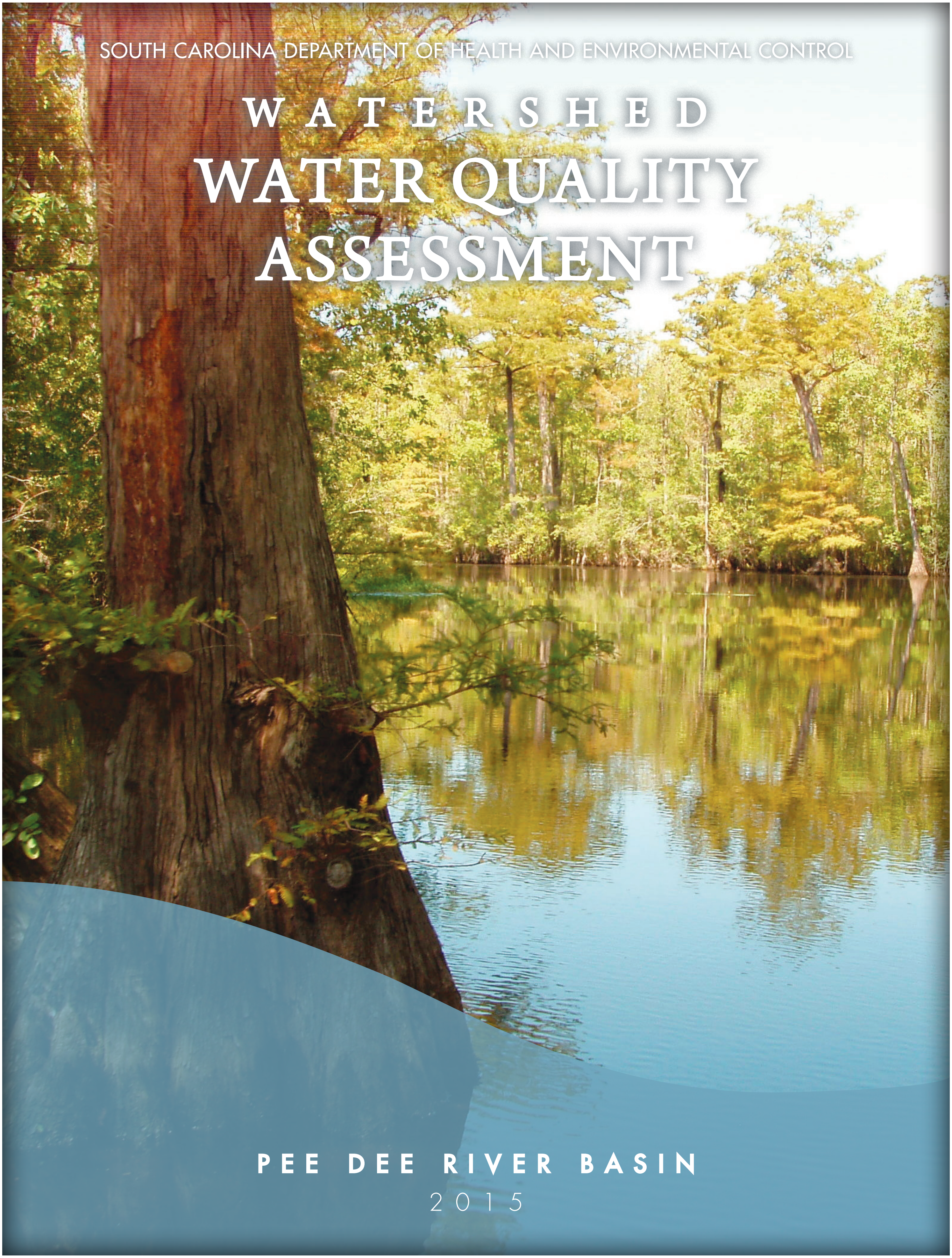
SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL

WATERSHED WATER QUALITY ASSESSMENT

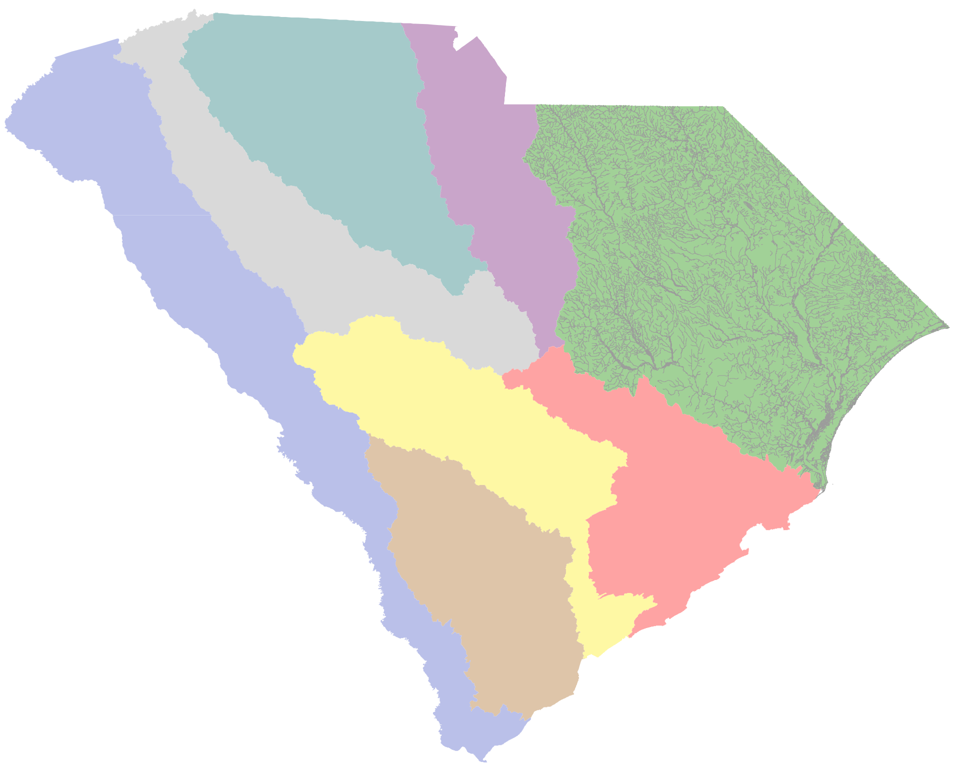


PEE DEE RIVER BASIN

2015

Watershed Water Quality Assessment

Pee Dee River Basin



South Carolina Department of Health and Environmental Control

Bureau of Water

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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 SCDHECôs 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 Pee Dee River Basin was collected during 2006 through 2010 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. Waterbody, monitoring station 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 Pee Dee 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.

General information on Pee Dee River Basin Watershed Protection and Restoration Strategies can be found under that section on page 24, and more detailed information is located within the individual watershed evaluations.

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 Pee Dee 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 Pee Dee Basin, please contact:

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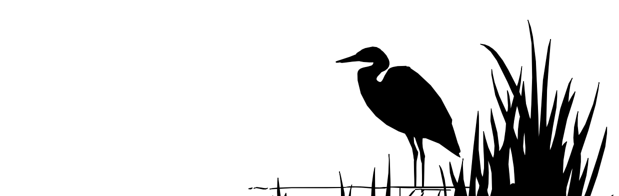

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This document should be cited as:

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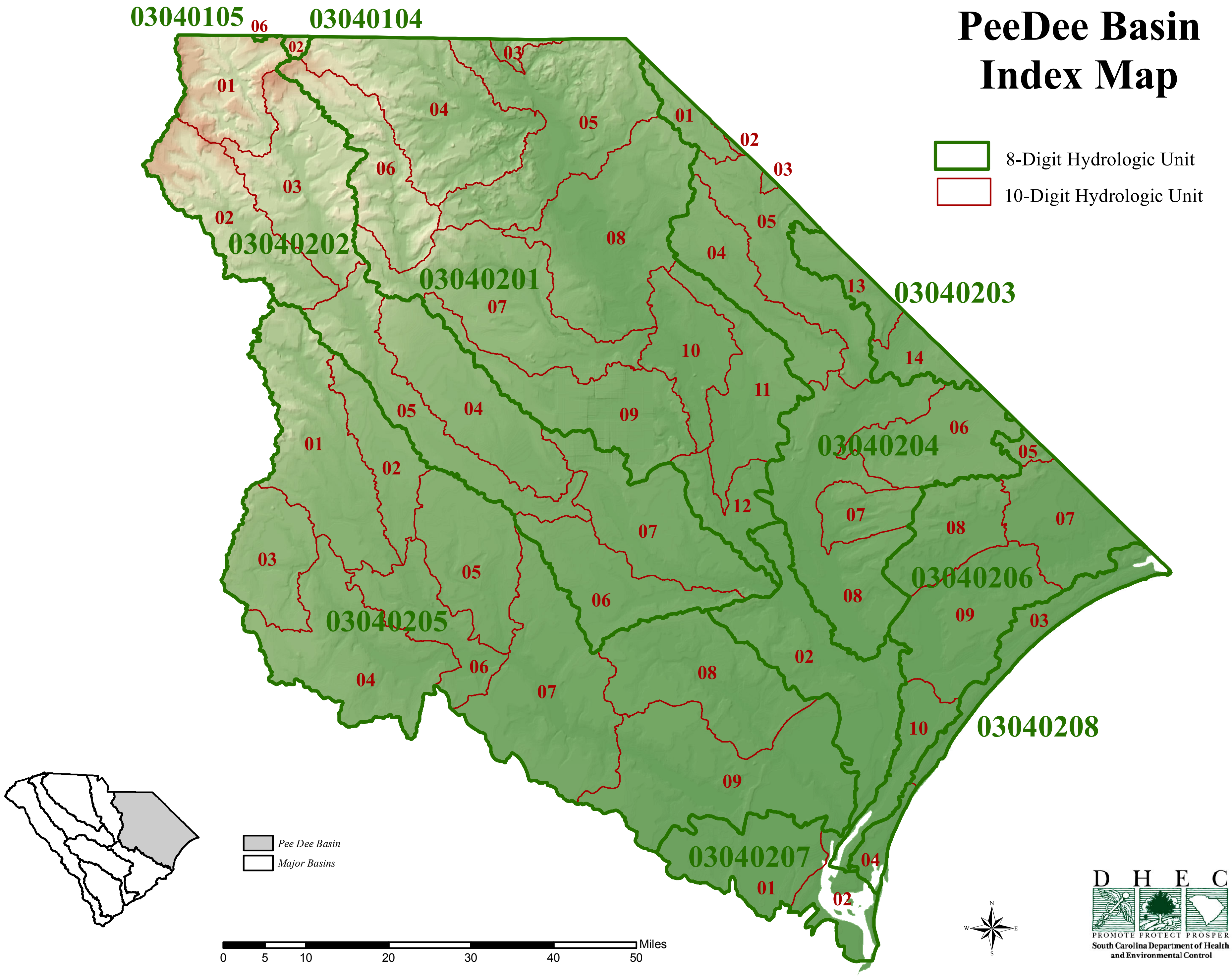
PeeDee Basin Index Map



Water Quality Assessment Summary

Pee Dee River Basin

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 chronic or 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. $\geq$ 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.$\geq$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.13 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 Pee Dee River Basin 2006-2010

* = Station not evaluated for Recreational Support; TD=TMDL Developed; TI=TMDL Implementation; Trend Data 1994-2008

Watershed	Waterbody Name	Station #	Improving Trends	Other Trends
03040202-01	North Branch Wildcat Creek	PD-179 [TD]		
	Flat Creek	PD-342 [TD]	Decreasing Fecal Coliform Bacteria	Increasing Total Phosphorus
03040202-02	Little Lynches River	PD-109	Increasing Dissolved Oxygen	Decreasing pH
		PD-343	Increasing Dissolved Oxygen	Increasing BOD5, Turbidity, Total Phosphorus, Fecal Coliform; Decreasing pH
		PD-344	Increasing Dissolved Oxygen	Increasing BOD5, Turbidity, Total Phosphorus, Fecal Coliform; Decreasing pH
	Todds Branch	PD-005		
	Cow Branch	PD-704*		
	Beaverdam Creek	PD-678*		
03040202-03	Lynches River	PD-001 [TD]		Increasing Total Phosphorus, pH
		PD-009		Increasing BOD5, Total Phosphorus, Fecal Coliform; Decreasing pH
	Little Rocky Creek	RS-06169		
03040202-04	Long Branch	RS-08067		
03040202-05	Lynches River	PD-080		Decreasing pH
		PD-071		Increasing BOD5, Fecal Coliform; Decreasing Dissolved Oxygen
		PD-319		Increasing BOD5
		PD-093		Increasing BOD5, Total Phosphorus, Total Nitrogen, Fecal Coliform; Decreasing Dissolved Oxygen
03040202-06	Lake Swamp	PD-087	Decreasing Total Phosphorus	Decreasing Dissolved Oxygen

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Watershed	Waterbody Name	Station #	Improving Trends	Other Trends
03040202-07	Lynches River	PD-281		Increasing BOD5, Total Phosphorus, Fecal Coliform; Decreasing Dissolved Oxygen
	Big Swamp	PD-168		
03040205-01	Scape Ore Swamp	PD-355 TD,TI	Decreasing Total Nitrogen	Increasing Turbidity, pH
	Lake Ashwood	CL-077	Increasing Dissolved Oxygen; Decreasing Total Nitrogen	Increasing Fecal Coliform
	Mechanicsville Swamp	PD-356	Increasing Dissolved Oxygen; Decreasing Total Nitrogen	
	Rocky Bluff Swamp	PD-201		Increasing Turbidity; Decreasing Dissolved Oxygen
03040205-06	Black River	PD-227		Increasing BOD5, Fecal Coliform
03040205-07	Black River	PD-714*		
		PD-044	Decreasing Total Phosphorus	Increasing BOD5, Fecal Coliform
		PD-045		
	Kingstree Swamp Canal	PD-358	Decreasing Total Phosphorus	Decreasing pH
	Thorntree Swamp	RS-06018		
03040205-08	Black Mingo Creek	PD-361	Decreasing Total Phosphorus	Decreasing Dissolved Oxygen
	Campbell Swamp	RS-09317		
03040205-09	Black River	PD-359	Decreasing Total Phosphorus	Increasing BOD5
	Indian Hut Swamp	RS-07221		
	Lanes Creek	RS-10349		
03040206-07	Buck Creek	PD-362		Increasing BOD5, Turbidity, Total Nitrogen; Decreasing Dissolved Oxygen, pH
	Waccamaw River	MD-124	Decreasing Turbidity	Increasing BOD5, pH

Table 1. Fully Supported Sites in the Pee Dee River Basin 2006-2010

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Watershed	Waterbody Name	Station #	Improving Trends	Other Trends
03040206-09	Waccamaw River	PD-373 TD		
		MD-110		
		MD-111		
		MD-136	Increasing Dissolved Oxygen	
	AIWW	MD-088 TD		
		MD-089 TD		
		MD-127 TD	Decreasing Turbidity	Increasing BOD5, pH
03040206-10	Waccamaw River	MD-146		Increasing pH
		MD-137		Increasing Turbidity
		MD-138	Increasing Dissolved Oxygen; Decreasing Total Phosphorus	Increasing BOD5, Turbidity
		MD-142		Increasing pH
		RO-09364		
03040201-04	Thompson Creek	PD-711*		
		PD-338	Increasing Dissolved Oxygen	Increasing Total Phosphorus, Fecal Coliform; Decreasing pH
	Jimmies Creek	RS-08273		
	Eureka Lake	RL-06436		Increasing Turbidity; Decreasing pH
		RL-03346		
		RL-06448		

Table 1. Fully Supported Sites in the Pee Dee River Basin 2006-2010

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Watershed	Waterbody Name	Station #	Improving Trends	Other Trends
03040201-04 (continued)	Juniper Lake	RL-10101		
		CL-088		
	Juniper Creek	PD-340		Increasing BOD5, Turbidity, Total Phosphorus; Decreasing pH
03040201-05	Whites Creek	PD-191	Increasing Dissolved Oxygen	Increasing BOD5, Turbidity; Decreasing pH
03040201-06	Black Creek	PD-004		Decreasing pH
		PD-710*		
		PD-251		Increasing Turbidity, Total Phosphorus, Fecal Coliform; Decreasing pH
	Little Black Creek Trib.	RS-08065		
	Skipper Creek.	PD-613		
	Lake Robinson	PD-327	Decreasing Turbidity, Total Nitrogen	Decreasing pH
		CL-094	Decreasing Total Nitrogen	Decreasing pH; Increasing Fecal Coliform
03040201-07	Black Creek	PD-159		
		PD-021	Decreasing Turbidity	Increasing BOD5
		PD-330		
		PD-023		Increasing Fecal Coliform
		PD-024A		Decreasing Dissolved Oxygen
		PD-025		
		PD-027		Increasing BOD5, Total Suspended Solids

Table 1. Fully Supported Sites in the Pee Dee River Basin 2006-2010

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Watershed	Waterbody Name	Station #	Improving Trends	Other Trends
03040201-07 (continued)	Black Creek (continued)	PD-078 [TD]		Increasing Turbidity, Fecal Coliform; Decreasing Dissolved Oxygen, pH
	Lake Prestwood	PD-268		
		PD-081		
	Boggy Swamp	PD-542*		
	High Hill Creek	PD-103		
03040201-08	Three Creeks	PD-341		
		PD-367		Increasing pH
		RS-08069		
	Rogers Creek	RS-07201		
03040201-09	Jeffries Creek	PD-231		Increasing BOD5, Turbidity, Fecal Coliform; Decreasing Dissolved Oxygen
03040201-10	Poccosin Swamp Tributary	RS-09329		
	Great Pee Dee River	PD-337	Decreasing Total Phosphorus	Increasing Fecal Coliform; Decreasing Dissolved Oxygen, pH
03040201-12	Great Pee Dee River	RS-10365		
		RS-08237		
		PD-076	Decreasing Total Phosphorus	Increasing Turbidity; Decreasing pH
03040203-13	Ashpole Swamp	PD-347		
03040204-01	McLaurins Mill Pond	PD-017A		

Table 1. Fully Supported Sites in the Pee Dee River Basin 2006-2010

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Watershed	Waterbody Name	Station #	Improving Trends	Other Trends
03040204-01	Panther Creek	PD-306		
		PD-016		
	Gum Swamp	PD-062		
	Little Pee Dee River	PD-365		
03040204-02	Leith Creek	PD-372		
03040204-03	Shoe Heel Creek	PD-371		
03040204-04	Buck Swamp	PD-031		
		RS-07047		
03040204-05	Little Pee Dee River	PD-069		Decreasing Dissolved Oxygen
		PD-029E [TD,TI]		Increasing Total Phosphorus
		PD-055		Increasing BOD5; Decreasing Dissolved Oxygen
		PD-030A [TD,TI]		
	Maple Swamp	PD-030 [TD,TI]		
03040204-07	Brunson Swamp	PD-370		
	Chinners Swamp	RS-07051		
		PD-177		Increasing Fecal Coliform
03040204-08	Little Pee Dee River	PD-042	Decreasing Turbidity	Increasing BOD5, Fecal Coliform
		RS-06181		
		PD-189	Decreasing Turbidity	Decreasing pH
		PD-350	Decreasing Total Phosphorus	Decreasing Dissolved Oxygen

Table 1. Fully Supported Sites in the Pee Dee River Basin 2006-2010

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Watershed	Waterbody Name	Station #	Improving Trends	Other Trends
03040207-01	Turkey Creek	MD-076N		
03040207-02	Great Pee Dee River	RS-04377		Increasing Fecal Coliform
		PD-060	Decreasing Total Phosphorus	Decreasing Dissolved Oxygen
		PD-061		
		MD-275	Decreasing Fecal Coliform	Increasing pH
	Winyah Bay	RO-08348		
		RO-10380		
		RO-07332		
		MD-278		
		RO-06317		
03040208-03	Dunn Sound Creek	RT-08069		
	Little River	RO-07333		
		MD-162		Increasing pH
	AIWW	MD-125 TD	Decreasing Turbidity	Increasing BOD5, Total Nitrogen; Decreasing Dissolved Oxygen, pH
		MD-091 TD		
		MD-085 TD	Decreasing Turbidity, Total Phosphorus	
		MD-087 TD	Increasing Dissolved Oxygen	

Table 1. Fully Supported Sites in the Pee Dee River Basin 2006-2010

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Watershed	Waterbody Name	Station #	Improving Trends	Other Trends
03040208-03 (continued)	Main Creek	RT-09113		
		RT-07049		
	Parsonage Creek	MD-277	Decreasing Total Nitrogen	Decreasing pH
	Clambank Creek Tributary	RT-08081		

Table 2. Impaired Sites in the Pee Dee River Basin 2006-2010

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Watershed	Waterbody Name	Station #	Use	Status	Water Quality Indicator	Improving Trends	Other Trends
03040202-01	Hills Creek	PD-333 TD,TI	REC	NS	Fecal Coliform		Increasing Fecal Coliform
		PD-366 TD,TI	REC	PS	Fecal Coliform	Increasing Dissolved Oxygen	Increasing Turbidity, Total Phosphorus, Total Nitrogen, Fecal Coliform
	Lynches River	PD-113 TD	REC	PS	Fecal Coliform		Increasing Total Phosphorus, Fecal Coliform
	North Br Wildcat Creek Tributary	RS-06185 TD	REC	NS	Fecal Coliform		
	North Branch Wildcat Creek	PD-679*	AL	PS	Macroinvertebrates		
	South Branch	PD-180 TD	REC	NS	Fecal Coliform		Decreasing pH
	Flat Creek	RS-08233 TD	AL	PS	Macroinvertebrates		
			REC	PS	Fecal Coliform		
03040202-02	Little Lynches River	PD-640*	AL	PS	Macroinvertebrates		
		PD-006 TD	REC	NS	Fecal Coliform		Decreasing pH
		PD-632*	AL	PS	Macroinvertebrates		
	Horton Creek	PD-335 TD	REC	PS	Fecal Coliform		Increasing Fecal Coliform
	Lick Creek	PD-329 TD	REC	NS	Fecal Coliform		
	Hanging Rock Creek	PD-328 TD	REC	PS	Fecal Coliform		Increasing Fecal Coliform
		PD-669*	AL	PS	Macroinvertebrates		

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Watershed	Waterbody Name	Station #	Use	Status	Water Quality Indicator	Improving Trends	Other Trends
03040202-03	Lynches River	PD-066 [TD]	REC	PS	Fecal Coliform		Increasing BOD5, Total Phosphorus, Fecal Coliform; Decreasing pH
	Fork Creek	PD-067 [TD,TI]	REC	PS	Fecal Coliform		Decreasing pH
		PD-068 [TD,TI]	REC	PS	Fecal Coliform	Decreasing Fecal Coliform	Decreasing pH
	Little Fork Creek	RS-10361	REC	NS	Fecal Coliform		
		PD647	AL	PS	Macroinvertebrates		
		PD-215 [TD]	REC	PS	Fecal Coliform		Increasing Fecal Coliform
03040202-04	Newman Swamp	PD-229	AL	NS	Dissolved Oxygen	Increasing Dissolved Oxygen	Increasing pH
	Sparrow Swamp	PD-072 [TD]	REC	NS	Fecal Coliform	Increasing Dissolved Oxygen	Increasing Fecal Coliform
		PD-332	REC	PS	Fecal Coliform	Decreasing Turbidity	Increasing Fecal Coliform; Decreasing Dissolved Oxygen
	Lake Swamp	PD-345	REC	PS	Fecal Coliform		Increasing Turbidity, pH
03040202-05	Lynches River	PD-364	REC	PS	Fecal Coliform		Increasing BOD5, Total Phosphorus, Fecal Coliform; Decreasing Dissolved Oxygen
	Cousar Branch	PD-112	REC	NS	Fecal Coliform		Increasing Turbidity; Decreasing Dissolved Oxygen, pH
03040202-06	Camp Branch	PD-346	AL	NS	Dissolved Oxygen	Decreasing Total Phosphorus	Increasing Fecal Coliform
			REC	PS	Fecal Coliform		

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Watershed	Waterbody Name	Station #	Use	Status	Water Quality Indicator	Improving Trends	Other Trends
03040202-06 (continued)	Lake Swamp	PD-085	AL	NS	Dissolved Oxygen		
		PD-086A	AL	NS	Dissolved Oxygen	Decreasing Total Phosphorus	Increasing Fecal Coliform
			REC	PS	Fecal Coliform		
	Long Branch	RS-10397	REC	NS	Fecal Coliform		
	Singleton Swamp	PD-314	AL	NS	Dissolved Oxygen		
03040202-07	Lynches River	PD-041 TD,TI	AL	PS	pH		Increasing BOD5, Fecal Coliform; Decreasing Dissolved Oxygen
			REC	PS	Fecal Coliform		
	Big Swamp	PD-169 TD,TI	AL	NS	Dissolved Oxygen		Decreasing Dissolved Oxygen
			REC	PS	Fecal Coliform		
03040205-01	Gum Spring Branch	RS-09095	AL	NS	Dissolved Oxygen		
	Rocky Bluff Swamp	PD-357	REC	PS	Fecal Coliform		Increasing Fecal Coliform
03040205-02	Unnamed Drainage Canal	PD-354	AL	NS	Dissolved Oxygen, pH		Increasing Total Nitrogen
	Black River	PD-353 TD	REC	PS	Fecal Coliform	Decreasing Turbidity	Increasing Fecal Coliform
03040205-03	Nasty Branch	PD-239 TD	AL	PS	Dissolved Oxygen	Increasing Dissolved Oxygen	Increasing pH
			REC	NS	Fecal Coliform		
	Green Swamp	PD-039	AL	NS	Dissolved Oxygen		Increasing Fecal Coliform, pH

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Watershed	Waterbody Name	Station #	Use	Status	Water Quality Indicator	Improving Trends	Other Trends
03040205-04	Pocotaligo River	PD-091	AL	NS	Dissolved Oxygen	Decreasing Total Nitrogen	Increasing BOD5, Fecal Coliform; Decreasing Dissolved Oxygen
		PD-202 [TD]	REC	NS	Fecal Coliform	Increasing Dissolved Oxygen	Increasing Turbidity, pH, Fecal Coliform
		PD-115 [TD]	REC	PS	Fecal Coliform		Increasing Turbidity
		PD-043	AL	PS	Dissolved Oxygen	Decreasing Total Phosphorus	Increasing Fecal Coliform
	Turkey Creek	PD-098 [TD]	REC	NS	Fecal Coliform		Increasing Fecal Coliform; Decreasing Dissolved Oxygen
		PD-040 [TD]	AL	NS	Dissolved Oxygen, Ammonia		
			REC	NS	Fecal Coliform		
	Big Branch [TD]	RS-07192	REC	NS	Fecal Coliform		
	Juneburn Branch [TD] Tributary	RS-08232	REC	NS	Fecal Coliform		
03040205-05	Pudding Swamp	PD-203	AL	NS	Copper	Increasing Dissolved Oxygen	Increasing BOD5, Fecal Coliform
			REC	PS	Fecal Coliform		
03040205-06	Black River	PD-116	AL	PS	Dissolved Oxygen		Increasing pH, Fecal Coliform
			REC	NS	Fecal Coliform		
03040205-07	Kingstree Swamp Canal	RS-10381	REC	NS	Fecal Coliform		

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Watershed	Waterbody Name	Station #	Use	Status	Water Quality Indicator	Improving Trends	Other Trends
03040205-08	Black Mingo Creek	PD-360	AL	NS	Dissolved Oxygen		Increasing Turbidity, Total Phosphorus
			REC	PS	Fecal Coliform		
	Smith Swamp	RS-06189	AL	NS	Dissolved Oxygen		
03040205-09	Black River	PD-170	AL	NS	Dissolved Oxygen	Decreasing Total Nitrogen	Increasing BOD5, Fecal Coliform; Decreasing Dissolved Oxygen
		PD-325	AL	NS	Turbidity		Increasing BOD5, Turbidity, pH
03040206-07	Simpson Creek	PD-363	REC	PS	Fecal Coliform		Increasing BOD5, Turbidity
03040206-08	Brown Swamp	RS-10389	AL	NS	Dissolved Oxygen		
	Crab Tree Swamp	RS-04375	REC	NS	Fecal Coliform		
		MD-158 TD.TI	AL	NS	Dissolved Oxygen		
			REC	NS	Fecal Coliform		
	Kingston Lake	MD-107 TD,TI	AL	NS	Dissolved Oxygen		Decreasing Dissolved Oxygen
			REC	NS	Fecal Coliform		
03040206-09	Waccamaw River	PD-369 TD	REC	PS	Fecal Coliform	Decreasing Turbidity	Increasing Fecal Coliform; Decreasing Dissolved Oxygen
		MD-145 TD	AL	PS	Dissolved Oxygen		Increasing Total Phosphorus; Decreasing Dissolved Oxygen
	Steritt Swamp	RS-06165	AL	NS	Dissolved Oxygen		
			REC	NS	Fecal Coliform	Decreasing Fecal Coliform	

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Watershed	Waterbody Name	Station #	Use	Status	Water Quality Indicator	Improving Trends	Other Trends
03040201-04	Deep Creek	RS-01013**	REC	NS	Fecal Coliform		
	Thompson Creek	PD-246 [TD,TI]	REC	NS	Fecal Coliform		
		PD-247 [TD,TI]	REC	PS	Fecal Coliform		Decreasing pH
	Indian Creek	RS-10377	AL	PS	Dissolved Oxygen		
			REC	NS	Fecal Coliform		
03040201-05	Westfield Creek	PD-339	AL	PS	pH	Increasing Dissolved Oxygen	Increasing BOD5, Turbidity, Fecal Coliform; Decreasing pH
03040201-07	Snake Branch	PD-258 [TD]	REC	NS	Fecal Coliform		Increasing Fecal Coliform
		PD-137 [TD]	REC	NS	Fecal Coliform		
	Tilefield to Ditch to Swift Creek	PD-141 [TD]	AL	NS	Ammonia	Increasing Dissolved Oxygen; Decreasing Turbidity	
			REC	NS	Fecal Coliform		
	Ashby Branch	RS-06027 [TD]	AL	NS	Dissolved Oxygen, pH		
			REC	NS	Fecal Coliform		
03040201-08	Buckholtz Creek	PD-637*	AL	PS	Macroinvertebrates		
	Hagins Prong	PD-336	REC	PS	Fecal Coliform		
	Great Pee Dee River	PD-028	REC	PS	Fecal Coliform	Decreasing Total Phosphorus	Increasing BOD5; Decreasing Dissolved Oxygen, pH

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Watershed	Waterbody Name	Station #	Use	Status	Water Quality Indicator	Improving Trends	Other Trends
03040201-09	Jeffries Creek	PD-639*	AL	PS	Macroinvertebrates		
		PD-255	AL	PS	Dissolved Oxygen		
		PD-256	AL	NS	Dissolved Oxygen		
			REC	NS	Fecal Coliform		
		PD-035	REC	NS	Fecal Coliform		Increasing Fecal Coliform
	Gulley Branch	PD-065 TD,TI	REC	NS	Fecal Coliform	Decreasing Turbidity	
	Middle Swamp	PD-230	AL	NS	Dissolved Oxygen		Increasing Fecal Coliform
	Polk Swamp	RS-07205	REC	NS	Fecal Coliform		
	Willow Creek	PD-167	REC	PS	Fecal Coliform		
03040201-11	Smith Swamp	PD-320 TD	AL	PS	Dissolved Oxygen		
			REC	PS	Fecal Coliform		
		PD-187 TD	AL	NS	Dissolved Oxygen	Decreasing Fecal Coliform	Increasing BOD5; Decreasing pH
	Catfish Canal	PD-097	AL	NS	Dissolved Oxygen	Decreasing BOD5, Total Phosphorus	Increasing Fecal Coliform; Decreasing pH
			REC	PS	Fecal Coliform		
03040203-13	Bear Swamp	PD-368	REC	PS	Fecal Coliform	Decreasing Turbidity, Total Phosphorus	
03040203-14	Lumber River	PD-038	AL	NS	Dissolved Oxygen	Decreasing Total Phosphorus	Increasing BOD5; Decreasing pH
			REC	PS	Fecal Coliform		

Table 2. Impaired Sites in the Pee Dee River Basin 2006-2010

REC=Recreational; AL=Aquatic Life; FS=Fully Supported Standards; PS=Partially Supported Standards; NS=Nonsupported Standards; *=Station not evaluated for Recreational Support; **=Station not evaluated for Aquatic Life Support; TD=TMDL Developed; TI=TMDL Implementation; Trend Data 1996-2010

Watershed	Waterbody Name	Station #	Use	Status	Water Quality Indicator	Improving Trends	Other Trends
03040204-04	Buck Swamp	PD-349	AL	NS	Dissolved Oxygen		Increasing Turbidity; Decreasing pH
03040204-05	Little Pee Dee River	PD-348	AL	PS	Dissolved Oxygen	Decreasing Fecal Coliform	Increasing BOD5, pH
		PD-052	AL	PS	Dissolved Oxygen		Increasing BOD5
03040204-06	Bobs Branch	RS-06009	AL	NS	Dissolved Oxygen		
	Lake Swamp	PD-176	REC	PS	Fecal Coliform		Decreasing Dissolved Oxygen
03040204-07	Chinners Swamp	PD-352 TD,TI	REC	PS	Fecal Coliform		Increasing pH, Total Phosphorus, Fecal Coliform
03040204-08	Cedar Creek	PD-351	AL	NS	Dissolved Oxygen		
	White Oak Creek	RS-08229	REC	NS	Fecal Coliform		
		PD-037 TD	REC	PS	Fecal Coliform		Increasing Fecal Coliform
03040207-01	Sampit River	MD-075	AL	NS	Dissolved Oxygen		
		MD-077	AL	PS	Dissolved Oxygen		Increasing BOD5
		MD-073	AL	PS	Dissolved Oxygen, pH		
		MD-074	AL	PS	Dissolved Oxygen, pH		
	Whites Creek	MD-149	AL	PS	Dissolved Oxygen		

Table 2. Impaired Sites in the Pee Dee River Basin 2006-2010

REC=Recreational; AL=Aquatic Life; FS=Fully Supported Standards; PS=Partially Supported Standards; NS=Nonsupported Standards; *=Station not evaluated for Recreational Support; **=Station not evaluated for Aquatic Life Support; TD=TMDL Developed; TI=TMDL Implementation; Trend Data 1996-2010

Watershed	Waterbody Name	Station #	Use	Status	Water Quality Indicator	Improving Trends	Other Trends
03040207-02	Cypress Creek	RS-06013	REC	NS	Fecal Coliform		
	Winyah Bay	MD-080	AL	PS	Dissolved Oxygen, pH		Increasing pH
03040208-03	House Creek	MD-276	AL	NS	Dissolved Oxygen, Zinc	Decreasing Total Nitrogen	Increasing Turbidity, Fecal Coliform; Decreasing Dissolved Oxygen, pH

Table 3. Changes in Use Support Status

Pee Dee River Basin Sites that Improved from 2004 to 2010

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

Watershed	Waterbody Name	Station #	Use	Status		Water Quality Indicator	
				2004	2010	2004	2010
03040202-01	Hills Creek	PD-333 [TD,TI]	AL	PS	FS	Macroinvertebrate	
	Lynches River	PD-113 [TD]	AL	NS	FS	Copper	
	North Branch Wildcat Creek	PD-179 [TD]	REC	NS	FS	Fecal Coliform	
	South Branch	PD-180 [TD]	AL	PS	FS	Macroinvertebrates	
	Flat Creek	PD-342 [TD]	AL	NS	FS	Copper	
			REC	PS	FS	Fecal Coliform	
03040202-02	Little Lynches River	PD-006 [TD]	AL	NS	FS	Copper	
		PD-344	AL	NS	FS	pH	
	Todd Branch	PD-005	REC	NS	FS	Fecal Coliform	
03040202-03	Fork Creek	PD-067 [TD,TI]	REC	NS	PS	Fecal Coliform	Fecal Coliform
		PD-068 [TD,TI]	REC	NS	PS	Fecal Coliform	Fecal Coliform
	Little Fork Creek	PD-215 [TD]	AL	NS	FS	Copper	
03040202-04	Newman Swamp	PD-229	REC	PS	FS	Fecal Coliform	
03040202-05	Lynches River	PD-364	AL	NS	FS	pH	Macroinvertebrates
		PD-319	AL	PS	FS	pH	
		PD-093	AL	PS	FS	pH	
03040202-07	Lynches River	PD-281	AL	NS	FS	Copper	
03040205-01	Scape Ore Swamp	PD-355 [TD,TI]	REC	PS	FS	Fecal Coliform	
	Lake Ashwood	CL-077	AL	NS	FS	Total Nitrogen, Chlorophyll-a	
	Mechanicsville Swamp	PD-356	AL	NS	FS	Dissolved Oxygen	
03040205-03	Nasty Branch	PD-239	AL	NS	PS	Dissolved Oxygen	Dissolved Oxygen
03040206-07	Waccamaw River	MD-124	AL	NS	FS	Copper	
	Simpson Creek	PD-363	AL	NS	FS	Zinc	
03040206-09	Waccamaw River	PD-369 [TD]	AL	PS	FS	Dissolved Oxygen	
		MD-111	AL	NS	FS	Dissolved Oxygen	

Pee Dee River Basin Sites that Improved from 2004 to 2010

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

Watershed	Waterbody Name	Station #	Use	Status 2004	Status 2010	Water Quality Indicator 2004	Water Quality Indicator 2010
03040206-09 (continued)	Waccamaw River	MD-136	AL	NS	FS	Dissolved Oxygen	
03040206-10	Waccamaw River	MD-146	AL	NS	FS	Dissolved Oxygen	
		MD-137	AL	NS	FS	Dissolved Oxygen	
		MD-138	AL	PS	FS	Dissolved Oxygen	
		MD-142	AL	PS	FS	Dissolved Oxygen	
03040201-04	Thompson Creek	PD-247 [TD,TI]	REC	NS	PS	Fecal Coliform	Fecal Coliform
	Eureka Lake	RL-03346	AL	NS	FS	pH	
	Juniper Creek	PD-340	AL	NS	FS	pH	
03040201-05	Great Pee Dee River	PD-015	REC	PS	FS	Fecal Coliform	
	Cedar Creek	PD-151	AL	NS	FS	pH	
03040201-07	Black Creek	PD-021	REC	PS	FS	Fecal Coliform	
		PD-025	REC	PS	FS	Fecal Coliform	
	Snake Branch	PD-258 [TD]	AL	NS	FS	pH	
03040201-08	Three Creeks	PD-341	AL	NS	FS	pH	
03040201-09	Gulley Branch	PD-065 [TD,TI]	AL	PS	FS	pH	
	Middle Swamp	PD-230	REC	PS	FS	Fecal Coliform	
03040201-11	Smith Swamp	PD-320 [TD]	REC	NS	PS	Fecal Coliform	Fecal Coliform
		PD-187 [TD]	REC	PS	FS	Fecal Coliform	
03040203-13	Bear Swamp	PD-368	AL	NS	FS	Dissolved Oxygen	
03040204-01	Little Pee Dee River	PD-365	AL	NS	FS	pH	
03040204-04	Buck Swamp	PD-031	REC	PS	FS	Fecal Coliform	
03040204-05	Little Pee Dee River	PD-029E [TD,TI]	REC	PS	FS	Fecal Coliform	
		PD-030A [TD,TI]	AL	NS	FS	Dissolved Oxygen	
			REC	PS	FS	Fecal Coliform	
		PD-348	AL	NS	PS	pH	Dissolved Oxygen

Pee Dee River Basin Sites that Improved from 2004 to 2010

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

Watershed	Waterbody Name	Station #	Use	Status		Water Quality Indicator	
				2004	2010	2004	2010
03040204-05	Maple Swamp	PD-030 [TD,TI]	REC	PS	FS	Fecal Coliform	
03040204-08	White Oak Creek	PD-037 [TD]	AL	PS	FS	Dissolved Oxygen	
	Little Pee Dee River	PD-042	AL	NS	FS	Dissolved Oxygen	
03040207-01	Turkey Creek	MD-076N	AL	NS	FS	pH	
	Whites Creek	MD-149	AL	NS	PS	Dissolved Oxygen Copper	Dissolved Oxygen
03040207-02	Great Pee Dee River	PD-060	AL	NS	FS	Copper	
		MD-275	AL	NS	FS	Dissolved Oxygen	
	AIWW	MD-278	AL	PS	FS	Dissolved Oxygen	
03040208-03	AIWW	MD-125 [TD]	AL	NS	FS	Copper	
	Parsonage Creek	MD-277	AL	PS	FS	Dissolved Oxygen	

Table 4. Changes in Use Support Status

Pee Dee River Basin Sites that Degraded from 2004 to 2010

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

Watershed	Waterbody Name	Station #	Use	Status 2004	Status 2010	Water Quality Indicator 2004	Water Quality Indicator 2010
03040202-01	Hills Creek	PD-336 TD,TI	REC	FS	PS		Fecal Coliform
	South Branch	PD-180 TD	REC	PS	NS	Fecal Coliform	Fecal Coliform
03040202-02	Lick Creek	PD-329 TD	REC	PS	NS	Fecal Coliform	Fecal Coliform
03040202-04	Newman Swamp	PD-229	AL	FS	NS		Dissolved Oxygen
	Sparrow Swamp	PD-072 TD	REC	PS	NS	Fecal Coliform	Fecal Coliform
		PD-332	REC	FS	PS		Fecal Coliform
	Lake Swamp	PD-345	REC	FS	PS		Fecal Coliform
03040202-05	Lynches River	PD-364	REC	FS	PS		Fecal Coliform
03040202-06	Camp Branch	PD-346	AL	FS	NS		Dissolved Oxygen
			REC	FS	PS		Fecal Coliform
	Lake Swamp	PD-085	AL	FS	NS		Dissolved Oxygen
		PD-086A	REC	FS	PS		Fecal Coliform
	Singleton Swamp	PD-314	AL	FS	NS		Dissolved Oxygen
03040202-07	Lynches River	PD-041 TD,TI	AL	FS	PS		pH
			REC	FS	PS		Fecal Coliform
	Big Swamp	PD-169 TD,TI	AL	FS	NS		Dissolved Oxygen
03040205-01	Rocky Bluff Swamp	PD-357	REC	FS	PS		Fecal Coliform
03040205-02	Black River	PD-353 TD	REC	FS	PS		Fecal Coliform
03040205-03	Nasty Branch	PD-239 TD	REC	PS	NS	Fecal Coliform	Fecal Coliform
03040205-04	Pocotaligo River	PD-202 TD	REC	FS	NS		Fecal Coliform
		PD-115 TD	REC	FS	PS		Fecal Coliform
		PD-043	AL	FS	PS		Dissolved Oxygen
	Turkey Creek	PD-040 TD	AL	FS	NS		Dissolved Oxygen Ammonia
			REC	PS	NS	Fecal Coliform	Fecal Coliform

Pee Dee River Basin Sites that Degraded from 2004 to 2010

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

Watershed	Waterbody Name	Station #	Use	Status		Water Quality Indicator	
				2004	2010	2004	2010
03040205-05	Pudding Swamp	PD-203	AL	FS	NS		Copper
			REC	FS	PS		Fecal Coliform
03040205-06	Black River	PD-116	REC	FS	NS		Fecal Coliform
03040205-08	Black Mingo Creek	PD-360	AL	FS	NS		Dissolved Oxygen
			REC	FS	PS		Fecal Coliform
03040205-09	Black River	PD-325	AL	PS	NS	Dissolved Oxygen	Dissolved Oxygen
03040206-07	Simpson Creek	PD-363	REC	FS	PS		Fecal Coliform
03040206-08	Crab Tree Swamp	MD-158 TD,TI	AL	FS	NS		Dissolved Oxygen
			REC	PS	NS	Fecal Coliform	Fecal Coliform
	Kingston Lake	MD-107 TD,TI	AL	FS	NS		Dissolved Oxygen
			REC	FS	NS		Fecal Coliform
03040206-09	Waccamaw River	PD-369 TD	REC	FS	PS		Fecal Coliform
03040201-04	Deep Creek	RS-01013	REC	PS	NS	Fecal Coliform	Fecal Coliform
03040201-05	Great Pee Dee River	PD-012	AL	FS	NS		Copper
03040201-07	Snake Branch	PD-137 TD	REC	FS	NS		Fecal Coliform
	Tilefield to Swift Creek	PD-141 TD	AL	FS	NS		Ammonia
03040201-08	Hagins Prong	PD-336	REC	FS	PS		Fecal Coliform
	Great Pee Dee River	PD-028	REC	FS	PS		Fecal Coliform
03040201-09	Jeffries Creek	PD-255	AL	FS	PS		Dissolved Oxygen
		PD-256	AL	FS	NS		Dissolved Oxygen
		PD-035	REC	FS	NS		Fecal Coliform
03040201-11	Smith Swamp	PD-320 TD	AL	FS	PS		Dissolved Oxygen
		PD-187 TD	AL	FS	NS		Dissolved Oxygen
	Catfish Creek	PD-097	REC	FS	PS		Fecal Coliform
03040203-13	Bear Swamp	PD-368	REC	FS	PS		Fecal Coliform

Pee Dee River Basin Sites that Degraded from 2004 to 2010

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

Watershed	Waterbody Name	Station #	Use	Status		Water Quality Indicator	
				2004	2010	2004	2010
03040203-14	Lumber River	PD-038	AL	FS	NS		Dissolved Oxygen
			REC	FS	PS		Fecal Coliform
03040204-04	Buck Swamp	PD-349	AL	FS	NS		Dissolved Oxygen
03040204-06	Lake Swamp	PD-176	REC	FS	PS		Fecal Coliform
03040204-08	Cedar Creek	PD-351	AL	FS	NS		Dissolved Oxygen
03040207-01	Sampit River	MD-074	AL	FS	PS		Dissolved Oxygen pH
03040207-02	AIWW	MD-080	AL	FS	PS		Dissolved Oxygen pH

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. The Department’s Pee Dee River Basin includes the Lynches River Basin, the Black River Basin, the Waccamaw River Basin, the Great Pee Dee River Basin, and the Pee Dee Coastal Frontage Basin. The ***Lynches River Basin*** is subdivided into 7 watersheds or hydrologic units within South Carolina and includes the Lynches River and its major tributaries (the Little Lynches River, Sparrow Swamp, Lake Swamp) before draining into the Great Pee Dee River. The ***Black River Basin*** is subdivided into 9 watersheds or hydrologic units and includes the Black River and its major tributaries (Scape Ore Swamp, Cane Savannah Creek, the Pocotaligo River, Black Mingo Creek) before draining into the Great Pee Dee River. The ***Waccamaw River Basin*** is subdivided into 5 watersheds or hydrologic units within South Carolina and includes the Waccamaw River and its major tributaries (Kingston Lake, Socastee Swamp/AIWW) before draining into the Great Pee Dee River. The ***Great Pee Dee River Basin*** is subdivided into 22 watersheds or hydrologic units within South Carolina and includes the Great Pee Dee River and its major tributaries, which include Thompson Creek, Crooked Creek, Cedar Creek, Three

Creeks, Black Creek, Jeffries Creek, Catfish Creek, the Lynches River Basin, the Little Pee Dee River, the Black River Basin, and the Waccamaw River Basin. The Great Pee Dee River flows through Winyah Bay to the Atlantic Ocean. The ***Pee Dee Coastal Frontage Basin*** is subdivided into 2 watersheds or hydrologic units within South Carolina and includes the Little River/AIWW and North Inlet, which drain to the Atlantic Ocean.

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 to realize a resource savings and the public to realize 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 statistical survey 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 discontinued cyclical watershed activities (W), the ambient surface water quality monitoring program includes several different monitoring station types: Integrator (INT), and Base sites (BASE), Special Purpose (SPRP), Survey Stream for year ## (RS##), Survey Lake for year ## (RL##), Survey Tide Creek for year ## (RT##), Survey Open Water for year ## (RO##), biological (BIO) stations.

Integrator Sites were fixed-location sites sampled on a monthly basis, year-round, every year, that targeted the furthest downstream access of each of the 10-digit watershed units in the state, as well as the major waterbodies that occurred within these watershed units. Base Sites replaced Integrator Sites when funding reductions reduced the monitoring frequency to only every other month (bi-monthly). Special Purpose Sites are permanent, monthly or bi-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.

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

A statewide Statistical Survey component is part of the monitoring design. A statistical survey monitoring design is a type of survey design in which the population of interest is sampled in such a manner 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 statistical survey 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 statistical survey sites is selected for each waterbody type. Survey Sites are sampled on a monthly basis for one year with the same parameter coverage as Integrator or Base Sites. The data from those Survey 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 (2006-2010) and trend data (1996-2010) from 247 stations were reviewed for the Pee Dee Basin, 52 from the Lynches River Basin, 36 from the Black River Basin, 22 from the Waccamaw River Basin, 125 from the Great Pee Dee River Basin, and 12 from the Pee Dee Coastal Frontage 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 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 SFH, or "shellfish harvesting" waters, are tidal saltwaters protected for shellfish harvesting, and are suitable also for uses listed in Classes SA and SB.

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 http://www.scdhec.gov/HomeAndEnvironment/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 (BOD_5) 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 BOD_5 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 BOD_5 discharged by point sources is limited through the National Pollutant Discharge Elimination System (NPDES) permits issued by the Department. The discharge of BOD_5 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 **E**.

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 ***(2006-2010).***

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 40CFR 131.36(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 http://www.scdhec.gov/FoodSafety/FishConsumptionAdvisories .

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 **1996** through **2010**.

Shellfish Water Quality

The shellfish-monitoring program provides the database that is used in conducting a comprehensive evaluation of each shellfish growing area. Evaluations of growing areas, which meet National Shellfish Sanitation Program requirements, are conducted annually. Routine bacteriological monitoring and subsequent laboratory analyses of water quality from approximately 465 strategically located sample sites are conducted monthly. South Carolina currently has 25 management areas comprising approximately 578,000 surface acres of estuarine and coastal riverine habitat suitable for the cultivation and harvest of molluscan shellfish. These management areas are assigned water quality classifications for the primary purpose of public health protection. The shellfish areas in the Pee Dee River Basin are located in the Waccamaw Management Area. All standards, monitoring methodology, and laboratory analyses comply with guidance set forth in the National Shellfish Sanitation Program Model Ordinance. The Department uses combinations of the following harvesting classifications for shellfish area management:

Approved - Areas that are normally open for the direct marketing of shellfish for human consumption. Approved areas must not exceed an established water quality standard.

Conditionally Approved - Areas that meet criteria for an Approved classification except under predictable conditions. Closure criteria and subsequent re-opening procedures are described in an area-specific management plan.

Restricted - Areas exceeding Approved area water quality standards and normally closed for direct harvesting activities but where harvesting may be allowed by special permit.

Prohibited – Areas that are administratively closed for the harvesting of shellfish for any purposes related to human consumption. These closures are established adjacent to permitted wastewater discharges, marina facilities, or areas containing multiple point sources of pollution. The Prohibited classification is not based upon violation of a bacteriological standard.

For background information and the most current evaluation, please visit http://www.scdhec.gov/FoodSafety/ShellfishMonitoring

Ocean Water Quality

SCDHEC's Ocean Water Quality Monitoring Program allows the public to make informed decisions concerning recreating in waters with the potential to cause adverse health effects. Routine monitoring of ocean front beaches by SCDHEC began in 1998 in Horry and Georgetown counties and was expanded to include all coastal counties in 2000. Beginning in 2002, SCDHEC has been awarded grant monies by EPA under the Beaches Environmental Assessment and Coastal Health (BEACH) Act. This grant money has allowed South Carolina to continue and to enhance a comprehensive monitoring and public notification program. To effectively allocate available resources, EPA required all monitoring and notification efforts be based on potential risk and intensity of use. An initial evaluation and classification of all beaches was performed to establish a three-tier monitoring program with Tier 1 beaches being highest priority. The beaches in the Pee Dee Basin are either Tier I or Tier 2. Grand Strand beaches from North Myrtle Beach south to Surfside Beach are Tier 1 beaches, and from Garden City Beach to Debordieu Beach they are considered Tier 2. More information on this program can be found online at: www.scdhec.gov/HomeAndEnvironment/Pollution/DHECPollutionMonitoringServices/BeachMonitoring.

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

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 (BOD_5). 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 2000 to 2010, statewide population growth in South Carolina increased by 15.3 percent. 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. During the same time period, Horry County experienced a 37 percent increase in population growth. 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.28). 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, 2013 there were 616 permitted mining operations in South Carolina totaling 84294.2 acres (includes acreage for excavation, buffer, and mine reserves). There were 655 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 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 instream 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 closed 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 over 3 million gallons in any month is required to be permitted and reported to the Department per the *Surface Water Withdrawal, Permitting, Use and Reporting Act* 49-4-10 (effect as of January 1, 2011). Any withdrawal of groundwater over 3 million gallons in any month is required to be reported to the Department and permits are required in counties designated as Capacity Use Areas (per the *Groundwater Use and Reporting Act* 49-5-10). Capacity Use Areas consist mainly of coastal counties where significant groundwater use has resulted in the lowering of groundwater levels in major aquifers.

Interbasin Transfer of Water

Requirements pertaining to the interbasin transfer of surface water between major river basins in the South Carolina are contained in the Surface Water Withdrawal, Permitting, Use and Reporting Act 49-4-10 and the Surface Water Withdrawal, Permitting, Use and Reporting Regulation R.61-119. The Regulation designates eight river basins to be used when applying the interbasin transfer (IBT) requirements of the Act. The transfer of water from one of these basins to any other river basin such that more than three million gallons of water are permanently lost to the basin of origin in any one month is considered an interbasin transfer. The primary difference between the permitting requirements for a non-interbasin transfer permit and a permit including an interbasin transfer of water is in the requirement for public notice. A permit involving an IBT must meet more stringent public notice and public hearing requirements. Public notice of an IBT permit application must be sent to a wider audience and a public hearing is required for an IBT application where it is optional for a non-IBT application. The status of interbasin transfer permits and registrations issued under the now repealed Interbasin Transfer of Water Regulation (former R. 121-10) is addressed in the Surface Water Withdrawal, Permitting, Use and Reporting Act 49-4-10.

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 Pee Dee Basin extends into the Pee Dee Capacity Area (Marlboro, Darlington, Dillon, Marion, Florence, and Williamsburg Counties) and the Waccamaw Capacity Use Area (Horry and Georgetown Counties).

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 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 Pee Dee 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 Pee Dee Basin include the Pee Dee Regional COG, Santee-Lynches COG, the Catawba Regional COG, and the Waccamaw Regional 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 http://www.scdhec.gov/HomeAndEnvironment/Water/ImpairedWaters/Overview . 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 http://www.scdhec.gov/HomeAndEnvironment/Water/ImpairedWaters/Overview 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.

Sanitary 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 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 http://www.scdhec.gov/HomeAndEnvironment/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.

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. For more information on the swimming advisories call the hotline at 1-800-360-5655 or check the swimming advisory website at http://www.scdhec.gov/HomeAndEnvironment/Water/SwimAdvisories.

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 the public 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 http://www.scdhec.gov/FoodSafety/FishConsumptionAdvisories. For a hard copy of the advisories, call SCDHEC's toll-free Fish Consumption Advisory hotline at 1-888-849-7241.

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 the water, air and land. Champions has been rewarding South Carolina's kindergarten through twelfth-grade students and teachers since 1993. Grant awards enable 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 http://www.scdhec.gov/HomeAndEnvironment/K12SchoolsStudentsTeachers/ContestsGrants/ChampionsoftheEnvironment

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 http://www.scdhec.gov/HomeandEnvironment/BusinessesandCommunities-GoGreen/EnvironmentalGrantsandLoans/StateRevolvingFund

Clean Marina Program

South Carolina's Clean Marina Program is part of an international effort, along with 24 other states and territories, to use best management practices to protect and improve water quality at marinas. By meeting prescribed environmental performance criteria, marinas can qualify to fly the Clean Marina flag to attract recreational and transient boaters to their facility. Water quality issues covered by the program include proper cleaning and painting, fuel and used oil management, sewage collection and removal, and emergency preparedness. The program is administered by the South Carolina Marine Association, which is governed by the Clean Marina Committee. The Clean Marina Committee consists of representatives from SCDHEC-OCRM, SCDNR, Palmetto Pride, and the commercial marine industry.

Citizen-Based Watershed Stewardship Programs

Throughout the Pee Dee 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 Pee Dee River Basin are described below. To view the most current listing, visit our webpage at http://www.scdhec.gov/HomeAndEnvironment/Water/Watersheds/GetInvolved

American Rivers: Blue Trails

In order to protect South Carolina's river heritage for future generations, we need to maintain and enhance river corridors for recreation, clean water and wildlife. Designated water trails, known as Blue Trails, help to make rivers more inviting places for both people and wildlife. A Blue Trail is a dedicated stretch of river that enjoys special clean water safeguards and is a destination for fishing, boating and other recreation. Just as hiking trails help people explore the land, Blue Trails help people discover rivers and provide a connection between both urban and rural communities, and the outdoors. The Waccamaw River Blue Trail begins near the Waccamaw River Heritage Preserve and connects urban and rural communities to the Waccamaw National Wildlife Refuge before ending at Winyah Bay. http://www.americanrivers.org/initiative/blue-trails/projects/waccamaw-river-blue-trail

Lynches River Advisory Council

The Lynches River Advisory Council consists of a varied group of individuals interested in protecting the Lynches River including landowners and representatives of industry, state agencies, grass roots environmental groups, and local governments. The council was formed after a 54-mile segment of the river, from Rt. 15 in Bishopville to Lynches River County Park was designated as a State Scenic River in 1994. In 2008 the designated scenic stretch was extended from the Florence County Park to its confluence with the Great Pee Dee River for a total of 111 miles, making it the longest scenic river. In 1997, the council published the Lynches River Management Plan, which contains recommendations to address specific issues within the scenic river segment. The management plan was revised in 2003. The council is currently inactive, but may become active if local interest and DNR resources increase. A Scenic River Water Trail Guide is now available at: www.dnr.sc.gov/water/envaff/river/pdf/LynchesBookComplete.pdf. The most recent information for this scenic river is available at: www.dnr.sc.gov/water/envaff/river/scenic/lynches.html

Black Scenic River Advisory Council

The Williamsburg Hometown Chamber Quality of Place Committee requested the SCDNR to consider the Black River for designation as a State Scenic River in 1999. The Williamsburg, Clarendon, and Georgetown County Councils adopted resolutions of support for the designation. The 75-mile segment was designated a State Scenic River in 2001. This SC scenic river segment begins at CR-40 in Clarendon County and extends southeast through Williamsburg County to Pea House Landing at the end of CR-38 in Georgetown County. The Black Scenic River Advisory Council represents local landowners, river users, community interests, and the SCDNR. The mission of the Advisory Council is to educate, protect, conserve, and be an advocate for the river through open communication with individuals and corporate partners. The council is to promote stewardship and long range planning for the sustainable development of wildlife habitats in order to enhance the natural beauty of the area. The council is not currently active, but may become active if local interest and SCDNR resources increase. The most recent information for this scenic river is available at: www.dnr.sc.gov/water/envaff/river/scenic/black.html

Great Pee Dee River Advisory Council

The Georgetown County Historical Society, the SC Coastal Conservation League, and a number of riparian landowners requested the SCDNR seek State Scenic River designation for the Great Pee Dee River in June 2001. Within a year, the river segment running from the US 378 bridge between Florence and Marion Counties and the US 17 bridge in Georgetown was designated a scenic river. The Great Pee Dee River Advisory Council represents local landowners, river users, community interests, and the SCDNR. Their first task is to create a management plan using an open community-based process where local citizens identify their vision and goals for the river, discuss and define issues of concern, and seek resolutions to achieve their vision. The management plan will be the guide for ongoing activities for the advisory council. The SCDNR and Pee Dee Scenic River Advisory Council completed a six week, Internet-based survey on June 30, 2014 to obtain citizen input for a management plan being developed for two adjoining State Scenic River sections: 1) the Great Pee Dee Scenic River and 2) the Little Pee Dee Scenic River, both of which extend south of U.S. Highway 378. Opportunity to participate in the survey was made known to the public through local news media, social media, websites, and direct mailings. The survey results are available at: www.dnr.sc.gov/water/envaff/river/pdf/peedeesurveyresults.pdf . The council is not currently active, but may become active if local interest and DNR resources increase. The most recent information for this scenic river is available at: www.dnr.sc.gov/water/envaff/river/scenic/greatpeedee.html

Little Pee Dee River Advisory Council

The Dillon County Council and Friends of the Little Pee Dee requested the SCDNR to consider the Little Pee Dee River in Dillon County for designation as a State Scenic River in 2004. The 48-mile segment was designated a State Scenic River in 2005. The focus of the Little Pee Dee River Advisory Council will be conservation, utilization, awareness, and protection and enhancement of the river's resources. In 2008, the council developed a scenic river management plan, which is intended to define community goals for the river and outline a plan of action for the advisory council. The management plan is available at: https://www.dnr.sc.gov/water/envaff/river/pdf/LittlePeeDee.pdf . The SCDNR and Pee Dee Scenic River Advisory Council completed a six week, Internet-based survey on June 30, 2014 to obtain citizen input for a management plan being developed for two adjoining State Scenic River sections: 1) the Great Pee Dee Scenic River and 2) the Little Pee Dee Scenic River, both of which extend south of U.S. Highway 378. Opportunity to participate in the survey was made known to the public through local news media, social media, websites, and direct mailings. The survey results are available at: www.dnr.sc.gov/water/envaff/river/pdf/peedeesurveyresults.pdf . The council is not currently active, but may become active if local interest and DNR resources increase. The most recent information for this scenic river is available at: www.dnr.sc.gov/water/envaff/river/scenic/littlepeedee.html. A boating trail guide for the Little Pee Dee is available at: www.dnr.sc.gov/water/river/pdf/LittlePeeDeeTrailGuide.pdf .

Winyah Bay Focus Area

Formed in 1992 under the aegis of the North American Plan, the Winyah Bay Focus Area Task Force was to quantify and qualify the significant habitats within the Winyah Bay Area. The Winyah Bay Focus Area covers the lower drainage of the Black, Great Pee Dee, Little Pee Dee, Sampit, and Waccamaw Rivers and their confluence into Winyah Bay itself. The combined efforts of landowners, public agencies, and private conservation organizations have resulted in the protection of 62,600 acres in the Winyah Bay Focus Area, the establishment of the Waccamaw National Wildlife Refuge, and the perpetual protection of 17,000 acres, including Sandy Island. The Lowcountry Open Land Trust protects 10 properties, covering 1,555 acres of natural and rural land. The Task Force continues in its efforts to protect the Waccamaw River and Pee Dee River watersheds within the Focus Area's boundaries. More information is available at: www.lolt.org/conservation-work/protected/winyah-bay.html .

Waccamaw Riverkeeper Program

The Waccamaw Riverkeeper focuses on promoting the ecological, social, and economic health and integrity of the Waccamaw River and its watershed. The watershed extends from its headwaters in North Carolina down to Winyah Bay in South Carolina. The riverkeeper networks with concerned citizens for the protection and revitalization of the Waccamaw River and its watershed. To achieve this, the riverkeeper advocates for compliance with environmental laws, identifies problems that affect the river and devises appropriate remedies, educates citizens and policy makers on the best ways to assure an apply supply of clean water that supports traditional and beneficial uses. The Waccamaw Riverkeeper Program is sponsored by the Winyah Rivers Foundation. Information on current projects is available at: www.winyahrivers.org/

Winyah Rivers Foundation

The Winyah Rivers Foundation is a nonprofit 501(c) (3) organization whose mission is to protect, preserve, monitor, and revitalize the health of the lands and waters of the greater Winyah Bay watershed, focusing on local activism through the Waccamaw Riverkeeper program. The foundation seeks to ensure that the land and water uses in the watershed support a high quality of life for all human and natural uses. The Winyah Rivers Foundation services the Waccamaw, Lynches, Lumber, Little Pee Dee, Black, Great Pee Dee, and Sampit Rivers, which drain into Winyah Bay. Further information is available at: http://www.winyahrivers.org/foundation.html

Murrells Inlet 2020

Murrells Inlet 2020 is a nonprofit, community revitalization group established in 1997 with the goal of making the historic fishing village of Murrells Inlet, South Carolina a more enjoyable place to live, work, and do business. The mission of Murrells Inlet 2020 is to promote and advance infrastructure improvements including beautification of the core commercial districts, to enhance environmental education, to initiate a redevelopment of the core commercial district which will reduce blight, and to utilize conservation and preservation methods to secure quality wetlands for future generations of residents and visitors to appreciate. Murrells Inlet 2020 has won national and state awards for it service to the community. Some of the accomplishments include: building a boardwalk over the marsh, acquiring creek front property to use as a public park with a public crabbing dock (Morse Landing Park), erecting community wide signs, partnering with local schools to teach water quality, beautification of the area, promoting area businesses, hosting community forums and litter clean up days, volunteer monitoring, and development of a watershed based plan. More information is available at: http://www.murrellsinletsc.com/

Coastal Waccamaw Stormwater Education Consortium

In 2005, the Coastal Waccamaw Stormwater Education Consortium (CWSEC) began to offer communities in northeastern South Carolina a watershed approach to educating citizens about managing stormwater runoff quality and quantity. Six regional agencies jointly serve as core education providers for six coastal municipalities. The Consortium's goals are to: maximize efficiency of stormwater education efforts by using a regional watershed approach; help local SMS4s meet NPDES Phase II permit requirements for education and outreach; provide and exchange technical information and expertise on innovative stormwater best management practices and supporting funding opportunities; improve watershed and stormwater awareness in target audiences that informs decision making and promotes behavior change to address water quality impairments; continue to serve as a model for collaborative stormwater educations and involvement throughout the state and beyond. More information on CWSEC can be found at: http://cwsec-sc.org/

Black Creek Volunteer Monitoring

In 2012, the Black Creek Land Trust committed to undertake a 24 month monitoring plan to test for bacteria in Black Creek. Samples were taken from eighteen different sampling stations with the assistance of monitoring volunteers. The study has an approved quality assurance project plan and is using certified methods for all analysis. In 2013, some sample station adjustments were made and the project was extended to last through August 2014. More information may be found at: www.blackcreeklandtrust.wordpress.com/

Lynches River Basin Description

The ***Lynches River Basin (hydrologic unit 03040202)*** is located in Lancaster, Chesterfield, Kershaw, Lee, Darlington, Sumter, Florence, and Williamsburg Counties, and encompasses 1,387 square miles with geographic regions that extend from the Piedmont to the Sandhills, and to the Upper and Lower Coastal Plains. The Lynches River Basin encompasses 7 watersheds and 887,668 acres, of which 35.7% is forested land, 33.6% is agricultural land, 23.3% is forested wetland (swamp), 5.6% is urban land, 1.3% is nonforested wetland (marsh), 0.4% is water, and 0.1% is barren land. The urban land percentage is comprised chiefly of the City of Lake City. This predominantly rural area has approximately 1,807 stream miles and 1,310 acres of lake waters. The Lynches River originates in North Carolina and accepts drainage from the Little Lynches River, Sparrow Swamp, and Lake Swamp before draining into the Great Pee Dee 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 regions that define the Lynches River Basin are 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.

Land Use/Land Cover

General land use/land cover mapping for South Carolina was derived from the U.S. Geological Survey's National Land Cover Data (NLCD), 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 areas).

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

Soil Types

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

Alpin soils are well drained and excessively drained, sandy soils with a loamy or sandy subsoil.

Badin soils are moderately deep, well drained, moderately permeable, clayey soils that formed in material weathered from Carolina Slate or other fine grained rock, on ridgetops and side slopes.

Blaney soils are nearly level to strongly sloping, excessively drained and well drained soils, some sandy throughout and some with a loamy subsoil and a fragipan on coastal plains.

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

Bonneau soils are deep, moderately well drained soils with loamy subsoil on ridges.

Candor soils are somewhat excessively drained soils that formed in sandy and loamy marine sediments on broad flats, narrow ridges, and side slopes.

Cantey soils are moderately well drained soils with a loamy surface layer and a clayey or loamy subsoil and poorly 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.

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

Foreston soils are moderately well drained soils that formed in loamy marine sediments in upland areas of the Coastal Plain, and on high ridges and slight rises within broad flats.

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

Gilead soils are gently sloping to sloping, moderately well drained, moderately deep soils underlain by a compact, brittle substratum, in beds of unconsolidated sand and clay.

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

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

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

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

Noboco soils are well drained, sandy soils with a loamy or clayey subsoil.

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

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

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

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

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

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

Wagram soils are well drained to very poorly drained, depressional to nearly level and gently sloping soils with a loamy to sandy surface layer and a clayey to loamy subsoil.

Whitestone soils are deep and very deep, moderately well drained soils on Piedmont uplands, and formed in weathered triassic materials.

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 Lynches River Basin is from 0.10 to 0.38.

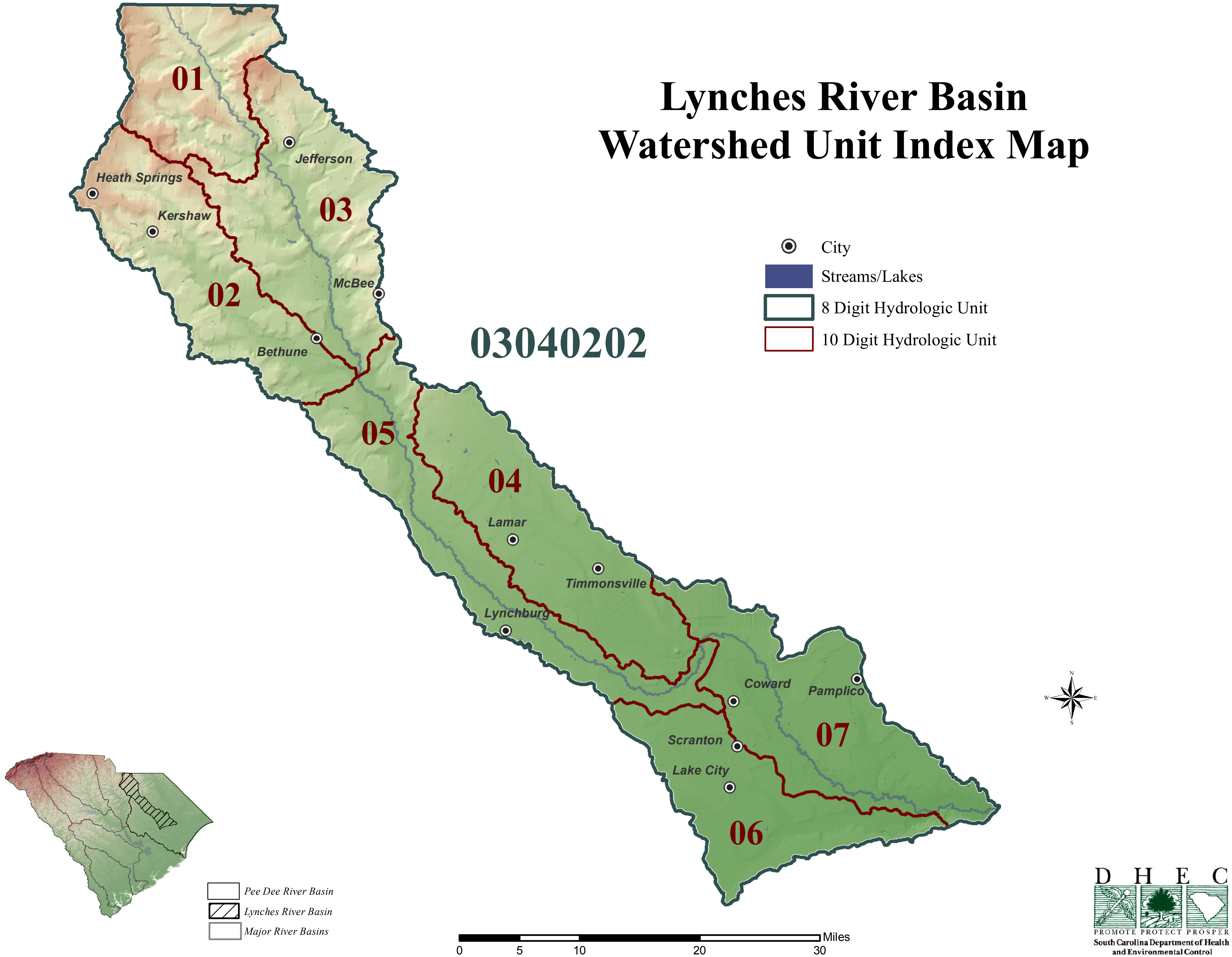
Fish Consumption Advisory

At the time of publication, a fish consumption advisory issued by SCDHEC is in effect for the ***Lynches River,*** from U.S. Hwy 15 to the Great Pee Dee River, advising people to limit the amount of some types of fish consumed from these waters. Fish consumption advisories are updated annually in March. For background information and the most current advisories please visit http://www.scdhec.gov/FoodSafety/FishConsumptionAdvisories.

Climate

Normal yearly rainfall in the Lynches River area during the period of 1971 to 2000 was 47.25 inches, according to South Carolina's **30-year** climatological record. Data compiled from National Weather Service stations in Bishopville, Florence, Florence Airport, Lake City, Pageland, Kershaw, and Effingham were used to determine the general climate information for this portion of the State. The highest seasonal rainfall occurred in the summer with 14.72 inches; 10.27, 11.47, and 10.80 inches of rain fell in the fall, winter, and spring, respectively. The average annual daily temperature was 62.5 °F. Winter temperatures averaged 45.6°F, spring temperatures averaged 62.1 °F and summer and fall mean temperatures were 78.7 °F and 63.6 °F, respectively.

Lynches River Basin Watershed Unit Index Map



Watershed Evaluations

03040202-01

(Lynches River)

General Description

The South Carolina portion of 03040202-01 is located in Lancaster and Chesterfield Counties and consists primarily of the ***Lynches River*** and its tributaries from where it enters South Carolina to Flat Creek. The watershed occupies 93,845 acres of the Piedmont region of South Carolina. Land use/land cover in the watershed includes: 72.0% forested land, 21.1% agricultural land, 5.2% urban land, 1.4% forested wetland, 0.2% water, and 0.1% barren land.

The Lynches River originates in North Carolina and accepts drainage also originating in North Carolina including Polecat Creek (Otter Creek, Silver Run), Buffalo Creek (Raccoon Branch Creek), and Dead Pine Creek. Hills Creek originates near the Town of Pageland and accepts the drainage of Mangum Branch, Cow Head Branch, and Conway Branch before flowing into the Lynches River. Mill Creek originates near the headwaters of Mangum Creek and flows into North Carolina. North Branch Wildcat Creek (South Branch, Sutton Branch, Long Branch) enters the river next, followed by Turkey Creek, Arant Branch, Shop Branch, Belk Branch (Horton Spring Branch), Cedar Falls Branch, and Rocky Branch. Flat Creek accepts drainage from Baker Creek (Ellis Creek), Childers Creek (Mine Branch), Big Double Branch (Little Double Branch), Lick Creek, Lick Run (Mill Branch), and Dry Creek before draining into the river at the bottom of the watershed. An additional natural resource in the watershed is the Forty Acre Rock Heritage Preserve adjacent to Flat Creek. There are a total of 288.3 stream miles and 105.1 acres of lake waters in this watershed, all classified FW.

Surface Water Quality

Station #	Type	Class	Description
PD-333	W	FW	HILLS CREEK AT S-13-105
PD-366	INT	FW	HILLS CREEK AT S-13-545
PD-113	INT	FW	LYNCHES RIVER AT SC 9 WEST OF PAGELAND
RS-06185	RS06	FW	UNNAMED TRIB TO NORTH BRANCH WILDCAT CREEK
PD-679	BIO	FW	NORTH BRANCH WILDCAT CREEKAT SR 178
PD-179	W	FW	NORTH BRANCH WILDCAT CREEK AT S-29-39 1 MI S OF TRADESVILLE
PD-180	W	FW	SOUTH BRANCH AT S-29-39 2 MI S OF TRADESVILLE
RS-08233	RS08/BIO	FW	FLAT CREEK AT S-29-99
PD-342	INT	FW	FLAT CREEK AT S-29-123
(PD-001)	W/INT/BIO	FW	LYNCHES RIVER AT SC 265

Hills Creek **-** There are two SCDHEC monitoring sites along Hills Creek. At the upstream site (***PD-333***), aquatic life uses are fully supported. 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 downstream site ***(PD-366)***, aquatic life uses are fully supported; however, there are significant increasing trends in turbidity, total phosphorus concentration, and total nitrogen concentration. A significant increasing trend in dissolved oxygen suggests improving conditions for this parameter.

Recreational uses are partially supported due to fecal coliform bacteria excursions, which are compounded by a significant increasing trend in fecal coliform bacteria concentration.

Lynches River (PD-113) - Aquatic life uses are fully supported; however, there is a significant increasing trend in total phosphorus concentration. Recreational uses are partially supported due to fecal coliform bacteria excursions. In addition, there is a significant increasing trend in fecal coliform bacteria. Station ***PD-001*** is physically located in 03040202-03, but also reflects the influence from this watershed drainage. Aquatic life and recreational uses are fully supported at PD-001; however, there is a significant increasing trend in total phosphorus. There is a significant increasing trend in pH.

Tributary to North Branch Wildcat Creek (RS-06185) - Aquatic life uses are fully supported. Recreational uses are not supported due to fecal coliform bacteria excursions.

North Branch Wildcat Creek- There are two SCDHEC monitoring sites along North Branch Wildcat Creek. At the upstream site (***PD-679***), aquatic life uses are partially supported based on macroinvertebrate community data. At the downstream site (***PD-179***), aquatic life and recreational uses are fully supported.

South Branch - (PD-180) - Aquatic life uses are fully supported. There is a significant decreasing trend in pH. Recreational uses are not supported due to fecal coliform bacteria excursions.

Flat Creek - There are two SCDHEC monitoring sites along Flat Creek. At the upstream site ***(RS-08233)***, aquatic life uses are partially supported based on macroinvertebrate community data. Recreational uses are partially supported due to fecal coliform bacteria excursions. At the downstream site ***(PD-342)***, aquatic life uses are fully supported; however, there is a significant increasing trend in total phosphorus concentration. Recreational uses are fully supported at this site and a significant decreasing trend in fecal coliform suggests improving conditions for this parameter.

NPDES Program

Active NPDES Facilities

RECEIVING STREAM ***FACILITY NAME***	***NPDES#*** ***TYPE***
HILLS CREEK TOWN OF PAGELAND/NORTHWEST WWTP	SC0021504 MINOR DOMESTIC
LYNCHES RIVER TRIBUTARY HANSON AGGREGATES SE/JEFFERSON	SCG730062 MINOR INDUSTRIAL
LYNCHES RIVER TRIBUTARY BUCKHORN MATERIALS, LLC	SC0048445 MINOR INDUSTRIAL
CEDAR FALLS BRANCH TRIBUTARY BUCKHORN MATERIALS, LLC	SC0048445 MINOR INDUSTRIAL

NORTH BRANCH WILDCAT CREEK LANCASTER CO. SCHOOL DIST./BUFORD H.S.	SC0030210 MINOR DOMESTIC
CHILDERS CREEK MINERAL MINING CORP.	SCG730049 MINOR INDUSTRIAL

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

LANDFILL NAME ***FACILITY TYPE***	***PERMIT #*** ***STATUS***
MINING ROAD C&D LANDFILL CONSTRUCTION	292440-1201 INACTIVE
MINING ROAD INDUSTRIAL SW LANDFILL INDUSTRIAL	292440-1601 ACTIVE
KINLAW COMPOSTING SITE COMPOSTING	132442-3001 INACTIVE

Mining Activities

MINING COMPANY ***MINE NAME***	***PERMIT #*** ***MINERAL***
HANSON AGGREGATES SE JEFFERSON PLANT	0093-25 GRANITE
BUCKHORN MATERIALS, LLC LYNCHES RIVER QUARRY	1619-25 GRANITE

Growth Potential

There is a low to moderate potential for growth in this watershed, which includes a portion of the Town of Pageland. The northeast corner of the watershed is the edge of the Charlotte Metroplex and future growth is expected. Pageland and the area immediately outside of the town have water and sewer service. Water service has also been extended to the Lynches River Industrial Park, located along the S.C. Hwy. 151/U.S. Hwy. 601 corridor. Wal-Mart has constructed a food distribution center in the park, and spillover development from the park is expected. The remainder of the watershed is predominately rural with forested land and rangeland.

Watershed Restoration and Protection

Total Maximum Daily Loads (TMDLs)

A TMDL was developed by SCDHEC and approved by EPA for ***Hills Creek*** water quality monitoring sites ***PD-333*** and ***PD-366*** to determine the maximum amount of fecal coliform bacteria it can receive from nonpoint sources and still meet water quality standards. The most likely sources of elevated fecal coliform concentrations include leaking sewers, sanitary sewer overflows (SSOs), wildlife, animal feeding operations (AFOs), cattle with direct access to creeks, and land application of manure. The

TMDL states that a 93% reduction 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 the ***Lynches River*** water quality monitoring sites ***PD-113*** and ***PD-001*** to determine the maximum amount of fecal coliform bacteria they can receive from nonpoint sources and still meet water quality standards. The primary sources of fecal coliform appear to be cattle with direct access to streams, pets, wildlife, AFO land application areas, and failing OSWD systems. The TMDL states that an 81% reduction 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 ***North Branch Wildcat Creek*** water quality monitoring sites ***PD-179*** and ***RS-06185*** to determine the maximum amount of fecal coliform bacteria they can receive and still meet water quality standards. Sources of fecal coliform are primarily nonpoint sources such as cattle, pets, wildlife, and AFO land application areas, with failing OSWD systems expected to be negligible. While only 1 percent of the watershed for PD-179 is urbanized land use, the town of Tradesville is very close to the WQM station. As a result, urban runoff from Tradesville may be contributing to fecal coliform exceedances. The TMDL states that an 85% reduction 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 ***South Branch*** water quality monitoring site ***PD-180*** to determine the maximum amount of fecal coliform bacteria it can receive and still meet water quality standards. The absence of point source discharges within the watershed indicates that nonpoint sources of fecal coliform appear to originate from turkeys and poultry as well as wildlife, while cattle, pets, land application of manure, and failing OSWD systems appear to be negligible. The TMDL states that a 51% reduction 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 ***Flat Creek*** water quality monitoring sites ***PD-342*** and ***RS-08233*** to determine the maximum amount of fecal coliform bacteria they can receive and still meet water quality standards. The absence of point sources indicates that nonpoint sources of fecal coliform that include turkey AFOs, land application of manure, and wildlife, with negligible contributions from cattle, pets, and failing OSWD systems. Fecal coliform concentrations in this watershed do not appear related to precipitation, which is substantiated by the designated hydrologic critical condition of "dry." The TMDL states that a 57% reduction in fecal coliform loading is necessary for the stream to meet the water quality standard.

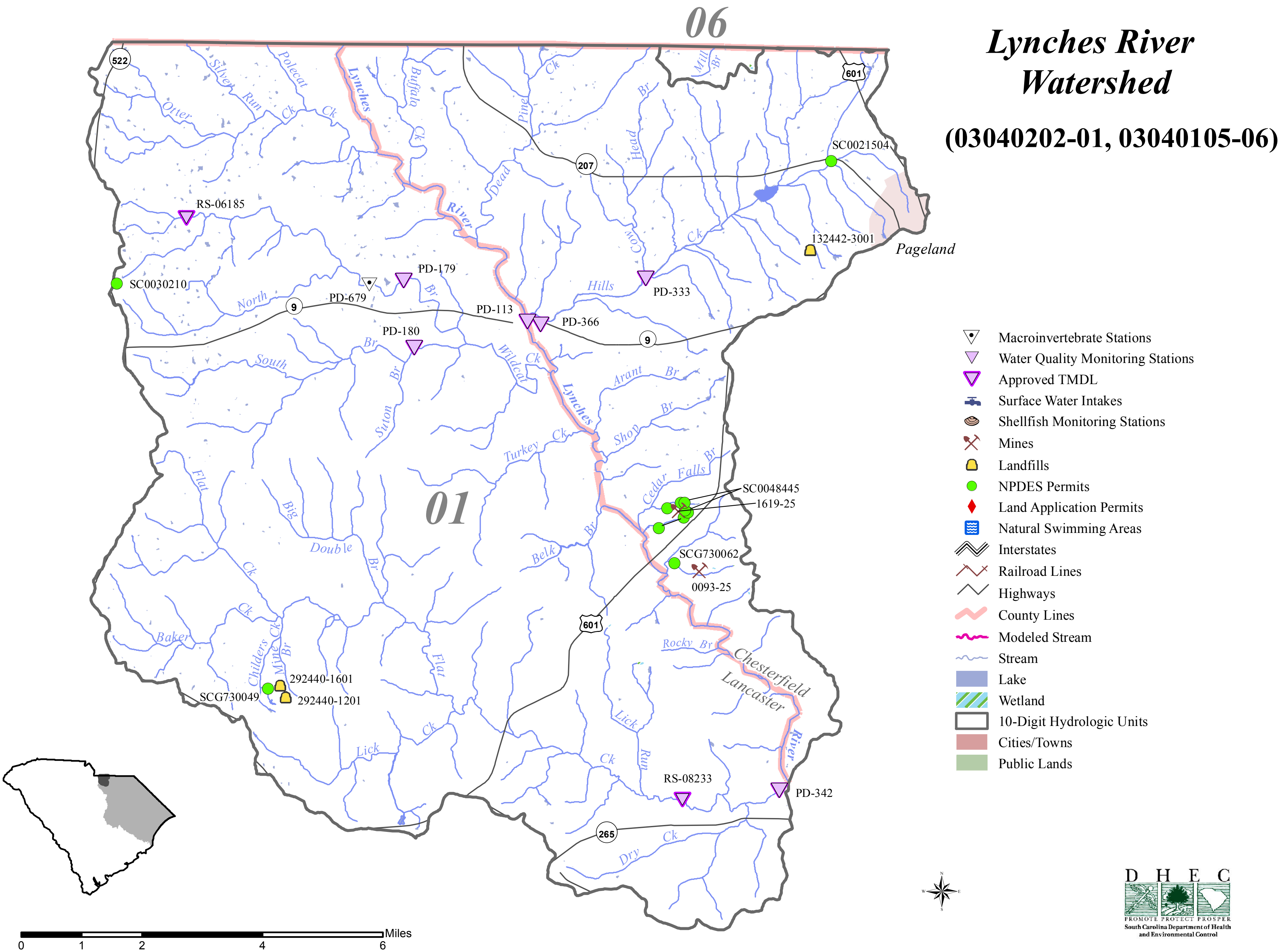
Special Projects

Hill Creek Watershed Water Quality Improvement Project

In 2008, the Pee Dee Resource Conservation and Development Council was awarded a 319 Grant to improve impaired waters in the Hills Creek Watershed. The grant was implemented by the Chesterfield Soil and Water Conservation District and the Natural Resources Conservation Service. Funds were utilized to assist homeowners with repairs to faulty septic systems. Livestock producers were assisted with funds for a variety of practices including: excluding cattle from streams and ponds by using fencing; providing alternative watering sources; and managing manure storage areas to reduce runoff. The project was completed in 2012.

Lynches River Watershed

(03040202-01, 03040105-06)



03040202-02

(Little Lynches River)

General Description

Watershed 03040202-02 is located in Lancaster and Kershaw Counties and consists primarily of the ***Little Lynches River*** and its tributaries. The watershed occupies 126,933 acres of the Piedmont and Sand Hills regions of South Carolina. Land use/land cover in the watershed includes: 56.4% forested land, 28.7% agricultural land, 8.6% forested wetland, 5.3% urban land, 0.5% nonforested wetland, 0.3% water, and 0.2% barren land.

Baskins Creek (Lyles Branch, Falls Branch, Bend Creek) is joined by Blackmon Branch to form the headwaters of the Little Lynches River. The Little Lynches River accepts drainage from Horton Creek (Little Lynches Creek, Sunrise Lake, Beckham Branch, Mobley Branch), Mill Creek, Camp Branch, Todds Branch, Haile Gold Mine Creek (Ledbetter Reservoir), and Neds Creek. Hanging Rock Creek (Lick Creek) flows past the City of Kershaw to join the Little Lynches River downstream of Neds Creek, followed by Gates Ford Branch, Shirley Creek, Cow Branch, Gully Branch, Mills Creek (Bakers Millpond), Beaverdam Creek, and Bell Branch. The Little Lynches River Watershed flows into the Lynches River. There are a total of 257.5 stream miles and 171.9 acres of lake waters in this watershed, all classified FW.

Surface Water Quality

Station #	Type	Class	Description
PD-640	BIO	FW	LITTLE LYNCHES RIVER AT S-29-88
PD-335	W	FW	HORTON CREEK AT S-29-95
PD-005	W	FW	TODDS BRANCH AT S-29-564 1.5 MI NE OF KERSHAW
PD-006	W	FW	LITTLE LYNCHES RIVER AT US 601 2 MI E KERSHAW
PD-632	BIO	FW	LITTLE LYNCHES RIVER AT SC 157
PD-109	W	FW	LITTLE LYNCHES RIVER AT SC 341, 4 MI SE OF KERSHAW
PD-329	W	FW	LICK CREEK AT S-29-13 ABOVE KERSHAW PLANT
PD-328	W	FW	HANGING ROCK CREEK OFF S-29-84 1.6 MI S OF KERSHAW
PD-669	BIO	FW	HANGING ROCK CREEK AT SR 770
PD-704	BIO	FW	COW BRANCH AT SPEARS ROAD
PD-343	INT	FW	LITTLE LYNCHES RIVER AT S-28-42
PD-678	BIO	FW	BEAVERDAM CREEK AT SR 59
PD-344/RS-07193	INT	FW	LITTLE LYNCHES RIVER AT SC 341, 3.5 MI SE OF BETHUNE

Little Lynches River - There are six SCDHEC monitoring sites along the Little Lynches River. This is a blackwater system, characterized by naturally low pH conditions. At the furthest upstream site ***(PD-640)***, aquatic life uses are partially supported based on macroinvertebrate community data. At the next site downstream ***(PD-006)***, aquatic life uses are fully supported. There is a significant decreasing trend in pH. Recreational uses are not supported at this site due to fecal coliform bacteria excursions. Further downstream ***(PD-632)***, aquatic life uses are partially supported based on macroinvertebrate community data.

Although pH excursions occurred at the lower 3 stations, they were typical of values seen in blackwater systems and were considered natural, not standards violations. At the next site downstream

(PD-109), aquatic life uses are fully supported. A significant increasing trend in dissolved oxygen concentration suggests improving conditions for this parameter. There is a significant decreasing trend in pH. Recreational uses are fully supported at this site. Further downstream ***(PD-343),*** aquatic life uses are fully supported; however, there are significant increasing trends in five-day biochemical oxygen demand, turbidity, and total phosphorus concentration. There is a significant decreasing trend in pH. A significant increasing trend in dissolved oxygen concentration suggests improving conditions for this parameter. Recreational uses are fully supported; however, there is a significant increasing trend in fecal coliform bacteria concentration. At the furthest downstream site ***(PD-344)***, aquatic life uses are fully supported; however, there are significant increasing trends in five-day biochemical oxygen demand, turbidity, and total phosphorus concentration. There is a significant decreasing trend in pH. A significant increasing trend in dissolved oxygen concentration suggests improving conditions for this parameter. Recreational uses are fully supported at this site; however, there is a significant increasing trend in fecal coliform bacteria concentration.

Horton Creek (PD-335) – Aquatic life uses are fully supported. Recreational uses are partially supported due to fecal coliform bacteria excursions. This is compounded by a significant increasing trend in fecal coliform bacteria.

Todds Branch (PD-005) – Aquatic life and recreational uses are fully supported.

Lick Creek (PD-329) - Aquatic life uses are fully supported. Recreational uses are not supported due to fecal coliform bacteria excursions.

Hanging Rock Creek – There are two SCDHEC monitoring sites along Hanging Rock Creek. At the upstream site ***(PD-328),*** aquatic life uses are fully supported. Recreational uses are partially supported due to fecal coliform bacteria excursions. In addition, there is a significant increasing trend in fecal coliform bacteria. At the downstream site ***(PD-669)***, aquatic life uses are partially supported based on macroinvertebrate community data.

Cow Branch (PD-704) - Aquatic life uses are fully supported based on macroinvertebrate community data.

Beaverdam Creek (PD-678) - Aquatic life uses are fully supported based on macroinvertebrate community data.

NPDES Program

Active NPDES Facilities

RECEIVING STREAM	***NPDES#***
FACILITY NAME	***TYPE***
BECKHAM BRANCH	SC0040118
TOWN OF HEATH SPRINGS/WWTF	MINOR DOMESTIC
HAILE GOLD MINE CREEK	SC0040479
HAILE MINING CO., INC.	MINOR INDUSTRIAL
HANGING ROCK CREEK	SC0025798
TOWN OF KERSHAW WWTP	MINOR DOMESTIC
COW BRANCH TRIBUTARY	SCG731286
C RAY MILES CONSTR. /SCDOT BORROW PIT MINE	MINOR INDUSTRIAL
LITTLE LYNCHES RIVER	SCG731302
C RAY MILES CONSTR. /SCDOT PIT 2	MINOR INDUSTRIAL

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

LANDFILL NAME	***PERMIT #***
FACILITY TYPE	***STATUS***
BETHUNE DUMP	---------
MUNICIPAL	CLOSED
TOWN OF HEATH SPRINGS COMPOSTING FACILITY	291002-3001
COMPOSTING	ACTIVE
TOWN OF HEATH SPRINGS C&D LANDFILL	291002-1701
C&D	ACTIVE

Mining Activities

MINING COMPANY	***PERMIT #***
MINE NAME	***MINERAL***
HAILE MINING CO., INC.	0601-57
HAILE MINE	GOLD ORE

Growth Potential

There is a moderate to high potential for growth in this watershed, which contains the Towns of Kershaw and Heath Springs, and a portion of the Town of Bethune due to the reactivation of the existing Haile Gold Mine. The reactivation includes the investment of $353 million to develop the mine and create 270 new jobs. Development of the mine includes the extraction of gold resources, the expansion of the area for open pit mining, and the construction of associated facilities beginning in May, 2015. The property encompasses approximately 4,553 acres and will be developed and operated over a 15-year lifespan, including pre-production and construction, twelve years of active mining, and two years of continued ore processing after mining is completed. The proposed work includes the mechanized land clearing, grubbing, temporary stockpiling, filling, and excavation that will impact approximately 120 acres of jurisdictional, freshwater wetlands and 26,461 linear feet of streams. Some locations would be reclaimed concurrently with ongoing mining. Final site reclamation would continue after the mining and processing of ore ceases, until the site is reclaimed as grasslands and lakes. Other potential growth areas include the Kershaw Business Park which is a 115 acre park served by the Town of Kershaw water and sewer infrastructure as well as by Lancaster County Natural Gas. Haile Gold Mine has recently exercised an option to purchase the entire project. The Heath Springs Industrial Park is currently 68 acres and home to Rico Industries. The Park is located along the U.S. Highway 521 corridor and is served by the Town of Heath Springs water and sewer infrastructure. A rail line connects the Town of Kershaw to the Cities of Lancaster and Camden along U.S. Hwy 521, and may provide some future growth.

Watershed Restoration and Protection

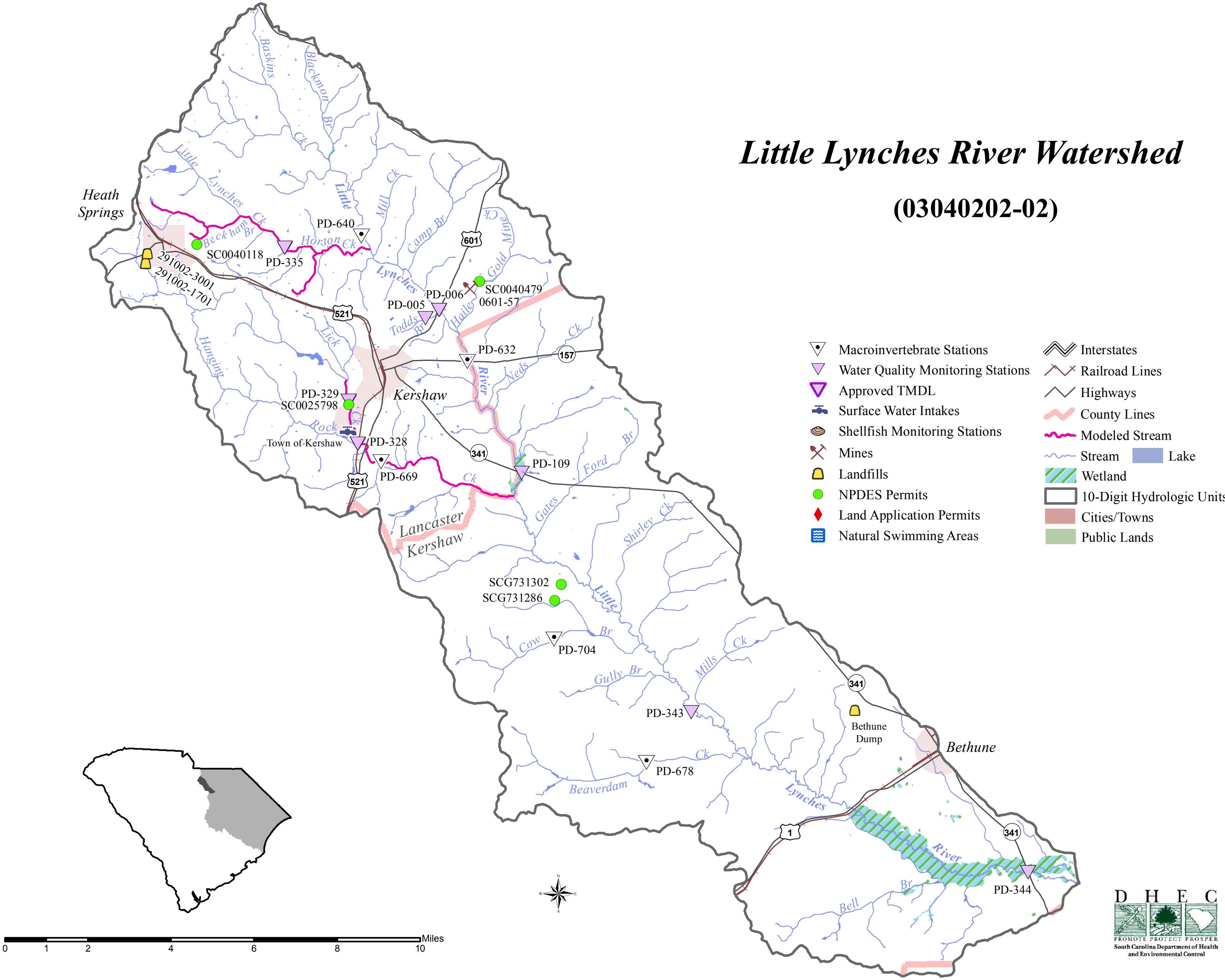
Total Maximum Daily Loads (TMDLs)

A TMDL was developed by SCDHEC and approved by the EPA for ***Hanging Rock Creek*** and ***Lick Creek*** to determine the maximum amount of fecal coliform bacteria they can receive from nonpoint sources and still meet water quality standards. Lick Creek (monitoring site ***PD-329***) is a tributary of Hanging Rock Creek ***(PD-328)***, which is a tributary of the Little Lynches River. The primary source of fecal coliform to the streams was determined to be runoff from pastureland. The TMDL states that an 84% and 67% reduction in current fecal coliform loading from pastureland to the streams, respectively, is needed to meet the recreational use standard.

Fecal coliform TMDLs were developed by SCDHEC and approved by the USEPA for water quality monitoring sites **PD-335** and **PD-006** in the ***Little Lynches River Watershed***. Probable sources of fecal contamination include direct loading of livestock, failing septic systems, surrounding wildlife, and other agricultural activities. In order to achieve the TMDL, target load (slightly below water quality standards) for this portions of the Little Lynches River, reductions in the existing loads of up to 73% will be necessary for Horton Creek at PD-335 and reductions in the existing loads of up to 86% will be necessary for the Little Lynches River at PD-006.

Little Lynches River Watershed

(03040202-02)



03040202-03

(Lynches River)

General Description

Watershed 03040202-03 is located in Lancaster, Kershaw, and Chesterfield Counties and consists primarily of the ***Lynches River*** and its tributaries from Flat Creek to the Little Lynches River. The watershed occupies 145,383 acres of the Piedmont and Sandhills regions of South Carolina. Land use/land cover in the watershed includes: 48.8% forested land, 33.8% agricultural land, 10.5% forested wetland, 5.5% urban land, 0.5% water, 0.5% barren land, and 0.4% nonforested wetland.

This section of the Lynches River accepts drainage from its upper reaches. Fork Creek accepts drainage from Canal Branch (Shady Slash Branch), Gum Branch (Dry Branch, Clark Mill Branch), Mill Branch, Meeting House Branch, Joes Branch, and Little Fork Creek (Little Fork Creek, Lake Terry, Mose Branch, Canal Branch, Brazzell Branch) before draining into the Lynches River. The river then accepts drainage from Rocky Creek (Long Branch, Little Rocky Creek, Fox Branch, Sycamore Pond), Buffalo Creek (Little Buffalo Creek, South Buffalo Creek, Raley Millpond), Big Sandy Creek (Sevenmile Branch, Oxpen Branch), and Little Sandy Creek. Further downstream, Jumping Gully (Horton Pond) enters the river followed by Swift Creek (North Prong, Rocky Prong, South Prong), Red Oak Camp Creek, Cedar Creek (McGee Branch, Park Pond, Sexton Pond), Hammond Branch (Beard Branch), and Blackwell Mill Stream. The Carolina Sandhills National Wildlife Refuge extends across Big Sandy Creek down to McGee Branch. The Sand Hills State Forest extends across the lower portion of the watershed below the wildlife refuge. There are a total of 273.8 stream miles and 446.9 acres of lake waters in this watershed, all classified FW.

Surface Water Quality

Station #	Type	Class	Description
PD-001	INT/BIO	FW	Lynches River at SC 265
PD-067	W	FW	Fork Creek at SC 151
RS-10361	RS10	FW	Little Fork Creek at S-13-151
PD-647	BIO	FW	Little Fork Creek at County rd 39
PD-215	INT	FW	Little Fork Creek at S-13-265 1.5 mi SW Jefferson
PD-068	INT	FW	Fork Creek at unnumbered road 1.5 mi SW Jefferson
PD-066	INT	FW	Lynches River at S-28-42
RS-06169	RS06	FW	Little Rocky Creek at culvert on S-13-360, 5 mi SE of Jefferson
PD-009	INT	FW	Lynches River at US 1
(PD-080)	W	FW	Lynches River at S-28-15 4.5 mi SE Bethune

Lynches River – There are three SCDHEC monitoring sites along this section of the Lynches River. At the furthest upstream site ***(PD-001)***, aquatic life and recreational uses are fully supported; however, there is a significant increasing trend in total phosphorus concentration. There is a significant increasing trend in pH. Further downstream ***(PD-066)***, aquatic life uses are fully supported; however, there are significant increasing trends in five-day biochemical oxygen demand and total phosphorus concentration. There is a significant decreasing trend in pH. Recreational uses are partially supported due to fecal coliform bacteria excursions, which are compounded by a significant increasing trend in fecal coliform bacteria at this site.

At the furthest downstream site ***(PD-009)***, aquatic life uses are fully supported; however, there are significant increasing trends in five-day biochemical oxygen demand and total phosphorus concentration. There is a significant decreasing trend in pH. Recreational uses are fully supported; however, there is a significant increasing trend in fecal coliform bacteria. ***PD-080*** is physically located downstream in 03040202-05, but reflects the influence from this watershed drainage. Aquatic life and recreational uses are fully supported at this site. There is a significant decreasing trend in pH. 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.

Fork Creek **-** There are two SCDHEC monitoring sites along Fork Creek. At the upstream site ***(PD-067)***, aquatic life uses are fully supported. There is a significant decreasing trend in pH. Recreational uses are partially supported due to fecal coliform bacteria excursions. At the downstream site ***(PD-068)***, aquatic life uses are fully supported. There is a significant decreasing trend in pH. Recreational uses are partially supported due to fecal coliform excursions; however, there is a significant decreasing trend in fecal coliform bacteria, which suggests improving conditions for this parameter.

Little Fork Creek **-** There are three SCDHEC monitoring sites along Little Fork Creek. At the upstream site ***(RS-10361)***, aquatic life 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. Recreational uses are not supported due to fecal coliform excursions. At the mid-stream station ***(PD-647)***, aquatic life uses are partially supported based on macroinvertebrate community data. At the downstream site ***(PD-215)***, aquatic life uses are fully supported. Recreational uses are partially supported at this site due to fecal coliform bacteria excursions, which are compounded by a significant increasing trend in fecal coliform bacteria concentration.

Little Rocky Creek (RS-06169) – Aquatic life and recreational uses are fully supported. Although pH excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations.

NPDES Program

Active NPDES Facilities

RECEIVING STREAM ***FACILITY NAME***	***NPDES#*** ***TYPE***
LYNCHES RIVER BETHUNE NONWOVENS INC.	SC0001341 MINOR INDUSTRIAL
BUFFALO CREEK MARTIN MARIETTA MAT., INC./BUFFALO CREEK MINE #1	SCG730982 MINOR INDUSTRIAL

MOSE BRANCH TRIBUTARY MARTIN MARIETTA MAT., INC./CHESTERFIELD QUARRY	SCG730343 MINOR INDUSTRIAL
FORK CREEK TRIBUTARY THOMAS CEMENT INC. /SIMPSON MINE	SCG731097 MINOR INDUSTRIAL
BRAZZELL BRANCH TOWN OF JEFFERSON WWTP	SC0024767 MINOR DOMESTIC

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

LANDFILL NAME ***FACILITY TYPE***	***PERMIT #*** ***STATUS***
KENDALL COMPANY INDUSTRIAL	----------- CLOSED

Mining Activities

MINING COMPANY ***MINE NAME***	***PERMIT #*** ***MINERAL***
MARTIN MARIETTA BUFFALO CREEK MINE #1	1306-55 SAND/GRAVEL
MARTIN MARIETTA MATERIALS CHESTERFIELD QUARRY	1062-25 GRANITE
THOMAS CEMENT INC. SIMPSON MINE	1905-25 SAND

Growth Potential

There is a low to moderate potential for growth in this watershed, which contains the Town of Jefferson, portions of the Towns of Bethune and McBee, and is adjacent to the Town of Pageland. S.C. Hwy 151, a major travel corridor from Charlotte to Florence and Myrtle Beach, has been widened to four lanes and a bypass completed around Jefferson. Additional commercial and industrial development is expected along this route. The Town of McBee has water service and has extended it along S.C. Hwy. 151 to the north of town. McBee also has a limited sewer system, which serves some of the industry in the area. Water service is provided for Jefferson and the area immediately surrounding it, along with a well water line running from Lake Terry to Pageland. Water service has been extended along S.C. Hwy 151 between Pageland and Jefferson, with the potential to encourage growth. The completion of this extension took place in 2007/2008. The remainder of the watershed is rural with agricultural and timberland uses.

Watershed Restoration and Protection

Total Maximum Daily Loads (TMDLs)

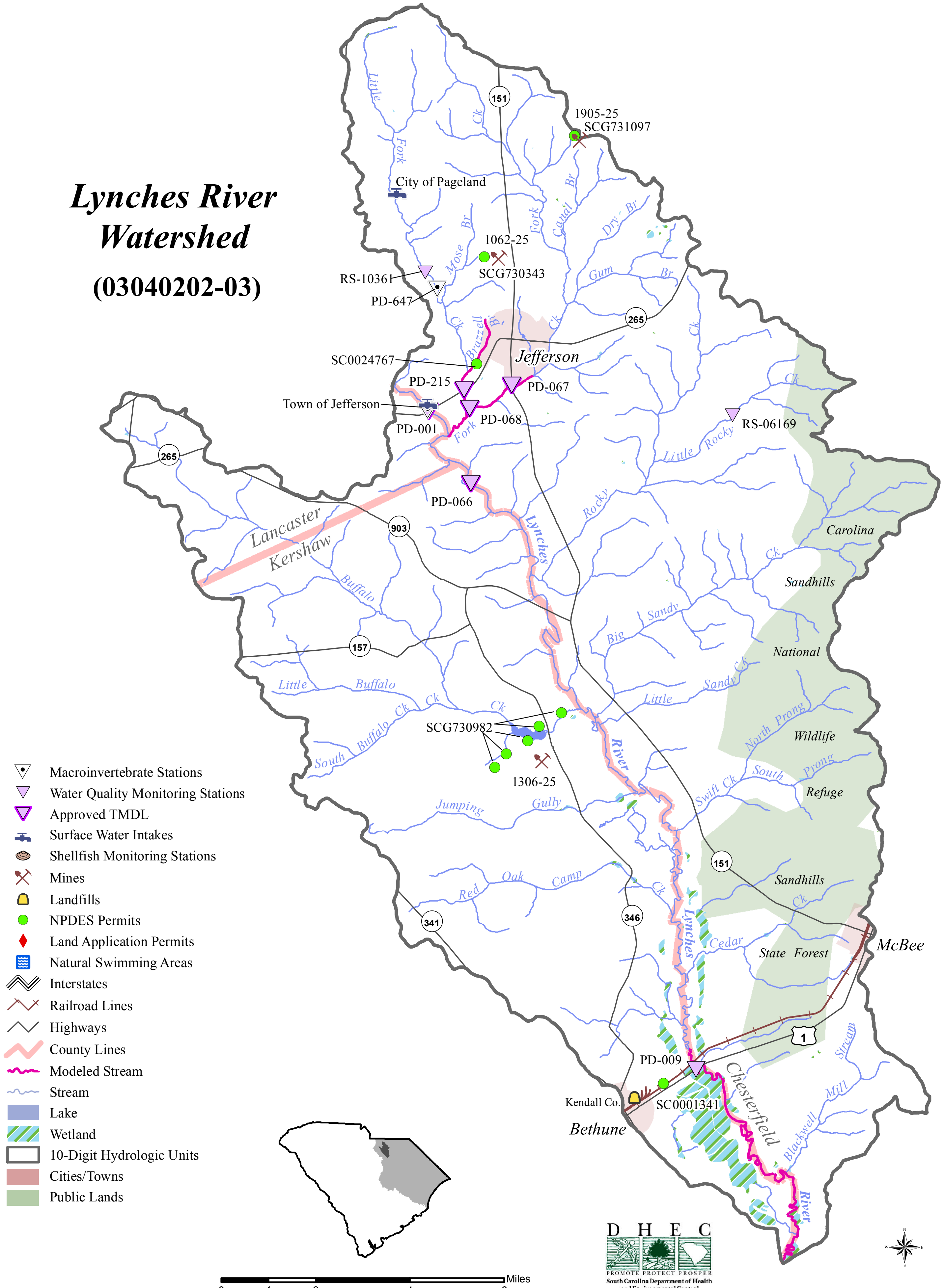
A TMDL was developed by SCDHEC and approved by the EPA for ***Fork Creek*** (monitoring sites ***PD-067, PD-068,*** and ***PD-215***) to determine the maximum amount of fecal coliform bacteria they can receive from nonpoint sources and still meet water quality standards. The nonpoint sources that have been determined to be contributors to the Fork Creek impairment include wildlife; grazing livestock and livestock defecating directly into streams; land application of poultry litter; failed, malfunctioning, and/or operational septic systems; and urban runoff from the Town of Jefferson. To achieve compliance with water quality standards, the TMDL recommends fecal coliform loads be reduced from livestock sources and runoff from poultry litter application by 45 and 20 percent at PD-067, and by 38 and 20 percent at monitoring station PD-068. The implementation of these load reduction allocation scenarios would result in an overall reduction of fecal coliform bacteria loading of 44% at PD-067 and 38% at PD-068, which are the amounts necessary for the stream to achieve compliance at the two water quality monitoring sites.

A TMDL was developed by SCDHEC and approved by EPA for the ***Lynches River*** water quality monitoring site ***PD-066*** to determine the maximum amount of fecal coliform bacteria it can receive and still meet water quality standards. Sources of fecal coliform loading could originate from nonpoint sources such as turkeys and land application from turkey AFOs. Other nonpoint sources include wildlife, cattle, pets, and failing OSWD systems (given their low density), which represent only a minor source of loading. The close proximity of the town of Jefferson upstream of WQM station PD-066 suggests that urban runoff may be contributing to fecal coliform exceedances. The TMDL states that an 81% reduction in fecal coliform loading is necessary for the stream to meet the water quality standard.

Special Projects

Fecal Coliform Bacteria TMDL Study and Implementation for the Fork Creek Watershed

The Pee Dee Resource Conservation and Development Council (RC&D) along with the Chesterfield Soil and Water Conservation District, the Department of Natural Resources and the Town of Jefferson have developed and are implementing a fecal coliform bacteria TMDL for the Fork Creek watershed. DHEC monitoring stations PD-067 and PD-068 were impaired for fecal coliform bacteria. The RC&D and its cooperators used their local knowledge to assist a contractor with the development of a TMDL. This included an identification of potential pollution sources within the watershed. Following TMDL approval, project cooperators targeted homeowners with failing septic systems in an effort to recruit cost-share participants. Those with failing systems are assisted with repair or replacement of their system. Additionally, the cooperators visited agricultural operations throughout the watershed to identify landowners interested in installing best management practices (BMPs) on their property. These BMPs are designed to exclude animals from creeks and streams and to control animal waste effectively.


Lynches River
Watershed
(03040202-03)
Macroinvertebrate Stations
Water Quality Monitoring Stations
Approved TMDL
Surface Water Intakes
Shellfish Monitoring 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
1905-25
SCG731097
City of Pageland
1062-25
SCG730343
RS-10361
PD-647
SC0024767
PD-215
PD-067
Jefferson
Town of Jefferson
PD-068
PD-001
RS-06169
PD-066
Lancaster
Kershaw
Carolina
Sandhills
National
Wildlife
Refuge
Sandhills
State Forest
McBee
SCG730982
1306-25
PD-009
Kendall Co.
SC0001341
Bethune
Chesterfield
Lynches
River
Little Fork
Big Brazzell Ck
Mose Br
Fork Canal Br
Dry Br
Gum Br
Little Rocky Ck
Rocky
Buffalo
Little Buffalo
South Buffalo Ck
Big Sandy
Little Sandy Ck
North Prong
South Prong
Swift Ck
Jumping Gully
Red Oak Camp
Cedar Ck
Blackwell Mill Stream
151
265
903
157
341
346
1
Miles
0
1
2
4
6
D H E C
PROMOTE PROTECT PROSPER
South Carolina Department of Health and Environmental Control

03040202-04

(Sparrow Swamp)

General Description

Watershed 03040202-04 is located in Darlington, Florence, and Lee Counties and consists primarily of ***Sparrow Swamp*** and its tributaries. The watershed occupies 142,641 acres of the Upper and Lower Coastal Plain regions of South Carolina. Land use/land cover in the watershed includes: 48.2% agricultural land, 30.8% forested wetland, 12.3% forested land, 6.6% urban land, 0.3% water, and 1.8% nonforested wetland.

Sparrow Swamp originates near the City of Hartsville, and accepts drainage from Burnt Branch before flowing through Smith Pond and Marco Millpond. Gully Run flows through Bell Pond and joins Sparrow Swamp in Marco Millpond. Long Branch enters the swamp downstream, followed by Harris Branch and Screeches Branch. Boggy Gully Swamp (The Bay, Big Cypress Bay, Little Cypress Bay, Boggy Gully Bay, Bees Wax Bay) also originates near Hartsville, and flows through Harolds Millpond and Andrews Millpond before draining into Sparrow Swamp. Sparrow Swamp then accepts drainage from McCalls Branch, Newman Swamp, Boyds Pond, Long Branch, Deep Hole Swamp (Camel Branch, Bay Branch, Bay Lake, Poplar Branch), and Magnolia Branch. Lake Swamp (Dargans Bay, Jacks Branch, Horse Branch) enters the system next followed by Long Branch (Meadow Prong) at the base of the watershed. The Sparrow Swamp Watershed flows into the Lynches River. Sparrow Swamp, Newman Swamp, and Lake Swamp are classified FW* (Dissolved oxygen not less than 4 mg/l and pH between 5.0 and 8.5) and the remaining streams in the watershed are classified FW. There are a total of 346.6 stream miles and 227.1 acres of lake waters in this watershed, all classified FW.

Surface Water Quality

Station #	Type	Class	Description
RS-08067	RS08	FW	LONG BRANCH AT S-31-39
PD-229	W	FW*	NEWMAN SWAMP AT S-16-449 0.9 MI NE OF LAMAR
PD-072	W	FW*	SPARROW SWAMP AT S-16-697 2.5 MI E OF LAMAR
PD-345	INT	FW*	LAKE SWAMP AT S-21-38
PD-332	INT	FW*	SPARROW SWAMP AT S-21-55 NEAR JOHNSONS CROSSROADS

Long Branch (RS-08067) – Aquatic life and recreational uses are fully supported. Although pH and dissolved oxygen excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations.

Newman Swamp (PD-229) – Aquatic life uses are not supported due to dissolved oxygen excursions; however, a significant increasing trend in dissolved oxygen concentration suggests improving conditions for this parameter. There is a significant increasing trend in pH. Recreational uses are fully supported.

Sparrow Swamp – There are two SCDHEC monitoring sites along Sparrow Swamp. This is a blackwater system, characterized by naturally low dissolved oxygen conditions. Although dissolved oxygen excursions occurred at both sites, they were typical of values seen in blackwater systems and were considered natural, not standards violations. At the upstream site ***(PD-072)***, aquatic life uses are fully supported and a significant increasing trend in dissolved oxygen concentration suggests improving conditions for this parameter. Recreational uses are not supported at this site due to fecal coliform bacteria excursions, which are compounded by significant increasing trends in fecal coliform bacteria. At the downstream site ***(PD-332)***, aquatic life uses are fully supported; however, there is a significant decreasing trend in dissolved oxygen concentration. A significant decreasing trend in turbidity suggests improving conditions for this parameter. Recreational uses are partially supported at this site due to fecal coliform bacteria excursions, which are compounded by significant increasing trends in fecal coliform bacteria.

***Lake Swamp (PD-345)* –** This is a blackwater system, characterized by naturally low dissolved oxygen concentration conditions. Although dissolved oxygen excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations. Aquatic life uses are fully supported; however, there is a significant increasing trend in turbidity. There is a significant increasing trend in pH. Recreational uses are partially supported due to fecal coliform bacteria excursions.

NPDES Program

Active NPDES Facilities

RECEIVING STREAM ***FACILITY NAME***	***NPDES#*** ***TYPE***
SPARROW SWAMP TOWN OF TIMMONSVILLE WWTP	SC0025356 MAJOR DOMESTIC
LAKE SWAMP PALMETTO CORPORATION/HUGGINS MINE	SCG731278 MINOR INDUSTRIAL
LAKE SWAMP PALMETTO CORPORATION/KIRBY MINE	SCG731279 MINOR INDUSTRIAL

Municipal Separate Storm Sewer Systems (MS4)

RECEIVING STREAM ***MUNICIPALITY*** ***RESPONSIBLE PARTY*** ***IMPLEMENTING PARTY***	***NPDES#*** ***MS4 PHASE*** ***MS4 SIZE***
SPARROW SWAMP UNINCORPORATED AREAS FLORENCE COUNTY FLORENCE COUNTY	SCR034102 PHASE II SMALL MS4
SPARROW SWAMP TOWN OF TIMMONSVILLE TOWN OF TIMMONSVILLE	SCR0------- PHASE II SMALL MS4

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

LANDFILL NAME	***PERMIT #***
FACILITY TYPE	***STATUS***
LEE COUNTY COMPOSTING FACILITY	312640-3001
COMPOSTING	ACTIVE
LEE COUNTY C&D LANDFILL	312640-2001
C&D	ACTIVE

Mining Activities

MINING COMPANY	***PERMIT #***
MINE NAME	***MINERAL***
WILLIS CONSTRUCTION INC.	1912-41
HUGGINS MINE	SAND; TOP SOIL

Groundwater Quantity

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

Growth Potential

There is a moderate potential for growth in this watershed, which contains the Towns of Lydia and Lamar, and a portion of the Town of Timmonsville. U.S. Hwy. 76 and a rail line cross the watershed at Timmonsville connecting the Cities of Sumter and Florence, and U.S. Hwy. 401 crosses the watershed at the Town of Lamar. Water and sewer services are provided for Timmonsville and Lamar and the immediate surrounding area. Improved water and sewer systems in these areas hold the potential for future industrial growth in the area. Interstates I-20 and I-95 cross the watershed, and an expansion of the Timmonsville Water and Sewer System along S.C. 403 to I-95 will encourage growth. The expansion of the Honda plant at the I-95/CR21-83 should spur future growth. The widening of U.S. Hwy. 76 east of Timmonsville to I-95 is presently taking place and should bring about commercial growth.

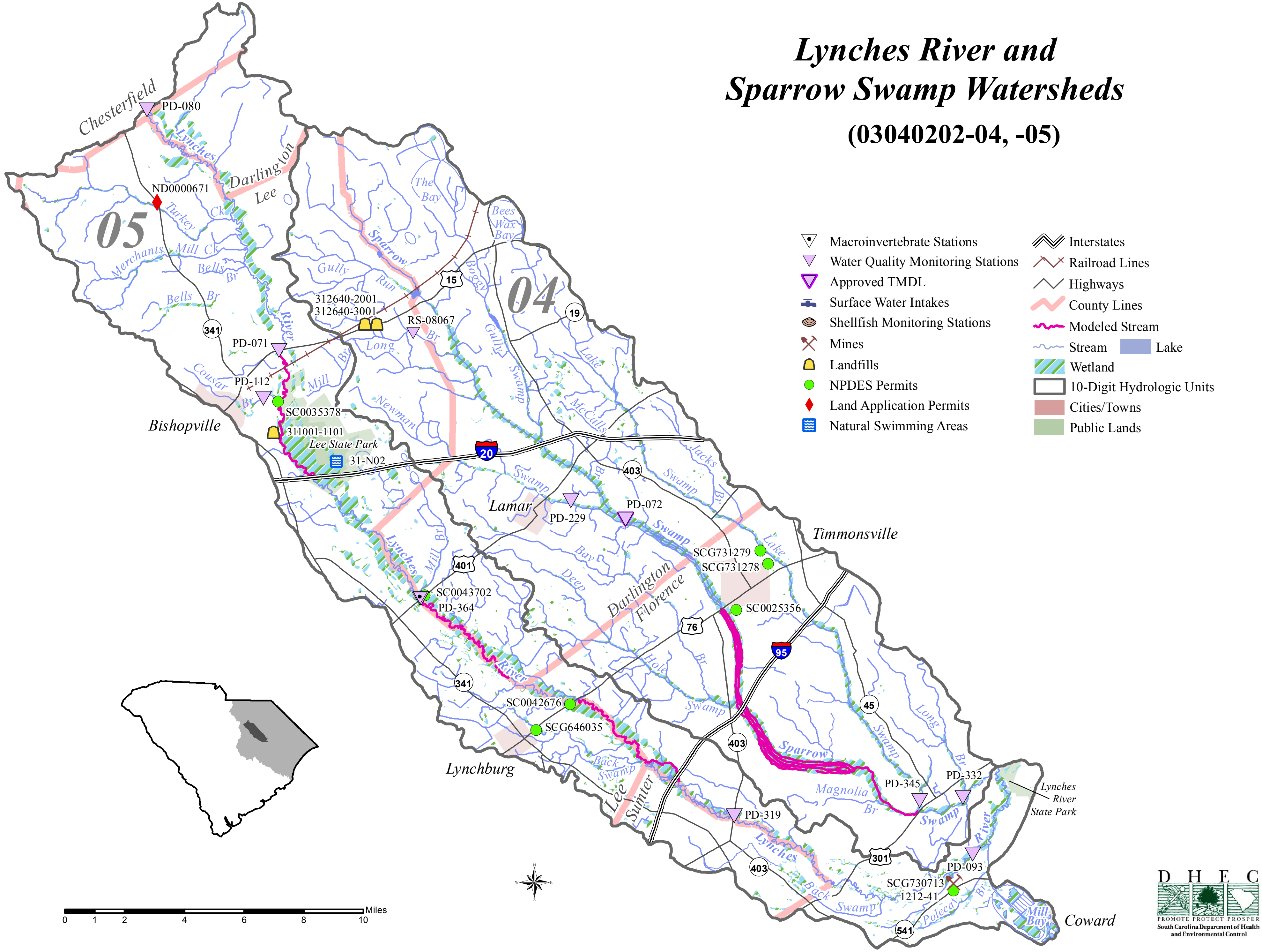
Watershed Restoration and Protection

Total Maximum Daily Loads (TMDLs)

A fecal coliform TMDL was developed by SCDHEC and approved by the USEPA for water quality monitoring site PD-072 on ***Sparrow Swamp***. Probable sources of fecal contamination include direct loading of livestock, failing septic systems, surrounding wildlife, and other agricultural activities. In order to achieve the target load (slightly below water quality standards) for Sparrow Swamp, reductions in the existing loads of up to 19% will be necessary at station PD- 072.

Lynches River and Sparrow Swamp Watersheds

(03040202-04, -05)



03040202-05

(Lynches River)

General Description

Watershed 03040202-05 is located in Chesterfield, and Kershaw, Darlington, Lee, Florence, and Sumter Counties consists primarily of the ***Lynches River*** and its tributaries from the Little Lynches River to Sparrow Swamp. The watershed occupies 126,915 acres of the Sandhills and the Upper and Lower Coastal Plain regions of South Carolina. Land use/land cover in the watershed includes: 36.2% agricultural land, 33.6% forested wetland, 24.0% forested land, 4.7% urban land, 1.2% nonforested wetland, and 0.3% water.

This portion of the Lynches River accepts drainage from its upper reaches, together with Turkey Creek, Merchants Mill Creek, and Bells Branch. The river then accepts drainage from Cousar Branch near the City of Bishopville and Lee State Park followed by Mill Branch, another Mill Branch, Rose Branch, and Back Swamp. Further downstream, Back Swamp drains into the river followed by Polecat Branch (Mill Bay). The Lynches River County Park is located near the confluence of the Lynches River and Sparrow Swamp. The portion of the river from the park upstream to U.S. 15 crossing is designated as a scenic river. There are a total of 246.5 stream miles and 159.3 acres of lake waters in this watershed, all classified FW.

Surface Water Quality

Station #	Type	Class	Description
PD-080	W	FW	LYNCHES RIVER AT S-28-15 4.5 MI SE BETHUNE
PD-071	W	FW	LYNCHES RIVER AT US 15/SC 34
PD-112	W	FW	COUSAR BRANCH 1/4 MI BELOW BISHOPVILLE FINISHING CO.
PD-364	SPRP/BIO	FW	LYNCHES RIVER AT US 401
PD-319	W	FW	LYNCHES RIVER AT SC 403
PD-093	INT	FW	LYNCHES RIVER AT S-21-55

Lynches River* -** There are five SCDHEC monitoring sites along this section of the Lynches River. This is a blackwater system, characterized by naturally low pH and dissolved oxygen conditions. Although pH excursions occurred at the two upstream sites, they were typical of values seen in blackwater systems and were considered natural, not standards violations. At the furthest upstream site ***(PD-080,) aquatic life and recreational uses are fully supported. There is a significant decreasing trend in pH. Further downstream ***(PD-071)***, 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. Recreational uses are fully supported; however, there is a significant increasing trend in fecal coliform bacteria.

Although pH and dissolved oxygen excursions occurred at the next two sites, they were typical of values seen in blackwater systems and were considered natural, not standards violations. Aquatic life uses were fully supported at station ***PD-364*** based on macroinvertebrate community data; however, there are significant decreasing trends in dissolved oxygen concentration and increasing trends in five-day biochemical oxygen demand and total phosphorus concentration. Recreational uses are partially supported and there is a significant increasing trend in fecal coliform bacteria. At the next site downstream ***(PD-319)***, aquatic life and recreational uses are fully supported; however, there is a significant increasing trend in five-day biochemical oxygen demand. At the furthest downstream site ***(PD-093)***, 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, total nitrogen concentration, and total phosphorus concentration. Although dissolved oxygen excursions occurred at this site, they were typical of values seen in blackwater systems and were considered natural, not standards violations. Recreational uses are fully supported; however, there is a significant increasing trend in fecal coliform bacteria.

Cousar Branch (PD-112) - Aquatic life uses are fully supported; however, there are significant decreasing trends in dissolved oxygen concentration and increasing trends turbidity. There is a significant decreasing trend in pH. Although pH and dissolved oxygen excursions occurred at this site, they were typical of values seen in blackwater systems and were considered natural, not standards violations. Recreational uses are not supported due to fecal coliform bacteria excursions.

A fish consumption advisory has been issued by the Department for mercury and includes the ***Lynches River*** *within this watershed (see advisory p.39).*

NPDES Program

Active NPDES Facilities

RECEIVING STREAM ***FACILITY NAME***	***NPDES#*** ***TYPE***
LYNCHES RIVER CITY OF BISHOPVILLE WWTP	SC0035378 MAJOR DOMESTIC
LYNCHES RIVER TOWN OF LYNCHBURG WWTP	SC0042676 MINOR DOMESTIC
LYNCHES RIVER TOWN OF LAMAR WWTP	SC0043702 MINOR DOMESTIC
LYNCHES RIVER TRIBUTARY SOUTHEASTERN SAND LLC/PRESTRESS MINE 2	SCG730713 MIN0R INDUSTRIAL
LYNCHES RIVER TRIBUTARY TOWN OF LYNCHBURG WTP	SCG646035 MIN0R DOMESTIC

Municipal Separate Storm Sewer Systems (MS4)

RECEIVING STREAM	***NPDES#***
MUNICIPALITY	***MS4 PHASE***
RESPONSIBLE PARTY	***MS4 SIZE***
IMPLEMENTING PARTY	
LYNCHES RIVER	SCR034102
UNINCORPORATED AREAS	PHASE II
FLORENCE COUNTY	SMALL MS4
FLORENCE COUNTY	

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

LANDFILL NAME	***PERMIT #***
FACILITY TYPE	***STATUS***
LEE COUNTY LANDFILL	311001-1101
MUNICIPAL	CLOSED

Land Application Sites

LAND APPLICATION SYSTEM	***PERMIT #***
FACILITY NAME	***TYPE***
SPRAYFIELD	ND0000671
FOUNTAINS LANDROMAT	DOMESTIC

Mining Activities

MINING COMPANY	***PERMIT #***
MINE NAME	***MINERAL***
SC PRESTRESS CORP.	1212-41
PRESTRESS MINE	SAND

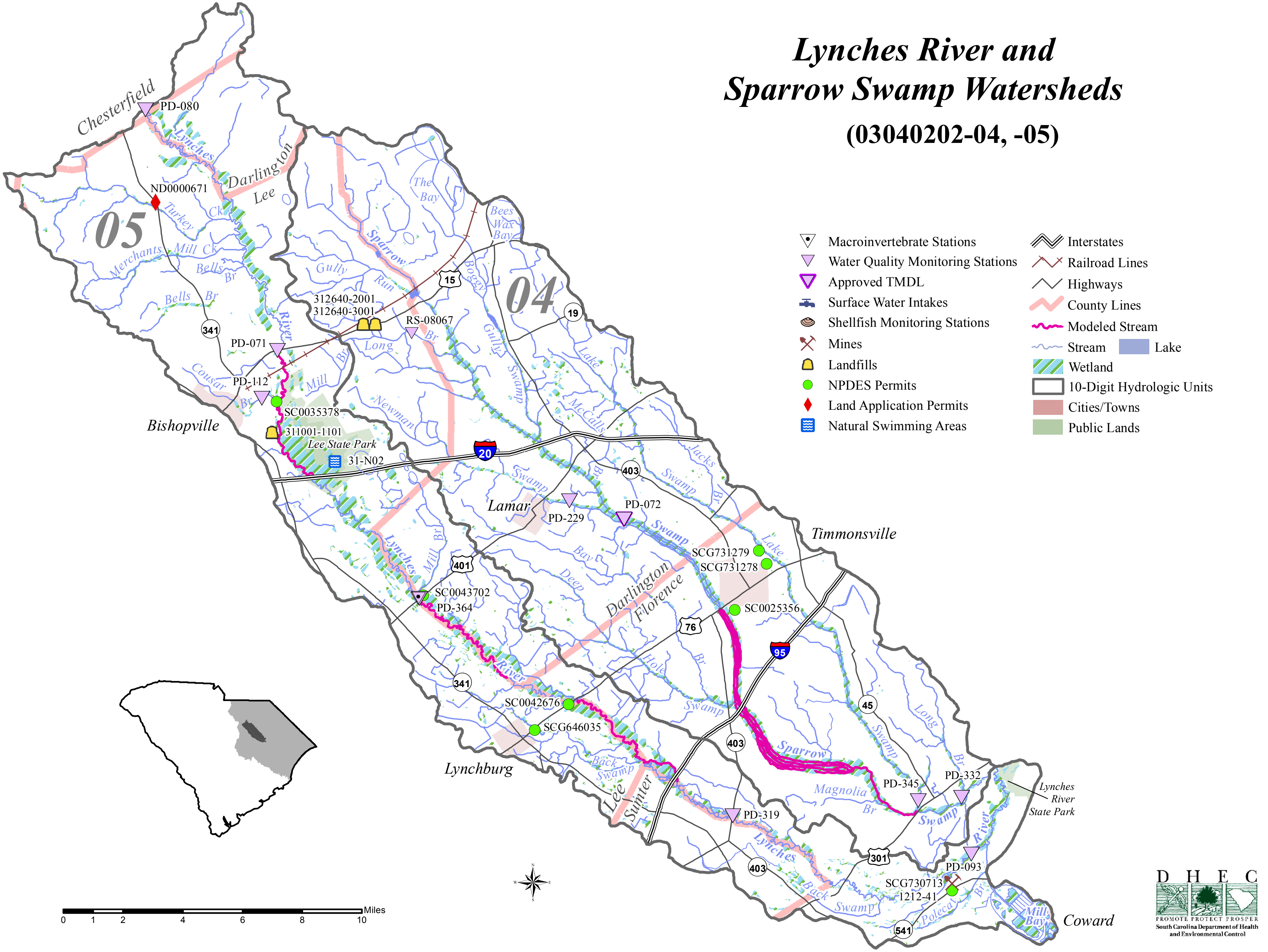
Groundwater Quantity

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

Growth Potential

There is a low to moderate potential for growth in this watershed, which contains the Town of Lynchburg and portions of the City of Bishopville and the Town of Cartersville. U.S. Hwy. 76 and a rail line cross the watershed south of Lynchburg connecting the Cities of Sumter and Florence. Interstates I-20 and I-95 also cross the watershed and some growth may be seen around the interchanges. An additional source of future growth is the Lee Correctional Institution. The Darlington County Water and Sewer Authority has extended water lines into the area east of the Lynches River to the Florence County line, which should precipitate residential growth, but no significant commercial or industrial growth. The remainder of the watershed is rural with agricultural and timberland uses.

Lynches River and Sparrow Swamp Watersheds
(03040202-04, -05)



DHEC
PROMOTE PROTECT PROSPER
South Carolina Department of Health and Environmental Control

03040202-06

(Lake Swamp)

General Description

Watershed 03040202-06 is located in Florence and Williamsburg Counties and consists primarily of ***Lake Swamp*** and its tributaries. The watershed occupies 105,112 acres of the Lower Coastal Plain region of South Carolina. Land use/land cover in the watershed includes: 33.1% agricultural land, 36.1% forested wetland, 20.5% forested land, 7.5% urban land, 2.6% nonforested wetland, 0.1% barren land, and 0.1% water.

Twomile Branch (Cypress Branch, Sandy Run Branch, Spring Run) merges with Camp Branch near the City of Lake City to form the headwaters of Lake Swamp. Smith Swamp (Spring Bay, Grahams Mill Branch, Graham Branch, Tupelo Bay) and McNamee Swamp (Rutledge Bay, Lower Rutledge Bay) join to form Singleton Swamp, which accepts drainage from Long Branch before draining into Lake Swamp. There are a total of 152.9 stream miles and 71.1 acres of lake waters in this watershed. Lake Swamp is classified FW* (Dissolved oxygen not less than 4.0 mg/l and pH between 5.0 and 8.5) and the remaining streams are classified FW.

Surface Water Quality

Station #	Type	Class	Description
PD-346	INT	FW	CAMP BRANCH AT S-21-278
PD-085	W	FW*	LAKE SWAMP AT US 378
PD-086A	INT	FW*	LAKE SWAMP ON SC 341
RS-10397	RS10	FW	LONG BRANCH AT CULVERT AT MOULDS RD
PD-314	INT	FW	SINGLETON SWAMP AT S-21-67
PD-087	INT	FW*	LAKE SWAMP AT SC 341 2.6 MI W OF JOHNSONVILLE

Camp Branch (PD-346) - Aquatic life uses are not supported due to dissolved oxygen concentration excursions. A significant decreasing trend in total phosphorus concentration suggests improving conditions for this parameter. Recreational uses are partially supporting due to fecal coliform excursions. In addition, there is a significant increasing trend in fecal coliform.

Lake Swamp – There are three SCDHEC monitoring stations along Lake Swamp. At the upstream site ***(PD-085)***, aquatic life uses are not supported due to dissolved oxygen excursions. Recreational uses are fully supported. Further downstream ***(PD-086A)***, aquatic life uses are not supported due to dissolved oxygen excursions. A significant decreasing trend in total phosphorus concentration suggests improving conditions for this parameter. Recreational uses are partially supporting due to fecal coliform excursions. In addition, there is a significant increasing trend in fecal coliform at this site. At the furthest downstream site ***(PD-087)***, aquatic life and recreational uses are fully supported; however, there is a significant decreasing trend in dissolved oxygen concentration. Although dissolved oxygen excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations. A significant decreasing trend in total phosphorus concentration suggests improving conditions for this parameter

***Long Branch (RS-10397)* -** Aquatic life uses are fully supported. Although dissolved oxygen excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations. Recreational uses are not supporting due to fecal coliform excursions.

***Singleton Swamp (PD-314)* –** Aquatic life uses are not supported due to dissolved oxygen excursions. 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.

NPDES Program

Active NPDES Facilities

RECEIVING STREAM ***FACILITY NAME***	***NPDES#*** ***TYPE***
LONG BRANCH NAN YA PLASTICS CORP. AMERICA	SCG250092 MIN0R INDUSTRIAL
TWOMILE BRANCH L&B DEVELOPERS/WOODBERRY LAKE MINE	SCG731153 MIN0R INDUSTRIAL
TWOMILE BRANCH DDC LLC/OSHAY PIT MINE	SCG731139 MIN0R INDUSTRIAL

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

LANDFILL NAME ***FACILITY TYPE***	***PERMIT #*** ***STATUS***
CITY OF LAKE CITY DUMP MUNICIPAL	----------- CLOSED
CITY OF LAKE CITY C&D LANDFILL C&D	451002-1201 ACTIVE
CITY OF LAKE CITY SANITARY LANDFILL MUNICIPAL	----------- INACTIVE
CITY OF LAKE CITY C&D LANDFILL C&D	PROPOSED ------------

Mining Activities

MINING COMPANY ***MINE NAME***	***PERMIT #*** ***MINERAL***
DDC LLC OSHAY PIT MINE	1960-41 SAND; TOP SOIL
L&B DEVELOPERS WOODBERRY LAKE MINE	1961-41 SAND; TOP SOIIL

Groundwater Quantity

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

Growth Potential

There is a low to moderate potential for growth in this watershed, which contains the Town of Scranton, and a portion of the City of Lake City and the Town of Johnsonville. Water and sewer services are limited to the urban areas of Lake City and Scranton. The sewer system in Scranton and the wastewater system in Lake City have undergone an expansion and should moderately add to the growth potential of the area. U.S. Hwy. 52, a four-lane highway, is the main corridor between the Cities of Florence and Charleston. This highway corridor contains the NanYa Industrial Complex and a surrounding multi-county industrial park, making this a prime industrial growth corridor in the region. The Florence County Industrial Park at Lake City and the expanded water and sewer capacity of the City of Lake City should also encourage industrial growth. A rail line parallels the road corridor between Lake City and Florence. U.S. Hwy. 378 is a major beach access highway. Additional commercial development is possible along U.S. Hwy. 52 and at the U.S. Hwy. 52/U.S. Hwy. 378 intersection.

Watershed Protection and Restoration Strategies

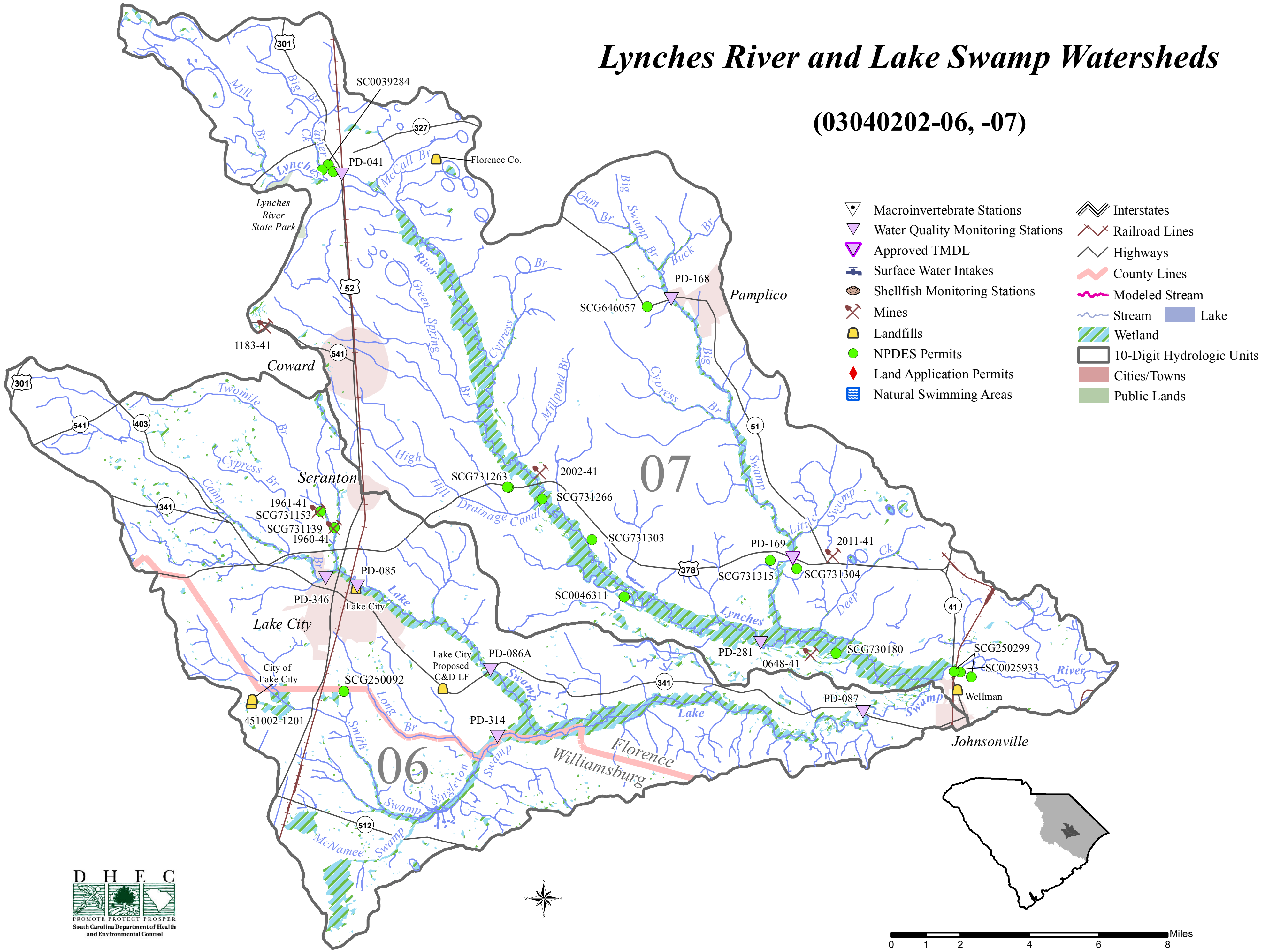
Special Projects

Fecal Coliform Bacteria TMDL Development and Implementation and Dissolved Oxygen Characterization for the Big Swamp and Singleton Swamp Watersheds

The Santee-Wateree Resource Conservation and Development Council (RC&D), along with the Williamsburg and Florence Soil and Water Conservation Districts, Williamsburg and Florence Natural Resource Conservation Services, and the Department of Natural Resources have developed and are implementing a fecal coliform bacteria TMDL for the Big Swamp and Singleton Swamp watersheds. The TMDL addresses fecal coliform excursions at SCDHEC water quality monitoring station PD-169. The RC&D and its cooperators used their local knowledge to assist a contractor with the development of a TMDL and the identification of potential pollution sources that negatively effect dissolved oxygen levels within the watershed. Following TMDL approval, project cooperators implemented a series of best management practices (BMPs) in cooperation with local homeowners. These BMPs were designed to reduce the loading of fecal coliform bacteria into the respective watersheds. Along with repairing failing septic tanks in the area, RC&D focused their attention on local ‘Hobby Farms”. These are places where a landowner may have several animals that are not utilized as income in a traditional farming or animal agriculture sense. RC&D identified cattle, horses, goats, donkeys, llamas, and even camels in the watershed. In cooperation with these landowners BMPs, including fencing, watering wells, heavy use protection areas, and filter strips were implemented to prevent these animals and their waste from accessing local streams. Through these BMPs and the upgrade of the Town of Pamplico wastewater treatment facility, SCDHEC hopes to begin seeing significant reductions of fecal coliform and increases in dissolved oxygen throughout the watersheds.

Lynches River and Lake Swamp Watersheds

(03040202-06, -07)



03040202-07

(Lynches River)

General Description

Watershed 03040202-07 is located in Florence County and consists primarily of the ***Lynches River*** and its tributaries from Sparrow Swamp to its confluence with the Pee Dee River. The watershed occupies 146,839 acres of the Lower Coastal Plain region of South Carolina. Land use/land cover in the watershed includes: 37.1% forested wetland (swamp), 29.8% agricultural land, 25.3% forested land, 4.6% urban land, 2.4% nonforested wetland (marsh), 0.7% water, and 0.1% barren land.

This segment of the Lynches River accepts drainage from its upstream reaches together with Mill Branch, Carter Creek (Big Branch), Bay Branch (Polecat Branch), McCall Branch (Taylor Branch), and Ward Mill Branch. Further downstream, Cypress Branch enters the river followed by Green Spring Branch (Cox Bay Branch, Horse Branch), Millpond Branch, High Hill Drainage Canal, and Big Swamp. Big Swamp Branch (Gum Branch) and Buck Branch join to form Big Swamp, near the Town of Pamplico, which accepts drainage from Cypress Branch and Little Swamp before draining into the Lynches River. Deep Creek and the Lake Swamp Watershed enter the river at the base of the watershed. The Lynches River County Park extends across the upper portion of the watershed. The portion of the river below the park to the Great Pee Dee River is a proposed scenic river corridor. There are a total of 241.5 stream miles and 128.3 acres of lake waters in this watershed. Big Swamp is classified FW* (dissolved oxygen not less than 4.0 mg/l and pH between 5.0 and 8.5) and the remaining streams in the watershed are classified FW.

Surface Water Quality

Station #	Type	Class	Description
PD-041	W	FW	LYNCHES RIVER AT US 52 NEAR EFFINGHAM
PD-281	INT	FW	LYNCHES RIVER AT S-21-49 5 MI NW OF JOHNSONVILLE
PD-168	W	FW*	BIG SWAMP AT S-21-360 1.1 MI W OF PAMPLICO
PD-169	INT	FW*	BIG SWAMP AT US 378 & SC 51 0.9 MI W OF SALEM

Lynches River - There are two SCDHEC monitoring stations along this section of the Lynches River. At the upstream site ***(PD-041)***, aquatic life uses are partially supported due to pH excursions. In addition, there are significant decreasing trends in dissolved oxygen and increasing trends in five-day biochemical oxygen demand. Recreational uses are partially supported due to fecal coliform excursions, which are compounded by significant increasing fecal coliform bacteria concentration. At the downstream site ***(PD-281)***, aquatic life and recreational uses are fully supported. Although dissolved oxygen excursions occurred at this site, they were typical of values seen in blackwater systems and were considered natural, not standards violations. However, there are significant decreasing trends in dissolved oxygen concentration and increasing trends in five-day biochemical oxygen demand, total phosphorus concentration, and fecal coliform bacteria.

Big Swamp* -** There are two SCDHEC monitoring stations along Big Swamp. At the upstream site ***(PD-168), aquatic life and recreational uses are fully supported. At the downstream site ***(PD-169)***, aquatic life uses are not supported due to dissolved oxygen excursions. This is compounded by a significant decreasing trend in dissolved oxygen concentration. Recreational uses are partially supported at this site due to fecal coliform bacteria excursions.

A fish consumption advisory has been issued by the Department for mercury and includes the ***Lynches River*** *within this watershed (see advisory p.39).*

NPDES Program

Active NPDES Facilities

RECEIVING STREAM ***FACILITY NAME***	***NPDES#*** ***TYPE***
LYNCHES RIVER CITY OF JOHNSONVILLE/EAST PLT	SC0025933 MAJOR DOMESTIC
LYNCHES RIVER WELLMAN PLASTICS RECYCLING/JOHNSONVILLE	SCG250299 MINOR INDUSTRIAL
LYNCHES RIVER MCCALL FARMS INC.	SC0039284 MINOR INDUSTRIAL
LYNCHES RIVER CITY OF LAKE CITY/LAKE SWAMP WWTP	SC0046311 MAJOR DOMESTIC
LYNCHES RIVER SOUTHERN ASPHALT/ POSTON MINE	SCG731266 MINOR INDUSTRIAL
LYNCHES RIVER SOUTHERN ASPHALT/RIVERSIDE CEMETERY ROAD MINE	SCG731303 MINOR INDUSTRIAL
BIG SWAMP SOUTHERN ASPHALT/KEVIN POSTON MINE	SCG731304 MINOR INDUSTRIAL
BIG SWAMP SOUTHERN ASPHALT/PIT #5 MINE	SCG731315 MINOR INDUSTRIAL
BIG SWAMP TOWN OF PAMPLICO/HYMAN WELL	SCG646057 MINOR DOMESTIC
LYNCHES RIVER SOUTHERN ASPHALT – FLOYD MINE	SCG731263 MINOR INDUSTRIAL
LYNCHES RIVER CAROLINA SAND,INC./JOHNSONVILLE PLANT MINE	SCG730180 MINOR INDUSTRIAL

Municipal Separate Storm Sewer Systems (MS4)

RECEIVING STREAM	***NPDES#***
MUNICIPALITY	***MS4 PHASE***
RESPONSIBLE PARTY	***MS4 SIZE***
IMPLEMENTING PARTY	
LYNCHES RIVER	SCR034102
UNINCORPORATED AREAS	PHASE II
FLORENCE COUNTY	SMALL MS4
FLORENCE COUNTY	

Nonpoint Source Management Program

Land Disposal Activities

Landfill Activities

SOLID WASTE LANDFILL NAME	***PERMIT #***
FACILITY TYPE	***STATUS***
FLORENCE COUNTY SANITARY LANDFILL	----------
MUNICIPAL	CLOSED
WELLMAN INC. LANDFILL	-----------
INDUSTRIAL	INACTIVE

Mining Activities

MINING COMPANY	***PERMIT #***
MINE NAME	***MINERAL***
CAROLINA SAND, INC.	0648-41
JOHNSONVILLE PLANT	SAND
MCCUTCHEONS INC.	1183-41
MCCUTCHEON MINE	SAND; SAND/CLAY
A&A STRUCTURAL FILL	2002-41
A&A MINE	SAND/CLAY; TOPSOIL
WEAVER CONTRACTING LLC	2011-41
WEAVER EAST SALEM ROAD MINE	SAND; TOPSOIL

Groundwater Quantity

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

Growth Potential

There is a low potential for growth in this watershed, which contains the Towns of Coward and Pamplico, and portions of the Towns of Scranton and Salem. Water and sewer service are available in Pamplico and Scranton, and water service is available in Coward. The watershed is bisected by U.S. Hwy. 52 and a rail line running north/south and by U.S. Hwy. 378 running east/west. U.S. Hwy. 52 is a major highway route from the City of Florence to the City of Charleston. Portions not already widened to four lanes are expected to be within 10-15 years, which could encourage industrial growth. The remainder of the watershed is rural with agricultural uses.

Watershed Restoration and Protection

Total Maximum Daily Loads (TMDLs)

A TMDL was developed by SCDHEC and approved by the EPA for ***Big Swamp*** (monitoring site ***PD-169)*** to determine the maximum amount of fecal coliform bacteria it can receive from nonpoint sources and still meet water quality standards. The sources of fecal coliform were determined to be wildlife, grazing livestock, malfunctioning septic systems, and the Town of Pamplico Waste Water Treatment Plant (WWTP). The Town of Pamplico is in the process of upgrading the treatment system and transferring all discharge to the adjacent Pee Dee River; therefore the TMDL focuses predominantly on nonpoint sources of fecal coliform. To achieve compliance with water quality standards, the TMDL recommends fecal coliform loads be reduced by approximately 67.6% from livestock sources, 84.2% from the WWTP during the interim discharge period, and 100% from failing septic systems.

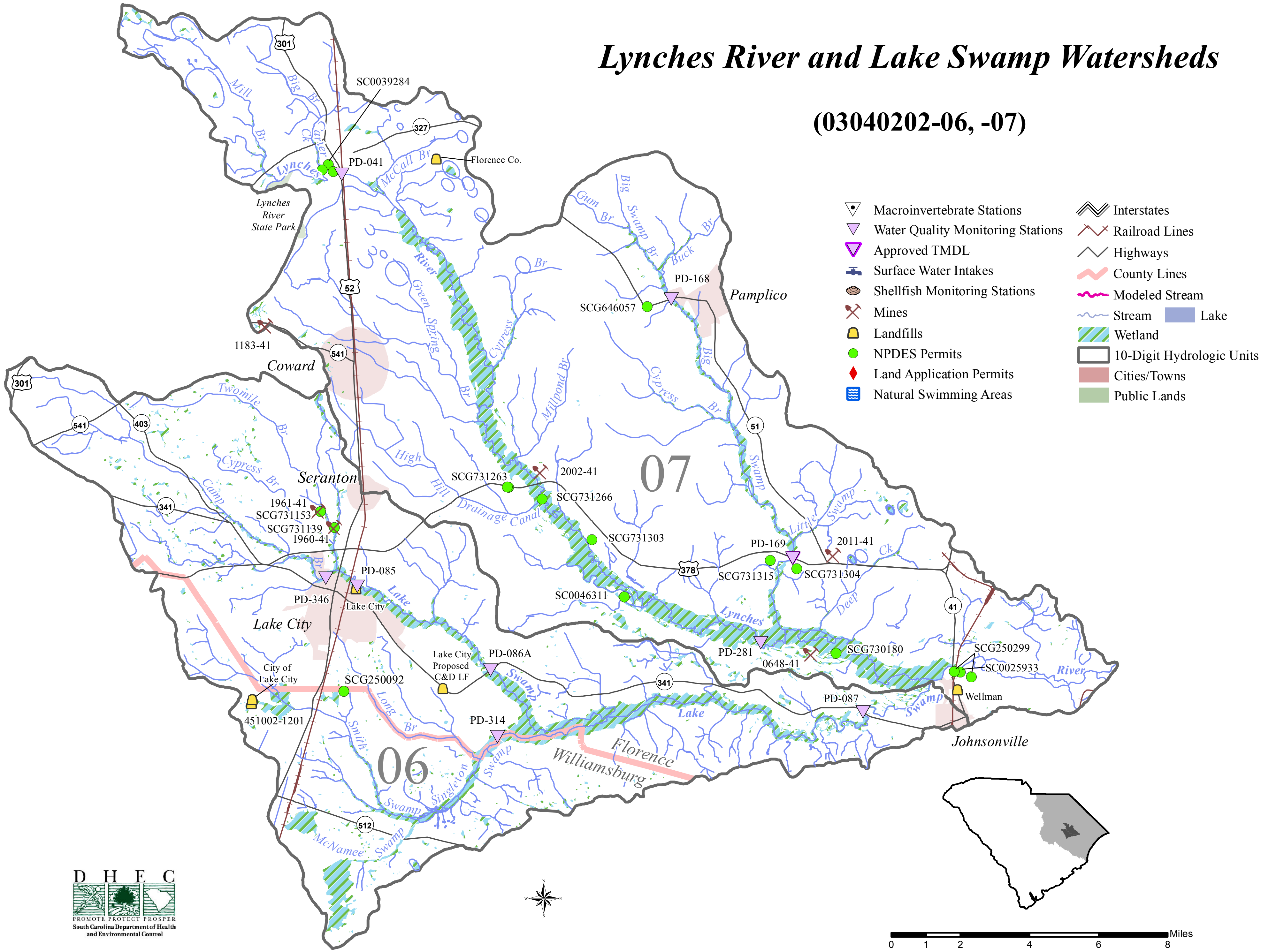
Special Projects

Fecal Coliform Bacteria TMDL Development and Implementation and Dissolved Oxygen Characterization for the Big Swamp and Singleton Swamp Watersheds

The Santee-Wateree Resource Conservation and Development Council (RC&D), along with the Williamsburg and Florence Soil and Water Conservation Districts, Williamsburg and Florence Natural Resource Conservation Services, and the Department of Natural Resources have developed and are implementing a fecal coliform bacteria TMDL for the Big Swamp and Singleton Swamp watersheds. The TMDL addresses fecal coliform excursions at SCDHEC water quality monitoring station PD-169. The RC&D and its cooperators used their local knowledge to assist a contractor with the development of a TMDL and the identification of potential pollution sources that negatively effect dissolved oxygen levels within the watershed. Following TMDL approval, project cooperators implemented a series of best management practices (BMPs) in cooperation with local homeowners. These BMPs were designed to reduce the loading of fecal coliform bacteria into the respective watersheds. Along with repairing failing septic tanks in the area, RC&D focused their attention on local ‘Hobby Farms”. These are places where a landowner may have several animals that are not utilized as income in a traditional farming or animal agriculture sense. RC&D identified cattle, horses, goats, donkeys, llamas, and even camels in the watershed. In cooperation with these landowners BMPs, including fencing, watering wells, heavy use protection areas, and filter strips were implemented to prevent these animals and their waste from accessing local streams. Through these BMPs and the upgrade of the Town of Pamplico wastewater treatment facility, SCDHEC hopes to begin seeing significant reductions of fecal coliform and increases in dissolved oxygen throughout the watersheds.

Lynches River and Lake Swamp Watersheds

(03040202-06, -07)



Black River Basin Description

The ***Black River Basin (hydrologic unit 03040205)*** is located in Kershaw, Lee, Sumter, Clarendon, Florence, Williamsburg, and Georgetown Counties, and encompasses 2,061 square miles with geographic regions extending from the Sandhills to the Upper and Lower Coastal Plains and into the Coastal Zone. The Black River Basin encompasses 18 watersheds, some 1.3 million acres of which 31.4% is forested wetland, 29.6% is forested land, 29.6% is agricultural land, 6.6% is urban land, 2.2% is nonforested wetland, 0.1% is barren land, and 0.5% is water. The urban land percentage is comprised chiefly of the City of Sumter. There are approximately 2,143 stream miles, 2,332 acres of lake waters, and 763 acres of estuarine areas in the Black River Basin. The Black River originates near the City of Bishopville and accepts drainage from Rocky Bluff Swamp, the Pocotaligo River, Pudding Swamp, Kingstree Swamp Canal, and Black Mingo Creek before merging with the Great Pee Dee 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 regions that define the Black River Basin are as follows:

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 U.S. Geological Survey's National Land Cover Data (NLCD), 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 areas).

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

Soil Types

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

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

Bonneau soils are deep, moderately well drained soils with loamy subsoil on ridges.

Emporia soils are well drained, gently sloping soils with surface and subsoils of loamy fine sand.

Foreston soils are moderately well drained soils that formed in loamy marine sediments in upland areas of the Coastal Plain, and on high ridges and slight rises within broad flats.

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.

Hobcaw soils are nearly level, very poorly drained soils in depressions.

Johnston soils are nearly level, moderately well drained to very poorly drained soils, loamy throughout with a sandy surface layer on floodplains.

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

Levy soils are nearly level, very poorly drained soils, mucky throughout or loamy and underlain with clayey layers, rarely or frequently flooded with fresh water.

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

Noboco soils are well drained, sandy soils with a loamy or clayey subsoil.

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.

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

Pelion soils are well drained and moderately well drained soils that have a sandy surface layer and a loamy subsoil, many with a fragipan in the subsoil.

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

Wagram soils are well drained to very poorly drained, depressional to nearly level and gently sloping soils with a loamy to sandy surface layer and a clayey to loamy subsoil.

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

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

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

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 Black River Basin is from 0.10 to 0.20.

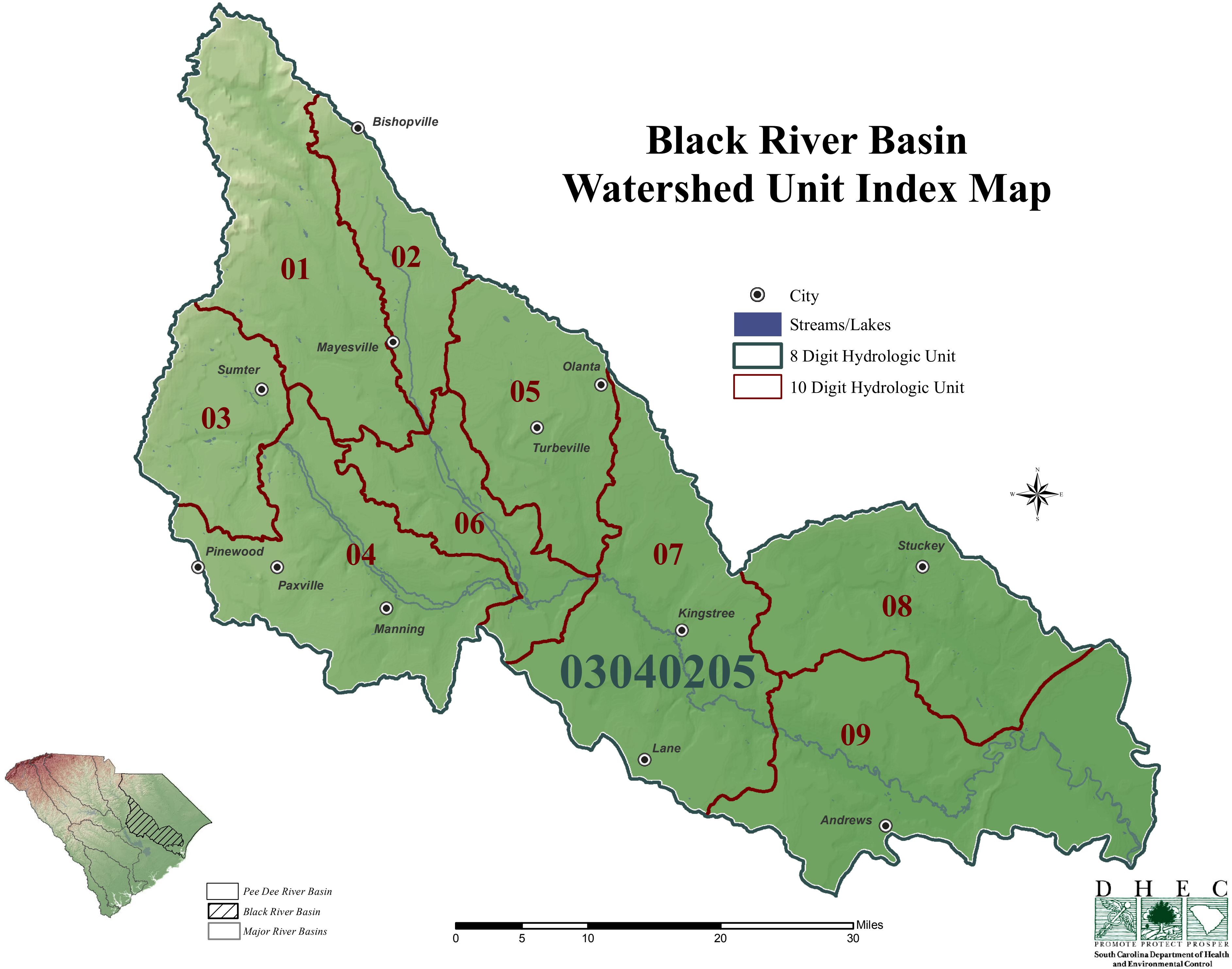
Fish Consumption Advisory

At the time of publication, a fish consumption advisory issued by SCDHEC is in effect for the ***Black River, Black Mingo Creek, and the Pocotaligo River*** advising people to limit the amount of some types of fish consumed from these waters. Fish consumption advisories are updated annually in March. For background information and the most current advisories please visit www.scdhec.gov/FoodSafety/FishConsumptionAdvisories.

Climate

Normal yearly rainfall in the Black River area during the period of 1971 to 2000 was 48.14 inches, according to South Carolina's **30-year** climatological record. Data compiled from National Weather Service stations in Andrews, Bishopville, Kingstree, Manning, Sumter, Wedgefield, and Pageland were used to determine the general climate information for this portion of the State. The highest seasonal rainfall occurred in the summer with 15.12 inches; 10.49, 11.72, and 10.81 inches of rain fell in the fall, winter, and spring, respectively. The average annual daily temperature was 63.0 °F. Winter temperatures averaged 46.4°F, spring temperatures averaged 62.6 °F and summer and fall mean temperatures were 78.8 °F and 64.0 °F, respectively.

Black River Basin
Watershed Unit Index Map



Watershed Evaluations

03040205-01

(Rocky Bluff Swamp)

General Description

Watershed 03040205-01 is located in Lee, Kershaw, and Sumter Counties and consists primarily of ***Rocky Bluff Swamp*** and its tributaries. The watershed occupies 179,089 acres of the Sandhills and Upper Coastal Plain regions of South Carolina. Land use/land cover in the watershed includes: 41.1% agricultural land, 26.6% forested land, 25.4% forested wetland, 5.5% urban land, 1.0% nonforested wetland, 0.3% water, and 0.1% barren land.

Rocky Bluff Swamp accepts drainage from Lee Swamp, Whites Millpond, Brunson Branch (Mile Branch, Mulberry Branch), Cowpen Swamp, Scape Ore Swamp, Alligator Branch, and Concord Branch before draining into the Black River. Scape Ore Swamp originates from the confluence of Timber Creek (Grassy Bottom Branch, Maple Branch, Long Branch, Nancy Branch, Pates Mill Branch, Fuzzy Branch) and Black Creek. Downstream of the confluence, Scape Ore Swamp accepts drainage from Cedar Creek, Cedar Creek Pond, Gum Springs Branch, Beaverdam Creek, McGrits Creek, Ashwood Lake, Mechanicsville Swamp, and Long Branch (Little Long Branch).

There are a total of 339.7 stream miles and 441.1 acres of lake waters in this watershed. Rocky Bluff Swamp and Lee Swamp are classified FW* (Dissolved oxygen not less than 4.0 mg/l and pH between 5.0 and 8.0) and the remaining streams in the watershed are classified FW.

Surface Water Quality

Station #	Type	Class	Description
RS-09095	RS09	FW	GUM SPRINGS BRANCH AT BRIDGE ON S-31-162 OFF SC 34
PD-355	INT	FW	SCAPE ORE SWAMP AT S-31-108
CL-077	W	FW	LAKE ASHWOOD, FOREBAY EQUIDISTANT FROM DAM AND SHORE LINES
PD-356	INT	FW	MECHANICSVILLE SWAMP AT S-31-500
PD-357	INT	FW*	ROCKY BLUFF SWAMP AT US 76
PD-201	INT	FW	ROCKY BLUFF SWAMP AT S-43-41

Gum Springs Branch (RS-09095) – Aquatic life uses are not supported due to dissolved oxygen excursions. 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.

***Scape Ore Swamp (PD-355)* -** This is a blackwater system, characterized by naturally low pH and dissolved oxygen conditions. Although pH and dissolved oxygen excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations. Aquatic life and recreational uses are fully supported; however, there is a significant increasing trend in turbidity. There is a significant increasing trend in pH. A significant decreasing trend in total nitrogen concentration suggests improving conditions for this parameter.

Lake Ashwood (CL-077) – This is a blackwater system, characterized by naturally low dissolved oxygen conditions. Although dissolved oxygen excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations. Aquatic life uses are fully supported and significant increasing trends in dissolved oxygen and decreasing trends in total nitrogen concentration suggest improving conditions for these parameters. Recreational uses are fully supported; however, there is a significant increasing trend in fecal coliform bacteria.

Mechanicsville Swamp (PD-356) – This is a blackwater system, characterized by naturally low pH and dissolved oxygen conditions. Although pH and dissolved oxygen excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations. Aquatic life uses are fully supported and significant increasing trends in dissolved oxygen and decreasing trends in total nitrogen concentration suggest improving conditions for these parameters. Recreational uses are fully supported.

Rocky Bluff Swamp – There are two stations along Rocky Bluff Swamp. Although dissolved oxygen excursions occurred at both sites, they were typical of values seen in blackwater systems and were considered natural, not standards violations. At the upstream site ***(PD-357),*** aquatic life uses are fully supported. Recreational uses are partially supported and there is a significant increasing trend in fecal coliform. At the downstream site (***PD-201)***, aquatic life and recreational uses are fully supported; however, there are significant decreasing trends in dissolved oxygen and increasing trends in turbidity.

NPDES Program

Active NPDES Facilities

RECEIVING STREAM ***FACILITY NAME***	***NPDES#*** ***TYPE***
BLACK CREEK CAROLINA GAS TRANSMISSION CORP.	SCG670001 MINOR INDUSTRIAL
SCAPE ORE SWAMP TRIBUTARY LEE COUNTY BORROW PIT	SCG730694 MINOR INDUSTRIAL
LEE SWAMP PALMETTO CORP. OF CONWAY/AIRPORT MINE	SCG731150 MINOR INDUSTRIAL

Municipal Separate Storm Sewer Systems (MS4)

RECEIVING STREAM ***MUNICIPALITY*** ***RESPONSIBLE PARTY*** ***IMPLEMENTING PARTY***	***NPDES#*** ***MS4 PHASE*** ***MS4 SIZE***
ROCKY BLUFF SWAMP UNINCORPORATED AREAS SUMTER COUNTY SUMTER COUNTY	SCR038503 PHASE II SMALL MS4

Nonpoint Source Management Program

Land Disposal Activities

Landfill Activities

SOLID WASTE LANDFILL NAME ***FACILITY TYPE***	***PERMIT #*** ***STATUS***
ASHWOOD DUMP MUNICIPAL	---------- CLOSED
SUMTER COUNTY LANDFILL MUNICIPAL	431001-1101 CLOSED
SUMTER COUNTY TRANSFER STATION MUNICIPAL	431001-6001 ACTIVE
SUMTER COUNTY LANDFILL MUNICIPAL	----------- CLOSED
SUMTER COUNTY C&D LANDFILL CONSTRUCTION	431001-1201, -1202, -1203 ACTIVE
UNION CAMP LAND APPLICATION	433313-8001 INACTIVE

Mining Activities

MINING COMPANY ***MINE NAME***	***PERMIT #*** ***MINERAL***
LEE COUNTY LEE COUNTY BORROW PIT	1042-61 SAND/CLAY
JAMES L. CORBITT CORBITTS PIT	1301-61 SAND; SAND/CLAY
WR MCLEOD MCCLEOD MINE	1304-85 SAND; SAND/CLAY
MICHAEL BLANDING AIRPORT MINE	1970-85 SAND

Growth Potential

There is a moderate to high potential for residential, commercial, and industrial growth in the area fringing the City of Sumter in this watershed. Growth is also expected along the corridor of U.S. Hwy. 76 en route from Sumter to the City of Florence, and I-20 which crosses the watershed south of the City of Bishopville. U.S. Hwys. 15, 521, and 378 bisect the watershed, along with two rail lines. There is a low potential for growth in the remainder of the watershed, which is rural with agricultural and timberland uses.

Watershed Restoration and Protection

Total Maximum Daily Loads (TMDLs)

A TMDL was developed by SCDHEC and approved by the EPA for ***Scape Ore Swamp*** (monitoring site ***PD-355***) to determine the maximum amount of fecal coliform bacteria it can receive from nonpoint sources and still meet water quality standards. The nonpoint sources that have been determined to be contributors to the Scape Ore Swamp impairment include wildlife, grazing livestock and livestock defecating directly into streams, land application of poultry litter, and failed or malfunctioning septic systems. To achieve compliance with water quality standards, the TMDL recommends fecal coliform bacteria loads contributed by livestock sources and runoff from poultry litter application be reduced by approximately 58%, and existing fecal coliform bacteria loads contributed by failing septic systems be reduced by 100%.

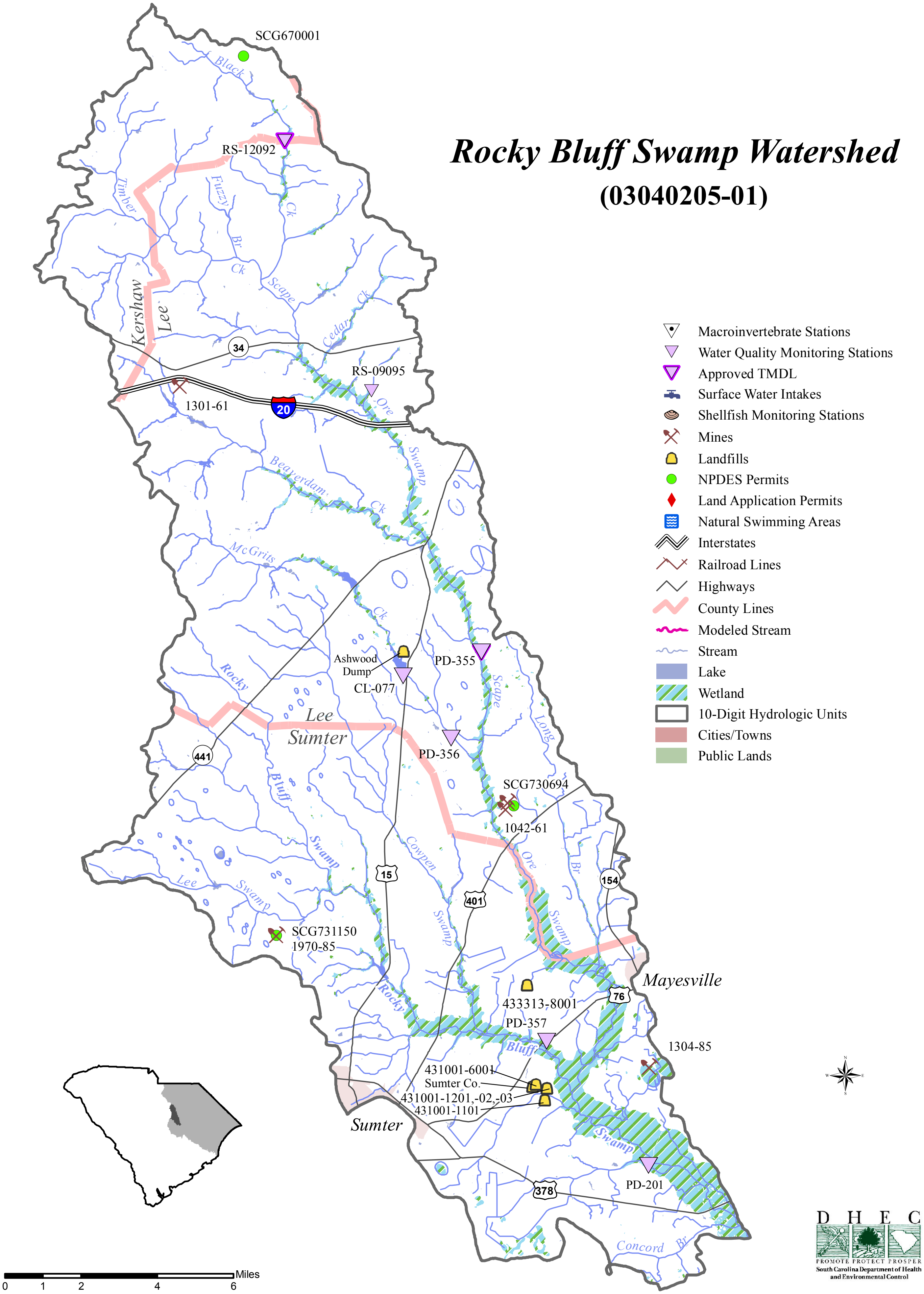
Special Projects

Fecal Coliform Bacteria TMDL Development and Implementation for the Scape Ore Swamp Watershed

The Santee-Wateree Resource Conservation and Development Council (RC&D), along with the Lee and Kershaw Soil and Water Conservation Districts, Lee and Kershaw Natural Resource Conservation Services, and the Department of Natural Resources have developed and implemented a fecal coliform bacteria TMDL for the Scape Ore Swamp watershed. The TMDL addresses the impairment at SCDHEC station PD-355, potential sources of pollution, and the amount of reduction needed to meet water quality standards. During the implementation phase of this project, RC&D staff identified homeowners and agriculture operations that could potentially contribute to the impairment. Through voluntary agreements and cost share assistance, a series of best management practices (BMPs) were installed to address fecal coliform loading in the watershed. These BMPs were designed to reduce the loading of fecal coliform into the respective watersheds. These BMPs included replacing or repairing failing septic tanks, fencing out livestock from streams, and providing alternative water sources for livestock. Additionally, RC&D identifies several local farmers who applied poultry litter as fertilizer for their crops. By establishing nutrient management plans and installing waste storage facilities, the project managers were able to significantly reduce the runoff of bacteria getting into local streams. Because of these BMPs, SCDHEC has begun to see fecal coliform reductions at PD-355 that, if continued, will ultimately result in the attainment of water quality standards in Scape Ore Swamp.

Rocky Bluff Swamp Watershed

(03040205-01)



03040205-02

(Black River)

General Description

Watershed 03040205-02 is located in Lee and Sumter Counties and consists primarily of the ***Black River*** and its tributaries from its origin to Scape Ore Swamp. The watershed occupies 71,944 acres of the Sandhills and the Upper and Lower Coastal Plain regions of South Carolina. Land use/land cover in the watershed includes: 59.1% agricultural land, 23.9% forested wetland, 9.2% forested land, 5.8% urban land, 1.2% nonforested wetland, 0.6% barren land, and 0.2% water.

The Black River originates near the City of Bishopville and accepts drainage from Gin Branch (Laws Branch), Broad Branch, Church Branch (Meadow Branch), and Casual Branch. Further downstream, Stony Run Branch (Little Stony Run Branch) enters the river followed by Nancy Branch, the Atkins Drainage Canal, and another Church Branch. There are 173.5 stream miles and 67.6 acres of lake waters in this watershed. The Black River is classified FW* (Dissolved oxygen not less than 4.0 mg/l and pH between 5.0 and 8.5) and the remaining streams in the watershed are classified FW.

Surface Water Quality

Station #	Type	Class	Description
PD-354	INT	FW	CANAL TO ATKINS DRAINAGE CANAL AT SC 527 (.75 MI N OF US 76)
PD-353	INT	FW*	BLACK RIVER AT S-43-57

Canal to Atkins Drainage Canal (PD-354) – Aquatic life uses are not supported due to dissolved oxygen and pH excursions. In addition, there is a significant increasing trend in total nitrogen concentration. Recreational uses are fully supported.

Black River (PD-353) – This is a blackwater system, characterized by naturally low dissolved oxygen conditions. Although dissolved oxygen excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations. Aquatic life uses are fully supported. A significant decreasing trend in turbidity suggests improving conditions for this parameter. Recreational uses are partially supported due to fecal coliform excursions, which are compounded by a significant increasing trend in fecal coliform bacteria.

A fish consumption advisory has been issued by the Department for mercury and includes the ***Black River*** *within this watershed (see advisory p.75).*

NPDES Program

Active NPDES Facilities

RECEIVING STREAM ***FACILITY NAME***	***NPDES#*** ***TYPE***
BLACK RIVER TRIBUTARY THE BURKE COMPANY/BURKE MINE	SCG730597 MINOR INDUSTRIAL

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

LANDFILL NAME / ***FACILITY TYPE***	***PERMIT #*** / ***STATUS***
LEE COUNTY LANDFILL MUNICIPAL	312411-1101 ACTIVE
LEE COUNTY LANDFILL COMPOSTING	312411-3001 INACTIVE

Mining Activities

MINING COMPANY / ***MINE NAME***	***PERMIT #*** / ***MINERAL***
THE BURKE COMPANY BURKE MINE	1601-61 SAND; SAND/CLAY; SOIL

Land Application Sites

LAND APPLICATION SYSTEM / ***FACILITY NAME***	***ND#*** / ***TYPE***
SPRAYFIELD TOWN OF MAYESVILLE	ND0069787 DOMESTIC

Growth Potential

There is a low to moderate potential for growth in this watershed, which contains a portion of the City of Bishopville and the Town of Mayesville, together with portions of I-20, U.S. Hwy. 15, and U.S. Hwy. 76. Residential, commercial, and industrial growth is expected surrounding the municipal areas and major road corridors. The remainder of the watershed is rural with agricultural and timberland uses.

Watershed Restoration and Protection

Total Maximum Daily Loads (TMDLs)

A fecal coliform TMDL has been developed by SCDHEC and approved by the USEPA for the water quality monitoring site ***PD-353*** on the ***Black River***. Potential causes of the fecal coliform impairment that were identified in the TMDL were agricultural runoff, failing septic systems, and surrounding wildlife. In order to achieve the TMDL target load (slightly below water quality standards) for this portion of the Black River watershed, reductions in the existing bacterial loads of up to 16 % will be necessary at station PD-353.

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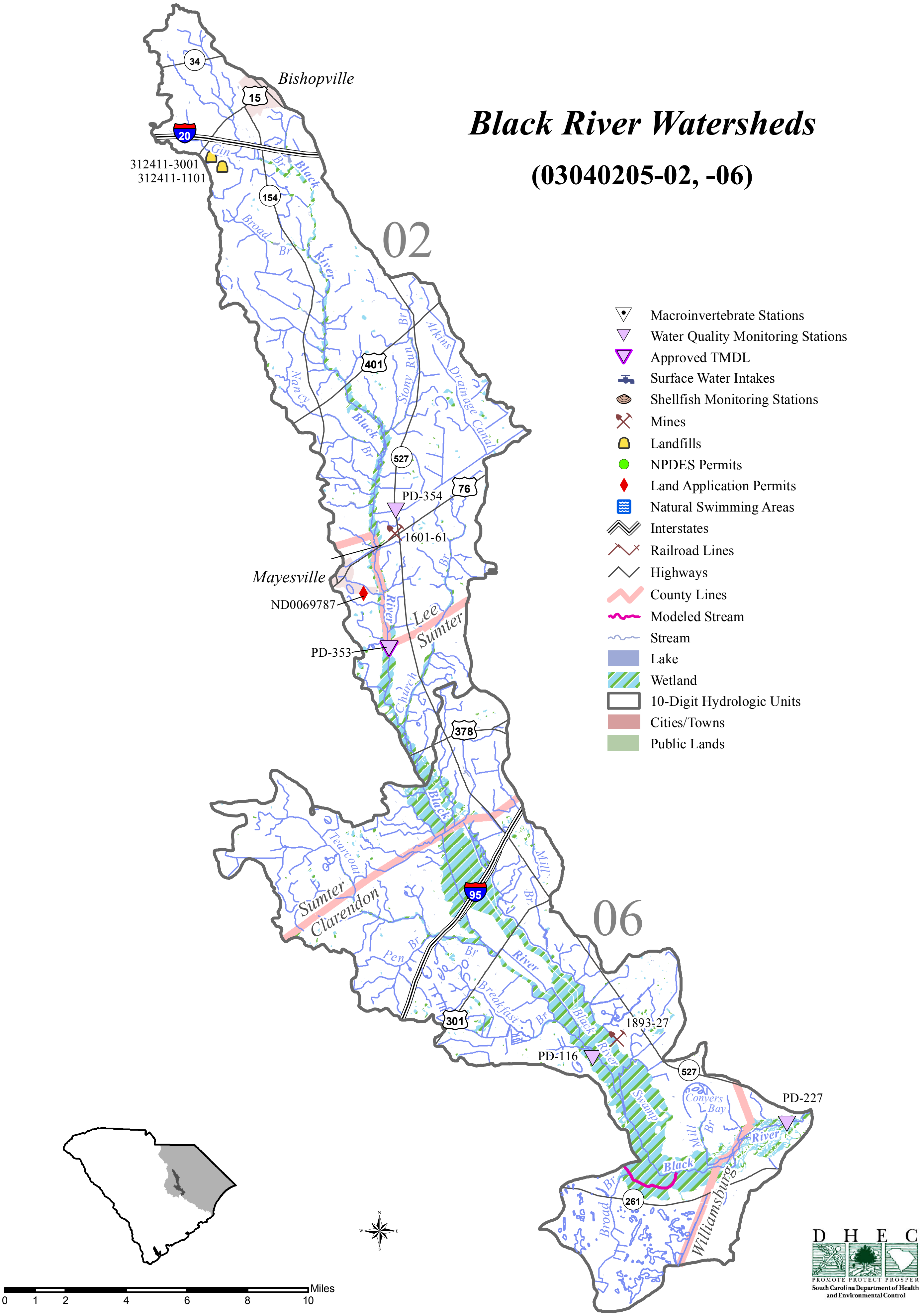

Black River Watersheds
(03040205-02, -06)
02
06
Bishopville
Mayesville
34
15
20
154
401
527
76
378
95
301
261
312411-3001
312411-1101
PD-354
1601-61
ND0069787
PD-353
1893-27
PD-116
PD-227
Gin Br
Black River
Broad Br
Nancy Br
Stony Run Br
Atkins Drainage Canal
Black Br
Church Br
Lee
Sumter
Clarendon
Tearcoat
Mill Br
Pen Br
Breakfast Br
Black River Swamp
Conyers Bay
Williamsburg
Macroinvertebrate Stations
Water Quality Monitoring Stations
Approved TMDL
Surface Water Intakes
Shellfish Monitoring 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 10 Miles
DHEC
PROMOTE PROTECT PROSPER
South Carolina Department of Health and Environmental Control

03040205-03

(Cane Savannah Creek)

General Description

Watershed 03040205-03 is located in Sumter County and consists primarily of ***Cane Savannah Creek*** and its tributaries. The watershed occupies 88,147 acres of the Upper Coastal Plain region of South Carolina. Land use/land cover in the watershed includes: 26.2% forested land, 24.5% agricultural land, 24.4% urban land, 22.6% forested wetland, 1.1% nonforested wetland, 0.8% water, and 0.4% barren land.

Hatchet Camp Branch (McCray Lake) and Brunson Swamp (Elliott Lake, Burnt Gin Lake) merge to form Cane Savannah Creek. Nasty Branch (Harvin Bay, Red Oak Branch, Bush Bay, Bush Branch, Bethel Creek, Cain Millpond) enters Cane Savannah Creek next followed by Green Swamp. Green Swamp accepts drainage from Horsepen Branch, Mush Swamp (Suicide Branch, Frierson Pond, Bluffhead Branch, Loring Millpond, Spann Branch, Long Branch, Booths Pond, Sawmill Pond, Cypress Bay, Pitts Savannah), Second Millpond, and Shot Pouch Branch (Swan Lake) before draining into Cane Savannah Creek. The headwaters of Brunson Swamp are within the Manchester State Forest, and Shaw Air Force Base lies between Mush Swamp and Long Branch. There are a total of 129.7 stream miles and 614.0 acres of lake waters in this watershed. Green Swamp is classified FW* (Dissolved oxygen not less than 4.0 mg/l and pH between 5.0 and 8.0) and the remaining streams in the watershed are classified FW.

Surface Water Quality

Station #	Type	Class	Description
PD-239	W	FW	NASTY BRANCH AT S-43-251 7.5 MI SW OF SUMTER
PD-039	W	FW*	GREEN SWAMP AT S-43-33

Nasty Branch (PD-239) –Aquatic life uses are partially supported due to dissolved oxygen excursions; however, a significant increasing trend in dissolved oxygen concentration 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.

Green Swamp (PD-039) – Aquatic life uses are not supported due to dissolved oxygen excursions. There is a significant increasing trend in pH. Recreational uses are fully supported; however, there is a significant increasing trend in fecal coliform bacteria concentration.

NPDES Program

Active NPDES Facilities

RECEIVING STREAM ***FACILITY NAME***	***NPDES#*** ***TYPE***
CANE SAVANNAH CREEK PILGRIMS PRIDE CORP./POULTRY PROC. PLT	SC0000795 MAJOR INDUSTRIAL

MUSH SWAMP USAF/SHAW AIR FORCE BASE	SC0024970 MINOR INDUSTRIAL
MUSH SWAMP CAROLINA MOBILE COURT WWTP	SC0032212 MINOR DOMESTIC
MUSH SWAMP JOE SINGLETON INC./SINGLETON MINE #4	SCG730171 MINOR INDUSTRIAL
MUSH SWAMP CLAUDE NEWMAN & SONS/CNS MINE	SCG730197 MINOR INDUSTRIAL
MUSH SWAMP GLASSCOCK COMPANY, INC.	SC0040088 MINOR INDUSTRIAL
BLUFFHEAD BRANCH HIGH HILLS RURAL WATER CO. INC./HARWOOD MHP	SCG570007 MINOR DOMESTIC
NASTY BRANCH DYSON LANDSCAPING/CAINS MILL MINE	SCG730152 MINOR INDUSTRIAL
HORSEPEN BRANCH PALMETTO CORP./PALMETTO PIT	SCG731242 MINOR INDUSTRIAL

Municipal Separate Storm Sewer Systems (MS4)

RECEIVING STREAM ***MUNICIPALITY*** ***RESPONSIBLE PARTY*** ***IMPLEMENTING PARTY***	***NPDES#*** ***MS4 PHASE*** ***MS4 SIZE***
SPARROW SWAMP SHAW AFB SHAW AFB SHAW AFB	SCR038501 PHASE II SMALL MS4
SPARROW SWAMP CITY OF SUMTER CITY OF SUMTER CITY OF SUMTER	SCR038502 PHASE II SMALL MS4
SPARROW SWAMP UNINCORPORATED AREAS SUMTER COUNTY SUMTER COUNTY	SCR038503 PHASE II SMALL MS4

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

LANDFILL NAME ***FACILITY TYPE***	***PERMIT #*** ***STATUS***
G&K TANK SERVICE LAND APPLICATION	432752-8001 ACTIVE
S.C.R. COMPOSTING SITE COMPOSTING	432661-3001 ACTIVE

PHIBRO TECH INC. INDUSTRIAL	---------- CLOSED
TOWN OF WEDGEWOOD DUMP MUNICIPAL	---------- CLOSED
BURGESS BROGDEN C&D DUMP CONSTRUCTION	---------- CLOSED
SUMTER COUNTY WOOD PROCESSING FACILITY COMPOSTING	431001-3001 ACTIVE
CARTER COMPANY C&D LF C&D	---------- PROPOSED

Mining Activities

MINING COMPANY ***MINE NAME***	***PERMIT #*** ***MINERAL***
SUMTER COUNTY SAND SMG, INC. PIT	0646-85 SAND
JOE SINGLETON CO. SINGLETON MINE #4	1008-85 SAND/CLAY
CLAUDE NEWMAN & SONS LLC CNS MINE #1	0878-85 SAND/CLAY
DYSON LANDSCAPING CAINS MILL MINE	0418-85 SAND/CLAY
PALMETTO CORP. PALMETTO PIT	2027-85 SAND; TOP SOIL

Growth Potential

There is a high potential for residential, commercial, and industrial growth in this watershed, which contains the majority of the City of Sumter and Shaw Air Force Base. Several major U.S. highways intersect in Sumter and increase the urban sprawl in every direction outside of the city. There are also several industrial parks and three rail lines.

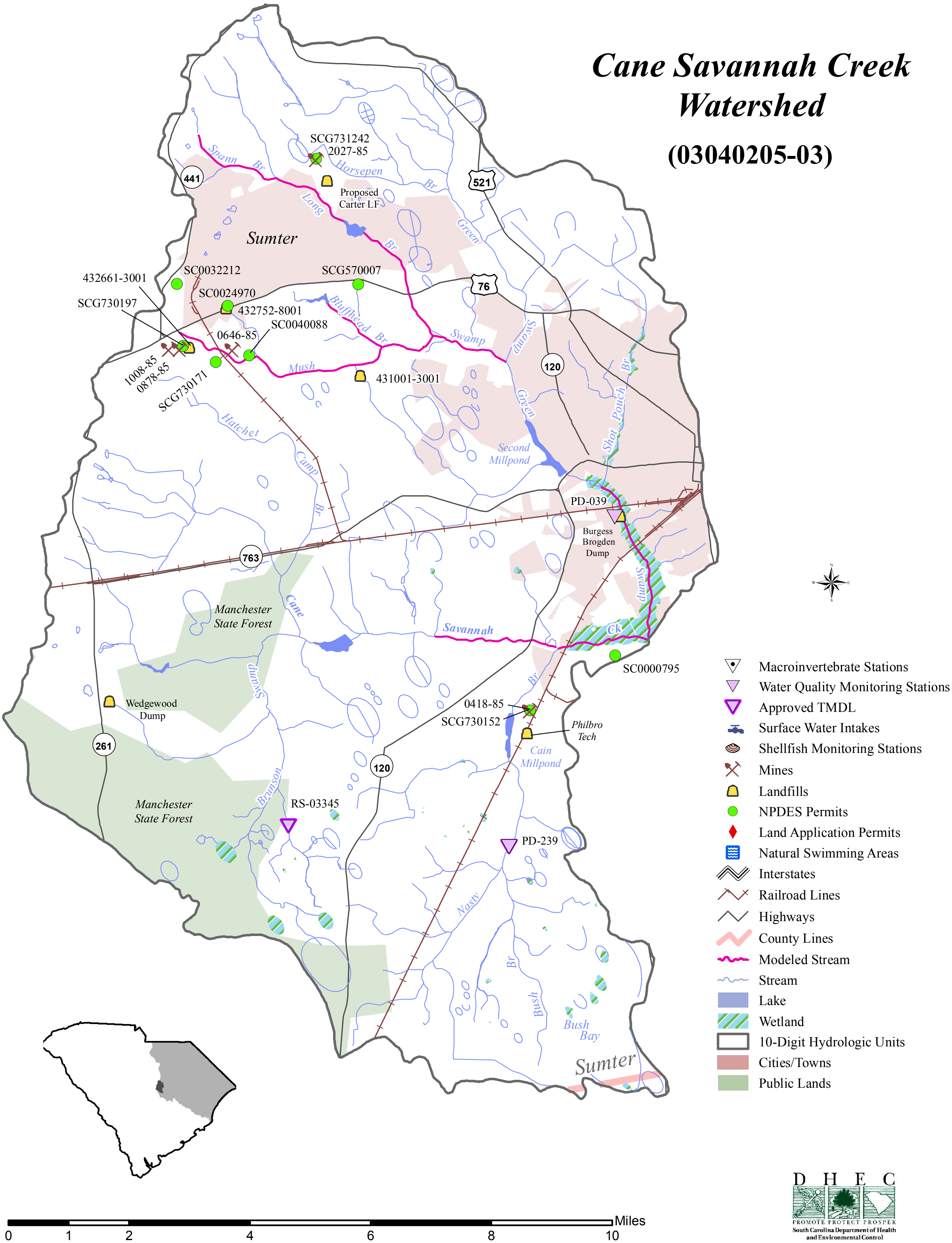
Watershed Restoration and Protection

Total Maximum Daily Loads (TMDLs)

A TMDL was developed by SCDHEC and approved by EPA for ***Nasty Branch*** water quality monitoring site ***PD-239*** to determine the maximum amount of fecal coliform bacteria it can receive and still meet water quality standards. Nonpoint sources of fecal coliform are poultry AFOs, land application of manure, possible failing OSWD systems, wildlife, and cattle with direct access to creeks. The TMDL states that a 5% reduction in fecal coliform loading is necessary for the stream to meet the water quality standard.

Cane Savannah Creek Watershed

(03040205-03)



03040205-04

(Pocotaligo River)

General Description

Watershed 03040205-04 is located in Sumter and Clarendon Counties and consists primarily of the ***Pocotaligo River*** and its tributaries. The watershed occupies 171,780 acres of the Upper Coastal Plain region of South Carolina. Land use/land cover in the watershed includes: 37.4% agricultural land, 32.4% forested wetland, 19.6% forested land, 8.7% urban land, 1.5% nonforested wetland, 0.3% water, and 0.1% barren land.

Green Swamp and Cane Savannah Creek join to form the headwaters of the Pocotaligo River near the City of Sumter, which then accepts drainage from Pocalla Creek (DesChamps Pond), Turkey Creek, Briar Branch, Boots Branch, Sammy Swamp (Boggy Swamp, Broadway Branch, Hungary Hall Branch, DesChamps Branch, Home Branch, Guckolds Branch), and Big Branch. Further downstream, another Big Branch enters the river followed by Bell Branch and Ox Swamp (Hog Branch, Lemon Branch, Fellowship Branch, Davis Branch, Loss Branch) near the City of Manning. Bear Creek enters the river next, followed by Deep Creek (Elwood Bay, Hog Bay, White Pond, Joes Branch), Juneburn Branch (Lightwood Knot Branch), Peddlers Branch, and Lakewood Creek (Lakewood Pond). The Pocotaligo River Watershed drains into the Black River. The western portion of the watershed is within the Manchester State Forest. There are a total of 313.1 stream miles and 336.6 acres of lake waters in this watershed. The Pocotaligo River, Pocalla Creek, and Turkey Creek are classified FW* (Dissolved oxygen not less than 4.0 mg/l and pH between 5.0 and 8.0) and the remaining streams in the watershed are classified FW.

Surface Water Quality

Station #	Type	Class	Description
PD-091	INT	FW*	POCOTALIGO RIVER AT US 15, 3.5 MI S OF SUMTER
PD-098	W	FW*	TURKEY CREEK AT LIBERTY ST IN SUMTER BY SANTEE PRINT WORKS
PD-040	W	FW*	TURKEY CREEK AT US 521
PD-202	W	FW*	POCOTALIGO RIVER AT S-43-32, 9 MI SE OF SUMTER
RS-07192	RS07	FW	BIG BRANCH AT SC 261
PD-115	W	FW*	POCOTALIGO RIVER AT THIRD BRIDGE N OF MANNING ON US 301
RS-08232	RS08	FW	UNNAMED TRIB TO JUNEBURN BRANCH AT CULVERT ON S-14-123
PD-043	INT	FW*	POCOTALIGO RIVER AT S-14-50, 9.5 MI NE OF MANNING

Pocotaligo River* -** There are four SCDHEC monitoring stations along the Pocotaligo River. At the furthest upstream site ***(PD-091), aquatic life uses are not supported due to dissolved oxygen excursions, which are compounded by a significant decreasing trend in dissolved oxygen concentration. There is also a significant increasing trend in five-day biological oxygen demand. A significant decreasing trend in total nitrogen concentration suggests improving conditions for this parameter. Recreational uses are fully supported at this site; however, there is a significant increasing trend in fecal coliform bacteria. At the next site downstream ***(PD-202),*** aquatic life uses are fully supported; however, there is a significant increasing trend in turbidity. There is a significant increasing trend in pH. A significant increasing trend in dissolved oxygen concentration suggests improving conditions for this parameter. Recreational uses are not supported due to fecal coliform excursions. In addition, there is a significant increasing trend in fecal coliform bacteria.

Further downstream ***(PD-115),*** aquatic uses are fully supported; however, there is a significant increasing trend in turbidity. Recreational uses are partially supported due to fecal coliform excursions. At the furthest downstream site ***(PD-043)***, aquatic life uses are partially supported due to dissolved oxygen excursions. A significant decreasing trend in total phosphorus concentration suggests improving conditions for this parameter. Recreational uses are fully supported at this site; however, there is a significant increasing trend in fecal coliform bacteria.

Turkey Creek **–** There are two SCDHEC monitoring stations along Turkey Creek. At the upstream site ***(PD-098)***, aquatic life uses are fully supported; however, there is a significant decreasing trend in dissolved oxygen. Recreational uses are not supported at this site due to fecal coliform bacteria excursions. In addition, there is a significant increasing trend in fecal coliform bacteria. At the downstream site ***(PD-040)***, aquatic life uses are not supported due to dissolved oxygen and ammonia excursions. Recreational uses are not supported due to fecal coliform bacteria excursions.

Big Branch (RS-07192) – Aquatic life uses are fully supported. This is a blackwater system, characterized by naturally low dissolved oxygen concentration conditions. Although dissolved oxygen excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations. Recreational uses are not supported due to fecal coliform bacteria excursions.

Juneburn Branch Tributary **(RS-08232) -** Aquatic life uses are fully supported. Recreational uses are not supported due to fecal coliform bacteria excursions.

A fish consumption advisory has been issued by the Department for mercury and includes the ***Pocotaligo River*** *within this watershed* *(see advisory p.75).*

NPDES Program

Active NPDES Facilities

RECEIVING STREAM ***FACILITY NAME***	***NPDES#*** ***TYPE***
POCOTALIGO RIVER CWS/POCALLA VILLAGE BELK SD	SC0030724 MINOR DOMESTIC
POCOTALIGO RIVER CITY OF SUMTER/POCOTALIGO RIVER PLANT	SC0027707 MAJOR DOMESTIC
POCOTALIGO RIVER CITY OF MANNING WWTP	SC0020419 MAJOR DOMESTIC
POCOTALIGO RIVER TRIBUTARY MCCUTCHEN FARMS/CALLOWAY PIT	SCG730552 MINOR INDUSTRIAL

BIG BRANCH | SCG730685
L. DEAN WEAVER CONSTR./WL COKER PIT | MINOR INDUSTRIAL

BIG BRANCH L. DEAN WEAVER CONSTR./WL COKER PIT	SCG730685 MINOR INDUSTRIAL
POCALLA CREEK PILGRIMS PRIDE CORP./POULTRY PROC. PLT	SC0000795 MAJOR INDUSTRIAL
POCALLA CREEK APEX TOOL GROUP LLC	SCG250295 MINOR INDUSTRIAL
BRIAR BRANCH VB HAWTHORNE/12 BRIDGES ROAD MINE	SCG731309 MINOR INDUSTRIAL

Municipal Separate Storm Sewer Systems (MS4)

RECEIVING STREAM ***MUNICIPALITY*** ***RESPONSIBLE PARTY*** ***IMPLEMENTING PARTY***	***NPDES#*** ***MS4 PHASE*** ***MS4 SIZE***
POCOTALIGO RIVER CITY OF SUMTER CITY OF SUMTER CITY OF SUMTER	SCR038502 PHASE II SMALL MS4

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

LANDFILL NAME ***FACILITY TYPE***	***PERMIT #*** ***STATUS***
GA PACIFIC CORP. C/C LANDFILL CONSTRUCTION	143304-1201, 143304-1601 INACTIVE
BOB SPRINGERS LANDFILL INDUSTRIAL	IWP-183 INACTIVE
GIANT RESOURCES RECOVERY INDUSTRIAL	432675-2001 ACTIVE
SOUTHEASTERN CHEMICAL & SOLVENT CO. INDUSTRIAL	432675-7301, 432675-7101 ACTIVE
CAMPBELL SOUP CO., INC. INDUSTRIAL	---------- INACTIVE
EAST COAST INDUSTRIAL SERVICES, INC. INDUSTRIAL	142348-5201 ACTIVE
CITY OF MANNING DUMP MUNICIPAL	--------- CLOSED
TOWN OF PINEWOOD DUMP MUNICIPAL	--------- CLOSED
CLARENDON COUNTY LANDFILL MUNICIPAL	141001-1103, 141001-1101 CLOSED

CLARENDON COUNTY C&D LANDFILL CONSTRUCTION	141001-1203 ACTIVE
CLARENDON COUNTY SW TRANSFER STATION CONSTRUCTION	141001-6001 ACTIVE

Mining Activities

MINING COMPANY ***MINE NAME***	***PERMIT #*** ***MINERAL***
MCCUTCHEN FARMS CALLOWAY PIT	0831-27 SAND

Growth Potential

There is a high potential for growth in this watershed, which includes the City of Manning and the Towns of Paxville and Pinewood. I-95 crosses the watershed near Manning, and other major roads running through Manning include U.S. Hwys. 15, 521, 301, and S.C. Hwys. 261 and 260. Besides the rail line connecting the Cities of Manning and Sumter, the Clarendon County Industrial Park will encourage future industrial growth, in conjunction with the City of Sumter's Pocotaligo Industrial Park and Continental Tire of the Americas Facilities along U.S. 521 and Sumter's Live Oak Industrial Park on U.S. Hwy 15. The remainder of the watershed is rural with agricultural and timberland uses. The City of Manning has extended its water service along U.S. 521 to the community of Alcolu at I-95. Additionally, the Cities of Manning and Summerton plan to connect their respective water systems along U.S. 301.

Watershed Restoration and Protection

Total Maximum Daily Loads (TMDLs)

In June 2013, fecal coliform TMDLs were developed for impaired stations **RS-03345**, **PD-202**, **RS-07192**, **PD-115**, **RS-08232**, and **RS-03347** on the ***Pocotaligo River and tributaries*** by SCDHEC and approved by USEPA. Additionally, revisions were made to three existing fecal coliform bacteria TMDLs approved by the USEPA in September 2005 to address other locations in tributaries of the Pocotaligo River (impaired sites **PD-098, PD-040**, and **PD-239**). Because South Carolina has recently adopted a change from fecal coliform bacteria to Escherichia coli (E. coli) bacteria as a recreational use standard in all freshwaters, the aforementioned sites will be will be included on future §303(d) lists due to exceedances of the current E. coli water quality standard until such time such that sufficient E. coli data are collected and demonstrate the standard is attained or such time that TMDLs are developed and approved to address the parameter of concern. In addition to addressing fecal coliform bacteria impairments, this TMDL document also includes converted E. coli TMDLs for the purposes of implementation of the current recreational use standard.

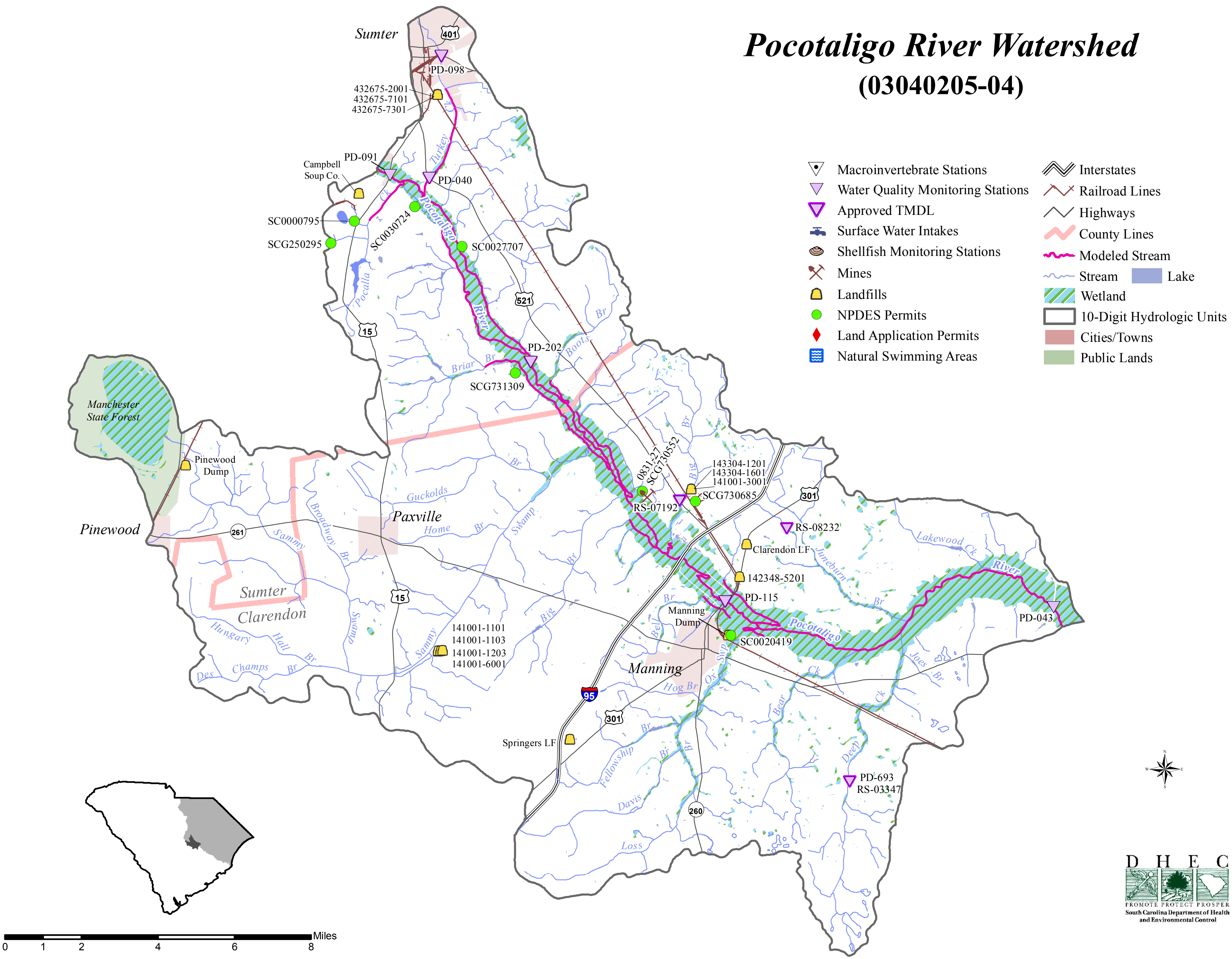
The TMDL report identifies as probable sources of fecal contamination direct loading by livestock, failing septic systems, surrounding wildlife, and other agricultural activities. In order to achieve the target load for the Pocotaligo River and tributaries, the following reductions in the existing loads at the respective stations will be necessary: Brunson Swamp Creek (RS-03345) up to 39% reduction; Pocotaligo River (PD-202) up to 60%; Big Branch (RS-07192) up to 81%; Pocotaligo River (PD-115) up to 7%; tributary to Juneburn Branch (RS-08232) up to 86%; and Deep Creek (RS-03347) up to 18%. The September 2005 TMDLs were revised in June 2013 and the following reductions were deemed necessary: Turkey Creek (PD-098) up to 81%; Turkey Creek (PD-040) up to 88%; and Nasty Branch (PD-239) up to 35%.

Special Projects

Turkey Creek Watershed Based Plan

In 2012, Sumter County with the cooperation of the City of Sumter was awarded a 319 Grant to develop a comprehensive Watershed Based Plan for the Turkey Creek Watershed. Stakeholders were involved in producing the plan which focuses on reducing fecal coliform loads in Turkey Creek.

Pocotaligo River Watershed
(03040205-04)



03040205-05

(Pudding Swamp)

General Description

Watershed 03040205-05 is located in Lee, Sumter, and Clarendon Counties and consists primarily of ***Pudding Swamp*** and its tributaries. The watershed occupies 119,947 acres of the Lower Coastal Plain region of South Carolina. Land use/land cover in the watershed includes: 35.5% agricultural land, 30.1% forested wetland, 26.8% forested land, 5.3% urban land, 2.1% nonforested wetland, and 0.2% water.

Pudding Swamp accepts drainage from Hope Swamp (Threemile Branch), Trustless Branch, and Horse Branch (Fuller Bay, Cypress Lake) before merging with Douglas Swamp. Douglas Swamp flows past Woods Bay State Park and accepts drainage from Woods Bay, Cypress Branch (Bushy Branch), Burnt Branch, and Rose Creek. Downstream of the confluence, Newman Branch (Cain Branch) flows into Pudding Swamp. Pudding Swamp drains into the Black River. There are a total of 210.1 stream miles and 175.8 acres of lake waters in this watershed. Pudding Swamp, Douglas Swamp, and Cypress Branch are classified FW* (Dissolved oxygen not less than 4.0 mg/l and pH between 5.0 and 8.0) and the remaining streams in the watershed are FW.

Surface Water Quality

Station #	Type	Class	Description
PD-203	S/INT	FW*	PUDDING SWAMP AT SC 527 8.1 MI NW OF KINGSTREE

Pudding Swamp (PD-203) - Aquatic life uses are not supported due to copper in excess of the aquatic life acute criterion. There is also a significant increasing trend in five-day biological oxygen demand. A significant increasing trend in dissolved oxygen concentration suggests improving conditions for this parameter. Recreational uses are partially supported due to fecal coliform bacteria excursions. In addition, there is a significant increasing trend in fecal coliform bacteria.

NPDES Program

Active NPDES Facilities

RECEIVING STREAM / ***FACILITY NAME***	***NPDES#*** / ***TYPE***
PUDDING SWAMP SPRINGFIELD REALTY/DOUBLE K MINE	SCG730201 MINOR INDUSTRIAL
PUDDING SWAMP SUMTER COUNTY/I-95 REST AREA	SCG570018 MINOR DOMESTIC

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

LANDFILL NAME	***PERMIT #***
FACILITY TYPE	***STATUS***
TOWN OF TIMMONSVILLE	211003-1701
C&D	ACTIVE

Land Application Sites

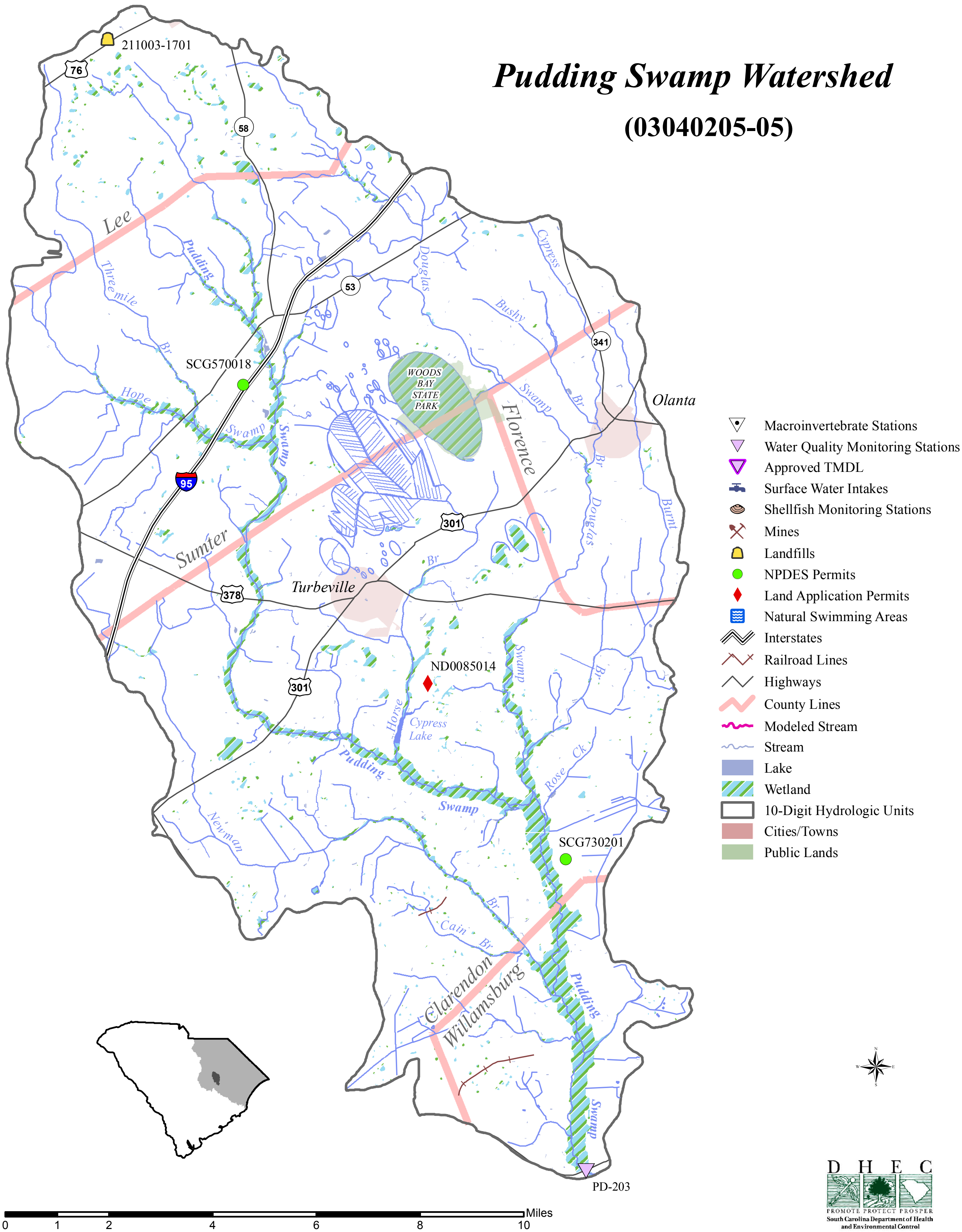
LAND APPLICATION SYSTEM	***ND#***
FACILITY NAME	***TYPE***
SPRAYFIELD	ND0085014
TOWN OF TURBEVILLE	DOMESTIC

Growth Potential

There is a low to moderate potential for growth in this watershed, which contains the Towns of Turbeville and Olanta, and portions of the I-95 and U.S. Hwy. 378 corridors. The I-95/U.S. 378 interchange has water and sewer service and is expected to see moderate to high growth. Water and sewer services are available in and around the Towns of Olanta and Turbeville, and should encourage growth. The remainder of the watershed is rural with agricultural and timberland uses.

Pudding Swamp Watershed

(03040205-05)



03040205-06

(Black River)

General Description

Watershed 03040205-06 is located in Lee, Sumter, Clarendon, and Williamsburg Counties and consists primarily of the ***Black River*** and its tributaries from Scape Ore Swamp to Pudding Swamp. The watershed occupies 84,764 acres of the Upper and Lower Coastal Plain regions of South Carolina. Land use/land cover in the watershed includes: 38.7% forested wetland, 30.6% agricultural land, 24.4% forested land, 4.1% urban land, 2.1% nonforested wetland, and 0.1% water.

This upper section of the Black River accepts drainage from its upstream reach together with the Scape Ore Swamp Watershed, Mill Branch, Tearcoat Branch (Davis Branch, Pen Branch), Breakfast Branch (Crow Bay), the Pocotaligo River Watershed, Broad Branch, another Mill Branch (Conyers Bay), and another Mill Branch. The river flows through the Black River Swamp throughout the watershed. There are a total of 190.7 stream miles and 122.9 acres of lake waters in this watershed. The Black River is classified FW* (Dissolved oxygen not less than 4.0 mg/l and pH between 5.0 and 8.0) and the remaining streams are classified FW.

Surface Water Quality

Station #	Type	Class	Description
PD-116	INT	FW*	BLACK RIVER AT S-14-40 E OF MANNING
PD-227	INT	FW*	BLACK RIVER AT S-45-35 8.6 MI NW OF KINGSTREE

Black River - There are two SCDHEC monitoring sites along this section of the Black River. At the upstream site ***(PD-116)***, aquatic life uses are partially supported due to dissolved oxygen excursions. There is a significant increasing trend in pH. Recreational uses are not supported at this site due to fecal coliform bacteria excursions. In addition, there is a significant increasing trend in fecal coliform bacteria. Aquatic life and recreational uses are fully supported at the downstream site ***(PD-227)***; however, there are significant increasing trends in five-day biological oxygen demand and fecal coliform bacteria.

A fish consumption advisory has been issued by the Department for mercury and includes the ***Black River*** *within this watershed* *(see advisory p.75).*

NPDES Program

Active NPDES Facilities

RECEIVING STREAM ***FACILITY NAME***	***NPDES#*** ***TYPE***
BLACK RIVER TRIBUTARY RICKY GOFF/RICKY'S PIT MINE	SCG731059 MINOR INDUSTRIAL

Mining Activities

MINING COMPANY	***PERMIT #***
MINE NAME	***MINERAL***
RICKY'S LAND CLEARING & HAULING LLC	1893-27
RICKY'S PIT MINE	SAND; TOPSOIL

Groundwater Quantity

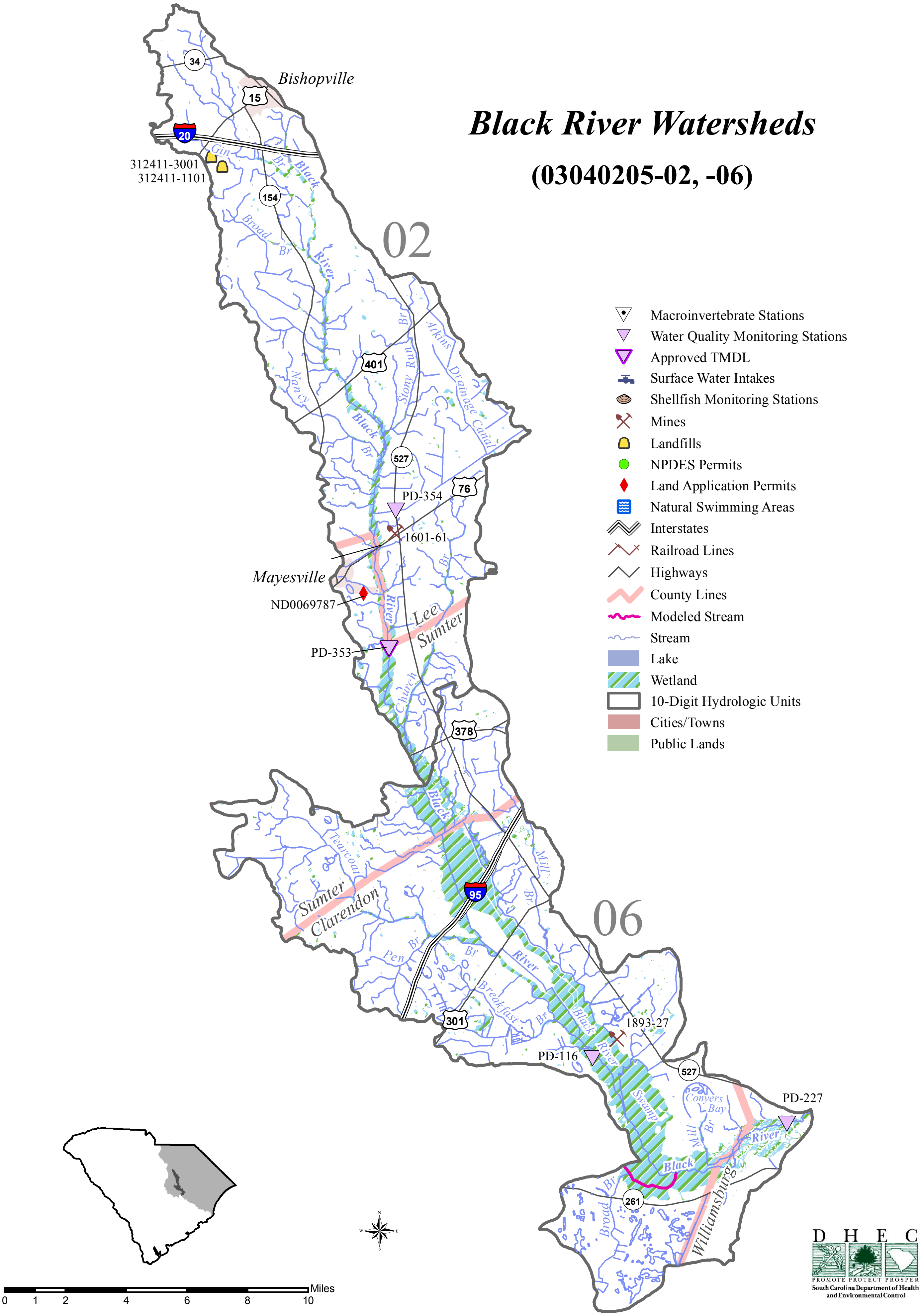
Portions of this watershed fall within the Pee Dee Capacity Use Area and large groundwater uses must be reported (see Capacity Use Program p.22).

Growth Potential

There is a low potential for growth in this watershed. There is no existing water or sewer infrastructure in the watershed. Some growth may occur surrounding the I-95 Interchanges and the U.S. Hwy 378 corridor. The remainder of the watershed is rural with agricultural and timberland uses.

Black River Watersheds

(03040205-02, -06)



03040205-07

(Black River)

General Description

Watershed 03040205-07 is located in Florence, Clarendon, and Williamsburg Counties and consists primarily of the ***Black River*** and its tributaries from Pudding Swamp to the crossing of SC Hwy 30. The watershed occupies 209,661 acres of the Lower Coastal Plain region of South Carolina. Land use/land cover in the watershed includes: 34.1% forested wetland, 31.6% forested land, 25.8% agricultural land, 5.9% urban land, 2.3% nonforested wetland, 0.2% water, and 0.1% barren land.

This middle section of the Black River accepts drainage from its upper reaches and Clapp Swamp (Long Branch, Bull Branch, Spring Branch), Kingstree Swamp Canal (Smiths Bay, Long Bay, Findley Bay, Sandy Bay), and Laws Swamp. Rocky Ford Swamp (Chaney Swamp) and Dickey Swamp (Mulberry Branch, Bennett Swamp, Mill Branch, Pushing Branch, Shanty Branch) join to form Laws Swamp, which flows into the river downstream of the Kingstree Swamp Canal. Further downstream, the river accepts drainage from Thorntree Swamp, Stony Run Branch, Boggy Swamp, McElroy Branch, Camden Swamp, and Ox Swamp (Gumtree Branch). There are a total of 212.1 stream miles and 137.1 acres of lake waters in this watershed. The Black River is classified FW* (Dissolved oxygen not less than 4.0 mg/l and pH between 5.0 and 8.0) and the remaining streams are classified FW.

Surface Water Quality

Station #	Type	Class	Description
PD-714	BIO	FW	BLACK RIVER AT GILLAND MEMORIAL PARK LANDING
RS-10381	RS10	FW	KINGSTREE SWAMP CANAL AT S-21-514
PD-358	INT	FW	KINGSTREE SWAMP CANAL AT SC 527
PD-044	INT	FW*	BLACK RIVER AT US 52 AT KINGSTREE
RS-06018	RS06	FW	THORNTREE SWAMP AT BRIDGE ON S-45-143, 5.1 MI S OF KINGSTREE
PD-045	W	FW*	BLACK RIVER AT SC 377 AT BRYAN'S CROSSROADS
(PD-359)	W	FW*	BLACK RIVER AT S-45-30

Black River - There are three SCDHEC monitoring sites along this section of the Black River. Aquatic life and recreational uses are fully supported at all sites. At the upstream site ***(PD-714)***, aquatic life uses are fully supported based on macroinvertebrate community data. Aquatic life and recreational uses are fully supported at the midstream site ***(PD-044)***; however there are significant increasing trends in five-day biochemical oxygen demand and fecal coliform bacteria. A significant decreasing trend in total phosphorus suggests improving conditions for this parameter. At the downstream site ***(PD-045)***, aquatic life and recreational uses are again fully supported. ***PD-359,*** being just downstream of this watershed, represents the water quality in this watershed and it too fully supports aquatic life and recreational uses; however, there is a significant increasing trend in five-day biochemical oxygen demand. A significant decreasing trend in total phosphorus suggests improving conditions for this parameter at this site.

Kingstree Swamp Canal - There are two SCDHEC monitoring sites along Kingstree Swamp Canal. This is a blackwater system, characterized by naturally low dissolved oxygen and pH conditions. At the upstream site ***(RS-10381)***, aquatic life uses are fully supported. Although dissolved oxygen and pH excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations. Recreational uses are not supported due to fecal coliform bacteria excursions. At the downstream site ***(PD-358)***, aquatic life and recreational uses are fully supported. There is a significant decreasing trend in pH. Although dissolved oxygen excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations. A significant decreasing trend in total phosphorus concentration suggests improving conditions for this parameter.

Thorntree Swamp (RS-06018) - Aquatic life and recreational uses are fully supported. This is a blackwater system, characterized by naturally low dissolved oxygen conditions. Although dissolved oxygen excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations.

A fish consumption advisory has been issued by the Department for mercury and includes the ***Black River*** *within this watershed (see advisory p.75).*

NPDES Program

Active NPDES Facilities

RECEIVING STREAM ***FACILITY NAME***	***NPDES#*** ***TYPE***
KINGSTREE SWAMP CANAL TRIBUTARY MARTEK BIOSCIENCES KINGSTREE	SC0003123 MINOR INDUSTRIAL
BLACK RIVER TOWN OF KINGSTREE	SC0035971 MAJOR DOMESTIC
BLACK RIVER TOWN OF KINGSTREE/MILLIKEN SITE IND.	SC0049255 MINOR DOMESTIC

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

LANDFILL NAME ***FACILITY TYPE***	***PERMIT #*** ***STATUS***
WILLIAMSBURG COUNTY LANDFILL #1 INDUSTRIAL	IWP-114 INACTIVE
TRAVENOL LABORATORIES, INC. INDUSTRIAL	453305-1601 INACTIVE
BLACK RIVER CORP. MUNICIPAL	452499-3001 ACTIVE
GAUSE TROY -FILL MUNICIPAL	--------- INACTIVE

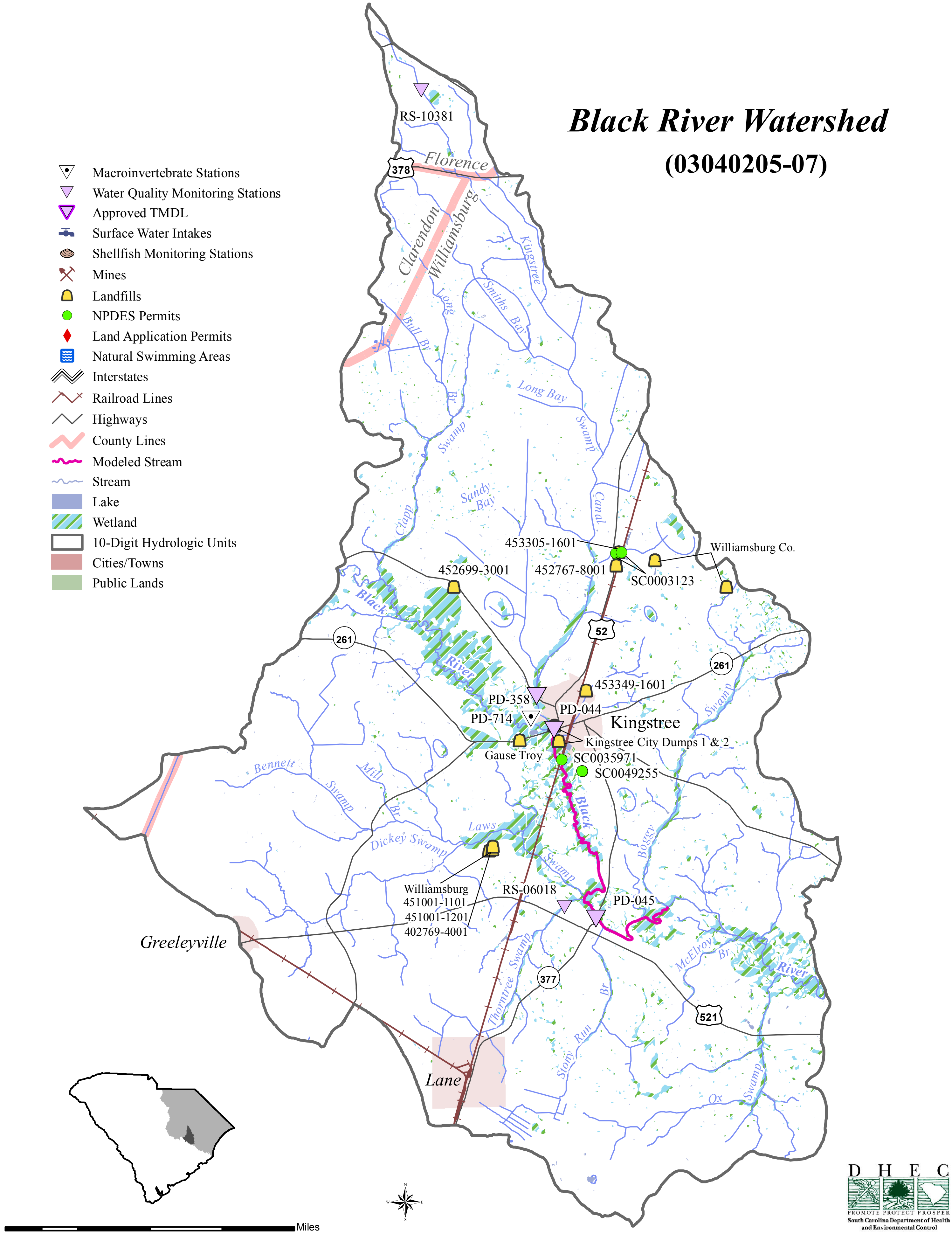
ARC TECHNOLOGY FACILITY RD&D	452767-8001 ACTIVE
WILLIAMSBURG CO. INDUSTRIAL LANDFILL INDUSTRIAL	IWP-153 CLOSED
MARTEK INDUSTRIAL	453349-1601 ACTIVE
WILLIAMSBURG COUNTY LANDFILL MUNICIPAL	451001-1101 ACTIVE
WILLIAMSBURG COUNTY C&D LANDFILL CONSTRUCTION	451001-1201 ACTIVE
WILLIAMSBURG COUNTY SHREDDER MUNICIPAL PULVERIZATION SITE	DWP-055 CLOSED
TOWN OF KINGSTREE DUMP#1 & #2 MUNICIPAL	----------- CLOSED
WHITAKER AIR CURTAIN INCINERATOR INCINERATOR	402769-4001 ACTIVE

Groundwater Quantity

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

Growth Potential

There is a low to moderate potential for growth in this watershed, which contains the Towns of Kingstree and Lane and a portion of the Town of Greeleyville. Water infrastructure is located in and around all three towns, but sewerage infrastructure is located only in and around the Kingstree area. The U.S. Hwy 52 corridor has the potential for residential, commercial, and industrial growth in the future due to the combination of an increase in the capacity of the sewage treatment plant, industrial areas, and an existing rail line. The former Milliken Industrial WWTF has been reactivated and upgraded by the Town of Kingstree to accommodate new industries and renamed the South Kingstree Industrial Wastewater Facility. Outside of this area, the watershed is rural with predominately agricultural and timberland uses.


Black River Watershed
(03040205-07)
Macroinvertebrate Stations
Water Quality Monitoring Stations
Approved TMDL
Surface Water Intakes
Shellfish Monitoring 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
RS-10381
Florence
Clarendon
Williamsburg
378
Kingstree
Smiths Bay
Long
Bull Br
Br
Long Bay
Swamp
Swamp
Sandy Bay
Canal
Clapp
453305-1601
452767-8001
452699-3001
SC0003123
Williamsburg Co.
Black
River
52
261
261
453349-1601
PD-358
PD-044
PD-714
Kingstree
Kingstree City Dumps 1 & 2
Gause Troy
SC0035971
SC0049255
Swamp
Bennett
Swamp
Mill
Br
Laws
Dickey Swamp
Black
Swamp
Boggy
Williamsburg
451001-1101
451001-1201
402769-4001
RS-06018
PD-045
Greeleyville
377
Thorntree
Swamp
Br
McElroy
Br
River
521
Stony
Run
Lane
Ox
Swamp
Miles
0
1
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D H E C
PROMOTE PROTECT PROSPER
South Carolina Department of Health and Environmental Control

03040205-08

(Black Mingo Creek)

General Description

Watershed 03040205-08 is located in Williamsburg and Georgetown Counties and consists primarily of ***Black Mingo Creek*** and its tributaries. The watershed occupies 160,804 acres of the Lower Coastal Plain region of South Carolina. Land use/land cover in the watershed includes: 37.0% forested wetland, 32.8% forested land, 23.6% agricultural land, 3.7% urban land, 2.4% nonforested wetland, 0.4% water, and 0.1% barren land.

Cedar Swamp (Orr Swamp, Home Swamp, Dry Swamp, The Morass, Pine Island Bay) and Parsley Swamp (Whiteoak Swamp, McKnight Swamp) join to form the headwaters of Black Mingo Creek. Downstream of the confluence, Black Mingo Creek accepts drainage from Turkey Creek, Boggy Swamp, and Indiantown Swamp (James Branch, Pointer Stump Branch). Further downstream, Black Mingo Creek accepts drainage from Wilson Lake, Gully Branch, Headless Creek, Snow Branch, and Campbell Swamp (Hickory Nut Branch). Johnson Branch enters the system next, followed by Walden Branch, Poplar Hill Branch (Caney Branch, Waterman Branch, Hughs Branch), Rome Branch, Burnett Swamp, and Jacks Creek. Further downstream, Browns Branch (Squirrel Run, Church Branch, Pittman Branch) flows into Black Mingo Creek followed by Peters Creek, Smith Swamp (Black Steer Swamp, McGinney Creek), Cold Creek, Mingo Swamp, and Schoolhouse Branch. The Black Mingo Creek flows into the Black River. There are a total of 219.6 stream miles and 223.3 acres of lake waters in this watershed, all classified FW.

Surface Water Quality

Station #	Type	Class	Description
PD-360	W/INT	FW	BLACK MINGO CREEK AT S-45-121
RS-09317	RS09	FW	CAMPBELL SWAMP AT BRIDGE ON S-45-24
PD-361	S/INT	FW	BLACK MINGO CREEK AT COWHEAD LANDING OFF SC 51
RS-06189	RS06	FW	SMITH SWAMP AT BRIDGE ON SC51, 12.2 MI S OF HEMINGWAY

Black Mingo Creek* -** There are two SCDHEC monitoring sites along Black Mingo Creek. At the upstream site ***(PD-360), aquatic life uses are not supported due to dissolved oxygen excursions. In addition, there are significant increasing trends in turbidity and total phosphorus concentration. Recreational uses are partially supported due to fecal coliform bacteria excursions. At the downstream site ***(PD-361)***, aquatic life and recreational uses are fully supported; however, there is a significant decreasing trend in dissolved oxygen concentration at this site. Although dissolved oxygen excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations. A significant decreasing trend in total phosphorus concentration suggests improving conditions for this parameter.

***Campbell Swamp (RS-09317)* -** Aquatic life and recreational uses are fully supported.

Smith Swamp (RS-06189) - Aquatic life uses are not supported due to dissolved oxygen excursions. Recreational uses are fully supported.

*A fish consumption advisory has been issued by the Department for mercury and includes **Black Mingo Creek** within this watershed* *(see advisory p.75).*

Groundwater Quantity

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

NPDES Program

Active NPDES Facilities

RECEIVING STREAM ***FACILITY NAME***	***NPDES#*** ***TYPE***
BLACK MINGO CREEK HOUSE OF RAEFORD FARMS, INC.	SCG250291 MINOR INDUSTRIAL

Nonpoint Source Management Program

Land Disposal Activities

Land Application Sites

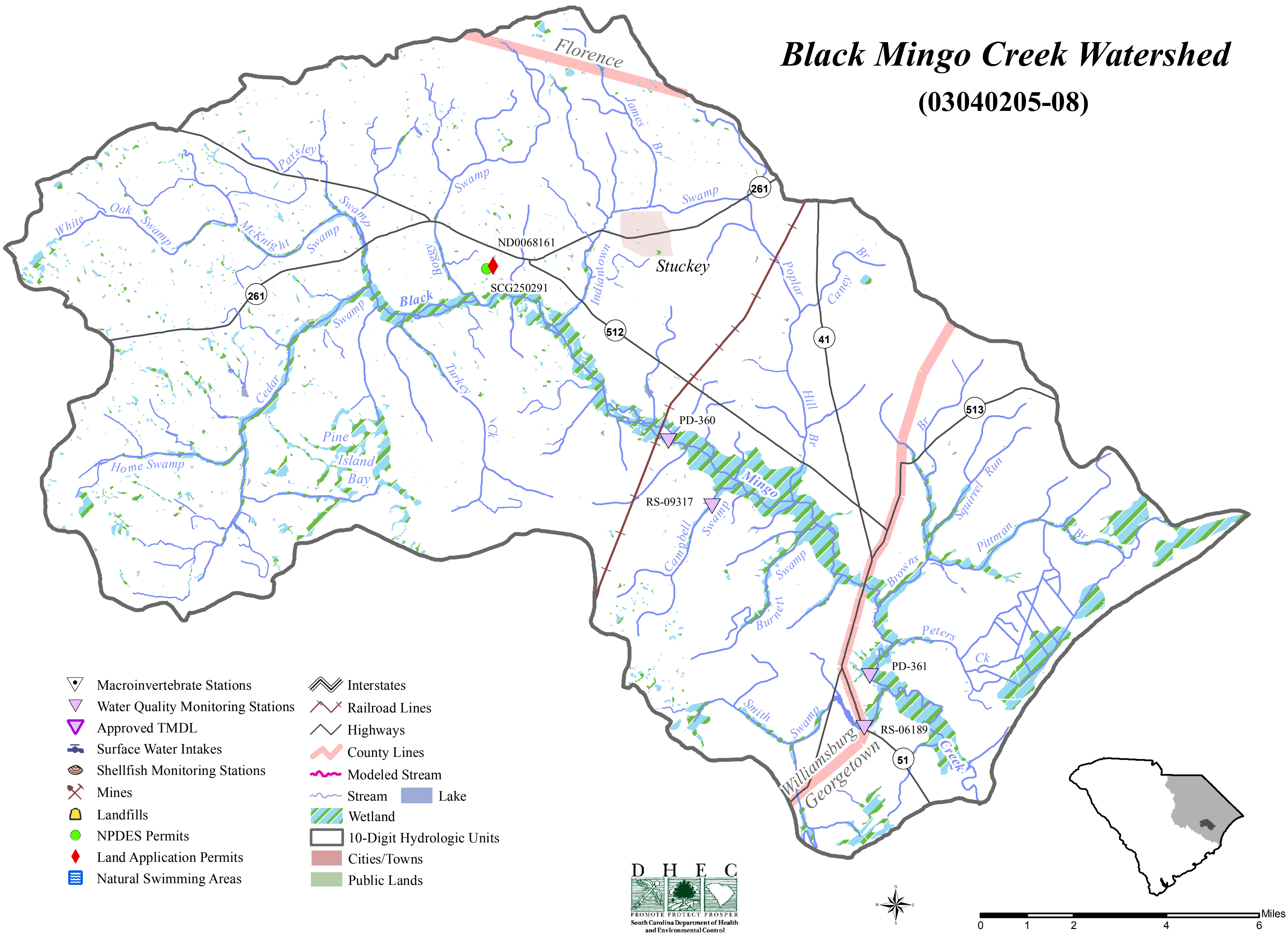
LAND APPLICATION SYSTEM ***FACILITY NAME***	***ND#*** ***TYPE***
SPRAYFIELD HOUSE OF RAEFORD FARMS, INC.	ND0068161 INDUSTRIAL

Growth Potential

There is a low potential for growth in this watershed, which contains the Town of Stuckey. Water infrastructure is available around the Town of Stuckey, but there is no sewerage infrastructure available in the watershed. The Williamsburg County Master Wastewater Plan lists the Stuckey to Hemingway corridor and the South Hemingway area as designated Priority Areas for Economic Development. Sewerage infrastructure would be the main investment to stimulate the economic development and potential growth in the area. Agriculture and timberlands remain the primary land uses.

Black Mingo Creek Watershed

(03040205-08)



D H E C

PROMOTE PROTECT PROSPER

South Carolina Department of Health and Environmental Control

03040205-09

(Black River)

General Description

Watershed 03040205-09 is located in Williamsburg and Georgetown Counties and consists primarily of the lower ***Black River*** and its tributaries from the crossing of SC Hwy 30 to its confluence with the Great Pee Dee River. The watershed occupies 232,756 acres of the Lower Coastal Plain and Coastal Zone regions of South Carolina. Land use/land cover in the watershed includes: 46.0% forested land, 32.9% forested wetland, 11.7% agricultural land, 4.1% nonforested wetland, 3.5% urban land, 1.6% water, and 0.2% barren land.

This section of the Black River accepts drainage from its upper reaches, together with Spring Branch, Spring Gully, Jumping Gully, Thompson Swamp, Birch Creek (Dobson Branch, Dobson Bay), and Gin Branch. Flat Swamp (Camp Pond Bay, Ricefield Bay, Alligator Bay, Log Branch) flows into Johnsons Swamp (Oakridge Bay, Mill Branch, Murray Swamp, Sportsman Pond), which in turn flows into Horse Pen Swamp before draining into the Black River downstream of Gin Branch. Further downstream, Big Dam Swamp (Roper Branch, Sleeper Branch, Cedar Patch Branch, Brightman Swamp) enters the river followed by Lester Creek, Puncheon Creek, and Indian Hut Swamp. Mill Grove Creek enters the river next followed by Lanes Creek, Choppee Creek (Stony Run Creek, Machine Bay), Boheck Creek, and Post Foot Branch. Carvers Bay drains into Big Branch (Millpond Branch), then flows into Carvers Bay Creek, which merges with Fardick Creek to form Peters Creek (Simmons Creek, Guinea Creek, Black Swamp) and drains into the river downstream of Post Foot Branch. Sixmile Creek (Gapway Bay, Greens Creek, Prince Creek, Crooked Branch, Inland Branch) enters the river next followed by Cottage Creek and Longwater Bay. There are a total of 354.3 stream miles, 213.8 acres of lake waters, and 763.3 acres of estuarine areas in this watershed. The Black River, upstream of the crossing of U.S. Hwy. 701 (just upstream of Sixmile Creek), is classified FW* (Dissolved Oxygen not less than 4.0 mg/l and pH between 5.0 and 8.5) and its tributaries are classified FW. Downstream of the crossing, the Black River and its tributaries are classified SA. Another natural resource in the watershed is the Black River Preserve north of the Town of Andrews. The Black River drains into the Great Pee Dee River.

Surface Water Quality

Station #	Type	Class	Description
PD-359	W/INT	FW*	BLACK RIVER AT S-45-30
RS-07221	RS07	FW	INDIAN HUT SWAMP AT S-22-29, 5MI ESE OF ANDREWS
PD-170	W/INT	FW*	BLACK RIVER AT SC 51, 11.6MI NE OF ANDREWS
RS-10349	RS10	FW	LANES CREEK AT SC 51 JUST N OF OATLAND
PD-325	P/INT	SA	BLACK RIVER AT S-22-489 4 MI NE OF GEORGETOWN

Black River – There are three SCDHEC monitoring sites along this lowest section of the Black River, and recreational uses are fully supported at all sites. This is a blackwater system, characterized by naturally low dissolved oxygen conditions. At the upstream site ***(PD-359)***, 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. At the midstream site ***(PD-170)***, aquatic life uses are not supported due to dissolved oxygen excursions, which are compounded by a significant decreasing trend in dissolved oxygen concentration. In addition, there are significant increasing trends in five-day biochemical oxygen demand and fecal coliform. A significant decreasing trend in total nitrogen concentration suggests improving conditions for this parameter. At the downstream site ***(PD-325)***, aquatic life uses are not supported due to turbidity excursions, which are compounded by a significant increasing trend in turbidity. In addition, there is a significant increasing trend in five-day biochemical oxygen demand. Although dissolved oxygen excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations. There is a significant increasing trend in pH at this site.

Indian Hut Swamp (RS-07221) - Aquatic life and recreational uses are fully supported. This is a blackwater system, characterized by naturally low dissolved oxygen conditions. Although dissolved oxygen excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations.

Lanes Creek (RS-10349) – Aquatic life and recreational uses are fully supported. This is a blackwater system, characterized by naturally low pH and dissolved oxygen conditions. Although excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations.

A fish consumption advisory has been issued by the Department for mercury and includes the ***Black River*** *within this watershed (see advisory p.75).*

Groundwater Quantity

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

NPDES Program

Active NPDES Facilities

RECEIVING STREAM ***FACILITY NAME***	***NPDES#*** ***TYPE***
INDIAN HUT SWAMP TRIBUTARY STONE CONSTRUCTION CO./ANDREWS MINE	SCG730006 MINOR INDUSTRIAL
INDIAN HUT SWAMP TRIBUTARY SIMPSON LUMBER CO./GEORGETOWN OPERATIONS	SC0046582 MINOR INDUSTRIAL
JOHNSONS SWAMP TREBOL USA LLC	SC0001619 MINOR INDUSTRIAL

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

LANDFILL NAME ***FACILITY TYPE***	***PERMIT #*** ***STATUS***
CM POWELL INDUSTRIAL	---------- CLOSED
GEORGETOWN COUNTY COMPOSTING COMPOSTING	221001-3001 ACTIVE
GEORGETOWN COUNTY MUNICIPAL	221001-1102 ACTIVE
GEORGETOWN COUNTY LANDFILL MUNICIPAL	221001-1101 CLOSED
GEORGETOWN SUBTITLE D LANDFILL INDUSTRIAL	IWP-231 CLOSED
GEORGETOWN COUNTY C&D LANDFILL CONSTRUCTION	221001-1201 INACTIVE
GEORGETOWN COUNTY C&D LANDFILL CONSTRUCTION	221001-1202 ACTIVE

Mining Activities

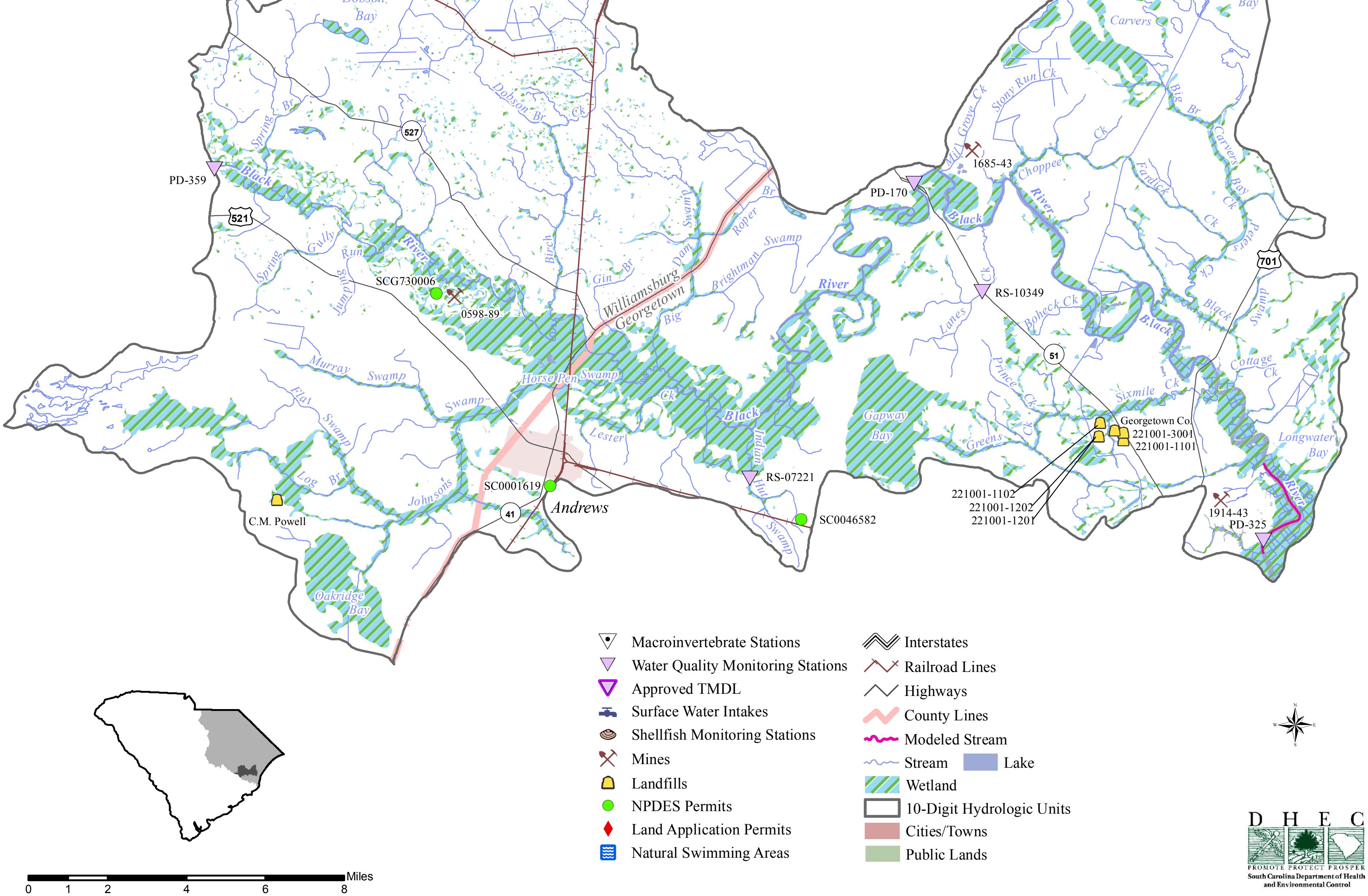
MINING COMPANY ***MINE NAME***	***PERMIT #*** ***MINERAL***
STONE CONSTRUCTION CO. ANDREWS MINE	0598-89 SAND
C-PIN INVESTMENTS, INC. C-PIN MINE	1685-43 SAND/CLAY

Growth Potential

There is a low potential for growth in this watershed, which contains the Town of Andrews. Andrews has both water and sewer infrastructure and a rail line, which should allow low to moderate growth. Outside of the Andrews area, the watershed is rural with mostly agricultural and timberland uses. Water is available along most roads in the area, and sewer has been installed in the Plantersville area.

Black River Watershed

(03040205-09)



Waccamaw River Basin

The ***Waccamaw River Basin (hydrologic unit 03040206)*** is located in Horry and Georgetown Counties, and encompasses 5 watersheds and 598 square miles. The Waccamaw River Basin incorporates the Lower Coastal Plain and Coastal Zone regions and the AIWW flows through the Coastal Zone region. Of the 382,983 acres, 39.3% is forested wetland (swamp), 22.1% is forested land, 15.4% is urban land, 14.8% is agricultural land, 5.1% is nonforested wetland (marsh), 2.7% is water, and 0.6% is barren land. The urban land percentage is comprised chiefly of the Cities of Conway, Georgetown, Myrtle Beach, and North Myrtle Beach. There are approximately 784 stream miles, 2,373 acres of lake waters, and 22,910 acres of estuarine areas in this watershed. The Waccamaw River flows across the South Carolina state line from North Carolina and accepts drainage from Kingston Lake and the AIWW via Socastee Creek. The Waccamaw River then joins the Great Pee Dee River as it forms Winyah Bay and drains into the Atlantic Ocean.

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 regions that define the Waccamaw River Basin are as follows:

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 U.S. Geological Survey's National Land Cover Data (NLCD), 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 areas).

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

Soil Types

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

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

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

Cape Fear soils are very poorly drained soils that formed in sandy and clayey marine sediments in upland areas of the Coastal Plain, and in flat and depressional areas.

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

Eulonia soils are moderately well drained, moderately slowly permeable soils that formed in clayey marine sediment, nearly level to gently sloping and on broad flats.

Hobonny soils are very poorly drained, moderately permeable soils that formed in organic deposits of remains of herbaceous and woody plants, on flood plains of major rivers, covered by water a large part of the time.

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

Leon soils are somewhat poorly drained to poorly drained, level to nearly level, sandy soils with weakly cemented layers stained by organic matter.

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

Mouzon soils are poorly drained, loamy and sandy soils with a loamy subsoil.

Nansemond soils are moderately well drained, rapidly permeable soils that formed in loamy Coastal Plain sediments on stream terraces and adjacent to small drainages.

Newhan soils are excessively drained, very rapidly permeable soils that formed in sandy marine sediment, nearly level to gently sloping, adjacent to beaches and waterways along the coastline.

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

Pocomoke soils are very poorly drained, moderately rapidly permeable soils that formed in sandy Coastal Plain sediments in small drainageways, in shallow depressions, and on flats.

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

Woodington soils are poorly drained, moderately permeable soils that formed in loamy Coastal Plain sediments on stream terraces and upland flats on higher elevations.

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

Yonges soils are moderately well drained to poorly drained, nearly level soils with a sandy surface layer and predominantly loamy subsoil.

Soil 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. The range of K-factor values in the Waccamaw River Basin is from 0.10 to 0.19.

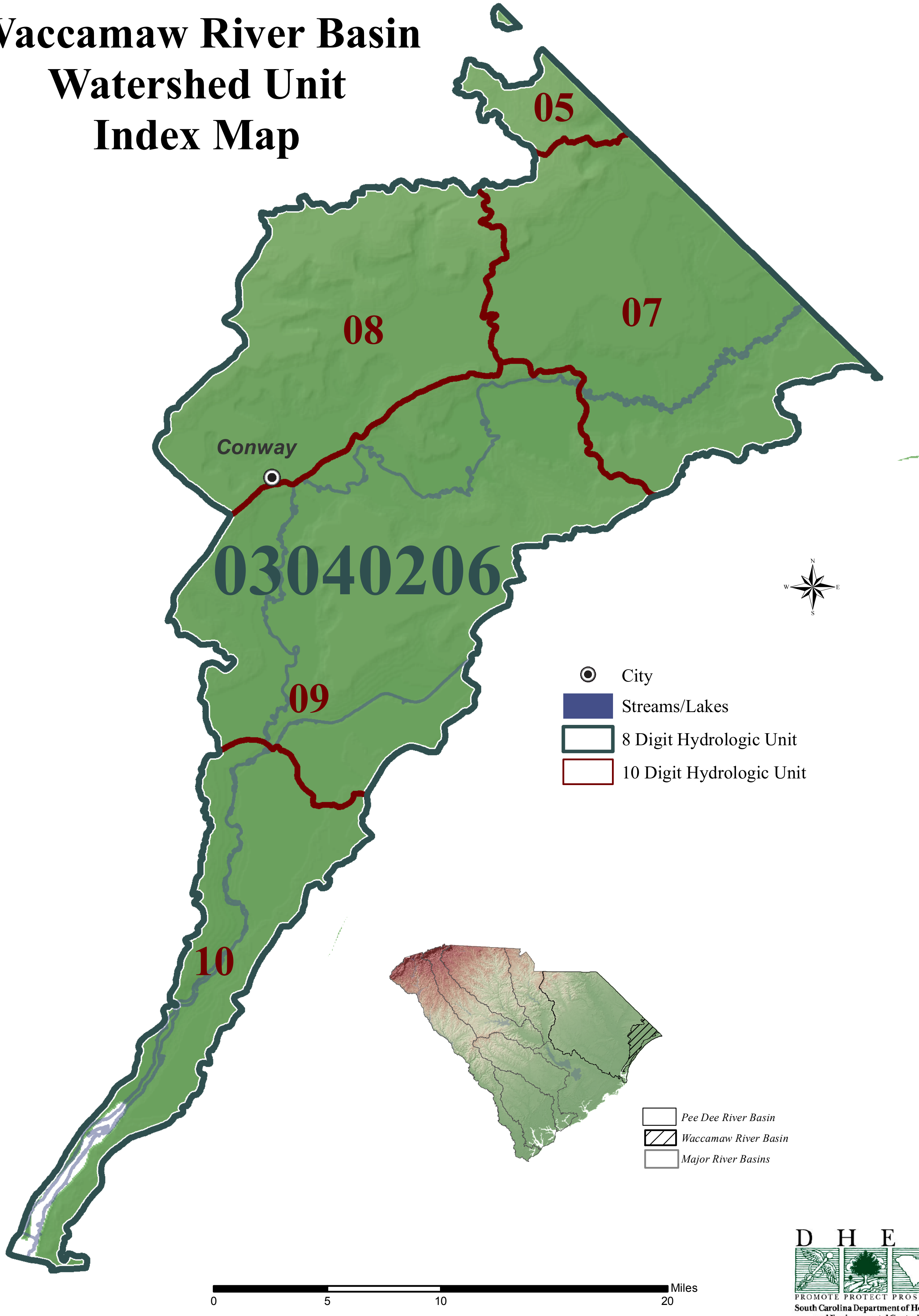
Fish Consumption Advisory

At the time of publication, a fish consumption advisory issued by SCDHEC is in effect for the ***Intracoastal Waterway (AIWW)*** and for the ***Waccamaw River*** (from the NS/SC state line to US 17 at Winyah Bay) advising people to limit the amount of some types of fish consumed from these waters. Fish consumption advisories are updated annually in March. For background information and the most current advisories please visit www.scdhec.gov/FoodSafety/FishConsumptionAdvisories.

Climate

Normal yearly rainfall in the Waccamaw River area during the period of 1971 to 2000 was 54.13 inches, according to South Carolina's **30-year** climatological record. Data compiled from National Weather Service stations in Loris, Conway, Brookgreen Gardens, and Georgetown were used to determine the general climate information for this portion of the State. The highest level of rainfall occurs in the summer with 18.07 inches; 12.76, 12.03, and 11.26 inches of rain falling in the fall, winter, and spring, respectively. The average annual daily temperature is 64.0 °F. Winter temperatures averaged 48.3°F, spring temperatures averaged 63.2°F and summer and fall mean temperatures were 79.0 °F and 65.5 °F, respectively.

Waccamaw River Basin Watershed Unit Index Map



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Watershed Evaluations

03040206-05

(Grissett Swamp Tributaries)

General Description

The South Carolina portion of 03040206-05 is located in Horry County and consists primarily of ***tributaries of Grissett Swamp*** within South Carolina. The watershed occupies 11,059 acres of the Lower Coastal Plain region of South Carolina. Land use/land cover in the watershed includes: 40.2% forested wetland, 31.8% agricultural land, 16.4% forested land, 9.5% urban land, 1.7% nonforested wetland, 0.2% barren land, and 0.2% water.

Tools Fork and Juniper Swamp (Green Sea Bay, Devils Cotton Patch, Benton Bay) originate in South Carolina and flow over the state line to drain into Grissett Swamp in North Carolina. Grissett Swamp then drains into the Waccamaw River, which then flows over the state line into South Carolina in 03040206-07. There are a total of 132.1 stream miles and 19.8 acres of lake waters in this S.C. watershed, all classified FW.

Surface Water Quality

No water quality monitoring occurred in this watershed

Water Quantity

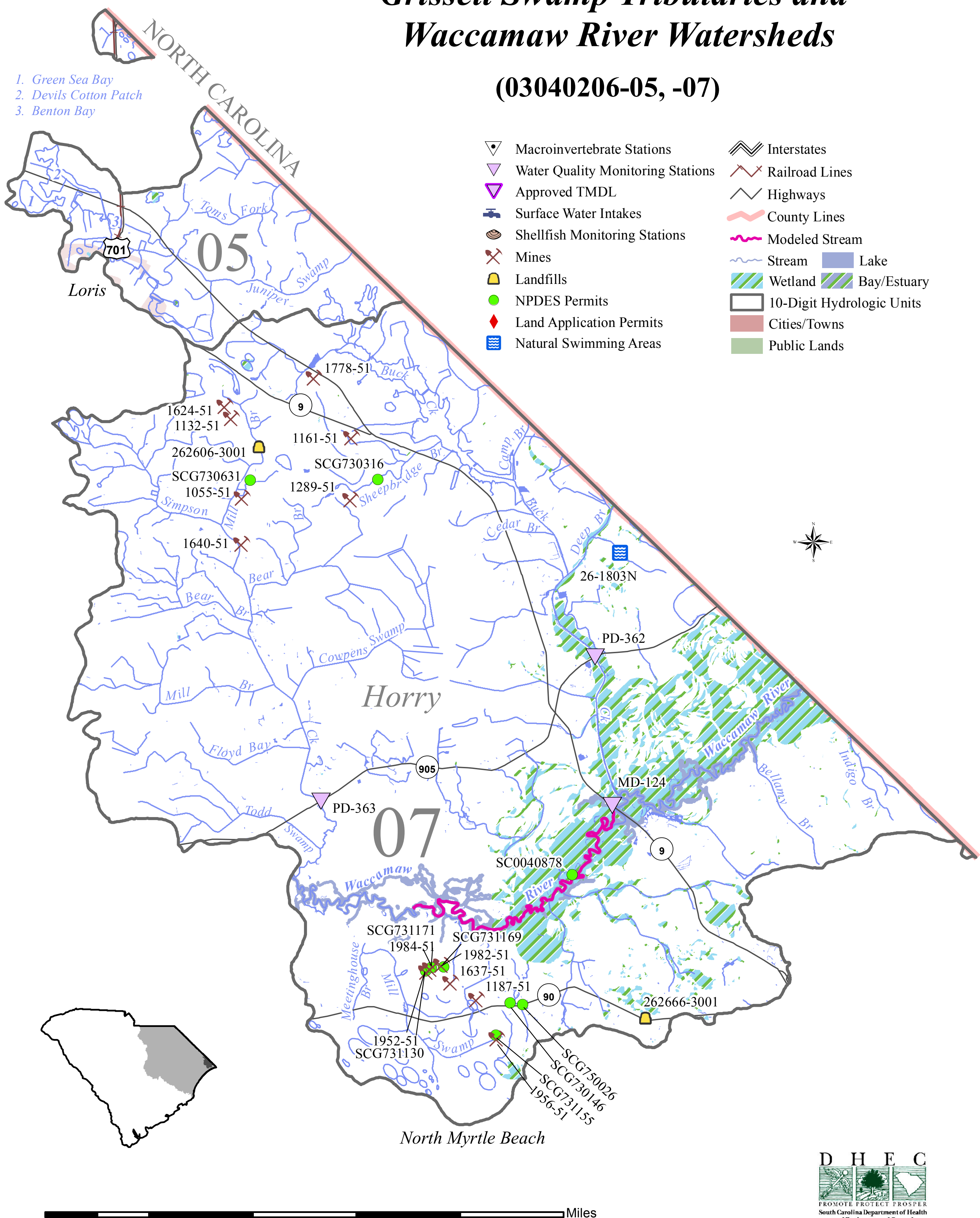
Portions of this watershed fall within the Waccamaw Capacity Use Area and large groundwater uses must be reported (see Capacity Use Program p.22).

Growth Potential

There is a low potential for growth in this watershed, which contains a portion of the Town of Loris. Loris has both water and sewer infrastructure in the town limits and the in the area surrounding the town. The rest of the watershed is very rural with agricultural uses, timberlands, and some residential areas. A railway line runs through the watershed, but there are no industrial areas.

Grissett Swamp Tributaries and Waccamaw River Watersheds

(03040206-05, -07)



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03040206-07

(Waccamaw River)

General Description

The South Carolina portion of 03040206-07 is located in Horry County and consists primarily of the ***Waccamaw River*** and its tributaries from where it crosses the South Carolina/North Carolina state line to Simpson Creek. The watershed occupies 96,578 acres of the Lower Coastal Plain region of South Carolina. Land use/land cover in the watershed includes: 41.0% forested wetland, 25.6% forested land, 20.0% agricultural land, 8.4% urban land, 3.4% nonforested wetland, 1.0% barren land, and 0.6% water.

This portion of the Waccamaw River accepts drainage within South Carolina from Indigo Branch, Bellamy Branch, Cold Water Branch, Meetinghouse Branch (Mill Swamp), and Buck Creek (Round Swamp, Sheepbridge Branch, Camp Swamp, Little Cedar Branch, Cedar Branch, Big Cedar Branch, Deep Branch). Simpson Creek accepts drainage from Mill Branch, Bear Branch, West Bear Branch (Neal Branch), another Mill Branch, Cowpen Swamp (Little Cowpen Swamp), Flat Bay, Floyd Bay, Big Swamp, and Todo Swamp (Thoroughfare Bay, Frank Branch) before draining into the river. There are a total of 335.6 stream miles and 84.0 acres of lake waters in this watershed. The Waccamaw River is classified FW* (dissolved oxygen not less than 4.0 mg/l and pH between 5.0 and 8.5) and the remaining streams in the watershed are classified FW.

Surface Water Quality

Station #	Type	Class	Description
PD-362	W/INT	FW	BUCK CREEK AT SC 905
MD-124	P/INT	FW*	WACCAMAW RIVER AT SC 9 7.0 MI W OF CHERRY GROVE
PD-363	W/INT	FW	SIMPSON CREEK AT SC 905

***Buck Creek (PD-362)* –** This is a blackwater system, characterized by naturally low dissolved oxygen concentration conditions. Although dissolved oxygen excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations. Aquatic life and recreational uses are fully supported; however, there are significant decreasing trends in dissolved oxygen concentration and increasing trends five-day biochemical oxygen demand, turbidity, and total nitrogen concentration. There is a significant decreasing trend in pH.

***Waccamaw River (MD-124)* –** This is a blackwater system, characterized by naturally low dissolved oxygen concentration conditions. Although dissolved oxygen excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations. 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. A significant decreasing trend in turbidity suggests improving conditions for this parameter.

***Simpson Creek (PD-363)* –** Aquatic life uses are fully supported; however, there are significant increasing trends in five-day biochemical oxygen demand and turbidity. Recreational uses are partially supported due to fecal coliform bacteria excursions.

A fish consumption advisory has been issued by the Department for mercury and includes the ***Waccamaw River*** *within this watershed (see advisory p.115).*

Natural Swimming Areas

FACILITY NAME / ***RECEIVING STREAM***	***PERMIT #*** / ***STATUS***
WILLOW TREE RESORT DEEP BRANCH TRIBUTARY	26-1803N ACTIVE

NPDES Program

Active NPDES Facilities

RECEIVING STREAM / ***FACILITY NAME***	***NPDES#*** / ***TYPE***
WACCAMAW RIVER GSW&SA/LONGS WWTP	SC0040878 MINOR DOMESTIC
MILL BRANCH LISTON HARDEE & SON/HARDEE PIT	SCG730631 MINOR INDUSTRIAL
WACCAMAW RIVER TRIBUTARY WIZARD WASH INC.	SCG750026 MINOR INDUSTRIAL
SHEEPBRIDGE BRANCH WAKE STONE CORP./N. MYRTLE BEACH	SCG730316 MINOR INDUSTRIAL
WACCAMAW RIVER TRIBUTARY SOUTHERN ASPHALT/HWY 90 PIT	SCG730146 MINOR INDUSTRIAL
WACCAMAW RIVER TRIBUTARY P MINING CO. INC./COATES PIT MINE	SCG731169 MINOR INDUSTRIAL
WACCAMAW RIVER TRIBUTARY DEWITT DIRT/DEWITT MINE	SCG731171 MINOR INDUSTRIAL
WACCAMAW RIVER TRIBUTARY P MINING CO. INC./DEWITT MINE	SCG731130 MINOR INDUSTRIAL
MILL SWAMP PRO-GREEN LLC/STRAWBERRY ROAD MINE	SCG731155 MINOR INDUSTRIAL

Municipal Separate Storm Sewer Systems (MS4)

RECEIVING STREAM	***NPDES#***
MUNICIPALITY	***MS4 PHASE***
RESPONSIBLE PARTY	***MS4 SIZE***
IMPLEMENTING PARTY	
WACCAMAW RIVER	SCR035104
UNINCORPORATED AREAS	PHASE II
HORRY COUNTY	SMALL MS4
HORRY COUNTY	

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

LANDFILL NAME	***PERMIT #***
FACILITY TYPE	***STATUS***
WHITE & SON, INC.	262606-3001
COMPOSTING	ACTIVE
SUNWAY ENVIRONMENTAL INC.	262666-3001
COMPOSTING	ACTIVE

Mining Activities

MINING COMPANY	***PERMIT #***
MINE NAME	***MINERAL***
LISTON T. HARDEE & SON, INC.	1055-51
HARDEE PIT	SAND/CLAY
WHITE & SON, INC.	1132-51
HEWETT ROAD MINE	SAND/CLAY
GRAND STRAND AGGREGATES, LLC	1161-51
GORETOWN MINE	LIMESTONE
HOLMES	1640-51
HOLMES MINE	SAND
WAKE STONE CORP.	1289-51
NORTH MYRTLE BEACH QUARRY	LIMESTONE
AO HARDEE & SONS	1624-51
HEWETT ROAD MINE	SAND/CLAY
HARDEE MINING	1637-51
HARDEE MINE	SAND
SOUTHERN ASPHALT INC.	1187-51
HWY 90 PIT MINE	SAND; SAND/CLAY
WORLEY TRUCKING CO., INC.	1778-51
WORLEY MINE #3	SAND
PRO-GREEN LLC	1956-51
STRAWBERRY ROAD MINE	SAND/TOPSOIL

DILLION COUNTY PEE DEE CHURCH ROAD MINE	1952-51 SAND/TOPSOIL
DEEP SOUTH PLANTATION THE BASS HOLE	1982-51 SAND/TOPSOIL
DEWITT DIRT DEWITT MINE	1984-51 SAND/TOPSOIL
HOT MIX INC HAWKSBILL MINE	2009-51 SAND/TOPSOIL

Water Quantity

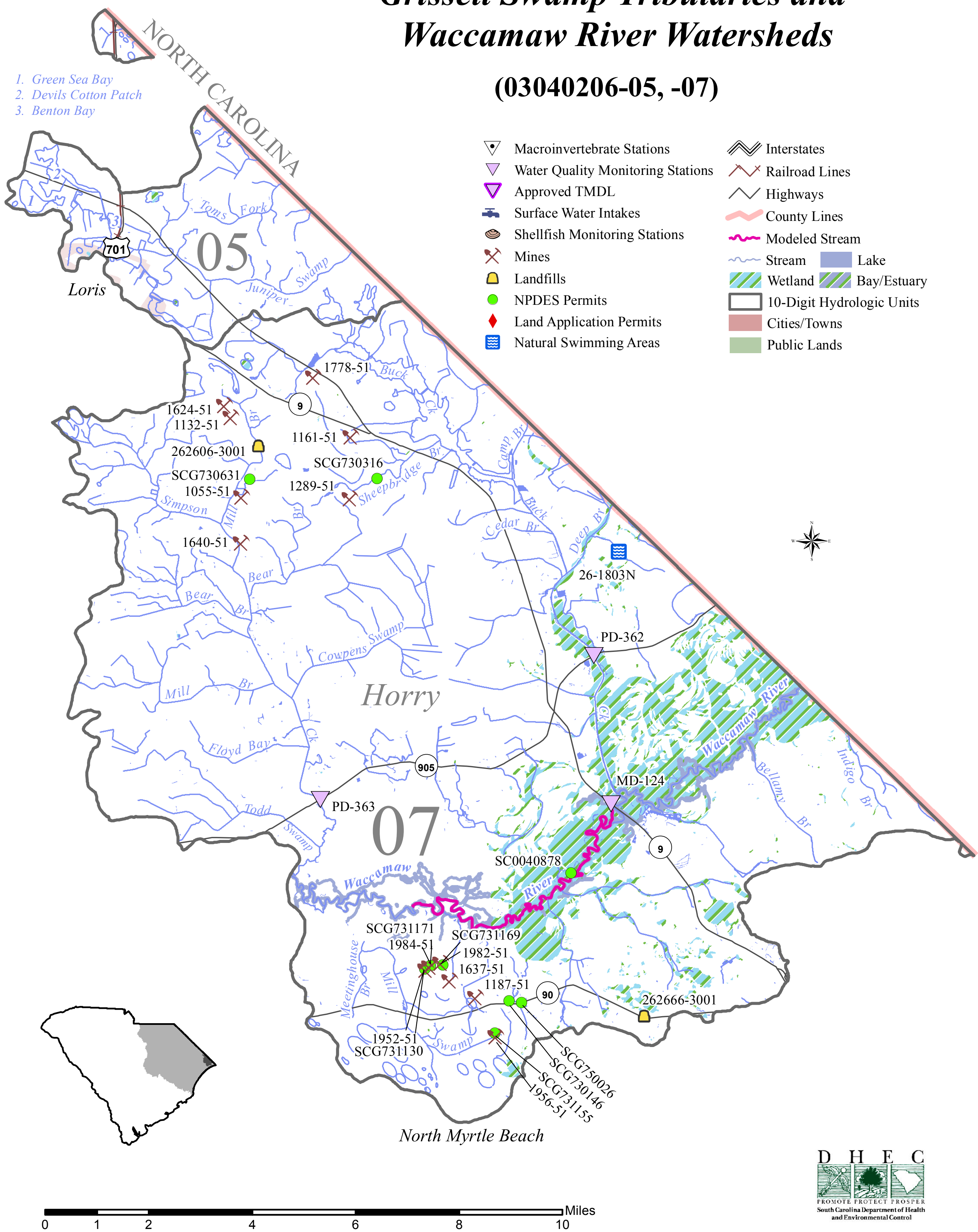
Portions of this watershed fall within the Waccamaw Capacity Use Area and large groundwater uses must be reported (see Capacity Use Program p.22).

Growth Potential

There is a moderate to high potential for growth in this watershed, which contains the City of North Myrtle Beach. The highest growth, in the form of residential and commercial development, will occur in the area east of the Waccamaw River, which has water infrastructure. The S.C. Hwy 90 corridor, which runs east of the river, also has water available. Moderate growth is seen for the S.C. Hwy 9 corridor, which has both water and sewerage, and an increase in commercial development in particular is predicted for this corridor. Outside of the municipal areas, the watershed is primarily agricultural, timberland, and residential. Some growth is predicted around the unincorporated community of Longs, which has water and sewer infrastructure, due to the sprawling development around North Myrtle Beach and Myrtle Beach.

Grissett Swamp Tributaries and Waccamaw River Watersheds

(03040206-05, -07)



03040206-08

(Kingston Lake)

General Description

Watershed 03040206-08 is located in Horry County and consists primarily of ***Kingston Lake*** and its tributaries. The watershed occupies 83,444 acres of the Lower Coastal Plain region of South Carolina. Land use/land cover in the watershed includes: 36.2% forested wetland, 28.0% agricultural land, 23.5% forested land, 9.9% urban land, 1.9% nonforested wetland, 0.4% water, and 0.1% barren land.

Kingston Lake accepts drainage from Jacks Bay, Alligator Swamp, and White Oak Swamp. White Oak Swamp receives drainage from Little White Oak Swamp (Cane Branch), Horsepen Branch, Huckleberry Branch, Bug Swamp (Bay Gully Branch, Bayboro Branch, Hellhole Swamp), and Fox Branch. Camp Swamp enters the system next followed by Horsepen Creek, Maple Swamp (Big Baxter Swamp, Little Baxter Swamp, Horse Creek, Cross Branch, Poplar Swamp, Booth Branch, Smith Branch, Boggy Swamp), Grier Swamp (Priver Branch, Mill Branch, Long Swamp, St. Paul Branch, Brown Swamp, Mary Branch), and Crab Tree Swamp (Ned Creek, Thompson Swamp, Oakey Swamp, Beaver Hole Swamp, Altman Branch). The Kingston Lake Watershed drains into the Waccamaw River. There are a total of 183.8 stream miles and 161.8 acres of lake waters in this watershed, all classified FW.

Surface Water Quality

Station #	Type	Class	Description
RS-10389	RS10	FW	BROWN SWAMP AT US 701
RS-04375	RS04	FW	CRAB TREE SWAMP AT US 501 BRIDGE, 1.5 MI NW OF CONWAY
MD-158	S/W	FW	CRAB TREE SWAMP AT LONG ST. BELOW CONWAY #1 POND OUTFALL
MD-107	S/INT	FW	KINGSTON LAKE NEAR PUMP STATIOIN ON LAKESIDE DRIVE IN CONWAY

***Brown Swamp (RS-10389)* –** 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. Recreational uses are fully supported.

Crab Tree Swamp* –** There are two monitoring stations along Crab Tree Swamp. At the upstream site ***(RS-04375), aquatic life uses are fully supported. Recreational uses are not supported due to fecal coliform bacteria excursions. At the downstream site ***(MD-158)***, aquatic life uses are not supported due to dissolved oxygen excursions and recreational uses are not supported due to fecal coliform bacteria excursions.

***Kingston Lake (MD-107)* –** Aquatic life uses are not supported due to dissolved oxygen excursions, which are compounded by a significant decreasing trend in dissolved oxygen concentration. Recreational uses are not supported due to fecal coliform bacteria excursions.

NPDES Program

Active NPDES Facilities

RECEIVING STREAM *FACILITY NAME*	*NPDES#* *TYPE*
MAPLE SWAMP HOT MIX, INC./ADRIAN MINE	SCG730422 MINOR INDUSTRIAL
CRAB TREE SWAMP BROWNS MOBILE HOME PARK/BROWN MINE	SCG731247 MINOR INDUSTRIAL
BUG SWAMP FAITH LANDSCAPING-CAROLINA MINE	SCG731301 MINOR INDUSTRIAL

Municipal Separate Storm Sewer Systems (MS4)

RECEIVING STREAM *MUNICIPALITY* *RESPONSIBLE PARTY* *IMPLEMENTING PARTY*	*NPDES#* *MS4 PHASE* *MS4 SIZE*
KINGSTON LAKE CITY OF CONWAY CITY OF CONWAY CITY OF CONWAY	SCR035103 PHASE II SMALL MS4

Nonpoint Source Management Program

Mining Activities

MINING COMPANY *MINE NAME*	*PERMIT #* *MINERAL*
HOT MIX, INC. ADRIAN MINE	1489-51 SAND
BROWNS MOBILE HOME PARK BROWN MINE	2029-51 SAND/TOP SOIL

Water Quantity

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

Growth Potential

There is a moderate potential for residential and commercial growth in this watershed, which contains a portion of the City of Conway. Water and sewerage infrastructure is located in and around Conway, and water is available along the U.S. Hwy 701 corridor. An industrial area is located along U.S. Hwy 701 and should see growth due to an existing rail line and highways that make the area accessible from all directions. The proposed Preferred Alternative route of I-73 (Southern Corridor) would cross this watershed and could bring some growth to the area, especially around interchanges.

Watershed Protection and Restoration

Special Projects

Wetland Program Development Grant

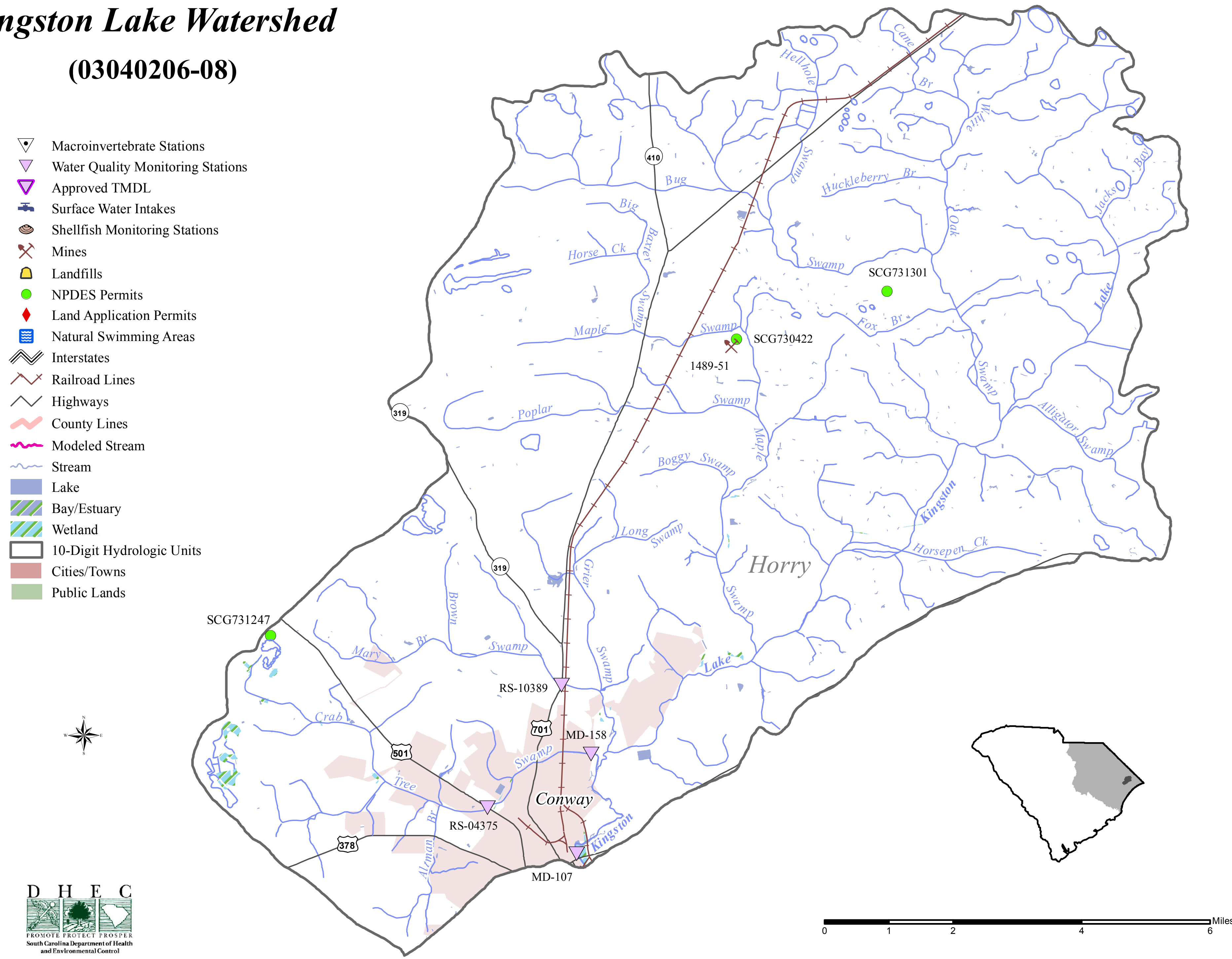
In 2005, USEPA Region IV awarded a 4-year Wetland Program Development Grant to build local capacity for watershed planning in the Kingston Lake Watershed. Coastal Carolina University's Waccamaw Watershed Academy is serving as the lead agency. Collaborators include Horry County, the City of Conway, and the Waccamaw Regional Council of Governments along with various state and federal agencies including SCDHEC's BOW and OCRM. The primary project goal is development of a watershed management plan. Current activities include a volunteer monitoring program compliant with USEPA quality control criteria with online data access. The increased local capacity for watershed planning is intended to stimulate and support similar efforts in the other watersheds of the Waccamaw River Basin. These efforts are a follow on to a USEPA 319 Program project conducted from 1999 to 2002 in which significant nonpoint pollution problems were quantified. A demonstration stormwater BMP was also assessed for pollution removal efficiency and is now being used as an educational resource.

Crabtree Swamp Water Quality Improvement Project

In 2008, Horry County and the City of Conway signed a Memorandum of Understanding with the Horry Soil and Water Conservation District and Crabtree Swamp Watershed Conservation District to undertake an initiative to restore Crabtree Swamp to a more natural state. In 2009, the group completed the first phase of a floodplain restoration project with help from project partners that included Coastal Carolina University, Clemson University, the U.S. Fish and Wildlife Service, USDA/NRCS, SCDHEC, and USEPA. The project was designed to increase flood storage capacity, stabilize canal banks, filter pollutants from water with native plantings, and provide wildlife habitat. In 2012, the project received a 319 Grant with the goal of improving water quality by reducing bacteria levels within the watershed to allow for improved water quality at impaired stations MD-158 and MD-107. Project leaders continue to help livestock producers implement best management practices and to repair and replace failing septic systems. The project also has an education component geared toward improving water quality awareness in the community. Project monitoring and assessment are ongoing. The project is scheduled to be completed in the fall of 2015.

Kingston Lake Watershed

(03040206-08)



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03040206-09

(Waccamaw River)

General Description

Watershed 03040206-09 is located in Horry County and consists primarily of the ***Waccamaw River*** and its tributaries from Simpson Creek to Socastee Creek (AIWW). The watershed occupies 136,304 acres of the Lower Coastal Plain and Coastal Zone regions of South Carolina. Land use/land cover in the watershed includes: 43.2% forested wetland, 21.9% urban land, 19.6% forested land, 6.8% agricultural land, 5.6% nonforested wetland, 2.3% water, and 0.6% barren land.

This portion of the Waccamaw River accepts drainage from its upstream reaches along with Jones Big Swamp (Boggy Swamp, Horse Savannah, Watts Bay), Stanley Creek (Beaverdam Swamp, Big Swamp), Tilly Swamp (Bare Bone Bay, Cane Bay, Tiger Bay, Buck Bay, Long Branch), Round Swamp, and McCoy Bay. Dam Swamp enters the river next followed by Steritt Swamp (Skinners Swamp) East Prong, South Prong). The river then flows past the City of Conway and accepts drainage from Bear Swamp (Butler Swamp, Willow Springs Branch, Busbee Lake), Pitch Lodge Lake, Cox Ferry Lake, and Thorofare Creek. Wadus Lake connects Busbee Lake to the river. Gravely Gully and Halfway Swamp (Big Branch) enter the river next, followed by Old Womans Lake, Big Buckskin Creek, and Peachtree Lake. Socastee Swamp and the AIWW (Folly Swamp) merge near the Town of Socastee to form Socastee Creek and flows into the Waccamaw River. Enterprise Creek connects the Waccamaw River and Socastee Creek just upstream of their confluence. There are a total of 226.2 stream miles and 477.1 acres of lake waters in this watershed. The Waccamaw River is classified FW* (dissolved oxygen not less than 4.0 mg/l and pH between 5.0 and 8.5) and the remaining streams are classified FW.

Surface Water Quality

Station #	Type	Class	Description
PD-373	INT	FW	Waccamaw River at S-26-31, Red Bluff Landing
PD-369	INT	FW*	Waccamaw River at S-26-105, Reeves Ferry Road
RS-06165	RS06	FW	Steritt Swamp at bridge on Steritt Swamp Rd, 4.8 mi E of Conway
MD-110	W	FW*	Waccamaw River at US 501 bypass around Conway
MD-111	W	FW*	Waccamaw River at Cox's Ferry on county road 110
MD-145	SPRP	FW*	Waccamaw River, 1 mi DS of Bucksville Landing at big bend in river
MD-136	W	FW*	Waccamaw River, 0.25 mi upstream of junction with AIWW
MD-088	W	FW	AIWW 1 mi S of bridge on US 501
MD-089	W	FW	AIWW 2 mi S of bridge on US 501
MD-127	SPRP	FW	AIWW at SC 544, 7.5 mi SW of Myrtle Beach

Waccamaw River* –** There are six SCDHEC monitoring sites along this section of the Waccamaw River. This is a blackwater system, characterized by naturally low dissolved oxygen conditions. At the furthest upstream site ***(PD-373), aquatic life and recreational uses are fully supported. Further downstream ***(PD-369)***, aquatic life uses are fully supported; however, there is a significant decreasing trend in dissolved oxygen. Although dissolved oxygen excursions occurred, they were typical of values seen in swamp and 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 excursions and there is an increasing trend in fecal coliform bacteria. At the next site downstream ***(MD-110)***, aquatic life and recreational uses are fully supported.

Further downstream ***(MD-111)***, aquatic life and recreational uses are fully supported. At the next site downstream ***(MD-145)***, aquatic life uses are partially supported due to dissolved oxygen excursions. In addition, there is a significant decreasing trend in dissolved oxygen concentration and a significant increasing trend in total phosphorus concentration. Recreational uses are fully supported. At the furthest downstream site ***(MD-136)***, aquatic life and recreational uses are fully supported and a significant increasing trend in dissolved oxygen concentration suggests improving conditions for this parameter.

Steritt Swamp (RS-06165) - Aquatic life uses are not supported due to dissolved oxygen excursions. Recreational uses are not supported due to fecal coliform bacteria excursions; however, a significant decreasing trend in fecal coliform bacteria suggests improving conditions for this parameter.

Atlantic Intracoastal Waterway (AIWW) - There are three SCDHEC monitoring sites along this section of the AIWW. This section of the AIWW is influenced by tidal pressures from both the Little River and the Winyah Bay ends, so flushing and mixing are limited, causing a bathtub effect whereby the water moves back and forth, but takes a long time to actually move out of the waterway. Although dissolved oxygen and pH excursions occurred at all sites, they were typical of values seen in tidally influenced systems with limited flushing and significant marsh drainage and were considered natural, not standards violations. At the upstream ***(MD-088)*** and midstream ***(MD-089)*** sites, aquatic life and recreational uses are fully supported. At the downstream site ***(MD-127)***, aquatic life and recreational uses are also 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.

A fish consumption advisory has been issued by the Department for mercury and includes the ***Waccamaw River*** *and the* ***Atlantic Intracoastal Waterway*** *within this watershed* *(see advisory p.115).*

NPDES Program

Active NPDES Facilities

RECEIVING STREAM ***FACILITY NAME***	***NPDES#*** ***TYPE***
WACCAMAW RIVER S.C. PUBLIC SERV. AUTH./GRAINGER GEN. STA.	SC0001104 MAJOR INDUSTRIAL
WADUS LAKE S.C. PUBLIC SERV. AUTH./GRAINGER GEN. STA.	SC0001104 MAJOR INDUSTRIAL
WACCAMAW RIVER GSW&SA/SCHWARTZ PLANT	SC0037753 MAJOR DOMESTIC
BEAR SWAMP GSW&SA/CONWAY WWTP	SC0021733 MAJOR DOMESTIC

STERITT SWAMP HUCKS LANDSCAPING & CONSTR./HUCKS MINE #8	SCG730347 MINOR INDUSTRIAL
EAST PRONG HUCKS LANDSCAPING & CONSTR./HUCKS MINE #1	SCG730310 MINOR INDUSTRIAL
SOCASTEE SWAMP RE GOODSON CONSTR./CAROLINA FOREST BLVD TRACT 19	SCG730292 MINOR INDUSTRIAL
WACCAMAW RIVER TRIBUTARY WEAVER CO./COX FERRY MINE #2	SCG730560 MINOR INDUSTRIAL
WILLOW SPRINGS BRANCH TRIBUTARY RICHARDSON & SONS/RICKYS DIRT	SCG730113 MINOR INDUSTRIAL
WACCAMAW RIVER TRIBUTARY ROBERT O. COLLINS CO., INC./LAKE RIDGE MINE	SCG730267 MINOR INDUSTRIAL
SOCASTEE CREEK TRIBUTARY ROBERT O. COLLINS CO., INC./FORESTBROOK MINE	SCG730236 MINOR INDUSTRIAL
SOCASTEE CREEK TRIBUTARY ROBERT O. COLLINS CO., INC./GLENS BAY MINE	SCG731299 MINOR INDUSTRIAL
WACCAMAW RIVER TRIBUTARY CL BENTON & SONS, INC./SEA MIST MINE	SCG730057 MINOR INDUSTRIAL
JONES BIG SWAMP EXPRESS CONSTRUCTION/EAST EDGE MINE	SCG731159 MINOR INDUSTRIAL
JONES BIG SWAMP EXPRESS CONSTRUCTION/EAST EDGE MINE	SCG731316 MINOR INDUSTRIAL
WACCAMAW RIVER TRIBUTARY ASHLEY ANDERSON FARM/BEAR BLUFF MATERIALS	SCG730130 MINOR INDUSTRIAL
TILLY SWAMP ASHLEY ANDERSON FARM/BARNHILL MINE	SCG731280 MINOR INDUSTRIAL
WATTS BAY WILLIAM LIVINGSTON/BLUE WATER MINE	SCG731281 MINOR INDUSTRIAL
TILLY SWAMP TRIBUTARY PALMETTO PROPERTIES/OLD REEVES FERRY MINE	SCG731246 MINOR INDUSTRIAL
SOCASTEE SWAMP TRIBUTARY RCPS PROPERTIES/HWY 501 MINE	SCG731129 MINOR INDUSTRIAL
WACCAMAW RIVER TRIBUTARY RE GOODSON/CBP PHIV LAKE RIDGE MINE	SCG731268 MINOR INDUSTRIAL
SOCASTEE CREEK TRIBUTARY HOME PLACE FARM LLC/WEATHERLY MINE	SCG731259 MINOR INDUSTRIAL
SOCASTEE SWAMP AVX CORPORATION/CONWAY	SC0048402 MINOR INDUSTRIAL

TILLY SWAMP TRIBUTARY SCOTT POTTER MINE	SCG731285 MINOR INDUSTRIAL

Municipal Separate Storm Sewer Systems (MS4)

RECEIVING STREAM ***MUNICIPALITY*** ***RESPONSIBLE PARTY*** ***IMPLEMENTING PARTY***	***NPDES#*** ***MS4 PHASE*** ***MS4 SIZE***
WACCAMAW RIVER CITY OF CONWAY CITY OF CONWAY CITY OF CONWAY	SCR035103 PHASE II SMALL MS4
WACCAMAW RIVER UNINCORPORATED AREAS HORRY COUNTY HORRY COUNTY	SCR035104 PHASE II SMALL MS4

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

LANDFILL NAME ***FACILITY TYPE***	***PERMIT #*** ***STATUS***
HORRY COUNTY LANDFILL MUNICIPAL	---------- CLOSED
HORRY COUNTY LANDFILL MUNICIPAL	261001-1101 CLOSED
HORRY COUNTY LANDFILL MUNICIPAL	261001-1102, 261001-1201 ACTIVE
CITY OF CONWAY DUMP MUNICIPAL	----------- CLOSED
THOMPKINS C&D DUMP CONSTRUCTION	----------- CLOSED
HORRY COUNTY COMPOSTING FACILITY COMPOSTING	261001-3001 ACTIVE
COASTAL RECLAMATION COMPOSTING SITE COMPOSTING	262448-3001 ACTIVE
AO HARDEE & SONS COMPOSTING	262626-3001 ACTIVE
HAMMOND WOOD RECYCLING #2 COMPOSTING	262660-3001 INACTIVE
ROBERT COLLINS INC. COMPOSTING	262659-3001 INACTIVE

DIXIE RECYCLING LLC COMPOSTING	262652-3001 ACTIVE
C. OWENS & SONS COMPOSTING	262635-3001 ACTIVE
HOLMES COMPOSTING SITE COMPOSTING	262616-3001 ACTIVE
POSTEC RECYCLING INC. COMPOSTING	262476-3001 INACTIVE

Mining Activities

MINING COMPANY ***MINE NAME***	***PERMIT #*** ***MINERAL***
ASHLEY ANDERSON FARM BEAR BLUFF MATERIALS	1030-51 SAND
ASHLEY ANDERSON FARM BARNHILL MINE	1936-51 SAND; SAND/CLAY
WEAVER COMPANY, INC. COX FERRY MINE #2	1405-51 SAND
RE GOODSON CONSTRUCTION CO. GOODSON/CAROLINA FOREST BLVD.	1363-51 SAND
ARCHIE BELL CONSTRUCTION, INC. LEES LANDING CIRCLE MINE	1056-51 SAND/CLAY
C. OWENS & SONS, INC. OWENS PIT	0951-51 SAND/CLAY
DONALD RICHARDSON & SON, INC. RICKYS DIRT PIT	1099-51 SAND/CLAY
CL BENTON & SONS, INC. SEA MIST MINE	1107-51 SAND
PALMETTO PROPERTIES OLD REEVES FERRY MINE	2041-51 SAND; TOP SOIL
ROBERT O. COLLINS CO., INC. LAKE RIDGE MINE	1158-51 SAND; SAND/CLAY
RCPS PROPERTIES LLC RCPS HWY 501	1992-51 SAND; SAND/CLAY;SOIL
HOME PLACE FARM LLC WEATHERLY MINE	2049-51 SAND; TOPSOIL
DREXEL 101 LLC SUGARLOAF MINE	2092-51 SAND/CLAY; TOPSOIL
SCOTT POTTER SCOTT POTTER MINE	2062-51 SAND/CLAY; TOPSOIL

Water Quantity

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

Growth Potential

There is a high potential for residential, commercial, and industrial growth in this watershed, which contains the City of Conway and the outskirts of the Cities of Myrtle Beach and North Myrtle Beach. A high increase of growth is expected east of the Waccamaw River in particular, and a moderate increase west of the river. All but the northern most corner of the watershed contains water infrastructure. Sewer infrastructure is located in much of the watershed, including the S.C. Hwy 544 corridor, east of S.C. Hwy 544 (excluding the area north of U.S. Hwy 501), and in the Bucksport community. Commercial and residential development is the predominate land use in the City of Conway and along sections of U.S. Hwy 501, U.S. Hwy 17 Bypass, and S.C. Hwy 544. Two industrial parks are located along the U.S. Hwy 501 corridor as well as an existing rail line. The former Myrtle Beach Air Force Base has undergone significant redevelopment as a mixed use district known as the Market Common. It is likely that it will become a central hub of growth in the region. U.S. Hwy 544 has been widened, S.C. Hwy 31 is being extended southward, and S.C. Hwy 707 is being widened, which will likely add to the growth in the area. Portions of the Buist Tract, the largest undeveloped tract of land in Horry County, are being developed. The Fantasy Harbor Bridge, which crosses the AIWW near U.S. Hwy 501 and funnels motorists to southbound U.S. 17 Bypass, was completed in 2009 and relieves some of the Myrtle Beach congestion on U.S. 501.

The proposed Preferred Alternative route of I-73 (Southern Corridor) would cross this watershed and could bring some growth to the area, especially around interchanges. The Southern Evacuation Lifeline has been proposed to bypass S.C. Hwy 707 and U.S. 501 during hurricane evacuations and relieve congestion on the major highways the rest of the time; however, the path of the proposed road travels next to or through several wildlife preserves. Most of the land use outside of these areas consist of residential development and timberland.

Watershed Protection and Restoration

Total Maximum Daily Loads (TMDLs)

A total maximum daily load (TMDL) for oxygen demanding substances has been developed for the main stem of the **Waccamaw River** and the **Atlantic Intracoastal Waterway (AIWW)** in watersheds 02040206-09, 03040206-10, and 03040208-03. The TMDL addresses 12 separate monitoring stations on the State’s 1998 303(d) list of impaired waters. The TMDL, based on a maximum 0.1 mg/l deficit allowed in waters that do not meet applicable dissolved oxygen standards due to natural conditions, will result in a decrease of approximately 63% in the permitted oxygen demanding load discharged to the system. The decreased loadings are being implemented through the NPDES permitting system with new, more restrictive limits becoming final at the conclusion of appropriate compliance schedules.

Special Projects

Development & Implementation of a S.C. Coast-A-Syst

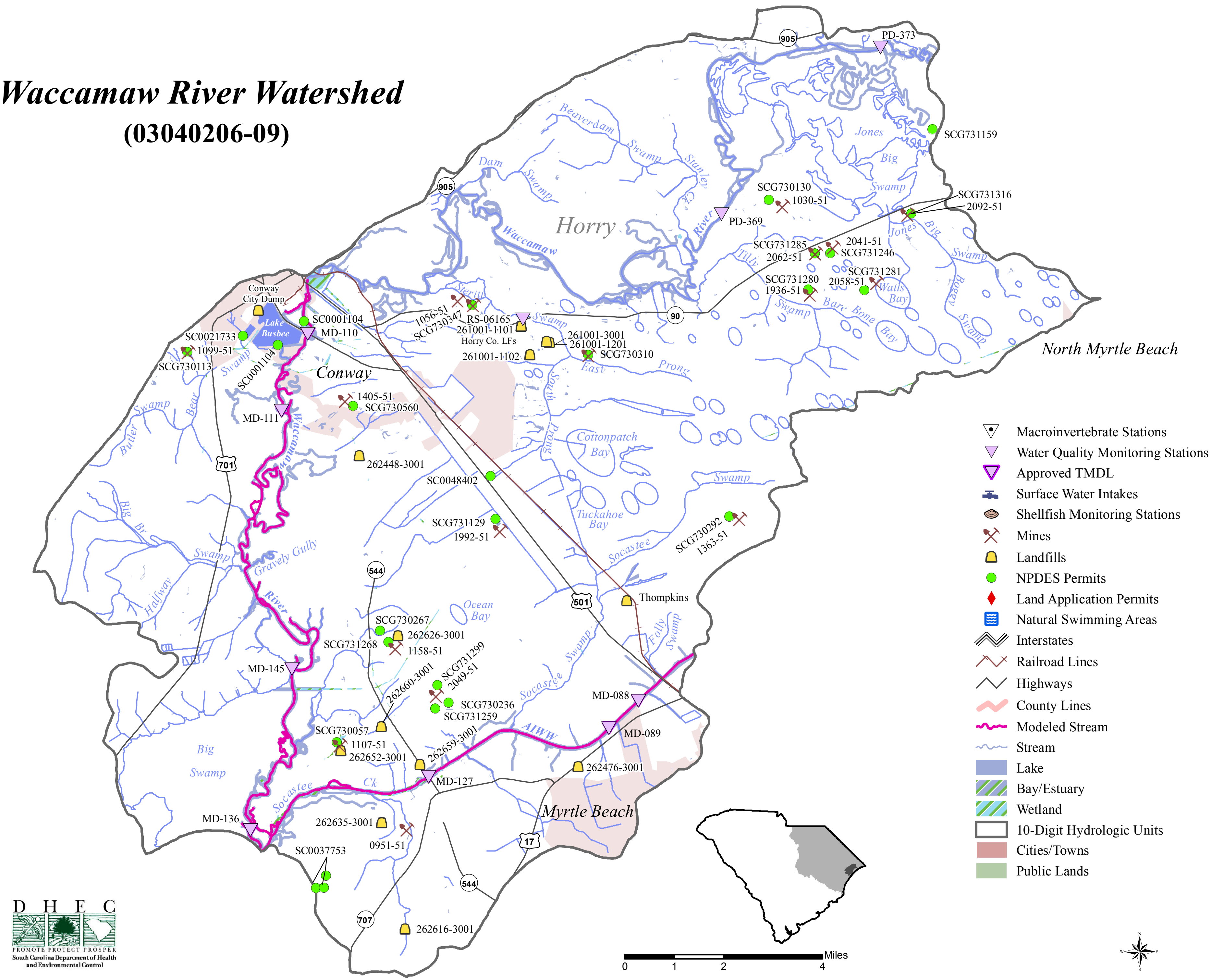
The S.C. Coast-A-Syst project targets homeowners living along the Atlantic Intracoastal Waterway (AIWW) and Socastee Creek (watershed 03040206-09) and the AIWW and Little River (watershed 03040208-03). Like much of the coast, these areas are experiencing rapid development and increased populations, while also harboring fragile water resources for recreation and marine ecology. High fecal coliform bacteria counts, water quality non-supportive of aquatic life because of low dissolved oxygen, and pH excursions exist in local waterbodies.

S.C. Sea Grant Consortium and Clemson University developed a program called South Carolina Coast-A-Syst. This product, modeled after the Home*A*Syst and Farm-A-Syst programs, is used to teach watershed residents and waterbody users responsible practices for protecting water quality, with the ultimate goal to reduce bacteria and nutrient input into nearby waterbodies from urban/suburban activities and land development. Research was conducted through surveys to determine what BMPs were appropriate for coastal South Carolina, where education about nonpoint source was lacking, and how best to reach homeowners in providing continued education. Education of coastal residents included identification of practices, which detrimentally affect water quality, reasons why those practices do so, and instructions in better water quality management practices.

Sea Grant Extension and Clemson Extension published a S.C. Coast-A-Syst packet, which includes self-assessments and fact sheets on homeowner practices. Sea Grant Extension trained Extension agents, Master Gardeners, and homeowner associations to administer this homestead self-assessment program distribute the program and materials through homeowner associations and other public groups, provide support for the program through the Horry County Extension Service, and provide electronic distribution of the program via the world wide web.

Waccamaw River Watershed

(03040206-09)



03040206-10

(Waccamaw River)

General Description

Watershed 03040206-10 is located in Georgetown and Horry Counties and consists primarily of the ***Waccamaw River*** and its tributaries from Socastee Creek (AIWW) to Winyah Bay. The watershed occupies 55,599 acres of the Coastal Zone region of South Carolina. Land use/land cover in the watershed includes: 31.3% forested wetland, 21.5% forested land, 21.1% urban land, 12.6% nonforested wetland, 10.8% water, 2.1% agricultural land, and 0.6% barren land.

This lowest section of the Waccamaw River accepts drainage from its upper reaches, together with Oatbed Creek, Seven Prongs, Peach Creek, Old River (Nimrod Creek), Clark Creek, Big Swamp, Old Dock Creek (Righthand Creek), and Silvers Creek. Bull Creek enters the river next followed by Prince Creek (Fisherman Creek), Vaux Creek, Silver Creek, Collins Creek, Cow House Creek, and Black Creek (White Creek). Sandhole Creek (Ruinsville Creek, Crane Creek) enters the river next followed by Springfield Creek, Brookgreen Creek (Still Creek), Pawleys Creek, Oatland Creek, Waverly Creek, Butler Creek, Schooner Creek, Caledonia Creek (Duncan Creek), and Jericho Creek. The Waccamaw River drains into the Great Pee Dee River in the headwaters of Winyah Bay. There are a total of 117.5 stream miles, 581.6 acres of lake waters, and 3,493.6 acres of estuarine areas in this watershed. The Waccamaw River and this reach of the AIWW is classified FW* (dissolved oxygen not less than 4.0 mg/l and pH between 5.0 and 8.5) from the top of the watershed to the river's confluence with Thoroughfare Creek. The tributaries along this portion of the river are classified FW. Downstream of the confluence to Winyah Bay (SB), the river and the AIWW are classified SA* (dissolved oxygen not less than 4.0 mg/l) and their tributaries are classified SA.

Surface Water Quality

Station #	Type	Class	Description
MD-146	W	FW*	WACCAMAW RIVER & AIWW 1 MI BELOW JCT, BUCKSPORT LANDING
MD-137	W	FW*	WACCAMAW RIVER NEAR MOUTH OF BULL CREEK AT CHANNEL MARKER 50
MD-138	SPRP	FW*	WACCAMAW RIVER AT CHANNEL MARKER 57
MD-142	INT	SA*	WACCAMAW RIVER DOWNSTREAM OF BUTLER ISLAND AT MARKER 86
RO-09364	INT	SB	WACCAMAW R. AT CONFL. OF PEE DEE AND SAMPIT RIVERS AT WINYAH BAY

Waccamaw River* –** There are five SCDHEC monitoring sites along this section of the Waccamaw River and recreational uses are fully supported at all sites. At the furthest upstream site ***(MD-146), aquatic life uses are fully supported. There is a significant increasing trend in pH. Further downstream ***(MD-137)***, aquatic life uses are fully supported; however, there is a significant increasing trend in turbidity. At the next site downstream ***(MD-138)***, aquatic life uses are fully supported; however, there are significant increasing trends in five-day biochemical oxygen demand and turbidity. Significant increasing trends in dissolved oxygen concentration and decreasing trends in total phosphorus concentration suggest improving conditions for these parameters. Further downstream (***MD-142)***, aquatic life uses are fully supported. There is a significant increasing trend in pH at this site. At the furthest downstream site ***(RO-09364)***, aquatic life uses are fully supported.

A fish consumption advisory has been issued by the Department for mercury and includes the ***Waccamaw River*** *and the* ***Atlantic Intracoastal Waterway*** *within this watershed* *(see advisory p.115).*

NPDES Program

Active NPDES Facilities

RECEIVING STREAM FACILITY NAME	NPDES# TYPE
WACCAMAW RIVER GSW&SA/SCHWARTZ PLANT	SC0037753 MAJOR DOMESTIC
BULL CREEK GSW&SA/SCHWARTZ PLANT	SC0037753 MAJOR DOMESTIC
WACCAMAW RIVER GCW&SD/MURRELLS INLET WWTP	SC0040959 MAJOR DOMESTIC
WACCAMAW RIVER GSW&SA/BUCKSPORT WWTP	SC0040886 MINOR DOMESTIC
WACCAMAW RIVER GCW&SD/PAWLEYS AREA WWTP	SC0039951 MAJOR DOMESTIC
WACCAMAW RIVER GCW&SD/DEBORDIEU COLONY WWTP ALT. DISCHARGE	SC0048984 MINOR MUNCIPAL
WACCAMAW RIVER TRIBUTARY AO HARDEE & SON/HWY 707 MAY MINE	SCG731291 MINOR INDUSTRIAL

Municipal Separate Storm Sewer Systems (MS4)

RECEIVING STREAM MUNICIPALITY RESPONSIBLE PARTY IMPLEMENTING PARTY	NPDES# MS4 PHASE MS4 SIZE
WACCAMAW RIVER UNINCORPORATED AREAS HORRY COUNTY HORRY COUNTY	SCR035104 PHASE II SMALL MS4
WACCAMAW RIVER UNINCORPORATED AREAS GEORGETOWN COUNTY GEORGETOWN COUNTY	SCR034301 PHASE II SMALL MS4

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

LANDFILL NAME / ***FACILITY TYPE***	***PERMIT #*** / ***STATUS***
ROMMIE GRAY COMPOSTING FACILITY COMPOSTING	222638-3001 INACTIVE

Land Application Sites

LAND APPLICATION SYSTEM / ***FACILITY NAME***	***ND#*** / ***TYPE***
SPRAYFIELD GSW&SA BULL CREEK WTP	ND0069892 DOMESTIC

Mining Activities

MINING COMPANY / ***MINE NAME***	***PERMIT #*** / ***MINERAL***
BROWN MOORE & PATRICK LLC POND ROAD MINE	1701-43 SAND/CLAY
BROWN MOORE & PATRICK LLC B, M, & P SANDPIT MINE	1574-51 SAND

Water Quantity

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

WATER USER / ***STREAM***	***REGULATED CAPACITY (MGD)*** / ***PUMPING CAPACITY (MGD)***
GEORGETOWN COUNTY W&S WACCAMAW RIVER	8.29 12.23

Growth Potential

There is a high potential for residential and commercial growth in this watershed, which contains portions of the Towns of Bucksport, Surfside Beach, and Murrells Inlet. The area is developed with many residential and resort communities. The area west of the AIWW is accessible only by boat and is not expecting significant growth. Water infrastructure is located throughout most of the watershed, and sewer is currently located in the northern tip as well as in many of the newer developments throughout the region. Most areas of the Waccamaw Neck now have sewer services. Along with resort and residential developments, commercial uses and two large tracts of semi-public land are located along the U.S. Hwy 17 corridor.

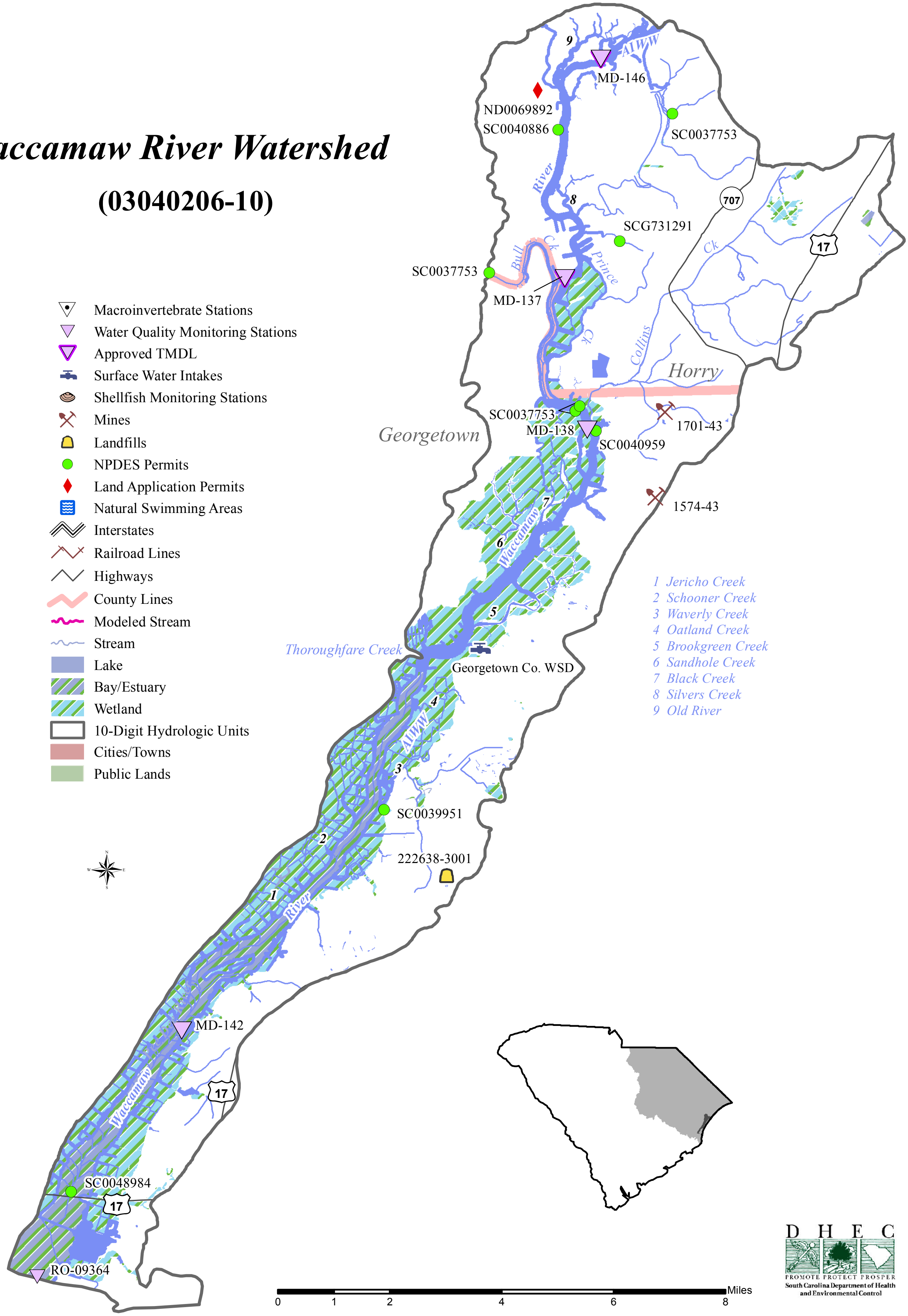
Watershed Protection and Restoration

Total Maximum Daily Loads (TMDLs)

A total maximum daily load (TMDL) for oxygen demanding substances has been developed for the main stem of the Waccamaw River and the Atlantic Intracoastal Waterway (AIWW) in watersheds 02040206-09, 03040206-10, and 03040208-03. The TMDL addresses 12 separate monitoring stations on the State's 1998 303(d) list of impaired waters. The TMDL, based on a maximum 0.1 mg/l deficit allowed in waters that do not meet applicable dissolved oxygen standards due to natural conditions, will result in a decrease of approximately 63% in the permitted oxygen demanding load discharged to the system. The decreased loadings are being implemented through the NPDES permitting system with new, more restrictive limits becoming final at the conclusion of appropriate compliance schedules.

Waccamaw River Watershed

(03040206-10)



Great Pee Dee River Basin Description

The ***Great Pee Dee River Basin (hydrologic units 03040201, 03040203, 03040204, 03040207)*** is located in Marlboro, Chesterfield, Darlington, Florence, Dillon, Marion, Williamsburg, Horry, and Georgetown Counties, and encompasses 22 watersheds and 3,658 square miles within South Carolina, excluding the Lynches River, Black River, and Waccamaw River Basins. The Great Pee Dee River flows across the Sandhills region to the Upper and Lower Coastal Plain regions and into the Coastal Zone region. Of the approximately 2.3 million acres, 33.5% is forested wetland, 28.4% is forested land, 26.7% is agricultural land, 6.7% is urban land, 2.7% is nonforested wetland, 1.8% is water, and 0.2% is barren land. The urban land percentage is comprised chiefly of the Cities of Florence, Darlington, Bennettsville, and Dillon. In the Great Pee Dee River Basin, there are approximately 4,669 stream miles, 10,864 acres of lake waters, and 17,676 acres of estuarine areas. The Great Pee Dee River flows across the North Carolina/South Carolina state line and accepts drainage from Thompson Creek, Crooked Creek, Cedar Creek, Three Creeks, and Black Creek. The river then accepts drainage from Jeffries Creek, Catfish Creek, the Lynches River Basin, the Little Pee Dee River, the Black River Basin and the Waccamaw River Basin before draining into Winyah Bay.

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 regions defining the Great Pee Dee River Basin are as follows:

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 U.S. Geological Survey’s National Land Cover Data (NLCD), 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 grasslands and industrial 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.

Forestland is characterized by deciduous and evergreen trees (or a mix of these), not including forests in wetland settings, generally greater than 6 meters (approximately 20 feet) 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, and areas cleared for construction in urban areas or clearcut forest areas).

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

Soil Types

The individual soil series for the Great Pee Dee River Basin are described as follows.

Alpin soils are well drained and excessively drained, sandy soils with a loamy or sandy subsoil.

Aycock soils are nearly level to gently sloping, well drained soils on Coastal Plain uplands, grayish brown in color and a very fine sandy loam.

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

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

Bonneau soils are deep, moderately well drained soils with loamy subsoil on ridges.

Candor soils are somewhat excessively drained soils that formed in sandy and loamy marine sediments on broad flats, narrow ridges, and side slopes.

Cantey soils are moderately well drained soils with a loamy surface layer and a clayey or loamy subsoil and poorly drained soils with a loamy surface layer and a clayey subsoil.

Cape Fear soils are very poorly drained soils that formed in sandy and clayey marine sediments in upland areas of the Coastal Plain, and in flat and depressional areas.

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

Coxville soils are deep, poorly drained soils in thick beds of clayey sediment, nearly level.

Dorovan soils are deep, level, very poorly drained, organic soils on floodplains adjacent to upland.

Eulonia soils are moderately well drained, moderately slowly permeable soils that formed in clayey marine sediment, nearly level to gently sloping and on broad flats.

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.

Johnston soils are nearly level, moderately well drained to very poorly drained soils, loamy throughout with a sandy surface layer on floodplains.

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

Leon soils are somewhat poorly drained to poorly drained, level to nearly level, sandy soils with weakly cemented layers stained by organic matter.

Levy soils are nearly level, very poorly drained soils, mucky throughout or loamy and underlain with clayey layers, rarely or frequently flooded with fresh water.

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.

Meggett soils are poorly drained to very poorly drained, level to nearly level soils with a loamy to sandy surface layer and a loamy to clayey subsoil.

Nansemond soils are moderately well drained, rapidly permeable soils that formed in loamy Coastal Plain sediments on stream terraces and adjacent to small drainages.

Noboco soils are well drained, sandy soils with a loamy or clayey subsoil.

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

Pelion soils are well drained and moderately well drained soils that have a sandy surface layer and a loamy subsoil, many with a fragipan in the subsoil.

Persanti soils are deep, moderately well drained, slowly permeable soils that formed in clayey marine sediment, found on broad estuary terraces.

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

Rutledge soils are somewhat poorly drained to moderately well drained, nearly level, sandy soils on ridges and poorly drained to very poorly drained, sandy soils in depressions.

Smithboro soils are deep, somewhat poorly drained, slowly permeable soils that formed in clayey marine sediment, found on the Coastal Plain on broad estuary terraces.

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.

Wagram soils are well drained to very poorly drained, depressional to nearly level and gently sloping soils with a loamy to sandy surface layer and a clayey to loamy subsoil.

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

Woodington soils are poorly drained, moderately permeable soils that formed in loamy Coastal Plain sediments on stream terraces and upland flats on higher elevations.

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

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

Yonges soils are moderately well drained to poorly drained, nearly level soils with a sandy surface layer and a predominantly 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. 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 Pee Dee River Basin is from 0.10 to 0.28.

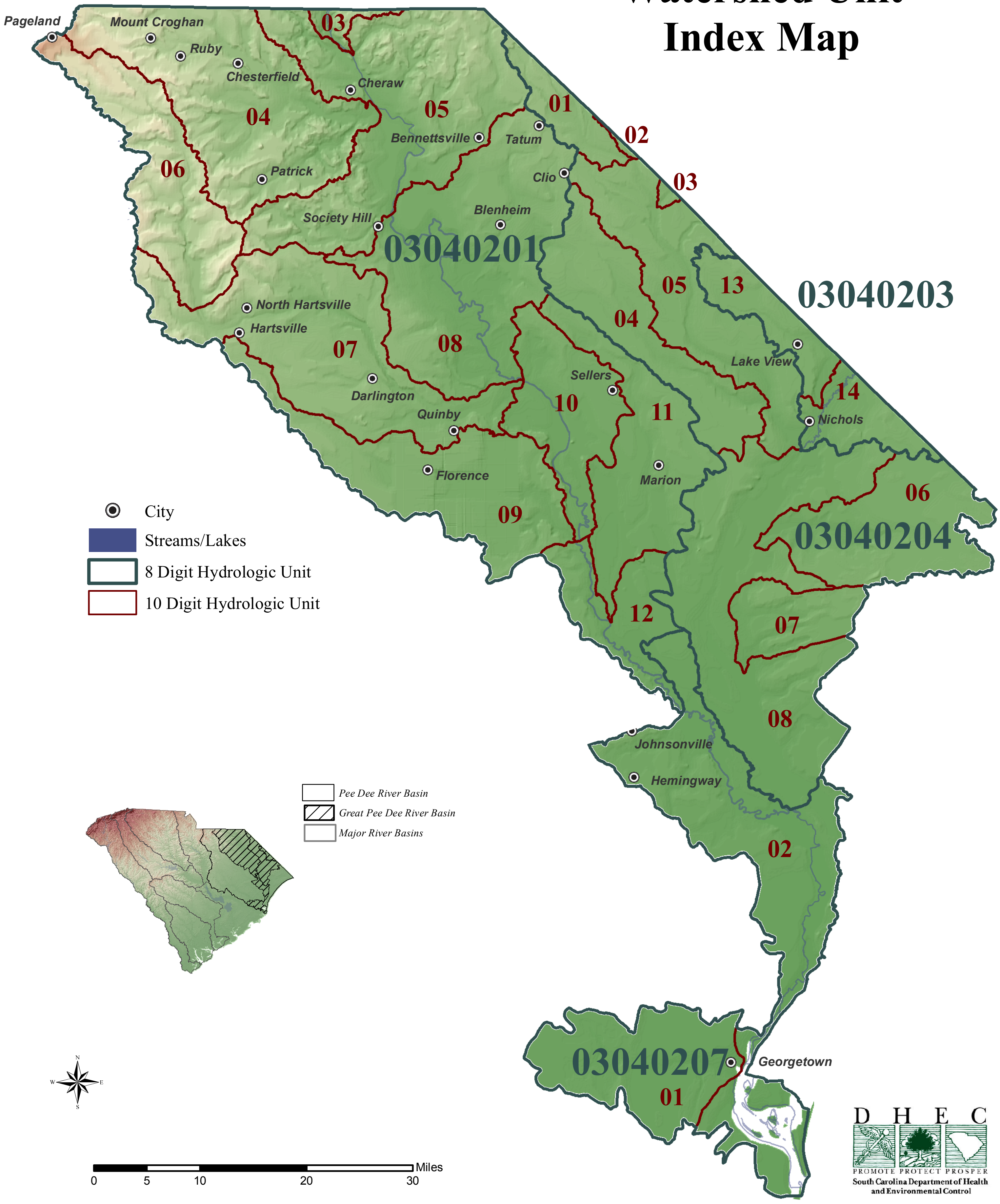
Fish Consumption Advisory

At the time of publication, a fish consumption advisory issued by SCDHEC is in effect for ***Black Creek, Lake Robinson, Lake Wallace, the Great Pee Dee River, the Little Pee Dee River, Russ Creek, the Lumber River, the Sampit River, the Intracoastal Waterway (AIWW), Clark Creek, and Winyah Bay*** advising people to limit the amount of some types of fish consumed from these waters. Fish consumption advisories are updated annually in March. For background information and the most current advisories please visit www.scdhec.gov/FoodSafety/FishConsumptionAdvisories.

Climate

Normal yearly rainfall in the Great Pee Dee River area during the period of 1971 to 2000 was 48.80 inches, according to South Carolina's **30-year** climatological record. Data compiled from National Weather Service stations in Pee Dee, Cheraw, McColl, Darlington, Florence (City and Airport), Dillon, Marion, Loris, Conway, Brookgreen Gardens, and Georgetown were used to determine the general climate information for this portion of the State. The highest seasonal rainfall occurred in the summer with 15.94 inches; 10.78, 11.35, and 10.74 inches of rain fell in the fall, winter, and spring, respectively. The average annual daily temperature was 63.0 ^{o}F. Winter temperatures averaged 46.5^{o}F, spring temperatures averaged 61.65 ^{o}F and summer and fall mean temperatures were 78.9 ^{o}F and 64.29 ^{o}F, respectively.

Great Pee Dee River Basin Watershed Unit Index Map



Watershed Evaluations

03040201-03

(Great Pee Dee River)

General Description

The South Carolina portion of 03040201-03 is located in Marlboro and Chesterfield Counties and consists primarily of the ***Great Pee Dee River*** and its tributaries from the North Carolina state line to Westfield Creek. The watershed occupies 8,647 acres of the Sandhills and Upper Coastal Plain regions of South Carolina. Land use/land cover in the watershed includes: 54.2% forested land, 24.9% agricultural land, 13.0% forested wetland (swamp), 3.8% water, 2.7% urban land, 0.8% barren land, and 0.6% nonforested wetland (marsh).

This upper reach of the Great Pee Dee River within South Carolina accepts drainage from its North Carolina reaches and Marks Creek. There are a total of 84.1 stream miles and 9.7 acres of lake waters in this watershed, all classified FW.

Surface Water Quality

No water quality monitoring occurred in this watershed.

A fish consumption advisory has been issued by the Department for mercury and includes the ***Great Pee Dee River*** *within this watershed (see advisory p.144).*

NPDES Program

Active NPDES Facilities

RECEIVING STREAM ***FACILITY NAME***	***NPDES#*** ***TYPE***
MARKS CREEK PALMETTO BRICK/PEGUES MINE	SCG730434 MINOR INDUSTRIAL
MARKS CREEK TRIBUTARY OLD CASTLE STONE/ESKRIDGE MINE	SCG730475 MINOR INDUSTRIAL
GREAT PEE DEE RIVER TRIBUTARY MARION CERAMICS/PAVER MINE	SCG730218 MINOR INDUSTRIAL

Nonpoint Source Management Program

Mining Activities

MINING COMPANY ***MINE NAME***	***PERMIT #*** ***MINERAL***
PALMETTO BRICK CO. PEGUES MINE	1485-69 SHALE
OLDCASTLE RETAIL INC. MARLBORO COUNTY MINE	0726-69 SAND

MARION CERAMICS INC.	0550-69
PAVER MINE	SHALE

Groundwater Quantity

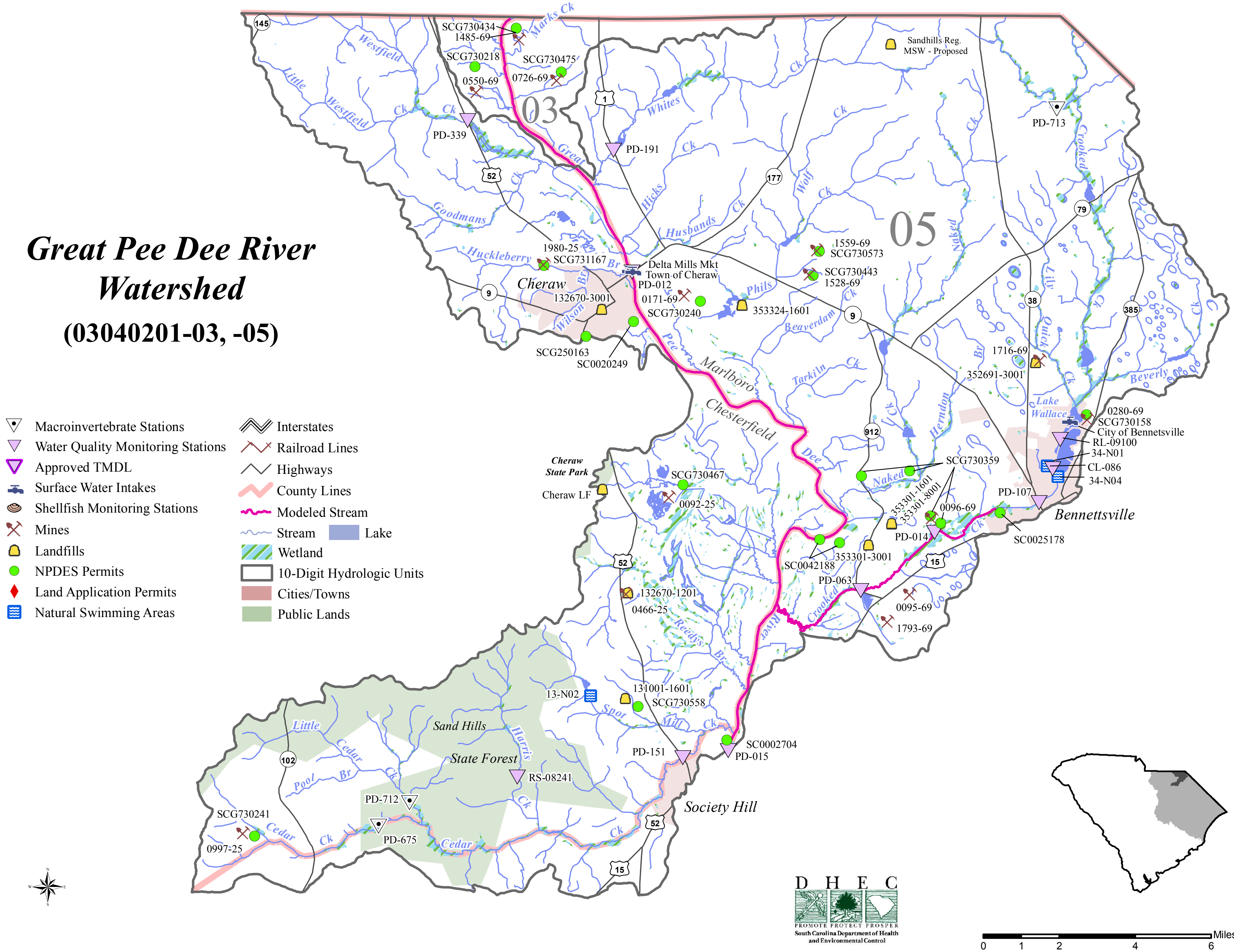
Portions of this watershed fall within the Pee Dee Capacity Use Area and large groundwater uses must be reported (see Capacity Use Program p.22).

Growth Potential

There is a low potential for growth in this watershed.

Great Pee Dee River Watershed

(03040201-03, -05)



03040201-04

(Thompson Creek)

General Description

The South Carolina portion of 03040201-04 is located in Chesterfield County and consists primarily of ***Thompson Creek*** and its tributaries. The watershed occupies 187,991 acres of the Sandhills and Upper Coastal Plain regions of South Carolina. Land use/land cover in the watershed includes: 51.5% forested land, 26.5% agricultural land, 13.3% forested wetland, 7.1% urban land, 0.8% water, 0.6% nonforested wetland, and 0.2% barren land.

While Thompson Creek originates in South Carolina, several of its tributaries originate in North Carolina including Deadfall Creek and Cedar Creek. Brown Creek originates near the headwaters of Thompson Creek and flows into North Carolina. Thompson Creek accepts drainage from Stone House Creek (Betties Branch), Clay Creek, Collins Branch, Deadfall Creek, Cedar Creek, Deep Creek (Mill Branch, Jenning Branch, Pitt Branch, Mill Creek, Horsepen Branch, Gulpins Branch, Crews Branch, Sellers Pond), and Tavern Branch. Jimmies Creek (Smarsh Branch) enters the system next, followed by Abrams Creek, Robeson Branch (Reedy Branch), Spencer Mill Creek (Sixmile Creek), and Indian Creek. Bear Creek (Rocky Prong, Teal Millpond) accepts drainage from Big Bear Creek (North Prong, Mill Branch, Cow Branch, Mash Branch, Strickland Branch) and Little Bear Creek (Polecat Branch, Bay Springs Branch, Bay Branch, Twitty Prong, Mount Prong, Mash Branch, Underground Branch, Gully Branch, Cross Branch) before flowing into Thompson Creek downstream of Indian Creek.

Beaver Creek flows into the system further downstream followed by Juniper Creek (Mill Creek, Wilkes Millpond, Cow Branch, Coker Branch, Little Juniper Creek, Campbell Lake, Pats Branch, Juniper Lake). The Cheraw State Park extends across Juniper Creek from Little Juniper Creek to downstream of Juniper Lake (also known as Eureka Lake). The Cheraw National Fish Hatchery is located within the Cheraw State Park. The Sand Hills State Forest extends over the lower portion of the watershed. Thompson Creek Watershed drains into the Pee Dee River. There are a total of 502.0 stream miles and 1,067.8 acres of lake waters in this watershed, all classified FW.

Surface Water Quality

Station #	Type	Class	Description
RS-01013	RS01	FW	Deep Creek, 75 ft upstr of jSC9, 5.5mi W of Chesterfield
PD-711	BIO	FW	Thompson Creek at SC 145
PD-246	W	FW	Thompson Creek at S-13-243 0.8 mi NE of Chesterfield
RS-08273	RS08	FW	Jimmies Creek at S-13-757
PD-247	W	FW	Thompson Creek at SC 9 1.5 mi ESE of Chesterfield
RS-10377	RS10	FW	Indian Creek at Scotch Road just off SC 102
RL-06436	RL06	FW	Eureka Lake, 5 mi SW of Cheraw
RL-03346	RL03	FW	Eureka Lake in Cheraw State Park, approx. midlake
RL-10101	RL10	FW	Juniper Lake, 1.4 mi SSE of jct of US 1 and US 52
RL-06448	RL06	FW	Eureka Lake, 4.2 mi SW of Cheraw
CL-088	W	FW	Juniper Lake, forebay equidistant from dam and shorelines
PD-340	W	FW	Juniper Creek at S-13-494
PD-338	INT	FW	Thompson Creek at S-13-148 S of Cheraw

Deep Creek (RS-01013) – Recreational uses are not supported due to fecal coliform excursions.

Thompson Creek – There are four SCDHEC monitoring sites along Thompson Creek. This is a blackwater system, characterized by naturally low pH conditions. At the furthest upstream site ***(PD-711)***, aquatic life uses are fully supported based on macroinvertebrate community data. At the next site downstream ***(PD-246)***, aquatic life uses are fully supported. Recreational uses are not supported at this site due to fecal coliform bacteria excursions. Further downstream ***(PD-247)***, aquatic life uses are fully supported. There is a significant decreasing trend in pH. Recreational uses are partially supported due to fecal coliform bacteria excursions. At the furthest downstream site ***(PD-338)***, aquatic life uses are fully supported; however, there is a significant increasing trend in total phosphorus concentration. There is a significant decreasing trend in pH. Although pH excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations. A significant increasing trend in dissolved oxygen concentration suggests improving conditions for this parameter. Recreational uses are fully supported at this site; however, there is a significant increasing trend in fecal coliform bacteria.

Jimmies Creek (RS-08273) – 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.

Indian Creek (RS-10377) – Aquatic life uses are partially supported due to dissolved oxygen excursions. Recreational uses are not supported due to fecal coliform bacteria excursions.

Eureka Lake – There are three monitoring sites along Eureka Lake. This is a blackwater system, characterized by naturally low pH and dissolved oxygen conditions. Although pH excursions occurred at all sites and dissolved oxygen at the downstream site, they were typical of values seen in blackwater systems and were considered natural, not standards violations. At the furthest uplake site ***(RL-06436)***, aquatic life uses are fully supported; however, there is a significant increasing trend in turbidity. There is a significant decreasing trend in pH. Recreational uses are fully supported. Aquatic life and recreational uses are fully supported at the midlake ***(RL-03346)*** and downlake ***(RL-06448)*** sites.

Juniper Lake – There are two monitoring sites along Juniper Lake. This is a blackwater system, characterized by naturally low pH conditions. Although pH excursions occurred at both sites, they were typical of values seen in blackwater systems and were considered natural, not standards violations. Aquatic life and recreational uses are fully supported at both the upstream ***(RL-10101)*** and downstream ***(CL-088)*** sites.

Juniper Creek (PD-340) – Aquatic life uses are fully supported; however, there are significant increasing trends in five-day biochemical oxygen demand, turbidity, and total phosphorus concentration. There is a significant decreasing trend in pH. Recreational uses are fully supported.

Natural Swimming Areas

FACILITY NAME *RECEIVING STREAM*	*PERMIT #* *STATUS*
CAMP JUNIPER JUNIPER LAKE/JUNIPER CREEK	13-N07 ACTIVE
CAMP FOREST JUNIPER LAKE/JUNIPER CREEK	13-N06 ACTIVE
CHERAW STATE PARK JUNIPER LAKE/JUNIPER CREEK	13-N01 ACTIVE
CAMP BEAVER LAKE MOUNT PRONG	13-1001N ACTIVE

NPDES Program

Active NPDES Facilities

RECEIVING STREAM *FACILITY NAME*	*NPDES#* *TYPE*
THOMPSON CREEK JW COVINGTON/JW COVINGTON MINE	SCG730625 MINOR INDUSTRIAL
STONE HOUSE CREEK TRIBUTARY HANSON AGGREGATES SE/PAGELAND QUARRY	SCG730570 MINOR INDUSTRIAL
NORTH PRONG JEWEL CITY SAND CO./JEWEL CITY SAND MINE	SCG730162 MINOR INDUSTRIAL
INDIAN CREEK TRIBUTARY CHESTERFIELD COUNTY/COUNTY CLAY PIT	SCG730166 MINOR INDUSTRIAL
JUNIPER CREEK TRIBUTARY PALMETTO BRICK/MCBRIDE MINE	SCG730386 MINOR INDUSTRIAL
THOMPSON CREEK GS MATERIALS/PAGELAND MINE	SCG731195 MINOR INDUSTRIAL
THOMPSON CREEK GRIGGS TRUCKING/COPELAND MINE	SCG731202 MINOR INDUSTRIAL
BEAVER CREEK TRIBUTARY HENLEY’S CONSTRUCTION/HENLEY’S MINE	SCG731157 MINOR INDUSTRIAL

Nonpoint Source Management Program

Mining Activities

MINING COMPANY *MINE NAME*	*PERMIT #* *MINERAL*
HANSON AGGREGATES SE, INC. PAGELAND QUARRY	0797-25 GRANITE
CHESTERFIELD COUNTY COUNTY PIT	0272-25 SAND/CLAY

JEWEL CITY SAND CO., INC JEWEL CITY SAND MINE	1147-25 SAND
PALMETTO BRICK CO. MCBRIDE MINE	1410-25 KAOLIN
B&B CONSTRUCTION CO. BOATWRIGHT	1599-25 SAND
JW COVINGTON JW COVINGTON MINE	1561-25 SAND
JOHN F. STROUD & SON STROUD & SON 265 MINE	1777-25 SAND
GS MATERIALS GSM PAGELAND MINE	2005-25 SAND; TOP SOIL

Growth Potential

There is a low potential for growth in this watershed, which contains the Towns of Patrick, Chesterfield, Ruby, and Mt.Croghan, and a portion of the Town of Cheraw. Water service is available in the above towns, but sewer services are limited to Chesterfield and the Cheraw urban area. The Town of Chesterfield has extended water and sewer service east of the community to serve a local industrial park, but few other extensions are planned. Commercial and industrial development is likely west of Cheraw and east of Chesterfield. The lower portion of the watershed (near Patrick) is in public ownership as part of the Sand Hills State Forest, and development will be limited as a result. Watershed 03040104-02, to the west of this watershed, has a low to moderate potential for growth. A portion of the Town of Pageland resides in this watershed and reflects the edge of the Charlotte Metroplex; future growth is expected. Pageland and the area immediately outside of the town have water and sewer service.

Watershed Restoration and Protection

Total Maximum Daily Loads (TMDLs)

A TMDL was developed by SCDHEC and approved by the EPA for ***Thompson Creek*** (monitoring sites ***PD-246*** and ***PD-247***) to determine the maximum amount of fecal coliform bacteria it can receive from nonpoint sources and still meet water quality standards. The nonpoint sources that have been determined to be contributors to Thompson Creek impairment include wildlife; grazing livestock and livestock depositing manure directly into streams; land application of poultry litter; and malfunctioning septic systems. The TMDL would require reductions of 68% and 82% in the current loads to the creeks, respectively, to meet standards.

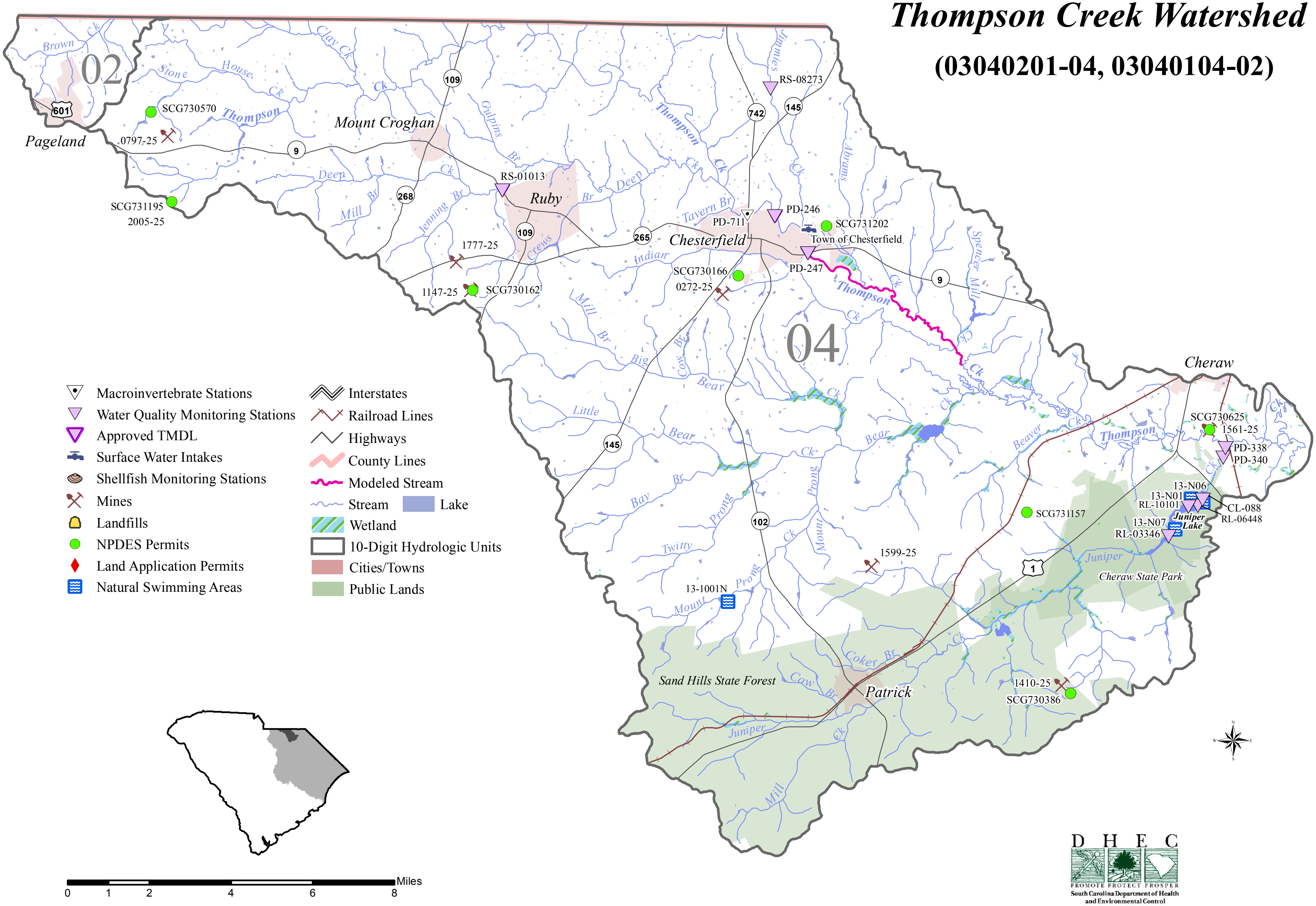
Special Projects

Fecal Coliform Bacteria TMDL Implementation for the Thompson Creek Watershed Located in Chesterfield County

Following a previous Section 319-funded effort to develop a fecal coliform TMDL for Thompson Creek, the Pee Dee Resource Conservation and Development Council (RC&D) received a second 319 grant to implement the TMDL. The goal of the project was to reduce loading in the watershed so that water quality as measured at PD-246 and PD-247 would meet water quality standards for fecal coliform bacteria. The RC&D, along with the Chesterfield Soil and Water Conservation District and the Department of Natural Resources recruited homeowners and volunteers throughout the watershed to participate in cost-share efforts. This included installing a large number of agricultural best management practices (BMPs) such as stream exclusion fencing, alternative water sources and heavy use protection areas. Project staff also identified and repaired a number of failing septic systems throughout the watershed. This project ended in late 2007. Preliminary data suggests that the RC&D's efforts were successful in reducing the amount of bacteria in Thompson Creek. Monitoring will continue in order to fully demonstrate the project's effectiveness.

Thompson Creek Watershed

(03040201-04, 03040104-02)



03040201-05

(Great Pee Dee River)

General Description

The South Carolina portion of 03040201-05 is located in Chesterfield, Marlboro, and Darlington Counties and consists primarily of the ***Great Pee Dee River*** and its tributaries from Westfield Creek to Cedar Creek. The watershed occupies 212,351 acres of the Sandhills and Upper and Lower Coastal Plain regions of South Carolina. Land use/land cover in the watershed includes: 32.6% forested land, 29.5% agricultural land, 27.4% forested wetland, 6.9% urban land, 1.7% water, 1.2% nonforested wetland, and 0.7% barren land.

This section of the Great Pee Dee River accepts drainage from its upstream reaches, along with Westfield Creek (Little Westfield Creek, Goodmans Creek), Whites Creek (Wallace Pond, Everett Millpond), Hicks Creek, Husbands Creek, Huckleberry Branch (Wilson Branch), and the Thompson Creek Watershed near the Town of Cheraw. Phils Creek (Wolf Creek, Andersons Millpond, Grants Millpond) enters the river next, followed by Beaverdam Creek, Tarkiln Creek, Naked Creek (Bullards Millpond, McLaurins Millpond, Davids Millpond, Herndon Branch), Crooked Creek, Hugh Creek, Reedys Branch, and Cedar Creek (Spot Mill Creek). Crooked Creek accepts drainage from Lightwood Knot Creek, Usher Pond, Goodwins Pond, Burnt Factory Lake, Beverly Creek, and Lily Quick Creek before flowing through Lake Paul Wallace and McCalls Millpond near the City of Bennettsville. Cedar Creek lies within the Sand Hills State Forest and accepts drainage from Little Cedar Creek (Pool Branch), Harris Creek, Coker Pond, and Spot Mill Creek. There are a total of 457.2 stream miles and 1,939 acres of lake waters in this watershed, all classified FW.

Surface Water Quality

Station #	Type	Class	Description
PD-191	INT	FW	Whites Creek at US 1
PD-339	INT	FW	Westfield Creek at US 52
PD-012	INT	FW	Great Pee Dee River at US 1 NE Cheraw
PD-713	BIO	FW	Great Pee Dee River at SR 166
RL-09100	RL09	FW	Lake Wallace, 0.6 mi N of ski impoundment boat landing – midchannel
RL-05398	RL05	FW	Lake Wallace, east shore near picnic area
CL-086	W	FW	Lake Wallace, equidistant from dam and shorelines
PD-107	W	FW	Crooked Creek at SC 9 in Bennettsville
PD-014	W	FW	Crooked Creek at S-35-43
PD-063	INT	FW	Crooked Creek at SC 912
PD-675	BIO	FW	Cedar Creek at SR 171
PD-712	BIO	FW	Cedar Creek at SR 675
RS-08241	RS08	FW	Harris Creek at S-13-80
PD-151	INT	FW	Cedar Creek at US 52
PD-015	W	FW	Great Pee Dee River at US 15 & 401

Whites Creek (PD-191) **-** 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. Aquatic life uses are fully supported; however, there are significant increasing trends in five-day biochemical oxygen demand and turbidity. There is a significant decreasing trend in pH. A significant increasing trend in dissolved oxygen concentration suggests improving conditions for this parameter. Recreational uses are fully supported.

Westfield Creek (PD-339) - Aquatic life uses are partially supported due to pH excursions. There are also significant increasing trends in five-day biochemical oxygen demand and turbidity. There is a significant decreasing trend in pH. A significant increasing trend in dissolved oxygen concentration suggests improving conditions for this parameter. Recreational uses are fully supported; however, there is a significant increasing trend in fecal coliform bacteria.

Great Pee Dee River – There are two SCDHEC monitoring sites along this section of the Great Pee Dee River. At the upstream site ***(PD-012),*** aquatic life uses are not supported due to copper in excess of the aquatic life acute criterion. In addition, there are significant increasing trends in five-day biochemical oxygen demand and total phosphorus concentration. Recreational uses are fully supported; however, there is a significant increasing trend in fecal coliform bacteria. At the downstream site (***PD-015),*** aquatic life and recreational uses are fully supported and significant decreasing trends in turbidity, total nitrogen concentration, and total phosphorus concentration suggest improving conditions for these parameters.

Lightwood Knot Creek (PD-713) - Aquatic life uses are partially supported based on macroinvertebrate community data.

Lake Wallace - There are three SCDHEC monitoring sites along Lake Wallace and recreational uses are fully supported at all sites. This is a blackwater system, characterized by naturally low pH conditions. At the uplake site ***(RL-09100)***, aquatic life uses are not supported due to excursions related to turbidity, total nitrogen, total phosphorus, chlorophyll-a, and pH. At the midlake site ***(RL-05398)***, aquatic life uses are not supported due to excursions related to turbidity, total phosphorus, and chlorophyll-a. Aquatic life uses at the downlake site ***(CL-086)*** are fully supported. Although pH excursions occurred at this site, they were typical of values seen in blackwater systems and were considered natural, not standards violations.

Crooked Creek - There are three SCDHEC monitoring sites along Crooked Creek. This is a blackwater system, characterized by naturally low pH conditions. Although pH excursions occurred at the lower two sites, they were typical of values seen in blackwater systems and were considered natural, not standards violations. At the furthest upstream site ***(PD-107)*** and midstream site ***(PD-014)***, aquatic life and recreational uses are fully supported. At the furthest downstream site ***(PD-063)***, aquatic life and recreational uses are again fully supported; however, there are significant increasing trends in five-day biochemical oxygen demand, total phosphorus concentration, and fecal coliform bacteria. There is a significant decreasing trend in pH. A significant increasing trend in dissolved oxygen concentration suggests improving conditions for this parameter.

Cedar Creek – There are two SCDHEC monitoring sites along Cedar Creek. At the upstream site (***PD-675),*** aquatic life uses are fully supported based on macroinvertebrate community data. At the downstream site (***PD-151)***, aquatic life uses are fully supported; however, there are significant increasing trends in five-day biological oxygen demand and total phosphorus concentration. There is a significant decreasing trend in pH. Recreational uses are fully supported.

Little Cedar Creek (***PD-712)*** – Aquatic life uses are fully supported based on macroinvertebrate community data.

Harris Creek (***RS-08241)*** – This is a blackwater system, characterized by naturally low dissolved oxygen and pH conditions. Although dissolved oxygen and pH excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations. Aquatic life and recreational uses are fully supported.

A fish consumption advisory has been issued by the Department for mercury and includes the ***Great Pee Dee River*** *and* ***Lake Wallace*** *within this watershed* *(see advisory p.144).*

Natural Swimming Areas

FACILITY NAME ***RECEIVING STREAM***	***PERMIT #*** ***STATUS***
LAKE PAUL WALLACE LAKE WALLACE	34-N01 ACTIVE
CAMP HORIZON LAKE WALLACE	34-N04 ACTIVE
CAMP COKER SPOT MILL CREEK	13-N02 ACTIVE

NPDES Program

Active NPDES Facilities

RECEIVING STREAM ***FACILITY NAME***	***NPDES#*** ***TYPE***
GREAT PEE DEE RIVER TOWN OF CHERAW WWTP	SC0020249 MAJOR DOMESTIC
GREAT PEE DEE RIVER DOMTAR PAPER CO.LLC/MARLBORO MILL	SC0042188 MAJOR INDUSTRIAL
GREAT PEE DEE RIVER GALEY & LORD, INC./SOCIETY HILL	SC0002704 MAJOR INDUSTRIAL
GREAT PEE DEE RIVER TRIBUTARY HANSON AGGREGATES SE/CASH MINE	SCG730467 MINOR INDUSTRIAL
CROOKED CREEK HANSON AGGREGATES SE/MARLBORO PLANT	SCG730359 MINOR INDUSTRIAL

CROOKED CREEK CITY OF BENNETTSVILLE WWTP	SC0025178 MAJOR DOMESTIC
SPOT MILL CREEK TRIBUTARY MOREE FARMS/PARADISE PIT	SCG730558 MINOR INDUSTRIAL
WILSON BRANCH TRIBUTARY SCHAEFFLER GROUP USA, INC.	SCG250163 MINOR INDUSTRIAL
PHILS CREEK PALMETTO BRICK/IRBY MINE	SCG730240 MINOR INDUSTRIAL
PHILS CREEK TRIBUTARY PALMETTO BRICK/PALMETTO SAND MINE	SCG730573 MINOR INDUSTRIAL
CEDAR CREEK PALMETTO BRICK/WINBURN MINE	SCG730241 MINOR INDUSTRIAL
BEVERLY CREEK MARLBORO COUNTY/COUNTY PIT	SCG730158 MINOR INDUSTRIAL
BEAVERDAM CREEK TRIBUTARY PALMETTO BRICK/CLINKSCALE MINE	SCG730443 MINOR INDUSTRIAL
HUCKLEBERRY BRANCH FURR GRADING/KNIGHT STREET MINE	SCG731167 MINOR INDUSTRIAL
NAKED CREEK HANSON AGGREGATES SE/MARLBORO FIELD PLANT	SCG730359 MINOR INDUSTRIAL

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

LANDFILL NAME ***FACILITY TYPE***	***PERMIT #*** ***STATUS***
PALMETTO BRICK CO. INDUSTRIAL	353324-1601 ACTIVE
CHERAW SANITARY LANDFILL MUNICIPAL	---------- CLOSED
WILLIAMETTE COMPOSTING COMPOSTING	353301-3001 INACTIVE
FURR COMPOSTING FACILITY COMPOSTING	132670-3001 INACTIVE
FURR FACILITY C&D LANDFILL C&D	132670-1201 ACTIVE
MCDUFFIE & SON COMPOSTING COMPOSTING	352691-3001 ACTIVE
WEYERHAEUSER COMPANY INDUSTRIAL	353301-1601 ACTIVE

WEYERHAEUSER COMPANY LAND APPLICATION	353301-8001 ACTIVE
CHESTERFIELD COUNTY LANDFILL INDUSTRIAL	131001-1601 ACTIVE
SANDHILLS REGIONAL MSW LANDFILL MUNICIPAL	-------- PROPOSED

Mining Activities

MINING COMPANY ***MINE NAME***	***PERMIT #*** ***MINERAL***
PALMETTO BRICK CO. CLINKSCALE MINE	1528-69 SAND
PALMETTO BRICK CO. IRBY MINE	0171-69 CLAY
HANSON AGGREGATES SE, INC. CASH PLANT	0092-25 SAND/GRAVEL
FURR GRADING & PAVING, INC. PEE DEE MINE	0466-25 SAND/GRAVEL
MARLBORO COUNTY MARLBORO COUNTY PIT	0280-69 SAND/CLAY
TE BROWN & ASSOCIATES BURNT FACTORY MINE	1716-69 SAND/CLAY
HANSON AGGREGATES SE, INC. MARLBORO PLANT	0095-69 SAND/GRAVEL
HANSON AGGREGATES SE, INC. MARLBORO FIELD PLANT	0096-69 SAND/GRAVEL
PALMETTO BRICK CO. WINBURN MINE	0997-25 KAOLIN
PALMETTO BRICK CO. PALMETTO SAND MINE	1739-69 SAND
FURR GRADING & PAVING, INC. KNIGHT STREET MINE	1980-25 SAND; TOP SOIL
FURR GRADING & PAVING, INC. FRAZIER MINE	1793-69 SAND; TOP SOIL

Groundwater Quantity

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

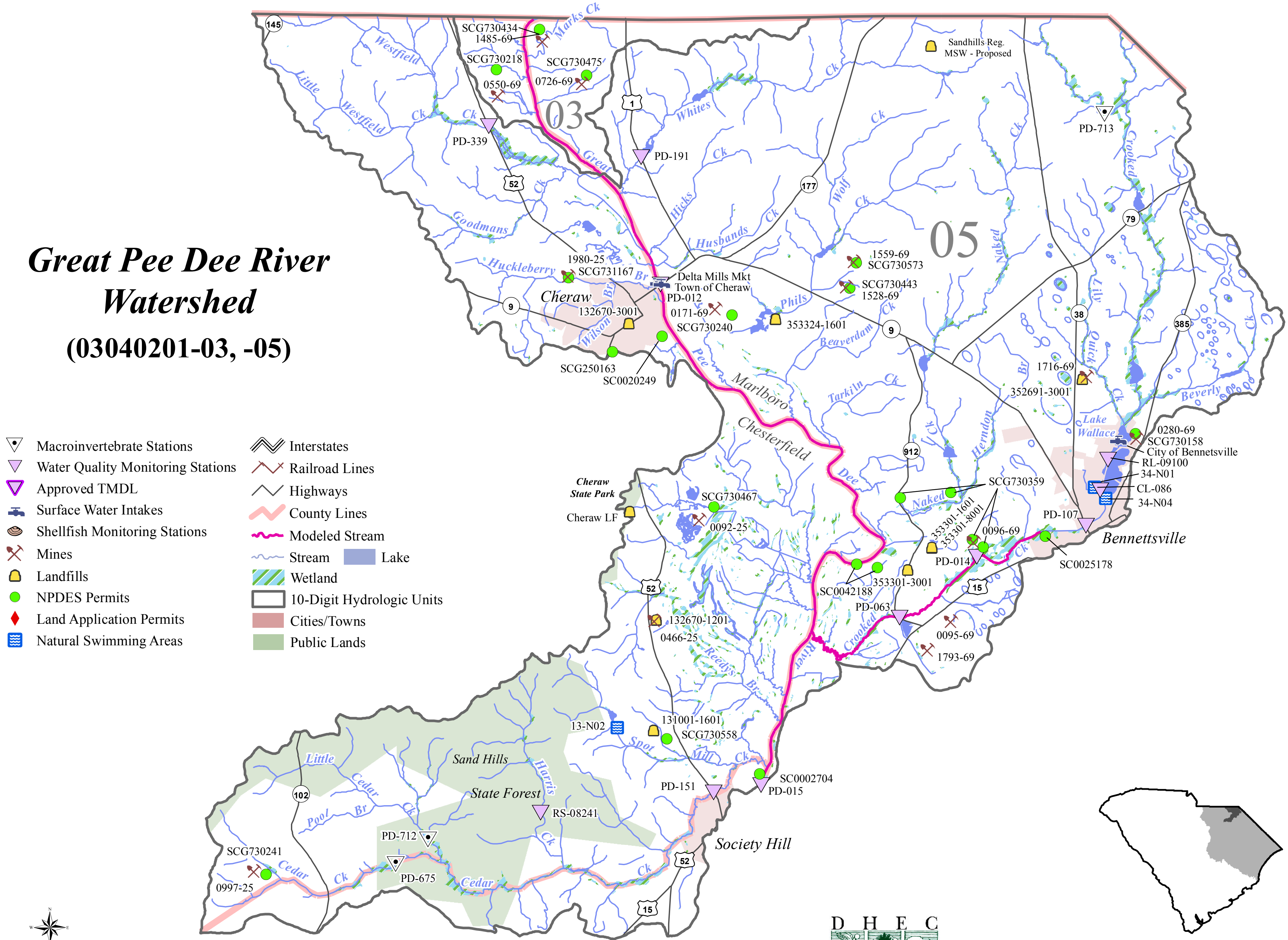
WATER USER ***STREAM***	***REGULATED CAPACITY (MGD)*** ***PUMPING CAPACITY (MGD)***
TOWN OF CHERAW GREAT PEE DEE RIVER	4.5 11.5
CITY OF BENNETTSVILLE LAKE WALLACE	4.00 6.00

Growth Potential

There is a low to moderate potential for growth in this watershed, which contains the Towns of Cheraw and Society Hill, and the City of Bennettsville and is projected to have one of the largest population growth rates in the region. There are numerous industries in the watershed, most in and around the municipal limits of Cheraw. Commercial development is also centered around Cheraw, particularly west of town along S.C. Hwy. 9, and additional growth is expected. A large portion of the watershed is not served by public water or sewer systems, primarily due to the large expanse of the floodplain associated with the Great Pee Dee River. These services are provided in and immediately around the Town of Cheraw, and along S.C. Hwy. 34 east of the City of Darlington. Water and sewer services are available in and around Bennettsville and should encourage growth. Water service is available in Society Hill, but there is no sewer service. A portion of the watershed is within the Sand Hills State Forest, and the remainder is primarily agricultural and timberland uses. The proposed Preferred Alternative route of I-73 (Northern Corridor) would cross this watershed and could bring some growth to the area, especially around interchanges.

Great Pee Dee River Watershed

(03040201-03, -05)



DHEC
PROMOTE PROTECT PROSPER
South Carolina Department of Health and Environmental Control

03040201-06

(Black Creek/Lake Robinson)

General Description

Watershed 03040201-06 is located Chesterfield and Darlington Counties and consists primarily of ***Black Creek*** and its tributaries from its origin to the Lake Robinson dam. The watershed occupies 109,406 acres of the Sandhills region of South Carolina. Land use/land cover in the watershed includes: 48.0% forested land, 31.7% agricultural land, 10.0% forested wetland, 6.6% urban land, 2.4% water, 0.8% barren land, and 0.5% nonforested wetland.

Black Creek originates near the Town of Pageland and accepts drainage from Old Town Pond, Cattail Branch, Mangum Branch, Boggy Branch, Rocky Branch, Big Branch, Panther Branch, Tan Trough Branch, and Cotton Patch Branch. Big Ruddy Branch enters the system next followed by Silver Run, Little Ruddy Branch, Still Branch, Horsepen Branch, Hurricane Branch, Joplin Branch (Stancil Lakes), Big Branch, and Meadow Branch (Joplin Mill Branch). Further downstream, Rattlesnake Branch (Dismal Spring Branch) flows into Black Creek followed by Jessies Branch, Little Black Creek (Graves Millpond, Peddler Branch, Martin Branch, Woodward Millpond), Canal Branch, and Poplar Branch. Black Creek then accepts drainage from Skipper Creek (Peeled Oak Branch, Dead Pine Branch, Little Skipper Creek), Rogers Branch, Pond Branch, Long Branch (Clay Ford Branch, Mays Lake), Ham Creek (Triple Lakes, Lake Bee, Hemp Branch, Lightwood Log Branch, Poplar Branch, Martin Lake, Cow Branch), and Little Alligator Creek before flowing through Lake Robinson. Little Beaverdam Branch and Lower Alligator Creek flow into the headwaters of the lake, Big Beaverdam Creek flows into the midsection, and Pond Hollow Branch enters the lake near the dam. The Carolina Sandhills National Wildlife Refuge extends across the center of the watershed, and the Sand Hills State Forest lies between the refuge and the lake. There are a total of 175.2 stream miles and 2,452.8 acres of lake waters in this watershed. Black Creek and its tributaries upstream of the S.C. Hwy. 145 crossing (just upstream of Skipper Creek) are classified FW. Downstream of the crossing, Black Creek is classified FW* (Dissolved oxygen not less than 4.0 mg/l and pH between 5.0 and 8.5) and its tributaries are classified FW. Lake Robinson is classified FW*.

Surface Water Quality

Station #	Type	Class	Description
PD-004	W	FW	BLACK CREEK AT S-13-43, 1 MI NE OF NICEY GROVE
RS-08065	RS08	FW	LITTLE BLACK CREEK TRIBUTARY AT ARCHIE SOWELL ROAD
PD-613	BIO	FW	SKIPPER CREEK AT SC 145
PD-710	BIO	FW	DIRT ROA D BRIDGE (EXT. OF SR 657) CROSSING DOWNSTREAM OF SC 145
PD-251	INT	FW*	BLACK CREEK AT US 1
PD-327 (RL-03342)	INT	FW*	LAKE ROBINSON AT S-13-346, 5 MI E OF MCBEE
CL-094	INT	FW*	LAKE ROBINSON IN FOREBAY EQUIDISTANT FROM DAM AND SHORELINES

Black Creek **–** There are three SCDHEC monitoring sites along this section of Black Creek. This is a blackwater system, characterized by naturally low pH conditions. Although pH excursions occurred at all monitored sites, they were typical of values seen in blackwater systems and were considered natural, not standards violations. At the upstream site ***(PD-004)***, aquatic life and recreational uses are fully supported. There is a significant decreasing trend in pH. Aquatic life uses are fully supported at the midstream site ***(PD-710)*** based on macroinvertebrate community data. At the furthest downstream site (***PD-251***), aquatic life uses are fully supported; however, there is a significant increasing trend in turbidity and total phosphorus concentration. There is a significant decreasing trend in pH. Recreational uses are fully supported; however, there is a significant increasing trend in fecal coliform bacteria concentration.

Little Black Creek (RS-08065) - 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.

Skipper Creek (PD-613) – Aquatic life uses are fully supported based on macroinvertebrate community data.

Lake Robinson – There are two SCDHEC monitoring sites along Lake Robinson. This is a blackwater system, characterized by naturally low pH conditions. Although pH excursions occurred at both monitored sites, they were typical of values seen in blackwater systems and were considered natural, not standards violations. At the uplake site ***(PD-327)***, aquatic life uses are fully supported. 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 fully supported. At the downlake site ***(CL-094)***, aquatic life uses are fully supported and a significant decreasing trend in total nitrogen concentration suggests improving conditions for this parameter. There is a significant decreasing trend in pH. Recreational uses are fully supported; however, there is a significant increasing trend in fecal coliform bacteria.

*A fish consumption advisory has been issued by the Department for mercury and includes **Black Creek** and **Lake Robinson** within this watershed (see advisory p.144).*

Natural Swimming Areas

FACILITY NAME ***RECEIVING STREAM***	***PERMIT #*** ***STATUS***
JOHNSONS LANDING LAKE ROBINSON	16-N07 ACTIVE
EASTERLING LANDING LAKE ROBINSON	16-N06 ACTIVE

NPDES Program

Active NPDES Facilities

RECEIVING STREAM ***FACILITY NAME***	***NPDES#*** ***TYPE***
BLACK CREEK HANSON AGGREGATES SE/BREWER SAND PIT #2	SCG730286 MINOR INDUSTRIAL
LITTLE BLACK CREEK B.V. HEDRICK SAND & GRAVEL CO./PIEDMONT SAND	SCG730045 MINOR INDUSTRIAL
LITTLE BLACK CREEK B.V. HEDRICK SAND & GRAVEL CO./WILLIAMS SAND	SCG730590 MINOR INDUSTRIAL
LITTLE BLACK CREEK TRIBUTARY PAGELAND SAND MINE #3	SCG730455 MINOR INDUSTRIAL
LITTLE BLACK CREEK TRIBUTARY PAGELAND SAND MINE #4	SCG730456 MINOR INDUSTRIAL
LITTLE BEAVERDAM BRANCH PALMETTO BRICK CO./MIDDENDORF MINE	SCG730388 MINOR INDUSTRIAL
LAKE ROBINSON/BLACK CREEK PROGRESS ENERGY/HB ROBINSON	SC0002925 MAJOR INDUSTRIAL
CATTAIL BRANCH TOWN OF PAGELAND/SOUTHEAST WWTP	SC0021539 MINOR DOMESTIC

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

LANDFILL NAME ***FACILITY TYPE***	***PERMIT #*** ***STATUS***
CHESTERFIELD COUNTY LF #2/JEFFERSON MUNICIPAL	131001-1101 CLOSED
CHESTERFIELD COUNTY DUMP --------	-------- CLOSED
TOWN OF PAGELAND INDUSTRIAL	131002-3001 ACTIVE
PROGRESS ENERGY LANDFILL INDUSTRIAL	163341-1601, 163341-1602 ACTIVE

Mining Activities

MINING COMPANY ***MINE NAME***	***PERMIT #*** ***MINERAL***
BV HEDRICK SAND & GRAVEL CO. PIEDMONT SAND	0665-25 SAND

HANSON AGGREGATES SE BREWER SAND PIT #2	0271-25 SAND
BARRINGER SAND, LLC. BARRINGER SAND MINE	1474-25 SAND
PALMETTO BRICK CO. MIDDENDORF MINE	1367-25 KAOLIN
PAGELAND SAND CO., INC. PAGELAND SAND MINE #3	1332-25 SAND
BV HEDRICK SAND & GRAVEL CO. WILLIAMS SAND	0969-25 SAND
CONSTRUCTION MATERIALS GROUP LLC SANDHILLS MINE	1723-25 SAND

Groundwater Quantity

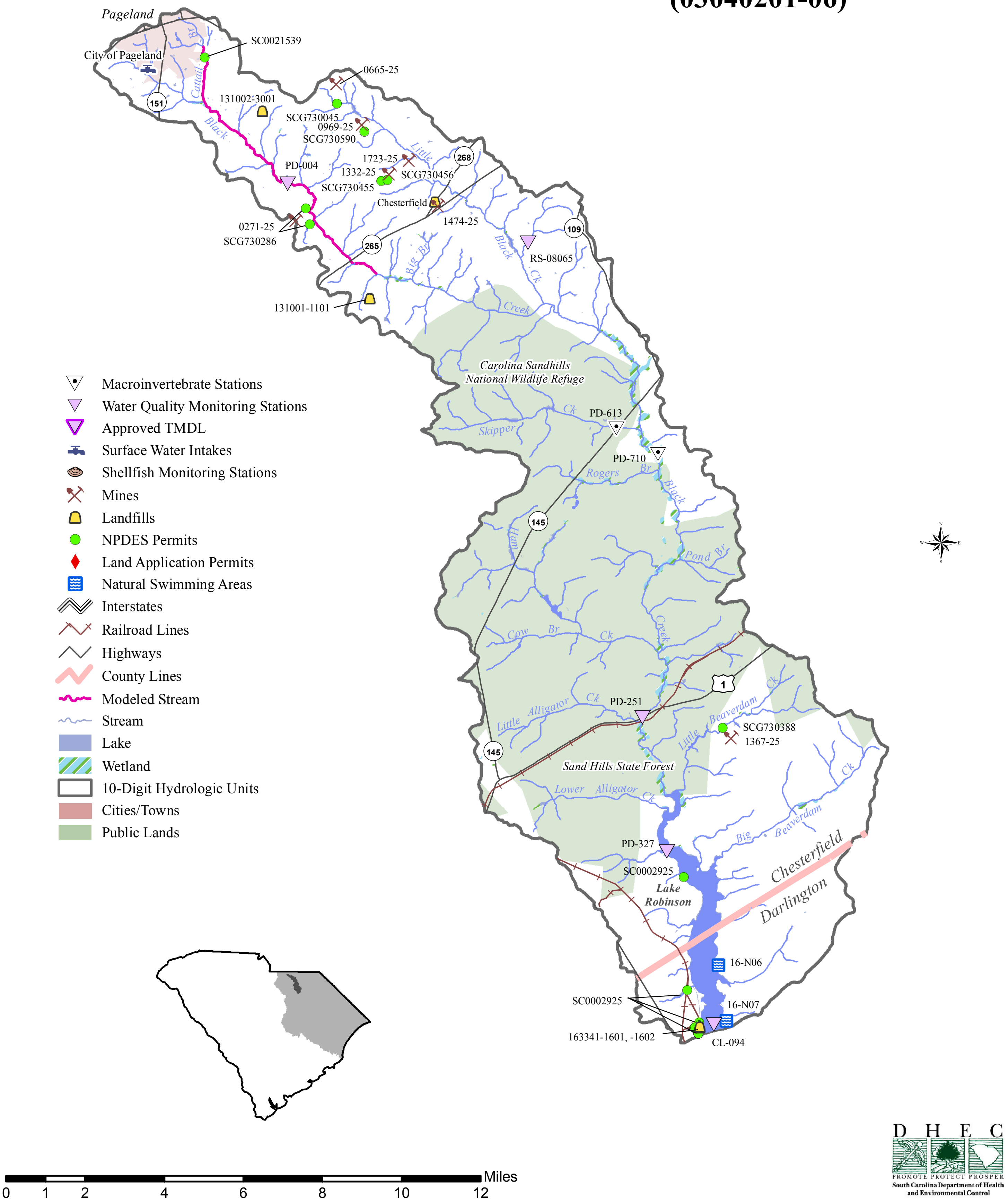
Portions of this watershed fall within the Pee Dee Capacity Use Area and large groundwater uses must be reported (see Capacity Use Program p.22).

Growth Potential

There is a low potential for growth in this rural watershed, which contains a portion of the Town of Pageland. The Town of McBee is just outside the watershed. A sizeable portion of the watershed is publicly owned lands within the Carolina Sandhills National Wildlife Refuge or the Sand Hills State Forest, limiting development in these areas. S.C. Hwy. 151 is a four-lane highway connecting the Cities of Florence and Charlotte, and together with its bypass around the Town of Pageland should see additional commercial and industrial development in the northern portion of the watershed. Water service is limited to Pageland and McBee, and sewer service exists only in the Pageland area.

Upper Black Creek Watershed

(03040201-06)



03040201-07

(Black Creek)

General Description

Watershed 03040201-07 is located in Chesterfield, Darlington, and Florence Counties and consists primarily of lower ***Black Creek*** and its tributaries from the Lake Robinson dam to the Pee Dee River. The watershed occupies 187,077 acres of the Sandhills and Upper Coastal Plain regions of South Carolina. Land use/land cover in the watershed includes: 41.3% agricultural land, 22.1% forested wetland, 21.9% forested land, 13.0% urban land, 1.2% nonforested wetland, 0.5% water, and 0.1% barren land.

This section of Black Creek accepts drainage from its upper reach together with Beaverdam Creek (King Millpond, Beaverdam Millpond) before flowing through Lake Prestwood (Dry Branch, Horsepen Branch) in the City of Hartsville. Downstream of the lake, Black Creek accepts drainage from Snake Branch, Spring Branch, Boggy Swamp (Little Boggy Swamp, McIntosh Millpond), Everlasting Branch (Gilbert Lake), Seed Branch (Little Seed Branch, Leavenworth Branch, Chapmans Pond), Horse Creek (Jeffords Millpond), and Lucas Creek. Swift Creek (Indian Creek, Ramsey Pond, Bellyache Creek) enters the system next, flowing through the City of Darlington, followed by High Hill Creek (Star Fork Branch, McCall Branch), Ashby Branch, and Polk Swamp Creek. The Black Creek Watershed drains into the Great Pee Dee River. There are 371.3 stream miles and 920.8 acres of lake waters in this watershed. Black Creek is classified FW* (dissolved oxygen not less than 4 mg/l and pH between 5.0 and 8.5) from the Lake Robinson Dam to the U.S. Hwy. 52 crossing (just upstream of Horse Creek and Lucas Creek). Tributaries to this reach of Black Creek along with the remaining streams in the watershed are classified FW.

Surface Water Quality

Station #	Type	Class	Description
PD-159	W	FW*	BLACK CREEK AT S-16-23 4.7 MI NW OF HARTSVILLE
PD-268	W	FW*	SONOVISTA CLUB HARTSVILLE OFF DOCK OFF PRESTWOOD LAKE
PD-081	W	FW*	PRESTWOOD LAKE AT US 15
PD-258	W	FW	SNAKE BRANCH AT RAILROAD AVENUE IN HARTSVILLE
PD-137	W	FW	SNAKE BRANCH AT WOODMILL STREET IN HARTSVILLE
PD-021	W	FW*	BLACK CREEK AT S-16-18 1 MI NNE OF HARTSVILLE
PD-330	W	FW*	BLACK CREEK AT HIGHWAY 15 BYPASS
PD-023	W	FW*	BLACK CREEK AT S-16-13 5.5 MI NE OF HARTSVILLE
PD-542	BIO	FW	BOGGY SWAMP AT COUNTY ROAD 50
PD-024A	SPRP	FW*	BLACK CREEK AT US 401 & 52, 6 MI NW OF DARLINGTON
PD-025	W	FW	BLACK CREEK AT S-16-133 2.25 MI NE OF DARLINGTON
PD-141	W	FW	TILE DISCHARGING TO DITCH AROSS RD AT DARLINGTON WWTP TO SWIFT CK
PD-027/RS-07045	W	FW	BLACK CREEK AT S-16-35, 5.5 MI SE OF DARLINGTON
PD-103	W	FW	HIGH HILL CREEK AT US 52 ON COUNTY LINE
RS-06027	RS06	FW	ASHBY BRANCH AT CULVERT ON S-21-1511
PD-078	INT/BIO	FW	BLACK CREEK AT SC 327

Black Creek – There are eight SCDHEC monitoring sites along this section of Black Creek. This is a blackwater system, characterized by naturally low pH conditions. At the furthest upstream site ***(PD-159)***, aquatic life and recreational uses are fully supported. At the next site downstream ***(PD-021)***, aquatic life and recreational uses are fully supported; however, there is a significant increasing trend in five-day biological oxygen demand. A significant decreasing trend in turbidity suggests improving conditions for this parameter. At the next site moving downstream (***PD-330)***, aquatic life and recreational uses are fully supported. Aquatic life and recreational uses are also fully supported further downstream at ***PD-023***; however there is a significant increasing trend in fecal coliform bacteria.

Aquatic life and recreational uses are fully supported at ***PD-024A***; however, there is a significant decreasing trend in dissolved oxygen concentration. Further downstream ***(PD-025)***, aquatic life and recreational uses are fully supported. At the next site downstream ***(PD-027)***, aquatic life and recreational uses are fully supported; however, there are significant increasing trends in five-day biological oxygen demand and total suspended solids. At the furthest downstream site ***(PD-078)***, aquatic life uses are fully supported based on macroinvertebrate community data; however, there are significant decreasing trends in dissolved oxygen concentration and increasing trends in turbidity. There is a significant decreasing trend in pH. Although dissolved oxygen excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations. Recreational uses are fully supported; however, there is a significant increasing trend in fecal coliform bacteria.

Lake Prestwood* -** There are two SCDHEC monitoring sites along Lake Prestwood. Aquatic life and recreational uses are fully supported at both the uplake ***(PD-268) and downlake ***(PD-081)*** sites.

Snake Branch* -** There are two SCDHEC monitoring sites along Snake Branch. This is a blackwater system, characterized by naturally low pH conditions. Although pH excursions occurred at both sites, they were typical of values seen in blackwater systems and were considered natural, not standards violations. At the upstream site ***(PD-258), aquatic life uses are fully supported. Recreational uses are not supported due to fecal coliform bacteria excursions. In addition, there is a significant increasing trend in fecal coliform bacteria. At the downstream site ***(PD-137)***, aquatic life uses are fully supported. Recreational uses are not supported due to fecal coliform bacteria excursions.

***Boggy Swamp (PD-542)* –**Aquatic life uses are fully supported based on macroinvertebrate community data.

***Tilefield to Ditch to Swift Creek (PD-141)* -** Aquatic life uses are not supported due to ammonia excursions. Significant increasing trends in dissolved oxygen concentration and decreasing trends in turbidity suggest improving conditions for these parameters. Recreational uses are not supported due to fecal coliform bacteria excursions.

***High Hill Creek (PD-103)* -** Aquatic life and recreational uses are fully supported. This is a blackwater system, characterized by naturally low dissolved oxygen conditions. Although dissolved oxygen excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations.

Ashby Branch (RS-06027) - Aquatic life uses are not supported due to dissolved oxygen and pH excursions. Recreational uses are not supported due to fecal coliform bacteria excursions.

*A fish consumption advisory has been issued by the Department for mercury and includes **Black Creek** and **Lake Prestwood** within this watershed* *(see advisory p.144).*

NPDES Program

Active NPDES Facilities

RECEIVING STREAM ***FACILITY NAME***	***NPDES#*** ***TYPE***
BLACK CREEK SONOCO PRODUCTS/HARTSVILLE	SC0003042 MAJOR INDUSTRIAL
BLACK CREEK CITY OF HARTSVILLE	SC0021580 MAJOR DOMESTIC
BLACK CREEK CITY OF DARLINGTON/BLACK CREEK WWTP	SC0039624 MAJOR DOMESTIC
BLACK CREEK LR STOKES/DOVESVILLE	SCG730200 MINOR INDUSTRIAL
BLACK CREEK GOODSON CONSTRUCTION/BARFIELD MINE	SCG731276 MINOR INDUSTRIAL
BLACK CREEK PEE DEE RIVER REG. WATER PLANT	SCG645035 MINOR MUNICIPAL
BLACK CREEK TRIBUTARY DARLINGTON DEVELOPMENT LLC/PALMETTO PLANT	SC0004162 MAJOR INDUSTRIAL
BLACK CREEK TRIBUTARY POND/FLORENCE #84 MINE	SCG731077 MINOR INDUSTRIAL
BLACK CREEK TRIBUTARY L. DEAN WEAVER/DOVESVILLE MINE	SCG730574 MINOR INDUSTRIAL
LAKE ROBINSON/BLACK CREEK PROGRESS ENERGY/HB ROBINSON	SC0002925 MAJOR INDUSTRIAL
HIGH HILL CREEK WEAVER CO., INC./MARLOWE PIT MINE	SCG731054 MINOR INDUSTRIAL
HORSE CREEK BRITTS CONSTRUCTION/HWY 52 PIT	SCG730557 MINOR INDUSTRIAL
LUCAS CREEK NUCOR STEEL CORPORATION	SC0048283 MINOR INDUSTRIAL
LUCAS CREEK NUCOR STEEL BORROW PIT	SCG730717 MINOR INDUSTRIAL

BEAVERDAM CREEK NEWSOM HAULING/NEWSOM 1 MINE	SCG731090 MINOR INDUSTRIAL
BEAVERDAM CREEK TRIBUTARY FLYING K FARMS MINE	SCG730987 MINOR INDUSTRIAL
LITTLE BOGGY SWAMP MARY JOHNSON/HUMMINGBIRD MINE	SCG731026 MINOR INDUSTRIAL
SWIFT CREEK DARLINGTON VENEER CO., INC.	SCG250223 MINOR INDUSTRIAL
SWIFT CREEK DCW&S CENTER ROAD PLANT	SCG645035 MINOR MUNICIPAL
MCCALL BRANCH FLORENCE/LUCAS ST WTP	SCG645024 MINOR MUNICIPAL
STAR FORK BRANCH TRIBUTARY DARLINGTON/52 BYPASS WATER PLANT	SCG646034 MINOR MUNICIPAL
SWIFT CREEK DARLINGTON/NORTH MAIN ST WTP	SCG646013 MINOR MUNICIPAL

Municipal Separate Storm Sewer Systems (MS4)

RECEIVING STREAM ***MUNICIPALITY*** ***RESPONSIBLE PARTY*** ***IMPLEMENTING PARTY***	***NPDES#*** ***MS4 PHASE*** ***MS4 SIZE***
BLACK CREEK UNINCORPORATED AREAS DARLINGTON COUNTY DARLINGTON COUNTY	SCR033101 PHASE II SMALL MS4
BLACK CREEK CITY OF FLORENCE CITY OF FLORENCE CITY OF FLORENCE	SCR034101 PHASE II SMALL MS4
BLACK CREEK CITY OF QUIMBY CITY OF QUIMBY FLORENCE COUNTY	SCR034103 PHASE II SMALL MS4
BLACK CREEK UNINCORPORATED AREAS FLORENCE COUNTY FLORENCE COUNTY	SCR034102 PHASE II SMALL MS4

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

SOLID WASTE LANDFILL NAME *FACILITY TYPE*	*PERMIT #* *STATUS*
CITY OF FLORENCE MUNICIPAL	DWP-054 CLOSED
DARLINGTON CO. SW TRANSFER STATION MUNICIPAL	161001-6001 ACTIVE
DARLINGTON COUNTY C/C LANDFILL CONSTRUCTION	161001-1201 ACTIVE
SONOCO PRODUCTS CO. INDUSTRIAL	163315-1601 ACTIVE
DARLINGTON VENEER CO. INDUSTRIAL	163307-1601 ACTIVE
BROCKS C&C LANDFILL C&D	PROPOSED ----------
DARLINGTON DEV. / PALMETTO PIT C&D	163329-1901 ACTIVE
HOWLE ENTERPRISES INC. COMPOSTING	162409-3001 INACTIVE
UNION CARBIDE-LINDE DIV. INDUSTRIAL	IWP-132 INACTIVE
HUMPHRAY COCKER SEED COMPANY INDUSTRIAL	---------- INACTIVE
PEE DEE ENVIRONMENTAL SERVICES INDUSTRIAL	212426-1601 ACTIVE
PEE DEE ENVIRO SERV. C/C LANDFILL CONSTRUCTION	212426-1201 INACTIVE
NUCOR STEEL INDUSTRIAL	163324-1601, 163324-1602 ACTIVE

Land Application Sites

LAND APPLICATION SYSTEM *FACILITY NAME*	*ND#* *TYPE*
TILEFIELD ODOM'S MHP	ND0067636 DOMESTIC

Mining Activities

MINING COMPANY ***MINE NAME***	***PERMIT #*** ***MINERAL***
L.H. STOKES & SON, INC. DOVESVILLE	0924-31 SAND
INDUSTRIAL PAVING, INC. BRUNSEN MINE	0349-31 SAND/CLAY
FLYING K FARMS FLYING K FARMS MINE	1788-25 SAND
KIRYEN CONSTRUCTION INC. GODLEY FARM MINE	1995-31 SAND; TOP SOIL
NEWSOM HAULING NEWSOM MINE #1	1925-31 SAND; TOP SOIL
MARY JOHNSON HUMMINGBIRD MINE	1853-31 SAND; TOP SOIL
BROCKS HAULING & CONSTRUCTION RANCHO ROAD PIT	1606-31 SAND/CLAY
POND LIMITED PARTNERSHIP ASPHALT PLANT #8	0084-25 SAND
LH STOKES & SON INC. MCLELLAN MINE	1881-41 SOIL; SAND/CLAY
HWY 52 PIT LLC BRITTS MINE	1347-31 SAND; SAND/CLAY
PALMETTO CORP. OF CONWAY HWY 52 MINE	2048-31 SAND; TOP SOIL
BRADY HILL BRADY’S PIT	2055-31 SAND; TOP SOIL

Groundwater Quantity

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

Growth Potential

There is a high potential for growth in this watershed, which contains the Cities of Hartsville and Darlington, the Town of Dovesville, and portions of the City of Florence and the Towns of McBee and Clyde. The watershed has several major highways that serve as growth corridors. U.S. Hwy. 52 connects Florence to Darlington and has been widened to four lanes, with plans to continue the widening from Darlington to Dovesville by November of 2015. S.C. Hwy. 151, already widened to four lanes, is the main Florence to Charlotte travel corridor, and is becoming a magnet for commercial development. The segment of S.C. Hwy. 151 between Darlington and Hartsville is the primary growth corridor for Darlington County and should see additional commercial and industrial growth.

There is extensive water service coverage in the watershed coming from the Town of McBee, the Cities of Hartsville, Darlington, and Florence, and the Darlington County Water and Sewer Authority. Sewer service is currently limited to the three urban areas. All three domestic systems have aggressive growth plans, especially the City of Florence which has constructed a new treatment facility and outfall to the Great Pee Dee River. The City of Florence completed development of a regional surface water treatment facility along the Pee Dee River in 2006 to address severe groundwater supply problems being experienced by many Pee Dee municipalities.

Watershed Restoration and Protection

Total Maximum Daily Loads (TMDLs)

Fecal coliform TMDLs were developed by SCDHEC and approved by the USEPA for the Black Creek watershed at seven water quality monitoring sites along ***Black Creek and its tributaries***. This watershed has several continuous point sources and includes several Municipal Separate Storm Sewer System (MS4) designated areas. There are also many animal feeding operations in the watershed. Probable sources of fecal contamination identified in the TMDL report include agricultural runoff, failing septic systems, and wildlife. The TMDL report specifies a 0% reduction in the load of fecal coliform bacteria into ***Black Creek*** at PD-078, an 81% reduction into ***Snake Branch*** at PD-137 and 84% into PD-258, an 83% reduction into an ***unnamed tributary to Swift Creek*** (PD-141), a 42% reduction into ***Swift Creek*** (RS-01023), a 72% reduction into ***Boggy Swamp*** (RS-03507), and an 83% reduction of fecal coliform into ***Ashby Branch*** (RS-06027) in order for the waterbodies to meet the recreational use standard.

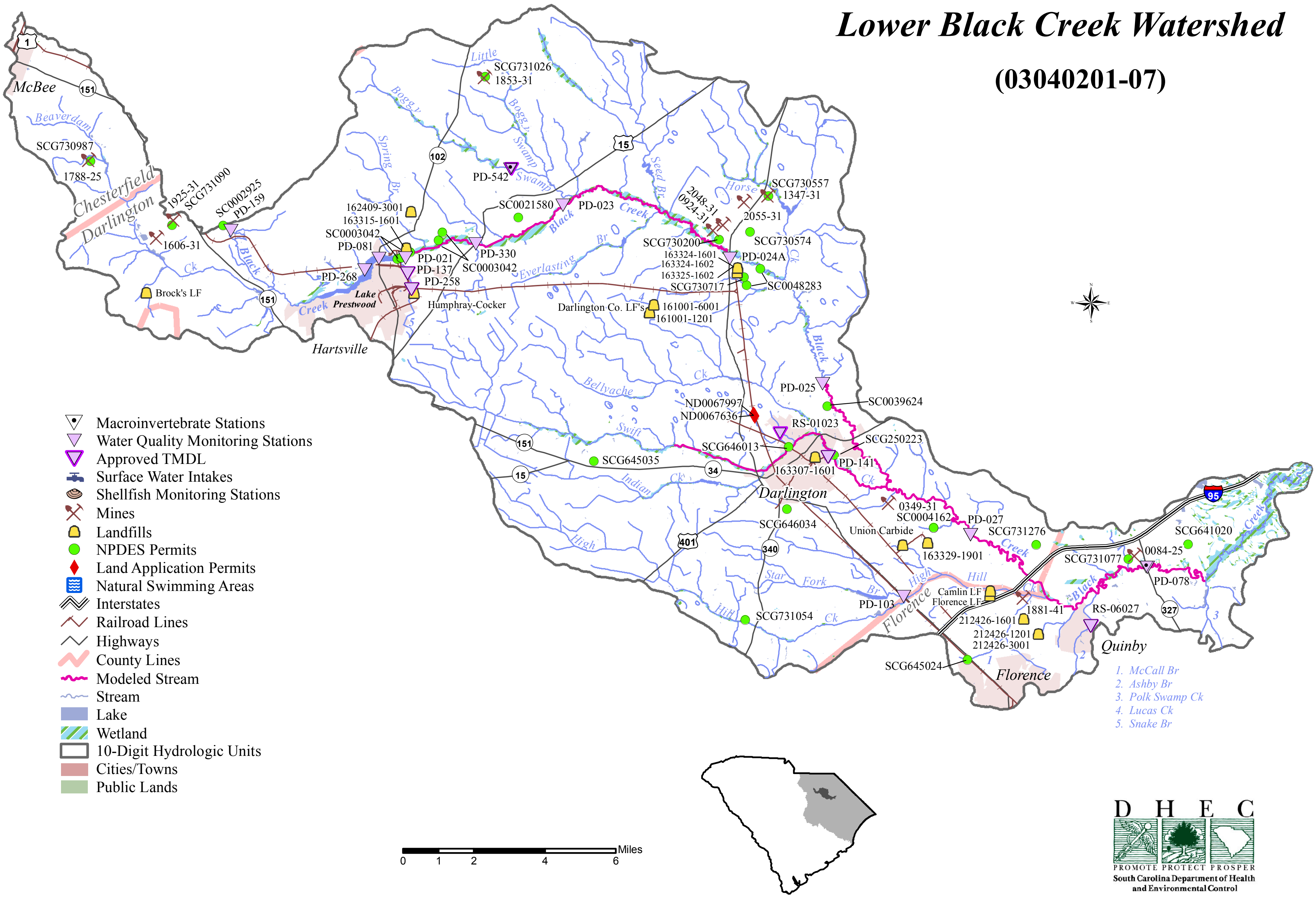
Special Projects

Hartsville Demonstration Project

In 2007, the City of Hartsville was awarded a 319 grant to construct a bio retention area on a vacant lot in the downtown business district. The installment of this low impact development technique met the visual goals of the City, utilized native plants and reduced runoff concerns in the area by utilizing infiltration of improve water quality. The water quality goal of the project was the reduction of total suspended solids (TSS) and oil and grease loading on Snake Branch. An educational kiosk is displayed to provide information about nonpoint source pollution and the bio retention area.

Lower Black Creek Watershed

(03040201-07)



03040201-08

(Great Pee Dee River)

General Description

Watershed 03040201-08 is located in Marlboro, Darlington, and Florence Counties and consists primarily of the ***Great Pee Dee River*** and its tributaries from Cedar Creek to Black Creek. The watershed occupies 214,121 acres of the Upper and Lower Coastal Plain regions of South Carolina. Land use/land cover in the watershed includes: 42.8% forested wetland, 25.7% agricultural land, 23.3% forested land, 4.0% urban land, 2.6% nonforested wetland, 1.4% water, and 0.2% barren land.

This section of the Great Pee Dee River accepts drainage from its upper reaches, along with Buckholtz Creek (Lake Darpo or Spring Lake), Muddy Creek (Machine Branch, Riggins Branch, Lake Creek, Henegan Lake), and Flat Creek. Cottingham Creek (Covington Millpond, Sandy Ocean, Carters Branch) originates near the City of Bennettsville and joins with Hagins Prong to form the headwaters of Three Creeks (Monroe Branch, Drakes Millpond, Big Branch), which flows into the river downstream of Flat Creek. Another Flat Creek enters the system next, followed by Rogers Creek (Mosey Bay, Wilson Bay, Burnt Bay), Hurricane Branch, and Back Swamp (Fountain Branch, Alligator Creek, Louthers Lake). There are a total of 418.9 stream miles and 719.1 acres of lake waters in this watershed, all classified FW.

Surface Water Quality

Station #	Type	Class	Description
PD-637	BIO	FW	Buckholtz Creek at dirt rd off county rd 656
PD-336	W	FW	Hagins Prong at SCR 381
PD-341	W	FW	Three Creeks at SC 381 at Blenheim
PD-367	INT	FW	Three Creeks at SC 38, S of Blenheim
RS-08069	RS08	FW	Three Creeks at S-35-18 at sharp turn in road
RS-07201	RS07	FW	Rogers Creek at S-35-18, 6mi S of Blenheim
PD-028	INT	FW	Great Pee Dee River at SC 34 11 mi NE of Darlington

Buckholtz Creek (PD-637) - Aquatic life uses are partially supported based on macroinvertebrate community data.

Hagins Prong* (*PD-336) – Aquatic life uses are fully supported. This is a blackwater system, characterized by naturally low pH and dissolved oxygen conditions. Although dissolved oxygen and pH 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 excursions.

Three Creeks – There are three SCDHEC monitoring sites along Three Creeks. This is a blackwater system, characterized by naturally low pH and dissolved oxygen conditions. Although pH and dissolved oxygen excursions occurred at all sites, they were typical of values seen in blackwater systems and were considered natural, not standards violations. Aquatic life and recreational uses are fully supported at ***PD-341, PD-367,*** and ***RS-08069.*** There is a significant increasing trend in pH at midstream site PD-367.

Rogers Creek (RS-07201) - Aquatic life and recreational uses are fully supported.

Great Pee Dee River (PD-028) - 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. There is a significant decreasing 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.

A fish consumption advisory has been issued by the Department for mercury and includes the ***Great Pee Dee River*** *and* ***Louthers Lake*** *within this watershed (see advisory p.144).*

Natural Swimming Areas

FACILITY NAME ***RECEIVING STREAM***	***PERMIT #*** ***STATUS***
LAKE DARPO LAKE DARPO	16-N05 ACTIVE

NPDES Program

Active NPDES Facilities

RECEIVING STREAM ***FACILITY NAME***	***NPDES#*** ***TYPE***
GREAT PEE DEE RIVER MOHAWK INDUSTRIES/OAK RIVER PLANT	SC0001996 MINOR INDUSTRIAL
ROGERS CREEK TRIBUTARY HANSON AGGREGATES SE/BROWNSVILLE	SCG730468 MINOR INDUSTRIAL
HAGINS PRONG TOWN OF CLIO WWTF	SC0040606 MINOR DOMESTIC
HAGINS PRONG TRIBUTARY BALDOR ELECTRIC CO.	SCG250256 MINOR INDUSTRIAL

Municipal Separate Storm Sewer Systems (MS4)

RECEIVING STREAM ***MUNICIPALITY*** ***RESPONSIBLE PARTY*** ***IMPLEMENTING PARTY***	***NPDES#*** ***MS4 PHASE*** ***MS4 SIZE***
GREAT PEE DEE RIVER UNINCORPORATED AREAS FLORENCE COUNTY FLORENCE COUNTY	SCR034102 PHASE II SMALL MS4

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

LANDFILL NAME ***FACILITY TYPE***	***PERMIT #*** ***STATUS***
CITY OF BENNETTSVILLE TRANSFER STA. MUNICIPAL	351002-6001 ACTIVE
MARLBORO COUNTY INDUSTRIAL	351001-1601 INACTIVE
MARLBORO COUNTY COMPOSTING FACILITY COMPOSTING	351001-3001 ACTIVE
MARLBORO COUNTY MUNICIPAL SW LF COMPOSTING	351001-1101 INACTIVE

Mining Activities

MINING COMPANY ***MINE NAME***	***PERMIT #*** ***MINERAL***
BAKER BROTHERS OF GRESHAM INC. GRESHAM	0959-31 SAND; SAND/CLAY
HANSON AGGREGATES SE, INC. BROWNSVILLE PLANT	0090-69 SAND/GRAVEL

Groundwater Quantity

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

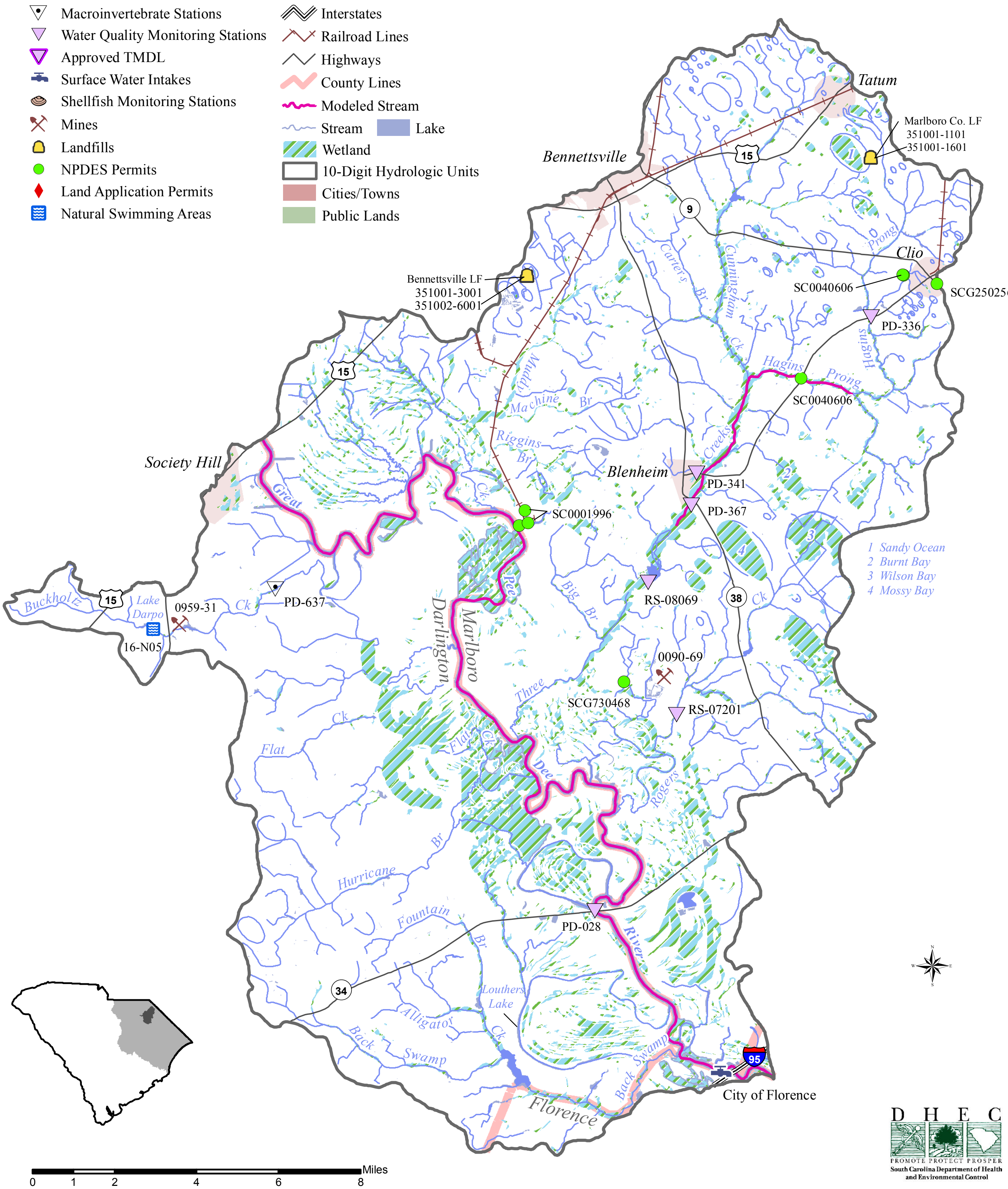
WATER USER ***STREAM***	***REGULATED CAPACITY (MGD)*** ***PUMPING CAPACITY (MGD)***
CITY OF FLORENCE GREAT PEE DEE RIVER	10.0 33.0

Growth Potential

There is a low to moderate potential for growth in this watershed, which contains the Towns of Cheraw, Clio, Tautm, and Blenheim, a portion of the City of Bennettsville and a portion of the Town of Society Hill, and is projected to have one of the largest population growth rates in the region. There are numerous industries in the watershed, most in and around the municipal limits of Cheraw. Commercial development is also centered around Cheraw, particularly west of town along S.C. Hwy 9, and additional growth is expected. A large portion of the watershed is not served by public water or sewer systems, primarily due to the large expanse of the floodplain associated with the Great Pee Dee River. These services are provided in and immediately around the Town of Cheraw, along S.C. Hwy 34 east of the City of Darlington, around Clio, and the areas near Bennettsville. The Town of Cheraw's plan to upgrade its wastewater treatment plant are currently underway and should encourage further growth. U.S. Hwy 15 and U.S. Hwy 401 form a bypass around the City of Bennettsville, and this bypass area is expected to see increased commercial growth. The proposed Preferred Alternative route of I-73 (Northern Corridor) would cross this watershed and could bring some growth to the area, especially around interchanges.

Great Pee Dee River Watershed

(03040201-08)



D H E C

PROMOTE PROTECT PROSPER

South Carolina Department of Health and Environmental Control

03040201-09

(Jeffries Creek)

General Description

Watershed 03040201-09 is located in Darlington and Florence Counties and consists primarily of ***Jeffries Creek*** and its tributaries. The watershed occupies 137,175 acres of the Upper and Lower Coastal Plain regions of South Carolina. Land use/land cover in the watershed includes: 28.3% forested wetland, 27.5% agricultural land, 23.9% forested land, 18.4% urban land, 1.4% nonforested wetland, 0.4% water, and 0.1% barren land.

Jeffries Creek accepts drainage from Beaverdam Creek, Gulley Branch, Pye Branch, Middle Swamp (Oakdale Lake, Forest Lake, Alligator Branch, Billy Branch), Eastman Branch, and Cane Branch. Polk Swamp Canal (Polk Swamp, Adams Branch, Twomile Creek, Canal Branch) enters the system downstream, followed by Middle Branch, Long Branch, Boggy Branch, More Branch, and Willow Creek (Little Willow Creek, Cypress Creek, Spring Branch, Claussen Branch). The Jeffries Creek Watershed drains into the Great Pee Dee River. There are a total of 229.5 stream miles and 353.2 acres of lake waters in this watershed. Jeffries Creek, Pye Branch, and Middle Swamp are classified FW* (dissolved oxygen not less than 4.0 mg/l and pH between 5.0 and 8.5) and the remaining streams in the watershed are classified FW.

Surface Water Quality

Station #	Type	Class	Description
PD-639	BIO	FW*	Jeffries Creek at county road 13
PD-255	W	FW*	Jeffries Creek at SC 340 6.8 mi SSW of Darlington
PD-256	W	FW*	Jeffries Creek at S-21-112 4.8 mi W of /Florence
PD-065	W	FW	Gulley Branch at S-21-13, Timrod Park
PD-230	W	FW*	Middle Swamp at SC 51 3.5 mi SSE of Florence
RS-07205	RS07	FW	Polk Swamp Canal at S-21-918, 5.75 mi ESE of Florence
PD-035	W	FW*	Jeffries Creek at SC 327 at Claussen
PD-231	INT	FW*	Jeffries Creek at unnumbered rd 3.3 mi ESE of Claussen
PD-167	W	FW	Willow Creek at S-21-57

Jeffries Creek* -** There are five SCDHEC monitoring sites along Jeffries Creek. At the furthest upstream site (PD-639)***, aquatic life uses are partially supported based on macroinvertebrate community data. Further downstream (***PD-255)***, aquatic life uses are partially supported due to dissolved oxygen excursions. Recreational uses are fully supported. At the next site downstream ***(PD-256)***, aquatic life uses are not supported due to dissolved oxygen excursions. Recreational uses are not supported due to fecal coliform bacteria excursions. Further downstream ***(PD-035)***, aquatic life uses are fully supported. Recreational uses are not supported due to fecal coliform bacteria excursions. In addition, there is a significant increasing trend in fecal coliform bacteria. At the furthest downstream site (***PD-231)***, aquatic life and recreational uses are fully supported; however, there are significant decreasing trends in dissolved oxygen concentration and increasing trends in five-day biological oxygen demand, turbidity, and fecal coliform bacteria.

Gulley Branch (PD-065) – Aquatic life uses are fully supported. A significant decreasing trend in turbidity suggests improving conditions for this parameter. Recreational uses are not supported due to fecal coliform bacteria excursions.

Middle Swamp (PD-230) – Aquatic life uses are not supported due to dissolved oxygen excursions. Recreational uses are fully supported; however, there is a significant increasing trend in fecal coliform bacteria.

Polk Swamp Canal (RS-07205) – Aquatic life uses are fully supported. This is a blackwater system, characterized by naturally low pH and dissolved oxygen conditions. Although dissolved oxygen and pH excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations. Recreational uses are not supported due to fecal coliform bacteria excursions.

Willow Creek (PD-167) – Aquatic life uses are fully supported. This is a blackwater system, characterized by naturally low pH and dissolved oxygen conditions. Although dissolved oxygen and pH 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

RECEIVING STREAM ***FACILITY NAME***	***NPDES#*** ***TYPE***
JEFFRIES CREEK WILKIE DEVELOPMENT LLC/GILBERT DRIVE MINE	SCG730528 MINOR INDUSTRIAL
JEFFRIES CREEK GE HEALTHCARE	SCG250233 MINOR INDUSTRIAL
JEFFRIES CREEK TRIBUTARY FLORENCE COUNTY/FLORENCE COUNTY MINE	SCG731067 MINOR INDUSTRIAL
JEFFRIES CREEK TRIBUTARY JOHNSON CONTROLS/FLORENCE RECYCLING CENTER	SCG250284 MINOR INDUSTRIAL
PYE BRANCH KOPPERS INC.	SC0003018 MINOR INDUSTRIAL
TWOMILE CREEK KOPPERS INC.	SC0003018 MINOR INDUSTRIAL
GULLEY BRANCH L.DEAN WEAVER/POSTON PIT	SCG730459 MINOR INDUSTRIAL
LITTLE WILLOW CREEK COMMANDER NURSING CENTER	SC0034703 MINOR DOMESTIC

BEAVERDAM CREEK DILMAR OIL	SC0048399 MINOR INDUSTRIAL

Municipal Separate Storm Sewer Systems (MS4)

RECEIVING STREAM ***MUNICIPALITY*** ***RESPONSIBLE PARTY*** ***IMPLEMENTING PARTY***	***NPDES#*** ***MS4 PHASE*** ***MS4 SIZE***
JEFFRIES CREEK UNINCORPORATED AREAS DARLINGTON COUNTY DARLINGTON COUNTY	SCR033101 PHASE II SMALL MS4
JEFFRIES CREEK CITY OF FLORENCE CITY OF FLORENCE CITY OF FLORENCE	SCR034101 PHASE II SMALL MS4
JEFFRIES CREEK UNINCORPORATED AREAS FLORENCE COUNTY FLORENCE COUNTY	SCR034102 PHASE II SMALL MS4

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

LANDFILL NAME ***FACILITY TYPE***	***PERMIT #*** ***STATUS***
CITY OF FLORENCE COMPOSTING FACILITY COMPOSTING	211004-3001 ACTIVE
FLORENCE COUNTY LANDFILL INDUSTRIAL	211001-1601 INACTIVE
CITY OF FLORENCE TRANSFER STA. MUNICIPAL	212498-6001 ACTIVE
CITY OF FLORENCE DUMP MUNICIPAL	-------- CLOSED
FLORENCE COUNTY SUBTITLE D MUNICIPAL	--------- INACTIVE
PEE DEE MSWLF MUNICIPAL	----------- INACTIVE
FLORENCE COUNTY LANDFILL MUNICIPAL	211001-1101 INACTIVE

Land Application Sites

LAND APPLICATION SYSTEM ***FACILITY NAME***	***ND#*** ***TYPE***
PERCOLATION BASIN BEULAH LLC/COUNTRY PINES APARTMENTS	ND0063801 DOMESTIC

Mining Activities

MINING COMPANY ***MINE NAME***	***PERMIT #*** ***MINERAL***
POINT SOUTH DEVELOPERS LLC WILDBIRD RUN MINE	1560-41 SAND
L. DEAN WEAVER CONTRUCTION CO. POSTON PIT	1294-41 SAND; SAND/CLAY
WILKIE DEVELOPMENT LLC GILBERT DRIVE MINE	1871-41 SAND/CLAY
FLORENCE COUNTY FLORENCE COUNTY MINE	1779-41 SAND; SAND/CLAY
PALMETTO PAVING CORPORATION HOFFMEYER MINE	1802-41 SAND; TOPSOIL
MAGNOLIA LAKE DEVELOPERS LLC MAGNOLIA LAKE MINE	1947-41 SAND; TOPSOIL

Groundwater Quantity

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

Growth Potential

There is a high potential for growth in this watershed, which contains most of the City of Florence. The Florence urban area is the commercial center of the Pee Dee region and is expected to continue to grow, particularly in the I-20/I-95 vicinity on the western edge of Florence, and the major highways leading into the urban area. The watershed is served by U.S. Hwy 52, U.S. Hwy 76, I-20, and I-95 as well as the interchange between the interstates to the west of Florence. The construction of a southeastern bypass around the Florence urban area has encouraged growth. This watershed, including the Florence urban area, the Pee Dee River area, and the Hartsville area is expected to be an area of major industrial expansion over the next twenty years. There are several large public or private industrial parks, located along the western side of the Florence urban area, and should foster additional large-scale development. This watershed has extensive water system coverage, including service from the City of Hartsville, the Darlington County Water and Sewer Authority, the City of Florence, and Florence County. The City of Florence has completed construction of a surface water treatment facility on the Great Pee Dee River that could evolve into a regional water treatment plant. The City of Florence has also expanded its wastewater treatment plant and constructed an outfall to the Great Pee Dee River, which should increase the availability of sewer service in the watershed and increase the likelihood of additional growth and development. A 700-acre industrial park at I-95/SC327 has been built and should spur future growth. A penny sales tax in Florence County should spur growth by financing the proposed widening of S.C. Hwy 51 to U.S. Hwy 378 (slated to begin in 2015), U.S. 378 from U.S. 52 at Lake City to Kingsburg in Florence County, and the SW Bypass around Florence (Alligator Road), which is presently undergoing right-of-way acquisition.

Watershed Restoration and Protection

Total Maximum Daily Loads (TMDLs)

A TMDL was developed by SCDHEC and approved by EPA for Gulley Branch water quality monitoring site ***PD-065*** to determine the maximum amount of fecal coliform bacteria it can receive and still meet water quality standards. The watershed contains no known cattle, and there are no AFOs or AFO land application areas. This watershed contains 43 OSWD systems with an average density of 4 per 100 acres, which could be significant. Fecal coliform sources associated with MS4s are expected and include human sources of fecal coliform (leaking sewers and SSOs). Domesticated pets could represent another source. The TMDL states that a 99% reduction in fecal coliform loading is necessary for the stream to meet the water quality standard.

Special Projects

Gully Branch Watershed Based Plan

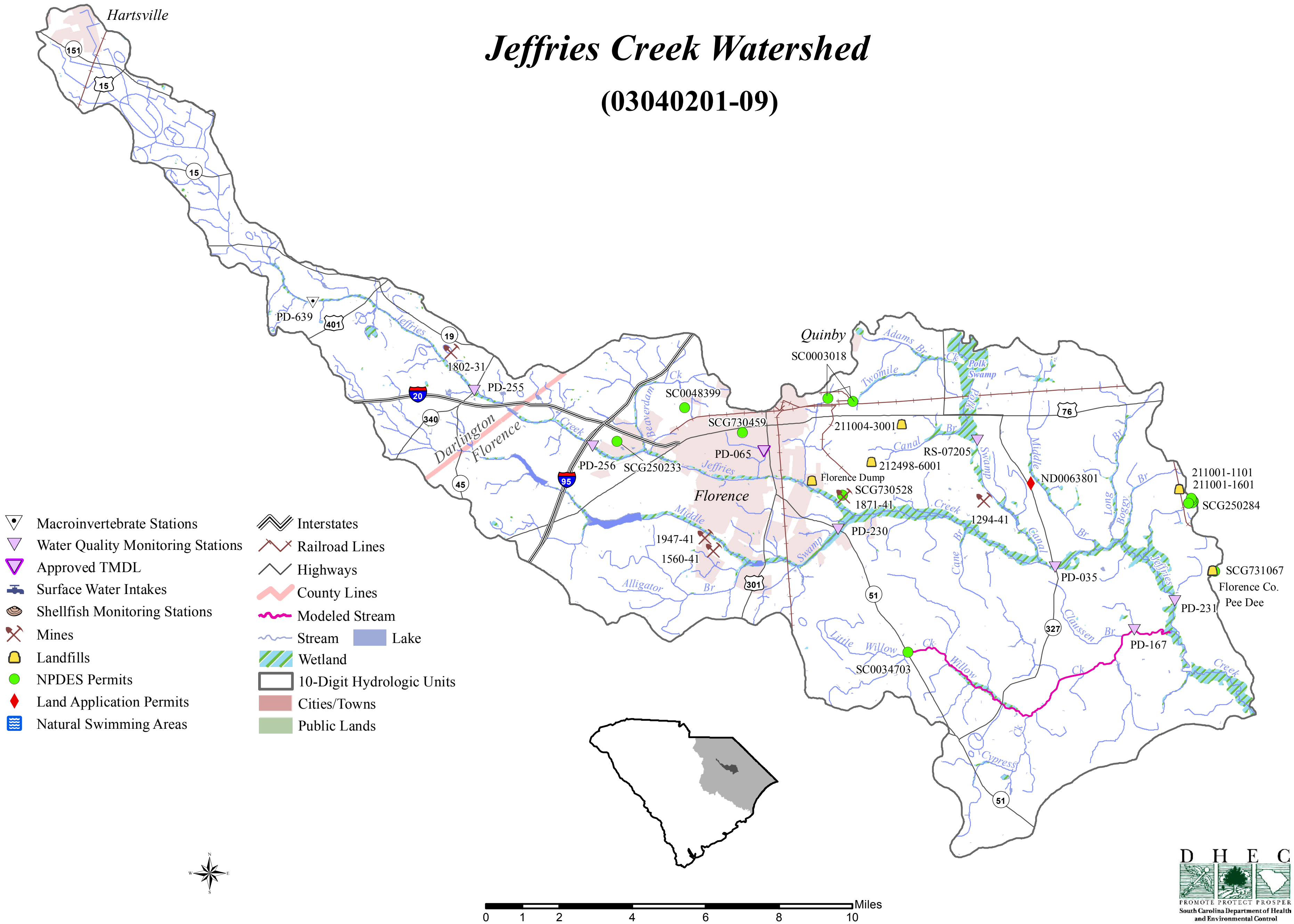
In 2012, Sumter County with the cooperation of the City of Florence was awarded a 319 Grant to develop a comprehensive watershed based plan for the Gully Branch Watershed. Stakeholders were involved in producing the plan, which focuses on reducing fecal coliform loads in Gully Branch.

Lucas and Timrod Park Restoration Project

In 2014, the City of Florence was awarded a 319 Grant to implement a portion of the water quality improvement projects identified in the Watershed Based plan. The City plans to construct two major BMPs in Lucas Park and two in Timrod Park. Within Lucas Park, a treatment forebay will be constructed to address bacteria loading from storm water runoff within the park and bacteria loading from the storm drainage network upstream of the park. Within Timrod Park, infiltration trenches will address overland flow entering the park from adjacent areas and tree planter boxes will be installed at three catch basins within the park to filter direct runoff and provide aesthetic improvement. Installation of these BMPs is scheduled to begin in late 2015.

Jeffries Creek Watershed

(03040201-09)



03040201-10

(Great Pee Dee River)

General Description

Watershed 03040201-10 is located in Dillon, Marion, and Florence Counties and consists primarily of the ***Great Pee Dee River*** and its tributaries from Black Creek to Jeffries Creek. The watershed occupies 84,377 acres of the Upper and Lower Coastal Plain regions of South Carolina. Land use/land cover in the watershed includes: 50.1% forested wetland, 30.6% forested land, 10.7% agricultural land, 2.9% urban land, 3.3% nonforested wetland, 2.1% water, and 0.3% barren land.

This segment of the Great Pee Dee River accepts drainage from its upper reaches together with Brownsville Swamp, Schoolhouse Branch (Alford Branch, Back Swamp), Mill Creek, Tobys Creek (Poccosin Swamp, Gum Swamp, Cud Swamp, Ellerbe Bay, Agnay Swamp), Muddy Gut (Buckley Creek), and Bachelor Creek. The Pee Dee River flows through the Great Pee Dee River Swamp throughout the watershed. There are a total of 122.4 stream miles and 113.8 acres of lake waters in this watershed, all classified FW.

Surface Water Quality

Station #	Type	Class	Description
RS-09329	RS09	FW	POCCOSIN SWAMP TRIBUTARY
PD-337	INT	FW	GREAT PEE DEE RIVER AT US 301/76

Poccosin Swamp Tributary (RS-09329) – 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.

Great Pee Dee River (PD-337) - Aquatic life uses are fully supported; however, there is a significant decreasing trend in dissolved oxygen concentration. There is a significant decreasing trend in pH. This is a blackwater system, characterized by naturally low dissolved oxygen conditions. Although dissolved oxygen excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations. A significant decreasing trend in total phosphorus concentration suggests improving conditions for this parameter. Recreational uses are fully supported; however, there is a significant increasing trend in fecal coliform bacteria.

*A fish consumption advisory has been issued by the Department for mercury and includes the **Great Pee Dee River** within this watershed (see advisory p.144).*

NPDES Program

Active NPDES Facilities

RECEIVING STREAM ***FACILITY NAME***	***NPDES#*** ***TYPE***
GREAT PEE DEE RIVER CITY OF FLORENCE/MAIN PLANT	SC0045462 MAJOR DOMESTIC
GREAT PEE DEE RIVER GSW&SA/CITY OF MARION WWTP	SC0046230 MAJOR DOMESTIC
GREAT PEE DEE RIVER ROCKTENN CP LLC	SC0000876 MAJOR INDUSTRIAL
TOBYS CREEK MARION CERAMICS, INC./PEE DEE CERAMICS MINE	SCG730219 MINOR INDUSTRIAL

Municipal Separate Storm Sewer Systems (MS4)

RECEIVING STREAM ***MUNICIPALITY*** ***RESPONSIBLE PARTY*** ***IMPLEMENTING PARTY***	***NPDES#*** ***MS4 PHASE*** ***MS4 SIZE***
GREAT PEE DEE RIVER UNINCORPORATED AREAS FLORENCE COUNTY FLORENCE COUNTY	SCR034102 PHASE II SMALL MS4

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

LANDFILL NAME ***FACILITY TYPE***	***PERMIT #*** ***STATUS***
SMURFIT STONE CONTAINER CORP. INDUSTRIAL	213310-1601 ACTIVE
SMURFIT STONE CONTAINER CORP. INDUSTRIAL	213310-1602 INACTIVE
EI DUPONT INDUSTRIAL	--------- INACTIVE
FLORENCE COUNTY C&D LANDFILL C&D	211001-1201 ACTIVE

Mining Activities

MINING COMPANY ***MINE NAME***	***PERMIT #*** ***MINERAL***
MARION CERAMICS INC. PEE DEE CERAMICS MINE	0050-67 CLAY
CAROLINA SAND INC. GRESHAM MINE – NECK SAND #2	0899-67 SAND

FLORENCE COUNTY	1779-41
FLORENCE COUNTY MINE	SAND; SAND/CLAY

Groundwater Quantity

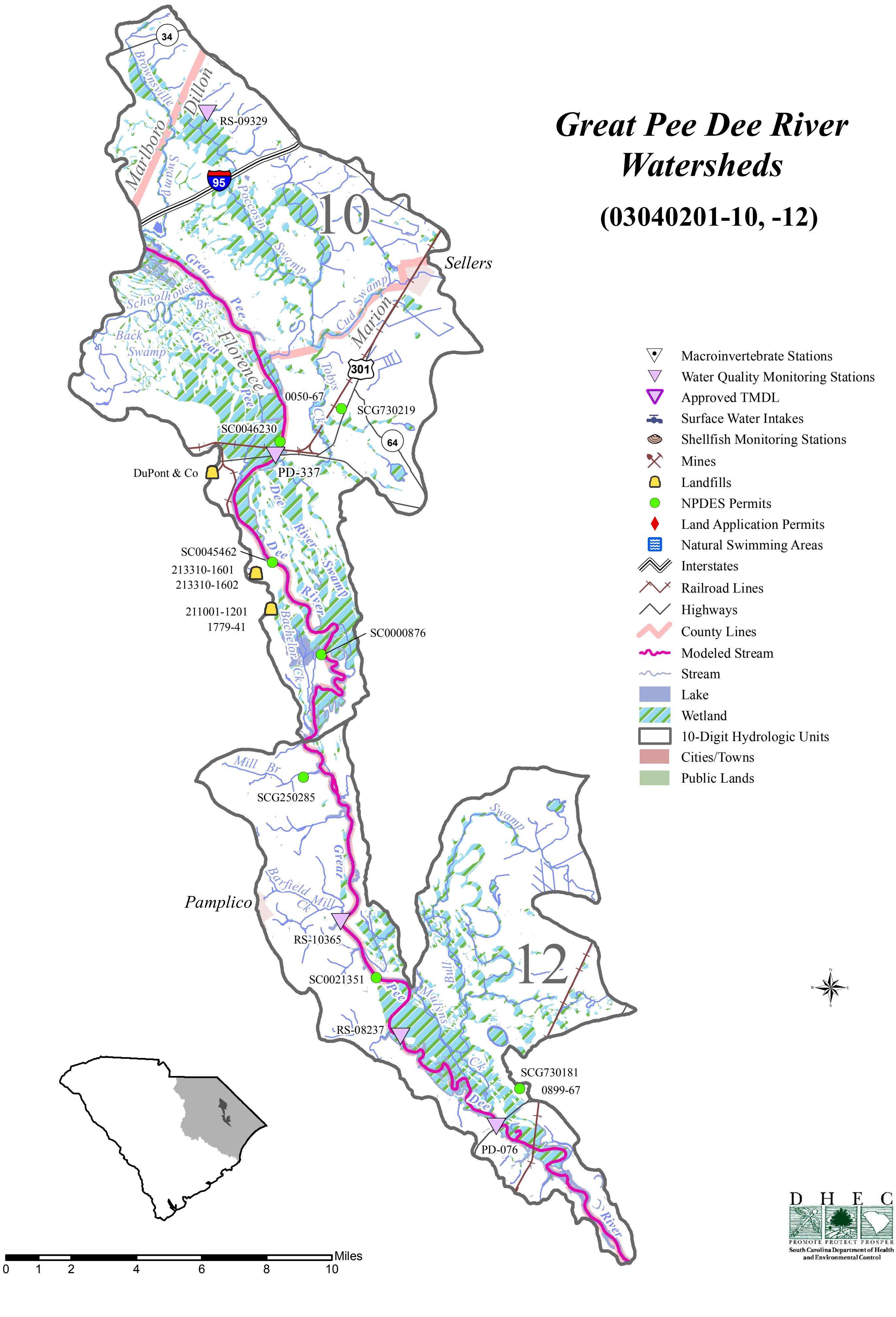
Portions of this watershed fall within the Pee Dee Capacity Use Area and large groundwater uses must be reported (see Capacity Use Program p.22).

Growth Potential

There is a low potential for growth in this watershed, which contains the Town of Sellers and the community of Pee Dee. U.S.Hwy 76 and U.S. Hwy 301, a four-laned corridor to the Grand Strand, cross the watershed at Pee Dee and run from the City of Florence to the City of Marion and on to Myrtle Beach. Marion has an interconnection with the City of Mullins, which may increase growth along the U.S. 76 corridor between Marion and Mullins. There is rural water service available from the Marion County Rural Water Company to approximately 30% of the watershed. The only sewer service is limited to the Town of Sellers, which is not capable of extending service unless the system is improved.

Great Pee Dee River Watersheds

(03040201-10, -12)



03040201-11

(Catfish Creek)

General Description

Watershed 03040201-11 is located in Dillon and Marion Counties and consists primarily of ***Catfish Creek*** and its tributaries. The watershed occupies 111,405 acres of the Upper and Lower Coastal Plain regions of South Carolina. Land use/land cover in the watershed includes: 42.5% forested wetland, 27.4% agricultural land, 20.8% forested land, 6.9% urban land, 2.0% nonforested wetland, 0.3% water, and 0.1% barren land.

Catfish Canal receives drainage from Stackhouse Creek (Boggy Branch) and flows through Catfish Swamp near the City of Marion. Collins Creek accepts drainage from Smith Swamp (Grassy Bay, Rabbit Bay, Tenmile Bay, Little Horsepen Bay, Big Horsepen Bay, Middle Bay, Wolfpit Bay) and joins Catfish Canal to form the headwaters of Catfish Creek. Catfish Creek then accepts drainage from Flat Swamp, Pitch Pot Swamp (Millrace Stream, Keedley Swamp, Wiggins Swamp), Mink Creek, and Beverly Swamp. The Catfish Creek Watershed drains into the Great Pee Dee River. There are a total of 150.2 stream miles and 67.1 acres of lake waters in this watershed. Catfish Creek and Smith Swamp are classified FW* (dissolved oxygen not less than 4.0 mg/l and pH between 5.0 and 8.5) and the remaining streams in the watershed are classified FW.

Surface Water Quality

Station #	Type	Class	Description
PD-320	S/W	FW*	SMITH SWAMP AT S-34-19 1 MI E OF MARION
PD-187	P/W	FW*	SMITH SWAMP AT US 501 1.9 MI SSE OF MARION
PD-097	S/INT	FW*	CATFISH CREEK AT S-34-34 6 MI SW OF MARION

Smith Swamp* –** There are two SCDHEC monitoring sites along Smith Swamp. At the upstream site ***(PD-320), aquatic life uses are partially supported due to dissolved oxygen excursions. Recreational uses are partially supported due to fecal coliform bacteria excursions. At the downstream site ***(PD-187)***, aquatic life uses are not supported due to dissolved oxygen excursions. In addition, there is a significant increasing trend in five-day biological oxygen demand. There is a significant decreasing trend in pH. Recreational uses are fully supported and a significant decreasing trend in fecal coliform bacteria concentration suggests improving conditions for this parameter.

***Catfish Creek (PD-097)* –** Aquatic life uses are not supported due to dissolved oxygen excursions. There is a significant decreasing trend in pH. Significant decreasing trends in five-day biological oxygen demand and total phosphorus concentration suggest improving conditions for these parameters. Recreational uses are partially supported due to fecal coliform excursions. In addition, there is a significant increasing trend in fecal coliform bacteria.

NPDES Program

Active NPDES Facilities

RECEIVING STREAM / ***FACILITY NAME***	***NPDES#*** / ***TYPE***
CATFISH CANAL TRICO WATER CO./FRED HYATT WTP	SCG646039 MINOR DOMESTIC
BOGGY BRANCH WEAVER CO./BAXLEY PIT	SCG730559 MINOR INDUSTRIAL
SMITH SWAMP TRIBUTARY ARVIN AVM INC.	SCG250108 MINOR INDUSTRIAL

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

LANDFILL NAME / ***FACILITY TYPE***	***PERMIT #*** / ***STATUS***
CITY OF MARION DUMP MUNICIPAL	----------- CLOSED
CITY OF MARION C&D LANDFILL CONSTRUCTION	341003-1201 ACTIVE
CITY OF MARION COMPOSTING	341003-3001 ACTIVE
TOWN OF LATTA COMPOSTING	171002-3001 ACTIVE
TOWN OF PEE DEE #2 MUNICIPAL	----------- INACTIVE

Groundwater Quantity

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

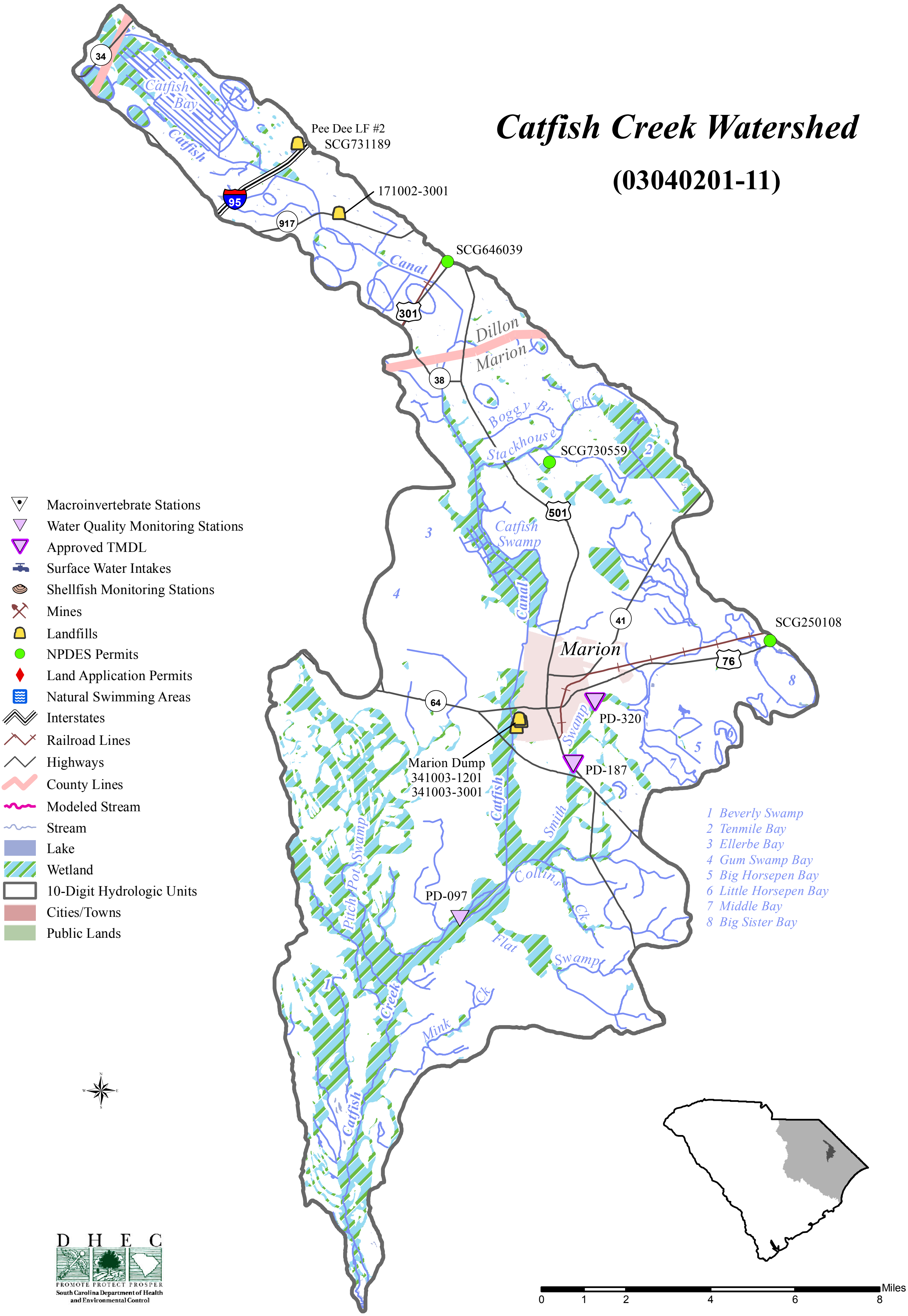
Growth Potential

There is a low to moderate potential for growth in this watershed, which contains the City of Marion and is adjacent to the Town of Latta. Commercial development is limited to Marion and portions of U.S. Hwy 76, particularly east of Marion at the U.S. Hwy 501 Bypass. Industrial development occurs along U.S. 76 and the U.S 501 Bypass near Marion. This watershed also contains the Marion Industrial Park and the Latta Industrial Park. U.S. 76 and the U.S. 501 Bypass are four-lane major highways that serve as major access corridors to the Grand Strand and will increase in traffic and development. Water service is provided from the City of Marion and the Marion County Rural Water Company and covers most of the watershed. Sewer service is available to the areas in and around the City of Marion and the Town of Latta.

Watershed Restoration and Protection

Total Maximum Daily Loads (TMDLs)

A TMDL was developed by SCDHEC and approved by EPA for ***Smith Swamp*** water quality monitoring sites ***PD-187*** and ***PD-320*** to determine the maximum amount of fecal coliform bacteria they can receive and still meet water quality standards. Fecal coliform sources typical of urban areas are expected and include human sources of fecal coliform such as leaking sewers, SSOs, and failing septic systems. Non-human sources such as swine, wildlife, and pets are expected to be low to moderate in this watershed. The TMDL states that a 66% reduction in fecal coliform loading at PD-187 and a 68% reduction at PD-320 is necessary for the stream to meet the water quality standard.



Catfish Creek Watershed
(03040201-11)
Macroinvertebrate Stations
Water Quality Monitoring Stations
Approved TMDL
Surface Water Intakes
Shellfish Monitoring 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
Pee Dee LF #2
SCG731189
171002-3001
SCG646039
SCG730559
SCG250108
Marion Dump
341003-1201
341003-3001
PD-320
PD-187
PD-097
Catfish Bay
Catfish
Canal
Dillon
Marion
Boggy Br
Ck
Stackhouse
Catfish Swamp
Canal
Marion
Swamp
Catfish
Smith
Collins
Ck
Flat
Swamp
Pitch Pot Swamp
Creek
Mink
Ck
Catfish
34
95
917
301
38
501
41
76
64
1 Beverly Swamp
2 Tenmile Bay
3 Ellerbe Bay
4 Gum Swamp Bay
5 Big Horsepen Bay
6 Little Horsepen Bay
7 Middle Bay
8 Big Sister Bay
D H E C
PROMOTE PROTECT PROSPER
South Carolina Department of Health and Environmental Control
0 1 2 4 6 8
Miles

03040201-12

(Great Pee Dee River)

General Description

Watershed 03040201-12 is located in Florence and Marion Counties and consists primarily of the ***Great Pee Dee River*** and its tributaries from Jeffries Creek to the Lynches River. The watershed occupies 57,878 acres of the Lower Coastal Plain region of South Carolina. Land use/land cover in the watershed includes: 51.1% forested wetland, 29.1% forested land, 13.8% agricultural land, 2.0% urban land, 2.2% water, and 1.8% nonforested wetland.

This section of the Great Pee Dee River accepts drainage from its upper reaches, together with Mill Branch, Bigham Branch, Barfield Mill Creek (Barfield Old Mill Creek, Brier Branch), the Catfish Creek Watershed, Bull Swamp (Ford Swamp), and Mulyns Creek. There are several oxbow lakes draining into the river including Dead River, Graves Lake, and Honey Lake. There are a total of 100.4 stream miles and 115.5 acres of lake waters in this watershed, all classified FW.

Surface Water Quality

Station #	Type	Class	Description
RS-10365	RS10	FW	GREAT PEE DEE RIVER AT DE WITT BLUFF LANDING
RS-08237	RS08	FW	GREAT PEE DEE RIVER AT BOSTIC LANDING AT END OF S-21-66
PD-076	INT	FW	GREAT PEE DEE RIVER AT US 378

Great Pee Dee River*–** There are three SCDHEC monitoring sites along this section of the Great Pee Dee River. This is a blackwater system, characterized by naturally low dissolved oxygen conditions. Aquatic life and recreational uses are fully supported at the two upstream sites ***(RS-10365, RS-08237). At the downstream site ***(PD-076),*** aquatic life and recreational uses are fully supported; however, there is a significant increasing trend in turbidity. Although dissolved oxygen 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 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 the **Great Pee Dee River** within this watershed (see advisory p.144).*

NPDES Program

Active NPDES Facilities

RECEIVING STREAM ***FACILITY NAME***	***NPDES#*** ***TYPE***
GREAT PEE DEE RIVER TRIBUTARY CAROLINA SAND INC./GRESHAM PIT	SCG730181 MINOR INDUSTRIAL
GREAT PEE DEE RIVER TOWN OF PAMPLICO	SC0021351 MINOR DOMESTIC

Groundwater Quantity

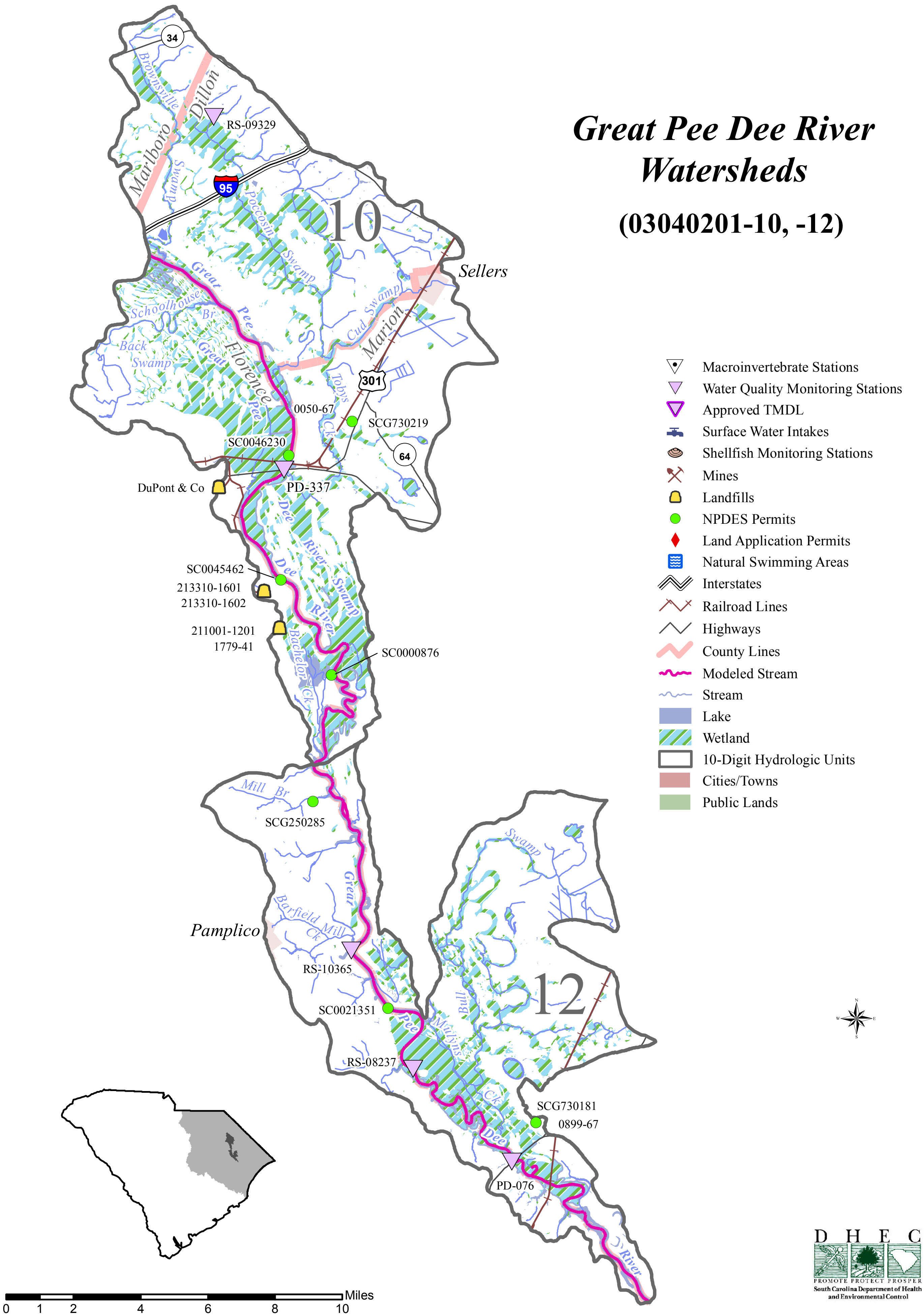
Portions of this watershed fall within the Pee Dee Capacity Use Area and large groundwater uses must be reported (see Capacity Use Program p.22).

Growth Potential

There is a low potential for growth in this rural watershed, which extends across the floodplain of the Great Pee Dee River. Except for a small portion of the Town of Pamplico, no public water or sewer service is available in the watershed.

Great Pee Dee River Watersheds

(03040201-10, -12)



03040203-13

(Ashpole Swamp)

General Description

The South Carolina portion of 03040203-13 is located in Dillon County and consists primarily of ***Ashpole Swamp*** and its tributaries. The watershed occupies 40,452 acres of the Upper Coastal Plain region of South Carolina. Land use/land cover in the watershed includes: 39.8% forested wetland, 38.6% agricultural land, 13.9% forested land, 6.0% urban land, 1.5% nonforested wetland, and 0.2% water.

Ashpole Swamp originates in North Carolina and flows across the border to receive drainage from Bear Swamp before flowing into the Lumber River. Canaan Branch (Roundabout Swamp) and Gully Branch (Beaverdam Creek) join in Gaddys Millpond and flow into Bear Swamp, which flows through Pages Millpond and accepts drainage from Cowpen Swamp before draining into Ashpole Swamp. There are a total of 80.0 stream miles and 206.9 acres of lake waters in this watershed. Ashpole Swamp, Cowpen Swamp, and Bear Swamp are classified FW* (dissolved oxygen not less than 4.0 mg/l and pH between 5.0 and 8.5), and the remaining streams are classified FW.

Surface Water Quality

Station #	Type	Class	Description
PD-368	INT	FW*	BEAR SWAMP AT S-17-56
PD-347	W	FW*	ASHPOLE SWAMP AT PRIVATE ROAD

***Bear Swamp (PD-368)* –** Aquatic life uses are fully supported and significant decreasing trends in turbidity and total phosphorus concentration suggest improving conditions for these parameters. This is a blackwater system, characterized by naturally low dissolved oxygen conditions. Although 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.

***Ashpole Swamp (PD-347)* –** Aquatic life and recreational uses are fully supported. This is a blackwater system, characterized by naturally low dissolved oxygen conditions. Although dissolved oxygen excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations.

NPDES Program

Active NPDES Facilities

RECEIVING STREAM	***NPDES#***
FACILITY NAME	***TYPE***
BEAR SWAMP	SC0022284
GSW&SA/TOWN OF LAKE VIEW WWTP	MINOR DOMESTIC

Groundwater Quantity

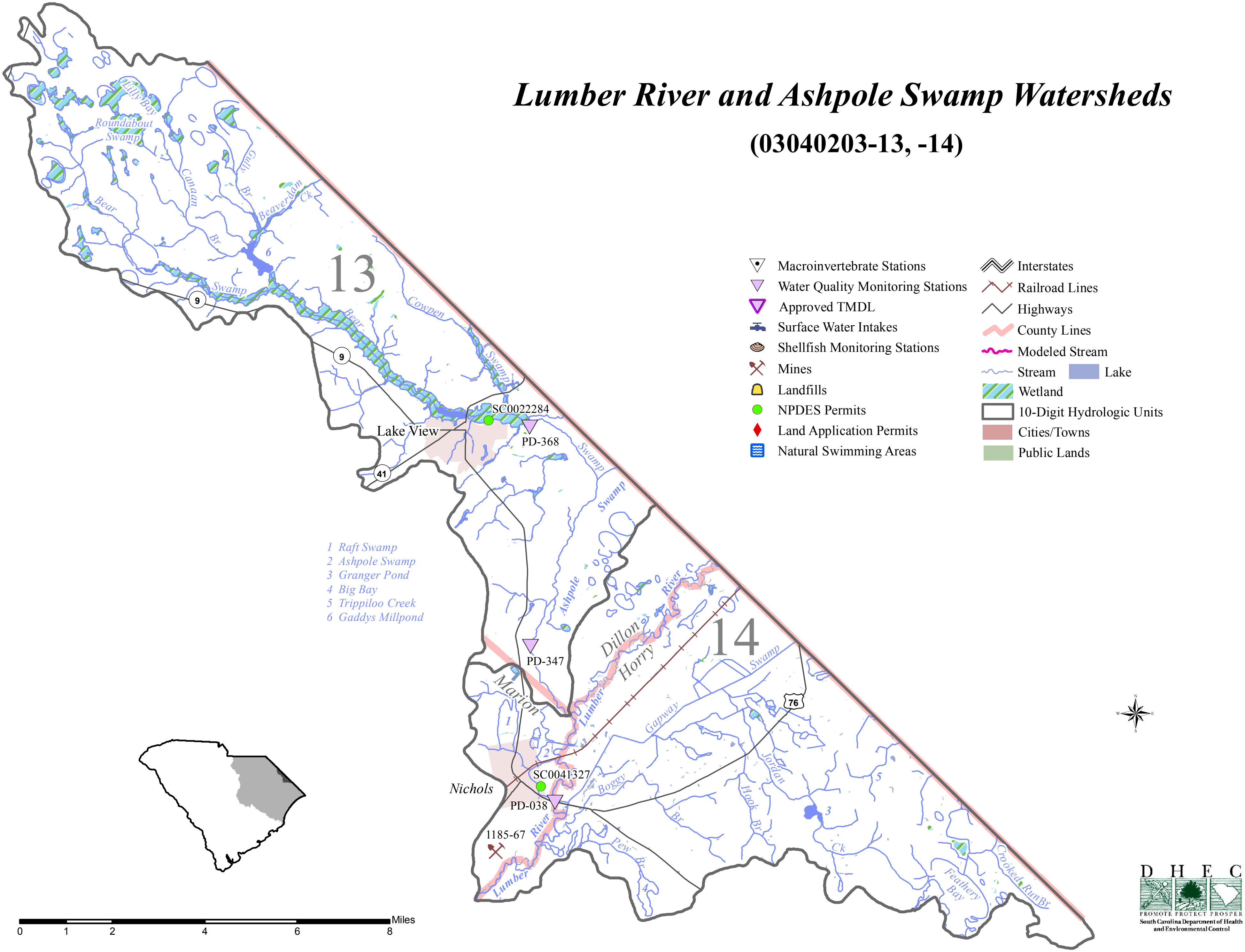
Portions of this watershed fall within the Pee Dee Capacity Use Area and large groundwater uses must be reported (see Capacity Use Program p.22).

Growth Potential

There is a low potential for growth in this watershed, which contains the Town of Lake View. An extensive rural water system serves the majority of the watershed, but sewer services are limited to the Town of Lake View.

Lumber River and Ashpole Swamp Watersheds

(03040203-13, -14)



03040203-14

(Lumber River)

General Description

The South Carolina portion of 03040203-14 is located in Dillon, Marion, and Horry Counties and consists primarily of the ***Lumber River*** and its tributaries from the South Carolina/North Carolina state line to its confluence with the Little Pee Dee River. The watershed occupies 37,495 acres of the Lower Coastal Plain and Coastal Zone regions of South Carolina. Land use/land cover in the watershed includes: 54.2% forested wetland, 25.2% agricultural land, 14.0% forested land, 4.1% urban land, 1.5% nonforested wetland, and 1.0% water.

The Lumber River originates in North Carolina and accepts drainage within South Carolina from the Ashpole Swamp Watershed, Jordan Creek (Feathery Bay, Granger Pond, Gapway Swamp, Hook Branch), and Boggy Branch (Pew Branch). Trippiloo Creek (Crooked Creek) originates in South Carolina and flows into North Carolina near Feathery Bay. There are a total of 101.4 stream miles and 70.5 acres of lake waters, all classified FW.

Surface Water Quality

Station #	Type	Class	Description
PD-038	INT	FW	LUMBER RIVER AT US 76 AT NICHOLS

***Lumber River (PD-038)* –** Aquatic life uses are not supported due to dissolved oxygen excursions. In addition, there is a significant increasing trend in five-day biological oxygen demand. This is a blackwater system, characterized by naturally low pH conditions. There is a significant decreasing trend in pH. 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 total phosphorus suggests improving conditions for this parameter. Recreational uses are partially supported due to fecal coliform bacteria excursions.

*A fish consumption advisory has been issued by the Department for mercury and includes the **Lumber River** within this watershed (see advisory p.144).*

NPDES Program

Active NPDES Facilities

RECEIVING STREAM ***FACILITY NAME***	***NPDES#*** ***TYPE***
LUMBER RIVER GSW&SA/TOWN OF NICHOLS WWTP	SC0041327 MINOR DOMESTIC

Nonpoint Source Management Program

Mining Activities

MINING COMPANY	***PERMIT #***
MINE NAME	***MINERAL***
HERRINGTON CONSTRUCTION CO., INC.	1185-67
HERRINGTON MINE #1	SAND/CLAY

Water Quantity

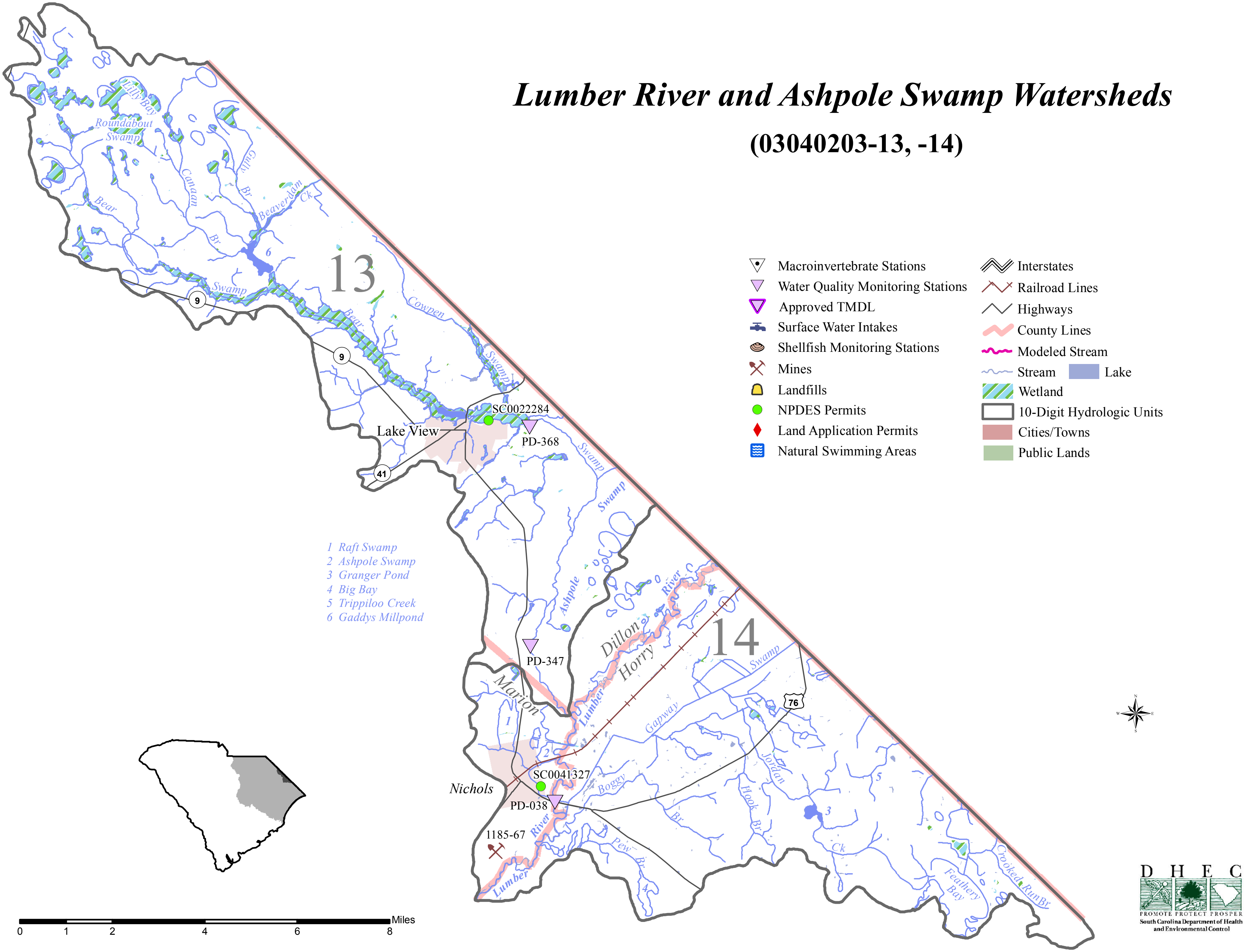
Portions of this watershed fall within the Pee Dee and Waccamaw Capacity Use Areas and large groundwater uses must be reported (see Capacity Use Program p.22).

Growth Potential

There is a low potential for growth in this watershed, which contains the Town of Nichols. An extensive rural water system serves the majority of the watershed, but sewer services are limited to the Town of Nichols. U.S. Hwy 76 crosses the watershed (through the Town of Nichols), but it is a two-lane road with no plans for improvement. A railway line crosses the watershed, but there are no industrial areas located in this region.

Lumber River and Ashpole Swamp Watersheds

(03040203-13, -14)



03040204-01

(Little Pee Dee River)

General Description

The South Carolina portion of 03040204-01 is located in Marlboro, Dillon, and Marion Counties and consists primarily of the ***Little Pee Dee River*** and its tributaries from its origin to Leith Creek. The watershed occupies 29,882 acres of the Upper Coastal Plain region of South Carolina. Land use/land cover in the watershed includes: 47.9% agricultural land, 25.6% forested wetland, 17.2% forested land, 6.6% urban land, 1.7% nonforested wetland, and 1.0% water.

This upper reach of the Little Pee Dee River accepts drainage from several tributaries that originate in North Carolina. Beaverdam Creek flows through McNairs Millpond and accepts drainage from Parker Branch, Marsnip Branch, McLaurins Millpond, and Panther Creek (Bear Creek) before merging with Gum Swamp to form Red Bluff Lake and the headwaters of the Little Pee Dee River. Reedy Branch enters the river next before converging with the Leith Creek Watershed. There are a total of 84.0 stream miles and 186.4 acres of lake waters, all classified FW.

Surface Water Quality

Station #	Type	Class	Description
PD-017A	W	FW	McLaurins Mill Pond SC 381
PD-306	W	FW	Panther Creek at US 15 outside of McColl
PD-016	W	FW	Panther Creek at S-35-27
PD-062	W	FW	Gum Swamp
PD-365	INT	FW	Little Pee Dee River at S-17-36

***McLaurins Mill Pond (PD-017A)* -** This is a blackwater system, characterized by naturally low pH and dissolved oxygen conditions. Although pH and dissolved oxygen excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations. Aquatic life and recreational uses are fully supported.

Panther Creek* –** There are two SCDHEC monitoring sites along Panther Creek. This is a blackwater system, characterized by naturally low pH and dissolved oxygen conditions. Although pH and dissolved oxygen excursions occurred at both sites, they were typical of values seen in blackwater systems and were considered natural, not standards violations. Aquatic life and recreational uses are fully supported at both the upstream site ***(PD-306) and at the downstream site ***(PD-016)***.

***Gum Swamp (PD-062)* -** 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. Aquatic life and recreational uses are fully supported.

***Little Pee Dee River (PD-365)* –** 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. Aquatic life and recreational uses are fully supported.

A fish consumption advisory has been issued by the Department for mercury and includes the ***Little Pee Dee River*** *within this watershed (see advisory p.144).*

NPDES Program

Active NPDES Facilities

RECEIVING STREAM ***FACILITY NAME***	***NPDES#*** ***TYPE***
GUM SWAMP TOWN OF MCCOLL/WWTF	SC0041963 MINOR DOMESTIC

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

LANDFILL NAME ***FACILITY TYPE***	***PERMIT #*** ***STATUS***
ARROWHEAD COMPOSTING FACILITY COMPOSTING	352680-3001 INACTIVE

Groundwater Quantity

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

Growth Potential

There is a low potential for growth in this watershed, which contains the Town of McColl. McColl has water and sewer service in and immediately surrounding the town, which could encourage some growth.

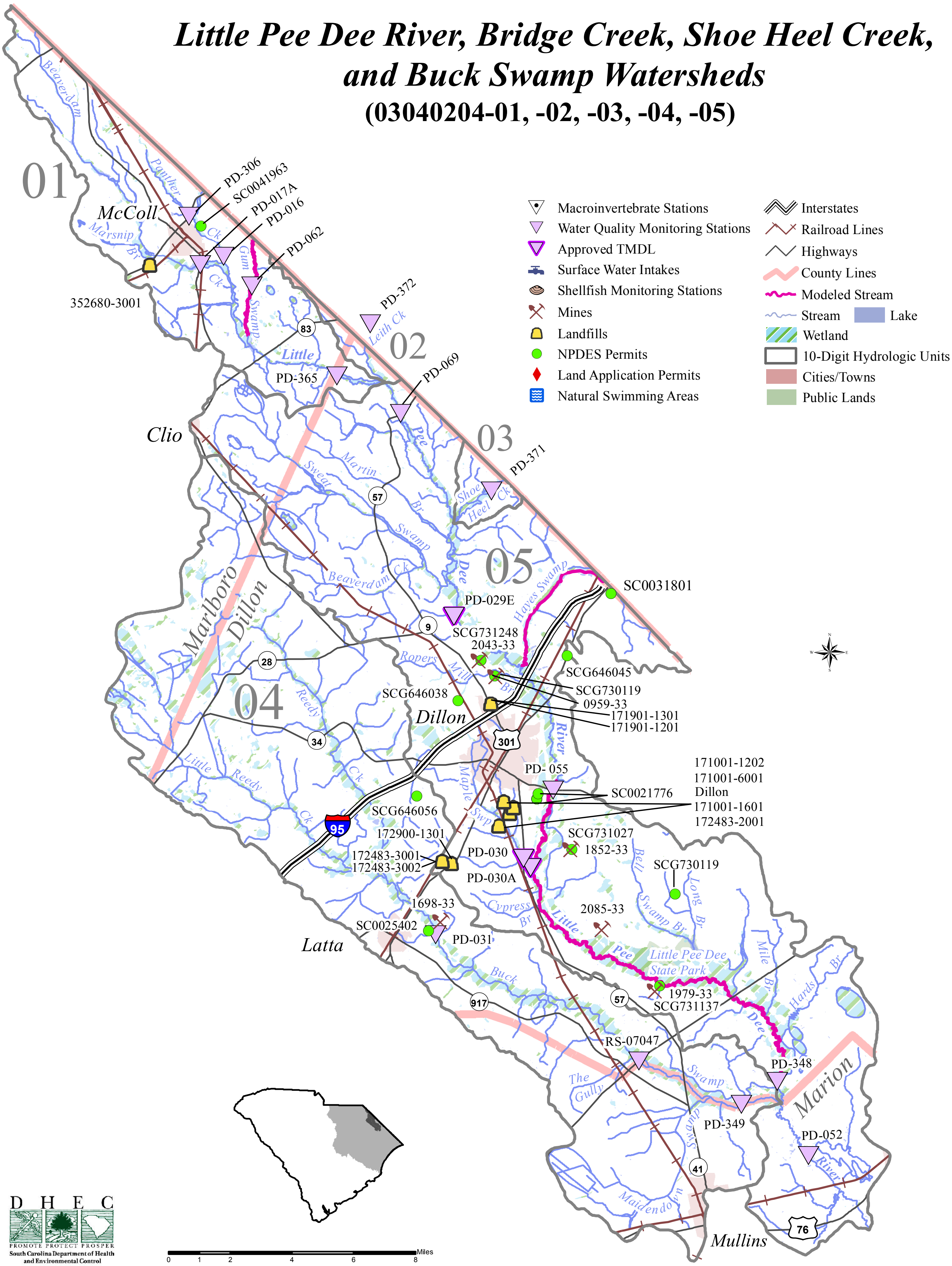
Special Projects

Interstate Fecal Coliform Bacteria TMDL Development and Implementation for the Upper Little Pee Dee River

The Pee Dee Resource Conservation and Development Council (RC&D) along with Soil and Water Conservation Districts in both North and South Carolina have worked to develop and implement a fecal bacteria TMDL for the upper Little Pee Dee River Basin. The TMDL itself covers the watershed above SCDHEC's water quality monitoring station (PD-029E) and stretched into North Carolina. The implementation effort took place only in the South Carolina portions of Dillon and Marlboro counties. Before ending in Fall 2007, the RC&D and its partners repaired or replaced a large number of septic systems. Many of these systems were located adjacent to swamps draining to the river. By targeting these critical areas for septic repairs and by implementing other agricultural best management practices like vegetative buffers and exclusion fencing, this project is on track for showing water quality improvements. Early data suggest such improvements, but further continued monitoring is necessary to determine complete success.

Little Pee Dee River, Bridge Creek, Shoe Heel Creek, and Buck Swamp Watersheds

(03040204-01, -02, -03, -04, -05)



03040204-02

(Leith Creek)

General Description

The South Carolina portion of 03040204-02 is located in Marlboro and Dillon Counties and consists primarily of ***Leith Creek*** and its tributaries within South Carolina. The watershed occupies 1,388 acres of the Upper Coastal Plain region of South Carolina. Land use/land cover in the watershed includes: 36.4% forested wetland, 33.8% agricultural land, 27.3% forested land, 2.5% urban land.

Leith Creek originates in North Carolina and drains into the Little Pee Dee River Watershed in South Carolina. There are a total of 51.1 stream miles in this watershed, all classified FW.

Surface Water Quality

Station #	Type	Class	Description
PD-372	W	FW	LEITH CREEK IN NC AT SC/NC 83

Leith Creek (PD-372) **-** This is a blackwater system, characterized by naturally low pH and dissolved oxygen conditions. Although pH and dissolved oxygen excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations. Aquatic life and recreational uses are fully supported.

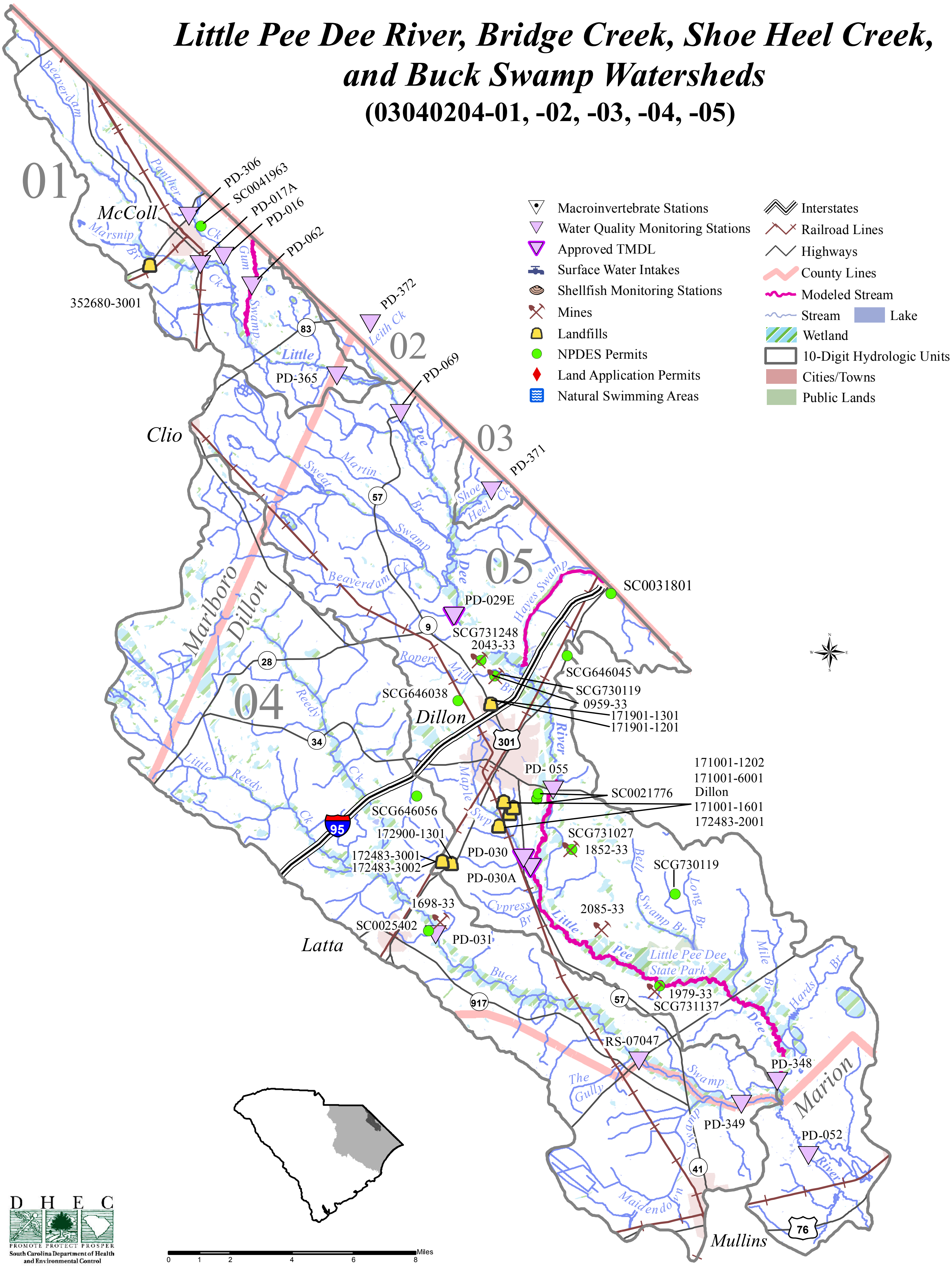
Groundwater Quantity

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

Growth Potential

There is a low potential for growth in this watershed.

Little Pee Dee River, Bridge Creek, Shoe Heel Creek, and Buck Swamp Watersheds
(03040204-01, -02, -03, -04, -05)



03040204-03

(Shoe Heel Creek)

General Description

The South Carolina portion of 03040204-03 (formerly 03040204-040) is located in Dillon County and consists primarily of ***Shoe Heel Creek*** and its tributaries. The watershed occupies 2,201 acres of the Upper Coastal Plain region of South Carolina. Land use/land cover in the watershed includes: 45.9% forested wetland, 30.3% agricultural land, 15.6% forested land, 5.7% nonforested wetland, and 2.5% urban land.

Shoe Heel Creek (Wilkerson Creek) originates in North Carolina and drains into the Little Pee Dee River Watershed. There are a total of 87.0 stream miles in this watershed, all classified FW.

Surface Water Quality

Station #	Type	Class	Description
PD-371	W	FW	SHOE HEEL CREEK AT S-17-70

Shoe Heel Creek (PD-371) **-** 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. Aquatic life and recreational uses are fully supported.

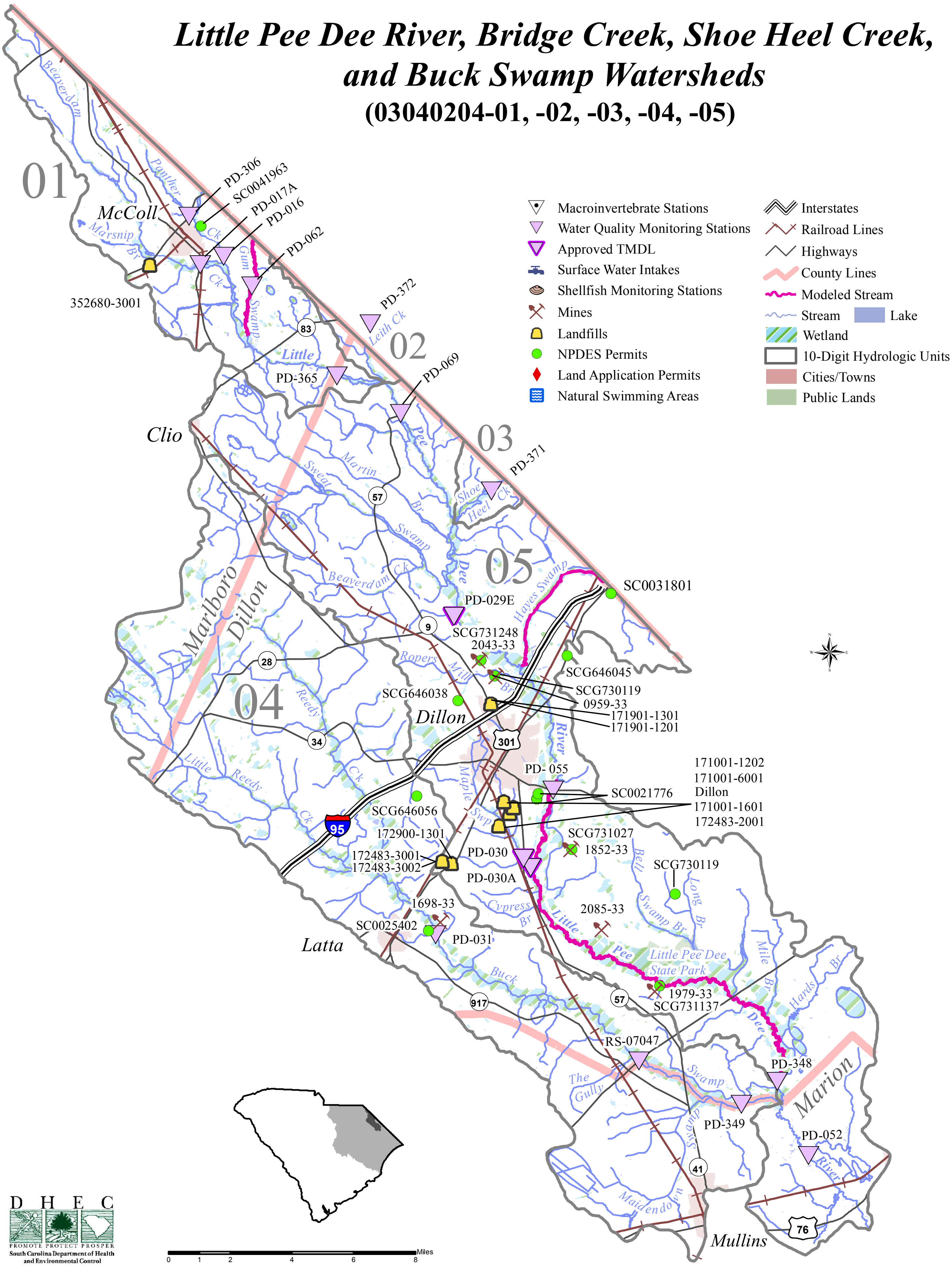
Groundwater Quantity

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

Growth Potential

There is a low potential for growth in this watershed.

Little Pee Dee River, Bridge Creek, Shoe Heel Creek, and Buck Swamp Watersheds
(03040204-01, -02, -03, -04, -05)



03040204-04

(Buck Swamp)

General Description

Watershed 03040204-04 is located in Marlboro, Dillon, and Marion Counties and consists primarily of ***Buck Swamp*** and its tributaries. The watershed occupies 97,521 acres of the Upper and Lower Coastal Plain regions of South Carolina. Land use/land cover in the watershed includes: 38.3% agricultural land, 32.3% forested wetland, 21.6% forested land, 5.9% urban land, 1.7% nonforested wetland, and 0.2% water.

Reedy Creek (Indigo Bay, Eli Branch, Old Mill Creek, Betsy Jackson Bay) and Little Reedy Creek (Hilson Bay) join to form the headwaters of Buck Swamp near the Town of Latta. Downstream of the confluence, Mill Creek enters the system followed by The Gully and Maidendown Swamp (Piney Bay, Maidendown Bay). The Buck Swamp Watershed drains into the Little Pee Dee River. There are a total of 201.4 stream miles and 47.0 acres of lake waters. Buck Swamp and Maidendown Swamp are classified FW* (dissolved oxygen not less than 4.0 mg/l and pH between 5.0 and 8.5) and the remaining streams in the watershed are classified FW.

Surface Water Quality

Station #	Type	Class	Description
PD-031	W	FW*	BUCK SWAMP AT S-17-33
RS-07047	RS07	FW*	BUCK SWAMP AT SC 41A, 5.75MI NNW OF MULLINS
PD-349	INT	FW*	BUCK SWAMP AT S-17-42

Buck Swamp – There are three SCDHEC monitoring sites along Buck Swamp. This is a blackwater system, characterized by naturally low dissolved oxygen conditions. Although dissolved oxygen excursions occurred at the upstream sites, they were typical of values seen in blackwater systems and were considered natural, not standards violations. At the upstream sites ***(PD-031, RS-07047)***, aquatic life and recreational uses are fully supported. At the downstream site ***(PD-349)***, aquatic life uses are not supported due to dissolved oxygen excursions. In addition, there is a significant increasing trend in turbidity. There is a significant decreasing trend in pH. Recreational uses are fully supported.

NPDES Program

Active NPDES Facilities

RECEIVING STREAM ***FACILITY NAME***	***NPDES#*** ***TYPE***
BUCK SWAMP TOWN OF LATTA WWTP	SC0025402 MAJOR DOMESTIC

Nonpoint Source Management Program

Mining Activities

MINING COMPANY	***PERMIT #***
MINE NAME	***MINERAL***
DILLON COUNTY	1698-33
JUDGE ROAD BORROW PIT	SAND/CLAY

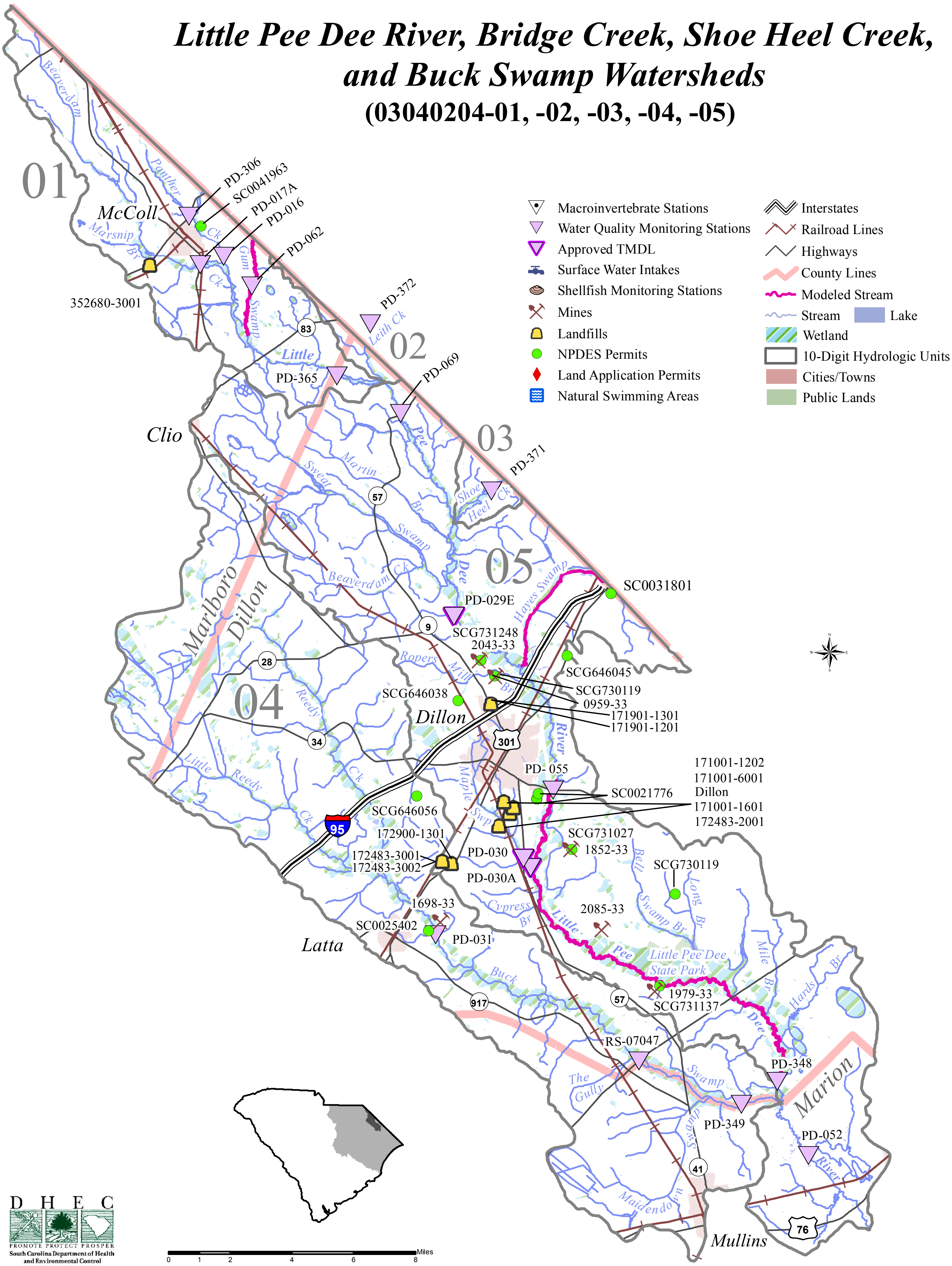
Groundwater Quantity

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

Growth Potential

There is a low potential for growth in this watershed, which contains the Towns of Latta and Zion, and a portion of the City of Mullins. Commercial development is confined to the two municipalities and the interchange of I-95 and S.C. Hwy 34. Public water service exists in and around Latta and Mullins and the rural area north of Mullins. Public sewer is more limited, and includes only the municipal limits of Latta and Mullins and their very immediate surroundings. No major expansion of water or sewer coverage is anticipated. The proposed Preferred Alternative route of I-73 (Northern Corridor and Southern Corridor) would cross this watershed and could bring some growth to the area, especially around interchanges.

Little Pee Dee River, Bridge Creek, Shoe Heel Creek, and Buck Swamp Watersheds
(03040204-01, -02, -03, -04, -05)



03040204-05

(Little Pee Dee River)

General Description

The South Carolina portion of 03040204-05 is located in Marlboro, Dillon, and Marion Counties and consists primarily of the ***Little Pee Dee River*** and its tributaries from Bridges Creek to the Lumber River. The watershed occupies 121,443 acres of the Upper Coastal Plain region of South Carolina. Land use/land cover in the watershed includes: 37.6% agricultural land, 35.6% forested wetland, 16.6% forested land, 8.2% urban land, 1.5% nonforested wetland, and 0.5% water.

This section of the Little Pee Dee River accepts the drainage of its upper reach along with the Leith Creek Watershed, Carolina Branch, the Shoe Heel Creek Watershed, and Martins Branch. Sweat Swamp (Wash Branch, Donohoe Bay, Beaverdam Creek) enters the river next, followed by Hayes Swamp (Persimmon Swamp), Ropers Mill Branch, Manning Bay, and Maple Swamp near the City of Dillon. Contrary Swamp originates in South Carolina and drains into North Carolina near Hayes Swamp. Cypress Branch drains into the Little Pee Dee River downstream of Maple Swamp together with Kelly Bay, Cane Branch (Boggy Branch), Bell Swamp Branch (Butler Branch, Long Branch, Indian Pot Branch, Poplar Branch, Little Pee Dee State Park Pond), Hayes Branch, Mile Branch, and Hards Branch. Little Pee Dee State Park is located on the river near the confluence with Cane Branch and extends over to Bell Branch Swamp. There are a total of 251.7 stream miles and 234.1 acres of lake waters in this watershed. Maple Swamp is classified FW* (dissolved oxygen not less than 4.0 mg/l and pH between 5.0 and 8.5), and the remaining streams in the watershed are classified FW.

Surface Water Quality

Station #	Type	Class	Description
PD-069	W	FW	LITTLE PEE DEE RIVER AT SC 57 11.5 MI NW OF DILLON
PD-029E	W	FW	LITTLE PEE DEE RIVER AT S-17-23
PD-055	SPRP	FW	LITTLE PEE DEE RIVER AT SC 9
PD-030	W	FW*	MAPLE SWAMP AT SC 57
PD-030A	W	FW	LITTLE PEE DEE RIVER BELOW JUCNTION WITH MAPLE SWAMP
PD-348	INT	FW	LITTLE PEE DEE RIVER AT S-17-72
PD-052	INT	FW	LITTLE PEE DEE RIVER AT S-34-60

Little Pee Dee River* –** There are six SCDHEC monitoring sites along this section of the Little Pee Dee River. This is a blackwater system, characterized by naturally low pH and dissolved oxygen conditions. At the furthest upstream site ***(PD-069), aquatic life and recreational uses are fully supported; however, there is a significant decreasing trend in dissolved oxygen concentration. Although dissolved oxygen and pH excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations. At the next site ***(PD-029E)***, aquatic life and recreational uses are fully supported; however, there is a significant increasing trend in total phosphorus concentration. Although pH and dissolved oxygen excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations. Further downstream ***(PD-055)***, aquatic life and recreational uses are fully supported; however, there are significant decreasing trends in dissolved oxygen concentration and increasing trends in five-day biological oxygen demand. Although pH and dissolved oxygen excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations.

At the next site downstream ***(PD-030A)***, aquatic life and recreational uses are fully supported. Although pH and dissolved oxygen excursions occurred at this site, they were typical of values seen in blackwater systems and were considered natural, not standards violations. Further downstream ***(PD-348)***, aquatic life uses are partially supported due to dissolved oxygen excursions. There is also a significant increasing trend in five-day biological oxygen demand. There is a significant increasing trend in pH. Recreational uses are fully supported and a significant decreasing trend in fecal coliform bacteria suggests improving conditions for this parameter. At the furthest downstream site ***(PD-052)***, aquatic life uses are partially supported due to dissolved oxygen excursions. In addition, there is a significant increasing trend in five-day biological oxygen demand. 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.

Maple Swamp (PD-030) – Aquatic life and recreational uses are fully supported.

A fish consumption advisory has been issued by the Department for mercury and includes the ***Little Pee Dee River*** *within this watershed (see advisory p.144).*

NPDES Program

Active NPDES Facilities

RECEIVING STREAM ***FACILITY NAME***	***NPDES#*** ***TYPE***
LITTLE PEE DEE RIVER CITY OF DILLON	SC0021776 MAJOR DOMESTIC
LITTLE PEE DEE RIVER DILLION COUNTY/PEE DEE CHURCH ROAD MINE	SCG731027 MINOR INDUSTRIAL
LITTLE PEE DEE RIVER TRIBUTARY TRICO WATER CO./HAMER WTP	SCG646045 MINOR DOMESTIC
REEDY CREEK TRIBUTARY TRICO WATER CO./FAIRFIELD PLANT	SCG646056 MINOR DOMESTIC
LONG BRANCH TRICO WATER CO./TANNER WTP	SCG646037 MINOR DOMESTIC
ROPERS MILL BRANCH TRICO WATER CO./BOBBY BYRD WTP	SCG646038 MINOR DOMESTIC
HAYES SWAMP SOUTH OF THE BORDER MOTEL	SC0031801 MINOR DOMESTIC
ROPERS MILL BRANCH BAKER BROTHERS/GRESHAM MINE	SCG730119 MINOR INDUSTRIAL

LITTLE PEE DEE RIVER LEE BARKER/BARKER MINE	SCG731248 MINOR INDUSTRIAL
LITTLE PEE DEE RIVER DILLON COUNTY/OLD RIVER ROAD MINE	SCG731137 MINOR INDUSTRIAL

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

LANDFILL NAME ***FACILITY TYPE***	***PERMIT #*** ***STATUS***
DILLON COUNTY C&D LANDFILL CONSTRUCTION	171001-1202 ACTIVE
DILLON COUNTY SHORT TERM C&D LANDFILL CONSTRUCTION	171901-1301 INACTIVE
DILLON COUNTY C&D LANDFILL INDUSTRIAL	171901-1201 INACTIVE
DILLON COUNTY INDUSTRIAL LANDFILL INDUSTRIAL	171001-1601 ACTIVE
DILLON COUNTY SW TRANSFER STATION MUNICIPAL	171001-6001 ACTIVE
DILLON COUNTY SW LANDFILL MUNICIPAL	---------- INACTIVE
DILLON COUNTY SANITARY LANDFILL MUNICIPAL	---------- INACTIVE
NOBLES CORP. WOOD CHIPPING SITE COMPOSTING	172483-3002 ACTIVE
NOBLES CORP. YARD WASTE COMPOSTING COMPOSTING	172483-3001 INACTIVE
NOBLES CORP. C&D SW RECYCLING COMPOSTING	172483-2001 ACTIVE
301 FARM SHORT-TERM LANDFILL C&D	172900-1301 INACTIVE

Mining Activities

MINING COMPANY ***MINE NAME***	***PERMIT #*** ***MINERAL***
DILLON COUNTY PEE DEE CHURCH ROAD MINE	1852-33 SAND; TOP SOIL
BAKER BROTHERS OF GRESHAM GRESHAM MINE	0959-33 SAND; SAND/CLAY

LEE BARKER BARKER MINE	2043-33 SAND; TOP SOIL
DILLON COUNTY OLD RIVER ROAD MINE	1979-33 CLAY
DILLON COUNTY GUM DROP MINE	2085-33 SAND/CLAY; TOP SOIL

Groundwater Quantity

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

Growth Potential

There is a moderate potential for growth in this watershed, which contains the City of Dillon. The main growth area for the watershed is the City of Dillon, with development concentrated in the downtown area, the area south of Dillon, and at two interstate interchanges (I-95/S.C. Hwy 34 and I-95/S.C. Hwy 9). Industrial development is extensive, mostly in the urban fringe area north of Dillon. Due to water and sewer improvements, additional growth in this industrial corridor is likely. Water service includes a moderately extensive rural system associated with the Trico Water Company and the City of Dillon. Public sewer service is more limited, serving only Dillon and the urban fringe surrounding it. The City of Dillon has undergone a wastewater treatment plant upgrade, and an expansion of sewer service to provide for future growth.

Watershed Restoration and Protection

Total Maximum Daily Loads (TMDLs)

A TMDL was developed by SCDHEC and approved by the EPA for the upper ***Little Pee Dee River*** (monitoring site ***PD-029E***) to determine the maximum amount of fecal coliform bacteria it can receive from nonpoint sources and still meet water quality standards. The nonpoint sources that have been determined to be contributors to the upper Little Pee Dee River impairment include wildlife; grazing livestock and livestock defecating directly into streams; land application of poultry litter; and failed, malfunctioning, and/or operational septic systems. To achieve compliance with water quality standards, the TMDL recommends that fecal coliform bacteria loads be reduced from livestock sources, runoff from poultry litter application, runoff from sewer overflows, and failing septic systems by 64, 41, 100 and 100 percent at monitoring station PD-029E. The implementation of these load reduction allocation scenarios would result in an overall reduction of fecal coliform bacteria loading of 49.2 % at PD-029E, which is the amount of reduction necessary for the stream to achieve compliance at the impaired water quality monitoring station.

A TMDL was developed by SCDHEC and approved by EPA for the ***Little Pee Dee River*** water quality monitoring site ***PD-030A*** to determine the maximum amount of fecal coliform bacteria it can receive and still meet water quality standards. Fecal coliform sources are expected to be from a combination of failing OSWD systems, and non-human sources such as livestock, wildlife, and pets. The

TMDL states that a 53% reduction 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 ***Maple Swamp*** water quality monitoring site ***PD-030*** to determine the maximum amount of fecal coliform bacteria it can receive and still meet water quality standards. Fecal coliform sources may include some unreported leaking sewer lines, failing septic systems, and runoff from the single swine AFO. Contributions from wildlife and pets are considered negligible. The TMDL states that a 62% reduction in fecal coliform loading is necessary for the stream to meet the water quality standard.

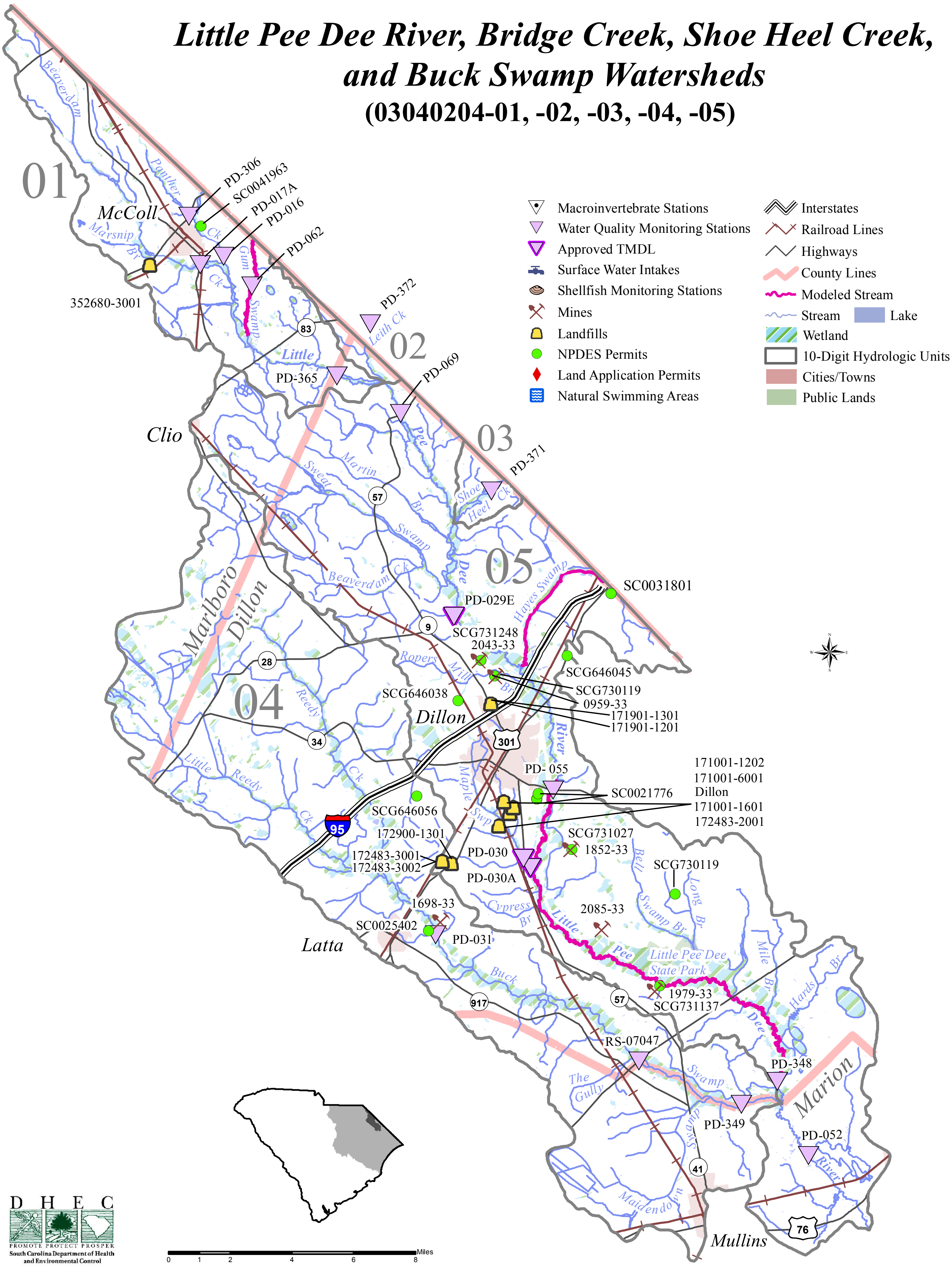
Special Projects

Interstate Fecal Coliform Bacteria TMDL Development and Implementation for the Upper Little Pee Dee River

The Pee Dee Resource Conservation and Development Council (RC&D) along with Soil and Water Conservation Districts in both North and South Carolina have worked to develop and implement a fecal bacteria TMDL for the upper Little Pee Dee River Basin. The TMDL itself covers the watershed above SCDHEC's water quality monitoring station (PD-029E) and stretched into North Carolina. The implementation effort took place only in the South Carolina portions of Dillon and Marlboro counties. Before ending in Fall 2007, the RC&D and its partners repaired or replaced a large number of septic systems. Many of these systems were located adjacent to swamps draining to the river. By targeting these critical areas for septic repairs and by implementing other agricultural best management practices like vegetative buffers and exclusion fencing, this project is on track for showing water quality improvements. Early data suggest such improvements, but further continued monitoring is necessary to determine complete success.

Little Pee Dee River, Bridge Creek, Shoe Heel Creek, and Buck Swamp Watersheds

(03040204-01, -02, -03, -04, -05)



D H E C
PROMOTE PROTECT PROSPER
South Carolina Department of Health and Environmental Control

03040204-06

(Lake Swamp)

General Description

The South Carolina portion of 03040204-06 is located in Horry County and consists primarily of ***Lake Swamp*** and its tributaries before it drains to the Little Pee Dee River. The watershed occupies 108,915 acres of the Lower Coastal Plain region of South Carolina. Land use/land cover in the watershed includes: 40.4% forested wetland, 37.3% agricultural land, 14.6% forested land, 5.9% urban land, land, 1.5% nonforested wetland, and 0.3% water.

Mitchell Swamp accepts drainage from Savannah Branch (Skeebo Branch), Huggins Creek (Calf Ford Branch), Mill Branch, Seed Tick Branch, Iron Springs Swamp (Iron Springs Bay, Bobs Branch, Pinelog Branch), and Long Branch. Mitchell Swamp then joins with Pleasant Meadow Swamp (Cushion Swamp, Gaskins Branch, Holmes Branch, Spring Branch, Big Branch, Fifth Branch, Rooty Branch) to form the headwaters of Lake Swamp. Downstream of the confluence, Playcard Swamp (Play Card Swamp, Zeeks Branch, Pasture Branch, Chickencoop Branch, Leather String Branch, Daniel Hole Branch, Bogue Bay) enters the system followed by Breakfast Swamp, Prince Mill Swamp (Little Mill Branch, Big Mill Branch, Limbrick Branch), Honey Camp Branch, Rattlesnake Branch, and Reedy Branch. Joiner Swamp (Long Branch, Joiner Bay) enters Lake Swamp next followed by Loosing Swamp (Watery Bay, Turf Camp Bay, Horseskull Bay, Horsepen Bay). There are a total of 274.1 stream miles and 169.4 acres of lake waters in this watershed. Lake Swamp and Pleasant Meadow Swamp are classified FW* (dissolved oxygen not less than 4.0 mg/l and pH between 5.0 and 8.5); their tributaries and the remaining streams in the watershed are classified FW.

Surface Water Quality

Station #	Type	Class	Description
RS-06009	RS06	FW	BOBS BRANCH AT BRIDGE ON S-26-637, 2.2 MI N OF GREEN SEA LAKE SWAMP
PD-176	W/INT	FW*	LAKE SWAMP AT S-26-99

Bobs Branch (RS-06009) **–**Aquatic life uses are not supported due to dissolved oxygen excursions. Recreational uses are fully supported.

Lake Swamp (PD-176) **–** This is a blackwater system, characterized by naturally low dissolved oxygen conditions. Although dissolved oxygen excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations. Aquatic life uses are fully supported; however, there is a significant decreasing trend in dissolved oxygen. Recreational uses are partially supported due to fecal coliform bacteria excursions.

NPDES Program

Active NPDES Facilities

RECEIVING STREAM ***FACILITY NAME***	***NPDES#*** ***TYPE***
PLEASANT MEADOWS SWAMP GSW&SA/LORIS WWTF	SC0025348 MINOR DOMESTIC

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

LANDFILL NAME ***FACILITY TYPE***	***PERMIT #*** ***STATUS***
CITY OF LORIS DUMP MUNICIPAL	---------- CLOSED
WACCAMAW WHEEL WILLIAMS INC. WTP	262489-5201 INACTIVE
SODBUSTERS TURF, INC./ WOOD CHIPPING FAC. COMPOSTING	262781-3001 ACTIVE

Land Application Sites

LAND APPLICATION SYSTEM ***FACILITY NAME***	***ND#*** ***TYPE***
SPRAYFIELD GSW&SA/GREEN SEA FLOYDS HIGH SCHOOL	ND0066516 DOMESTIC

Mining Activities

MINING COMPANY ***MINE NAME***	***PERMIT #*** ***MINERAL***
ALFORD & CO. ALFORD MINE	1476-51 SAND
SB TURF & MULCH SMITH MINE	1747-51 SAND; SAND/CLAY

Water Quantity

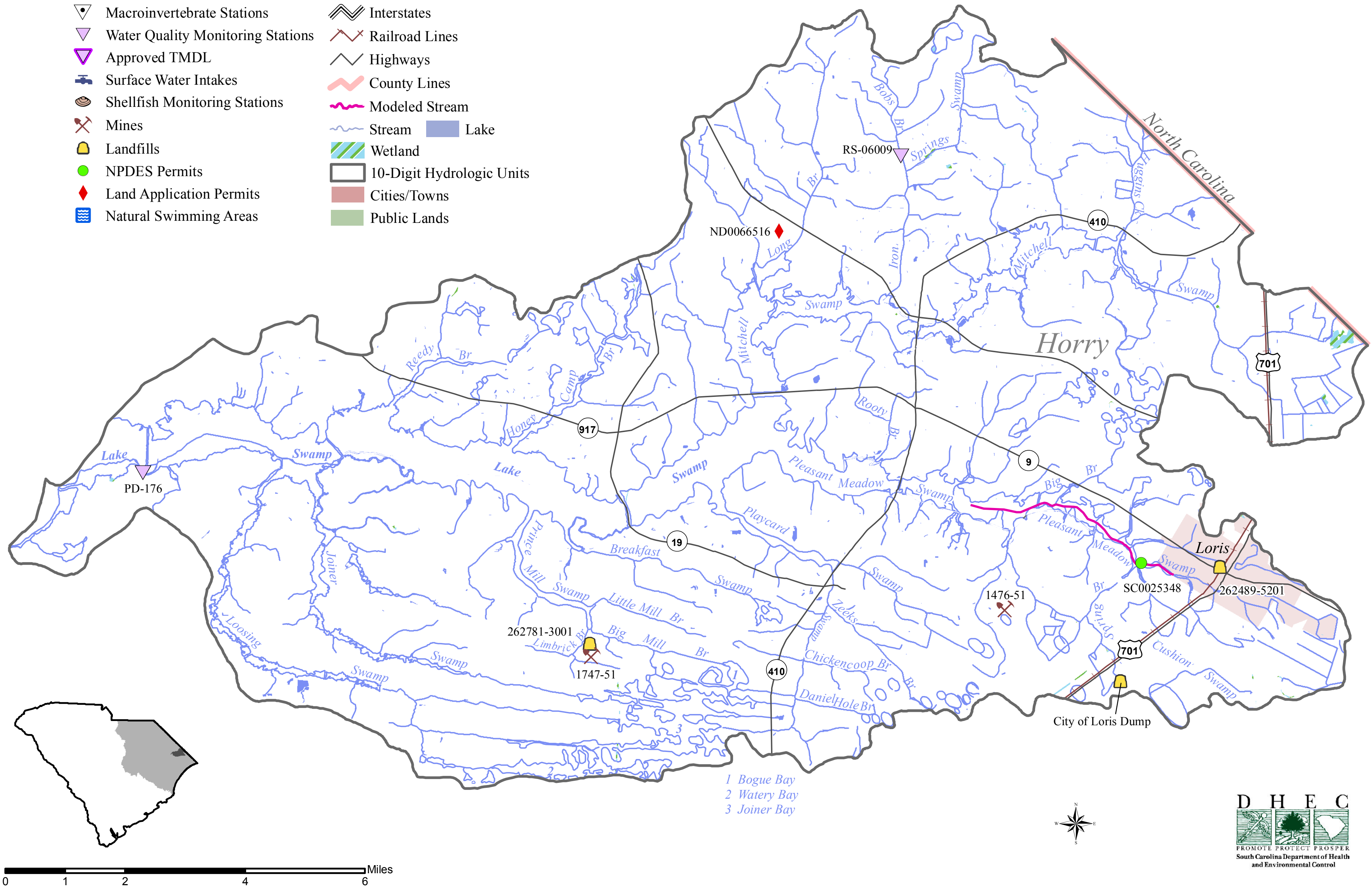
Portions of this watershed fall within the Waccamaw Capacity Use Area and large groundwater uses must be reported (see Capacity Use Program p.22).

Growth Potential

There is a low potential for growth in this watershed, which contains the City of Loris. Water and sewer infrastructure are located in Loris, and water service is available along the U.S. Hwy 701 corridor to the City of Conway. Outside of Loris, the area is mostly rural with agricultural uses and timberlands. The proposed Preferred Alternative route of I-73 (Southern Corridor) would cross this watershed and could bring some growth to the area, especially around interchanges.

Lake Swamp Watershed

(03040204-06)



03040204-07

(Brunson Swamp)

General Description

Watershed 03040204-07 is located in Horry County and consists primarily of ***Brunson Swamp*** and its tributaries. The watershed occupies 44,602 acres of the Lower Coastal Plain region of South Carolina. Land use/land cover in the watershed includes: 35.5% forested wetland, 32.9% agricultural land, 23.7% forested land, 5.9% urban land, 1.5% nonforested wetland, 0.3% water, and 0.2% barren land.

Brunson Swamp accepts drainage from Chinners Swamp and Spring Swamp (Holly Hill Branch) before draining into the Little Pee Dee River. Chinners Swamp accepts drainage from Rabon Branch, South Prong, North Prong (Mose Swamp), Mill Branch, Savannah Creek, Big Swamp, Burnt Bay, Schoolhouse Branch, and Evans Branch. There are a total of 83.0 stream miles and 73.0 acres of lake waters in this watershed. All are classified FW with the exception of Chinners Swamp, which is classified FW* (dissolved oxygen not less than 4.0 mg/l and pH between 5.0 and 8.5).

Surface Water Quality

Station #	Type	Class	Description
PD-370	W	FW	BRUNSON SWAMP AT S-26-99
RS-07051	RS07	FW*	CHINNERS SWAMP AT S-26-569,.6 MI ESE OF AYNOR
PD-177	W	FW*	CHINNERS SWAMP AT S-26-24 1.9 MI SSE OF AYNOR
PD-352	INT	FW*	CHINNERS SWAMP AT GUNTERS ISLAND ROAD OFF S-26-99

***Brunson Swamp (PD-370)* –** This is a blackwater system, characterized by naturally low dissolved oxygen concentration conditions. Although dissolved oxygen excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations. Aquatic life and recreational uses are fully supported.

Chinners Swamp* –** There are three SCDHEC monitoring sites along Chinners Swamp. This is a blackwater system, characterized by naturally low dissolved oxygen concentration conditions. Although dissolved oxygen excursions occurred at all sites, they were typical of values seen in blackwater systems and were considered natural, not standards violations. At the upstream site ***(RS-07051), aquatic life and recreational uses are fully supported. At the midstream site ***(PD-177)***, aquatic life and recreational uses are fully supported; however, there is a significant increasing trend in fecal coliform bacteria. Aquatic life uses are fully supported at the downstream site ***(PD-352)***; however there is a significant increasing trend in total phosphorus concentration. There is a significant increasing trend in pH. Recreational uses are partially supported due to fecal coliform bacteria excursions and there is a significant increasing trend in fecal coliform bacteria.

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

LANDFILL NAME	***PERMIT #***
FACILITY TYPE	***STATUS***
TOWN OF AYNOR DUMP	-----------
MUNICIPAL	CLOSED

Mining Activities

MINING COMPANY	***PERMIT #***
MINE NAME	***MINERAL***
JARRETTS LANDCLEARING	1757-51
HUGHES MINE	SAND
KENNETH E & JEAN JOHNSON	1790-51
ALLEN PLACE MINE	SAND; TOPSOIL

Water Quantity

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

Growth Potential

There is a low potential for growth for most of this watershed. An exception is the U.S. Hwy. 501 corridor that bisects the watershed. This heavily traveled road connects I-95 with Myrtle Beach, and an increase in residential and commercial growth is likely. The Town of Aynor has been connected to the Grand Strand Water and Sewer Authority Conway wastewater plant, which should encourage growth. The northeastern edge of the watershed contains water infrastructure and should see a moderate increase in development. The remainder of the watershed is rural with agricultural, timberlands, and residential areas. The proposed Preferred Alternative route of I-73 (Southern Corridor) would cross this watershed and could bring some growth to the area, especially around interchanges.

Watershed Restoration and Protection

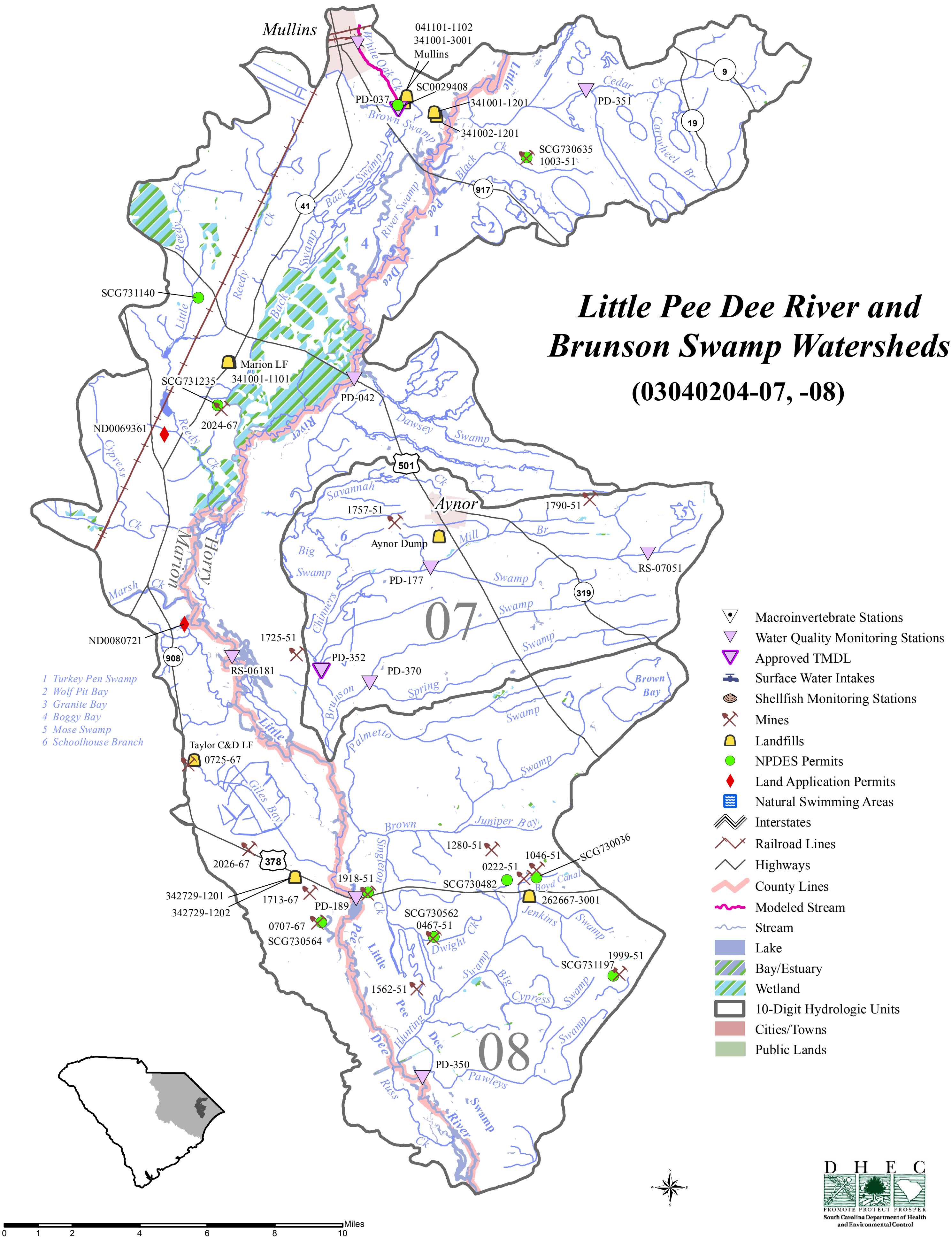
Total Maximum Daily Loads (TMDLs)

A TMDL was developed by SCDHEC and approved by EPA for ***Chinners Swamp*** water quality monitoring site ***PD-352*** to determine the maximum amount of fecal coliform bacteria it can receive and still meet water quality standards. OSWD systems may represent the major source of fecal coliform loadings, and swine AFOs may also contribute substantially to elevated concentrations. Wildlife and cattle may also contribute fecal coliform loadings. The TMDL states that a 39% reduction in fecal coliform loading is necessary for the stream to meet the water quality standard.

Special Studies

Horry, Aynor and Dog Bluff (HAD)/Chinners Swamp Water Quality Project

The 319 Grant funded Horry, Aynor, and Dog Bluff (HAD) Water Quality Project began in June of 2011. The project was started to address water quality problems in areas adjacent to the successfully completed Little Pee Dee and Catfish Creek Water Quality Project. The goal of the project is to reduce loading in the watershed so that water quality as measured at PD-352 will meet water quality standards for bacteria. Sponsors and supporters of the HAD project include the Horry Soil and Water Conservation District, the USDA Natural Resources Conservation Service, Clemson Extension Service, Horry County Storm Water Division, SCDHEC, Grand Strand Water and Sewer Authority, and the Town of Aynor. The project’s identified watersheds in Western Horry County include the Chinners, Brunson, and Palmetto Swamps and their tributaries. The primary focus of the HAD project is failing septic systems and nonpoint pollution associated with livestock. The project is scheduled to be completed in July of 2015.



Little Pee Dee River and
Brunson Swamp Watersheds
(03040204-07, -08)
Mullins
Aynor
041101-1102
341001-3001
Mullins
SC0029408
PD-037
341001-1201
341002-1201
PD-351
SCG730635
1003-51
SCG731140
Marion LF
341001-1101
SCG731235
2024-67
PD-042
ND0069361
1757-51
1790-51
Aynor Dump
PD-177
RS-07051
ND0080721
1725-51
PD-352
RS-06181
PD-370
Taylor C&D LF
0725-67
1280-51
2026-67
342729-1201
342729-1202
1713-67
1918-51
PD-189
0707-67
SCG730564
SCG730482
0222-51
1046-51
SCG730036
262667-3001
SCG730562
0467-51
SCG731197
1999-51
1562-51
PD-350
07
08
Marion
Horry
1 Turkey Pen Swamp
2 Wolf Pit Bay
3 Granite Bay
4 Boggy Bay
5 Mose Swamp
6 Schoolhouse Branch
Macroinvertebrate Stations
Water Quality Monitoring Stations
Approved TMDL
Surface Water Intakes
Shellfish Monitoring Stations
Mines
Landfills
NPDES Permits
Land Application Permits
Natural Swimming Areas
Interstates
Railroad Lines
Highways
County Lines
Modeled Stream
Stream
Lake
Bay/Estuary
Wetland
10-Digit Hydrologic Units
Cities/Towns
Public Lands
Miles
0 1 2 4 6 8 10
D H E C
PROMOTE PROTECT PROSPER
South Carolina Department of Health and Environmental Control

03040204-08

(Little Pee Dee River)

General Description

Watershed 03040204-08 is located in Marion and Horry Counties and consists primarily of the ***Little Pee Dee River*** and its tributaries from the Lumber River to its confluence with the Pee Dee River. The watershed occupies 217,859 acres of the Upper and Lower Coastal Plain regions of South Carolina. Land use/land cover in the watershed includes: 49.5% forested wetland, 22.3% agricultural land, 20.0% forested land, 4.1% urban land, 2.3% nonforested wetland, 1.7% water, and 0.1% barren land.

This section of the Little Pee Dee River accepts drainage from its upper reaches, followed by Cedar Creek (Cow Bog, Juniper Bay, Spring Bay, Mossy Bay, Back Swamp, Cartwheel Branch, Cartwheel Bay, Fifteenmile Bay, Jet Branch), Brown Swamp (White Oak Creek, Fowler Branch), Black Creek (Flat Bay), and Turkey Pen Swamp (Gunter Bay, Hannah Bay, Wolf Pit Bay, Mill Bay). Cartwheel Bay is a Heritage Trust Preserve. The Lake Swamp Watershed enters the river next, followed by Dawsey Swamp, Tredwell Swamp (Mill Swamp), The Falls, Back Swamp (Fox Bay), and Sandy Slough. Little Reedy Creek (Cane Bay, Mill Bay) merges with Reedy Creek (Big Sister Bay, Little Sister Bay, Reedy Creek Bay) in Smith Millpond and then flows through Leggett Millpond before draining into the Little Pee Dee River downstream of Sandy Slough. Further downstream, Cypress Creek enters the river, followed by Marsh Creek, Alligator Run, the Brunson Swamp Watershed, Palmetto Swamp (Little Palmetto Swamp, Ratan Branch), and Giles Bay.

Singleton Creek (Dwight Creek, Red Hill Branch, Alfred Creek, Bunker Hill Creek, Church Branch, Running Branch) drains into another Brown Swamp as does Brown Bay, Knotty Branch, Cooper Branch, Davis Branch, Juniper Bay, Calhoun Branch, Todd Mill Branch, Lewis Mill Branch, and Alkinson Branch. Brown Swamp then flows through Jordan Lake and Old River Lake before entering the river. Hunting Swamp (Boyd Canal, Jenkins Swamp, Cedar Grove Branch, Cates Bay, Forney Branch, Brownway Branch, Big Cypress Swamp, Sarah Branch, Pawley Swamp) enters the system at the base of the watershed followed by Russ Creek (Jiles Creek, Russ Lake) near the Brittons Neck area. The Little Pee Dee Swamp flows parallel to the river in the lower portion of the watershed. Several oxbow lakes drain into the Little Pee Dee River including Cox Lake, Newfound Lake, Gunter Lake, Johnson Big Lake, Cannon Lake, Jordan Lake, Old River Lake, Richard Lake, Sampson Lakes, and Dead River. There are a total of 326.3 stream miles and 668.8 acres of lake waters in this watershed. All streams in the watershed are classified ORW with the following exceptions: Brown Swamp and White Oak Creek in the upper portion of the watershed, and another Brown Swamp further downstream are classified FW* (dissolved oxygen not less than 4.0 mg/l and pH between 5.0 and 8.5) and their tributaries are classified FW; Hunting Swamp and Palmetto Swamp and their tributaries are classified FW.

Surface Water Quality

Station #	Type	Class	Description
PD-351	W	ORW	CEDAR CREEK AT S-26-23
RS-08229	RS08	FW*	WHITE OAK CREEK AT US 76
PD-037	W	FW*	WHITE OAK CREEK AT S-34-31

PD-042	W	ORW	LITTLE PEE DEE RIVER AT US 501, GALIVANT'S FERRY
RS-06181	RS06	ORW	LITTLE PEE DEE RIVER AT GUNTERS LAKE LANDING, 7.8 MI SW OF AYNOR
PD-189	W	ORW	LITTLE PEE DEE RIVER AT US 378 12 MI W. OF CONWAY
PD-350	INT	ORW	LITTLE PEE DEE RIVER AT PUNCHBOWL LANDING

***Cedar Creek (PD-351)* –**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. Aquatic life uses are not supported due to dissolved oxygen excursions. Recreational uses are fully supported.

White Oak Creek (PD-037)* –** There are two SCDHEC monitoring sites along White Oak Creek. At the upstream site ***(RS-08229), aquatic life uses are fully supported. Recreational uses are not supported due to fecal coliform bacteria excursions. At the downstream site ***(PD-037)***, aquatic life uses are fully supported. Recreational uses are partially supported due to fecal coliform bacteria excursions and there is a significant increasing trend in fecal coliform bacteria.

Little Pee Dee River* –** There are four SCDHEC monitoring sites along this lowest section of the Little Pee Dee River. This is a blackwater system, characterized by naturally low pH and dissolved oxygen conditions. At the upstream site ***(PD-042), aquatic life and recreational uses are fully supported; however, there are increasing trends in five-day biochemical oxygen demand and fecal coliform bacteria. Although pH and dissolved oxygen 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. Aquatic life and recreational uses are fully supported downstream at ***RS-06181***. At the next site downstream ***(PD-189)***, aquatic life and recreational uses are fully supported. Although pH and dissolved oxygen 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 significant decreasing trend in turbidity suggests improving conditions for this parameter. At the furthest downstream site ***(PD-350)***, aquatic life and recreational uses are again fully supported; however, there is a significant decreasing trend in dissolved oxygen concentration. Although dissolved oxygen excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations. 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 the ***Little Pee Dee River*** and ***Russ Creek*** *within this watershed* *(see advisory p.144).*

NPDES Program

Active NPDES Facilities

RECEIVING STREAM / ***FACILITY NAME***	***NPDES#*** / ***TYPE***
WHITE OAK CREEK GSW&SA/ MULLINS WWTP	SC0029408 MAJOR DOMESTIC

BLACK CREEK SUPERIOR SAND LLC/BLACK CREEK MINE	SCG730635 MINOR INDUSTRIAL
LITTLE PEE DEE RIVER TRIBUTARY CAROLINA SAND/PEE DEE MINE	SCG730564 MINOR INDUSTRIAL
DWIGHT CREEK KAHM FARMS LLC/CANNON SPRINGS	SCG730562 MINOR INDUSTRIAL
BOYD CANAL CAVU INC./BUCK MINE	SCG730036 MINOR INDUSTRIAL
BOYD CANAL G & G MINING CO./G & G MINE	SCG730482 MINOR INDUSTRIAL
BIG CYPRESS SWAMP RICHARD SMITH/MALLARD FARM MINE	SCG731197 MINOR INDUSTRIAL
LITTLE PEE DEE RIVER TRIBUTARY INLAND SAND LLC/INLAND SAND MINE	SCG731235 MINOR INDUSTRIAL

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

LANDFILL NAME ***FACILITY TYPE***	***PERMIT #*** ***STATUS***
MARION COUNTY LANDFILL MUNICIPAL	DWP-068 CLOSED
MARION COUNTY C&D LANDFILL C&D	341001-1201 ACTIVE
MARION COUNTY WOOD CHIPPING COMPOSTING	341001-3001 ACTIVE
MARION COUNTY LANDFILL MUNICIPAL	341001-1101 INACTIVE
JOHN E TAYLOR C&D LANDFILL C&D	PROPOSED ----------
G&G MINING CO. COMPOSTING SITE COMPOSTING	262667-3001 ACTIVE
SANDLANDS C&D LANDFILL C&D	342729-1201; 342729-1202 ACTIVE
CITY OF MULLINS MUNICIPAL	041101-1102 INACTIVE
CITY OF MULLINS SANITARY LANDFILL MUNICIPAL	--------- INACTIVE
CITY OF MULLINS C&D	341002-1201 ACTIVE

Land Application Sites

LAND APPLICATION SYSTEM ***FACILITY NAME***	***ND#*** ***TYPE***
SPRAYFIELD GSW&SA/ CENTENARY SEWER SYSTEM	ND0069361 DOMESTIC
PERCOLATION LAGOON LOCUST TREE DEVELOPMENT	ND0080721 DOMESTIC

Mining Activities

MINING COMPANY ***MINE NAME***	***PERMIT #*** ***MINERAL***
CAROLINA SAND, INC. BRITTONS NECK MINE	0725-67 SAND
OUTBACK SOURCE, LLC BLACK ISLAND PRESERVE 1	1725-67 SAND/CLAY
COASTAL SAND LLC LARRIMORE MINE	1713-67 SAND
SUPERIOR SAND LLC SUPERIOR SAND MINE	1003-51 SAND
WEAVER CO., INC. CANNON SPRING MINE	0467-51 LIMESTONE
CAROLINA SAND, INC. PEE DEE MINE	0707-67 SAND
G & C MINING CO., INC. G & C MINE	0222-51 LIMESTONE
CAVU, INC. BUCK MINE	1046-51 SAND
D & L SITEWORK, INC. CATES BAY HWY MINE	1562-51 SAND
BURNIE F. JORDAN JORDAN'S DIRT PIT	1280-51 SAND
INLAND SAND LLC INLAND SAND MINE	2024-67 SAND/CLAY
RICHARD SMITH MALLARD FARM MINE	1999-51 SAND; TOPSOIL
LANDSDOWN EARTH & PIPE INC. MARION COUNTY US 378 MINE	2026-67 SAND/CLAY

Water Quantity

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

Growth Potential

There is a low potential for growth in this watershed, which contains the Towns of Centenary and Rains, and a portion of the City of Mullins. The Town of Aynor is adjacent to the watershed. A portion of the U.S. Hwy. 501 corridor, running from the City of Marion to the City of Conway, crosses this watershed. Water infrastructure is located in and around the Town of Aynor, but only the U.S. Hwy. 501 corridor in the Town of Aynor is sewered. Sewerage infrastructure along U.S. Hwy. 501 from Aynor to Conway has been constructed. It is likely that residential, commercial, and industrial development will occur along this corridor in the future. U.S. Hwy. 76, between the Cities of Marion and Mullins, has both water and sewer services and prime industrial properties may encourage commercial and industrial growth in the watershed. There is a relatively extensive rural water system serving the watershed, and an extension of this system into the Britton's Neck area has taken place. The proposed Preferred Alternative route of I-73 (Southern Corridor) would cross this watershed and could bring some growth to the area, especially around interchanges.

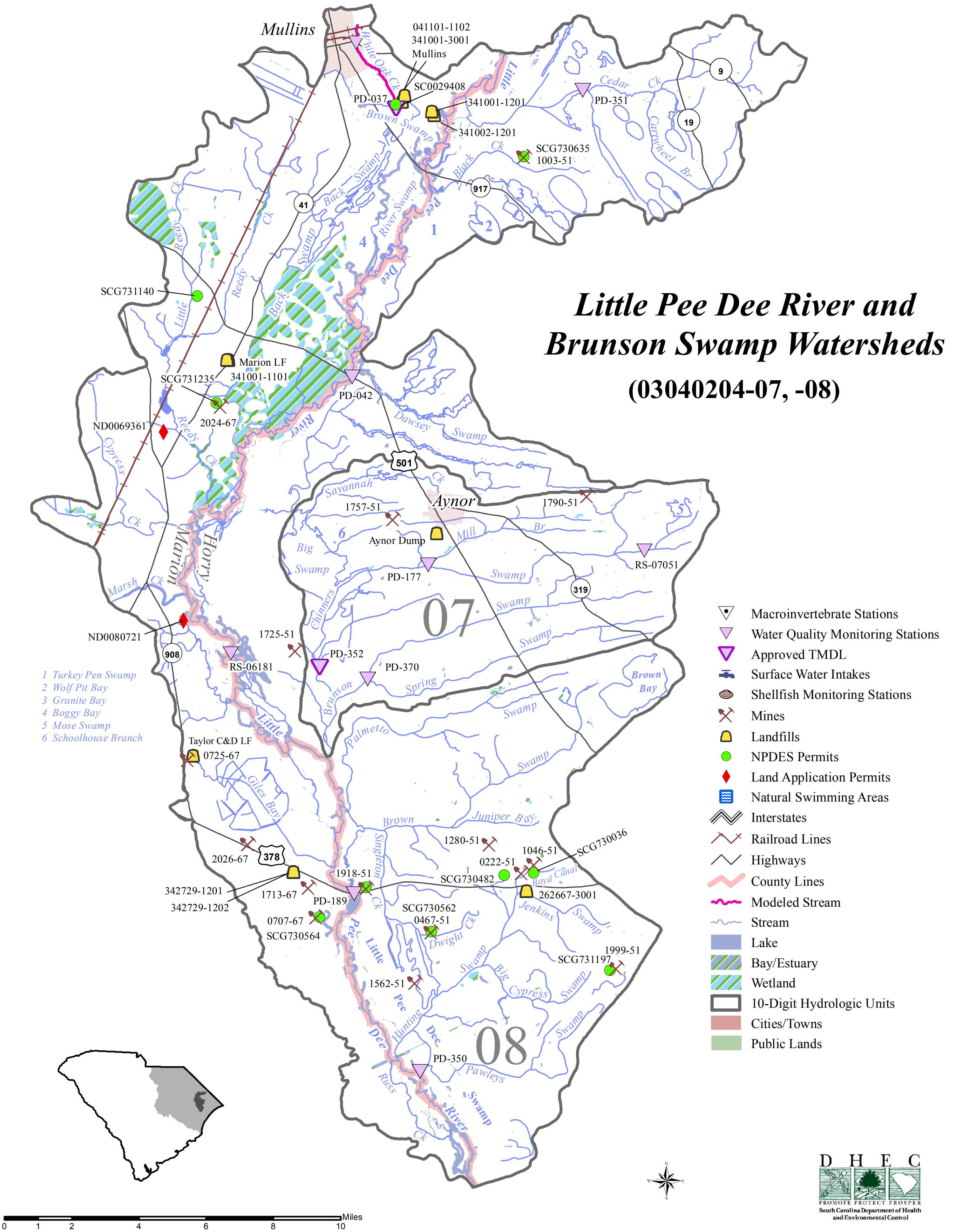
Watershed Restoration and Protection

Total Maximum Daily Loads (TMDLs)

A TMDL was developed by SCDHEC and approved by EPA for ***White Oak Creek*** water quality monitoring site ***PD-037*** to determine the maximum amount of fecal coliform bacteria it can receive and still meet water quality standards. Fecal coliform sources may include a combination of nonpoint sources including stormwater runoff from the Town of Mullins, failing septic systems, and both pets and wildlife. The TMDL states that a 91% reduction in fecal coliform loading is necessary for the stream to meet the water quality standard.

Little Pee Dee River and Brunson Swamp Watersheds

(03040204-07, -08)



03040207-01

(Sampit River)

General Description

Watershed 03040207-01 is located in Georgetown County and consists primarily of the ***Sampit River*** and its tributaries. The watershed occupies 105,287 acres of the Lower Coastal Plain and Coastal Zone regions of South Carolina. Land use/land cover in the watershed includes: 56.2% forested land, 24.2% forested wetland, 6.8% agricultural land, 5.3% urban land, 5.0% nonforested wetland, 2.0% water, and 0.5% barren land.

Bond Swamp (Boety Bay, Mackey Bay, Bino Bay, Canaan Bay, Ditch Branch, Canaan Branch, Summons Swamp) flows into Boggy Swamp (Waterhole Bay, Cherryhill Swamp, Machine Branch, Britt Branch), which forms the Sampit River. The Sampit River accepts drainage from Spring Gully, Little Kilsock Bay, Ports Creek, Canaan Branch, Pennyroyal Creek (Big Kilsock Bay, Flat Bay, Turkey Creek), and Whites Creek before draining into Winyah Bay. There are a total of 166.1 stream miles, 819.8 acres of lake waters, and 1,033.5 acres of estuarine areas in this watershed. The upper reaches of the watershed, including Boggy Swamp and its tributaries are classified FW* (dissolved oxygen not less than 4.0 mg/l and pH between 5.0 and 8/5). The Sampit River is classified FW*/SB dependent on the freshwater inflow from its neighboring rivers (the Great Pee Dee and Waccamaw Rivers), and the remaining streams in the watershed are classified FW.

Surface Water Quality

Station #	Type	Class	Description
MD-075	W	SB/FW*	SAMPIT RIVER BETWEEN MOUTHS OF PORTS CREEK & PENNYROYAL CREEK
MD-076N	W	FW	TURKEY CREEK S-22-42 SW OF GEORGETOWN
MD-149	W	FW	WHITES CREEK 100 YDS UPSTREAM OF JUNCTION WITH SAMPIT RIVER
MD-077	INT	SB/FW*	SAMPIT RIVER AT US 17
MD-073	W	SB/FW*	SAMPIT RIVER OPPOSITE AMERICAN CYANAMID CHEMICAL CO.
MD-074	W	SB/FW*	SAMPIT RIVER AT CHANNEL MARKER #30

Sampit River* –** There are four SCDHEC monitoring sites along the Sampit River, and recreational uses are supported at all sites. This is a tidally influenced system with limited flushing and significant marsh drainage characterized by naturally low pH and dissolved oxygen conditions. At the furthest upstream site ***(MD-075), aquatic life uses are not supported due to dissolved oxygen excursions. Although pH excursions occurred, they were typical of values seen in tidally influenced systems and were considered natural, not standards violations.

At the next site downstream ***(MD-077)***, aquatic life uses are partially supported due to dissolved oxygen excursions. In addition, there is a significant increasing trend in five-day biochemical oxygen demand. At the furthest two downstream sites ***(MD-073, MD-074)***, aquatic life uses are partially supported due to dissolved oxygen and pH excursions.

***Turkey Creek (MD-076N)* –** Aquatic life and recreational uses are fully supported. This is a tidally influenced system with limited flushing and significant marsh drainage characterized by naturally low pH conditions. Although pH excursions occurred, they were typical of values seen in such systems and were considered natural, not standards violations.

Whites Creek (MD-149) – Aquatic life uses are partially supported due to dissolved oxygen. This is a tidally influenced system with limited flushing and significant marsh drainage characterized by naturally low pH conditions. Although pH excursions occurred, they were typical of values seen in tidally influenced 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 **Sampit River** within this watershed (see advisory p.144).*

NPDES Program

Active NPDES Facilities

RECEIVING STREAM ***FACILITY NAME***	***NPDES#*** ***TYPE***
SAMPIT RIVER INTERNATIONAL PAPER CO./GEORGETOWN	SC0000868 MAJOR INDUSTRIAL
SAMPIT RIVER 3V, INC.	SC0036111 MAJOR INDUSTRIAL
SAMPIT RIVER CITY OF GEORGETOWN WWTP	SC0040029 MAJOR DOMESTIC
SAMPIT RIVER ARCELORMITTAL GEORGETOWN INC.	SC0001431 MAJOR INDUSTRIAL
TURKEY CREEK SCPSA/WINYAH STEAM STATION	SC0022471 MAJOR INDUSTRIAL
CANAAN BRANCH TRIBUTARY HOWCOX LLC/LIVE OAK TERRACE MINE	SCG731194 MINOR INDUSTRIAL
SAMPIT RIVER TRIBUTARY WILLIAM HARRELSON/HARRELSON MINE	SCG731293 MINOR INDUSTRIAL

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

LANDFILL NAME ***FACILITY TYPE***	***PERMIT #*** ***STATUS***
INTERNATIONAL PAPER, INC. LANDFILL INDUSTRIAL	222435-1601 ACTIVE
INTERNATIONAL PAPER, INC. INDUSTRIAL	------------ INACTIVE
STONE MANUFACTURING CO. INDUSTRIAL	------------ INACTIVE
GEORGETOWN STEEL CORPORATION INDUSTRIAL	------------ INACTIVE

INTERNATIONAL PAPER, INC. LANDFILL LAND APPLICATION	222654-8001 ACTIVE
INTERNATIONAL PAPER, INC. LANDFILL LAND APPLICATION	222654-8002 ACTIVE
FRASIER COMPOSTING SITE COMPOSTING	222679-3001 ACTIVE
HAMMOND WOOD RECYCLING #3 COMPOSTING	222660-3001 INACTIVE
MCKENZIE WOOD CHIPPING COMPOSTING	222732-3001 ACTIVE
MILLER WOOD PROCESSING FACILITY COMPOSTING	222763-3001 ACTIVE
AMERICAN CYANAMID INDUSTRIAL	IWP-070 INACTIVE

Mining Activities

MINING COMPANY ***MINE NAME***	***PERMIT #*** ***MINERAL***
STONE CONSTRUCTION CO. SAMPIT MINE	1639-43 SAND
HOWCOX LLC LIVE OAK TERRACE MINE	1929-43 SAND/CLAY
WILLIAM HARRELSON HARRELSON MINE	2069-43 SAND/CLAY

Water Quantity

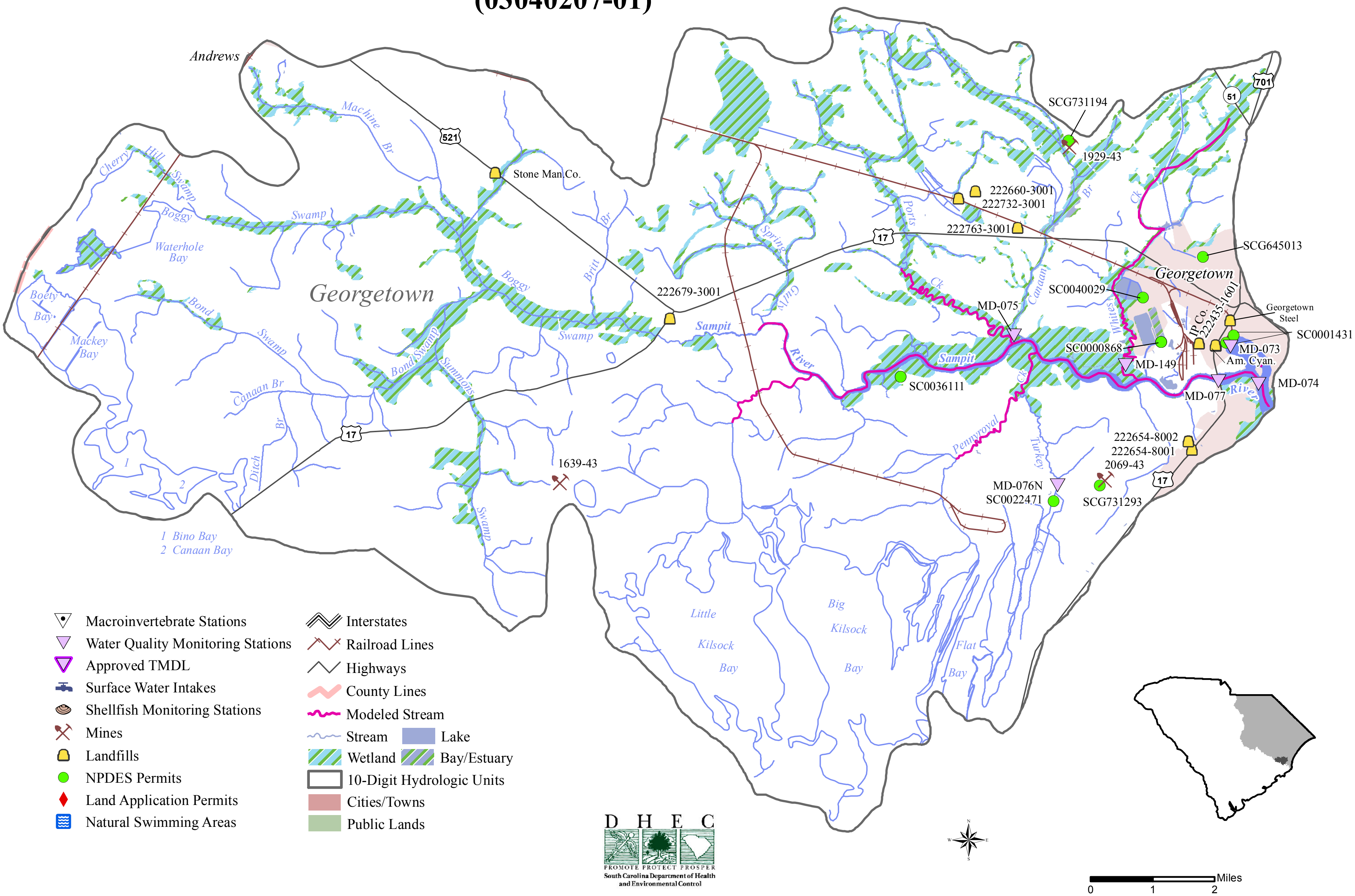
Portions of this watershed fall within the Waccamaw Capacity Use Area and large groundwater uses must be reported (see Capacity Use Program p.22).

Growth Potential

There is a moderate to high potential for growth in this watershed, which contains the City of Georgetown and is adjacent to the Town of Andrews. Water and sewer infrastructure are located in and immediately around these municipalities, and also southeast of Georgetown, which supports an industrial area. The U.S. Hwy 521 corridor between Andrews and Georgetown has been widened to four lanes and should increase the potential for growth. There are currently five industrial areas in the watershed, one south of Andrews and four located in or near the City of Georgetown. Based on the location of facilities and infrastructure required by many industries (a shipping port, rail lines, commercial air service, highway access, and water and sewer infrastructure), the eastern edge of the watershed has the potential for significant industrial growth. Outside these areas, the watershed is rural with agricultural uses and timberlands.

Sampit River Watershed

(03040207-01)



03040207-02

(Great Pee Dee River/Winyah Bay)

General Description

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

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

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

SFH, -ORW, Noble Slough-SB), and Cotton Patch Creek (SB). Jones Creek (SB, SFH, ORW) connects Mud Bay to North Inlet. Oyster Bay (SB) connects Jones Creek to Town Creek (Sawmill Creek-SB, Cutoff Creek-SFH), both draining to Winyah Bay and North Inlet. There are a total of 351.9 stream miles, 629.6 acres of lake waters, and 16,642.3 acres of estuarine areas in this watershed.

Surface Water Quality

Station #	Type	Class	Description
RS-04377	RS04	FW	Great Pee Dee River at Ports Hill Landing, 9.5mi SE of Hemmingway
PD-060	INT	FW	Great Pee Dee River at Peters Field Landing off S-22-36
PD-061	P/W	FW	Great Pee Dee River at US 701 2.75 mi NE of Yauhannah
RS-06013	RS06	FW	Cypress Creek at bridge on S-22-264, 1.5mi SE of Plantersville
MD-275	INT	SB*	Great Pee Dee River at White House Plantation
MD-080	P/W	SB	Winyah Bay at Marker 92 at mouth of Pee Dee and Waccamaw Rivers
RO-08348	RO08	SB	Winyah Bay, 0.8 mi W of Horse Island
RO-10380	RO10	SB	Winyah Bay, 1.7mi W of western most marsh islands; 5.4 mi S of Waccamaw Pt.
RO-07332	RO07	SB	Winyah Bay, main channel, approx. 0.75 mi WNW of Buoy 19A Range E
MD-278	INT	SB	Winyah Bay main channel, Buoy 19A range E
RO-06317	RO06	SB	Winyah Bay, 0.8 mi S of Light house

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

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

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

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

Shellfish Monitoring Stations

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

Station locations from the Shellfish Annual Report for Section 5 can be found at http://www.scdhec.gov/FoodSafety/ShellfishMonitoring/Map and http://www.scdhec.gov/foodsafety/docs/SFMA_05 . Information from the Shellfish Annual Report for Section 5 can be found at http://www.scdhec.gov/FoodSafety/ShellfishMonitoring/MonitoringStationReports.

NPDES Program

Active NPDES Facilities

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

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

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

Mining Activities

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

Water Quantity

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

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

Growth Potential

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

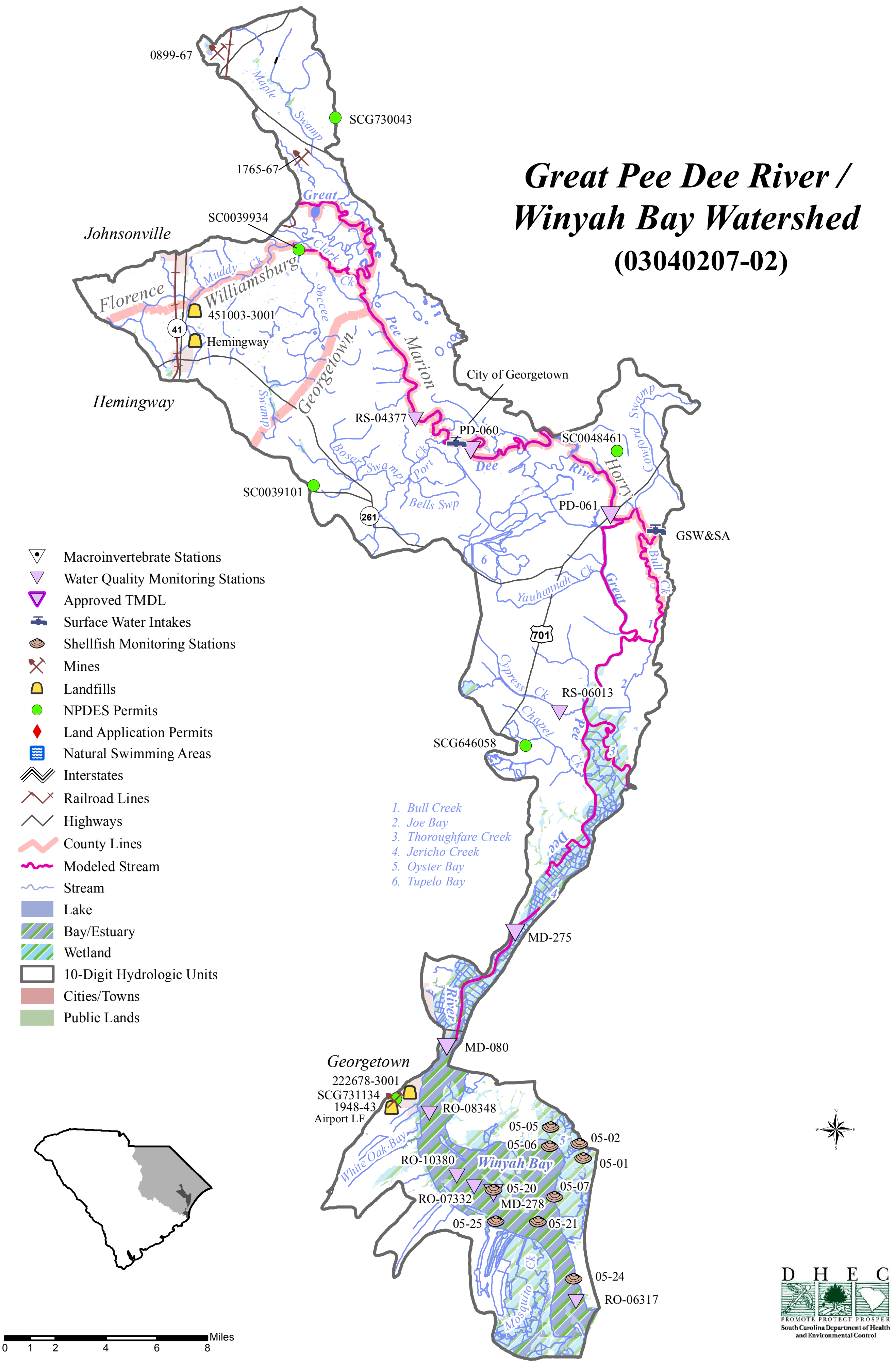
Watershed Restoration and Protection

Special Studies

Winyah Bay Nutrient Study

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

Great Pee Dee River / Winyah Bay Watershed (03040207-02)



Pee Dee Coastal Frontage Basin

The ***Pee Dee Coastal Frontage Basin (hydrologic unit 03040208)*** is located in Horry and Georgetown Counties, and encompasses 2 watersheds and 143.7 square miles. This coastal frontage drains directly into the Atlantic Ocean. The Coastal Basin incorporates the Lower Coastal Plain and Coastal Zone regions. Of the 91,936 acres, 41.9% is urban land, 20.4% is forested wetland, 13.7% is forested land, 13.4% is nonforested wetland, 5.8% is water, 2.5% is barren land, and 2.3% is agricultural land. The urban land percentage is comprised chiefly of the Cities of Myrtle Beach and North Myrtle Beach. There are approximately 92 stream miles in this basin, 155 acres of lake waters, and 3,521 acres of estuarine areas. The Little River flows back and forth across the SC/NC state line forming a portion of the AIWW and draining to the Atlantic Ocean through the Little River Inlet. The Grand Strand Beaches and their swashes all drain to the Atlantic in this watershed, as does Murrells Inlet, Pawleys Inlet, and North Inlet and their tributaries.

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 regions that define the Pee Dee Coastal Frontage Basin are as follows:

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 U.S. Geological Survey's National Land Cover Data (NLCD), 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 areas).

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

Soil Types

The individual soil series for the Pee Dee Coastal Frontage Basin are described as follows.

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

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

Leon soils are somewhat poorly drained to poorly drained, level to nearly level, sandy soils with weakly cemented layers stained by organic matter.

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

Newhan soils are excessively drained, very rapidly permeable soils that formed in sandy marine sediment, nearly level to gently sloping, adjacent to beaches and waterways along the coastline.

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 Pee Dee Coastal Frontage Basin is from 0.10 to 0.16.

Fish Consumption Advisory

At the time of publication, a fish consumption advisory issued by SCDHEC is in effect for the ***Intracoastal Waterway (AIWW)*** and the ***Atlantic Ocean (marine waters)*** advising people to limit the amount of some types of fish consumed from these waters. Fish consumption advisories are updated annually in March. For background information and the most current advisories please visit www.scdhec.gov/FoodSafety/FishConsumptionAdvisories.

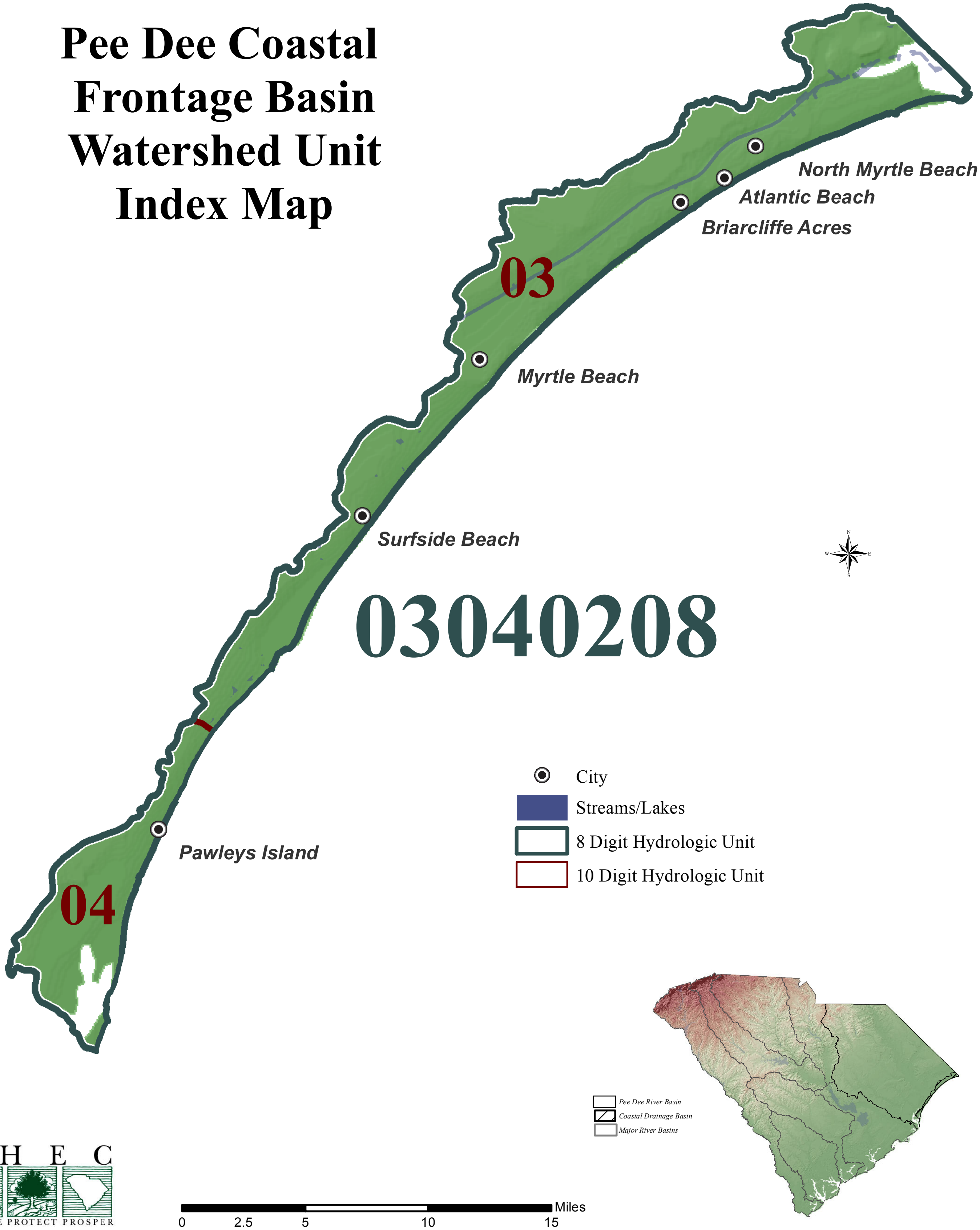
Ocean Swimming Advisory

SCDHEC routinely collects water samples along South Carolina's beaches. If high numbers of bacteria (enterococcus) are found, an advisory is issued for that portion of beach. An advisory means that DHEC advises you NOT to swim in that areas while signs are posted. This is especially true for young children, those with comprised immune systems, and the elderly. Advisories do not mean that the beach is closed. Wading, fishing, and shell collecting do not pose a risk. Advisories may be issued due to high sample results or because of rainfall causing stormwater to runoff on the beach. Advisories are lifted when sample results fall below the limit of 104CFU/100mL. Check local newspapers, television stations, posted advisory signs on beaches, and this website http://gis.dhec.sc.gov/beachaccess/ for up-to-date information.

Climate

Normal yearly rainfall in the Pee Dee Coastal Frontage Basin area during the period of 1971 to 2000 was 54.68 inches, according to South Carolina's **30-year** climatological record. Data compiled from National Weather Service stations in Conway, Brookgreen Gardens, and Georgetown were used to determine the general climate information for this portion of the State. The highest level of rainfall occurs in the summer with 18.21 inches; 13.19, 12.06, and 11.21 inches of rain falling in the fall, winter, and spring, respectively. The average annual daily temperature is 64.5 °F. Winter temperatures averaged 48.9°F, spring temperatures averaged 63.7 °F and summer and fall mean temperatures were 79.2 °F and 66.0 °F, respectively.

Pee Dee Coastal Frontage Basin Watershed Unit Index Map



D H E C
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South Carolina Department of Health and Environmental Control

Watershed Evaluations

03040208-03

(Little River/AIWW/Murrells Inlet)

General Description

The South Carolina portion of 03040208-03 is a *coastal frontage basin* located in Horry and Georgetown Counties and consists primarily of the ***Little River*** and the ***Atlantic Intracoastal Waterway (AIWW)*** and their tributaries from Myrtle Beach northward to the North Carolina state line and the Little River Inlet, and streams draining directly into the ***Atlantic Ocean*** from the "Grand Strand" beaches southward to ***Murrells Inlet***. The watershed occupies 70,883 acres of the Coastal Zone region of South Carolina. Land use/land cover in the watershed includes: 50.4% urban land, 17.6% forested wetland, 12.8% forested land, 8.2% nonforested wetland, 5.6% water, 2.9% agricultural land, and 2.5% barren land.

The Little River is a tidal river and flows in both directions according to the tides. The Atlantic Intracoastal Waterway (AIWW) flows across the North Carolina state line in the “Little River Neck” area and merges with the Little River to flow south toward North Myrtle Beach or flow out of the Little River Inlet to the Atlantic Ocean. The portion flowing to the ocean accepts drainage from Dunn Sound, Dunn Sound Creek, Sheephead Creek, and Horse Ford Creek on the South Carolina side. Bonaparte Creek (East River, Dead Backwater, Clauton Creek) flows into the Little River Inlet from the North Carolina side.

The Little River flows through Milliken Cove and accepts drainage from the Calabash River (originating in North Carolina) and Mullet Creek. The Little River merges with the AIWW to become one and the same until the Little River Neck area where the Little River ceases. The Little River Swamp drains into the AIWW near the City of North Myrtle Beach, as does Camp Branch Run and Prices Swamp Run. Prices Swamp and Long Branch enter the waterway near the Town of Briarcliffe Acres. Lewis Ocean Bay, Cane Patch Swamp, and Black Creek drain into the AIWW near the City of Myrtle Beach.

Nixon Creek, Salt Flat Creek, House Creek, Williams Creek, and Saltworks Creek drain to the Atlantic Ocean through Hog Inlet or Cherry Grove Inlet (SFH). Long Pond drains to the ocean at Briarcliffe Acres. Buck Island Swamp drains to the ocean through Singleton Swash. Bear Creek drains to the ocean in Myrtle Beach. Other swashes draining to the ocean include Canepatch Swash, Deephead Swash (Withers Swamp), Withers Swash, and Midway Swash near Springmaid Beach. Dogwood Lake (Big Swamp) and Floral Lake drain to the ocean near Surfside Beach. Main Creek accepts drainage from Whale Creek, Woodland Creek (Parsonage Creek) and Oaks Creek (Allston Creek) before draining to the ocean through Murrells Inlet (SFH).

There are a total of 91.5 stream miles, 148.8 acres of lake waters, and 2,365.7 acres of estuarine areas in this watershed, all classified SFH with the exception of the AIWW. The AIWW and its tributaries from the North Carolina state line to the crossing of S.C. Hwy 9 are classified SA, and southward from the S.C. Hwy 9 crossing are classified FW. Huntington Beach State Park is a natural resource in the watershed.

Surface Water Quality

Station #	Type	Class	Description
RT-08069	RT08	SFH	MOUTH OF DUNN SOUND CREEK NEAR SHELLFISH SITE 01-02
RO-07333	RO07	SFH	LITTLE RIVER AT MOUTH OF HORSE FORD CREEK
MD-276	INT	SFH	HOUSE CREEK AT 53RD AVE OUT FROM BOAT LANDING (01-19)
MD-162	P/W	SA	LITTLE RIVER AT S END OF ISLAND DUE E OF TOWN
MD-125	S/INT	FW/SA	AIWW (LITTLE RIVER) ON SC 9 (US 17)
MD-091	S/W	FW	AIWW 4 MI N OF BRIDGE ON US 501
MD-085	S/INT	FW	AIWW AT POINT 3 MI N OF BRIDGE ON US 501
MD-087	P/W	FW	AIWW JUST N OF BRIDGE ON US 501
RT-09113	RT09	SFH	MAIN CREEK, 160 YDS UPSTREAM FROM SHELLFISH SITE 04-27
RT-07049	RT07	SFH	MAIN CREEK, 200 METERS SSE OF MOUTH OF FLAGG CREEK
MD-277	INT	SFH	PARSONAGE CREEK AT INLET PORT BASIN (04-17)

Dunn Sound Creek (RT-08069) – Aquatic life and recreational uses are fully supported.

Little River – There are two SCDHEC monitoring sites along this section of the Little River. At the upstream site ***(RO-07333)***, aquatic life and recreational uses are fully supported. At the downstream site ***(MD-162)***, aquatic life and recreational uses are fully supported. Although dissolved oxygen excursions occurred, they were typical of values seen in tidally influenced systems with limited flushing and significant marsh drainage. As such they were considered to be natural in origin, not standards violations. There is a significant increasing trend in pH.

House Creek (MD-276) – Aquatic life uses are not supported due to dissolved oxygen excursions and occurrences of zinc in excess of the aquatic life acute criterion. In addition, there is a significant decreasing trend in dissolved oxygen concentration and a significant increasing trend in turbidity. There is a significant decreasing trend in pH. A significant decreasing trend in total nitrogen concentration suggests improving conditions for this parameter. Recreational uses are fully supported; however, there is a significant increasing trend in fecal coliform bacteria.

Atlantic Intracoastal Waterway – There are four SCDHEC monitoring sites along this section of the AIWW and recreational uses are fully supported at **all sites.** This section of the AIWW is influenced by tidal pressures from both the Little River and the Winyah Bay ends, so flushing and mixing are limited, causing a bathtub effect whereby the water moves back and forth, but takes a long time to actually move out of the waterway. At the northernmost station ***(MD-125)***, aquatic life use is fully supported; however, there are decreasing trends in dissolved oxygen concentration and increasing trends in five-day biochemical oxygen demand and total nitrogen concentration. Although dissolved oxygen excursions occurred, they were typical of values seen in tidally influenced systems with limited flushing and significant marsh drainage and were considered natural, not standards violations. There is a significant decreasing trend in pH. A significant decreasing trend in turbidity suggests improving conditions for this parameter. Moving along the AIWW southerly toward Georgetown ***(MD-091)***, aquatic life uses are fully supported. Although pH excursions occurred, they were typical of values seen in tidally influenced systems with limited flushing and significant marsh drainage and were considered natural, not standards violations.

Further along the waterway ***(MD-085)***, aquatic life uses are fully supported. Although dissolved oxygen excursions occurred, they were typical of values seen in tidally influenced systems with limited flushing and significant marsh drainage and were considered natural, not standards violations. Significant decreasing trends in turbidity and total phosphorus concentration suggest improving conditions for these parameters. At the southernmost site ***(MD-087)***, aquatic life uses are fully supported. Although pH excursions occurred, they were typical of values seen in tidally influenced systems with limited flushing and significant marsh drainage and were considered natural, not standards violations. A significant increasing trend in dissolved oxygen concentration suggests improving conditions for this parameter.

Main Creek – There are two SCDHEC monitoring sites along Main Creek. At the upstream site ***(RT-09113)***, aquatic life and recreational uses are fully supported. At the downstream site ***(RT-07049)***, aquatic life and recreational uses are also fully supported. Although there were dissolved oxygen excursions, these were typical of values seen in tidally influenced systems with limited flushing and significant marsh drainage. As such they were considered to be natural in origin, and are not considered to be standards violations.

Parsonage Creek (MD-277) – Aquatic life uses are fully supported. Although there were dissolved oxygen excursions, these were typical of values seen in tidally influenced systems with limited flushing and significant marsh drainage. As such they were considered to be natural in origin, and are not considered to be standards violations. There is a significant decreasing trend in pH. A significant decreasing trend in total nitrogen concentration suggests improving conditions for this parameter. Recreational uses are fully supported.

A fish consumption advisory has been issued by the Department for mercury and includes the ***Atlantic Intracoastal Waterway*** *and the* ***Atlantic Ocean*** *within this watershed* *(see advisory p.246).*

Shellfish Monitoring Stations

Station #	Description
01-01	LITTLE RIVER JETTY
01-02	MOUTH OF DUNN SOUND CREEK
01-05	BIG BEND UP DUNN SOUND CREEK
01-06	BRIDGE TO WAITES ISLAND
01-07	HOG INLET
01-17	42ND AVENUE - CHERRY GROVE
01-17A	53RD AVENUE BRIDGE ON CANAL
01-18	DUNN SOUND AT HOG INLET
01-19	53RD AVENUE AT MAIN CREEK
02-01	WHITE POINT SWASH
02-02	SINGLETON SWASH
02-03	CANEPATCH SWASH
03-01	WITHERS SWASH
03-02	MIDWAY SWASH - PEBBLE BEACH
04-01	MAIN CREEK AT ATLANTIC AVENUE BRIDGE
04-02	MAIN CREEK AT MICKEY SPILLANE'S HOME
04-03A	MAIN CREEK SOUTHEAST SIDE OF PROHIBITED AREA NEAR CAPTAIN DICK'S MARINA
04-03B	AIWW - MARKER #9 (D3-02)
04-04A	GARDEN CITY CANAL DUE E OF ENTRANCE TO FLAGG CREEK

04-04B	Northern boundary of Marlin Quay closure zone – Main Creek
04-04C	Western boundary of Marlin Quay closure zone – Main Creek
04-06	Allston Creek at Weston Flat
04-07	Allston Creek Pog - Hughes Landing
04-08	Parsonage Creek at Nance's Dock
04-08A	Oyster (Carr) Landing at Huntington Beach Station Park
04-16	Parsonage Creek at Chicken Farm Ditch
04-17A	Southwest Corner of Voyager View Marina Prohibited Zone in Parsonage Creek
04-18	North Boundary of Clambank Flats POG
04-23	Main Creek at Oyster Cover
04-24	Oaks Creek at First Curve
04-25	Main Creek at Flagg Creek
04-26	Garden City Canal at the "Old Boat Wreck"
04-27	Main Creek, Opposite Entrance to Mt. Gilead Canal
04-28	Oaks Creek, Approx. 150 Meters from the Huntington Beach State Park Causeway
04-29	Oyster Cove, South Branch
04-30	Oyster Cove, North Branch
04-31	Woodland Creek, 100 meters east of mainland
04-32	Oaks Creek at Brigham Hole

Station locations from the Shellfish Annual Report for Sections 1-4 can be found at http://www.scdhec.gov/FoodSafety/ShellfishMonitoring/Map and http://www.scdhec.gov/foodsafety/docs/SFMA_05.pdf Information from the Shellfish Annual Report for Sections 1-4 can be found at http://www.scdhec.gov/FoodSafety/ShellfishMonitoring/MonitoringStationReports.

NPDES Program

Active NPDES Facilities

RECEIVING STREAM ***FACILITY NAME***	***NPDES#*** ***TYPE***
ATLANTIC INTRACOASTAL WATERWAY GSW&SA/VEREEN WWTP	SC0041696 MAJOR DOMESTIC
CAROLINA BAYS GSW&SA/VEREEN WWTP	SC0041696 MAJOR DOMESTIC
ATLANTIC INTRACOASTAL WATERWAY CITY OF N. MYRTLE BEACH/OCEAN DRIVE	SC0022152 MAJOR DOMESTIC
ATLANTIC INTRACOASTAL WATERWAY CITY OF NORTH MYRTLE BEACH/CRESCENT BEACH	SC0022161 MAJOR DOMESTIC
ATLANTIC INTRACOASTAL WATERWAY GSW&SA/MYRTLE BEACH SUEFACE WTP	SCG646011 MINOR DOMESTIC
ATLANTIC INTRACOASTAL WATERWAY MYRTLE BEACH FARMS CO., INC./BENTON MINE	SCG730075 MINOR INDUSTRIAL
AIWW TRIBUTARY PALMETTO LAND PARTNERS LLC/BAREFOOT PIT	SCG730351 MINOR INDUSTRIAL

ATLANTIC INTRACOASTAL WATERWAY P MINING CO./P-MINING PIT #1	SCG730081 MINOR INDUSTRIAL
ATLANTIC INTRACOASTAL WATERWAY P MINING CO./P-MINING PIT #2	SCG730272 MINOR INDUSTRIAL
ATLANTIC INTRACOASTAL WATERWAY VEREEN CONCRETE/SAND RIDGE MINE	SCG730576 MINOR INDUSTRIAL
WITHERS SWASH AUX CORP./MYRTLE BEACH PLANT	SC0047953 MINOR INDUSTRIAL
AIWW TRIBUTARY HINSON FAMILY LTD/APACHE TRACT II MINE	SCG731089 MINOR INDUSTRIAL
AIWW TRIBUTARY SOUTHERN ASPHALT INC./APACHE MINE	SCG731264 MINOR INDUSTRIAL

Municipal Separate Storm Sewer Systems (MS4)

RECEIVING STREAM ***MUNICIPALITY*** ***RESPONSIBLE PARTY*** ***IMPLEMENTING PARTY***	***NPDES#*** ***MS4 PHASE*** ***MS4 SIZE***
AIWW UNINCORPORATED AREAS GEORGETOWN COUNTY GEORGETOWN COUNTY	SCR034301 PHASE II SMALL MS4
AIWW CITY OF ATLANTIC BEACH CITY OF ATLANTIC BEACH HORRY COUNTY	SCR035101 PHASE II SMALL MS4
AIWW CITY OF BRIARCLIFFE ACRES CITY OF BRIARCLIFFE ACRES HORRY COUNTY	SCR035102 PHASE II SMALL MS4
AIWW CITY OF MYRTLE BEACH CITY OF MYRTLE BEACH CITY OF MYRTLE BEACH	SCR035105 PHASE II SMALL MS4
AIWW CITY OF NORTH MYRTLE BEACH CITY OF NORTH MYRTLE BEACH CITY OF NORTH MYRTLE BEACH	SCR035106 PHASE II SMALL MS4
AIWW CITY OF SURFSIDE BEACH CITY OF SURFSIDE BEACH CITY OF SURFSIDE BEACH	SCR035107 PHASE II SMALL MS4

AIWW	SCR035104
HORRY COUNTY	PHASE II
HORRY COUNTY	SMALL MS4
HORRY COUNTY	

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

LANDFILL NAME	***PERMIT #***
FACILITY TYPE	***STATUS***
CITY OF MYRTLE BEACH DUMP	-----------
MUNICIPAL	CLOSED
CITY OF MYRTLE BEACH	-----------
INDUSTRIAL	CLOSED
CITY OF MYRTLE BEACH TRANSFER STA.	261003-6001
MUNICIPAL	ACTIVE
CITY OF N. MYRTLE BEACH TRANSFER STA.	261004-6001
MUNICIPAL	ACTIVE
VENTURE MANUFACTURING	342433-5201
INDUSTRIAL	ACTIVE
P MINING COMPOSTING	262650-3001
COMPOSTING	ACTIVE
VEREEN COMPOSTING SITE	262484-3001
COMPOSTING	INACTIVE
DIRTY WORK INC.	222671-3001
COMPOSTING	INACTIVE

Mining Activities

MINING COMPANY	***PERMIT #***
MINE NAME	***MINERAL***
P MINING CO.	0776-51
P MINING PIT #1	LIMESTONE
P MINING CO.	1157-51
P MINING PIT #2	LIMESTONE
VEREEN CONCRETE CO., INC.	0928-51
SAND RIDGE MINE	SAND
PALMETTO LAND PARTNERS LLC	1407-51
BAREFOOT PIT	LIMESTONE/COQUINA SAND
MYRTLE BEACH FARMS CO., INC.	0362-51
79TH AVE. NORTH BORROW PIT	SAND/CLAY
SOUTHERN ASPHALT INC.	1993-51
APACHE MINE	SAND

HINSON FAMILY LTD PARTNERSHIP	1926-51
APACHE TRACT II MINE	SAND/TOP SOIL

Water Quantity

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

WATER USER *STREAM*	*REGULATED CAPACITY (MGD)* *PUMPING CAPACITY (MGD)*
CITY OF MYRTLE BEACH AIWW	42.1 52.8

Growth Potential

There is a high potential for residential/resort and commercial growth in this watershed, which contains the Cities of North Myrtle and Myrtle Beach as well as the Towns of Atlantic Beach, and Surfside Beach. This "Grand Strand" area is expected to experience a significant increase in population as the popular tourist destination lures year-round residents. Water infrastructure is located throughout the watershed, and sewerage is available in the northern tip as well as in many of the residential/resort developments on the Waccamaw Neck. All developed areas on the Waccamaw Neck will have sewer services in the near future. The former Myrtle Beach Air Force Base has undergone significant redevelopment as a mixed use district known as the Market Common. It is likely that it will become a central hub of growth in the region. The City of North Myrtle Beach has an interconnection with Grand Strand Water and Sewer Authority/Wetlands projects to handle additional wastewater flows in the North Myrtle Beach area, which should encourage additional growth. The Robert Edge Parkway, which crosses the AIWW and joins into Main Street in North Myrtle Beach, will relieve some of the congestion on U.S. Hwy 501. The proposed Preferred Alternative route of I-73 (Southern Corridor) would cross this watershed and could bring some growth to the area, especially around interchanges.

Watershed Protection and Restoration

Total Maximum Daily Loads (TMDLs)

A total maximum daily load (TMDL) for oxygen demanding substances has been developed for the main stem of the ***Waccamaw River*** and the ***Atlantic Intracoastal Waterway (AIWW)*** in watersheds 02040206-09, 03040206-10, and 03040208-030. The TMDL addresses 12 separate monitoring stations on the State’s 1998 303(d) list of impaired waters. The TMDL, based on a maximum 0.1 mg/l deficit allowed in waters that do not meet applicable dissolved oxygen standards due to natural conditions, will result in a decrease of approximately 63% in the permitted oxygen demanding load discharged to the system. The decreased loadings are being implemented through the NPDES permitting system with new, more restrictive limits becoming final at the conclusion of appropriate compliance schedules.

TMDLs were developed for SCDHEC and approved by the USEPA for eight water quality monitoring sites in the Murrell’s Inlet system for fecal coliform impairments. Relationships between in-stream fecal coliform levels and precipitation, and the lack of major point sources of fecal coliform pollution within the watershed, indicate that storm water runoff from nonpoint sources are the primary contributors to fecal coliform contamination in the impaired waterbodies. Studies conducted by Kelsey et al. (2003) indicate that this fecal coliform contamination is derived primarily from animal, not human, sources. Reduction in loading of fecal coliform bacteria will be required in ***Main Creek*** (Shellfish monitoring sites: 04-01, 04-01A, 04-27 and 04-02) of 80.4% or 76.5%; ***Parsonage Creek/Allston Creek*** (shellfish monitoring sites: 04-08, 04-16, and 04-06) of 81.4%; and ***Garden City Canal*** (shellfish monitoring site: 04-26) of 71.4% for these water bodies to meet the shellfish harvesting standard.

Special Projects

Beach Monitoring Workgroup Results

The Department ceased collection of water samples in the surf zone in 1980 due to resource limitations. There were no ocean discharges of treated wastewater and other sources of ocean pollution were limited. Prior to 1980, data did not show violations of the water quality standards in the surf zone related to stormwater discharge. A Beach Monitoring workgroup, consisting of Department personnel and coastal municipal and county leaders, was initiated in response to concerns of stormwater inputs in South Carolina's surf zone. The consensus of the workgroup was that a voluntary baseline surf water quality project should be conducted to evaluate whether South Carolina needs to implement an ocean beach bacteria sampling program. The results of the study indicated that stormwater inflows via swashes and drain pipes are responsible for the observed high levels of bacteria in surf during wet weather. Recommendations from the workgroup include: ***Do not swim or allow children to play in swashes or stormwater***; ***in areas with swashes or stormwater outfalls, do not swim in the ocean during rainfall; educate and advise the public about the health risks of swimming; maintain a State/local partnership to regularly monitor surf in areas with beach stormwater discharges during swimming season***; ***reduce bacteria inputs to surface waters from residences and parks***; ***and prevent and control sources of pathogens to beaches from stormwater discharges and nonpoint sources***.

The findings of the workgroup support the posting of permanent signs at specific beach swashes and storm drain outfalls. A voluntary surf water quality monitoring program, with SCDHEC oversight, supported by local coastal municipalities and counties continues.

Development Implementation of a S.C. Coast-A-Syst

The S.C. Coast-A-Syst project targets homeowners living along the Atlantic Intracoastal Waterway (AIWW) and Socastee Creek (watershed 03040206-09) and the AIWW and Little River (watershed 03040208-03). Like much of the coast, these areas are experiencing rapid development and increased populations, while also harboring fragile water resources for recreation and marine ecology. High fecal coliform bacteria counts, water quality non-supportive of aquatic life because of low dissolved oxygen, and pH excursions exist in local waterbodies.

S.C. Sea Grant Consortium and Clemson University developed a program called South Carolina Coast-A-Syst. This product, modeled after the Home*A*Syst and Farm-A-Syst programs, is used to teach watershed residents and waterbody users responsible practices for protecting water quality, with the ultimate goal to reduce bacteria and nutrient input into nearby waterbodies from urban/suburban activities and land development. Research was conducted through surveys to determine what BMPs were appropriate for coastal South Carolina, where education about nonpoint source was lacking, and how best to reach homeowners in providing continued education. Education of coastal residents included identification of practices, which detrimentally affect water quality, reasons why those practices do so, and instructions in better water quality management practices.

Sea Grant Extension and Clemson Extension published a S.C. Coast-A-Syst packet, which includes self-assessments and fact sheets on homeowner practices. Sea Grant Extension trained Extension agents, Master Gardeners, and homeowner associations to administer this homestead self-assessment program distribute the program and materials through homeowner associations and other public groups, provide support for the program through the Horry County Extension Service, and provide electronic distribution of the program via the world wide web.

Determining the Role of Estuarine Swashes on Water Quality Impairments along the Grand Strand of South Carolina

The NOAA-NERRS (National Oceanic Atmospheric Administration-National Estuarine Research Reserve) Science Collaborative began in September 2010 seeking to address how land use attributes and stormwater management practices and conveyance within swash watersheds affect nutrient and organic matter loading to swashes, their internal transformations, and subsequent export to the coastal ocean. The ultimate goal of the project is to make landuse and stormwater management decisions that improve and protect coastal water quality, particularly with respect to hypoxia along the Grand Strand. Investigators worked with intended end users of the study to develop a categorization scheme for all 14 swashes within the study area. Two swashes, Dogwood and Wiithers, were selected for intensive investigation that included sampling three upstream sites and a down stream location at the mouth of each swash over a period of two years. The final report for this study is under development. Additional information is available at: http://www.northinlet.sc.edu/training/media/2012/11152012WithersTour/Swash_Two_Pager_v2.pdf.

Hypoxia in the Nearshore Coastal Waters of South Carolina along the Grand Strand

In the summer of 2004, a hypoxic event in the nearshore area of Long Bay led to the formation of a workgroup of researchers and resource managers called Long Bay Working Group. A multi-disciplinary approach has been established to gain additional insight into future hypoxic conditions by continuing nearshore water quality monitoring (salinity, temperature, dissolved oxygen) and expanding this monitoring to include 222Rn (a tracer of groundwater inputs) and chlorophyll, CDOM, and turbidity; examining the biological response (productivity) during times of enhanced nutrient input and low dissolved oxygen levels; and analyzing prior and newly collected data to better understand the interconnection between offshore and onshore driving forces. A preliminary assessment of the impact of low oxygen on the marine life of Long Bay is being conducted by monitoring larval recruitment onto ceramic plates suspended from the piers. The study is ongoing with more information available at: http://www.coastal.edu/eql/projects/hypoxia.html.

Murrells Inlet Watershed Based Plan

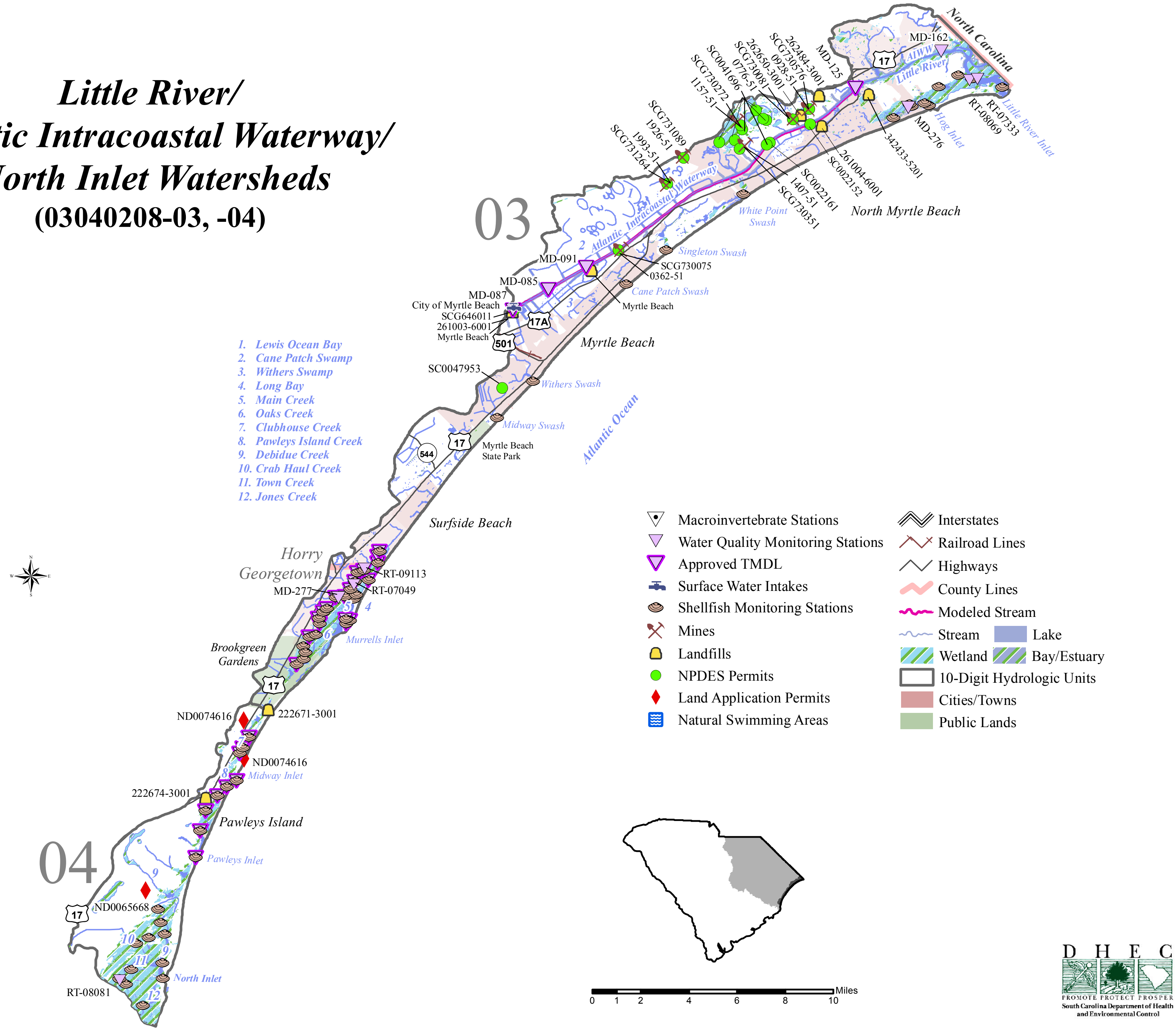
In 2012, the Waccamaw Regional Council of Governments, with the Horry and Georgetown County Stormwater Departments, Murrells Inlet 2020 and Coastal Carolina University as cooperating partners, were awarded a 319 Grant to develop a comprehensive Watershed Based Plan for Murrells Inlet Estuary. A diverse group of stakeholders were involved in producing the plan, which focuses on reducing fecal coliform loads and reserving the shellfish use of the Estuary. The plan is available for review at http://www.wrcog.org/wp-content/uploads/2014/06/Murrells-Inlet-Watershed-Plan-Part-A.pdf.

Murrells Inlet Watershed Plan BMP Implementation Projects

In 2014, the Waccamaw Regional Council of Governments, with the Horry and Georgetown County Stormwater Departments and Murrells Inlet 2020 as cooperating partners, were awarded a 319 Grant to implement water quality improvement projects identified in the Watershed Based Plan. Proposed structural BMPs include floating treatment wetlands, bacterial medial filter strips, an infiltration bioswale and a constructed wetland. Installation of these BMPs is scheduled to begin in late 2015.

Little River/ Atlantic Intracoastal Waterway/ North Inlet Watersheds

(03040208-03, -04)



03040208-04

(North Inlet)

General Description

Watershed 03040208-04 is a *coastal frontage basin* located in Georgetown County and consists primarily of ***Midway Inlet***, ***Pawleys Inlet*** and ***North Inlet***, and their tributaries draining to the ***Atlantic Ocean***. The watershed occupies 21,054 acres of the Coastal Zone region of South Carolina. Land use/land cover in the watershed includes: 31.1% nonforested wetland, 29.6% forested wetland, 16.6% forested land, 13.2% urban land, 6.4% water, 2.6% barren land, and 0.5% agricultural land.

Clubhouse Creek and Pawleys Island Creek (SFH) merge to flow out of Midway Inlet near Pawleys Island. Pawleys Island Creek also drains to the ocean through Pawleys Inlet (SFH) at the other end of Pawleys Island. Debidue Creek (SFH, ORW) accepts drainage from Bass Hole Bay, Bass Hole Creek, and Cooks Creek before merging with Town Creek to form and drain out of North Inlet. Old Man Creek accepts drainage from Crab Haul Creek, Bass Hole Bay, Cooks Creek, Sea Creek Bay, and Bly Creek before draining to Town Creek, all classified ORW (SFH). Other streams draining to Town Creek include Clambake Creek ORW (SFH), Bread and Butter Creek ORW (SFH), Sixty Bass Creek (SFH, ORW), which also drains to North Inlet, and Mud Creek (SFH). Jones Creek, in this watershed, accepts drainage from Duck Creek, Wood Creek (Double Prong Creek, Little Wood Creek), Perry Creek, and Bobs Garden Creek, all classified ORW (SFH), before draining to the ocean through North Inlet. There are a total of 6.6 acres of lake waters and 1,155.2 acres of estuarine areas in this watershed.

Surface Water Quality

Station #	Type	Class	Description
RT-08081	RT08	SFH	CLAMBANK CREEK TRIB

Clambank Creek Tributary (RT-08081) – Aquatic life and recreational uses are fully supported. Although there were dissolved oxygen excursions, these were typical of values seen in tidally influenced systems with limited flushing and significant marsh drainage. As such they were considered to be natural in origin, and are not considered to be standards violations.

A fish consumption advisory has been issued by the Department for mercury and includes **estuarine waters** and ***marine waters (Atlantic Ocean)*** *within this watershed (see advisory p.246).*

Shellfish Monitoring Stations

Station #	Description
04-09	CLUBHOUSE CREEK AT LITCHFIELD BOULEVARD BRIDGE
04-10	SHELL AVENUE AND PAWLEYS ISLAND CREEK
04-11	NORTH CAUSEWAY BRIDGE AT PAWLEYS ISLAND CREEK
04-12	SOUTH CAUSEWAY BRIDGE AT PAWLEYS ISLAND CREEK
04-13	PAWLEYS INLET
04-14	DOCK - END OF SPORTSMAN BOULEVARD
04-15	MIDWAY INLET

04-19	CLUBHOUSE CREEK - FIRST BEND SOUTH OF SALT MARSH COVE
04-21	SOUTH PAWLEYS ISLAND BOAT LANDING
05-03	NORTH INLET
05-04	TOWN CREEK AT DEBIDUE CREEK
05-08	TOWN CREEK AT SIXTY BASS CREEK
05-09	TOWN CREEK AT SOUTHERN REACH OF CLAMBANK CREEK
05-10	JONES CREEK AT DUCK CREEK
05-11	TOWN CREEK AT BREAD AND BUTTER CREEK
05-12	OLD MAN CREEK AND SEA CREEK BAY
05-13	DEBIDUE CREEK AT BOAT BASIN
05-14	MID CHANNEL ISLAND, BLY CREEK
05-15	DEBIDUE CREEK AND COOKS CREEK
05-16	DEBIDUE CREEK AND BASS HOLE BAY

Station locations from the Shellfish Annual Report for Sections 4 and 5 can be found at http://www.scdhec.gov/FoodSafety/ShellfishMonitoring/Map and http://www.scdhec.gov/foodsafety/docs/SFMA_05 . Information from the Shellfish Annual Report for Sections 4 and 5 can be found at http://www.scdhec.gov/FoodSafety/ShellfishMonitoring/MonitoringStationReports.

Nonpoint Source Management Program

Land Disposal Activities

Land Application Sites

LAND APPLICATION SYSTEM ***FACILITY NAME***	***ND#*** ***TYPE***
SPRAYFIELD- 001, 002 INLET POINT SOUTH, PHASE 3	ND0074616 DOMESTIC
SPRAYFIELD GCW&SA/DEBORDIEU COLONY	ND0065668 DOMESTIC

Landfill Facilities

LANDFILL NAME ***FACILITY TYPE***	***PERMIT #*** ***STATUS***
CHOPPEE ROAD COMPOSTING SITE COMPOSTING	222674-3001 INACTIVE

Water Quantity

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

Growth Potential

There is an overall low potential for growth in this watershed, which contains the Town of Pawleys Island. The northern most area is expected to experience a high population increase and the remaining area is only expected to experience a low increase due to lands protected from development by land trusts. Water and sewer infrastructure is located in the Georgetown area and in several large developments on the Waccamaw Neck. The watershed is largely rural with residential uses, timberlands, and large tracts of protected land.

Watershed Protection and Restoration

Total Maximum Daily Loads (TMDLs)

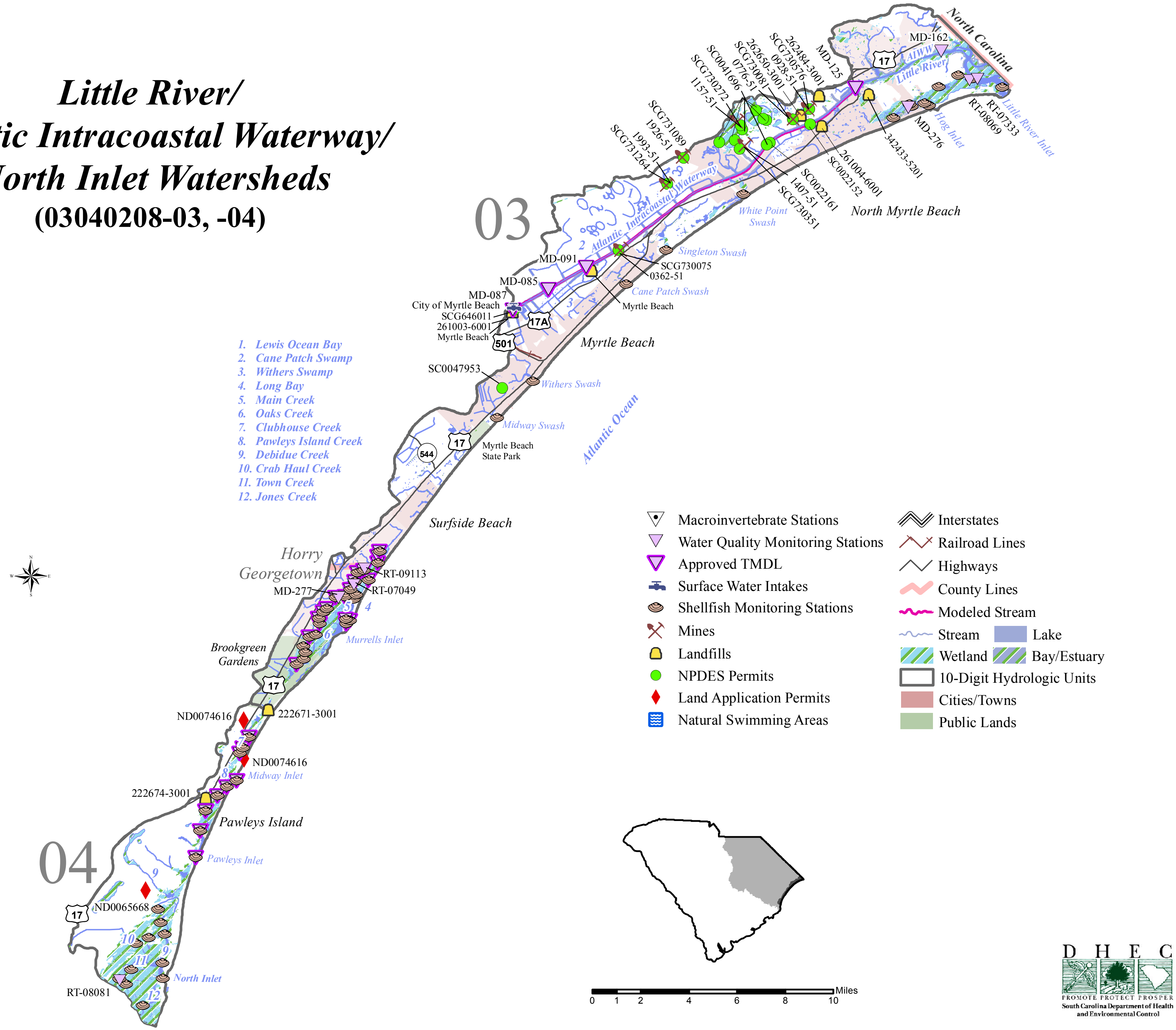
Fecal coliform TMDLS were developed for SCDHEC and approved by the USEPA for eight water quality monitoring stations within the Litchfield-Pawleys Island Estuary. Based on the land use distribution within the watershed, potential nonpoint sources of fecal coliform contamination include urban and suburban storm water runoff, agricultural runoff, individual sewage treatment and disposal (ISTD) systems, wild and domestic animal populations, and boat traffic. The TMDLs require reduction in loading of fecal coliform bacteria to ***Clubhouse Creek*** (shellfish monitoring sites: 04-09, 04-14, 04-15 and 04-19) of 95.2 %; ***Pawleys Island Creek*** (shellfish monitoring sites: 04-10, 04-11 and 04-12) of 94.2 %; and ***South Pawleys Island Creek*** (shellfish monitoring sites: 04-13 and 04-21) of 70% for these water bodies to meet the shellfish harvesting standard.

Special Projects

Murrells Inlet/DeBordieu Colony Demonstration Project

In 2009, Georgetown County was awarded a 319 Grant for a demonstration project within the DeBordieu Colony. The objective of the project was to demonstrate the reductions of fecal coliform in existing wet ponds by best management practice (BMP) retrofits, such as installation of littoral shelves and bio retention filters. Two existing golf course ponds were altered to take advantage of a variety of mechanisms that are destructive to microbial contaminants. Pre and post construction monitoring was conducted to provide data needed for load reduction estimates. The project provided the County with the ability to assess the potential for water quality improvement by the technologies demonstrated in the study. This date continues to be used to refine water quality modeling to further define the performance standards of constructed systems. An outreach component of the project provided workshops to encourage the use of the demonstrated BMPs to reduce fecal coliform loads on wet ponds throughout Georgetown County.

Little River/ Atlantic Intracoastal Waterway/ North Inlet Watersheds
(03040208-03, -04)



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APPENDIX A.

Lynches River Basin

Ambient Water Quality Monitoring Site Descriptions

Station #	Type	Class	Description
03040202-01			
PD-333	W	FW	HILLS CREEK AT S-13-105
PD-366	INT	FW	HILLS CREEK AT S-13-545
PD-113	INT	FW	LYNCHES RIVER AT SC 9 WEST OF PAGELAND
RS-06185	RS06	FW	UNNAMED TRIB TO NORTH BRANCH WILDCAT CREEK
PD-679	BIO	FW	NORTH BRANCH WILDCAT CREEKAT SR 178
PD-179	W	FW	NORTH BRANCH WILDCAT CREEK AT S-29-39 1 MI S OF TRADESVILLE
PD-180	W	FW	SOUTH BRANCH AT S-29-39 2 MI S OF TRADESVILLE
RS-08233	RS08/BIO	FW	FLAT CREEK AT S-29-99
PD-342	INT	FW	FLAT CREEK AT S-29-123
(PD-001)	W/INT/BIO	FW	LYNCHES RIVER AT SC 265
03040202-02			
PD-640	BIO	FW	LITTLE LYNCHES RIVER AT S-29-88
PD-335	W	FW	HORTON CREEK AT S-29-95
PD-005	W	FW	TODDS BRANCH AT S-29-564 1.5 MI NE OF KERSHAW
PD-006	W	FW	LITTLE LYNCHES RIVER AT US 601 2 MI E KERSHAW
PD-632	BIO	FW	LITTLE LYNCHES RIVER AT SC 157
PD-109	W	FW	LITTLE LYNCHES RIVER AT SC 341, 4 MI SE OF KERSHAW
PD-329	W	FW	LICK CREEK AT S-29-13 ABOVE KERSHAW PLANT
PD-328	W	FW	HANGING ROCK CREEK OFF S-29-84 1.6 MI S OF KERSHAW
PD-669	BIO	FW	HANGING ROCK CREEK AT SR 770
PD-704	BIO	FW	COW BRANCH AT SPEARS ROAD
PD-343	INT	FW	LITTLE LYNCHES RIVER AT S-28-42
PD-678	BIO	FW	BEAVERDAM CREEK AT SR 59
PD-344/RS-07193	INT	FW	LITTLE LYNCHES RIVER AT SC 341, 3.5 MI SE OF BETHUNE
03040202-03			
PD-001	INT/BIO	FW	LYNCHES RIVER AT SC 265
PD-067	W	FW	FORK CREEK AT SC 151
RS-10361	RS10	FW	LITTLE FORK CREEK AT S-13-151
PD-647	BIO	FW	LITTLE FORK CREEK AT COUNTY RD 39
PD-215	INT	FW	LITTLE FORK CREEK AT S-13-265 1.5 MI SW JEFFERSON
PD-068	INT	FW	FORK CREEK AT UNNUMBERED ROAD 1.5 MI SW JEFFERSON
PD-066	INT	FW	LYNCHES RIVER AT S-28-42
RS-06169	RS06	FW	LITTLE ROCKY CREEK AT CULVERT ON S-13-360, 5 MI SE OF JEFFERSON
PD-009	INT	FW	LYNCHES RIVER AT US 1
(PD-080)	W	FW	LYNCHES RIVER AT S-28-15 4.5 MI SE BETHUNE
03040202-04			
RS-08067	RS08	FW	LONG BRANCH AT S-31-39
PD-229	W	FW*	NEWMAN SWAMP AT S-16-449 0.9 MI NE OF LAMAR
PD-072	W	FW*	SPARROW SWAMP AT S-16-697 2.5 MI E OF LAMAR
PD-345	INT	FW*	LAKE SWAMP AT S-21-38
PD-332	INT	FW*	SPARROW SWAMP AT S-21-55 NEAR JOHNSONS CROSSROADS
03040202-05			
PD-080	W	FW	LYNCHES RIVER AT S-28-15 4.5 MI SE BETHUNE
PD-071	W	FW	LYNCHES RIVER AT US 15/SC 34
PD-112	W	FW	COUSAR BRANCH 1/4 MI BELOW BISHOPVILLE FINISHING CO.
PD-364	SPRP/BIO	FW	LYNCHES RIVER AT US 401
PD-319	W	FW	LYNCHES RIVER AT SC 403
PD-093	INT	FW	LYNCHES RIVER AT S-21-55

Station #	Type	Class	Description
03040202-06			
PD-346	INT	FW	CAMP BRANCH AT S-21-278
PD-085	W	FW*	LAKE SWAMP AT US 378
PD-086A	INT	FW*	LAKE SWAMP ON SC 341
RS-10397	RS10	FW	LONG BRANCH AT CULVERT AT MOULDS RD
PD-314	INT	FW	SINGLETON SWAMP AT S-21-67
PD-087	INT	FW*	LAKE SWAMP AT SC 341 2.6 MI W OF JOHNSONVILLE
03040202-07			
PD-041	W	FW	LYNCHES RIVER AT US 52 NEAR EFFINGHAM
PD-281	INT	FW	LYNCHES RIVER AT S-21-49 5 MI NW OF JOHNSONVILLE
PD-168	W	FW*	BIG SWAMP AT S-21-360 1.1 MI W OF PAMPLICO
PD-169	INT	FW*	BIG SWAMP AT US 378 & SC 51 0.9 MI W OF SALEM

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
PD or W = Special watershed station added for the Pee Dee 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 2006 and December 2010.
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 2006 and December 20010. DL indicates that the median was the detection limit.

Key to Trends:

D Statistically significant decreasing trend in parameter concentration
I Statistically significant increasing trend in parameter concentration
***** No statistically significant trend

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	DO N	DO EXC.	DO %	MEAN EXC.	TRENDS (99-2012) DO	TRENDS (99-2012) BOD	N	pH EXC.	pH %	MEAN EXC. LT	MEAN EXC. GT	TRENDS (99-2012) PH
03040202-01															
PD-333	PD	HILLS CK	FW	9	0	0	0	NS		9	0	0	0	0	NS
PD-366	INT	HILLS CK	FW	28	1	3.571	4.67	I	NS	28	1	3.571	5.82	0	NS
PD-113	INT	LYNCHES RVR	FW	21	0	0	0	NS	NS	21	0	0	0	0	NS
RS-06185	RS06	UNNAMED TRIB TO N BRANCH WILDCAT CK	FW	6	1	16.667	2.28			6	1	16.667	3.61	0	
PD-179	PD	N BRANCH WILDCAT CK	FW	7	0	0	0	NS		7	0	0	0	0	NS
PD-180/ RS-01058	PD	S BRANCH WILDCAT CK	FW	11	0	0	0	NS	NS	11	0	0	0	0	D
RS-08233	RS08	FLAT CK	FW	11	1	9.091	3.82			11	0	0	0	0	
PD-342	INT	FLAT CK	FW	36	0	0	0	NS	NS	36	1	2.778	5.97	0	NS
03040202-02															
PD-335	PD	HORTON CK	FW	10	0	0	0	NS		9	0	0	0	0	NS
PD-005	PD	TODDS BRANCH	FW	7	0	0	0			7	1	14.286	5.62	0	
PD-006	PD	LITTLE LYNCHES RVR	FW	10	0	0	0	NS		10	0	0	0	0	D
PD-109	PD	LITTLE LYNCHES RVR	FW	9	0	0	0	I		9	2	22.222	5.84	0	D
PD-329	PD	LICK CK	FW	10	0	0	0	NS		10	0	0	0	0	NS
PD-328	PD	HANGING ROCK CK	FW	12	0	0	0	NS		12	0	0	0	0	NS
PD-343	INT	LITTLE LYNCHES RVR	FW	45	0	0	0	I	I	46	11	23.913	5.256	0	D
PD-344/ RS-07193/ RS-12108	INT	LITTLE LYNCHES RVR	FW	51	4	7.843	4.66	I	I	51	24	47.059	5.728	0	D
03040202-03															
PD-001	I*	LYNCHES RVR	FW	12	0	0	0	NS	NS	12	0	0	0	0	I
PD-067	PD	FORK CK	FW	6	0	0	0	NS		6	1	16.667	5.82	0	D
RS-10361	RS10	LITTLE FORK CK	FW	11	0	0	0			12	5	41.667	5.858	0	
PD-215	I*	LITTLE FORK CK	FW	12	0	0	0	NS	NS	12	0	0	0	0	NS
PD-068	INT	FORK CK	FW	30	0	0	0	NS	NS	30	3	10	5.897	0	D
PD-066	INT	LYNCHES RVR	FW	30	0	0	0	NS	I	30	1	3.333	5.93	0	D
RS-06169	RS06	LITTLE ROCKY CK	FW	9	1	11.111	4.75			9	9	100	4.639	0	
PD-009/ RS-14172	INT	LYNCHES RVR	FW	52	0	0	0	NS	I	52	5	9.615	5.6	0	D
03040202-04															
RS-08067	RS08	LONG BRANCH	FW	8	3	37.5	1.917			8	8	100	5.675	0	
PD-229	PD	NEWMAN SWAMP	FW-SP	11	3	27.273	2.427	I		11	0	0	0	0	I
PD-072	PD	SPARROW SWAMP	FW-SP	12	2	16.667	3.915	I		12	0	0	0	0	NS
PD-345	INT	LAKE SWAMP	FW-SP	29	3	10.345	3.377	NS	NS	29	0	0	0	0	I
PD-332/ RS-13155	INT	SPARROW SWAMP	FW-SP	35	4	11.429	3.735	D	NS	37	0	0	0	0	NS

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	TURB N	TURB EXC.	TURB %	TRENDS (99-2012) TURB	TP N	TP EXC.	TP %	MEAN EXC.	TRENDS (99-2012) TP
03040202-01												
PD-333	PD	HILLS CK	FW	8	0	0	NS					
PD-366	INT	HILLS CK	FW	27	2	7.407	I					I
PD-113	INT	LYNCHES RVR	FW	21	1	4.762	NS					I
RS-06185	RS06	UNNAMED TRIB TO N BRANCH WILDCAT CK	FW	6	0	0						
PD-179	PD	N BRANCH WILDCAT CK	FW	7	0	0	NS					
PD-180/ RS-01058	PD	S BRANCH WILDCAT CK	FW	11	1	9.091	NS					NS
RS-08233	RS08	FLAT CK	FW	11	1	9.091						
PD-342	INT	FLAT CK	FW	36	1	2.778	NS					I
03040202-02												
PD-335	PD	HORTON CK	FW	9	0	0	NS					
PD-005	PD	TODDS BRANCH	FW	6	0	0						
PD-006	PD	LITTLE LYNCHES RVR	FW	9	0	0	NS					
PD-109	PD	LITTLE LYNCHES RVR	FW	8	0	0	NS					
PD-329	PD	LICK CK	FW	9	0	0	NS					
PD-328	PD	HANGING ROCK CK	FW	11	0	0	NS					
PD-343	INT	LITTLE LYNCHES RVR	FW	46	2	4.348	I					I
PD-344/ RS-07193/ RS-12108	INT	LITTLE LYNCHES RVR	FW	51	2	3.922	I					I
03040202-03												
PD-001	I*	LYNCHES RVR	FW	12	0	0	NS					I
PD-067	PD	FORK CK	FW	6	0	0	NS					
RS-10361	RS10	LITTLE FORK CK	FW	12	0	0						
PD-215	I*	LITTLE FORK CK	FW	12	0	0	NS					NS
PD-068	INT	FORK CK	FW	30	0	0	NS					NS
PD-066	INT	LYNCHES RVR	FW	30	1	3.333	NS					I
RS-06169	RS06	LITTLE ROCKY CK	FW	9	1	11.111						
PD-009/ RS-14172	INT	LYNCHES RVR	FW	52	1	1.923	NS					I
03040202-04												
RS-08067	RS08	LONG BRANCH	FW	8	0	0						
PD-229	PD	NEWMAN SWAMP	FW-SP	11	0	0	NS					
PD-072	PD	SPARROW SWAMP	FW-SP	12	0	0	NS					
PD-345	INT	LAKE SWAMP	FW-SP	29	0	0	I					NS
PD-332/ RS-13155	INT	SPARROW SWAMP	FW-SP	37	0	0	D					NS

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	TN N	TN EXC.	TN %	MEAN EXC.	TRENDS (99-2012) TN	CHL N	CHL EXC.	CHL %	MEAN EXC.	TRENDS (99-2012) TSS
03040202-01													
PD-333	PD	HILLS CK	FW										
PD-366	INT	HILLS CK	FW					I					
PD-113	INT	LYNCHES RVR	FW					NS					
RS-06185	RS06	UNNAMED TRIB TO N BRANCH WILDCAT CK	FW										
PD-179	PD	N BRANCH WILDCAT CK	FW										
PD-180/ RS-01058	PD	S BRANCH WILDCAT CK	FW										
RS-08233	RS08	FLAT CK	FW										
PD-342	INT	FLAT CK	FW					NS					
03040202-02													
PD-335	PD	HORTON CK	FW										
PD-005	PD	TODDS BRANCH	FW										
PD-006	PD	LITTLE LYNCHES RVR	FW										
PD-109	PD	LITTLE LYNCHES RVR	FW										
PD-329	PD	LICK CK	FW										
PD-328	PD	HANGING ROCK CK	FW										
PD-343	INT	LITTLE LYNCHES RVR	FW					NS					
PD-344/ RS-07193/ RS-12108	INT	LITTLE LYNCHES RVR	FW					NS					
03040202-03													
PD-001	I*	LYNCHES RVR	FW					NS					
PD-067	PD	FORK CK	FW										
RS-10361	RS10	LITTLE FORK CK	FW										
PD-215	I*	LITTLE FORK CK	FW					NS					
PD-068	INT	FORK CK	FW					NS					
PD-066	INT	LYNCHES RVR	FW					NS					
RS-06169	RS06	LITTLE ROCKY CK	FW										
PD-009/ RS-14172	INT	LYNCHES RVR	FW					NS					
03040202-04													
RS-08067	RS08	LONG BRANCH	FW										
PD-229	PD	NEWMAN SWAMP	FW-SP										
PD-072	PD	SPARROW SWAMP	FW-SP										
PD-345	INT	LAKE SWAMP	FW-SP					NS					
PD-332/ RS-13155	INT	SPARROW SWAMP	FW-SP					NS					

STATION NUMBER	TYPE	WATERBODY NAME	CLASS		BACT N	BACT EXC.	BACT %	MEAN EXC.	TRENDS (99-2012) BACT		NH3 N	NH3 EXC.	NH3 %
03040202-01													
PD-333	PD	HILLS CK	FW		28	11	39.286	868.182	I		9	0	0
PD-366	INT	HILLS CK	FW		38	7	18.421	982.857	I		10	0	0
PD-113	INT	LYNCHES RVR	FW		21	3	14.286	2200	I				
RS-06185	RS06	UNNAMED TRIB TO N BRANCH WILDCAT CK	FW		7	2	28.571	1800					
PD-179	PD	N BRANCH WILDCAT CK	FW		7	1	14.286	1800	NS		7	0	0
PD-180/ RS-01058	PD	S BRANCH WILDCAT CK	FW		11	4	36.364	767.5	NS		11	0	0
RS-08233	RS08	FLAT CK	FW		11	2	18.182	1215			11	0	0
PD-342	INT	FLAT CK	FW		36	2	5.556	1320	D		12	0	0
03040202-02													
PD-335	PD	HORTON CK	FW		10	2	20	1180	I		10	0	0
PD-005	PD	TODDS BRANCH	FW		7	1	14.286	640			7	0	0
PD-006	PD	LITTLE LYNCHES RVR	FW		10	3	30	840	NS		10	0	0
PD-109	PD	LITTLE LYNCHES RVR	FW		9	0	0	0	NS		9	0	0
PD-329	PD	LICK CK	FW		9	3	33.333	713.333	NS		10	0	0
PD-328	PD	HANGING ROCK CK	FW		12	3	25	753.333	I		12	0	0
PD-343	INT	LITTLE LYNCHES RVR	FW		46	3	6.522	703.333	I		22	0	0
PD-344/ RS-07193/ RS-12108	INT	LITTLE LYNCHES RVR	FW		51	1	1.961	600	I		28	0	0
03040202-03													
PD-001	I*	LYNCHES RVR	FW		12	0	0	0	NS				
PD-067	PD	FORK CK	FW		25	5	20	564	NS		6	0	0
RS-10361	RS10	LITTLE FORK CK	FW		12	5	41.667	642			11	0	0
PD-215	I*	LITTLE FORK CK	FW		12	3	25	576.667	I				
PD-068	INT	FORK CK	FW		41	7	17.073	700	D		7	0	0
PD-066	INT	LYNCHES RVR	FW		30	4	13.333	1050	I		17	0	0
RS-06169	RS06	LITTLE ROCKY CK	FW		9	1	11.111	520					
PD-009/ RS-14172	INT	LYNCHES RVR	FW		52	5	9.615	928	I		27	0	0
03040202-04													
RS-08067	RS08	LONG BRANCH	FW		8	0	0	0			8	0	0
PD-229	PD	NEWMAN SWAMP	FW-SP		11	1	9.091	1300	NS		10	0	0
PD-072	PD	SPARROW SWAMP	FW-SP		24	7	29.167	958.571	I		11	0	0
PD-345	INT	LAKE SWAMP	FW-SP		29	5	17.241	1380	NS		10	0	0
PD-332/ RS-13155	INT	SPARROW SWAMP	FW-SP		37	4	10.811	1477.5	I		15	0	0

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	CD N	CD EXC.	CD %	MEAN EXC.	CR N	CR EXC.	CR %	MEAN EXC.	CU N	CU EXC.	CU %	MEAN EXC.
03040202-01															
PD-333	PD	HILLS CK	FW	3	0	0	0	3	0	0	0	3	0	0	0
PD-366	INT	HILLS CK	FW	3	0	0	0	3	0	0	0	3	1	33.333	15
PD-113	INT	LYNCHES RVR	FW												
RS-06185	RS06	UNNAMED TRIB TO N BRANCH WILDCAT CK	FW												
PD-179	PD	N BRANCH WILDCAT CK	FW	2	0	0	0	2	0	0	0	2	1	50	14
PD-180/ RS-01058	PD	S BRANCH WILDCAT CK	FW	4	1	25	14	4	0	0	0	4	0	0	0
RS-08233	RS08	FLAT CK	FW	3	0	0	0	3	0	0	0	3	0	0	0
PD-342	INT	FLAT CK	FW	4	0	0	0	4	0	0	0	4	0	0	0
03040202-02															
PD-335	PD	HORTON CK	FW	4	0	0	0	4	0	0	0	4	0	0	0
PD-005	PD	TODDS BRANCH	FW	3	0	0	0	3	0	0	0	3	1	33.333	11
PD-006	PD	LITTLE LYNCHES RVR	FW	4	0	0	0	4	0	0	0	4	1	25	11
PD-109	PD	LITTLE LYNCHES RVR	FW	3	0	0	0	3	0	0	0	3	0	0	0
PD-329	PD	LICK CK	FW	4	0	0	0	4	0	0	0	4	0	0	0
PD-328	PD	HANGING ROCK CK	FW	5	0	0	0	5	0	0	0	5	1	20	16
PD-343	INT	LITTLE LYNCHES RVR	FW	7	0	0	0	7	0	0	0	7	1	14.286	11
PD-344/ RS-07193/ RS-12108	INT	LITTLE LYNCHES RVR	FW	10	0	0	0	9	0	0	0	10	0	0	0
03040202-03															
PD-001	I*	LYNCHES RVR	FW												
PD-067	PD	FORK CK	FW												
RS-10361	RS10	LITTLE FORK CK	FW	8	0	0	0	8	0	0	0	8	0	0	0
PD-215	I*	LITTLE FORK CK	FW												
PD-068	INT	FORK CK	FW	3	0	0	0	3	0	0	0	3	0	0	0
PD-066	INT	LYNCHES RVR	FW	6	0	0	0	6	0	0	0	6	1	16.667	13
RS-06169	RS06	LITTLE ROCKY CK	FW												
PD-009/ RS-14172	INT	LYNCHES RVR	FW	10	0	0	0	9	0	0	0	10	0	0	0
03040202-04															
RS-08067	RS08	LONG BRANCH	FW	3	0	0	0	3	0	0	0	3	0	0	0
PD-229	PD	NEWMAN SWAMP	FW-SP	4	0	0	0	4	0	0	0	4	0	0	0
PD-072	PD	SPARROW SWAMP	FW-SP	4	0	0	0	4	0	0	0	4	0	0	0
PD-345	INT	LAKE SWAMP	FW-SP	4	0	0	0	4	0	0	0	4	0	0	0
PD-332/ RS-13155	INT	SPARROW SWAMP	FW-SP	8	0	0	0	8	0	0	0	8	0	0	0

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	HG N	HG EXC.	HG %	MEAN EXC.	NI N	NI EXC.	NI %	MEAN EXC.	ZN N	ZN EXC.	ZN %	MEAN EXC.
03040202-01															
PD-333	PD	HILLS CK	FW	3	0	0	0	3	0	0	0	3	0	0	0
PD-366	INT	HILLS CK	FW	3	0	0	0	3	0	0	0	3	0	0	0
PD-113	INT	LYNCHES RVR	FW												
RS-06185	RS06	UNNAMED TRIB TO N BRANCH WILDCAT CK	FW												
PD-179	PD	N BRANCH WILDCAT CK	FW	2	0	0	0	2	0	0	0	2	0	0	0
PD-180/ RS-01058	PD	S BRANCH WILDCAT CK	FW	4	0	0	0	4	0	0	0	4	0	0	0
RS-08233	RS08	FLAT CK	FW	3	0	0	0	3	0	0	0	3	0	0	0
PD-342	INT	FLAT CK	FW	4	0	0	0	4	0	0	0	4	0	0	0
03040202-02															
PD-335	PD	HORTON CK	FW	4	0	0	0	4	0	0	0	4	0	0	0
PD-005	PD	TODDS BRANCH	FW	3	0	0	0	3	0	0	0	3	0	0	0
PD-006	PD	LITTLE LYNCHES RVR	FW	4	0	0	0	4	0	0	0	4	0	0	0
PD-109	PD	LITTLE LYNCHES RVR	FW	3	0	0	0	3	0	0	0	3	0	0	0
PD-329	PD	LICK CK	FW	4	0	0	0	4	0	0	0	4	0	0	0
PD-328	PD	HANGING ROCK CK	FW	5	0	0	0	5	0	0	0	5	0	0	0
PD-343	INT	LITTLE LYNCHES RVR	FW	7	0	0	0	7	0	0	0	7	0	0	0
PD-344/ RS-07193/ RS-12108	INT	LITTLE LYNCHES RVR	FW	10	0	0	0	9	0	0	0	10	0	0	0
03040202-03															
PD-001	I*	LYNCHES RVR	FW												
PD-067	PD	FORK CK	FW												
RS-10361	RS10	LITTLE FORK CK	FW	8	0	0	0	8	0	0	0	8	0	0	0
PD-215	I*	LITTLE FORK CK	FW												
PD-068	INT	FORK CK	FW	3	0	0	0	3	0	0	0	3	0	0	0
PD-066	INT	LYNCHES RVR	FW	6	0	0	0	6	0	0	0	6	0	0	0
RS-06169	RS06	LITTLE ROCKY CK	FW												
PD-009/ RS-14172	INT	LYNCHES RVR	FW	10	0	0	0	9	0	0	0	10	0	0	0
03040202-04															
RS-08067	RS08	LONG BRANCH	FW	3	0	0	0	3	0	0	0	3	0	0	0
PD-229	PD	NEWMAN SWAMP	FW-SP	4	0	0	0	4	0	0	0	4	0	0	0
PD-072	PD	SPARROW SWAMP	FW-SP	4	0	0	0	4	0	0	0	4	0	0	0
PD-345	INT	LAKE SWAMP	FW-SP	4	0	0	0	4	0	0	0	4	0	0	0
PD-332/ RS-13155	INT	SPARROW SWAMP	FW-SP	8	0	0	0	8	0	0	0	8	0	0	0

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	DO N	DO EXC.	DO %	MEAN EXC.	TRENDS (99-2012) DO	TRENDS (99-2012) BOD	N	pH EXC.	pH %	MEAN EXC. LT	MEAN EXC. GT	TRENDS (99-2012) PH
03040202-05															
PD-080	PD	LYNCHES RVR	FW	12	0	0	0	NS		12	2	16.667	5.885	0	D
PD-071/ RS-09305	PD	LYNCHES RVR	FW	21	0	0	0	D	I	21	4	19.048	5.925	0	NS
PD-112	PD	COUSAR BRANCH	FW	7	3	42.857	2.173	D		7	6	85.714	5.53	0	D
PD-364/ RS-14204	SPRP	LYNCHES RVR	FW	46	5	10.87	4.402	D	I	46	5	10.87	5.724	0	NS
PD-319	PD	LYNCHES RVR	FW	12	0	0	0	NS	I	12	0	0	0	0	NS
PD-093	INT	LYNCHES RVR	FW	38	4	10.526	4.485	D	I	40	1	2.5	5.69	0	NS
03040202-06															
PD-346	INT	CAMP BRANCH	FW	25	13	52	2.802	NS	NS	26	2	7.692	5.94	0	NS
PD-085	PD	LAKE SWAMP	FW-SP	7	3	42.857	3.297			7	0	0	0	0	
PD-086A/ RS-02318	INT	LYNCHES LAKE SWAMP	FW-SP	24	14	58.333	2.363	NS	NS	25	0	0	0	0	NS
RS-10397	RS10	LONG BRANCH	FW	7	3	42.857	4.703			7	0	0	0	0	
PD-314	INT	SINGLETON SWAMP	FW	23	12	52.174	2.447	NS	NS	24	4	16.667	5.952	0	NS
PD-087	INT	LAKE SWAMP	FW-SP	31	14	45.161	2.84	D	NS	31	0	0	0	0	NS
03040202-07															
PD-041/ RS-13116	PD	LYNCHES RVR	FW	12	0	0	0	D	I	12	2	16.667	5.835	0	NS
PD-281	INT	LYNCHES RVR	FW	40	13	32.5	4.305	D	I	40	1	2.5	5.97	0	NS
PD-168	PD	BIG SWAMP	FW-SP	4	1	25	0.6			4	0	0	0	0	
PD-169	INT	BIG SWAMP	FW-SP	24	11	45.833	2.589	D	NS	24	0	0	0	0	NS

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	TURB N	TURB EXC.	TURB %	TRENDS (99-2012) TURB	TP N	TP EXC.	TP %	MEAN EXC.	TRENDS (99-2012) TP
03040202-05												
PD-080	PD	LYNCHES RVR	FW	12	1	8.333	NS					
PD-071/ RS-09305	PD	LYNCHES RVR	FW	21	0	0	NS					NS
PD-112	PD	COUSAR BRANCH	FW	7	1	14.286	I					
PD-364/ RS-14204	SPRP	LYNCHES RVR	FW	46	1	2.174	NS					I
PD-319	PD	LYNCHES RVR	FW	12	0	0	NS					
PD-093	INT	LYNCHES RVR	FW	40	0	0	NS					I
03040202-06												
PD-346	INT	CAMP BRANCH	FW	26	0	0	NS					D
PD-085	PD	LAKE SWAMP	FW-SP	7	0	0						
PD-086A/ RS-02318	INT	LYNCHES LAKE SWAMP	FW-SP	25	0	0	NS					D
RS-10397	RS10	LONG BRANCH	FW	7	1	14.286						
PD-314	INT	SINGLETON SWAMP	FW	24	0	0	NS					NS
PD-087	INT	LAKE SWAMP	FW-SP	31	0	0	NS					D
03040202-07												
PD-041/ RS-13116	PD	LYNCHES RVR	FW	12	0	0	NS					
PD-281	INT	LYNCHES RVR	FW	40	0	0	NS					I
PD-168	PD	BIG SWAMP	FW-SP	4	0	0						
PD-169	INT	BIG SWAMP	FW-SP	24	0	0	NS					NS

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	TN N	TN EXC.	TN %	MEAN EXC.	TRENDS (99-2012) TN	CHL N	CHL EXC.	CHL %	MEAN EXC.	TRENDS (99-2012) TSS
03040202-05													
PD-080	PD	LYNCHES RVR	FW										
PD-071/ RS-09305	PD	LYNCHES RVR	FW										
PD-112	PD	COUSAR BRANCH	FW										
PD-364/ RS-14204	SPRP	LYNCHES RVR	FW					NS					
PD-319	PD	LYNCHES RVR	FW										
PD-093	INT	LYNCHES RVR	FW					I					
03040202-06													
PD-346	INT	CAMP BRANCH	FW					NS					
PD-085	PD	LAKE SWAMP	FW-SP										
PD-086A/ RS-02318	INT	LYNCHES LAKE SWAMP	FW-SP					NS					
RS-10397	RS10	LONG BRANCH	FW										
PD-314	INT	SINGLETON SWAMP	FW					NS					
PD-087	INT	LAKE SWAMP	FW-SP					NS					
03040202-07													
PD-041/ RS-13116	PD	LYNCHES RVR	FW										
PD-281	INT	LYNCHES RVR	FW					NS					
PD-168	PD	BIG SWAMP	FW-SP										
PD-169	INT	BIG SWAMP	FW-SP					NS					

STATION				BACT	BACT	BACT	MEAN	TRENDS (99-2012)	NH3	NH3	NH3
NUMBER	TYPE	WATERBODY NAME	CLASS	N	EXC.	%	EXC.	BACT	N	EXC.	%
03040202-05											
PD-080	PD	LYNCHES RVR	FW	12	1	8.333	410	NS	12	0	0
PD-071/ RS-09305	PD	LYNCHES RVR	FW	21	0	0	0	I	20	0	0
PD-112	PD	COUSAR BRANCH	FW	7	2	28.571	2205		7	0	0
PD-364/ RS-14204	SPRP	LYNCHES RVR	FW	45	5	11.111	640	I	21	0	0
PD-319	PD	LYNCHES RVR	FW	12	1	8.333	450	NS	12	0	0
PD-093	INT	LYNCHES RVR	FW	40	3	7.5	1706.667	I	15	0	0
03040202-06											
PD-346	INT	CAMP BRANCH	FW	77	12	15.584	1080	I	9	0	0
PD-085	PD	LAKE SWAMP	FW-SP	7	1	14.286	500		7	0	0
PD-086A/ RS-02318	INT	LYNCHES LAKE SWAMP	FW-SP	25	4	16	1770	I	7	0	0
RS-10397	RS10	LONG BRANCH	FW	7	4	57.143	660		7	0	0
PD-314	INT	SINGLETON SWAMP	FW	24	1	4.167	1800	NS	7	0	0
PD-087	INT	LAKE SWAMP	FW-SP	32	1	3.125	1700	NS	13	0	0
03040202-07											
PD-041/ RS-13116	PD	LYNCHES RVR	FW	12	2	16.667	565	I	12	0	0
PD-281	INT	LYNCHES RVR	FW	40	2	5	1365	I	16	0	0
PD-168	PD	BIG SWAMP	FW-SP	4	0	0	0		4	0	0
PD-169	INT	BIG SWAMP	FW-SP	26	5	19.231	1150	NS	7	0	0

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	CD N	CD EXC.	CD %	MEAN EXC.	CR N	CR EXC.	CR %	MEAN EXC.	CU N	CU EXC.	CU %	MEAN EXC.
03040202-05															
PD-080	PD	LYNCHES RVR	FW	4	0	0	0	4	0	0	0	4	0	0	0
PD-071/ RS-09305	PD	LYNCHES RVR	FW	8	0	0	0	8	0	0	0	8	0	0	0
PD-112	PD	COUSAR BRANCH	FW	3	1	33.333	27	3	0	0	0	3	0	0	0
PD-364/ RS-14204	SPRP	LYNCHES RVR	FW	8	0	0	0	8	0	0	0	8	0	0	0
PD-319	PD	LYNCHES RVR	FW	4	0	0	0	4	0	0	0	4	0	0	0
PD-093	INT	LYNCHES RVR	FW	8	0	0	0	8	0	0	0	8	0	0	0
03040202-06															
PD-346	INT	CAMP BRANCH	FW	4	0	0	0	4	0	0	0	4	1	25	19
PD-085	PD	LAKE SWAMP	FW-SP	3	0	0	0	3	0	0	0	3	0	0	0
PD-086A/ RS-02318	INT	LYNCHES LAKE SWAMP	FW-SP	2	0	0	0	2	0	0	0	2	0	0	0
RS-10397	RS10	LONG BRANCH	FW	3	0	0	0	3	0	0	0	3	0	0	0
PD-314	INT	SINGLETON SWAMP	FW	2	0	0	0	2	0	0	0	2	0	0	0
PD-087	INT	LAKE SWAMP	FW-SP	6	0	0	0	6	0	0	0	6	0	0	0
03040202-07															
PD-041/ RS-13116	PD	LYNCHES RVR	FW	4	0	0	0	4	0	0	0	4	1	25	11
PD-281	INT	LYNCHES RVR	FW	8	0	0	0	8	0	0	0	8	0	0	0
PD-168	PD	BIG SWAMP	FW-SP												
PD-169	INT	BIG SWAMP	FW-SP	3	0	0	0	3	0	0	0	3	0	0	0

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	HG N	HG EXC.	HG %	MEAN EXC.	NI N	NI EXC.	NI %	MEAN EXC.	ZN N	ZN EXC.	ZN %	MEAN EXC.
03040202-05															
PD-080	PD	LYNCHES RVR	FW	4	0	0	0	4	0	0	0	4	0	0	0
PD-071/ RS-09305	PD	LYNCHES RVR	FW	8	0	0	0	8	0	0	0	8	0	0	0
PD-112	PD	COUSAR BRANCH	FW	3	0	0	0	3	0	0	0	3	0	0	0
PD-364/ RS-14204	SPRP	LYNCHES RVR	FW	8	0	0	0	8	0	0	0	8	1	12.5	130
PD-319	PD	LYNCHES RVR	FW	4	0	0	0	4	0	0	0	4	0	0	0
PD-093	INT	LYNCHES RVR	FW	8	0	0	0	8	0	0	0	8	0	0	0
03040202-06															
PD-346	INT	CAMP BRANCH	FW	4	0	0	0	4	1	25	42	4	1	25	1300
PD-085	PD	LAKE SWAMP	FW-SP	3	0	0	0	3	0	0	0	3	0	0	0
PD-086A/ RS-02318	INT	LYNCHES LAKE SWAMP	FW-SP	2	0	0	0	2	0	0	0	2	0	0	0
RS-10397	RS10	LONG BRANCH	FW	3	0	0	0	3	0	0	0	3	0	0	0
PD-314	INT	SINGLETON SWAMP	FW	2	0	0	0	2	0	0	0	2	0	0	0
PD-087	INT	LAKE SWAMP	FW-SP	6	0	0	0	6	0	0	0	6	0	0	0
03040202-07															
PD-041/ RS-13116	PD	LYNCHES RVR	FW	4	0	0	0	4	0	0	0	4	0	0	0
PD-281	INT	LYNCHES RVR	FW	8	0	0	0	8	0	0	0	8	0	0	0
PD-168	PD	BIG SWAMP	FW-SP												
PD-169	INT	BIG SWAMP	FW-SP	3	0	0	0	3	0	0	0	3	0	0	0

APPENDIX B.

Black River Basin

Ambient Water Quality Monitoring Site Descriptions

Station #	Type	Class	Description
03040205-01			
RS-09095	RS09	FW	Gum Springs Branch at bridge on S-31-162 off SC 34
PD-355	INT	FW	Scape Ore Swamp at S-31-108
CL-077	W	FW	Lake Ashwood, forebay equidistant from dam and shore lines
PD-356	INT	FW	Mechanicsville Swamp at S-31-500
PD-357	INT	FW*	Rocky Bluff Swamp at US 76
PD-201	INT	FW	Rocky Bluff Swamp at S-43-41
03040205-02			
PD-354	INT	FW	Canal to Atkins Drainage Canal at SC 527 (.75 mi N of US 76)
PD-353	INT	FW*	Black River at S-43-57
03040205-03			
PD-239	W	FW	Nasty Branch at S-43-251 7.5 mi SW of Sumter
PD-039	W	FW*	Green Swamp at S-43-33
03040205-04			
PD-091	INT	FW*	Pocotaligo River at US 15, 3.5 mi S of Sumter
PD-098	W	FW*	Turkey Creek at Liberty St in Sumter by Santee Print Works
PD-040	W	FW*	Turkey Creek at US 521
PD-202	W	FW*	Pocotaligo River at S-43-32, 9 mi SE of Sumter
RS-07192	RS07	FW	Big Branch at SC 261
PD-115	W	FW*	Pocotaligo River at third bridge N of Manning on US 301
RS-08232	RS08	FW	Unnamed Trib to Juneburn Branch at culvert on S-14-123
PD-043	INT	FW*	Pocotaligo River at S-14-50, 9.5 mi NE of Manning
03040205-05			
PD-203	S/INT	FW*	Pudding Swamp at SC 527 8.1 mi NW of Kingstree
03040205-06			
PD-116	INT	FW*	Black River at S-14-40 E of Manning
PD-227	INT	FW*	Black River at S-45-35 8.6 mi NW of Kingstree
03040205-07			
PD-714	BIO	FW	Black River at Gilland Memorial Park Landing
RS-10381	RS10	FW	Kingstree Swamp Canal at S-21-514
PD-358	INT	FW	Kingstree Swamp Canal at SC 527
PD-044	INT	FW*	Black River at US 52 at Kingstree
RS-06018	RS06	FW	Thorntree Swamp at bridge on S-45-143, 5.1 mi S of Kingstree
PD-045	W	FW*	Black River at SC 377 at Bryan's Crossroads
(PD-359)	W	FW*	Black River at S-45-30
03040205-08			
PD-360	W/INT	FW	Black Mingo Creek at S-45-121
RS-09317	RS09	FW	Campbell Swamp at bridge on S-45-24
PD-361	S/INT	FW	Black Mingo Creek at Cowhead landing off SC 51
RS-06189	RS06	FW	Smith Swamp at bridge on SC51, 12.2 mi S of Hemingway
03040205-09			
PD-359	W/INT	FW*	Black River at S-45-30
RS-07221	RS07	FW	Indian Hut Swamp at S-22-29, 5mi ESE of Andrews
PD-170	W/INT	FW*	Black River at SC 51, 11.6mi NE of Andrews
RS-10349	RS10	FW	Lanes Creek at SC 51 just N of Oatland
PD-325	P/INT	SA	Black River at S-22-489 4 mi NE of Georgetown

For further details concerning sampling frequency and parameters sampled, please visit our website at <u>www.scdhec.gov/eqc/admin/html/eqcpubs.html#wqreports</u> for the current State of S.C. Monitoring Strategy.

Water Quality Data

Spreadsheet Legend

<u>Station Information:</u>

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

PD or W = Special watershed station added for the Pee Dee 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

<u>Parameter Abbreviations and Parameter Measurement Units:</u>

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)

<u>Statistical Abbreviations:</u>

N	For *standards compliance*, number of surface samples collected between January 2006 and December 2010.
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 2006 and December 20010. DL indicates that the median was the detection limit.

<u>Key to Trends</u>:

D	Statistically significant decreasing trend in parameter concentration
I	Statistically significant increasing trend in parameter concentration
*****	No statistically significant trend

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	DO N	DO EXC.	DO %	MEAN EXC.	TRENDS (99-2012) DO	BOD	N	pH EXC.	pH %	MEAN EXC. LT	MEAN EXC. GT	TRENDS (99-2012) PH
03040205-01															
RS-09095	RS09	GUM SPRING BRANCH	FW	6	4	66.667	2.152			6	4	66.667	5.558	0	
PD-355	INT	SCAPE ORE SWAMP	FW	28	5	17.857	3.666	NS	NS	28	16	57.143	5.603	0	I
CL-077/ RL-07002	SPRP	LAKE ASHWOOD	FW	34	6	17.647	4.183	I	NS	34	3	8.824	5.753	0	NS
PD-356	INT	MECHANICSVILLE SWAMP	FW	24	13	54.167	3.298	I	NS	24	16	66.667	5.62	0	NS
PD-357	INT	ROCKY BLUFF SWAMP	FW-SP	22	6	27.273	2.028	NS	NS	22	0	0	0	0	NS
PD-201/ RS-06160	INT	ROCKY BLUFF SWAMP	FW-SP	36	7	19.444	3.154	D	NS	36	2	5.556	4.915	0	NS
03040205-02															
PD-354	INT	UNNAMED DRAINAGE CANAL	FW	28	13	46.429	3.265	NS	NS	28	5	17.857	5.894	0	NS
PD-353	INT	BLACK RVR	FW-SP	32	15	46.875	2.769	NS	NS	32	0	0	0	0	NS
03040205-03															
PD-239	PD	NASTY BRANCH	FW	12	3	25	3.957	I		12	1	8.333	5.89	0	I
PD-039	PD	GREEN SWAMP	FW-SP	12	5	41.667	1.96	NS		12	0	0	0	0	I
03040205-04															
PD-091	INT	POCOTALIGO RVR	FW-SP	36	22	61.111	1.88	D	I	36	0	0	0	0	NS
PD-098	PD	TURKEY CK	FW-SP	12	1	8.333	2.08	D		12	0	0	0	0	NS
PD-040	PD	TURKEY CK	FW-SP	12	8	66.667	1.683			12	0	0	0	0	
PD-202	PD	POCOTALIGO RVR	FW-SP	12	0	0	0	I		12	0	0	0	0	I
RS-07192	RS07	BIG BRANCH	FW	7	3	42.857	2.883			7	0	0	0	0	
PD-115	PD	POCOTALIGO RVR	FW-SP	12	0	0	0	NS		12	0	0	0	0	NS
RS-08232	RS08	JUNEBURN BRANCH TRIB	FW	5	0	0	0			5	1	20	5.66	0	
PD-043	INT	POCOTALIGO RVR	FW-SP	40	8	20	3.42	NS	NS	40	0	0	0	0	NS
03040205-05															
PD-203	INT	PUDDING SWAMP	FW-SP	32	1	3.125	3.75	I	I	32	0	0	0	0	NS
03040205-06															
PD-116	INT	BLACK RVR	FW-SP	29	3	10.345	2.767	NS	NS	29	0	0	0	0	I
PD-227	INT	BLACK RVR	FW-SP	40	0	0	0	NS	I	40	0	0	0	0	NS
03040205-07															
RS-10381	RS10	KINGSTREE SWAMP CANAL	FW	10	2	20	3.42			10	4	40	5.473	0	
PD-358	INT	KINGSTREE SWAMP CANAL	FW	29	16	55.172	3.048	NS	NS	29	2	6.897	5.93	0	D
PD-044	INT	BLACK RVR	FW-SP	34	1	2.941	3.9	NS	I	34	0	0	0	0	NS
RS-06018	RS06	THORNTREE SWAMP	FW	9	3	33.333	3.5			9	0	0	0	0	
PD-045	PD	BLACK RVR	FW-SP	9	0	0	0	NS		9	0	0	0	0	NS
03040205-08															
PD-360	INT	BLACK MINGO CK	FW	19	7	36.842	3.511	NS	NS	19	0	0	0	0	NS
RS-09317	RS09	CAMBELL SWAMP	FW	4	0	0	0			4	0	0	0	0	
PD-361	INT	BLACK MINGO CK	FW	40	27	67.5	2.7	D	NS	40	3	7.5	5.847	0	NS
RS-06189	RS06	SMITH SWAMP	FW	11	8	72.727	1.946			11	1	9.091	5.93	0	

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	TURB N	TURB EXC.	TURB %	TRENDS (99-2012) TURB	TP N	TP EXC.	TP %	MEAN EXC.	TRENDS (99-2012) TP
03040205-01												
RS-09095	RS09	GUM SPRING BRANCH	FW	6	0	0						
PD-355	INT	SCAPE ORE SWAMP	FW	28	0	0	I					NS
CL-077/ RL-07002	SPRP	LAKE ASHWOOD	FW	34	0	0	NS	34	1	2.941	0.064	NS
PD-356	INT	MECHANICSVILLE SWAMP	FW	24	0	0	NS					NS
PD-357	INT	ROCKY BLUFF SWAMP	FW-SP	22	0	0	NS					NS
PD-201/ RS-06160	INT	ROCKY BLUFF SWAMP	FW-SP	36	0	0	I					NS
03040205-02												
PD-354	INT	UNNAMED DRAINAGE CANAL	FW	28	0	0	NS					NS
PD-353	INT	BLACK RVR	FW-SP	32	1	3.125	D					NS
03040205-03												
PD-239	PD	NASTY BRANCH	FW	12	0	0	NS					
PD-039	PD	GREEN SWAMP	FW-SP	12	0	0	NS					
03040205-04												
PD-091	INT	POCOTALIGO RVR	FW-SP	36	0	0	NS					NS
PD-098	PD	TURKEY CK	FW-SP	12	1	8.333	NS					
PD-040	PD	TURKEY CK	FW-SP	12	0	0						
PD-202	PD	POCOTALIGO RVR	FW-SP	12	0	0	I					
RS-07192	RS07	BIG BRANCH	FW	7	0	0						
PD-115	PD	POCOTALIGO RVR	FW-SP	12	1	8.333	I					
RS-08232	RS08	JUNEBURN BRANCH TRIB	FW	5	0	0						
PD-043	INT	POCOTALIGO RVR	FW-SP	39	0	0	NS					D
03040205-05												
PD-203	INT	PUDDING SWAMP	FW-SP	31	0	0	NS					NS
03040205-06												
PD-116	INT	BLACK RVR	FW-SP	28	0	0	NS					NS
PD-227	INT	BLACK RVR	FW-SP	39	0	0	NS					NS
03040205-07												
RS-10381	RS10	KINGSTREE SWAMP CANAL	FW	10	0	0						
PD-358	INT	KINGSTREE SWAMP CANAL	FW	28	0	0	NS					D
PD-044	INT	BLACK RVR	FW-SP	33	0	0	NS					D
RS-06018	RS06	THORNTREE SWAMP	FW	8	0	0						
PD-045	PD	BLACK RVR	FW-SP	9	0	0	NS					
03040205-08												
PD-360	INT	BLACK MINGO CK	FW	19	0	0	I					I
RS-09317	RS09	CAMBELL SWAMP	FW	4	1	25						
PD-361	INT	BLACK MINGO CK	FW	40	0	0	NS					D
RS-06189	RS06	SMITH SWAMP	FW	11	0	0						

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	TN N	TN EXC.	TN %	MEAN EXC.	TRENDS (99-2012) TN	CHL N	CHL EXC.	CHL %	MEAN EXC.	TRENDS (99-2012) TSS
03040205-01													
RS-09095	RS09	GUM SPRING BRANCH	FW										
PD-355	INT	SCAPE ORE SWAMP	FW					D					
CL-077/ RL-07002	SPRP	LAKE ASHWOOD	FW	26	0	0	0	D	17	1	5.882	47.067	
PD-356	INT	MECHANICSVILLE SWAMP	FW					D					
PD-357	INT	ROCKY BLUFF SWAMP	FW-SP					NS					
PD-201/ RS-06160	INT	ROCKY BLUFF SWAMP	FW-SP					NS					
03040205-02													
PD-354	INT	UNNAMED DRAINAGE CANAL	FW					I					
PD-353	INT	BLACK RVR	FW-SP					NS					
03040205-03													
PD-239	PD	NASTY BRANCH	FW										
PD-039	PD	GREEN SWAMP	FW-SP										
03040205-04													
PD-091	INT	POCOTALIGO RVR	FW-SP					D					
PD-098	PD	TURKEY CK	FW-SP										
PD-040	PD	TURKEY CK	FW-SP										
PD-202	PD	POCOTALIGO RVR	FW-SP										NS
RS-07192	RS07	BIG BRANCH	FW										
PD-115	PD	POCOTALIGO RVR	FW-SP										
RS-08232	RS08	JUNEBURN BRANCH TRIB	FW										
PD-043	INT	POCOTALIGO RVR	FW-SP					NS					
03040205-05													
PD-203	INT	PUDDING SWAMP	FW-SP					NS					
03040205-06													
PD-116	INT	BLACK RVR	FW-SP					NS					
PD-227	INT	BLACK RVR	FW-SP					NS					
03040205-07													
RS-10381	RS10	KINGSTREE SWAMP CANAL	FW										
PD-358	INT	KINGSTREE SWAMP CANAL	FW					NS					
PD-044	INT	BLACK RVR	FW-SP					NS					
RS-06018	RS06	THORNTREE SWAMP	FW										
PD-045	PD	BLACK RVR	FW-SP										
03040205-08													
PD-360	INT	BLACK MINGO CK	FW					NS					
RS-09317	RS09	CAMBELL SWAMP	FW										
PD-361	INT	BLACK MINGO CK	FW					NS					
RS-06189	RS06	SMITH SWAMP	FW										

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	BACT N	BACT EXC.	BACT %	MEAN EXC.	TRENDS (99-2012) BACT	NH3 N	NH3 EXC.	NH3 %
03040205-01											
RS-09095	RS09	GUM SPRING BRANCH	FW	6	0	0	0		6	0	0
PD-355	INT	SCAPE ORE SWAMP	FW	28	1	3.571	610	NS	7	0	0
CL-077/ RL-07002	SPRP	LAKE ASHWOOD	FW	85	0	0	0	I	21	0	0
PD-356	INT	MECHANICSVILLE SWAMP	FW	24	2	8.333	615	NS	7	0	0
PD-357	INT	ROCKY BLUFF SWAMP	FW-SP	23	3	13.043	836.667	I	6	0	0
PD-201/ RS-06160	INT	ROCKY BLUFF SWAMP	FW-SP	35	2	5.714	825	NS	16	0	0
03040205-02											
PD-354	INT	UNNAMED DRAINAGE CANAL	FW	28	0	0	0	NS	9	0	0
PD-353	INT	BLACK RVR	FW-SP	84	17	20.238	865.882	I	14	0	0
03040205-03											
PD-239	PD	NASTY BRANCH	FW	12	5	41.667	586	NS	12	0	0
PD-039	PD	GREEN SWAMP	FW-SP	12	1	8.333	470	I	12	0	0
03040205-04											
PD-091	INT	POCOTALIGO RVR	FW-SP	36	1	2.778	770	I	17	0	0
PD-098	PD	TURKEY CK	FW-SP	12	10	83.333	1721	I	12	0	0
PD-040	PD	TURKEY CK	FW-SP	12	12	100	2060.833		11	2	18.182
PD-202	PD	POCOTALIGO RVR	FW-SP	12	4	33.333	762.5	I	12	0	0
RS-07192	RS07	BIG BRANCH	FW	7	3	42.857	1086.667				
PD-115	PD	POCOTALIGO RVR	FW-SP	12	3	25	876.667	NS	12	0	0
RS-08232	RS08	JUNEBURN BRANCH TRIB	FW	5	3	60	1766.667		5	0	0
PD-043	INT	POCOTALIGO RVR	FW-SP	40	4	10	667.5	I	16	0	0
03040205-05											
PD-203	INT	PUDDING SWAMP	FW-SP	32	5	15.625	892	I	13	0	0
03040205-06											
PD-116	INT	BLACK RVR	FW-SP	29	9	31.034	774.444	I	9	0	0
PD-227	INT	BLACK RVR	FW-SP	40	3	7.5	490	I	16	0	0
03040205-07											
RS-10381	RS10	KINGSTREE SWAMP CANAL	FW	10	3	30	846.667		10	0	0
PD-358	INT	KINGSTREE SWAMP CANAL	FW	29	1	3.448	660	NS	8	0	0
PD-044	INT	BLACK RVR	FW-SP	34	3	8.824	510	I	10	0	0
RS-06018	RS06	THORNTREE SWAMP	FW	9	0	0	0				
PD-045	PD	BLACK RVR	FW-SP	9	0	0	0	NS	9	0	0
03040205-08											
PD-360	INT	BLACK MINGO CK	FW	19	3	15.789	813.333	NS	6	0	0
RS-09317	RS09	CAMBELL SWAMP	FW	4	1	25	600		4	0	0
PD-361	INT	BLACK MINGO CK	FW	40	1	2.5	480	NS	16	0	0
RS-06189	RS06	SMITH SWAMP	FW	11	1	9.091	540				

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	CD N	CD EXC.	CD %	MEAN EXC.	CR N	CR EXC.	CR %	MEAN EXC.	CU N	CU EXC.	CU %	MEAN EXC.
03040205-01															
RS-09095	RS09	GUM SPRING BRANCH	FW	3	0	0	0	3	0	0	0	3	0	0	0
PD-355	INT	SCAPE ORE SWAMP	FW	4	0	0	0	4	0	0	0	4	0	0	0
CL-077/ RL-07002	SPRP	LAKE ASHWOOD	FW	8	0	0	0	8	0	0	0	8	0	0	0
PD-356	INT	MECHANICSVILLE SWAMP	FW	4	0	0	0	4	0	0	0	4	0	0	0
PD-357	INT	ROCKY BLUFF SWAMP	FW-SP	3	0	0	0	3	0	0	0	3	0	0	0
PD-201/ RS-06160	INT	ROCKY BLUFF SWAMP	FW-SP	8	0	0	0	8	0	0	0	8	0	0	0
03040205-02															
PD-354	INT	UNNAMED DRAINAGE CANAL	FW	3	0	0	0	3	0	0	0	3	0	0	0
PD-353	INT	BLACK RVR	FW-SP	7	0	0	0	7	0	0	0	7	0	0	0
03040205-03															
PD-239	PD	NASTY BRANCH	FW	4	0	0	0	4	0	0	0	4	0	0	0
PD-039	PD	GREEN SWAMP	FW-SP	4	0	0	0	4	0	0	0	4	0	0	0
03040205-04															
PD-091	INT	POCOTALIGO RVR	FW-SP	9	0	0	0	9	0	0	0	9	0	0	0
PD-098	PD	TURKEY CK	FW-SP	4	0	0	0	4	0	0	0	4	1	25	59
PD-040	PD	TURKEY CK	FW-SP	4	0	0	0	4	0	0	0	4	1	25	31
PD-202	PD	POCOTALIGO RVR	FW-SP	4	0	0	0	4	0	0	0	4	1	25	15
RS-07192	RS07	BIG BRANCH	FW												
PD-115	PD	POCOTALIGO RVR	FW-SP	4	0	0	0	4	0	0	0	4	0	0	0
RS-08232	RS08	JUNEBURN BRANCH TRIB	FW												
PD-043	INT	POCOTALIGO RVR	FW-SP	8	0	0	0	8	0	0	0	8	0	0	0
03040205-05															
PD-203	INT	PUDDING SWAMP	FW-SP	6	0	0	0	6	1	16.667	480	6	3	50	37.333
03040205-06															
PD-116	INT	BLACK RVR	FW-SP	4	0	0	0	4	0	0	0	4	0	0	0
PD-227	INT	BLACK RVR	FW-SP	8	0	0	0	8	0	0	0	8	0	0	0
03040205-07															
RS-10381	RS10	KINGSTREE SWAMP CANAL	FW	5	0	0	0	5	0	0	0	5	0	0	0
PD-358	INT	KINGSTREE SWAMP CANAL	FW	3	0	0	0	3	0	0	0	3	0	0	0
PD-044	INT	BLACK RVR	FW-SP	4	0	0	0	4	0	0	0	4	0	0	0
RS-06018	RS06	THORNTREE SWAMP	FW												
PD-045	PD	BLACK RVR	FW-SP	3	0	0	0	3	0	0	0	3	0	0	0
03040205-08															
PD-360	INT	BLACK MINGO CK	FW	2	0	0	0	2	0	0	0	2	0	0	0
RS-09317	RS09	CAMBELL SWAMP	FW	2	0	0	0	2	0	0	0	2	0	0	0
PD-361	INT	BLACK MINGO CK	FW	8	0	0	0	8	0	0	0	8	0	0	0
RS-06189	RS06	SMITH SWAMP	FW												

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	HG N	HG EXC.	HG %	MEAN EXC.	NI N	NI EXC.	NI %	MEAN EXC.	ZN N	ZN EXC.	ZN %	MEAN EXC.
03040205-01															
RS-09095	RS09	GUM SPRING BRANCH	FW	3	0	0	0	3	0	0	0	3	0	0	0
PD-355	INT	SCAPE ORE SWAMP	FW	4	0	0	0	4	0	0	0	4	0	0	0
CL-077/ RL-07002	SPRP	LAKE ASHWOOD	FW	8	0	0	0	8	0	0	0	8	0	0	0
PD-356	INT	MECHANICSVILLE SWAMP	FW	4	0	0	0	4	0	0	0	4	0	0	0
PD-357	INT	ROCKY BLUFF SWAMP	FW-SP	3	0	0	0	3	0	0	0	3	0	0	0
PD-201/ RS-06160	INT	ROCKY BLUFF SWAMP	FW-SP	8	0	0	0	8	0	0	0	8	1	12.5	130
03040205-02															
PD-354	INT	UNNAMED DRAINAGE CANAL	FW	3	0	0	0	3	0	0	0	3	0	0	0
PD-353	INT	BLACK RVR	FW-SP	7	0	0	0	7	0	0	0	7	0	0	0
03040205-03															
PD-239	PD	NASTY BRANCH	FW	4	0	0	0	4	0	0	0	4	0	0	0
PD-039	PD	GREEN SWAMP	FW-SP	4	0	0	0	4	0	0	0	4	0	0	0
03040205-04															
PD-091	INT	POCOTALIGO RVR	FW-SP	9	0	0	0	9	0	0	0	9	1	11.111	130
PD-098	PD	TURKEY CK	FW-SP	4	0	0	0	4	0	0	0	4	1	25	220
PD-040	PD	TURKEY CK	FW-SP	4	0	0	0	4	0	0	0	4	1	25	84
PD-202	PD	POCOTALIGO RVR	FW-SP	4	0	0	0	4	0	0	0	4	1	25	210
RS-07192	RS07	BIG BRANCH	FW												
PD-115	PD	POCOTALIGO RVR	FW-SP	4	0	0	0	4	0	0	0	4	0	0	0
RS-08232	RS08	JUNEBURN BRANCH TRIB	FW												
PD-043	INT	POCOTALIGO RVR	FW-SP	8	0	0	0	8	0	0	0	8	0	0	0
03040205-05															
PD-203	INT	PUDDING SWAMP	FW-SP	6	0	0	0	6	1	16.667	220	6	0	0	0
03040205-06															
PD-116	INT	BLACK RVR	FW-SP	4	0	0	0	4	0	0	0	4	0	0	0
PD-227	INT	BLACK RVR	FW-SP	8	0	0	0	8	0	0	0	8	0	0	0
03040205-07															
RS-10381	RS10	KINGSTREE SWAMP CANAL	FW	5	0	0	0	5	0	0	0	5	0	0	0
PD-358	INT	KINGSTREE SWAMP CANAL	FW	3	0	0	0	3	0	0	0	3	0	0	0
PD-044	INT	BLACK RVR	FW-SP	4	0	0	0	4	0	0	0	4	0	0	0
RS-06018	RS06	THORNTREE SWAMP	FW												
PD-045	PD	BLACK RVR	FW-SP	3	0	0	0	3	0	0	0	3	0	0	0
03040205-08															
PD-360	INT	BLACK MINGO CK	FW	2	0	0	0	2	0	0	0	2	0	0	0
RS-09317	RS09	CAMBELL SWAMP	FW	2	0	0	0	2	0	0	0	2	0	0	0
PD-361	INT	BLACK MINGO CK	FW	8	0	0	0	8	0	0	0	8	0	0	0
RS-06189	RS06	SMITH SWAMP	FW												

STATION NUMBER	TYPE	WATERBODY NAME	CLASS		DO N	DO EXC.	DO %	MEAN EXC.	TRENDS (99-2012) DO	BOD		N	pH EXC.	pH %	MEAN EXC. LT	MEAN EXC. GT	TRENDS (99-2012) PH
03040205-09																	
PD-359/ RS-06168/ RS-14219	INT	BLACK RVR	FW-SP		40	1	2.5	3.71	NS	I		40	0	0	0	0	NS
RS-07221	RS07	INDIAN HUT SWAMP	FW		7	3	42.857	3.293				7	0	0	0	0	
PD-170	INT	BLACK RVR	FW-SP		34	10	29.412	3.067	D	I		34	0	0	0	0	NS
RS-10349	RS10	LANES CK	FW		12	8	66.667	1.46				12	6	50	5.79	0	
PD-325	INT	BLACK RVR	SA		40	9	22.5	4.349	NS	I		40	2	5	6.315	0	I

STATION NUMBER	TYPE	WATERBODY NAME	CLASS		TURB N	TURB EXC.	TURB %	TRENDS (99-2012) TURB		TP N	TP EXC.	TP %	MEAN EXC.	TRENDS (99-2012) TP
03040205-09														
PD-359/ RS-06168/ RS-14219	INT	BLACK RVR	FW-SP		39	0	0	NS						D
RS-07221	RS07	INDIAN HUT SWAMP	FW		7	0	0							
PD-170	INT	BLACK RVR	FW-SP		34	0	0	NS						NS
RS-10349	RS10	LANES CK	FW		12	0	0							
PD-325	INT	BLACK RVR	SA		40	11	27.5	I						NS

STATION NUMBER	TYPE	WATERBODY NAME	CLASS		TN N	TN EXC.	TN %	MEAN EXC.	TRENDS (99-2012) TN		CHL N	CHL EXC.	CHL %	MEAN EXC.		TRENDS (99-2012) TSS
03040205-09																
PD-359/ RS-06168/ RS-14219	INT	BLACK RVR	FW-SP						NS							
RS-07221	RS07	INDIAN HUT SWAMP	FW													
PD-170	INT	BLACK RVR	FW-SP						D							
RS-10349	RS10	LANES CK	FW													
PD-325	INT	BLACK RVR	SA						NS							

STATION NUMBER	TYPE	WATERBODY NAME	CLASS		BACT N	BACT EXC.	BACT %	MEAN EXC.	TRENDS (99-2012) BACT		NH3 N	NH3 EXC.	NH3 %
03040205-09													
PD-359/ RS-06168/ RS-14219	INT	BLACK RVR	FW-SP		40	0	0	0	NS		16	0	0
RS-07221	RS07	INDIAN HUT SWAMP	FW		6	1	16.667	520					
PD-170	INT	BLACK RVR	FW-SP		34	2	5.882	785	I		10	0	0
RS-10349	RS10	LANES CK	FW		12	0	0	0			11	0	0
PD-325	INT	BLACK RVR	SA		39	0	0	0	NS		15	0	0

STATION NUMBER	TYPE	WATERBODY NAME	CLASS		CD N	CD EXC.	CD %	MEAN EXC.		CR N	CR EXC.	CR %	MEAN EXC.		CU N	CU EXC.	CU %	MEAN EXC.
03040205-09																		
PD-359/ RS-06168/ RS-14219	INT	BLACK RVR	FW-SP		8	0	0	0		8	0	0	0		8	1	12.5	15
RS-07221	RS07	INDIAN HUT SWAMP	FW															
PD-170	INT	BLACK RVR	FW-SP		4	0	0	0		4	0	0	0		4	0	0	0
RS-10349	RS10	LANES CK	FW		6	0	0	0		6	0	0	0		6	0	0	0
PD-325	INT	BLACK RVR	SA		8	0	0	0		8	0	0	0		8	0	0	0

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	HG N	HG EXC.	HG %	MEAN EXC.	NI N	NI EXC.	NI %	MEAN EXC.	ZN N	ZN EXC.	ZN %	MEAN EXC.
03040205-09															
PD-359/ RS-06168/ RS-14219	INT	BLACK RVR	FW-SP	8	0	0	0	8	0	0	0	8	0	0	0
RS-07221	RS07	INDIAN HUT SWAMP	FW												
PD-170	INT	BLACK RVR	FW-SP	4	0	0	0	4	0	0	0	4	0	0	0
RS-10349	RS10	LANES CK	FW	6	0	0	0	6	0	0	0	6	0	0	0
PD-325	INT	BLACK RVR	SA	8	0	0	0	8	0	0	0	8	1	12.5	130

APPENDIX C.

Waccamaw River Basin

Ambient Water Quality Monitoring Site Descriptions

Station #	Type	Class	Description
03040206-05			
THERE WAS NO SAMPLING IN THIS WATERSHED.			
03040206-07			
PD-362	W/INT	FW	BUCK CREEK AT SC 905
MD-124	P/INT	FW*	WACCAMAW RIVER AT SC 9 7.0 MI W OF CHERRY GROVE
PD-363	W/INT	FW	SIMPSON CREEK AT SC 905
03040206-08			
RS-10389	RS10	FW	BROWN SWAMP AT US 701
RS-04375	RS04	FW	CRAB TREE SWAMP AT US 501 BRIDGE, 1.5 MI NW OF CONWAY
MD-158	S/W	FW	CRAB TREE SWAMP AT LONG ST. BELOW CONWAY #1 POND OUTFALL
MD-107	S/INT	FW	KINGSTON LAKE NEAR PUMP STATIOIN ON LAKESIDE DRIVE IN CONWAY
03040206-09			
PD-373	INT	FW	WACCAMAW RIVER AT S-26-31, RED BLUFF LANDING
PD-369	INT	FW*	WACCAMAW RIVER AT S-26-105, REEVES FERRY ROAD
RS-06165	RS06	FW	STERITT SWAMP AT BRIDGE ON STERITT SWAMP RD, 4.8 MI E OF CONWAY
MD-110	W	FW*	WACCAMAW RIVER AT US 501 BYPASS AROUND CONWAY
MD-111	W	FW*	WACCAMAW RIVER AT COX'S FERRY ON COUNTY ROAD 110
MD-145	SPRP	FW*	WACCAMAW RIVER, 1 MI DS OF BUCKSVILLE LANDING AT BIG BEND IN RIVER
MD-136	W	FW*	WACCAMAW RIVER, 0.25 MI UPSTREAM OF JUNCTION WITH AIWW
MD-088	W	FW	AIWW 1 MI S OF BRIDGE ON US 501
MD-089	W	FW	AIWW 2 MI S OF BRIDGE ON US 501
MD-127	SPRP	FW	AIWW AT SC 544, 7.5 MI SW OF MYRTLE BEACH
03040206-10			
MD-146	W	FW*	WACCAMAW RIVER & AIWW 1 MI BELOW JCT, BUCKSPORT LANDING
MD-137	W	FW*	WACCAMAW RIVER NEAR MOUTH OF BULL CREEK AT CHANNEL MARKER 50
MD-138	SPRP	FW*	WACCAMAW RIVER AT CHANNEL MARKER 57
MD-142	INT	SA*	WACCAMAW RIVER DOWNSTREAM OF BUTLER ISLAND AT MARKER 86
RO-09364	INT	SB	WACCAMAW R. AT CONFL. OF PEE DEE AND SAMPIT RIVERS AT WINYAH BAY

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

PD or W = Special watershed station added for the Pee Dee 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 2006 and December 2010.

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 2006 and December 20010. DL indicates that the median was the detection limit.

Key to Trends:

D Statistically significant decreasing trend in parameter concentration

I Statistically significant increasing trend in parameter concentration

***** No statistically significant trend

STATION NUMBER	TYPE	WATERBODY NAME	CLASS		DO N	DO EXC.	DO %	MEAN EXC.	TRENDS (99-2012) DO	TRENDS (99-2012) BOD		N	pH EXC.	pH %	MEAN EXC. LT	MEAN EXC. GT	TRENDS (99-2012) PH
03040206-07																	
PD-362	INT	BUCK CK	FW		30	5	16.667	3.71	D	I		30	0	0	0	0	D
MD-124	INT	WACCAMAW RVR	FW-SP		34	5	14.706	3.388	NS	I		34	0	0	0	0	I
PD-363	INT	SIMPSON CK	FW		24	0	0	0	NS	I		24	0	0	0	0	NS
03040206-08																	
RS-10389	RS10	BROWN SWAMP	FW		8	5	62.5	1.292				8	3	37.5	5.853	0	
RS-04375	RS04	CRAB TREE SWAMP	FW		12	1	8.333	3.82				12	0	0	0	0	
MD-158	PD	CRAB TREE SWAMP	FW		12	4	33.333	3.985	NS			12	0	0	0	0	NS
MD-107	INT	LAKE, KINGSTON	FW		47	28	59.574	3.788	D	NS		47	1	2.128	5.99	0	NS
03040206-09																	
PD-373		WACCAMAW RVR	FW-SP		6	1	16.667	3.31				6	0	0	0	0	
PD-369/ RS-14203	INT	WACCAMAW RVR	FW-SP		33	8	24.242	3.389	D	NS		33	0	0	0	0	NS
RS-06165	RS06	STERITT SWAMP	FW		10	7	70	1.969				10	1	10	5.92	0	
MD-110	PD	WACCAMAW RVR	FW-SP		12	1	8.333	2.49				12	0	0	0	0	
MD-111	PD	WACCAMAW RVR	FW-SP		12	1	8.333	3.53	NS			12	0	0	0	0	NS
MD-145/ RS-07053	SPRP	WACCAMAW RVR	FW-SP		42	6	14.286	3.08	D	NS		41	1	2.439	0.63	0	NS
MD-136	PD	WACCAMAW RVR	FW-SP		12	1	8.333	2.18	I			12	0	0	0	0	NS
MD-088	PD	ICWW	FW		12	2	16.667	3.56				12	3	25	5.837	0	
MD-089	PD	ICWW	FW		12	3	25	4.02				12	3	25	5.767	0	
MD-127	SPRP	ICWW	FW		42	21	50	4.014	NS	I		41	9	21.951	5.857	0	I
03040206-10																	
MD-146	PD	WACCAMAW RVR, ICWW	FW-SP		12	1	8.333	3.69	NS			12	0	0	0	0	I
MD-137	PD	WACCAMAW RVR	FW-SP		12	1	8.333	3.77	NS			12	0	0	0	0	NS
MD-138	SPRP	WACCAMAW RVR	FW-SP		52	3	5.769	3.433	I	I		52	1	1.923	0	9.08	NS
MD-142	INT	WACCAMAW RVR	SA-SP		40	0	0	0	NS	NS		40	0	0	0	0	I
RO-09364	RO09	WINYAH BAY	SB		10	0	0	0				10	0	0	0	0	

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	TURB N	TURB EXC.	TURB %	TRENDS (99-2012) TURB	TP N	TP EXC.	TP %	MEAN EXC.	TRENDS (99-2012) TP
03040206-07												
PD-362	INT	BUCK CK	FW	30	0	0	I					NS
MD-124	INT	WACCAMAW RVR	FW-SP	34	0	0	D					NS
PD-363	INT	SIMPSON CK	FW	24	1	4.167	I					NS
03040206-08												
RS-10389	RS10	BROWN SWAMP	FW	8	0	0						
RS-04375	RS04	CRAB TREE SWAMP	FW	12	1	8.333						
MD-158	PD	CRAB TREE SWAMP	FW	12	1	8.333	NS					
MD-107	INT	LAKE, KINGSTON	FW	47	0	0	NS					NS
03040206-09												
PD-373		WACCAMAW RVR	FW-SP	6	0	0						
PD-369/ RS-14203	INT	WACCAMAW RVR	FW-SP	33	0	0	D					NS
RS-06165	RS06	STERITT SWAMP	FW	10	0	0						
MD-110	PD	WACCAMAW RVR	FW-SP	12	0	0						
MD-111	PD	WACCAMAW RVR	FW-SP	12	0	0	NS					
MD-145/ RS-07053	SPRP	WACCAMAW RVR	FW-SP	42	0	0	NS					I
MD-136	PD	WACCAMAW RVR	FW-SP	12	0	0	NS					
MD-088	PD	ICWW	FW	12	0	0						
MD-089	PD	ICWW	FW	12	0	0						
MD-127	SPRP	ICWW	FW	42	0	0	D					NS
03040206-10												
MD-146	PD	WACCAMAW RVR, ICWW	FW-SP	12	0	0	NS					
MD-137	PD	WACCAMAW RVR	FW-SP	12	0	0	I					
MD-138	SPRP	WACCAMAW RVR	FW-SP	52	0	0	I					D
MD-142	INT	WACCAMAW RVR	SA-SP	40	2	5	NS					NS
RO-09364	RO09	WINYAH BAY	SB	9	1	11.111						

STATION NUMBER	TYPE	WATERBODY NAME	CLASS		TN N	TN EXC.	TN %	MEAN EXC.	TRENDS (99-2012) TN		CHL N	CHL EXC.	CHL %	MEAN EXC.		TRENDS (99-2012) TSS
03040206-07																
PD-362	INT	BUCK CK	FW						I							
MD-124	INT	WACCAMAW RVR	FW-SP						NS							
PD-363	INT	SIMPSON CK	FW						NS							
03040206-08																
RS-10389	RS10	BROWN SWAMP	FW													
RS-04375	RS04	CRAB TREE SWAMP	FW													
MD-158	PD	CRAB TREE SWAMP	FW													
MD-107	INT	LAKE, KINGSTON	FW						NS							
03040206-09																
PD-373		WACCAMAW RVR	FW-SP													
PD-369/ RS-14203	INT	WACCAMAW RVR	FW-SP						NS							
RS-06165	RS06	STERITT SWAMP	FW													
MD-110	PD	WACCAMAW RVR	FW-SP													
MD-111	PD	WACCAMAW RVR	FW-SP													
MD-145/ RS-07053	SPRP	WACCAMAW RVR	FW-SP						NS							
MD-136	PD	WACCAMAW RVR	FW-SP													
MD-088	PD	ICWW	FW													
MD-089	PD	ICWW	FW													
MD-127	SPRP	ICWW	FW						NS							
03040206-10																
MD-146	PD	WACCAMAW RVR, ICWW	FW-SP													
MD-137	PD	WACCAMAW RVR	FW-SP													
MD-138	SPRP	WACCAMAW RVR	FW-SP						NS							
MD-142	INT	WACCAMAW RVR	SA-SP						NS							
RO-09364	RO09	WINYAH BAY	SB													

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	BACT N	BACT EXC.	BACT %	MEAN EXC.	TRENDS (99-2012) BACT	NH3 N	NH3 EXC.	NH3 %
03040206-07											
PD-362	INT	BUCK CK	FW	29	1	3.448	460	NS	10	0	0
MD-124	INT	WACCAMAW RVR	FW-SP	33	0	0	0	NS	10	0	0
PD-363	INT	SIMPSON CK	FW	22	3	13.636	530	NS	10	0	0
03040206-08											
RS-10389	RS10	BROWN SWAMP	FW	8	1	12.5	610		8	0	0
RS-04375	RS04	CRAB TREE SWAMP	FW	12	9	75	808.889	NS	11	0	0
MD-158	PD	CRAB TREE SWAMP	FW	12	7	58.333	651.429	NS	11	0	0
MD-107	INT	LAKE, KINGSTON	FW	46	15	32.609	990	NS	25	0	0
03040206-09											
PD-373		WACCAMAW RVR	FW-SP	6	0	0	0		5	0	0
PD-369/ RS-14203	INT	WACCAMAW RVR	FW-SP	32	6	18.75	1158.333	I	10	0	0
RS-06165	RS06	STERITT SWAMP	FW	10	4	40	780	D			
MD-110	PD	WACCAMAW RVR	FW-SP	12	0	0	0		11	0	0
MD-111	PD	WACCAMAW RVR	FW-SP	12	0	0	0	NS	11	0	0
MD-145/ RS-07053	SPRP	WACCAMAW RVR	FW-SP	42	1	2.381	2000	NS	17	0	0
MD-136	PD	WACCAMAW RVR	FW-SP	11	0	0	0	NS	12	0	0
MD-088	PD	ICWW	FW	11	0	0	0		12	0	0
MD-089	PD	ICWW	FW	11	0	0	0		12	0	0
MD-127	SPRP	ICWW	FW	41	0	0	0	NS	17	0	0
03040206-10											
MD-146	PD	WACCAMAW RVR, ICWW	FW-SP	12	1	8.333	480	NS	11	0	0
MD-137	PD	WACCAMAW RVR	FW-SP	11	0	0	0	NS	12	0	0
MD-138	SPRP	WACCAMAW RVR	FW-SP	51	0	0	0	NS	27	0	0
MD-142	INT	WACCAMAW RVR	SA-SP	39	0	0	0	NS	16	0	0
RO-09364	RO09	WINYAH BAY	SB	10	0	0	0		10	0	0

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	CD N	CD EXC.	CD %	MEAN EXC.	CR N	CR EXC.	CR %	MEAN EXC.	CU N	CU EXC.	CU %	MEAN EXC.
03040206-07															
PD-362	INT	BUCK CK	FW	4	0	0	0	4	0	0	0	4	0	0	0
MD-124	INT	WACCAMAW RVR	FW-SP	4	0	0	0	4	0	0	0	4	0	0	0
PD-363	INT	SIMPSON CK	FW	4	0	0	0	4	0	0	0	4	0	0	0
03040206-08															
RS-10389	RS10	BROWN SWAMP	FW	3	0	0	0	3	0	0	0	3	0	0	0
RS-04375	RS04	CRAB TREE SWAMP	FW	4	0	0	0	4	0	0	0	4	0	0	0
MD-158	PD	CRAB TREE SWAMP	FW	4	0	0	0	4	0	0	0	4	0	0	0
MD-107	INT	LAKE, KINGSTON	FW	11	0	0	0	11	0	0	0	11	0	0	0
03040206-09															
PD-373		WACCAMAW RVR	FW-SP	3	0	0	0	3	0	0	0	3	0	0	0
PD-369/ RS-14203	INT	WACCAMAW RVR	FW-SP	4	0	0	0	4	0	0	0	4	0	0	0
RS-06165	RS06	STERITT SWAMP	FW												
MD-110	PD	WACCAMAW RVR	FW-SP	4	0	0	0	4	0	0	0	4	0	0	0
MD-111	PD	WACCAMAW RVR	FW-SP	4	0	0	0	4	0	0	0	4	0	0	0
MD-145/ RS-07053	SPRP	WACCAMAW RVR	FW-SP	8	0	0	0	8	0	0	0	8	1	12.5	15
MD-136	PD	WACCAMAW RVR	FW-SP	4	0	0	0	4	0	0	0	4	0	0	0
MD-088	PD	ICWW	FW	4	0	0	0	4	0	0	0	4	0	0	0
MD-089	PD	ICWW	FW	4	0	0	0	4	0	0	0	4	0	0	0
MD-127	SPRP	ICWW	FW	7	0	0	0	7	0	0	0	7	0	0	0
03040206-10															
MD-146	PD	WACCAMAW RVR, ICWW	FW-SP	4	0	0	0	4	0	0	0	4	0	0	0
MD-137	PD	WACCAMAW RVR	FW-SP	4	0	0	0	4	0	0	0	4	0	0	0
MD-138	SPRP	WACCAMAW RVR	FW-SP	11	0	0	0	11	0	0	0	11	0	0	0
MD-142	INT	WACCAMAW RVR	SA-SP	8	0	0	0	7	0	0	0	8	0	0	0
RO-09364	RO09	WINYAH BAY	SB	4	0	0	0	4	0	0	0	4	0	0	0

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	HG N	HG EXC.	HG %	MEAN EXC.	NI N	NI EXC.	NI %	MEAN EXC.	ZN N	ZN EXC.	ZN %	MEAN EXC.
03040206-07															
PD-362	INT	BUCK CK	FW	4	0	0	0	4	0	0	0	4	1	25	110
MD-124	INT	WACCAMAW RVR	FW-SP	4	0	0	0	4	0	0	0	4	1	25	120
PD-363	INT	SIMPSON CK	FW	4	0	0	0	4	0	0	0	4	1	25	120
03040206-08															
RS-10389	RS10	BROWN SWAMP	FW	3	0	0	0	3	0	0	0	3	0	0	0
RS-04375	RS04	CRAB TREE SWAMP	FW	4	0	0	0	4	0	0	0	4	0	0	0
MD-158	PD	CRAB TREE SWAMP	FW	4	0	0	0	4	0	0	0	4	0	0	0
MD-107	INT	LAKE, KINGSTON	FW	11	0	0	0	11	0	0	0	11	1	9.091	98
03040206-09															
PD-373		WACCAMAW RVR	FW-SP	3	0	0	0	3	0	0	0	3	0	0	0
PD-369/ RS-14203	INT	WACCAMAW RVR	FW-SP	4	0	0	0	4	0	0	0	4	1	25	110
RS-06165	RS06	STERITT SWAMP	FW												
MD-110	PD	WACCAMAW RVR	FW-SP	4	0	0	0	4	0	0	0	4	0	0	0
MD-111	PD	WACCAMAW RVR	FW-SP	4	0	0	0	4	0	0	0	4	0	0	0
MD-145/ RS-07053	SPRP	WACCAMAW RVR	FW-SP	8	0	0	0	8	0	0	0	8	0	0	0
MD-136	PD	WACCAMAW RVR	FW-SP	4	0	0	0	4	0	0	0	4	0	0	0
MD-088	PD	ICWW	FW	4	0	0	0	4	0	0	0	4	0	0	0
MD-089	PD	ICWW	FW	4	0	0	0	4	0	0	0	4	0	0	0
MD-127	SPRP	ICWW	FW	7	0	0	0	7	0	0	0	7	0	0	0
03040206-10															
MD-146	PD	WACCAMAW RVR, ICWW	FW-SP	4	0	0	0	4	0	0	0	4	0	0	0
MD-137	PD	WACCAMAW RVR	FW-SP	4	0	0	0	4	0	0	0	4	0	0	0
MD-138	SPRP	WACCAMAW RVR	FW-SP	11	0	0	0	11	1	9.091	160	11	0	0	0
MD-142	INT	WACCAMAW RVR	SA-SP	8	0	0	0	7	0	0	0	8	0	0	0
RO-09364	RO09	WINYAH BAY	SB	4	0	0	0	4	0	0	0	4	0	0	0

APPENDIX D.

Great Pee Dee River Basin

Ambient Water Quality Monitoring Site Descriptions

Station #	Type	Class	Description
03040206-05			
THERE WAS NO SAMPLING IN THIS WATERSHED.			
03040206-07			
PD-362	W/INT	FW	BUCK CREEK AT SC 905
MD-124	P/INT	FW*	WACCAMAW RIVER AT SC 9 7.0 MI W OF CHERRY GROVE
PD-363	W/INT	FW	SIMPSON CREEK AT SC 905
03040206-08			
RS-10389	RS10	FW	BROWN SWAMP AT US 701
RS-04375	RS04	FW	CRAB TREE SWAMP AT US 501 BRIDGE, 1.5 MI NW OF CONWAY
MD-158	S/W	FW	CRAB TREE SWAMP AT LONG ST. BELOW CONWAY #1 POND OUTFALL
MD-107	S/INT	FW	KINGSTON LAKE NEAR PUMP STATIOIN ON LAKESIDE DRIVE IN CONWAY
03040206-09			
PD-373	INT	FW	WACCAMAW RIVER AT S-26-31, RED BLUFF LANDING
PD-369	INT	FW*	WACCAMAW RIVER AT S-26-105, REEVES FERRY ROAD
RS-06165	RS06	FW	STERITT SWAMP AT BRIDGE ON STERITT SWAMP RD, 4.8 MI E OF CONWAY
MD-110	W	FW*	WACCAMAW RIVER AT US 501 BYPASS AROUND CONWAY
MD-111	W	FW*	WACCAMAW RIVER AT COX'S FERRY ON COUNTY ROAD 110
MD-145	SPRP	FW*	WACCAMAW RIVER, 1 MI DS OF BUCKSVILLE LANDING AT BIG BEND IN RIVER
MD-136	W	FW*	WACCAMAW RIVER, 0.25 MI UPSTREAM OF JUNCTION WITH AIWW
MD-088	W	FW	AIWW 1 MI S OF BRIDGE ON US 501
MD-089	W	FW	AIWW 2 MI S OF BRIDGE ON US 501
MD-127	SPRP	FW	AIWW AT SC 544, 7.5 MI SW OF MYRTLE BEACH
03040206-10			
MD-146	W	FW*	WACCAMAW RIVER & AIWW 1 MI BELOW JCT, BUCKSPORT LANDING
MD-137	W	FW*	WACCAMAW RIVER NEAR MOUTH OF BULL CREEK AT CHANNEL MARKER 50
MD-138	SPRP	FW*	WACCAMAW RIVER AT CHANNEL MARKER 57
MD-142	INT	SA*	WACCAMAW RIVER DOWNSTREAM OF BUTLER ISLAND AT MARKER 86
RO-09364	INT	SB	WACCAMAW R. AT CONFL. OF PEE DEE AND SAMPIT RIVERS AT WINYAH BAY

For further details concerning sampling frequency and parameters sampled, please visit our website at <u>www.scdhec.gov/eqc/admin/html/eqcpubs.html#wqreports</u> 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

PD or W = Special watershed station added for the Pee Dee 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 2006 and December 2010.
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 2006 and December 20010. DL indicates that the median was the detection limit.

Key to Trends:

D	Statistically significant decreasing trend in parameter concentration
I	Statistically significant increasing trend in parameter concentration
*****	No statistically significant trend

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	DO N	DO EXC.	DO %	MEAN EXC.	TRENDS (99-2012) DO	TRENDS (99-2012) BOD	N	pH EXC.	pH %	MEAN EXC. LT	MEAN EXC. GT	TRENDS (99-2012) PH
03040201-04															
RS-01013	RS01	DEEP CK	FW												
PD-246	PD	THOMPSON CK	FW	11	1	9.091	4.91	NS		11	0	0	0	0	NS
RS-08273	RS08	JIMMIES CK	FW	9	0	0	0			9	9	100	5.413	0	
PD-247	PD	THOMPSON CK	FW	11	0	0	0	NS		11	0	0	0	0	D
RS-10377	RS10	INDIAN CK	FW	8	2	25	2.5			8	1	12.5	5.88	0	
RL-06436/ RL-09072/ RL-12129	RL06	LAKE, EUREKA (JUNIPER)	FW	20	0	0	0	NS	NS	20	20	100	4.574	0	D
RL-03346/ RL-07008	RL03	LAKE, EUREKA	FW	11	0	0	0			11	11	100	4.465	0	
RL-10101	RL10	LAKE, JUNIPER	FW	10	0	0	0			9	9	100	4.157	0	
RL-06448	RL06	LAKE, EUREKA	FW	12	2	16.667	3.46			12	11	91.667	4.596	0	
CL-088	PD	LAKE, EUREKA (JUNIPER)	FW	11	1	9.091	4.59			11	11	100	4.603	0	
PD-340	INT	JUNIPER CK	FW	42	0	0	0	NS	I	43	43	100	4.827	0	D
PD-338	INT	THOMPSON CK	FW	47	0	0	0	I	NS	48	9	18.75	5.812	0	D
03040201-05															
PD-191	INT	WHITES CK	FW	43	0	0	0	I	I	45	41	91.111	5.118	0	D
PD-339	INT	WESTFIELD CK	FW	38	0	0	0	I	I	39	8	20.513	5.444	0	D
PD-012	INT	PEE DEE RVR	FW	51	0	0	0	NS	I	52	2	3.846	5.2	8.94	NS
RL-09100	RL09	LAKE WALLACE	FW	9	0	0	0			9	2	22.222	0	9.11	
RL-05398/ RL-08052	RL05	LAKE WALLACE	FW	12	0	0	0			12	1	8.333	0	9.06	
CL-086	PD	LAKE WALLACE	FW	12	1	8.333	4.45			12	10	83.333	5.532	0	
PD-107	PD	CROOKED CK	FW	12	0	0	0	NS		12	1	8.333	5.78	0	NS
PD-014	PD	CROOKED CK	FW	12	0	0	0			12	3	25	5.953	0	
PD-063	INT	CROOKED CK	FW	45	0	0	0	I	I	46	12	26.087	5.628	0	D
RS-08241	RS08	HARRIS CK	FW	12	3	25	3.813			12	12	100	4.693	0	
PD-151	INT	CEDAR CK	FW	43	2	4.651	4.53	NS	I	44	41	93.182	5.141	0	D
PD-015/ RS-06161	PD	PEE DEE RVR	FW	30	0	0	0	NS	NS	30	0	0	0	0	NS
03040201-06															
PD-004	PD	BLACK CK	FW	11	0	0	0	NS		11	3	27.273	5.76	0	D
RS-08065	RS08	LITTLE BLACK CK TRIB	FW	11	0	0	0			11	9	81.818	5.679	0	
PD-251	INT	BLACK CK	FW-SP	52	0	0	0	NS	NS	52	21	40.385	4.584	0	D
CL-094	INT	LAKE ROBINSON	FW-SP	46	0	0	0	NS	NS	46	6	13.043	4.838	0	D

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	TURB N	TURB EXC.	TURB %	TRENDS (99-2012) TURB	TP N	TP EXC.	TP %	MEAN EXC.	TRENDS (99-2012) TP
03040201-04												
RS-01013	RS01	DEEP CK	FW									
PD-246	PD	THOMPSON CK	FW	11	1	9.091	NS					
RS-08273	RS08	JIMMIES CK	FW	8	0	0						
PD-247	PD	THOMPSON CK	FW	10	0	0	NS					
RS-10377	RS10	INDIAN CK	FW	8	0	0						
RL-06436/ RL-09072/ RL-12129	RL06	LAKE, EUREKA (JUNIPER)	FW	20	0	0	I	20	0	0	0	NS
RL-03346/ RL-07008	RL03	LAKE, EUREKA	FW	11	0	0		11	0	0	0	
RL-10101	RL10	LAKE, JUNIPER	FW	10	0	0		10	0	0	0	
RL-06448	RL06	LAKE, EUREKA	FW	12	0	0		12	0	0	0	
CL-088	PD	LAKE, EUREKA (JUNIPER)	FW	10	0	0		11	0	0	0	
PD-340	INT	JUNIPER CK	FW	44	0	0	I					I
PD-338	INT	THOMPSON CK	FW	49	1	2.041	NS					I
03040201-05												
PD-191	INT	WHITES CK	FW	45	0	0	I					NS
PD-339	INT	WESTFIELD CK	FW	39	0	0	I					NS
PD-012	INT	PEE DEE RVR	FW	52	3	5.769	NS					I
RL-09100	RL09	LAKE WALLACE	FW	9	7	77.778		9	8	88.889	0.169	
RL-05398/ RL-08052	RL05	LAKE WALLACE	FW	12	6	50		12	11	91.667	0.137	
CL-086	PD	LAKE WALLACE	FW	11	0	0		12	0	0	0	
PD-107	PD	CROOKED CK	FW	12	0	0	NS					
PD-014	PD	CROOKED CK	FW	12	0	0						
PD-063	INT	CROOKED CK	FW	46	0	0	NS					I
RS-08241	RS08	HARRIS CK	FW	12	0	0						
PD-151	INT	CEDAR CK	FW	45	0	0	NS					I
PD-015/ RS-06161	PD	PEE DEE RVR	FW	30	0	0	D					D
03040201-06												
PD-004	PD	BLACK CK	FW	11	0	0	NS					
RS-08065	RS08	LITTLE BLACK CK TRIB	FW	11	0	0						
PD-251	INT	BLACK CK	FW-SP	51	0	0	I					I
CL-094	INT	LAKE ROBINSON	FW-SP	45	0	0	NS	46	2	4.348	0.275	NS

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	TN N	TN EXC.	TN %	MEAN EXC.	TRENDS (99-2012) TN	CHL N	CHL EXC.	CHL %	MEAN EXC.	TRENDS (99-2012) TSS
03040201-04													
RS-01013	RS01	DEEP CK	FW										
PD-246	PD	THOMPSON CK	FW										
RS-08273	RS08	JIMMIES CK	FW										
PD-247	PD	THOMPSON CK	FW										
RS-10377	RS10	INDIAN CK	FW										
RL-06436/ RL-09072/ RL-12129	RL06	LAKE, EUREKA (JUNIPER)	FW	16	0	0	0		11	0	0	0	
RL-03346/ RL-07008	RL03	LAKE, EUREKA	FW	5	0	0	0		5	0	0	0	
RL-10101	RL10	LAKE, JUNIPER	FW	10	0	0	0		4	0	0	0	
RL-06448	RL06	LAKE, EUREKA	FW	11	9.091	1	1.62		6	0	0	0	
CL-088	PD	LAKE, EUREKA (JUNIPER)	FW	11	0	0	0		7	0	0	0	
PD-340	INT	JUNIPER CK	FW					NS					
PD-338	INT	THOMPSON CK	FW					NS					
03040201-05													
PD-191	INT	WHITES CK	FW					NS					
PD-339	INT	WESTFIELD CK	FW					NS					
PD-012	INT	PEE DEE RVR	FW					NS					
RL-09100	RL09	LAKE WALLACE	FW	9	66.667	6	1.999		6	4	66.667	107.45	
RL-05398/ RL-08052	RL05	LAKE WALLACE	FW	11	9.091	1	1.62		6	6	100	78.8	
CL-086	PD	LAKE WALLACE	FW	12	0	0	0		5	0	0	0	
PD-107	PD	CROOKED CK	FW										
PD-014	PD	CROOKED CK	FW										
PD-063	INT	CROOKED CK	FW					NS					
RS-08241	RS08	HARRIS CK	FW										
PD-151	INT	CEDAR CK	FW					NS					
PD-015/ RS-06161	PD	PEE DEE RVR	FW					D					
03040201-06													
PD-004	PD	BLACK CK	FW										
RS-08065	RS08	LITTLE BLACK CK TRIB	FW										
PD-251	INT	BLACK CK	FW-SP					NS					
CL-094	INT	LAKE ROBINSON	FW-SP	39	2.564	1	5.682	D	20	0	0	0	

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	BACT N	BACT EXC.	BACT %	MEAN EXC.	TRENDS (99-2012) BACT	NH3 N	NH3 EXC.	NH3 %
03040201-04											
RS-01013	RS01	DEEP CK	FW	11	4	36.364	542.5				
PD-246	PD	THOMPSON CK	FW	23	12	52.174	945	NS	11	0	0
RS-08273	RS08	JIMMIES CK	FW	9	0	0	0		9	0	0
PD-247	PD	THOMPSON CK	FW	23	3	13.043	1146.667	NS	11	0	0
RS-10377	RS10	INDIAN CK	FW	8	3	37.5	1343.333		8	0	0
RL-06436/ RL-09072/ RL-12129	RL06	LAKE, EUREKA (JUNIPER)	FW	20	0	0	0	NS	8	0	0
RL-03346/ RL-07008	RL03	LAKE, EUREKA	FW	11	0	0	0				
RL-10101	RL10	LAKE, JUNIPER	FW	9	0	0	0		8	0	0
RL-06448	RL06	LAKE, EUREKA	FW	12	0	0	0				
CL-088	PD	LAKE, EUREKA (JUNIPER)	FW	11	0	0	0		11	0	0
PD-340	INT	JUNIPER CK	FW	44	0	0	0	NS	21	0	0
PD-338	INT	THOMPSON CK	FW	49	1	2.041	1200	I	24	0	0
03040201-05											
PD-191	INT	WHITES CK	FW	44	0	0	0	NS	21	0	0
PD-339	INT	WESTFIELD CK	FW	39	3	7.692	626.667	I	17	0	0
PD-012	INT	PEE DEE RVR	FW	52	2	3.846	1300	I	27	0	0
RL-09100	RL09	LAKE WALLACE	FW	9	0	0	0		9	1	11.111
RL-05398/ RL-08052	RL05	LAKE WALLACE	FW	12	0	0	0		11	1	9.091
CL-086	PD	LAKE WALLACE	FW	12	0	0	0		12	0	0
PD-107	PD	CROOKED CK	FW	12	0	0	0	NS	11	0	0
PD-014	PD	CROOKED CK	FW	12	0	0	0		11	0	0
PD-063	INT	CROOKED CK	FW	46	0	0	0	I	21	0	0
RS-08241	RS08	HARRIS CK	FW	12	0	0	0		12	0	0
PD-151	INT	CEDAR CK	FW	45	2	4.444	560	NS	21	0	0
PD-015/ RS-06161	PD	PEE DEE RVR	FW	30	0	0	0	NS	17	0	0
03040201-06											
PD-004	PD	BLACK CK	FW	11	0	0	0	NS	11	0	0
RS-08065	RS08	LITTLE BLACK CK TRIB	FW	11	0	0	0		11	0	0
PD-251	INT	BLACK CK	FW-SP	52	1	1.923	580	I	28	0	0
CL-094	INT	LAKE ROBINSON	FW-SP	46	0	0	0	I	22	0	0

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	CD N	CD EXC.	CD %	MEAN EXC.	CR N	CR EXC.	CR %	MEAN EXC.	CU N	CU EXC.	CU %	MEAN EXC.
03040201-04															
RS-01013	RS01	DEEP CK	FW												
PD-246	PD	THOMPSON CK	FW	4	0	0	0	4	0	0	0	4	0	0	0
RS-08273	RS08	JIMMIES CK	FW	3	0	0	0	3	0	0	0	3	0	0	0
PD-247	PD	THOMPSON CK	FW	4	0	0	0	4	0	0	0	4	0	0	0
RS-10377	RS10	INDIAN CK	FW	5	0	0	0	5	0	0	0	5	0	0	0
RL-06436/ RL-09072/ RL-12129	RL06	LAKE, EUREKA (JUNIPER)	FW	2	0	0	0	2	0	0	0	2	0	0	0
RL-03346/ RL-07008	RL03	LAKE, EUREKA	FW												
RL-10101	RL10	LAKE, JUNIPER	FW	5	0	0	0	5	0	0	0	5	0	0	0
RL-06448	RL06	LAKE, EUREKA	FW												
CL-088	PD	LAKE, EUREKA (JUNIPER)	FW	3	0	0	0	3	0	0	0	3	0	0	0
PD-340	INT	JUNIPER CK	FW	7	0	0	0	7	0	0	0	7	1	14.286	18
PD-338	INT	THOMPSON CK	FW	8	0	0	0	8	0	0	0	8	1	12.5	11
03040201-05															
PD-191	INT	WHITES CK	FW	7	0	0	0	7	0	0	0	7	0	0	0
PD-339	INT	WESTFIELD CK	FW	5	0	0	0	5	0	0	0	5	0	0	0
PD-012	INT	PEE DEE RVR	FW	9	1	11.111	11	9	0	0	0	9	2	22.222	14
RL-09100	RL09	LAKE WALLACE	FW	4	0	0	0	4	0	0	0	4	0	0	0
RL-05398/ RL-08052	RL05	LAKE WALLACE	FW	4	0	0	0	4	0	0	0	4	0	0	0
CL-086	PD	LAKE WALLACE	FW	4	0	0	0	4	0	0	0	4	0	0	0
PD-107	PD	CROOKED CK	FW	4	0	0	0	4	0	0	0	4	0	0	0
PD-014	PD	CROOKED CK	FW	4	0	0	0	4	0	0	0	4	1	25	14
PD-063	INT	CROOKED CK	FW	7	0	0	0	7	0	0	0	7	1	14.286	11
RS-08241	RS08	HARRIS CK	FW	4	0	0	0	4	0	0	0	4	0	0	0
PD-151	INT	CEDAR CK	FW	6	0	0	0	6	0	0	0	6	0	0	0
PD-015/ RS-06161	PD	PEE DEE RVR	FW	8	0	0	0	8	0	0	0	8	0	0	0
03040201-06															
PD-004	PD	BLACK CK	FW	4	0	0	0	4	0	0	0	4	0	0	0
RS-08065	RS08	LITTLE BLACK CK TRIB	FW	4	0	0	0	4	0	0	0	4	0	0	0
PD-251	INT	BLACK CK	FW-SP	10	0	0	0	9	0	0	0	10	0	0	0
CL-094	INT	LAKE ROBINSON	FW-SP	7	0	0	0	7	0	0	0	7	0	0	0

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	HG N	HG EXC.	HG %	MEAN EXC.	NI N	NI EXC.	NI %	MEAN EXC.	ZN N	ZN EXC.	ZN %	MEAN EXC.
03040201-04															
RS-01013	RS01	DEEP CK	FW												
PD-246	PD	THOMPSON CK	FW	4	0	0	0	4	0	0	0	4	0	0	0
RS-08273	RS08	JIMMIES CK	FW	3	0	0	0	3	0	0	0	3	0	0	0
PD-247	PD	THOMPSON CK	FW	4	0	0	0	4	0	0	0	4	0	0	0
RS-10377	RS10	INDIAN CK	FW	5	0	0	0	5	0	0	0	5	0	0	0
RL-06436/ RL-09072/ RL-12129	RL06	LAKE, EUREKA (JUNIPER)	FW	2	0	0	0	2	0	0	0	2	0	0	0
RL-03346/ RL-07008	RL03	LAKE, EUREKA	FW												
RL-10101	RL10	LAKE, JUNIPER	FW	5	0	0	0	5	0	0	0	5	0	0	0
RL-06448	RL06	LAKE, EUREKA	FW												
CL-088	PD	LAKE, EUREKA (JUNIPER)	FW	3	0	0	0	3	0	0	0	3	0	0	0
PD-340	INT	JUNIPER CK	FW	7	0	0	0	7	0	0	0	7	0	0	0
PD-338	INT	THOMPSON CK	FW	8	0	0	0	8	0	0	0	8	0	0	0
03040201-05															
PD-191	INT	WHITES CK	FW	7	0	0	0	7	0	0	0	7	0	0	0
PD-339	INT	WESTFIELD CK	FW	5	0	0	0	5	0	0	0	5	0	0	0
PD-012	INT	PEE DEE RVR	FW	9	0	0	0	9	0	0	0	9	1	11.111	97
RL-09100	RL09	LAKE WALLACE	FW	4	0	0	0	4	0	0	0	4	0	0	0
RL-05398/ RL-08052	RL05	LAKE WALLACE	FW	4	0	0	0	4	0	0	0	4	0	0	0
CL-086	PD	LAKE WALLACE	FW	4	0	0	0	4	0	0	0	4	0	0	0
PD-107	PD	CROOKED CK	FW	4	0	0	0	4	0	0	0	4	0	0	0
PD-014	PD	CROOKED CK	FW	4	0	0	0	4	0	0	0	4	1	25	110
PD-063	INT	CROOKED CK	FW	7	0	0	0	7	0	0	0	7	0	0	0
RS-08241	RS08	HARRIS CK	FW	4	0	0	0	4	0	0	0	4	0	0	0
PD-151	INT	CEDAR CK	FW	6	0	0	0	6	0	0	0	6	0	0	0
PD-015/ RS-06161	PD	PEE DEE RVR	FW	8	0	0	0	8	0	0	0	8	0	0	0
03040201-06															
PD-004	PD	BLACK CK	FW	4	0	0	0	4	0	0	0	4	0	0	0
RS-08065	RS08	LITTLE BLACK CK TRIB	FW	4	0	0	0	4	0	0	0	4	0	0	0
PD-251	INT	BLACK CK	FW-SP	10	0	0	0	9	0	0	0	10	0	0	0
CL-094	INT	LAKE ROBINSON	FW-SP	7	0	0	0	7	0	0	0	7	0	0	0

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	DO N	DO EXC.	DO %	MEAN EXC.	TRENDS (99-2012) DO	TRENDS (99-2012) BOD	N	pH EXC.	pH %	MEAN EXC. LT	MEAN EXC. GT	TRENDS (99-2012) PH
03040201-07															
PD-159	PD	BLACK CK	FW-SP	12	0	0	0			12	0	0	0	0	
PD-268	PD	LAKE, PRESTWOOD	FW-SP	12	0	0	0			12	1	8.333	4.64	0	
PD-081	PD	LAKE, PRESTWOOD	FW-SP	12	0	0	0			12	0	0	0	0	
PD-258	PD	SNAKE BRANCH	FW	9	1	11.111	4.93			9	3	33.333	5.937	0	
PD-137	PD	SNAKE BRANCH	FW	12	0	0	0			12	7	58.333	5.944	0	
PD-021	PD	BLACK CK	FW-SP	12	0	0	0	NS	I	12	0	0	0	0	NS
PD-330	PD	BLACK CK	FW-SP	12	0	0	0			12	0	0	0	0	
PD-023	PD	BLACK CK	FW-SP	12	0	0	0	NS		12	0	0	0	0	NS
PD-024A	SPRP	BLACK CK	FW	45	4	8.889	4.19	D	NS	46	1	2.174	5.19	0	NS
PD-024A	SPRP	BLACK CK	FW-SP	45	2	4.444	3.725	D	NS	46	0	0	0	0	NS
PD-025	PD	BLACK CK	FW	13	0	0	0	NS		13	0	0	0	0	NS
PD-141	PD	PIPE	FW	11	1	9.091	4.75	I		11	0	0	0	0	NS
PD-027/ RS-07045	SPRP	BLACK CK	FW	35	2	5.714	4.43	NS	I	35	0	0	0	0	NS
PD-103	PD	HIGH HILL CK	FW	9	3	33.333	3.353			9	1	11.111	4.83	0	
RS-06027	RS06	ASHBY BRANCH	FW	11	4	36.364	4.4			11	6	54.545	5.65	0	
PD-078	INT	BLACK CK	FW	39	5	12.821	4.25	D	NS	39	2	5.128	5.69	0	D
03040201-08															
PD-336	PD	HAGINS PRONG	FW	10	6	60	2.478			10	9	90	5.693	0	
PD-341	PD	THREE CKS	FW	11	5	45.455	3.286			11	10	90.909	5.784	0	
PD-367	INT	THREE CKS	FW	25	10	40	3.363	NS	NS	26	4	15.385	5.565	0	I
RS-08069	RS08	THREE CKS	FW	11	6	54.545	2.51			11	10	90.909	5.657	0	
RS-07201	RS07	ROGERS CK	FW	5	1	20	4.8			5	0	0	0	0	
PD-028	INT	PEE DEE RVR	FW	38	2	5.263	4.74	D	I	38	1	2.632	5.72	0	D
03040201-09															
PD-255	PD	JEFFERIES CK	FW-SP	9	2	22.222	2.08	NS		9	0	0	0	0	NS
PD-256	PD	JEFFERIES CK	FW-SP	9	3	33.333	2.15	NS		9	0	0	0	0	NS
PD-065	PD	GULLEY BR	FW	12	0	0	0	NS		12	0	0	0	0	NS
PD-230	PD	MIDDLE SWAMP	FW-SP	7	4	57.143	1.908			7	1	14.286	3.97	0	
RS-07205	RS07	POLK SWAMP	FW	7	3	42.857	3.747			7	6	85.714	5.625	0	
PD-035	PD	JEFFERIES CK	FW-SP	12	0	0	0			12	0	0	0	0	
PD-231	INT	JEFFERIES CK	FW-SP	51	1	1.961	3.45	D	I	51	0	0	0	0	NS
PD-167	PD	WILLOW CK	FW	9	2	22.222	3.085			9	3	33.333	5.803	0	
03040201-10															
RS-09329	RS09	UNNAMED TRIB TO POCCOSIN SWAMP	FW	4	0	0	0			4	3	75	5.683	0	
PD-337	INT	PEE DEE RVR	FW	40	6	15	4.52	D	NS	40	2	5	5.935	0	D
03040201-11															
PD-320	PD	SMITH SWAMP	FW-SP	14	3	21.429	1.817	NS		14	0	0	0	0	NS
PD-187	PD	SMITH SWAMP	FW-SP	18	10	55.556	1.972	NS	I	18	0	0	0	0	D
PD-097	INT	CATFISH CANAL	FW-SP	34	21	61.765	2.702	NS	D	34	0	0	0	0	D

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	TURB N	TURB EXC.	TURB %	TRENDS (99-2012) TURB	TP N	TP EXC.	TP %	MEAN EXC.	TRENDS (99-2012) TP
03040201-07												
PD-159	PD	BLACK CK	FW-SP	12	0	0						
PD-268	PD	LAKE, PRESTWOOD	FW-SP	12	0	0		12	0	0	0	
PD-081	PD	LAKE, PRESTWOOD	FW-SP	12	0	0		12	0	0	0	
PD-258	PD	SNAKE BRANCH	FW	9	0	0						
PD-137	PD	SNAKE BRANCH	FW	12	1	8.333						
PD-021	PD	BLACK CK	FW-SP	12	0	0	D					
PD-330	PD	BLACK CK	FW-SP	12	0	0						
PD-023	PD	BLACK CK	FW-SP	12	0	0	NS					
PD-024A	SPRP	BLACK CK	FW	46	0	0	NS					NS
PD-024A	SPRP	BLACK CK	FW-SP	46	0	0	NS					NS
PD-025	PD	BLACK CK	FW	12	0	0	NS					
PD-141	PD	PIPE	FW	11	0	0	D					
PD-027/ RS-07045	SPRP	BLACK CK	FW	34	0	0	NS					NS
PD-103	PD	HIGH HILL CK	FW	9	0	0						
RS-06027	RS06	ASHBY BRANCH	FW	11	0	0						
PD-078	INT	BLACK CK	FW	39	1	2.564	I					NS
03040201-08												
PD-336	PD	HAGINS PRONG	FW	10	0	0						
PD-341	PD	THREE CKS	FW	11	0	0						
PD-367	INT	THREE CKS	FW	26	0	0	NS					NS
RS-08069	RS08	THREE CKS	FW	11	0	0						
RS-07201	RS07	ROGERS CK	FW	5	0	0						
PD-028	INT	PEE DEE RVR	FW	38	4	10.526	NS					D
03040201-09												
PD-255	PD	JEFFERIES CK	FW-SP	9	0	0	NS					
PD-256	PD	JEFFERIES CK	FW-SP	9	0	0	NS					
PD-065	PD	GULLEY BR	FW	12	0	0	D					
PD-230	PD	MIDDLE SWAMP	FW-SP	7	0	0						
RS-07205	RS07	POLK SWAMP	FW	7	0	0						
PD-035	PD	JEFFERIES CK	FW-SP	12	0	0						
PD-231	INT	JEFFERIES CK	FW-SP	51	0	0	I					NS
PD-167	PD	WILLOW CK	FW	9	0	0						
03040201-10												
RS-09329	RS09	UNNAMED TRIB TO POCCOSIN SWAMP	FW	4	0	0						
PD-337	INT	PEE DEE RVR	FW	40	2	5	NS					D
03040201-11												
PD-320	PD	SMITH SWAMP	FW-SP	14	0	0	NS					
PD-187	PD	SMITH SWAMP	FW-SP	18	0	0	NS					NS
PD-097	INT	CATFISH CANAL	FW-SP	34	0	0	NS					D

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	TN N	TN EXC.	TN %	MEAN EXC.	TRENDS (99-2012) TN	CHL N	CHL EXC.	CHL %	MEAN EXC.	TRENDS (99-2012) TSS
03040201-07													
PD-159	PD	BLACK CK	FW-SP										
PD-268	PD	LAKE, PRESTWOOD	FW-SP	11	0	0	0		5	0	0	0	
PD-081	PD	LAKE, PRESTWOOD	FW-SP	12	0	0	0		5	0	0	0	
PD-258	PD	SNAKE BRANCH	FW										
PD-137	PD	SNAKE BRANCH	FW										
PD-021	PD	BLACK CK	FW-SP										
PD-330	PD	BLACK CK	FW-SP										
PD-023	PD	BLACK CK	FW-SP										
PD-024A	SPRP	BLACK CK	FW					NS					
PD-024A	SPRP	BLACK CK	FW-SP					NS					
PD-025	PD	BLACK CK	FW										
PD-141	PD	PIPE	FW										
PD-027/ RS-07045	SPRP	BLACK CK	FW					NS					I
PD-103	PD	HIGH HILL CK	FW										
RS-06027	RS06	ASHBY BRANCH	FW										
PD-078	INT	BLACK CK	FW					NS					
03040201-08													
PD-336	PD	HAGINS PRONG	FW										
PD-341	PD	THREE CKS	FW										
PD-367	INT	THREE CKS	FW					NS					
RS-08069	RS08	THREE CKS	FW										
RS-07201	RS07	ROGERS CK	FW										
PD-028	INT	PEE DEE RVR	FW					NS					NS
03040201-09													
PD-255	PD	JEFFERIES CK	FW-SP										
PD-256	PD	JEFFERIES CK	FW-SP										
PD-065	PD	GULLEY BR	FW										
PD-230	PD	MIDDLE SWAMP	FW-SP										
RS-07205	RS07	POLK SWAMP	FW										
PD-035	PD	JEFFERIES CK	FW-SP										
PD-231	INT	JEFFERIES CK	FW-SP					NS					
PD-167	PD	WILLOW CK	FW										
03040201-10													
RS-09329	RS09	UNNAMED TRIB TO POCCOSIN SWAMP	FW										
PD-337	INT	PEE DEE RVR	FW					NS					
03040201-11													
PD-320	PD	SMITH SWAMP	FW-SP										
PD-187	PD	SMITH SWAMP	FW-SP										
PD-097	INT	CATFISH CANAL	FW-SP					NS					

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	BACT N	BACT EXC.	BACT %	MEAN EXC.	TRENDS (99-2012) BACT	NH3 N	NH3 EXC.	NH3 %
03040201-07											
PD-159	PD	BLACK CK	FW-SP	12	0	0	0		12	0	0
PD-268	PD	LAKE, PRESTWOOD	FW-SP	12	0	0	0		12	0	0
PD-081	PD	LAKE, PRESTWOOD	FW-SP	12	0	0	0	NS	12	0	0
PD-258	PD	SNAKE BRANCH	FW	9	7	77.778	1515.714	I	9	0	0
PD-137	PD	SNAKE BRANCH	FW	12	6	50	1238.333		12	0	0
PD-021	PD	BLACK CK	FW-SP	11	0	0	0	NS	12	0	0
PD-330	PD	BLACK CK	FW-SP	11	0	0	0		12	0	0
PD-023	PD	BLACK CK	FW-SP	12	1	8.333	480	I	12	0	0
PD-024A	SPRP	BLACK CK	FW	46	1	2.174	580	NS	22	0	0
PD-024A	SPRP	BLACK CK	FW-SP	46	1	2.174	580	NS	22	0	0
PD-025	PD	BLACK CK	FW	11	0	0	0	NS	12	0	0
PD-141	PD	PIPE	FW	11	5	45.455	1940	NS	11	4	36.364
PD-027/ RS-07045	SPRP	BLACK CK	FW	83	3	3.614	1020	NS	22	0	0
PD-103	PD	HIGH HILL CK	FW	9	0	0	0		9	0	0
RS-06027	RS06	ASHBY BRANCH	FW	11	6	54.545	1348.333				
PD-078	INT	BLACK CK	FW	39	2	5.128	1330	I	15	0	0
03040201-08											
PD-336	PD	HAGINS PRONG	FW	19	2	10.526	1500		9	0	0
PD-341	PD	THREE CKS	FW	11	0	0	0		10	0	0
PD-367	INT	THREE CKS	FW	74	2	2.703	430	NS	7	0	0
RS-08069	RS08	THREE CKS	FW	11	0	0	0		11	0	0
RS-07201	RS07	ROGERS CK	FW	5	0	0	0				
PD-028	INT	PEE DEE RVR	FW	37	4	10.811	1295	NS	27	0	0
03040201-09											
PD-255	PD	JEFFERIES CK	FW-SP	9	0	0	0	NS	9	0	0
PD-256	PD	JEFFERIES CK	FW-SP	10	8	80	2185	NS	9	0	0
PD-065	PD	GULLEY BR	FW	12	5	41.667	1938	NS	11	0	0
PD-230	PD	MIDDLE SWAMP	FW-SP	8	1	12.5	4900	I	7	0	0
RS-07205	RS07	POLK SWAMP	FW	7	2	28.571	675				
PD-035	PD	JEFFERIES CK	FW-SP	13	4	30.769	2377.5	I	12	0	0
PD-231	INT	JEFFERIES CK	FW-SP	51	4	7.843	680	I	27	0	0
PD-167	PD	WILLOW CK	FW	9	2	22.222	595	NS	9	0	0
03040201-10											
RS-09329	RS09	UNNAMED TRIB TO POCCOSIN SWAMP	FW	4	0	0	0		4	0	0
PD-337	INT	PEE DEE RVR	FW	89	5	5.618	584	I	15	0	0
03040201-11											
PD-320	PD	SMITH SWAMP	FW-SP	27	4	14.815	732.5	NS	14	0	0
PD-187	PD	SMITH SWAMP	FW-SP	30	1	3.333	1700	D	18	0	0
PD-097	INT	CATFISH CANAL	FW-SP	34	4	11.765	1010	I	14	0	0

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	CD N	CD EXC.	CD %	MEAN EXC.	CR N	CR EXC.	CR %	MEAN EXC.	CU N	CU EXC.	CU %	MEAN EXC.
03040201-07															
PD-159	PD	BLACK CK	FW-SP	4	0	0	0	4	0	0	0	4	0	0	0
PD-268	PD	LAKE, PRESTWOOD	FW-SP	4	0	0	0	4	0	0	0	4	0	0	0
PD-081	PD	LAKE, PRESTWOOD	FW-SP	4	0	0	0	4	0	0	0	4	0	0	0
PD-258	PD	SNAKE BRANCH	FW	3	0	0	0	3	0	0	0	3	0	0	0
PD-137	PD	SNAKE BRANCH	FW	4	0	0	0	4	0	0	0	4	1	25	15
PD-021	PD	BLACK CK	FW-SP	4	0	0	0	4	1	25	75	4	1	25	15
PD-330	PD	BLACK CK	FW-SP	4	0	0	0	4	0	0	0	4	0	0	0
PD-023	PD	BLACK CK	FW-SP	4	0	0	0	4	0	0	0	4	0	0	0
PD-024A	SPRP	BLACK CK	FW	8	0	0	0	8	0	0	0	8	0	0	0
PD-024A	SPRP	BLACK CK	FW-SP	8	0	0	0	8	0	0	0	8	0	0	0
PD-025	PD	BLACK CK	FW	4	0	0	0	4	0	0	0	4	0	0	0
PD-141	PD	PIPE	FW	3	0	0	0	3	0	0	0	3	0	0	0
PD-027/ RS-07045	SPRP	BLACK CK	FW	8	0	0	0	8	0	0	0	8	0	0	0
PD-103	PD	HIGH HILL CK	FW	3	0	0	0	3	0	0	0	3	1	33.333	13
RS-06027	RS06	ASHBY BRANCH	FW												
PD-078	INT	BLACK CK	FW	8	0	0	0	8	0	0	0	8	0	0	0
03040201-08															
PD-336	PD	HAGINS PRONG	FW	4	0	0	0	4	0	0	0	4	0	0	0
PD-341	PD	THREE CKS	FW	4	0	0	0	4	0	0	0	4	0	0	0
PD-367	INT	THREE CKS	FW	3	0	0	0	3	0	0	0	3	0	0	0
RS-08069	RS08	THREE CKS	FW	4	0	0	0	4	0	0	0	4	0	0	0
RS-07201	RS07	ROGERS CK	FW												
PD-028	INT	PEE DEE RVR	FW	12	0	0	0	12	0	0	0	12	0	0	0
03040201-09															
PD-255	PD	JEFFERIES CK	FW-SP	3	0	0	0	3	0	0	0	3	0	0	0
PD-256	PD	JEFFERIES CK	FW-SP	3	0	0	0	3	0	0	0	3	0	0	0
PD-065	PD	GULLEY BR	FW	4	0	0	0	4	0	0	0	4	0	0	0
PD-230	PD	MIDDLE SWAMP	FW-SP	2	0	0	0	2	0	0	0	2	0	0	0
RS-07205	RS07	POLK SWAMP	FW												
PD-035	PD	JEFFERIES CK	FW-SP	4	0	0	0	4	0	0	0	4	0	0	0
PD-231	INT	JEFFERIES CK	FW-SP	11	0	0	0	11	0	0	0	11	0	0	0
PD-167	PD	WILLOW CK	FW	4	0	0	0	4	0	0	0	4	0	0	0
03040201-10															
RS-09329	RS09	UNNAMED TRIB TO POCCOSIN SWAMP	FW	3	0	0	0	3	0	0	0	3	0	0	0
PD-337	INT	PEE DEE RVR	FW	7	0	0	0	7	0	0	0	7	0	0	0
03040201-11															
PD-320	PD	SMITH SWAMP	FW-SP	5	0	0	0	5	0	0	0	5	0	0	0
PD-187	PD	SMITH SWAMP	FW-SP	6	0	0	0	6	0	0	0	6	0	0	0
PD-097	INT	CATFISH CANAL	FW-SP	7	0	0	0	7	0	0	0	7	0	0	0

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	HG N	HG EXC.	HG %	MEAN EXC.	NI N	NI EXC.	NI %	MEAN EXC.	ZN N	ZN EXC.	ZN %	MEAN EXC.
03040201-07															
PD-159	PD	BLACK CK	FW-SP	4	0	0	0	4	0	0	0	4	0	0	0
PD-268	PD	LAKE, PRESTWOOD	FW-SP	4	0	0	0	4	0	0	0	4	0	0	0
PD-081	PD	LAKE, PRESTWOOD	FW-SP	4	0	0	0	4	0	0	0	4	0	0	0
PD-258	PD	SNAKE BRANCH	FW	3	0	0	0	3	0	0	0	3	0	0	0
PD-137	PD	SNAKE BRANCH	FW	4	0	0	0	4	0	0	0	4	0	0	0
PD-021	PD	BLACK CK	FW-SP	4	0	0	0	4	1	25	39	4	0	0	0
PD-330	PD	BLACK CK	FW-SP	4	0	0	0	4	0	0	0	4	0	0	0
PD-023	PD	BLACK CK	FW-SP	4	0	0	0	4	0	0	0	4	0	0	0
PD-024A	SPRP	BLACK CK	FW	8	0	0	0	8	0	0	0	8	1	12.5	95
PD-024A	SPRP	BLACK CK	FW-SP	8	0	0	0	8	0	0	0	8	1	12.5	95
PD-025	PD	BLACK CK	FW	4	0	0	0	4	0	0	0	4	0	0	0
PD-141	PD	PIPE	FW	3	0	0	0	3	0	0	0	3	0	0	0
PD-027/ RS-07045	SPRP	BLACK CK	FW	8	0	0	0	8	0	0	0	8	0	0	0
PD-103	PD	HIGH HILL CK	FW	3	0	0	0	3	0	0	0	3	0	0	0
RS-06027	RS06	ASHBY BRANCH	FW												
PD-078	INT	BLACK CK	FW	8	0	0	0	8	0	0	0	8	0	0	0
03040201-08															
PD-336	PD	HAGINS PRONG	FW	4	0	0	0	4	0	0	0	4	0	0	0
PD-341	PD	THREE CKS	FW	4	0	0	0	4	0	0	0	4	0	0	0
PD-367	INT	THREE CKS	FW	3	0	0	0	3	0	0	0	3	0	0	0
RS-08069	RS08	THREE CKS	FW	4	0	0	0	4	0	0	0	4	0	0	0
RS-07201	RS07	ROGERS CK	FW												
PD-028	INT	PEE DEE RVR	FW	12	0	0	0	12	0	0	0	12	0	0	0
03040201-09															
PD-255	PD	JEFFERIES CK	FW-SP	3	0	0	0	3	0	0	0	3	0	0	0
PD-256	PD	JEFFERIES CK	FW-SP	3	0	0	0	3	0	0	0	3	0	0	0
PD-065	PD	GULLEY BR	FW	4	0	0	0	4	0	0	0	4	0	0	0
PD-230	PD	MIDDLE SWAMP	FW-SP	2	0	0	0	2	0	0	0	2	0	0	0
RS-07205	RS07	POLK SWAMP	FW												
PD-035	PD	JEFFERIES CK	FW-SP	4	0	0	0	4	0	0	0	4	0	0	0
PD-231	INT	JEFFERIES CK	FW-SP	11	0	0	0	11	0	0	0	11	0	0	0
PD-167	PD	WILLOW CK	FW	4	0	0	0	4	0	0	0	4	0	0	0
03040201-10															
RS-09329	RS09	UNNAMED TRIB TO POCCOSIN SWAMP	FW	3	0	0	0	3	0	0	0	3	0	0	0
PD-337	INT	PEE DEE RVR	FW	7	0	0	0	7	0	0	0	7	0	0	0
03040201-11															
PD-320	PD	SMITH SWAMP	FW-SP	5	0	0	0	5	0	0	0	5	0	0	0
PD-187	PD	SMITH SWAMP	FW-SP	6	0	0	0	6	0	0	0	6	0	0	0
PD-097	INT	CATFISH CANAL	FW-SP	7	0	0	0	7	0	0	0	7	0	0	0

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	DO N	DO EXC.	DO %	MEAN EXC.	TRENDS (99-2012) DO	TRENDS (99-2012) BOD	N	pH EXC.	pH %	MEAN EXC. LT	MEAN EXC. GT	TRENDS (99-2012) PH
03040201-12															
RS-10365	RS10	PEE DEE RVR	FW	12	0	0	0			12	0	0	0	0	
RS-08237	RS08	PEE DEE RVR	FW	12	1	8.333	4.79			12	0	0	0	0	
PD-076	INT	PEE DEE RVR	FW	39	4	10.256	4.232	NS	NS	39	0	0	0	0	D
03040203-13															
PD-360	INT	BLACK MINGO CK	FW	19	7	36.842	3.511	NS	NS	19	0	0	0	0	NS
PD-347	PD	ASHPOLE SWAMP	FW-SP	4	2	50	2.685			4	0	0	0	0	
03040203-14															
PD-038/ RS-08261	INT	LUMBER RVR	FW	49	15	30.612	4.201	NS	I	49	17	34.694	5.626	0	D
03040204-01															
PD-017A	PD	MCLAURINS MILL POND	FW	12	5	41.667	3.766			12	4	33.333	5.838	0	
PD-306	PD	PANTHER CK	FW	9	4	44.444	3.192			9	6	66.667	5.72	0	
PD-016	PD	PANTHER CK	FW	8	2	25	2.345			8	8	100	5.826	0	
PD-062	PD	GUM SWAMP	FW	12	1	8.333	4.52			12	8	66.667	5.706	0	
PD-365	INT	LITTLE PEE DEE RVR	FW	38	2	5.263	3.855	NS	NS	39	12	30.769	5.75	0	NS
03040204-02															
PD-372		LEITH CK	FW	5	2	40	3.635			5	3	60	5.79	0	
03040204-03															
PD-371		SHOE HEEL CK	FW	6	0	0	0			6	4	66.667	5.82	0	
03040204-04															
PD-031/ RS-08265	PD	BUCK SWAMP	FW-SP	8	2	25	1.105			8	0	0	0	0	
RS-07047	RS07	BUCK SWAMP	FW-SP	6	2	33.333	3			6	0	0	0	0	
PD-349	INT	BUCK SWAMP	FW-SP	30	10	33.333	2.51	NS	NS	30	0	0	0	0	D
03040204-05															
PD-069/ RS-08225	PD	LITTLE PEE DEE RVR	FW	12	2	16.667	4.33	D		12	10	83.333	5.72	0	NS
PD-029E	PD	LITTLE PEE DEE RVR	FW	22	6	27.273	4.02	NS	NS	22	18	81.818	5.754	0	NS
PD-055	SPRP	LITTLE PEE DEE RVR	FW	50	9	18	4.049	D	I	50	22	44	5.799	0	NS
PD-030	PD	MAPLE SWAMP	FW-SP	6	0	0	0			6	0	0	0	0	
PD-030A	PD	LITTLE PEE DEE RVR	FW	12	3	25	4.61	NS		12	8	66.667	5.622	0	NS
PD-348/ RS-01018	INT	LITTLE PEE DEE RVR	FW	32	5	15.625	4.228	NS	I	32	2	6.25	5.84	0	I
PD-052	INT	LITTLE PEE DEE RVR	FW	40	7	17.5	4.323	NS	I	40	6	15	5.557	0	NS
03040204-06															
RS-06009	RS06	BOB'S BRANCH	FW	7	3	42.857	2.933			7	0	0	0	0	
PD-176/ RS-04545	INT	LAKE SWAMP	FW-SP	34	14	41.176	2.474	D	NS	34	0	0	0	0	NS

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	TURB N	TURB EXC.	TURB %	TRENDS (99-2012) TURB	TP N	TP EXC.	TP %	MEAN EXC.	TRENDS (99-2012) TP
03040201-12												
RS-10365	RS10	PEE DEE RVR	FW	12	0	0						
RS-08237	RS08	PEE DEE RVR	FW	12	1	8.333						
PD-076	INT	PEE DEE RVR	FW	39	0	0	I					D
03040203-13												
PD-360	INT	BLACK MINGO CK	FW	19	0	0	I					I
PD-347	PD	ASHPOLE SWAMP	FW-SP	4	0	0						
03040203-14												
PD-038/ RS-08261	INT	LUMBER RVR	FW	49	0	0	NS					D
03040204-01												
PD-017A	PD	MCLAURINS MILL POND	FW	12	0	0						
PD-306	PD	PANTHER CK	FW	9	0	0						
PD-016	PD	PANTHER CK	FW	8	0	0						
PD-062	PD	GUM SWAMP	FW	12	0	0						
PD-365	INT	LITTLE PEE DEE RVR	FW	39	0	0	NS					NS
03040204-02												
PD-372		LEITH CK	FW	5	0	0						
03040204-03												
PD-371		SHOE HEEL CK	FW	6	0	0						
03040204-04												
PD-031/ RS-08265	PD	BUCK SWAMP	FW-SP	8	0	0						
RS-07047	RS07	BUCK SWAMP	FW-SP	6	0	0						
PD-349	INT	BUCK SWAMP	FW-SP	30	1	3.333	I					NS
03040204-05												
PD-069/ RS-08225	PD	LITTLE PEE DEE RVR	FW	12	0	0	NS					
PD-029E	PD	LITTLE PEE DEE RVR	FW	22	0	0	NS					I
PD-055	SPRP	LITTLE PEE DEE RVR	FW	50	0	0	NS					NS
PD-030	PD	MAPLE SWAMP	FW-SP	6	0	0						
PD-030A	PD	LITTLE PEE DEE RVR	FW	12	0	0	NS					
PD-348/ RS-01018	INT	LITTLE PEE DEE RVR	FW	32	0	0	NS					NS
PD-052	INT	LITTLE PEE DEE RVR	FW	40	0	0	NS					NS
03040204-06												
RS-06009	RS06	BOB'S BRANCH	FW	7	0	0						
PD-176/ RS-04545	INT	LAKE SWAMP	FW-SP	34	0	0	NS					NS

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	TN N	TN EXC.	TN %	MEAN EXC.	TRENDS (99-2012) TN	CHL N	CHL EXC.	CHL %	MEAN EXC.	TRENDS (99-2012) TSS
03040201-12													
RS-10365	RS10	PEE DEE RVR	FW										
RS-08237	RS08	PEE DEE RVR	FW										
PD-076	INT	PEE DEE RVR	FW					NS					
03040203-13													
PD-360	INT	BLACK MINGO CK	FW					NS					
PD-347	PD	ASHPOLE SWAMP	FW-SP										
03040203-14													
PD-038/ RS-08261	INT	LUMBER RVR	FW					NS					NS
03040204-01													
PD-017A	PD	MCLAURINS MILL POND	FW										
PD-306	PD	PANTHER CK	FW										
PD-016	PD	PANTHER CK	FW										
PD-062	PD	GUM SWAMP	FW										
PD-365	INT	LITTLE PEE DEE RVR	FW					NS					
03040204-02													
PD-372		LEITH CK	FW										
03040204-03													
PD-371		SHOE HEEL CK	FW										
03040204-04													
PD-031/ RS-08265	PD	BUCK SWAMP	FW-SP										
RS-07047	RS07	BUCK SWAMP	FW-SP										
PD-349	INT	BUCK SWAMP	FW-SP					NS					
03040204-05													
PD-069/ RS-08225	PD	LITTLE PEE DEE RVR	FW										
PD-029E	PD	LITTLE PEE DEE RVR	FW										
PD-055	SPRP	LITTLE PEE DEE RVR	FW					NS					
PD-030	PD	MAPLE SWAMP	FW-SP										
PD-030A	PD	LITTLE PEE DEE RVR	FW										
PD-348/ RS-01018	INT	LITTLE PEE DEE RVR	FW					NS					
PD-052	INT	LITTLE PEE DEE RVR	FW					NS					
03040204-06													
RS-06009	RS06	BOB'S BRANCH	FW										
PD-176/ RS-04545	INT	LAKE SWAMP	FW-SP					NS					

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	BACT N	BACT EXC.	BACT %	MEAN EXC.	TRENDS (99-2012) BACT	NH3 N	NH3 EXC.	NH3 %
03040201-12											
RS-10365	RS10	PEE DEE RVR	FW	12	0	0	0		12	0	0
RS-08237	RS08	PEE DEE RVR	FW	12	0	0	0		12	0	0
PD-076	INT	PEE DEE RVR	FW	39	2	5.128	620	NS	16	0	0
03040203-13											
PD-360	INT	BLACK MINGO CK	FW	19	3	15.789	813.333	NS	6	0	0
PD-347	PD	ASHPOLE SWAMP	FW-SP	4	1	25	1100		3	0	0
03040203-14											
PD-038/ RS-08261	INT	LUMBER RVR	FW	49	5	10.204	862	NS	27	0	0
03040204-01											
PD-017A	PD	MCLAURINS MILL POND	FW	12	0	0	0		12	0	0
PD-306	PD	PANTHER CK	FW	9	1	11.111	780		9	0	0
PD-016	PD	PANTHER CK	FW	8	0	0	0		8	0	0
PD-062	PD	GUM SWAMP	FW	12	0	0	0		11	0	0
PD-365	INT	LITTLE PEE DEE RVR	FW	38	1	2.632	940	NS	14	0	0
03040204-02											
PD-372		LEITH CK	FW	5	0	0	0		5	0	0
03040204-03											
PD-371		SHOE HEEL CK	FW	6	0	0	0		6	0	0
03040204-04											
PD-031/ RS-08265	PD	BUCK SWAMP	FW-SP	8	0	0	0		8	0	0
RS-07047	RS07	BUCK SWAMP	FW-SP	6	0	0	0				
PD-349	INT	BUCK SWAMP	FW-SP	30	3	10	840	NS	13	0	0
03040204-05											
PD-069/ RS-08225	PD	LITTLE PEE DEE RVR	FW	12	0	0	0	NS	11	0	0
PD-029E	PD	LITTLE PEE DEE RVR	FW	30	2	6.667	800	NS	21	0	0
PD-055	SPRP	LITTLE PEE DEE RVR	FW	50	4	8	725	NS	25	0	0
PD-030	PD	MAPLE SWAMP	FW-SP	6	0	0	0		6	0	0
PD-030A	PD	LITTLE PEE DEE RVR	FW	12	0	0	0	NS	11	0	0
PD-348/ RS-01018	INT	LITTLE PEE DEE RVR	FW	32	1	3.125	410	D	10	0	0
PD-052	INT	LITTLE PEE DEE RVR	FW	40	1	2.5	570	NS	15	0	0
03040204-06											
RS-06009	RS06	BOB'S BRANCH	FW	7	1	14.286	1500				
PD-176/ RS-04545	INT	LAKE SWAMP	FW-SP	34	6	17.647	965	NS	14	0	0

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	CD N	CD EXC.	CD %	MEAN EXC.	CR N	CR EXC.	CR %	MEAN EXC.	CU N	CU EXC.	CU %	MEAN EXC.
03040201-12															
RS-10365	RS10	PEE DEE RVR	FW	7	0	0	0	7	0	0	0	7	0	0	0
RS-08237	RS08	PEE DEE RVR	FW	4	0	0	0	4	0	0	0	4	1	25	13
PD-076	INT	PEE DEE RVR	FW	8	0	0	0	8	0	0	0	8	0	0	0
03040203-13															
PD-360	INT	BLACK MINGO CK	FW	2	0	0	0	2	0	0	0	2	0	0	0
PD-347	PD	ASHPOLE SWAMP	FW-SP	2	0	0	0	2	0	0	0	2	0	0	0
03040203-14															
PD-038/ RS-08261	INT	LUMBER RVR	FW	11	0	0	0	11	0	0	0	11	0	0	0
03040204-01															
PD-017A	PD	MCLAURINS MILL POND	FW	4	0	0	0	4	0	0	0	4	0	0	0
PD-306	PD	PANTHER CK	FW	3	0	0	0	3	0	0	0	3	0	0	0
PD-016	PD	PANTHER CK	FW	3	0	0	0	3	0	0	0	3	0	0	0
PD-062	PD	GUM SWAMP	FW	4	0	0	0	4	0	0	0	4	0	0	0
PD-365	INT	LITTLE PEE DEE RVR	FW	8	0	0	0	8	0	0	0	8	0	0	0
03040204-02															
PD-372		LEITH CK	FW	3	0	0	0	3	0	0	0	3	0	0	0
03040204-03															
PD-371		SHOE HEEL CK	FW	4	0	0	0	4	0	0	0	4	0	0	0
03040204-04															
PD-031/ RS-08265	PD	BUCK SWAMP	FW-SP	2	0	0	0	2	0	0	0	2	0	0	0
RS-07047	RS07	BUCK SWAMP	FW-SP												
PD-349	INT	BUCK SWAMP	FW-SP	6	0	0	0	6	0	0	0	6	0	0	0
03040204-05															
PD-069/ RS-08225	PD	LITTLE PEE DEE RVR	FW	4	0	0	0	4	0	0	0	4	0	0	0
PD-029E	PD	LITTLE PEE DEE RVR	FW	8	0	0	0	8	0	0	0	8	0	0	0
PD-055	SPRP	LITTLE PEE DEE RVR	FW	12	0	0	0	12	0	0	0	12	0	0	0
PD-030	PD	MAPLE SWAMP	FW-SP	2	0	0	0	2	0	0	0	2	0	0	0
PD-030A	PD	LITTLE PEE DEE RVR	FW	4	0	0	0	4	0	0	0	4	0	0	0
PD-348/ RS-01018	INT	LITTLE PEE DEE RVR	FW	4	0	0	0	4	0	0	0	4	0	0	0
PD-052	INT	LITTLE PEE DEE RVR	FW	7	0	0	0	7	0	0	0	7	0	0	0
03040204-06															
RS-06009	RS06	BOB'S BRANCH	FW												
PD-176/ RS-04545	INT	LAKE SWAMP	FW-SP	7	0	0	0	7	0	0	0	7	0	0	0

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	HG N	HG EXC.	HG %	MEAN EXC.	NI N	NI EXC.	NI %	MEAN EXC.	ZN N	ZN EXC.	ZN %	MEAN EXC.
03040201-12															
RS-10365	RS10	PEE DEE RVR	FW	7	0	0	0	7	0	0	0	7	0	0	0
RS-08237	RS08	PEE DEE RVR	FW	4	0	0	0	4	0	0	0	4	0	0	0
PD-076	INT	PEE DEE RVR	FW	8	0	0	0	8	0	0	0	8	0	0	0
03040203-13															
PD-360	INT	BLACK MINGO CK	FW	2	0	0	0	2	0	0	0	2	0	0	0
PD-347	PD	ASHPOLE SWAMP	FW-SP	2	0	0	0	2	0	0	0	2	0	0	0
03040203-14															
PD-038/ RS-08261	INT	LUMBER RVR	FW	11	0	0	0	11	0	0	0	11	0	0	0
03040204-01															
PD-017A	PD	MCLAURINS MILL POND	FW	4	0	0	0	4	0	0	0	4	1	25	120
PD-306	PD	PANTHER CK	FW	3	0	0	0	3	0	0	0	3	1	33.333	180
PD-016	PD	PANTHER CK	FW	3	0	0	0	3	0	0	0	3	0	0	0
PD-062	PD	GUM SWAMP	FW	4	0	0	0	4	0	0	0	4	0	0	0
PD-365	INT	LITTLE PEE DEE RVR	FW	8	0	0	0	8	0	0	0	8	0	0	0
03040204-02															
PD-372		LEITH CK	FW	3	0	0	0	3	0	0	0	3	0	0	0
03040204-03															
PD-371		SHOE HEEL CK	FW	4	0	0	0	4	0	0	0	4	0	0	0
03040204-04															
PD-031/ RS-08265	PD	BUCK SWAMP	FW-SP	2	0	0	0	2	0	0	0	2	0	0	0
RS-07047	RS07	BUCK SWAMP	FW-SP												
PD-349	INT	BUCK SWAMP	FW-SP	6	0	0	0	6	0	0	0	6	0	0	0
03040204-05															
PD-069/ RS-08225	PD	LITTLE PEE DEE RVR	FW	4	0	0	0	4	0	0	0	4	0	0	0
PD-029E	PD	LITTLE PEE DEE RVR	FW	8	0	0	0	8	0	0	0	8	0	0	0
PD-055	SPRP	LITTLE PEE DEE RVR	FW	12	0	0	0	12	0	0	0	12	0	0	0
PD-030	PD	MAPLE SWAMP	FW-SP	2	0	0	0	2	0	0	0	2	0	0	0
PD-030A	PD	LITTLE PEE DEE RVR	FW	4	0	0	0	4	0	0	0	4	0	0	0
PD-348/ RS-01018	INT	LITTLE PEE DEE RVR	FW	4	0	0	0	4	0	0	0	4	0	0	0
PD-052	INT	LITTLE PEE DEE RVR	FW	7	0	0	0	7	0	0	0	7	0	0	0
03040204-06															
RS-06009	RS06	BOB'S BRANCH	FW												
PD-176/ RS-04545	INT	LAKE SWAMP	FW-SP	7	0	0	0	7	0	0	0	7	0	0	0

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	DO N	DO EXC.	DO %	MEAN EXC.	TRENDS (99-2012) DO	TRENDS (99-2012) BOD	N	pH EXC.	pH %	MEAN EXC. LT	MEAN EXC. GT	TRENDS (99-2012) PH
03040204-07															
PD-370	NULL	BRUNSON SWAMP	FW	6	3	50	3.713			6	0	0	0	0	
RS-07051	RS07	CHINNERS SWAMP	FW-SP	6	2	33.333	2.95			6	0	0	0	0	
PD-177	PD	CHINNERS SWAMP	FW-SP	9	3	33.333	3.037			9	0	0	0	0	
PD-352	INT	CHINNERS SWAMP	FW-SP	21	4	19.048	3.105	NS	NS	21	0	0	0	0	I
03040204-08															
PD-351	PD	CEDAR CK	ORW	4	2	50	3.575			4	4	100	5.822	0	
RS-08229	RS08	WHITE OAK CK	FW-SP	7	0	0	0			7	0	0	0	0	
PD-037	PD	WHITE OAK CK	FW-SP	22	0	0	0	NS	NS	22	0	0	0	0	NS
PD-042	PD	LITTLE PEE DEE RVR	ORW	12	4	33.333	4.758	NS	I	12	10	83.333	5.665	0	NS
RS-06181	RS06	LITTLE PEE DEE RVR	ORW	10	1	10	4.3			10	0	0	0	0	
PD-189/ RS-08083	PD	LITTLE PEE DEE RVR	ORW	12	6	50	4.312	NS		12	10	83.333	5.674	0	D
PD-350	INT	LITTLE PEE DEE RVR	ORW	32	9	28.125	3.859	D	NS	33	3	9.091	5.79	0	NS
03040207-01															
MD-075	PD	SAMPIT RVR	SB	12	5	41.667	2.206	NS		12	3	25	6.243	0	NS
MD-076N	PD	TURKEY CK	FW	6	1	16.667	4.6			6	2	33.333	5.945	0	
MD-149	PD	WHITES CK	SB	12	3	25	2.667	NS		12	2	16.667	6.255	0	NS
MD-077	INT	SAMPIT RVR	SB	40	7	17.5	3.727	NS	I	40	0	0	0	0	NS
MD-073/ NO-01099	PD	SAMPIT RVR	SB	12	3	25	3.237	NS		12	2	16.667	6.245	0	NS
MD-074	PD	SAMPIT RVR	SB	12	3	25	3.5	NS		12	2	16.667	6.085	0	NS
03040207-02															
RS-04377/ RS-06157/ RS-10401	RS04	PEE DEE RVR	FW	24	2	8.333	3.775	NS	NS	24	0	0	0	0	NS
PD-060	INT	PEE DEE RVR	FW	34	2	5.882	4.695	D	NS	34	1	2.941	5.74	0	NS
PD-061	PD	PEE DEE RVR	FW	12	1	8.333	3.7	NS		12	0	0	0	0	NS
RS-06013	RS06	CYPRESS CK	FW	12	7	58.333	3.214			12	2	16.667	5.86	0	
MD-275	INT	PEE DEE RVR	SB-SP	40	14	35	4.265	NS	NS	40	2	5	6.46	0	I
MD-080	PD	WINYAH BAY	SB	12	3	25	3.47	NS		12	2	16.667	6.11	0	I
RO-08348	RO08	WINYAH BAY	SB	14	2	14.286	3.255			14	1	7.143	5.97	0	
RO-10380	RO10	WINYAH BAY	SB	13	0	0	0			13	0	0	0	0	
RO-07332	RO07	WINYAH BAY	SB	15	0	0	0			15	0	0	0	0	
MD-278/ RO-12327	INT	WINYAH BAY	SB	40	0	0	0	NS	NS	40	1	2.5	0	8.56	NS
RO-06317	RO06	WINYAH BAY	SB	13	0	0	0			13	0	0	0	0	

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	TURB N	TURB EXC.	TURB %	TRENDS (99-2012) TURB	TP N	TP EXC.	TP %	MEAN EXC.	TRENDS (99-2012) TP
03040204-07												
PD-370	NULL	BRUNSON SWAMP	FW	6	0	0						
RS-07051	RS07	CHINNERS SWAMP	FW-SP	6	0	0						
PD-177	PD	CHINNERS SWAMP	FW-SP	9	0	0						
PD-352	INT	CHINNERS SWAMP	FW-SP	21	0	0	NS					I
03040204-08												
PD-351	PD	CEDAR CK	ORW	4	0	0						
RS-08229	RS08	WHITE OAK CK	FW-SP	7	0	0						
PD-037	PD	WHITE OAK CK	FW-SP	22	0	0	NS					NS
PD-042	PD	LITTLE PEE DEE RVR	ORW	12	0	0	D					
RS-06181	RS06	LITTLE PEE DEE RVR	ORW	10	0	0						
PD-189/ RS-08083	PD	LITTLE PEE DEE RVR	ORW	12	0	0	D					
PD-350	INT	LITTLE PEE DEE RVR	ORW	33	0	0	NS					D
03040207-01												
MD-075	PD	SAMPIT RVR	SB	12	1	8.333	NS					
MD-076N	PD	TURKEY CK	FW	6	0	0						
MD-149	PD	WHITES CK	SB	12	3	25	NS					
MD-077	INT	SAMPIT RVR	SB	40	7	17.5	NS					NS
MD-073/ NO-01099	PD	SAMPIT RVR	SB	12	1	8.333	NS					
MD-074	PD	SAMPIT RVR	SB	12	2	16.667	NS					
03040207-02												
RS-04377/ RS-06157/ RS-10401	RS04	PEE DEE RVR	FW	24	0	0	NS					NS
PD-060	INT	PEE DEE RVR	FW	34	0	0	NS					D
PD-061	PD	PEE DEE RVR	FW	12	0	0	NS					
RS-06013	RS06	CYPRESS CK	FW	12	0	0						
MD-275	INT	PEE DEE RVR	SB-SP	40	3	7.5	NS					NS
MD-080	PD	WINYAH BAY	SB	12	1	8.333	NS					
RO-08348	RO08	WINYAH BAY	SB	12	2	16.667						
RO-10380	RO10	WINYAH BAY	SB	13	1	7.692						
RO-07332	RO07	WINYAH BAY	SB	13	3	23.077						
MD-278/ RO-12327	INT	WINYAH BAY	SB	40	5	12.5	NS					NS
RO-06317	RO06	WINYAH BAY	SB	12	1	8.333						

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	TN N	TN EXC.	TN %	MEAN EXC.	TRENDS (99-2012) TN	CHL N	CHL EXC.	CHL %	MEAN EXC.	TRENDS (99-2012) TSS
03040204-07													
PD-370	NULL	BRUNSON SWAMP	FW										
RS-07051	RS07	CHINNERS SWAMP	FW-SP										
PD-177	PD	CHINNERS SWAMP	FW-SP										
PD-352	INT	CHINNERS SWAMP	FW-SP					NS					
03040204-08													
PD-351	PD	CEDAR CK	ORW										
RS-08229	RS08	WHITE OAK CK	FW-SP										
PD-037	PD	WHITE OAK CK	FW-SP										
PD-042	PD	LITTLE PEE DEE RVR	ORW										
RS-06181	RS06	LITTLE PEE DEE RVR	ORW										
PD-189/ RS-08083	PD	LITTLE PEE DEE RVR	ORW										
PD-350	INT	LITTLE PEE DEE RVR	ORW					NS					
03040207-01													
MD-075	PD	SAMPIT RVR	SB										
MD-076N	PD	TURKEY CK	FW										
MD-149	PD	WHITES CK	SB										
MD-077	INT	SAMPIT RVR	SB					NS					
MD-073/ NO-01099	PD	SAMPIT RVR	SB										
MD-074	PD	SAMPIT RVR	SB										
03040207-02													
RS-04377/ RS-06157/ RS-10401	RS04	PEE DEE RVR	FW					NS					
PD-060	INT	PEE DEE RVR	FW					NS					
PD-061	PD	PEE DEE RVR	FW										NS
RS-06013	RS06	CYPRESS CK	FW										
MD-275	INT	PEE DEE RVR	SB-SP					NS					
MD-080	PD	WINYAH BAY	SB										
RO-08348	RO08	WINYAH BAY	SB										
RO-10380	RO10	WINYAH BAY	SB										
RO-07332	RO07	WINYAH BAY	SB										
MD-278/ RO-12327	INT	WINYAH BAY	SB					NS					
RO-06317	RO06	WINYAH BAY	SB										

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	BACT N	BACT EXC.	BACT %	MEAN EXC.	TRENDS (99-2012) BACT	NH3 N	NH3 EXC.	NH3 %
03040204-07											
PD-370	NULL	BRUNSON SWAMP	FW	6	0	0	0		6	0	0
RS-07051	RS07	CHINNERS SWAMP	FW-SP	6	0	0	0				
PD-177	PD	CHINNERS SWAMP	FW-SP	9	0	0	0	I	9	0	0
PD-352	INT	CHINNERS SWAMP	FW-SP	20	5	25	676	I	4	0	0
03040204-08											
PD-351	PD	CEDAR CK	ORW	4	0	0	0		4	0	0
RS-08229	RS08	WHITE OAK CK	FW-SP	7	7	100	1347.143		7	0	0
PD-037	PD	WHITE OAK CK	FW-SP	34	8	23.529	748.75	I	22	0	0
PD-042	PD	LITTLE PEE DEE RVR	ORW	12	0	0	0	I	12	0	0
RS-06181	RS06	LITTLE PEE DEE RVR	ORW	10	1	10	670				
PD-189/ RS-08083	PD	LITTLE PEE DEE RVR	ORW	12	0	0	0	NS	12	0	0
PD-350	INT	LITTLE PEE DEE RVR	ORW	33	2	6.061	585	NS	13	0	0
03040207-01											
MD-075	PD	SAMPIT RVR	SB	11	0	0	0	NS	12	0	0
MD-076N	PD	TURKEY CK	FW	6	0	0	0		6	0	0
MD-149	PD	WHITES CK	SB	11	0	0	0	NS	12	0	0
MD-077	INT	SAMPIT RVR	SB	38	0	0	0	NS	16	0	0
MD-073/ NO-01099	PD	SAMPIT RVR	SB	11	0	0	0	NS	12	0	0
MD-074	PD	SAMPIT RVR	SB	11	0	0	0	NS	12	0	0
03040207-02											
RS-04377/ RS-06157/ RS-10401	RS04	PEE DEE RVR	FW	24	2	8.333	715	I	11	0	0
PD-060	INT	PEE DEE RVR	FW	34	0	0	0	NS	10	0	0
PD-061	PD	PEE DEE RVR	FW	12	0	0	0	NS	11	0	0
RS-06013	RS06	CYPRESS CK	FW	12	4	33.333	877.5				
MD-275	INT	PEE DEE RVR	SB-SP	39	0	0	0	D	15	0	0
MD-080	PD	WINYAH BAY	SB	11	0	0	0	NS	12	0	0
RO-08348	RO08	WINYAH BAY	SB	11	0	0	0		20	0	0
RO-10380	RO10	WINYAH BAY	SB	13	0	0	0		13	0	0
RO-07332	RO07	WINYAH BAY	SB	13	0	0	0				
MD-278/ RO-12327	INT	WINYAH BAY	SB	40	0	0	0	NS	15	0	0
RO-06317	RO06	WINYAH BAY	SB	13	0	0	0				

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	CD N	CD EXC.	CD %	MEAN EXC.	CR N	CR EXC.	CR %	MEAN EXC.	CU N	CU EXC.	CU %	MEAN EXC.
03040204-07															
PD-370	NULL	BRUNSON SWAMP	FW	4	0	0	0	4	0	0	0	4	0	0	0
RS-07051	RS07	CHINNERS SWAMP	FW-SP												
PD-177	PD	CHINNERS SWAMP	FW-SP	4	0	0	0	4	0	0	0	4	0	0	0
PD-352	INT	CHINNERS SWAMP	FW-SP	3	0	0	0	3	0	0	0	3	0	0	0
03040204-08															
PD-351	PD	CEDAR CK	ORW												
RS-08229	RS08	WHITE OAK CK	FW-SP	2	0	0	0	2	0	0	0	2	0	0	0
PD-037	PD	WHITE OAK CK	FW-SP	8	0	0	0	8	0	0	0	8	0	0	0
PD-042	PD	LITTLE PEE DEE RVR	ORW	4	0	0	0	4	0	0	0	4	0	0	0
RS-06181	RS06	LITTLE PEE DEE RVR	ORW												
PD-189/ RS-08083	PD	LITTLE PEE DEE RVR	ORW	4	0	0	0	4	0	0	0	4	0	0	0
PD-350	INT	LITTLE PEE DEE RVR	ORW	6	0	0	0	6	0	0	0	6	0	0	0
03040207-01															
MD-075	PD	SAMPIT RVR	SB	4	0	0	0	4	0	0	0	4	0	0	0
MD-076N	PD	TURKEY CK	FW	3	0	0	0	3	0	0	0	3	0	0	0
MD-149	PD	WHITES CK	SB	4	0	0	0	4	0	0	0	4	0	0	0
MD-077	INT	SAMPIT RVR	SB	8	0	0	0	8	0	0	0	8	0	0	0
MD-073/ NO-01099	PD	SAMPIT RVR	SB	4	0	0	0	4	0	0	0	4	0	0	0
MD-074	PD	SAMPIT RVR	SB	4	0	0	0	4	0	0	0	4	0	0	0
03040207-02															
RS-04377/ RS-06157/ RS-10401	RS04	PEE DEE RVR	FW	6	0	0	0	6	0	0	0	6	0	0	0
PD-060	INT	PEE DEE RVR	FW	4	0	0	0	4	0	0	0	4	0	0	0
PD-061	PD	PEE DEE RVR	FW	4	0	0	0	4	0	0	0	4	0	0	0
RS-06013	RS06	CYPRESS CK	FW												
MD-275	INT	PEE DEE RVR	SB-SP	8	0	0	0	8	0	0	0	8	0	0	0
MD-080	PD	WINYAH BAY	SB	4	0	0	0	4	0	0	0	4	0	0	0
RO-08348	RO08	WINYAH BAY	SB	4	0	0	0	4	0	0	0	4	0	0	0
RO-10380	RO10	WINYAH BAY	SB	6	0	0	0	6	0	0	0	6	0	0	0
RO-07332	RO07	WINYAH BAY	SB												
MD-278/ RO-12327	INT	WINYAH BAY	SB	8	0	0	0	7	0	0	0	8	0	0	0
RO-06317	RO06	WINYAH BAY	SB												

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	HG N	HG EXC.	HG %	MEAN EXC.	NI N	NI EXC.	NI %	MEAN EXC.	ZN N	ZN EXC.	ZN %	MEAN EXC.
03040204-07															
PD-370	NULL	BRUNSON SWAMP	FW	4	0	0	0	4	0	0	0	4	0	0	0
RS-07051	RS07	CHINNERS SWAMP	FW-SP												
PD-177	PD	CHINNERS SWAMP	FW-SP	4	0	0	0	4	0	0	0	4	0	0	0
PD-352	INT	CHINNERS SWAMP	FW-SP	3	0	0	0	3	0	0	0	3	0	0	0
03040204-08															
PD-351	PD	CEDAR CK	ORW												
RS-08229	RS08	WHITE OAK CK	FW-SP	2	0	0	0	2	0	0	0	2	0	0	0
PD-037	PD	WHITE OAK CK	FW-SP	8	0	0	0	8	0	0	0	8	1	12.5	130
PD-042	PD	LITTLE PEE DEE RVR	ORW	4	0	0	0	4	0	0	0	4	0	0	0
RS-06181	RS06	LITTLE PEE DEE RVR	ORW												
PD-189/ RS-08083	PD	LITTLE PEE DEE RVR	ORW	4	0	0	0	4	0	0	0	4	0	0	0
PD-350	INT	LITTLE PEE DEE RVR	ORW	6	0	0	0	6	0	0	0	6	0	0	0
03040207-01															
MD-075	PD	SAMPIT RVR	SB	4	0	0	0	4	0	0	0	4	0	0	0
MD-076N	PD	TURKEY CK	FW	3	0	0	0	3	0	0	0	3	0	0	0
MD-149	PD	WHITES CK	SB	4	0	0	0	4	0	0	0	4	0	0	0
MD-077	INT	SAMPIT RVR	SB	8	0	0	0	8	0	0	0	8	1	12.5	120
MD-073/ NO-01099	PD	SAMPIT RVR	SB	4	0	0	0	4	0	0	0	4	0	0	0
MD-074	PD	SAMPIT RVR	SB	4	0	0	0	4	0	0	0	4	0	0	0
03040207-02															
RS-04377/ RS-06157/ RS-10401	RS04	PEE DEE RVR	FW	6	0	0	0	6	0	0	0	6	0	0	0
PD-060	INT	PEE DEE RVR	FW	4	0	0	0	4	0	0	0	4	0	0	0
PD-061	PD	PEE DEE RVR	FW	4	0	0	0	4	0	0	0	4	0	0	0
RS-06013	RS06	CYPRESS CK	FW												
MD-275	INT	PEE DEE RVR	SB-SP	8	0	0	0	8	0	0	0	8	1	12.5	120
MD-080	PD	WINYAH BAY	SB	4	0	0	0	4	0	0	0	4	0	0	0
RO-08348	RO08	WINYAH BAY	SB	4	0	0	0	4	0	0	0	4	0	0	0
RO-10380	RO10	WINYAH BAY	SB	6	0	0	0	6	0	0	0	6	0	0	0
RO-07332	RO07	WINYAH BAY	SB												
MD-278/ RO-12327	INT	WINYAH BAY	SB	8	0	0	0	7	0	0	0	8	0	0	0
RO-06317	RO06	WINYAH BAY	SB												

APPENDIX E.

Pee Dee Coastal Frontage Basin

Ambient Water Quality Monitoring Site Descriptions

Station #	Type	Class	Description
03040208-03			
RT-08069	RT08	SFH	MOUTH OF DUNN SOUND CREEK NEAR SHELLFISH SITE 01-02
RO-07333	RO07	SFH	LITTLE RIVER AT MOUTH OF HORSE FORD CREEK
MD-276	INT	SFH	HOUSE CREEK AT 53RD AVE OUT FROM BOAT LANDING (01-19)
MD-162	P/W	SA	LITTLE RIVER AT S END OF ISLAND DUE E OF TOWN
MD-125	S/INT	FW/SA	AIWW (LITTLE RIVER) ON SC 9 (US 17)
MD-091	S/W	FW	AIWW 4 MI N OF BRIDGE ON US 501
MD-085	S/INT	FW	AIWW AT POINT 3 MI N OF BRIDGE ON US 501
MD-087	P/W	FW	AIWW JUST N OF BRIDGE ON US 501
RT-09113	RT09	SFH	MAIN CREEK, 160 YDS UPSTREAM FROM SHELLFISH SITE 04-27
RT-07049	RT07	SFH	MAIN CREEK, 200 METERS SSE OF MOUTH OF FLAGG CREEK
MD-277	INT	SFH	PARSONAGE CREEK AT INLET PORT BASIN (04-17)
03040208-04			
RT-08081	RT08	SFH	CLAMBANK CREEK TRIB

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
PD or W = Special watershed station added for the Pee Dee 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 2006 and December 2010.
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 2006 and December 20010. DL indicates that the median was the detection limit.

Key to Trends:

D	Statistically significant decreasing trend in parameter concentration
I	Statistically significant increasing trend in parameter concentration
*****	No statistically significant trend

STATION				DO	DO	DO	MEAN	TRENDS (99-2012)			pH	pH	MEAN	MEAN	TRENDS (99-2012)
NUMBER	TYPE	WATERBODY NAME	CLASS	N	EXC.	%	EXC.	DO	BOD	N	EXC.	%	EXC. LT	EXC. GT	PH
03040208-03															
RT-08069	RT08	DUNN SOUND CK	SFH	12	1	8.333	4.31			11	0	0	0	0	
RO-07333	RO07	LITTLE RVR	SFH	15	1	6.667	4.61			13	0	0	0	0	
MD-276	INT	HOUSE CK	SFH	34	9	26.471	3.853	D	NS	34	0	0	0	0	D
MD-162	PD	LITTLE RVR	SA	12	2	16.667	4.285	NS		12	0	0	0	0	I
MD-125	INT	ICWW	FW	40	5	12.5	4.615	D	I	40	0	0	0	0	D
MD-125	INT	ICWW	SA	40	5	12.5	4.615	D	I	40	2	5	6.485	0	D
MD-091	PD	ICWW	FW	11	1	9.091	2.95	NS		11	3	27.273	5.887	0	NS
MD-085	INT	ICWW	FW	30	4	13.333	4.155	NS	NS	30	3	10	5.797	0	NS
MD-087	PD	ICWW	FW	12	1	8.333	2.73	I		12	4	33.333	5.872	0	NS
RT-09113	RT09	MAIN CK	SFH	10	2	20	3.9			10	0	0	0	0	
RT-07049	RT07	MAIN CREEK	SFH	16	4	25	4.098			15	0	0	0	0	
MD-277	INT	PARSONNAGE CK	SFH	40	9	22.5	4.416	NS	NS	40	1	2.5	4.87	0	D
03040208-04															
RT-08081	RT08	CLAMBANK CK TRIB	SFH	16	6	37.5	3.932			16	1	6.25	6.29	0	

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	TURB N	TURB EXC.	TURB %	TRENDS (99-2012) TURB	TP N	TP EXC.	TP %	MEAN EXC.	TRENDS (99-2012) TP
03040208-03												
RT-08069	RT08	DUNN SOUND CK	SFH	11	0	0						
RO-07333	RO07	LITTLE RVR	SFH	13	0	0						
MD-276	INT	HOUSE CK	SFH	32	2	6.25	I					NS
MD-162	PD	LITTLE RVR	SA	12	0	0	NS					
MD-125	INT	ICWW	FW	38	0	0	D					NS
MD-125	INT	ICWW	SA	38	0	0	D					NS
MD-091	PD	ICWW	FW	11	0	0						
MD-085	INT	ICWW	FW	30	0	0	D					D
MD-087	PD	ICWW	FW	12	0	0	NS					
RT-09113	RT09	MAIN CK	SFH	10	2	20						
RT-07049	RT07	MAIN CREEK	SFH	12	0	0						
MD-277	INT	PARSONNAGE CK	SFH	40	0	0	NS					NS
03040208-04												
RT-08081	RT08	CLAMBANK CK TRIB	SFH	13	1	7.692						

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	TN N	TN EXC.	TN %	MEAN EXC.	TRENDS (99-2012) TN	CHL N	CHL EXC.	CHL %	MEAN EXC.	TRENDS (99-2012) TSS
03040208-03													
RT-08069	RT08	DUNN SOUND CK	SFH										
RO-07333	RO07	LITTLE RVR	SFH										
MD-276	INT	HOUSE CK	SFH					D					
MD-162	PD	LITTLE RVR	SA										
MD-125	INT	ICWW	FW					I					
MD-125	INT	ICWW	SA					I					
MD-091	PD	ICWW	FW										
MD-085	INT	ICWW	FW					NS					
MD-087	PD	ICWW	FW										
RT-09113	RT09	MAIN CK	SFH										
RT-07049	RT07	MAIN CREEK	SFH										
MD-277	INT	PARSONNAGE CK	SFH					D					
03040208-04													
RT-08081	RT08	CLAMBANK CK TRIB	SFH										

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	BACT N	BACT EXC.	BACT %	MEAN EXC.	TRENDS (99-2012) BACT	NH3 N	NH3 EXC.	NH3 %
03040208-03											
RT-08069	RT08	DUNN SOUND CK	SFH	11	0	0	0		16	0	0
RO-07333	RO07	LITTLE RVR	SFH	13	0	0	0				
MD-276	INT	HOUSE CK	SFH	33	0	0	0	I	10	0	0
MD-162	PD	LITTLE RVR	SA	12	0	0	0	NS	12	0	0
MD-125	INT	ICWW	FW	40	0	0	0	NS	15	0	0
MD-125	INT	ICWW	SA	40	0	0	0	NS	15	0	0
MD-091	PD	ICWW	FW	10	0	0	0		11	0	0
MD-085	INT	ICWW	FW	30	0	0	0	NS	5	0	0
MD-087	PD	ICWW	FW	11	0	0	0	NS	12	0	0
RT-09113	RT09	MAIN CK	SFH	11	1	9.091	500		9	0	0
RT-07049	RT07	MAIN CREEK	SFH	12	0	0	0				
MD-277	INT	PARSONNAGE CK	SFH	38	0	0	0	NS	15	0	0
03040208-04											
RT-08081	RT08	CLAMBANK CK TRIB	SFH	12	0	0	0		20	0	0

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	CD N	CD EXC.	CD %	MEAN EXC.	CR N	CR EXC.	CR %	MEAN EXC.	CU N	CU EXC.	CU %	MEAN EXC.
03040208-03															
RT-08069	RT08	DUNN SOUND CK	SFH	3	0	0	0	3	0	0	0	3	0	0	0
RO-07333	RO07	LITTLE RVR	SFH												
MD-276	INT	HOUSE CK	SFH	4	0	0	0	4	0	0	0	4	0	0	0
MD-162	PD	LITTLE RVR	SA	4	0	0	0	4	0	0	0	4	0	0	0
MD-125	INT	ICWW	FW	7	0	0	0	7	0	0	0	7	0	0	0
MD-125	INT	ICWW	SA	7	0	0	0	7	0	0	0	7	0	0	0
MD-091	PD	ICWW	FW	3	0	0	0	3	0	0	0	3	0	0	0
MD-085	INT	ICWW	FW	3	0	0	0	3	0	0	0	3	0	0	0
MD-087	PD	ICWW	FW	4	0	0	0	4	0	0	0	4	0	0	0
RT-09113	RT09	MAIN CK	SFH	4	0	0	0	4	0	0	0	4	0	0	0
RT-07049	RT07	MAIN CREEK	SFH												
MD-277	INT	PARSONNAGE CK	SFH	7	0	0	0	7	0	0	0	7	1	14.286	13
03040208-04															
RT-08081	RT08	CLAMBANK CK TRIB	SFH	4	0	0	0	4	0	0	0	4	0	0	0

STATION NUMBER	TYPE	WATERBODY NAME	CLASS	HG N	HG EXC.	HG %	MEAN EXC.	NI N	NI EXC.	NI %	MEAN EXC.	ZN N	ZN EXC.	ZN %	MEAN EXC.
03040208-03															
RT-08069	RT08	DUNN SOUND CK	SFH	3	0	0	0	3	0	0	0	3	0	0	0
RO-07333	RO07	LITTLE RVR	SFH												
MD-276	INT	HOUSE CK	SFH	4	0	0	0	4	0	0	0	4	2	50	125
MD-162	PD	LITTLE RVR	SA	4	0	0	0	4	0	0	0	4	0	0	0
MD-125	INT	ICWW	FW	7	0	0	0	7	0	0	0	7	1	14.286	110
MD-125	INT	ICWW	SA	7	0	0	0	7	0	0	0	7	1	14.286	110
MD-091	PD	ICWW	FW	3	0	0	0	3	0	0	0	3	0	0	0
MD-085	INT	ICWW	FW	3	0	0	0	3	0	0	0	3	0	0	0
MD-087	PD	ICWW	FW	4	0	0	0	4	0	0	0	4	0	0	0
RT-09113	RT09	MAIN CK	SFH	4	0	0	0	4	0	0	0	4	0	0	0
RT-07049	RT07	MAIN CREEK	SFH												
MD-277	INT	PARSONNAGE CK	SFH	7	0	0	0	7	0	0	0	7	0	0	0
03040208-04															
RT-08081	RT08	CLAMBANK CK TRIB	SFH	4	0	0	0	4	0	0	0	4	0	0	0

Appendix F.

Waterbody Index

Waterbody Index

Appendix G.

Monitoring Station Index

Monitoring Station Index

Surface Water Quality Monitoring Stations

SW Quality Monitoring Stations (continued)

SW Quality Monitoring Stations (continued)

Shellfish Monitoring Stations

Shellfish Monitoring Stations (continued)

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Appendix H.

Facility Index

Facility Index

Appendix I.

Facility Permit Number Index

Facility Permit Number Index

NPDES

MS4 Permits

General Permits

General Permits (continued)

Land Applications

Mining

Mining (continued)

Mining (continued)

Natural Swimming Areas

Landfills

Landfills (continued)

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