03050201-06

(Ashley River)

General Description

Watershed 03050201-06 (formerly 03050202-030, 040, and a portion of -020) is located in Berkeley, Charleston, and Dorchester Counties and consists primarily of the ***Ashley River*** and its tributaries. The watershed occupies 86,887 acres of the Lower Coastal Plain and Coastal Zone regions of South Carolina. Land use/land cover in the watershed includes: 43.3% urban land, 20.0% forested land, 19.5% forested wetland, 9.4% nonforested wetland, 4.9% water, 2.5% agricultural land, and 0.4% barren land.

The Ashley River flows out of the Cypress Swamp and accepts drainage from Dorchester Creek (Sawmill Branch, Rose Creek) and Eagle Creek (Spencer Branch, Federwitz Branch, Chandler Bridge Creek). Sawmill Branch is classified FW, Dorchester Creek is SA, and Eagle Creek is SB. Old Dorchester State Park lies between Dorchester and Eagle Creeks. The river then receives drainage from Coosaw Creek (SA), Olive Branch (SA), Sawpit Creek (SA), and Popperdam Creek (SA). MacBeth Creek (SA) enters the river next followed by Keivling Creek (SA), Church Creek, Bulls Creek (SA^*), Brickyard Creek (SB), Duck Island Canal (SA^*), Orangegrove Creek (Oldtown Creek), Wappoo Creek, Dill Creek, James Island Creek, and Mill Creek before flowing into the Cooper River in Charleston Harbor. The Atlantic Intracoastal Waterway (AIWW) follows Wappoo Creek from the Stono River to the Ashley River and into the harbor. This portion of the AIWW is classified SB.

The Ashley River is classified FW from its origin to Bacon Bridge and SA from Bacon Bridge to Church Creek, where it changes to SA^* (DO not less than 4 mg/l) to the entrance of Orangegrove Creek. Downstream of Orangegrove Creek, the Ashley River returns to its classification of SA. In addition to the Old Dorchester State Park, other natural resources in the watershed include many historic gardens and plantations, and Charles Towne Landing State Park. There are a total of 113.4 stream miles, 421.3 acres of lake waters, and 3,862.5 acres of estuarine areas in this watershed.

Surface Water Quality

Station #	Type	Class	Description
CSTL-102	P/INT	FW/SA	ASHLEY RIVER AT SC 165 4.8 MI SSW OF SUMMERVILLE
CSTL-043	S/W	FW	SAWMILL BRANCH AT SC 78 E OF SUMMERVILLE
RS-05563	RS-05	FW	SAWMILL BRANCH AT S-18-706 IN SUMMERVILLE
CSTL-013	P/INT	SA	DORCHESTER CREEK AT SC 165
CSTL-099	P/W	SB	EAGLE CREEK AT SC 642 5 MI SSE OF SUMMERVILLE
MD-049	P/SPRP	SA	ASHLEY RIVER AT MAGNOLIA GARDENS
MD-246	P/W	SA*	CHURCH CREEK MOUTH
MD-135	S/W	SA*	ASHLEY RIVER AT S.C. 7 (NORTH BRIDGE)
MD-052	P/INT	SA	ASHLEY RIVER AT SAL RR BRIDGE
MD-020	P/INT	SB	MOUTH OF WAPPOO CREEK BETW CHANNEL MARKERS 3 & 4
MD-034	P/INT	SA	RT BANK OF ASHLEY R. BETW MOUTH OF WAPPOO CK AND DILLS CK
RT-052098	RT-05	SA	JAMES ISLAND CREEK N OF WHITE HALL PLANTATION

Ashley River – There are five monitoring stations along the Ashley River. At the furthest upstream site ***(CSTL-102)***, aquatic life uses are fully supported for both fresh and saltwater classifications; however, there is a significant increasing trend in total phosphorus concentration for both classifications. Although dissolved oxygen excursions occurred, they were typical of values seen in such systems and were considered natural, not standard violations. 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 for both classifications. Moving downstream to ***MD-049***, aquatic life uses are not supported due to turbidity and dissolved oxygen excursions. Significant decreasing trends in turbidity, total nitrogen concentration, and fecal coliform bacteria concentration suggest improving conditions for these parameters. Recreational uses are partially supported due to fecal coliform bacteria excursions at this site. Further downstream ***(MD-135)***, both aquatic life and recreational uses are fully supported. Significant increasing trends in dissolved oxygen concentration and decreasing trends in total phosphorus concentration suggest improving conditions for these parameters.

Continuing downstream to ***MD-052***, aquatic life uses are not supported due to occurrences of copper in excess of the aquatic life criterion and dissolved oxygen excursions. In addition, there is a significant increasing trend in five-day biological oxygen demand. There is a significant decreasing trend in pH. Significant increasing trends in dissolved oxygen concentration and decreasing trends in turbidity, total nitrogen concentration, and fecal coliform bacteria suggest improving conditions for these parameters. Recreational uses are fully supported at this site. At the furthest downstream site ***(MD-034)***, aquatic life and recreational uses are fully supported. Significant decreasing trends in five-day biological oxygen demand, total phosphorus and total nitrogen concentration, and fecal coliform bacteria suggest improving conditions for these parameters.

Sawmill Branch - There are two monitoring stations along Sawmill Branch. At the upstream site ***(CSTL-043)***, aquatic life uses are partially supported due to dissolved oxygen excursions. In addition, there is a significant increasing trend in turbidity. There is a significant increasing trend in pH. Significant decreasing trends in five-day biological oxygen demand and fecal coliform bacteria concentration suggest improving conditions for these parameters. Recreational uses are fully supported. At the downstream site ***(RS-05563)***, aquatic life uses are fully supported, but recreational uses are not supported due to fecal coliform excursions.

Dorchester Creek (CSTL-013) - Aquatic life uses are partially supported due to dissolved oxygen excursions. 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.

***Eagle Creek* (CSTL-099) –** Aquatic life uses are not supported due to ammonia excursions. In addition, there is a significant increasing trend in total phosphorus concentration. There is a significant increasing trend in pH. Significant decreasing trends in five-day biological oxygen demand and total nitrogen concentration suggest improving conditions for these parameters. Recreational uses are not supported due to fecal coliform bacteria excursions.

***Church Creek (MD-246)* –** Aquatic life and recreational uses are fully supported. In addition, significant increasing trends in dissolved oxygen and decreasing trends in five-day biological oxygen demand, turbidity, total phosphorus and total nitrogen concentration, and fecal coliform bacteria concentration suggest improving conditions for these parameters.

***Wappoo Creek (MD-020)* –** Aquatic life and recreational uses are fully supported. There is a significant decreasing trend in pH. Significant decreasing trends in five-day biological oxygen demand, total nitrogen concentration, and fecal coliform bacteria concentration suggest improving conditions for these parameters.

***James Island Creek (RT-052098)* –** Aquatic life uses are not supported due to dissolved oxygen excursions. 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 portions of the Ashley River within this watershed. Fish tissue samples from the lower Ashley River (downstream of U.S. 17) indicate no advisories are needed at this time. For more information and the most current advisory, visit http://www.scdhec.gov/fish .

Groundwater Quality

Well #	Class	Aquifer	Location
AMB-022	GB	BLACK CREEK/MIDDENDORF	SUMMERVILLE NO.5

NPDES Program

Active NPDES Facilities

RECEIVING STREAM *FACILITY NAME*	*NPDES#* *TYPE*
ASHLEY RIVER CHARLESTON CPW/PLUM ISLAND WWTP	SC0021229 MAJOR MUNICIPAL
ASHLEY RIVER TRIBUTARY USAF CHARLESTON AFB	SCG250218 MINOR INDUSTRIAL
ASHLEY RIVER TOWN OF SUMMERVILLE/WWTP	SC0037541 MAJOR DOMESTIC
ASHLEY RIVER MIDDLETON INN	SC0039063 MINOR DOMESTIC
ASHLEY RIVER TRIBUTARY THE BOEING CO./N. CHARLESTON	SCG250270 MINOR INDUSTRIAL

CHANDLER BRIDGE CREEK LJ INC./LADSON FARMS MINE	SCG730623 MINOR INDUSTRIAL
ASHLEY RIVER TRIBUTARY MURRAY SAND CO., INC./MILL BROOK MINE	SCG731028 MINOR INDUSTRIAL
OLIVE BRANCH MCDIRT CO. LLC/MILL BROOK MINE	SCG731217 MINOR INDUSTRIAL
ASHLEY RIVER L&L CONTRACTORS INC./L&L DORCHESTER ROAD MINE	SCG731178 MINOR INDUSTRIAL
SAWMILL BRANCH MASSENBURG CONSTR. INC./MAIN STREET CARWASH	SCG750030 MINOR INDUSTRIAL
COOSAW CREEK DORCHESTER COUNTY/LOWER DORCHESTER PLANT	SC0038822 MAJOR DOMESTIC

Municipal Separate Storm Sewer Systems (MS4)

RECEIVING STREAM ***MUNICIPALITY*** ***RESPONSIBLE PARTY*** ***IMPLEMENTING PARTY***	***NPDES#*** ***MS4 PHASE*** ***MS4 SIZE***
ASHLEY RIVER TOWN OF SUMMERVILLE TOWN OF SUMMERVILLE TOWN OF SUMMERVILLE	SCR033502 PHASE II SMALL MS4
ASHLEY RIVER UNINCORPORATED AREAS BERKELEY COUNTY BERKELEY COUNTY	SCR031501 PHASE II SMALL MS4
ASHLEY RIVER CITY OF CHARLESTON CITY OF CHARLESTON CITY OF CHARLESTON	SCR031901 PHASE II SMALL MS4
ASHLEY RIVER LINCOLNVILLE LINCOLNVILLE CHARLESTON COUNTY	SCR031905 PHASE II SMALL MS4
ASHLEY RIVER CITY OF NORTH CHARLESTON CHARLESTON AFB CHARLESTON AFB	SCR031909 PHASE II SMALL MS4
ASHLEY RIVER CITY OF NORTH CHARLESTON CITY OF NORTH CHARLESTON CITY OF NORTH CHARLESTON	SCR031907 PHASE II SMALL MS4
ASHLEY RIVER TOWN OF SUMMERVILLE TOWN OF SUMMERVILLE TOWN OF SUMMERVILLE	SCR033502 PHASE II SMALL MS4
ASHLEY RIVER UNINCORPORATED AREAS CHARLESTON COUNTY CHARLESTON COUNTY	SCR031902 PHASE II SMALL MS4

ASHLEY RIVER	SCR031907
CITY OF NORTH CHARLESTON	PHASE II
CITY OF NORTH CHARLESTON	SMALL MS4
CITY OF NORTH CHARLESTON	
ASHLEY RIVER	SCR033502
TOWN OF SUMMERVILLE	PHASE II
TOWN OF SUMMERVILLE	SMALL MS4
TOWN OF SUMMERVILLE	
ASHLEY RIVER	SCR033501
UNINCORPORATED AREAS	PHASE II
DORCHESTER COUNTY	SMALL MS4
DORCHESTER COUNTY	

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

LANDFILL NAME	***PERMIT #***
FACILITY TYPE	***STATUS***
TOWN OF SUMMERVILLE C&D SW TRANSFER STATION	181002-6001
C&D	ACTIVE
MOORE DRUMS	--------
INDUSTRIAL	INACTIVE
CHARLESTON COUNTY DUMP	---------
MUNICIPAL	CLOSED
LOCKWOOD BLVD DUMP	---------
MUNICIPAL	INACTIVE
BEES FERRY RD ASH MONOFIL	-------
ASH MONOFIL	INACTIVE
GENSTA	--------
INDUSTRIAL	INACTIVE
BANKS CONSTRUCTION CO.	102707-7301
UOM	ACTIVE
BANKS CONSTRUCTION CO.	102707-7101
UOP	ACTIVE
BANKS CONSTRUCTION CO.	----------
INDUSTRIAL	INACTIVE
PEPPERHILL REG. IND. SW LANDFILL	182441-1601
INDUSTRIAL	ACTIVE
PEPPERHILL PROCESSING & TRANSFER STA.	182441-2001
SWP	ACTIVE
HAMMOND WOOD RECYCLING COMP. SITE	182621-3001
COMPOSTING	INACTIVE
WESTOE PLANTATION C&D & LCD	182437-1201
C&D	INACTIVE

WESTOE PLANTATION	----------
INDUSTRIAL	INACTIVE
DORCHESTER COUNTY NORTH COMPOSTING SITE	181001-3001
COMPOSTING	INACTIVE

Mining Activities

MINING COMPANY	***PERMIT #***
MINE NAME	***MINERAL***
L.J., INC.	0644-35
LADSON FARMS MINE	SAND/SAND CLAY
ADDCO MINING CO.	0252-35
EVERGREEN MINE	SAND
JENNER TRUCKING & CONSTRUCTION INC.	1355-31
JENNER RECYCLING	CLAY
THE WHITFIELD CO.	1717-19
RUNNYMEADE MINE	SAND
MC DIRT LLC.	1249-35
MIDDLETON MINE	SAND/CLAY

Growth Potential

There is a high potential for growth in this watershed, which contains portions of the Towns of Summerville and Ladson and the Cities of Charleston and North Charleston. The west bank of the Ashley River contains numerous historic structures including Middleton Place, Drayton Hall, Magnolia Gardens, Runnymead Plantation, and Charles Towne Landing State Park; all are important scenic, cultural, and tourism resources. Areas with a high potential for growth include Amberwood, Jerico on the Ashley, Summerfield, River Oaks, and Shadowmoss in Charleston County; and Coosaw Creek, Whitehall, Avanti Tract, Appian Landing, Bakers Landing, Indigo Fields, and Ricefield/Windsor Hill in Dorchester County. There are water and sewer services available to all these growth areas.

Watershed Protection and Restoration

Total Maximum Daily Loads (TMDLs)

A TMDL was developed by SCDHEC and approved by EPA for ***Sawmill Branch*** water quality monitoring site CSTL-043 and for ***Dorchester Creek*** site CSTL-013 to determine the maximum amount of fecal coliform bacteria it can receive from nonpoint sources and still meet water quality standards. Most of Sawmill Branch and Dorchester Creek have been straightened and channelized, separating them from their flood plains. The primary sources of fecal coliform to the streams were determined to be runoff from urbanized land in the watershed. The TMDL states that a 96% reduction in fecal coliform loading from urban sources for Sawmill Branch and a 93% reduction for Dorchester Creek is necessary for the streams to meet the recreational use standard.

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% form 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 0.1mg/L depression target at existing conditions. The TMDL model is currently being adapted for future harbor deepening evaluations.


Ashley River Watershed
(03050201-06)
Summerville
Ladson
North Charleston
Westoe Plantation
Old Ft Dorchester State Park
Bees Ferry
Charleston
Moore Drums
Gensta
Charleston Co. Dump
Lockwood Blvd Dump
SCG750030
CSTL-043
181002-6001
0644-19
SCG730623
RS-05563
AMB-022
SCG731178
CSTL-013
CSTL-102
1355-31
SC0037541
CSTL-099
181001-3001
182441-1601
182441-2001
SC0038822
SC0039063
1249-31
SCG731217
SCG731028
1717-19
MD-049
SCG250218
SCG250270
102707-7101, 7301
MD-246
MD-135
MD-052
MD-020
MD-034
RT-052098
SC0021229
1. Sawpit Creek
2. Bulls Creek
3. Brickyard Creek
4. Old Town Creek
5. Orangegrove Creek
6. James Island Creek
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
Wetland
Lake
10-Digit Hydrologic Units
Cities/Towns
Public Lands
D H E C
PROMOTE PROTECT PROSPER
South Carolina Department of Health and Environmental Control
0 0.5 1 2 3 4 5 Miles