

<i>RECEIVING STREAM FACILITY NAME</i>	<i>NPDES# TYPE</i>
WANDO RIVER DETYENS SHIPYARDS/WANDO YARD	SC0033022 MINOR INDUSTRIAL
WANDO RIVER MT.PLEASANT WATER WORKS/WTP#2	SC0043273 MINOR MUNICIPAL

Municipal Separate Storm Sewer Systems (MS4)

<i>RECEIVING STREAM MUNICIPALITY RESPONSIBLE PARTY IMPLEMENTING PARTY</i>	<i>NPDES# MS4 PHASE MS4 SIZE</i>
WANDO RIVER TOWN OF MOUNT PLEASANT TOWN OF MOUNT PLEASANT TOWN OF MOUNT PLEASANT	SCR031906 PHASE II SMALL MS4
WANDO RIVER UNINCORPORATED AREAS CHARLESTON COUNTY CHARLESTON COUNTY	SCR031902 PHASE II SMALL MS4

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

<i>LANDFILL NAME FACILITY TYPE</i>	<i>PERMIT # STATUS</i>
EAST COOPER RES.DEV.C&D C&D	PROPOSED -----

Mining Activities

<i>MINING COMPANY MINE NAME</i>	<i>PERMIT # MINERAL</i>
DH HANKINS TRUCKING CO. LLC WAPPETAU MINE	1707-19 SAND/CLAY

Growth Potential

There is a high potential for growth projected for this watershed, which contains portions of the Towns of Mt. Pleasant and Awendaw, and the City of Charleston. Some of the major development areas include: Dunes West, Liberty, Rivertowne, Brickyard, Long Point, Belle Hall, and Daniel Island. Water and sewer services are available in all potential growth areas.

Watershed Protection and Restoration

Total Maximum Daily Loads (TMDLs)

The TMDLs addressing dissolved oxygen for the Ashley River and for the Cooper River-*Wando River*-Charleston Harbor have been revised. The revised TMDLs are combined in a single TMDL document covering Charleston Harbor and the Cooper, Ashley, and Wando Rivers. The basis for this revision is a new 3-Dimensional Environmental Fluid Dynamics Code (EFDC) model covering the entire system completed in 2008, a revised Dissolved Oxygen standard as amended in the South Carolina Pollution Control Act in 2010 (adopted in S.C. R.61-68 in 2012), and subsequent reallocation of the TMDLs led by the Berkeley-Charleston-Dorchester Council of Governments. The revised TMDL was placed on public notice in October 2012 and approved by EPA in April 2013. The TMDL determined revised wasteload allocations for oxygen-demanding pollutants from continuous point sources which will be implemented in NPDES permits.

The previous and revised TMDLs can be compared on a percent reduction basis. The Cooper River TMDL required an interim reduction of 58% (Phase 1) and a final reduction of 69% (Phase 2) from pre-TMDL permitted UOD; the Ashley River TMDL required a reduction of 32% from pre-TMDL permitted UOD. This TMDL applies a more accurate water quality model in addition to a more accurate laboratory characterization of the wastewater. Based on this new information, the revised TMDL is equivalent to an additional 2% reduction below the Phase 1 level for the Cooper River. The revised TMDL for the Ashley River is equivalent to a 15% reduction from the pre-TMDL permitted UOD. For more detailed information on TMDLs, please visit www.scdhec.gov/tmdl.

Special Models

Charleston Harbor System TMDLs

Modeling for the revised TMDL includes EFDC hydrodynamic and water quality models for the river and harbor segments and linked Loading Simulation Program in C++ (LSPC) watershed model. Charleston waters are considered naturally low in dissolved oxygen, so the TMDL target is an allowable oxygen depression of 0.1 mg/L due to continuous NPDES point sources. Regulated stormwater and nonpoint sources were determined equivalent to natural background due to high levels of natural organic matter in the system. As such, they do not contribute to the 0.1 mg/L depression target at existing conditions. The TMDL model is currently being adapted for future harbor deepening evaluations.

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