

SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL

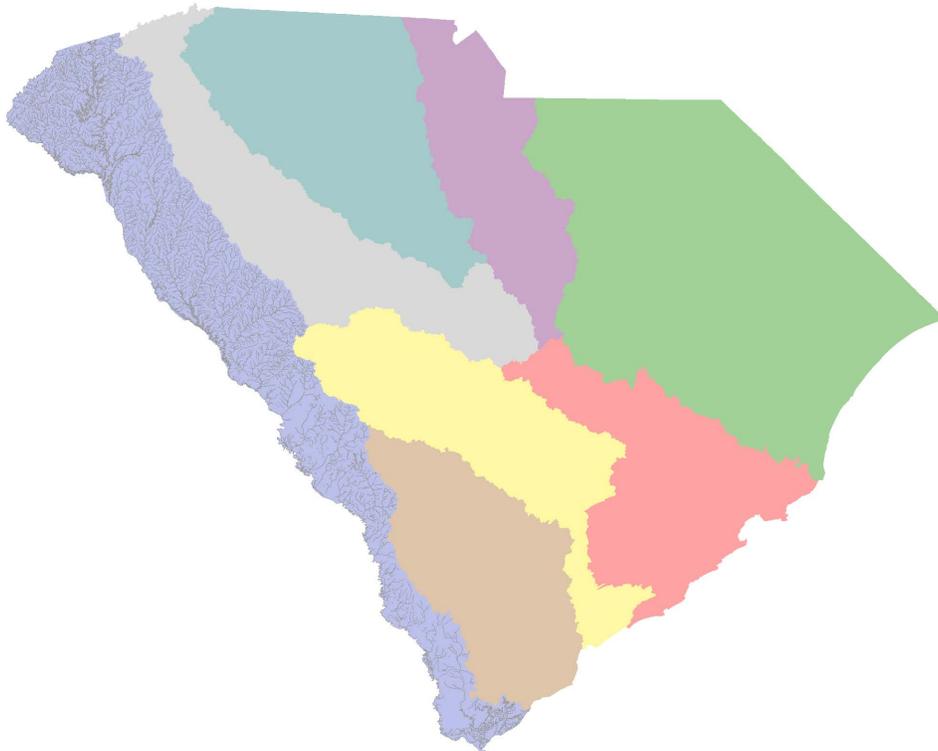
WATERSHED WATER QUALITY ASSESSMENT

SAVANNAH RIVER BASIN

2010

Watershed Water Quality Assessment

Savannah River Basin 2010



South Carolina Department of Health and Environmental Control

Bureau of Water

2600 Bull Street

Columbia, SC 29201

803-898-4300

www.scdhec.gov/water

PREFACE

In 1993, the South Carolina Department of Health and Environmental Control (SCDHEC) published the first in a series of five watershed management documents. The first in that series, Watershed Water Quality Management Strategy: Savannah-Salkehatchie Basin, communicated SCDHEC's innovative watershed approach, summarizing water programs and water quality in the basins. The approach continues to evolve and improve.

The watershed documents facilitate broader participation in the water quality management process. Through these publications, SCDHEC shares water quality information with internal and external partners, providing a common foundation for water quality improvement efforts at the local watershed or large-scale, often interstate, river basin level.

Water quality data from the Savannah River Basin was collected during 2002 through 2006 and assessed during this fourth, five-year watershed management cycle. This updated atlas provides summary information on a watershed basis, as well as geographical presentations of all permitted watershed activities. A waterbody index and facility indices allow the reader to locate information on specific waters and facilities of interest.

A brief summary of the water quality assessments included in the body of this document is provided following the Table of Contents. This summary lists all waters within the Savannah River Basin that fully support recreational and aquatic life uses, followed by those waters not supporting uses. In addition, the summaries list changes in use support status; those that have improved or degraded over the five years since the last assessment was written. More comprehensive information can be found in the individual watershed sections. The information provided is accurate to the best of our knowledge at the time of writing and will be updated in five years.

General information on Savannah River Basin Watershed Protection and Restoration Strategies can be found under that section on page 26, and more detailed information is located within the individual watershed evaluations.

A major change to this newest assessment is the use of the National Watershed Boundary dataset using the 8-, 10-, 12-Digit Hydrologic Unit Codes for South Carolina. This more accurate hydrologic unit code's use changes numerous boundaries in the basin and introduces a new numbering system for the watersheds. For comparison, each watershed evaluation will state the prior hydrologic code.

As SCDHEC continues basinwide and statewide water quality protection and improvement efforts, we are counting on the support and assistance of all stakeholders in the Savannah River Basin to participate in water quality improvements. We look forward to working with you.

If you have questions or comments regarding this document, or if you are seeking further information on the water quality in the Savannah Basin, please contact:

**Watershed Manager, Savannah River Basin
SCDHEC Bureau of Water
2600 Bull St.
Columbia, SC 29201
(803) 898-4300
www.scdhec.gov/watershed**

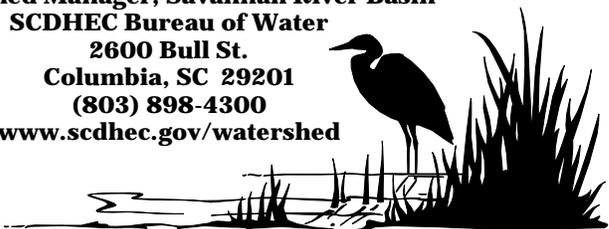


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This document should be cited as:

South Carolina Department of Health and Environmental Control. 2010.
Watershed Water Quality Assessment: Savannah River Basin. Technical
Report No.02F-10. Bureau of Water, Columbia, S.C.

Water Quality Assessment Summary

Savannah River Basin

- Table 1. Fully Supported Sites – *Sites with No Impairments from 2002-2006***
- Table 2. Impaired Sites – *Partially Supported or Not Supported sites from 2002-2006***
- Table 3. Changes in Use Support Status - *Sites that Improved from 2002-2006***
- Table 4. Changes in Use Support Status - *Sites that Degraded from 2002-2006***

TERMS USED IN TABLES

AQUATIC LIFE USE SUPPORT (AL) - The degree to which aquatic life is protected is assessed by comparing important water quality characteristics and the concentrations of potentially toxic pollutants with standards. Aquatic life use support is based on the percentage of standards excursions at a sampling site.

For **dissolved oxygen** and **pH**:

If the percentage of standard excursions is 10% or less, then uses are *fully supported*.

If the percentage of standard excursions is greater than 10% and less than or equal to 25%, then uses are *partially supported*.

If the percentage of standard excursions is greater than 25%, uses are *not supported* (see p.12 for further information).

For **toxins** (heavy metals, priority pollutants, chlorine, ammonia):

If the acute aquatic life standard for any individual toxicant is not exceeded more than once, uses are *fully supported*.

If the appropriate acute or chronic aquatic life standard is exceeded more than once (i.e. ≥ 2), but is less than or equal to 10% of the samples, uses are *partially supported*.

If the appropriate acute or chronic aquatic life standard is exceeded more than once (i.e. ≥ 2), and is greater than 10% of the samples, aquatic life uses are *not supported* (see p.12 for further information).

For **turbidity** and waters with **numeric total phosphorus, total nitrogen, and chlorophyll-a**:

If the percentage of standard excursions is 25% or less, then uses are *fully supported*.

If the percentage of standard excursions is greater than 25%, then uses are *not supported* (see p.12 for further information).

RECREATIONAL USE SUPPORT (REC) - The degree to which the swimmable goal of the Clean Water Act is attained (recreational use support) is based on the frequency of fecal coliform bacteria excursions, defined as greater than 400/100 ml for all surface water classes.

If 10% or less of the samples are greater than 400/100 ml, then recreational uses are said to be *fully supported*.

If the percentage of standards excursions is greater than 10% and less than or equal to 25%, then recreational uses are said to be *partially supported*.

If the percentage of standards excursions is greater than 25%, then recreational uses are said to be *nonsupported* (see p.14 for further information).

Excursion - The term excursion is used to describe a measurement that does not comply with the appropriate water quality standard.

Table 1. Fully Supported Sites in the Savannah River Basin 2002-2006

* = Station not evaluated for Recreational Support; TD=TMDL Developed; TI=TMDL Implementation; TI*=TMDL Implementation after 2006; Trend Data 1992-2006

Watershed	Waterbody Name	Station #	Improving Trends	Other Trends
03060102-02	East Fork Chattooga River	SV-308		Increasing BOD ₅
		SV-792 *		
	Chattooga River	SV-227	Decreasing Turbidity, Total Phosphorus	Increasing BOD ₅ , Total Nitrogen, Fecal Coliform
		SV-199	Decreasing Turbidity, Total Phosphorus	Increasing BOD ₅
03060102-03	Chauga River	RS-04538		
		SV-344		Increasing BOD ₅ , Total Nitrogen
	Toxaway Creek	SV-225 *		
03060102-04	Lake Yonah	RL-04376		
		RL-06444		
	Lake Hartwell-Tugaloo River Arm	SV-200	Decreasing Total Phosphorus	Increasing BOD ₅
03060102-05	Lake Hartwell	RL-03352		
		SV-363	Increasing Dissolved Oxygen; Decreasing Turbidity	
		RL-03459		
		RL-03333		
03060101-01	Lake Jocassee	SV-335	Decreasing Total Phosphorus, Fecal Coliform	Decreasing Dissolved Oxygen; Increasing BOD ₅ , Total Nitrogen
		SV-334	Decreasing Total Phosphorus, Fecal Coliform	Increasing pH
		SV-337	Decreasing Turbidity, Total Phosphorus, Fecal Coliform	Increasing BOD ₅ , Total Nitrogen, pH

Table 1. Fully Supported Sites in the Savannah River Basin 2002-2006

* = Station not evaluated for Recreational Support; TD=TMDL Developed; TI=TMDL Implementation; TI*=TMDL Implementation after 2006; Trend Data 1992-2006

Watershed	Waterbody Name	Station #	Improving Trends	Other Trends
03060101-01 (continued)	Lake Jocassee	SV-336	Decreasing Total Phosphorus, Fecal Coliform	Increasing BOD ₅ , Total Nitrogen
		RL-06430		
		CL-019	Increasing Dissolved Oxygen	Increasing pH, Fecal Coliform
03060101-02	Eastatoe Creek	SV-741 *		
		SV-230	Increasing Dissolved Oxygen; Decreasing Turbidity, Total Phosphorus	Increasing BOD ₅
	Rocky Bottom Creek	SV-676 *		
	Little Eastatoe Creek	RS-05392		
	Lake Keowee-Eastatoe Creek Arm	RL-04380		
	Lake Keowee	SV-338	Decreasing Turbidity, Total Phosphorus	Increasing BOD ₅ , Total Nitrogen
RL-02304				
03060101-03	Crane Creek	SV-684 *		
	Oconee Creek	SV-742 *		
	Lake Keowee	RL-03354		
		SV-312	Decreasing Total Phosphorus, Fecal Coliform	Increasing pH
		RL-05466		
		SV-361	Increasing Dissolved Oxygen	Increasing Total Nitrogen, Fecal Coliform
		SV-311	Decreasing Total Phosphorus	Decreasing Dissolved Oxygen; Increasing pH
		RL-05394		

Table 1. Fully Supported Sites in the Savannah River Basin 2002-2006

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Watershed	Waterbody Name	Station #	Improving Trends	Other Trends
03060101-05	Lake Hartwell-Coneross Creek Arm	SV-236		Decreasing Dissolved Oxygen; Increasing BOD ₅ , pH, Total Nitrogen
03060101-06	Lake Hartwell-Eighteenmile Creek Arm	RL-05392		
03060101-07	Six and Twenty Creek	SV-180*		
		SV-181		
03060101-08	Lake Hartwell-Keowee River Arm	SV-249	Decreasing Turbidity, Total Phosphorus	Increasing pH
	Wildcat Creek	SV-683 *		
	Lake Issaqueena	SV-360		Increasing Total Nitrogen
		RL-06432		
	Lake Hartwell-Martin Creek Arm	SV-106		Increasing BOD ₅
	Lake Hartwell-Seneca River Arm	RL-04378		
		RL-02330		
		SV-288	Decreasing Turbidity, Total Phosphorus	Increasing pH
		RL-05417		
		SV-339	Decreasing Turbidity, Total Phosphorus	Increasing BOD ₅ , pH
03060103-01	Lake Hartwell	RL-04371		
03060103-02	Broadway Lake	SV-319		
		RL-06421		

Table 1. Fully Supported Sites in the Savannah River Basin 2002-2006

* = Station not evaluated for Recreational Support; TD=TMDL Developed; TI=TMDL Implementation; TI*=TMDL Implementation after 2006; Trend Data 1992-2006

Watershed	Waterbody Name	Station #	Improving Trends	Other Trends
03060103-02 (Continued)	Broadway Lake (continued)	RL-02455		
		RL-03355		
		SV-258		
		SV-321		Increasing BOD ₅
	Wilson Creek	SV-185*		
	Lake Russell-Rocky River Arm	RL-06439		
SV-357				
03060103-04	Lake Russell	SV-100		Increasing BOD ₅ , Total Nitrogen
		RL-06441		
		RL-05409		
		SV-098	Decreasing Turbidity, Total Phosphorus	Increasing BOD ₅ , pH
	Little Generostee Creek	SV-109*		
03060103-05	Little River	RS-02478		
	Hogskin Creek	SV-733*		
	Morrow Creek	RS-05558		
	Calhoun Creek	SV-171*		
03060103-06	Big Curly Tail Creek	SV-732*		
	Rocky Branch	RS-05574		

Table 1. Fully Supported Sites in the Savannah River Basin 2002-2006

* = Station not evaluated for Recreational Support; TD=TMDL Developed; TI=TMDL Implementation; TI*=TMDL Implementation after 2006; Trend Data 1992-2006

Watershed	Waterbody Name	Station #	Improving Trends	Other Trends
03060103-07	Lake Thurmond	CL-040		
		RL-05405		
		RL-05407		
		RL-03357		
		RL-05463		
		SV-291	Decreasing Turbidity, Total Phosphorus, Fecal Coliform	Increasing BOD ₅
		RL-06423		
		RL-04385		
		CL-041	Decreasing Turbidity	Increasing pH
	Lake Thurmond–Little River Arm	CL-039		
	Baker Creek Tributary	RS-03510		
	Hawe Creek	SV-819*		
		SV-066*		
	Hawe Creek Tributary	SV-818*		
SV-817*				
03060106-01	Stevens Creek Reservoir	SV-294	Decreasing Turbidity, Total Phosphorus	Decreasing Dissolved Oxygen; Increasing BOD ₅
03060106-02	Vaucluse Pond	CL-067		
	Flat Rock Pond	SV-686		

Table 1. Fully Supported Sites in the Savannah River Basin 2002-2006

* = Station not evaluated for Recreational Support; TD=TMDL Developed; TI=TMDL Implementation; TI*=TMDL Implementation after 2006; Trend Data 1992-2006

Watershed	Waterbody Name	Station #	Improving Trends	Other Trends
03060106-02 (continued)	Graniteville Pond #2	SV-722		
	Horse Creek	SV-329	Decreasing Turbidity, Total Phosphorus	Increasing BOD ₅ , Fecal Coliform; Decreasing pH
		SV-096	Decreasing Total Phosphorus, Fecal Coliform	Increasing BOD ₅ ; Decreasing pH
		SV-072 ^{TD, TI}	Decreasing Turbidity, Total Phosphorus	Decreasing Dissolved Oxygen, pH
		SV-250 ^{TD, TI}	Decreasing Turbidity, Total Phosphorus	Decreasing Dissolved Oxygen, pH; Increasing BOD ₅
	Sand River	SV-069 ^{TD}	Decreasing Turbidity, Total Phosphorus	Increasing BOD ₅ ; Decreasing pH
	Langley Pond	RL-04373		
		RL-02317		
		CL-069		
		RL-03335		
	Little Horse Creek	SV-724*		
SV-073 ^{TD}			Decreasing pH	
03060106-04	Hollow Creek	SV-350 ^{TD}	Decreasing Turbidity	Increasing BOD ₅
03060106-05	Upper Three Runs	SV-680*		
	Cedar Creek	SV-723*		
	Tims Branch	SV-324	Decreasing Turbidity, Total Phosphorus, Total Nitrogen	Increasing BOD ₅ ; Decreasing Dissolved Oxygen, pH
03060106-06	Savannah River	SV-251 ^{TD, TI*}	Decreasing Turbidity, Total Phosphorus, Fecal Coliform	Increasing BOD ₅

Table 1. Fully Supported Sites in the Savannah River Basin 2002-2006

* = Station not evaluated for Recreational Support; TD=TMDL Developed; TI=TMDL Implementation; TI*=TMDL Implementation after 2006; Trend Data 1992-2006

Watershed	Waterbody Name	Station #	Improving Trends	Other Trends
03060106-06 (continued)	Savannah River	SV-252 ^{TD, TI*}	Decreasing Turbidity, Total Phosphorus, Fecal Coliform	Increasing BOD ₅
		SV-323 ^{TD, TI*}	Decreasing Turbidity	Increasing BOD ₅
		SV-366 ^{TD, TI*}	Decreasing BOD ₅ , Turbidity	
03060106-07	Lower Three Runs	SV-328		Increasing BOD ₅ , pH, Fecal Coliform
03060106-08	Fourmile Branch	RS-02470		
	Steel Creek	SV-327	Decreasing Total Phosphorus	Increasing BOD ₅ , Fecal Coliform
	Savannah River	SV-367 ^{TD, TI*}	Increasing Dissolved Oxygen; Decreasing Turbidity	Increasing pH
03060106-09	Brier Creek	SV-815*		
		SV-814*		
	Stoney Creek	SV-816*		
	Savannah River	SV-118 ^{TD, TI*}	Decreasing Turbidity	Increasing BOD ₅ ; Decreasing Dissolved Oxygen
		SV-368 ^{TD, TI*}		Increasing Fecal Coliform
03060107-01	Hard Labor Creek	SV-731*		
	Stevens Creek	SV-365	Decreasing BOD ₅	Increasing pH
03060107-02	Turkey Creek	SV-729*		
	Log Creek	SV-728*		
	Rocky Creek	SV-727*		

Table 1. Fully Supported Sites in the Savannah River Basin 2002-2006

* = Station not evaluated for Recreational Support; TD=TMDL Developed; TI=TMDL Implementation; TI*=TMDL Implementation after 2006; Trend Data 1992-2006

Watershed	Waterbody Name	Station #	Improving Trends	Other Trends	
03060107-03	Stevens Creek	SV-063*			
	Cheves Creek	SV-725*			
03060109-01	Savannah River	SV-355 ^{TD,TI*}		Increasing BOD ₅	
		SV-370 ^{TD,TI*}			
03060109-03	Cypress Branch	SV-744*			
	Savannah River	RO-046061			
03060110-02	New River	RT-052109			
		RT-042063			
03060110-03	May River	MD-173		Increasing Fecal Coliform	
		RO-06313			
		RO-02002			
		MD-016		Increasing BOD ₅	
	Calibouge Sound	RO-056102			
		RO-036038			
		MD-175	Decreasing Fecal Coliform		
		RO-02009			
	Cooper River	RO-06305			
	Ramshorn Creek	MD-257	Decreasing Turbidity		Increasing Fecal Coliform
	Cooper River Tributary	RT-052106			

Table 1. Fully Supported Sites in the Savannah River Basin 2002-2006

* = Station not evaluated for Recreational Support; TD=TMDL Developed; TI=TMDL Implementation; TI*=TMDL Implementation after 2006; Trend Data 1992-2006

Watershed	Waterbody Name	Station #	Improving Trends	Other Trends
03060110-03 (continued)	Broad Creek	RT-02022		
		MD-174	Decreasing Total Nitrogen	Increasing BOD ₅ ; Decreasing pH

Table 2. Impaired Sites in the Savannah River Basin 2002-2006

REC=Recreational; AL=Aquatic Life; DW= Drinking Water; PS=Partially Supported Standards; NS=Nonsupported Standards; *=Station not evaluated for REC Support; **=Station not evaluated for AL Support; TD=TMDL Developed; TI=TMDL Implementation; TI*=TMDL Implementation after 2006; Trend Data 1992-2006

Watershed	Waterbody Name	Station #	Use	Status	Water Quality Indicator	Improving Trends	Other Trends
03060102-02	Lake Tugaloo	SV-359	AL	PS	pH		Decreasing pH; Increasing BOD ₅ , Total Nitrogen
03060102-03	Chauga River Tributary	RS-04380	REC	NS	Fecal Coliform		
03060102-04	Lake Yonah	SV-358	AL	PS	pH		Increasing BOD ₅ , Total Nitrogen
03060102-05	Norris Creek	SV-301	REC	PS	Fecal Coliform	Decreasing Turbidity	Increasing BOD ₅ , pH
	Choestoea Creek	SV-108	REC	NS	Fecal Coliform		Increasing BOD ₅ , Total Nitrogen
	Beaverdam Creek	SV-345 ^{TD, TI}	AL	PS	Macroinvertebrates pH		
			REC	PS	Fecal Coliform		
		SV-364	AL	PS	pH		
			REC	PS	Fecal Coliform		
Mud Creek	RS-06170	REC	PS	Fecal Coliform			
03060101-02	Little Eastatoe Creek	SV-341 ^{TD}	REC	NS	Fecal Coliform	Decreasing Total Phosphorus	Increasing BOD ₅
03060101-03	Burgess Creek	RS-02466	REC	NS	Fecal Coliform		
	Little River	SV-203	REC	PS	Fecal Coliform		Increasing BOD ₅
	Cane Creek	SV-342 ^{TD, TI*}	REC	PS	Fecal Coliform	Decreasing Total Phosphorus	Increasing BOD ₅

Table 2. Impaired Sites in the Savannah River Basin 2002-2006

REC=Recreational; AL=Aquatic Life; DW= Drinking Water; PS=Partially Supported Standards; NS=Nonsupported Standards; *=Station not evaluated for REC Support; **=Station not evaluated for AL Support; TD=TMDL Developed; TI=TMDL Implementation; TI*=TMDL Implementation after 2006; Trend Data 1992-2006

Watershed	Waterbody Name	Station #	Use	Status	Water Quality Indicator	Improving Trends	Other Trends
03060101-03 (continued)	Little Cane Creek	SV-807**	REC	PS	Fecal Coliform		
		SV-808**	REC	PS	Fecal Coliform		
		SV-809**	REC	NS	Fecal Coliform		
		SV-810**	REC	NS	Fecal Coliform		
		SV-343 ^{TD,TI*}	REC	NS	Fecal Coliform		Increasing BOD ₅
	Little Cane Creek Tributary	SV-811**	REC	NS	Fecal Coliform		
		SV-812**	REC	PS	Fecal Coliform		
03060101-04	North Fork	SV-206* ^{TD,TI*}	AL	PS	Macroinvertebrates	Decreasing Turbidity	Increasing BOD ₅ , pH
	Rices Creek	SV-740*	AL	PS	Macroinvertebrates		
	Twelvemile Creek	SV-362 ^{TD,TI*}	REC	NS	Fecal Coliform		
		SV-137 ^{TD,TI*}	REC	PS	Fecal Coliform		Increasing BOD ₅ ; Decreasing pH
	Golden Creek	SV-239 ^{TD,TI*}	REC	NS	Fecal Coliform		
		SV-738*	AL	PS	Macroinvertebrates		
	Twelvemile Creek Tributary	SV-136 ^{TD,TI*}	REC	NS	Fecal Coliform	Decreasing Turbidity	Increasing BOD ₅ , pH, Total Phosphorus
03060101-05	Colonels Fork Creek	RS-02304	REC	PS	Fecal Coliform		

Table 2. Impaired Sites in the Savannah River Basin 2002-2006

REC=Recreational; AL=Aquatic Life; DW= Drinking Water; PS=Partially Supported Standards; NS=Nonsupported Standards; *=Station not evaluated for REC Support; **=Station not evaluated for AL Support; TD=TMDL Developed; TI=TMDL Implementation; TI*=TMDL Implementation after 2006; Trend Data 1992-2006

Watershed	Waterbody Name	Station #	Use	Status	Water Quality Indicator	Improving Trends	Other Trends
03060101-05 (continued)	Coneross Creek	SV-333 ^{TD,TI}	REC	PS	Fecal Coliform	Decreasing Turbidity, Fecal Coliform; Increasing Dissolved Oxygen	Increasing BOD ₅
		SV-004 ^{TD,TI}	AL	PS	Zinc	Decreasing Turbidity	Increasing BOD ₅ , pH
	REC		PS	Fecal Coliform			
	Snow Creek	RS-05412	REC	PS	Fecal Coliform		
03060101-06	Eighteenmile Creek	SV-017 ^{TD}	REC	NS	Fecal Coliform		Increasing BOD ₅ , pH
		SV-245 ^{TD}	REC	PS	Fecal Coliform	Decreasing Turbidity; Increasing Dissolved Oxygen	Increasing BOD ₅
		SV-135 ^{TD}	AL	PS	pH	Decreasing Turbidity	Increasing BOD ₅ , Total Nitrogen
			REC	NS	Fecal Coliform		
	SV-233 ^{TD}	REC	NS	Fecal Coliform		Increasing Total Nitrogen	
	Woodside Branch	SV-241 ^{TD}	AL	PS	pH	Decreasing BOD ₅ , Fecal Coliform	Increasing Turbidity
			REC	PS	Fecal Coliform		
	Lake Hartwell-Eighteenmile Creek Arm	SV-268 ^{TD}	AL	NS	Dissolved Oxygen, Turbidity, Total Phosphorus	Decreasing Turbidity, Total Phosphorus	Decreasing Dissolved Oxygen
			REC	NS	Fecal Coliform		
	03060101-07	Charles Creek	RS-03506	AL	PS	Macroinvertebrates	
REC				PS	Fecal Coliform		

Table 2. Impaired Sites in the Savannah River Basin 2002-2006

REC=Recreational; AL=Aquatic Life; DW= Drinking Water; PS=Partially Supported Standards; NS=Nonsupported Standards; *=Station not evaluated for REC Support; **=Station not evaluated for AL Support; TD=TMDL Developed; TI=TMDL Implementation; TI*=TMDL Implementation after 2006; Trend Data 1992-2006

Watershed	Waterbody Name	Station #	Use	Status	Water Quality Indicator	Improving Trends	Other Trends
03060101-07 (continued)	Three and Twenty Creek	SV-735*	AL	PS	Macroinvertebrates		
		SV-111 ^{TD}	REC	NS	Fecal Coliform	Decreasing Turbidity, Total Phosphorus	Increasing BOD ₅
03060101-08	Sixmile Creek	SV-205	REC	NS	Fecal Coliform		Increasing BOD ₅
03060103-01	Lake Hartwell	SV-340	AL	PS	Copper	Decreasing Turbidity, Total Phosphorus, Fecal Coliform	Increasing BOD ₅ , pH
03060103-02	Rocky River	SV-031 ^{TD}	AL	NS	Turbidity		Increasing BOD ₅ , pH, Fecal Coliform
			REC	NS	Fecal Coliform		
		SV-041 ^{TD}	AL	NS	Turbidity		Increasing pH
			REC	NS	Fecal Coliform		
	SV-346	REC	PS	Fecal Coliform	Decreasing Total Nitrogen	Increasing BOD ₅	
	Cupboard Creek	SV-139 ^{TD}	AL	PS	Dissolved Oxygen	Decreasing BOD ₅ , Total Phosphorus, Fecal Coliform	Decreasing pH
		SV-140 ^{TD}	REC	PS	Fecal Coliform	Decreasing BOD ₅ , Total Phosphorus; Increasing Dissolved Oxygen	
	Broadway Creek	SV-141 ^{TD}	AL	NS	Turbidity	Decreasing Turbidity	Increasing pH
			REC	NS	Fecal Coliform		
Betsy Creek	SV-037	REC	NS	Fecal Coliform			

Table 2. Impaired Sites in the Savannah River Basin 2002-2006

REC=Recreational; AL=Aquatic Life; DW= Drinking Water; PS=Partially Supported Standards; NS=Nonsupported Standards; *=Station not evaluated for REC Support; **=Station not evaluated for AL Support; TD=TMDL Developed; TI=TMDL Implementation; TI*=TMDL Implementation after 2006; Trend Data 1992-2006

Watershed	Waterbody Name	Station #	Use	Status	Water Quality Indicator	Improving Trends	Other Trends
03060103-02 (Continued)	Lake Secession	SV-331	AL	PS	pH	Decreasing Turbidity, Total Phosphorus, Total Nitrogen, Fecal Coliform	Increasing pH
		SV-332	AL	PS	pH	Decreasing Turbidity, Total Phosphorus	Increasing BOD ₅ , pH
	Wilson Creek	SV-347 ^{TD}	REC	NS	Fecal Coliform		Increasing BOD ₅
03060103-04	Big Generostee Creek	SV-316 ^{TD, TI}	REC	NS	Fecal Coliform	Decreasing Turbidity, Fecal Coliform	Increasing pH
	Devils Fork Creek	RS-02490	REC	NS	Fecal Coliform		
	Little Generostee Creek	RS-05414	REC	NS	Fecal Coliform		
03060103-05	Little River	SV-164 ^{TD}	REC	PS	Fecal Coliform		Increasing BOD ₅
		SV-348 ^{TD}	REC	PS	Fecal Coliform		Increasing BOD ₅
		SV-192 ^{TD}	REC	PS	Fecal Coliform		Increasing BOD ₅ , pH
	Johnson Creek Trib.	RS-05586	REC	PS	Fecal Coliform		
	Gill Creek	SV-644*	AL	PS	Macroinvertebrates		
	Sawney Creek	SV-052 ^{TD}	REC	PS	Fecal Coliform	Decreasing Turbidity, Fecal Coliform	Increasing BOD ₅ , Total Nitrogen; Decreasing Dissolved Oxygen

Table 2. Impaired Sites in the Savannah River Basin 2002-2006

REC=Recreational; AL=Aquatic Life; DW= Drinking Water; PS=Partially Supported Standards; NS=Nonsupported Standards; *=Station not evaluated for REC Support; **=Station not evaluated for AL Support; TD=TMDL Developed; TI=TMDL Implementation; TI*=TMDL Implementation after 2006; Trend Data 1992-2006

Watershed	Waterbody Name	Station #	Use	Status	Water Quality Indicator	Improving Trends	Other Trends
03060103-06	Bailey Creek Tributary	RS-06190	AL	PS	Macroinvertebrates		
			REC	NS	Fecal Coliform		
	Long Cane Creek	SV-349 ^{TD, TI*}	REC	NS	Fecal Coliform	Decreasing Turbidity	Increasing BOD ₅
		SV-318 ^{TD, TI*}	REC	PS	Fecal Coliform	Decreasing Turbidity, Total Phosphorus	Increasing BOD ₅ , pH
	Johns Creek	SV-734*	AL	PS	Macroinvertebrates		
	Blue Hill Creek	SV-053B ^{TD}	REC	NS	Fecal Coliform	Increasing Dissolved Oxygen	Increasing BOD ₅ , Turbidity, Total Phosphorus
	Reedy Branch	RS-04542	REC	NS	Fecal Coliform		
03060106-02	Horse Creek	SV-071	REC	NS	Fecal Coliform	Decreasing Turbidity, Total Phosphorus	Increasing BOD ₅ ; Decreasing pH
03060106-05	Upper Three Runs	SV-325	REC	PS	Fecal Coliform	Decreasing Turbidity, Total Nitrogen	Increasing BOD ₅ ; Decreasing pH
03060106-06	Pretty Run Creek	RS-04544 ^{TD, TI*}	AL	PS	Macroinvertebrates		
			REC	NS	Fecal Coliform		
03060106-07	Lower Three Runs	SV-175	AL	NS	Copper		
03060106-09	Brier Creek	SV-745*	AL	PS	Macroinvertebrates		
03060107-01	Hard Labor Creek	SV-151 ^{TD, TI*}	AL	PS	Macroinvertebrates	Decreasing Turbidity	Increasing BOD ₅ , pH
			REC	NS	Fecal Coliform		

Table 2. Impaired Sites in the Savannah River Basin 2002-2006

REC=Recreational; AL=Aquatic Life; DW= Drinking Water; PS=Partially Supported Standards; NS=Nonsupported Standards; *=Station not evaluated for REC Support; **=Station not evaluated for AL Support; TD=TMDL Developed; TI=TMDL Implementation; TI*=TMDL Implementation after 2006; Trend Data 1992-2006

Watershed	Waterbody Name	Station #	Use	Status	Water Quality Indicator	Improving Trends	Other Trends
03060107-01 (Continued)	Church Branch	RS-06016	REC	NS	Fecal Coliform		
	Cuffytown Creek	SV-351 ^{TD}	AL	PS	Macroinvertebrates		Increasing BOD ₅ , pH
			REC	PS	Fecal Coliform		
	Doctors Branch	RS-03342	AL	PS	Macroinvertebrates		
Stevens Creek	SV-330	REC	PS	Fecal Coliform	Decr. Total Phosphorus	Increasing BOD ₅ , pH	
03060107-02	Turkey Creek	SV-352	REC	PS	Fecal Coliform		Increasing BOD ₅ , pH
	Beaverdam Creek	SV-353	AL	PS	Macroinvertebrates		Increasing BOD ₅ , pH
			REC	PS	Fecal Coliform		
03060107-03	Stevens Creek	SV-354	AL	NS	Copper		Increasing BOD ₅ , pH
			REC	PS	Fecal Coliform		
03060109-01	Savannah River	SV-369 ^{TD, TI*}	AL	NS	Zinc		Increasing Fecal Coliform
03060109-03	Cypress Creek	SV-356	AL	NS	Dissolved Oxygen	Decreasing Turbidity	
			REC	PS	Fecal Coliform		
	Unnamed Swamp to the Savannah River	RS-04372	AL	NS	Zinc		
	Wright River	RT-032032	AL	NS	Turbidity		
MD-259		AL	PS	Copper, Nickel			

Table 2. Impaired Sites in the Savannah River Basin 2002-2006

REC=Recreational; AL=Aquatic Life; DW= Drinking Water; PS=Partially Supported Standards; NS=Nonsupported Standards; *=Station not evaluated for REC Support; **=Station not evaluated for AL Support; TD=TMDL Developed; TI=TMDL Implementation; TI*=TMDL Implementation after 2006; Trend Data 1992-2006

Watershed	Waterbody Name	Station #	Use	Status	Water Quality Indicator	Improving Trends	Other Trends
03060110-01	Great Swamp	MD-129	AL	NS	Zinc		Increasing BOD ₅ , Total Phosphorus
			REC	PS	Fecal Coliform		
03060110-02	New River	MD-118	REC	PS	Fecal Coliform		Increasing pH
		RT-06021	REC	PS	Fecal Coliform		
	Ramshorn Creek	MD-258	AL	NS	Nickel		

Table 3. Changes in Use Support Status

Savannah River Basin Sites that Improved from 2002 to 2006

REC= Recreational; AL=Aquatic Life; FS=Fully Supported Standards; PS=Partially Supported Standards; NS=Nonsupported Standards; TD=TMDL Developed; TI=TMDL Implementation; TI*=TMDL Implementation after 2006

Watershed	Waterbody Name	Station #	Use	Status		Water Quality Indicator	
				2002	2006	2002	2006
03060102-03	Chauga River	SV-344	REC	PS	FS	Fecal Coliform	
03060102-04	Lake Yonah	SV-358	AL	NS	PS	Total Phosphorus	pH
03060102-05	Norris Creek	SV-301	REC	NS	PS	Fecal Coliform	Fecal Coliform
	Beaverdam Creek	SV-345 ^{TD,TI}	REC	NS	PS	Fecal Coliform	Fecal Coliform
03060101-03	Cane Creek	SV-342 ^{TD,TI*}	REC	NS	PS	Fecal Coliform	Fecal Coliform
03060101-04	North Fork	SV-206 ^{TD,TI*}	REC	PS	FS	Fecal Coliform	
03060101-05	Coneross Creek	SV-333 ^{TD,TI}	AL	PS	FS	Copper	
		SV-004 ^{TD,TI}	AL	NS	PS	Copper	Zinc
03060101-06	Eighteenmile Creek	SV-245 ^{TD}	REC	NS	PS	Fecal Coliform	Fecal Coliform
03060101-07	Six and Twenty Creek	SV-181	REC	PS	FS	Fecal Coliform	
03060103-02	Cupboard Creek	SV-139 ^{TD}	AL	NS	PS	Dissolved Oxygen	Dissolved Oxygen
		SV-140 ^{TD}	REC	NS	PS	Fecal Coliform	Fecal Coliform
	Betsy Creek	SV-037	AL	NS	FS	Copper	
	Lake Seccession	SV-331	AL	NS	PS	Total Phosphorus, pH	pH
03060103-05	Little River	SV-348 ^{TD}	REC	NS	PS	Fecal Coliform	Fecal Coliform
	Sawney Creek	SV-052 ^{TD}	AL	PS	FS	Dissolved Oxygen	
REC			NS	PS	Fecal Coliform	Fecal Coliform	
03060103-06	Blue Hill Creek	SV-053B ^{TD}	AL	NS	FS	Turbidity	
03060106-01	Stevens Creek Reservoir	SV-294	AL	PS	FS	Dissolved Oxygen, pH	
03060106-02	Horse Creek	SV-071	AL	NS	FS	pH	
		SV-096	AL	PS	FS	pH	
		SV-072 ^{TD,TI}	REC	PS	FS	Fecal Coliform	
		SV-250 ^{TD,TI}	AL	NS	FS	pH	
	REC		PS	FS	Fecal Coliform		
Little Horse Creek	SV-073 ^{TD,TI}	AL	PS	FS	pH		

Savannah River Basin Sites that Improved from 2002 to 2006

REC= Recreational; AL=Aquatic Life; FS=Fully Supported Standards; PS=Partially Supported Standards; NS=Nonsupported Standards; TD=TMDL Developed; TI=TMDL Implementation; TI*=TMDL Implementation after 2006

Watershed	Waterbody Name	Station #	Use	Status		Water Quality Indicator	
				2002	2006	2002	2006
03060106-04	Hollow Creek	SV-350 ^{TD}	REC	PS	FS	Fecal Coliform	
03060106-05	Tims Branch	SV-324	REC	PS	FS	Fecal Coliform	
03060107-01	Rocky Creek	SV-730	AL	PS	FS	Macroinvertebrates	
03060110-02	New River	MD-118	AL	NS	FS	pH	
			REC	NS	PS	Fecal Coliform	Fecal Coliform

Table 4. Changes in Use Support Status

Savannah River Basin Sites that Degraded from 2002 to 2006

REC= Recreational; AL=Aquatic Life; FS=Fully Supported Standards; PS=Partially Supported Standards; NS=Nonsupported Standards; TD=TMDL Developed; TI=TMDL Implementation; TI*=TMDL Implementation after 2006

Watershed	Waterbody Name	Station #	Use	Status		Water Quality Indicator	
				2002	2006	2002	2006
03060102-02	Lake Tugaloo	SV-359	AL	FS	PS		pH
03060102-05	Beaverdam Creek	SV-345 ^{TD,TI}	AL	FS	PS		Macroinvertebrates pH
03060101-02	Little Eastatoe Creek	SV-341 ^{TD}	REC	PS	NS	Fecal Coliform	Fecal Coliform
03060101-03	Little River	SV-203	REC	FS	PS		Fecal Coliform
03060101-04	North Fork	SV-206 ^{TD,TI*}	AL	FS	PS		Macroinvertebrates
	Rices Creek	SV-740	AL	FS	PS		Macroinvertebrates
	Twelvemile Creek Tributary	SV-136 ^{TD,TI*}	REC	PS	NS	Fecal Coliform	Fecal Coliform
	Golden Creek	SV-738	AL	FS	PS		Macroinvertebrates
03060101-06	Eighteenmile Creek	SV-135 ^{TD}	AL	FS	PS		pH
	Lake Hartwell- Eighteenmile Creek Arm	SV-268 ^{TD}	REC	PS	NS	Fecal Coliform	Fecal Coliform
	Woodside Branch	SV-241 ^{TD}	AL	FS	PS		pH
03060101-07	Three and Twenty Creek	SV-735	AL	FS	PS		Macroinvertebrates
03060101-08	Sixmile Creek	SV-205	REC	PS	NS	Fecal Coliform	Fecal Coliform
03060103-01	Lake Hartwell	SV-340	AL	FS	PS		Copper
03060103-02	Broadway Creek	SV-141 ^{TD}	AL	PS	NS	Macroinvertebrates	Turbidity
	Betsy Creek	SV-037	REC	FS	NS		Fecal Coliform
	Rocky River	SV-031 ^{TD}	AL	FS	NS		Turbidity
		SV-041 ^{TD}	AL	FS	NS		Turbidity
			REC	PS	NS	Fecal Coliform	Fecal Coliform
		SV-346	REC	FS	PS		Fecal Coliform
	Wilson Creek	SV-347 ^{TD}	REC	PS	NS	Fecal Coliform	Fecal Coliform
Lake Secession	SV-332	AL	FS	PS		pH	
03060103-05	Gill Creek	SV-644	AL	FS	PS		Macroinvertebrates
03060103-06	Long Cane Creek	SV-318 ^{TD,TI*}	REC	FS	PS		Fecal Coliform
03060106-02	Horse Creek	SV-071	REC	FS	NS		Fecal Coliform

Savannah River Basin Sites that Degraded from 2002 to 2006

REC= Recreational; AL=Aquatic Life; FS=Fully Supported Standards; PS=Partially Supported Standards; NS=Nonsupported Standards; TD=TMDL Developed; TI=TMDL Implementation; TI*=TMDL Implementation after 2006

Watershed	Waterbody Name	Station #	Use	Status		Water Quality Indicator	
				2002	2006	2002	2006
03060106-05	Upper Three Runs	SV-325	REC	FS	PS		Fecal Coliform
03060106-07	Lower Three Runs	SV-175	AL	FS	NS		Copper
03060106-09	Brier Creek	SV-745	AL	FS	PS		Macroinvertebrates
03060107-01	Cuffytown Creek	SV-351 ^{TD}	AL	FS	PS		Macroinvertebrates
	Stevens Creek	SV-330	REC	FS	PS		Fecal Coliform
03060107-02	Turkey Creek	SV-352	REC	FS	PS		Fecal Coliform
	Beaverdam Creek	SV-353	AL	FS	PS		Macroinvertebrates
			REC	FS	PS		Fecal Coliform
03060107-03	Stevens Creek	SV-354	AL	FS	NS		Copper
			REC	FS	PS		Fecal Coliform
03060109-03	Cypress Creek	SV-356	REC	FS	PS		Fecal Coliform
03060110-01	Great Swamp	MD-129	AL	FS	NS		Zinc

Introduction

The South Carolina Department of Health and Environmental Control (SCDHEC or the Department) initiated its first watershed planning activities as a result of a U.S. Environmental Protection Agency (USEPA) grant in June of 1972. These activities were soon extended by requirements for a Continuing Planning Process under §303(e), “Federal Water Pollution Control Act Amendments of 1972”, U.S. Public Law 92-500. In 1975, the SCDHEC published basin-planning reports for the four major basins in South Carolina. A related planning activity resulted from §208 of the Federal Water Pollution Control Act, which required states to prepare planning documents on an areawide basis. The Continuing Planning Process, watershed assessments, and 208 plans are elements of South Carolina’s overall water quality management plan. In 1992, SCDHEC’s Bureau of Water initiated its Watershed Water Quality Management program to better coordinate river basin planning and water quality management. Watershed-based management allows the Department to address Congressional and Legislative mandates in a coordinated manner and to better utilize current resources. The watershed approach also improves communication between the Department, the regulated community, and the public on existing and future water quality issues.

Purpose of the Watershed Water Quality Assessment

A watershed is a geographic area into which the surrounding waters, sediments, and dissolved materials drain, and whose boundaries extend along surrounding topographic ridges. Watershed-based water quality management recognizes the interdependence of water quality related activities associated with a drainage basin including: monitoring, problem identification and prioritization, water quality modeling, planning, permitting, and other activities. The Bureau of Water’s watershed approach integrates these and other activities by watershed, resulting in appropriately focused water quality protection efforts. While an important aspect of the program is water quality problem identification and solution, the emphasis is on problem prevention.

The Department has divided the State into five regions (areas consisting of one or more river basins), along hydrologic lines, which contain approximately the same number of NPDES permitted dischargers. A Watershed Water Quality Assessment (WWQA) will be created for each major river basin within the five regions and will be updated on a five-year rotational basis. This will allow for effective allocation and coordination of water quality activities and efficient use of available resources. The Savannah River Basin is subdivided into 34 watersheds or hydrologic units within South Carolina, which include the Tugaloo River/Seneca River Basin, the Upper Savannah River Basin, and the Lower Savannah River Basin. The Tugaloo River/Seneca River Basin is subdivided into 12 watersheds and includes The Chattooga River, the Tugaloo River, Lake Jocassee, the Keowee River, Lake Keowee, the Little River, Twelvemile Creek, Coneross Creek, Eighteenmile Creek, Six and Twenty Creek, Lake Hartwell, and the Seneca River. The Upper Savannah River Basin is subdivided into 6 watersheds and includes the Savannah River, Lake Hartwell, the Rocky River, Lake Russell, the Little River, Lake

Thurmond, and Long Cane Creek. The Lower Savannah River Basin is subdivided into 16 watersheds and includes the Savannah River, Stevens Creek Reservoir, Horse Creek, Hollow Creek, Upper Three Runs, Lower Three Runs, Stevens Creek, Turkey Creek, Great Swamp, the New River, the May River, and Calibougue Sound.

The hydrologic units are based on the National Watershed Boundary dataset using the 8-, 10-, 12-Digit Hydrologic Unit Codes for South Carolina. All water quality related evaluations are made at the 10-digit watershed level. The stream names used are derived from USGS topographic maps. The National Hydrography Dataset (NHD) served as the basemap for streams and lakes. The dataset was used to calculate stream length estimates, and lake acreages. NHD is the digital database of the USGS 1:24,000 scale hydrography, integrated with reach (stream) related information from the USEPA. Based on the blue line streams of the USGS topographic maps, it is likely that portions of the stream network in terms of perennial, intermittent, and ephemeral streams are not accurately represented.

The watershed-based assessments fulfill a number of USEPA reporting requirements including various activities under §303(d), §305(b), §314, and §319 of the Clean Water Act (CWA). Section 303(d) requires a listing of waters located within a watershed that do not meet applicable water quality standards. Section 305(b) requires that the State biennially submit a report that includes a water quality description and analysis of all navigable waters to estimate environmental impacts. Section 314 requires that the State submit a biennial report that identifies, classifies, describes, and assesses the status and trends in water quality of publicly owned lakes. The watershed plan is also a logical evaluation, prioritization, and implementation tool for nonpoint source (§319) requirements. Nonpoint source best management practices (BMPs) can be selected by identifying water quality impairments and necessary controls, while considering all the activities occurring in the drainage basin.

The assessment also allows for more efficient issuance of National Pollutant Discharge Elimination System (NPDES) and State wastewater discharge permits. Proposed permit issuances within a watershed may be consolidated and presented to the public in groups, rather than one at a time, allowing the Department a resource savings and the public an information advantage.

The Watershed Water Quality Assessment (WWQA) is a geographically based document that describes, at the watershed level, water quality related activities that may potentially have an adverse impact on water quality. The Watershed Implementation Staff investigates the impaired streams mentioned in the WWQA to determine, where possible, the source of the impairment and recommends solutions to correct the problems. As part of this effort, the watershed staff is forging partnerships with various federal and state agencies, local governments, and community groups. In particular, the Department's Watershed Program and the NRCS (Natural Resources Conservation Service) district offices are working together to address some of the nonpoint source (NPS) concerns in the basin. By combining NRCS's local knowledge of land use and the Department's knowledge of water quality, we are able to build upon NRCS's close relationships with landowners and determine where NPS projects are needed. These projects may include educational campaigns or special water quality studies.

Factors Assessed in Watershed Evaluations

Surface Water Quality

SCDHEC's Bureau of Water and Bureau of Environmental Services work to ensure that the water in South Carolina is safe for drinking and recreation, and that it is suitable to support and maintain aquatic flora and fauna. Functions include planning, permitting, compliance assurance, enforcement, and monitoring. This section provides an overview of water quality evaluation and protection activities.

Monitoring

In an effort to evaluate the State's water quality, the Department operates and collects data from a statewide network of ambient monitoring sites. The ambient monitoring network is directed toward determining long-term water quality trends, assessing attainment of water quality standards, identifying locations in need of additional attention, and providing background data for planning and evaluating stream classifications and standards.

Ambient monitoring data are also used in the process of formulating permit limits for wastewater discharges with the goal of maintaining State and Federal water quality standards and criteria in the receiving streams in accordance with the goals of the Clean Water Act. These standards and criteria define the instream chemical concentrations that provide for protection and reproduction of aquatic flora and fauna, help determine support of the classified uses of each waterbody, and serve as instream limits for the regulation of wastewater discharges or other activities. In addition, by comparing the ambient monitoring network data to the State Water Quality Standards, these data are used in the preparation of the biennial §305(b) report to Congress, which provides a general summary of statewide water quality, and the §303(d) list of impaired waters with respect to attainment of classified uses.

There are several major components to SCDHEC's ambient surface water quality monitoring activities, including ongoing fixed-location monitoring, cyclic watershed monitoring, and statewide probability-based monitoring, each designed to provide data for water quality assessment of major water resource types at different spatial and temporal scales. In addition to sites sampled specifically as part of the cyclical watershed activities (W), the ambient surface water quality monitoring program includes several different monitoring station types: Integrator (INT), Special Purpose (SPRP), Summer-Only (SUMM), Random Stream for year ## (RS##), Random Lake for year ## (RL##), Random Tide Creek for year ## (RT##), Random Open Water for year ## (RO##), biological (BIO) stations. Special Study Sites (SSS) are designed to investigate specific activities at a station.

Integrator Sites are fixed-location sites sampled on a monthly basis, year-round, every year, and target the furthest downstream access of each of the 10-digit watershed units in the state, as well as the major waterbodies that occur within these watershed units. Special Purpose Sites are also permanent, monthly, year-round, fixed-location sites, but represent locations of special interest to the Department that do not meet the location criteria of Integrator Sites.

Summer-Only stations are sampled monthly from May through October, a period critical to aquatic life, and characterized by higher water temperatures and lower flows. There are very few Summer-Only Sites as they are intended to track specific reservoir eutrophication concerns.

Watershed stations are sampled on a monthly basis, year-round, during a basin's target year. Watershed stations are located to provide more complete and representative coverage within the larger drainage basin, and to identify additional monitoring needs. Watershed stations have the same parameter coverage as Integrator Sites. Watershed stations are locations with extensive historic monitoring data (e.g. primary or secondary monitoring sites under the previous design). Changes in water quality can be identified by comparison of the new data to the historic data.

A statewide Probability-Based, or random sampling, component is part of the monitoring design. A probability-based monitoring design is a type of a survey design in which the population of interest is sampled in a fashion that allows statements to be made about the whole population based on a subsample, and produces an estimate of the accuracy of the assessment results. The advantage of the probability-based sampling design is that statistically valid statements about water quality can be made about large areas based on a relatively small subsample. Separate monitoring schemes have been developed for stream, lake/reservoir, and estuarine resources. Each year a new statewide set of probability-based random sites is selected for each waterbody type. Random Sites are sampled on a monthly basis for one year with the same parameter coverage as Integrator Sites. The data from those Random Sites located within this basin are included in this assessment.

Ambient biological trend monitoring is conducted to collect data to indicate general biological conditions of State waters that may be subject to a variety of point and nonpoint source impacts. Ambient biological sampling is also used to establish regional reference or "least impacted" sites from which to make comparisons in future monitoring. Additionally, special macroinvertebrate studies, in which stream specific comparisons among stations located upstream and downstream from a known discharge or nonpoint source area, are used to assess impact.

Qualitative sampling of macroinvertebrate communities is the primary bioassessment technique used in ambient biological trend monitoring. A habitat assessment of general stream habitat availability and a substrate characterization is conducted at each site. Annual ambient biological monitoring is conducted during low flow "worst case" conditions in July - September. Some coastal plain streams that have no flow conditions in the summer months may be sampled in the winter (January-March). This technique may also be used in special studies for the purpose of determining if, and to what extent, a wastewater discharge or nonpoint source runoff is impacting the receiving stream. A minimum of two sample locations, one upstream and one downstream from a discharge or runoff area, is collected. At least one downstream recovery station is also established when appropriate. Sampling methodology follows procedures described in Standard Operating Procedures, Biological Monitoring. Only sites described as 'BIO' will collect information on the macroinvertebrate communities used in the ambient biological trend monitoring.

Many pollutants may be components of point source discharges, but may be discharged in a discontinuous manner, or at such low concentrations that water column sampling for them is impractical. Some pollutants are also common in nonpoint source runoff, reaching waterways only after a heavy rainfall; therefore, in these situations, the best media for the detection of these chemicals are sediment and fish tissue where they may accumulate over time. Their impact may also affect the macroinvertebrate community.

The ambient monitoring program has the capability of sampling a wide range of media and analyzing them for the presence or effects of contaminants. Ambient monitoring data (2002-2006) and trend data (1992- 2006) from 231 stations were reviewed for the Savannah River Basin, 89 from the Tugaloo River/Seneca River Basin, 62 from the Upper Savannah River Basin, and 80 from the Lower Savannah River Basin.

Natural Swimming Areas

Although all waters of the State are protected for swimming, some areas are more popular than others and may require closer monitoring. Currently monitored areas are located and discussed in the appropriate watershed evaluations.

Classified Waters, Standards, and Natural Conditions

The waters of the State have been classified in regulation based on the desired uses of each waterbody. State standards for various parameters have been established to protect all uses within each classification. The water-use classifications that apply to this basin are as follows.

Class ORW, or “outstanding resource waters”, are freshwaters or saltwaters that constitute an outstanding recreational or ecological resource, or those freshwaters suitable as a source for drinking water supply purposes, with treatment levels specified by the Department.

Class Trout Waters is comprised of three types of water:

trout natural waters, which are freshwaters suitable for supporting reproducing trout populations and a cold water balanced indigenous aquatic community of fauna and flora,

trout put, grow and take waters, which are freshwaters suitable for supporting the growth of stocked trout populations and a balanced indigenous aquatic community of fauna and flora,

trout put and take waters, which are freshwaters protected by the standards of Class FW.

Class A were freshwaters that were suitable for primary contact recreation. This class was also suitable for uses listed as Class B. As of April 1992, Class A and Class B waters were reclassified as Class FW, which protects for primary contact recreation.

Class B were freshwaters that were suitable for secondary contact recreation and as a source for drinking water supply, after conventional treatment, in accordance with the requirements of the Department. These waters were suitable for fishing, and the survival and propagation of a balanced indigenous aquatic community of fauna and flora. This class was also suitable for industrial and agricultural uses. The main difference between the Class A and B freshwater was the fecal coliform standard. Class A waters were not to exceed a geometric mean of 200/100ml,

based on 5 consecutive samples during any 30 day period; nor were more than 10% of the total samples during any 30 day period to exceed 400/100ml. Class B waters were not to exceed a geometric mean of 1000/100ml, based on 5 consecutive samples during any 30 day period; nor were more than 20% of the total samples during any 30 day period to exceed 2000/100ml. As of April 1992, Class A and Class B waters were reclassified as Class FW, which protects for primary contact recreation.

Class FW, or “freshwaters”, are freshwaters that are suitable for primary and secondary contact recreation and as a source for drinking water supply, after conventional treatment, in accordance with the requirements of the Department. These waters are suitable for fishing, and the survival and propagation of a balanced indigenous aquatic community of fauna and flora. This class is also suitable for industrial and agricultural uses.

Class SA comprises “tidal saltwaters” suitable for primary and secondary contact recreation, crabbing and fishing. These waters are not protected for harvesting of clams, mussels, or oysters for market purposes or human consumption. The waters are suitable for the survival and propagation of a balanced indigenous aquatic community of marine fauna and flora.

Class SB are “tidal saltwaters” suitable for the same uses listed in SA. The difference between the Class SA and SB saltwater concerns the DO limitations. Class SA waters must maintain daily DO averages not less than 5.0 mg/l, with a minimum of 4.0 mg/l, and Class SB waters maintain DO levels not less than 4.0 mg/l.

Class GB, or “groundwaters”, include all groundwaters of the State, unless classified otherwise, which meet the definition of underground sources of drinking water.

Site specific numeric standards (*) for surface waters may be established by the Department to replace the numeric standards found in Regulation 61-68 or to add new standards not contained in R.61-68. Establishment of such standards shall be subject to public participation and administrative procedures for adopting regulations. In addition, such site specific numeric standards shall not apply to tributary or downstream waters unless specifically described in the water classification listing in R.61-69.

The standards are used as instream water quality goals to maintain and improve water quality and also serve as the foundation of the Bureau of Water’s program. They are used to determine permit limits for treated wastewater dischargers and any other activities that may impact water quality. Using mathematical Wasteload Allocation Models, the impact of a wastewater discharge on a receiving stream is predicted under critical conditions following R.61-68. These predictions are then used to set limits for different pollutants on the National Pollutant Discharge Elimination System (NPDES) permits issued by the Department. The NPDES permit limits are set so that, as long as a permittee (wastewater discharger) meets the established permit limits, the discharge should not cause a standards violation in the receiving stream. All discharges to the waters of the State are required to have an NPDES permit and must abide by those limits, under penalty of law.

Classifications are based on desired uses, not on natural or existing water quality, and are a legal means to obtain the necessary treatment of discharged wastewater to protect designated uses. Actual water quality may not have a bearing on a waterbody’s classification. A waterbody may be reclassified if desired or existing public uses justify the reclassification and the water quality necessary to protect these

uses is attainable. A classification change is an amendment to a State regulation and requires public participation, SCDHEC Board approval, and General Assembly approval.

Natural conditions may prevent a waterbody from meeting the water quality goals as set forth in the standards. The fact that a waterbody does not meet the specified numeric standards for a particular classification does not mean the waterbody is polluted or of poor quality. Certain types of waterbodies (i.e. swamps, lakes, tidal creeks) may naturally have water quality lower than the numeric standards. A waterbody can have water quality conditions below standards due to natural causes and still meet its use classification. A site specific numeric standard may be established by the Department after being subjected to public participation and administrative procedures for adopting regulations. Site specific numeric standards apply only to the stream segment described in the water classification listing, not to tributaries or downstream unspecified waters.

Water Quality Indicators

Water quality data are used to describe the condition of a waterbody, to help understand why that condition exists, and to provide some clues as to how it may be improved. Water quality indicators include physical, chemical, and biological measurements. The current State of S.C. Monitoring Strategy describes what parameters are sampled, where they are sampled, and how frequently. It is available on our website at www.scdhec.gov/environment/water/docs/strategy/pdf.

MACROINVERTEBRATE COMMUNITY

Macroinvertebrates are aquatic insects and other aquatic invertebrates associated with the substrates of waterbodies (including, but not limited to, streams, rivers, tidal creeks, and estuaries). Macroinvertebrates can be useful indicators of water quality because these communities respond to integrated stresses over time that reflect fluctuating environmental conditions. Community responses to various pollutants (i.e. organic, toxic, and sediment) may be assessed through interpretation of diversity, known organism tolerances, and in some cases, relative abundances and feeding types.

FISH TISSUE

Many pollutants occur in such low concentrations in the water column that they are usually below analytical detection limits. Over time many of these chemicals may accumulate in fish tissue to levels that are easily measured. By analyzing fish tissue it is possible to see what pollutants may be present in waterbodies at very low levels. This information can also be used to determine if consumption of the fish poses any undue human health concerns and to calculate consumption rates that are safe.

DISSOLVED OXYGEN

Oxygen is essential for the survival and propagation of aquatic organisms. If the amount of oxygen dissolved in water falls below the minimum requirements for survival, aquatic organisms or their eggs and larvae may die. A severe example is a fish kill. Dissolved oxygen (DO) varies greatly due to

natural phenomena, resulting in daily and seasonal cycles. Different forms of pollution also can cause declines in DO.

Changes in DO levels can result from temperature changes or the activity of plants and other organisms present in a waterbody. The natural diurnal (daily) cycle of DO concentration is well documented. Dissolved oxygen concentrations are generally lowest in the morning, climbing throughout the day due to photosynthesis and peaking near dusk, then steadily declining during the hours of darkness.

There is also a seasonal DO cycle in which concentrations are greater in the colder, winter months and lower in the warmer, summer months. Streamflow (in freshwater) is generally lower during the summer and fall, and greatly affects flushing, reaeration, and the extent of saltwater intrusion, all of which affect dissolved oxygen values.

BIOCHEMICAL OXYGEN DEMAND

Five-day biochemical oxygen demand (BOD₅) is a measure of the amount of dissolved oxygen consumed by the decomposition of carbonaceous and nitrogenous matter in water over a five-day period. The BOD₅ test indicates the amount of biologically oxidizable carbon and nitrogen that is present in wastewater or in natural water. Matter containing carbon or nitrogen uses dissolved oxygen from the water as it decomposes, which can result in a dissolved oxygen decline. The quantity of BOD₅ discharged by point sources is limited through the National Pollutant Discharge Elimination System (NPDES) permits issued by the Department. The discharge of BOD₅ from a point source is restricted by the permits so as to maintain the applicable dissolved oxygen standard.

pH

pH is a measure of the hydrogen ion concentration of water, and is used to indicate degree of acidity. The pH scale ranges from 0 to 14 standard units (SU). A pH of 7 is considered neutral, with values less than 7 being acidic, and values greater than 7 being basic.

Low pH values are found in natural waters rich in dissolved organic matter, especially in Coastal Plain swamps and black water rivers. The tannic acid released from the decomposition of vegetation causes the tea coloration of the water and low pH. High pH values in lakes during warmer months are associated with high phytoplankton (algae) densities. The relationship between phytoplankton and daily pH cycles is well established. Photosynthesis by phytoplankton consumes carbon dioxide during the day, which results in a rise in pH. In the dark, phytoplankton respiration releases carbon dioxide. In productive lakes, carbon dioxide decreases to very low levels, causing the pH to rise to 9-10 SU.

FECAL COLIFORM BACTERIA

Fecal coliform bacteria are present in the digestive tract and feces of all warm-blooded animals, including humans, poultry, livestock, and wild animal species. Fecal coliform bacteria are themselves generally not harmful, but their presence indicates that surface waters may contain pathogenic microbes.

Diseases that can be transmitted to humans through water contaminated by improperly treated human or animal waste are the primary concern. At present, it is difficult to distinguish between waters contaminated by animal waste and those contaminated by human waste.

Public health studies have established correlations between fecal coliform numbers in recreational and drinking waters and the risk of adverse health effects. Based on these relationships, the USEPA and SCDHEC have developed enforceable standards for surface waters to protect against adverse health effects from various recreational or drinking water uses. Proper waste disposal or sewage treatment prior to discharge to surface waters minimizes this type of pollution.

NUTRIENTS

Oxygen demanding materials and plant nutrients are common substances discharged to the environment by man's activities, through wastewater facilities and by agricultural, residential, and stormwater runoff. The most important plant nutrients, in terms of water quality, are phosphorus and nitrogen. In general, increasing nutrient concentrations are undesirable due to the potential for accelerated growth of aquatic plants, including algae.

The forms of nitrogen routinely analyzed at SCDHEC stations are ammonia and ammonium nitrogen (NH_3/NH_4), total Kjeldahl nitrogen (TKN), and nitrite and nitrate nitrogen (NO_2/NO_3). Ammonia and ammonium are readily used by plants. TKN is a measure of organic nitrogen and ammonia in a sample. Nitrate is the product of aerobic transformation of ammonia, and is the most common form used by aquatic plants. Nitrite is usually not present in significant amounts. Total nitrogen is the sum of TKN and NO_2/NO_3 .

Total phosphorus (TP) is commonly measured to determine phosphorus concentrations in surface waters. TP includes all of the various forms of phosphorus (organic, inorganic, dissolved, and particulate) present in a sample.

CHLOROPHYLL *a*

Nuisance plant growth can create imbalances in the aquatic community, as well as aesthetic and access issues. Invasive growth of rooted aquatic vegetation can clog boat motors and create disagreeable conditions for swimming and water skiing. High densities of microscopic algae (phytoplankton) can cause wide fluctuations in pH and dissolved oxygen, and can cause undesirable shifts in the composition of aquatic life, or even fish kills. Chlorophyll *a* is a dominant photosynthetic pigment in plants and is used as an indicator of the density of phytoplankton in the water column. The process of cultural eutrophication, from increased plant nutrients, is particularly noticeable in lakes. Continuous flushing in streams prevents the development of significant phytoplankton populations and the resultant chemical changes in water quality.

TURBIDITY

Turbidity is an expression of the scattering and absorption of light through water. The presence of clay, silt, fine organic and inorganic matter, soluble colored organic compounds, and plankton and other microscopic organisms increases turbidity. Increasing turbidity can be an indication of increased runoff from land. It is an important consideration for drinking water as finished water has turbidity limits.

TOTAL SUSPENDED SOLIDS

Total Suspended Solids (TSS) are the suspended organic and inorganic particulate matter in water. Although increasing TSS can also be an indication of increased runoff from land, TSS differs from turbidity in that it is a measure of the mass of material in, rather than light transmittance through, a water sample. High TSS can adversely impact fish and fish food populations and damage invertebrate populations. There are no explicit State standards for TSS.

HEAVY METALS

Concentrations of cadmium, chromium, copper, lead, mercury, and nickel in water are routinely measured by the Department to compare to State standards intended to protect aquatic life and human health. These metals occur naturally in the environment, and many are essential trace elements for plants and animals. Human activities, such as land use changes and industrial and agricultural processes have resulted in an increased flux of metals from land to water. Atmospheric inputs are also recognized as important sources of metals to aquatic systems. Metals are released to the atmosphere from the burning of fossil fuels (coal, oil, gasoline), wastes (medical, industrial, municipal), and organic materials. The metals are then deposited on land and in waterways from the atmosphere via rainfall and attached to particulates (dry deposition).

Assessment Methodology

The Watershed Water Quality Assessment is a geographically-based document that describes, at the watershed level, water quality as well as conditions and activities related to water quality. This section provides an explanation of the information assessment methodology used to generate the watershed-level summaries. Water quality data summaries used in this assessment are presented in Appendices A through C.

USE SUPPORT DETERMINATION

Physical, chemical and biological data were evaluated, as described below, to determine if water quality met the water quality criteria established to protect the State classified uses defined in S.C. Regulation 61-68, *Water Classifications and Standards*. Some waters may exhibit characteristics outside the appropriate criteria due to natural conditions. Such natural conditions do not constitute a violation of the water quality criteria. To determine the appropriate classified uses and water quality criteria for

specific waterbodies and locations, refer to S.C. Regulation 61-69, *Classified Waters*, in conjunction with S.C. Regulation 61-68.

At the majority of SCDHEC's surface water monitoring stations, samples for analysis are collected as surface grabs once per month, quarter, or year, depending on the parameter. Grab samples collected at a depth of 0.3 meters are considered to be a surface measurement. For the purpose of assessment, only surface samples are used in standards comparisons and trend assessments. Because of the inability to target individual high or low flow events on a statewide basis these data are considered to represent typical physical conditions and chemical concentrations in the waterbodies sampled. All water and sediment samples are collected and analyzed according to standard procedures (SCDHEC 1997, 2001).

Results from water quality samples can be compared to State and USEPA criteria, with some restrictions due to time of collection and sampling frequency. For certain parameters, the monthly sampling frequency employed in the ambient monitoring network is insufficient for strict interpretation of the standards. The USEPA does not define the sampling method or frequency other than indicating that it should be "representative." The grab sample method is considered to be representative for the purpose of indicating excursions relative to criteria, within certain considerations. A single grab sample is more representative of a one-hour average than a four-day average, more representative of a one-day average than a one-month average, and so on; thus, when inferences are drawn from grab samples relative to criteria, sampling frequency and the intent of the criteria must be weighed. When the sampling method or frequency does not agree with the intent of the particular criterion, any conclusion about water quality should be considered as only an indication of conditions, not as a proven circumstance.

Macroinvertebrate community structure is analyzed routinely, at selected stations, as a means of detecting adverse biological impacts on the aquatic fauna of the state's waters due to water quality conditions that may not be readily detectable in the water column chemistry.

This water quality assessment is based on the last complete five years of available quality assured physical, chemical, and biological data (2002 - 2006).

AQUATIC LIFE USE SUPPORT

One important goal of the Clean Water Act, the South Carolina Pollution Control Act, and the State Water Quality Classifications and Standards is to maintain the quality of surface waters to provide for the survival and propagation of a balanced indigenous aquatic community of fauna and flora. The degree to which aquatic life is protected (Aquatic Life Use Support) is assessed by comparing important water quality characteristics and the concentrations of potentially toxic pollutants with numeric criteria.

Support of aquatic life uses is determined based on the percentage of numeric criteria excursions and, where data are available, the composition and functional integrity of the biological community. The term excursion is used to describe a measured pollutant concentration that is outside of the acceptable range as defined by the appropriate criterion. Some waters may exhibit characteristics outside the appropriate criteria due to natural conditions. Such natural conditions do not constitute a violation of the

water quality criteria. A number of waterbodies have been given waterbody-specific criteria for pH and dissolved oxygen, which reflect natural conditions. To determine the appropriate numeric criteria and classified uses for specific waterbodies and locations, please refer to S.C. Regulation 61-68, *Water Classifications and Standards* and S.C. Regulation 61-69, *Classified Waters*.

If the appropriate criterion for **dissolved oxygen and pH** are contravened in 10 percent or less of the samples, the criterion is said to be fully supported. If the percentage of criterion excursions is greater than 10 percent, but less than or equal to 25 percent, the criterion is partially supported, unless excursions are due to natural conditions. If there are more than 25 percent excursions, the criterion is not supported, unless excursions are due to natural conditions. The decision that criteria excursions are due to natural conditions is determined by consensus and/or the professional judgment of SCDHEC staff with specific local knowledge.

If the appropriate acute or chronic aquatic life criterion for any individual **toxicant (heavy metals, priority pollutants, ammonia)** is exceeded more than once, representing more than 10 percent of the samples collected, the criterion is not supported. If the acute or chronic aquatic life criterion is exceeded more than once, but in less than or equal to 10 percent of the samples, the criterion is partially supported.

The total recoverable metals criteria for **heavy metals** are adjusted to account for solids partitioning following the approach set forth in the Office of Water Policy and Technical Guidance on Interpretation and Implementation of Aquatic Life Metals Criteria, October 1, 1993, by Martha G. Prothro, Acting Assistant Administrator for Water, available from the Water Resource center, USEPA, 401 M St., SW, mail code RC4100, Washington, DC 20460; and 40CFR131.36(b)(1). Under this approach, a default TSS value of 1 mg/L is used. Where the metals criteria are hardness based, a default value of 25 mg/L is used for waters where hardness is 25 mg/l or less.

The calculation of the appropriate criterion value for **ammonia** requires the values of several associated field parameters measured concurrent with the ammonia sample collection. Where direct measurements of any of the parameters are lacking the ammonia value will not be used to determine compliance with the standards.

If the appropriate criterion for **turbidity** in all waters, and for waters with **numeric total phosphorus, total nitrogen, and chlorophyll-a** criteria is exceeded in more than 25 percent of the samples, the criterion is not supported. If the criterion is exceeded in more than 10 but less than 25 percent, sites are evaluated on a case-by-case basis to determine if local conditions indicate that classified uses are impaired. Among the characteristics considered are: hydrology and morphometry of the waterbody, existing and projected trophic state, characteristics of pollutant loadings and ongoing pollutant control mechanisms. If the criterion is exceeded in less than 10 percent of the samples, then the criterion is fully supported.

If the conclusion for any single parameter is that the criterion is “not supported”, then it is concluded that aquatic life uses are not supported for that waterbody, at that monitoring location. If there are no criteria that are “not supported”, but the conclusion for at least one parameter criterion is “partially

supported”, then the conclusion is aquatic life uses are partially supported. Regardless of the number of samples, no monitoring site will be listed as partially or not supporting for any pollutant based a single sample result because of the possibility of an anomalous event.

The goal of the standards for aquatic life uses is the protection of a balanced indigenous aquatic community; therefore, biological data is the ultimate deciding factor, regardless of chemical conditions. If biological data shows a healthy, balanced community, the use is considered supported even if chemical parameters do not meet the applicable criteria.

MACROINVERTEBRATE DATA INTERPRETATION

Macroinvertebrate community assessment data are used to directly determine Aquatic Life Use Support and to support determinations based on water chemistry data. Macroinvertebrate community data may also be used to evaluate potential impacts from the presence of sediment contaminants. Aquatic and semi-aquatic macroinvertebrates are identified to the lowest practical taxonomic level depending on the condition and maturity of specimens collected. The EPT Index and the North Carolina Biotic Index are the main indices used in analyzing macroinvertebrate data. To a lesser extent, taxa richness and total abundance may be used to help interpret data.

The EPT Index or the Ephemeroptera (mayflies) - Plecoptera (stoneflies) - Trichoptera (caddisflies) Index is the total taxa richness of these three generally pollution-sensitive orders. EPT values are compared with least impacted regional sites. The Biotic Index for a sample is the average pollution tolerance of all organisms collected, based on assigned taxonomic tolerance values. A database is currently being developed to establish significant EPT index levels to be used in conjunction with the Biotic Index to address aquatic life use support.

Taxa richness is the number of distinct taxa collected and is the simplest measure of diversity. High taxa richness is generally associated with high water quality. Increasing levels of pollution progressively eliminate the more sensitive taxa, resulting in lower taxa richness. Total abundance is the enumeration of all macroinvertebrates collected at a sampling location. When gross differences in abundance occur between stations, this metric may be considered as a potential indicator.

RECREATIONAL USE SUPPORT

Recreational use support is defined as the degree to which the swimmable goal of the Clean Water Act is attained and is based on the frequency of fecal coliform bacteria excursions. A fecal coliform excursion is defined as an occurrence of a bacteria concentration greater than 400/100 ml for all surface water classes. Comparisons to the bacteria geometric mean standard are not considered appropriate based on sampling frequency and the intent of the standard. If 10 percent or less of the samples are greater than 400/100 ml, then recreational uses are said to be fully supported. If the percentage of standards excursions is greater than 10 percent, but less than or equal to 25 percent, then recreational uses are said to be partially supported. If the percentage of excursions is greater than 25 percent, then it is considered to represent nonsupport of recreational uses.

FISH CONSUMPTION USE SUPPORT

The Department uses a risk-based approach to evaluate fish tissue data and to issue consumption advisories in affected waterbodies. This approach contrasts the average daily exposure dose to the reference dose (RfD). Using these relationships, fish tissue data are interpreted by determining the consumption rates that would not be likely to pose a health threat to adult males and nonpregnant adult females. Because an acceptable RfD for developmental neurotoxicity has not been developed, pregnant women, infants, and children are advised to avoid consumption of fish from any waterbody where a mercury advisory was issued.

Fish consumption use support is determined by the occurrence of advisories or bans on consumption for a waterbody. For the support of fish consumption uses, a fish consumption advisory indicates partial use support, a consumption ban indicates nonsupport of uses. Fish consumption advisories are updated annually in the spring. For background information and the most current advisories please visit the Bureau of Water homepage at www.scdhec.gov/water and click on “Advisories.” For more information or a hard copy of the advisories, call SCDHEC’s Fish Consumption Advisory toll-free hotline at (888) 849-7241.

DRINKING WATER USE SUPPORT

Nonattainment of drinking water use is indicated if the median concentration of the ambient surface water data for any pollutant exceeds the appropriate drinking water Maximum Contaminant Level (MCL), based on a minimum of three samples. Where MCLs do not exist, SCDHEC may use or develop other criteria such that pollutant concentrations or amounts do not interfere with drinking water use, actual or intended, as determined by SCDHEC.

Additional Screening and Prioritization Tools

Evaluation of water quality data and other supplemental information facilitates watershed planning. Information from the following sources is used to develop watershed-based protection and prevention strategies.

LONG-TERM TREND ASSESSMENT

As part of the watershed water quality assessments, surface data from each station are analyzed for statistically significant long-term trends using the Seasonal Kendall Test Without Correction (SKWOC) for significant serial correlation, using a program written in-house using SAS. Flows are not available for most stations, and the parametric concentrations are not flow-corrected. Seasonal Kendall’s Tau Analysis is used to test for the presence of a statistically significant trend of a parameter, either increasing or decreasing, over a fifteen-year period. It indicates whether the concentration of a given parameter is exhibiting consistent change in one direction over the specified time period. A two sided test at $p=0.1$ is used to determine statistically significant trends, and the direction of trend. An estimate of the magnitude of any statistically significant trend is calculated.

A rigorous evaluation for trends in time-series data usually includes a test for autocorrelation. The data are not tested for autocorrelation prior to the trend analysis. It is felt that autocorrelation would not seriously compromise a general characterization of water quality trends based on such a long series of deseasonalized monthly samples.

One of the advantages of the seasonal Kendall test is that values reported as being below detection limits (DL) are valid data points in this nonparametric procedure, since they are all considered to be tied at the DL value. When the DL changed during the period of interest, all values are considered to be tied at the highest DL occurring during that period. Since it is possible to measure concentrations equal to the value of the DL, values less than DL are reduced by subtraction of a constant so that they remain tied with each other, but are less than the values equal to the DL. Since fecal coliform bacteria detection limits vary with sample dilution, there is no set DL; therefore, for values reported as less than some number, the value of the number is used.

For the purposes of this assessment, long-term trends in selected parameters were examined using data collected from **1992** through **2006**.

Groundwater Quality

The state of South Carolina depends upon its groundwater resources to supply an estimated 40 percent of its residents. To monitor the ambient quality of this valuable resource, a network of existing public and private water supply wells has been established that provides groundwater quality data representing all of the State's major aquifers (see SCDHEC's Ambient Groundwater Quality Monitoring Network Report for listing of groundwater quality data). A great deal of monitoring is also being carried out at regulated sites with known or potential groundwater contamination (see SCDHEC's South Carolina Groundwater Contamination Inventory).

The ambient monitoring network has been designed to avoid wells in areas of known or potential contamination in order to analyze natural aquifer conditions. Information collected can then be used to identify variations in water chemistry among the major aquifers of South Carolina and give a general understanding of the groundwater conditions throughout the state at varying depths.

Wells sampled in the Savannah River Basin were drilled into one of three major aquifers. From Aiken County northwest to the mountains in Oconee County, the Piedmont Bedrock is the prevailing aquifer. Lying directly over this is the Saprolite Aquifer. The Middendorf Aquifer is the dominant aquifer running from the Fall Line, the physiographic regional divider between the Piedmont and Coastal Plain regions, towards the sea. All well samples met state standards for Class GB groundwater (see section on Classified Waters, Standards, and Natural Conditions). The ambient monitoring well sites are indicated in the appropriate watershed evaluations and depicted on the watershed maps.

PIEDMONT BEDROCK AQUIFER

Groundwater supplies in the Piedmont region of South Carolina come from one of two sources. These include the unweathered fractured bedrock and the overlying weathered bedrock (saprolite). The majority of wells are completed in the fractured bedrock, which varies widely from granites to metamorphic gneisses. The water characteristics also can vary widely; however, it is possible to make some broad statements about groundwater conditions in the Piedmont.

Water pumped from the Piedmont Bedrock Aquifer tends to be slightly acidic, ranging in pH from 5.1 to 7.0. It also tends to be soft, having very little dissolved calcium and magnesium, and falls well within the acceptable hardness range of 50 to 150 mg/l. The host rock also is either insoluble or dissolves very slowly, so the water pumped from this rock is relatively low in total dissolved solids, and falls well below the maximum limit of 500 mg/l.

SAPROLITE AQUIFER

Although the majority of South Carolina's piedmont groundwater supplies come from the Piedmont Bedrock Aquifer, the overlying saprolite, consisting mainly of clay to sandy soils, is a significant water-producing unit. This saprolite layer can be absent in some areas and up to 150 feet thick others. Because it is an in-place weathering product, the soils maintain many of their original structures, such as fractures, dikes, and foliations, and these structures act as paths for groundwater flow.

The sampling network was developed to include paired wells in the piedmont. These wells are close in vicinity to one another, and one is drilled into the Piedmont Bedrock Aquifer and one into the Saprolite Aquifer. These paired wells are used to analyze the development of groundwater chemistry as water slowly percolates down through overlying saprolite into the basement rock. It seems that variations between these two aquifers are minute with few distinctions. Generally, the water is soft, acidic, and low in dissolved solids. There is a slight increase in dissolved silica in the bedrock due to the slow addition of silica into the water as it seeped through the saprolite.

MIDDENDORF AQUIFER

The Middendorf Aquifer directly overlies the bedrock and stretches from the Fall Line, where it outcrops, to the Atlantic coast, where it exceeds depths of 3000 feet. In the coastal plain region of the Savannah River Basin, the Middendorf Aquifer is the main provider of groundwater to numerous private and public wells. It is generally composed of fairly coarse sands and therefore is capable of yielding considerable amounts of water.

The sands that make up the Middendorf Aquifer are typically clean, containing relatively few heavy minerals or organics. The water is generally leached of most minerals and approaches the chemistry of distilled water. It is similar to the water previously discussed in the Piedmont Bedrock and Saprolite Aquifer sections. There is a tendency for water in the Middendorf Aquifer to be soft, acidic, and low in dissolved solids, with locally high iron content. This tendency changes toward the coast, due to minute amounts of minerals that slowly dissolve in the water as it ages. As it reaches the coastal areas,

the concentration is high enough to affect the water quality; however, the Middendorf Aquifer now lies beneath waters of similar quality and more easily reached aquifers.

NPDES Program

The Water Facilities Permitting Division is responsible for drafting and issuing National Pollutant Discharge Elimination System (NPDES) permits. Facilities are defined as either “major” or “minor.” For municipal permits, a facility is considered a “major” if it has a permitted flow of 1 MGD (million gallons per day) or more and is not a private facility. The determination for industrial facilities is based on facility and stream characteristics, including toxicity, amount of flow, BOD (biochemical oxygen demand) loading, proximity of drinking water source, potential to exceed stream standards, and potential effect on coastal waters.

Permitting Process

A completed draft permit is sent to the permittee, the SCDHEC District office, and if it is a major permit, to the USEPA for review. A public notice is issued when the permit draft is finalized. Comments from the public are considered and, if justified, a public hearing is arranged. Both oral and written comments are collected at the hearing, and after considering all information, the Department staff makes the decision whether to issue the permit as drafted, issue a modified permit, or to deny the permit. Everyone who participated in the process receives a notice of the final decision. A copy of the final permit will be sent to anyone who requests it. Staff decisions may be appealed according to the procedures in R.61-72 and the rule of the Administrative Law Court of South Carolina.

The permitting Divisions use general permits with statewide coverage for certain categories of discharges. Discharges covered under general permits include utility water, potable surface water treatment plants, potable groundwater treatment plants with iron removal, petroleum contaminated groundwater, mine dewatering activities, aquaculture facilities, bulk oil and gas terminals, hydrostatic test waters (oil & gas lines), and vehicle wash waters. State land application systems for land disposal and lagoons are also permitted.

Wasteload Allocation Process

A wasteload allocation (WLA) is the portion of a stream’s assimilative capacity for a particular pollutant that is allocated to an existing or proposed point source discharge. Existing WLAs are updated during the basin review process and included in permits during the normal permit expiration and reissuance process. New WLAs are developed for proposed projects seeking a discharge permit or for existing discharges proposing to increase their effluent loading at the time of application. Wasteload allocations for oxygen demanding parameters and nutrients are developed by the Department’s modeling staff, and WLAs for toxic pollutants and metals are developed by the appropriate permitting division.

The ability of a stream to assimilate a particular pollutant is directly related to its physical and chemical characteristics. Various techniques are used to estimate this capacity. Simple mass balance/dilution calculations may be used for a particular conservative (nondecaying) pollutant while complex models may be used to determine the fate of nonconservative pollutants that degrade in the environment. Waste characteristics, available dilution, and the number of discharges in an area may, along with existing water quality, dictate the use of a simple or complex method of analysis. Projects that generally do not require complex modeling include: groundwater remediation, noncontact cooling water, mine dewatering, air washers, and filter backwash. Streams that have been modeled are indicated on the watershed maps.

Streams are considered either effluent limited or water quality limited based on the level of treatment required of the dischargers to that particular portion of the stream. In cases where the USEPA published effluent guidelines and the minimum treatment levels required by law are sufficient to maintain instream water quality standards, the stream is said to be effluent limited. Streams lacking the assimilative capacity for a discharge at minimum treatment levels are said to be water quality limited. In cases where better than technology limits are required, water quality, not minimum treatment requirements, controls the permit limits. The Department's modeling staff develops limits for numerous parameters including ammonia nitrogen (NH₃-N), dissolved oxygen (DO), and five-day biochemical oxygen demand (BOD₅). Limits for other parameters, including metals, toxics (including total residual chlorine), and nutrients are developed by the Water Facilities Permitting Division in conjunction with support groups within the Department.

Nonpoint Source Management Program

Nonpoint source (NPS) water pollution, sometimes called "runoff pollution" or "polluted runoff" does not result from a discharge at a specific, single location (or point), but generally comes from diffuse, numerous sources. Runoff occurring after a rain event may transport sediment from plowed fields, construction sites, or logging operations, pesticides and fertilizers from farms and lawns, motor oil and grease deposited on roads and parking lots, or bacteria containing waste from agricultural animal facilities or malfunctioning septic systems. The rain moves the pollutants across the land to the nearest waterbody or storm drain where they may impact the water quality in creeks, rivers, lakes, estuaries, and wetlands. NPS pollution may also impact groundwater when it is allowed to seep or percolate into aquifers. Adverse effects of NPS pollution include physical destruction of aquatic habitat, fish kills, interference with or elimination of recreational uses of a waterbody (particularly lakes), closure of shellfish beds, reduced water supply or taste and odor problems in drinking water, and increased potential for flooding because waterbodies become choked with sediment.

Congress recognized the growing problem of nonpoint source pollution in the late 1980s, and added NPS provisions to the federal law. Section 319 of the 1987 Amendments to the Clean Water Act required states to assess the nonpoint source water pollution associated with surface and groundwater within their borders and then develop and implement a management strategy to control and abate the

pollution. The first Assessment of Nonpoint Source Pollution in South Carolina accomplished this purpose. The Department's Bureau of Water manages the ongoing State NPS Management Program, which develops strategies and targets waterbodies for priority implementation of management projects. Section 319 funds various voluntary efforts, including watershed-based improvement projects, which address many aspects of the pollution prevention management measure and provide education, outreach and technical assistance to various groups and agencies. Most of the projects are implemented by cooperating agencies.

Many land activities can individually or cumulatively contribute to NPS pollution. Eight categories of NPS pollution sources have been identified as contributing to water quality degradation in South Carolina: agriculture, forestry, urban areas, marinas and recreational boating, mining, hydrologic modification, wetlands and riparian areas disturbance, land disposal, and groundwater contamination. There are programs in place, both regulatory and voluntary to address all eight categories.

Agriculture

In South Carolina, pesticides, fertilizers, animal waste, and sediment are potential sources of agricultural NPS pollution. Agricultural activities also have the potential to directly impact the habitat of aquatic species through physical disturbances caused by livestock or equipment, and through the management of water. The State has laws and regulations that prevent NPS pollution from several agricultural sources including pesticides and animal waste. Funding programs, including those under §319 grants from EPA such as the Environmental Quality Incentives Program (EQIP) and the Conservation Reserve Program (CRP), cost share funds from USDA and are used to implement best management practices that are not covered under regulations. Agriculture land acreage is quantified in the basin-wide and individual watershed evaluations.

Silviculture

Forests comprise a major portion of South Carolina's land base. As of 2009, 67% (12.9 million acres) of the State's total land area is in timberland. Silvicultural practices associated with road access, harvest, and regeneration of timber present the most significant potential for NPS pollution. Silvicultural activities have the potential to degrade the State's waters through the addition of sediment, nutrients, organics, elevated temperature, and pesticides. Erosion and subsequent sedimentation are the most significant and widespread NPS problems associated with forestry practices. Sudden removal of large quantities of vegetation through harvesting or silvicultural practices can also increase leaching of nutrients from the soil system into surface waters and groundwaters. Most water quality impacts from forestry are temporary or short-lived, can be minimized or mitigated when Best Management Practices (BMPs) are applied, and the site recovers within 2-3 years as vegetation is re-established.

Overall compliance with South Carolina's Best Management Practices for Forestry is 98.6% for timber harvesting operations. Programs to abate or control NPS pollution from forestry activities are

primarily the responsibility of the S.C. Forestry Commission (SCFC) and the United States Department of Agriculture's Forest Service (USFS), with other agencies having supplementary programs. SCFC provides the results of courtesy exams of forestry operations monthly to both SCDHEC's Division of Water Quality and to forest industries. Impacts from silviculture can be significant if BMPs are not properly applied. If water quality was impacted by a forestry operation, SCDHEC may institute enforcement action under the South Carolina Pollution Control Act. The United States Department of Agriculture's Natural Resources Conservation Service (USDA-NRCS) also provides technical assistance to government, landowners, and land users. Forest land acreage is quantified in the basin-wide and individual watershed evaluations.

Urban Areas

Urbanization has been linked to the degradation of urban waterways. The major pollutants found in runoff from urban areas include sediment, nutrients, oxygen-demanding substances, heavy metals, petroleum hydrocarbons, pathogenic bacteria, and viruses. Suspended sediments constitute the largest mass of pollutant loadings to receiving waters from urban areas. Construction sites are a major source of sediment erosion. Nutrient and bacterial sources of contamination include fertilizer and pesticide usage, pet wastes, leaves, grass clippings, and faulty septic tanks. Petroleum hydrocarbons result mostly from automobile sources. From April 2000 through July 2008, statewide population growth was 11.7 percent, while the coastal counties had an increase of 19.7 percent, during the same time period. This continuing development and population growth has the potential to make urban runoff the most significant source of pollution in waters of the State in the future, particularly in South Carolina's coastal communities. Urban land acreage is quantified in the basin-wide and individual watershed evaluations.

SCDHEC has a number of statewide programs that address components of urban NPS pollution. The Bureau of Water administers four permitting programs that control runoff from new and existing urban sources. These include the Stormwater and Sediment Reduction program, Municipal Separate Storm Sewer System (MS4), Industrial NPDES Stormwater Permits, and the §401 water quality certification program (see p.27). Additional controls for urban runoff in the coastal zone are implemented by SCDHEC's Oceans and Coastal Resources Management (OCRM) through the State Coastal Zone Management Plan.

SCDHEC's Bureau of Environmental Health's Division of Onsite Wastewater Management administers the Onsite Sewage Disposal System program for the entire State, and oversees the permitting for the installation and management of septic systems. Although not associated with urban land use, this Division permits the septic systems of camping facilities if the facility is not on public sewer. The camp sewage is discharged into a public collection, treatment and disposal system if available, or an onsite wastewater treatment and disposal system (septic tank) is used.

Marinas and Recreational Boating

As with any human activity, marinas and associated recreational boating activities have the potential to impact the natural environment. Marine sanitation devices and illicit discharges can be sources of bacteria and oxygen demanding substances. Antifouling paints, exhausts, and maintenance activities can be sources of toxic metals, hydrocarbons, and other pollutants. Construction and maintenance activities, such as dredging, can negatively impact aquatic habitats and ecosystems. The physical characteristics of marinas (basin verses open water, high tidal flushing verses low or no tidal flushing, etc.) have the potential to impact water quality. To ensure that impacts associated with existing and proposed marinas are minimized to the greatest extent possible, the U.S. Army Corps of Engineers and the SCDHEC are responsible for permitting marinas in South Carolina. Within SCDHEC, the two offices that have marina permitting authority are the Office of Ocean and Coastal Resource Management (SCDHEC OCRM) and the Office of Environmental Quality Control (SCDHEC Bureau of Water). SCDHEC OCRM issues critical area permits for marinas within the critical area of the coastal zone. SCDHEC Bureau of Water issues permits for marinas at all other locations within the State and issues §401 Water Quality Certifications (see p.27) for marinas statewide. The U.S. Coast Guard and the S.C. Department of Natural Resources are responsible for managing recreational boating activity.

Mining

South Carolina's mineral production consists of non-fuel minerals that provide raw materials for construction products and a precious metal industry. Portland cement clays (kaolin and brick), sand and gravel, and crushed stone represent the majority of the total mineral value. As of June 30, 2009 there were 615 permitted mining operations in South Carolina totaling 76,546 acres (includes acreage for excavation, buffer, and mine reserves). There were 335.8 acres of mine land reclaimed during the past fiscal year, which brings the cumulative total of mine land reclaimed since the beginning of the mining and reclamation program to 17,271 acres. Surface mining has the potential to generate NPS pollution during mineral exploration, mine development extraction, transportation, mining and processing, product storage, waste disposal, or reclamation. Potential nonpoint source impacts related to mining activities generally include hydrologic modification, erosion and sedimentation, water quality deterioration, fish and wildlife disturbances, and public nuisances.

The Department's Bureau of Land and Waste Management has primary regulatory responsibility for mining activities. Within the Bureau, the Division of Mining and Solid Waste Permitting is responsible for administering and implementing the S.C. Mining Act and its associated regulations. The Mining Act serves as part of an overall management plan for NPS pollution from active mines. Mining activities and locations are identified in the appropriate watershed evaluations.

Hydromodification

Hydrologic modification (or hydromodification) is defined as stream channelization, channel modification, and dam construction. These activities can negatively impact water quality, destroy or modify in-stream habitat and increase streambank and shoreline erosion. Two State permits, implemented by the SCDHEC, are involved in the implementation of management measures for hydromodification. A critical area permit is required for coastal waters, saltwater wetlands, and beaches defined as critical areas. A navigable waters permit is required for the remainder of the State. Implementation of State policy for dam construction is similar to control of other hydromodification projects in South Carolina, requiring the same State permits and certifications. In addition, dams require a State dam safety permit or a State stormwater management and sediment reduction permit. The Department must also issue Water Quality Certifications pursuant to §401 of the Federal Clean Water Act for dam construction and hydropower operations licensed by the Federal Energy Regulatory Commission.

Wetlands

The U.S. Fish and Wildlife Service is the principal Federal agency that provides information to the public on the extent and status of the Nation's wetlands. According to the most recent survey by the U.S. Fish and Wildlife Service (Dahl 1999), twenty-one percent of South Carolina is covered by 4,104,805 acres of wetlands. The U.S. Army Corps of Engineers implements the federal program for regulating development in wetlands with guidelines established by EPA. The Corps delineates wetlands and determines which wetlands fall under regulatory jurisdiction and require a federal permit for development. At the state level, the primary focus of wetland regulation is through the §401 Water Quality Certification. In accordance with §401 of the Federal Clean Water Act, a certification is required by the state for any Federal permit that may result in a discharge to waters of the state, including wetlands. Applications for wetland alterations may be denied or modified due to the special nature of a wetland or the functions that a wetland provides. Wetland impacts must be compensated for through restoration, enhancement, preservation, or creation and protected in perpetuity. Future development would be legally protected in these areas. Knowledge of areas that are restricted from development due to mitigation or special water classification is useful in planning future development in a watershed. Wetland acreage is quantified in the basin-wide and individual watershed evaluations.

Land Disposal

Solid Waste Landfills are permitted by the Bureau of Land and Waste Management under Regulation 61-107.19. There are three classifications of Solid Waste Landfills in South Carolina: Class One Landfills, Class Two Landfills, and Class Three Landfills. The landfill classifications are based upon the physical and chemical characteristics of the waste that is disposed in each landfill. There are currently 171 permitted landfills in South Carolina. This total represents 56 Class One Landfills that are limited to disposal of land-clearing debris; 91 Class Two Landfills that receive construction and demolition debris and

waste streams that characterize at less than ten times the maximum contamination limits for drinking water; and 24 Class Three Landfill that receive municipal solid wastes and other nonhazardous waste streams that must be characterized prior to acceptance. Solid Waste Landfills are considered point sources of pollution and are thereby required to have BOW industrial storm water permits. Storm water runoff from these landfills may have an impact on the watershed if it is not managed correctly. Regulatory authority over solid waste disposal activities resides with SCDHEC's Bureau of Land and Waste Management. All active and inactive Solid Waste Landfills are identified in the appropriate watershed evaluations.

Land application of wastewater or its by-products is a form of recycling because it allows recovery of elements needed for crop production. Land application of biosolids may be beneficial and environmentally sound when applied at the correct agronomic rate. Land applying biosolids can benefit farmers by offsetting the costs of fertilizer and lime while reducing the pressure on existing landfills. SCDHEC's Bureau of Water, Division of Water Monitoring, Assessment and Protection, Groundwater Management Section conducts a program to prevent and monitor groundwater contamination from nonpoint source pollution from land application of wastewater biosolids, solids, animal manures, biosolids, and sewage sludge. Land application, which is not a discharge, requires a "no discharge" permit (ND). All active industrial and municipal land applications are identified in the appropriate watershed evaluations.

Groundwater Contamination

All aquifers in the State are potential Underground Sources of Drinking Water and are protected under the S.C. Water Classifications and Standards. Groundwaters are thus protected in a manner consistent with the SCDHEC groundwater protection strategy. Staff hydrogeologists implement a screening program for nonpoint source impacts from pits, ponds, and lagoons associated with the permitted storage, treatment, and disposal of industrial and municipal wastewaters. In cases where a groundwater impact has been identified in violation of S.C. Water Classifications and Standards, appropriate actions will be coordinated with the facility owner to ensure regulatory compliance. The hydrogeologist coordinates with the facility owner to implement source identification, contaminant extent assessments, initiation of contaminant remediation systems, and performance evaluations of corrective actions. In addition to releases from wastewater treatment systems, the staff evaluates releases from other nonpoint sources such as above ground tanks, nonregulated fuel oil tanks, spills and/or leaks. Sites with confirmed groundwater impact will be placed under a Consent Agreement or an Order. SCDHEC's South Carolina Groundwater Contamination Inventory quantifies the status of groundwater quality in South Carolina. The sites in the inventory are known groundwater contamination cases in the State, and are referenced by name and county, and updated annually.

Water Quantity

Any withdrawal of surface water or groundwater over 3 million gallons in any month is required to be reported to the Department (per the *Surface Water Withdrawal and Reporting Act* 49-4-10 and the *Groundwater Use and Reporting Act* 49-5-10). These data are compiled into an annual report of total water usage in the state (see SCDHEC's South Carolina Water Use Report). The report also breaks down water usage into categories of interest such as water supply, hydropower, agriculture, and irrigation. In Capacity Use Areas, which are of concern due to the significant groundwater use and subsequent lowering of groundwater levels in major aquifers, withdrawals over 3 million gallons in any month must receive a permit from the Department. Currently, no quantity permit is required for surface water withdrawals.

Interbasin Transfer of Water

According to the State Interbasin Transfer of Water Act, an interbasin transfer (IBT) of water permit is required when any entity desires to withdraw, divert, pump, or cause directly the transfer of either 5% of the 7Q10 (seven day, ten year low flow), or one million gallons or more of water a day on any day, whichever is less, from one river basin and use or discharge all or any part of the water in a different river basin. The SCDHEC Board is empowered to negotiate agreements, accords, or compacts on behalf of and in the name of the State of South Carolina with other states or the United States, or both, with any agency, department, or commission of either, or both, relating to transfers of water that impact waters of this State, or are connected to or flowing into those waters. The Board is further empowered to represent this State in connection with water withdrawals, diversions, or transfers occurring in other states, which may affect this State.

In June 2010, Senate Bill 452 or the Surface Water Withdrawal Act was signed into law and it will supercede the State Interbasin Transfer of Water Act after January 1, 2011. It covers all surface water withdrawals that are 3 million gallons per month. Any existing surface water withdrawals will be grandfathered in for the amount of water they can remove at the date the law goes into effect. IBT's are included as existing surface water withdrawers, and are grandfathered in for the amount listed in their IBT permits. Any applications that are administratively complete as of January 1, 2011 will be considered existing users and be grandfathered in for the amount their intakes are designed to pump.

Capacity Use Program

As authorized under the Groundwater Use and Reporting Act, the Department may declare a capacity use area if the resource is threatened by increasing demand or the potential problems of saltwater intrusion. The Capacity Use Program requires large groundwater users to obtain a permit in capacity use areas. Permits are required for groundwater withdrawn in excess of 3 million gallons in a month. Permit owners are required to report the amount of groundwater withdrawn per month on an annual basis. As part of the Capacity Use Program, the Department monitors a large number of wells to determine the relationship between water levels and pumpage in order to determine regional impacts and evaluate

reserve supply. A reserve supply is maintained to offset drought conditions. The Low Country Capacity Use Area includes Beaufort, Colleton, Hampton, and Jasper Counties. Jasper, Hampton, and Beaufort Counties make up the Low Country Capacity Use Area in the Savannah River Basin.

Growth Potential and Planning

Land use and management can define the impacts to water quality in relation to point and nonpoint sources. Assessing the potential for an area to expand and grow allows for water quality planning to occur and, if appropriate, increased monitoring for potential impairment of water quality. Indicators used to predict growth potential include water and sewer service, road and highway accessibility, and population trends. These indicators and others were used as tools to determine areas having the greatest potential for impacts to water quality as a result of development.

Watershed boundaries extend along topographic ridges and drain surrounding surface waters. Roads are commonly built along ridge tops with the best drainage conditions. Cities often develop in proximity to ridges as a result of their plateau terrain. It is not uncommon, then, to find cities or road corridors located along watershed boundaries, and thus influencing or impacting several watersheds.

SCDHEC's Strategic Plan for 2005-2010 (www.scdhec.gov/news/releases/pdf_files/Stratpln.pdf) acknowledges that growth issues are best handled at the local government level. SCDHEC's role is to work with local governments and communities to help them understand the importance of planning for smart growth: buffers, greenspaces, mass transit, subdivision and roadway planning, bike paths and bike lanes, and park and ride lots. SCDHEC can also provide assistance in helping local entities access information and provide consultation on technical issues such as the establishment of buffers and watershed stormwater planning. Many counties in the Savannah River Basin lack county wide zoning ordinances; therefore, there is little local regulatory power to influence the direction or magnitude of regional growth. The majority of municipalities have zoning ordinances in place; however, much of the growth takes place just outside the municipal boundaries, where infrastructure is inadequate. Section 208 of the Clean Water Act serves to encourage and facilitate the development and implementation of areawide waste treatment management plans. South Carolina's water quality management plans support consolidation of wastewater treatment facilities into larger regional systems.

The regional Councils of Government (COGs) located in the Savannah River Basin include the Appalachian COG, the Upper Savannah COG, the Lower Savannah COG, and the Lowcountry COG. Growth potential reported in the individual watershed evaluations are updated by the COGs active in that watershed.

Watershed Protection and Restoration Strategies

SCDHEC's Bureau of Water is responsible for ensuring that South Carolina's water is safe for drinking and recreation, and suitable to support aquatic life. This section provides an overview of other important Bureau programs and strategies applied statewide to protect and restore water quality. The point and nonpoint source controls described previously assist with achieving these goals.

Under §303(d) of the Federal Clean Water Act, each state is required to provide a comprehensive inventory of impaired waters for which existing required pollution controls are not stringent enough to achieve State water quality standards or Federal Clean Water Act goals. This biennial list, commonly referred to as the "303(d) list", is the basis for targeting waterbodies for watershed-based solutions. A copy of the current §303(d) list can be obtained by contacting the Bureau of Water (803-898-4300) or online at www.scdhec.gov/water. Several Bureau programs address these impaired streams in an effort to restore them.

Total Maximum Daily Load

A Total Maximum Daily Load (TMDL) is the calculated maximum allowable pollutant loading to a waterbody at which water quality standards are maintained. A TMDL is made up of two main components, a load allocation and a wasteload allocation. A load allocation is the portion of the receiving water's loading capacity attributed to existing or future nonpoint sources or to natural background sources. The waste load allocation is the portion of a receiving water's loading capacity allocated to an existing or future point source.

A TMDL is a means for recommending controls needed to meet water quality standards in a particular water or watershed. Historically, the typical TMDL has been developed as a wasteload allocation, considering a particular waterbody segment, for a particular point source, to support setting effluent limitations. In order to address the combined cumulative impacts of all sources, broad watershed-based TMDLs are now being developed.

The TMDL process is linked to all other State water quality activities. Water quality impairments are identified through monitoring and assessment. Watershed-based investigations result in source identification and TMDL development. TMDLs form links between water quality standards and point and nonpoint source controls. Where TMDLs are established, they constitute the basis for NPDES permits and for strategies to reduce nonpoint source pollution. The effectiveness and adequacy of applied controls are evaluated through continued monitoring and assessment.

Funding for TMDL implementation is currently available with USEPA's §319 of the Clean Water Act grants. For more information, see the Bureau of Water web page www.scdhec.gov/water or call the TMDL Program at (803) 898-4300.

Antidegradation Implementation

The State's Antidegradation Policy as part of S.C. Regulation 61-68 is represented by a three-tiered approach to maintaining and protecting various levels of water quality and uses; streams included on the §303(d) list are addressed under Tier 1. Tier 1 antidegradation policies apply to all waters of the State and require that existing uses and the minimum level of water quality for those uses be maintained and protected. Tier 2 policies apply to high quality water where the water quality exceeds the mandatory minimum levels to support the Clean Water Act's goals of propagation of fish, shellfish, wildlife, and recreation in and on the water. The Department considers all the waters of the State as high quality waters. Tier 3 policies apply to the maintenance of water quality in waters that constitute an Outstanding National Resource Water and do not allow for any permanent permitted dischargers. Outstanding Resource Waters of the State are provided a higher level of protection than Tier 2, but do not meet the requirements of Tier 3.

Tier 1 protection will be implemented when applying numeric standards included in Regulation 61-68 for human health, aquatic life, and organoleptic protection as follows: if a waterbody has been affected by a parameter of concern causing it to be on the §303(d) list, then the Department will not allow a permitted net increase of loading for the parameter of concern unless the concentration will not contribute to a violation of water quality standards. This no net increase will be achieved by reallocation of existing total load(s) or by meeting applicable water quality standard(s) at the end-of-pipe. No discharge will be allowed to cause or contribute to further degradation of a §303(d) listed waterbody.

The Antidegradation Rules apply to both nonpoint source pollution and for point sources into impaired waters. Many activities contributing to nonpoint source pollution are controlled with voluntary measures. The Department implements permitting or certification programs for some of these activities and has the opportunity to ensure compliance with the Antidegradation Rules. The activities of primary concern are land development projects which are immediately adjacent to and discharge runoff or stormwater into impaired waters.

401 Water Quality Certification Program

If a Federal permit for a discharge into waters of the State, including wetlands, is required, the Department must issue Water Quality Certification pursuant to §401 of the Federal Clean Water Act. Certification is required for permits issued by the U.S. Army Corps of Engineers for construction in navigable waters and for deposition of dredged or fill material.

Regulation 61-101 presents administrative and technical guidance for the water quality certification program and requires SCDHEC to consider whether or not a project is water dependent; whether or not there are feasible alternatives which will have less adverse consequences on water quality and classified uses; the intended purpose of the project; and all potential water quality impacts of the project, both direct and indirect, over the life of the project. Any project with the potential to affect

waters of the State must be conducted in such a manner as to maintain the specified standards and classified and existing water uses.

As a routine part of the §401 Water Quality Certification review process, the waterbody in question is identified as impaired or not impaired according to the §303(d) list. If it is impaired, the parameter of concern is noted, along with any steps required to prevent further degradation of the water quality of that waterbody.

Stormwater Program

Stormwater discharges result from precipitation during rain events. Runoff washes pollutants associated with industrial activities (including construction activity), agricultural operations, and commercial and household sites directly into streams, or indirectly into drainage systems that eventually drain into streams. The SCDHEC Stormwater Permitting Program focuses on pollution prevention to reduce or eliminate stormwater pollution. The Department has general permitting authority for stormwater discharges associated with industrial activity, including construction. General NPDES permits SCR000000 and SCR100000 for industrial and construction activities, respectively, require permittees to develop and implement stormwater pollution prevention plans that establish best management practices to effectively reduce or eliminate the discharge of pollutants via stormwater runoff. The Construction, Stormwater and Agricultural Division is responsible for issuing NPDES stormwater permits to prevent degradation of water quality as well as for issuing state sediment and erosion control permits for construction sites.

NPDES permits are issued under the authority of the federal Clean Water Act and the S.C. Pollution Control Act. The state sediment and erosion control permits are issued under the authority of two S.C. laws. The S.C. Stormwater Management and Sediment Reduction Act of 1991 addresses construction on land that is not state owned or managed. Currently, NPDES permits are required for: construction sites 1 acre and greater; construction sites in the coastal area that are within 1/2 mile of a receiving water body; and construction sites less than 1 acre on a case-by-case basis where water quality is a concern. Permits are required under the state sediment and erosion control for construction sites that are greater than 2 acres; however, there are exemptions under the law and regulation. The State Sediment and Erosion Program is somewhat duplicative of the NDPEs Stormwater Program. The state program created by the 1991 Act can be delegated to local governments. SCDHEC's Office of Ocean and Coastal Resource Management (OCRM) oversees stormwater permitting in the coastal area. The Stormwater Permitting Section manages the program in the remainder of the state.

SCDHEC is assisted in implementing these regulations by many cities and counties that have been delegated to run a stormwater program under provisions of the 1991 Act and/or are owners of Municipal Separate Storm Sewer Systems (MS4) and required to run stormwater management programs under the NPDES program. MS4 will identify all impaired water bodies in a Stormwater Management Plan (SWMP). In addition, existing pollution discharge control methods will be identified and incorporated into the SWMP. Procedures, processes, and methods to control the discharge of pollutants

from the MS4 into impaired waterbodies and publicly owned lakes included on the §303(d) list will be described in the SWMP. The effectiveness of these controls will be assessed and necessary corrective measures, if any, shall be developed and implemented.

NPDES MS4 permits allow communities to design SWMP that are suited for controlling pollutants in their jurisdiction. There are three population-based categories of MS4: large (population of 250,000 or greater), medium (population of 100,000 or more but less than 250,000), and small (population less than 100,000). Large and medium MS4 have been regulated since the 1990s. Those small MS4 within the boundaries of an urbanized area are called Regulated Small MS4. MS4 NPDES Permits are required for all large, medium, and regulated small MS4. MS4 can extend over more than one 10-digit watershed or even 8-digit river basin as it follows municipal boundaries, so the same permit can be listed in multiple watersheds. The MS4 receiving stream listed in the individual watershed evaluations is the mainline stream of the 10-digit hydrologic unit. The initial receiving source of the MS4 may be a smaller tributary upstream.

South Carolina Animal Feeding Operations Strategy

Among the general categories of pollution sources, agriculture ranks as the number one cause of stream and lake impairment nationwide. Many diseases can potentially be contracted from drinking water or coming into contact with waters contaminated with animal wastes. The Department uses S.C. Regulation 61-43: *Standards for the Permitting of Agricultural Animal Facilities* to address the permitting of animal feeding operations (AFOs). Implementing these regulations and their corresponding compliance efforts are a priority for the Department in order to reduce public health and environmental impacts from AFOs. There are approximately 1,100 active AFOs in S.C. There are no federally defined concentrated animal feeding operations (CAFOs) in operation in South Carolina based on the EPA definition of a CAFO in the NPDES regulations. Using the Watershed Program cycle and the division of the State into five regions, AFOs will be monitored and inspected by region. The §303(d) list will be used to prioritize the inspections. After all the inspections have been made in a region, the Department will move to the river basins in the next region in the watershed cycle. The Department is continuing to work in cooperation and coordination with the U.S. Department of Agriculture, the Natural Resources Conservation Service, the S.C. Department of Agriculture, the S.C. Soil and Water Conservation Districts, and the Clemson Extension Service.

Sewer Overflow Strategy

Sanitary sewers are designed to collect municipal and industrial wastewater, with the allowance for some acceptable level of infiltration and inflow, and transport these flows to a treatment facility. When the sewer system is unable to carry these flows, the system becomes surcharged and an overflow may occur. Sewer overflows (SSOs) have existed since the introduction of separate sanitary sewers, and

most overflows are caused by inadequate operation, maintenance, and management of the collection system.

The Department encourages utilities to embrace the principals of EPA's capacity Management, Operations, and Maintenance (cMOM) program. Through this program utilities can ensure adequate funding and capacity as well as a proactive approach to operations and maintenance. Those that have implemented cMOM programs have been able to significantly reduce or eliminate overflows from their collection systems. Additionally, the Department has adopted requirements for operation and maintenance of sewer systems in Regulation 61-9, Water Pollution Control Permits.

The Department's approach has been to shift resources historically applied to treatment plant inspections to include evaluations of pump stations and collection systems where problems are suspected. To assist evaluators in identifying water quality violations related to SSOs, staff have utilized the 303(d) list of impaired waters to identify waters impacted by fecal coliform or other appropriate pollutants and correlate those with collection systems with incidences of SSOs. The Department's Enforcement Referral Procedures Document is to be used to determine when a collection system should be referred to enforcement for SSOs. The enforcement process allows for the Department to consider actions taken by the collection system such as: timely and proper notification, containment and mitigation of discharge, voluntarily conducting self evaluations, and requests for compliance assistance. The Department will take immediate action where it has been determined that SSOs have occurred and the collection system has not made timely and proper notification.

SCDHEC's Watershed Stewardship Programs

Public participation is an important component of the Department's Watershed Water Quality Management Program. Benefits to this interaction on the local level include improved public awareness about SCDHEC water programs, and increased local interest and participation in water quality improvement. Described below are some of the Department's water programs that encourage public interest and involvement in water quality. These programs and their contacts are listed on the Department's website at www.scdhec.gov/water.

Source Water Assessment Program

A safe, adequate source of drinking water is key to development of communities and the health of citizens. The Safe Drinking Water Act (SDWA) places an emphasis on protection of sources of drinking water. As a result of the 1996 amendments to the SDWA, source water protection has become a national priority. States are required to develop a plan for assessment of source waters for all federally defined public groundwater and surface water systems.

The Source Water Assessment Program (SWAP) involves determining the boundaries of the areas that are the source of waters for public water systems. For groundwater systems, these areas are defined using groundwater flow models. For surface water systems, a distance of 15 miles upstream from the surface water intake is the designated protection area (although certain areas within the basin will be segmented as being of greater vulnerability to contamination from overland flow, groundwater contributions to surface water, and direct spills into the surface water). Known and potential sources of contamination in the delineated area must be identified, and the inventoried sources evaluated to determine the susceptibility of public water systems to such contaminants. Assessments must be made available to the public.

Local involvement is a critical factor in the success of the SWAP, and local governments, citizen groups, environmental groups, water suppliers, and the Department must all work together to increase the general public's awareness of where drinking water comes from and how to better protect sources of drinking water. Implementation of source water protection activities largely occur at the local level, and local authorities may wish to base zoning and land-use planning on the source water assessments. The SWAP is a key part of the Department's watershed management approach. To avoid duplication, information gathered from existing regulatory programs and/or watershed protection efforts is utilized (e.g., ambient monitoring programs, TMDLs, etc.).

Consumer Confidence Reports

The Consumer Confidence Report (CCR) is an annual water quality report required of all community water systems. The rationale behind the CCR is that consumers have a right to know what is in their drinking water and where it comes from. These reports are to educate consumers and help them make informed

choices that affect the health of themselves and their families. All CCRs are to include the following basic components:

- the water source, its location, and the availability of source water assessment plan;
- information about the water system (name and telephone number of a contact person, opportunities for public participation, and information for non-English speaking populations if applicable);
- definitions of terms and abbreviations used in the report;
- table of detected contaminants including the known or likely source of the contaminants;
- the health effects language for Maximum Contaminant Level violations and an explanation of the violation;
- information on cryptosporidium, radon, and other contaminants if applicable; and
- educational information that includes an explanation of contaminants and their presence in drinking water, an advisory for immuno-compromised people, the Safe Drinking Water Hotline telephone number, and other statements about lead, arsenic, and nitrate if applicable.

Nonpoint Source Outreach Assistance

The Bureau's Nonpoint Source (NPS) Outreach program is an integral component of the State's NPS management program. The NPS Outreach program supports South Carolina's NPS water quality improvement goals through a capacity building approach. The NPS Outreach program provides outreach resources and materials to communities, organizations and municipalities as they develop their NPS outreach plans. Available resources include a Web-based NPS outreach toolbox tailored for South Carolina specific NPS issues, and consultation in best outreach practices. For more information please call 803-898-4300 or go to www.scdhec.gov/environment/water/or.htm.

Swimming Advisory Outreach

SCDHEC tests rivers, lakes and streams all over the State. Sometimes these tests show high amounts of bacteria for some streams and rivers. DHEC puts up a swimming advisory sign where high amounts of bacteria have been found and people commonly swim. The NPS Outreach program uses this as a springboard for awareness of NPS issues and steps citizens can take to reduce their contributions to runoff pollution. For more information on the swimming advisories call the hotline at 1-800-360-5655. Information and tips on reducing NPS can be found on the swimming advisory website at www.scdhec.gov/environment/water/swim.htm.

Fish Advisory Outreach

Based on fish tissue monitoring results assessing mercury levels, SCDHEC and the Department of Natural Resources work together to provide annual fish consumption advisories that tell you the right amounts and types of fish to eat in South Carolina. The advisories particularly focus on providing statewide advice for at-risk women and children. For more information and the most current advisories, please visit www.scdhec.gov/fish. If you have further questions or would like a hard copy of the advisories, call SCDHEC's toll-free Fish Consumption Advisory hotline at (888) 849-7241.

Champions of the Environment

Champions of the Environment encourages, enables and recognizes youth environmental education projects that develop awareness, promote behavior change or improve and protect our water, air and land. Champions has been rewarding South Carolina's kindergarten through twelfth-grade students and teachers since 1993. Grants and cash awards enabled schools and communities to participate in activities such as protecting nesting sea turtles, reducing a school's carbon footprint, and protecting water quality; all positively impacting the environment and developing young, environmental stewards. Champions is a unique public-private partnership between DHEC, industry partners, and the media. For more information contact the Champions of the Environment coordinator at 803-898-4300 or visit www.scdhec.gov/environment/water/champion.htm.

Water Efficiency Outreach

In South Carolina, a growing population has placed greater demands on water supplies. Reducing household water use becomes part of the solution to maintaining adequate water supplies and protecting water resources. SCDHEC's Bureau of Water Outreach program is committed to increasing household water use efficiency through the promotion of EPA's WaterSense program. WaterSense encourages water-efficient behaviors and the purchase of products that use less water. For more information about WaterSense call 803-898-4300 or visit www.scdhec.gov/environment/water/or.

Clean Water State Revolving Fund

Congress created the Clean Water State Revolving Fund (SRF) in 1987, to replace the §201 Construction Grants program. In doing so, 'state banks' were created to lend money for virtually any type of water pollution control infrastructure project. Project types include construction of wastewater treatment systems and nonpoint source pollution control. The interest rate on the loans is always below the current market rate. As repayments are made on the loans, funds are recycled to fund additional water protection projects. The vast majority of the SRF funds have been used for the construction of traditional municipal wastewater treatment systems. Because of its inherent flexibility, the SRF program is well suited to accommodate the watershed approach.

SRF loans are available to units of state, local, and regional government, and special purpose districts. South Carolina law prevents loans from being made directly to private organizations and individuals. Local governments such as cities and counties and other units of government such as Soil and Water Conservation Districts, Councils of Government, and Water and Sewer Districts are encouraged to apply for SRF loans for nonpoint source projects. Nonpoint source projects may include construction and maintenance of stormwater management facilities, establishment of a stormwater utility, purchase of land for wetlands and riparian zones, and implementation of source water protection assessments. For more information, view the State Revolving Fund web site www.scdhec.gov/srf.

Citizen-Based Watershed Stewardship Programs

Throughout the Savannah River Basin, water quality is a common interest among citizen groups. The issues and membership of these groups vary widely. Some of the citizen groups interested in water quality in the Savannah River Basin are described below. To view the most current listing, visit our web page at <http://www.scdhec.gov/environment/water/shed/org.htm>.

Upstate Forever

Upstate Forever is a nonprofit, membership-based organization that promotes sensible growth, advocates for sustainable development practices, and protects special places in the Upstate region of South Carolina. It has three principal programs: education, advocacy, and Land trust. For more information, see www.upstateforever.org.

Friends of Lake Keowee Society (FOLKS)

The mission of the Friends of Lake Keowee Society (FOLKS) is to preserve, protect, and enhance Lake Keowee and its watershed through conservation, science, and education. FOLKS conducts a Lake Sweep twice a year, monitors water clarity, regularly scouts for improper soil conservation practices, and conducts programs to monitor and detect water quality changes. For more information, visit <http://www.keoweefolks.org/>.

Lake Hartwell Association

The Lake Hartwell Association (LHA) is a group of over 2000 members, primarily homeowners and recreational users of the lake, most of whom live in upstate South Carolina and northeast Georgia. The organization's purpose is to provide a focus on the lake and its watershed, maintain its high quality, and assist in guiding wholesome growth while retaining the area's desirable characteristics. For more information, visit <http://www.lakehartwellassociation.org/>

Savannah Riverkeeper, Inc.

The Savannah Riverkeeper, Inc. is a Savannah River basin water quality advocacy group whose primary purposes are to aid government agencies in identifying water quality problems, to educate the public about water quality issues, and to train volunteers to (1) recognize water quality impairments, (2) assess water quality biologically and chemically, (3) evaluate NPDES permits and compliance with those permits, (4) examine stormwater control issues, (5) identify specific sources of water impairments, and (6) propose actions to minimize threats to water quality. For more information, visit <http://www.savannahriverkeeper.org>

Lake Secession/Rocky River Property Owners Association

The Lake Secession/Rocky River Property Owners Association is comprised of water users, property owners and interested parties on and near Rocky River in southern Anderson County and Lake Secession, which is primarily in Abbeville County. The association originated following a “spill” from a wastewater treatment facility and continues to keep water quality a high priority in its mission. For more information, visit <http://www.lakesecession.net/Property%20Owners%20Assoc.html>

Aiken County Watershed Alliance

The Aiken County Watershed Alliance (ACWA) is a small group of concerned citizens, scientists, educators, and planners that have been meeting since fall of 2002 to determine ways to protect a unique Aiken County natural resource - the Upper Three Runs Watershed. ACWA operates under the auspices of the Aiken County Open Land Trust ([ACOLT](#)), which is dedicated to the preservation of open, undeveloped space in Aiken County, South Carolina. For more information, visit <http://www.upperthreeruns.org>

Tugaloo River/Seneca River Basin Description

The South Carolina portion of the *Tugaloo River/Seneca River Basin (hydrologic units 03060102, 03060101)* is located in Oconee, Anderson, and Pickens Counties, and encompasses 12 watersheds and 1,269 square miles that extend across the Blue Ridge and Piedmont regions of the state. The Tugaloo River/Seneca River Basin extends into Georgia and North Carolina. There are 1,170,070 acres in the extended watershed; 357,695 acres or 30.6% are outside of South Carolina. The South Carolina Tugaloo River/Seneca River Basin consists of 59.4% forested land, 23.3% agricultural land, 9.2% urban land, 7.0% water, 0.6% barren land, and 0.5% forested wetland. There are approximately 3,831 stream miles and 67,532 acres of lake waters in this extended basin.

The Chattooga River flows across the North Carolina/South Carolina state line and flows between the states of South Carolina and Georgia. The Chattooga River then flows through Tugaloo Lake and Lake Yonah, becoming the Tugaloo River. The Tugaloo River accepts drainage from the Chauga River and other smaller streams before joining the Seneca River.

The Whitewater River and the Toxaway River join to form the Keowee River in Lake Jocassee near the North Carolina border. The Keowee River flows out of the Lake Jocassee Dam and into Lake Keowee. The Keowee River flows out of the Keowee Dam and merges with the Little River coming out of the Little River Dam to form the Seneca River and Lake Hartwell. The Seneca River within Lake Hartwell accepts drainage from Twelvemile Creek, Coneross Creek, Eighteenmile Creek and Three and Twenty Creek. The Tugaloo River converges with the Seneca River within Lake Hartwell to form the Savannah River.

Physiographic Regions

The USDA Soil Conservation Service divided the State of South Carolina into six Major Land Resource Areas (MLRAs). The MLRAs are physiographic regions that have soils, climate, water resources, and land uses in common. The physiographic region defining the Tugaloo River/Seneca River Basin is as follows:

The **Blue Ridge** is an area of dissected (separated by erosion into many closely spaced valley), rugged mountains with narrow valleys dominated by forests; elevations range from 1,000 to 3,300 feet.

The **Piedmont** is an area of gently rolling to hilly slopes with narrow stream valleys dominated by forests, farms, and orchards; elevations range from 375 to 1,000 feet.

Land Use/Land Cover

General land use/land cover mapping for South Carolina was derived from the 2006 National Land Cover Data (NLCD). The dataset is based on nationwide Landsat Thematic Mapper (TM) multispectral satellite images (furnished through the Multi-Resolution Land Characteristics (MRLC) consortium,

coordinated by USEPA) using image analysis software to inventory the Nation's land classes. The NLCD are developed by the USGS (EROS Data Center) using TM image interpretation, air photo interpretation, National Wetland Inventory data analysis, and ancillary data analysis.

Urban land is characterized by man-made structures and artificial surfaces related to industrial, commercial, and residential uses, as well as vegetated portions of urban areas.

Agricultural/Grass land is characterized by cropland, pasture, and orchards and may include some grass cover in urban, scrub/shrub, and forest areas.

Forest land is characterized by deciduous and evergreen trees not including forests in wetland settings.

Forested Wetland (swampland) is the saturated bottomland, mostly hardwood forests that are primarily composed of wooded swamps occupying river floodplains and isolated low-lying wet areas, primarily located in Coastal Plain.

Nonforested Wetland (marshland) is dependent on soil moisture to distinguish it from Scrub/Shrub since both classes contain grasses and low herbaceous cover; nonforested wetlands are most common along the coast and isolated freshwater areas found in the Coastal Plain.

Barren land is characterized by an unvegetated condition of the land, both natural (rock, beaches, unvegetated flats) and man-induced (rock quarries, mines, and areas cleared for construction in urban areas or clearcut forest areas).

Water (non-land) includes both fresh and tidal waters.

Soil Types

The individual soil series for the Tugaloo River/Seneca River Basin are described as follows.

Ashe soils are shallow to moderately deep, well drained to excessively drained soils in steep areas.

Cecil soils are deep, well drained, gently sloping to sloping soils that have red subsoil.

Hayesville soils are moderately shallow to deep, well drained soils in gently sloping to steep areas, with red to yellow-brown subsoil.

Hiwassee soils are well drained, moderately sloping soils with clayey subsoil, moderately deep.

Madison soils are well drained, moderately sloping soils, with clayey subsoil, moderately deep.

Pacolet soils are well drained, moderately steep soils with clayey subsoil, moderately deep.

Saluda soils are excessively drained to well drained, strongly sloping to very steep soils.

Slope and Erodibility

The definition of soil erodibility differs from that of soil erosion. Soil erosion may be more influenced by slope, rainstorm characteristics, cover, and land management than by soil properties. Soil erodibility refers to the properties of the soil itself, which cause it to erode more or less easily than others when all other factors are constant. The soil erodibility factor, K, is the rate of soil loss per erosion index unit as measured on a unit plot, and represents an average value for a given soil reflecting the combined effects of all the soil properties that significantly influence the ease of soil erosion by rainfall and runoff if not protected. The K values closer to 1.0 represent higher soil erodibility and a greater need for best management practices to minimize erosion and contain those sediments that do erode. The range of K-factor values in the Tugaloo River/Seneca River Basin is from 0.21 to 0.26.

Fish Consumption Advisory

At the time of publication, a fish consumption advisory issued by SCDHEC is in effect for Lake Jocassee, Lake Tugaloo, Lake Yonah, Lake Hartwell, the Seneca River arm of Lake Hartwell, and Twelvemile Creek advising people to limit the amount of some types of fish consumed from these waters. Fish consumption advisories are updated annually in the spring. For background information and the most current advisories please visit the Bureau of Water homepage at www.scdhec.gov/water and click on “Advisories.” For more information or a hard copy of the advisories, call SCDHEC’s Fish Consumption Advisory toll-free hotline at (888) 849-7241.

Climate

Normal yearly rainfall in the Tugaloo River/Seneca River area during the period of 1971 to 2000 was 60.31 inches, according to South Carolina’s 30-year climatological record. Data compiled from National Weather Service stations in Longcreek, Salem, Walhalla, Clemson University, Pickens, Jocassee, Anderson, and Anderson County Airport were used to determine the general climate information for the northwestern corner of the state. The highest seasonal rainfall occurred in the winter with 16.17 inches; 15.53, 14.66, and 13.95 inches of rain fell in the spring, summer, and fall, respectively. The average annual daily temperature was 59.2 °F, the coolest in the state. Winter temperatures averaged 41.9°F, spring temperatures averaged 58.7°F and summer and fall mean temperatures were 75.9°F and 60.2 °F, respectively.

Watershed Evaluations

03060102-02

(Chattooga River)

General Description

Watershed 03060102-02 consists primarily of the Chattooga River and its tributaries from its origin to its confluence with the Tallulah River* at the Tugaloo Dam. The South Carolina portion of watershed 03060102-02 (formerly 03060102-010 and a portion of 03060102-060) is located in Oconee County and resides in the Blue Ridge physiographic region. The Chattooga River watershed extends into North Carolina and Georgia. There are 178,648 acres in the extended watershed; 143,750 acres or 80.5% are outside of South Carolina. Land use/land cover in the South Carolina portion includes: 87.6% forested land, 2.5% urban land, 8.9% agricultural land, 0.7% water, and 0.3% forested wetland (swamp).

The Chattooga River flows across the North Carolina/South Carolina border in the northwest corner of South Carolina, flowing between the states of South Carolina and Georgia. Streams flowing into the river from the Georgia side are connoted with an asterisk. Flowing out of North Carolina, the river accepts drainage from Bad Creek, East Fork Chattooga River (Dark Branch, Jacks Creek, Slatten Branch, Indian Camp Branch), Harden Creek*, King Creek, Lick Log Creek (Thrift Lake, Pigpen Branch), Ira Branch, Reed Creek*, West Fork*, Holden Branch*, Adline Branch*, Bynum Branch*, and Laurel Branch*. Further downstream, Moss Mill Creek enters the river followed by Warwomen Creek*, Dicks Creek*, Whetstone Creek (Tyler Branch, Swaford Branch, Harts Branch), Rock Creek*, Buckeye Branch*, Lick Long Creek*, and Turpin Branch. Fall Creek (Fall Creek, North Fork Fall Creek, Stump Branch) enters the river next followed by Tilly Branch, Pole Creek*, Reedy Branch, Stekoa Creek*, Cliff Creek*, Long Creek, Pinckney Branch, Daniel Creek*, Camp Creek*, Fishtrap Branch, and Opossum Creek (Sawhead Branch, Shoulder Bone Branch, Camp Branch). The Chattooga River then flows through Lake Tugaloo accepting drainage from Devils Branch, Bad Creek*, and Worse Creek* before merging with the Tallulah River* to form the Tugaloo River. There are a total of 570.6 stream miles and 629.3 acres of lake waters within the extended watershed.

The Chattooga River and its tributaries from the North Carolina line to Opossum Creek are classified ORW with the following exceptions: the portion of East Fork Chattooga River from its confluence with Indian Camp Branch to the Chattooga River is classified TN, Whetstone Creek and Swaford Branch are classified TN, Lick Log Creek from Thrift Lake to its headwaters is classified FW, and Turpin Branch, Fall Creek, Tilly Branch, Reedy Branch, Long Creek, Pinckney Branch, Fishtrap Branch, and Opossum Creek are classified FW. The Chattooga River and its tributaries from Opossum Creek to the Tugaloo River are classified FW. Lake Tugaloo is classified TPGT. The Sumter National Forest extends across the entire watershed.

Surface Water Quality

<u>Station #</u>	<u>Type</u>	<u>Class</u>	<u>Description</u>
SV-308	W/BIO	ORW	EAST FORK CHATTOOGA RIVER AT SC 107, 2 MI S OF STATE LINE
SV-792	BIO	ORW	EAST FORK CHATTOOGA RIVER 300 MI DOWNSTREAM OF HATCHERY OUTFALL
SV-227	INT	ORW	CHATTOOGA RIVER AT SC 28, 3.5 MI NW MT REST
SV-199	W	ORW	CHATTOOGA RIVER AT US 76
SV-359	W	TPGT	LAKE TUGALOO , FOREBAY EQDISTANT FROM SPILLWAY AND SHORELINE

East Fork Chattooga River – There are two monitoring stations along the East Fork Chattooga River. Although there were pH excursions at the upstream site (**SV-308**), aquatic life uses are fully supported based on macroinvertebrate community data. There is a significant increasing trend in five-day biochemical oxygen demand. Recreational uses are fully supported at this site. At the downstream site (**SV-792**), aquatic life uses are fully supported based on macroinvertebrate community data.

Chattooga River – There are two monitoring stations along the Chattooga River. Significant decreasing trends in turbidity and total phosphorus concentration at both sites suggest improving conditions for these parameters. Aquatic life and recreational uses are fully supported at the upstream site (**SV-227**); however, there are significant increasing trends in five-day biochemical oxygen demand, total nitrogen concentration, and fecal coliform bacteria concentration. Although pH excursions occurred, they were considered natural, not standards violations. Aquatic life and recreational uses are also fully supported at the downstream site (**SV-199**); however, there is a significant increasing trend in five-day biochemical oxygen demand.

Lake Tugaloo (SV-359) - Aquatic life uses are partially supported due to pH excursions. There are also significant increasing trends in five-day biochemical oxygen demand and total nitrogen concentration. There is a significant decreasing trend in pH. Recreational uses are fully supported.

A fish consumption advisory has been issued by the Department for mercury and includes Lake Tugaloo within this watershed (see advisory p. 38).

NPDES Program

Active NPDES Facilities

<i>RECEIVING STREAM FACILITY NAME</i>	<i>NPDES# TYPE</i>
EAST FORK CHATTOOGA RIVER SCDNR/WALHALLA FISH HATCHERY	SC0000451 MINOR INDUSTRIAL

Growth Potential

There is a low potential for growth in this watershed, which resides entirely within the Sumter National Forest. The steep slopes of this region would limit establishment of infrastructure and any serious growth.

03060102-03
(Chauga River)

General Description

Watershed 03060102-03 (formerly 03060102-120) is located in Oconee County and consists primarily of the **Chauga River** and its tributaries. The watershed occupies 70,760 acres of the Blue Ridge region of South Carolina. Land use/land cover in the watershed includes: 82.9% forested land, 12.2% agricultural land, 3.8% urban land, 0.5% forested wetland (swamp), 0.5% water, and 0.1% barren land. A map depicting this watershed is found in Appendix A, page A-31.

Village Creek (West Village Creek, Mountain Rest Lake) and East Village Creek (Clear Branch, Big Stakey Creek, Ores Mill Creek, Chattooga Lake, Taylor Creek) join to form the Chauga River. The river accepts drainage from Jerry Creek (Crystal Lake, Lake Becky, Oconee State Park Lake), Miller Field Branch, Coppermine Branch, Limestone Creek (Grapevine Branch), Bone Camp Creek (Sawyer Branch, Orchard Branch, Chambers Branch), Hell Hole Creek (Long Branch), and Shingle Mill Branch. Further downstream, the Chauga River accepts drainage from Hickory Flat Branch, Rhoda Branch, Mill Creek (Woodall Branch), Double Branch, Spider Valley Creek (Persimmon Branch, Laurel Creek, Sand Creek), Doran Creek, and Crooked Creek. Cedar Creek (Baker Branch) enters the river next, followed by Spy Rock Creek, Devils Fork Creek (Flint Creek), Barton Creek, Muddy Creek (Findley Branch), and Rocky Fork. The Chauga River and its tributaries from its origin to 1 mile above US 76 are classified ORW, with the exception of Jerry Creek (FW).

The Chauga River then accepts drainage from Ramsey Creek (Collins Lake) and Dickson Lake. West Toxaway Creek and East Toxaway Creek join to form Toxaway Creek (Big Branch, Little Longnose Creek, Sourwood Branch, Little Toxaway Creek, Harper Pond), which flows into the Chauga River near the base of the watershed to form an arm of Lake Hartwell. The Chauga River and its tributaries from 1 mile above US 76 to its confluence with the Tugaloo River are classified FW. There are a total of 323.4 stream miles and 456.3 acres of lake waters in this watershed. The upper two thirds of the watershed resides within the Sumter National Forest.

Surface Water Quality

<u>Station #</u>	<u>Type</u>	<u>Class</u>	<u>Description</u>
RS-04538	RS04	FW	CHAUGA RIVER AT FOOT BRIDGE IN CHAU-RAM COUNTY PARK
SV-344	INT	FW	CHAUGA RIVER AT S-37-34
SV-225	BIO	FW	TOXAWAY CREEK AT S-37-34
RS-04380	RS04/BIO	FW	CHAUGA TRIB. AT BRIDGE ON CO.RD.S-37-142, 5.8 MI SW OF WESTMINSTER

Chauga River – There are two SCDHEC monitoring stations along the Chauga River (**RS-04538**, **SV-344**). Aquatic life and recreational uses are fully supported at both sites; however, there are significant increasing trends five-day biochemical oxygen demand and total nitrogen concentration at the downstream site (**SV-344**).

Toxaway Creek (SV-225) – Aquatic life uses are fully supported based on macroinvertebrate community data.

Chauga River Tributary (RS-04380) - Aquatic life uses are fully supported based on macroinvertebrate community data. Recreational uses are not supported due to fecal coliform bacteria excursions.

Natural Swimming Areas

<i>FACILITY NAME</i>	<i>PERMIT #</i>
<i>RECEIVING STREAM</i>	<i>STATUS</i>
CAMP CHATUGA	37-N04
ORES MILL CREEK	ACTIVE
OCONEE STATE PARK	37-N02
JERRY CREEK	ACTIVE

NPDES Program

Active NPDES Facilities

<i>RECEIVING STREAM</i>	<i>NPDES#</i>
<i>FACILITY NAME</i>	<i>TYPE</i>
JERRY CREEK	SC0024872
SCPRT/OCONEE STATE PARK	MINOR DOMESTIC

Water Supply

<i>WATER USER (INTAKE #)</i>	<i>TOTAL PUMP. CAPACITY (MGD)</i>
<i>STREAM</i>	<i>RATED PUMP. CAPACITY (MGD))</i>
TOWN OF WESTMINSTER (S37103)	3.8
RAMSEY CREEK	1.8
TOWN OF WESTMINSTER (S37104)	8.0
CHAUGA RIVER	4.0

Growth Potential

There is a low potential for growth in this watershed, which has a large area residing within the Sumter National Forest. The steep slopes of this region would limit establishment of infrastructure and any serious growth.

03060102-04
(Tugaloo River)

General Description

The South Carolina portion of watershed 03060102-04 (formerly a portion of 03060102-060) is located in Oconee County and consists primarily of the upper **Tugaloo River** and its tributaries from its origin to the Chauga River. The Tugaloo River watershed extends into Georgia. There are 83,089 acres in the extended watershed; 56,078 acres or 67.5% are outside of South Carolina. The South Carolina portion is within the Blue Ridge physiographic region. Land use/land cover in the South Carolina portion includes: 82.3% forested land, 10.0% agricultural land, 3.1% urban land, 3.6% water, 0.5% forested wetland (swamp), and 0.5% barren land. A map depicting this watershed is found in Appendix A, page A-31.

The Tugaloo River is formed by the confluence of the Tallulah River in Georgia and the Chattooga River. Streams flowing into the river from the Georgia side are connoted with an asterisk. Downstream of the confluence, the Tugaloo River accepts drainage from Battle Creek (Daniel Branch) and Moccasin Creek* before flowing through Lake Yonah. Downstream of Yonah Dam, the Tugaloo River accepts drainage from Panther Creek*, Brasstown Creek (Devil Hole Branch, Wallace Branch, Big Branch, Double Branch, Little Brasstown Creek, Joe Branch, Porter Branch, Boatwright Creek, Mill Branch), Rothwell Creek*, Cherry Cove Branch, and Rocky Branch*. The Tugaloo River begins to impound as an arm of Lake Hartwell and accepts drainage from Prather Creek*, Barton Creek (Drummond Creek), Longnose Creek (East Longnose Creek), Gryer Branch, Ramsey Pond, and Ward Creek*. There are a total of 259.7 stream miles and 2,288.6 acres of lake waters within the extended watershed. All streams in the watershed are classified FW, with the exception of Battle Creek and Brasstown Creek and their tributaries, which are classified TPGT. The upper portion of the watershed resides in the Sumter National Forest.

Surface Water Quality

<u>Station #</u>	<u>Type</u>	<u>Class</u>	<u>Description</u>
RL-04376	RL04	FW	LAKE YONAH, 0.65 MI NNE OF SPILLWAY
SV-358	W	FW	LAKE YONAH, ½ WAY BETW. CENTER OF SPILLWAY AND OPPOSITE SHORE
RL-06444	RL06	FW	LAKE HARTWELL, 8.9 MI WSW OF WESTMINSTER
SV-200	INT	FW	TUGALOO RIVER ARM OF LAKE HARTWELL AT US 123

Lake Yonah – There are two SCDHEC monitoring stations along Lake Yonah. At the uplake site (**RL-04376**), aquatic life and recreational uses are fully supported. At the downlake site (**SV-358**), aquatic life uses are partially supported due to pH excursions. There are also increasing trends in five-day biochemical oxygen demand and total nitrogen concentration. Recreational uses are fully supported.

Lake Hartwell (RL-06444) – Aquatic life and recreational uses are fully supported.

Tugaloo River Arm of Lake Hartwell (SV-200) - Aquatic life and recreational uses are fully supported; however, there is an increasing trend in five-day biochemical oxygen demand. A significant decreasing trend in total phosphorus concentration suggests improving conditions for this parameter.

A fish consumption advisory has been issued by the Department for mercury and includes Lake Yonah and Lake Hartwell within this watershed (see advisory p. 38).

Growth Potential

There is a low potential for growth in this watershed. A substantial portion of the watershed resides within the Sumter National Forest and the steep slopes of this region would limit establishment of infrastructure and any serious growth.

03060102-05

(Tugaloo River/Lake Hartwell)

General Description

The South Carolina portion of watershed 03060102-05 (formerly 03060102-130) is located in Oconee and Anderson Counties and consists primarily of the lower **Tugaloo River** and its tributaries from the Chauga River through **Lake Hartwell**. This portion of the Tugaloo River watershed extends into Georgia. There are 179,670 acres in the extended watershed; 94,679 acres or 52.7% are outside of South Carolina. The South Carolina portion is within the Piedmont physiographic region. Land use/land cover in the S.C. watershed includes: 41.8% forested land, 38.9% agricultural land, 7.0% urban land, 10.4% water, 0.9% forested wetland (swamp), and 1.0% barren land. A map depicting this watershed is found in Appendix A, page A-32.

This portion of the Tugaloo River flows through Lake Hartwell and between the states of South Carolina and Georgia. Streams flowing into the river from the Georgia side are connoted with an asterisk. The Tugaloo River accepts drainage from Rock Creek*, Eastanolla Creek*, Sugar Creek, Choestoea Creek (Johns Pond, Freeman Pond, Norris Creek, Harbin Creek, Little Choestoea Creek), Crawford Creek*, Crawford Creek*, Whitworth Creek*, Shoal Creek*, Fairplay Creek, Paynes Creek*, Reed Creek*, Beaverdam Creek (Mud Creek, Cleveland Creek), Cranes Creek*, and Little Beaverdam Creek before merging with the Seneca River Watershed to form the Savannah River. There are a total of 544.1 stream miles and 17,041.2 acres of lake waters within the extended watershed, all classified FW.

Surface Water Quality

<u>Station #</u>	<u>Type</u>	<u>Class</u>	<u>Description</u>
SV-301	W	FW	NORRIS CREEK AT S-37-435, 1 MI S OF WESTMINSTER
SV-108	W/BIO	FW	CHOESTOEAL CREEK AT S-37-49
RL-03352	RL03	FW	LAKE HARTWELL, 0.9MI NE ANDERSON/OCONEE/HART CO. GA
SV-363	INT	FW	LK HARTWELL, OFF GLENN FORD LANDING US BEAVERDAM CK COVE
RL-03459	RL03	FW	LK HARTWELL, TUGALOO R. ARM APPROX. 1.2 MI S OF S-04-890 & S-04-23
SV-345	W/BIO	FW	BEAVERDAM CREEK AT S-37-66
RS-06170	RS06	FW	MUD CREEK AT BRIDGE ON S-37-99, 2.9 MI NE OF FAIR PLAY
SV-364	W	FW	BEAVERDAM CREEK AT SC 243
RL-03333	RL03	FW	LAKE HARTWELL, 3.9 MI NW OF SADLERS CREEK ST. PARK

Norris Creek (SV-301) - Aquatic life 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. A significant decreasing trend in turbidity suggests improving conditions for this parameter. Recreational uses are partially supported due to fecal coliform bacteria excursions.

Choestoea Creek (SV-108) - Aquatic life uses are fully supported based on macroinvertebrate community data; however, there are significant increasing trends in five-day biochemical oxygen demand and total nitrogen concentration. Recreational uses are not supported due to fecal coliform bacteria excursions.

Lake Hartwell - There are four SCDHEC monitoring stations along Lake Hartwell (**RL-03352, SV-363, RL-03459, RL-03333**) and aquatic life and recreational uses are fully supported at all sites. Significant increasing trends in dissolved oxygen and decreasing trends in turbidity at **SV-363** suggest improving conditions for these parameters at this site.

Beaverdam Creek – There are two SCDHEC monitoring stations along Beaverdam Creek, and recreational uses are partially supported at both sites due to fecal coliform bacteria excursions. At the upstream site (**SV-345**), aquatic life uses are partially supported based on macroinvertebrate community data and pH excursions. At the downstream site (**SV-364**), aquatic life uses are partially supported due to pH excursions.

Mud Creek (RS-06170) - Aquatic life uses are fully supported. Recreational uses are partially supported due to fecal coliform bacteria excursions.

A fish consumption advisory has been issued by the Department for PCBs (Polychlorinated biphenols) and includes Lake Hartwell within this watershed. A fish consumption advisory has also been issued by the State of Georgia for mercury and PCBs for the Tugaloo River arm of Lake Hartwell within this watershed (see p. 38).

NPDES Program

Active NPDES Facilities

RECEIVING STREAM FACILITY NAME	NPDES# TYPE
HARBIN CREEK WEST OAK HS/OCONEE CO. SCH. DIST.	SC0038644 MINOR DOMESTIC
LAKE HARTWELL TOTAL ENVIRON/FOXWOOD HILLS SD	SC0022357 MINOR DOMESTIC
LAKE HARTWELL SCDOT WELCOME CENTER/FAIRPLAY	SC0026638 MINOR DOMESTIC
LAKE HARTWELL NACO/CAROLINA LANDING CAMPGROUND	SC0022063 MINOR DOMESTIC
LAKE HARTWELL TRIBUTARY CHICKASAW POINT SD	SC0048259 MINOR DOMESTIC
CLEVELAND CREEK S&S CONSTRUCTION/OCONEE IND.	SCG731008 MINOR INDUSTRIAL
LAKE HARTWELL TRIBUTARY SLOAN CONSTRUCTION CO./I-85 BORROW PIT	SCG731017 MINOR INDUSTRIAL

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

<i>LANDFILL NAME</i>	<i>PERMIT #</i>
<i>FACILITY TYPE</i>	<i>STATUS</i>
STONE BRIDGE CORP. C&D	372900-1301 INACTIVE
WOODY'S CHIP & MULCH COMPOSTING	372703-3001 INACTIVE
ANDERSON-OCONEE TRANSFER STATION TS-MUNICIPAL	042760-6001 ACTIVE

Land Application Sites

<i>LAND APPLICATION SYSTEM</i>	<i>ND#</i>
<i>FACILITY NAME</i>	<i>TYPE</i>
SPRAYFIELD CHICKASAW UTIL./CHICKASAW POINT	ND0065927 DOMESTIC
SPRAYFIELD LAKESIDE INN	ND0067237 DOMESTIC

Growth Potential

There is a moderate potential for growth in this watershed, which contains portions of the Town of Westminster and Lake Hartwell. Particular emphasis will be placed on residential, commercial, and industrial growth and development along the US 123 corridor, beginning with Westminster and extending towards the City of Seneca. I-85 crosses the lower portion of the watershed, and development pressures continue along the lakeshore.

Watershed Protection and Restoration Strategies

Total Maximum Daily Loads (TMDLs)

A TMDL was developed for SCDHEC and approved by EPA for **Beaverdam Creek** at water quality monitoring site SV-345. The TMDL determines the maximum amount of fecal coliform bacteria this stream can receive and still meet water quality standards. Agriculture and Silviculture are the two major land uses in the watershed and both can be sources of fecal coliform. Targeting agricultural land for reduction of bacteria is the most effective strategy for this watershed. The TMDL translates to a 55% reduction in the loading from agricultural sources. Forested lands are not targeted for reduction, as there are currently no acceptable means of reducing fecal coliform sources within that land use. The nonpoint source component of the Beaverdam Creek TMDL has been implemented using \$319 grant funds. Implementation was completed in December 2005. For more information on \$319 grants, visit <http://www.scdhec.gov/water> and click on Nonpoint Source Program.

03060101-01

(*Keowee River/Lake Jocassee*)

General Description

The South Carolina portion of watershed 03060101-01 (formerly 03060101-010) is located in Oconee and Pickens Counties and consists primarily of the *Keowee River* and its tributaries, flowing through and forming *Lake Jocassee*. The Keowee River watershed extends into North Carolina. There are 93,945 acres in the extended watershed; 62,071 acres or 66.1% are outside of South Carolina. The South Carolina portion is within the Blue Ridge physiographic region. Land use/land cover in the S.C. portion includes: 73.7% forested land, 23.6% water, 0.6% urban land, 1.3% agricultural land, 0.7% barren land, and 0.1% forested wetland (swamp). A map depicting this watershed is found in Appendix A, page A-33.

The Keowee River is formed by the confluence of the Whitewater River and the Toxaway River, both originating in North Carolina. The Whitewater River flows across the North Carolina/South Carolina Stateline and accepts drainage from the Thompson River (Coley Creek, Wright Creek) and Devils Fork. Corbin Creek and Howard Creek (Bad Creek, Bad Creek Reservoir, Limber Pole Creek) join to form Devils Fork, which accepts drainage from another Bad Creek before joining the Whitewater River within Lake Jocassee. The Toxaway River flows across the Stateline and accepts drainage from Bear Creek, Laurel Fork Creek (Long Branch, Bad Creek, Jackies Branch), the Horsepasture River (Bearcamp Creek, Mill Creek), and Devils Hole Creek before joining the Whitewater River to form the Keowee River. In the northeastern portion of the watershed, Rock Creek flows out of and back into North Carolina.

Lake Jocassee is classified TGPT. Jackies Branch, Rock Creek, Bear Creek, Bearcamp Creek, and Limber Pole Creek are classified TN. Laurel Fork Creek and its tributaries are classified TN from its origin to Lake Jocassee, and the Thompson River is classified TN from the Stateline to Lake Jocassee. Wright Creek is classified ORW from its origin to Lake Jocassee, and the Whitewater River is classified ORW from the Stateline to Lake Jocassee. Howard Creek is classified ORW from its origin to Bad Creek, and from Bad Creek to Devils Fork it is classified TN. Corbin Creek is classified ORW from its origin to its confluence with Howard Creek. Devils Fork is classified TN from its origin to Lake Jocassee. Bad Creek Reservoir is classified FW. The SC portion of Rock Creek is classified TN. There are a total of 229.7 stream miles and 8,490.2 acres of lake waters in this extended watershed. The majority of the watershed resides within the Sumter National Forest.

Surface Water Quality

<u>Station #</u>	<u>Type</u>	<u>Class</u>	<u>Description</u>
SV-335	INT	TPGT	L. JOCASSEE AT TOXAWAY R., HORSE PASTURE R. & LAUREL FK CK CONFL.
SV-334	W	TPGT	LAKE JOCASSEE, MAIN BODY
SV-337	W	TPGT	LAKE JOCASSEE OUTSIDE COFFER DAM AT BAD CREEK PROJECT
SV-336	INT	TPGT	LAKE JOCASSEE AT THOMPSON RIVER & WHITEWATER RIVER CONFLUENCE

RL-06430	RL06	TPGT	LAKE JOCASSEE, 1MI SSE OF DOUBLE SPRINGS MOUNTAIN
CL-019	INT	TPGT	LAKE JOCASSEE IN FOREBAY EQUIDISTANT FROM DAM AND SHORELINES

Lake Jocassee – There are six SCDHEC monitoring stations along Lake Jocassee, and aquatic life and recreational uses are fully supported at all sites (*SV-335, SV-334, SV-337, SV-336, RL-06430, CL-019*). At the furthest uplake site (*SV-335*), there are significant decreasing trends in dissolved oxygen and increasing trends in five-day biochemical oxygen demand and total nitrogen concentration. Significant decreasing trends in total phosphorus concentration and fecal coliform bacteria concentration suggest improving conditions for these parameters at this site. At *SV-334*, significant decreasing trends in total phosphorus concentration and fecal coliform bacteria concentration suggest improving conditions for these parameters at this site. There was a significant increasing trend in pH. Further downlake (*SV-337*), there are significant increasing trends in five-day biochemical oxygen demand and total nitrogen concentration. There was a significant increasing trend in pH. Significant decreasing trends in turbidity, total phosphorus concentration, and fecal coliform bacteria concentration suggest improving conditions for these parameters at this site. At *SV-336*, there are significant increasing trends in five-day biochemical oxygen demand and total nitrogen concentration. Significant decreasing trends in total phosphorus concentration and fecal coliform bacteria concentration suggest improving conditions for these parameters. At the furthest downlake site (*CL-019*), there was a significant increasing trend in pH. A significant increasing trend in dissolved oxygen concentration suggests improving conditions for this parameter. There is a significant increasing trend in fecal coliform bacteria concentration at this site.

A fish consumption advisory has been issued by the Department for mercury and includes Lake Jocassee within this watershed (see advisory p. 38).

Natural Swimming Areas

<i>FACILITY NAME</i>	<i>PERMIT #</i>
<i>RECEIVING STREAM</i>	<i>STATUS</i>
DEVILS FORK STATE PARK	37-N13
LAKE JOCASSEE	ACTIVE

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

<i>LANDFILL NAME</i>	<i>PERMIT #</i>
<i>FACILITY TYPE</i>	<i>STATUS</i>
DUKE POWER CO.-BAD CREEK	373303-1602
INDUSTRIAL	INACTIVE

Growth Potential

Residential growth in and adjacent to the mountain region is predicted at relatively high levels, despite the low population base. The Nantahala National Forest and the Sumter National Forest extends across the majority of the watershed and would tend to limit growth in those areas.

03060101-02

(*Keowee River/Lake Keowee*)

General Description

The South Carolina portion of watershed 03060101-02 (formerly 03060101-030) is located in Oconee and Pickens Counties in the Blue Ridge and Piedmont physiographic regions, and consists primarily of the *Keowee River* and its tributaries from the Jocassee Dam to the Keowee Dam forming *Lake Keowee*. A small portion of this Keowee River watershed extends into North Carolina. There are 79,952 acres in the extended watershed; 1,116 acres or 1.4% are outside of South Carolina. Land use/land cover in the S.C. watershed includes: 77.5% forested land, 9.8% water, 8.0% agricultural land, 4.1% urban land, 0.5% barren land, and 0.1% forested wetland (swamp). A map depicting this watershed is found in Appendix A, page A-33.

The Keowee River flows out of the Jocassee Dam and into Lake Keowee. Cane Creek (Bully Branch, Dammo Branch), McKinneys Creek, and Eastatoe Creek all form arms in the upper portion of the lake. Eastatoe Creek flows over the NC Stateline and accepts drainage from Wild Hog Creek, Abner Creek (Dogwood Creek), Rocky Bottom Creek, Side-of-Mountain Creek, Laurel Branch, and Laurel Creek. Downstream of Laurel Creek, Eastatoe Creek accepts drainage from Reedy Cove Creek, Smith Creek, Jewell Branch, Mill Creek (Kinney Branch, Chucky Branch), Barn Branch, Peach Orchard Branch, Little Eastatoe Creek (Winnie Branch, Mine Times Creek, Clearwater Branch), and Poe Creek before flowing into the Keowee River. Downstream from the Eastatoe Creek confluence, the river accepts drainage from Boones Creek, Cedar Creek (Lake Diana, Little Cedar Creek), and Fall Creek. Crow Creek (Lake Carlton, Katoma Branch, East Fork, Ellenburg Branch, Taylor Branch, Little Crow Creek) enters the lake next, followed by Betty Branch, Caney Branch, Mile Creek, Whetner Branch, and Kelly Creek.

There are a total of 309.8 stream miles and 7,598.2 acres of lake waters in this extended watershed. Lake Keowee and its tributaries are classified FW with the following exceptions. Cane Creek and its tributaries from its origin to Lake Keowee are classified TN. Eastatoe Creek and tributaries are classified ORW from the Stateline to Laurel Creek, and TPGT from Laurel Creek to Lake Keowee. Laurel Creek and Laurel Branch are classified ORW. Little Eastatoe Creek is classified TGPT from its headwaters to its confluence with Eastatoe Creek. McKinneys Creek is classified TN from its headwaters to SC 25, and FW below that line to Lake Keowee.

Surface Water Quality

<u>Station #</u>	<u>Type</u>	<u>Class</u>	<u>Description</u>
SV-741	BIO	ORW	EASTATOE CREEK AT S-39-237
SV-676	BIO	ORW	ROCKY BOTTOM CREEK AT US 178
SV-230	SPRP	TPGT	EASTATOE CREEK AT S-39-143
RS-05392	RS05	ORW	LITTLE EASTATOE CREEK, BESIDE SR-49, 8.4 MI NW OF PICKENS
SV-341	SPRP/BIO	TPGT	LITTLE EASTATOE CREEK AT S-39-49
RL-04380	RL04	ORW	EASTATOE CK ARM OF L. KEOWEE, 0.5 MIN N OF STATE PARK

SV-338	INT	FW	LAKE KEOWEE ABOVE SC 130 AND DAM
RL-02304	RL02	ORW	LAKE KEOWEE, 7.0 MI E OF WALHALLA

Eastatoe Creek – There are two SCDHEC monitoring stations along Eastatoe Creek. Aquatic life uses are fully supported at the upstream site (**SV-741**) based on macroinvertebrate community data. At the downstream site (**SV-230**), aquatic life and recreational uses are fully supported; however, there is a significant increasing trend in five-day biochemical oxygen demand. Significant increasing trends in dissolved oxygen concentration, and decreasing trends in turbidity and total phosphorus concentration suggest improving conditions for these parameters.

Rocky Bottom Creek (SV-676) – Aquatic life uses are fully supported based on macroinvertebrate community data.

Little Eastatoe Creek - There are two SCDHEC monitoring stations along Little Eastatoe Creek. At the upstream site (**RS-05392**), aquatic life and recreational uses are fully supported. At the downstream site (**SV-341**), aquatic life uses are fully supported based on macroinvertebrate community data; however, there is a significant increasing trend in five-day biochemical oxygen demand. A significant decreasing trend in total phosphorus concentration suggests improving conditions for this parameter. Recreational uses are not supported at this site due to fecal coliform bacteria excursions.

Eastatoe Creek arm of Lake Keowee (RL-04380) - Aquatic life and recreational uses are fully supported.

Lake Keowee - There are two SCDHEC monitoring stations along this section of Lake Keowee, and aquatic life and recreational uses are fully supported at both sites (**SV-338, RL-02304**). Trend data at the uplake site (**SV-338**), indicated there are significant increasing trends in five-day biochemical oxygen demand and total nitrogen concentration. Significant decreasing trends in turbidity and total phosphorus concentration suggest improving conditions for these parameters at this site. *Fish tissue analyses on species caught within Lake Keowee indicate no advisories or restrictions on consumption of fish from these waters.*

Natural Swimming Areas

FACILITY NAME	PERMIT #
RECEIVING STREAM	STATUS
MCCALL ROYAL AMBASSADOR CAMP	39-N03
REEDY COVE CREEK	ACTIVE

NPDES Program

Active NPDES Facilities

RECEIVING STREAM	NPDES#
FACILITY NAME	TYPE

LAKE KEOWEE
DUKE POWER CO./OCONEE NUCLEAR

SC0000515
MAJOR INDUSTRIAL

KELLY CREEK
GREENVILLE WATER SYSTEM

SCG645039
MINOR MUNICIPAL

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

<i>LANDFILL NAME</i> <i>FACILITY TYPE</i>	<i>PERMIT #</i> <i>STATUS</i>
MARTIN GRADING & SAND CO./HWY 88 S C&D	392900-1301 INACTIVE
CRAWFORDS LCD LANDFILL C&D	392738-1701 ACTIVE
CLEMSON-SENECA LCD LANDFILL C&D	372690-1701 ACTIVE

Water Quantity

<i>WATER USER</i> <i>STREAM</i>	<i>TOTAL PUMP. CAPACITY (MGD)</i> <i>RATED PUMP. CAPACITY (MGD)</i>
GREENVILLE WATER SYSTEM	90.0
LAKE KEOWEE	67.5

Growth Potential

There is a moderate to high potential for growth in this watershed, which contains Lake Keowee. Residential growth in and adjacent to the mountain region is predicted at relatively high levels, despite the low population base.

Watershed Protection and Restoration Strategies

Total Maximum Daily Loads (TMDLs)

A TMDL was developed for SCDHEC and approved by EPA for **Little Eastatoe Creek** at water quality monitoring site SV-341. The TMDLs determine the maximum amount of fecal coliform bacteria these streams can receive and still meet water quality standards. Agriculture and forest are two major land uses in the Little Eastatoe Creek watershed. Both can be sources of fecal coliform bacteria. Targeting agricultural land for reduction of bacteria is the most effective strategy for this watershed. Forested lands are not targeted for reduction, as there are currently no acceptable means of reducing fecal coliform sources within that land use. The TMDLs require reductions of 21% in fecal coliform loading from agriculture for this stream to meet the recreational use standard.

03060101-03
(Little River/Lake Keowee)

General Description

Watershed 03060101-03 (formerly 03060101-050) is located in Oconee County and consists primarily of the **Little River** and its tributaries as it flow through **Lake Keowee**. The watershed occupies 104,996 acres of the Blue Ridge and Piedmont regions of South Carolina. Land use/land cover in the watershed includes: 65.4% forested land, 17.2% agricultural land, 9.2% water, 7.5% urban land, 0.3% barren land, 0.2% forested wetland (swamp), and 0.2% nonforested wetland (marsh). A map depicting this watershed is found in Appendix A, page A-34.

Burgess Creek (Long Branch) and Mill Creek join to form the North Fork Little River, which accepts drainage from Craven Creek, Whitewater Lake, Smeltzer Creek, Fiddlers Creek, Barbeque Branch, and the Flat Shoals River. The Flat Shoals River is formed from the confluence of Cheohee Creek and Tamassee Creek (Horse Bone Branch). Cheohee Creek accepts drainage from White Rock Creek (Bee Cave Creek, Wilson Creek, Pack Branch), Townes Creek, and Mud Creek. Townes Creek is formed by the confluence of Crane Creek and West Fork and accepts drainage from Wash Branch and Crossland Creek before flowing through Lake Isaqueena (also known as Lake Cherokee). Moody Creek (Cantrell Creek, Cheohee Lake, White Oak Creek) and Jumping Branch also drain into Townes Creek through the lake. Flat Shoals River then accepts drainage from Reece Branch and Davey Branch before merging with the North Fork Little River to form the Little River.

Downstream of the confluence, the Little River accepts drainage from Oconee Creek (Alexander Creek, Station Creek), Yarborough Branch, Camp Bottom Branch, and Todd Branch before the river begins to impound into Lake Keowee. Beaman Branch enters the river next, followed by Neal Branch, Wilson Branch, Whetstone Creek, and Stamp Creek (Davis Branch, Cornhouse Creek). The impounded river then accepts drainage from Long Branch, Barkshed Branch, Von Hollen Creek (Frenge Branch), Big Creek, and Crooked Creek (Cater Branch). Cane Creek (Walhalla Reservoir) accepts drainage from Browns Lake, Little Cane Creek (Beaty Creek, Williams Creek), and Dodgens Creek before flowing into the Little River near the base of the watershed.

Lake Keowee, divided between 03060101-02 (Keowee River) and this watershed, is connected through a narrow channel bisected by SC 130. Waters flowing through this connection flow out of the Keowee dam at the base of 03060101-02 and into the Keowee River in 03060101-03. The Little River Dam is located near the confluence with Cane Creek at the base of this watershed and discharges waters into a segment of the Little River, which flows into the Keowee River in 03060101-03. There are a total of 339.5 stream miles and 9,758.4 acres of lake waters in this watershed. Burgess Creek, Mill Creek, White Oak Creek, Jumping Branch, West Fork, Townes Creek (from headwaters to Lake Isaqueena), and Crane Creek are classified TN. North Fork Little River and its tributaries from the confluence of Mill Creek and Burgess Creek to SC 11 is classified TPGT, below that line it is classified FW. Cheohee Creek and Tamassee Creek and their tributaries from their headwaters to the end of U.S. Forest Service land are

classified ORW, below that line are classified FW. Moody Creek is classified TN from its headwaters to its confluence with and including Cantrell Creek. West Fork Townes Creek, from its headwaters to its confluence with Lake Isaqueena, is classified TN. Smeltzer Creek is classified TN from its headwaters to SC 130, below that line to its confluence with the North Fork Little River it is classified TN. All other streams in the watershed are classified FW.

Surface Water Quality

<u>Station #</u>	<u>Type</u>	<u>Class</u>	<u>Description</u>
RS-02466	RS02	TN	BURGESS CREEK AT S-37-171
SV-684	BIO	FW	CRANE CREEK AT WINDING STAIRS RD
SV-742	BIO	FW	OCONEE CREEK AT S-37-129
SV-203	W	FW	LITTLE RIVER AT S-37-24 7.1 MI NE OF WALHALLA
RL-03354	RL03	FW	LAKE KEOWEE, 1.6 MI NW OF SC 188 & 0.7 MI SE OF S-37-175
SV-312	W	FW	LAKE KEOWEE AT SC 188 – CROOKED CK ARM 4.5 MI N SENECA
RL-05466	RL05	FW	LAKE KEOWEE, 0.25 MI NWN OF S-37-340 & S-37-588
SV-361	INT	FW	LAKE KEOWEE IN FOREBAY OF LITTLE RIVER DAM
SV-342	SPRP	FW	CANE CREEK AT S-37-133
SV-807	SS	FW	LITTLE CANE CREEK AT NELLIE ROAD
SV-808	SS	FW	LITTLE CANE CREEK AT AUSTIN EDWARDS ROAD
SV-809	SS	TN	LITTLE CANE CREEK AT OCONEE BELLE LANE
SV-810	SS	FW	LITTLE CANE CREEK AT PICKENS HIGHWAY
SV-811	SS	FW	LITTLE CANE CREEK TRIBUTARY NEAR PICKENS HIGHWAY
SV-812	SS	FW	LITTLE CANE CREEK TRIBUTARY AT TAYLOR ROAD
SV-343	W/BIO	FW	LITTLE CANE CREEK AT S-37-133
SV-311	W	FW	LAKE KEOWEE AT SC 188 – CANE CK ARM 3.5 MI NW SENECA
RL-05394	RL05	FW	LAKE KEOWEE, 5.06 MI NNW OF SENECA

Burgess Creek (RS-02466) - Aquatic life uses are fully supported. Although dissolved oxygen excursions occurred, they were considered natural, not standards violations. Recreational uses are not supported due to fecal coliform bacteria excursions.

Crane Creek (SV-684) – Aquatic life uses are fully supported based on macroinvertebrate community data.

Oconee Creek (SV-742) - Aquatic life uses are fully supported based on macroinvertebrate community data.

Little River (SV-203) – Aquatic life uses are fully supported; however, there is a significant increasing trend in five-day biochemical oxygen demand. Recreational uses are partially supported due to fecal coliform bacteria excursions.

Lake Keowee – There are six SCDHEC monitoring stations along this section of Lake Keowee, and aquatic life and recreational uses are fully supported at all sites (**RL-03354, SV-312, RL-05466, SV-361, SV-311, RL-05394**). At **SV-312**, there is a significant increasing trend in pH. Significant decreasing trends in total phosphorus concentration and fecal coliform bacteria concentration suggest improving

conditions for these parameters at this site. At **SV-361**, there are significant increasing trends in total nitrogen concentration and fecal coliform bacteria concentration. A significant increasing trend in dissolved oxygen concentration suggests improving conditions for this parameter at this site. At **SV-311**, there is a significant decreasing trend in dissolved oxygen concentration. There is a significant increasing trend in pH. A significant decreasing trend in total phosphorus concentration suggests improving conditions for this parameter at this site. *Fish tissue analyses on species caught within Lake Keowee indicate no advisories or restrictions on consumption of fish from these waters.*

Cane Creek (SV-342) - Aquatic life uses are fully supported; however, there is a significant increasing trend in five-day biochemical oxygen demand. A significant decreasing trend in total phosphorus concentration suggests improving conditions for this parameter. Recreational uses are partially supported due to fecal coliform bacteria excursions.

Little Cane Creek - There are five SCDHEC monitoring stations along Little Cane Creek. The four upstream sites were special study stations and only examined recreational uses. Recreational uses are partially supported at the furthest upstream sites (**SV-807, SV-808**), and not supported at the next two stations (**SV-809, SV-810**) due to fecal coliform bacteria excursions. At the furthest downstream site (**SV-343**), aquatic life uses are fully supported based on macroinvertebrate community data; however, there is a significant increasing trend in five-day biochemical oxygen demand. Recreational uses are not supported due to fecal coliform bacteria excursions.

Little Cane Creek Tributary - There are two SCDHEC monitoring stations along the Little Cane Creek tributary. The stations were special study stations and only examined recreational uses. Recreational uses were not supported at the upstream site (**SV-811**) and partially supported at the downstream site (**SV-812**) due to fecal coliform bacteria excursions.

Natural Swimming Areas

<i>FACILITY NAME</i>	<i>PERMIT #</i>
<i>RECEIVING STREAM</i>	<i>STATUS</i>
DIAKONIA CENTER	37-1008N
CRAVEN CREEK	ACTIVE

NPDES Program

Active NPDES Facilities

<i>RECEIVING STREAM</i>	<i>NPDES#</i>
<i>FACILITY NAME</i>	<i>TYPE</i>
DAVEY BRANCH	SC0026727
TAMASSEE DAR SCHOOL	MINOR DOMESTIC

LAKE KEOWEE
TYCO HEALTHCARE KENDALL

SCG250067
MINOR INDUSTRIAL

LAKE KEOWEE
KEOWEE KEY UTILITY SYSTEMS, INC.

SC0022322
MINOR DOMESTIC

LAKE KEOWEE
CITY OF SENECA WTP

SCG641010
MINOR INDUSTRIAL

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

LANDFILL NAME
FACILITY TYPE

PERMIT #
STATUS

WOOD LCD & YT LANDFILL
C&D

372669-1701
ACTIVE

FLAT ROCK LANDCLEARING & YD FILL
C & D

372664-1701
INACTIVE

NORTHWEST GRADING LANDCLEARING
C & D

372614-1701
ACTIVE

Mining Activities

MINING COMPANY
MINE NAME

PERMIT #
MINERAL

LOST DUTCHMANS MINING ASSOC.
NEW OCONEE CAMP

1310-73
GOLD

Water Quantity

WATER USER
STREAM

TOTAL PUMP. CAPACITY (MGD)
RATED PUMP. CAPACITY (MGD)

CITY OF SENECA INTAKE
LAKE KEOWEE

30.0
18.0

Growth Potential

There is a moderate potential for growth in this watershed, which contains the Town of Salem and portions of the Cities of Walhalla and Seneca. Salem and the shoreline of Lake Keowee are predicted for growth in the form of retirement communities. SC 130, running from Salem to Seneca, will be particularly prone to development. The Sumter National Forest extends across the upper portion of the watershed and would limit growth in that area.

Watershed Protection and Restoration Strategies

Total Maximum Daily Loads (TMDLs)

TMDLs were developed by SCDHEC and approved by the EPA for **Cane Creek** (SV-342) and **Little Cane Creek** (SV-343) to determine the maximum amount of fecal coliform bacteria these creeks can receive from sources and still meet water quality standards. The nonpoint sources that were identified to be possible contributors to the Cane Creek impairment include grazing livestock, livestock depositing manure directly into streams, failing septic systems, and urban runoff. The possible sources of the impairment of Little Cane Creek were grazing livestock, livestock depositing manure directly into streams, failing septic systems, and land applied manure. Neither stream had a permitted point source within its drainage area. The TMDL would require reductions of 54% for Cane Creek and 65% for Little Cane Creek to the existing loads for the creeks to meet standards.

The nonpoint source component of the Cane Creek TMDL has been implemented using §319 grant funds. Implementation was completed in January 2009. For more information on §319 grants, visit <http://www.scdhec.gov/water> and click on Nonpoint Source Program.

03060101-04

(Twelvemile Creek/Lake Hartwell)

General Description

Watershed 03060101-04 (formerly 03060101-060, -070) is located in Pickens County and consists primarily of *Twelvemile Creek* and its tributaries to its confluence with the Keowee River forming an arm of *Lake Hartwell*. The watershed occupies 98,964 acres of the Blue Ridge and Piedmont regions of South Carolina. Land use/land cover in the watershed includes: 55.6% forested land, 29.7% agricultural land, 12.4% urban land, 1.2% water, 0.7% barren land, and 0.4% forested wetland (swamp). A map depicting this watershed is found in Appendix A, page A-35.

Middle Fork Twelvemile Creek (Cove Creek, Big Rock Lake, Youngs Branch, Blacks Branch, Mill Shoals Creek, California Branch, Adams Creek) and North Fork (Findleys Lake, Hagood Branch) join to form Twelvemile Creek. Downstream from the confluence, Twelvemile Creek accepts drainage from Town Creek, Cannon Creek (Gregory Creek, West Fork, Hayes and Collins Lake), Wolf Creek (Raven Branch), Praters Creek, and Rices Creek (Country Club Lake). Golden Creek (Murphey Branch) enters the stream next, followed by Shoal Creek, Camp Creek, Huggins Creek, Todd Creek, and Pike Creek before forming an arm of Lake Hartwell. There are a total of 371.3 stream miles and 1,193.2 acres of lake waters in this watershed, all classified FW.

Surface Water Quality

<u>Station #</u>	<u>Type</u>	<u>Class</u>	<u>Description</u>
SV-206	SEDM/BIO	FW	NORTH FORK AT US 178, 2.9 MI N OF PICKENS
SV-740	BIO	FW	RICES CREEK AT S-39-158
SV-362	INT	FW	TWELVEMILE CREEK AT S-39-137
SV-239	W	FW	GOLDEN CREEK AT S-39-222, 1.2 MI NW OF LIBERTY
SV-738	BIO	FW	GOLDEN CREEK AT GOLDEN CREEK ROAD
SV-137	INT	FW	TWELVEMILE CREEK AT S-39-337
SV-136	W	FW	1ST CREEK AFTER LEAVING CENTRAL AT CLVT ON MAW BRIDGE RD

North Fork (SV-206) – Aquatic life uses are partially supported based on macroinvertebrate community data. There is also a significant increasing trend in five-day biochemical oxygen demand. There is a significant increasing trend in pH. A significant decreasing trend in turbidity suggests improving conditions for this parameter.

Rices Creek (SV-740) – Aquatic life uses are partially supported based on macroinvertebrate community data.

Twelvemile Creek – There are two SCDHEC monitoring stations along Twelvemile Creek. At the upstream site (*SV-362*), aquatic life uses are fully supported, but recreational uses are not supported due to fecal coliform bacteria excursions. At the downstream site (*SV-137*), aquatic life uses are fully supported; however, there is a significant increasing trend in five-day biochemical oxygen demand.

There is a significant decreasing trend in pH. Recreational uses are partially supported due to fecal coliform bacteria excursions.

Golden Creek - There are two SCDHEC monitoring stations along Golden Creek. At the upstream site (**SV-239**), aquatic life uses are fully supported, but recreational uses are not supported due to fecal coliform bacteria excursions. At the downstream site (**SV-738**), aquatic life uses are partially supported based on macroinvertebrate community data.

Twelvemile Creek Tributary (SV-136) - Aquatic life uses are fully supported; however, there were significant increasing trends in five-day biochemical oxygen demand and total phosphorus concentration. There is a significant increasing trend in pH. A significant decreasing trend in turbidity suggests improving conditions for this parameter. Recreational uses are not supported due to fecal coliform bacteria excursions.

A fish consumption advisory has been issued by the Department for PCBs (Polychlorinated biphenols) and includes Twelvemile Creek and the impounded area (Lake Hartwell) of Twelvemile Creek within this watershed (see advisory p. 38).

NPDES Program

Active NPDES Facilities

<i>RECEIVING STREAM FACILITY NAME</i>	<i>NPDES# TYPE</i>
PRATERS CREEK SPANGLERS GROCERY	SC0000434 MIN0R INDUSTRIAL
RICES CREEK ALICE MFG/FOSTER & ELLJEAN PLT	SC0000370 MIN0R INDUSTRIAL
TOWN CREEK OWT INDUSTRY, INC.	SC0026492 MIN0R INDUSTRIAL
TOWN CREEK SCHLUMBERGER TECH. CORP.	SC0046612 MIN0R INDUSTRIAL
TOWN CREEK TRIBUTARY KENT MANUFACTURING COMPANY	SCG250154 MIN0R INDUSTRIAL
TWELVEMILE CREEK CITY OF PICKENS/12MILE & WOLF CK REG TRT FAC.	SC0047716 MIN0R DOMESTIC
TWELVEMILE CREEK PICKENS COUNTY STOCKADE WWTF	SC0047899 MIN0R DOMESTIC

TWELVEMILE CREEK TRIBUTARY PICKENS COUNTY/PRISON CAMP MINE	SCG731102 MINOR INDUSTRIAL
MIDDLE FORK TWELVEMILE CREEK CITY OF PICKENS/WTP	SCG643004 MINOR INDUSTRIAL
WOLF CREEK SCHLUMBERGER TECH./SANGAMO/BREAZEALE NPL SITE	SC0047198 MINOR INDUSTRIAL
LAKE HARTWELL/TWELVEMILE CREEK ARM CITY OF CLEMSON/COCHRAN RD WWTP	SC0020010 MAJOR DOMESTIC
LAKE HARTWELL/TWELVEMILE CREEK ARM RC EDWARDS JR HIGH SCHOOL	SC0028762 MINOR DOMESTIC
LAKE HARTWELL TRIBUTARY CHRISTOFF CONSTRUCTION CO./ISAQUEENA VILLAGE	SC0023141 MINOR DOMESTIC
HUGGINS CREEK SHAW INDUSTRIES GROUP/CLEMSON	SC0000302 MAJOR INDUSTRIAL
TWELVEMILE CREEK SHAW INDUSTRIES GROUP/CLEMSON	SC0000302 MAJOR INDUSTRIAL
TWELVEMILE CREEK CATEECHEE VILLAGE INC. WWTP	SC0022012 MINOR DOMESTIC
TWELVEMILE CREEK TRIBUTARY PICKENS COUNTY PSC/CENTRAL/NORTH PLT	SC0024996 MINOR DOMESTIC
GOLDEN CREEK PICKENS COUNTY-LIBERTY/ROPER LAGOON	SC0026191 MINOR DOMESTIC
GOLDEN CREEK EASLEY COMBINED UTIL./EASLEY-GOLDEN CREEK LAGOON	SC0023035 MINOR DOMESTIC
GOLDEN CREEK VULCAN CONSTRUCTION MATERIALS/LIBERTY	SCG730065 MINOR INDUSTRIAL
PIKE CREEK AMERICAN HOUSE SPINNING	SC0000132 MINOR INDUSTRIAL
TOWN CREEK SAM COX INVESTMENTS/MINE	SCG731023 MINOR INDUSTRIAL
TOWN CREEK TRIBUTARY JIM PATTEN/PAT'S MINE	SCG731062 MINOR INDUSTRIAL
GOLDEN CREEK TRIBUTARY IMPERIAL DIE CASTING CORP.	SCG250169 MINOR INDUSTRIAL
GOLDEN CREEK TRIBUTARY PICKENS COUNTY/TRAINING FACIL MINE	SCG731111 MINOR INDUSTRIAL

Municipal Separate Storm Sewer Systems (MS4)

<i>RECEIVING STREAM</i>	<i>NPDES#</i>
<i>MUNICIPALITY</i>	<i>MS4 PHASE</i>
<i>RESPONSIBLE PARTY</i>	<i>MS4 SIZE</i>
<i>IMPLEMENTING PARTY</i>	
TWELVEMILE CREEK	-----
CITY OF CLEMSON	PHASE II
CITY OF CLEMSON	SMALL MS4
CITY OF CLEMSON	
TWELVEMILE CREEK	SCR037701
CITY OF EASLEY	PHASE II
CITY OF EASLEY	SMALL MS4
CITY OF EASLEY	
TWELVEMILE CREEK	SCR037702
CITY OF LIBERTY	PHASE II
CITY OF LIBERTY	SMALL MS4
CITY OF LIBERTY	
TWELVEMILE CREEK	SCR037703
CITY OF PICKENS	PHASE II
CITY OF PICKENS	SMALL MS4
PICKENS COUNTY	
TWELVEMILE CREEK	SCR037704
UNINCORPORATED AREAS	PHASE II
PICKENS COUNTY	SMALL MS4
PICKENS COUNTY	

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

<i>LANDFILL NAME</i>	<i>PERMIT #</i>
<i>FACILITY TYPE</i>	<i>STATUS</i>
SANGAMO/ERNEST NIX PROPERTY	-----
INDUSTRIAL	INACTIVE
PICKENS HIGH SCHOOL	392900-1302
SHORT TERM LANDFILL	INACTIVE
EASLEY C&D & LCD LANDFILL	391001-1201
DOMESTIC	INACTIVE
PICKENS COUNTY COMP. SITE	391001-3001
COMPOSTING	INACTIVE
PICKENS COUNTY SANITARY LANDFILL	-----
DOMESTIC	INACTIVE

PICKENS COUNTY AIR CURT. DESTR. INCENERATOR	391001-4001 ACTIVE
PICKENS COUNTY TRANSFER STATION TRANSFER STATION	391001-6001 ACTIVE
EASLEY MUNICIPAL SW LANDFILL DOMESTIC	391001-1101 ACTIVE
CITY OF CLEMSON BRUSH RECYCLING CTR COMPOSTING	391002-3001 ACTIVE
RANDY THOMAS LAND CLEARING DEBRIS LANDFILL C&D	392762-1701 ACTIVE
SOUTHERN GRADING I SITE COMPOSTING	232701-3001 ACTIVE
CITY OF EASLEY C&D	391003-1701 ACTIVE

Land Application Sites

*LAND APPLICATION SYSTEM
FACILITY NAME*

*ND#
TYPE*

PERCOLATION POND
MONTE VISTA SD

ND0067407
DOMESTIC

Mining Activities

*MINING COMPANY
MINE NAME*

*PERMIT #
MINERAL*

VULCAN CONSTRUCTION CO.
LIBERTY QUARRY

0060-77
GRANITE

Water Quantity

*WATER USER
STREAM*

*TOTAL PUMP. CAPACITY (MGD)
RATED PUMP. CAPACITY (MGD)*

TOWN OF PICKENS
CITY RESERVOIR/NORTH FORK

10.6
5.3

TOWN OF PICKENS
TWELVEMILE CREEK

4.0
2.0

CITY OF EASLEY CENTRAL WD
TWELVEMILE CREEK

6.0
3.0

Growth Potential

There is a moderate potential for growth in this watershed, which contains portions of the Towns of Six Mile, Central, Norris, Liberty, and Pickens and the Cities of Clemson and Easley. This growth will

occur, provided there is sufficient infrastructure to accommodate it. Commercial growth is predicted between Pickens and Easley along SC 8. The residential growth trend is eastward from Clemson to Central, Liberty, and Easley along SC 93 and US 123. Easley has the greatest potential for commercial growth due to its proximity to SC 93, SC 153, and SC 8, and US 123. Industrial growth in this watershed is due, in part, to the established infrastructure and transportation system, and the proximity of I-85. The topography of Easley is most conducive to industrial development and gives it the highest potential for growth in this area. The Town of Liberty also has a high potential for industrial growth due to the large tracts in the Liberty vicinity that are projected to develop, pending the construction of new or expanded sewage disposal plants in the area. Construction of these will encourage growth along the US 123 corridor as well.

Watershed Protection and Restoration Strategies

Total Maximum Daily Loads (TMDLs)

TMDLs were developed for SCDHEC and approved by EPA for the water quality monitoring sites at **Twelvemile Creek** (SV-015, SV-362, and SV-137), unnamed **Twelvemile Creek Tributary** (SV-136), **North Fork** (SV-206), and **Golden Creek** (SV-239). The TMDLs determine the maximum amount of fecal coliform bacteria the stream can receive and still meet water quality standards. There were several permitted wastewater treatment facilities located on Twelvemile Creek and its tributaries. The Twelvemile Creek watershed has four designated small MS4s. Probable sources of fecal coliform bacteria that were identified in the watershed are grazing livestock, especially cattle with access to creeks, failing septic systems, and urban runoff. The TMDLs state that reductions of 39% to 64% in fecal coliform loading are necessary for these streams to meet the recreational use standard.

The nonpoint source component of the above TMDLs has been implemented using §319 grant funds. Implementation was completed in June 2008. For more information on §319 grants, visit <http://www.scdhec.gov/water> and click on Nonpoint Source Program.

03060101-05
(Coneross Creek/Lake Hartwell)

General Description

Watershed 03060101-05 (formerly 03060101-080 plus a portion of -040) is located in Oconee County and consists primarily of **Coneross Creek** and its tributaries, which form an arm of **Lake Hartwell**. The watershed occupies 68,125 acres of the Blue Ridge and Piedmont regions of South Carolina. Land use/land cover in the watershed includes: 49.1% forested land, 34.4% agricultural land, 12.2% urban land, 3.3% water, 0.8% barren land, and 0.2% forested wetland (swamp). A map depicting this watershed is found in Appendix A, page A-36.

Coneross Creek accepts drainage from Yellow Branch and Otter Creek (Lake Jemike) before flowing into Coneross Creek Reservoir. It then accepts drainage from White Fork, Negro Fork (Negro Fork Reservoir), Bear Swamp Creek, Colonels Fork Creek, Richland Creek (Halfway Branch, Webb Pond), Perkins Creek, Snow Creek, and Speeds Creek before forming an arm of Lake Hartwell. There are a total of 236.4 stream miles and 2,304.2 acres of lake waters in this watershed, all classified FW.

Surface Water Quality

<u>Station #</u>	<u>Type</u>	<u>Class</u>	<u>Description</u>
RS-02304	RS02	FW	COLONELS FORK CREEK AT S-37-91
SV-333	W	FW	CONEROSS CREEK AT S-37-13
SV-004	INT	FW	CONEROSS CREEK AT SC 59
RS-05412	RS05/BIO	FW	SNOW CREEK AT S-37-51, 4.9 MI SW OF SENECA
SV-236	W	FW	CONEROSS CK ARM OF LAKE HARTWELL AT S-37-184, 6.5 MI SSE OF SENECA

Colonels Fork Creek (RS-02304) - Aquatic life uses are fully supported, but recreational uses are partially supported due to fecal coliform bacteria excursions.

Coneross Creek - There are two SCDHEC monitoring stations along Coneross Creek. Aquatic life uses are fully supported at the upstream site (**SV-333**); however, there is a significant increasing trend in five-day biochemical oxygen demand. Significant increasing trends in dissolved oxygen concentration and decreasing trends in turbidity and fecal coliform bacteria concentration suggest improving conditions for these parameters. Recreational uses are partially supported due to fecal coliform bacteria excursions. At the downstream site (**SV-004**), aquatic life uses are partially supported due to occurrences of zinc in excess of the aquatic life acute criterion. There is also a significant increasing trend in five-day biochemical oxygen demand. There is a significant increasing trend in pH.

A significant decreasing trend in turbidity suggests improving conditions for this parameter. Recreational uses are partially supported due to fecal coliform bacteria excursions.

Snow Creek (RS-05412) – Although pH excursions occurred, aquatic life uses are fully supported based on macroinvertebrate community data. Recreational uses are partially supported due to fecal coliform bacteria excursions.

Coneross Creek Arm of Lake Hartwell (SV-236) - Aquatic life and recreational uses are fully supported at this lake site; however, there are significant decreasing trends in dissolved oxygen concentration and increasing trends in five-day biochemical oxygen demand and total nitrogen concentration. There is a significant increasing trend in pH.

A fish consumption advisory has been issued by the Department for PCBs (Polychlorinated biphenols) and includes the impounded area (Lake Hartwell) of Coneross Creek within this watershed (see advisory p.38).

Groundwater Quality

<u>Well #</u>	<u>Class</u>	<u>Aquifer</u>	<u>Location</u>
AMB-070	GB	SAPROLITE	MOUNTAIN REST DEEP
AMB-081	GB	PIEDMONT BEDROCK	MOUNTAIN REST SHALLOW

NPDES Program

Active NPDES Facilities

<i>RECEIVING STREAM FACILITY NAME</i>	<i>NPDES# TYPE</i>
CONEROSS CREEK OCONEE COUNTY/CONEROSS CREEK WWTP	SC0033553 MAJOR DOMESTIC
CONEROSS CREEK WALHALLA/CONEROSS CREEK WTP	SCG641004 MINOR DOMESTIC
BEAR SWAMP CREEK TRIBUTARY AVONDALE MILLS INC./WALHALLA PLT	SCG250114 MINOR INDUSTRIAL
CONEROSS CREEK OCONEE COUNTY ROCK QUARRY	SCG730448 MINOR INDUSTRIAL

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

<i>LANDFILL NAME FACILITY TYPE</i>	<i>PERMIT # STATUS</i>
FIVE POINTS MUNICIPAL SW LANDFILL DOMESTIC	371001-1102 INACTIVE
LAKE VIEW LANDFILL DOMESTIC	----- INACTIVE

SENECA MUNICIPAL SW LANDFILL DOMESTIC	371001-1101 INACTIVE
OCONEE NUCLEAR STATION LANDFILL INDUSTRIAL	373303-1601 ACTIVE
HURDT LAND-CLEARING LANDFILL C &D	372494-1701 INACTIVE
JP STEVENS & CO.-WEST POINT PEPPERAL INDUSTRIAL	----- INACTIVE
SENECA (OCONEE) C&D LANDFILL C&D	371001-1201 ACTIVE
SENECA 2 (OCONEE) C&D LANDFILL C&D	371001-1202 ACTIVE
SENECA MULCHING FACILITY COMPOSTING	371001-3001 ACTIVE
OCONEE COUNTY TRANSFER STATION TRANSFER STATION	371001-6001 ACTIVE

Mining Activities

<i>MINING COMPANY MINE NAME</i>	<i>PERMIT # MINERAL</i>
OCONEE COUNTY OCONEE COUNTY ROCK QUARRY	0253-73 GRANITE

Water Quantity

<i>WATER USER STREAM</i>	<i>TOTAL PUMP. CAPACITY (MGD) RATED PUMP. CAPACITY (MGD)</i>
CITY OF WALHALLA CONEROSS CREEK	4.3 3.0
CITY OF WALHALLA NEGRO FORK	0.0 0.0

Growth Potential

There is a moderate to high potential for growth in this watershed, which contains portions of the Cities of Walhalla and Seneca and the Town of Westminster. Residential, commercial, and industrial growth is expected along the US 123 corridor from Westminster through Seneca to Clemson, as well as along SC 28 from Seneca through West Union to Walhalla. Seneca, in particular, is considered one of the largest manufacturing areas in the upstate region. Growth of the manufacturing industry is dependent on infrastructural expansion, which is dependent on the capacity of existing facilities. The regional wastewater treatment facility has expanded and is able to support future growth.

Watershed Protection and Restoration Strategies

Total Maximum Daily Loads (TMDLs)

A TMDL was developed to determine the maximum amount of fecal coliform bacteria **Coneross Creek** at water quality monitoring sites SV-333 and SV-004 can receive from point and nonpoint sources and still meet water quality standards. EPA's BASINS model (HSPF) was used to calculate the continuous in-stream concentration of fecal coliform bacteria. Based on this estimation, we calculated the sum of the allowable loads of the single pollutant from all contributing point and nonpoint sources. This TMDL includes a margin of safety and seasonality to ensure that the waterbody can be used for the recreational use purposes that the State has designated. This TMDL recommends a reduction of 50% in the loading from unidentified sources, which includes sanitary sewer overflows, leaking sanitary sewers, failing septic systems, and direct discharges.

The nonpoint source component of the Coneross Creek TMDL has been implemented using §319 grant funds. Implementation was completed in December 2005. For more information on §319 grants, visit <http://www.scdhec.gov.water> and click on Nonpoint Source Program.

03060101-06

(Eighteenmile Creek/Lake Hartwell)

General Description

Watershed 03060101-06 (formerly 03060101-090) is located in Pickens and Anderson Counties and consists primarily of *Eighteenmile Creek* and its tributaries, which form an arm of *Lake Hartwell*. The watershed occupies 38,109 acres of the Piedmont region of South Carolina. Land use/land cover in the watershed includes: 51.5% forested land, 24.9% agricultural land, 20.6% urban land, 1.6% forested wetland (swamp), 0.9% water, and 0.5% barren land. A map depicting this watershed is found in Appendix A, page A-37.

Eighteenmile Creek originates near the City of Easley and accepts drainage from Woodside Branch, Mohasco Branch, and Fifteenmile Creek, before forming an arm of Lake Hartwell. There are a total of 130.1 stream miles and 361.3 acres of lake waters in this watershed, all classified FW.

Surface Water Quality

<u>Station #</u>	<u>Type</u>	<u>Class</u>	<u>Description</u>
SV-017	W	FW	EIGHTEENMILE CREEK AT UNNUMBERED COUNTY RD, 2.25 MI SSW OF EASLEY
SV-241	W	FW	WOODSIDE BRANCH AT US 123, 1.5 MI E OF LIBERTY
SV-245	W	FW	EIGHTEENMILE CREEK AT S-39-27, 3.3 MI S OF LIBERTY
SV-135	W	FW	EIGHTEENMILE CREEK AT S-39-93, S OF CENTRAL
SV-233	INT	FW	EIGHTEENMILE CREEK AT S-04-279
SV-268	SUMM	FW	EIGHTEENMILE CREEK ARM OF LAKE HARTWELL AT S-04-1098
RL-05392	RL05	FW	EIGHTEENMILE CREEK ARM OF LAKE HARTWELL, 5.96 MI SSW OF PENDLETON

Eighteenmile Creek - There are four SCDHEC monitoring stations along Eighteenmile Creek. At the furthest upstream site (*SV-017*), aquatic life 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. Recreational uses are not supported at this site due to fecal coliform bacteria excursions. Further downstream at *SV-245*, aquatic life uses are fully supported; however, there is a significant increasing trend in five-day biochemical oxygen demand. Significant decreasing trends in turbidity and increasing trends in dissolved oxygen concentration suggest improving conditions for these parameters. Recreational uses are partially supported due to fecal coliform bacteria excursions.

At the next site downstream (*SV-135*), aquatic life uses are partially supported due to pH excursions. There are also significant increasing trends in five-day biochemical oxygen demand and total nitrogen concentration. A significant decreasing trend in turbidity suggests improving conditions for this parameter. Recreational uses are not supported due to fecal coliform bacteria excursions. At the furthest downstream site (*SV-233*), aquatic life uses are fully supported; however, there is a significant increasing trend in total nitrogen concentration. Recreational uses are not supported due to fecal coliform bacteria excursions.

Woodside Branch (SV-241) – Aquatic life uses are partially supported due to pH excursions. There is also a significant increasing trend in turbidity. A significant decreasing trend in five-day biochemical oxygen demand suggests improving conditions for this parameter. 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.

Eighteenmile Creek Arm of Lake Hartwell - There are two SCDHEC monitoring stations along the Eighteenmile Creek arm of Lake Hartwell. At the uplake site (**SV-268**), aquatic life uses are not supported due to excursions of dissolved oxygen concentration, turbidity, and total phosphorus concentration; compounded by a significant decreasing trend in dissolved oxygen concentration. Significant decreasing trends in turbidity and total phosphorus concentration suggest improving conditions for these parameters. Recreational uses are not supported due to fecal coliform bacteria excursions. At the downlake site (**RL-05392**), aquatic life and recreational uses are fully supported.

A fish consumption advisory has been issued by the Department for PCBs (Polychlorinated biphenols) and includes the impounded area (Lake Hartwell) of Eighteenmile Creek within this watershed (see advisory p.38).

NPDES Program

Active NPDES Facilities

RECEIVING STREAM FACILITY NAME	NPDES# TYPE
EIGHTEENMILE CREEK MILLIKEN & CO./PENDLETON FINISHING	SC0000477 MAJOR INDUSTRIAL
EIGHTEENMILE CREEK TOWN OF PENDLETON-CLEMSON REG. WWTP	SC0035700 MAJOR DOMESTIC
EIGHTEENMILE CREEK PICKENS COUNTY/18MILE CK UPPER REG. WWTP	SC0042994 MAJOR DOMESTIC
EIGHTEENMILE CREEK PICKENS COUNTY/18MILE CK MIDDLE REG. WWTP	SC0047856 MAJOR DOMESTIC
EIGHTEENMILE CREEK TRIBUTARY HEATHERWOOD SD/MADERA UTIL.	SC0029548 MINOR DOMESTIC
EIGHTEENMILE CREEK TRIBUTARY EASLEY CUSTOM PLASTICS INC.	SCG250077 MINOR INDUSTRIAL
WOODSIDE BRANCH LIBERTY DENIM LLC	SC0000264 MAJOR INDUSTRIAL

Municipal Separate Storm Sewer Systems (MS4)

<i>RECEIVING STREAM</i>	<i>NPDES#</i>
<i>MUNICIPALITY</i>	<i>MS4 PHASE</i>
<i>RESPONSIBLE PARTY</i>	<i>MS4 SIZE</i>
<i>IMPLEMENTING PARTY</i>	
EIGHTEENMILE CREEK	-----
CITY OF CLEMSON	PHASE II
CITY OF CLEMSON	SMALL MS4
CITY OF CLEMSON	
EIGHTEENMILE CREEK	SCR037701
CITY OF EASLEY	PHASE II
CITY OF EASLEY	SMALL MS4
CITY OF EASLEY	
EIGHTEENMILE CREEK	SCR037702
CITY OF LIBERTY	PHASE II
CITY OF LIBERTY	SMALL MS4
CITY OF LIBERTY	
EIGHTEENMILE CREEK	SCR037704
UNINCORPORATED AREAS	PHASE II
PICKENS COUNTY	SMALL MS4
PICKENS COUNTY	

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

<i>LANDFILL NAME</i>	<i>PERMIT #</i>
<i>FACILITY TYPE</i>	<i>STATUS</i>
TOWN OF PENDLETON MSW LANDFILL	041001-1103
DOMESTIC	INACTIVE
ANDERSON COUNTY LANDFILL	-----
DOMESTIC	INACTIVE
PENDLETON MUNICIPAL TRANSFER STATION	042401-6001
DOMESTIC	ACTIVE
PICKENS COUNTY RECYCLING DEPT	391001-5201
RECYCLING	ACTIVE
PICKENS CENTRAL LANDFILL	391001-1102
DOMESTIC	ACTIVE
HIGHWAY 93 C&D LANDFILL	PROPOSED
C&D	-----
CLEMSON UNIVERSITY LANDFILL	-----
INDUSTRIAL	INACTIVE
CLEMSON UNIVERSITY PHYSICAL PLANT	-----
INDUSTRIAL	INACTIVE

CLEMSON UNIVERSITY SANITARY LANDFILL DOMESTIC	----- INACTIVE
CLEMSON CENTRAL MSW LANDFILL DOMESTIC	391001-1103 INACTIVE
WACCAMAW LANE LAND CLEARING LANDFILL C & D	392603-1701 INACTIVE
EASLEY BUILDERS SUPPLY LANDFILL C & D	392639-1701 INACTIVE
WALTER MOODY LC&D LANDFILL C & D	392775-1701 ACTIVE

Mining Activities

<i>MINING COMPANY MINE NAME</i>	<i>PERMIT # MINERAL</i>
VENESKY ASPHALT PAVING & GRADING HIGHWAY 93 MINE	1647-77 SAND
KENNETH M MERCK 126 EIGHTEENMILE RD CENTER	1597-77 SAND

Growth Potential

There is a moderate to high potential for growth in this watershed, which contains portions of the Cities of Easley and Clemson and the Towns of Liberty, Norris, Central, and Pendleton. A residential growth trend extends eastward from Clemson to Central, Liberty, and Easley along SC 93 and US 123. Commercial growth is predicted between Easley and Pickens along SC 8. The City of Easley has the greatest potential for commercial growth due to its proximity to SC 93, SC 153, and SC 8, and US 123.

Industrial growth in this watershed is due, in part, to the established infrastructure and transportation system, and the proximity to I-85. The topography of Easley is most conducive to industrial development and gives it the highest potential for growth in this area. The Town of Liberty also has a high potential for industrial growth due to the large tracts in the Liberty vicinity that are projected to develop, pending the construction of new or expanded sewage disposal plants in the area. Construction of these will encourage growth along the US 123 corridor as well. The Town of Pendleton is also projected for industrial growth along the US 76 corridor from Pendleton to Anderson. In addition, a rail line runs through Pendleton to Seneca, a criterion for siting a new industry.

Watershed Protection and Restoration Strategies

Total Maximum Daily Loads (TMDLs)

TMDLs were developed for SCDHEC and approved by EPA for the water quality monitoring sites at **Eighteenmile Creek** (SV-017, SV-135, SV-233, and SV-245), **Woodside Branch** (SV-241), and the **Eighteenmile Creek Arm of Lake Hartwell** (SV-268). The TMDLs determine the maximum amount of fecal coliform bacteria these streams can receive and still meet water quality standards. There were several permitted wastewater treatment facilities located on Eighteenmile Creek. Parts of the watershed have been designated as small MS4s. Probable sources of fecal coliform bacteria that were identified in the watershed are failing septic systems, leaking sewers, domestic animals, especially cattle watering in the creeks, residential stormwater runoff, and wildlife. The TMDLs state that reductions of 57% to 89% in fecal coliform loading are necessary for these streams to meet the recreational use standard.

03060101-07

(Deep Creek/Lake Hartwell)

General Description

Watershed 03060101-07 (formerly 03060101-100 plus Six and Twenty Creek from -040) is located in Pickens and Anderson Counties and consists primarily of *Six and Twenty Creek* and *Three and Twenty Creek*, which form *Deep Creek* as an arm of *Lake Hartwell*. The watershed occupies 105,765 acres of the Piedmont region of South Carolina. Land use/land cover in the watershed includes: 40.5% agricultural land, 38.0% forested land, 15.8% urban land, 4.0% water, 1.0% forested wetland (swamp), and 0.7% barren land. A map depicting this watershed is found in Appendix A, page A-38.

Three and Twenty Creek originates near the City of Easley and accepts drainage from Charles Creek, Carmel Creek, Pickens Creek, Double Branch, Cuffie Creek, Big Garvin Creek (Bishop Branch, Little Garvin Creek), Town Creek, and Millwee Creek. Six and Twenty Creek accepts drainage from Jones Creek, Town Creek, Hembree Creek, Hurricane Creek, Steel Creek, Salem Creek, and Prichards Branch before merging with Three and Twenty Creek to form Deep Creek, which flows into the Seneca River (within Lake Hartwell). There are a total of 345.6 stream miles and 4,282.2 acres of lake waters in this watershed, all classified FW.

Surface Water Quality

<u>Station #</u>	<u>Type</u>	<u>Class</u>	<u>Description</u>
RS-03506	RS03/BIO	FW	CHARLES CREEK AT UNNUMBERED RIDGE ROAD OFF S-04-485
SV-735	BIO	FW	THREE AND TWENTY CREEK AT S-04-29
SV-111	INT	FW	THREE AND TWENTY CREEK AT S-04-280
SV-180	BIO	FW	SIX AND TWENTY CREEK AT S-04-174
SV-181	W	FW	SIX AND TWENTY CREEK AT S-04-29, 8.2 MI SE OF PENDLETON

Charles Creek (RS-03506) - Aquatic life uses are partially supported based on macroinvertebrate community data. Recreational uses are partially supported due to fecal coliform bacteria excursions.

Three and Twenty Creek - There are two SCDHEC monitoring stations along Three and Twenty Creek. At the upstream site (*SV-735*), aquatic life uses are partially supported based on macroinvertebrate community data. At the downstream site (*SV-111*), aquatic life uses are fully supported; however, there is a significant increasing trend in five-day biochemical oxygen demand. Significant decreasing trends in turbidity and total phosphorus concentration suggest improving conditions for these parameters. Recreational uses are not supported due to fecal coliform bacteria excursions.

Six and Twenty Creek - There are two SCDHEC monitoring stations along Six and Twenty Creek. At the upstream site (*SV-180*), aquatic life uses are fully supported based on macroinvertebrate community data. At the downstream site (*SV-181*), aquatic life and recreational uses are fully supported.

A fish consumption advisory has been issued by the Department for PCBs (Polychlorinated biphenols) and includes the impounded area (Lake Hartwell) of Six and Twenty Creek within this watershed (see advisory p. 38).

Natural Swimming Areas

<i>FACILITY NAME</i>	<i>PERMIT #</i>
<i>RECEIVING STREAM</i>	<i>STATUS</i>
DARWIN WRIGHT	04-N09
SIX AND TWENTY CREEK	ACTIVE

NPDES Program

Active NPDES Facilities

<i>RECEIVING STREAM</i>	<i>NPDES#</i>
<i>FACILITY NAME</i>	<i>TYPE</i>
THREE AND TWENTY CREEK MT. VERNON MILLS/LAFRANCE	SC0000485 MAJOR INDUSTRIAL
THREE AND TWENTY CREEK MICHELIN N AMERICA/SANDY SPRINGS	SC0026701 MAJOR INDUSTRIAL
THREE AND TWENTY CREEK TRIBUTARY SAUR DANFOSS	SCG250203 MINOR INDUSTRIAL
MILLWEE CREEK TRIBUTARY BILL SANDERS/SANDERS MINE	SCG731045 MINOR INDUSTRIAL
SIX AND TWENTY CREEK ANDERSON CO. WASTEWATER MANAGEMENT	SC0040193 MINOR DOMESTIC
SIX AND TWENTY CREEK TRIBUTARY ODELL OIL CO. INC./US 178 MINE	SCG731040 MINOR INDUSTRIAL
SIX AND TWENTY CREEK TRIBUTARY ROBERT BOSCH CORP.	SCG250184 MINOR INDUSTRIAL
LAKE HARTWELL JACABB UTILITIES LLC/ SHOALS WWTF	SC0021873 MINOR DOMESTIC
LAKE HARTWELL HARBOR GATE CONDOMINIUMS	SC0021849 MINOR DOMESTIC

Municipal Separate Storm Sewer Systems (MS4)

<i>RECEIVING STREAM</i>	<i>NPDES#</i>
<i>MUNICIPALITY</i>	<i>MS4 PHASE</i>
<i>RESPONSIBLE PARTY</i>	<i>MS4 SIZE</i>
<i>IMPLEMENTING PARTY</i>	
THREE AND TWENTY CREEK CITY OF ANDERSON CITY OF ANDERSON CITY OF ANDERSON	SCR030701 PHASE II SMALL MS4
THREE AND TWENTY CREEK UNINCORPORATED AREAS ANDERSON COUNTY ANDERSON COUNTY	SCR030702 PHASE II SMALL MS4
THREE AND TWENTY CREEK CITY OF EASLEY CITY OF EASLEY CITY OF EASLEY	SCR037701 PHASE II SMALL MS4
THREE AND TWENTY CREEK UNINCORPORATED AREAS PICKENS COUNTY PICKENS COUNTY	SCR037704 PHASE II SMALL MS4

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

<i>LANDFILL NAME</i>	<i>PERMIT #</i>
<i>FACILITY TYPE</i>	<i>STATUS</i>
GERBER CHILDRENSWEAR LANDFILL INDUSTRIAL	232408-1301 INACTIVE
MARTIN GRADING & SAND CO. C & D	392900-1303 INACTIVE
MARTIN GRADING LAND C&D LANDFILL C & D	392600-1701 ACTIVE
MARTIN GRADING LAND C&D LANDFILL C & D	392600-1702 INACTIVE
GREENPOINTE C&D C & D	PROPOSED -----
WEDGEWOOD LC&D C & D	042485-1701 INACTIVE
BAD SHORT TERM C&D LANDFILL C & D	042902-1301 INACTIVE
BOBBY & DANNY C&D LANDFILL C & D	042696-1201 INACTIVE

MCCLELLION/MEECHAN SHORT TERM C&D LANDFILL
C & D

042477-1301
INACTIVE

Mining Activities

MINING COMPANY
MINE NAME

PERMIT #
MINERAL

BILL SANDERS
SANDERS MINE

1622-09
SAND

Water Quantity

WATER USER
STREAM

TOTAL PUMP. CAPACITY (MGD)
RATED PUMP. CAPACITY (MGD)

ANDERSON REGIONAL
SIX AND TWENTY CREEK

66.0
49.5

Growth Potential

There is a moderate potential for growth in this watershed, which contains portions of the Towns of Pendleton and La France. The area between the City of Anderson and Pendleton, including the Town of La France, along US 76, is predicted to grow significantly.

Watershed Protection and Restoration Strategies

Total Maximum Daily Loads (TMDLs)

A TMDL was developed for SCDHEC and approved by EPA for **Three and Twenty Creek** at water quality monitoring site SV-111. TMDLs determine the maximum amount of fecal coliform bacteria a stream can receive and still meet water quality standards. There were two permitted NPDES facilities located on Three and Twenty Creek. Two small areas in the upper Three and Twenty Creek watershed have been designated as small MS4s. Probable sources of fecal coliform bacteria that were identified in the watershed are grazing livestock, especially cattle watering in creeks, failing septic systems, and wildlife. The TMDL states that a reduction of 55% in fecal coliform loading is necessary for this stream to meet the recreational use standard.

03060101-08

(Seneca River/Lake Hartwell)

General Description

Watershed 03060101-08 (formerly 03060101-040 minus Six and Twenty Creek and a portion of Coneross Creek) is located in Oconee, Pickens, and Anderson Counties and consists primarily of the *Seneca River arm of Lake Hartwell*. The watershed occupies 68,085 acres of the Piedmont region of South Carolina. Land use/land cover in the watershed includes: 49.9% forested land, 19.6% water, 17.0% agricultural land, 12.2% urban land, 1.0% barren land, and 0.3% forested wetland (swamp). A map depicting this watershed is found in Appendix A, page A-39.

The Keowee River flows out of the Keowee Dam and accepts drainage from Fourmile Creek, the Little River (flowing out of the Little River Dam), Sixmile Creek (Wildcat Creek, Lake Issaqueena), and the Twelvemile Creek watershed before merging with Seneca Creek to form the Seneca River. Downstream of the confluence, the Seneca River accepts drainage from Shiloh Branch, Martin Creek, the Coneross Creek watershed, Camp Creek, the Eighteenmile Creek watershed, and the Deep Creek/Lake Hartwell watershed. There are a total of 170.6 stream miles and 13,028.6 acres of lake waters in this watershed, all classified FW.

Surface Water Quality

<u>Station #</u>	<u>Type</u>	<u>Class</u>	<u>Description</u>
SV-249	W	FW	LAKE HARTWELL HEADWATERS, KEOWEE RIVER ARM AT SC 183
SV-205	W/BIO	FW	SIXMILE CREEK AT S-39-160
SV-683	BIO	FW	WILDCAT CREEK AT CLEMSON UNIV. REC. AREA OFF SC 133
SV-360	W	FW	LAKE ISSAQUEENA, FOREBAY EQUIDISTANT FROM DAM AND SHORELINE
RL-06432	RL06	FW	LAKE ISSAQUEENA, 0.1 MI N OF SPILLWAY
SV-106	W	FW	MARTIN CREEK ARM OF LAKE HARTWELL AT S-37-65 N OF CLEMSON
RL-04378	RL04	FW	L. HARTWELL, SENECA R. ARM 0.8 MI WNW OF CLEMSON LOOKOUT TOWER
RL-02330	RL02	FW	L. HARTWELL, 0.4 MI SE OF OCONEE/ANDERSON CO. LINE, 5 MI W OF SANDY SPRINGS
SV-288	W	FW	L. HARTWELL, SENECA R. ARM AT USACE BUOY BETW MRKRS S-28A & S-29
RL-05417	RL05	FW	L. HARTWELL, 0.3 MI S OF SC 24 BRIDGE OVER SENECA R. ARM
SV-339	INT	FW	LAKE HARTWELL, SENECA R. ARM AT USACE BUOY BETW MRKRS S-14 & S-15

Keowee River Arm of Lake Hartwell (SV-249) – Aquatic life and recreational uses are fully supported. There is a significant increasing trend in pH. Significant decreasing trends in turbidity and total phosphorus concentration suggest improving conditions for these parameters.

Sixmile Creek (SV-205) – Aquatic life uses are fully supported based on macroinvertebrate community data; however, there is a significant increasing trend in five-day biochemical oxygen demand. Recreational uses are not supported due to fecal coliform bacteria excursions.

Wildcat Creek (SV-683) - Aquatic life uses are fully supported based on macroinvertebrate community data.

Lake Issaqueena – There are two SCDHEC monitoring stations along Lake Issaqueena (**SV-360, RL-06432**). Aquatic life and recreational uses are fully supported at both sites; however, there is a significant increasing trend in total nitrogen concentration at the upstream site (**SV-360**).

Martin Creek Arm of Lake Hartwell (SV-106) – Aquatic life and recreational uses are fully supported; however, there is a significant increasing trend in five-day biochemical oxygen demand.

Seneca River Arm of Lake Hartwell - There are five SCDHEC monitoring stations along the Seneca River Arm of Lake Hartwell. At the furthest uplake sites (**RL-04378, RL-02330**), aquatic life and recreational uses are fully supported. Moving downlake (**SV-288**), aquatic life and recreational uses are fully supported. There is a significant increasing trend in pH. Significant decreasing trends in turbidity and total phosphorus concentration suggest improving conditions for these parameters at this site. Aquatic life and recreational uses are again fully supported at **RL-05417**. At the furthest downlake site (**SV-339**), 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 decreasing trends in turbidity and total phosphorus concentration suggest improving conditions for these parameters at this site.

Natural Swimming Areas

<i>FACILITY NAME</i> <i>RECEIVING STREAM</i>	<i>PERMIT #</i> <i>STATUS</i>
FOOTHILLS YMCA LAKE HARTWELL	37-N07 ACTIVE

A fish consumption advisory has been issued by the Department for PCBs (Polychlorinated biphenols) and includes Lake Hartwell and the Seneca River arm of Lake Hartwell within this watershed (see advisory p.38).

NPDES Program

Active NPDES Facilities

<i>RECEIVING STREAM</i> <i>FACILITY NAME</i>	<i>NPDES#</i> <i>TYPE</i>
KEOWEE RIVER TRIBUTARY DUKE POWER/OCONEE NUCLEAR	SC0000515 MAJOR INDUSTRIAL
KEOWEE RIVER (INTERNAL) DUKE POWER/OCONEE NUCLEAR	SC0000515 MAJOR INDUSTRIAL

KEOWEE RIVER TAILRACE DUKE POWER/OCONEE NUCLEAR	SC0000515 MAJOR INDUSTRIAL
LAKE HARTWELL JACABB UTILITIES LLC/POINTE WEST WWTP	SC0000591 MAJOR INDUSTRIAL
LAKE HARTWELL CLEMSON UNIVERSITY WWTP	SC0034843 MAJOR DOMESTIC
LAKE HARTWELL MILLIKEN & CO./DEFORE PLT	SC0023353 MINOR INDUSTRIAL
LAKE HARTWELL CLEMSON UNIVERSITY/CENTRAL ENERGY	SC0022004 MINOR INDUSTRIAL
LAKE HARTWELL TRIBUTARY ANITA INC.	SC0023311 MINOR DOMESTIC

Municipal Separate Storm Sewer Systems (MS4)

<i>RECEIVING STREAM</i>	<i>NPDES#</i>
<i>MUNICIPALITY</i>	<i>MS4 PHASE</i>
<i>RESPONSIBLE PARTY</i>	<i>MS4 SIZE</i>
<i>IMPLEMENTING PARTY</i>	
LAKE HARTWELL UNINCORPORATED AREAS ANDERSON COUNTY ANDERSON COUNTY	SCR030702 PHASE II SMALL MS4
LAKE HARTWELL CITY OF CLEMSON CITY OF CLEMSON CITY OF CLEMSON	----- PHASE II SMALL MS4

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

<i>LANDFILL NAME</i>	<i>PERMIT #</i>
<i>FACILITY TYPE</i>	<i>STATUS</i>
WELLS HWY LC&D LANDFILL C & D	372649-1701 ACTIVE
JP STEVENS & CO.- DELTA #1 INDUSTRIAL	----- INACTIVE
WEST POINT HOME INDUSTRIAL	373317-1601 INACTIVE
CLEMSON UNIVERSITY LONG TERM C & D, LCD	041804-1202 ACTIVE
CLEMSON UNIVERSITY SHORT TERM C & D, LCD	041804-1301 INACTIVE

DUKE POWER-BAD CREEK
INDUSTRIAL

INACTIVE

Land Application Sites

LAND APPLICATION SYSTEM
FACILITY NAME

ND#
TYPE

LAGOON
CLEMSON UNIVERSITY/COOPER SER. LAB.

ND0083003
INDUSTRIAL

PERCOLATION FROM LAGOON
SIX MILE RETIREMENT & CONVUL. CTR

ND0067679
DOMESTIC

Growth Potential

There is a moderate to high potential for growth in this watershed, which contains portions of the Town of Six Mile and the Cities of Clemson and Anderson. Residential growth should occur along SC 133 from Clemson to Six Mile. Another growth area surrounds the intersection of I-85 and SC 81, near Six and Twenty Creek. The presence of I-85 and four-lane US 76 to the west of Anderson are attracting industrial growth. Clemson is one of the largest manufacturing areas in the upstate region. Future growth of the manufacturing industry is dependent on infrastructure expansion, which is dependent on the capacity of existing facilities to treat the effluent, and on the assimilative capacity of surrounding streams to absorb the effluent. Several wastewater treatment facilities in the area have been expanded and are able to serve expanding industrial growth.

Upper Savannah River Basin Description

The South Carolina portion of the *Upper Savannah River Basin (hydrologic unit 03060103)* is located in Anderson, Abbeville, Greenwood, McCormick and Edgefield Counties, and encompasses 6 watersheds and 1,156 square miles in the Piedmont geographical region of the state. The upper Savannah River Basin extends into Georgia. There are 1,097,768 acres in the extended watershed; 352,660 acres or 32.1% are outside of South Carolina. The S.C. portion of the upper Savannah River Basin consists of 55.3% forested land, 27.4% agricultural land, 5.7% water, 9.3% urban land, 0.6% barren land, and 1.7% forested wetland (swamp). There are approximately 3,365 stream miles and 83,241 acres of lake waters in this extended basin.

The Seneca River Watershed and the Tugaloo River Watershed join to form the Savannah River within Lake Hartwell. The Savannah River flows out of the Hartwell Dam and into Lake Russell, where it accepts drainage from the Rocky River (Lake Secession, Wilson Creek). The Savannah River then flows out of the Richard B. Russell Dam and into Lake J. Strom Thurmond, where it accepts drainage from the Little River and Long Cane Creek.

Physiographic Regions

The USDA Soil Conservation Service divided the State of South Carolina into six Major Land Resource Areas (MLRAs). The MLRAs are physiographic regions that have soils, climate, water resources, and land uses in common. The physiographic region that defines the Upper Savannah River Basin is as follows:

The **Piedmont** is an area of gently rolling to hilly slopes with narrow stream valleys dominated by forests, farms, and orchards; elevations range from 375 to 1,000 feet.

Land Use/Land Cover

General land use/land cover mapping for South Carolina was derived from the 2006 National Land Cover Data (NLCD). The dataset is based on nationwide Landsat Thematic Mapper (TM) multispectral satellite images (furnished through the Multi-Resolution Land Characteristics (MRLC) consortium, coordinated by USEPA) using image analysis software to inventory the Nation's land classes. The NLCD are developed by the USGS (EROS Data Center) using TM image interpretation, air photo interpretation, National Wetland Inventory data analysis, and ancillary data analysis.

Urban land is characterized by man-made structures and artificial surfaces related to industrial, commercial, and residential uses, as well as vegetated portions of urban areas.

Agricultural/Grass land is characterized by cropland, pasture, and orchards and may include some grass cover in urban, scrub/shrub, and forest areas.

Forest land is characterized by deciduous and evergreen trees not including forests in wetland settings.

Forested Wetland (swampland) is the saturated bottomland, mostly hardwood forests that are primarily composed of wooded swamps occupying river floodplains and isolated low-lying wet areas, primarily located in the Coastal Plain.

Nonforested Wetland (marshland) is dependent on soil moisture to distinguish it from scrub/shrub since both classes contain grasses and low herbaceous cover; nonforested wetlands are most common along the coast and isolated freshwater areas found in the Coastal Plain.

Barren land is characterized by an unvegetated condition of the land, both natural (rock, beaches and unvegetated flats) and man-induced (rock quarries, mines, and areas cleared for construction in urban areas or clearcut forest).

Water (non-land) includes both fresh and tidal waters.

Soil Types

The individual soil series for the Upper Savannah River Basin are described as follows.

Cataula soils are deep, gently sloping to strongly sloping, well drained soils with a loamy surface layer and a clayey subsoil.

Cecil soils are deep, well drained, gently sloping to sloping soils that have red subsoil.

Davidson soils are deep, gently sloping to strongly sloping, well drained to somewhat poorly drained soils with a loamy surface layer and a clayey subsoil.

Goldston soils are dominantly sloping to steep, well drained to excessively drained soils.

Hiwassee soils are well drained, moderately sloping soils with clayey subsoil, moderately deep.

Madison soils are well drained, moderately sloping soils, with clayey subsoil, moderately deep.

Pacolet soils are well drained, moderately steep soils with clayey subsoil, moderately deep.

Wilkes soils are dominantly strongly sloping to steep, well drained soils.

Slope and Erodibility

The definition of soil erodibility differs from that of soil erosion. Soil erosion may be more influenced by slope, rainstorm characteristics, cover, and land management than by soil properties. Soil erodibility refers to the properties of the soil itself, which cause it to erode more or less easily than others when all other factors are constant.

The soil erodibility factor, K, is the rate of soil loss per erosion index unit as measured on a unit plot, and represents an average value for a given soil reflecting the combined effects of all the soil properties that significantly influence the ease of soil erosion by rainfall and runoff if not protected. The K values closer to 1.0 represent higher soil erodibility and a greater need for best management practices to minimize erosion and contain those sediments that do erode. The range of K-factor values in the Upper Savannah River Basin is from 0.26 to 0.30.

Fish Consumption Advisory

At the time of publication, a fish consumption advisory issued by SCDHEC is in effect for Lake Hartwell and Lake Russell advising people to limit the amount of some types of fish consumed from these waters. Fish consumption advisories are updated annually in the spring. For background information and the most current advisories please visit the Bureau of Water homepage at www.scdhec.gov/water and click on “Advisories.” For more information or a hard copy of the advisories, call SCDHEC’s Fish Consumption Advisory toll-free hotline at (888) 849-7241.

Climate

Normal yearly rainfall in the Upper Savannah River area during the period of 1971 to 2000 was 48.01 inches, according to South Carolina’s 30-year climatological record. Data from National Weather Service stations in Anderson, Anderson County Airport, West Pelzer, Calhoun Falls, Greenwood, Edgefield, McCormick, Belton, Antreville, and Johnston were compiled to determine general climatic information for the Upper Savannah River area. The highest seasonal rainfall occurred in the winter with 13.14 inches; 12.15, 11.96, and 10.76 inches of rain fell in the spring, summer, and fall, respectively. The average annual daily temperature was 60.1°F. Winter temperatures averaged 43.1 °F, and spring, summer, and fall mean temperatures were 60.0 °F, 75.6 °F, and 61.6 °F, respectively.

Watershed Evaluations

03060103-01

(*Savannah River/Lake Hartwell*)

General Description

The South Carolina portion of watershed 03060103-01 (formerly 03060103-020) is located in Anderson County and consists primarily of the *Savannah River* as it flows through *Lake Hartwell*. This Savannah River watershed extends into Georgia. There are 50,004 acres in the extended watershed; 41,218.8 acres or 82% are outside of South Carolina. The South Carolina portion is within the Piedmont physiographic region. Land use/land cover in the S.C. watershed includes: 59.1% water, 19.4% forested land, 14.6% agricultural land, 5.3% urban land, 1.5% barren land, and 0.1% forested wetland (swamp). A map depicting this watershed is found in Appendix B, page B-21.

This uppermost reach of the Savannah River forms the lower end of Lake Hartwell. Lightwood Log Creek flows into the river on the Georgia side. There are 79.2 stream miles in this watershed and 15,669.6 acres of lake waters in this extended watershed, all classified FW. Sadlers Creek State Park resides on the eastern shore in this watershed.

Surface Water Quality

<u>Station #</u>	<u>Type</u>	<u>Class</u>	<u>Description</u>
RL-04371	RL04	FW	LAKE HARTWELL COVE, 0.75 MI SE OF SADLERS CREEK STATE PARK
SV-340	INT	FW	LAKE HARTWELL, MAIN BODY AT USACE WQ BUOY BETWEEN MARKERS 11 & 12

Lake Hartwell - There are two SCDHEC monitoring stations along this portion of Lake Hartwell. Aquatic life and recreational uses are fully supported at the uplake site (**RL-04371**). At the downlake site (**SV-340**), aquatic life uses are partially supported due to occurrences of copper in excess of the aquatic life chronic criterion. There is also a significant increasing trend in five-day biochemical oxygen demand. There is a significant increasing trend in pH. Significant decreasing trends in turbidity and total phosphorus concentration suggest improving conditions for these parameters at this site. Recreational uses are fully supported and a significant decreasing trend in fecal coliform bacteria concentration suggests improving conditions for this parameter.

A fish consumption advisory has been issued by the Department for PCBs (Polychlorinated biphenols) and includes Lake Hartwell within this watershed (see advisory p. 84).

Nonpoint Source Management Program

Land Disposal Activities

Land Application Sites

LAND APPLICATION SYSTEM
FACILITY NAME

ND#
TYPE

SPRAYFIELD
HARTWELL VILLAS ASSOC., INC.

ND0067041
DOMESTIC

GOLF COURSE
STONE CREEK COVE HOMEOWNERS ASSOC.

ND0067032
DOMESTIC

Growth Potential

There is a low potential for growth in this watershed.

03060103-02
(Rocky River/Lake Russell)

General Description

Watershed 03060103-02 (formerly 03060103-070, -080, and a portion of -030) is located in Anderson and Abbeville Counties and consists primarily of the **Rocky River** and its tributaries as it flows through **Lake Secession** and forms an arm of **Lake Richard B. Russell**. The watershed occupies 178,235 acres of the Piedmont region of South Carolina. Land use/land cover in the watershed includes: 46.1% forested land, 34.1% agricultural land, 13.5% urban land, 4.0% water, 1.6% forested wetland (swamp), and 0.7% barren land. A map depicting this watershed is found in Appendix B, page B-22.

Beaverdam Creek (Anderson Reservoir) and Little Beaverdam Creek join to form the Rocky River. Downstream from the confluence, the river accepts drainage from Cox Creek (Bailey Creek) and Broadway Creek. Watermelon Creek (Rock Creek) and Browns Creek join to form Broadway Creek, which accepts drainage from Cupboard Creek, Pea Creek, Neals Creek, and Broadway Lake before discharging into the Rocky River. Beaver Creek (Betsy Creek, Nesbit Creek, Tugaloo Creek) enters the river next, followed by Hencoop Creek (Cherokee Creek, Long Branch), Bear Creek, and Governors Creek. The Rocky River then impounds into Lake Secession and accepts drainage from First Creek. Downstream of the Lake Secession Dam, the Rocky River arm of Lake Russell accepts drainage from Wilson Creek (Jordan Creek, Deep Step Creek, East Beards Creek), Long Branch, and Charlies Creek. There are a total of 639.0 stream miles and 8,443.8 acres of lake waters in this watershed, all classified FW. Calhoun Falls State Park resides at the base of the watershed.

Surface Water Quality

<u>Station #</u>	<u>Type</u>	<u>Class</u>	<u>Description</u>
SV-031	W	FW	ROCKY RIVER AT S-04-263, 2.7 MI SE ANDERSON AT STP
SV-041	W	FW	ROCKY RIVER AT S-04-152 BELOW ROCKY RIVER STP
SV-139	W	FW	CUPBOARD CK AT S-04-733 ABOVE BREAZEALE ST PLT & BELOW BLAIR HILL
SV-140	W	FW	CUPBOARD CK AT S-04-209 BELOW EFFLUENT FROM BELTON 2 PLANT
SV-141	W	FW	BROADWAY CREEK AT US 76 BETWEEN ANDERSON & BELTON
SV-319	W	FW	BROADWAY LAKE, BROADWAY CREEK ARM UPSTREAM OF PUBLIC ACCESS
RL-06421	RL06	FW	BROADWAY LAKE, 1 MI SW OF JUNCTION OF US 178 AND US 76
RL-02455	RL02	FW	BROADWAY LAKE, 0.2 MI NW OF ALLEN PARK
RL-03355	RL03	FW	BROADWAY LAKE, 0.5 MI NW OF SPILLWAY NEARSHORE OPP. END OF S-04-152
SV-258	W	FW	BROADWAY LAKE, NEALS CREEK ARM ½ BETWEEN BANKS AT GOLF COURSE
SV-321	W	FW	BROADWAY LAKE, FOREBAY, ½ BETWEEN SPILLWAY AND OPPOSITE LAND
SV-346	INT	FW	ROCKY RIVER AT S-04-244
SV-037	W	FW	BETSY CREEK AT S-04-259 BELOW FIBERGLAS OUTFALL
SV-331	INT	FW	LAKE SECESSION, 1¼ MI BELOW SC 28
SV-332	INT	FW	LAKE SECESSION APPROX. 400 YDS ABOVE DAM
SV-185	BIO	FW	WILSON CREEK AT SC 413
SV-347	INT	FW	WILSON CREEK AT S-04-294
RL-06439	RL06	FW	LAKE RUSSELL, ROCKY RIVER ARM, 0.2 MI S OF BRIDGE AT SC 71
SV-357	W	FW	LAKE RUSSELL, ROCKY RIVER ARM BETWEEN MARKERS 48 & 49

Rocky River – There are three SCDHEC monitoring stations along the Rocky River. At the furthest upstream site (**SV-031**), aquatic life uses are not supported due to turbidity excursions. There is also a significant increasing trend in five-day biochemical oxygen demand. There is a significant increasing trend in pH. Recreational uses are not supported due to fecal coliform bacteria excursions, which are compounded by a significant increasing trend in fecal coliform bacteria concentration. At the midstream site (**SV-041**), aquatic life uses are not supported due to turbidity excursions. There is a significant increasing trend in pH. Recreational uses are not supported at this site due to fecal coliform bacteria excursions. At the furthest downstream site (**SV-346**), aquatic life uses are fully supported; however, there is a significant increasing trend in five-day biochemical oxygen demand. A significant decreasing trend in total nitrogen concentration suggests improving conditions for this parameter. Recreational uses are partially supported at this site due to fecal coliform bacteria excursions.

Cupboard Creek – There are two SCDHEC monitoring stations along Cupboard Creek. At the upstream site (**SV-139**), aquatic life uses are partially supported due to dissolved oxygen concentration excursions. Although pH excursions occurred, they were considered natural, not standards violations. There is a significant decreasing trend in pH. Significant decreasing trends in five-day biochemical oxygen demand and total phosphorus concentration suggest improving conditions for these parameters. Recreational uses are fully supported at this site and a significant decreasing trend in fecal coliform bacteria concentration suggests improving conditions for this parameter. At the downstream site (**SV-140**), aquatic life uses are fully supported. Significant decreasing trends in five-day biochemical oxygen demand and total phosphorus concentration and increasing trends in dissolved oxygen concentration suggest improving conditions for these parameters. Recreational uses are partially supported at this site due to fecal coliform bacteria excursions.

Broadway Creek (SV-141) – Aquatic life uses are not supported due to turbidity excursions; however, a significant decreasing trend in turbidity suggests improving conditions for this parameter. There is a significant increasing trend in pH. Recreational uses are not supported due to fecal coliform bacteria excursions.

Broadway Lake – There are six SCDHEC monitoring stations along Broadway Lake (**SV-319, RL-06421, RL-02455, RL-03355, SV-258, and SV-321**). Aquatic life and recreational uses are fully supported at all sites; however there is a significant increasing trend in five-day biochemical oxygen demand at **SV-321**. *Fish tissue analyses on species caught within Broadway Lake indicate no advisories or restrictions on consumption of fish from these waters.*

Betsy Creek (SV-037) – Aquatic life uses are fully supported, but recreational uses are not supported due to fecal coliform bacteria excursions.

Lake Seccession – There are two SCDHEC monitoring stations along Lake Seccession and recreational uses are fully supported at both sites. At the upstream site (**SV-331**), aquatic life uses are partially supported due to pH excursions. There is a significant increasing trend in pH. Significant decreasing trends in turbidity, total phosphorus concentration, total nitrogen concentration, and fecal coliform bacteria concentration suggest improving conditions for these parameters. At the downstream site (**SV-332**), aquatic life uses are partially supported due to pH excursions. There is also a significant increasing trend in five-day biochemical oxygen demand. There is a significant increasing trend in pH. Significant decreasing trends in turbidity and total phosphorus concentration suggest improving conditions for these parameters. *Fish tissue analyses on species caught within Lake Seccession indicate no advisories or restrictions on consumption of fish from these waters.*

Wilson Creek – There are two SCDHEC monitoring stations along Wilson Creek. At the upstream site (**SV-185**), aquatic life uses are fully supported based on macroinvertebrate community data. At the downstream site (**SV-347**), aquatic life uses are fully supported; however, there is a significant increasing trend in five-day biochemical oxygen demand. Recreational uses are not supported at this site due to fecal coliform bacteria excursions.

Rocky River Arm of Lake Russell – There are two SCDHEC monitoring stations (**RL-06439, SV-357**) along this section of Lake Russell and aquatic life and recreational uses are fully supported at both sites.

A fish consumption advisory has been issued by the Department for mercury and includes the portions of Lake Russell within this watershed (see advisory p.84).

Natural Swimming Areas

<i>FACILITY NAME</i>	<i>PERMIT #</i>
<i>RECEIVING STREAM</i>	<i>STATUS</i>
CALHOUN FALLS STATE PARK	01-N04
LAKE RUSSELL	ACTIVE

NPDES Program

Active NPDES Facilities

<i>RECEIVING STREAM</i>	<i>NPDES#</i>
<i>FACILITY NAME</i>	<i>TYPE</i>
BEAVER CREEK	SC0047210
FMR ELISKIM, INC. RCRA POSTCLOSURE	MINOR INDUSTRIAL
BEAVER CREEK	SCG670006
TRANSCONTINENTAL GAS PIPELINE	MINOR INDUSTRIAL

BETSY CREEK OWENS-CORNING/ANDERSON PLT	SC0000400 MAJOR INDUSTRIAL
NESBIT CREEK HANSON AGGREGATES SE/ANDERSON	SCG730222 MINOR INDUSTRIAL
PEA CREEK VULCAN MATERIALS CO./ANDERSON QUARRY	SCG730112 MINOR INDUSTRIAL
ROCKY RIVER CITY OF ANDERSON/ROCKY RIVER	SC0023744 MAJOR DOMESTIC
LAKE RUSSELL MOHAWK INDUSTRIES/ROCKY RIVER PLT	SC0000299 MAJOR INDUSTRIAL
LITTLE BEAVERDAM CREEK JACOB UTIL./ROCKY FORD SD	SC0048372 MINOR DOMESTIC

Municipal Separate Storm Sewer Systems (MS4)

<i>RECEIVING STREAM</i>	<i>NPDES#</i>
<i>MUNICIPALITY</i>	<i>MS4 PHASE</i>
<i>RESPONSIBLE PARTY</i>	<i>MS4 SIZE</i>
<i>IMPLEMENTING PARTY</i>	
ROCKY RIVER UNINCORPORATED AREAS ANDERSON COUNTY ANDERSON COUNTY	SCR030701 PHASE II SMALL MS4
ROCKY RIVER CITY OF BELTON CITY OF BELTON ANDERSON COUNTY	SCR030703 PHASE II SMALL MS4
ROCKY RIVER UNINCORPORATED AREAS ANDERSON COUNTY ANDERSON COUNTY	SCR030702 PHASE II SMALL MS4

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

<i>LANDFILL NAME</i>	<i>PERMIT #</i>
<i>FACILITY TYPE</i>	<i>STATUS</i>
ANDERSON TIRE RECYCLING TIRE RECYCLING	042417-5201 ACTIVE
ANDERSON TIRE WASTE TIRE DISPOSAL FAC. WASTE TIRE DISPOSAL	042417-5301 ACTIVE
OWENS-CORNING FIBERGLAS INDUSTRIAL	043334-1601 ACTIVE

OWENS-CORNING FIBERGLAS INDUSTRIAL	----- INACTIVE
SHAW LCD & YARD TRASH LANDFILL LC & D	042637-1701 INACTIVE
MILLER CONSTRUCTION SITE #5 C & D	042689-1702 ACTIVE
ENTERPRISE MATERIAL HANDLING C & D	042733-1201 ACTIVE
BROADWAY LCD & LANDFILL C & D	042722-1701 ACTIVE
BOBBY & DANNY C&D LANDFILL C & D	----- PROPOSED
WHITE ST. SW TRANSFER FACILITY MUNICIPAL	041001-6001 INACTIVE
ANDERSON CO. MATERIAL RECOVERY FAC. RECYLING CENTER	041001-2003 INACTIVE
ANDERSON CO. WOOD CHIP FAC. COMPOSTING	041001-3001 INACTIVE
CITY OF ANDERSON COMPOSTING FAC. COMPOSTING	041003-3001 ACTIVE
ACE RECYCLING CENTER RECYLING CENTER	042663-2001 ACTIVE

Mining Activities

<i>MINING COMPANY MINE NAME</i>	<i>PERMIT # MINERAL</i>
COOPER SAND & GRAVEL CO. ROCKY RIVER PLANT	0859-07 RIVER SAND
THOMAS SAND COMPANY RIVER ROAD PLANT	0908-07 RIVER SAND
HANSON AGGREGATES SOUTHEAST INC. ANDERSON QUARRY	0424-07 GRANITE

Water Quantity

<i>WATER USER STREAM</i>	<i>TOTAL PUMP. CAPACITY (MGD) RATED PUMP. CAPACITY (MGD)</i>
CITY OF ABBEVILLE	10.60
LAKE RUSSELL	4.50

Growth Potential

There is a moderate to high potential for growth in this watershed, which contains the communities of Antreville, Lake Secession, and Homeland Park; the Town of Lowndesville; portions of the Towns of Calhoun Falls, Starr, and Iva; and portions of the Cities of Anderson and Belton. Anderson is currently one of the largest manufacturing areas in the upstate region. Growth of the manufacturing industry is dependent on infrastructural expansion, which is dependent on the capacity of existing facilities. Many wastewater treatment facilities have expanded and are able to support future growth.

Projected industrial development in this watershed runs along the SC 81 corridor from Anderson to Starr, along the western side of Anderson on SC 28, and around the I-85 and SC 81 intersection. Also a rail line runs between Iva and Starr to Anderson, a criterion for siting new industry. Overall development trends are predicted to occur between Belton and Anderson along US 76, and between Honea Path and Williamston (including Belton) along SC 20. Anderson County is in the process of developing long-range plans for growth in this area. A residential growth area lies between Lowndesville and Antreville and will be impacted along SC 81 by any future lakefront development in Calhoun Falls, located near the Lake Russell Dam. Calhoun Falls has upgraded their treatment system, replacing the lagoon treatment system, and are better able to support future growth.

Watershed Protection and Restoration Strategies

Total Maximum Daily Loads (TMDLs)

TMDLs were developed for SCDHEC and approved by EPA for the water quality monitoring sites at the **Rocky River** (SV-031, SV-041), **Cupboard Creek** (SV-139, SV-140), **Broadway Creek** (SV-141), and **Cherokee Creek** (SV-043). The TMDLs determine the maximum amount of fecal coliform bacteria the streams can receive and still meet water quality standards. Rocky River has a major wastewater treatment facility located on it. Parts of the watersheds of the Rocky River and its tributaries are within areas designated as MS4s. Probable sources of fecal coliform bacteria that were identified in the watershed are grazing livestock, especially cattle with access to creeks, failing septic systems, illicit discharges, and urban runoff. The TMDLs state that reductions of 50% to 93% in fecal coliform loading are necessary for these streams to meet the recreational use standard.

A TMDL was developed for SCDHEC and approved by EPA for **Wilson Creek** at water quality monitoring site SV-347. Wilson Creek has no wastewater treatment facilities located on it. Part of the Wilson Creek watershed is within an area designated as a MS4. Probable sources of fecal coliform bacteria that were identified in the watershed are grazing livestock, especially cattle with access to creeks, failing septic systems, and urban runoff. The TMDL states that a reduction of 22% in fecal coliform loading is necessary for this stream to meet the recreational use standard.

03060103-04

(Savannah River/Lake Russell)

General Description

The South Carolina portion of watershed 03060103-04 (formerly 03060103-030 minus the Rocky River arm) is located in Anderson and Abbeville Counties and consists primarily of the *Savannah River* and its tributaries from the Hartwell Dam to the Richard B. Russell Dam, forming *Lake Richard B. Russell*. This Savannah River watershed extends into Georgia. There are 217,939 acres in the extended watershed; 110,145 acres or 50.5% are outside of South Carolina. The South Carolina portion is within the Piedmont physiographic region. Land use/land cover in the S.C. watershed includes: 44.4% forested land, 34.2% agricultural land, 12.3% urban land, 7.2% water, 1.4% forested wetland (swamp), and 0.5% barren land. A map depicting this watershed is found in Appendix B, page B-21.

The Savannah River flows out of the Hartwell Dam and flows into and through Lake Richard B. Russell. Streams flowing into the river from the Georgia side are connoted with an asterisk. Big Generostee Creek (Whitner Creek, Dye Creek, Threemile Creek, Fivemile Creek, Richland Creek, Mountain Creek, Devil Fork Creek, Reedy Creek, Buckingham Creek, Weems Creek) drains into the Savannah River at the top of the watershed, followed by Cedar Creek* and Little Generostee Creek (East Prong, Canoe Creek, Crooked Creek). Pickens Creek* and Bond Creek flow into the headwaters of Lake Russell, followed by Coldwater Creek*, Allen Creek (Bowman Branch, Deal Creek), Van Creek*, the Rocky River watershed, Beaverdam Creek*, Calhoun Branch, and Beer Garden Creek (Manor Creek). There are a total of 664.0 stream miles and 17,015.9 acres of lake waters in this extended watershed. The Savannah River, from Lake Hartwell dam to the Lake Russell headwaters is classified TPGT, the remaining streams in the watershed are classified FW.

Surface Water Quality

<u>Station #</u>	<u>Type</u>	<u>Class</u>	<u>Description</u>
SV-316	W	FW	BIG GENEROSTEE CREEK AT COUNTY ROAD 104
RS-02490	RS02	FW	DEVIL FORK CREEK AT BUSBY RD OFF S-04-22
SV-100	W	FW	LAKE RUSSELL AT SC 181, 6.5 MI SW OF STARR
RL-06441	RL06	FW	LAKE RUSSELL, 5.8 MI WSW OF IVA
RS-05414	RS05	FW	LITTLE GENEROSTEE CREEK AT TINY MCCONELL RD, 4.1 MI SW OF STARR
SV-109	BIO	FW	LITTLE GENEROSTEE CREEK AT SC 184
RL-05409	RL05	FW	LAKE RUSSELL, 3.85 MI WSW OF END OF S-1-169
SV-098	INT	FW	LAKE RUSSELL AT SC 72, 3.1 MI SW CALHOUN FALLS

Big Generostee Creek (SV-316) – Aquatic life uses are fully supported and a significant decreasing trend in turbidity suggests improving conditions for this parameter. There is a significant increasing trend in pH. Recreational uses are not supported due to fecal coliform bacteria excursions; however, a significant decreasing trend in fecal coliform bacteria concentration suggests improving conditions for this parameter.

Devil Fork Creek (RS-02490) - Aquatic life uses are fully supported, but recreational uses are not supported due to fecal coliform bacteria excursions.

Lake Russell – There are four SCDHEC monitoring stations along Lake Russell (**SV-100, RL-06441, RL-05409, SV-098**) and aquatic life and recreational uses are fully supported at all sites. At the furthest uplake site (**SV-100**), there are significant increasing trends in five-day biochemical oxygen demand and total nitrogen concentration. Although pH excursions occurred at **RL-05409**, due to the small sample size, aquatic life uses are considered to be fully supported. At the furthest downlake site (**SV-098**), there is a significant increasing trend in five-day biochemical oxygen demand. There is a significant increasing trend in pH. Significant decreasing trends in turbidity and total phosphorus concentration suggest improving conditions for these parameters at this site.

Little Generostee Creek – There are two SCDHEC monitoring stations along Little Generostee Creek. At the upstream site (**RS-05414**), aquatic life uses are fully supported, but recreational uses are not supported due to fecal coliform bacteria excursions. Aquatic life uses are fully supported at the downstream site (**SV-109**) based on macroinvertebrate community data.

A fish consumption advisory has been issued by the Department for mercury and includes Lake Russell within this watershed (see advisory p. 84).

Groundwater Quality

<u>Well #</u>	<u>Class</u>	<u>Aquifer</u>	<u>Location</u>
AMB-055	GB	SAPROLITE	STARR
AMB-076	GB	PIEDMONT BEDROCK	STARR

All water samples collected from ambient monitoring wells **AMB-055** and **AMB-076** met standards for Class GB groundwater.

NPDES Program

Active NPDES Facilities

<i>RECEIVING STREAM FACILITY NAME</i>	<i>NPDES# TYPE</i>
BIG GENEROSTEE CREEK CITY OF ANDERSON/GENEROSTEE CREEK	SC0023752 MAJOR DOMESTIC
BIG GENEROSTEE CREEK SHAW INDUSTRIES GROUP, INC./ANDERSON	SC0000281 MAJOR INDUSTRIAL

EAST PRONG
TOWN OF IVA/WESTSIDE WWTP B

SC0025828
MINOR DOMESTIC

MOUNTAIN CREEK
UNITED UTILITIES/CHAMBERT FOREST SD

SC0024716
MINOR DOMESTIC

LAKE RUSSELL
SCPSA/JOHN RAINEY GEN. STA.

SC0048135
MAJOR INDUSTRIAL

Municipal Separate Storm Sewer Systems (MS4)

***RECEIVING STREAM
MUNICIPALITY
RESPONSIBLE PARTY
IMPLEMENTING PARTY***

***NPDES#
MS4 PHASE
MS4 SIZE***

BIG GENEROSTEE CREEK
CITY OF ANDERSON
CITY OF ANDERSON
CITY OF ANDERSON

SCR030701
PHASE II
SMALL MS4

BIG GENEROSTEE CREEK
UNINCORPORATED AREAS
ANDERSON COUNTY
ANDERSON COUNTY

SCR030702
PHASE II
SMALL MS4

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

***LANDFILL NAME
FACILITY TYPE***

***PERMIT #
STATUS***

STARR C& D LANDFILL
C & D

041001-1201; 041001-1203
ACTIVE

STARR C& D & LCD LANDFILL
C & D

041001-1701
ACTIVE

STARR MUNICIPAL SW LANDFILL
DOMESTIC

041001-1104
INACTIVE

SHAW GRADING – THOMPSON SITE
C & D

042698-1701
INACTIVE

ANDERSON CO. LANDFILL
DOMESTIC

INACTIVE

Growth Potential

There is a moderate to high potential for growth in this watershed, which contains portions of the City of Anderson and the Towns of Starr, Iva, Calhoun Falls, and the Homeland Park community. Anderson is currently one of the largest manufacturing areas in the upstate region. Growth of the manufacturing industry is dependent on infrastructural expansion, which is dependent on the capacity of

existing facilities. Many wastewater treatment facilities have expanded and are able to support future growth.

Projected industrial development in this watershed runs along the US 76 corridor from Anderson to Pendleton, along the SC 81 corridor from Anderson to Starr, and along the western side of Anderson on SC 28. A rail line runs between Iva and Starr to Anderson, another criterion for siting new industry. A residential growth area lies between Lowndesville and Antreville and will be impacted along SC 81 by any future lakefront development in Calhoun Falls, located near the Lake Russell Dam. Calhoun Falls has upgraded their treatment system, replacing the lagoon treatment system, and are better able to support future growth.

Watershed Protection and Restoration Strategies

Total Maximum Daily Loads (TMDLs)

A TMDL was developed by SCDHEC and approved by the EPA for **Big Generostee Creek** at monitoring site SV-316. TMDLs determine the maximum amount of fecal coliform bacteria water bodies can receive from pollution sources and still meet water quality standards. There are two permitted wastewater dischargers in this watershed. About half of the watershed has been designated as part of a MS4. The nonpoint sources that have been determined to be contributors to Big Generostee Creek impairment include urban runoff, livestock depositing manure directly into streams, sanitary sewer overflows (SSOs), and failing septic systems. The TMDL requires a reduction of 80% in the current load to the creek to meet standards.

The nonpoint source component of the Big Generostee Creek TMDL has been implemented using §319 grant funds. Implementation was completed in December 2006. For more information on §319 grants, visit <http://www.scdhec.gov/water> and click on Nonpoint Source Program.

03060103-05
(Little River)

General Description

Watershed 03060103-05 (formerly 03060103-140 minus the impounded Lake Thurmond arm) is located in Anderson, Abbeville, and McCormick Counties and consists primarily of **Little River** and its tributaries to Lake Thurmond. The watershed occupies 207,276 acres of the Piedmont region of South Carolina. Land use/land cover in the watershed includes: 58.2% forested land, 31.9% agricultural land, 6.3% urban land, 2.5% forested wetland (swamp), 0.7% barren land, and 0.4% water. A map depicting this watershed is found in Appendix B, page B-23.

Barkers Creek (Blue Barker Creek, Long Branch) and Corner Creek join to form the Little River, which then accepts drainage from Camp Creek, Hogskin Creek (Long Branch, Little Hogskin Creek), Chickasaw Creek, Spur Creek (Johnson Creek, Blacks Creek), Park Creek (Reids Creek), and Cochran Branch (Tanyard Branch). Penny Creek enters the river next, followed by Shanklin Creek, McKenley Creek (Morrow Creek, Baskin Branch, Gill Creek), and Sawney Creek (Sherard Lake). Calhoun Creek originates near the City of Abbeville and accepts drainage from Reid Creek, Redd Creek, Flagreed Creek, Jim Knox Branch, White Creek (Hammond Branch, Bowie Branch, Hillbern Creek), and Hartzog Branch before draining into the Little River. Further downstream, the river accepts drainage from Lott Creek, Lee Creek, Bell Creek, Scott Creek, and Connor Creek (Cole Branch). There are a total of 754.4 stream miles and 416.5 acres of lake waters in this watershed, all classified FW. The bottom third of the watershed is within the Sumter National Forest.

Surface Water Quality

<u>Station #</u>	<u>Type</u>	<u>Class</u>	<u>Description</u>
SV-164	W/BIO	FW	LITTLE RIVER AT S-01-24
SV-733	BIO	FW	HOGSKIN CREEK AT SC 184
RS-05586	RS05/BIO	FW	JOHNSON CK TRIB AT S-01-352, 2 ND BRIDGE FROM SC201, 6.8 MI W DUE WEST
SV-348	W	FW	LITTLE RIVER AT S-01-32
RS-02478	RS02/BIO	FW	LITTLE RIVER AT S-01-308
RS-05558	RS05	FW	MORROW CREEK AT S-01-344, 4.1 MI NE OF CALHOUN FALLS
SV-644	BIO	FW	GILL CREEK AT S-01-32
SV-052	W	FW	SAWNEY CREEK AT Co. Rd 1.5 MI SE OF CALHOUN FALLS
SV-171	BIO	FW	CALHOUN CREEK AT S-01-40
SV-192	INT	FW	LITTLE RIVER AT S-33-19

Little River – There are four SCDHEC monitoring stations along the unimpounded portion of the Little River. At the furthest upstream sites (**SV-164**, **SV-348**), aquatic life uses are fully supported; however, there is a significant increasing trend in five-day biochemical oxygen demand. Recreational uses are partially supported at these sites due to fecal coliform bacteria excursions. Aquatic life uses are fully supported at **RS-02478** based on macroinvertebrate community data. Recreational uses are fully supported at this site. At the furthest downstream site (**SV-192**), aquatic life 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. Recreational uses are partially supported due to fecal coliform bacteria excursions. *Fish tissue analyses on species caught from the Little River indicate no advisories or restrictions on consumption of fish from these waters.*

Hogskin Creek (SV-733) - Aquatic life uses are fully supported based on macroinvertebrate community data.

Johnson Creek Tributary (RS-05586) - Aquatic life uses are fully supported based on macroinvertebrate community data. Recreational uses are partially supported due to fecal coliform bacteria excursions.

Morrow Creek (RS-05558) - Aquatic life and recreational uses are fully supported.

Gill Creek (SV-644) - Aquatic life uses are partially supported based on macroinvertebrate community data.

Sawney Creek (SV-052) - Aquatic life uses are fully supported; however, there are significant decreasing trends in dissolved oxygen concentration and increasing trends in five-day biochemical oxygen demand and total nitrogen concentration. Significant decreasing trends in turbidity and fecal coliform bacteria concentration suggest improving conditions for these parameters. Recreational uses are partially supported due to fecal coliform bacteria excursions.

Calhoun Creek (SV-171) - Aquatic life uses are fully supported based on macroinvertebrate community data.

Groundwater Quality

<u>Well #</u>	<u>Class</u>	<u>Aquifer</u>	<u>Location</u>
AMB-054	GB	PIEDMONT BEDROCK	ABBEVILLE
AMB-075	GB	SAPROLITE	ABBEVILLE

All water samples collected from ambient monitoring wells **AMB-054** and **AMB-075** met standards for Class GB groundwater.

NPDES Program

Active NPDES Facilities

<i>RECEIVING STREAM FACILITY NAME</i>	<i>NPDES# TYPE</i>
HILLBERN CREEK TRIBUTARY MILLIKEN & CO./SHARON PLT	SC0023477 MINOR INDUSTRIAL

SAWNEY CREEK
TOWN OF CALHOUN FALLS

SC0025721
MINOR DOMESTIC

PARK CREEK
TOWN OF DUE WEST WWTP

SC0022403
MINOR DOMESTIC

LITTLE RIVER
LITTLE RIVER SAND CO. MINE

SCG730555
MINOR INDUSTRIAL

REDD CREEK
S&S CONSTRUCTION, INC./OVERHOLT MINE

SCG731041
MINOR INDUSTRIAL

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

<i>LANDFILL NAME FACILITY TYPE</i>	<i>PERMIT # STATUS</i>
CITY OF ABBEVILLE LCD&YT LANDFILL C&D	011002-1701 INACTIVE
CITY OF ABBEVILLE LCD&YT LANDFILL C&D	011002-1702 INACTIVE
CITY OF ABBEVILLE INERT & CELLULOSIC INERT	----- INACTIVE
ABBEVILLE CO. SANITARY LANDFILL DOMESTIC	----- INACTIVE
ABBEVILLE CO. SANITARY LANDFILL #2 DOMESTIC	----- INACTIVE
ABBEVILLE CO. C&D LANDFILL C&D	011001-1201 ACTIVE
ABBEVILLE CO. MSW LANDFILL DOMESTIC	011001-1102 ACTIVE
ABBEVILLE CO. SW LANDFILL DOMESTIC	011001-2001 INACTIVE
ABBEVILLE CO. SANITARY LANDFILL DOMESTIC	011001-1101 INACTIVE
ABBEVILLE CO. WOOD CHIPPING COMPOSTING	011001-3001 INACTIVE
TOWN OF CALHOUN FALLS DUMP DOMESTIC	----- INACTIVE
THRELKO INC. LCD LANDFILL C&D	012741-1701 INACTIVE

HR GARRETT-DOBBINS LCD LANDFILL
C&D

012458-1701
ACTIVE

MH CAROLINAS LCD&YT LANDFILL
C&D

012755-1701
INACTIVE

Mining Activities

MINING COMPANY
MINE NAME

PERMIT #
MINERAL

LITTLE RIVER SAND CO.
LITTLE RIVER SAND MINE

1406-01
RIVER SAND

JAMES GROVES CONSTRUCTION
LITTLE RIVER

1521-01
SAND

Growth Potential

There is a moderate potential for growth in this watershed, which contains the Town of Due West and the Willington community, portions of the Towns of Calhoun Falls and Honea Path, and the communities of Antreville and Mount Carmel. Industrial growth is projected along the US 76 corridor from Honea Path to Belton. Overall development trends are predicted to occur between Honea Path and Williamston (including Belton) along SC 20. A residential growth area lies between Lowndesville and Antreville and will be impacted by any future lakefront development in Calhoun Falls, which resides next to Sawney Creek. Calhoun Falls has upgraded their treatment system, replacing the lagoon treatment system, and are better able to support future growth. The Calhoun Falls Industrial Park is located in Calhoun Falls on SC 72 and serves as a source for future industrial growth. The City of Abbeville resides just over the eastern watershed border and affects this watershed. Sharing the same rail line is the Abbeville County Industrial Park, located on the southwest side of the City of Abbeville, another source of potential industrial growth within the watershed. The Sumter National Forest extends across the lower portion of the watershed and would limit growth in that area.

Watershed Protection and Restoration Strategies

Total Maximum Daily Loads (TMDLs)

TMDLs were developed for SCDHEC and approved by EPA at water quality monitoring sites for the **Little River** (SV-164, SV-192, SV-348), **Sawney Creek** (SV-052), and **Calhoun Creek** (RS-01049). The TMDLs determine the maximum amount of fecal coliform bacteria these streams can receive and still meet water quality standards. There was one major permitted wastewater treatment facility located on Sawney Creek and two small permitted NPDES facilities located on Little River. At this time there are no designated MS4s in the Little River watershed. Probable sources of fecal coliform bacteria that were identified in the watershed are grazing livestock, especially cattle watering in the creeks, failing septic systems, residential stormwater runoff, and wildlife. The TMDLs state that reductions of 30% to 69% in fecal coliform loading are necessary for these streams to meet the recreational use standard.

03060103-06
(Long Cane Creek)

General Description

Watershed 03060103-06 (formerly 03060103-150 minus the impounded Lake Thurmond arm) is located in Abbeville, Greenwood, and McCormick Counties and consists primarily of **Long Cane Creek** and its tributaries to Lake Thurmond. The watershed occupies 128,358 acres of the Piedmont region of South Carolina. Land use/land cover in the watershed includes: 66.9% forested land, 22.6% agricultural land, 8.0% urban land, 1.7% forested wetland (swamp), 0.4% barren land, and 0.4% water. A map depicting this watershed is found in Appendix B, page B-24.

Long Cane Creek originates near the Town of Donalds, and accepts drainage from Miller Branch, Grays Creek, Pickens Creek, Bailey Creek (Bowie Branch, Morrison Branch, Job Creek), McCord Creek, Bagg Creek, and Johns Creek (Little Johns Creek, Long Branch, Dry Creek). Another McCord Creek (Keller Branch) enters Long Cane Creek next, followed by Norris Creek (Parker Creek, Adams Branch, Blue Hill Creek, Double Branch), and McGill Branch. Further downstream, Big Curltail Creek (Watts Branch, Little Curltail Creek, Grays Creek, Little Muckaway Creek, George Devlin Branch, Wharton Branch, Fell Branch) enters followed by Stillhouse Branch, Church Branch, Mountain Creek (Parsons Mountain Lake), Candy Branch, Big Branch (Richie Branch, Sawmill Creek), and Chapel Branch. Reedy Branch accepts drainage from South Fork (Hareb Branch) and Rocky Branch (Edwards Branch, Puckett Branch) before flowing into Long Cane Creek, followed by Flat Branch and Cow Branch. There are a total of 478.6 stream miles and 349.8 acres of lake waters in this watershed, all classified FW. The lower half of the watershed is contained within the Sumter National Forest.

Surface Water Quality

<u>Station #</u>	<u>Type</u>	<u>Class</u>	<u>Description</u>
RS-06190	RS06/BIO	FW	BAILEY CREEK TRIB AT S-01-171, 4.8 MI NNE OF ABBEVILLE
SV-349	W/BIO	FW	LONG CANE CREEK AT S-01-159
SV-734	BIO	FW	JOHNS CREEK AT S-01-159
SV-053B	S	FW	BLUE HILL CREEK ON S MAIN ST ABBEVILLE
SV-732	BIO	FW	BIG CURLY TAIL CREEK AT US FOREST RD 509
RS-04542	RS04	FW	REEDY BR, ABOUT 1 MI E OF S-24-112, 5 MI SW OF PROMISED LAND
RS-05574	RS05/BIO	FW	ROCKY BRANCH AT S-24-177, 14.6 MI SW OF GREENWOOD
SV-318	INT/BIO	FW	LONG CANE CREEK AT S-33-117, 7 MI NW MCCORMICK

Bailey Creek Tributary (RS-06190) – Aquatic life uses are partially supported based on macroinvertebrate community data. Recreational uses are not supported due to fecal coliform bacteria excursions.

Long Cane Creek – There are two SCDHEC monitoring stations along Long Cane Creek. At the upstream site (**SV-349**), aquatic life uses are fully supported based on macroinvertebrate community data; however, there is a significant increasing trend in five-day biochemical oxygen demand. A significant decreasing trend in turbidity suggests improving conditions for this parameter. Recreational uses are not supported due to fecal coliform bacteria excursions. At the downstream site (**SV-318**), aquatic life uses are fully supported based on macroinvertebrate community data; however, there is a significant increasing trend in five-day biochemical oxygen demand. There is a significant increasing trend in pH. Significant decreasing trends in turbidity and total phosphorus concentration suggest improving conditions for these parameters. Recreational uses are partially supported due to fecal coliform bacteria excursions.

Johns Creek (SV-734) – Aquatic life uses are partially supported based on macroinvertebrate community data.

Blue Hill Creek (SV-053B) - Aquatic life uses are fully supported; however, there are significant increasing trends in five-day biochemical oxygen demand, turbidity, and total phosphorus concentration. A significant increasing trend in dissolved oxygen concentration suggests improving conditions for this parameter. Recreational uses are not supported due to fecal coliform bacteria excursions.

Big Curly Tail Creek (SV-732) - Aquatic life uses are fully supported based on macroinvertebrate community data.

Reedy Branch (RS-04542) – Aquatic life uses are fully supported, but recreational uses are not supported due to fecal coliform bacteria excursions.

Rocky Branch (RS-05574) - Aquatic life uses are fully supported based on macroinvertebrate community data and recreational uses are also fully supported.

Natural Swimming Areas

FACILITY NAME	PERMIT #
RECEIVING STREAM	STATUS
PARSONS MOUNTAIN	01-1002N
PARSONS MOUNTAIN LAKE	ACTIVE

NPDES Program

Active NPDES Facilities

<i>RECEIVING STREAM FACILITY NAME</i>	<i>NPDES# TYPE</i>
BLUE HILL CREEK MILLIKEN & CO./ABBEVILLE PLANT	SC0000353 MAJOR INDUSTRIAL
LONG CANE CREEK CITY OF ABBEVILLE/LONG CANE CK WWTP	SC0040614 MAJOR DOMESTIC
BLUE HILL CREEK CITY OF ABBEVILLE WTP	SCG645030 MINOR DOMESTIC

Municipal Separate Storm Sewer Systems (MS4)

<i>RECEIVING STREAM MUNICIPALITY RESPONSIBLE PARTY IMPLEMENTING PARTY</i>	<i>NPDES# MS4 PHASE MS4 SIZE</i>
LONG CANE CREEK CITY OF GREENWOOD CITY OF GREENWOOD CITY OF GREENWOOD	----- PHASE II SMALL MS4

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

<i>LANDFILL NAME FACILITY TYPE</i>	<i>PERMIT # STATUS</i>
CITY OF ABBEVILLE LANDFILL INDUSTRIAL	011002-1201 INACTIVE
CITY OF ABBEVILLE LANDFILL INDUSTRIAL	----- INACTIVE
CITY OF ABBEVILLE C&D LANDFILL C&D	011002-1703 ACTIVE

Mining Activities

<i>MINING COMPANY MINE NAME</i>	<i>PERMIT # MINERAL</i>
CONFEDERATE MINING CO., INC. CANDY BRANCH	1252-01 GOLD

Growth Potential

There is a moderate potential for growth in this watershed, which contains the City of Abbeville, and portions of the Towns of Donalds, Hodges, Troy, a portion of the City of Greenwood, and the communities of Promised Land and Bradley. Industrial development in the Saluda River Basin may

impact this watershed with a shared boundary. In particular, development around the Town of Hodges and the SC 25 Industrial Park, together with the associated infrastructural and residential growth that runs along the US 178 corridor to the City of Greenwood. The Abbeville County Industrial Park and the supporting rail line are sources of potential industrial growth in the watershed. The Greenwood County Industrial Site is also located within this watershed, and with support from another rail line, has potential for industrial growth. The Sumter National Forest extends across the lower half of the watershed and would limit growth in that area.

Watershed Protection and Restoration Strategies

Total Maximum Daily Loads (TMDLs)

TMDLs were developed for SCDHEC and approved by EPA at water quality monitoring sites for **Long Cane Creek** (SV-318, SV-349) and its tributary **Blue Hill Creek** (SV-053B). The TMDLs determine the maximum amount of fecal coliform bacteria these streams can receive and still meet water quality standards. There was one major permitted wastewater treatment facility located on Long Cane Creek. At this time, there are not designated MS4s in the Long Cane Creek watershed. Probable sources of fecal coliform bacteria that were identified in the watershed are leaking sewers, domestic animals, failing septic systems, and wildlife. The TMDLs state that reductions of 22% to 99% in fecal coliform loading are necessary for these streams to meet the recreational use standard. The nonpoint source component of the Long Cane Creek and Blue Hill Creek TMDLs has been implemented using §319 grant funds. Implementation was completed in October 2009. For more information on §319 grants, visit <http://www.scdhec.gov/water> and click on Nonpoint Source Program.

03060103-07

(Savannah River/Lake Thurmond)

General Description

The South Carolina portion of watershed 03060103-07 (formerly 03060103-100 plus the Little River Arm from 03060103-140) is located in Abbeville, McCormick, and Edgefield Counties and consists primarily of the *Savannah River* and its tributaries as it flows through *Lake J. Strom Thurmond*. This Savannah River watershed extends into Georgia. There are 316,144 acres in the extended watershed; 201,296 acres or 63.7% are outside of South Carolina. The South Carolina portion is within the Piedmont physiographic region. Land use/land cover in the S.C. watershed includes: 64.5% forested land, 18.5% water, 8.5% agricultural land, 7.1% urban land, 0.6% forested wetland (swamp), and 0.8% barren land. A map depicting this watershed is found in Appendix B, page B-25.

The Savannah River flows out of the Richard B. Russell Dam and into Lake Thurmond, where it accepts drainage from Coffey Creek and Russells Creek. The Broad River* and Pistol Creek* drain into the lake next from the Georgia side. All tributaries from the Georgia side of the Savannah River will be connoted with an asterisk. Further downstream, Patterson Creek enters the lake followed by Fishing Creek*, Lees Branch, Harmon Branch, Murray Creek*, another Patterson Creek, and Soap Creek*. The Little River watershed enters Lake Thurmond next forming an arm of the lake. Streams draining into this impounded portion of Little River include Wilson Spring Creek, Horse Branch, Ludlow Branch, Mill Creek, the impounded portion of Long Cane Creek (Linkay Creek, Bold Branch (Persimmon Branch, Little Persimmon Branch, Rocky Branch, Tanyard Branch, Horton Branch, Morrah Branch, Welch Creek, Mathias Creek), Buffalo Creek (Vall Branch, Taylor Branch, Engevine Branch), and Baker Creek. The Little River is followed by Hawe Creek (Jester Branch), Wells Creek*, Benningsfield Creek, Landam Branch, Shriver Creek*, and Dordon Creek. At the lower end of the lake, Reese Branch flows into the lake followed by Howell Branch, Little River*, Lake Spring Creek*, and Scott Creek. There are a total of 750.2 stream miles and 41,345.3 acres of lake waters in this extended watershed, all classified FW. Hickory Knob State Resort Area, Baker Creek State Park, and Hamilton Branch State Recreation Area are all located along the shoreline of Lake Thurmond.

Surface Water Quality

<u>Station #</u>	<u>Type</u>	<u>Class</u>	<u>Description</u>
CL-040	W	FW	LAKE THURMOND HEADWATERS (SAVANNAH RIVER)
RL-05405	RL05	FW	LAKE THURMOND, 1.25 MI S OF THE END OF S-33-337
RL-05407	RL05	FW	LAKE THURMOND, 0.3 MI S OF BOATRAMP AT THE END OF S-33-366
RL-03357	RL03	FW	LAKE THURMOND, HICKORY KNOB STATE PARK OPP PATTERSON CREEK
RL-05463	RL05	FW	LAKE THURMOND, 0.67 MI NW OF US 378
SV-291	W	FW	LAKE THURMOND AT US 378, 7 MI SW OF MCCORMICK
CL-039	W	FW	LITTLE RIVER ARM OF LAKE THURMOND
RS-03510	RS03/BIO	FW	BAKER CREEK TRIB AT S-33-329 IN BAKER CREEK STATE PARK
SV-819	SSS	FW	HAWE CREEK IMMEDIATELY UPSTREAM OF SV-817 & SV-818
SV-818	SSS	FW	HAWE CREEK TRIBUTARY AT STREAM MOUTH

SV-817	SSS	FW	HAWE CREEK TRIBUTARY AT STREAM MOUTH
SV-066	SSS	FW	HAWE CREEK AT SECONDARY ROAD 44
RL-05405	RL05	FW	LAKE THURMOND HEADWATERS (SAVANNAH RIVER)
RL-05405	RL05	FW	LAKE THURMOND HEADWATERS (SAVANNAH RIVER)
CL-041	W	FW	LAKE THURMOND IN FOREBAY NEAR DAM

Lake Thurmond – There are nine SCDHEC monitoring stations along Lake Thurmond (**CL-040, RL-05405, RL-05407, RL-03357, RL-05463, SV-291, RL-06423, RL-04385, CL-041**) and aquatic life and recreational uses are fully supported at all sites. At **SV-291**, there is however, a significant increasing trend in five-day biochemical oxygen demand. Significant decreasing trends in turbidity, total phosphorus concentration, and fecal coliform bacteria concentration suggest improving conditions for these parameters at this site. At the furthest downlake site (**CL-041**), there is a significant increasing trend in pH. A significant decreasing trend in turbidity suggests improving conditions for this parameter at this site.

Little River arm of Lake Thurmond (CL-039) – Aquatic life and recreational uses are fully supported.

Tributary to Baker Creek (RS-03510) – Aquatic life uses are fully supported based on macroinvertebrate community data and recreational uses are fully supported.

Hawe Creek – There are two SCDHEC monitoring stations along Hawe Creek (**SV-819, SV-066**). These are special study stations and only examined aquatic life uses. Aquatic life uses are fully supported at both sites.

Hawe Creek Tributary – There are two SCDHEC monitoring stations along the Hawe Creek tributary (**SV-818, SV-817**). These are special study stations and only examined aquatic life uses. Aquatic life uses are fully supported at both sites. Although pH excursions occurred at **SV-818**, due to the small sample size, aquatic life uses are considered fully supported.

A fish consumption advisory has been issued by the Department for mercury and includes the Savannah River and Lake Thurmond within this watershed (see advisory p. 84).

Natural Swimming Areas

FACILITY NAME	PERMIT #
RECEIVING STREAM	STATUS
BAKERS CREEK STATE PARK	35-N01
LITTLE RIVER ARM, LAKE THURMOND	ACTIVE

Groundwater Quality

<u>Well #</u>	<u>Class</u>	<u>Aquifer</u>	<u>Location</u>
AMB-106	GB	PIEDMONT BEDROCK	HAMILTON BRANCH

All water samples collected from ambient monitoring well *AMB-106* met standards for Class GB groundwater.

NPDES Program

Active NPDES Facilities

<i>RECEIVING STREAM FACILITY NAME</i>	<i>NPDES# TYPE</i>
LAKE THURMOND SCPRT/HAMILTON BRANCH	SC0021466 MINOR DOMESTIC

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

<i>LANDFILL NAME FACILITY TYPE</i>	<i>PERMIT # STATUS</i>
MCCORMICK COUNTY LC&D LANDFILL C & D	331002-1701 ACTIVE
BARITE HILL GOLD MINE LANDFILL INDUSTRIAL	332338-1601 INACTIVE

Water Quantity

<i>WATER USER STREAM</i>	<i>TOTAL PUMP. CAPACITY (MGD) RATED PUMP. CAPACITY (MGD)</i>
MCCORMICK CPW	5.4
LITTLE RIVER ARM OF LAKE THURMOND	2.7

Growth Potential

There is a low potential for growth in this watershed, which contains portions of the Towns of McCormick, Plum Branch, and Parksville, and the communities of Mount Carmel and Modoc. The Town of McCormick has experienced a population growth with the establishment of a State Prison near the town. Growth has occurred around the Savannah Lakes Village Development, a retirement village, on Lake Thurmond, and may encourage more in the future. The majority of the watershed resides within the Sumter National Forest and would tend to limit growth.

Lower Savannah River Basin Description

The South Carolina portion of the *lower Savannah River Basin (hydrologic units 03060106, 03060107, 03060109, 03060110)* is located in Edgefield, Aiken, Barnwell, Allendale, Greenwood, McCormick, Saluda, Hampton, Jasper, and Beaufort Counties and encompasses 16 watersheds and 2,522 square miles. The basin extends from the Piedmont to the Sandhills to the Upper and Lower Coastal Plains and on into the Coastal Zone regions of the state. The lower Savannah River Basin extends into Georgia. There are 2,306,099 acres in the extended watershed; 692,120 acres or 30.0% are outside of South Carolina. The S.C. portion of the lower Savannah River watershed consists of 56.4% forested land, 16.4% forested wetland (swamp), 14.0% agricultural land, 6.3% urban land, 3.9% nonforested wetland (marsh), 2.3% water, and 0.7% barren land. The urban land percentage is comprised chiefly of North Augusta, Aiken, Bluffton, and a portion of Hilton Head Island. Federal lands, such as the Savannah River Site and the Savannah National Wildlife Refuge, are sizable portions of this basin. There are approximately 6,010 stream miles, 19,349 acres of lake waters, and 24,788 acres of estuarine areas in this extended basin.

The Savannah River flows out of the Thurmond Dam and is restricted again by the Stevens Creek dam, forming Stevens Creek Reservoir. Stevens Creek accepts drainage from Turkey Creek (Beaverdam Creek) and enters the Savannah River prior to the dam. Downstream of the Stevens Creek dam, the Savannah River accepts drainage from Horse Creek, Hollow Creek, Upper Three Runs, and Lower Three Runs (Par Pond). At the base of the Savannah River Basin, the Calibogue Sound accepts drainage from the May River, the Cooper River, and Broad Creek before joining with the Savannah River as it flows into the Atlantic Ocean near Savannah, Georgia. The Atlantic Intracoastal Waterway (AIWW) connects Calibogue Sound to Port Royal Sound and to the Savannah River crossing the New River (Great Swamp) and the Wright River.

Physiographic Regions

The State of South Carolina has been divided into six Major Land Resource Areas (MLRAs) by the USDA Soil Conservation Service. The MLRAs are physiographic regions that have soils, climate, water resources, and land uses in common. The physiographic region that defines the Lower Savannah River Basin is as follows:

The **Piedmont** is an area of gently rolling to hilly slopes with narrow stream valleys dominated by forests, farms, and orchards; elevations range from 375 to 1,000 feet.

The **Sandhills** are an area of gently sloping to strongly sloping uplands with a predominance of sandy areas and scrub vegetation; elevations range from 250 to 450 feet.

The **Upper Coastal Plain** is an area of gentle slopes with increased dissection and moderate slopes in the northwestern section that contain the State's major farming areas; elevations range from 100 to 450 feet.

The **Lower Coastal Plain** is an area that is mostly nearly level and is dissected by many broad, shallow valleys with meandering stream channels; elevations range from 25 to 125 feet.

The **Coastal Zone** is a mostly tidally-influenced area that is nearly level and dissected by many broad, shallow valleys with meandering stream channels; most of the valleys terminate in tidal estuaries along the coast; elevations range from sea level to about 25 feet.

Land Use/Land Cover

General land use/land cover mapping for South Carolina was derived from the 2006 National Land Cover Data (NLCD). The dataset is based on nationwide Landsat Thematic Mapper (TM) multispectral satellite images (furnished through the Multi-Resolution Land Characteristics (MRLC) consortium, coordinated by USEPA) using image analysis software to inventory the Nation's land classes. The NLCD are developed by the USGS (EROS Data Center) using TM image interpretation, air photo interpretation, National Wetland Inventory data analysis, and ancillary data analysis.

Urban land is characterized by man-made structures and artificial surfaces related to industrial, commercial, and residential uses, and vegetated portions of urban areas such as recreational grass lands and facility lawns.

Agricultural/Grass land is characterized by row crops, pastures, orchards, vineyards, and hay land, and includes grass cover in fallow, scrub/shrub, forest clearcut and urban areas.

Forest land is characterized by deciduous and evergreen trees (or a mix of these), not including forests in wetland settings, generally greater than 6m (approximately 20 ft) in height, with tree canopy of 25-100% cover.

Forested Wetland is saturated bottomland, mostly hardwood, forests primarily composed of wooded swamps occupying river floodplains, moist marginal forests, and isolated low-lying wet areas, located predominantly in the Coastal Plain.

Nonforested Wetland is saturated marshland, most commonly located in coastal tidelands and in isolated freshwater inland areas, found predominantly in the Coastal Plain.

Barren land is characterized by a nonvegetated condition of the land, both natural (rock, beaches, nonvegetated flats) and man-induced (rock quarries, mines, urban areas cleared for construction, clearcut forest areas).

Water (non-land) includes both fresh (inland) and saline (tidal) waters.

Soil Types

The individual soil series for the Lower Savannah River Basin are described as follows.

Ailey soils are well drained loamy and sandy soils with clayey or loamy subsoil.

Albany soils are deep, somewhat poorly drained soils with sandy to loamy subsoil on nearly level terrain.

Argent soils are poorly drained soils on low, nearly level areas and low ridges.

Blanton soils are excessively drained soils that have loamy subsoil or are sandy throughout.

Bohicket soils are very poorly drained soils, clayey throughout or mucky and underlain with clayey layers, frequently flooded.

Capers soils are very poorly drained soils, clayey throughout, and underlain with clayey layers, frequently flooded.

Cataula soils are deep, gently sloping to strongly sloping, well drained soils with a loamy surface layer and clayey subsoil.

Cecil soils are deep, well drained, gently sloping to sloping soils that have red subsoil.

Chastain soils are poorly drained to well drained soils that are clayey or loamy throughout and are subject to flooding.

Chewacla soils are nearly level, somewhat poorly drained and well drained soils.

Chipleay soils are moderately to excessively well drained soils, sandy throughout, on high ridges.

Chisolm soils are deep, well to moderately drained soils with sandy to loamy subsoil on nearly level to gently sloping terrain.

Coosaw soils are somewhat to poorly drained soils, with a moderately thick sandy surface layer and loamy subsoil, on ridges and in depressions.

Dothan soils are well drained, sandy soils with loamy subsoil.

Georgeville soils are gently sloping to sloping, well drained and moderately well drained soils.

Fuquay soils are well drained, loamy and sandy soils with clayey or loamy subsoil.

Goldsboro soils are moderately well to poorly drained soils with loamy subsoil on nearly level ridges and in shallow depressions.

Helena soils are gently sloping to sloping, moderately well drained to well drained soils.

Herndon soils are gently sloping to sloping, well drained and moderately well drained soils.

Lakeland soils are well drained to excessively drained, sandy soils with loamy subsoil.

Lynchburg soils are moderately well to poorly drained soils, with loamy subsoil, on nearly level ridges and in shallow depressions.

Lynnhaven soils are poorly drained sandy soils, with sandy subsoil, in low areas, and prone to ponding.

Norfolk soils are deep, well drained soils, with loamy subsoil, nearly level and gently sloping elevated uplands.

Ogeechee soils are poorly drained and moderately well drained, loamy soils with clayey or loamy subsoil, on terraces.

Okeetee soils are deep, somewhat poorly drained soils, with clayey subsoil, on broad low ridges.

Paxville somewhat to very poorly drained soils, with a loamy subsoil, on low ridges and in depressions.

Rains soils are moderately well to poorly drained soils, with a loamy subsoil, on nearly level ridges and in shallow depressions.

Santee soils are very poorly drained soils on low nearly level areas.

Tatum soils are dominantly sloping to steep, well drained to excessively drained soils, with a loamy subsoil, moderately deep or shallow to weathered rock.

Tawcaw soils are poorly drained to well drained soils that are clayey or loamy throughout and are subject to flooding.

Troup soils are well drained, sandy soils with loamy subsoil and excessively drained soils.

Vaocluse soils are well drained, loamy and sandy soils with clayey or loamy subsoil.

Slope and Erodibility

The definition of soil erodibility differs from that of soil erosion. Soil erosion may be more influenced by slope, rainstorm characteristics, cover, and land management than by soil properties. Soil erodibility refers to the properties of the soil itself, which cause it to erode more or less easily than others when all other factors are constant.

The soil erodibility factor, K, is the rate of soil loss per erosion index unit as measured on a unit plot, and represents an average value for a given soil reflecting the combined effects of all the soil properties that significantly influence the ease of soil erosion by rainfall and runoff if not protected. The K values closer to 1.0 represent higher soil erodibility and a greater need for best management practices to minimize erosion and contain those sediments that do erode. The range of K-factor values in the Lower Savannah River Basin is from 0.12 to 0.35.

Fish Consumption Advisory

At the time of publication, a fish consumption advisory issued by SCDHEC is in effect for the Savannah River, from the Thurmond Dam downstream to its discharge into the Atlantic Ocean, and for portions of the New River advising people to limit the amount of some types of fish consumed from these waters. Fish consumption advisories are updated annually in the spring. For background information and the most current advisories please visit the Bureau of Water homepage at www.scdhec.gov/water and click on “Advisories.” For more information or a hard copy of the advisories, call SCDHEC’s Fish Consumption Advisory toll-free hotline at (888) 849-7241.

Climate

Normal yearly rainfall in the Lower Savannah River area during the period of 1971 to 2000 was 49.45 inches, according to South Carolina’s **30-year** climatological record. Data from National Weather Service stations in Aiken, Allendale, Hilton Head, Ridgeland, Blackville, and Clark Hill were compiled to determine general climatic information for the Lower Savannah River area. The highest seasonal rainfall occurred in the summer with 16.01 inches; 10.39, 11.97, and 11.09 inches of rain fell in the fall, winter, and spring, respectively. The average annual daily temperature was 64.2 °F. Summer temperatures averaged 79.5 °F, and fall, winter, and spring mean temperatures were 65.3 °F, 48.0 °F, and 63.7 °F, respectively.

Watershed Evaluations

03060106-01

(Savannah River/Stevens Creek Reservoir)

General Description

The South Carolina portion of watershed 03060106-01 (formerly 03060106-030) is located in Edgefield and Aiken Counties and consists primarily of the **Savannah River** and its tributaries as it flows through **Stevens Creek Reservoir** to the dam. This Savannah River watershed extends into Georgia. There are 163,361 acres in the extended watershed; 149,702 acres or **91.6%** are outside of South Carolina. The South Carolina portion is within the Piedmont physiographic region. Land use/land cover in the S.C. watershed includes: 74.7% forested land, 7.9% water, 7.1% agricultural land, 5.9% forested wetland (swamp), 3.9% urban land, 0.4% barren land, and 0.1% nonforested wetland (marsh). A map depicting this watershed is found in Appendix C, page C-31.

The section of the Savannah River impounded between the Thurmond Dam and the Stevens Creek Dam forms the Stevens Creek Reservoir, which accepts drainage from its upper reaches and from Nixon Branch and Deep Step Creek. An asterisk connotes a stream entering from the Georgia side of the river. Lloyd Creek* enters the river next, followed by Kiokee Creek*, Little Kiokee Creek*, Little River*, Mauldin Branch, Deep Step Branch, and Bussy Creek. There are a total of 605.4 stream miles and 2,236.7 acres of lake waters in this extended watershed, all classified FW.

Surface Water Quality

<u>Station #</u>	<u>Type</u>	<u>Class</u>	<u>Description</u>
SV-294	P	FW	STEVENS CREEK RES. HEADWATERS AT CLARKS HILL DAM BOAT RAMP

Stevens Creek Reservoir (SV-294) – Aquatic life and recreational uses are fully supported; however, there is a significant increasing trend in five-day biochemical oxygen demand and a decreasing trend in dissolved oxygen concentration. Significant decreasing trends in turbidity and total phosphorus concentration suggest improving conditions for these parameters.

A fish consumption advisory has been issued by the Department for mercury and includes the Savannah River within this watershed (see advisory p. 111).

NPDES Program

Active NPDES Facilities

*RECEIVING STREAM
FACILITY NAME*

*NPDES#
TYPE*

SAVANNAH RIVER
US ARMY CORPS./LAKE THURMOND

SC0047317
MINOR INDUSTRIAL

Nonpoint Source Management Program

Land Application Sites

*LAND APPLICATION SYSTEM
FACILITY NAME*

*ND#
TYPE*

LAND APPLICATION
US ARMY CORPS./LAKE THURMOND

SC0047317
INDUSTRIAL

Growth Potential

There is a low potential for growth in this watershed, which contains a portion of the community of Clarks Hill. The majority of the watershed resides within the Sumter National Forest and would tend to limit growth.

Watershed Protection and Restoration Strategies

Total Maximum Daily Loads (TMDLs)

Portions of the **Savannah Harbor** have been included on the Georgia 303(d) list of impaired waters as impaired for dissolved oxygen. This tidal area is considered, at times, to experience naturally occurring levels of dissolved oxygen (DO) below the Georgia standard. This naturally occurring low DO is further impacted by point source discharges both to the harbor and the Savannah River upstream of the estuarine portion of the river. In 2006, the US Environmental Protection Agency (EPA) finalized a dissolved oxygen TMDL for the system that required a 100% reduction in the loading of oxygen demanding substances being discharged to the system. This essentially required that all discharges to the system below Thurmond Dam cease discharging.

Subsequent to development of this TMDL, the State of Georgia adopted a new DO standard for the harbor. The new Georgia standards allow for a 0.1 mg/L depression in DO levels below natural conditions in naturally low DO waters. This is essentially consistent with the South Carolina standard for the waters it shares with Georgia. EPA, with assistance and input from Georgia, South Carolina and interested stakeholders, is developing a new TMDL based on the new Georgia standard. It is anticipated that the new TMDL, though very restrictive, will allow continued discharge of some oxygen demanding substances to the Savannah River and Harbor. The final TMDL is not expected until 2011.

03060106-02
(Horse Creek)

General Description

Watershed 03060106-02 (formerly 03060106-060) is located in Edgefield and Aiken Counties and consists primarily of *Horse Creek* and its tributaries. The watershed occupies 103,463 acres of the Sand Hills and Upper Coastal Plain regions of South Carolina. Land use/land cover in the watershed includes: 45.0% forested land, 26.3% agricultural land, 19.2% urban land, 6.1% forested wetland (swamp), 1.3% water, 1.6% barren land, and 0.5% nonforested wetland (marsh). A map depicting this watershed is found in Appendix C, page C-32.

Horse Creek accepts drainage from Long Branch, Little Horse Creek (Bear Branch, Gopher Branch, Beaver Branch), and Camp Branch before flowing through Vaucluse Pond. Horse Creek then accepts drainage from Good Spring Branch and Sage Mill Branch and flows through Flat Rock Pond. Bridge Creek (Bridge Creek Pond, Graniteville Pond) and the Sand River enter Horse Creek next before it flows through Langley Pond. Little Horse Creek accepts drainage from Simons Lake, Red Hill Branch (Eggleston Lake), Arrowhead Lakes, Antique Lake, Horsepen Creek, Hightower Creek (Ascauga Lake), Franklin Branch, Sudlow Lake, and Mims Branch. Little Horse Creek then flows through Clearwater Lake before merging with Horse Creek downstream of Langley Pond. Storm Branch drains into Horse Creek downstream of the confluence. Horse Creek drains into the Savannah River. There are a total of 297.3 stream miles and 1,533.5 acres of lake waters in this watershed, all classified FW.

Surface Water Quality

<u>Station #</u>	<u>Type</u>	<u>Class</u>	<u>Description</u>
CL-067	W	FW	VAUCLUSE POND IN FOREBAY NEAR DAM
SV-686	W	FW	FLAT ROCK POND IN FOREBAY NEAR DAM
SV-722	W	FW	GRANITEVILLE POND #2 IN FOREBAY NEAR DAM
SV-329	W	FW	HORSE CREEK AT ASCAUGA LAKE RD (S-02-33) IN GRANITEVILLE
SV-071	W	FW	HORSE CREEK AT S-02-104, 0.6 MI SW GRANITEVILLE
SV-069	W/BIO	FW	SAND RIVER AT OLD US 1, 1.2 MI SE WARRENVILLE
RL-04373	RL04	FW	LANGLEY POND, 0.85 MI NE (UPLAKE) OF SPILLWAY
RL-02317	RL02	FW	LANGLEY POND, NEAR NW SHORE & 0.6 MI NE OF SPILLWAY
CL-069	W	FW	LANGLEY POND IN FOREBAY NEAR DAM
RL-03335	RL03	FW	LANGLEY POND, 0.05 MI OFF NW END OF DAM AND SHORELINE
SV-096	W	FW	HORSE CREEK BELOW LANGLEY POND AT S-02-254
SV-724	BIO	FW	LITTLE HORSE CREEK AT S-02-104
SV-073	W	FW	LITTLE HORSE CREEK AT SC 421, BELOW EFFL. OF CLEARWATER FINISHING
SV-072	W	FW	HORSE CREEK AT S-02-145
SV-250	INT	FW	HORSE CREEK AT SC 125, 1.5MI SW CLEARWATER

Vaucluse Pond (CL-067) – Aquatic life and recreational uses are fully supported. This is a blackwater system, characterized by naturally low pH conditions. Although pH excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations.

Flat Rock Pond (SV-686) - Aquatic life and recreational uses are fully supported. This is a blackwater system, characterized by naturally low pH conditions. Although pH excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations.

Graniteville Pond #2 (SV-722) - Aquatic life and recreational uses are fully supported. This is a blackwater system, characterized by naturally low pH conditions. Although pH excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations.

Horse Creek – There are five SCDHEC monitoring stations along Horse Creek. This is a blackwater system, characterized by naturally low pH conditions. Although pH excursions occurred at all sites, they were typical of values seen in blackwater systems and were considered natural, not standards violations. There is a significant decreasing trend in pH at all sites. Aquatic life and recreational uses are fully supported at the furthest upstream site (**SV-329**); however, there are significant increasing trends in five-day biochemical oxygen demand and fecal coliform bacteria concentration. Significant decreasing trends in turbidity and total phosphorus concentration suggest improving conditions for these parameters. Further downstream (**SV-071**), aquatic life uses are fully supported; however, there is a significant increasing trend in five-day biochemical oxygen demand. Significant decreasing trends in turbidity and total phosphorus concentration suggest improving conditions for these parameters. Recreational uses are not supported at this site due to fecal coliform bacteria excursions.

Aquatic life and recreational uses are fully supported at the midstream site (**SV-096**); however, there is a significant increasing trend in five-day biochemical oxygen demand. Significant decreasing trends in total phosphorus concentration and fecal coliform bacteria concentration suggest improving conditions for these parameters at this site. Further downstream (**SV-072**), aquatic life and recreational uses are fully supported; however, there is a significant decreasing trend in dissolved oxygen concentration. Significant decreasing trends in turbidity and total phosphorus concentration suggest improving conditions for these parameters. Aquatic life and recreational uses are fully supported at the furthest downstream site (**SV-250**); however, there are significant increasing trends in five-day biochemical oxygen demand and decreasing trends in dissolved oxygen concentration. Significant decreasing trends in turbidity and total phosphorus concentration suggest improving conditions for these parameters.

Sand River (SV-069) – Aquatic life uses are fully supported based on macroinvertebrate community data; however, there is a significant increasing trend in five-day biochemical oxygen demand. There is a significant decreasing trend in pH. Significant decreasing trends in turbidity and total phosphorus concentration suggest improving conditions for these parameters. Recreational uses are fully supported.

Langley Pond - There are four SCDHEC monitoring stations along Langley Pond (**RL-04373**, **RL-02317**, **CL-069**, **RL-03335**) and aquatic life and recreational uses are fully supported at all sites. This is a blackwater system, characterized by naturally low pH conditions. Although pH excursions occurred at **RL-02317** and **RL-03335**, they were typical of values seen in blackwater systems and were considered natural, not standards violations.

Little Horse Creek - There are two SCDHEC monitoring stations along Little Horse Creek. Aquatic life uses are fully supported at the upstream site (**SV-724**) based on macroinvertebrate community data. At the downstream site (**SV-073**), aquatic life and recreational uses are fully supported. This is a blackwater system, characterized by naturally low pH conditions. Although pH excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations. There is a significant decreasing trend in pH.

A fish consumption advisory has been issued by the Department for mercury and includes Flat Rock Pond, Langley Pond, and Vaucluse Pond within this watershed (see advisory p. 111).

Natural Swimming Areas

FACILITY NAME	PERMIT #
RECEIVING STREAM	STATUS
OUTING CLUB	02-N14
BRIDGE CREEK	ACTIVE
GREFF PARK	02-N07
BRIDGE CREEK	ACTIVE
LANGLEY POND PARK	02-1002N
LANGLEY POND	ACTIVE

Groundwater Quality

<u>Well #</u>	<u>Class</u>	<u>Aquifer</u>	<u>Location</u>
AMB-027	GB	MIDDENDORF	NORTH AUGUSTA

All water samples collected from ambient monitoring well **AMB-027** met standards for Class GB groundwater.

NPDES Program

Active NPDES Facilities

RECEIVING STREAM	NPDES#
FACILITY NAME	TYPE
HORSE CREEK	SC0039730
CYTEC INDUSTRIES INC.	MINOR INDUSTRIAL

HORSE CREEK AVONDALE MILLS WTP	SCG641001 MINOR INDUSTRIAL
HORSE CREEK GTX PROPERTIES LLC/GLENRIDGE MOBILE ESTATES	SC0032638 MINOR DOMESTIC
HORSE CREEK TRIBUTARY KENTUCKY-TENN CLAY/CONGER PLT	SC0040096 MINOR INDUSTRIAL
HORSE CREEK TRIBUTARY KENTUCKY-TENN CLAY/PARAGON MINE	SCG730387 MINOR INDUSTRIAL
HORSE CREEK SC MINERALS/N. AUGUSTA MINE	SC0027529 MINOR INDUSTRIAL
LITTLE HORSE CREEK MARTIN MARIETTA/AIKEN QUARRY	SCG730221 MINOR INDUSTRIAL
FRANKLIN BRANCH KINDER MORGAN SE TERMINALS, LLC/N. AUGUSTA #2	SCG340016 MINOR INDUSTRIAL
HORSE CREEK TRIBUTARY DIXIE CLAY CO./MCNAMEE MINE	SCG730141 MINOR INDUSTRIAL
BRIDGE CREEK BONNETT HAULING/BONNETT CLAY PIT	SCG730447 MINOR INDUSTRIAL
HORSE CREEK AVONDALE MILLS/GREGG DIV.	SCG641019 MINOR INDUSTRIAL
SAND RIVER GL WILLIAMS/HWY 421 MINE	SCG730488 MINOR INDUSTRIAL
SAND RIVER MIKE WILLIAMS/MT ARTHUR MINE	SCG731069 MINOR INDUSTRIAL
LITTLE HORSE CREEK GL WILLIAMS/HILLTOP MINE	SCG730486 MINOR INDUSTRIAL
LITTLE HORSE CREEK TRIBUTARY GL WILLIAMS/JACKSONVILLE MINE	SCG730487 MINOR INDUSTRIAL
HORSE CREEK TRIBUTARY US CONSTRUCTORS/MORRIS PIT	SCG730471 MINOR INDUSTRIAL
HORSE CREEK TRIBUTARY DIXIE CLAY CO./PARDUE PIT	SCG730143 MINOR INDUSTRIAL
HORSE CREEK TRIBUTARY SOUTHERN GRADING & PAVING INC.	SCG730402 MINOR INDUSTRIAL

Municipal Separate Storm Sewer Systems (MS4)

<i>RECEIVING STREAM</i>	<i>NPDES#</i>
<i>MUNICIPALITY</i>	<i>MS4 PHASE</i>
<i>RESPONSIBLE PARTY</i>	<i>MS4 SIZE</i>
<i>IMPLEMENTING PARTY</i>	
HORSE CREEK	SCR030301
CITY OF AIKEN	PHASE II
CITY OF AIKEN	SMALL MS4
CITY OF AIKEN	
HORSE CREEK	SCR030303
CITY OF BURNETTOWN	PHASE II
CITY OF BURNETTOWN	SMALL MS4
AIKEN COUNTY	
HORSE CREEK	SCR030304
CITY OF NORTH AUGUSTA	PHASE II
CITY OF NORTH AUGUSTA	SMALL MS4
CITY OF NORTH AUGUSTA	
HORSE CREEK	SCR030302
UNINCORPORATED AREAS	PHASE II
AIKEN COUNTY	SMALL MS4
AIKEN COUNTY	
HORSE CREEK	-----
UNINCORPORATED AREAS	PHASE II
EDGEFIELD COUNTY	SMALL MS4
EDGEFIELD COUNTY	

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

<i>LANDFILL NAME</i>	<i>PERMIT #</i>
<i>FACILITY TYPE</i>	<i>STATUS</i>
GL WILLIAMS C&D LANDFILL	022481-1201
C & D	ACTIVE
APAC COMPOSTING (GL WILLIAMS)	022676-3001
C & D	ACTIVE
RAINBOW FALLS RD C&D LANDFILL	022737-1201
C & D	ACTIVE
VALCLUSE DUMP	-----
DOMESTIC	INACTIVE
CYPRESS INDUSTRIAL MINERALS CO.	-----
INDUSTRIAL	INACTIVE
MIKE WILLIAMS LC& D LANDFILL	022740-1701
C & D	ACTIVE

AIKEN COUNTY C&D LANDFILL C & D	021001-1201 ACTIVE
421 COMPOSTING SITE COMPOSTING	022672-3002 INACTIVE
AIKEN COUNTY LANDFILL #1 DOMESTIC	----- INACTIVE
AIKEN COUNTY LANGLEY LANDFILL DOMESTIC	021001-1103 INACTIVE
AIKEN COUNTY LANDFILL #2 DOMESTIC	----- INACTIVE
AIKEN COUNTY LANDFILL #4 DOMESTIC	021001-1104 INACTIVE
CARLINE ROAD DUMP DOMESTIC	----- INACTIVE
N. AUGUSTA MATERIAL RECOVERY FACILITY DOMESTIC	021003-2001 ACTIVE
CITY OF NORTH AUGUSTA DUMP DOMESTIC	SCD980844146 INACTIVE
HR GARRET INC. C & D	022458-1701 INACTIVE
KENTUCKY-TENNESSEE CLAY CO. NWP	----- INACTIVE
HORSE CREEK WWTF INDUSTRIAL	----- INACTIVE
KIMBERLY-CLARK BEECH ISLAND MILL INDUSTRIAL	----- INACTIVE
KIMBERLY-CLARK BEECH ISLAND MILL INDUSTRIAL	----- INACTIVE

Mining Activities

<i>MINING COMPANY</i> <i>MINE NAME</i>	<i>PERMIT #</i> <i>MINERAL</i>
WILLIAMS & SON TRUCKING HILLTOP MINE	0720-03 SAND
WILLIAMS SAND & GRAVEL CO. RAINBOW FALLS PIT	0702-03 SAND

DIXIE CLAY CO. PARDUE MINE	0451-03 KAOLIN
SATTERFIELD CONSTRUCTION TIMMERMAN SAND PIT	0230-03 SAND
KENTUCKY-TENN CLAY CO. CONGER MINE	0037-03 KAOLIN
CITY OF NORTH AUGUSTA CITY OF NORTH AUGUSTA CLAY PIT	0988-03 SAND; SAND/CLAY
WERTS EQUIPMENT RENTAL, INC. WERTS DRIVE IN	0949-03 SAND/CLAY
FOSTER DIXIANA CORP. CLEARWATER MINE	0006-03 SAND
MUNDYS CONSTRUCTION, INC. MUNDY BORROW PIT	1155-03 SAND; SAND/CLAY
DIXIE CLAY CO. MCNAMEE MINE	0073-03 KAOLIN
KENTUCKY-TENN CLAY CO. PARAGON MINE	0034-03 KAOLIN
GL WILLIAMS LANDSCAPING, INC. CHALK BED MINE	1635-03 SAND/CLAY
GL WILLIAMS LANDSCAPING, INC. JACKSONVILLE CHURCH MINE	1422-03 SAND
AIKEN AUGUSTA SAND & GRAVEL BAKERS MINE	1499-03 SAND
WERTS SITE PREPARATION PALMETTO PARKWAY	1772-03 SAND
BONNETT HAULING & LAND CLEARING BONNETTS CLAY PIT	1529-03 SAND
DIXIE CLAY CO. PARDUE MINE	0451-03 KAOLIN
MARTIN MARIETTA MATERIALS INC. AIKEN QUARRY	0763-03 GRANITE

Growth Potential

There is a moderate potential for growth in this watershed, which contains portions of the Cities of Aiken and North Augusta. The City of Aiken is experiencing growth in a southwesterly direction toward the Savannah River Site. Growth is predominately residential; numerous subdivisions are being developed. Commercial centers are also being constructed in conjunction with the population growth and residential development. Aiken has the permit for expansion of Aiken County's Horse Creek Treatment

Plant to handle potential growth. SC 19 (towards New Ellenton and SRS) and SC 302 (towards Augusta and SRS) are the major commercial corridors serving the residential communities. Growth is expected to continue south and southwest instead of in previously established areas. Industrial growth is expected to occur along SC 19 to New Ellenton and west towards North Augusta, along the Horse Creek drainage.

Watershed Protection and Restoration Strategies

Total Maximum Daily Loads (TMDLs)

TMDLs were developed by SCDHEC and approved by EPA at water quality monitoring sites for **Horse Creek** (SV-072, SV-250), **Little Horse Creek** (SV-073), and the **Sand River** (SV-069). TMDLs determine the maximum amount of fecal coliform bacteria it can receive from sources and still meet water quality standards. A minor wastewater treatment facility was located on Horse Creek. Parts of the watershed are within areas designated as MS4s. Probable sources of fecal coliform bacteria that were identified in the watershed are grazing livestock, especially cattle with access to creeks, failing septic systems, and urban runoff. The TMDL states that reductions of 11% to 47% in fecal coliform loading are necessary for these streams to meet the recreational use standard.

The nonpoint source component of the above TMDLs has been implemented using §319 grant funds. Implementation was completed in October 2009. For more information on §319 grants, visit <http://www.scdhec.gov/water> and click on Nonpoint Source Program.

03060106-04
(Hollow Creek)

General Description

Watershed 03060106-04 (formerly 03060106-070) is located in Aiken County and consists primarily of *Hollow Creek* and its tributaries. The watershed occupies 71,340 acres of the Sand Hills and Upper Coastal Plain region of South Carolina. Land use/land cover in the watershed includes: 47.8% forested land, 36.4% agricultural land, 10.0% urban land, 9.8% forested wetland (swamp), 1.1% nonforested wetland (marsh), 0.8% water, and 0.5% barren land. A map depicting this watershed is found in Appendix C, page C-33.

Hollow Creek originates in the City of Aiken and accepts drainage from Anderson Millpond, Dry Branch, Town Creek (Craig Pond, Gem Lake, Wilson Pond, Richardsons Lake, Herndon Pond, Johnsons Lake, McElmurray Pond, Lake Florence, Long Branch), Kathwood Lakes, and Bear Island Creek (Neal Creek, Musterfield Branch, Curry Branch). Hollow Creek drains into the Savannah River. There are a total of 190.2 stream miles and 600.2 acres of lake waters within this watershed, all classified FW.

Surface Water Quality

<u>Station #</u>	<u>Type</u>	<u>Class</u>	<u>Description</u>
SV-350	INT	FW	HOLLOW CREEK AT S-02-5

Hollow Creek (SV-350) - Aquatic life and recreational uses are fully supported; however, there is a significant increasing trend in five-day biochemical oxygen demand. This is a blackwater system, characterized by naturally low pH conditions. Although pH excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations. A significant decreasing trend in turbidity suggests improving conditions for this parameter.

Natural Swimming Areas

<i>FACILITY NAME</i>	<i>PERMIT #</i>
<i>RECEIVING STREAM</i>	<i>STATUS</i>
RICHARDSONS LAKE	02-N01
RICHARDSONS LAKE	ACTIVE
GEM LAKE	02-N11
GEM LAKE	ACTIVE

NPDES Program

Active NPDES Facilities

<i>RECEIVING STREAM FACILITY NAME</i>	<i>NPDES# TYPE</i>
HOLLOW CREEK TRIBUTARY GODARD & MCGAHEE ENTERPRISES/HAMILTON MINE	SCG731002 MINOR INDUSTRIAL
DRY BRANCH TRIBUTARY HIBBITS DIRT PIT MINE	SCG730516 MINOR INDUSTRIAL

Municipal Separate Storm Sewer Systems (MS4)

<i>RECEIVING STREAM MUNICIPALITY RESPONSIBLE PARTY IMPLEMENTING PARTY</i>	<i>NPDES# MS4 PHASE MS4 SIZE</i>
HOLLOW CREEK CITY OF AIKEN CITY OF AIKEN CITY OF AIKEN	SCR030301 PHASE II SMALL MS4
HOLLOW CREEK UNINCORPORATED AREAS AIKEN COUNTY AIKEN COUNTY	SCR030302 PHASE II SMALL MS4

Nonpoint Source Management Program

Land Disposal Activities

Land Application Sites

<i>LAND APPLICATION SYSTEM FACILITY NAME</i>	<i>ND# TYPE</i>
LOW PRESSURE ABSORPTION FIELD SILVER BLUFF HIGH	ND0014010 DOMESTIC

Landfill Facilities

<i>LANDFILL NAME FACILITY TYPE</i>	<i>PERMIT # STATUS</i>
JACK WOOD LC&D LANDFILL C & D	022719-1701 ACTIVE
GL WILLIAMS LC&D LANDFILL C & D	022481-1701 ACTIVE
JOHN SWEARINGEN LC&D LANDFILL C&D	022743-1701 ACTIVE
GARY MILLER LC&D LANDFILL C&D	022725-1701 ACTIVE

Mining Activities

<i>MINING COMPANY MINE NAME</i>	<i>PERMIT # MINERAL</i>
DIXIE CLAY CO. RANDALL MINE	0074-03 KAOLIN
KENTUCKY-TENN CLAY COMPANY EUBANKS MINE	0874-03 KAOLIN
HIBBITTS LAND EXCAVATION INC. WOODFIELD ROAD MINE	1719-03 SAND
HIBBITTS LAND EXCAVATION INC. HIBBITTS DIRT PIT MINE	1518-03 SAND

Growth Potential

There is a low to moderate potential for growth in this watershed, which contains portions of the Towns of New Ellenton and Jackson, and a portion of the City of Aiken. The City of Aiken is experiencing growth in a southwesterly direction toward the Savannah River Site. Growth is predominately residential; numerous subdivisions are being developed. Commercial centers are also being constructed in conjunction with the population growth and residential development. Aiken has the permit for expansion of Aiken County's Horse Creek Treatment Plant to handle potential growth.

SC 19 (towards New Ellenton and SRS) and SC 302 (towards Augusta and SRS) are the major commercial corridors serving the residential communities. Growth is expected to continue south and southwest instead of in previously established areas. Industrial growth is expected to occur along SC 19 to New Ellenton and west towards North Augusta, along the Horse Creek drainage. North Aiken has also experienced recent growth (along the US 1 corridor) and is expected to continue that trend.

Watershed Protection and Restoration Strategies

Total Maximum Daily Loads (TMDLs)

A TMDL was developed by SCDHEC and approved by EPA for **Hollow Creek** water quality monitoring site SV-350. TMDLs determine the maximum amount of fecal coliform bacteria water bodies can receive from pollution sources and still meet water quality standards. Hollow Creek has two minor wastewater treatment facilities that are permitted for land application. A small part of the Hollow Creek watershed is located within a designated MS4. The primary sources of fecal coliform to the stream were identified as failing septic systems, grazing livestock, especially those with access to streams, and runoff from built-up areas. The TMDL states that a 39% reduction in fecal coliform loading from these sources is necessary for the stream to meet the recreational use standard.

03060106-05
(Upper Three Runs)

General Description

Watershed 03060106-05 (formerly 03060106-100) is located in Aiken and Barnwell Counties and consists primarily of the **Upper Three Runs** and its tributaries. The watershed occupies 157,637 acres of the Sand Hills and Upper Coastal Plain regions of South Carolina. Land use/land cover in the watershed includes: 62.0% forested land, 16.4% forested wetland (swamp), 14.2% agricultural land, 5.8% urban land, 0.8% barren land, 0.6% nonforested wetland (marsh), and 0.2% water. A map depicting this watershed is found in Appendix C, page C-34.

Upper Three Runs accepts drainage from Tarrants Millpond, Jackson Branch, Cedar Creek (Chapman Pond), Boggy Gut (Beulah Fork, Dicks Pond, Cooks Pond), Johnson Fork, Tinker Creek (Riley Pond, Reedy Branch, Mill Creek, McQueen Branch), Crouch Branch, Tims Branch, and Island Creek (Brent Lake) before draining into the Savannah River. There are a total of 316.1 stream miles and 342.7 acres of lake waters in this watershed, all classified FW.

Surface Water Quality

<u>Station #</u>	<u>Type</u>	<u>Class</u>	<u>Description</u>
SV-680	BIO	FW	UPPER THREE RUNS AT S-02-113
SV-723	BIO	FW	CEDAR CREEK AT S-02-79
SV-324	W	FW	TIMS BRANCH AT SRS ROAD C
SV-325	INT	FW	UPPER THREE RUNS AT SRS ROAD A

Upper Three Runs – There are two SCDHEC monitoring stations along Upper Three Runs. At the upstream site (**SV-680**), aquatic life uses are fully supported based on macroinvertebrate community data. At the downstream site (**SV-325**), aquatic life uses are fully supported; however; there is a significant increasing trend in five-day biochemical oxygen demand. This is a blackwater system, characterized by naturally low pH conditions. Although pH excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations. There is a significant decreasing trend in pH. Significant decreasing trends in turbidity and total nitrogen concentration suggest improving conditions for these parameters. Recreational uses are partially supported at this site due to fecal coliform bacteria excursions.

Cedar Creek (SV-723) – Aquatic life uses are fully supported based on macroinvertebrate community data.

Tims Branch (SV-324) - Aquatic life and recreational uses are fully supported; however; there are significant increasing trends in five-day biochemical oxygen demand and decreasing trends in dissolved oxygen concentration. This is a blackwater system, characterized by naturally low pH conditions. Although pH excursions occurred, they were typical of values seen in blackwater systems and were

considered natural, not standards violations. There is a significant decreasing trend in pH. Significant decreasing trends in turbidity, total phosphorus concentration, and total nitrogen concentration suggest improving conditions for these parameters.

NPDES Program

Active NPDES Facilities

<i>RECEIVING STREAM FACILITY NAME</i>	<i>NPDES# TYPE</i>
UPPER THREE RUNS TRIBUTARY USDOE WESTINGHOUSE SRS (F02, F05)	SC0000175 MAJOR INDUSTRIAL
TIMS BRANCH USDOE WESTINGHOUSE SRS (A11)	SC0000175 MAJOR INDUSTRIAL
TIMS BRANCH TRIBUTARY USDOE WESTINGHOUSE SRS (A1A, A01, M05)	SC0000175 MAJOR INDUSTRIAL
CROUCH BRANCH TRIBUTARY USDOE WESTINGHOUSE SRS (H02)	SC0000175 MAJOR INDUSTRIAL
MCQUEEN BRANCH USDOE WESTINGHOUSE SRS (H04, H07, S04)	SC0000175 MAJOR INDUSTRIAL

Municipal Separate Storm Sewer Systems (MS4)

<i>RECEIVING STREAM MUNICIPALITY RESPONSIBLE PARTY IMPLEMENTING PARTY</i>	<i>NPDES# MS4 PHASE MS4 SIZE</i>
UPPER THREE RUNS CITY OF AIKEN CITY OF AIKEN CITY OF AIKEN	SCR030301 PHASE II SMALL MS4
UPPER THREE RUNS UNINCORPORATED AREAS AIKEN COUNTY AIKEN COUNTY	SCR030302 PHASE II SMALL MS4

Nonpoint Source Management Program

Land Disposal Activities

Landfill Activities

<i>SOLID WASTE LANDFILL NAME FACILITY TYPE</i>	<i>PERMIT # STATUS</i>
TOWN OF NEW ELLENTON DUMP DOMESTIC	----- INACTIVE
TOWN OF JACKSON DUMP DOMESTIC	----- INACTIVE

THREE RIVERS TIRE PROCESSING TIRE PROCESSING	024202-5201 ACTIVE
THREE RIVERS REGIONAL MSW LANDFILL DOMESTIC	024202-1101 ACTIVE
THREE RIVERS SW PROCESSING FACILITY DOMESTIC	024202-2001 ACTIVE
THREE RIVERS MSW LANDFILL RD&S	024202-8001 INACTIVE
THREE RIVERS TIRE PROCESSING WTP	024202-5201 ACTIVE
SRS 200-F SITE INDUSTRIAL	025800-1601 ACTIVE
SRS IND. SW LANDFILL INDUSTRIAL	025500-1601 INACTIVE
SRS BURN ROAD CC LANDFILL INDUSTRIAL	025500-1201 INACTIVE
SRS SW LANDFILL INDUSTRIAL	025500-1602 INACTIVE
SRS Z-AREA SALTSTONE IND. SITE INDUSTRIAL	025500-1603 ACTIVE
SRS SANITARY LANDFILL DOMESTIC	025500-1102 INACTIVE

Land Application Sites

***LAND APPLICATION SYSTEM
FACILITY NAME***

***ND#
TYPE***

SPRAYFIELD
TOWN OF NEW ELLENTON

ND0068454
DOMESTIC

Mining Activities

***MINING COMPANY
MINE NAME***

***PERMIT #
MINERAL***

MABUS BROTHERS CONSTRUCTION CO.
BIDDLE MINE

1607-03
SAND

GODARD & MCGAHEE ENTERPRISES
WESSEL PIT

1610-03
SAND

Growth Potential

There is a moderate potential for growth in this watershed, which contains portions of the City of Aiken, the Towns of New Ellenton and Jackson, and the Savannah River Site. The City of Aiken is experiencing growth in a southwesterly direction toward the Savannah River Site. Growth is predominately residential; numerous subdivisions are being developed. Commercial centers are also being constructed in conjunction with the population growth and residential development. Aiken has the permit for expansion of Aiken County's Horse Creek Treatment Plant to handle potential growth. SC 19 (towards New Ellenton and SRS) and SC 302 (towards Augusta and SRS) are the major commercial corridors serving the residential communities. Growth is expected to continue south and southwest instead of in previously established areas. Industrial growth is expected to occur along SC 19 to New Ellenton and west towards North Augusta, along the Horse Creek drainage. The Savannah River Site covers the lower half of the watershed. The Savannah River Site employs 25,000 people from nearby counties and is responsible for the overall growth in proximity to the site.

03060106-06
(Savannah River)

General Description

The South Carolina portion of watershed 03060106-06 (formerly 03060106-050) is located in Edgefield and Aiken Counties and consists primarily of the *Savannah River* and its tributaries from the Stevens Creek Dam to Upper Three Runs. This Savannah River watershed extends into Georgia. There are 230,156 acres in the extended watershed; 189,151 acres or 82.2% are outside of South Carolina. The South Carolina portion is within the Piedmont, Sand Hills, and Upper Coastal Plain physiographic regions. Land use/land cover in the S.C. watershed includes: 33.8% forested land, 27.2% forested wetland, 18.2% urban land, 14.7% agricultural land, 4.2% water, 1.6% nonforested wetland, and 0.3% barren land. A map depicting this watershed is found in Appendix C, page C-31.

This section of the Savannah River accepts drainage from its upper reaches, together with Reed Creek*, Fox Creek (Pole Branch), Rock Creek*, Pretty Run Creek, the Horse Creek watershed, the Dead River (oxbow), and Butler Creek*. An asterisk connotes a stream entering from the Georgia side of the river. Further downstream, the river accepts drainage from Spirit Creek*, Pine Creek (Hardens Dead River, Horseshoe Lake, Clarkes Lake), the Hollow Creek watershed, Berryhill Gut (Coleman Lake), High Bank Creek*, McBean Creek*, Boggy Gut Creek*, Bent Lake, and Newberry Creek*. There are a total of 712.7 stream miles and 3,119.2 acres of lake waters in this extended watershed, all classified FW. Redcliffe State Park resides in this watershed, as does a portion of the federally owned Savannah River Plant.

Surface Water Quality

<u>Station #</u>	<u>Type</u>	<u>Class</u>	<u>Description</u>
RS-04544	RS04/BIO	FW	PRETTY RUN CREEK AT RIVER BLUFF RD IN RAPIDS SD
SV-251	W	FW	SAVANNAH RIVER AT US 1, 1.5 MI SW N.AUGUSTA
SV-252	W	FW	SAVANNAH RIVER AT SC 28, 1.6 MI NNW OF BEECH ISLAND
SV-323	W	FW	SAVANNAH RIVER AT LOCK AND DAM
SV-366	INT	FW	SAVANNAH RIVER OFF JACKSON LANDING OFF END OF S-02-299

Pretty Run Creek (RS-04544) – Aquatic life uses are partially supported based on macroinvertebrate community data. Recreational uses are not supported due to fecal coliform bacteria excursions.

Savannah River – There are four SCDHEC monitoring stations along this portion of the Savannah River. At the furthest upstream sites (**SV-251, SV-252**), aquatic life and recreational uses are fully supported; however; there is a significant increasing trend in five-day biochemical oxygen demand. Significant decreasing trends in turbidity, total phosphorus concentration, and fecal coliform bacteria concentration suggest improving conditions for these parameters. Further downstream (**SV-323**), aquatic life and recreational uses are fully supported; however; there is a significant increasing trend in five-day biochemical oxygen demand. A significant decreasing trend in turbidity suggests improving conditions

for this parameter. At the furthest downstream site (*SV-366*), aquatic life and recreational uses are fully supported and significant decreasing trends in five-day biochemical oxygen demand and turbidity suggest improving conditions for these parameters.

A fish consumption advisory has been issued by the Department for mercury and includes the Savannah River within this watershed (see advisory p. 111).

NPDES Program

Active NPDES Facilities

<i>RECEIVING STREAM FACILITY NAME</i>	<i>NPDES# TYPE</i>
SAVANNAH RIVER TRIBUTARY ECW&SA/WTP	SCG645036 MINOR INDUSTRIAL
SAVANNAH RIVER KIMBERLY-CLARK CORP./BEECH ISLAND	SC0000582 MAJOR INDUSTRIAL
SAVANNAH RIVER SCE&G/URQUHART STEAM STATION	SC0000574 MAJOR INDUSTRIAL
SAVANNAH RIVER AIKEN PSA/HORSE CREEK WWTP	SC0024457 MAJOR INDUSTRIAL

Municipal Separate Storm Sewer Systems (MS4)

<i>RECEIVING STREAM MUNICIPALITY RESPONSIBLE PARTY IMPLEMENTING PARTY</i>	<i>NPDES# MS4 PHASE MS4 SIZE</i>
SAVANNAH RIVER CITY OF NORTH AUGUSTA CITY OF NORTH AUGUSTA CITY OF NORTH AUGUSTA	SCR030304 PHASE II SMALL MS4
SAVANNAH RIVER UNINCORPORATED AREAS AIKEN COUNTY AIKEN COUNTY	SCR030302 PHASE II SMALL MS4
SAVANNAH RIVER UNINCORPORATED AREAS EDGEFIELD COUNTY EDGEFIELD COUNTY	----- PHASE II SMALL MS4

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

<i>LANDFILL NAME</i> <i>FACILITY TYPE</i>	<i>PERMIT #</i> <i>STATUS</i>
MASONS TREE & TURF FARM INDUSTRIAL	----- INACTIVE
SCE&G URQUHART STA. LANDFILL INDUSTRIAL	023320-1601 ACTIVE
SCE&G URQUHART INDUSTRIAL	----- INACTIVE
KIMBERLY-CLARK CORP. INDUSTRIAL	----- INACTIVE
SHRED TRED CORP. WASTE TIRE PROC.	192482-5201 INACTIVE

Land Application Sites

<i>LAND APPLICATION SYSTEM</i> <i>FACILITY NAME</i>	<i>ND#</i> <i>TYPE</i>
INFILTRATION POND BEECHWOOD SD	ND0067113 DOMESTIC

Mining Activities

<i>MINING COMPANY</i> <i>MINE NAME</i>	<i>PERMIT #</i> <i>MINERAL</i>
THE MARTIN GROUP RAIFORD PIT	1009-03 SAND/CLAY
WERTS EQUIPMENT RENTAL, INC. BEECH ISLAND MINE	0845-03 SAND/CLAY
WILLIAMS & SON TRUCKING HWY 421 NO. 2 MINE	1041-03 SAND; SAND/CLAY
MASONS TREE & TURF FARM MASONS MINE	1667-03 SAND

Water Quantity

<i>WATER USER</i> <i>STREAM</i>	<i>TOTAL PUMP. CAPACITY (MGD)</i> <i>RATED PUMP. CAPACITY (MGD)</i>
ECW&SA SAVANNAH RIVER	14.0 10.0
CITY OF NORTH AUGUSTA SAVANNAH RIVER	25.2 16.8

Growth Potential

There is a moderate potential for growth in this watershed, which contains portions of the Town of Jackson and the City of North Augusta. The City of North Augusta is currently experiencing a northward push towards I-20 and Augusta, Georgia. This growth is primarily residential and commercial; the trend is expected to continue. Projected growth includes the area surrounding the seven interchanges of I-20 in Aiken County, particularly in the intersection of I-20 and SC 19, and that of I-20 and US 1.

Watershed Protection and Restoration Strategies

Total Maximum Daily Loads (TMDLs)

Portions of the **Savannah Harbor** have been included on the Georgia 303(d) list of impaired waters as impaired for dissolved oxygen. This tidal area is considered, at times, to experience naturally occurring levels of dissolved oxygen (DO) below the Georgia standard. This naturally occurring low DO is further impacted by point source discharges both to the harbor and the Savannah River upstream of the estuarine portion of the river. In 2006, the U.S. Environmental Protection Agency (EPA) finalized a dissolved oxygen TMDL for the system that required a 100% reduction in the loading of oxygen demanding substances being discharged to the system. This essentially required that all discharges to the system below Thurmond Dam cease discharging.

Subsequent to development of this TMDL, the State of Georgia adopted a new DO standard for the harbor. The new Georgia standards allow for a 0.1 mg/L depression in DO levels below natural conditions in naturally low DO waters. This is essentially consistent with the South Carolina standard for the waters it shares with Georgia. EPA, with assistance and input from Georgia, South Carolina and interested stakeholders, is developing a new TMDL based on the new Georgia standard. It is anticipated that the new TMDL, though very restrictive, will allow continued discharge of some oxygen demanding substances to the Savannah River and Harbor. The final TMDL is not expected until 2011.

A TMDL was developed by SCDHEC and approved by EPA for **Pretty Run Creek** at water quality monitoring site RS-04544. TMDLs determine the maximum amount of fecal coliform bacteria a water body can receive from pollution sources and still meet water quality standards. This small stream has no permitted wastewater treatment facilities. Most of the watershed is within a designated MS4. Probable sources of fecal coliform bacteria that were identified in the watershed are leaking sanitary sewers, illicit discharges, failing septic systems, and urban runoff. The TMDL states that a reduction of 31% in fecal coliform loading is necessary for the stream to meet the recreational use standard. The nonpoint source component of the Pretty Run Creek TMDL has been implemented using §319 grant funds. Implementation was completed in October 2009. For more information on §319 grants, visit <http://www.scdhec.gov/water> and click on Nonpoint Source Program.

03060106-07
(Lower Three Runs)

General Description

Watershed 03060106-07 (formerly 03060106-130) is located in Barnwell and Allendale Counties and consists primarily of **Lower Three Runs** and its tributaries. The watershed occupies 110,863 acres of the Sand Hills, Upper Coastal Plain, and Lower Coastal Plain physiographic regions. Land use/land cover in the extended watershed includes: 63.7% forested land, 15.5% forested wetland, 15.3% agricultural land, 2.1% urban land, 2.1% water, and 0.4% nonforested wetland. A map depicting this watershed is found in Appendix C, page C-35.

Pond A, Pond B, and Pond C form one arm of Par Pond, and Pond 2, Pond 4, and Pond 5 form another arm. Downstream of Par Pond, Lower Three Runs accepts drainage from Gantts Mill Creek (Patterson Branch), Big Branch, Bodiford Mill Creek, Spring Branch, Miller Creek (Bentley Branch, Fiddle Pond Creek), Davis Branch, Furse Mill Creek (Browns Pond, Furse Creek, Furse Pond, Johnson Pond, Terry Pond), The Big Bay (Lake Echee), and Smith Lake Creek before draining into the Savannah River. There are a total of 187.3 stream miles and 2,927.5 acres of lake waters within this watershed, all classified FW. This watershed resides within the federally owned Savannah River Plant.

Surface Water Quality

<u>Station #</u>	<u>Type</u>	<u>Class</u>	<u>Description</u>
SV-328	W	FW	LOWER THREE RUNS AT S-0620, 7.5MI SW BARNWELL
SV-175	INT	FW	LOWER THREE RUNS AT SC 125, 11MI NW ALLENDALE

Lower Three Runs - There are two SCDHEC monitoring stations along Lower Three Runs. At the upstream site (**SV-328**), aquatic life and recreational uses are fully supported; however, there are significant increasing trends in five-day biochemical oxygen demand and fecal coliform bacteria concentration. There is a significant increasing trend in pH. At the downstream site (**SV-175**), aquatic life uses are not supported due to occurrences of copper in excess of the aquatic life chronic criterion. Recreational uses are fully supported.

Natural Swimming Areas

<i>FACILITY NAME</i>	<i>PERMIT #</i>
<i>RECEIVING STREAM</i>	<i>STATUS</i>
FURSE POND	03-N01
FURSE MILL CREEK	ACTIVE

Nonpoint Source Management Program

Land Disposal Activities

Land Application Sites

LAND APPLICATION SYSTEM
FACILITY NAME

ND#
TYPE

SPRAYFIELDS
SC ADVANCED TECHNOLOGY PARK WWTP

ND0080985
DOMESTIC

Landfill Activities

SOLID WASTE LANDFILL NAME
FACILITY TYPE

PERMIT #
STATUS

ALLIED GENERAL NUCLEAR SERVICES
INDUSTRIAL

INACTIVE

Growth Potential

There is a low to moderate potential for growth in this watershed, which contains portions of the Towns of Snelling and Kline, and the Savannah River Site. The Savannah River Site extends across the upper portion of the watershed. The Savannah River Site employs 25,000 people from nearby counties and is responsible for the overall growth in proximity to the site. There has been a small increase in residential growth in the non-SRS area of the watershed as a result of SRS activities. Allendale County has adopted a zoning ordinance that includes River and Streamside Management Areas that restrict development within 100 feet of a river and 50 feet from perennial streams, which flow directly into the river.

03060106-08
(Savannah River)

General Description

The South Carolina portion of watershed 03060106-08 (formerly 03060106-110) is located in Aiken, Barnwell, and Allendale Counties and consists primarily of the *Savannah River* and its tributaries from Upper Three Runs to Lower Three Runs. This Savannah River watershed extends into Georgia. There are 147,432 acres in this extended watershed; 59,376 acres or 40.3% are outside of South Carolina. The South Carolina portion is within the Sand Hills, Upper Coastal Plain, and Lower Coastal Plain physiographic regions. Land use/land cover in the S.C. watershed includes: 58.6% forested land, 29.2% forested wetland (swamp), 6.1% agricultural land, 3.0% urban land, 2.0% water, 0.7% nonforested wetland (marsh), and 0.4% barren land. A map depicting this watershed is found in Appendix C, page C-36.

This section of the Savannah River accepts drainage from its upper reaches, together with Beaverdam Creek, Fourmile Branch, Beaverdam Creek*, Pen Branch (Indian Grave Branch), and Little Beaverdam Creek*. An asterisk connotes a stream entering from the Georgia side of the river. Steel Creek (L-Lake, Meyers Branch) enters the river next, followed by Boggy Gut Branch, Brier Branch (The Bay), Swift Gut, Sweetwater Creek*, Little Sweetwater Creek*, and Cator Hall Lake. There are a total of 315.2 stream miles and 1,844.0 acres of lake waters in this extended watershed, all classified FW. This watershed resides within the federally owned Savannah River Plant.

Surface Water Quality

<u>Station #</u>	<u>Type</u>	<u>Class</u>	<u>Description</u>
RS-02470	RS02	FW	FOURMILE BRANCH AT SRS ROAD A-13
SV-327	W	FW	STEEL CREEK AT SRS ROAD A
SV-367	INT	FW	SAVANNAH RIVER OFF LITTLE HELL LANDING OFF S-03-368

Fourmile Branch (RS-02470) - Aquatic life and recreational uses are fully supported.

Steel Creek (SV-327) - Aquatic life and recreational uses are fully supported; however; there are significant increasing trends in five-day biochemical oxygen demand and fecal coliform bacteria concentration. A significant decreasing trend in total phosphorus concentration suggests improving conditions for this parameter.

Savannah River (SV-367) - Aquatic life and recreational uses are fully supported. Significant increasing trends in dissolved oxygen concentration and decreasing trends in turbidity 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 Savannah River within this watershed (see advisory p. 111).

NPDES Program

Active NPDES Facilities

<i>RECEIVING STREAM FACILITY NAME</i>	<i>NPDES# TYPE</i>
INDIAN GRAVE BRANCH USDOE WESTINGHOUSE SRS	SC0000175 MAJOR INDUSTRIAL
SAVANNAH RIVER USDOE WESTINGHOUSE SRS	SC0000175 MAJOR INDUSTRIAL
FOURMILE BRANCH TRIBUTARY USDOE WESTINGHOUSE SRS	SC0000175 MAJOR INDUSTRIAL
FOURMILE BRANCH USDOE WESTINGHOUSE SRS	SC0000175 MAJOR INDUSTRIAL
L-LAKE (STEEL CREEK) USDOE WESTINGHOUSE SRS	SC0000175 MAJOR INDUSTRIAL

Nonpoint Source Management Program

Land Disposal Activities

Land Application Sites

<i>LAND APPLICATION SYSTEM FACILITY NAME</i>	<i>ND# TYPE</i>
SPRAYFIELDS USDOE WESTINGHOUSE SRS	ND0072125 INDUSTRIAL

Landfill Activities

<i>SOLID WASTE LANDFILL NAME FACILITY TYPE</i>	<i>PERMIT # STATUS</i>
SRS 632-G C&D LANDFILL C & D	065800-1901 ACTIVE
SRS BURMA RD C&C LANDFILL C & D	065800-1901 INACTIVE
SRS 200-H SITE INDUSTRIAL	----- INACTIVE
USDOE WESTINGHOUSE SRS C & D	025800-1901 ACTIVE

Growth Potential

There is a moderate potential for growth in this watershed, which contains the Savannah River Site. The Savannah River Site, which covers the majority of the watershed, employs 25,000 people from nearby counties and is responsible for the overall growth in proximity to the site. Allendale County has adopted a zoning ordinance that includes River and Streamside Management Areas that restrict development within 100 feet of a river and 50 feet from perennial streams, which flow directly into the river.

Watershed Protection and Restoration Strategies

Total Maximum Daily Loads (TMDLs)

Portions of the **Savannah Harbor** have been included on the Georgia 303(d) list of impaired waters as impaired for dissolved oxygen. This tidal area is considered, at times, to experience naturally occurring levels of dissolved oxygen (DO) below the Georgia standard. This naturally occurring low DO is further impacted by point source discharges both to the harbor and the Savannah River upstream of the estuarine portion of the river. In 2006, the US Environmental Protection Agency (EPA) finalized a dissolved oxygen TMDL for the system that required a 100% reduction in the loading of oxygen demanding substances being discharged to the system. This essentially required that all discharges to the system below Thurmond Dam cease discharging.

Subsequent to development of this TMDL, the State of Georgia adopted a new DO standard for the harbor. The new Georgia standards allow for a 0.1 mg/L depression in DO levels below natural conditions in naturally low DO waters. This is essentially consistent with the South Carolina standard for the waters it shares with Georgia. EPA, with assistance and input from Georgia, South Carolina and interested stakeholders, is developing a new TMDL based on the new Georgia standard. It is anticipated that the new TMDL, though very restrictive, will allow continued discharge of some oxygen demanding substances to the Savannah River and Harbor. The final TMDL is not expected until 2011.

03060106-09
(Savannah River)

General Description

The South Carolina portion of watershed 03060106-09 (formerly 03060106-140) is located in Allendale County and consists primarily of the *Savannah River* and its tributaries from Lower Three Runs to the oxbow lake at Brier Creek Landing, Georgia. This Savannah River watershed extends into Georgia. There are 121,672 acres in this extended watershed; 54,470 acres or 44.8% are outside of South Carolina. The South Carolina portion is within the Lower Coastal Plain physiographic region. Land use/land cover in the S.C. watershed includes: 52.0% forested land, 32.3% forested wetland (swamp), 9.7% agricultural land, 3.0% urban land, 1.4% nonforested wetland (marsh), 1.4% water, and 0.2% barren land. A map depicting this watershed is found in Appendix C, page C-35.

This section of the Savannah River accepts drainage from its upper reaches, together with Smith Lake Creek, Dead River Lake, Mount Lake (Spring Run), McDaniel Creek*, Brier Creek (Stony Creek), Little Brier Creek (Warren Branch, Mars Branch), Ferguson Lake, Watch Call Branch (Bull Pond), The Gaul King Creek, Blue Lake, Pipe Creek, and Brier Creek*. An asterisk connotes a stream entering from the Georgia side of the river. There are a total of 256.8 stream miles and 1,023.6 acres of lake waters in this extended watershed, all classified FW.

Surface Water Quality

<u>Station #</u>	<u>Type</u>	<u>Class</u>	<u>Description</u>
SV-815	SSS	FW	BRIER CREEK AT CO. RD 53 NEAR GILL CROSSROADS
SV-814	SSS	FW	BRIER CREEK AT SC 3
SV-816	SSS	FW	STONY CREEK AT CO. RD 53
SV-745	BIO	FW	BRIER CREEK AT S-03-102
SV-118	W	FW	SAVANNAH RIVER AT US 301, 12.5 MI SW OF ALLENDALE
SV-368	INT	FW	SAVANNAH RIVER OFF COHENS BLUFF LANDING OFF S-03-41

Brier Creek – There are three SCDHEC monitoring stations along Brier Creek. These are special study stations and only examined aquatic life uses. Aquatic life uses are fully supported at the upstream site (**SV-815**). Although pH excursions occurred, due to the small sample size, aquatic life uses are considered fully supported. Aquatic life uses are also fully supported at the midstream site (**SV-814**). Aquatic life uses are partially supported due to macroinvertebrate community data at the downstream site (**SV-745**).

Stony Creek (SV-816) – This is a special study station and only examined aquatic life uses. Aquatic life uses are fully supported. Although pH excursions occurred, due to the small sample size, aquatic life uses are considered fully supported.

Savannah River - There are two SCDHEC monitoring stations along this portion of the Savannah River. Aquatic life and recreational uses are fully supported at the upstream site (*SV-118*); however, there is a significant increasing trend in five-day biochemical oxygen demand and a significant decreasing trend in dissolved oxygen concentration. A significant decreasing trend in turbidity suggests improving conditions for this parameter. Aquatic life and recreational uses are also fully supported at the downstream site (*SV-368*); however, there is a significant increasing trend in fecal coliform bacteria concentration.

A fish consumption advisory has been issued by the Department for mercury and includes the Savannah River within this watershed (see advisory p. 111).

NPDES Program

Active NPDES Facilities

<i>RECEIVING STREAM FACILITY NAME</i>	<i>NPDES# TYPE</i>
SAVANNAH RIVER TOWN OF ALLENDALE WWTP	SC0039918 MAJOR DOMESTIC
SAVANNAH RIVER CLAIRIANT CORP./MARTIN PLT	SC0042803 MAJOR INDUSTRIAL

Growth Potential

There is a low potential for growth in this watershed, which is located near the Town of Allendale. Due to growth in the Allendale-Fairfax area, the Town of Allendale’s treatment facility has been expanded. Allendale County has adopted a zoning ordinance that includes River and Streamside Management Areas that restrict development within 100 feet of a river and 50 feet from perennial streams, which flow directly into the river.

Watershed Protection and Restoration Strategies

Total Maximum Daily Loads (TMDLs)

Portions of the **Savannah Harbor** have been included on the Georgia 303(d) list of impaired waters as impaired for dissolved oxygen. This tidal area is considered, at times, to experience naturally occurring levels of dissolved oxygen (DO) below the Georgia standard. This naturally occurring low DO is further impacted by point source discharges both to the harbor and the Savannah River upstream of the estuarine portion of the river. In 2006, the US Environmental Protection Agency (EPA) finalized a dissolved oxygen TMDL for the system that required a 100% reduction in the loading of oxygen demanding substances being discharged to the system. This essentially required that all discharges to the system below Thurmond Dam cease discharging.

Subsequent to development of this TMDL, the State of Georgia adopted a new DO standard for the harbor. The new Georgia standards allow for a 0.1 mg/L depression in DO levels below natural conditions in naturally low DO waters. This is essentially consistent with the South Carolina standard for the waters it shares with Georgia. EPA, with assistance and input from Georgia, South Carolina and interested stakeholders, is developing a new TMDL based on the new Georgia standard. It is anticipated that the new TMDL, though very restrictive, will allow continued discharge of some oxygen demanding substances to the Savannah River and Harbor. The final TMDL is not expected until 2011.

03060107-01
(*Stevens Creek*)

General Description

Watershed 03060107-01 (formerly 03060107-010) is located in Greenwood and McCormick Counties and consists primarily of upper *Stevens Creek* and its tributaries from its origin to Turkey Creek. The watershed occupies 159,297 acres of the Piedmont region of South Carolina. Land use/land cover in the watershed includes: 69.3% forested land, 21.0% agricultural land, 7.2% urban land, 1.9% forested wetland (swamp), 0.3% barren land, and 0.3% water. A map depicting this watershed is found in Appendix C, page C-37.

Hard Labor Creek originates within the City of Greenwood and accepts drainage from Panola Branch (Oregon Pond), Muskrat Pond Branch, Armstrong Branch, Big Cowhead Creek (Little Cowhead Creek), Beaverdam Branch, Coleman Branch, Chiles Branch (Stillhouse Branch), Cunning Ford Creek (Church Branch), Brissey Branch, Calabash Branch (Goatneck Branch), Big Branch, Hibbler Branch, Buncombe Branch, Bracknell Branch, and Blue Branch. Cuffytown Creek originates near the City of Greenwood and accepts drainage from Horsepen Creek, Beaverdam Creek, Reedy Creek, Little Horsepen Creek, Little Creek, Mill Branch, Sand Branch, Cow Branch, Sandhill Branch, Lick Creek, Hill Branch, Doctors Branch, and Bee Tree Branch. Hard Labor Creek and Cuffytown Creek merge to form Stevens Creek, which accepts drainage from Deal Branch, Rocky Creek (Persimmon Branch), Plum Branch, and Byrd Creek. There are a total of 508.4 stream miles and 475.6 acres of lake waters in this watershed, all classified FW.

Surface Water Quality

<u>Station #</u>	<u>Type</u>	<u>Class</u>	<u>Description</u>
SV-151	W/BIO	FW	HARD LABOR CREEK AT S-24-164 BRIDGE
RS-06016	RS06	FW	CHURCH BRANCH AT S-24-375, 3.6 MI E OF BRADLEY
SV-731	BIO	FW	HARD LABOR CREEK AT SR 23
SV-351	W/BIO	FW	CUFFYTOWN CREEK AT S-33-138
RS-03342	RS03/BIO	FW	DOCTORS BRANCH AT S-33-21, 6.75 MI E OF MCCORMICK
SV-330	W	FW	STEVENS CREEK AT S-33-21
SV-365	INT	FW	STEVENS CREEK AT S-33-138

Hard Labor Creek - There are two SCDHEC monitoring stations along Hard Labor Creek. At the upstream site (**SV-151**), aquatic life uses are partially supported based on macroinvertebrate community data and there is a significant increasing trend in five-day biochemical oxygen demand. There is a significant increasing trend in pH. A significant decreasing trend in turbidity suggests improving conditions for this parameter. Recreational uses are not supported due to fecal coliform bacteria excursions. At the downstream site (**SV-731**), aquatic life uses are fully supported based on macroinvertebrate community data.

Church Branch (RS-06016) – Aquatic life uses are fully supported. Recreational uses are not supported due to fecal coliform bacteria excursions.

Cuffytown Creek (SV-351) – Aquatic life uses are partially supported based on macroinvertebrate community data and there is a significant increasing trend in five-day biochemical oxygen demand. There is a significant increasing trend in pH. Recreational uses are partially supported due to fecal coliform bacteria excursions.

Doctors Branch (RS-03342) – Aquatic life uses are partially supported based on macroinvertebrate community data. Recreational uses are fully supported.

Stevens Creek – There are two SCDHEC monitoring stations along this portion of Stevens Creek. At the upstream site (SV-330), aquatic life 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. A significant decreasing trend in total phosphorus concentration suggests improving conditions for this parameter. Recreational uses are partially supported due to fecal coliform bacteria excursions. At the downstream site (SV-365), aquatic life and recreational uses are fully supported and there is a significant decreasing trend in five-day biochemical oxygen demand. There is a significant increasing trend in pH.

Groundwater Quality

<u>Well #</u>	<u>Class</u>	<u>Aquifer</u>	<u>Location</u>
AMB-107	GB	PIEDMONT BEDROCK	N.W. EDGEVILLE COUNTY

All water samples collected from ambient monitoring well **AMB-107** met standards for Class GB groundwater.

NPDES Program

Active NPDES Facilities

<i>RECEIVING STREAM FACILITY NAME</i>	<i>NPDES# TYPE</i>
HARD LABOR CREEK CITY OF GREENWOOD/W. ALEXANDER WWTP	SC0022870 MAJOR DOMESTIC
PANOLA BRANCH GREENWOOD MILLS/MATTHEWS PLT	SCG250127 MINOR INDUSTRIAL
PERSIMMON BRANCH TOWN OF MCCORMICK/WTP	SCG645007 MINOR INDUSTRIAL
PERSIMMON BRANCH TRIBUTARY MILLIKEN & CO./MCCORMICK PLT	SC0000396 MINOR INDUSTRIAL

ROCKY CREEK
MCCORMICK CPW/ROCKY CREEK WWTF

SC0030783
MINOR DOMESTIC

STEVENS CREEK TRIBUTARY
GS ROOFING PRODUCTS/PLUM BRANCH

SCG730227
MINOR INDUSTRIAL

Municipal Separate Storm Sewer Systems (MS4)

RECEIVING STREAM
MUNICIPALITY
RESPONSIBLE PARTY
IMPLEMENTING PARTY

NPDES#
MS4 PHASE
MS4 SIZE

UPPER STEVENS CREEK
CITY OF GREENWOOD
CITY OF GREENWOOD
CITY OF GREENWOOD

PHASE II
SMALL MS4

Nonpoint Source Management Program

Mining Activities

MINING COMPANY
MINE NAME

PERMIT #
MINERAL

GS ROOFING PRODUCTS CO., INC.
PLUM BRANCH QUARRY

0998-65
METAANDESITE

Water Quantity

WATER USER
STREAM

TOTAL PUMP. CAPACITY (MGD)
RATED PUMP. CAPACITY (MGD)

MCCORMICK CPW
ROCKY CREEK

0.5
0.5

Growth Potential

There is a low to moderate potential for growth in this watershed, which contains portions of the Towns of Troy, McCormick, Plum Branch, and Parksville, the communities of Promised Land and Bradley, and a portion of the City of Greenwood. The Town of McCormick has experienced population growth with the establishment of a State Prison near the town. Growth has occurred around the Savannah Lakes Village Development, a retirement village, on Lake Thurmond, and may encourage more in the future. The Greenwood Industrial Park, just south of the City of Greenwood, is considered a source of potential industrial growth. The midsection of the watershed resides within the Sumter National Forest and would tend to limit growth in that area.

Watershed Protection and Restoration Strategies

Total Maximum Daily Loads (TMDLs)

A TMDL was developed by SCDHEC and approved by EPA for **Cuffytown Creek** water quality monitoring site SV-351. TMDLs determine the maximum amount of fecal coliform bacteria water bodies can receive and still meet water quality standards. There are no permitted wastewater dischargers in this

watershed. Much of the watershed is within the Sumter National Forest. There is very little urban land and the watershed has no designated MS4s. At the time the TMDL was developed there were some 63 fields permitted for the application of poultry litter in the watershed. Likely fecal coliform sources include improperly applied or handled litter, grazing livestock, especially cattle in the streams, failing septic systems, and wildlife. The TMDL states that a reduction of 11% in fecal coliform loading is necessary for the stream to meet the water quality standard.

A TMDL was developed by SCDHEC and approved by EPA for **Hard Labor Creek** at water quality monitoring site SV-151. TMDLs determine the maximum amount of fecal coliform bacteria water bodies can receive from pollution sources and still meet water quality standards. Hard Labor Creek has one permitted wastewater discharger. At the time the TMDL was developed there were no MS4s in the watershed. The primary sources of fecal coliform to the stream were identified as grazing livestock, especially those with access to creeks, failing septic systems, urban runoff, and sanitary sewer overflows (SSOs). The TMDL states that a 64% reduction in fecal coliform loading is necessary for the stream to meet the recreational use standard.

The nonpoint source component of the Hard Labor Creek TMDL is currently being implemented using §319 grant funds. Implementation is scheduled to be completed in 2011. For more information on §319 grants, visit <http://www.scdhec.gov/water> and click on Nonpoint Source Program.

03060107-02
(Turkey Creek)

General Description

Watershed 03060107-02 (formerly 03060107-020, 030) is located in Greenwood, McCormick, Edgefield, and Saluda Counties and consists primarily of **Turkey Creek** and its tributaries. The watershed occupies 182,781 acres of the Piedmont and Upper Coastal regions of South Carolina. Land use/land cover in the watershed includes: 76.3% forested land, 16.4% agricultural land, 4.4% urban land, 1.9% forested wetland (swamp), 0.6% barren land, and 0.4% water. A map depicting this watershed is found in Appendix C, page C-38.

Turkey Creek originates near the Town of Johnston and accepts drainage from Little Turkey Creek (Bartley Branch), Bubbling Branch, Center Spring Branch, Little Stevens Creek (Rocky Creek), and Sleepy Creek (Flat Rock Branch, Ephriam Branch). Talbert Branch and Mt. Carmel Branch join to form Mountain Creek, which accepts drainage from Catholic Branch, Pickell Branch, Little Mountain Creek, Bell Branch (Quaker Branch), and Hegwood Branch before draining into Turkey Creek. Log Creek (Dunn Creek) enters Turkey Creek next, followed by Jim Branch, Crooked Run, and Rocky Creek (Wiley Branch, Stockman Branch, Wilson Branch, Cartledge Branch, Bailey Branch). Further downstream, Turkey Creek accepts drainage from Pike Branch, Horse Branch, Broadwater Branch, Cyper Creek, Goff Branch, Wine Creek (Church Branch, Mack Branch), Beaverdam Creek (Slade Lake, Little Beaverdam Creek, Chap Branch, White Branch, Moss Branch, Camp Branch, and Red Hill Spring Branch), Coon Creek, Rock Creek, and Blue Branch. Turkey Creek drains into Stevens Creek. There are a total of 626.5 stream miles and 905.4 acres of lake waters in this watershed, all classified FW. The Sumter National Forest extends over a large portion of the watershed.

Surface Water Quality

<u>Station #</u>	<u>Type</u>	<u>Class</u>	<u>Description</u>
SV-729	BIO	FW	TURKEY CREEK AT S-191-100
SV-728	BIO	FW	LOG CREEK AT S-19-315
SV-727	BIO	FW	ROCKY CREEK AT S-19-61
SV-353	INT/BIO	FW	BEAVERDAM CREEK AT FOREST SERVICE RD 621 OFF S-19-68
SV-352	INT	FW	TURKEY CREEK AT S-33-227/S-19-68

Turkey Creek – There are two SCDHEC monitoring stations along Turkey Creek. At the upstream site (**SV-729**), aquatic life uses are fully supported based on macroinvertebrate community data. At the downstream site (**SV-352**), aquatic life 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. Recreational uses are partially supported due to fecal coliform bacteria excursions.

Log Creek (SV-728) – Aquatic life uses are fully supported based on macroinvertebrate community data.

Rocky Creek (SV-727) – Aquatic life uses are fully supported based on macroinvertebrate community data.

Beaverdam Creek (SV-353) – Aquatic life uses are partially supported based on macroinvertebrate community data and there is a significant increasing trend in five-day biochemical oxygen demand. There is a significant increasing trend in pH. Recreational uses are partially supported due to fecal coliform bacteria excursions.

NPDES Program

Active NPDES Facilities

<i>RECEIVING STREAM FACILITY NAME</i>	<i>NPDES# TYPE</i>
BEAVERDAM CREEK ECW&SA/BROOKS ST WWTP	SC0025330 MINOR DOMESTIC
BEAVERDAM CREEK FED PACIFIC ELECTRIC CO./ODELL DAM	SC0047813 MINOR INDUSTRIAL
TURKEY CREEK BORAL BRICKS/TURKEY CREEK MINE	SCG730638 MINOR INDUSTRIAL
TURKEY CREEK TRIBUTARY THRELKO/WHITLOCK PIT MINE	SCG730638 MINOR INDUSTRIAL

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

<i>LANDFILL NAME FACILITY TYPE</i>	<i>PERMIT # STATUS</i>
EDGEFIELD COUNTY SANITARY LANDFILL DOMESTIC	----- INACTIVE
TRI-COUNTY LANDFILL TRANSFER STATION	194200-6001 ACTIVE
TRI-COUNTY LANDFILL C & D	194200-1201 ACTIVE
TRI-COUNTY SANITARY LANDFILL DOMESTIC	----- INACTIVE
EUGENE EASLER LCD LANDFILL C & D	192757-1701 ACTIVE

Mining Activities

MINING COMPANY
MINE NAME

PERMIT #
MINERAL

BORAL BRICK INC./MERRY DIV.
EDGEFIELD SHALE PIT

0040-37
SHALE

Growth Potential

There is a low to moderate potential for growth in this watershed, which contains portions of the Towns of Johnston and Edgefield. The Edgefield County Water and Sewer Authority's Regional Sewer Collection System now serves Edgefield County, and the Saluda County and the Town of Saluda where it connects to the sewer system of the City of North Augusta for final connection to the Horse Creek Valley WWTP. The Towns of Edgefield and Johnson have also tied into the system, allowing for possible growth. The Edgefield Industrial Park, located southeast of the Town of Edgefield, is supported by a rail system and serves as a source of potential industrial growth in the watershed. A new industrial park has been proposed for the Town of Johnston between SC 23 and SC 121, and if built, would greatly increase industrial growth in this watershed. A federal prison and state prison have been constructed in Edgefield County, which should also increase growth. Over half of the watershed resides within the Sumter National Forest and would tend to limit growth in that area.

03060107-03
(Stevens Creek)

General Description

Watershed 03060107-03 (formerly 03060107-040) is located in Edgefield and McCormick Counties and consists primarily of lower *Stevens Creek* and its tributaries from Turkey Creek to its confluence with the Savannah River. The watershed occupies 131,586 acres of the Piedmont and Upper Coastal Plain regions of South Carolina. Land use/land cover in the watershed includes: 75.8% forested land, 17.0% agricultural land, 3.8% urban land, 1.9% forested wetland (swamp), 1.0% water, and 0.5% barren land. A map depicting this watershed is found in Appendix C, page C-39.

This segment of Stevens Creek accepts drainage from Buzzard Branch, Cuffey Branch, Key Branch, Shumate Branch, another Buzzard Branch, John Branch, Gundy Creek (Ray Creek), Cosey Branch, Double Branches, Ryan Branch, Lloyd Creek (Owl Branch), and Horn Creek. Horn Creek accepts drainage from Quarles Creek (Clearwater Branch), Gilroy Branch, Tobler Creek, Hog Eye Branch, Cedar Creek, Rock Creek, Dry Creek, Lick Fork (Lick Fork Lake, Miller Branch, Big Branch), Big Creek, and Williams Branch. Downstream of Horn Creek, Stevens Creek accepts drainage from Reedy Branch, Cheves Creek (Canaan Branch, Spring Branch, Monday Branch, Bakers Branch, Burkhalter Branch, Big Branch, Dry Branch, Rainsford Pond), Anderson Branch, Hardy Branch, and Sweetwater Branch. There are a total of 522.9 stream miles and 398.1 acres of lake waters within this watershed, all classified FW. The Sumter National Forest extends over the western side of the watershed.

Surface Water Quality

<u>Station #</u>	<u>Type</u>	<u>Class</u>	<u>Description</u>
SV-063	BIO	FW	STEVENS CREEK AT SC 23
SV-354	INT	FW	STEVENS CREEK AT S-33-88/S-19-143
SV-725	BIO	FW	CHEVES CREEK AT S-19-34

Stevens Creek - There are two SCDHEC monitoring stations along this portion of Stevens Creek. At the upstream site (*SV-063*), aquatic life uses are fully supported based on macroinvertebrate community data.

At the downstream site (*SV-354*), aquatic life uses are not supported due to occurrences of copper in excess of the aquatic life chronic criterion, and there is a significant increasing trend in five-day biochemical oxygen demand. There is a significant increasing trend in pH. Recreational uses are partially supported due to fecal coliform bacteria excursions.

Cheves Creek (SV-725) - Aquatic life uses are fully supported based on macroinvertebrate community data.

Natural Swimming Areas

***FACILITY NAME
RECEIVING STREAM***

***PERMIT #
STATUS***

LICK FORK LAKE
LICK FORK LAKE

19-1001N
ACTIVE

NPDES Program

Active NPDES Facilities

***RECEIVING STREAM
FACILITY NAME***

***NPDES#
TYPE***

SWEETWATER BRANCH
MAGELLAN TERMINALS HOLDINGS/N. AUGUSTA

SCG340012
MINOR INDUSTRIAL

SWEETWATER BRANCH
MAGELLAN TERMINALS HOLDINGS/N. AUGUSTA 2

SCG340003
MINOR INDUSTRIAL

MONDAY BRANCH
PIONEER CLEARING #1 MINE

SCG730703
MINOR INDUSTRIAL

Municipal Separate Storm Sewer Systems (MS4)

***RECEIVING STREAM
MUNICIPALITY
RESPONSIBLE PARTY
IMPLEMENTING PARTY***

***NPDES#
MS4 PHASE
MS4 SIZE***

LOWER STEVENS CREEK
UNINCORPORATED AREAS
AIKEN COUNTY
AIKEN COUNTY

SCR030302
PHASE II
SMALL MS4

LOWER STEVENS CREEK
UNINCORPORATED AREAS
EDGEFIELD COUNTY
EDGEFIELD COUNTY

PHASE II
SMALL MS4

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

***LANDFILL NAME
FACILITY TYPE***

***PERMIT #
STATUS***

GRIFFIN SHORT TERM C & D LANDFILL
C & D

332900-1301
INACTIVE

PIONEER CLEARING DEBRIS & YT LANDFILL
C & D

192697-1701
ACTIVE

Mining Activities

MINING COMPANY
MINE NAME

PERMIT #
MINERAL

PIONEER CLEARING
PIONEER CLEARING #1 MINE

1588-37
SAND/CLAY

Growth Potential

There is a low potential for growth in this watershed, which contains portions of the Town of Edgefield, and the communities of Modoc, Clarks Hill, and Murphys Estates. The Edgefield Industrial Park, located southeast of the Town of Edgefield, is supported by a rail system and serves as a source of potential industrial growth in the watershed. The Edgefield County Water and Sewer Authority's Regional Sewer Collection System now serves Edgefield County, and the Saluda County and the Town of Saluda where it connects to the sewer system of the City of North Augusta for final connection to the Horse Creek Valley WWTP. The Town of Edgefield has connected to the system, allowing for possible growth. A federal prison and state prison have been constructed in Edgefield County, which should also increase growth. The growth of North Augusta is approaching the Stevens Creek area, particularly residential development. The regional sewer line should also enhance industrial development along US 25, between the Towns of Trenton and North Augusta. Over half of the watershed resides within the Sumter National Forest and would tend to limit growth in that area.

03060109-01
(Savannah River)

General Description

The South Carolina portion of watershed 03060109-01 (formerly 03060109-020, 03060109-050) is located in Allendale, Hampton, and Jasper Counties and consists primarily of the **Savannah River** and its tributaries from the Brier Creek Landing to Ebenezer Creek, Georgia. This Savannah River watershed extends into Georgia. There are 214,057 acres in this extended watershed; 98,308 acres or 45.9% are outside of South Carolina. The South Carolina portion is within the Lower Coastal Plain and Coastal Zone physiographic regions. Land use/land cover in the S.C. watershed includes: 45.7% forested land, 34.5% forested wetland, 14.3% agricultural land, 2.7% urban land, 1.4% nonforested wetland, 1.2% water, and 0.2% barren land. A map depicting this watershed is found in Appendix C, page C-40.

This section of the Savannah River accepts drainage from Brier Creek*, Buck Creek*, Cutoff No.10, Ware Creek, Limestone Branch*, Cutoff No. 9, Clear Water Creek (Dry Gall Branch, Long Branch, Ceasars Camp Pond, Gaylord Crossing Pond, Bob Bee Tree Lake, Blake Lake, Barnes Lake, Ball Lake), and Pike Creek (Rose Bowl Pond, Long Pond, Heart Stone Pond, Calhoun Pond, Big Lake). An asterisk connotes a stream entering from the Georgia side of the river. Cornhouse Reach and Little Cornhouse Reach enter the system next, followed by Wildcat Cut, Black Creek*, Ferry Branch*, Hudson Ferry Reach, Rooty Branch*, Fowl Craw Lake, and Jordan Lake. Boggy Branch (Millpond Branch, McKenzie Pond, Boggy Swamp, King Branch, Dunn Pond, Flat Lake, Bluff Lake) enters the river next followed by Hog Branch, Church Branch, Cutoff No.7A, Sisters Cut, Little Snooks Lake, Snooks Lake, Ivory Lake, Strong Creek, Plank Creek*, Yorkley Creek, and Hungleiter Branch*. There are a total of 521.9 stream miles and 2,053.2 acres of lake waters within this extended watershed, all classified FW.

Surface Water Quality

<u>Station #</u>	<u>Type</u>	<u>Class</u>	<u>Description</u>
SV-355	W	FW	SAVANNAH RIVER AT STOKES BLUFF LANDING OFF S-25-461
SV-369	INT	FW	SAVANNAH RIVER OFF B&C LANDING OFF S-27-201
SV-370	INT	FW	SAVANNAH RIVER, 0.2MI UPSTREAM EBENEZER CREEK

Savannah River - There are three SCDHEC monitoring stations along this portion of the Savannah River. At the upstream site (**SV-355**), aquatic life and recreational uses are fully supported; however, there is a significant increasing trend in five-day biochemical oxygen demand. At the midstream site (**SV-369**), aquatic life uses are not supported due to occurrences of zinc in excess of the aquatic life chronic criterion. Although pH and dissolved oxygen excursions occurred, they were considered natural, not standards violations. Recreational uses are fully supported; however, there is a significant increasing trend in fecal coliform bacteria concentration. At the downstream site (**SV-370**), aquatic life and recreational uses are fully supported.

A fish consumption advisory has been issued by the Department for mercury and includes the Savannah River within this watershed (see advisory p. 111).

Growth Potential

There is a low potential for growth in this watershed, which contains a portion of the Town of Scotia.

Watershed Protection and Restoration Strategies

Total Maximum Daily Loads (TMDLs)

Portions of the **Savannah Harbor** have been included on the Georgia 303(d) list of impaired waters as impaired for dissolved oxygen. This tidal area is considered, at times, to experience naturally occurring levels of dissolved oxygen (DO) below the Georgia standard. This naturally occurring low DO is further impacted by point source discharges both to the harbor and the Savannah River upstream of the estuarine portion of the river. In 2006, the US Environmental Protection Agency (EPA) finalized a dissolved oxygen TMDL for the system that required a 100% reduction in the loading of oxygen demanding substances being discharged to the system. This essentially required that all discharges to the system below Thurmond Dam cease discharging.

Subsequent to development of this TMDL, the State of Georgia adopted a new DO standard for the harbor. The new Georgia standards allow for a 0.1 mg/L depression in DO levels below natural conditions in naturally low DO waters. This is essentially consistent with the South Carolina standard for the waters it shares with Georgia. EPA, with assistance and input from Georgia, South Carolina and interested stakeholders, is developing a new TMDL based on the new Georgia standard. It is anticipated that the new TMDL, though very restrictive, will allow continued discharge of some oxygen demanding substances to the Savannah River and Harbor. The final TMDL is not expected until 2011.

03060109-03
(Savannah River)

General Description

The South Carolina portion of watershed 03060109-03 (formerly 03060109-060 and 03050208-140) is located in Hampton and Jasper Counties and consists primarily of the *Savannah River* and its tributaries from Ebenezer Creek (in Georgia) to the Atlantic Ocean. This Savannah River watershed extends into Georgia. There are 285,167 acres in this extended watershed; 141,113 acres or 49.5% are outside of South Carolina. The South Carolina portion is within the Coastal Zone physiographic region. Land use/land cover in the S.C. watershed includes: 33.5% forested wetland (swamp), 31.6% forested land, 17.2% nonforested wetland (marsh), 8.6% agricultural land, 3.8% water, 3.5% urban land, and 1.8% barren land. A map depicting this watershed is found in Appendix C, page C-41.

This section of the Savannah River accepts drainage from Ebenezer Creek*, Lockner Creek*, Mill Creek*, Bear Creek *, and Black Swamp. An asterisk connotes a stream entering from the Georgia side of the river. Black Swamp originates near the Towns of Furman and Scotia and accepts drainage from Long Branch, Cypress Branch, Cypress Creek (Sweet Leaf Swamp, Big Boar Flat, Tew Lake), UMBER Run, Hodgins Lake, Chunk Creek, Tee Lake, Coleman Run, Gator Holes, and Coleman Lake before flowing into the Savannah River. Downstream of the Black Swamp, the Savannah River accepts drainage from Far Lake, Meyer Lake, Big Collis Creek*, and Abercorn Creek*. Downstream of Abercorn Creek, McCays Cut connects the Savannah River to the Little Back River. The Little Back River accepts drainage from Union Creek, Vernezobre Creek, and Clydesdale Creek before flowing into the Back River. Murray Hill Canal, Clydesdale Canal, and Shubra Canal drain into the Back River before it merges back into the Savannah River. The SC/GA state line follows McCays Cut to the Little Back River, to the Back River and returning to the Savannah River near Ft. Jackson on the Georgia side.

Fields Cut or the Mud River connects the Savannah River to the Wright River. The Wright River accepts drainage from Salt Water Creek (Monkey John Swamp), Fields Cut, and Watts Cut before flowing into the Atlantic Ocean. Watts Cut connects the Wright River to the New River Watershed. The Savannah River is Class SB* (DO not less than daily average 5 mg/l and minimum 4 mg/l) from the Seaboard Coastline Railroad to Ft. Pulaski, and Class SA from Ft. Pulaski to the Atlantic Ocean. The Wright River and Fields Cut are classified SA, and the remainder of the watershed is FW. There are a total of 702.8 stream miles, 1,801.4 acres of lake waters, and 8,256.2 acres of estuarine waters in this extended watershed.

Surface Water Quality

<u>Station #</u>	<u>Type</u>	<u>Class</u>	<u>Description</u>
SV-744	BIO	FW	CYPRESS BRANCH AT US 321
SV-356	W	FW	CYPRESS CREEK AT S-27-119
RS-04372	RS04	FW	UNNAMED SWAMP AT BRIDGE ON S-27-119 1MI W OF TILLMAN
RO-046061	RO04	SA/SB*	SAVANNAH RIVER, 3.3MI NW OF FIELDS CUT (MUD RIVER)
RT-032032	RT03	SA	WRIGHT RIVER, 1.9MI SE OF TURN BRIDGE LANDING
MD-259	INT	SA	WRIGHT RIVER, 1.5MI FROM FIELDS CUT

Cypress Branch (SV-744) – Aquatic life uses are fully supported based on macroinvertebrate community data.

Cypress Creek (SV-356) – Aquatic life uses are not supported due to dissolved oxygen excursions. This is a blackwater system, characterized by naturally low pH conditions. Although pH excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations. A significant decreasing trend in turbidity suggests improving conditions for this parameter. Recreational uses are partially supported due to fecal coliform bacteria excursions.

Unnamed Swamp (RS-04372) – Aquatic life uses are not supported due to occurrences of zinc in excess of the aquatic life chronic criterion. This is a blackwater system, characterized by naturally low pH conditions. Although pH excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations. Recreational uses are fully supported.

Savannah River (RO-046061) – Aquatic life and recreational uses are fully supported.

Wright River – There are two SCDHEC monitoring stations along the Wright River and recreational uses are fully supported at both sites. This is a tidally influenced system, which are often characterized by naturally low dissolved oxygen concentrations. Although dissolved oxygen excursions were noted at both sites, they were typical of values seen in such systems and were considered natural, not standards violations. At the upstream site (**RT-032032**), aquatic life uses are not supported due to turbidity excursions. At the downstream site (**MD-259**), aquatic life uses are partially supported due to occurrences of copper and nickel in excess of the aquatic life chronic criterion.

A fish consumption advisory has been issued by the Department for mercury and includes the Savannah River within this watershed (see advisory p. 111).

Shellfish Monitoring Stations

<u>Station #</u>	<u>Description</u>
19-06	WRIGHT RIVER, MARKER #43
19-20	1.5 MILES UP THE WRIGHT RIVER FROM FIELDS CUT
19-22	WRIGHT RIVER AT FIELDS CUT
19-27	WRIGHT RIVER AT CONFLUENCE WITH ATLANTIC OCEAN

Groundwater Quality

<u>Well #</u>	<u>Class</u>	<u>Aquifer</u>	<u>Location</u>
AMB-097	GB	TERTIARY LIMESTONE	HARDEEVILLE

All water samples collected from ambient monitoring well **AMB-097** met standards for Class GB groundwater.

NPDES Program

Active NPDES Facilities

<i>RECEIVING STREAM FACILITY NAME</i>	<i>NPDES# TYPE</i>
SAVANNAH RIVER BJW&SA/HARDEEVILLE CHURCH ROAD	SC0034584 MAJOR DOMESTIC
MONKEY JOHN SWAMP TO SAVANNAH RIVER RINKER MATERIALS/DEERFIELD PIT	SCG730624 MINOR INDUSTRIAL
SAVANNAH RIVER TRIBUTARY REED-HTI/SAVANNAH LAKE MINE	SCG731042 MINOR INDUSTRIAL

Nonpoint Source Management Program

Mining Activities

<i>MINING COMPANY MINE NAME</i>	<i>PERMIT # MINERAL</i>
MALPHRUS CONSTRUCTION CO. NEW HARDEEVILLE MINE	1251-53 SAND
BAIRD TRANSPORT BAIRD MINE	1759-53 SAND

Water Quantity

<i>WATER USER STREAM</i>	<i>TOTAL PUMP. CAPACITY (MGD) RATED PUMP. CAPACITY (MGD)</i>
BJW&SA	40.2
SAVANNAH RIVER	31.2

Growth Potential

There is a moderate potential for growth in this watershed, primarily in the vicinity of the Town of Hardeeville. Portions of the Towns of Scotia and Furman are located at the top of the watershed, where there is a limited potential for growth. Beaufort-Jasper Water and Sewer Authority is in the process of expanding the wastewater treatment facility, which should promote future growth. Less than 25% of the total land area is suitable for septic system installations; and another 25% or less is classified as marginally suitable. Also, growth in the area tends to be spread out over a large area not served by a

sewer system. The Savannah National Wildlife Preserve and the Tybee Island National Wildlife Preserve are located at the base of this watershed, and would limit growth in these areas.

Watershed Protection and Restoration Strategies

Total Maximum Daily Loads (TMDLs)

Portions of the **Savannah Harbor** have been included on the Georgia 303(d) list of impaired waters as impaired for dissolved oxygen. This tidal area is considered, at times, to experience naturally occurring levels of dissolved oxygen (DO) below the Georgia standard. This naturally occurring low DO is further impacted by point source discharges both to the harbor and the Savannah River upstream of the estuarine portion of the river. In 2006, the US Environmental Protection Agency (EPA) finalized a dissolved oxygen TMDL for the system that required a 100% reduction in the loading of oxygen demanding substances being discharged to the system. This essentially required that all discharges to the system below Thurmond Dam cease discharging.

Subsequent to development of this TMDL, the State of Georgia adopted a new DO standard for the harbor. The new Georgia standards allow for a 0.1 mg/L depression in DO levels below natural conditions in naturally low DO waters. This is essentially consistent with the South Carolina standard for the waters it shares with Georgia. EPA, with assistance and input from Georgia, South Carolina and interested stakeholders, is developing a new TMDL based on the new Georgia standard. It is anticipated that the new TMDL, though very restrictive, will allow continued discharge of some oxygen demanding substances to the Savannah River and Harbor. The final TMDL is not expected until 2011.

03060110-01
(Great Swamp)

General Description

Watershed 03060110-01 (formerly 03050208-120, and a portion of 03050208-130) is located in Jasper County and consists primarily of **Great Swamp** and its tributaries. The watershed occupies 82,019 acres of the Lower Coastal Plain and Coastal Zone regions of South Carolina. Land use/land cover in the watershed includes: 58.2% forested land, 28.3% forested wetland (swamp), 8.3% agricultural land, 3.6% urban land, 1.0% nonforested wetland (marsh), 0.3% water, and 0.3% barren land. A map depicting this watershed is found in Appendix C, page C-42.

Great Swamp accepts drainage from Calfpn Bay (Pine Savannah Branch, Gillison Branch), Poli Bay, Broad Water (Wagon Branch), Darn Swamp, Green Swamp, and Bagshaw Swamp (Sand Branch, Buck Bay). Further downstream, Great Swamp accepts drainage from Kato Bay, Shingle Swamp, Causeway Swamp (Hog Crawl Swamp, Fivemile Swamp, Halfmoon Bay, Sixmile Swamp, Sevenmile Swamp, Bahama Swamp), and Thomas Swamp before draining into the New River. There are a total of 212.7 stream miles, 32.5 acres of lake waters, and 6.7 acres of estuarine waters in this watershed, all classified SA.

Surface Water Quality

<u>Station #</u>	<u>Type</u>	<u>Class</u>	<u>Description</u>
MD-129	INT	SA	GREAT SWAMP AT US 17

Great Swamp (MD-129) – Aquatic life uses are not supported due to occurrences of zinc in excess of the aquatic life chronic criterion. In addition, there are significant increasing trends in five-day biochemical oxygen demand and total phosphorus concentration. This is a blackwater system, characterized by naturally low pH and dissolved oxygen concentrations. Although pH and dissolved oxygen excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations. Recreational uses are partially supported due to fecal coliform bacteria excursions.

NPDES Program

Active NPDES Facilities

<i>RECEIVING STREAM FACILITY NAME</i>	<i>NPDES# TYPE</i>
GREAT SWAMP TRIBUTARY BJW&SA/CHERRY POINTE-OKATIE WRF	SC0047279 MAJOR DOMESTIC

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

<i>LANDFILL NAME</i>	<i>PERMIT #</i>
<i>FACILITY TYPE</i>	<i>STATUS</i>
JASPER COUNTY LANDFILL DOMESTIC	----- INACTIVE
JASPER COUNTY C/C LANDFILL DOMESTIC	271001-1201 INACTIVE
JASPER COUNTY C/C LANDFILL DOMESTIC	----- INACTIVE
JASPER COUNTY INERT DISPOSAL SITE INERT	----- INACTIVE
JASPER COUNTY LCD&YT LANDFILL C&D	271001-1701 ACTIVE
JASPER COUNTY LANDFILL #2 DOMESTIC	----- INACTIVE

Land Application Sites

<i>LAND APPLICATION SYSTEM</i>	<i>ND#</i>
<i>FACILITY NAME</i>	<i>TYPE</i>
SPRAYFIELD TOWN OF RIDGELAND WWTP	ND0067971 DOMESTIC
SPRAY SITES BJW&SA/CHERRY POINT-OKATIE WRF	ND0074004 DOMESTIC

Mining Activities

<i>MINING COMPANY</i>	<i>PERMIT #</i>
<i>MINE NAME</i>	<i>MINERAL</i>
SOUTHERN AGGREGATES CO., INC. DEERFIELD MINE	0016-53 SAND

Growth Potential

There is a high potential for residential growth in this watershed, which contains the western edge of the Town of Ridgeland. I-95 crosses the Town of Ridgeland and may provide some growth to the area. Beaufort-Jasper Water and Sewer Authority (BJWSA) has expanded its regional treatment facility, which was built to address the needs of Del Webb's Sun City and Hilton Head. The Town of Ridgeland has also expanded its municipal treatment facility to accommodate planned growth.

03060110-02

(New River)

General Description

Watershed 03060110-02 (formerly 03050208-130 minus a portion to –110-01) is located in Jasper and Beaufort Counties and consists primarily of the *New River* and its tributaries. The watershed occupies 67,139 acres of the Coastal Zone region of South Carolina. Land use/land cover in the watershed includes: 44.5% forested land, 25.2% forested wetland, 16.0% nonforested wetland, 6.3% urban land, 3.8% agricultural land, 3.6% water, and 0.6% barren land. A map depicting this watershed is found in Appendix C, page C-43.

The New River flows out of the Great Swamp Watershed, through Garrett Lake, and accepts drainage from Pickseed Swamp, Brickyard Swamp (Bob Dam Swamp, Turkey Pond, Fourmile Swamp), Fox Pond, and Horse Swamp (Two Bridge Swamp, White Oak Nook Swamp). At the base of the watershed, Ramshorn Creek connects the New River to the Cooper River and the Calibogue Sound Watershed, and Watts Cut connects the New River to the Wright River Watershed. Mungen Creek drains into two locations in the last bend of the New River. There are a total of 34.2 stream miles, 55.4 acres of lake waters, and 2,726.1 acres of estuarine waters in this watershed, all classified SA except for the portion of Ramshorn Creek connected to the watershed that is classified SFH.

Surface Water Quality

<u>Station #</u>	<u>Type</u>	<u>Class</u>	<u>Description</u>
MD-118	W	SA	NEW RIVER AT SC 170, 9MI W OF BLUFFTON
RT-06021	RT06	SA	NEW RIVER, 3.4MI SSE OF SC 170 BRIDGE OVER NEW RIVER
RT-052109	RT05	SA	NEW RIVER, 3MI W OF PAGE ISLAND
RT-042063	RT04	SA	NEW RIVER, 8.5MI SW OF BLUFFTON
MD-258	INT	SFH/SA	RAMSHORN CREEK AT NEW RIVER

New River – There are four SCDHEC monitoring stations along the New River. This is a tidally influenced system, which are often characterized by naturally low pH and dissolved oxygen concentrations. At the furthest upstream site (*MD-118*), aquatic life use is fully supported. Although pH and dissolved oxygen excursions occurred, they were typical of values seen in such systems and were considered natural, not standards violations. There is a significant increasing trend in pH. Recreational uses are partially supported due to fecal coliform bacteria excursions. Further downstream (*RT-06021*), aquatic life use is fully supported. Although pH and dissolved oxygen excursions occurred, they were typical of values seen in such systems and were considered natural, not standards violations. Recreational uses are partially supported due to fecal coliform bacteria excursions. At the downstream sites (*RT-052109*, *RT-042063*), aquatic life and recreational uses are fully supported. Although dissolved oxygen excursions occurred at *RT-052109*, they were typical of values seen in such systems and were considered natural, not standards violations.

Ramshorn Creek (MD-258) – Aquatic life uses are not supported due to occurrences of nickel in excess of the aquatic life chronic criterion. This is a tidally influenced system, which are often characterized by naturally low dissolved oxygen concentrations. Although dissolved oxygen excursions were noted at both sites, they were typical of values seen in such systems and were considered natural, not standards violations. Recreational uses are fully supported.

A fish consumption advisory has been issued by the Department for mercury and includes the New River within this watershed (see advisory p. 111).

Shellfish Monitoring Stations

Station #	Description
19-02A	COOPER RIVER AT NEW RIVER
19-04	COOPER RIVER AT MARKER #41 – DAUFUSKIE ISLAND
19-05	BLOODY POINT AT MUNGEN CREEK
19-07	RAMSHORN CREEK AT NEW RIVER
19-08	FIRST CREEK ON LEFT UP NEW RIVER AT POLLUTION LINE
19-21	2.5 MILES UP NEW RIVER FROM STATION 19-02A
19-23	NEW RIVER AT WATTS CUT

NPDES Program

Active NPDES Facilities

RECEIVING STREAM FACILITY NAME	NPDES# TYPE
NEW RIVER TRIBUTARY BJW&SA/CHERRY POINTE-OKATIE WRF	SC0047279 MAJOR DOMESTIC
NEW RIVER TRIBUTARY JEJ CONSTRUCTION/ SARGAENT JASPER PARK	SCG730399 MINOR INDUSTRIAL
NEW RIVER TRIBUTARY CLELAND SITE PREP/COOLER MINE	SCG730647 MINOR INDUSTRIAL
NEW RIVER TRIBUTARY DRIESSEN EXCAVATING/ DRIESSEN MINE #1	SCG730671 MINOR INDUSTRIAL

Nonpoint Source Management Program

Land Disposal Activities

Land Application Sites

LAND APPLICATION SYSTEM FACILITY NAME	ND# TYPE
GOLF COURSE DAUFUSKIE ISLAND CLUB & RESORT	ND0068179 DOMESTIC

Mining Activities

<i>MINING COMPANY MINE NAME</i>	<i>PERMIT # MINERAL</i>
JEJ CONSTRUCTION CO., INC. SARGAENT JASPER PARK	1436-53 SAND
CLELAND SITE PREP INC. COOLER PIT MINE	1423-53 SAND
TH COBURN CONSTRUCTION LLC MAUREEN PLANTATION MINE	1626-53 SAND
MALPHRUS CONSTRUCTION CO., INC. MONROE MINE	1569-53 SAND
BUNTON HADWIN CONSTRUCTION CO. BELLINGER HILL MINE	1416-53 SAND
DRIESSEN EXCAVATING DRIESSEN MINE #1	1571-53 SAND
LOW COUNTRY LAND SERVICES LLC LOWCOUNTRY MINE #1	1630-53 SAND

Growth Potential

There is a high potential for growth in this watershed, which contains portions of the Towns of Hardeeville and Bluffton. I-95 crosses the Town of Hardeeville and may provide some growth to the area. Beaufort-Jasper Water and Sewer Authority has expanded the wastewater treatment facility, which should promote future growth in the Hardeeville area. Less than 25% of the total land area is suitable for septic system installations; and another 25% or less is classified as marginally suitable. Also, growth in the area tends to be spread out over a large area not served by a sewer system. The Town of Bluffton and the surrounding unincorporated area of Beaufort County experienced substantial growth from 2000 to 2006 and may do so again when the economy and the market recover. Del Webb's Sun City retirement community development near Bluffton has added tremendous residential and commercial growth to the area. Between 25 and 50% of the total land area is suitable for septic system installations; and another 25% or less is classified as marginally suitable. Beaufort-Jasper Water and Sewer Authority has extended water and sewer services to the area to provide for the growth.

03060110-03
(*Calibogue Sound*)

General Description

Watershed 03060110-03 (formerly 03050208-110) is located in Beaufort County and consists primarily of *Calibogue Sound* and its tributaries, which include the May River, the Cooper River, Broad Creek, and MacKay Creek. The watershed occupies 78,904 acres of the Coastal Zone region of South Carolina. Land use/land cover in the watershed includes: 32.3% forested land, 25.9% nonforested wetland (marsh), 18.9% water, 13.7% urban land, 6.3% forested wetland (swamp), 2.1% agricultural land, and 0.8% barren land. A map depicting this watershed is found in Appendix C, page C-44.

The May River originates near the Town of Bluffton and accepts drainage from Stony Creek, Rose Dew Creek, Bull Creek (Savage Creek), and Bass Creek before joining MacKay Creek (Skull Creek, Jarvis Creek, Whooping Crane Pond, Golden Bear Pond, Old House Creek) to form Calibogue Sound. Calibogue Sound accepts drainage from Bryan Creek (Barataria Creek), the Cooper River (Bull Creek, Hoophole Creek, Ramshorn Creek), Broad Creek (The Folly, Point Comfort Creek, Boggy Gut), Calibogue Creek, and Braddock Cove before flowing into the Atlantic Ocean. Broad Creek originates and flows through the City of Hilton Head Island. Mackay Creek connects Calibogue Sound to Port Royal Sound. Bull Creek connects the May River to the Cooper River. Ramshorn Creek connects Calibogue Sound (via the Cooper River) to the New River Watershed. There are a total of 13,799.4 estuarine acres in this watershed, all classified SFH with a few exceptions. The May River, Bull Creek, and the Cooper River from the New River to Ramshorn Creek and their tributaries are classified ORW. From Ramshorn Creek to Calibogue Sound the Cooper River is classified SFH.

Surface Water Quality

<u>Station #</u>	<u>Type</u>	<u>Class</u>	<u>Description</u>
MD-173	INT	ORW	MAY RIVER, 1.8MI SE OF BLUFFTON OUT FROM END OF S-07-461
RO-06313	RO06	ORW	MAY RIVER, 3.2MI SE OF BLUFFTON
RO-02002	RO02	ORW	MAY RIVER, 0.9MI NW OF CONFLUENCE WITH CALIBOGUE SOUND
MD-016	W	ORW	MOUTH OF MAY RIVER, 1.0MI W OF CHANNEL MARKER 29
RO-056102	RO05	SFH	CALIBOGUE SOUND, 2.7 MI W OF HILTON HEAD ISLAND
RO-036038	RO03	SFH	CALIBOGUE SOUND, 0.6 MI NW OF BROAD CREEK MOUTH
RO-06305	RO06	SFH	COOPER RIVER, 7.8 MI W OF HILTON HEAD ISLAND
MD-257	INT	SFH/ORW	RAMSHORN CREEK AT COOPER RIVER
RT-052106	RT05	SFH	UNNAMED CREEK TO COOPER RIVER, 4.7MI W OF HILTON HEAD
RT-02022	RT02	SFH	BROAD CREEK, 4.0 MI NE OF CONFLUENCE W/CALIBOGUE SOUND
MD-174	SPRP	SFH	BROAD CREEK OPPOSITE END OF S-07-80
MD-175	W	SFH	CALIBOGUE SOUND AT MOUTH OF COOPER RIVER NEAR RED BUOY 32
RO-02009	RO02	SFH	CALIBOGUE SOUND NEAR COOPER RIVER MOUTH

May River – There are four SCDHEC monitoring stations along the May River (**MD-173, RO-06313, RO-02002, MD-016**). Aquatic life and recreational uses are fully supported at all sites; however, there is a significant increasing trend in fecal coliform bacteria concentration at **MD-173**, and a significant increasing trend in five-day biochemical oxygen demand at **MD-016**. This is a tidally influenced system with marsh drainage, which are often characterized by naturally low dissolved oxygen concentrations. Although dissolved oxygen excursions were noted at **MD-173, RO-06313**, they were typical of values seen in such systems and were considered natural, not standards violations.

Calibogue Sound – There are four SCDHEC monitoring stations along Calibogue Sound (**RO-056102, RO-036038, MD-175, RO-02009**). Aquatic life and recreational uses are fully supported at all sites and a significant decreasing trend in fecal coliform bacteria concentration at **MD-175** suggests improving conditions for this parameter.

Cooper River (RO-06305) – Aquatic life and recreational uses are fully supported. This is a tidally influenced system with marsh drainage, which are often characterized by naturally low dissolved oxygen concentrations. Although dissolved oxygen excursions were noted, they were typical of values seen in such systems and were considered natural, not standards violations.

Ramshorn Creek (MD-257) – Aquatic life and recreational uses are fully supported; however, there is a significant increasing trend in fecal coliform bacteria concentration. This is a tidally influenced system with marsh drainage, which are often characterized by naturally low dissolved oxygen concentrations. Although dissolved oxygen excursions were noted, they were typical of values seen in such systems and were considered natural, not standards violations. A significant decreasing trend in turbidity suggests improving conditions for this parameter.

Tributary to Cooper River (RT-052106) – Aquatic life and recreational uses are fully supported.

Broad Creek – There are two SCDHEC monitoring stations along Broad Creek. This is a tidally influenced system with marsh drainage, which are often characterized by naturally low dissolved oxygen concentrations. Although dissolved oxygen excursions were noted at both sites, they were typical of values seen in such systems and were considered natural, not standards violations. At the upstream site (**RT-02022**), aquatic life and recreational uses are fully supported. At the downstream site (**MD-174**), 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 decreasing trend in pH. A significant decreasing trend in total nitrogen concentration suggests improving conditions for this parameter.

Shellfish Monitoring Stations

<u>Station #</u>	<u>Description</u>
19-01	MAY RIVER SOUTH OF PALMETTO BLUFF, MARKER #8
19-02	UNNAMED CREEK AT JACK CROW ISLAND IN COOPER RIVER
19-03	RAMSHORN CREEK AT COOPER RIVER
19-09	BULL CREEK AT COOPER RIVER
19-11	BULL CREEK AT SAVAGE CREEK
19-12	BULL CREEK AT MAY RIVER
19-16	MAY RIVER BEHIND BLUFFTON OYSTER CO-OP
19-17A	COOPER RIVER MARINA AT EDGE OF CSZ
19-18	MAY RIVER BELOW DRAINAGE CANAL AT MARKER #11
19-19	MAY RIVER AT FIRST DOCK IN HEADWATERS PAST BLUFF
19-24	MAY RIVER AT SOUTHERN END OF CRANE ISLAND
19-25	MAY RIVER AT GREEN MARKER #25
19-26	MAY RIVER, SOUTHEAST OF HEYWARD COVE
20-01	BRADDOCK POINT – SOUTH END OF HILTON HEAD ISLAND
20-02	CALIBOGUE SOUND, MARKER #32
20-03	SHARK BANK AND BROAD CREEK – CSZ SEA PINES WWTP, MARKER #2
20-04A	BROAD CREEK AT PALMETTO BAY MARINA CSZ – EBB TIDE (COMBINED 20-04E AND 20-04F)
20-05	MAY RIVER AT CALIBOGUE SOUND
20-06	JARVIS CREEK AT CALIBOGUE SOUND
20-07	BUCKINGHAM LANDING AT BRIDGE
20-10	SKULL CREEK AT SMALL CREEK FROM MARINER’S COVE
20-11	SKULL CREEK, MARKER #19
20-12	SKULL CREEK BEHIND HILTON HEAD SEAFOOD COMPANY
20-15	BROAD CREEK AT LAWTON CREEK
20-15A	BROAD CREEK AT CALIBOGUE SOUND – NORTH END OF BUCK ISLAND
20-16	CREEK BEHIND LYNN SMITH’S OYSTER PLANT AT BROAD CREEK
20-16A	CREEK APPROXIMATELY 50 YDS SOUTHEAST OF STATION 20-16
20-18	BROAD CREEK AT SHELTER COVE MARINA
20-19A	BROAD CREEK AT HARBOR TOWN MARINA CSZ (COMBINED 20-19E AND 20-19F)
20-20A	MOSS CREEK MARINA CSZ (COMBINED 20-20E AND 20-20F)
20-22	OLD HOUSE CREEK AT CALIBOGUE SOUND
20-23	FIRST MAJOR “Y” IN JARVIS CREEK
20-24	FIRST MAJOR CREEK RIGHT AFTER MARKER #18
20-25	BROAD CREEK AT CONFLUENCE OF CHANNEL AT OLD OYSTER FACTORY
20-26	NORTHWEST OF S. BEACH MARINA CLOSURE ZONE
20-28	BROAD CREEK AT SOUTHERN BOUNDARY OF SOUTH ISLAND WWTP PROHIBITED CLOSURE ZONE
20-29	BROAD CREEK AT NORTHERN BOUNDARY OF SOUTH ISLAND WWTP PROHIBITED CLOSURE ZONE

Groundwater Quality

<u>Well #</u>	<u>Class</u>	<u>Aquifer</u>	<u>Location</u>
AMB-092	GB	TERTIARY LIMESTONE	HILTON HEAD ISLAND

All water samples collected from ambient monitoring well **AMB-092** met standards for Class GB groundwater.

NPDES Program

Active NPDES Facilities

<i>RECEIVING STREAM FACILITY NAME</i>	<i>NPDES# TYPE</i>
WHOOPING CRANE POND CONSERVANCY HILTON HEAD #1 PSD WWTP	SC0046191 MAJOR DOMESTIC
CYPRESS CONSERVANCY HILTON HEAD #1 PSD WWTP	SC0046191 MAJOR DOMESTIC
GOLDEN BEAR POND/INDIGO RUN HILTON HEAD #1 PSD WWTP	SC0046191 MAJOR DOMESTIC
BOGGY GUT MARSH/WHITE IBIS MARSH SOUTH ISLAND PSD WWTP	SC0042501 MAJOR DOMESTIC
CALIBOGUE SOUND SOUTH ISLAND PSD/WTP	SC0047724 MINOR DOMESTIC

Municipal Separate Storm Sewer Systems (MS4)

<i>RECEIVING STREAM MUNICIPALITY RESPONSIBLE PARTY IMPLEMENTING PARTY</i>	<i>NPDES# MS4 PHASE MS4 SIZE</i>
CALIBOGUE SOUND CITY OF HILTON HEAD ISLAND CITY OF HILTON HEAD ISLAND CITY OF HILTON HEAD ISLAND	----- PHASE II SMALL MS4

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

<i>LANDFILL NAME FACILITY TYPE</i>	<i>PERMIT # STATUS</i>
MALPHRUS CONSTRUCTION COMPANY INDUSTRIAL	----- INACTIVE
MELROSE PLANTATION TRANSFER STATION TRANSFER STATION	072492-6001 ACTIVE
HAIG POINT TRANSFER STATION TRANSFER STATION	072496-6001 ACTIVE
ESC INC. WOOD PROCESSING COMPOSTING	072412-3001 INACTIVE
DAUFUSKIE SITE PREP./AIR CURTAIN INCINERATOR INCINERATOR	072753-4001 ACTIVE

SEA PINES WOOD CHIPPING FACILITY COMPOSTING	072405-3001 ACTIVE
HILTON HEAD DISPOSAL CHIPPING FACILITY COMPOSTING	073339-3001 INACTIVE
HILTON HEAD DISPOSAL COMPOSTING	072431-3001 INACTIVE

Land Application Sites

<i>LAND APPLICATION SYSTEM FACILITY NAME</i>	<i>ND# TYPE</i>
GOLF COURSES WATER OAK UTILITY/MOSS CREEK PLANTATION	ND0014567 DOMESTIC
SPRAYFIELDS BROAD CREEK PSD	ND0063100 DOMESTIC
GOLF COURSE SOUTH ISLAND PSD/LONG COVE PLANT	ND0013528 DOMESTIC
GOLF COURSE SOUTH ISLAND PSD/WEXFORD PLANT	ND0017141 DOMESTIC
SPRAYFIELDS SOUTH ISLAND PSD	ND0064033 DOMESTIC
GOLF COURSE HAIG POINT/MELROSE WWTP	ND0062286 DOMESTIC

Mining Activities

<i>MINING COMPANY MINE NAME</i>	<i>PERMIT # MINERAL</i>
T.H. COBERN CONSTRUCTION COMPANY COBERN MINE	1182-13 SAND/CLAY

Growth Potential

There is a high potential for growth in this watershed, which contains portions of the Towns of Bluffton and Hilton Head. The Town of Bluffton and the surrounding unincorporated area of Beaufort County experienced substantial growth from 2000 to 2006 and may do so again when the economy and the market recover. Del Webb's Sun City retirement community development near Bluffton has added tremendous residential and commercial growth to the area. Between 25 and 50% of the total land area is suitable for septic system installations; and another 25% or less is classified as marginally suitable. Beaufort-Jasper Water and Sewer Authority has extended water and sewer services to the area to provide for the growth. They were then able to extend the services over to Hilton Head, where the natural aquifer is becoming shallow and salty.

The area along US 278 en route from Bluffton to Hilton Head is a high growth residential and commercial corridor. There are numerous golf and/or residential developments, and plans to develop

nearby areas in a similar fashion. The new toll road that by-passes a portion of US 278 diverts the heavy commercial tourism traffic to more residential areas and the beaches. Hilton Head Island has adequate sewer service, but is trying to control growth due to size limitations of the highly developed island. The island has recently lost population. However, this area is still projected as a growth area due to the following plans: (1) Beaufort and Jasper Counties are cooperating to construct a regional wastewater treatment plant in the Cherry Point area; (2) the regional water and sewer authority has proposed a regional water supply project to serve southern Beaufort and Jasper Counties with the Savannah River as the source; (3) a four lane, limited access highway connecting Hilton Head Island with I-95 will be built in the next few years; and (4) Union Camp has plans to develop at least a portion of its holding in southern Beaufort County.

Watershed Protection and Restoration Strategies

Special Studies

SCDHEC awarded the Town of Bluffton a Section 319 grant to implement a watershed-based plan to protect the May River. The goal of the project is to reduce fecal coliform levels in the May River, specifically at station 19-19. This multi-party grant will work to address all potential sources of fecal coliform. In addition to extensive educational efforts, the project includes a Stormwater Best Management Practices (BMPs) Pilot Project which will address approximately 20% of the Station 19-19 drainage area, a Unified Code Overhaul Project that addresses land use and zoning from a watershed perspective, a Septic System Inspection, Cleanout, and Replacement Program, and a Rain Barrel/Rain Garden installation project. Currently the project is scheduled to be completed in July 2012.

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APPENDIX A.

Tugaloo River/Seneca River Basin

Monitoring Site Descriptions

Ambient Water Quality Monitoring Sites

Station #	Type	Class	Description
03060102-02			
SV-308	W/BIO	ORW	EAST FORK CHATTOOGA RIVER AT SC 107, 2 MI S OF STATE LINE
SV-792	BIO	ORW	EAST FORK CHATTOOGA RIVER 300 MI DOWNSTREAM OF HATCHERY OUTFALL
SV-227	INT	ORW	CHATTOOGA RIVER AT SC 28, 3.5 MI NW MT REST
SV-199	W	ORW	CHATTOOGA RIVER AT US 76
SV-359	W	TPGT	LAKE TUGALOO , FOREBAY EQUIDISTANT FROM SPILLWAY AND SHORELINE
03060102-03			
RS-04538	RS04	FW	CHAUGA RIVER AT FOOT BRIDGE IN CHAU-RAM COUNTY PARK
SV-344	INT	FW	CHAUGA RIVER AT S-37-34
SV-225	BIO	FW	TOXAWAY CREEK AT S-37-34
RS-04380	RS04/BIO	FW	CHAUGA TRIB. AT BRIDGE ON Co.Rd.S-37-142, 5.8 MI SW OF WESTMINSTER
03060102-04			
RL-04376 RL04		FW	LAKE YONAH, 0.65 MI NNE OF SPILLWAY
SV-358	W	FW	LAKE YONAH, ½ WAY BETW. CENTER OF SPILLWAY AND OPPOSITE SHORE
RL-06444 RL06		FW	LAKE HARTWELL, 8.9 MI WSW OF WESTMINSTER
SV-200	INT	FW	TUGALOO RIVER ARM OF LAKE HARTWELL AT US 123
03060102-05			
SV-301	W	FW	NORRIS CREEK AT S-37-435, 1 MI S OF WESTMINSTER
SV-108	W/BIO	FW	CHOESTOEIA CREEK AT S-37-49
RL-03352	RL03	FW	LAKE HARTWELL, 0.9MI NE ANDERSON/OCONEE/HART CO. GA
SV-363	INT	FW	LK HARTWELL, OFF GLENN FORD LANDING US BEAVERDAM CK COVE
RL-03459	RL03	FW	LK HARTWELL, TUGALOO R. ARM APPROX. 1.2 MI S OF S-04-890 & S-04-23
SV-345	W/BIO	FW	BEAVERDAM CREEK AT S-37-66
RS-06170	RS06	FW	MUD CREEK AT BRIDGE ON S-37-99, 2.9 MI NE OF FAIR PLAY
SV-364	W	FW	BEAVERDAM CREEK AT SC 243
RL-03333	RL03	FW	LAKE HARTWELL, 3.9 MI NW OF SADLERS CREEK ST. PARK
03060101-01			
SV-335	INT	TPGT	L. JOCASSEE AT TOXAWAY R., HORSE PASTURE R. & LAUREL FK CK CONFL.
SV-334	W	TPGT	LAKE JOCASSEE, MAIN BODY
SV-337	W	TPGT	LAKE JOCASSEE OUTSIDE COFFER DAM AT BAD CREEK PROJECT
SV-336	INT	TPGT	LAKE JOCASSEE AT THOMPSON RIVER & WHITEWATER RIVER CONFLUENCE
RL-06430 RL06		TPGT	LAKE JOCASSEE, 1MI SSE OF DOUBLE SPRINGS MOUNTAIN
CL-019	INT	TP	GT LAKE JOCASSEE IN FOREBAY EQUIDAISTANT FROM DAM AND SHORELINES
03060101-02			
SV-741	BIO	ORW	EASTATOE CREEK AT S-39-237
SV-676	BIO	ORW	ROCKY BOTTOM CREEK AT US 178
SV-230	SPRP	T	PGT EASTATOE CREEK AT S-39-143
RS-05392 RS05		ORW	LITTLE EASTATOE CREEK, BESIDE SR-49, 8.4 MI NW OF PICKENS
SV-341	SPRP/BIO	TPGT	LITTLE EASTATOE CREEK AT S-39-49
RL-04380 RL04		ORW	EASTATOE Ck ARM OF L. KEOWEE, 0.5 MIN N OF STATE PARK
SV-338	INT	FW	LAKE KEOWEE ABOVE SC 130 AND DAM
RL-02304 RL02		ORW	LAKE KEOWEE, 7.0 MI E OF WALHALLA

Station #	Type	Class	Description
03060101-03			
RS-02466 RS02		TN	BURGESS CREEK AT S-37-171
SV-684	BIO	FW	CRANE CREEK AT WINDING STAIRS RD
SV-742	BIO	FW	OCONEE CREEK AT S-37-129
SV-203	W	FW	LITTLE RIVER AT S-37-24 7.1 MI NE OF WALHALLA
RL-03354 RL03		FW	LAKE KEOWEE, 1.6 MI NW OF SC 188 & 0.7 MI SE OF S-37-175
SV-312	W	FW	LAKE KEOWEE AT SC 188 – CROOKED CK ARM 4.5 MI N SENECA
RL-05466 RL05		FW	LAKE KEOWEE, 0.25 MI NWN OF S-37-340 & S-37-588
SV-361	INT	FW	LAKE KEOWEE IN FOREBAY OF LITTLE RIVER DAM
SV-342	SPRP	FW	CANE CREEK AT S-37-133
SV-807	SS	FW	LITTLE CANE CREEK AT NELLIE ROAD
SV-808	SS	FW	LITTLE CANE CREEK AT AUSTIN EDWARDS ROAD
SV-809	SS	TN	LITTLE CANE CREEK AT OCONEE BELLE LANE
SV-810	SS	FW	LITTLE CANE CREEK AT PICKENS HIGHWAY
SV-811	SS	FW	LITTLE CANE CREEK TRIBUTARY NEAR PICKENS HIGHWAY
SV-812	SS	FW	LITTLE CANE CREEK TRIBUTARY AT TAYLOR ROAD
SV-343	W/BIO	FW	LITTLE CANE CREEK AT S-37-133
SV-311	W	FW	LAKE KEOWEE AT SC 188 – CANE CK ARM 3.5 MI NW SENECA
RL-05394 RL05		FW	LAKE KEOWEE, 5.06 MI NNW OF SENECA
03060101-04			
SV-206	SEDM/BIO	FW	NORTH FORK AT US 178, 2.9 MI N OF PICKENS
SV-740	BIO	FW	RICES CREEK AT S-39-158
SV-362	INT	FW	TWELVEMILE CREEK AT S-39-137
SV-239	W	FW	GOLDEN CREEK AT S-39-222, 1.2 MI NW OF LIBERTY
SV-738	BIO	FW	GOLDEN CREEK AT GOLDEN CREEK ROAD
SV-137	INT	FW	TWELVEMILE CREEK AT S-39-337
SV-136	W	FW	1ST CREEK AFTER LEAVING CENTRAL AT CLVT ON MAW BRIDGE RD
03060101-05			
RS-02304 RS02		FW	COLONELS FORK CREEK AT S-37-91
SV-333	W	FW	CONEROSS CREEK AT S-37-13
SV-004	INT	FW	CONEROSS CREEK AT SC 59
RS-05412 RS05/BIO		FW	SNOW CREEK AT S-37-51, 4.9 MI SW OF SENECA
SV-236	W	FW	CONEROSS CK ARM OF LAKE HARTWELL AT S-37-184, 6.5 MI SSE OF SENECA
03060101-06			
SV-017	W	FW	EIGHTEENMILE CREEK AT UNNUMBERED COUNTY RD, 2.25 MI SSW OF EASLEY
SV-241	W	FW	WOODSIDE BRANCH AT US 123, 1.5 MI E OF LIBERTY
SV-245	W	FW	EIGHTEENMILE CREEK AT S-39-27, 3.3 MI S OF LIBERTY
SV-135	W	FW	EIGHTEENMILE CREEK AT S-39-93, S OF CENTRAL
SV-233	INT	FW	EIGHTEENMILE CREEK AT S-04-279
SV-268	SUMM	FW	EIGHTEENMILE CREEK ARM OF LAKE HARTWELL AT S-04-1098
RL-05392 RL05		FW	EIGHTEENMILE CREEK ARM OF LAKE HARTWELL, 5.96 MI SSW OF PENDLETON
03060101-07			
RS-03506	RS03/BIO	FW	CHARLES CREEK AT UNNUMBERED RIDGE ROAD OFF S-04-485
SV-735	BIO	FW	THREE AND TWENTY CREEK AT S-04-29
SV-111	INT	FW	THREE AND TWENTY CREEK AT S-04-280
SV-180	BIO	FW	SIX AND TWENTY CREEK AT S-04-174
SV-181	W	FW	SIX AND TWENTY CREEK AT S-04-29, 8.2 MI SE OF PENDLETON

Station #	Type	Class	Description
03060101-08			
SV-249	W	FW	LAKE HARTWELL HEADWATERS, KEOWEE RIVER ARM AT SC 183
SV-205	W/BIO	FW	SIXMILE CREEK AT S-39-160
SV-683	BIO	FW	WILDCAT CREEK AT CLEMSON UNIV. REC. AREA OFF SC 133
SV-360	W	FW	LAKE ISSAQUEENA, FOREBAY EQUIDISTANT FROM DAM AND SHORELINE
RL-06432	RL06	FW	LAKE ISSAQUEENA, 0.1 MI N OF SPILLWAY
SV-106	W	FW	MARTIN CREEK ARM OF LAKE HARTWELL AT S-37-65 N OF CLEMSON
RL-04378	RL04	FW	L. HARTWELL, SENECA R. ARM 0.8 MI WNW OF CLEMSON LOOKOUT TOWER
RL-02330	RL02	FW	L. HARTWELL, 0.4 MI SE OF OCONEE/ANDERSON CO. LINE, 5 MI W OF SANDY SPRINGS
SV-288	W	FW	L. HARTWELL, SENECA R. ARM AT USACE BUOY BETW MRKRS S-28A & S-29
RL-05417	RL05	FW	L. HARTWELL, 0.3 MI S OF SC 24 BRIDGE OVER SENECA R. ARM
SV-339	INT	FW	LAKE HARTWELL, SENECA R. ARM AT USACE BUOY BETW MRKRS S-14 & S-15

Groundwater Monitoring Sites

Well #	Class	Aquifer	Location
03060101-05			
AMB-070	GB	SAPROLITE	MOUNTAIN REST DEEP
AMB-081	GB	PIEDMONT BEDROCK	MOUNTAIN REST SHALLOW

For further details concerning sampling frequency and parameters sampled, please visit our website at www.scdhec.gov/eqc/admin/html/eqcpubs.html#wqreports for the current State of S.C. Monitoring Strategy.

Water Quality Data Spreadsheet Legend

Station Information:

STATION NUMBER Station ID

TYPE

SCDHEC station type code

P = Primary station, sampled monthly all year round

S = Secondary station, sampled monthly May - October

P* = Secondary station upgraded to primary station parameter coverage and sampling frequency for basin study

W = Special watershed station added for the Savannah River Basin study

BIO = Indicates macroinvertebrate community data assessed

INT = Integrator Station (approximates a Primary station)

RL = Random Lake station

RO = Random Open water station

RS = Random Stream station

RT = Random Tide Creek station

WATERBODY NAME Stream or Lake Name

CLASS Stream classification at the point where monitoring station is located

Parameter Abbreviations and Parameter Measurement Units:

DO Dissolved Oxygen (mg/l)

BOD Five-Day Biochemical Oxygen Demand (mg/l)

pH pH (SU)

TP Total Phosphorus (mg/l)

TN Total Nitrogen (mg/l)

TURB Turbidity (NTU)

TSS Total Suspended Solids (mg/l)

BACT Fecal Coliform Bacteria (#/100 ml)

NH3 Ammonia (mg/l)

CD Cadmium (ug/l)

CR Chromium (ug/l)

CU Copper (ug/l)

PB Lead (ug/l)

HG Mercury (ug/l)

NI Nickel (ug/l)

ZN Zinc (ug/l)

Statistical Abbreviations:

N For *standards compliance*, number of surface samples collected between January 2002 and December 2006.

For *trends*, number of surface samples collected between January 1992 and December 2006.

EXC. Number of samples contravening the appropriate standard

% Percentage of samples contravening the appropriate standard

MEAN EXC. Mean of samples that contravened the applied standard

MED For *heavy metals with a human health criterion*, this is the median of all surface samples between January 2002 and December 2006. DL indicates that the median was the detection limit.

MAG Magnitude of any statistically significant trend, average change per year, expressed in parameter measurement units

GEO MEAN Geometric mean of fecal coliform bacteria samples collected between January 2002 and December 2006

Key to Trends:

D Statistically significant decreasing trend in parameter concentration

I Statistically significant increasing trend in parameter concentration

***** No statistically significant trend

Appendix A. Tugaloo/Seneca River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	DO N	DO EXC.	DO %	MEAN EXC.	TRENDS (92-2006)					
								DO	N	MAG	BOD	N	MAG
03060102-02													
SV-308	SS	E FORK CHATTOOGA RVR	ORW	12	0	0	0	NS	64	0	I	62	0.1
SV-792		E FORK CHATTOOGA RVR	TN	1	0	0	0						
SV-227	INT	CHATTOOGA RVR	ORW	58	0	0	0	NS	184	0.0193	I	180	0.108
SV-199	SS	CHATTOOGA RVR	ORW	12	0	0	0	NS	129	0.0333	I	126	0.0449
SV-359/ RL-02320	SS	LAKE, TUGALOO	TPGT	24	0	0	0	NS	45	-0.0078	I	43	0.15
03060102-03													
RS-04538	RS04	CHAUGA RVR	FW	11	0	0	0						
SV-344	INT	CHAUGA RVR	FW	57	0	0	0	NS	94	-0.05	I	90	0
SV-225		TOXAWAY CK											
RS-04380	RS04	UNNAMED TRIB	FW	12	0	0	0						
03060102-04													
RL-04376	RL04	LAKE YONAH	FW	13	0	0	0						
SV-358	SS	LAKE YONAH	FW	13	0	0	0	NS	33	-0.0522	I	31	0.1611
RL-06444	RL06	LAKE HARTWELL	FW	12	0	0	0						
SV-200	INT	LAKE HARTWELL	FW	60	1	2	3.95	NS	136	-0.0286	I	131	0.0889
03060102-05													
SV-301	SS	NORRIS CK	FW	12	0	0	0	NS	64	0.0291	I	62	0.1
SV-108	SS	CHOESTOEAK CK	FW	12	0	0	0	NS	37	0.0368	I	36	0.1472
SV-809		LITTLE CANE CK	TN										
RL-03352	RL03	LAKE HARTWELL	FW	12	0	0	0						
SV-363	INT	LAKE HARTWELL	FW	60	0	0	0	I	71	0.126	NS	66	0
RL-03459	RL03	LAKE HARTWELL	FW	11	0	0	0						
SV-345	SS	BEAVERDAM CK	FW	14	0	0	0	NS	40	-0.02	NS	37	0.0472
RS-06170	RS06	MUD CK	FW	12	0	0	0						
SV-364	SS	BEAVERDAM CK	FW	11	1	9	4.81						
RL-03333	RL03	LAKE HARTWELL	FW	12	0	0	0						
03060101-01													
SV-335	INT	LAKE JOCASSEE	TPGT	60	0	0	0	D	200	-0.0216	I	173	0.108
SV-334	SS	LAKE JOCASSEE	TPGT	12	0	0	0	NS	140	0	NS	121	0.0167
SV-337	SS	LAKE JOCASSEE	TPGT	12	0	0	0	NS	145	-0.0005	I	117	0.02
SV-336	INT	LAKE JOCASSEE	TPGT	60	0	0	0	NS	196	-0.0167	I	171	0.1
RL-06430	RL06	LAKE JOCASSEE	TPGT	12	0	0	0						
CL-019	INT	LAKE JOCASSEE	TPGT	60	0	0	0	I	71	0.18	NS	63	0

Appendix A. Tugaloo/Seneca River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	pH			MEAN EXC.	TRENDS (92-2006)			TURB N	TURB EXC.	TURB %	MEAN EXC.	TRENDS (92-2006)		
				N	EXC.	%		PH	N	MAG					TURB	N	MAG
03060102-02																	
SV-308	SS	E FORK CHATTOOGA RVR	ORW	12	3	25	7.38	NS	64	0.005	12	1	8	61	NS	63	0
SV-792		E FORK CHATTOOGA RVR	TN	1	0	0	0										
SV-227	INT	CHATTOOGA RVR	ORW	59	6	10	5.6517	NS	186	-0.0107	60	1	2	140	D	185	-0.0345
SV-199	SS	CHATTOOGA RVR	ORW	12	1	8	5.93	NS	129	0.012	12	0	0	0	D	128	-0.1111
SV-359/ RL-02320	SS	LAKE, TUGALOO	TPGT	24	3	13	6.4067	D	45	-0.078	24	0	0	0	NS	45	0.0417
03060102-03																	
RS-04538	RS04	CHAUGA RVR	FW	11	0	0	0				12	0	0	0			
SV-344	INT	CHAUGA RVR	FW	59	0	0	0	NS	96	-0.0238	60	1	2	55	NS	97	0
SV-225		TOXAWAY CK															
RS-04380	RS04	UNNAMED TRIB	FW	12	0	0	0				12	0	0	0			
03060102-04																	
RL-04376	RL04	LAKE YONAH	FW	13	1	8	5.49				13	0	0	0			
SV-358	SS	LAKE YONAH	FW	13	2	15	5.91	NS	33	-0.0703	13	0	0	0	NS	33	-0.0528
RL-06444	RL06	LAKE HARTWELL	FW	12	0	0	0				12	1	8	28			
SV-200	INT	LAKE HARTWELL	FW	60	5	8	6.312	NS	136	0	60	1	2	26	NS	135	-0.1
03060102-05																	
SV-301	SS	NORRIS CK	FW	12	1	8	5.69	I	64	0.0204	12	1	8	100	D	62	-0.3667
SV-108	SS	CHOESTOEA CK	FW	12	1	8	5.76	NS	37	0.0017	12	2	17	135	NS	38	-0.4958
SV-809		LITTLE CANE CK	TN														
RL-03352	RL03	LAKE HARTWELL	FW	12	1	8	5.94				12	0	0	0			
SV-363	INT	LAKE HARTWELL	FW	60	1	2	5.86	NS	71	0.01	59	0	0	0	D	70	-0.1
RL-03459	RL03	LAKE HARTWELL	FW	11	0	0	0				12	0	0	0			
SV-345	SS	BEAVERDAM CK	FW	14	3	21	5.73	NS	40	0.0189	13	1	8	110	NS	40	-0.375
RS-06170	RS06	MUD CK	FW	12	1	8	5.9				12	0	0	0			
SV-364	SS	BEAVERDAM CK	FW	11	2	18	7.345				11	0	0	0			
RL-03333	RL03	LAKE HARTWELL	FW	12	1	8	5.94				12	0	0	0			
03060101-01																	
SV-335	INT	LAKE JOCASSEE	TPGT	58	1	2	5.91	NS	193	0.0071	59	0	0	0	NS	178	0
SV-334	SS	LAKE JOCASSEE	TPGT	12	1	8	5.78	I	134	0.0333	12	0	0	0	NS	122	-0.008
SV-337	SS	LAKE JOCASSEE	TPGT	12	1	8	5.96	I	139	0.0333	12	0	0	0	D	119	-0.0143
SV-336	INT	LAKE JOCASSEE	TPGT	58	2	3	5.965	NS	187	0.0038	58	0	0	0	NS	176	0
RL-06430	RL06	LAKE JOCASSEE	TPGT	12	0	0	0				11	0	0	0			
CL-019	INT	LAKE JOCASSEE	TPGT	58	2	3	5.74	I	69	0.0435	59	0	0	0	NS	69	0

Appendix A. Tugalo/Seneca River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	TP N	TP EXC.	TP %	MEAN EXC.	TRENDS (92-2006)			TN N	TN EXC.	TN %	MEAN EXC.	TRENDS (92-2006)		
								TP	N	MAG					TN	N	MAG
03060102-02																	
SV-308	SS	E FORK CHATTOOGA RVR	ORW					NS	48	0							
SV-792		E FORK CHATTOOGA RVR	TN														
SV-227	INT	CHATTOOGA RVR	ORW					D	147	0					I	160	0.002
SV-199	SS	CHATTOOGA RVR	ORW					D	99	0					NS	122	0
SV-359/ RL-02320	SS	LAKE, TUGALOO	TPGT	23	0	0	0				16	0	0	0	I	35	0.017
03060102-03																	
RS-04538	RS04	CHAUGA RVR	FW														
SV-344	INT	CHAUGA RVR	FW					NS	71	0					I	75	0.0058
SV-225		TOXAWAY CK															
RS-04380	RS04	UNNAMED TRIB	FW														
03060102-04																	
RL-04376	RL04	LAKE YONAH	FW	12	1	8	0.02				12	3	25	0.6533			
SV-358	SS	LAKE YONAH	FW	13	1	8	0.02				12	3	25	0.4967	I	32	0.0104
RL-06444	RL06	LAKE HARTWELL	FW	12	0	0	0				9	0	0	0			
SV-200	INT	LAKE HARTWELL	FW	59	1	2	0.11	D	104	0	42	0	0	0	NS	75	0.0032
03060102-05																	
SV-301	SS	NORRIS CK	FW					NS	50	0							
SV-108	SS	CHOESTOEIA CK	FW												I	36	0.0239
SV-809		LITTLE CANE CK	TN														
RL-03352	RL03	LAKE HARTWELL	FW	12	0	0	0				6	0	0	0			
SV-363	INT	LAKE HARTWELL	FW	60	0	0	0	NS	60	0	45	0	0	0	NS	52	0.0108
RL-03459	RL03	LAKE HARTWELL	FW	12	0	0	0				6	0	0	0			
SV-345	SS	BEAVERDAM CK	FW												NS	37	-0.0014
RS-06170	RS06	MUD CK	FW														
SV-364	SS	BEAVERDAM CK	FW														
RL-03333	RL03	LAKE HARTWELL	FW	12	0	0	0				6	0	0	0			
03060101-01																	
SV-335	INT	LAKE JOCASSEE	TPGT	59	4	7	0.025	D	144	0	41	3	7	0.47	I	152	0.0014
SV-334	SS	LAKE JOCASSEE	TPGT	12	0	0	0	D	99	0	12	0	0	0	NS	120	0
SV-337	SS	LAKE JOCASSEE	TPGT	12	0	0	0	D	90	0	12	2	17	0.39	I	112	0
SV-336	INT	LAKE JOCASSEE	TPGT	59	4	7	0.0275	D	138	0	44	6	14	0.5017	I	151	0.0018
RL-06430	RL06	LAKE JOCASSEE	TPGT	12	2	17	0.03				10	1	10	0.41			
CL-019	INT	LAKE JOCASSEE	TPGT	58	2	3	0.03	NS	58	0	41	4	10	0.5125	NS	50	0.009

Appendix A. Tugaloo/Seneca River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	CHL N	CHL EXC.	CHL %	MEAN EXC.	TRENDS (92-2006)		
								TSS	N	MAG
03060102-02										
SV-308	SS	E FORK CHATTOOGA RVR	ORW							
SV-792		E FORK CHATTOOGA RVR	TN							
SV-227	INT	CHATTOOGA RVR	ORW							
SV-199	SS	CHATTOOGA RVR	ORW							
SV-359/ RL-02320	SS	LAKE, TUGALOO	TPGT	8	0	0	0			
03060102-03										
RS-04538	RS04	CHAUGA RVR	FW							
SV-344	INT	CHAUGA RVR	FW							
SV-225		TOXAWAY CK								
RS-04380	RS04	UNNAMED TRIB	FW							
03060102-04										
RL-04376	RL04	LAKE YONAH	FW	6	0	0	0			
SV-358	SS	LAKE YONAH	FW	5	0	0	0			
RL-06444	RL06	LAKE HARTWELL	FW	6	0	0	0			
SV-200	INT	LAKE HARTWELL	FW	25	0	0	0			
03060102-05										
SV-301	SS	NORRIS CK	FW							
SV-108	SS	CHOESTOEA CK	FW							
SV-809		LITTLE CANE CK	TN							
RL-03352	RL03	LAKE HARTWELL	FW	6	0	0	0			
SV-363	INT	LAKE HARTWELL	FW	29	0	0	0			
RL-03459	RL03	LAKE HARTWELL	FW	6	0	0	0			
SV-345	SS	BEAVERDAM CK	FW							
RS-06170	RS06	MUD CK	FW							
SV-364	SS	BEAVERDAM CK	FW							
RL-03333	RL03	LAKE HARTWELL	FW	6	0	0	0			
03060101-01										
SV-335	INT	LAKE JOCASSEE	TPGT	28	0	0	0			
SV-334	SS	LAKE JOCASSEE	TPGT	5	0	0	0			
SV-337	SS	LAKE JOCASSEE	TPGT	5	0	0	0			
SV-336	INT	LAKE JOCASSEE	TPGT	29	0	0	0			
RL-06430	RL06	LAKE JOCASSEE	TPGT	6	0	0	0			
CL-019	INT	LAKE JOCASSEE	TPGT	29	0	0	0			

Appendix A. Tugaloo/Seneca River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	GEO MEAN	BACT N	BACT EXC.	BACT %	MEAN EXC.	TRENDS (92-2006)			
									BACT	N	MAG	
03060102-02												
SV-308	SS	E FORK CHATTOOGA RVR	ORW	16.3104	12	0	0	0	NS	64	1	
SV-792		E FORK CHATTOOGA RVR	TN									
SV-227	INT	CHATTOOGA RVR	ORW	11.399	59	1	2	2700	I	183	0.4	
SV-199	SS	CHATTOOGA RVR	ORW	20.6235	12	0	0	0	NS	128	-0.4615	
SV-359/ RL-02320	SS	LAKE, TUGALOO	TPGT	4.0529	25	0	0	0	NS	46	0	
03060102-03												
RS-04538	RS04	CHAUGA RVR	FW	68.1502	12	1	8	420				
SV-344	INT	CHAUGA RVR	FW	56.6791	60	5	8	810	NS	97	0.6667	
SV-225		TOXAWAY CK										
RS-04380	RS04	UNNAMED TRIB	FW	335.8732	12	4	33	1572.5				
03060102-04												
RL-04376	RL04	LAKE YONAH	FW	3.9392	13	1	8	1100				
SV-358	SS	LAKE YONAH	FW	6.3015	13	0	0	0	NS	33	0	
RL-06444	RL06	LAKE HARTWELL	FW	22.2672	12	0	0	0				
SV-200	INT	LAKE HARTWELL	FW	6.749	60	2	3	645	NS	136	0.1111	
03060102-05												
SV-301	SS	NORRIS CK	FW	320.9437	12	3	25	5000	NS	63	-11.25	
SV-108	SS	CHOESTOEA CK	FW	402.3519	12	5	42	3212	NS	37	9.5556	
SV-809		LITTLE CANE CK	TN	618.6248	18	12	67	1531.6667				
RL-03352	RL03	LAKE HARTWELL	FW	2.773	12	0	0	0				
SV-363	INT	LAKE HARTWELL	FW	1.3337	60	0	0	0	NS	70	0	
RL-03459	RL03	LAKE HARTWELL	FW	1.7373	12	0	0	0				
SV-345	SS	BEAVERDAM CK	FW	258.0839	34	7	21	2620	NS	62	0.7374	
RS-06170	RS06	MUD CK	FW	182.5074	12	2	17	605				
SV-364	SS	BEAVERDAM CK	FW	113.747	11	2	18	1260				
RL-03333	RL03	LAKE HARTWELL	FW	1.5199	12	0	0	0				
03060101-01												
SV-335	INT	LAKE JOCASSEE	TPGT	1.171	60	0	0	0	D	179	0	
SV-334	SS	LAKE JOCASSEE	TPGT	1.2301	12	0	0	0	D	119	0	
SV-337	SS	LAKE JOCASSEE	TPGT	1.5993	12	0	0	0	D	118	0	
SV-336	INT	LAKE JOCASSEE	TPGT	1.151	60	0	0	0	D	178	0	
RL-06430	RL06	LAKE JOCASSEE	TPGT	1.0959	12	0	0	0				
CL-019	INT	LAKE JOCASSEE	TPGT	1.4503	60	0	0	0	I	71	0	

Appendix A. Tugaloo/Seneca River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	NH3 N	NH3 EXC.	NH3 %	MEAN EXC.	CD N	CD EXC.	CD %	MEAN EXC.	CR N	CR EXC.	CR %	MEAN EXC.
03060102-02															
SV-308	SS	E FORK CHATTOOGA RVR	ORW	10	0	0	0	4	0	0	0	4	0	0	0
SV-792		E FORK CHATTOOGA RVR	TN												
SV-227	INT	CHATTOOGA RVR	ORW	39	0	0	0	20	0	0	0	20	1	5	140
SV-199	SS	CHATTOOGA RVR	ORW	10	0	0	0	4	0	0	0	4	0	0	0
SV-359/ RL-02320	SS	LAKE, TUGALOO	TPGT	17	0	0	0	8	0	0	0	8	0	0	0
03060102-03															
RS-04538	RS04	CHAUGA RVR	FW	9	0	0	0	4	0	0	0	4	0	0	0
SV-344	INT	CHAUGA RVR	FW	43	0	0	0	20	0	0	0	20	0	0	0
SV-225		TOXAWAY CK													
RS-04380	RS04	UNNAMED TRIB	FW	11	0	0	0	4	0	0	0	4	0	0	0
03060102-04															
RL-04376	RL04	LAKE YONAH	FW	12	0	0	0	4	0	0	0	4	1	25	110
SV-358	SS	LAKE YONAH	FW	11	0	0	0	4	0	0	0	4	0	0	0
RL-06444	RL06	LAKE HARTWELL	FW	9	0	0	0	4	0	0	0	4	0	0	0
SV-200	INT	LAKE HARTWELL	FW	44	0	0	0	20	0	0	0	20	0	0	0
03060102-05															
SV-301	SS	NORRIS CK	FW	11	0	0	0	4	0	0	0	4	0	0	0
SV-108	SS	CHOESTOE CK	FW	12	0	0	0	4	0	0	0	4	0	0	0
SV-809		LITTLE CANE CK	TN												
RL-03352	RL03	LAKE HARTWELL	FW	6	0	0	0	4	0	0	0	4	0	0	0
SV-363	INT	LAKE HARTWELL	FW	42	0	0	0	20	0	0	0	20	0	0	0
RL-03459	RL03	LAKE HARTWELL	FW	6	0	0	0	4	0	0	0	4	0	0	0
SV-345	SS	BEAVERDAM CK	FW	13	0	0	0	4	0	0	0	4	0	0	0
RS-06170	RS06	MUD CK	FW	7	0	0	0	4	0	0	0	4	0	0	0
SV-364	SS	BEAVERDAM CK	FW	11	0	0	0	4	0	0	0	4	0	0	0
RL-03333	RL03	LAKE HARTWELL	FW	6	0	0	0	4	0	0	0	4	0	0	0
03060101-01															
SV-335	INT	LAKE JOCASSEE	TPGT	42	0	0	0	20	0	0	0	20	0	0	0
SV-334	SS	LAKE JOCASSEE	TPGT	11	0	0	0	4	0	0	0	4	0	0	0
SV-337	SS	LAKE JOCASSEE	TPGT	11	0	0	0	4	0	0	0	4	0	0	0
SV-336	INT	LAKE JOCASSEE	TPGT	41	0	0	0	20	0	0	0	20	0	0	0
RL-06430	RL06	LAKE JOCASSEE	TPGT	5	0	0	0	4	0	0	0	4	0	0	0
CL-019	INT	LAKE JOCASSEE	TPGT	39	0	0	0	20	0	0	0	20	0	0	0

Appendix A. Tugaloo/Seneca River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	CU N	CU EXC.	CU %	MEAN EXC.	PB N	PB EXC.	PB %	MEAN EXC.	HG N	HG EXC.	HG %	MEAN EXC.
03060102-02															
SV-308	SS	E FORK CHATTOOGA RVR	ORW	4	0	0	0	4	0	0	0	4	0	0	0
SV-792		E FORK CHATTOOGA RVR	TN												
SV-227	INT	CHATTOOGA RVR	ORW	20	1	5	15	20	0	0	0	20	0	0	0
SV-199	SS	CHATTOOGA RVR	ORW	4	0	0	0	4	0	0	0	4	0	0	0
SV-359/ RL-02320	SS	LAKE, TUGALOO	TPGT	8	1	13	23	8	0	0	0	8	0	0	0
03060102-03															
RS-04538	RS04	CHAUGA RVR	FW	4	0	0	0	4	0	0	0	4	0	0	0
SV-344	INT	CHAUGA RVR	FW	20	1	5	110	20	0	0	0	20	0	0	0
SV-225		TOXAWAY CK													
RS-04380	RS04	UNNAMED TRIB	FW	4	1	25	18	4	0	0	0	4	0	0	0
03060102-04															
RL-04376	RL04	LAKE YONAH	FW	4	0	0	0	4	0	0	0	4	0	0	0
SV-358	SS	LAKE YONAH	FW	4	0	0	0	4	0	0	0	4	0	0	0
RL-06444	RL06	LAKE HARTWELL	FW	4	0	0	0	4	0	0	0	4	0	0	0
SV-200	INT	LAKE HARTWELL	FW	20	0	0	0	20	0	0	0	20	0	0	0
03060102-05															
SV-301	SS	NORRIS CK	FW	4	0	0	0	4	0	0	0	4	0	0	0
SV-108	SS	CHOESTOEA CK	FW	4	0	0	0	4	0	0	0	4	0	0	0
SV-809		LITTLE CANE CK	TN												
RL-03352	RL03	LAKE HARTWELL	FW	4	1	25	21	4	0	0	0	4	0	0	0
SV-363	INT	LAKE HARTWELL	FW	20	0	0	0	20	0	0	0	20	0	0	0
RL-03459	RL03	LAKE HARTWELL	FW	4	0	0	0	4	0	0	0	4	0	0	0
SV-345	SS	BEAVERDAM CK	FW	4	0	0	0	4	0	0	0	4	0	0	0
RS-06170	RS06	MUD CK	FW	4	0	0	0	4	0	0	0	4	0	0	0
SV-364	SS	BEAVERDAM CK	FW	4	0	0	0	4	0	0	0	4	0	0	0
RL-03333	RL03	LAKE HARTWELL	FW	4	1	25	15	4	0	0	0	4	0	0	0
03060101-01															
SV-335	INT	LAKE JOCASSEE	TPGT	20	1	5	31	20	0	0	0	20	0	0	0
SV-334	SS	LAKE JOCASSEE	TPGT	4	0	0	0	4	0	0	0	4	0	0	0
SV-337	SS	LAKE JOCASSEE	TPGT	4	0	0	0	4	0	0	0	4	0	0	0
SV-336	INT	LAKE JOCASSEE	TPGT	20	0	0	0	20	0	0	0	20	0	0	0
RL-06430	RL06	LAKE JOCASSEE	TPGT	4	0	0	0	4	0	0	0	4	0	0	0
CL-019	INT	LAKE JOCASSEE	TPGT	20	0	0	0	20	0	0	0	20	0	0	0

Appendix A. Tugaloo/Seneca River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	NI N	NI EXC.	NI %	MEAN EXC.	ZN N	ZN EXC.	ZN %	MEAN EXC.
03060102-02											
SV-308	SS	E FORK CHATTOOGA RVR	ORW	4	0	0	0	4	0	0	0
SV-792		E FORK CHATTOOGA RVR	TN								
SV-227	INT	CHATTOOGA RVR	ORW	20	1	5	56	20	0	0	0
SV-199	SS	CHATTOOGA RVR	ORW	4	1	25	31	4	0	0	0
SV-359/ RL-02320	SS	LAKE, TUGALOO	TPGT	8	0	0	0	8	0	0	0
03060102-03											
RS-04538	RS04	CHAUGA RVR	FW	4	0	0	0	4	0	0	0
SV-344	INT	CHAUGA RVR	FW	20	0	0	0	20	0	0	0
SV-225		TOXAWAY CK									
RS-04380	RS04	UNNAMED TRIB	FW	4	0	0	0	4	0	0	0
03060102-04											
RL-04376	RL04	LAKE YONAH	FW	4	1	25	100	4	0	0	0
SV-358	SS	LAKE YONAH	FW	4	0	0	0	4	0	0	0
RL-06444	RL06	LAKE HARTWELL	FW	4	0	0	0	4	0	0	0
SV-200	INT	LAKE HARTWELL	FW	20	0	0	0	20	0	0	0
03060102-05											
SV-301	SS	NORRIS CK	FW	4	0	0	0	4	0	0	0
SV-108	SS	CHOESTOEIA CK	FW	4	0	0	0	4	0	0	0
SV-809		LITTLE CANE CK	TN								
RL-03352	RL03	LAKE HARTWELL	FW	4	0	0	0	4	0	0	0
SV-363	INT	LAKE HARTWELL	FW	20	0	0	0	20	0	0	0
RL-03459	RL03	LAKE HARTWELL	FW	4	0	0	0	4	0	0	0
SV-345	SS	BEAVERDAM CK	FW	4	0	0	0	4	0	0	0
RS-06170	RS06	MUD CK	FW	4	0	0	0	4	0	0	0
SV-364	SS	BEAVERDAM CK	FW	4	0	0	0	4	0	0	0
RL-03333	RL03	LAKE HARTWELL	FW	4	0	0	0	4	0	0	0
03060101-01											
SV-335	INT	LAKE JOCASSEE	TPGT	20	0	0	0	20	1	5	86
SV-334	SS	LAKE JOCASSEE	TPGT	4	0	0	0	4	0	0	0
SV-337	SS	LAKE JOCASSEE	TPGT	4	0	0	0	4	0	0	0
SV-336	INT	LAKE JOCASSEE	TPGT	20	0	0	0	20	1	5	170
RL-06430	RL06	LAKE JOCASSEE	TPGT	4	0	0	0	4	0	0	0
CL-019	INT	LAKE JOCASSEE	TPGT	20	0	0	0	20	0	0	0

Appendix A. Tugaloo/Seneca River Basin

STATION				DO	DO	DO	MEAN	TRENDS (92-2006)					
NUMBER	TYPE	WATERBODY NAME	CLASS	N	EXC.	%	EXC.	DO	N	MAG	BOD	N	MAG
03060101-02													
SV-741		EASTATOE CK											
SV-676		ROCKY BOTTOM CK											
SV-230	SPRP	EASTATOE CK	TPGT	58	0	0	0	I	179	0.0333	I	175	0.1083
RS-05392	RS05	LITTLE EASTATOE CK	TPGT	12	0	0	0						
SV-341	SPRP	LITTLE EASTATOE CK	TPGT	58	0	0	0	NS	94	0.0203	I	88	0
RL-04380	RL04	LAKE KEOWEE	FW	12	0	0	0						
SV-338	INT	LAKE KEOWEE	FW	59	0	0	0	NS	197	-0.0129	I	173	0.1038
RL-02304	RL02	LAKE KEOWEE	FW	11	0	0	0						
03060101-03													
RS-02466	RS02	BURGESS CK	TN	11	2	18	5.125						
SV-684		CRANE CK											
SV-742		OCONEE CK											
SV-203	SS	LITTLE RVR	FW	12	0	0	0	NS	78	0.0225	I	76	0.1
RL-03354	RL03	LAKE KEOWEE	FW	12	0	0	0						
SV-312	SS	LAKE KEOWEE	FW	12	0	0	0	NS	142	-0.013	NS	118	0
RL-05466	RL05	LAKE KEOWEE	FW	13	0	0	0						
SV-361	INT	LAKE KEOWEE	FW	58	0	0	0	I	69	0.14	NS	63	0
SV-342	SPRP	CANE CK	FW	58	1	2	4.85	NS	95	-0.0061	I	91	0
SV-807		LITTLE CANE CK	TN										
SV-808		LITTLE CANE CK	TN										
SV-810		LITTLE CANE CK	TN										
SV-811		UNNAMED TRIB TO LITTLE CANE CK	TN										
SV-812		UNNAMED TRIB TO LITTLE CANE CK	TN										
SV-343	SS	LITTLE CANE CK	FW	27	0	0	0	NS	53	0.0575	I	36	0.1578
SV-311	SS	LAKE KEOWEE	FW	12	0	0	0	D	146	-0.025	NS	119	0.0167
RL-05394	RL05	LAKE KEOWEE	FW	12	0	0	0						
03060101-04													
SV-206	SEDM	NORTH FORK	FW					NS	52	-0.01	I	52	0.0333
SV-740		RICES CK											
SV-362	INT	TWELVE MILE CK	FW	60	0	0	0	NS	70	0.1297	NS	66	0
SV-239	SS	GOLDEN CK	FW	12	0	0	0	NS	64	0.0025	NS	62	0.025
SV-738		GOLDEN CK											
SV-137	INT	TWELVE MILE CK	FW	59	0	0	0	NS	103	-0.0312	I	100	0.0625
SV-136	SS	UNNAMED	FW	12	0	0	0	NS	65	0.0333	I	62	0.05
03060101-05													
RS-02304	RS02	COLONELS FORK CK	FW	11	1	9	3.96						
SV-333	SS	CONEROSS CK	FW	12	0	0	0	I	144	0.0354	I	139	0.0563
SV-004	INT	CONEROSS CK	FW	58	1	2	4.79	NS	174	0	I	168	0.1
RS-05412	RS05	SNOW CK	FW	12	0	0	0						
SV-236	SS	LAKE HARTWELL	FW	12	0	0	0	D	98	-0.05	I	85	0.0667

Appendix A. Tugaloo/Seneca River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	pH			MEAN EXC.	TRENDS (92-2006)			TURB			MEAN EXC.	TRENDS (92-2006)		
				N	EXC.	%		PH	N	MAG	N	EXC.	%		TURB	N	MAG
03060101-02																	
SV-741		EASTATOE CK															
SV-676		ROCKY BOTTOM CK															
SV-230	SPRP	EASTATOE CK	TPGT	58	3	5	5.8467	NS	181	0.0023	56	6	11	17.5	D	179	-0.24
RS-05392	RS05	LITTLE EASTATOE CK	TPGT	12	1	8	5.85				12	1	8	12			
SV-341	SPRP	LITTLE EASTATOE CK	TPGT	58	2	3	6.93	NS	94	-0.0254	56	6	11	19.3333	NS	93	-0.0944
RL-04380	RL04	LAKE KEOWEE	FW	12	0	0	0				10	0	0	0			
SV-338	INT	LAKE KEOWEE	FW	60	0	0	0	NS	195	0.005	57	0	0	0	D	176	-0.0222
RL-02304	RL02	LAKE KEOWEE	FW	12	0	0	0				12	0	0	0			
03060101-03																	
RS-02466	RS02	BURGESS CK	TN	12	1	8	5.7				12	3	25	12.6667			
SV-684		CRANE CK															
SV-742		OCONEE CK															
SV-203	SS	LITTLE RVR	FW	12	0	0	0	NS	78	0	12	0	0	0	NS	76	-0.1833
RL-03354	RL03	LAKE KEOWEE	FW	12	0	0	0				12	0	0	0			
SV-312	SS	LAKE KEOWEE	FW	12	0	0	0	I	138	0.0333	11	0	0	0	NS	121	-0.02
RL-05466	RL05	LAKE KEOWEE	FW	13	1	8	5.58				12	0	0	0			
SV-361	INT	LAKE KEOWEE	FW	60	1	2	5.83	NS	71	0.04	57	0	0	0	NS	68	0
SV-342	SPRP	CANE CK	FW	59	1	2	5.7	NS	96	-0.0045	60	3	5	120	NS	97	-0.2
SV-807		LITTLE CANE CK	TN														
SV-808		LITTLE CANE CK	TN														
SV-810		LITTLE CANE CK	TN														
SV-811		UNNAMED TRIB TO LITTLE CANE CK	TN														
SV-812		UNNAMED TRIB TO LITTLE CANE CK	TN														
SV-343	SS	LITTLE CANE CK	FW	29	2	7	5.545	NS	55	-0.0052	12	0	0	0	NS	38	-0.3
SV-311	SS	LAKE KEOWEE	FW	12	0	0	0	I	141	0.0361	11	0	0	0	NS	122	-0.0143
RL-05394	RL05	LAKE KEOWEE	FW	12	1	8	5.65				11	0	0	0			
03060101-04																	
SV-206	SEDM	NORTH FORK	FW					I	52	0.075					D	51	-1
SV-740		RICES CK															
SV-362	INT	TWELVE MILE CK	FW	59	1	2	5.77	NS	69	0.0075	58	5	9	113.8	NS	68	0.44
SV-239	SS	GOLDEN CK	FW	12	0	0	0	NS	64	0.01	12	1	8	51	NS	62	-0.3333
SV-738		GOLDEN CK															
SV-137	INT	TWELVE MILE CK	FW	59	2	3	5.88	D	103	-0.0418	58	7	12	110.286	NS	102	-0.3167
SV-136	SS	UNNAMED	FW	12	1	8	5.92	I	65	0.026	12	0	0	0	D	62	-0.32
03060101-05																	
RS-02304	RS02	COLONELS FORK CK	FW	12	1	8	5.8				12	1	8	200			
SV-333	SS	CONEROSS CK	FW	12	0	0	0	NS	144	0.0085	12	2	17	120	D	141	-0.6
SV-004	INT	CONEROSS CK	FW	59	1	2	5.77	I	175	0.0286	60	8	13	119.125	D	174	-0.6
RS-05412	RS05	SNOW CK	FW	12	3	25	5.91				12	2	17	165			
SV-236	SS	LAKE HARTWELL	FW	12	0	0	0	I	97	0.0774	12	0	0	0	NS	86	-0.0708

Appendix A. Tugalo/Seneca River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	TP N	TP EXC.	TP %	MEAN EXC.	TRENDS (92-2006)			TN N	TN EXC.	TN %	MEAN EXC.	TRENDS (92-2006)		
								TP	N	MAG					TN	N	MAG
03060101-02																	
SV-741		EASTATOE CK															
SV-676		ROCKY BOTTOM CK															
SV-230	SPRP	EASTATOE CK	TPGT					D	143	-0.0001					NS	158	0
RS-05392	RS05	LITTLE EASTATOE CK	TPGT														
SV-341	SPRP	LITTLE EASTATOE CK	TPGT					D	68	0					NS	72	0.0029
RL-04380	RL04	LAKE KEOWEE	FW	12	2	17	0.025				9	1	11	0.74			
SV-338	INT	LAKE KEOWEE	FW	59	0	0	0	D	141	0	45	0	0	0	I	150	0.0017
RL-02304	RL02	LAKE KEOWEE	FW	11	0	0	0				7	0	0	0			
03060101-03																	
RS-02466	RS02	BURGESS CK	TN														
SV-684		CRANE CK															
SV-742		OCONEE CK															
SV-203	SS	LITTLE RVR	FW					NS	53	0					NS	35	0.0065
RL-03354	RL03	LAKE KEOWEE	FW	12	0	0	0				6	0	0	0			
SV-312	SS	LAKE KEOWEE	FW	12	0	0	0	D	97	0	12	0	0	0	NS	119	0
RL-05466	RL05	LAKE KEOWEE	FW	13	0	0	0				12	0	0	0			
SV-361	INT	LAKE KEOWEE	FW	59	0	0	0	NS	59	0	44	1	2	2.03	I	50	0.029
SV-342	SPRP	CANE CK	FW					D	69	0					NS	73	0
SV-807		LITTLE CANE CK	TN														
SV-808		LITTLE CANE CK	TN														
SV-810		LITTLE CANE CK	TN														
SV-811		UNNAMED TRIB TO LITTLE CANE CK	TN														
SV-812		UNNAMED TRIB TO LITTLE CANE CK	TN														
SV-343	SS	LITTLE CANE CK	FW												NS	36	0.0062
SV-311	SS	LAKE KEOWEE	FW	12	0	0	0	D	96	0	12	0	0	0	NS	114	0
RL-05394	RL05	LAKE KEOWEE	FW	12	0	0	0				12	0	0	0			
03060101-04																	
SV-206	SEDM	NORTH FORK	FW					NS	37	0							
SV-740		RICES CK															
SV-362	INT	TWELVE MILE CK	FW					NS	59	0					NS	54	0.0233
SV-239	SS	GOLDEN CK	FW					NS	50	-0.0001							
SV-738		GOLDEN CK															
SV-137	INT	TWELVE MILE CK	FW					NS	78	-0.0001					NS	80	0.0006
SV-136	SS	UNNAMED	FW					I	50	0.0065							
03060101-05																	
RS-02304	RS02	COLONELS FORK CK	FW														
SV-333	SS	CONEROSS CK	FW					NS	119	0					NS	142	0.005
SV-004	INT	CONEROSS CK	FW					NS	137	-0.0018					NS	144	-0.0117
RS-05412	RS05	SNOW CK	FW														
SV-236	SS	LAKE HARTWELL	FW	12	0	0	0	NS	63	0	12	0	0	0	I	63	0.0125

Appendix A. Tugaloo/Seneca River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	CHL	CHL	CHL	MEAN	TRENDS (92-2006)		
				N	EXC.	%	EXC.	TSS	N	MAG
03060101-02										
SV-741		EASTATOE CK								
SV-676		ROCKY BOTTOM CK								
SV-230	SPRP	EASTATOE CK	TPGT					NS	74	0
RS-05392	RS05	LITTLE EASTATOE CK	TPGT							
SV-341	SPRP	LITTLE EASTATOE CK	TPGT							
RL-04380	RL04	LAKE KEOWEE	FW	6	0	0	0			
SV-338	INT	LAKE KEOWEE	FW	29	0	0	0			
RL-02304	RL02	LAKE KEOWEE	FW	6	0	0	0			
03060101-03										
RS-02466	RS02	BURGESS CK	TN							
SV-684		CRANE CK								
SV-742		OCONEE CK								
SV-203	SS	LITTLE RVR	FW							
RL-03354	RL03	LAKE KEOWEE	FW	5	0	0	0			
SV-312	SS	LAKE KEOWEE	FW	5	0	0	0			
RL-05466	RL05	LAKE KEOWEE	FW	5	0	0	0			
SV-361	INT	LAKE KEOWEE	FW	29	0	0	0			
SV-342	SPRP	CANE CK	FW							
SV-807		LITTLE CANE CK	TN							
SV-808		LITTLE CANE CK	TN							
SV-810		LITTLE CANE CK	TN							
SV-811		UNNAMED TRIB TO LITTLE CANE CK	TN							
SV-812		UNNAMED TRIB TO LITTLE CANE CK	TN							
SV-343	SS	LITTLE CANE CK	FW							
SV-311	SS	LAKE KEOWEE	FW	5	0	0	0			
RL-05394	RL05	LAKE KEOWEE	FW	5	0	0	0			
03060101-04										
SV-206	SEDM	NORTH FORK	FW							
SV-740		RICES CK								
SV-362	INT	TWELVE MILE CK	FW							
SV-239	SS	GOLDEN CK	FW							
SV-738		GOLDEN CK								
SV-137	INT	TWELVE MILE CK	FW							
SV-136	SS	UNNAMED	FW							
03060101-05										
RS-02304	RS02	COLONELS FORK CK	FW							
SV-333	SS	CONEROSS CK	FW							
SV-004	INT	CONEROSS CK	FW							
RS-05412	RS05	SNOW CK	FW							
SV-236	SS	LAKE HARTWELL	FW	4	0	0	0			

Appendix A. Tugaloo/Seneca River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	GEO MEAN	BACT N	BACT EXC.	BACT %	MEAN EXC.	TRENDS (92-2006)		
									BACT	N	MAG
03060101-02											
SV-741		EASTATOE CK									
SV-676		ROCKY BOTTOM CK									
SV-230	SPRP	EASTATOE CK	TPGT	54.8247	56	2	4	760	NS	178	0.6667
RS-05392	RS05	LITTLE EASTATOE CK	TPGT	109.5276	12	0	0	0			
SV-341	SPRP	LITTLE EASTATOE CK	TPGT	216.937	76	24	32	1435.8333	NS	113	0.6
RL-04380	RL04	LAKE KEOWEE	FW	4.4302	12	0	0	0			
SV-338	INT	LAKE KEOWEE	FW	1.7277	60	0	0	0	NS	180	0
RL-02304	RL02	LAKE KEOWEE	FW	1.3348	12	0	0	0			
03060101-03											
RS-02466	RS02	BURGESS CK	TN	71.0544	12	4	33	870			
SV-684		CRANE CK									
SV-742		OCONEE CK									
SV-203	SS	LITTLE RVR	FW	159.8077	12	2	17	680	NS	78	2
RL-03354	RL03	LAKE KEOWEE	FW	1.8676	12	0	0	0			
SV-312	SS	LAKE KEOWEE	FW	1.0595	12	0	0	0	D	125	0
RL-05466	RL05	LAKE KEOWEE	FW	1.8101	13	0	0	0			
SV-361	INT	LAKE KEOWEE	FW	1.3144	60	0	0	0	I	70	0
SV-342	SPRP	CANE CK	FW	208.6831	59	11	19	1536.3636	NS	96	-8.013
SV-807		LITTLE CANE CK	TN	64.0525	18	3	17	1266.6667			
SV-808		LITTLE CANE CK	TN	296.7961	18	4	22	3375			
SV-810		LITTLE CANE CK	TN	463.1114	18	8	44	2353.75			
SV-811		UNNAMED TRIB TO LITTLE CANE CK	TN	239.7088	18	6	33	1180			
SV-812		UNNAMED TRIB TO LITTLE CANE CK	TN	238.8866	18	4	22	1825			
SV-343	SS	LITTLE CANE CK	FW	436.2273	69	31	45	1733.871	NS	97	-5
SV-311	SS	LAKE KEOWEE	FW	1.8199	12	0	0	0	NS	126	0
RL-05394	RL05	LAKE KEOWEE	FW	2.271	12	0	0	0			
03060101-04											
SV-206	SEDM	NORTH FORK	FW						NS	52	-4
SV-740		RICES CK									
SV-362	INT	TWELVE MILE CK	FW	282.95	60	19	32	1515.7895	NS	70	10
SV-239	SS	GOLDEN CK	FW	311.6924	19	6	32	4183.3333	NS	71	-20
SV-738		GOLDEN CK									
SV-137	INT	TWELVE MILE CK	FW	173.5243	59	14	24	1463.5714	NS	102	10.875
SV-136	SS	UNNAMED	FW	234.724	18	5	28	4120	NS	70	6.6667
03060101-05											
RS-02304	RS02	COLONELS FORK CK	FW	147.2038	12	2	17	1390			
SV-333	SS	CONEROSS CK	FW	260.0977	33	6	18	5236.6667	D	163	-5
SV-004	INT	CONEROSS CK	FW	184.4573	60	15	25	1354.6667	NS	175	-4.8077
RS-05412	RS05	SNOW CK	FW	298.8729	12	3	25	4563.3333			
SV-236	SS	LAKE HARTWELL	FW	4.0583	12	0	0	0	NS	87	0

Appendix A. Tugaloo/Seneca River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	NH3 N	NH3 EXC.	NH3 %	MEAN EXC.	CD N	CD EXC.	CD %	MEAN EXC.	CR N	CR EXC.	CR %	MEAN EXC.
03060101-02															
SV-741		EASTATOE CK													
SV-676		ROCKY BOTTOM CK													
SV-230	SPRP	EASTATOE CK	TPGT	46	0	0	0	18	0	0	0	18	0	0	0
RS-05392	RS05	LITTLE EASTATOE CK	TPGT	12	0	0	0	4	0	0	0	4	0	0	0
SV-341	SPRP	LITTLE EASTATOE CK	TPGT	44	0	0	0	18	0	0	0	18	0	0	0
RL-04380	RL04	LAKE KEOWEE	FW	10	0	0	0	4	0	0	0	4	0	0	0
SV-338	INT	LAKE KEOWEE	FW	41	0	0	0	20	0	0	0	20	0	0	0
RL-02304	RL02	LAKE KEOWEE	FW	8	0	0	0	4	0	0	0	4	0	0	0
03060101-03															
RS-02466	RS02	BURGESS CK	TN	7	0	0	0	4	0	0	0	4	0	0	0
SV-684		CRANE CK													
SV-742		OCONEE CK													
SV-203	SS	LITTLE RVR	FW	10	0	0	0	4	0	0	0	4	0	0	0
RL-03354	RL03	LAKE KEOWEE	FW	6	0	0	0	4	0	0	0	4	0	0	0
SV-312	SS	LAKE KEOWEE	FW	12	0	0	0	4	0	0	0	4	0	0	0
RL-05466	RL05	LAKE KEOWEE	FW	11	0	0	0	4	0	0	0	4	0	0	0
SV-361	INT	LAKE KEOWEE	FW	41	0	0	0	20	0	0	0	20	0	0	0
SV-342	SPRP	CANE CK	FW	40	0	0	0	20	0	0	0	20	0	0	0
SV-807		LITTLE CANE CK	TN												
SV-808		LITTLE CANE CK	TN												
SV-810		LITTLE CANE CK	TN												
SV-811		UNNAMED TRIB TO LITTLE CANE CK	TN												
SV-812		UNNAMED TRIB TO LITTLE CANE CK	TN												
SV-343	SS	LITTLE CANE CK	FW	10	0	0	0	4	0	0	0	4	0	0	0
SV-311	SS	LAKE KEOWEE	FW	12	0	0	0	4	0	0	0	4	0	0	0
RL-05394	RL05	LAKE KEOWEE	FW	12	0	0	0	4	0	0	0	4	0	0	0
03060101-04															
SV-206	SEDM	NORTH FORK	FW												
SV-740		RICES CK													
SV-362	INT	TWELVE MILE CK	FW	48	0	0	0	20	0	0	0	20	0	0	0
SV-239	SS	GOLDEN CK	FW	11	0	0	0	4	0	0	0	4	0	0	0
SV-738		GOLDEN CK													
SV-137	INT	TWELVE MILE CK	FW	45	0	0	0	20	0	0	0	20	0	0	0
SV-136	SS	UNNAMED	FW	12	0	0	0	4	0	0	0	4	0	0	0
03060101-05															
RS-02304	RS02	COLONELS FORK CK	FW	7	0	0	0	3	0	0	0	4	0	0	0
SV-333	SS	CONEROSS CK	FW	12	0	0	0	4	0	0	0	4	0	0	0
SV-004	INT	CONEROSS CK	FW	44	0	0	0	20	0	0	0	20	0	0	0
RS-05412	RS05	SNOW CK	FW	11	0	0	0	4	0	0	0	4	0	0	0
SV-236	SS	LAKE HARTWELL	FW	12	0	0	0	4	0	0	0	4	0	0	0

Appendix A. Tugaloo/Seneca River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	CU N	CU EXC.	CU %	MEAN EXC.	PB N	PB EXC.	PB %	MEAN EXC.	HG N	HG EXC.	HG %	MEAN EXC.
03060101-02															
SV-741		EASTATOE CK													
SV-676		ROCKY BOTTOM CK													
SV-230	SPRP	EASTATOE CK	TPGT	18	0	0	0	18	0	0	0	18	0	0	0
RS-05392	RS05	LITTLE EASTATOE CK	TPGT	4	0	0	0	4	0	0	0	4	0	0	0
SV-341	SPRP	LITTLE EASTATOE CK	TPGT	18	0	0	0	18	0	0	0	18	0	0	0
RL-04380	RL04	LAKE KEOWEE	FW	4	0	0	0	4	0	0	0	4	0	0	0
SV-338	INT	LAKE KEOWEE	FW	20	0	0	0	20	0	0	0	20	0	0	0
RL-02304	RL02	LAKE KEOWEE	FW	4	0	0	0	4	0	0	0	4	0	0	0
03060101-03															
RS-02466	RS02	BURGESS CK	TN	4	0	0	0	4	0	0	0	4	0	0	0
SV-684		CRANE CK													
SV-742		OCONEE CK													
SV-203	SS	LITTLE RVR	FW	4	0	0	0	4	0	0	0	4	0	0	0
RL-03354	RL03	LAKE KEOWEE	FW	4	0	0	0	4	0	0	0	4	0	0	0
SV-312	SS	LAKE KEOWEE	FW	4	0	0	0	4	0	0	0	4	0	0	0
RL-05466	RL05	LAKE KEOWEE	FW	4	0	0	0	4	0	0	0	4	0	0	0
SV-361	INT	LAKE KEOWEE	FW	20	0	0	0	20	0	0	0	20	0	0	0
SV-342	SPRP	CANE CK	FW	20	0	0	0	20	0	0	0	20	1	5	4
SV-807		LITTLE CANE CK	TN												
SV-808		LITTLE CANE CK	TN												
SV-810		LITTLE CANE CK	TN												
SV-811		UNNAMED TRIB TO LITTLE CANE CK	TN												
SV-812		UNNAMED TRIB TO LITTLE CANE CK	TN												
SV-343	SS	LITTLE CANE CK	FW	4	0	0	0	4	0	0	0	4	0	0	0
SV-311	SS	LAKE KEOWEE	FW	4	0	0	0	4	0	0	0	4	0	0	0
RL-05394	RL05	LAKE KEOWEE	FW	4	1	25	11	4	0	0	0	4	0	0	0
03060101-04															
SV-206	SEDM	NORTH FORK	FW												
SV-740		RICES CK													
SV-362	INT	TWELVE MILE CK	FW	20	0	0	0	20	0	0	0	20	0	0	0
SV-239	SS	GOLDEN CK	FW	4	0	0	0	4	0	0	0	4	0	0	0
SV-738		GOLDEN CK													
SV-137	INT	TWELVE MILE CK	FW	20	0	0	0	20	0	0	0	20	0	0	0
SV-136	SS	UNNAMED	FW	4	0	0	0	4	0	0	0	4	0	0	0
03060101-05															
RS-02304	RS02	COLONELS FORK CK	FW	4	0	0	0	4	0	0	0	4	0	0	0
SV-333	SS	CONEROSS CK	FW	4	0	0	0	4	0	0	0	4	0	0	0
SV-004	INT	CONEROSS CK	FW	20	1	5	22	20	0	0	0	20	0	0	0
RS-05412	RS05	SNOW CK	FW	4	0	0	0	4	0	0	0	4	0	0	0
SV-236	SS	LAKE HARTWELL	FW	4	0	0	0	4	0	0	0	4	0	0	0

Appendix A. Tugaloo/Seneca River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	NI N	NI EXC.	NI %	MEAN EXC.	ZN N	ZN EXC.	ZN %	MEAN EXC.
03060101-02											
SV-741		EASTATOE CK									
SV-676		ROCKY BOTTOM CK									
SV-230	SPRP	EASTATOE CK	TPGT	18	0	0	0	18	0	0	0
RS-05392	RS05	LITTLE EASTATOE CK	TPGT	4	0	0	0	4	0	0	0
SV-341	SPRP	LITTLE EASTATOE CK	TPGT	18	0	0	0	18	0	0	0
RL-04380	RL04	LAKE KEOWEE	FW	4	0	0	0	4	0	0	0
SV-338	INT	LAKE KEOWEE	FW	20	0	0	0	20	0	0	0
RL-02304	RL02	LAKE KEOWEE	FW	4	0	0	0	4	0	0	0
03060101-03											
RS-02466	RS02	BURGESS CK	TN	4	0	0	0	4	0	0	0
SV-684		CRANE CK									
SV-742		OCONEE CK									
SV-203	SS	LITTLE RVR	FW	4	0	0	0	4	0	0	0
RL-03354	RL03	LAKE KEOWEE	FW	4	0	0	0	4	0	0	0
SV-312	SS	LAKE KEOWEE	FW	4	0	0	0	4	0	0	0
RL-05466	RL05	LAKE KEOWEE	FW	4	0	0	0	4	0	0	0
SV-361	INT	LAKE KEOWEE	FW	20	0	0	0	20	0	0	0
SV-342	SPRP	CANE CK	FW	20	0	0	0	20	0	0	0
SV-807		LITTLE CANE CK	TN								
SV-808		LITTLE CANE CK	TN								
SV-810		LITTLE CANE CK	TN								
SV-811		UNNAMED TRIB TO LITTLE CANE CK	TN								
SV-812		UNNAMED TRIB TO LITTLE CANE CK	TN								
SV-343	SS	LITTLE CANE CK	FW	4	0	0	0	4	0	0	0
SV-311	SS	LAKE KEOWEE	FW	4	0	0	0	4	0	0	0
RL-05394	RL05	LAKE KEOWEE	FW	4	0	0	0	4	0	0	0
03060101-04											
SV-206	SEDM	NORTH FORK	FW								
SV-740		RICES CK									
SV-362	INT	TWELVE MILE CK	FW	20	0	0	0	20	0	0	0
SV-239	SS	GOLDEN CK	FW	4	0	0	0	4	0	0	0
SV-738		GOLDEN CK									
SV-137	INT	TWELVE MILE CK	FW	20	1	5	39	20	1	5	98
SV-136	SS	UNNAMED	FW	4	0	0	0	4	0	0	0
03060101-05											
RS-02304	RS02	COLONELS FORK CK	FW	4	0	0	0	4	0	0	0
SV-333	SS	CONERROSS CK	FW	4	0	0	0	4	0	0	0
SV-004	INT	CONERROSS CK	FW	20	0	0	0	20	2	10	89.5
RS-05412	RS05	SNOW CK	FW	4	0	0	0	4	0	0	0
SV-236	SS	LAKE HARTWELL	FW	4	0	0	0	4	0	0	0

Appendix A. Tugaloo/Seneca River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	DO N	DO EXC.	DO %	MEAN EXC.	TRENDS (92-2006)					
								DO	N	MAG	BOD	N	MAG
03060101-06													
SV-017	SS	EIGHTEENMILE CK	FW	12	0	0	0	NS	65	0.02	I	63	0.05
SV-241	SS	WOODSIDE BRANCH	FW	12	0	0	0	NS	66	0	D	64	-0.0875
SV-245	SS	EIGHTEENMILE CK	FW	12	0	0	0	I	65	0.06	I	64	0.0556
SV-135	SS	EIGHTEENMILE CK	FW	12	0	0	0	NS	118	0.0231	I	116	0.05
SV-233	INT	EIGHTEENMILE CK	FW	58	2	3	4.39	NS	69	0.073	NS	64	0
SV-268	SUMM	LAKE HARTWELL	FW	33	6	18	3.9783	D	158	-0.0667	NS	147	0.0214
RL-05392	RL05	LAKE HARTWELL	FW	12	0	0	0						
03060101-07													
RS-03506	RS03	CHARLES CREEK	FW	11	1	9	4.1						
SV-735		THREE & TWENTY CK											
SV-111	INT	THREE & TWENTY CK	FW	58	2	3	4.45	NS	137	-0.026	I	133	0.0882
SV-180		SIX & TWENTY CK											
SV-181	SS	SIX & TWENTY CK	FW	11	0	0	0	NS	64	0.0439	NS	62	0.0333
03060101-08													
SV-249	SS	LAKE HARTWELL	FW	12	0	0	0	NS	126	0.0146	NS	123	0
SV-205	SS	SIXMILE CK	FW	12	0	0	0	NS	38	-0.0658	I	37	0.1444
SV-683		WILDCAT CK											
SV-360	SS	LAKE ISSAQUEENA	FW	12	0	0	0	NS	30	0.04			
RL-06432	RL06	LAKE ISSAQUEENA	FW	10	0	0	0						
SV-106	SS	LAKE HARTWELL	FW	12	0	0	0	NS	64	0.0083	I	63	0.0833
RL-04378	RL04	LAKE HARTWELL	FW	12	0	0	0						
RL-02330	RL02	LAKE HARTWELL	FW	13	0	0	0						
SV-288	SS	LAKE HARTWELL	FW	12	0	0	0	NS	130	-0.0125	NS	119	0.0155
RL-05417	RL05	LAKE HARTWELL	FW	12	0	0	0						
SV-339	INT	LAKE HARTWELL	FW	60	0	0	0	NS	188	0	I	174	0.1

Appendix A. Tugaloo/Seneca River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	pH			MEAN EXC.	TRENDS (92-2006)			TURB			MEAN EXC.	TRENDS (92-2006)		
				N	EXC.	%		PH	N	MAG	N	EXC.	%		TURB	N	MAG
03060101-06																	
SV-017	SS	EIGHTEENMILE CK	FW	12	0	0	0	I	65	0.0193	12	1	8	180	NS	63	-0.2657
SV-241	SS	WOODSIDE BRANCH	FW	12	2	17	5.925	NS	66	-0.0021	12	1	8	92	I	64	0.3333
SV-245	SS	EIGHTEENMILE CK	FW	12	0	0	0	NS	65	0.025	12	2	17	175	D	64	-0.5
SV-135	SS	EIGHTEENMILE CK	FW	12	2	17	5.865	NS	118	0.0188	12	2	17	110	D	116	-1.1538
SV-233	INT	EIGHTEENMILE CK	FW	58	2	3	5.745	NS	69	0.014	55	11	20	122	NS	66	0
SV-268	SUMM	LAKE HARTWELL	FW	33	0	0	0	NS	157	0.0146	29	14	48	49.5	D	146	-0.6
RL-05392	RL05	LAKE HARTWELL	FW	12	1	8	5.93				12	1	8	30			
03060101-07																	
RS-03506	RS03	CHARLES CREEK	FW	11	0	0	0				12	2	17	72.5			
SV-735		THREE & TWENTY CK															
SV-111	INT	THREE & TWENTY CK	FW	58	2	3	5.79	NS	137	0.0033	53	6	11	73.3333	D	131	-0.6905
SV-180		SIX & TWENTY CK															
SV-181	SS	SIX & TWENTY CK	FW	11	0	0	0	NS	65	0.0338	11	0	0	0	NS	64	0.25
03060101-08																	
SV-249	SS	LAKE HARTWELL	FW	12	1	8	5.7	I	123	0.02	12	0	0	0	D	124	-0.0625
SV-205	SS	SIXMILE CK	FW	12	0	0	0	NS	38	-0.0031	12	0	0	0	NS	38	-0.0422
SV-683		WILDCAT CK															
SV-360	SS	LAKE ISSAQUEENA	FW	12	1	8	5.93	NS	30	-0.0433	12	0	0	0	NS	30	0.04
RL-06432	RL06	LAKE ISSAQUEENA	FW	10	1	10	5.9				8	0	0	0			
SV-106	SS	LAKE HARTWELL	FW	12	0	0	0	NS	64	0.0247	12	0	0	0	NS	63	-0.0134
RL-04378	RL04	LAKE HARTWELL	FW	12	0	0	0				12	0	0	0			
RL-02330	RL02	LAKE HARTWELL	FW	13	0	0	0				13	0	0	0			
SV-288	SS	LAKE HARTWELL	FW	12	1	8	5.79	I	128	0.035	12	0	0	0	D	117	-0.0667
RL-05417	RL05	LAKE HARTWELL	FW	12	0	0	0				12	0	0	0			
SV-339	INT	LAKE HARTWELL	FW	60	0	0	0	I	188	0.025	60	0	0	0	D	178	-0.0458

Appendix A. Tugalo/Seneca River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	TP N	TP EXC.	TP %	MEAN EXC.	TRENDS (92-2006)			TN N	TN EXC.	TN %	MEAN EXC.	TRENDS (92-2006)		
								TP	N	MAG					TN	N	MAG
03060101-06																	
SV-017	SS	EIGHTEENMILE CK	FW					NS	53	0							
SV-241	SS	WOODSIDE BRANCH	FW					NS	51	-0.0314							
SV-245	SS	EIGHTEENMILE CK	FW					NS	52	0							
SV-135	SS	EIGHTEENMILE CK	FW					NS	92	0					I	109	0.0125
SV-233	INT	EIGHTEENMILE CK	FW					NS	59	-0.0025					I	50	0.085
SV-268	SUMM	LAKE HARTWELL	FW	33	13	39	0.0977	D	120	-0.003	25	5	20	1.88	NS	137	0.0082
RL-05392	RL05	LAKE HARTWELL	FW	12	0	0	0				11	0	0	0			
03060101-07																	
RS-03506	RS03	CHARLES CREEK	FW														
SV-735		THREE & TWENTY CK															
SV-111	INT	THREE & TWENTY CK	FW					D	106	-0.0014					NS	74	0.005
SV-180		SIX & TWENTY CK															
SV-181	SS	SIX & TWENTY CK	FW					NS	51	0.0037							
03060101-08																	
SV-249	SS	LAKE HARTWELL	FW	11	0	0	0	D	95	0	11	0	0	0	NS	117	0
SV-205	SS	SIXMILE CK	FW												NS	38	0.0033
SV-683		WILDCAT CK															
SV-360	SS	LAKE ISSAQUEENA	FW	12	0	0	0				12	0	0	0	I	30	0.0256
RL-06432	RL06	LAKE ISSAQUEENA	FW	9	0	0	0				9	0	0	0			
SV-106	SS	LAKE HARTWELL	FW	12	0	0	0	NS	51	0	12	0	0	0			
RL-04378	RL04	LAKE HARTWELL	FW	12	0	0	0				10	0	0	0			
RL-02330	RL02	LAKE HARTWELL	FW	13	0	0	0				7	0	0	0			
SV-288	SS	LAKE HARTWELL	FW	12	0	0	0	D	95	0	12	0	0	0	NS	114	0.0037
RL-05417	RL05	LAKE HARTWELL	FW	12	0	0	0				12	0	0	0			
SV-339	INT	LAKE HARTWELL	FW	60	0	0	0	D	145	0	45	0	0	0	NS	156	0.0033

Appendix A. Tugaloo/Seneca River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	CHL N	CHL EXC.	CHL %	MEAN EXC.	TRENDS (92-2006)		
								TSS	N	MAG
03060101-06										
SV-017	SS	EIGHTEENMILE CK	FW							
SV-241	SS	WOODSIDE BRANCH	FW							
SV-245	SS	EIGHTEENMILE CK	FW							
SV-135	SS	EIGHTEENMILE CK	FW							
SV-233	INT	EIGHTEENMILE CK	FW							
SV-268	SUMM	LAKE HARTWELL	FW	24	0	0	0			
RL-05392	RL05	LAKE HARTWELL	FW	5	0	0	0			
03060101-07										
RS-03506	RS03	CHARLES CREEK	FW							
SV-735		THREE & TWENTY CK								
SV-111	INT	THREE & TWENTY CK	FW							
SV-180		SIX & TWENTY CK								
SV-181	SS	SIX & TWENTY CK	FW							
03060101-08										
SV-249	SS	LAKE HARTWELL	FW	4	0	0	0			
SV-205	SS	SIXMILE CK	FW							
SV-683		WILDCAT CK								
SV-360	SS	LAKE ISSAQUEENA	FW	5	0	0	0			
RL-06432	RL06	LAKE ISSAQUEENA	FW	6	0	0	0			
SV-106	SS	LAKE HARTWELL	FW	4	0	0	0			
RL-04378	RL04	LAKE HARTWELL	FW	6	0	0	0			
RL-02330	RL02	LAKE HARTWELL	FW	6	0	0	0			
SV-288	SS	LAKE HARTWELL	FW	5	0	0	0			
RL-05417	RL05	LAKE HARTWELL	FW	5	0	0	0			
SV-339	INT	LAKE HARTWELL	FW	29	0	0	0			

Appendix A. Tugaloo/Seneca River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	GEO MEAN	BACT N	BACT EXC.	BACT %	MEAN EXC.	TRENDS (92-2006)		
									BACT	N	MAG
03060101-06											
SV-017	SS	EIGHTEENMILE CK	FW	606.3795	12	6	50	7833.3333	NS	64	22.5
SV-241	SS	WOODSIDE BRANCH	FW	95.4354	12	2	17	3670	D	64	-17.2917
SV-245	SS	EIGHTEENMILE CK	FW	277.3771	12	3	25	3900	NS	64	0
SV-135	SS	EIGHTEENMILE CK	FW	389.1499	12	5	42	828	NS	116	3.4524
SV-233	INT	EIGHTEENMILE CK	FW	371.4096	58	28	48	1097.5	NS	68	4
SV-268	SUMM	LAKE HARTWELL	FW	227.0831	32	12	38	1044.1667	NS	147	0
RL-05392	RL05	LAKE HARTWELL	FW	5.4933	12	0	0	0			
03060101-07											
RS-03506	RS03	CHARLES CREEK	FW	91.2573	12	2	17	1415			
SV-735		THREE & TWENTY CK									
SV-111	INT	THREE & TWENTY CK	FW	451.6884	58	27	47	1515.5556	NS	135	5
SV-180		SIX & TWENTY CK									
SV-181	SS	SIX & TWENTY CK	FW	63.0717	11	1	9	1000	NS	65	-0.5
03060101-08											
SV-249	SS	LAKE HARTWELL	FW	13.6379	12	0	0	0	NS	125	0
SV-205	SS	SIXMILE CK	FW	343.9835	12	5	42	1532	NS	38	0.1944
SV-683		WILDCAT CK									
SV-360	SS	LAKE ISSAQUEENA	FW	4.6866	12	0	0	0	NS	30	-0.1111
RL-06432	RL06	LAKE ISSAQUEENA	FW	2.3868	10	0	0	0			
SV-106	SS	LAKE HARTWELL	FW	3.6657	12	0	0	0	NS	64	0
RL-04378	RL04	LAKE HARTWELL	FW	11.2663	12	0	0	0			
RL-02330	RL02	LAKE HARTWELL	FW	1.2769	13	0	0	0			
SV-288	SS	LAKE HARTWELL	FW	5.838	12	0	0	0	NS	119	0
RL-05417	RL05	LAKE HARTWELL	FW	5.2159	12	0	0	0			
SV-339	INT	LAKE HARTWELL	FW	1.9093	60	0	0	0	NS	177	0

Appendix A. Tugaloo/Seneca River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	NH3 N	NH3 EXC.	NH3 %	MEAN EXC.	CD N	CD EXC.	CD %	MEAN EXC.	CR N	CR EXC.	CR %	MEAN EXC.
03060101-06															
SV-017	SS	EIGHTEENMILE CK	FW	11	0	0	0	4	0	0	0	4	0	0	0
SV-241	SS	WOODSIDE BRANCH	FW	11	0	0	0	4	0	0	0	4	0	0	0
SV-245	SS	EIGHTEENMILE CK	FW	12	0	0	0	4	0	0	0	4	0	0	0
SV-135	SS	EIGHTEENMILE CK	FW	12	0	0	0	4	0	0	0	4	0	0	0
SV-233	INT	EIGHTEENMILE CK	FW	44	0	0	0	20	0	0	0	20	0	0	0
SV-268	SUMM	LAKE HARTWELL	FW	25	0	0	0	12	0	0	0	12	0	0	0
RL-05392	RL05	LAKE HARTWELL	FW	11	0	0	0	4	0	0	0	4	0	0	0
03060101-07															
RS-03506	RS03	CHARLES CREEK	FW	6	0	0	0	4	0	0	0	4	0	0	0
SV-735		THREE & TWENTY CK													
SV-111	INT	THREE & TWENTY CK	FW	45	0	0	0	20	0	0	0	20	0	0	0
SV-180		SIX & TWENTY CK													
SV-181	SS	SIX & TWENTY CK	FW	11	0	0	0	4	0	0	0	4	0	0	0
03060101-08															
SV-249	SS	LAKE HARTWELL	FW	10	0	0	0	4	0	0	0	4	0	0	0
SV-205	SS	SIXMILE CK	FW	12	0	0	0	4	0	0	0	4	0	0	0
SV-683		WILDCAT CK													
SV-360	SS	LAKE ISSAQUEENA	FW	12	0	0	0	4	0	0	0	4	0	0	0
RL-06432	RL06	LAKE ISSAQUEENA	FW	8	0	0	0	4	0	0	0	4	0	0	0
SV-106	SS	LAKE HARTWELL	FW	12	0	0	0	4	0	0	0	4	0	0	0
RL-04378	RL04	LAKE HARTWELL	FW	11	0	0	0	4	1	25	15	4	0	0	0
RL-02330	RL02	LAKE HARTWELL	FW	7	0	0	0	4	0	0	0	4	0	0	0
SV-288	SS	LAKE HARTWELL	FW	12	0	0	0	4	0	0	0	4	0	0	0
RL-05417	RL05	LAKE HARTWELL	FW	11	0	0	0	4	0	0	0	4	0	0	0
SV-339	INT	LAKE HARTWELL	FW	42	0	0	0	20	0	0	0	20	0	0	0

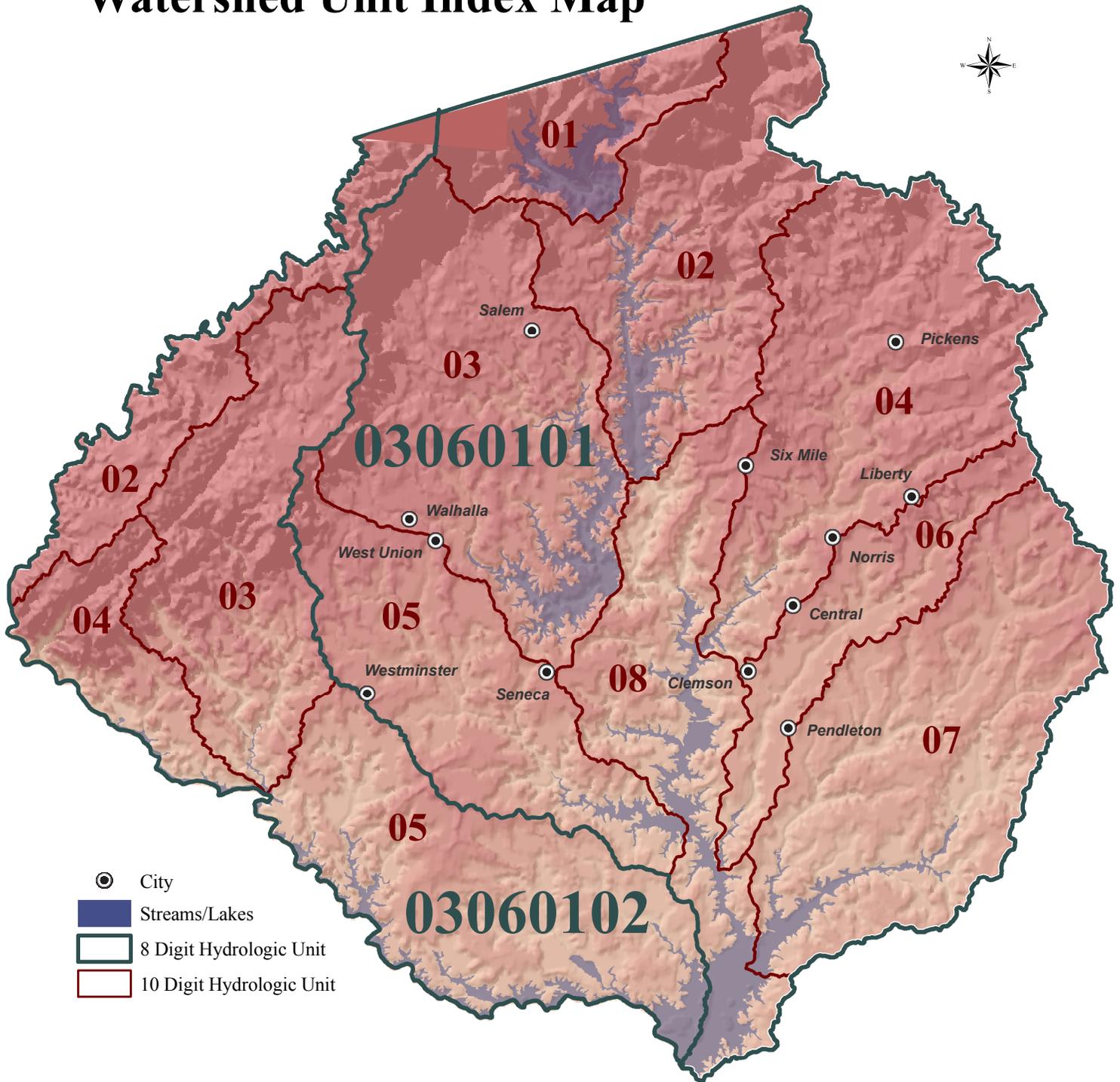
Appendix A. Tugaloo/Seneca River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	CU N	CU EXC.	CU %	MEAN EXC.	PB N	PB EXC.	PB %	MEAN EXC.	HG N	HG EXC.	HG %	MEAN EXC.
03060101-06															
SV-017	SS	EIGHTEENMILE CK	FW	4	0	0	0	4	0	0	0	4	0	0	0
SV-241	SS	WOODSIDE BRANCH	FW	4	0	0	0	4	0	0	0	4	0	0	0
SV-245	SS	EIGHTEENMILE CK	FW	4	0	0	0	4	0	0	0	4	0	0	0
SV-135	SS	EIGHTEENMILE CK	FW	4	0	0	0	4	0	0	0	4	0	0	0
SV-233	INT	EIGHTEENMILE CK	FW	20	1	5	20	20	0	0	0	20	0	0	0
SV-268	SUMM	LAKE HARTWELL	FW	12	1	8	16	12	0	0	0	12	0	0	0
RL-05392	RL05	LAKE HARTWELL	FW	4	0	0	0	4	0	0	0	4	0	0	0
03060101-07															
RS-03506	RS03	CHARLES CREEK	FW	4	0	0	0	4	0	0	0	4	0	0	0
SV-735		THREE & TWENTY CK													
SV-111	INT	THREE & TWENTY CK	FW	20	1	5	14	20	0	0	0	20	0	0	0
SV-180		SIX & TWENTY CK													
SV-181	SS	SIX & TWENTY CK	FW	4	1	25	16	4	0	0	0	4	0	0	0
03060101-08															
SV-249	SS	LAKE HARTWELL	FW	4	0	0	0	4	0	0	0	4	0	0	0
SV-205	SS	SIXMILE CK	FW	4	0	0	0	4	0	0	0	4	0	0	0
SV-683		WILDCAT CK													
SV-360	SS	LAKE ISSAQUEENA	FW	4	1	25	49	4	0	0	0	4	0	0	0
RL-06432	RL06	LAKE ISSAQUEENA	FW	4	0	0	0	4	0	0	0	4	0	0	0
SV-106	SS	LAKE HARTWELL	FW	4	0	0	0	4	0	0	0	4	0	0	0
RL-04378	RL04	LAKE HARTWELL	FW	4	1	25	14	4	0	0	0	4	0	0	0
RL-02330	RL02	LAKE HARTWELL	FW	4	0	0	0	4	0	0	0	4	0	0	0
SV-288	SS	LAKE HARTWELL	FW	4	0	0	0	4	0	0	0	4	0	0	0
RL-05417	RL05	LAKE HARTWELL	FW	4	0	0	0	4	0	0	0	4	0	0	0
SV-339	INT	LAKE HARTWELL	FW	20	0	0	0	20	0	0	0	20	0	0	0

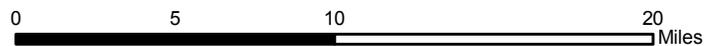
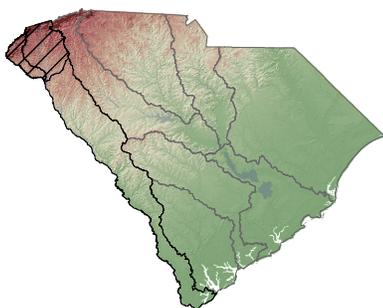
Appendix A. Tugaloo/Seneca River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	NI N	NI EXC.	NI %	MEAN EXC.	ZN N	ZN EXC.	ZN %	MEAN EXC.
03060101-06											
SV-017	SS	EIGHTEENMILE CK	FW	4	0	0	0	4	0	0	0
SV-241	SS	WOODSIDE BRANCH	FW	4	0	0	0	4	0	0	0
SV-245	SS	EIGHTEENMILE CK	FW	4	0	0	0	4	0	0	0
SV-135	SS	EIGHTEENMILE CK	FW	4	0	0	0	4	0	0	0
SV-233	INT	EIGHTEENMILE CK	FW	20	0	0	0	20	0	0	0
SV-268	SUMM	LAKE HARTWELL	FW	12	1	8	26	12	0	0	0
RL-05392	RL05	LAKE HARTWELL	FW	4	0	0	0	4	0	0	0
03060101-07											
RS-03506	RS03	CHARLES CREEK	FW	4	0	0	0	4	0	0	0
SV-735		THREE & TWENTY CK									
SV-111	INT	THREE & TWENTY CK	FW	20	0	0	0	20	0	0	0
SV-180		SIX & TWENTY CK									
SV-181	SS	SIX & TWENTY CK	FW	4	0	0	0	4	0	0	0
03060101-08											
SV-249	SS	LAKE HARTWELL	FW	4	0	0	0	4	0	0	0
SV-205	SS	SIXMILE CK	FW	4	0	0	0	4	0	0	0
SV-683		WILDCAT CK									
SV-360	SS	LAKE ISSAQUEENA	FW	4	0	0	0	4	1	25	88
RL-06432	RL06	LAKE ISSAQUEENA	FW	4	0	0	0	4	0	0	0
SV-106	SS	LAKE HARTWELL	FW	4	0	0	0	4	0	0	0
RL-04378	RL04	LAKE HARTWELL	FW	4	0	0	0	4	0	0	0
RL-02330	RL02	LAKE HARTWELL	FW	4	0	0	0	4	0	0	0
SV-288	SS	LAKE HARTWELL	FW	4	0	0	0	4	0	0	0
RL-05417	RL05	LAKE HARTWELL	FW	4	0	0	0	4	0	0	0
SV-339	INT	LAKE HARTWELL	FW	20	0	0	0	20	0	0	0

Tugaloo/Seneca River Basin Watershed Unit Index Map



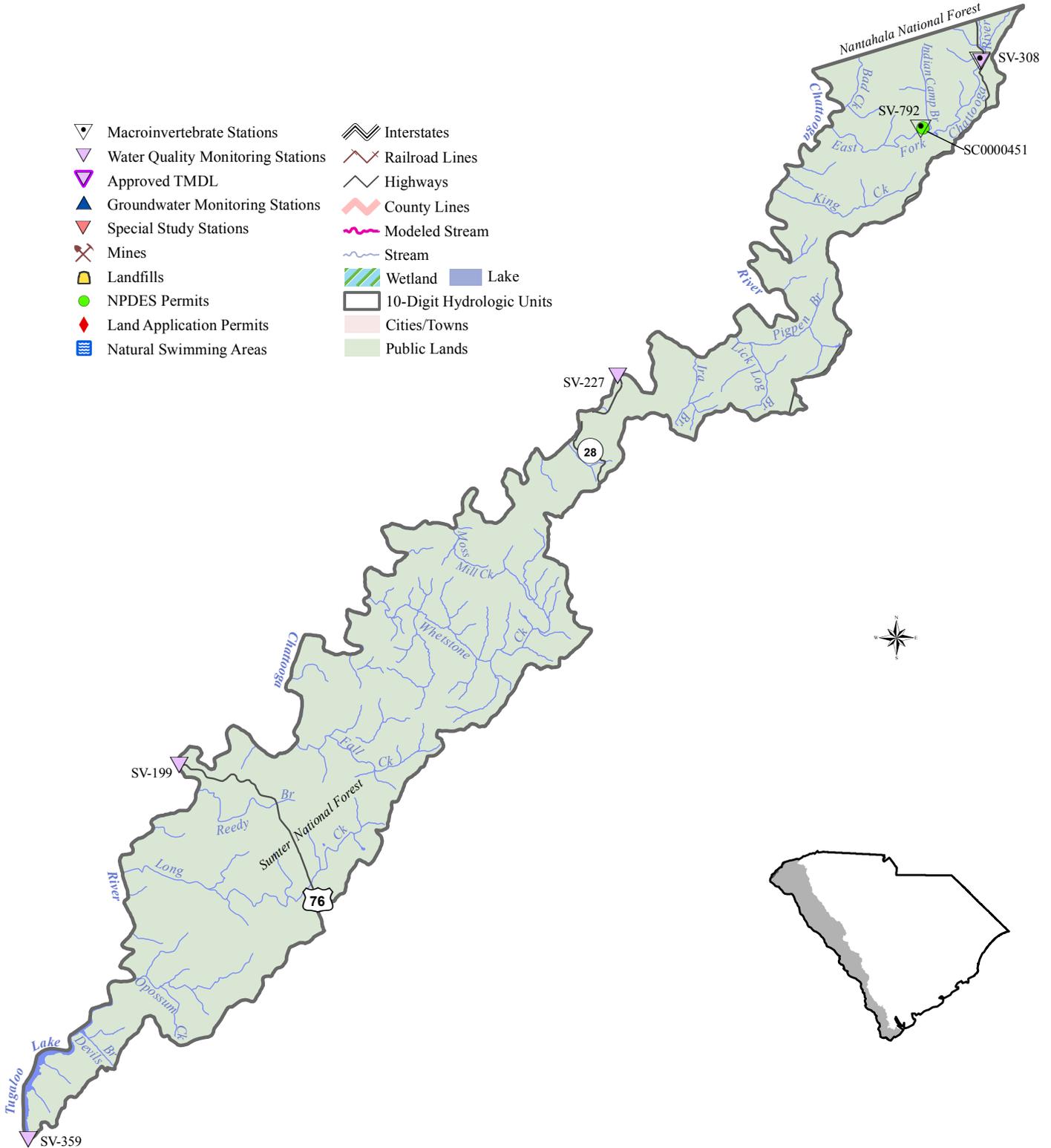
- City
- Streams/Lakes
- 8 Digit Hydrologic Unit
- 10 Digit Hydrologic Unit



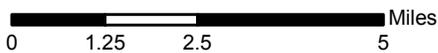
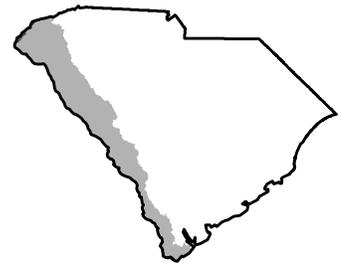
- Entire Savannah River Basin
- ▨ Tugaloo/Seneca River Basin
- Major River Basins



Chattooga River Watershed (03060102-02)

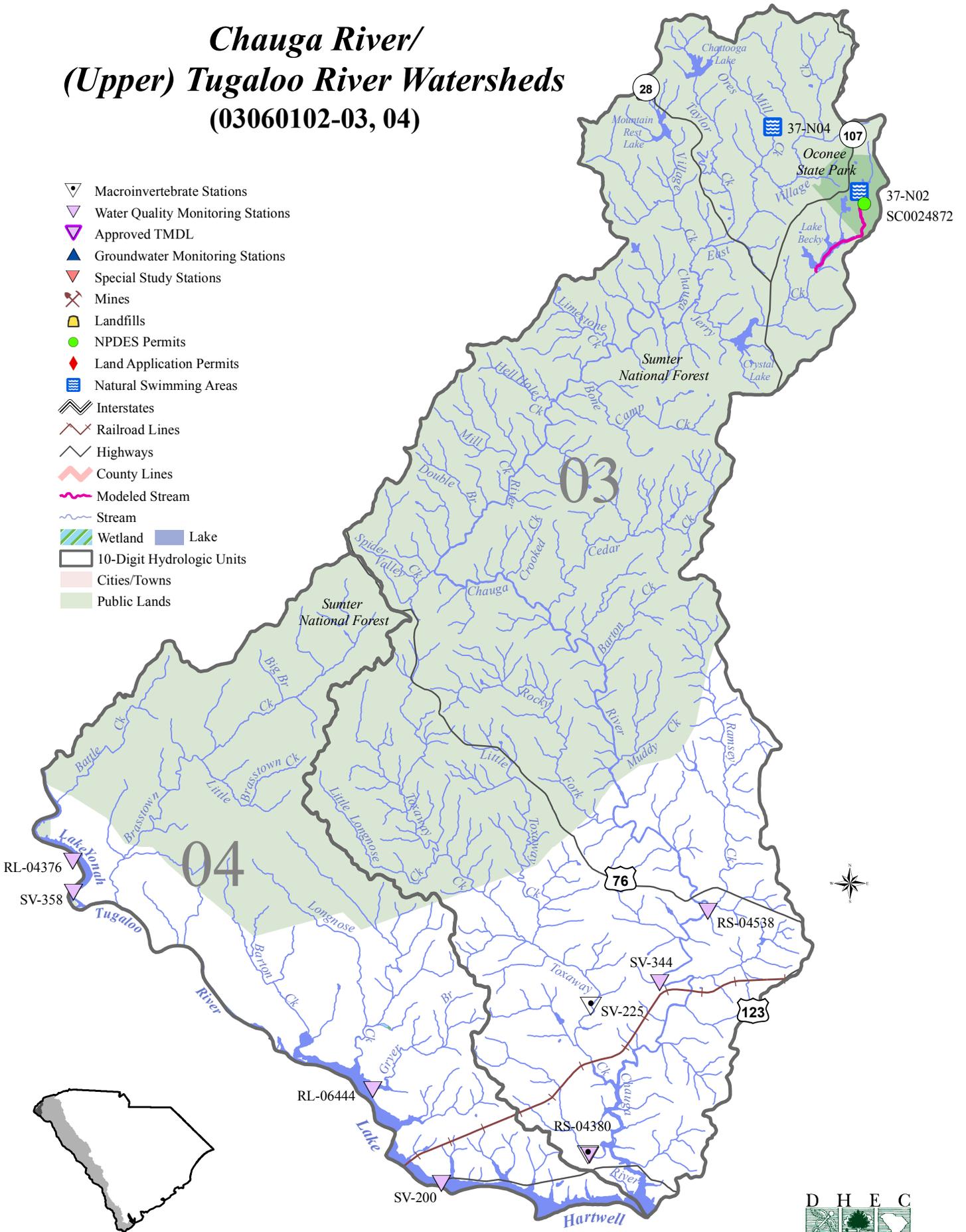


- | | |
|-------------------------------------|-----------------------------|
| ▽ Macroinvertebrate Stations | ≡ Interstates |
| ▽ Water Quality Monitoring Stations | ⚡ Railroad Lines |
| ▽ Approved TMDL | ⚡ Highways |
| ▲ Groundwater Monitoring Stations | ⚡ County Lines |
| ▽ Special Study Stations | ⚡ Modeled Stream |
| ⚡ Mines | ⚡ Stream |
| 🗑 Landfills | 🌿 Wetland |
| ● NPDES Permits | 🟦 Lake |
| ♦ Land Application Permits | ▭ 10-Digit Hydrologic Units |
| 🏊 Natural Swimming Areas | 🏠 Cities/Towns |
| | 🟩 Public Lands |



Chauga River/ (Upper) Tugaloo River Watersheds (03060102-03, 04)

- ▽ 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

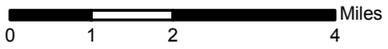
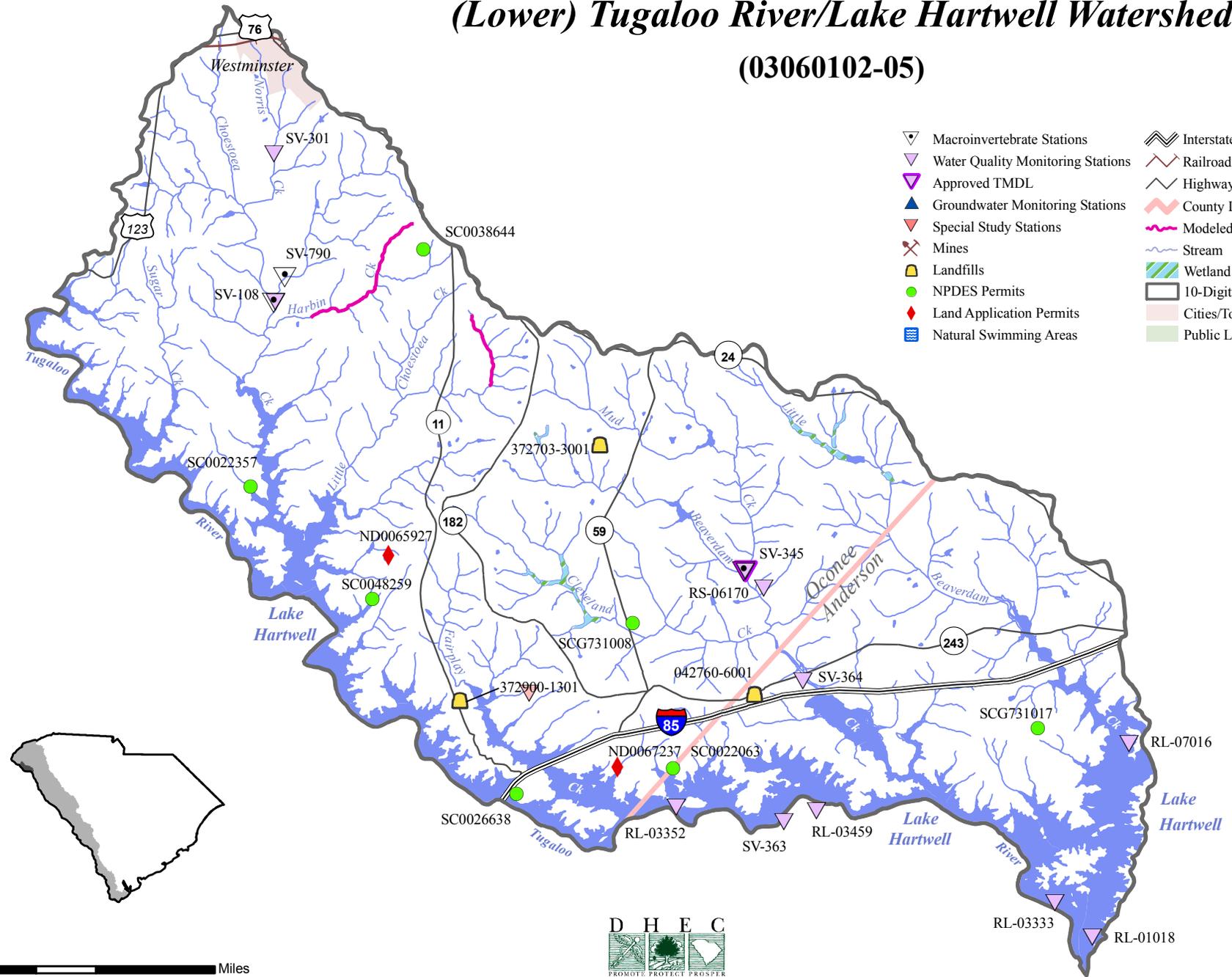


0 1 2 4 Miles

(Lower) Tugaloo River/Lake Hartwell Watershed (03060102-05)

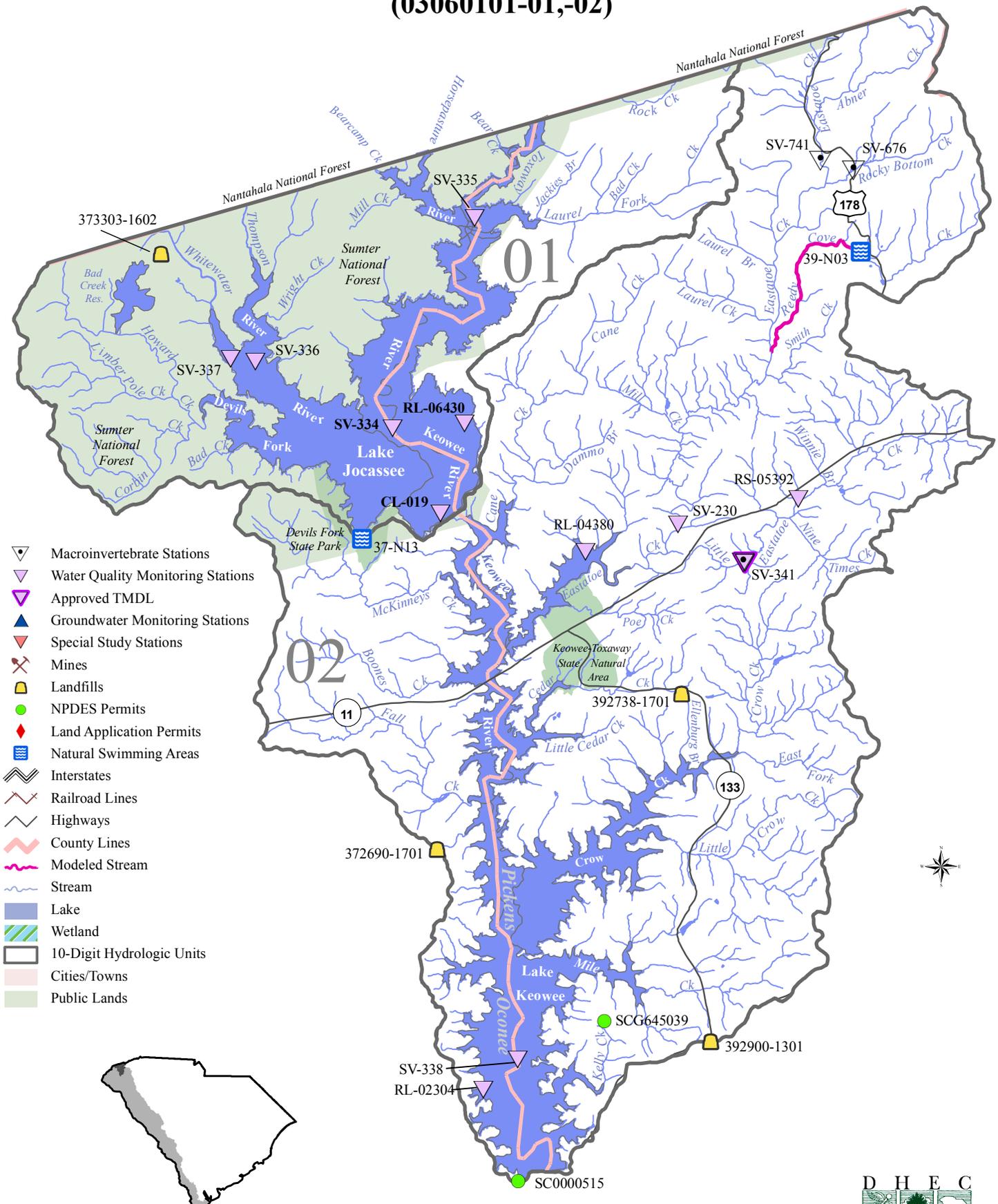
A-32

- ▽ 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



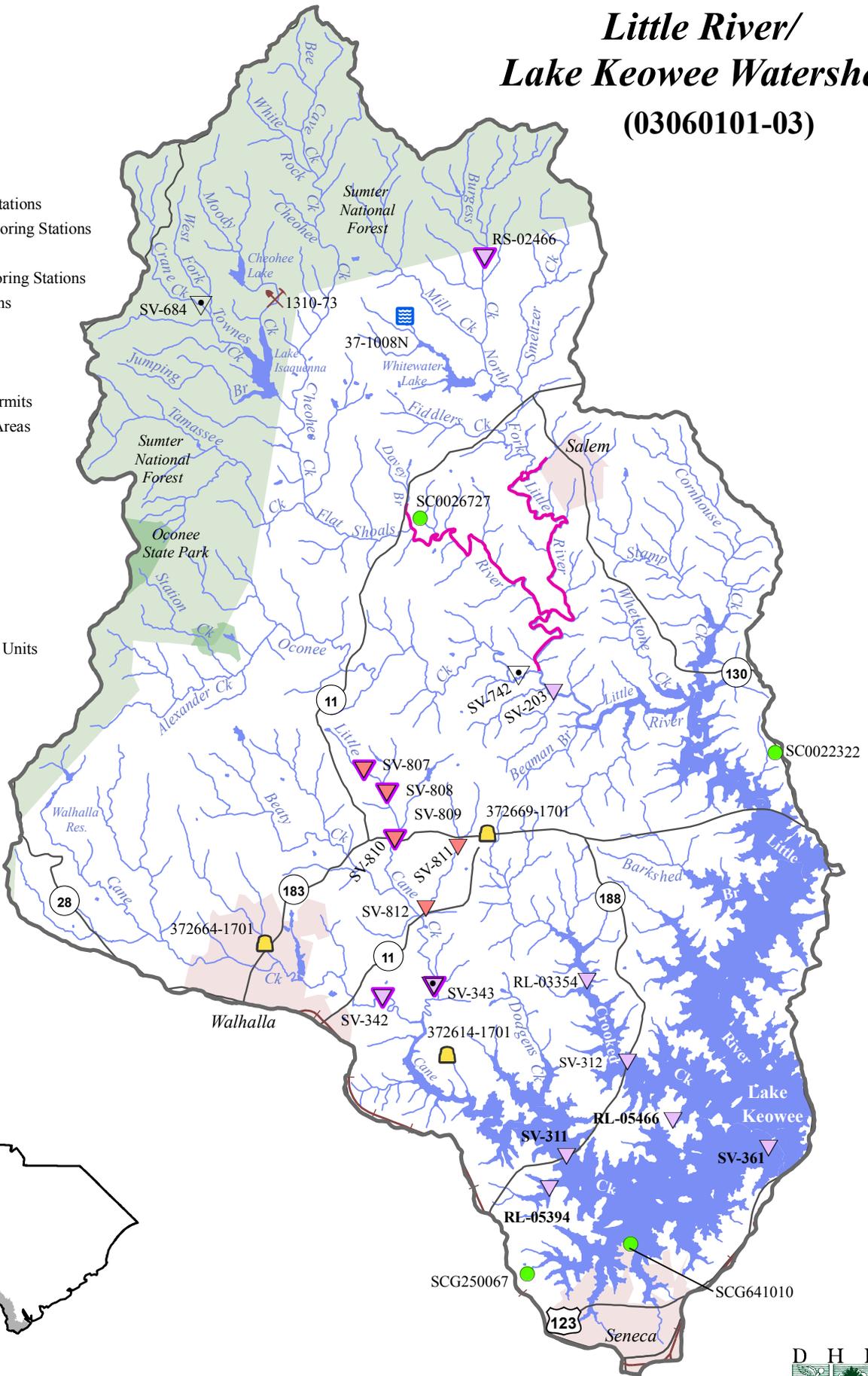
Keowee River/Lake Jocassee/Lake Keowee Watersheds

(03060101-01,-02)



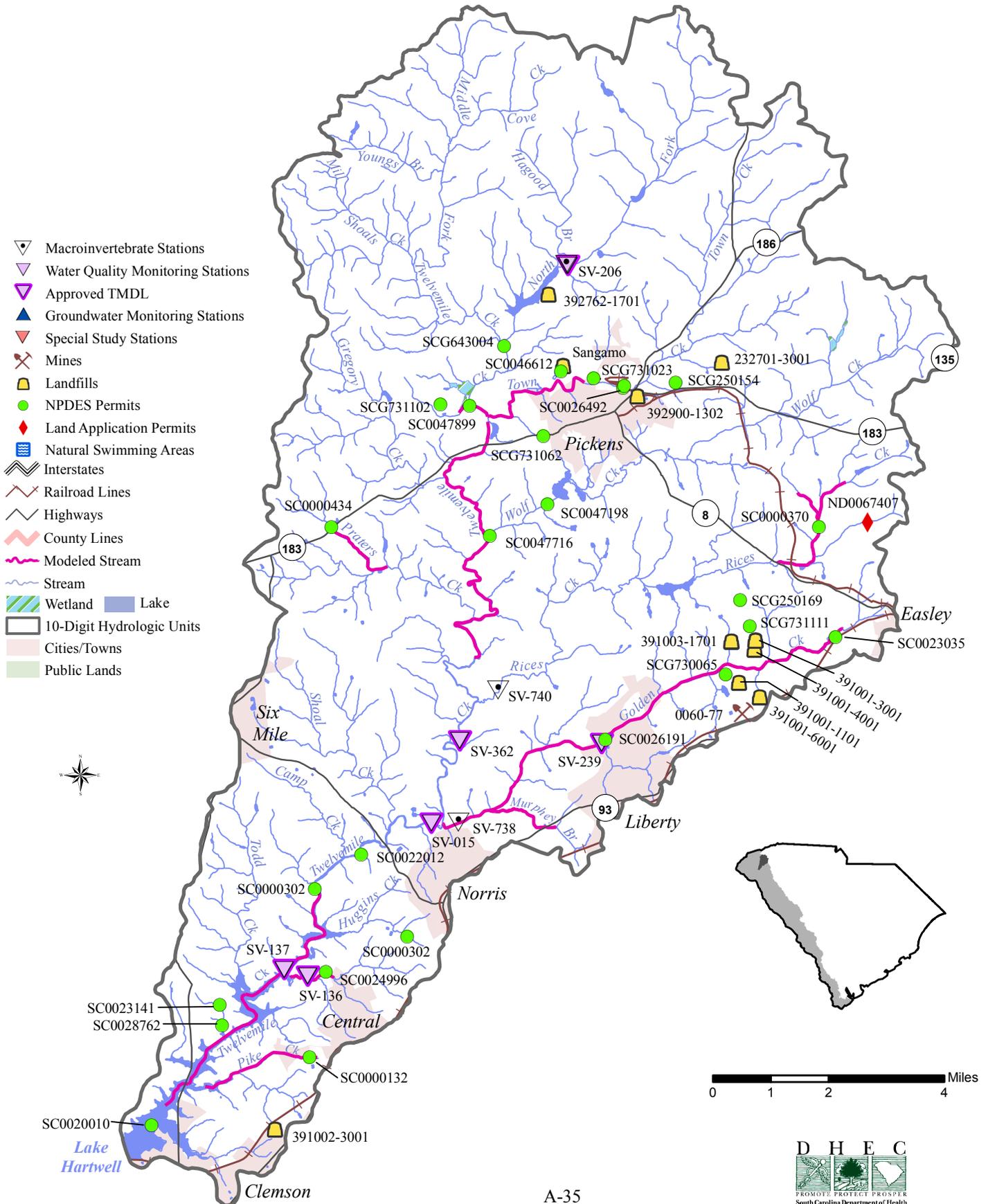
Little River/ Lake Keowee Watershed (03060101-03)

- ▽ 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
- 🌊 Lake
- 🌿 Wetland
- 🗺️ 10-Digit Hydrologic Units
- 🏘️ Cities/Towns
- 🌲 Public Lands



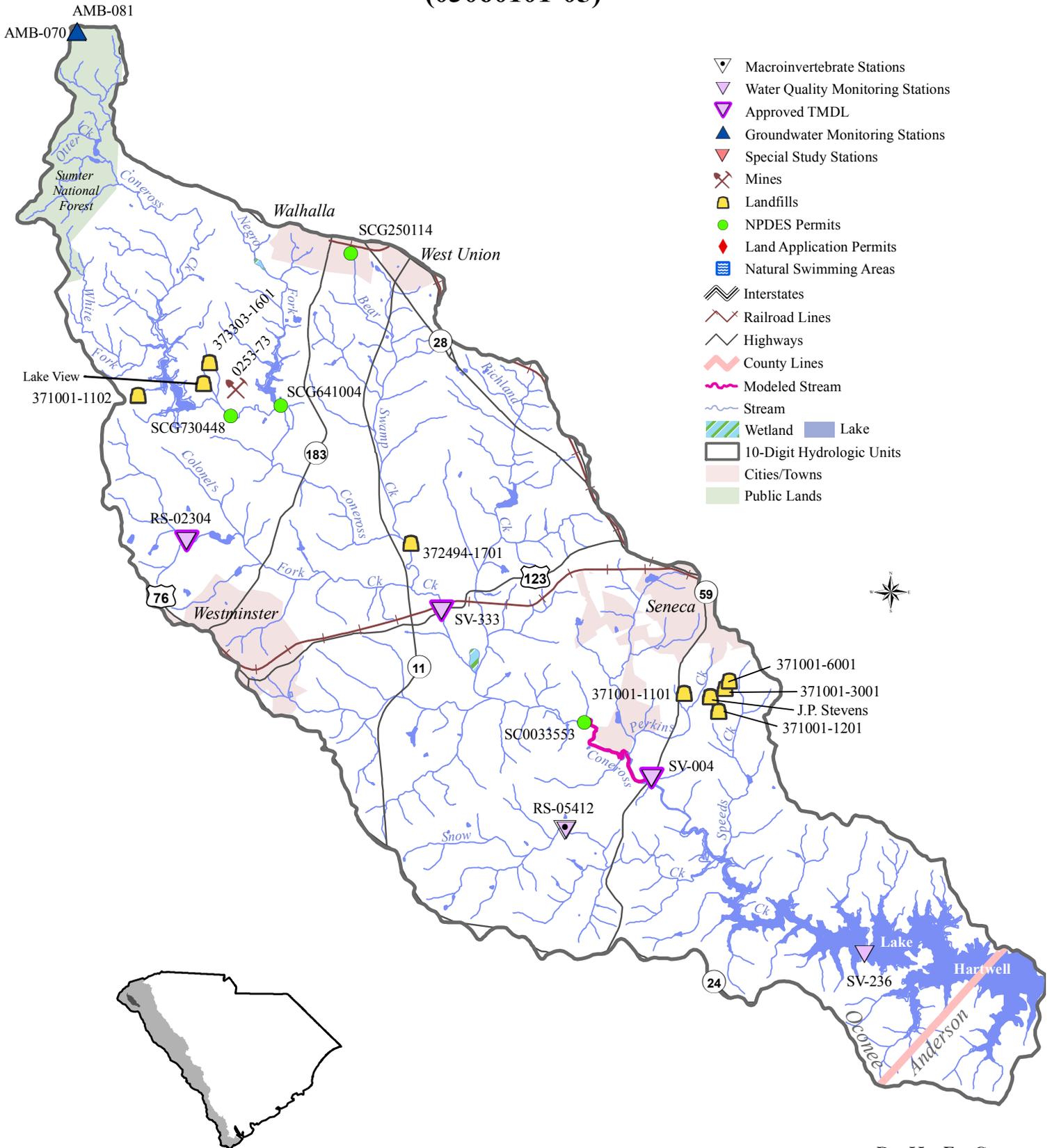
Twelvemile Creek/Lake Hartwell Watershed

(03060101-04)



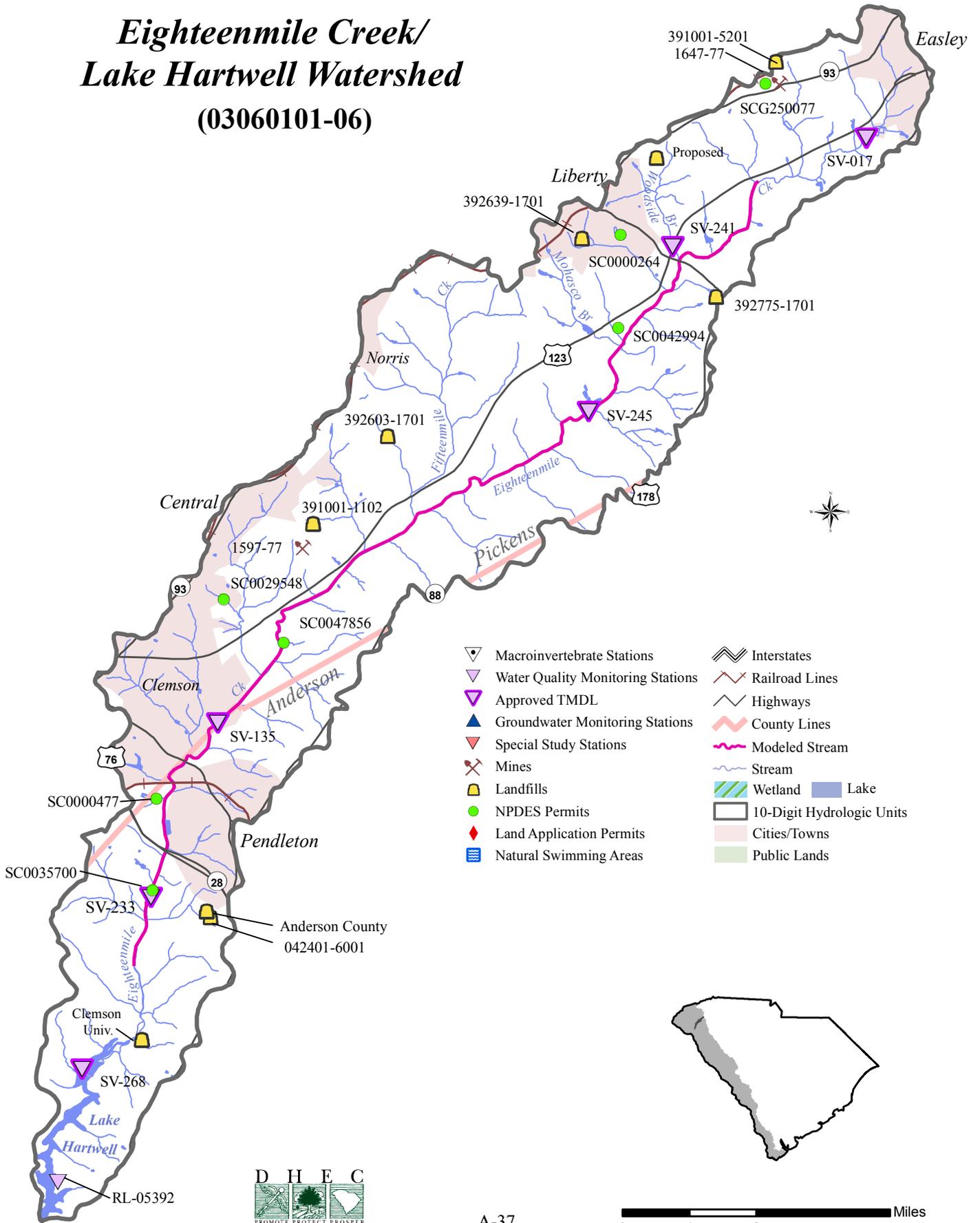
Coneross Creek/Lake Hartwell Watershed

(03060101-05)



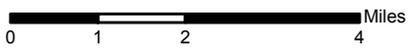
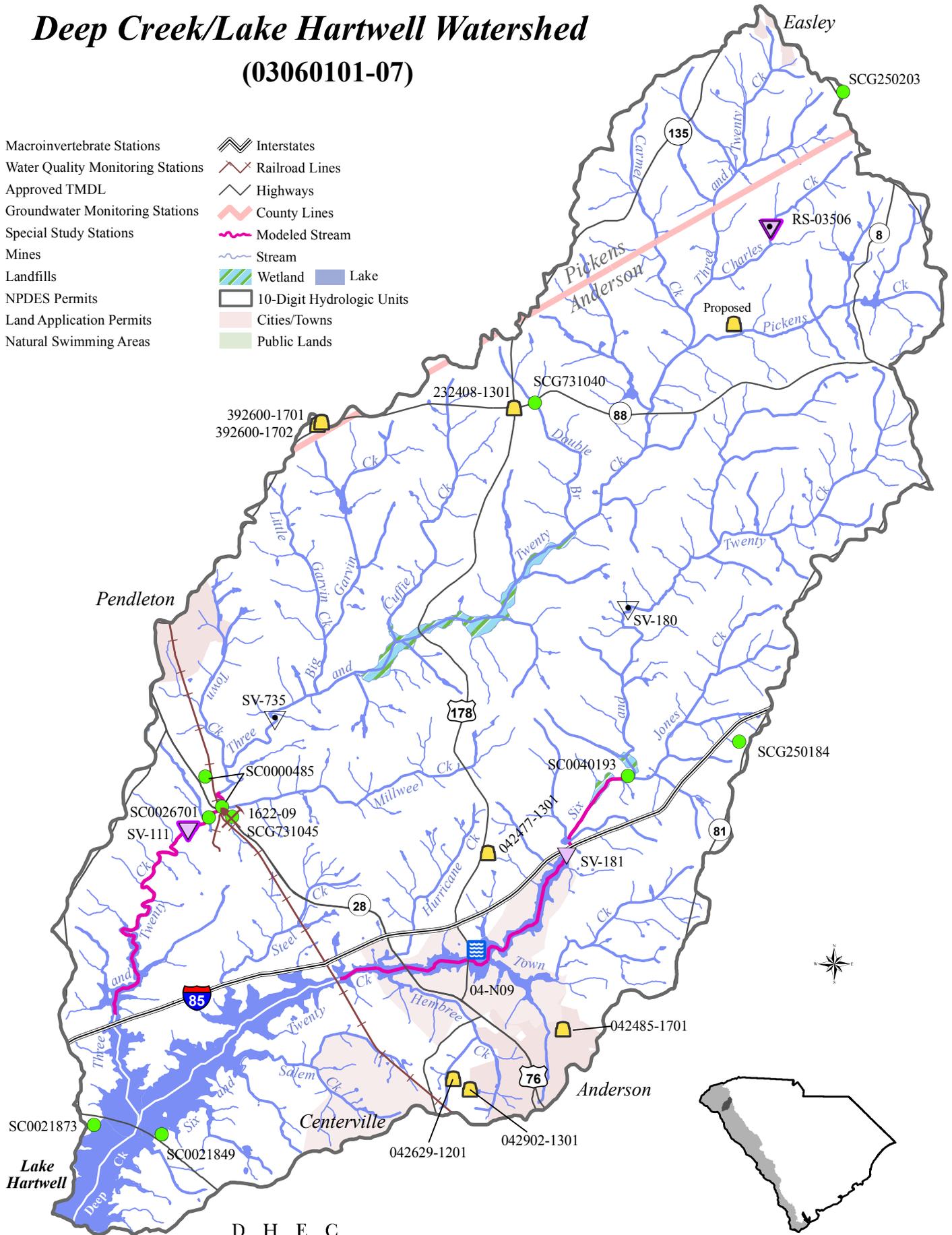
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Eighteenmile Creek/ Lake Hartwell Watershed (03060101-06)



Deep Creek/Lake Hartwell Watershed (03060101-07)

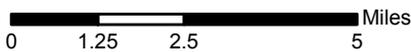
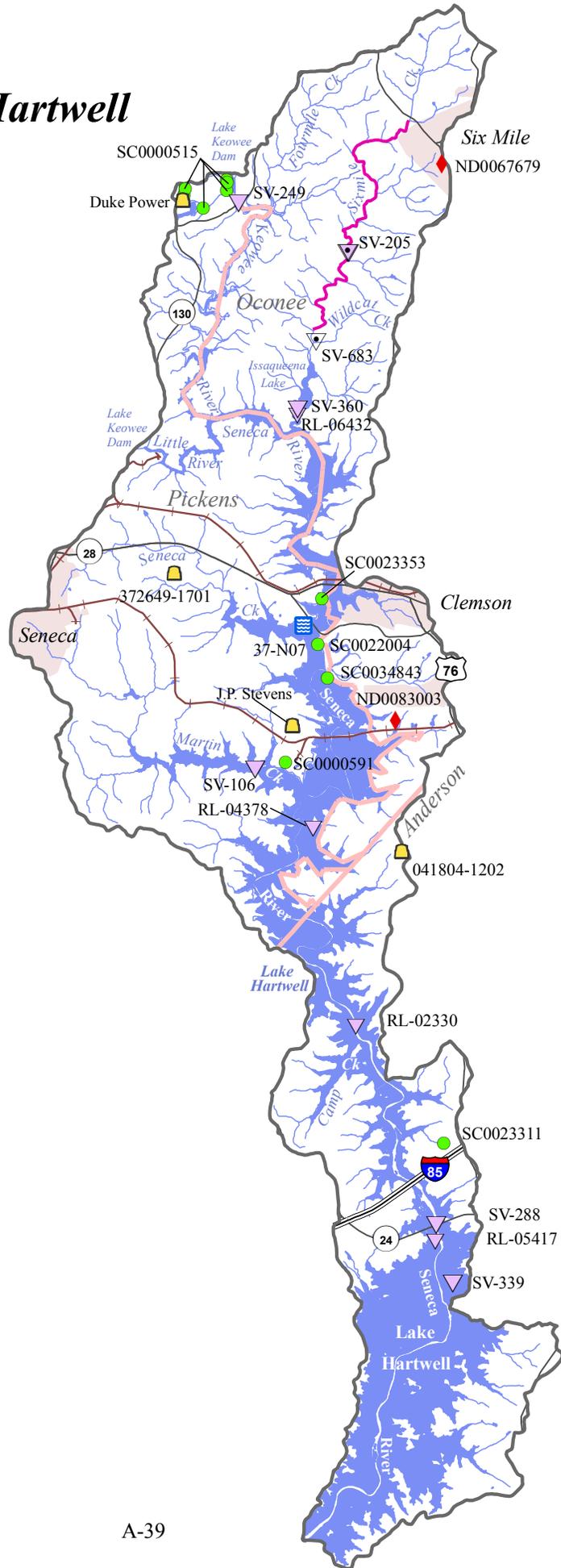
- | | |
|-------------------------------------|-----------------------------|
| ▽ Macroinvertebrate Stations | ≡ Interstates |
| ▽ Water Quality Monitoring Stations | ≡ Railroad Lines |
| ▽ Approved TMDL | ≡ Highways |
| ▲ Groundwater Monitoring Stations | ≡ County Lines |
| ▼ Special Study Stations | ≡ Modeled Stream |
| ⚡ Mines | ≡ Stream |
| 🗑️ Landfills | ≡ Wetland |
| ● NPDES Permits | ≡ Lake |
| ♦ Land Application Permits | ≡ 10-Digit Hydrologic Units |
| 🏊 Natural Swimming Areas | ≡ Cities/Towns |
| | ≡ Public Lands |



Seneca River/Lake Hartwell Watershed

(03060101-08)

- ▽ 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
- 🟦 Lake
- 🟩 Wetland
- 📏 10-Digit Hydrologic Units
- 🏘️ Cities/Towns
- 🌲 Public Lands



APPENDIX B.

Upper Savannah River Basin

Monitoring Site Descriptions

Ambient Water Quality Monitoring Sites

Station #	Type	Class	Description
03060103-01			
RL-04371 RL04		FW	LAKE HARTWELL COVE, 0.75 MI SE OF SADLERS CREEK STATE PARK
SV-340	INT	FW	LAKE HARTWELL, MAIN BODY AT USACE WQ BUOY BETWEEN MARKERS 11 & 12
03060103-02			
SV-031	W	FW	ROCKY RIVER AT S-04-263, 2.7 MI SE ANDERSON AT STP
SV-041	W	FW	ROCKY RIVER AT S-04-152 BELOW ROCKY RIVER STP
SV-139	W	FW	CUPBOARD CK AT S-04-733 ABOVE BREAZEALE ST PLT & BELOW BLAIR HILL
SV-140	W	FW	CUPBOARD CK AT S-04-209 BELOW EFFLUENT FROM BELTON 2 PLANT
SV-141	W	FW	BROADWAY CREEK AT US 76 BETWEEN ANDERSON & BELTON
SV-319	W	FW	BROADWAY LAKE, BROADWAY CREEK ARM UPSTREAM OF PUBLIC ACCESS
RL-06421 RL06		FW	BROADWAY LAKE, 1 MI SW OF JUNCTION OF US HWY 178 AND US HWY 76
RL-02455 RL02		FW	BROADWAY LAKE, 0.2 MI NW OF ALLEN PARK
RL-03355 RL03		FW	BROADWAY LAKE, 0.5 MI NW OF SPILLWAY NEARSHORE OPP. END OF S-04-152
SV-258	W	FW	BROADWAY LAKE, NEALS CREEK ARM ½ BETWEEN BANKS AT GOLF COURSE
SV-321	W	FW	BROADWAY LAKE, FOREBAY, ½ BETWEEN SPILLWAY AND OPPOSITE LAND
SV-346	INT	FW	ROCKY RIVER AT S-04-244
SV-037	W	FW	BETSY CREEK AT S-04-259 BELOW FIBERGLAS OUTFALL
SV-331	INT	FW	LAKE SECESSION, ¼ MI BELOW SC 28
SV-332	INT	FW	LAKE SECESSION APPROX. 400 YDS ABOVE DAM
SV-185	BIO	FW	WILSON CREEK AT SC 413
SV-347	INT	FW	WILSON CREEK AT S-04-294
RL-06439 RL06		FW	LAKE RUSSELL, ROCKY RIVER ARM, 0.2 MI S OF BRIDGE AT SC HWY 71
SV-357	W	FW	LAKE RUSSELL, ROCKY RIVER ARM BETWEEN MARKERS 48 & 49
03060103-04			
SV-316	W	FW	BIG GENEROSTEE CREEK AT COUNTY ROAD 104
RS-02490 RS02		FW	DEVIL FORK CREEK AT BUSBY RD OFF S-04-22
SV-100	W	FW	LAKE RUSSELL AT SC 181, 6.5 MI SW OF STARR
RL-06441 RL06		FW	LAKE RUSSELL, 5.8 MI WSW OF IVA
RS-05414 RS05		FW	LITTLE GENEROSTEE CREEK AT TINY MCCONELL RD, 4.1 MI SW OF STARR
SV-109	BIO	FW	LITTLE GENEROSTEE CREEK AT SC 184
RL-05409 RL05		FW	LAKE RUSSELL, 3.85 MI WSW OF END OF S-1-169
SV-098	INT	FW	LAKE RUSSELL AT SC 72, 3.1 MI SW CALHOUN FALLS
03060103-05			
SV-164	W/BIO	FW	LITTLE RIVER AT S-01-24
SV-733	BIO	FW	HOGSKIN CREEK AT SC 184
RS-05586 RS05/BIO		FW	JOHNSON CK TRIB AT S-01-352, 2 ND BRIDGE FROM SC201, 6.8 MI W DUE WEST
SV-348	W	FW	LITTLE RIVER AT S-01-32
RS-02478 RS02/BIO		FW	LITTLE RIVER AT S-01-308
RS-05558 RS05		FW	MORROW CREEK AT S-01-344, 4.1 MI NE OF CALHOUN FALLS
SV-644	BIO	FW	GILL CREEK AT S-01-32
SV-052	W	FW	SAWNEY CREEK AT CO. RD 1.5 MI SE OF CALHOUN FALLS
SV-171	BIO	FW	CALHOUN CREEK AT S-01-40
SV-192	INT	FW	LITTLE RIVER AT S-33-19

Station #	Type	Class	Description
RS-06190	RS06/BIO	FW	BAILEY CREEK TRIB AT S-01-171, 4.8 MI NNE OF ABBEVILLE
SV-349	W/BIO	FW	LONG CANE CREEK AT S-01-159
SV-734	BIO	FW	JOHNS CREEK AT S-01-159
SV-053B	S	FW	BLUE HILL CREEK ON S MAIN ST ABBEVILLE
SV-732	BIO	FW	BIG CURLY TAIL CREEK AT US FOREST RD 509
RS-04542	RS04	FW	REEDY BR, ABOUT 1 MI E OF S-24-112, 5 MI SW OF PROMISED LAND
RS-05574	RS05/BIO	FW	ROCKY BRANCH AT S-24-177, 14.6 MI SW OF GREENWOOD
SV-318	INT/BIO	FW	LONG CANE CREEK AT S-33-117, 7 MI NW McCORMICK
03060103-07			
CL-040	W	FW	LAKE THURMOND HEADWATERS (SAVANNAH RIVER)
RL-05405	RL05	FW	LAKE THURMOND, 1.25 MI S OF THE END OF S-33-337
RL-05407	RL05	FW	LAKE THURMOND, 0.3 MI S OF BOATRAMP AT THE END OF S-33-366
RL-03357	RL03	FW	LAKE THURMOND, HICKORY KNOB STATE PARK OPP PATTERSON CREEK
RL-05463	RL05	FW	LAKE THURMOND, 0.67 MI NW OF US 378
SV-291	W	FW	LAKE THURMOND AT US 378, 7 MI SW OF McCORMICK
CL-039	W	FW	LITTLE RIVER ARM OF LAKE THURMOND
RS-03510	RS03	FW	BAKER CREEK TRIB AT S-33-329 IN BAKER CREEK STATE PARK
SV-819	SSS	FW	HAWE CREEK IMMEDIATELY UPSTREAM OF SV-817 & SV-818
SV-818	SSS	FW	HAWE CREEK TRIBUTARY AT STREAM MOUTH
SV-817	SSS	FW	HAWE CREEK TRIBUTARY AT STREAM MOUTH
SV-066	SSS	FW	HAWE CREEK AT SECONDARY ROAD 44
RL-05405	RL05	FW	LAKE THURMOND HEADWATERS (SAVANNAH RIVER)
RL-05405	RL05	FW	LAKE THURMOND HEADWATERS (SAVANNAH RIVER)
CL-041	W	FW	LAKE THURMOND IN FOREBAY NEAR DAM

Groundwater Monitoring Sites

Well #	Class	Aquifer	Location
03060103-04			
AMB-055	GB	SAPROLITE	STARR
AMB-076	GB	PIEDMONT BEDROCK	STARR
03060103-05			
AMB-054	GB	PIEDMONT BEDROCK	ABBEVILLE
AMB-075	GB	SAPROLITE	ABBEVILLE
03060103-07			
AMB-106	GB	PIEDMONT BEDROCK	HAMILTON BRANCH

For further details concerning sampling frequency and parameters sampled, please visit our website at www.scdhec.gov/eqc/admin/html/eqcpubs.html#wqreports for the current State of S.C. Monitoring Strategy.

Water Quality Data Spreadsheet Legend

Station Information:

STATION NUMBER Station ID

TYPE SCDHEC station type code
P = Primary station, sampled monthly all year round
S = Secondary station, sampled monthly May - October
P* = Secondary station upgraded to primary station parameter coverage and sampling frequency for basin study
W = Special watershed station added for the Savannah River Basin study
BIO = Indicates macroinvertebrate community data assessed
INT = Integrator Station (approximates a Primary station)
RL = Random Lake station
RO = Random Open water station
RS = Random Stream station
RT = Random Tide Creek station

WATERBODY NAME Stream or Lake Name

CLASS Stream classification at the point where monitoring station is located

Parameter Abbreviations and Parameter Measurement Units:

DO	Dissolved Oxygen (mg/l)	NH3	Ammonia (mg/l)
BOD	Five-Day Biochemical Oxygen Demand (mg/l)	CD	Cadmium (ug/l)
pH	pH (SU)	CR	Chromium (ug/l)
TP	Total Phosphorus (mg/l)	CU	Copper (ug/l)
TN	Total Nitrogen (mg/l)	PB	Lead (ug/l)
TURB	Turbidity (NTU)	HG	Mercury (ug/l)
TSS	Total Suspended Solids (mg/l)	NI	Nickel (ug/l)
BACT	Fecal Coliform Bacteria (#/100 ml)	ZN	Zinc (ug/l)

Statistical Abbreviations:

N For *standards compliance*, number of surface samples collected between January 2002 and December 2006.
 For *trends*, number of surface samples collected between January 1992 and December 2006.
EXC. Number of samples contravening the appropriate standard
% Percentage of samples contravening the appropriate standard
MEAN EXC. Mean of samples that contravened the applied standard
MED For *heavy metals with a human health criterion*, this is the median of all surface samples between January 2002 and December 2006. DL indicates that the median was the detection limit.
MAG Magnitude of any statistically significant trend, average change per year, expressed in parameter measurement units
GEO MEAN Geometric mean of fecal coliform bacteria samples collected between January 2002 and December 2006

Key to Trends:

D Statistically significant decreasing trend in parameter concentration
I Statistically significant increasing trend in parameter concentration
***** No statistically significant trend

Appendix B. Upper Savannah River Basin

STATION				DO	DO	DO	MEAN	TRENDS (92-2006)					
NUMBER	TYPE	WATERBODY NAME	CLASS	N	EXC.	%	EXC.	DO	N	MAG	BOD	N	MAG
03060103-01													
RL-04371	RL04	LAKE HARTWELL	FW	12	0	0	0						
SV-340	INT	LAKE HARTWELL	FW	61	0	0	0	NS	190	0	I	171	0.1
03060103-02													
SV-031	SS	ROCKY RVR	FW	12	0	0	0	NS	130	0.0286	I	128	0.0625
SV-041	SS	ROCKY RVR	FW	12	0	0	0	NS	78	0.0571	NS	75	0.0208
SV-139	SS	CUPBOARD CK	FW	12	2	17	4.445	NS	63	-0.0203	D	63	-0.1042
SV-140	SS	CUPBOARD CK	FW	12	0	0	0	I	64	0.1764	D	64	-0.278
SV-141	SS	BROADWAY CK	FW	12	0	0	0	NS	82	-0.0109	NS	64	0.0345
SV-319	SS	LAKE, BROADWAY	FW	12	0	0	0	NS	32	0.0019	NS	30	0.0222
RL-06421	RL06	LAKE, BROADWAY	FW	12	0	0	0						
RL-02455	RL02	LAKE BROADWAY	FW	12	0	0	0						
RL-03355	RL03	LAKE, BROADWAY	FW	11	1	9	3						
SV-258	SS	LAKE, BROADWAY	FW	11	0	0	0	NS	31	-0.0773			
SV-321	SS	LAKE, BROADWAY	FW	12	0	0	0	NS	33	0.0161	I	31	0.0444
SV-346	INT	ROCKY RVR	FW	58	4	7	3.4125	NS	94	-0.0258	I	89	0
SV-037	SS	BETSY CK	FW	12	0	0	0	NS	40	0.0125			
SV-331	INT	LAKE SECESSION	FW	60	0	0	0	NS	204	0	NS	172	0.01
SV-332	INT	LAKE SECESSION	FW	59	0	0	0	NS	200	0.025	I	172	0.05
SV-185		WILSON CK											
SV-347	INT	WILSON CK	FW	59	4	7	3.7925	NS	95	0	I	89	0
RL-06439	RL06	LAKE RUSSELL	FW	12	0	0	0						
SV-357	SS	LAKE RUSSELL	FW	12	0	0	0	NS	30	0.016			
03060103-04													
SV-316	SS	BIG GENEROSTEE CK	FW	11	0	0	0	NS	66	0.0413	NS	64	0
RS-02490	RS02	DEVILS FORK CK	FW	12	0	0	0						
SV-100	SS	LAKE RUSSELL	FW	11	0	0	0	NS	129	0	I	128	0.05
RL-06441	RL06	LAKE RUSSELL	FW	12	0	0	0						
RS-05414	RS05	LITTLE GENEROSITEE	FW	11	0	0	0						
SV-109		LITTLE GENEROSITEE											
RL-05409	RL05	LAKE RUSSELL	FW	11	0	0	0						
SV-098/ RL-03337	INT	LAKE RUSSELL	FW	59	0	0	0	NS	216	-0.0102	I	189	0.0818

Appendix B. Upper Savannah River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	pH			MEAN EXC.	TRENDS (92-2006)			TURB N	TURB EXC.	TURB %	MEAN EXC.	TRENDS (92-2006)		
				N	EXC.	%		PH	N	MAG					TURB	N	MAG
03060103-01																	
RL-04371	RL04	LAKE HARTWELL	FW	12	0	0	0				12	0	0	0			
SV-340	INT	LAKE HARTWELL	FW	61	3	5	7.1	I	189	0.03	60	1	2	37	D	176	-0.0317
03060103-02																	
SV-031	SS	ROCKY RVR	FW	12	0	0	0	I	128	0.022	11	3	27	64.3333	NS	127	0.3333
SV-041	SS	ROCKY RVR	FW	12	0	0	0	I	77	0.0329	11	3	27	127.333	NS	74	0
SV-139	SS	CUPBOARD CK	FW	12	2	17	5.805	D	62	-0.0629	12	0	0	0	NS	62	0.1429
SV-140	SS	CUPBOARD CK	FW	12	1	8	5.94	NS	63	-0.0089	12	0	0	0	NS	63	-0.1667
SV-141	SS	BROADWAY CK	FW	12	0	0	0	I	81	0.0186	11	3	27	103.333	D	64	-0.8
SV-319	SS	LAKE, BROADWAY	FW	12	0	0	0	NS	32	0.0083	11	2	18	47	NS	31	-0.4
RL-06421	RL06	LAKE, BROADWAY	FW	12	0	0	0				11	0	0	0			
RL-02455	RL02	LAKE BROADWAY	FW	12	0	0	0				12	0	0	0			
RL-03355	RL03	LAKE, BROADWAY	FW	11	1	9	5.85				12	1	8	45			
SV-258	SS	LAKE, BROADWAY	FW	11	1	9	5.87	NS	31	-0.012	10	0	0	0	NS	30	-0.1589
SV-321	SS	LAKE, BROADWAY	FW	12	1	8	5.96	NS	33	-0.0017	11	0	0	0	NS	32	-0.0956
SV-346	INT	ROCKY RVR	FW	58	1	2	5.36	NS	94	-0.006	54	4	7	88.5	NS	91	-0.32
SV-037	SS	BETSY CK	FW	12	0	0	0	NS	39	0.0304	11	0	0	0			
SV-331	INT	LAKE SECESSION	FW	60	14	23	8.8579	I	201	0.02	59	7	12	50	D	177	-0.4333
SV-332	INT	LAKE SECESSION	FW	59	10	17	8.466	I	199	0.045	59	2	3	37	D	176	-0.1154
SV-185		WILSON CK															
SV-347	INT	WILSON CK	FW	59	0	0	0	NS	95	0.03	58	3	5	171.667	NS	94	0
RL-06439	RL06	LAKE RUSSELL	FW	12	0	0	0				12	1	8	42			
SV-357	SS	LAKE RUSSELL	FW	12	0	0	0	NS	31	0.027	12	0	0	0	NS	31	0.0444
03060103-04																	
SV-316	SS	BIG GENEROSTEE CK	FW	11	1	9	5.64	I	65	0.0209	11	1	9	110	D	62	-0.5
RS-02490	RS02	DEVILS FORK CK	FW	12	1	8	5.9				11	2	18	57.5			
SV-100	SS	LAKE RUSSELL	FW	11	1	9	5.98	NS	127	0.0104	11	0	0	0	NS	127	-0.075
RL-06441	RL06	LAKE RUSSELL	FW	12	1	8	8.64				11	0	0	0			
RS-05414	RS05	LITTLE GENEROSITEE	FW	11	0	0	0				11	1	9	0			
SV-109		LITTLE GENEROSITEE															
RL-05409	RL05	LAKE RUSSELL	FW	11	2	18	8.63				11	0	0	0			
SV-098/ RL-03337	INT	LAKE RUSSELL	FW	60	4	7	7.7575	I	211	0.0313	65	0	0	0	D	196	-0.0333

Appendix B. Upper Savannah River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	TP N	TP EXC.	TP %	MEAN EXC.	TRENDS (92-2006)			TN N	TN EXC.	TN %	MEAN EXC.	TRENDS (92-2006)		
								TP	N	MAG					TN	N	MAG
03060103-01																	
RL-04371	RL04	LAKE HARTWELL	FW	12	0	0	0				11	0	0	0			
SV-340	INT	LAKE HARTWELL	FW	61	1	2	0.07	D	141	0	43	0	0	0	NS	151	0.0026
03060103-02																	
SV-031	SS	ROCKY RVR	FW					NS	103	0					NS	126	0.0117
SV-041	SS	ROCKY RVR	FW					NS	55	0.0031					NS	37	0.044
SV-139	SS	CUPBOARD CK	FW					D	49	-0.01							
SV-140	SS	CUPBOARD CK	FW					D	51	-0.064							
SV-141	SS	BROADWAY CK	FW					NS	70	0							
SV-319	SS	LAKE, BROADWAY	FW	12	1	8	0.08				11	0	0	0	NS	30	0.0025
RL-06421	RL06	LAKE, BROADWAY	FW	12	0	0	0				10	0	0	0			
RL-02455	RL02	LAKE BROADWAY	FW	12	0	0	0				3	0	0	0			
RL-03355	RL03	LAKE, BROADWAY	FW	12	0	0	0				6	0	0	0			
SV-258	SS	LAKE, BROADWAY	FW	11	0	0	0				10	0	0	0			
SV-321	SS	LAKE, BROADWAY	FW	12	0	0	0				11	0	0	0			
SV-346	INT	ROCKY RVR	FW					NS	69	-0.003					D	73	-0.04
SV-037	SS	BETSY CK	FW														
SV-331	INT	LAKE SECESSION	FW	59	9	15	0.0978	D	146	-0.0025	45	1	2	1.56	D	160	-0.0133
SV-332	INT	LAKE SECESSION	FW	59	1	2	0.07	D	143	0	45	0	0	0	NS	156	0.0027
SV-185		WILSON CK															
SV-347	INT	WILSON CK	FW					NS	70	0					NS	72	0.0116
RL-06439	RL06	LAKE RUSSELL	FW	12	0	0	0				11	0	0	0			
SV-357	SS	LAKE RUSSELL	FW	12	0	0	0				11	0	0	0	NS	31	0.004
03060103-04																	
SV-316	SS	BIG GENEROSTEE CK	FW					NS	50	0.0029							
RS-02490	RS02	DEVILS FORK CK	FW														
SV-100	SS	LAKE RUSSELL	FW	11	0	0	0	NS	102	0	11	0	0	0	I	125	0.01
RL-06441	RL06	LAKE RUSSELL	FW	12	0	0	0				11	0	0	0			
RS-05414	RS05	LITTLE GENEROSITEE	FW														
SV-109		LITTLE GENEROSITEE															
RL-05409	RL05	LAKE RUSSELL	FW	11	0	0	0				10	0	0	0			
SV-098/ RL-03337	INT	LAKE RUSSELL	FW	60	0	0	0	D	156	0	50	0	0	0	NS	167	0

Appendix B. Upper Savannah River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	CHL N	CHL EXC.	CHL %	MEAN EXC.	TRENDS (92-2006)		
								TSS	N	MAG
03060103-01										
RL-04371	RL04	LAKE HARTWELL	FW	6	0	0	0			
SV-340	INT	LAKE HARTWELL	FW	29	0	0	0			
03060103-02										
SV-031	SS	ROCKY RVR	FW							
SV-041	SS	ROCKY RVR	FW							
SV-139	SS	CUPBOARD CK	FW							
SV-140	SS	CUPBOARD CK	FW							
SV-141	SS	BROADWAY CK	FW							
SV-319	SS	LAKE, BROADWAY	FW	5	0	0	0			
RL-06421	RL06	LAKE, BROADWAY	FW	5	1	20	42.08			
RL-02455	RL02	LAKE BROADWAY	FW	6	0	0	0			
RL-03355	RL03	LAKE, BROADWAY	FW	6	0	0	0			
SV-258	SS	LAKE, BROADWAY	FW	5	0	0	0			
SV-321	SS	LAKE, BROADWAY	FW	5	0	0	0			
SV-346	INT	ROCKY RVR	FW							
SV-037	SS	BETSY CK	FW							
SV-331	INT	LAKE SECESSION	FW	27	2	7	47.25			
SV-332	INT	LAKE SECESSION	FW	28	0	0	0			
SV-185		WILSON CK								
SV-347	INT	WILSON CK	FW							
RL-06439	RL06	LAKE RUSSELL	FW	5	0	0	0			
SV-357	SS	LAKE RUSSELL	FW	6	0	0	0			
03060103-04										
SV-316	SS	BIG GENEROSTEE CK	FW							
RS-02490	RS02	DEVILS FORK CK	FW							
SV-100	SS	LAKE RUSSELL	FW	5	0	0	0			
RL-06441	RL06	LAKE RUSSELL	FW	5	0	0	0			
RS-05414	RS05	LITTLE GENEROSITEE	FW							
SV-109		LITTLE GENEROSITEE								
RL-05409	RL05	LAKE RUSSELL	FW	5	0	0	0			
SV-098/ RL-03337	INT	LAKE RUSSELL	FW	31	0	0	0			

Appendix B. Upper Savannah River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	GEO MEAN	BACT N	BACT EXC.	BACT %	MEAN EXC.	TRENDS (92-2006)		
									BACT	N	MAG
03060103-01											
RL-04371	RL04	LAKE HARTWELL	FW	1.2599	12	0	0	0			
SV-340	INT	LAKE HARTWELL	FW	1.3181	61	1	2	480	D	177	0
03060103-02											
SV-031	SS	ROCKY RVR	FW	494.859	12	5	42	2068	I	129	9.75
SV-041	SS	ROCKY RVR	FW	371.9464	12	4	33	1835	NS	77	3.0952
SV-139	SS	CUPBOARD CK	FW	185.2074	12	0	0	0	D	63	-212.7778
SV-140	SS	CUPBOARD CK	FW	238.965	12	2	17	510	NS	64	-18.5714
SV-141	SS	BROADWAY CK	FW	454.7086	12	4	33	2895	NS	66	-10
SV-319	SS	LAKE, BROADWAY	FW	47.0368	12	1	8	1300	NS	31	1.65
RL-06421	RL06	LAKE, BROADWAY	FW	8.3057	12	0	0	0			
RL-02455	RL02	LAKE BROADWAY	FW	6.0587	12	0	0	0			
RL-03355	RL03	LAKE, BROADWAY	FW	33.9407	12	0	0	0			
SV-258	SS	LAKE, BROADWAY	FW	26.438	11	0	0	0	NS	30	4.3
SV-321	SS	LAKE, BROADWAY	FW	11.2711	12	0	0	0	NS	33	0.0667
SV-346	INT	ROCKY RVR	FW	233.8371	58	13	22	2240.7692	NS	90	8
SV-037	SS	BETSY CK	FW	247.8324	12	5	42	1376			
SV-331	INT	LAKE SECESSION	FW	25.8117	60	4	7	545	D	180	-0.9167
SV-332	INT	LAKE SECESSION	FW	3.0284	59	0	0	0	NS	178	0
SV-185		WILSON CK									
SV-347	INT	WILSON CK	FW	381.556	59	22	37	1643.1818	NS	93	10.9167
RL-06439	RL06	LAKE RUSSELL	FW	9.9494	12	1	8	440			
SV-357	SS	LAKE RUSSELL	FW	2.2972	12	0	0	0	NS	31	0
03060103-04											
SV-316	SS	BIG GENEROSTEE CK	FW	574.559	32	19	59	6930	D	88	-40
RS-02490	RS02	DEVILS FORK CK	FW	753.183	11	9	82	1298.8889			
SV-100	SS	LAKE RUSSELL	FW	9.52	11	0	0	0	NS	127	0
RL-06441	RL06	LAKE RUSSELL	FW	3.2311	12	0	0	0			
RS-05414	RS05	LITTLE GENEROSITEE	FW	2398.8543	11	11	100	3270			
SV-109		LITTLE GENEROSITEE									
RL-05409	RL05	LAKE RUSSELL	FW	1.2821	10	0	0	0			
SV-098/ RL-03337	INT	LAKE RUSSELL	FW	1.7623	65	0	0	0	NS	196	0

Appendix B. Upper Savannah River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	NH3 N	NH3 EXC.	NH3 %	MEAN EXC.	CD N	CD EXC.	CD %	MEAN EXC.	CR N	CR EXC.	CR %	MEAN EXC.
03060103-01															
RL-04371	RL04	LAKE HARTWELL	FW	11	0	0	0	4	0	0	0	4	0	0	0
SV-340	INT	LAKE HARTWELL	FW	39	0	0	0	21	0	0	0	21	0	0	0
03060103-02															
SV-031	SS	ROCKY RVR	FW	12	0	0	0	4	0	0	0	4	0	0	0
SV-041	SS	ROCKY RVR	FW	12	0	0	0	4	0	0	0	4	0	0	0
SV-139	SS	CUPBOARD CK	FW	12	0	0	0	4	0	0	0	4	0	0	0
SV-140	SS	CUPBOARD CK	FW	12	0	0	0	4	0	0	0	4	0	0	0
SV-141	SS	BROADWAY CK	FW	12	0	0	0	4	0	0	0	4	0	0	0
SV-319	SS	LAKE, BROADWAY	FW	12	0	0	0	4	0	0	0	4	0	0	0
RL-06421	RL06	LAKE, BROADWAY	FW	12	0	0	0	4	0	0	0	4	0	0	0
RL-02455	RL02	LAKE BROADWAY	FW	4	0	0	0	4	0	0	0	4	0	0	0
RL-03355	RL03	LAKE, BROADWAY	FW	6	0	0	0	4	0	0	0	4	0	0	0
SV-258	SS	LAKE, BROADWAY	FW	11	0	0	0	4	0	0	0	4	0	0	0
SV-321	SS	LAKE, BROADWAY	FW	12	0	0	0	4	0	0	0	4	0	0	0
SV-346	INT	ROCKY RVR	FW	46	0	0	0	20	0	0	0	20	0	0	0
SV-037	SS	BETSY CK	FW	12	0	0	0	4	0	0	0	4	0	0	0
SV-331	INT	LAKE SECESSION	FW	44	0	0	0	20	0	0	0	20	0	0	0
SV-332	INT	LAKE SECESSION	FW	43	0	0	0	20	0	0	0	20	0	0	0
SV-185		WILSON CK													
SV-347	INT	WILSON CK	FW	42	0	0	0	20	0	0	0	20	0	0	0
RL-06439	RL06	LAKE RUSSELL	FW	9	0	0	0	4	0	0	0	4	0	0	0
SV-357	SS	LAKE RUSSELL	FW	12	0	0	0	4	0	0	0	4	0	0	0
03060103-04															
SV-316	SS	BIG GENEROSTEE CK	FW	11	0	0	0	4	0	0	0	4	0	0	0
RS-02490	RS02	DEVILS FORK CK	FW	6	0	0	0	4	0	0	0	4	0	0	0
SV-100	SS	LAKE RUSSELL	FW	11	0	0	0	4	0	0	0	4	0	0	0
RL-06441	RL06	LAKE RUSSELL	FW	8	0	0	0	4	0	0	0	4	0	0	0
RS-05414	RS05	LITTLE GENEROSITEE	FW	10	0	0	0	4	0	0	0	4	0	0	0
SV-109		LITTLE GENEROSITEE													
RL-05409	RL05	LAKE RUSSELL	FW	10	0	0	0	4	0	0	0	4	0	0	0
SV-098/ RL-03337	INT	LAKE RUSSELL	FW	47	0	0	0	20	0	0	0	20	0	0	0

Appendix B. Upper Savannah River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	CU N	CU EXC.	CU %	MEAN EXC.	PB N	PB EXC.	PB %	MEAN EXC.	HG N	HG EXC.	HG %	MEAN EXC.
03060103-01															
RL-04371	RL04	LAKE HARTWELL	FW	4	0	0	0	4	0	0	0	4	0	0	0
SV-340	INT	LAKE HARTWELL	FW	21	2	10	30.5	21	0	0	0	21	0	0	0
03060103-02															
SV-031	SS	ROCKY RVR	FW	4	0	0	0	4	0	0	0	4	0	0	0
SV-041	SS	ROCKY RVR	FW	4	0	0	0	4	0	0	0	4	0	0	0
SV-139	SS	CUPBOARD CK	FW	4	1	25	94	4	0	0	0	4	0	0	0
SV-140	SS	CUPBOARD CK	FW	4	0	0	0	4	0	0	0	4	0	0	0
SV-141	SS	BROADWAY CK	FW	4	0	0	0	4	0	0	0	4	0	0	0
SV-319	SS	LAKE, BROADWAY	FW	4	0	0	0	4	0	0	0	4	0	0	0
RL-06421	RL06	LAKE, BROADWAY	FW	4	0	0	0	4	0	0	0	4	0	0	0
RL-02455	RL02	LAKE BROADWAY	FW	4	0	0	0	4	0	0	0	4	0	0	0
RL-03355	RL03	LAKE, BROADWAY	FW	4	0	0	0	4	0	0	0	4	0	0	0
SV-258	SS	LAKE, BROADWAY	FW	4	0	0	0	4	0	0	0	4	0	0	0
SV-321	SS	LAKE, BROADWAY	FW	4	0	0	0	4	0	0	0	4	0	0	0
SV-346	INT	ROCKY RVR	FW	20	0	0	0	20	0	0	0	20	0	0	0
SV-037	SS	BETSY CK	FW	4	0	0	0	4	0	0	0	4	0	0	0
SV-331	INT	LAKE SECESSION	FW	20	0	0	0	20	0	0	0	20	0	0	0
SV-332	INT	LAKE SECESSION	FW	20	0	0	0	20	0	0	0	20	0	0	0
SV-185		WILSON CK													
SV-347	INT	WILSON CK	FW	20	0	0	0	20	0	0	0	20	0	0	0
RL-06439	RL06	LAKE RUSSELL	FW	4	0	0	0	4	0	0	0	4	0	0	0
SV-357	SS	LAKE RUSSELL	FW	4	0	0	0	4	0	0	0	4	0	0	0
03060103-04															
SV-316	SS	BIG GENEROSTEE CK	FW	4	0	0	0	4	0	0	0	4	0	0	0
RS-02490	RS02	DEVILS FORK CK	FW	4	0	0	0	4	0	0	0	4	0	0	0
SV-100	SS	LAKE RUSSELL	FW	4	0	0	0	4	1	25	430	4	0	0	0
RL-06441	RL06	LAKE RUSSELL	FW	4	0	0	0	4	0	0	0	4	0	0	0
RS-05414	RS05	LITTLE GENEROSITEE	FW	4	0	0	0	4	0	0	0	4	0	0	0
SV-109		LITTLE GENEROSITEE													
RL-05409	RL05	LAKE RUSSELL	FW	4	0	0	0	4	0	0	0	4	0	0	0
SV-098/ RL-03337	INT	LAKE RUSSELL	FW	20	0	0	0	20	0	0	0	20	0	0	0

Appendix B. Upper Savannah River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	NI N	NI EXC.	NI %	MEAN EXC.	ZN N	ZN EXC.	ZN %	MEAN EXC.
03060103-01											
RL-04371	RL04	LAKE HARTWELL	FW	4	0	0	0	4	0	0	0
SV-340	INT	LAKE HARTWELL	FW	21	0	0	0	21	1	5	160
03060103-02											
SV-031	SS	ROCKY RVR	FW	4	0	0	0	4	0	0	0
SV-041	SS	ROCKY RVR	FW	4	0	0	0	4	0	0	0
SV-139	SS	CUPBOARD CK	FW	4	0	0	0	4	0	0	0
SV-140	SS	CUPBOARD CK	FW	4	0	0	0	4	0	0	0
SV-141	SS	BROADWAY CK	FW	4	0	0	0	4	0	0	0
SV-319	SS	LAKE, BROADWAY	FW	4	0	0	0	4	0	0	0
RL-06421	RL06	LAKE, BROADWAY	FW	4	0	0	0	4	0	0	0
RL-02455	RL02	LAKE BROADWAY	FW	4	0	0	0	4	0	0	0
RL-03355	RL03	LAKE, BROADWAY	FW	4	0	0	0	4	0	0	0
SV-258	SS	LAKE, BROADWAY	FW	4	0	0	0	4	0	0	0
SV-321	SS	LAKE, BROADWAY	FW	4	0	0	0	4	0	0	0
SV-346	INT	ROCKY RVR	FW	20	0	0	0	20	0	0	0
SV-037	SS	BETSY CK	FW	4	0	0	0	4	0	0	0
SV-331	INT	LAKE SECESSION	FW	20	0	0	0	20	0	0	0
SV-332	INT	LAKE SECESSION	FW	20	0	0	0	20	0	0	0
SV-185		WILSON CK									
SV-347	INT	WILSON CK	FW	20	0	0	0	20	0	0	0
RL-06439	RL06	LAKE RUSSELL	FW	4	0	0	0	4	0	0	0
SV-357	SS	LAKE RUSSELL	FW	4	0	0	0	4	0	0	0
03060103-04											
SV-316	SS	BIG GENEROSTEE CK	FW	4	0	0	0	4	0	0	0
RS-02490	RS02	DEVILS FORK CK	FW	4	0	0	0	4	0	0	0
SV-100	SS	LAKE RUSSELL	FW	4	0	0	0	4	0	0	0
RL-06441	RL06	LAKE RUSSELL	FW	4	0	0	0	4	0	0	0
RS-05414	RS05	LITTLE GENEROSITEE	FW	4	0	0	0	4	0	0	0
SV-109		LITTLE GENEROSITEE									
RL-05409	RL05	LAKE RUSSELL	FW	4	0	0	0	4	0	0	0
SV-098/ RL-03337	INT	LAKE RUSSELL	FW	20	0	0	0	21	0	0	0

Appendix B. Upper Savannah River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	DO N	DO EXC.	DO %	MEAN EXC.	TRENDS (92-2006)					
								DO	N	MAG	BOD	N	MAG
03060103-05													
SV-164	SS	LITTLE RVR	FW	12	0	0	0	NS	38	0.0317	I	36	0.1111
SV-733		HOGSKIN CK											
RS-05586	RS05	UNNAMED TRIB TO JOHNSON CK	FW	12	0	0	0						
SV-348	SS	LITTLE RVR	FW	12	0	0	0	NS	38	0.0289	I	36	0.1261
RS-02478	RS02	LITTLE RVR	FW	11	0	0	0						
RS-05558	RS05	MORROW CK	FW	12	1	8	2.65						
SV-644		GILL CK											
SV-052	SS	SAWNEY CK	FW	12	0	0	0	D	115	-0.075	I	114	0.0833
SV-171		CALHOUN CK											
SV-192	INT	LITTLE RVR	FW	47	1	2	4.68	NS	83	-0.0029	I	79	0
03060103-06													
RS-06190	RS06	UNNAMED TRIB TO BAILEYS CREEK	FW	12	0	0	0						
SV-349	SS	LONG CANE CK	FW	12	0	0	0	NS	38	0.0133	I	36	0.1275
SV-734		JOHNS CK											
SV-053B	SS	BLUE HILL CK	FW	12	0	0	0	I	62	0.05	I	60	0.1611
SV-732		BIG CURLY TAIL CK											
RS-04542	RS04	REEDY BRANCH	FW	11	0	0	0						
RS-05574	RS05	ROCKY BRANCH	FW	10	0	0	0						
SV-318	INT	LONG CANE CK	FW	55	0	0	0	NS	182	0	I	179	0.0774
03060103-07													
CL-040	SS	LAKE, CLARKS HILL RESERVOIR	FW	12	0	0	0						
RL-05405	RL05	LAKE, CLARKS HILL RESERVOIR	FW	12	0	0	0						
RL-05407	RL05	LAKE, CLARKS HILL RESERVOIR	FW	11	0	0	0						
RL-03357	RL03	LAKE, CLARKS HILL RESERVOIR	FW	12	0	0	0						
RL-05463	RL05	LAKE, CLARKS HILL RESERVOIR	FW	12	0	0	0						
SV-291	SS	LAKE, CLARKS HILL RESERVOIR	FW	12	0	0	0	NS	128	-0.025	I	125	0.0667
CL-039	SS	LAKE, CLARKS HILL RESERVOIR	FW	11	1	9	4.91						
RS-03510	RS03	TRIB TO BAKER CREEK	FW	12	0	0	0						
SV-819		HAWE CK	FW	2	0	0	0						
SV-818		UNNAMED TRIB TO HAWE CK	FW	2	0	0	0						
SV-817		UNNAMED TRIB TO HAWE CK	FW	2	0	0	0						
SV-066		HAWE CK	FW	2	0	0	0						
RL-06423	RL06	LAKE, CLARKS HILL RESERVOIR	FW	12	0	0	0						
RL-04385	RL04	LAKE, CLARKS HILL RESERVOIR	FW	11	0	0	0						
CL-041	INT	LAKE, CLARKS HILL RESERVOIR	FW	59	0	0	0	NS	68	0.0358	NS	60	0

Appendix B. Upper Savannah River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	pH				TRENDS (92-2006)			TURB			TRENDS (92-2006)			
				N	EXC.	%	MEAN EXC.	PH	N	MAG	N	EXC.	%	MEAN EXC.	TURB	N	MAG
03060103-05																	
SV-164	SS	LITTLE RVR	FW	12	0	0	0	NS	38	-0.028	12	1	8	81	NS	38	-0.4667
SV-733		HOGSKIN CK															
RS-05586	RS05	UNNAMED TRIB TO JOHNSON CK	FW	12	0	0	0				12	0	0	0			
SV-348	SS	LITTLE RVR	FW	12	0	0	0	NS	38	0.0073	12	1	8	86	NS	38	-0.76
RS-02478	RS02	LITTLE RVR	FW	11	0	0	0				11	0	0	0			
RS-05558	RS05	MORROW CK	FW	12	0	0	0				12	0	0	0			
SV-644		GILL CK															
SV-052	SS	SAWNEY CK	FW	12	0	0	0	NS	114	-0.025	12	0	0	0	D	114	-0.5
SV-171		CALHOUN CK															
SV-192	INT	LITTLE RVR	FW	47	1	2	5.69	I	83	0.0949	47	4	9	124.5	NS	83	0
03060103-06																	
RS-06190	RS06	UNNAMED TRIB TO BAILEYS CREEK	FW	12	0	0	0				10	0	0	0			
SV-349	SS	LONG CANE CK	FW	12	0	0	0	NS	38	0.0219	12	2	17	95	D	38	-1.15
SV-734		JOHNS CK															
SV-053B	SS	BLUE HILL CK	FW	12	0	0	0	NS	62	0.0204	12	0	0	0	I	59	1.1
SV-732		BIG CURLY TAIL CK															
RS-04542	RS04	REEDY BRANCH	FW	11	0	0	0				11	1	9	120			
RS-05574	RS05	ROCKY BRANCH	FW	12	0	0	0				13	0	0	0			
SV-318	INT	LONG CANE CK	FW	57	2	4	5.795	I	184	0.0156	58	3	5	84	D	186	-1
03060103-07																	
CL-040	SS	LAKE, CLARKS HILL RESERVOIR	FW	12	0	0	0				12	1	8	44			
RL-05405	RL05	LAKE, CLARKS HILL RESERVOIR	FW	12	1	8	8.63				12	2	17	64.5			
RL-05407	RL05	LAKE, CLARKS HILL RESERVOIR	FW	11	1	9	8.52				11	1	9	47			
RL-03357	RL03	LAKE, CLARKS HILL RESERVOIR	FW	12	0	0	0				12	1	8	33			
RL-05463	RL05	LAKE, CLARKS HILL RESERVOIR	FW	12	0	0	0				12	0	0	0			
SV-291	SS	LAKE, CLARKS HILL RESERVOIR	FW	12	0	0	0	NS	128	0.02	12	0	0	0	D	129	-0.3214
CL-039	SS	LAKE, CLARKS HILL RESERVOIR	FW	12	0	0	0				12	3	25	50.6667			
RS-03510	RS03	TRIB TO BAKER CREEK	FW	12	0	0	0				12	0	0	0			
SV-819		HAWK CK	FW	2	0	0	0										
SV-818		UNNAMED TRIB TO HAWK CK	FW	2	2	100	4.28										
SV-817		UNNAMED TRIB TO HAWK CK	FW	2	0	0	0										
SV-066		HAWK CK	FW	2	0	0	0										
RL-06423	RL06	LAKE, CLARKS HILL RESERVOIR	FW	11	0	0	0				12	0	0	0			
RL-04385	RL04	LAKE, CLARKS HILL RESERVOIR	FW	11	0	0	0				12	0	0	0			
CL-041	INT	LAKE, CLARKS HILL RESERVOIR	FW	59	2	3	7.12	I	67	0.0914	58	0	0	0	D	64	-0.05

Appendix B. Upper Savannah River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	TP N	TP EXC.	TP %	MEAN EXC.	TRENDS (92-2006)			TN N	TN EXC.	TN %	MEAN EXC.	TRENDS (92-2006)		
								TP	N	MAG					TN	N	MAG
03060103-05																	
SV-164	SS	LITTLE RVR	FW												NS	35	0.0044
SV-733		HOGSKIN CK															
RS-05586	RS05	UNNAMED TRIB TO JOHNSON CK	FW														
SV-348	SS	LITTLE RVR	FW												NS	35	0.001
RS-02478	RS02	LITTLE RVR	FW														
RS-05558	RS05	MORROW CK	FW														
SV-644		GILL CK															
SV-052	SS	SAWNEY CK	FW					NS	86	0					I	103	0.0525
SV-171		CALHOUN CK															
SV-192	INT	LITTLE RVR	FW					NS	58	-0.0013					NS	61	-0.008
03060103-06																	
RS-06190	RS06	UNNAMED TRIB TO BAILEYS CREEK	FW														
SV-349	SS	LONG CANE CK	FW												NS	36	0.0032
SV-734		JOHNS CK															
SV-053B	SS	BLUE HILL CK	FW					I	49	0.0772							
SV-732		BIG CURLY TAIL CK															
RS-04542	RS04	REEDY BRANCH	FW														
RS-05574	RS05	ROCKY BRANCH	FW														
SV-318	INT	LONG CANE CK	FW					D	148	-0.0022					NS	166	-0.005
03060103-07																	
CL-040	SS	LAKE, CLARKS HILL RESERVOIR	FW	12	1	8	0.09				12	0	0	0			
RL-05405	RL05	LAKE, CLARKS HILL RESERVOIR	FW	12	1	8	0.2				12	0	0	0			
RL-05407	RL05	LAKE, CLARKS HILL RESERVOIR	FW	11	1	9	0.1				11	0	0	0			
RL-03357	RL03	LAKE, CLARKS HILL RESERVOIR	FW	12	0	0	0				8	0	0	0			
RL-05463	RL05	LAKE, CLARKS HILL RESERVOIR	FW	12	0	0	0				12	0	0	0			
SV-291	SS	LAKE, CLARKS HILL RESERVOIR	FW	12	0	0	0	D	100	0	12	0	0	0	NS	125	-0.0033
CL-039	SS	LAKE, CLARKS HILL RESERVOIR	FW	12	3	25	0.09				12	0	0	0			
RS-03510	RS03	TRIB TO BAKER CREEK	FW														
SV-819		HAWE CK	FW														
SV-818		UNNAMED TRIB TO HAWE CK	FW														
SV-817		UNNAMED TRIB TO HAWE CK	FW														
SV-066		HAWE CK	FW														
RL-06423	RL06	LAKE, CLARKS HILL RESERVOIR	FW	13	0	0	0				11	0	0	0			
RL-04385	RL04	LAKE, CLARKS HILL RESERVOIR	FW	12	0	0	0				11	0	0	0			
CL-041	INT	LAKE, CLARKS HILL RESERVOIR	FW	59	0	0	0	NS	59	0	48	0	0	0	NS	54	0.005

Appendix B. Upper Savannah River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	CHL N	CHL EXC.	CHL %	MEAN EXC.	TRENDS (92-2006)		
								TSS	N	MAG
03060103-05										
SV-164	SS	LITTLE RVR	FW							
SV-733		HOGSKIN CK								
RS-05586	RS05	UNNAMED TRIB TO JOHNSON CK	FW							
SV-348	SS	LITTLE RVR	FW							
RS-02478	RS02	LITTLE RVR	FW							
RS-05558	RS05	MORROW CK	FW							
SV-644		GILL CK								
SV-052	SS	SAWNEY CK	FW							
SV-171		CALHOUN CK								
SV-192	INT	LITTLE RVR	FW							
03060103-06										
RS-06190	RS06	UNNAMED TRIB TO BAILEYS CREEK	FW							
SV-349	SS	LONG CANE CK	FW							
SV-734		JOHNS CK								
SV-053B	SS	BLUE HILL CK	FW							
SV-732		BIG CURLY TAIL CK								
RS-04542	RS04	REEDY BRANCH	FW							
RS-05574	RS05	ROCKY BRANCH	FW							
SV-318	INT	LONG CANE CK	FW							
03060103-07										
CL-040	SS	LAKE, CLARKS HILL RESERVOIR	FW	5	0	0	0			
RL-05405	RL05	LAKE, CLARKS HILL RESERVOIR	FW	5	0	0	0			
RL-05407	RL05	LAKE, CLARKS HILL RESERVOIR	FW	5	0	0	0			
RL-03357	RL03	LAKE, CLARKS HILL RESERVOIR	FW	6	0	0	0			
RL-05463	RL05	LAKE, CLARKS HILL RESERVOIR	FW	5	0	0	0			
SV-291	SS	LAKE, CLARKS HILL RESERVOIR	FW	5	0	0	0	NS	82	-0.3775
CL-039	SS	LAKE, CLARKS HILL RESERVOIR	FW	5	0	0	0			
RS-03510	RS03	TRIB TO BAKER CREEK	FW							
SV-819		HAWE CK	FW							
SV-818		UNNAMED TRIB TO HAWE CK	FW							
SV-817		UNNAMED TRIB TO HAWE CK	FW							
SV-066		HAWE CK	FW							
RL-06423	RL06	LAKE, CLARKS HILL RESERVOIR	FW	6	0	0	0			
RL-04385	RL04	LAKE, CLARKS HILL RESERVOIR	FW	6	0	0	0			
CL-041	INT	LAKE, CLARKS HILL RESERVOIR	FW	27	0	0	0			

Appendix B. Upper Savannah River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	GEO MEAN	BACT N	BACT EXC.	BACT %	MEAN EXC.	TRENDS (92-2006)			
									BACT	N	MAG	
03060103-05												
SV-164	SS	LITTLE RVR	FW	235.4534	12	2	17	800	NS	38	-8.8889	
SV-733		HOGSKIN CK										
RS-05586	RS05	UNNAMED TRIB TO JOHNSON CK	FW	176.4056	12	2	17	1480				
SV-348	SS	LITTLE RVR	FW	219.273	12	3	25	1353.3333	NS	38	1.5	
RS-02478	RS02	LITTLE RVR	FW	110.2302	11	1	9	530				
RS-05558	RS05	MORROW CK	FW	97.1853	12	0	0	0				
SV-644		GILL CK										
SV-052	SS	SAWNEY CK	FW	85.6643	12	2	17	730	D	113	-10.2857	
SV-171		CALHOUN CK										
SV-192	INT	LITTLE RVR	FW	183.711	47	8	17	866.25	NS	83	-3.4848	
03060103-06												
RS-06190	RS06	UNNAMED TRIB TO BAILEYS CREEK	FW	254.3567	12	4	33	757.5				
SV-349	SS	LONG CANE CK	FW	565.0774	12	6	50	6743.3333	NS	38	-12.25	
SV-734		JOHNS CK										
SV-053B	SS	BLUE HILL CK	FW	737.5922	11	6	55	4753.3333	NS	59	0	
SV-732		BIG CURLY TAIL CK										
RS-04542	RS04	REEDY BRANCH	FW	201.9225	11	3	27	800				
RS-05574	RS05	ROCKY BRANCH	FW	118.1947	13	1	8	600				
SV-318	INT	LONG CANE CK	FW	140.4634	58	11	19	801.8182	NS	186	-2.5	
03060103-07												
CL-040	SS	LAKE, CLARKS HILL RESERVOIR	FW	3.4104	11	0	0	0				
RL-05405	RL05	LAKE, CLARKS HILL RESERVOIR	FW	10.6413	11	1	9	600				
RL-05407	RL05	LAKE, CLARKS HILL RESERVOIR	FW	3.9362	10	1	10	600				
RL-03357	RL03	LAKE, CLARKS HILL RESERVOIR	FW	2.406	12	0	0	0				
RL-05463	RL05	LAKE, CLARKS HILL RESERVOIR	FW	1.4408	12	0	0	0				
SV-291	SS	LAKE, CLARKS HILL RESERVOIR	FW	1.4066	12	0	0	0	D	129	-0.3636	
CL-039	SS	LAKE, CLARKS HILL RESERVOIR	FW	4.7169	11	1	9	470				
RS-03510	RS03	TRIB TO BAKER CREEK	FW	92.8719	12	0	0	0				
SV-819		HAWE CK	FW									
SV-818		UNNAMED TRIB TO HAWE CK	FW									
SV-817		UNNAMED TRIB TO HAWE CK	FW									
SV-066		HAWE CK	FW									
RL-06423	RL06	LAKE, CLARKS HILL RESERVOIR	FW	1.9257	12	0	0	0				
RL-04385	RL04	LAKE, CLARKS HILL RESERVOIR	FW	1.3986	12	0	0	0				
CL-041	INT	LAKE, CLARKS HILL RESERVOIR	FW	2.3459	59	0	0	0	NS	65	0	

Appendix B. Upper Savannah River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	NH3 N	NH3 EXC.	NH3 %	MEAN EXC.	CD N	CD EXC.	CD %	MEAN EXC.	CR N	CR EXC.	CR %	MEAN EXC.
03060103-05															
SV-164	SS	LITTLE RVR	FW	12	0	0	0	4	0	0	0	4	0	0	0
SV-733		HOGSKIN CK													
RS-05586	RS05	UNNAMED TRIB TO JOHNSON CK	FW	12	0	0	0	4	0	0	0	4	0	0	0
SV-348	SS	LITTLE RVR	FW	12	0	0	0	4	0	0	0	4	0	0	0
RS-02478	RS02	LITTLE RVR	FW	5	0	0	0	3	0	0	0	3	0	0	0
RS-05558	RS05	MORROW CK	FW	12	0	0	0	4	0	0	0	4	0	0	0
SV-644		GILL CK													
SV-052	SS	SAWNEY CK	FW	12	0	0	0	4	0	0	0	4	0	0	0
SV-171		CALHOUN CK													
SV-192	INT	LITTLE RVR	FW	30	0	0	0	16	0	0	0	16	0	0	0
03060103-06															
RS-06190	RS06	UNNAMED TRIB TO BAILEYS CREEK	FW	10	0	0	0	4	0	0	0	4	0	0	0
SV-349	SS	LONG CANE CK	FW	11	0	0	0	4	0	0	0	4	0	0	0
SV-734		JOHNS CK													
SV-053B	SS	BLUE HILL CK	FW	12	0	0	0	4	0	0	0	4	0	0	0
SV-732		BIG CURLY TAIL CK													
RS-04542	RS04	REEDY BRANCH	FW	9	0	0	0	3	0	0	0	3	0	0	0
RS-05574	RS05	ROCKY BRANCH	FW	13	0	0	0	4	0	0	0	4	0	0	0
SV-318	INT	LONG CANE CK	FW	44	0	0	0	18	0	0	0	18	0	0	0
03060103-07															
CL-040	SS	LAKE, CLARKS HILL RESERVOIR	FW	12	0	0	0	4	0	0	0	4	0	0	0
RL-05405	RL05	LAKE, CLARKS HILL RESERVOIR	FW	12	0	0	0	4	0	0	0	4	0	0	0
RL-05407	RL05	LAKE, CLARKS HILL RESERVOIR	FW	11	0	0	0	4	0	0	0	4	0	0	0
RL-03357	RL03	LAKE, CLARKS HILL RESERVOIR	FW	8	0	0	0	4	0	0	0	4	0	0	0
RL-05463	RL05	LAKE, CLARKS HILL RESERVOIR	FW	12	0	0	0	4	0	0	0	4	0	0	0
SV-291	SS	LAKE, CLARKS HILL RESERVOIR	FW	12	0	0	0	4	0	0	0	4	0	0	0
CL-039	SS	LAKE, CLARKS HILL RESERVOIR	FW	12	0	0	0	4	0	0	0	4	0	0	0
RS-03510	RS03	TRIB TO BAKER CREEK	FW	8	0	0	0	4	0	0	0	4	0	0	0
SV-819		HAWE CK	FW					1	0	0	0	1	0	0	0
SV-818		UNNAMED TRIB TO HAWE CK	FW					1	1	100	36	1	0	0	0
SV-817		UNNAMED TRIB TO HAWE CK	FW					1	0	0	0	1	0	0	0
SV-066		HAWE CK	FW					1	0	0	0	1	0	0	0
RL-06423	RL06	LAKE, CLARKS HILL RESERVOIR	FW	11	0	0	0	5	0	0	0	5	0	0	0
RL-04385	RL04	LAKE, CLARKS HILL RESERVOIR	FW	11	0	0	0	4	0	0	0	4	0	0	0
CL-041	INT	LAKE, CLARKS HILL RESERVOIR	FW	44	0	0	0	18	0	0	0	18	0	0	0

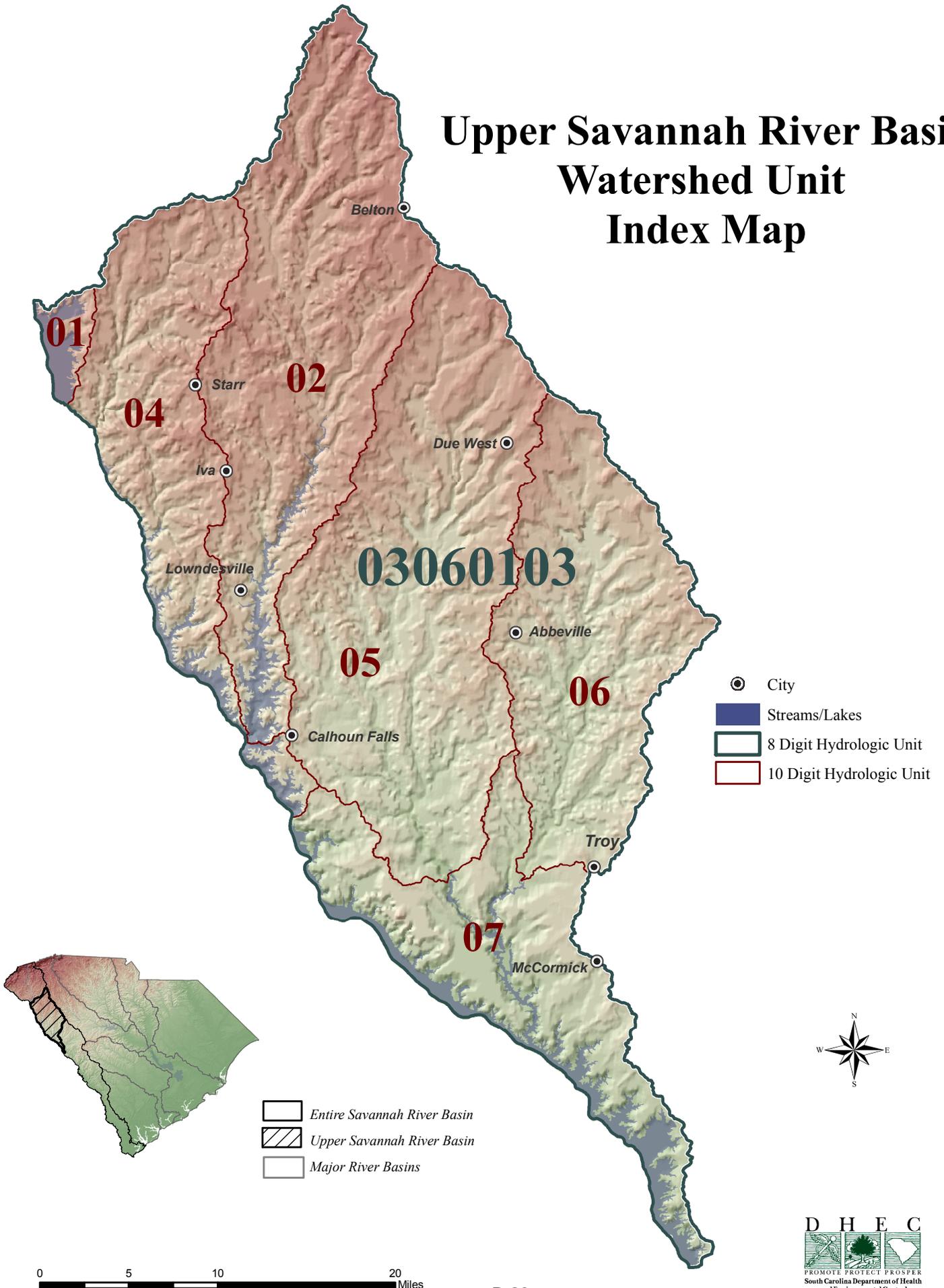
Appendix B. Upper Savannah River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	CU N	CU EXC.	CU %	MEAN EXC.	PB N	PB EXC.	PB %	MEAN EXC.	HG N	HG EXC.	HG %	MEAN EXC.
03060103-05															
SV-164	SS	LITTLE RVR	FW	4	0	0	0	4	0	0	0	4	0	0	0
SV-733		HOGSKIN CK													
RS-05586	RS05	UNNAMED TRIB TO JOHNSON CK	FW	4	0	0	0	4	0	0	0	4	0	0	0
SV-348	SS	LITTLE RVR	FW	4	0	0	0	4	0	0	0	4	0	0	0
RS-02478	RS02	LITTLE RVR	FW	3	0	0	0	3	0	0	0	3	0	0	0
RS-05558	RS05	MORROW CK	FW	4	0	0	0	4	0	0	0	4	0	0	0
SV-644		GILL CK													
SV-052	SS	SAWNEY CK	FW	4	1	25	63	4	0	0	0	4	0	0	0
SV-171		CALHOUN CK													
SV-192	INT	LITTLE RVR	FW	16	1	6	18	16	0	0	0	16	0	0	0
03060103-06															
RS-06190	RS06	UNNAMED TRIB TO BAILEYS CREEK	FW	4	0	0	0	4	0	0	0	4	0	0	0
SV-349	SS	LONG CANE CK	FW	4	0	0	0	4	0	0	0	4	0	0	0
SV-734		JOHNS CK													
SV-053B	SS	BLUE HILL CK	FW	4	0	0	0	4	0	0	0	4	0	0	0
SV-732		BIG CURLY TAIL CK													
RS-04542	RS04	REEDY BRANCH	FW	3	0	0	0	3	0	0	0	3	0	0	0
RS-05574	RS05	ROCKY BRANCH	FW	4	0	0	0	4	0	0	0	4	0	0	0
SV-318	INT	LONG CANE CK	FW	18	1	6	29	18	0	0	0	18	0	0	0
03060103-07															
CL-040	SS	LAKE, CLARKS HILL RESERVOIR	FW	4	0	0	0	4	0	0	0	4	0	0	0
RL-05405	RL05	LAKE, CLARKS HILL RESERVOIR	FW	4	0	0	0	4	0	0	0	4	0	0	0
RL-05407	RL05	LAKE, CLARKS HILL RESERVOIR	FW	4	0	0	0	4	0	0	0	4	0	0	0
RL-03357	RL03	LAKE, CLARKS HILL RESERVOIR	FW	4	1	25	710	4	1	25	55	4	0	0	0
RL-05463	RL05	LAKE, CLARKS HILL RESERVOIR	FW	4	0	0	0	4	0	0	0	4	0	0	0
SV-291	SS	LAKE, CLARKS HILL RESERVOIR	FW	4	0	0	0	4	0	0	0	4	0	0	0
CL-039	SS	LAKE, CLARKS HILL RESERVOIR	FW	4	0	0	0	4	0	0	0	4	0	0	0
RS-03510	RS03	TRIB TO BAKER CREEK	FW	4	0	0	0	4	0	0	0	4	0	0	0
SV-819		HAWE CK	FW	1	0	0	0	1	0	0	0	1	0	0	0
SV-818		UNNAMED TRIB TO HAWE CK	FW	1	1	100	2800	1	0	0	0	1	0	0	0
SV-817		UNNAMED TRIB TO HAWE CK	FW	1	1	100	12	1	0	0	0	1	0	0	0
SV-066		HAWE CK	FW	1	1	100	380	1	0	0	0	1	0	0	0
RL-06423	RL06	LAKE, CLARKS HILL RESERVOIR	FW	5	0	0	0	5	0	0	0	5	0	0	0
RL-04385	RL04	LAKE, CLARKS HILL RESERVOIR	FW	4	0	0	0	4	0	0	0	4	0	0	0
CL-041	INT	LAKE, CLARKS HILL RESERVOIR	FW	18	0	0	0	18	0	0	0	19	0	0	0

Appendix B. Upper Savannah River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	NI N	NI EXC.	NI %	MEAN EXC.	ZN N	ZN EXC.	ZN %	MEAN EXC.
03060103-05											
SV-164	SS	LITTLE RVR	FW	4	0	0	0	4	0	0	0
SV-733		HOGSKIN CK									
RS-05586	RS05	UNNAMED TRIB TO JOHNSON CK	FW	4	0	0	0	4	0	0	0
SV-348	SS	LITTLE RVR	FW	4	0	0	0	4	0	0	0
RS-02478	RS02	LITTLE RVR	FW	3	0	0	0	3	0	0	0
RS-05558	RS05	MORROW CK	FW	4	0	0	0	4	0	0	0
SV-644		GILL CK									
SV-052	SS	SAWNEY CK	FW	4	1	25	45	4	0	0	0
SV-171		CALHOUN CK									
SV-192	INT	LITTLE RVR	FW	16	0	0	0	16	0	0	0
03060103-06											
RS-06190	RS06	UNNAMED TRIB TO BAILEYS CREEK	FW	4	0	0	0	4	0	0	0
SV-349	SS	LONG CANE CK	FW	4	0	0	0	4	0	0	0
SV-734		JOHNS CK									
SV-053B	SS	BLUE HILL CK	FW	4	0	0	0	4	0	0	0
SV-732		BIG CURLY TAIL CK									
RS-04542	RS04	REEDY BRANCH	FW	3	0	0	0	3	0	0	0
RS-05574	RS05	ROCKY BRANCH	FW	4	0	0	0	4	0	0	0
SV-318	INT	LONG CANE CK	FW	18	0	0	0	18	0	0	0
03060103-07											
CL-040	SS	LAKE, CLARKS HILL RESERVOIR	FW	4	0	0	0	4	0	0	0
RL-05405	RL05	LAKE, CLARKS HILL RESERVOIR	FW	4	0	0	0	4	0	0	0
RL-05407	RL05	LAKE, CLARKS HILL RESERVOIR	FW	4	0	0	0	4	0	0	0
RL-03357	RL03	LAKE, CLARKS HILL RESERVOIR	FW	4	0	0	0	4	1	25	320
RL-05463	RL05	LAKE, CLARKS HILL RESERVOIR	FW	4	0	0	0	4	0	0	0
SV-291	SS	LAKE, CLARKS HILL RESERVOIR	FW	4	0	0	0	4	0	0	0
CL-039	SS	LAKE, CLARKS HILL RESERVOIR	FW	4	0	0	0	4	0	0	0
RS-03510	RS03	TRIB TO BAKER CREEK	FW	4	0	0	0	4	0	0	0
SV-819		HAWE CK	FW	1	0	0	0				
SV-818		UNNAMED TRIB TO HAWE CK	FW	1	0	0	0				
SV-817		UNNAMED TRIB TO HAWE CK	FW	1	0	0	0				
SV-066		HAWE CK	FW	1	0	0	0	1	1	100	150
RL-06423	RL06	LAKE, CLARKS HILL RESERVOIR	FW	5	0	0	0	5	0	0	0
RL-04385	RL04	LAKE, CLARKS HILL RESERVOIR	FW	4	0	0	0	4	0	0	0
CL-041	INT	LAKE, CLARKS HILL RESERVOIR	FW	18	0	0	0	18	0	0	0

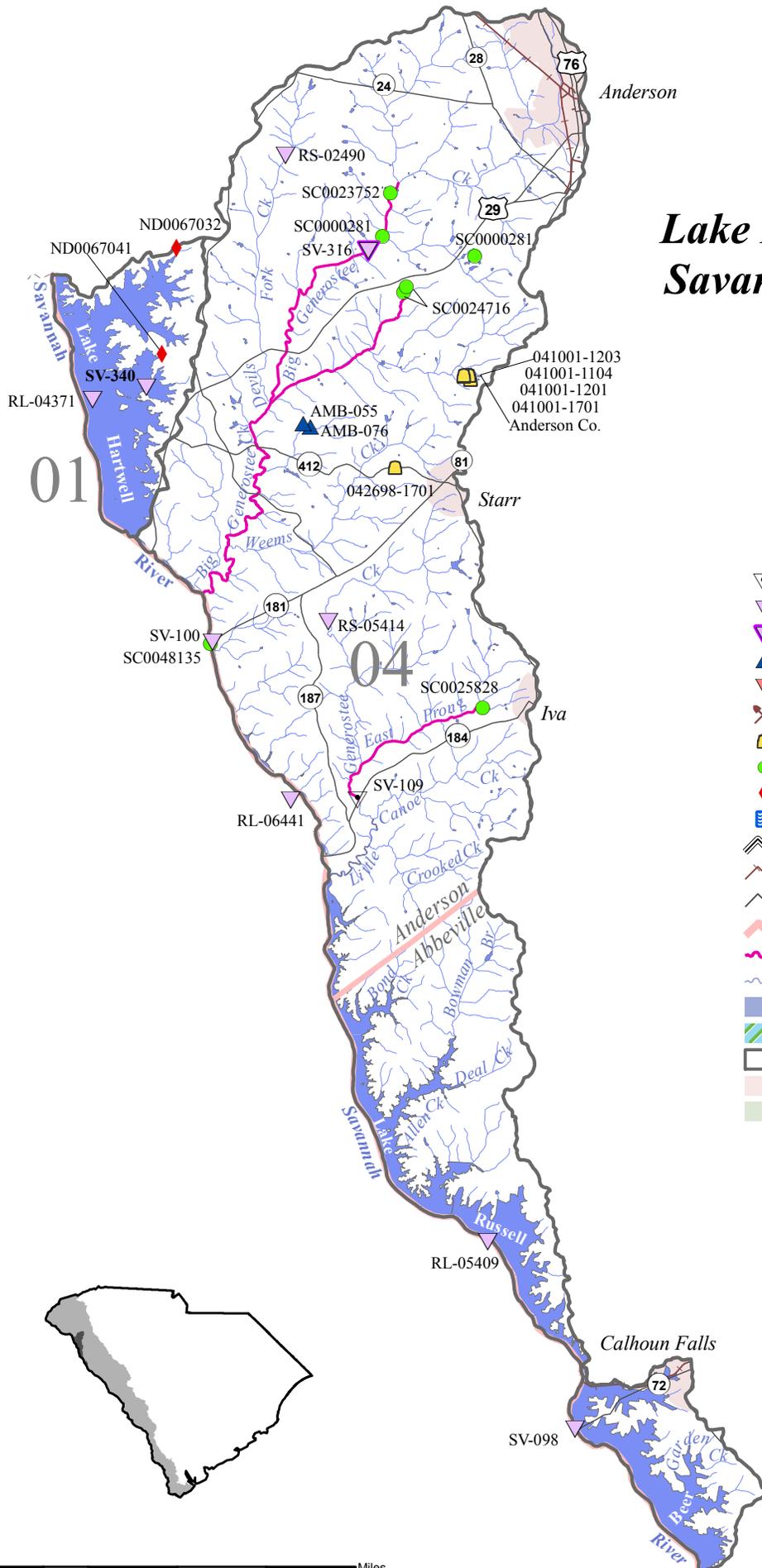
Upper Savannah River Basin Watershed Unit Index Map



0 5 10 20 Miles

Lake Hartwell/Lake Russell/ Savannah River Watersheds

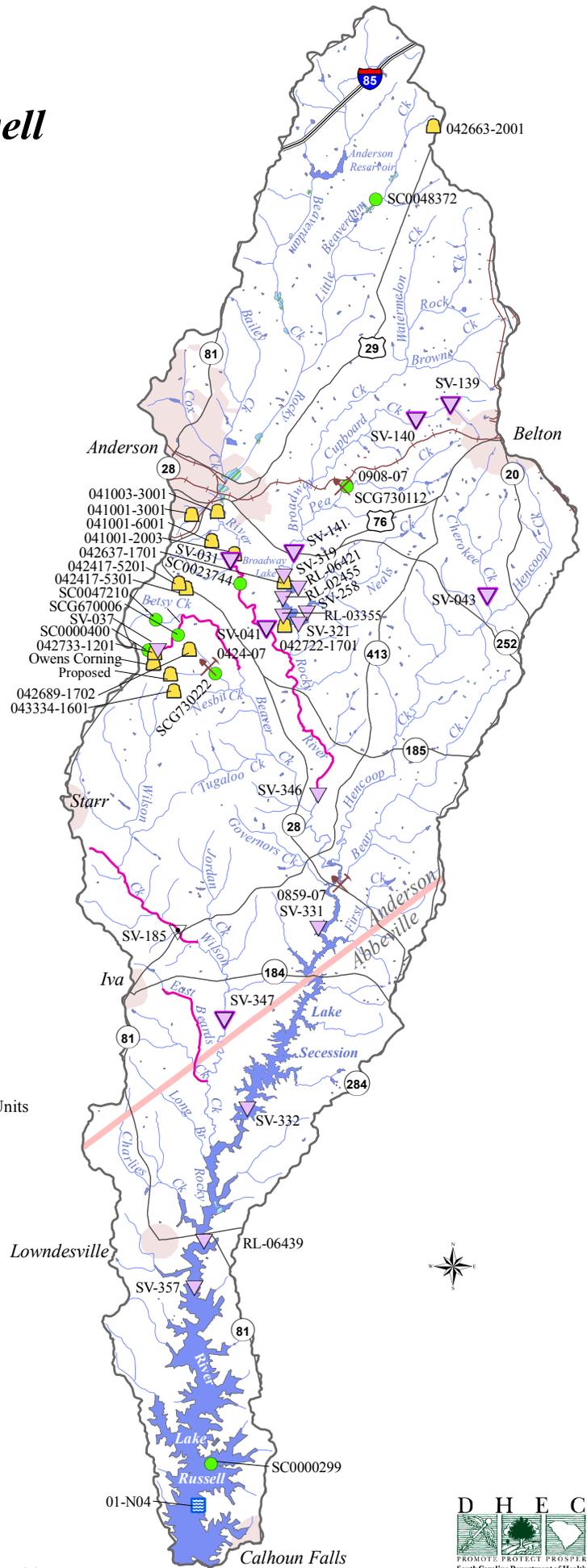
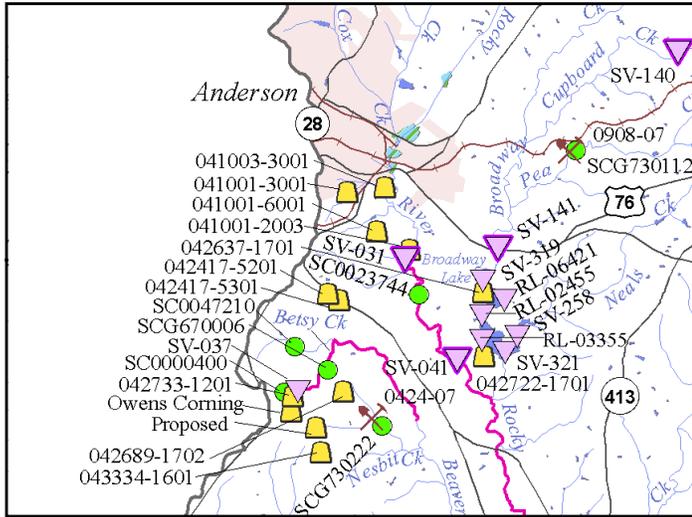
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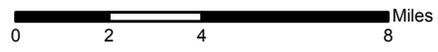
- ▽ Macroinvertebrate Stations
- ▽ Water Quality Monitoring Stations
- ▽ Approved TMDL
- ▲ Groundwater Monitoring Stations
- ▽ Special Study Stations
- ⚡ Mines
- 🗑️ Landfills
- NPDES Permits
- ◆ Land Application Permits
- 🏊 Natural Swimming Areas
- ⚡ Interstates
- 🚂 Railroad Lines
- 🛣️ Highways
- 🗺️ County Lines
- 🌊 Modeled Stream
- 🌊 Stream
- 🟦 Lake
- 🟩 Wetland
- 📏 10-Digit Hydrologic Units
- 🏘️ Cities/Towns
- 🟩 Public Lands



Rocky River/Lake Russell Watershed (03060103-02)



- | | | | |
|--|-----------------------------------|--|---------------------------|
| | Macroinvertebrate Stations | | Interstates |
| | Water Quality Monitoring Stations | | Railroad Lines |
| | Approved TMDL | | Highways |
| | Groundwater Monitoring Stations | | County Lines |
| | Special Study Stations | | Modeled Stream |
| | Mines | | Stream |
| | Landfills | | Lake |
| | NPDES Permits | | Wetland |
| | Land Application Permits | | 10-Digit Hydrologic Units |
| | Natural Swimming Areas | | Cities/Towns |
| | | | Public Lands |

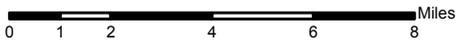
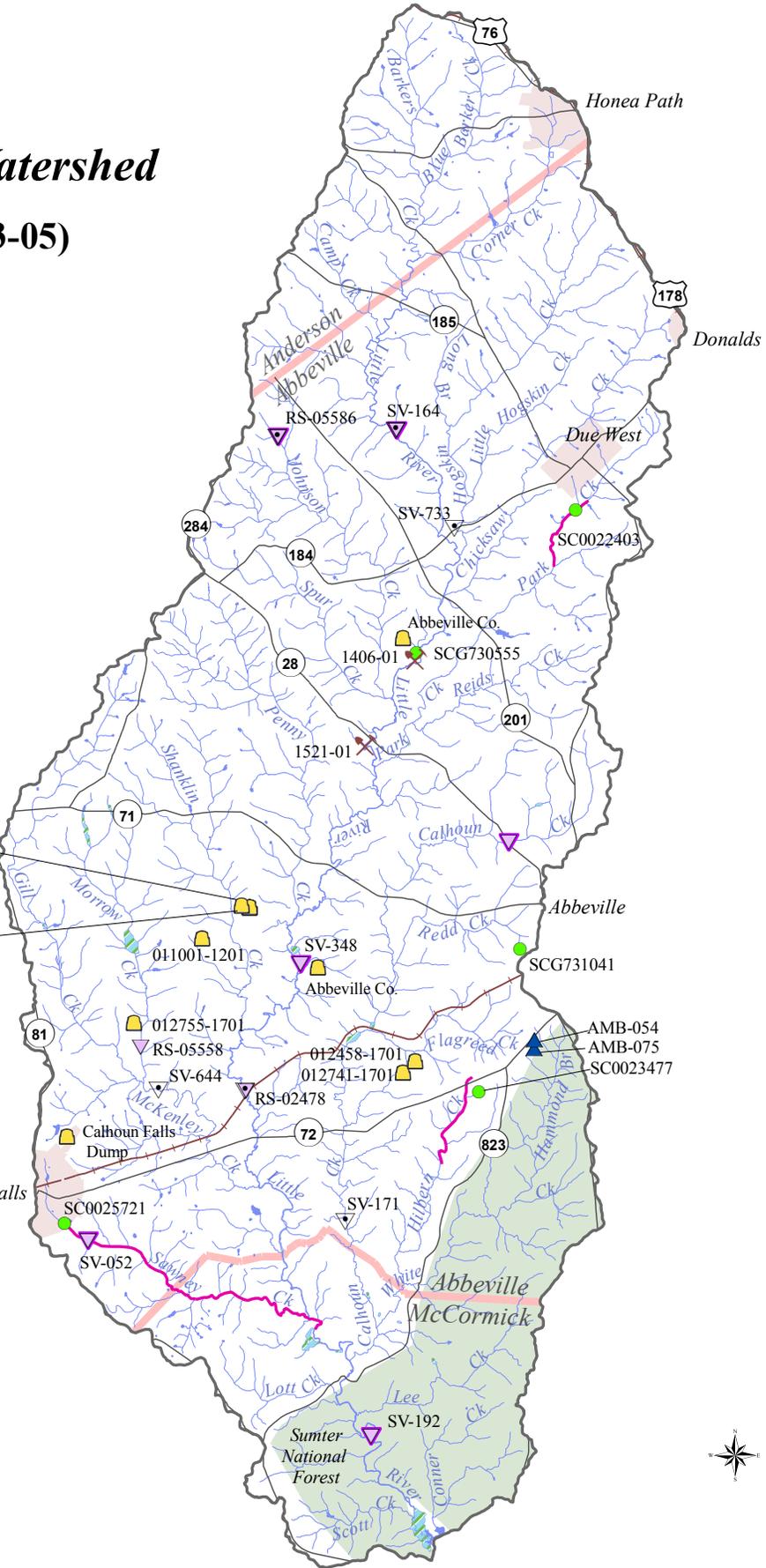


Little River Watershed

(03060103-05)

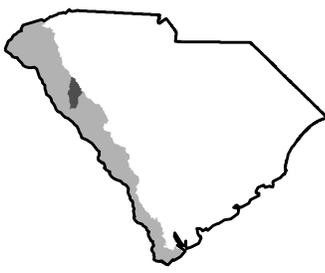
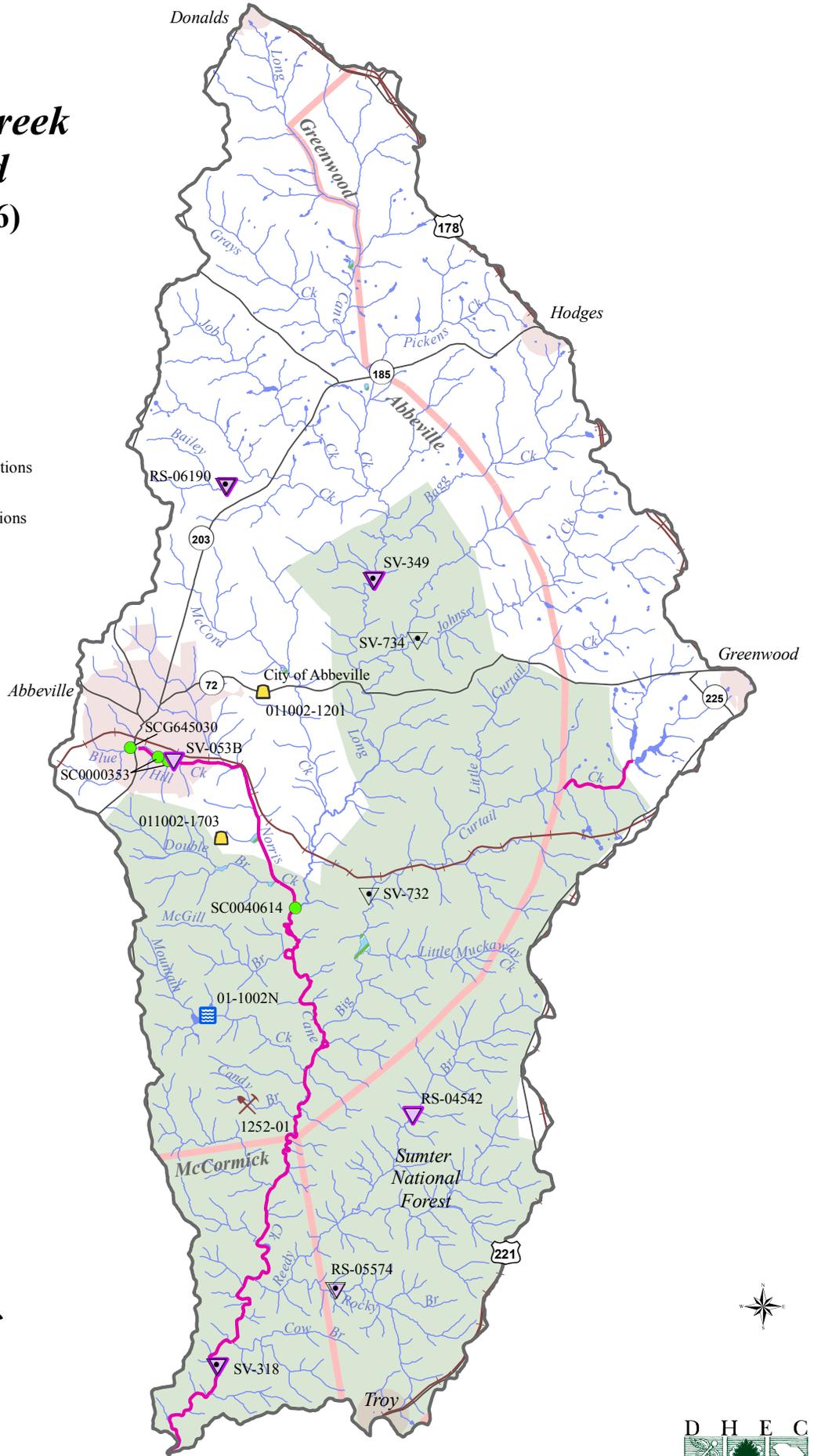
-  Macroinvertebrate Stations
-  Water Quality Monitoring Stations
-  Approved TMDL
-  Groundwater Monitoring Stations
-  Special Study Stations
-  Mines
-  Landfills
-  NPDES Permits
-  Land Application Permits
-  Natural Swimming Areas
-  Interstates
-  Railroad Lines
-  Highways
-  County Lines
-  Modeled Stream
-  Stream
-  Lake
-  Wetland
-  10-Digit Hydrologic Units
-  Cities/Towns
-  Public Lands

011001-3001
011001-1101
011001-2001
011001-1102
011002-1702
011002-1701
City of Abbeville



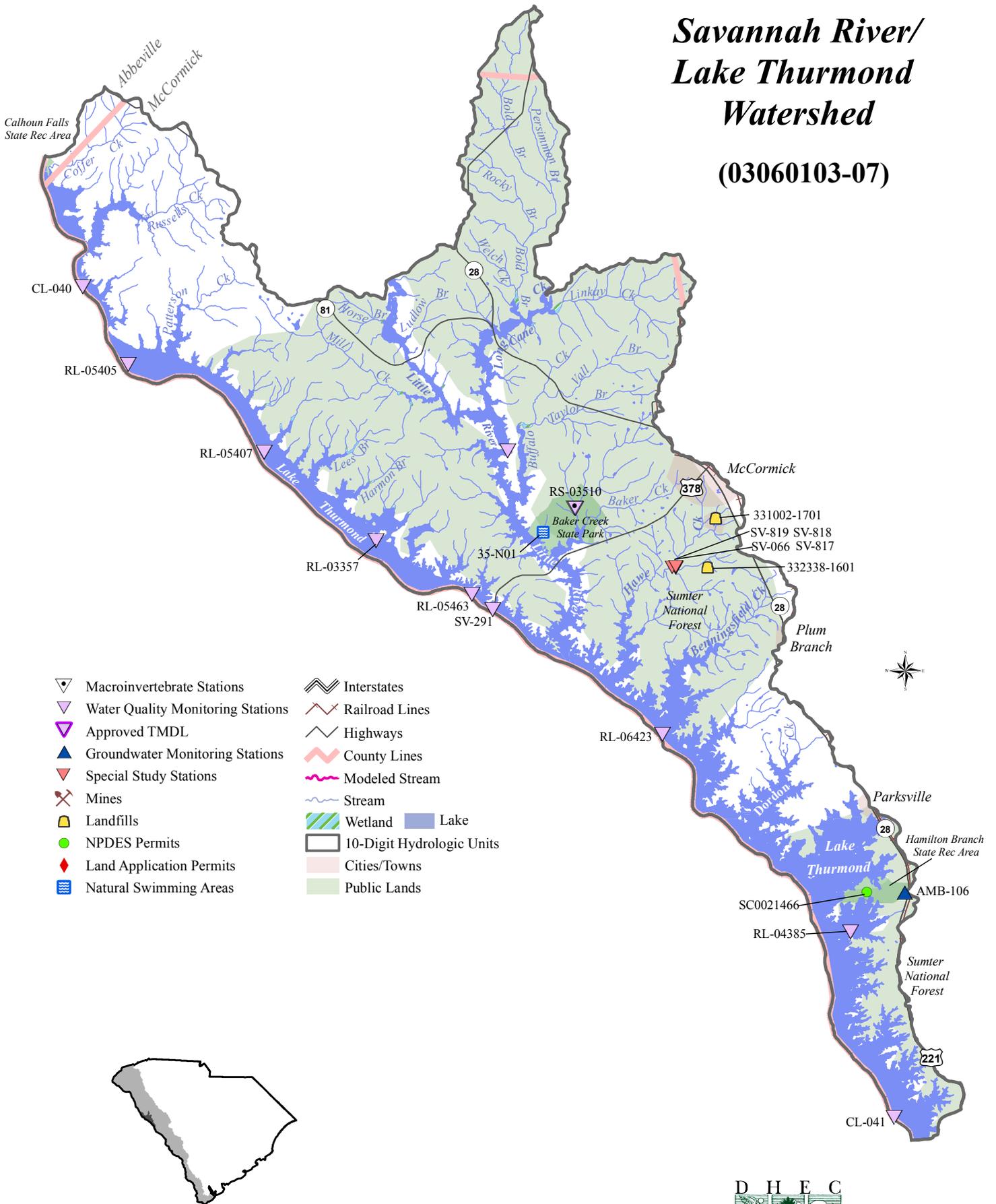
Long Cane Creek Watershed (03060103-06)

-  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
-  Lake
-  Wetland
-  10-Digit Hydrologic Units
-  Cities/Towns
-  Public Lands



Savannah River/ Lake Thurmond Watershed

(03060103-07)



- | | | | |
|----|-----------------------------------|-----|---------------------------|
| ▽ | Macroinvertebrate Stations | ≡ | Interstates |
| ▽ | Water Quality Monitoring Stations | —x— | Railroad Lines |
| ▽ | Approved TMDL | — | Highways |
| ▲ | Groundwater Monitoring Stations | — | County Lines |
| ▽ | Special Study Stations | ~ | Modeled Stream |
| ⚡ | Mines | — | Stream |
| 🗑️ | Landfills | ▨ | Wetland |
| ● | NPDES Permits | ■ | Lake |
| ♦ | Land Application Permits | □ | 10-Digit Hydrologic Units |
| 🏊 | Natural Swimming Areas | ■ | Cities/Towns |
| | | ■ | Public Lands |



APPENDIX C.

Lower Savannah River Basin

Monitoring Site Descriptions

Ambient Water Quality Monitoring Sites

Station #	Type	Class	Description
03060106-01			
SV-294	P	FW	STEVENS CREEK RES. HEADWATERS AT CLARKS HILL DAM BOAT RAMP
03060106-02			
CL-067	W	FW	VAUCLUSE POND IN FOREBAY NEAR DAM
SV-686	W	FW	FLAT ROCK POND IN FOREBAY NEAR DAM
SV-722	W	FW	GRANITEVILLE POND #2 IN FOREBAY NEAR DAM
SV-329	W	FW	HORSE CREEK AT ASCAUGA LAKE RD (S-02-33) IN GRANITEVILLE
SV-071	W	FW	HORSE CREEK AT S-02-104, 0.6 MI SW GRANITEVILLE
SV-069	W/BIO	FW	SAND RIVER AT OLD US 1, 1.2 MI SE WARRENVILLE
RL-04373 RL04		FW	LANGLEY POND, 0.85 MI NE (UPLAKE) OF SPILLWAY
RL-02317 RL02		FW	LANGLEY POND, NEAR NW SHORE & 0.6 MI NE OF SPILLWAY
CL-069	W	FW	LANGLEY POND IN FOREBAY NEAR DAM
RL-03335 RL03		FW	LANGLEY POND, 0.05 MI OFF NW END OF DAM AND SHORELINE
SV-096	W	FW	HORSE CREEK BELOW LANGLEY POND AT S-02-254
SV-724	BIO	FW	LITTLE HORSE CREEK AT S-02-104
SV-073	W	FW	LITTLE HORSE CREEK AT SC 421, BELOW EFFL. OF CLEARWATER FINISHING
SV-072	W	FW	HORSE CREEK AT S-02-145
SV-250	INT	FW	HORSE CREEK AT SC 125, 1.5MI SW CLEARWATER
03060106-04			
SV-350	INT	FW	HOLLOW CREEK AT S-02-5
03060106-05			
SV-680	BIO	FW	UPPER THREE RUNS AT S-02-113
SV-723	BIO	FW	CEDAR CREEK AT S-02-79
SV-324	W	FW	TIMS BRANCH AT SRS ROAD C
SV-325	INT	FW	UPPER THREE RUNS AT SRS ROAD A
03060106-06			
RS-04544 RS04/BIO		FW	SAVANNAH RIVER TRIB AT RIVER BLUFF RD IN RAPIDS SD
SV-251	W	FW	SAVANNAH RIVER AT US 1, 1.5 MI SW N.AUGUSTA
SV-252	W	FW	SAVANNAH RIVER AT SC 28, 1.6 MI NNW OF BEECH ISLAND
SV-323	W	FW	SAVANNAH RIVER AT LOCK AND DAM
SV-366	INT	FW	SAVANNAH RIVER OFF JACKSON LANDING OFF END OF S-02-299
03060106-07			
SV-328	W	FW	LOWER THREE RUNS AT S-0620, 7.5MI SW BARNWELL
SV-175	INT	FW	LOWER THREE RUNS AT SC 125, 11MI NW ALLENDALE
03060106-08			
RS-02470 RS02		FW	FOURMILE BRANCH AT SRS ROAD A-13
SV-327	W	FW	STEEL CREEK AT SRS ROAD A
SV-367	INT	FW	SAVANNAH RIVER OFF LITTLE HELL LANDING OFF S-03-368

Station #	Type	Class	Description
03060106-09			
SV-815	SSS	FW	BRIER CREEK AT Co. RD 53 NEAR GILL CROSSROADS
SV-814	SSS	FW	BRIER CREEK AT SC 3
SV-816	SSS	FW	STONY CREEK AT Co. RD 53
SV-745	BIO	FW	BRIER CREEK AT S-03-102
SV-118	W	FW	SAVANNAH RIVER AT US 301, 12.5 MI SW OF ALLENDALE
SV-368	INT	FW	SAVANNAH RIVER OFF COHENS BLUFF LANDING OFF S-03-41
03060107-01			
SV-151	W/BIO	FW	HARD LABOR CREEK AT S-24-164 BRIDGE
RS-06016 RS06		FW	CHURCH BRANCH AT S-24-375, 3.6 MI E OF BRADLEY
SV-731	BIO	FW	HARD LABOR CREEK AT SR 23
SV-351	W/BIO	FW	CUFFYTOWN CREEK AT S-33-138
RS-03342 RS03/BIO		FW	DOCTORS BRANCH AT S-33-21, 6.75 MI E OF McCORMICK
SV-330	W	FW	STEVENS CREEK AT S-33-21
SV-365	INT	FW	STEVENS CREEK AT S-33-138
03060107-02			
SV-729	BIO	FW	TURKEY CREEK AT S-191-100
SV-728	BIO	FW	LOG CREEK AT S-19-315
SV-727	BIO	FW	ROCKY CREEK AT S-19-61
SV-353	INT/BIO	FW	BEAVERDAM CREEK AT FOREST SERVICE RD 621 OFF S-19-68
SV-352	INT	FW	TURKEY CREEK AT S-33-227/S-19-68
03060107-03			
SV-063	BIO	FW	STEVENS CREEK AT SC 23
SV-354	INT	FW	STEVENS CREEK AT S-33-88/S-19-143
SV-725	BIO	FW	CHEVES CREEK AT S-19-34
03060109-01			
SV-355	W	FW	SAVANNAH RIVER AT STOKES BLUFF LANDING OFF S-25-461
SV-369	INT	FW	SAVANNAH RIVER OFF B&C LANDING OFF S-27-201
SV-370	INT	FW	SAVANNAH RIVER, 0.2MI UPSTREAM EBENEZER CREEK
03060109-03			
SV-744	BIO	FW	CYPRESS BRANCH AT US 321
SV-356	W	FW	CYPRESS CREEK AT S-27-119
RS-04372 RS04		FW	UNNAMED SWAMP AT BRIDGE ON S-27-119 1MI W OF TILLMAN
RO-046061 RO04		SA/SB*	SAVANNAH RIVER, 3.3MI NW OF FIELDS CUT (MUD RIVER)
RT-032032 RT03		SA	WRIGHT RIVER, 1.9MI SE OF TURN BRIDGE LANDING
MD-259	INT	SA	WRIGHT RIVER, 1.5MI FROM FIELDS CUT
03060110-01			
MD-129	INT	SA	GREAT SWAMP AT US 17
03060110-02			
MD-118	W	SA	NEW RIVER AT SC 170, 9MI W OF BLUFFTON
RT-06021 RT06		SA	NEW RIVER, 3.4MI SSE OF SC 170 BRIDGE OVER NEW RIVER
RT-052109 RT05		SA	NEW RIVER, 3MI W OF PAGE ISLAND
RT-042063 RT04		SA	NEW RIVER, 8.5MI SW OF BLUFFTON

Station #	Type	Class	Description
03060110-02 (continued)			
MD-258	INT	SFH/SA R	AMSHORN CREEK AT NEW RIVER
03060110-03			
MD-173	INT	ORW M	MAY RIVER, 1.8MI SE OF BLUFFTON OUT FROM END OF S-07-461
RO-06313	RO06	ORW	MAY RIVER, 3.2MI SE OF BLUFFTON
RO-02002	RO02	ORW	MAY RIVER, 0.9MI NW OF CONFLUENCE WITH CALIBOGUE SOUND
MD-016	W	ORW	MOUTH OF MAY RIVER, 1.0MI W OF CHANNEL MARKER 29
RO-056102	RO05	SFH	CALIBOGUE SOUND, 2.7 MI W OF HILTON HEAD ISLAND
RO-036038	RO03	SFH	CALIBOGUE SOUND, 0.6 MI NW OF BROAD CREEK MOUTH
RO-06305	RO06	SFH	COOPER RIVER, 7.8 MI W OF HILTON HEAD ISLAND
MD-257	INT	SFH/ORW	RAMSHORN CREEK AT COOPER RIVER
RT-052106	RT05	SFH	UNNAMED CREEK TO COOPER RIVER, 4.7MI W OF HILTON HEAD
RT-02022	RT02	SFH	BROAD CREEK, 4.0 MI NE OF CONFLUENCE W/CALIBOGUE SOUND
MD-174	SPRP	SFH B	ROAD CREEK OPPOSITE END OF S-07-80
MD-175	W	SFH C	CALIBOGUE SOUND AT MOUTH OF COOPER RIVER NEAR RED BUOY 32
RO-02009	RO02	SFH	CALIBOGUE SOUND NEAR COOPER RIVER MOUTH

Groundwater Monitoring Sites

Well #	Class	Aquifer	Location
03060106-02			
AMB-027	GB	MIDDENDORF	NORTH AUGUSTA
03060107-01			
AMB-107	GB	PIEDMONT BEDROCK	N.W. EDGEVILLE COUNTY
03060109-03			
AMB-097	GB	TERTIARY LIMESTONE	HARDEEVILLE
03060110-03			
AMB-092	GB	TERTIARY LIMESTONE	HILTON HEAD ISLAND

Shellfish Monitoring Stations

Station #	Description
03060109-03	
19-06	WRIGHT RIVER, MARKER #43
19-20	1.5 MILES UP THE WRIGHT RIVER FROM FIELDS CUT
19-22	WRIGHT RIVER AT FIELDS CUT
19-27	WRIGHT RIVER AT CONFLUENCE WITH ATLANTIC OCEAN
03060110-02	
19-02A	COOPER RIVER AT NEW RIVER
19-04	COOPER RIVER AT MARKER #41 – DAUFUSKIE ISLAND
19-05	BLOODY POINT AT MUNGEN CREEK

Station #	Description
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03060110-02 (continued)

19-07	RAMSHORN CREEK AT NEW RIVER
19-08	FIRST CREEK ON LEFT UP NEW RIVER AT POLLUTION LINE
19-21	2.5 MILES UP NEW RIVER FROM STATION 19-02A
19-23	NEW RIVER AT WATTS CUT

03060110-03

19-01	MAY RIVER SOUTH OF PALMETTO BLUFF, MARKER #8
19-02	UNNAMED CREEK AT JACK CROW ISLAND IN COOPER RIVER
19-03	RAMSHORN CREEK AT COOPER RIVER
19-09	BULL CREEK AT COOPER RIVER
19-11	BULL CREEK AT SAVAGE CREEK
19-12	BULL CREEK AT MAY RIVER
19-16	MAY RIVER BEHIND BLUFFTON OYSTER CO-OP
19-17A	COOPER RIVER MARINA AT EDGE OF CSZ
19-18	MAY RIVER BELOW DRAINAGE CANAL AT MARKER #11
19-19	MAY RIVER AT FIRST DOCK IN HEADWATERS PAST BLUFF
19-24	MAY RIVER AT SOUTHERN END OF CRANE ISLAND
19-25	MAY RIVER AT GREEN MARKER #25
19-26	MAY RIVER, SOUTHEAST OF HEYWARD COVE
20-01	BRADDOCK POINT – SOUTH END OF HILTON HEAD ISLAND
20-02	CALIBOGUE SOUND, MARKER #32
20-03	SHARK BANK AND BROAD CREEK – CSZ SEA PINES WWTP, MARKER #2
20-04A	BROAD CREEK AT PALMETTO BAY MARINA CSZ – EBB TIDE (COMBINED 20-04E AND 20-04F)
20-05	MAY RIVER AT CALIBOGUE SOUND
20-06	JARVIS CREEK AT CALIBOGUE SOUND
20-07	BUCKINGHAM LANDING AT BRIDGE
20-10	SKULL CREEK AT SMALL CREEK FROM MARINER’S COVE
20-11	SKULL CREEK, MARKER #19
20-12	SKULL CREEK BEHIND HILTON HEAD SEAFOOD COMPANY
20-15	BROAD CREEK AT LAWTON CREEK
20-15A	BROAD CREEK AT CALIBOGUE SOUND – NORTH END OF BUCK ISLAND
20-16	CREEK BEHIND LYNN SMITH’S OYSTER PLANT AT BROAD CREEK
20-16A	CREEK APPROXIMATELY 50 YDS SOUTHEAST OF STATION 20-16
20-18	BROAD CREEK AT SHELTER COVE MARINA
20-19A	BROAD CREEK AT HARBOR TOWN MARINA CSZ (COMBINED 20-19E AND 20-19F)
20-20A	MOSS CREEK MARINA CSZ (COMBINED 20-20E AND 20-20F)
20-22	OLD HOUSE CREEK AT CALIBOGUE SOUND
20-23	FIRST MAJOR “Y” IN JARVIS CREEK
20-24	FIRST MAJOR CREEK RIGHT AFTER MARKER #18
20-25	BROAD CREEK AT CONFLUENCE OF CHANNEL AT OLD OYSTER FACTORY
20-26	NORTHWEST OF S. BEACH MARINA CLOSURE ZONE
20-28	BROAD CREEK AT SOUTHERN BOUNDARY OF SOUTH ISLAND WWTP PROHIBITED CLOSURE ZONE
20-29	BROAD CREEK AT NORTHERN BOUNDARY OF SOUTH ISLAND WWTP PROHIBITED CLOSURE ZONE

For further details concerning sampling frequency and parameters sampled, please visit our website at www.scdhec.gov/eqc/admin/html/eqcpubs.html#wqreports for the current State of S.C. Monitoring Strategy.

Water Quality Data Spreadsheet Legend

Station Information:

STATION NUMBER Station ID

TYPE SCDHEC station type code
P = Primary station, sampled monthly all year round
S = Secondary station, sampled monthly May - October
P* = Secondary station upgraded to primary station parameter coverage and sampling frequency for basin study
W = Special watershed station added for the Savannah River Basin study
BIO = Indicates macroinvertebrate community data assessed
INT = Integrator Station (approximates a Primary station)
RL = Random Lake station
RO = Random Open water station
RS = Random Stream station
RT = Random Tide Creek station

WATERBODY NAME Stream or Lake Name

CLASS Stream classification at the point where monitoring station is located

Parameter Abbreviations and Parameter Measurement Units:

DO Dissolved Oxygen (mg/l)	NH3 Ammonia (mg/l)
BOD Five-Day Biochemical Oxygen Demand (mg/l)	CD Cadmium (ug/l)
pH pH (SU)	CR Chromium (ug/l)
TP Total Phosphorus (mg/l)	CU Copper (ug/l)
TN Total Nitrogen (mg/l)	PB Lead (ug/l)
TURB Turbidity (NTU)	HG Mercury (ug/l)
TSS Total Suspended Solids (mg/l)	NI Nickel (ug/l)
BACT Fecal Coliform Bacteria (#/100 ml)	ZN Zinc (ug/l)

Statistical Abbreviations:

N For *standards compliance*, number of surface samples collected between January 2002 and December 2006.
 For *trends*, number of surface samples collected between January 1992 and December 2006.

EXC. Number of samples contravening the appropriate standard

% Percentage of samples contravening the appropriate standard

MEAN EXC. Mean of samples that contravened the applied standard

MED For *heavy metals with a human health criterion*, this is the median of all surface samples between January 2002 and December 2006. DL indicates that the median was the detection limit.

MAG Magnitude of any statistically significant trend, average change per year, expressed in parameter measurement units

GEO MEAN Geometric mean of fecal coliform bacteria samples collected between January 2002 and December 2006

Key to Trends:

D Statistically significant decreasing trend in parameter concentration

I Statistically significant increasing trend in parameter concentration

***** No statistically significant trend

Appendix C. Lower Savannah River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	DO N	DO EXC.	DO %	MEAN EXC.	TRENDS (92-2006)					
								DO	N	MAG	BOD	N	MAG
03060106-01													
SV-294	SS	LAKE, STEVENS CK RESERVOIR	FW	12	0	0	0	D	130	-0.0736	I	128	0.0333
03060106-02													
CL-067	SS	LAKE, VAUCLUSE POND	FW	11	1	9	0.03						
SV-686	SS	LAKE, FLAT ROCK POND	FW	10	0	0	0						
SV-722/ RL-05419	SS	LAKE, GRANITEVILLE POND #2	FW	10	0	0	0						
SV-329	SS	HORSE CK	FW	12	0	0	0	NS	130	0	I	127	0.05
SV-071	SS	HORSE CK	FW	13	1	8	0.13	NS	132	-0.0167	I	129	0.0462
SV-069	SS	SAND RVR	FW	12	0	0	0	NS	129	0.025	I	129	0.0667
RL-04373	RL04	LAKE, LANGLEY POND	FW	12	0	0	0						
RL-02317	RL02	LAKE, LANGLEY POND	FW	11	0	0	0						
CL-069	SS	LAKE, LANGLEY POND	FW	10	0	0	0						
RL-03335	RL03	LAKE, LANGLEY POND	FW	11	0	0	0						
SV-096	SS	HORSE CK	FW	12	0	0	0	NS	130	0	I	130	0.0625
SV-724		LITTLE HORSE CK											
SV-073	SS	LITTLE HORSE CK	FW	12	0	0	0	NS	66	0	NS	65	0.0429
SV-072	SS	HORSE CK	FW	12	0	0	0	D	65	-0.05	NS	64	0.0414
SV-250	INT	HORSE CK	FW	51	0	0	0	D	182	-0.04	I	180	0.06
03060106-04													
SV-350	INT	HOLLOW CK	FW	58	0	0	0	NS	94	0.0433	I	91	0
03060106-05													
SV-680		UPPER THREE RUNS											
SV-723		CEDAR CK											
SV-324	SS	TIMS BRANCH	FW	10	0	0	0	D	106	-0.08	I	108	0.0833
SV-325	INT	UPPER THREE RUNS	FW	19	0	0	0	NS	116	0	I	118	0.05
03060106-06													
RS-04544	RS04	UNNAMED TRIB TO SAVANNAH RVR	FW	12	0	0	0						
SV-251	SS	SAVANNAH RVR	FW	12	0	0	0	NS	133	-0.0286	I	131	0.0714
SV-252	SS	SAVANNAH RVR	FW	12	0	0	0	NS	132	-0.0306	I	131	0.0774
SV-323	SS	SAVANNAH RVR	FW	12	0	0	0	NS	131	-0.0333	I	129	0.0613
SV-366	INT	SAVANNAH RVR	FW	50	0	0	0	NS	61	0.06	D	58	0
03060106-07													
SV-328	SS	LOWER THREE RUNS CK	FW	4	0	0	0	NS	123	0	I	120	0.06
SV-175	INT	LOWER THREE RUNS CK	FW	19	0	0	0	NS	85	0	NS	87	0

Appendix C. Lower Savannah River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	pH			MEAN EXC.	TRENDS (92-2006)			TURB N	TURB EXC.	TURB %	MEAN EXC.	TRENDS (92-2006)		
				N	EXC.	%		PH	N	MAG					TURB N	N	MAG
03060106-01																	
SV-294	SS	LAKE, STEVENS CK RESERVOIR	FW	12	0	0	0	NS	130	-0.025	12	0	0	0	D	130	-0.2
03060106-02																	
CL-067	SS	LAKE, VAUCLUSE POND	FW	12	4	33	5.6375				12	0	0	0			
SV-686	SS	LAKE, FLAT ROCK POND	FW	12	5	42	5.712				12	0	0	0			
SV-722/ RL-05419	SS	LAKE, GRANITEVILLE POND #2	FW	12	8	67	5.5188				12	0	0	0			
SV-329	SS	HORSE CK	FW	12	7	58	5.7971	D	128	-0.055	12	0	0	0	D	131	-0.1134
SV-071	SS	HORSE CK	FW	12	6	50	5.7917	D	129	-0.05	12	0	0	0	D	132	-0.2
SV-069	SS	SAND RVR	FW	12	12	100	5.34	D	128	-0.075	12	0	0	0	D	132	-0.1969
RL-04373	RL04	LAKE, LANGLEY POND	FW	12	1	8	5.9				12	0	0	0			
RL-02317	RL02	LAKE, LANGLEY POND	FW	11	4	36	5.715				11	0	0	0			
CL-069	SS	LAKE, LANGLEY POND	FW	11	0	0	0				12	1	8	28			
RL-03335	RL03	LAKE, LANGLEY POND	FW	11	2	18	5.96				11	1	9	31			
SV-096	SS	HORSE CK	FW	12	5	42	5.726	D	129	-0.0354	12	0	0	0	NS	132	0
SV-724		LITTLE HORSE CK															
SV-073	SS	LITTLE HORSE CK	FW	12	6	50	5.7417	D	66	-0.0414	12	0	0	0	NS	66	-0.1845
SV-072	SS	HORSE CK	FW	12	6	50	5.81	D	65	-0.0367	12	0	0	0	D	65	-0.4333
SV-250	INT	HORSE CK	FW	51	29	57	5.7738	D	182	-0.05	51	0	0	0	D	181	-0.3
03060106-04																	
SV-350	INT	HOLLOW CK	FW	58	40	69	5.599	NS	94	-0.0075	58	0	0	0	D	95	-0.1
03060106-05																	
SV-680		UPPER THREE RUNS															
SV-723		CEDAR CK															
SV-324	SS	TIMS BRANCH	FW	10	2	20	5.455	D	106	-0.05	13	0	0	0	D	107	-0.8
SV-325	INT	UPPER THREE RUNS	FW	20	9	45	5.6322	D	117	-0.0625	22	0	0	0	D	117	-0.2181
03060106-06																	
RS-04544	RS04	UNNAMED TRIB TO SAVANNAH RVR	FW	12	0	0	0				12	0	0	0			
SV-251	SS	SAVANNAH RVR	FW	12	0	0	0	NS	133	-0.01	12	0	0	0	D	132	-0.2
SV-252	SS	SAVANNAH RVR	FW	12	0	0	0	NS	132	-0.0044	12	0	0	0	D	131	-0.2477
SV-323	SS	SAVANNAH RVR	FW	12	0	0	0	NS	131	-0.0029	12	0	0	0	D	128	-0.275
SV-366	INT	SAVANNAH RVR	FW	50	0	0	0	NS	61	0.015	50	0	0	0	D	61	-0.2667
03060106-07																	
SV-328	SS	LOWER THREE RUNS CK	FW	4	0	0	0	I	122	0.0237	4	0	0	0	NS	121	0
SV-175	INT	LOWER THREE RUNS CK	FW	21	1	5	5.85	NS	87	0.0137	22	0	0	0	NS	87	-0.1472

Appendix C. Lower Savannah River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	TP N	TP EXC.	TP %	MEAN EXC.	TRENDS (92-2006)			TN N	TN EXC.	TN %	MEAN EXC.	TRENDS (92-2006)		
								TP	N	MAG					TN	N	MAG
03060106-01																	
SV-294	SS	LAKE, STEVENS CK RESERVOIR	FW	12	0	0	0	D	104	0	12	0	0	0	NS	127	0.0014
03060106-02																	
CL-067	SS	LAKE, VAUCLUSE POND	FW	12	0	0	0				12	0	0	0			
SV-686	SS	LAKE, FLAT ROCK POND	FW	12	0	0	0				12	0	0	0			
SV-722/ RL-05419	SS	LAKE, GRANITEVILLE POND #2	FW	12	0	0	0				12	0	0	0			
SV-329	SS	HORSE CK	FW					D	100	-0.0001					NS	124	-0.0025
SV-071	SS	HORSE CK	FW					D	104	-0.0003					NS	128	0.0018
SV-069	SS	SAND RVR	FW					D	102	-0.0012					NS	125	0.0071
RL-04373	RL04	LAKE, LANGLEY POND	FW	12	0	0	0				11	0	0	0			
RL-02317	RL02	LAKE, LANGLEY POND	FW	10	0	0	0				8	0	0	0			
CL-069	SS	LAKE, LANGLEY POND	FW	12	0	0	0				11	0	0	0			
RL-03335	RL03	LAKE, LANGLEY POND	FW	11	0	0	0				7	1	14	1.73			
SV-096	SS	HORSE CK	FW					D	100	-0.0003					NS	123	-0.01
SV-724		LITTLE HORSE CK															
SV-073	SS	LITTLE HORSE CK	FW					NS	51	0							
SV-072	SS	HORSE CK	FW					D	49	-0.001							
SV-250	INT	HORSE CK	FW					D	145	-0.0002					NS	162	-0.0009
03060106-04																	
SV-350	INT	HOLLOW CK	FW					NS	66	0					NS	73	-0.0017
03060106-05																	
SV-680		UPPER THREE RUNS															
SV-723		CEDAR CK															
SV-324	SS	TIMS BRANCH	FW					D	103	-0.0064					D	106	-0.1175
SV-325	INT	UPPER THREE RUNS	FW					NS	110	-0.0002					D	112	-0.0218
03060106-06																	
RS-04544	RS04	UNNAMED TRIB TO SAVANNAH RVR	FW														
SV-251	SS	SAVANNAH RVR	FW					D	106	0					NS	130	0.0021
SV-252	SS	SAVANNAH RVR	FW					D	106	-0.0001					NS	130	-0.0028
SV-323	SS	SAVANNAH RVR	FW					NS	105	0					NS	127	0
SV-366	INT	SAVANNAH RVR	FW					NS	50	0.006					NS	47	-0.0067
03060106-07																	
SV-328	SS	LOWER THREE RUNS CK	FW					NS	95	0					NS	116	0.0029
SV-175	INT	LOWER THREE RUNS CK	FW					NS	74	0					NS	47	-0.0107

Appendix C. Lower Savannah River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	CHL N	CHL EXC.	CHL %	MEAN EXC.	TRENDS (92-2006)		
								TSS	N	MAG
03060106-01										
SV-294	SS	LAKE, STEVENS CK RESERVOIR	FW	5	0	0	0			
03060106-02										
CL-067	SS	LAKE, VAUCLUSE POND	FW	5	0	0	0			
SV-686	SS	LAKE, FLAT ROCK POND	FW	5	0	0	0			
SV-722/ RL-05419	SS	LAKE, GRANITEVILLE POND #2	FW	5	0	0	0			
SV-329	SS	HORSE CK	FW							
SV-071	SS	HORSE CK	FW							
SV-069	SS	SAND RVR	FW							
RL-04373	RL04	LAKE, LANGLEY POND	FW	6	0	0	0			
RL-02317	RL02	LAKE, LANGLEY POND	FW	6	0	0	0			
CL-069	SS	LAKE, LANGLEY POND	FW	5	0	0	0			
RL-03335	RL03	LAKE, LANGLEY POND	FW	6	0	0	0			
SV-096	SS	HORSE CK	FW							
SV-724		LITTLE HORSE CK								
SV-073	SS	LITTLE HORSE CK	FW							
SV-072	SS	HORSE CK	FW							
SV-250	INT	HORSE CK	FW							
03060106-04										
SV-350	INT	HOLLOW CK	FW							
03060106-05										
SV-680		UPPER THREE RUNS								
SV-723		CEDAR CK								
SV-324	SS	TIMS BRANCH	FW							
SV-325	INT	UPPER THREE RUNS	FW							
03060106-06										
RS-04544	RS04	UNNAMED TRIB TO SAVANNAH RVR	FW							
SV-251	SS	SAVANNAH RVR	FW							
SV-252	SS	SAVANNAH RVR	FW							
SV-323	SS	SAVANNAH RVR	FW					NS	90	0.0321
SV-366	INT	SAVANNAH RVR	FW							
03060106-07										
SV-328	SS	LOWER THREE RUNS CK	FW							
SV-175	INT	LOWER THREE RUNS CK	FW							

Appendix C. Lower Savannah River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	GEO MEAN	BACT N	BACT EXC.	BACT %	MEAN EXC.	TRENDS (92-2006)		
									BACT	N	MAG
03060106-01											
SV-294	SS	LAKE, STEVENS CK RESERVOIR	FW	11.1503	12	0	0	0	NS	132	0.1833
03060106-02											
CL-067	SS	LAKE, VAUCLUSE POND	FW	19.8456	12	0	0	0			
SV-686	SS	LAKE, FLAT ROCK POND	FW	36.4054	12	0	0	0			
SV-722/ RL-05419	SS	LAKE, GRANITEVILLE POND #2	FW	16.1117	12	0	0	0			
SV-329	SS	HORSE CK	FW	73.3206	12	1	8	600	I	131	3.1833
SV-071	SS	HORSE CK	FW	184.9181	12	4	33	495	NS	131	0
SV-069	SS	SAND RVR	FW	82.6894	12	0	0	0	NS	131	0
RL-04373	RL04	LAKE, LANGLEY POND	FW	9.3883	12	0	0	0			
RL-02317	RL02	LAKE, LANGLEY POND	FW	11.2475	10	0	0	0			
CL-069	SS	LAKE, LANGLEY POND	FW	5.025	12	0	0	0			
RL-03335	RL03	LAKE, LANGLEY POND	FW	12.6735	11	0	0	0			
SV-096	SS	HORSE CK	FW	23.786	12	0	0	0	D	130	-9.4722
SV-724		LITTLE HORSE CK									
SV-073	SS	LITTLE HORSE CK	FW	81.1862	12	0	0	0	NS	66	-0.2143
SV-072	SS	HORSE CK	FW	81.3863	12	0	0	0	NS	65	4.4444
SV-250	INT	HORSE CK	FW	58.2447	51	3	6	740	NS	183	0.5278
03060106-04											
SV-350	INT	HOLLOW CK	FW	158.4847	57	5	9	650	NS	94	-2.7619
03060106-05											
SV-680		UPPER THREE RUNS									
SV-723		CEDAR CK									
SV-324	SS	TIMS BRANCH	FW	72.1508	13	1	8	680	NS	109	-8
SV-325	INT	UPPER THREE RUNS	FW	140.5505	22	3	14	550	NS	119	0
03060106-06											
RS-04544	RS04	UNNAMED TRIB TO SAVANNAH RVR	FW	433.1032	12	8	67	567.5			
SV-251	SS	SAVANNAH RVR	FW	20.2793	12	0	0	0	D	133	-3.2071
SV-252	SS	SAVANNAH RVR	FW	24.6323	12	1	8	600	D	133	-3.7321
SV-323	SS	SAVANNAH RVR	FW	21.6666	12	0	0	0	NS	132	0
SV-366	INT	SAVANNAH RVR	FW	29.5473	50	5	10	820	NS	61	6.5
03060106-07											
SV-328	SS	LOWER THREE RUNS CK	FW	96.6061	4	0	0	0	I	123	8.3333
SV-175	INT	LOWER THREE RUNS CK	FW	180.7684	22	1	5	600	NS	88	-5

Appendix C. Lower Savannah River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	NH3 N	NH3 EXC.	NH3 %	MEAN EXC.	CD N	CD EXC.	CD %	MEAN EXC.	CR N	CR EXC.	CR %	MEAN EXC.
03060106-01															
SV-294	SS	LAKE, STEVENS CK RESERVOIR	FW	11	0	0	0	4	0	0	0	4	0	0	0
03060106-02															
CL-067	SS	LAKE, VAUCLUSE POND	FW	12	0	0	0	4	0	0	0	4	0	0	0
SV-686	SS	LAKE, FLAT ROCK POND	FW	12	0	0	0	4	0	0	0	4	0	0	0
SV-722/ RL-05419	SS	LAKE, GRANITEVILLE POND #2	FW	12	0	0	0	4	0	0	0	4	0	0	0
SV-329	SS	HORSE CK	FW	12	0	0	0	4	0	0	0	4	0	0	0
SV-071	SS	HORSE CK	FW	12	0	0	0	4	0	0	0	4	0	0	0
SV-069	SS	SAND RVR	FW	11	0	0	0	4	0	0	0	4	0	0	0
RL-04373	RL04	LAKE, LANGLEY POND	FW	11	0	0	0	4	0	0	0	4	0	0	0
RL-02317	RL02	LAKE, LANGLEY POND	FW	8	0	0	0	4	0	0	0	4	0	0	0
CL-069	SS	LAKE, LANGLEY POND	FW	12	0	0	0	4	0	0	0	4	0	0	0
RL-03335	RL03	LAKE, LANGLEY POND	FW	7	0	0	0	3	0	0	0	3	0	0	0
SV-096	SS	HORSE CK	FW	11	0	0	0	4	0	0	0	4	0	0	0
SV-724		LITTLE HORSE CK													
SV-073	SS	LITTLE HORSE CK	FW	12	0	0	0	4	0	0	0	4	0	0	0
SV-072	SS	HORSE CK	FW	12	0	0	0	4	0	0	0	4	0	0	0
SV-250	INT	HORSE CK	FW	38	0	0	0	17	1	6	32	17	0	0	0
03060106-04															
SV-350	INT	HOLLOW CK	FW	43	0	0	0	19	1	5	33	19	0	0	0
03060106-05															
SV-680		UPPER THREE RUNS													
SV-723		CEDAR CK													
SV-324	SS	TIMS BRANCH	FW	12	0	0	0	4	0	0	0	5	0	0	0
SV-325	INT	UPPER THREE RUNS	FW	20	0	0	0	7	0	0	0	8	0	0	0
03060106-06															
RS-04544	RS04	UNNAMED TRIB TO SAVANNAH RVR	FW	11	0	0	0	4	0	0	0	4	0	0	0
SV-251	SS	SAVANNAH RVR	FW	11	0	0	0	4	0	0	0	4	0	0	0
SV-252	SS	SAVANNAH RVR	FW	10	0	0	0	4	0	0	0	4	0	0	0
SV-323	SS	SAVANNAH RVR	FW	12	0	0	0	4	0	0	0	4	0	0	0
SV-366	INT	SAVANNAH RVR	FW	41	0	0	0	16	1	6	34	16	0	0	0
03060106-07															
SV-328	SS	LOWER THREE RUNS CK	FW	3	0	0	0	3	0	0	0	3	0	0	0
SV-175	INT	LOWER THREE RUNS CK	FW	21	0	0	0	9	0	0	0	9	0	0	0

Appendix C. Lower Savannah River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	CU N	CU EXC.	CU %	MEAN EXC.	PB N	PB EXC.	PB %	MEAN EXC.	HG N	HG EXC.	HG %	MEAN EXC.
03060106-01															
SV-294	SS	LAKE, STEVENS CK RESERVOIR	FW	4	0	0	0	4	0	0	0	4	0	0	0
03060106-02															
CL-067	SS	LAKE, VAUCLUSE POND	FW	4	0	0	0	4	0	0	0	4	0	0	0
SV-686	SS	LAKE, FLAT ROCK POND	FW	4	1	25	18	4	0	0	0	4	0	0	0
SV-722/ RL-05419	SS	LAKE, GRANITEVILLE POND #2	FW	4	0	0	0	4	0	0	0	4	0	0	0
SV-329	SS	HORSE CK	FW	4	0	0	0	4	0	0	0	4	0	0	0
SV-071	SS	HORSE CK	FW	4	0	0	0	4	0	0	0	4	0	0	0
SV-069	SS	SAND RVR	FW	4	0	0	0	4	0	0	0	4	0	0	0
RL-04373	RL04	LAKE, LANGLEY POND	FW	4	1	25	26	4	0	0	0	4	0	0	0
RL-02317	RL02	LAKE, LANGLEY POND	FW	4	0	0	0	4	0	0	0	4	0	0	0
CL-069	SS	LAKE, LANGLEY POND	FW	4	0	0	0	4	0	0	0	4	0	0	0
RL-03335	RL03	LAKE, LANGLEY POND	FW	3	0	0	0	3	0	0	0	3	0	0	0
SV-096	SS	HORSE CK	FW	4	0	0	0	4	0	0	0	4	0	0	0
SV-724		LITTLE HORSE CK													
SV-073	SS	LITTLE HORSE CK	FW	4	0	0	0	4	0	0	0	4	0	0	0
SV-072	SS	HORSE CK	FW	4	0	0	0	4	0	0	0	4	0	0	0
SV-250	INT	HORSE CK	FW	17	1	6	24	17	0	0	0	17	0	0	0
03060106-04															
SV-350	INT	HOLLOW CK	FW	19	1	5	26	19	0	0	0	19	0	0	0
03060106-05															
SV-680		UPPER THREE RUNS													
SV-723		CEDAR CK													
SV-324	SS	TIMS BRANCH	FW	5	0	0	0	5	0	0	0	5	0	0	0
SV-325	INT	UPPER THREE RUNS	FW	8	0	0	0	8	0	0	0	8	0	0	0
03060106-06															
RS-04544	RS04	UNNAMED TRIB TO SAVANNAH RVR	FW	4	0	0	0	4	0	0	0	4	0	0	0
SV-251	SS	SAVANNAH RVR	FW	4	0	0	0	4	0	0	0	4	0	0	0
SV-252	SS	SAVANNAH RVR	FW	4	0	0	0	4	0	0	0	4	0	0	0
SV-323	SS	SAVANNAH RVR	FW	4	0	0	0	4	0	0	0	4	0	0	0
SV-366	INT	SAVANNAH RVR	FW	16	1	6	28	16	0	0	0	16	0	0	0
03060106-07															
SV-328	SS	LOWER THREE RUNS CK	FW	3	0	0	0	3	0	0	0	3	0	0	0
SV-175	INT	LOWER THREE RUNS CK	FW	9	2	22	11.5	9	0	0	0	9	0	0	0

Appendix C. Lower Savannah River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	NI N	NI EXC.	NI %	MEAN EXC.	ZN N	ZN EXC.	ZN %	MEAN EXC.
03060106-01											
SV-294	SS	LAKE, STEVENS CK RESERVOIR	FW	4	0	0	0	4	0	0	0
03060106-02											
CL-067	SS	LAKE, VAUCLUSE POND	FW	4	0	0	0	4	0	0	0
SV-686	SS	LAKE, FLAT ROCK POND	FW	4	0	0	0	4	0	0	0
SV-722/ RL-05419	SS	LAKE, GRANITEVILLE POND #2	FW	4	0	0	0	4	0	0	0
SV-329	SS	HORSE CK	FW	4	0	0	0	4	0	0	0
SV-071	SS	HORSE CK	FW	4	0	0	0	4	0	0	0
SV-069	SS	SAND RVR	FW	4	0	0	0	4	0	0	0
RL-04373	RL04	LAKE, LANGLEY POND	FW	4	0	0	0	4	0	0	0
RL-02317	RL02	LAKE, LANGLEY POND	FW	4	0	0	0	4	0	0	0
CL-069	SS	LAKE, LANGLEY POND	FW	4	0	0	0	4	0	0	0
RL-03335	RL03	LAKE, LANGLEY POND	FW	3	0	0	0	3	0	0	0
SV-096	SS	HORSE CK	FW	4	0	0	0	4	0	0	0
SV-724		LITTLE HORSE CK									
SV-073	SS	LITTLE HORSE CK	FW	4	0	0	0	4	0	0	0
SV-072	SS	HORSE CK	FW	4	0	0	0	4	0	0	0
SV-250	INT	HORSE CK	FW	17	1	6	28	17	0	0	0
03060106-04											
SV-350	INT	HOLLOW CK	FW	19	1	5	32	19	1	5	180
03060106-05											
SV-680		UPPER THREE RUNS									
SV-723		CEDAR CK									
SV-324	SS	TIMS BRANCH	FW	5	0	0	0	5	1	20	110
SV-325	INT	UPPER THREE RUNS	FW	8	0	0	0	8	1	13	490
03060106-06											
RS-04544	RS04	UNNAMED TRIB TO SAVANNAH RVR	FW	4	0	0	0	4	0	0	0
SV-251	SS	SAVANNAH RVR	FW	4	0	0	0	4	0	0	0
SV-252	SS	SAVANNAH RVR	FW	4	0	0	0	4	0	0	0
SV-323	SS	SAVANNAH RVR	FW	4	0	0	0	4	0	0	0
SV-366	INT	SAVANNAH RVR	FW	16	1	6	51	16	0	0	0
03060106-07											
SV-328	SS	LOWER THREE RUNS CK	FW	3	0	0	0	3	0	0	0
SV-175	INT	LOWER THREE RUNS CK	FW	9	0	0	0	9	1	11	230

Appendix C. Lower Savannah River Basin

STATION				DO	DO	DO	MEAN	TRENDS (92-2006)					
NUMBER	TYPE	WATERBODY NAME	CLASS	N	EXC.	%	EXC.	DO	N	MAG	BOD	N	MAG
03060106-08													
RS-02470/ ESOP													
SV-2039	RS02	FOURMILE BRANCH	FW	3	0	0	0						
SV-327	SS	STEEL CK	FW	8	0	0	0	NS	102	-0.0333	I	104	0.075
SV-367/ RS-05552	INT	SAVANNAH RVR	FW	55	0	0	0	I	66	0.1775	NS	64	0
03060106-09													
SV-815		BRIAR CK	FW	2	0	0	0						
SV-814		BRIAR CK	FW	2	0	0	0						
SV-816		STONE CK	FW	2	0	0	0						
SV-745		BRIAR CK	FW	6	0	0	0						
SV-118	SS	SAVANNAH RVR	FW	11	0	0	0	D	130	-0.0632	I	127	0.0667
SV-368	INT	SAVANNAH RVR	FW	57	1	2	4.67	NS	68	-0.0605	NS	66	0
03060107-01													
SV-151	SS	HARD LABOR CK	FW	9	0	0	0	NS	115	-0.05	I	117	0.0429
RS-06016	RS06	CHURCH BRANCH	FW	12	0	0	0						
SV-731		HARD LABOR CK	FW	1	0	0	0						
SV-351	SS	CUFFYTOWN CK	FW	9	0	0	0	NS	35	0.122	I	36	0.11
RS-03342	RS03	DOCTORS BRANCH	FW	12	0	0	0						
SV-330	SS	STEVENS CK	FW	11	0	0	0	NS	129	-0.0489	I	125	0.06
SV-365	INT	STEVENS CK	FW	58	2	3	3.09	NS	68	0.1925	D	66	0
03060107-02													
SV-729		TURKEY CK	FW	2	0	0	0						
SV-728		LOG CK											
SV-727		ROCKY CK											
SV-353	INT	BEAVERDAM CK	FW	56	1	2	4.94	NS	92	-0.0583	I	89	0
SV-352	INT	TURKEY CK	FW	57	2	4	4.885	NS	93	-0.07	I	89	0
03060107-03													
SV-063		STEVENS CK											
SV-354	INT	STEVENS CK	FW	58	2	3	4.665	NS	94	-0.0133	I	89	0
SV-725		CHEVES CK	FW	2	0	0	0						
03060109-01													
SV-355	SS	SAVANNAH RVR	FW	12	1	8	4.85	NS	37	-0.0511	I	36	0.0889
SV-369	INAC	SAVANNAH RVR	FW	30	13	43	3.2354	NS	41	0.655	NS	42	-0.1
SV-370	INT	SAVANNAH RVR	FW	12	0	0	0						

Appendix C. Lower Savannah River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	pH				TRENDS (92-2006)			TURB			TRENDS (92-2006)				
				N	EXC.	%	MEAN EXC.	PH	N	MAG	N	EXC.	%	MEAN EXC.	TURB	N	MAG	
03060106-08																		
RS-02470/ ESOP SV-2039	RS02	FOURMILE BRANCH	FW	3	0	0	0					3	0	0	0			
SV-327	SS	STEEL CK	FW	9	0	0	0	NS	103	-0.0075		11	0	0	0	NS	104	-0.0667
SV-367/ RS-05552	INT	SAVANNAH RVR	FW	55	4	7	6.5825	I	66	0.11		55	0	0	0	D	66	-0.3
03060106-09																		
SV-815		BRIAR CK	FW	2	2	100	5.2					1	0	0	0			
SV-814		BRIAR CK	FW	2	1	50	5.38					1	0	0	0			
SV-816		STONE CK	FW	2	2	100	5.545					1	0	0	0			
SV-745		BRIAR CK	FW	6	0	0	0					2	0	0	0			
SV-118	SS	SAVANNAH RVR	FW	11	0	0	0	NS	129	0.0176		11	0	0	0	D	128	-0.425
SV-368	INT	SAVANNAH RVR	FW	57	1	2	8.85	NS	68	0.0662		57	0	0	0	NS	68	-0.1
03060107-01																		
SV-151	SS	HARD LABOR CK	FW	11	0	0	0	I	118	0.025		12	1	8	55	D	118	-0.5586
RS-06016	RS06	CHURCH BRANCH	FW	12	0	0	0					12	2	17	86			
SV-731		HARD LABOR CK	FW	1	0	0	0											
SV-351	SS	CUFFYTOWN CK	FW	11	0	0	0	I	37	0.044		12	0	0	0	NS	38	-0.1667
RS-03342	RS03	DOCTORS BRANCH	FW	12	1	8	5.98					11	0	0	0			
SV-330	SS	STEVENS CK	FW	12	0	0	0	I	130	0.036		12	1	8	86	NS	131	-0.25
SV-365	INT	STEVENS CK	FW	59	2	3	7.215	I	69	0.18		59	5	8	77.2	NS	69	0
03060107-02																		
SV-729		TURKEY CK	FW	2	0	0	0											
SV-728		LOG CK																
SV-727		ROCKY CK																
SV-353	INT	BEAVERDAM CK	FW	57	3	5	7.3567	I	93	0.0542		57	1	2	59	NS	93	-0.1583
SV-352	INT	TURKEY CK	FW	58	3	5	5.8933	I	94	0.0567		58	2	3	62.5	NS	94	-0.1
03060107-03																		
SV-063		STEVENS CK																
SV-354	INT	STEVENS CK	FW	59	0	0	0	I	95	0.06		58	1	2	62	NS	93	-0.1667
SV-725		CHEVES CK	FW	2	0	0	0											
03060109-01																		
SV-355	SS	SAVANNAH RVR	FW	12	0	0	0	NS	35	0.0344		12	0	0	0	NS	37	-0.3589
SV-369	INAC	SAVANNAH RVR	FW	30	11	37	5.6973	NS	41	-0.22		37	9	24	172.778	NS	48	0
SV-370	INT	SAVANNAH RVR	FW	12	0	0	0					12	0	0	0			

Appendix C. Lower Savannah River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	TP N	TP EXC.	TP %	MEAN EXC.	TRENDS (92-2006)			TN N	TN EXC.	TN %	MEAN EXC.	TRENDS (92-2006)		
								TP	N	MAG					TN	N	MAG
03060106-08																	
RS-02470/ ESOP SV-2039	RS02	FOURMILE BRANCH	FW														
SV-327	SS	STEEL CK	FW					D	98	-0.0001					NS	101	-0.01
SV-367/ RS-05552	INT	SAVANNAH RVR	FW					NS	54	0.0035					NS	49	-0.016
03060106-09																	
SV-815		BRIAR CK	FW														
SV-814		BRIAR CK	FW														
SV-816		STONE CK	FW														
SV-745		BRIAR CK	FW														
SV-118	SS	SAVANNAH RVR	FW					NS	104	0.0006					NS	124	0.008
SV-368	INT	SAVANNAH RVR	FW					NS	56	0.0015					NS	52	0.032
03060107-01																	
SV-151	SS	HARD LABOR CK	FW					NS	89	-0.0078					NS	108	-0.0054
RS-06016	RS06	CHURCH BRANCH	FW														
SV-731		HARD LABOR CK	FW														
SV-351	SS	CUFFYTOWN CK	FW												NS	36	0.0083
RS-03342	RS03	DOCTORS BRANCH	FW														
SV-330	SS	STEVENS CK	FW					D	102	-0.0025					NS	124	-0.0073
SV-365	INT	STEVENS CK	FW					NS	59	0.0033					NS	50	-0.015
03060107-02																	
SV-729		TURKEY CK	FW														
SV-728		LOG CK															
SV-727		ROCKY CK															
SV-353	INT	BEAVERDAM CK	FW					NS	68	0.0004					NS	74	0.0083
SV-352	INT	TURKEY CK	FW					NS	70	0					NS	74	-0.0013
03060107-03																	
SV-063		STEVENS CK															
SV-354	INT	STEVENS CK	FW					NS	68	0					NS	76	0
SV-725		CHEVES CK	FW														
03060109-01																	
SV-355	SS	SAVANNAH RVR	FW												NS	34	0.006
SV-369	INAC	SAVANNAH RVR	FW					NS	37	0.027							
SV-370	INT	SAVANNAH RVR	FW														

Appendix C. Lower Savannah River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	CHL N	CHL EXC.	CHL %	MEAN EXC.	TRENDS (92-2006)		
								TSS	N	MAG
03060106-08										
RS-02470/ ESOP										
SV-2039	RS02	FOURMILE BRANCH	FW							
SV-327	SS	STEEL CK	FW							
SV-367/ RS-05552	INT	SAVANNAH RVR	FW							
03060106-09										
SV-815		BRIAR CK	FW							
SV-814		BRIAR CK	FW							
SV-816		STONE CK	FW							
SV-745		BRIAR CK	FW							
SV-118	SS	SAVANNAH RVR	FW					NS	89	0
SV-368	INT	SAVANNAH RVR	FW							
03060107-01										
SV-151	SS	HARD LABOR CK	FW							
RS-06016	RS06	CHURCH BRANCH	FW							
SV-731		HARD LABOR CK	FW							
SV-351	SS	CUFFYTOWN CK	FW							
RS-03342	RS03	DOCTORS BRANCH	FW							
SV-330	SS	STEVENS CK	FW							
SV-365	INT	STEVENS CK	FW							
03060107-02										
SV-729		TURKEY CK	FW							
SV-728		LOG CK								
SV-727		ROCKY CK								
SV-353	INT	BEAVERDAM CK	FW							
SV-352	INT	TURKEY CK	FW							
03060107-03										
SV-063		STEVENS CK								
SV-354	INT	STEVENS CK	FW							
SV-725		CHEVES CK	FW							
03060109-01										
SV-355	SS	SAVANNAH RVR	FW							
SV-369	INAC	SAVANNAH RVR	FW							
SV-370	INT	SAVANNAH RVR	FW							

Appendix C. Lower Savannah River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	GEO MEAN	BACT N	BACT EXC.	BACT %	MEAN EXC.	TRENDS (92-2006)		
03060106-08											
RS-02470/ ESOP SV-2039	RS02	FOURMILE BRANCH	FW	318.1073	3	1	33	580			
SV-327	SS	STEEL CK	FW	65.5537	11	0	0	0	I	105	4
SV-367/ RS-05552	INT	SAVANNAH RVR	FW	25.8424	55	1	2	580	NS	66	1.1667
03060106-09											
SV-815		BRIAR CK	FW								
SV-814		BRIAR CK	FW								
SV-816		STONE CK	FW								
SV-745		BRIAR CK	FW								
SV-118	SS	SAVANNAH RVR	FW	30.0226	11	0	0	0	NS	130	-1
SV-368	INT	SAVANNAH RVR	FW	26.7504	57	1	2	600	I	68	4.125
03060107-01											
SV-151	SS	HARD LABOR CK	FW	391.8859	12	8	67	546.25	NS	119	5.5556
RS-06016	RS06	CHURCH BRANCH	FW	587.2431	12	9	75	976.6667			
SV-731		HARD LABOR CK	FW								
SV-351	SS	CUFFYTOWN CK	FW	149.0878	12	2	17	900	NS	38	-2.1389
RS-03342	RS03	DOCTORS BRANCH	FW	40.9401	12	0	0	0			
SV-330	SS	STEVENS CK	FW	85.5241	12	2	17	600	NS	131	0
SV-365	INT	STEVENS CK	FW	41.6098	59	4	7	615	NS	69	3.25
03060107-02											
SV-729		TURKEY CK	FW								
SV-728		LOG CK									
SV-727		ROCKY CK									
SV-353	INT	BEAVERDAM CK	FW	128.509	57	6	11	640	NS	93	5.7917
SV-352	INT	TURKEY CK	FW	115.9774	58	10	17	763	NS	94	0
03060107-03											
SV-063		STEVENS CK									
SV-354	INT	STEVENS CK	FW	93.041	59	6	10	556.6667	NS	96	-1.5476
SV-725		CHEVES CK	FW								
03060109-01											
SV-355	SS	SAVANNAH RVR	FW	29.7398	12	0	0	0	NS	36	-3
SV-369	INAC	SAVANNAH RVR	FW	24.0112	36	0	0	0	I	47	7.8333
SV-370	INT	SAVANNAH RVR	FW	9.0085	12	0	0	0			

Appendix C. Lower Savannah River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	NH3 N	NH3 EXC.	NH3 %	MEAN EXC.	CD N	CD EXC.	CD %	MEAN EXC.	CR N	CR EXC.	CR %	MEAN EXC.
03060106-08															
RS-02470/ ESOP															
SV-2039	RS02	FOURMILE BRANCH	FW	3	0	0	0	1	0	0	0	1	0	0	0
SV-327	SS	STEEL CK	FW	9	0	0	0	5	0	0	0	5	0	0	0
SV-367/ RS-05552	INT	SAVANNAH RVR	FW	41	0	0	0	17	0	0	0	17	0	0	0
03060106-09															
SV-815		BRIAR CK	FW	1	0	0	0	1	0	0	0	1	0	0	0
SV-814		BRIAR CK	FW	1	0	0	0	1	0	0	0	1	0	0	0
SV-816		STONE CK	FW	1	0	0	0	1	0	0	0	1	0	0	0
SV-745		BRIAR CK	FW	3	0	0	0	3	0	0	0	3	0	0	0
SV-118	SS	SAVANNAH RVR	FW	11	0	0	0	3	0	0	0	3	0	0	0
SV-368	INT	SAVANNAH RVR	FW	44	0	0	0	19	0	0	0	19	0	0	0
03060107-01															
SV-151	SS	HARD LABOR CK	FW	12	0	0	0	4	0	0	0	4	0	0	0
RS-06016	RS06	CHURCH BRANCH	FW	11	0	0	0	4	0	0	0	4	0	0	0
SV-731		HARD LABOR CK	FW												
SV-351	SS	CUFFYTOWN CK	FW	12	0	0	0	4	0	0	0	4	0	0	0
RS-03342	RS03	DOCTORS BRANCH	FW	5	0	0	0	4	0	0	0	4	0	0	0
SV-330	SS	STEVENS CK	FW	12	0	0	0	4	0	0	0	4	0	0	0
SV-365	INT	STEVENS CK	FW	44	0	0	0	19	0	0	0	19	0	0	0
03060107-02															
SV-729		TURKEY CK	FW	1	0	0	0	1	0	0	0	1	0	0	0
SV-728		LOG CK													
SV-727		ROCKY CK													
SV-353	INT	BEAVERDAM CK	FW	43	0	0	0	18	0	0	0	18	0	0	0
SV-352	INT	TURKEY CK	FW	44	0	0	0	18	0	0	0	18	0	0	0
03060107-03															
SV-063		STEVENS CK													
SV-354	INT	STEVENS CK	FW	47	0	0	0	20	1	5	14	19	0	0	0
SV-725		CHEVES CK	FW	1	0	0	0	1	0	0	0	1	0	0	0
03060109-01															
SV-355	SS	SAVANNAH RVR	FW	12	0	0	0	4	0	0	0	4	0	0	0
SV-369	INAC	SAVANNAH RVR	FW	24	0	0	0	13	0	0	0	13	0	0	0
SV-370	INT	SAVANNAH RVR	FW	11	0	0	0	4	0	0	0	4	0	0	0

Appendix C. Lower Savannah River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	CU N	CU EXC.	CU %	MEAN EXC.	PB N	PB EXC.	PB %	MEAN EXC.	HG N	HG EXC.	HG %	MEAN EXC.
03060106-08															
RS-02470/ ESOP															
SV-2039	RS02	FOURMILE BRANCH	FW	1	0	0	0	1	0	0	0	1	0	0	0
SV-327	SS	STEEL CK	FW	5	0	0	0	5	0	0	0	5	0	0	0
SV-367/ RS-05552	INT	SAVANNAH RVR	FW	17	1	6	14	17	0	0	0	17	0	0	0
03060106-09															
SV-815		BRIAR CK	FW	1	0	0	0	1	0	0	0	1	0	0	0
SV-814		BRIAR CK	FW	1	0	0	0	1	0	0	0	1	0	0	0
SV-816		STONE CK	FW	1	0	0	0	1	0	0	0	1	0	0	0
SV-745		BRIAR CK	FW	3	0	0	0	3	0	0	0	3	0	0	0
SV-118	SS	SAVANNAH RVR	FW	3	0	0	0	3	0	0	0	3	0	0	0
SV-368	INT	SAVANNAH RVR	FW	19	0	0	0	19	0	0	0	19	0	0	0
03060107-01															
SV-151	SS	HARD LABOR CK	FW	4	1	25	17	4	0	0	0	4	0	0	0
RS-06016	RS06	CHURCH BRANCH	FW	4	0	0	0	4	0	0	0	4	0	0	0
SV-731		HARD LABOR CK	FW												
SV-351	SS	CUFFYTOWN CK	FW	4	1	25	12	4	0	0	0	4	0	0	0
RS-03342	RS03	DOCTORS BRANCH	FW	4	0	0	0	4	0	0	0	4	0	0	0
SV-330	SS	STEVENS CK	FW	4	0	0	0	4	0	0	0	4	0	0	0
SV-365	INT	STEVENS CK	FW	19	0	0	0	19	0	0	0	19	0	0	0
03060107-02															
SV-729		TURKEY CK	FW	1	0	0	0	1	0	0	0	1	0	0	0
SV-728		LOG CK													
SV-727		ROCKY CK													
SV-353	INT	BEVERDAM CK	FW	18	1	6	55	18	0	0	0	18	0	0	0
SV-352	INT	TURKEY CK	FW	18	0	0	0	18	0	0	0	18	0	0	0
03060107-03															
SV-063		STEVENS CK													
SV-354	INT	STEVENS CK	FW	20	3	15	20	20	0	0	0	20	0	0	0
SV-725		CHEVES CK	FW	1	0	0	0	1	0	0	0	1	0	0	0
03060109-01															
SV-355	SS	SAVANNAH RVR	FW	4	0	0	0	4	0	0	0	4	0	0	0
SV-369	INAC	SAVANNAH RVR	FW	13	0	0	0	13	0	0	0	13	0	0	0
SV-370	INT	SAVANNAH RVR	FW	4	0	0	0	4	0	0	0	4	0	0	0

Appendix C. Lower Savannah River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	NI N	NI EXC.	NI %	MEAN EXC.	ZN N	ZN EXC.	ZN %	MEAN EXC.
03060106-08											
RS-02470/ ESOP											
SV-2039	RS02	FOURMILE BRANCH	FW	1	0	0	0	1	0	0	0
SV-327	SS	STEEL CK	FW	5	0	0	0	5	0	0	0
SV-367/ RS-05552	INT	SAVANNAH RVR	FW	17	0	0	0	17	0	0	0
03060106-09											
SV-815		BRIAR CK	FW	1	0	0	0				
SV-814		BRIAR CK	FW	1	0	0	0				
SV-816		STONE CK	FW	1	0	0	0				
SV-745		BRIAR CK	FW	3	0	0	0				
SV-118	SS	SAVANNAH RVR	FW	3	0	0	0	3	0	0	0
SV-368	INT	SAVANNAH RVR	FW	19	0	0	0	19	0	0	0
03060107-01											
SV-151	SS	HARD LABOR CK	FW	4	0	0	0	4	0	0	0
RS-06016	RS06	CHURCH BRANCH	FW	4	0	0	0	4	0	0	0
SV-731		HARD LABOR CK	FW								
SV-351	SS	CUFFYTOWN CK	FW	4	0	0	0	4	0	0	0
RS-03342	RS03	DOCTORS BRANCH	FW	4	0	0	0	4	0	0	0
SV-330	SS	STEVENS CK	FW	4	0	0	0	4	0	0	0
SV-365	INT	STEVENS CK	FW	19	0	0	0	19	0	0	0
03060107-02											
SV-729		TURKEY CK	FW	1	0	0	0				
SV-728		LOG CK									
SV-727		ROCKY CK									
SV-353	INT	BEAVERDAM CK	FW	18	0	0	0	18	0	0	0
SV-352	INT	TURKEY CK	FW	18	0	0	0	18	0	0	0
03060107-03											
SV-063		STEVENS CK									
SV-354	INT	STEVENS CK	FW	20	0	0	0	20	1	5	160
SV-725		CHEVES CK	FW	1	0	0	0				
03060109-01											
SV-355	SS	SAVANNAH RVR	FW	4	0	0	0	4	0	0	0
SV-369	INAC	SAVANNAH RVR	FW	13	0	0	0	13	6	46	148.8333
SV-370	INT	SAVANNAH RVR	FW	4	0	0	0	4	0	0	0

Appendix C. Lower Savannah River Basin

STATION				DO	DO	DO	MEAN	TRENDS (92-2006)					
NUMBER	TYPE	WATERBODY NAME	CLASS	N	EXC.	%	EXC.	DO	N	MAG	BOD	N	MAG
03060109-03													
SV-744		CYPRESS BRANCH											
SV-356	SS	CYPRESS CK	FW	12	8	67	2.1988	NS	36	-0.076	NS	31	0.0156
RS-04372	RS04	UNNAMED SWAMP	FW	7	1	14	3.09						
RO-046061	RO04	SAVANNAH RVR	SA/SB-SP	7	1	14	4.11						
RT-032032	RT03	WRIGHT RIVER	SA	12	4	33	4.1075						
MD-259/ RO-02011	INT	WRIGHT RVR	SA	56	12	21	4.3492	NS	67	0.1425	NS	84	0
03060110-01													
MD-129	INT	GREAT SWAMP	SA	54	23	43	2.4774	NS	90	-0.0478	I	92	0
03060110-02													
MD-118	SS	NEW RVR	SA	12	6	50	2.7583	NS	125	-0.0007	NS	125	0
RT-06021	RT06	NEW RVR	SA	13	6	46	4.3533						
RT-052109	RT05	NEW RVR	SA	9	2	22	3.915						
RT-042063	RT04	NEW RVR	SA	7	0	0	0						
MD-258	INT	NEW RVR	SFH/SA	43	9	21	4.4322	NS	54	0.1158	NS	71	0
03060110-03													
MD-173	INT	MAY RVR	ORW	43	7	16	4.5243	NS	54	0.108	NS	70	0
RO-06313	RO06	MAY RVR	ORW	8	4	50	4.395						
RO-02002	RO02	MAY RVR	ORW	13	1	8	4.41						
MD-016	SS	MAY RVR	ORW	8	0	0	0	NS	33	-0.012	I	33	0.0401
RO-056102	RO05	CALIBOUGE SOUND	SFH	9	1	11	4.42						
RO-036038	RO03	CALIBOGUE SOUND	SFH	10	1	10	4.84						
RO-06305	RO06	COOPER RVR	SFH	8	4	50	3.9875						
MD-257	INT	COOPER RVR	FW/ORW	43	8	19	4.3463	NS	54	0.1892	NS	71	0
RT-052106	RT05	UNNAMED TRIB TO COOPER RIVER	SFH	9	1	11	3.6						
RT-02022	RT02	BROAD CK	SFH	13	2	15	4.505						
MD-174	SPRP	BROAD CK	SFH	42	7	17	4.6014	NS	148	0.0333	I	161	0.05
MD-175	SS	CALIBOGUE SOUND	SFH	8	0	0	0	NS	112	0.02	NS	109	0
RO-02009	RO02	CALIBOGUE SOUND	SFH	13	1	8	4.05						

Appendix C. Lower Savannah River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	pH			MEAN EXC.	TRENDS (92-2006)			TURB N	TURB EXC.	TURB %	MEAN EXC.	TRENDS (92-2006)		
				N	EXC.	%		PH	N	MAG					TURB N	N	MAG
03060109-03																	
SV-744		CYPRESS BRANCH															
SV-356	SS	CYPRESS CK	FW	12	11	92	5.6964	NS	34	-0.0133	12	0	0	0	D	32	-0.4333
RS-04372	RS04	UNNAMED SWAMP	FW	7	7	100	5.7343				12	0	0	0			
RO-046061	RO04	SAVANNAH RVR	SA/SB-SP	7	0	0	0				13	0	0	0			
RT-032032	RT03	WRIGHT RIVER	SA	12	0	0	0				14	5	36	31.6			
MD-259/ RO-02011	INT	WRIGHT RVR	SA	56	0	0	0	NS	67	-0.0263	73	6	8	35.8333	NS	84	-0.75
03060110-01																	
MD-129	INT	GREAT SWAMP	SA	53	40	75	5.3033	NS	87	0.016	57	0	0	0	NS	93	-0.1111
03060110-02																	
MD-118	SS	NEW RVR	SA	12	12	100	5.7292	I	125	0.03	12	0	0	0	NS	124	0.1292
RT-06021	RT06	NEW RVR	SA	13	5	38	5.93				13	1	8	26			
RT-052109	RT05	NEW RVR	SA	9	0	0	0				13	0	0	0			
RT-042063	RT04	NEW RVR	SA	7	0	0	0				13	1	8	44			
MD-258	INT	NEW RVR	SFH/SA	43	0	0	0	NS	54	-0.005	60	5	8	40.4	NS	71	-0.1
03060110-03																	
MD-173	INT	MAY RVR	ORW	43	0	0	0	NS	54	-0.02	59	1	2	30	NS	70	-0.1375
RO-06313	RO06	MAY RVR	ORW	8	0	0	0				13	0	0	0			
RO-02002	RO02	MAY RVR	ORW	13	0	0	0				13	0	0	0			
MD-016	SS	MAY RVR	ORW	8	0	0	0	NS	33	-0.014	11	0	0	0	NS	34	0.0889
RO-056102	RO05	CALIBOUGE SOUND	SFH	9	0	0	0				13	0	0	0			
RO-036038	RO03	CALIBOUGE SOUND	SFH	10	0	0	0				12	0	0	0			
RO-06305	RO06	COOPER RVR	SFH	8	0	0	0				13	1	8	27			
MD-257	INT	COOPER RVR	FW/ORW	43	0	0	0	NS	54	-0.008	60	4	7	55.25	D	71	-0.725
RT-052106	RT05	UNNAMED TRIB TO COOPER RIVER	SFH	9	0	0	0				13	0	0	0			
RT-02022	RT02	BROAD CK	SFH	13	0	0	0				13	1	8	55			
MD-174	SPRP	BROAD CK	SFH	42	0	0	0	D	150	-0.0125	59	0	0	0	NS	163	0.0573
MD-175	SS	CALIBOUGE SOUND	SFH	8	0	0	0	NS	115	-0.0062	12	0	0	0	NS	111	0.0604
RO-02009	RO02	CALIBOUGE SOUND	SFH	13	0	0	0				13	2	15	30.5			

Appendix C. Lower Savannah River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	TP N	TP EXC.	TP %	MEAN EXC.	TRENDS (92-2006)			TN N	TN EXC.	TN %	MEAN EXC.	TRENDS (92-2006)		
								TP	N	MAG					TN	N	MAG
03060109-03																	
SV-744		CYPRESS BRANCH															
SV-356	SS	CYPRESS CK	FW														
RS-04372	RS04	UNNAMED SWAMP	FW														
RO-046061	RO04	SAVANNAH RVR	SA/SB-SP														
RT-032032	RT03	WRIGHT RIVER	SA														
MD-259/ RO-02011	INT	WRIGHT RVR	SA					NS	63	0.0028					NS	51	0.0233
03060110-01																	
MD-129	INT	GREAT SWAMP	SA					I	69	0.0026					NS	73	0.0142
03060110-02																	
MD-118	SS	NEW RVR	SA					NS	101	0					NS	121	0
RT-06021	RT06	NEW RVR	SA														
RT-052109	RT05	NEW RVR	SA														
RT-042063	RT04	NEW RVR	SA														
MD-258	INT	NEW RVR	SFH/SA					NS	53	0.0029					NS	48	-0.0303
03060110-03																	
MD-173	INT	MAY RVR	ORW					NS	53	0.002					NS	41	-0.032
RO-06313	RO06	MAY RVR	ORW														
RO-02002	RO02	MAY RVR	ORW														
MD-016	SS	MAY RVR	ORW														
RO-056102	RO05	CALIBOUGE SOUND	SFH														
RO-036038	RO03	CALIBOGUE SOUND	SFH														
RO-06305	RO06	COOPER RVR	SFH														
MD-257	INT	COOPER RVR	FW/ORW					NS	54	0					NS	45	-0.0458
RT-052106	RT05	UNNAMED TRIB TO COOPER RIVER	SFH														
RT-02022	RT02	BROAD CK	SFH														
MD-174	SPRP	BROAD CK	SFH					NS	123	0					D	134	-0.0109
MD-175	SS	CALIBOGUE SOUND	SFH					NS	86	0					NS	106	-0.0075
RO-02009	RO02	CALIBOGUE SOUND	SFH														

Appendix C. Lower Savannah River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	CHL N	CHL EXC.	CHL %	MEAN EXC.	TRENDS (92-2006)		
								TSS	N	MAG
03060109-03										
SV-744		CYPRESS BRANCH								
SV-356	SS	CYPRESS CK	FW							
RS-04372	RS04	UNNAMED SWAMP	FW							
RO-046061	RO04	SAVANNAH RVR	SA/SB-SP							
RT-032032	RT03	WRIGHT RIVER	SA							
MD-259/ RO-02011	INT	WRIGHT RVR	SA							
03060110-01										
MD-129	INT	GREAT SWAMP	SA							
03060110-02										
MD-118	SS	NEW RVR	SA							
RT-06021	RT06	NEW RVR	SA							
RT-052109	RT05	NEW RVR	SA							
RT-042063	RT04	NEW RVR	SA							
MD-258	INT	NEW RVR	SFH/SA							
03060110-03										
MD-173	INT	MAY RVR	ORW							
RO-06313	RO06	MAY RVR	ORW							
RO-02002	RO02	MAY RVR	ORW							
MD-016	SS	MAY RVR	ORW							
RO-056102	RO05	CALIBOUGE SOUND	SFH							
RO-036038	RO03	CALIBOGUE SOUND	SFH							
RO-06305	RO06	COOPER RVR	SFH							
MD-257	INT	COOPER RVR	FW/ORW							
RT-052106	RT05	UNNAMED TRIB TO COOPER RIVER	SFH							
RT-02022	RT02	BROAD CK	SFH							
MD-174	SPRP	BROAD CK	SFH							
MD-175	SS	CALIBOGUE SOUND	SFH							
RO-02009	RO02	CALIBOGUE SOUND	SFH							

Appendix C. Lower Savannah River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	GEO MEAN	BACT N	BACT EXC.	BACT %	MEAN EXC.	TRENDS (92-2006)		
									BACT	N	MAG
03060109-03											
SV-744		CYPRESS BRANCH									
SV-356	SS	CYPRESS CK	FW	151.9148	12	3	25	866.6667	NS	31	0.3333
RS-04372	RS04	UNNAMED SWAMP	FW	51.5565	12	0	0	0			
RO-046061	RO04	SAVANNAH RVR	SA/SB-SP	10.421	13	0	0	0			
RT-032032	RT03	WRIGHT RIVER	SA	8.4054	14	0	0	0			
MD-259/ RO-02011	INT	WRIGHT RVR	SA	4.4292	73	0	0	0	NS	84	0.3333
03060110-01											
MD-129	INT	GREAT SWAMP	SA	97.2393	60	13	22	1238.4615	NS	96	0
03060110-02											
MD-118	SS	NEW RVR	SA	212.2815	12	3	25	1233.3333	NS	127	0
RT-06021	RT06	NEW RVR	SA	204.3766	13	3	23	1366.6667			
RT-052109	RT05	NEW RVR	SA	11.5994	13	0	0	0			
RT-042063	RT04	NEW RVR	SA	4.5433	13	0	0	0			
MD-258	INT	NEW RVR	SFH/SA	3.5794	60	0	0	0	NS	71	0
03060110-03											
MD-173	INT	MAY RVR	ORW	2.6998	60	0	0	0	I	71	0
RO-06313	RO06	MAY RVR	ORW	3.3739	13	0	0	0			
RO-02002	RO02	MAY RVR	ORW	1.7818	12	0	0	0			
MD-016	SS	MAY RVR	ORW	2	12	0	0	0	NS	34	0
RO-056102	RO05	CALIBOUGE SOUND	SFH	2.9723	13	0	0	0			
RO-036038	RO03	CALIBOGUE SOUND	SFH	5.1036	12	0	0	0			
RO-06305	RO06	COOPER RVR	SFH	4.3161	13	0	0	0			
MD-257	INT	COOPER RVR	FW/ORW	5.1156	60	1	2	500	I	71	1
RT-052106	RT05	UNNAMED TRIB TO COOPER RIVER	SFH	12.2125	13	0	0	0			
RT-02022	RT02	BROAD CK	SFH	4.4554	13	0	0	0			
MD-174	SPRP	BROAD CK	SFH	6.796	59	0	0	0	NS	162	0
MD-175	SS	CALIBOGUE SOUND	SFH	2.8007	12	0	0	0	D	112	0
RO-02009	RO02	CALIBOGUE SOUND	SFH	1.9796	13	0	0	0			

Appendix C. Lower Savannah River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	NH3 N	NH3 EXC.	NH3 %	MEAN EXC.	CD N	CD EXC.	CD %	MEAN EXC.	CR N	CR EXC.	CR %	MEAN EXC.
03060109-03															
SV-744		CYPRESS BRANCH													
SV-356	SS	CYPRESS CK	FW	12	1	8	9.6	4	0	0	0	4	0	0	0
RS-04372	RS04	UNNAMED SWAMP	FW	11	0	0	0	4	0	0	0	4	0	0	0
RO-046061	RO04	SAVANNAH RVR	SA/SB-SP	11	0	0	0	4	0	0	0	4	0	0	0
RT-032032	RT03	WRIGHT RIVER	SA	7	0	0	0	5	0	0	0	5	0	0	0
MD-259/ RO-02011	INT	WRIGHT RVR	SA	46	0	0	0	23	0	0	0	23	1	4	89
03060110-01															
MD-129	INT	GREAT SWAMP	SA	44	0	0	0	20	0	0	0	20	0	0	0
03060110-02															
MD-118	SS	NEW RVR	SA	12	0	0	0	4	0	0	0	4	0	0	0
RT-06021	RT06	NEW RVR	SA	11	0	0	0	4	0	0	0	4	0	0	0
RT-052109	RT05	NEW RVR	SA	12	0	0	0	4	0	0	0	4	0	0	0
RT-042063	RT04	NEW RVR	SA	11	0	0	0	4	0	0	0	4	0	0	0
MD-258	INT	NEW RVR	SFH/SA	39	0	0	0	19	0	0	0	19	1	5	110
03060110-03															
MD-173	INT	MAY RVR	ORW	39	0	0	0	20	0	0	0	20	0	0	0
RO-06313	RO06	MAY RVR	ORW	10	0	0	0	4	0	0	0	4	0	0	0
RO-02002	RO02	MAY RVR	ORW	5	0	0	0	4	0	0	0	4	0	0	0
MD-016	SS	MAY RVR	ORW	11	0	0	0	4	0	0	0	4	0	0	0
RO-056102	RO05	CALIBOUGE SOUND	SFH	13	0	0	0	4	0	0	0	4	0	0	0
RO-036038	RO03	CALIBOGUE SOUND	SFH	6	0	0	0	3	0	0	0	3	0	0	0
RO-06305	RO06	COOPER RVR	SFH	10	0	0	0	4	0	0	0	4	0	0	0
MD-257	INT	COOPER RVR	FW/ORW	41	0	0	0	20	0	0	0	20	0	0	0
RT-052106	RT05	UNNAMED TRIB TO COOPER RIVER	SFH	11	0	0	0	4	0	0	0	4	0	0	0
RT-02022	RT02	BROAD CK	SFH	3	0	0	0	4	0	0	0	4	0	0	0
MD-174	SPRP	BROAD CK	SFH	40	0	0	0	19	0	0	0	19	0	0	0
MD-175	SS	CALIBOGUE SOUND	SFH	11	0	0	0	4	0	0	0	4	0	0	0
RO-02009	RO02	CALIBOGUE SOUND	SFH	5	0	0	0	4	0	0	0	4	0	0	0

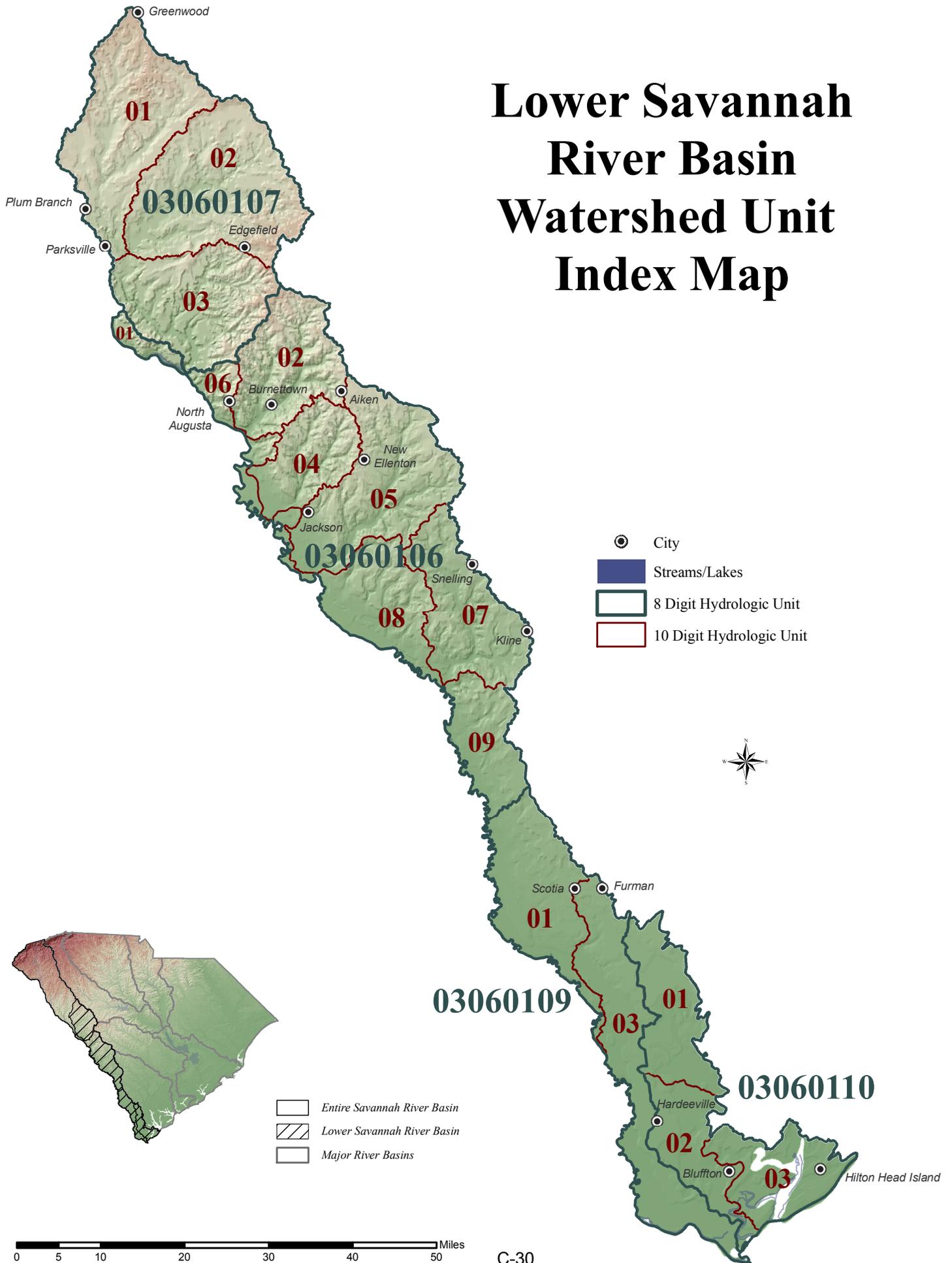
Appendix C. Lower Savannah River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	CU N	CU EXC.	CU %	MEAN EXC.	PB N	PB EXC.	PB %	MEAN EXC.	HG N	HG EXC.	HG %	MEAN EXC.
03060109-03															
SV-744		CYPRESS BRANCH													
SV-356	SS	CYPRESS CK	FW	4	0	0	0	4	0	0	0	4	0	0	0
RS-04372	RS04	UNNAMED SWAMP	FW	4	0	0	0	4	0	0	0	4	0	0	0
RO-046061	RO04	SAVANNAH RVR	SA/SB-SP	4	0	0	0	4	0	0	0	4	0	0	0
RT-032032	RT03	WRIGHT RIVER	SA	5	0	0	0	5	0	0	0	5	0	0	0
MD-259/ RO-02011	INT	WRIGHT RVR	SA	23	2	9	20	23	0	0	0	23	0	0	0
03060110-01															
MD-129	INT	GREAT SWAMP	SA	20	1	5	60	20	0	0	0	20	0	0	0
03060110-02															
MD-118	SS	NEW RVR	SA	4	0	0	0	4	0	0	0	4	0	0	0
RT-06021	RT06	NEW RVR	SA	4	0	0	0	4	0	0	0	4	0	0	0
RT-052109	RT05	NEW RVR	SA	4	0	0	0	4	0	0	0	4	0	0	0
RT-042063	RT04	NEW RVR	SA	4	0	0	0	4	0	0	0	4	0	0	0
MD-258	INT	NEW RVR	SFH/SA	19	1	5	20	19	0	0	0	19	0	0	0
03060110-03															
MD-173	INT	MAY RVR	ORW	20	1	5	17	20	0	0	0	20	0	0	0
RO-06313	RO06	MAY RVR	ORW	4	0	0	0	4	0	0	0	4	0	0	0
RO-02002	RO02	MAY RVR	ORW	4	1	25	22	4	0	0	0	4	0	0	0
MD-016	SS	MAY RVR	ORW	4	0	0	0	4	0	0	0	4	0	0	0
RO-056102	RO05	CALIBOUGE SOUND	SFH	4	0	0	0	4	0	0	0	4	0	0	0
RO-036038	RO03	CALIBOGUE SOUND	SFH	3	0	0	0	3	0	0	0	3	0	0	0
RO-06305	RO06	COOPER RVR	SFH	4	0	0	0	4	0	0	0	4	0	0	0
MD-257	INT	COOPER RVR	FW/ORW	20	1	5	12	20	0	0	0	20	0	0	0
RT-052106	RT05	UNNAMED TRIB TO COOPER RIVER	SFH	4	0	0	0	4	0	0	0	4	0	0	0
RT-02022	RT02	BROAD CK	SFH	4	0	0	0	4	0	0	0	4	0	0	0
MD-174	SPRP	BROAD CK	SFH	19	1	5	12	19	0	0	0	19	0	0	0
MD-175	SS	CALIBOGUE SOUND	SFH	4	0	0	0	4	0	0	0	4	0	0	0
RO-02009	RO02	CALIBOGUE SOUND	SFH	4	1	25	18	4	0	0	0	4	0	0	0

Appendix C. Lower Savannah River Basin

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	NI N	NI EXC.	NI %	MEAN EXC.	ZN N	ZN EXC.	ZN %	MEAN EXC.
03060109-03											
SV-744		CYPRESS BRANCH									
SV-356	SS	CYPRESS CK	FW	4	0	0	0	4	1	25	100
RS-04372	RS04	UNNAMED SWAMP	FW	4	0	0	0	4	4	100	160
RO-046061	RO04	SAVANNAH RVR	SA/SB-SP	4	0	0	0	4	0	0	0
RT-032032	RT03	WRIGHT RIVER	SA	5	0	0	0	5	0	0	0
MD-259/ RO-02011	INT	WRIGHT RVR	SA	23	2	9	28.5	23	0	0	0
03060110-01											
MD-129	INT	GREAT SWAMP	SA	20	0	0	0	20	9	45	228.1111
03060110-02											
MD-118	SS	NEW RVR	SA	4	0	0	0	4	0	0	0
RT-06021	RT06	NEW RVR	SA	4	0	0	0	4	0	0	0
RT-052109	RT05	NEW RVR	SA	4	0	0	0	4	0	0	0
RT-042063	RT04	NEW RVR	SA	4	0	0	0	4	0	0	0
MD-258	INT	NEW RVR	SFH/SA	19	2	11	55.5	19	0	0	0
03060110-03											
MD-173	INT	MAY RVR	ORW	20	0	0	0	20	0	0	0
RO-06313	RO06	MAY RVR	ORW	4	0	0	0	4	0	0	0
RO-02002	RO02	MAY RVR	ORW	4	0	0	0	4	0	0	0
MD-016	SS	MAY RVR	ORW	4	0	0	0	4	0	0	0
RO-056102	RO05	CALIBOUGE SOUND	SFH	4	0	0	0	4	0	0	0
RO-036038	RO03	CALIBOGUE SOUND	SFH	3	0	0	0	3	0	0	0
RO-06305	RO06	COOPER RVR	SFH	4	0	0	0	4	0	0	0
MD-257	INT	COOPER RVR	FW/ORW	20	0	0	0	20	0	0	0
RT-052106	RT05	UNNAMED TRIB TO COOPER RIVER	SFH	4	0	0	0	4	0	0	0
RT-02022	RT02	BROAD CK	SFH	4	0	0	0	4	0	0	0
MD-174	SPRP	BROAD CK	SFH	19	0	0	0	19	0	0	0
MD-175	SS	CALIBOGUE SOUND	SFH	4	0	0	0	4	0	0	0
RO-02009	RO02	CALIBOGUE SOUND	SFH	4	0	0	0	4	0	0	0

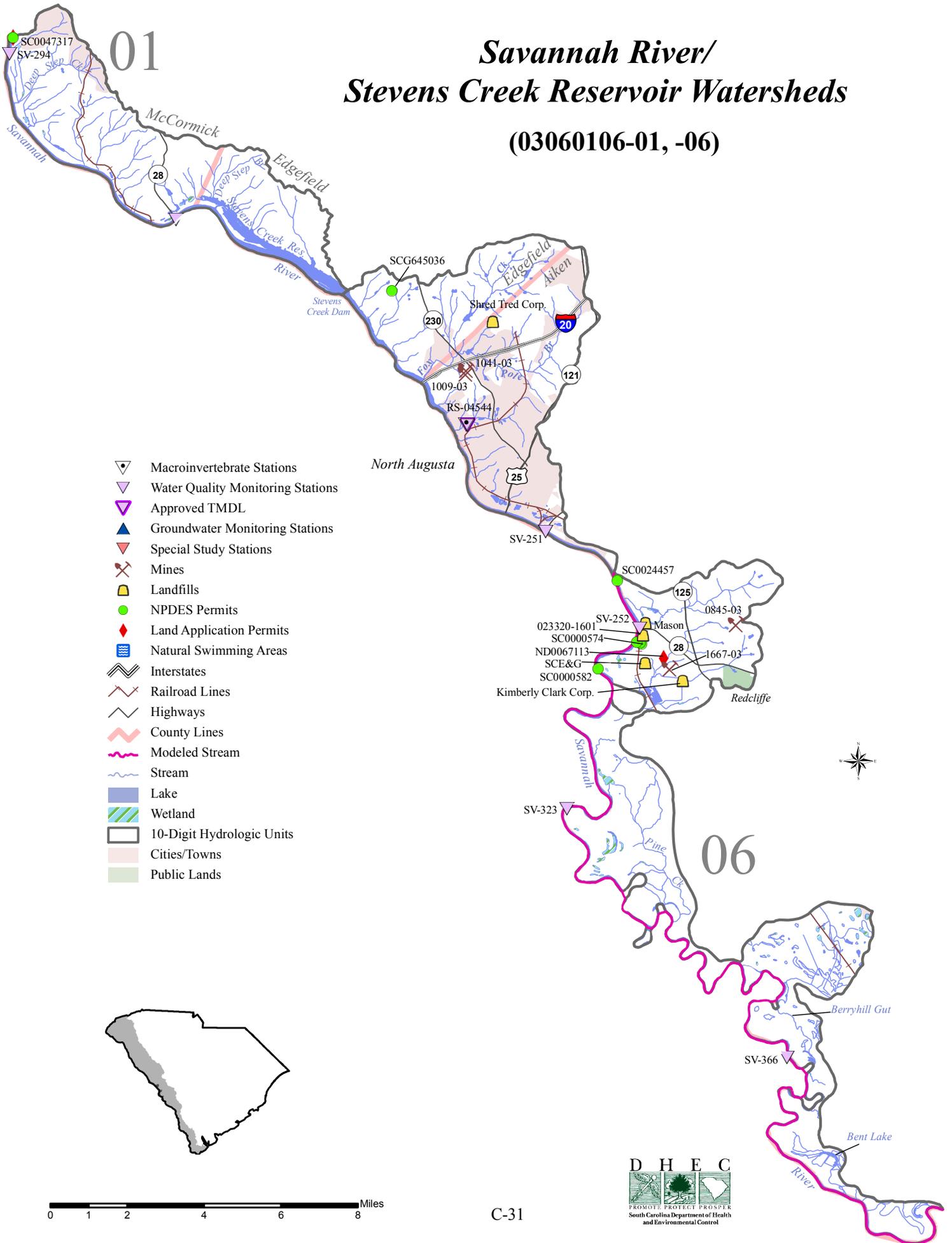
Lower Savannah River Basin Watershed Unit Index Map



0 5 10 20 30 40 50 Miles

Savannah River/ Stevens Creek Reservoir Watersheds

(03060106-01, -06)



- ▽ 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
- 🟦 Lake
- 🟩 Wetland
- 📏 10-Digit Hydrologic Units
- 🏘 Cities/Towns
- 🌳 Public Lands

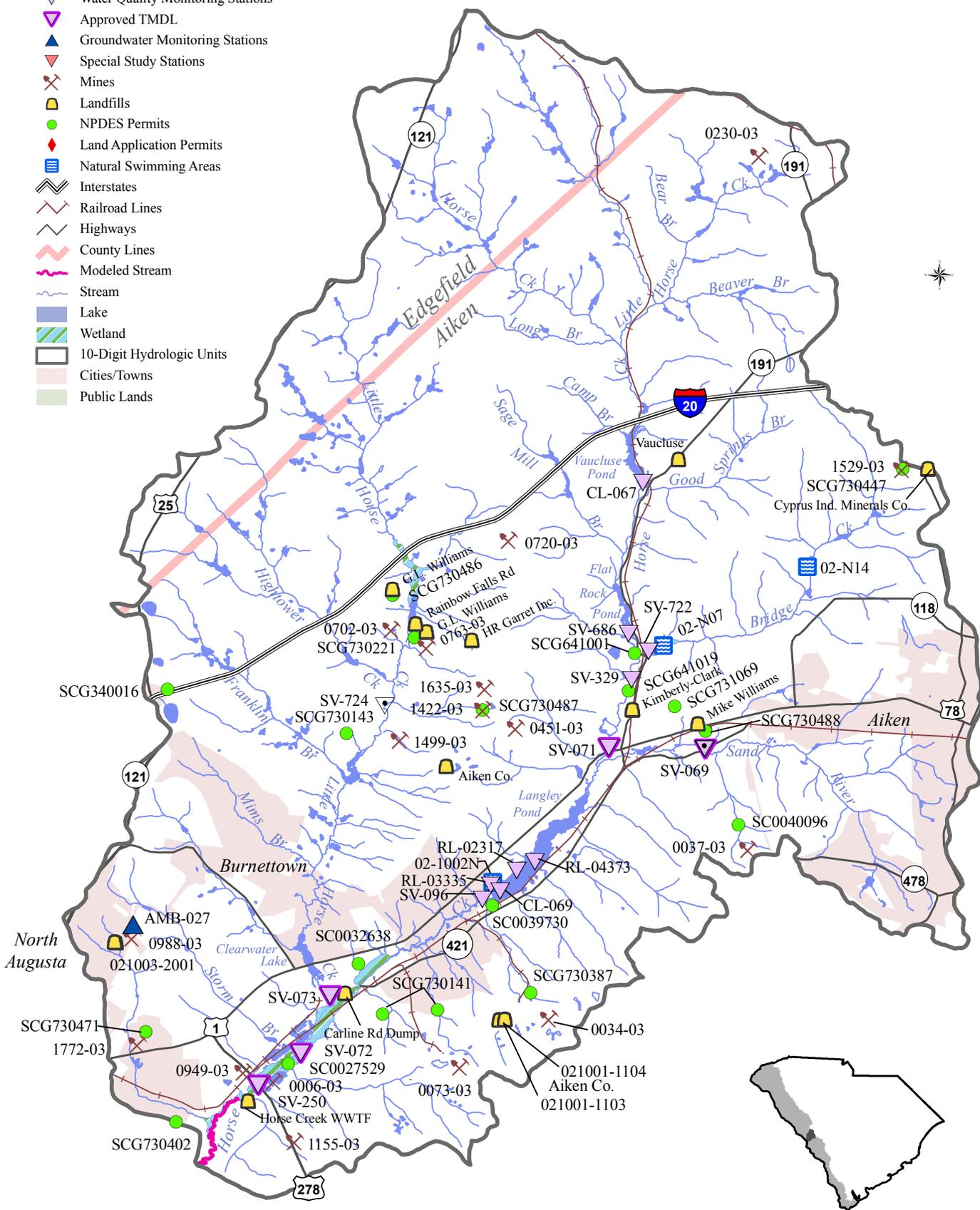


0 1 2 4 6 8 Miles



Horse Creek Watershed (03060106-02)

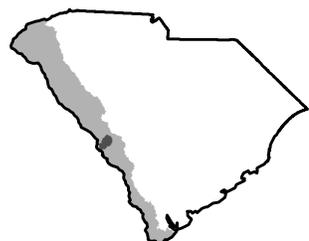
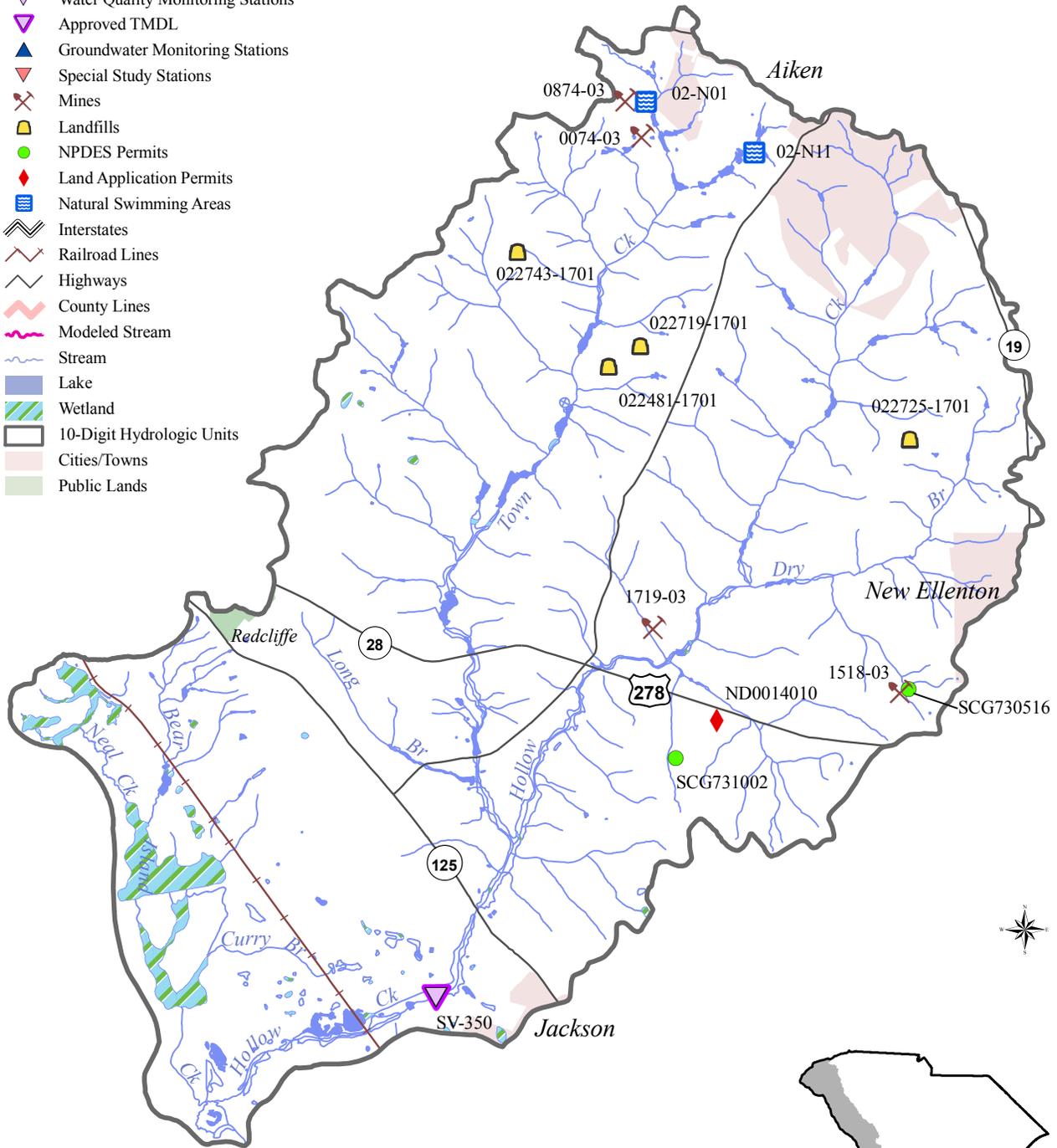
- ▽ Macroinvertebrate Stations
- ▽ Water Quality Monitoring Stations
- ▽ Approved TMDL
- ▲ Groundwater Monitoring Stations
- ▽ Special Study Stations
- ⚡ Mines
- 🗑️ Landfills
- NPDES Permits
- ◆ Land Application Permits
- 🏊 Natural Swimming Areas
- 🛣️ Interstates
- 🚂 Railroad Lines
- 🛣️ Highways
- 🗺️ County Lines
- 🌊 Modeled Stream
- 🌊 Stream
- 🌊 Lake
- 🌿 Wetland
- 🗺️ 10-Digit Hydrologic Units
- 🏘️ Cities/Towns
- 🌳 Public Lands



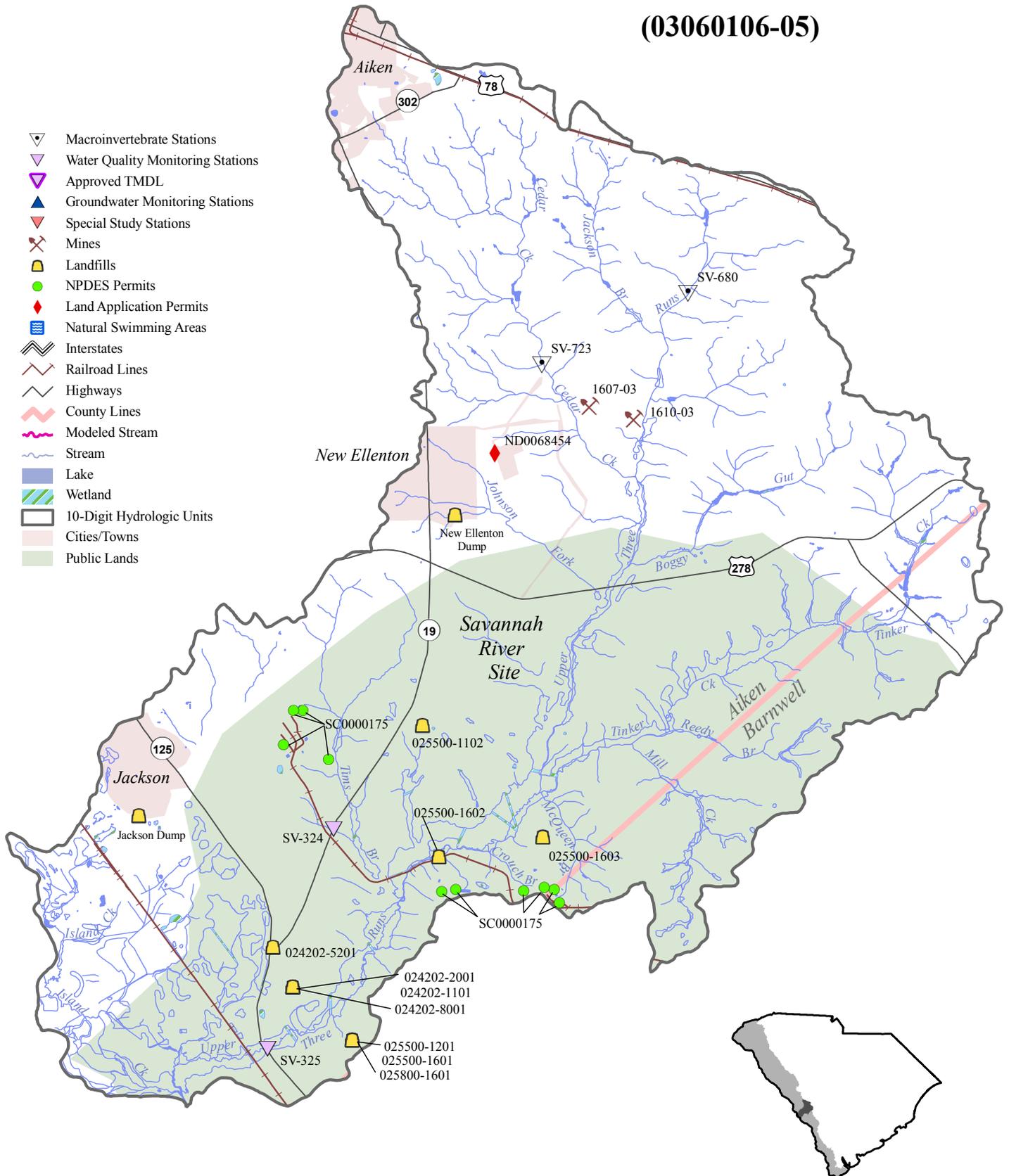
Hollow Creek Watershed

(03060106-04)

-  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
-  Lake
-  Wetland
-  10-Digit Hydrologic Units
-  Cities/Towns
-  Public Lands

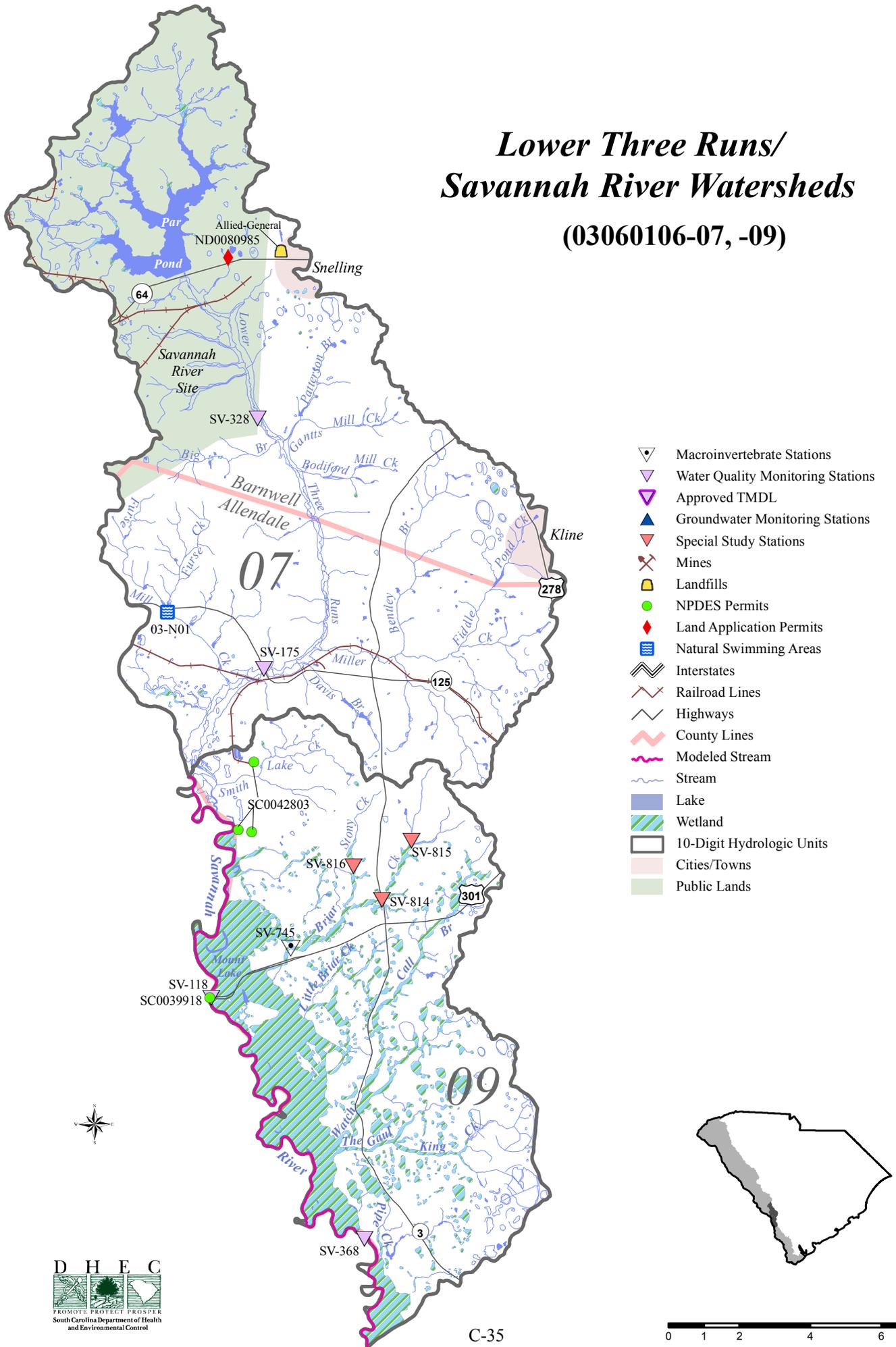


Upper Three Runs Watershed (03060106-05)

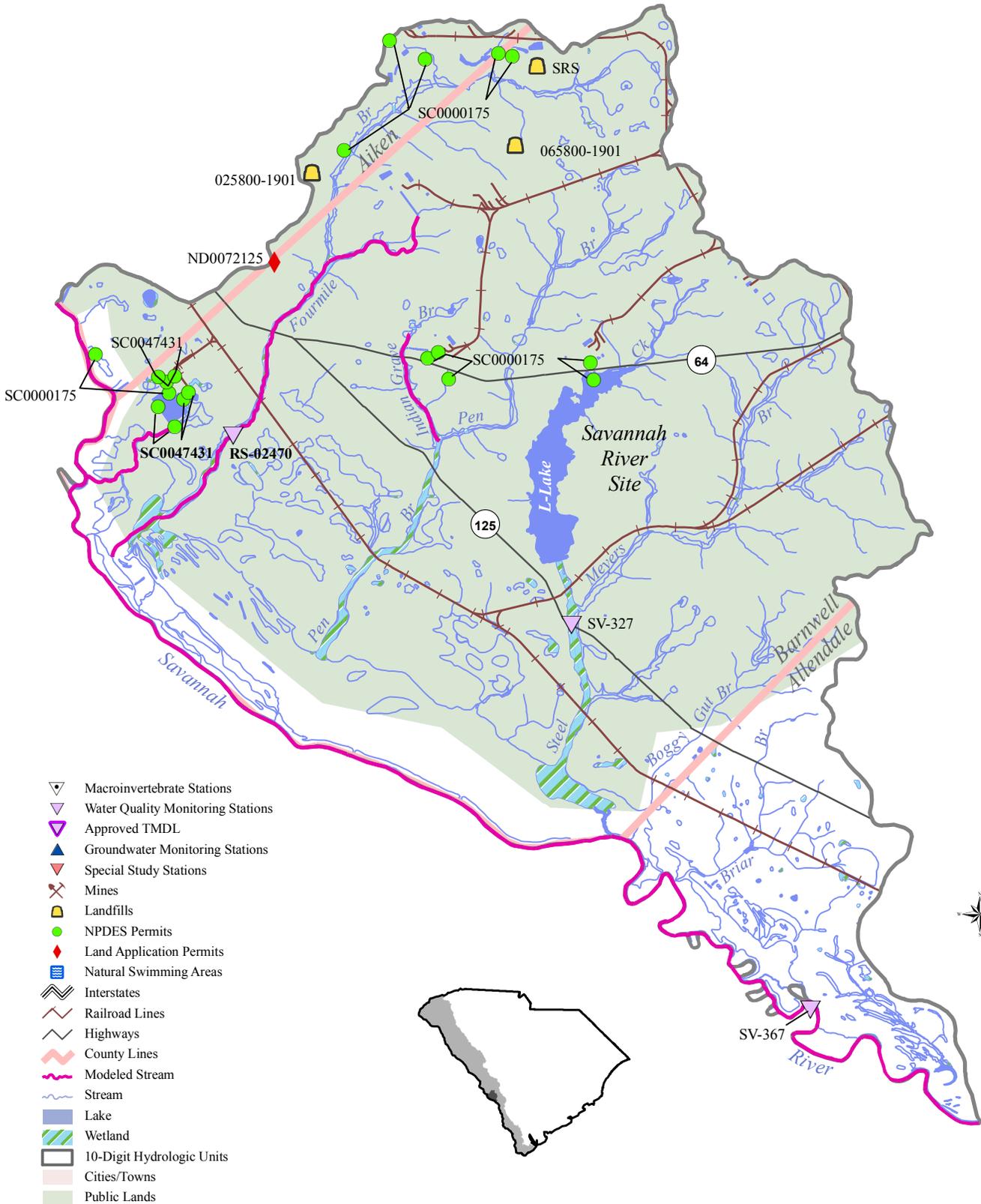


Lower Three Runs/ Savannah River Watersheds

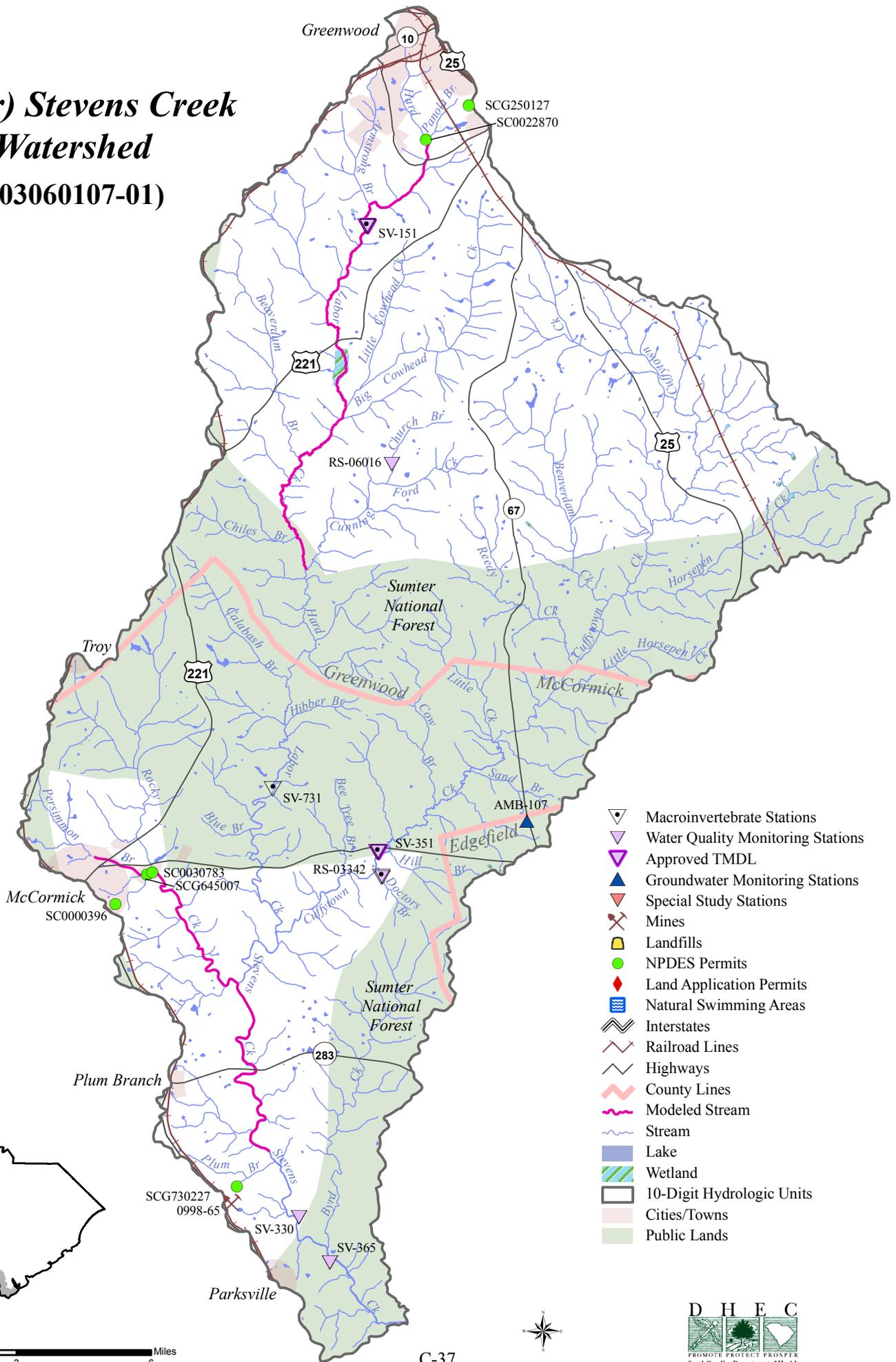
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Savannah River Watershed (03060106-08)



(Upper) Stevens Creek Watershed (03060107-01)

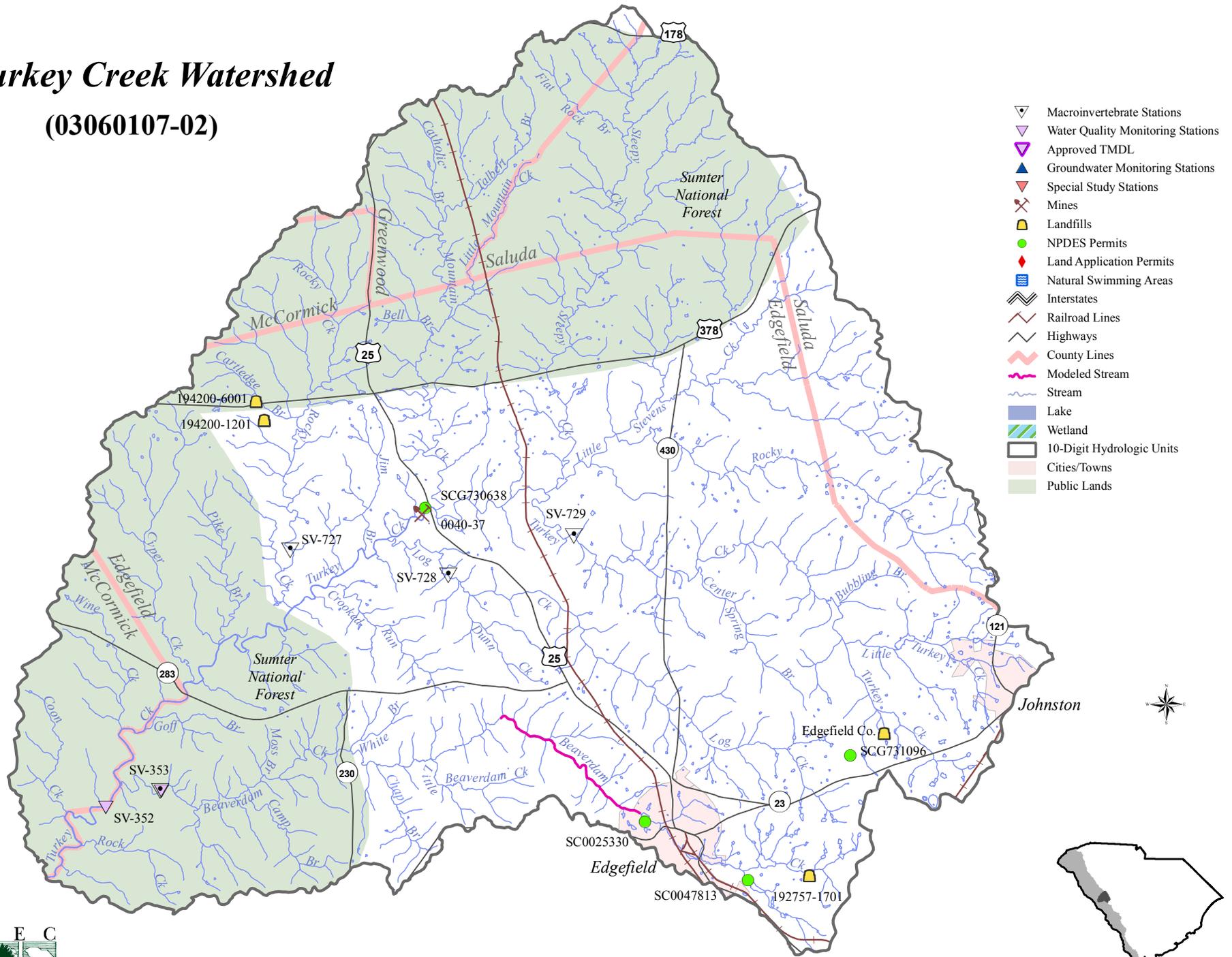


- ▽ Macroinvertebrate Stations
- ▽ Water Quality Monitoring Stations
- ▽ Approved TMDL
- ▲ Groundwater Monitoring Stations
- ▽ Special Study Stations
- ⚡ Mines
- 🗑️ Landfills
- NPDES Permits
- ◆ Land Application Permits
- 🏊 Natural Swimming Areas
- 🛣️ Interstates
- 🚂 Railroad Lines
- 🛣️ Highways
- 🗺️ County Lines
- 🌊 Modeled Stream
- 🌊 Stream
- 🟦 Lake
- 🌿 Wetland
- 🟩 10-Digit Hydrologic Units
- 🏘️ Cities/Towns
- 🌳 Public Lands



Turkey Creek Watershed (03060107-02)

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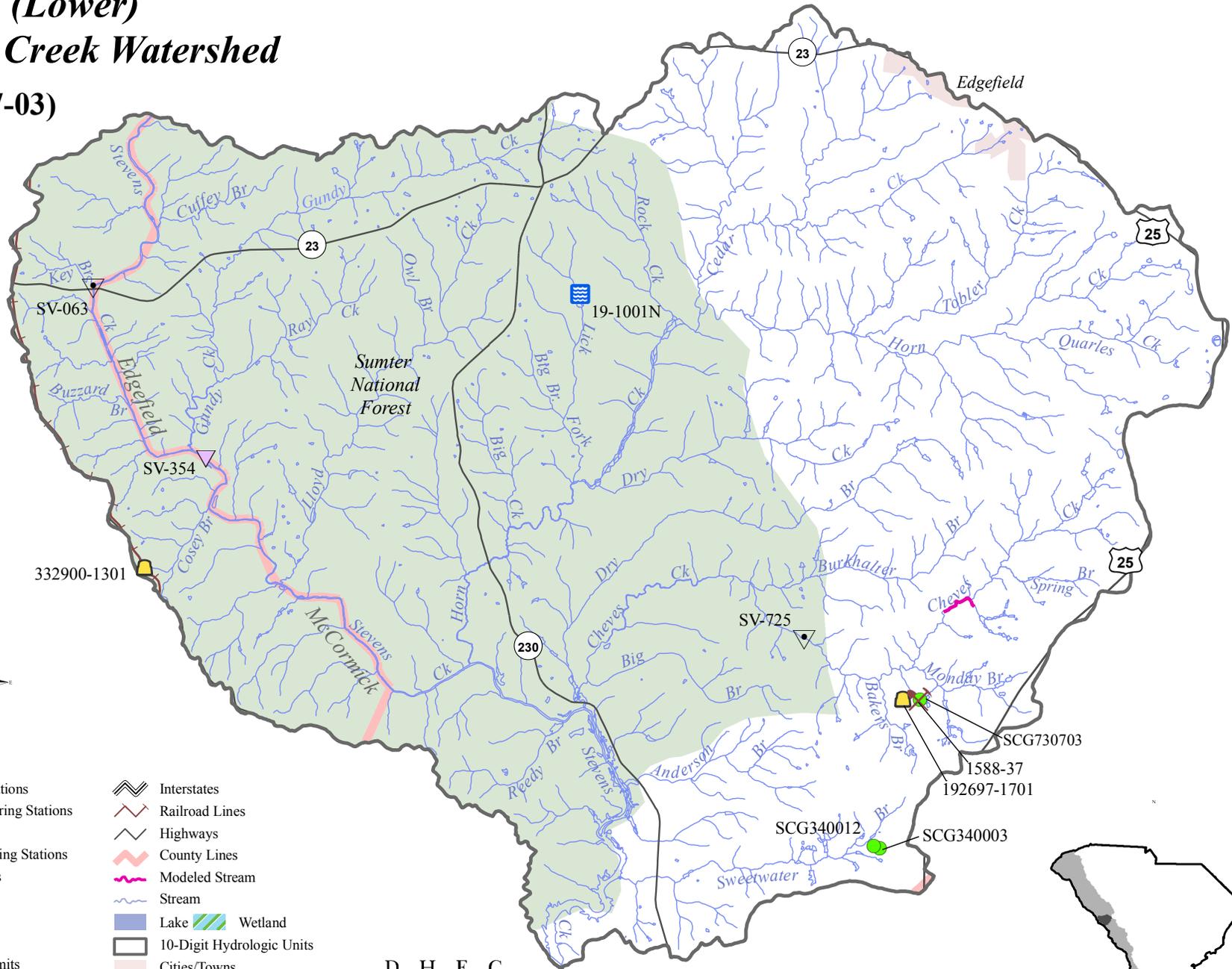


- ▽ Macroinvertebrate Stations
- ▽ Water Quality Monitoring Stations
- ▽ Approved TMDL
- ▲ Groundwater Monitoring Stations
- ▲ Special Study Stations
- ⚒ Mines
- 🗑 Landfills
- NPDES Permits
- ♦ Land Application Permits
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- ↔ Interstates
- 🚂 Railroad Lines
- 🛣 Highways
- 📏 County Lines
- 🌊 Modeled Stream
- 🌊 Stream
- 🌊 Lake
- 🌊 Wetland
- 🗺 10-Digit Hydrologic Units
- 🏘 Cities/Towns
- 🌲 Public Lands

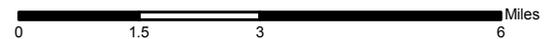
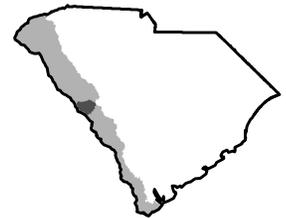


(Lower)
Stevens Creek Watershed
(03060107-03)

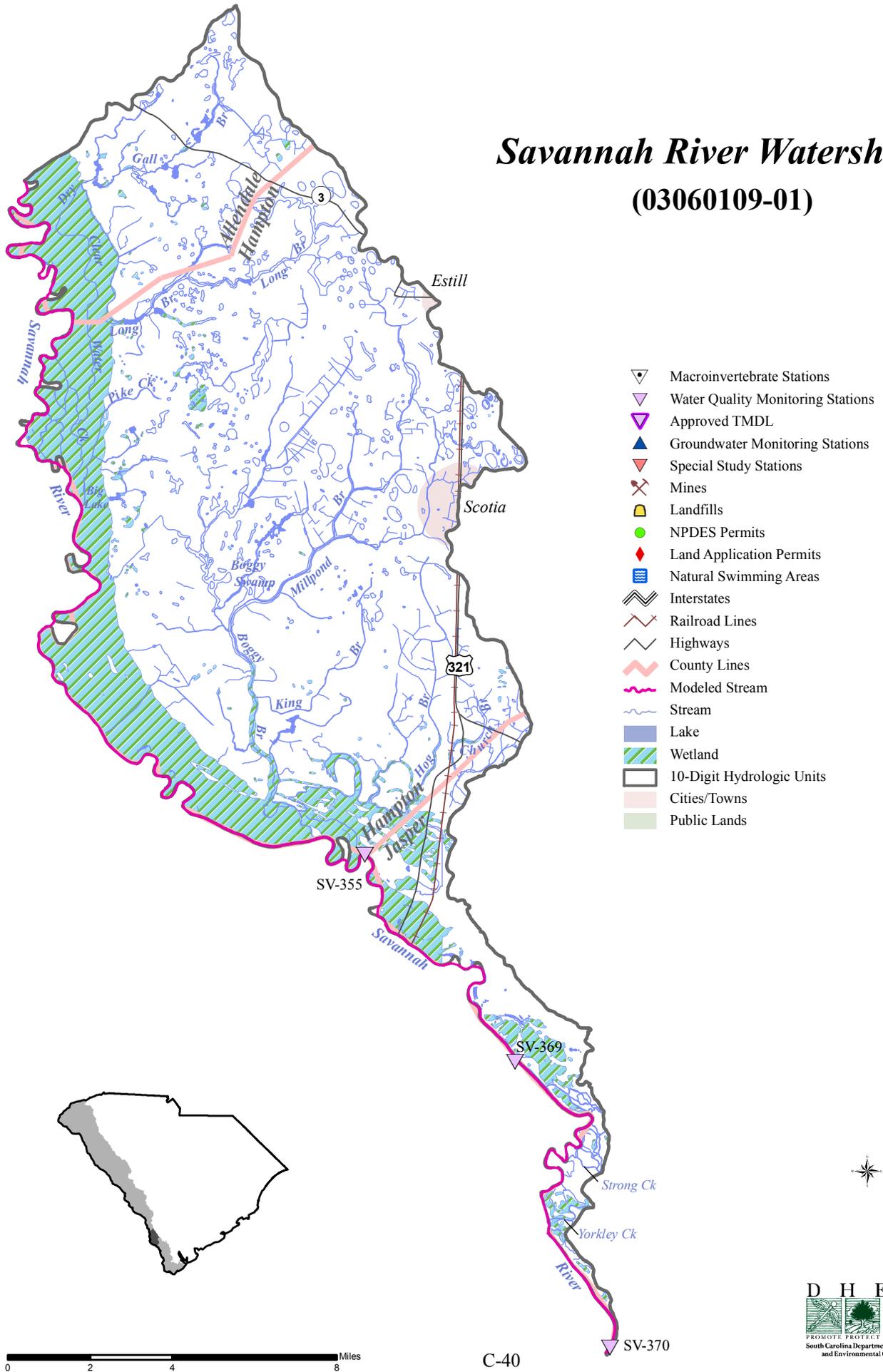
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| | Macroinvertebrate Stations | | Interstates |
| | Water Quality Monitoring Stations | | Railroad Lines |
| | Approved TMDL | | Highways |
| | Groundwater Monitoring Stations | | County Lines |
| | Special Study Stations | | Modeled Stream |
| | Mines | | Stream |
| | Landfills | | Lake |
| | NPDES Permits | | Wetland |
| | Land Application Permits | | 10-Digit Hydrologic Units |
| | Natural Swimming Areas | | Cities/Towns |
| | | | Public Lands |



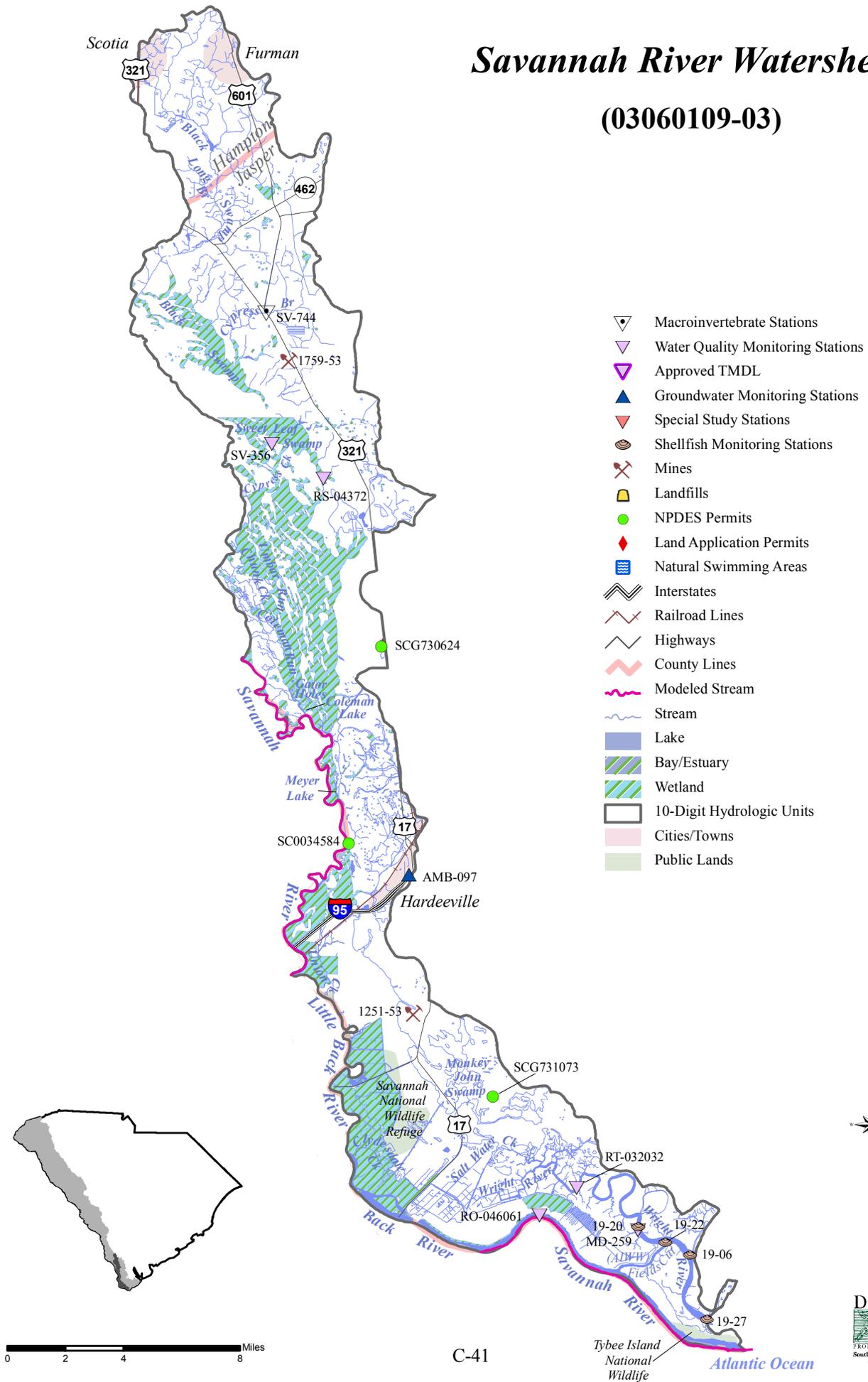
Savannah River Watershed (03060109-01)



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Savannah River Watershed

(03060109-03)

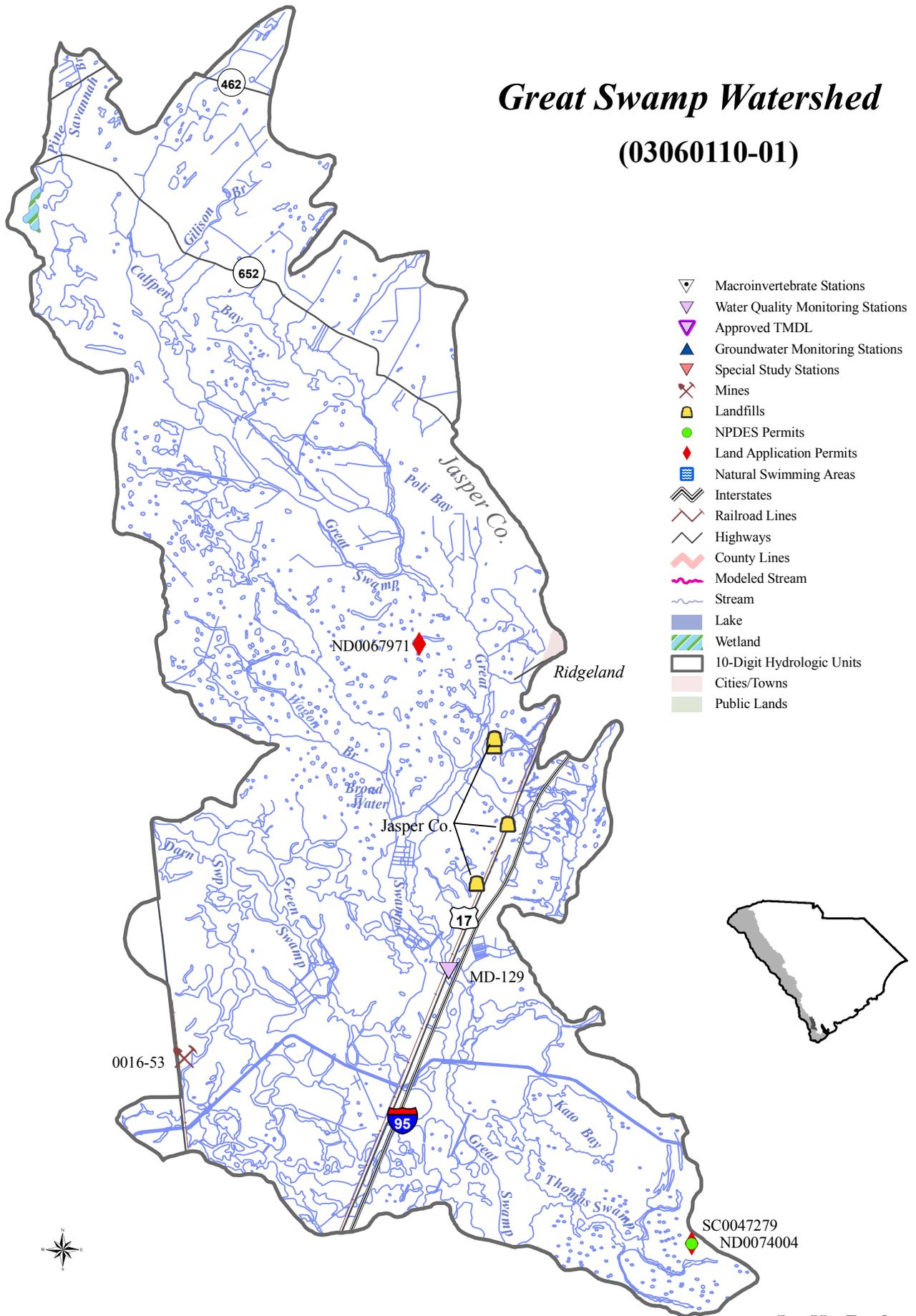


- ▽ Macroinvertebrate Stations
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- ▼ Special Study Stations
- ☉ Shellfish Monitoring Stations
- ⚡ Mines
- 🗑️ Landfills
- NPDES Permits
- ◆ Land Application Permits
- 🏊 Natural Swimming Areas
- ⚡ Interstates
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- 🌊 Modeled Stream
- 🌊 Stream
- 🟦 Lake
- 🟦 Bay/Estuary
- 🟦 Wetland
- 📏 10-Digit Hydrologic Units
- 🏘️ Cities/Towns
- 🟩 Public Lands



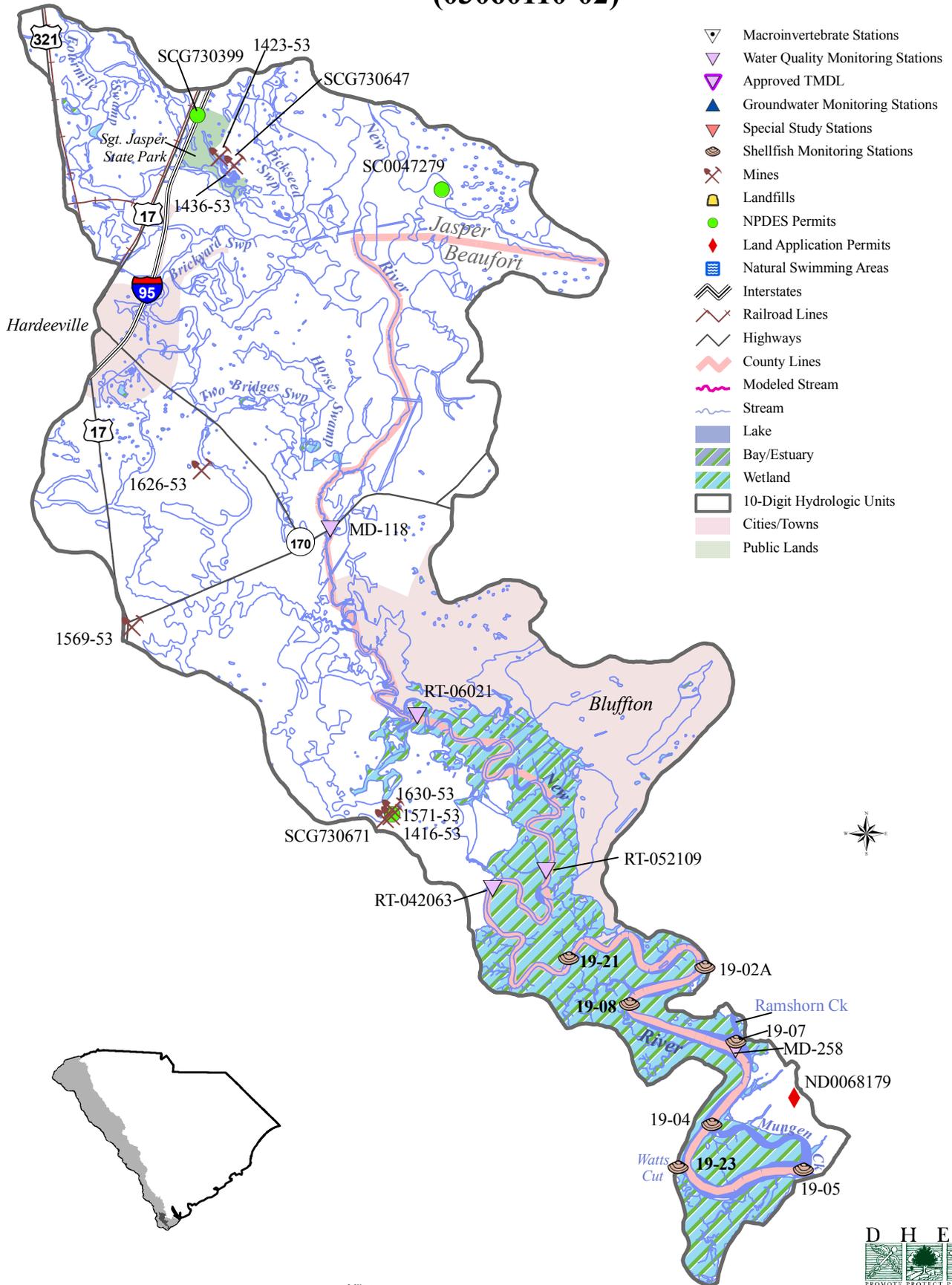
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(03060110-01)



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(03060110-02)



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CR-009718 2/2010