

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

<u>Station #</u>	<u>Type</u>	<u>Class</u>	<u>Description</u>
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

<i>RECEIVING STREAM FACILITY NAME</i>	<i>NPDES# TYPE</i>
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

<i>MINING COMPANY MINE NAME</i>	<i>PERMIT # MINERAL</i>
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.

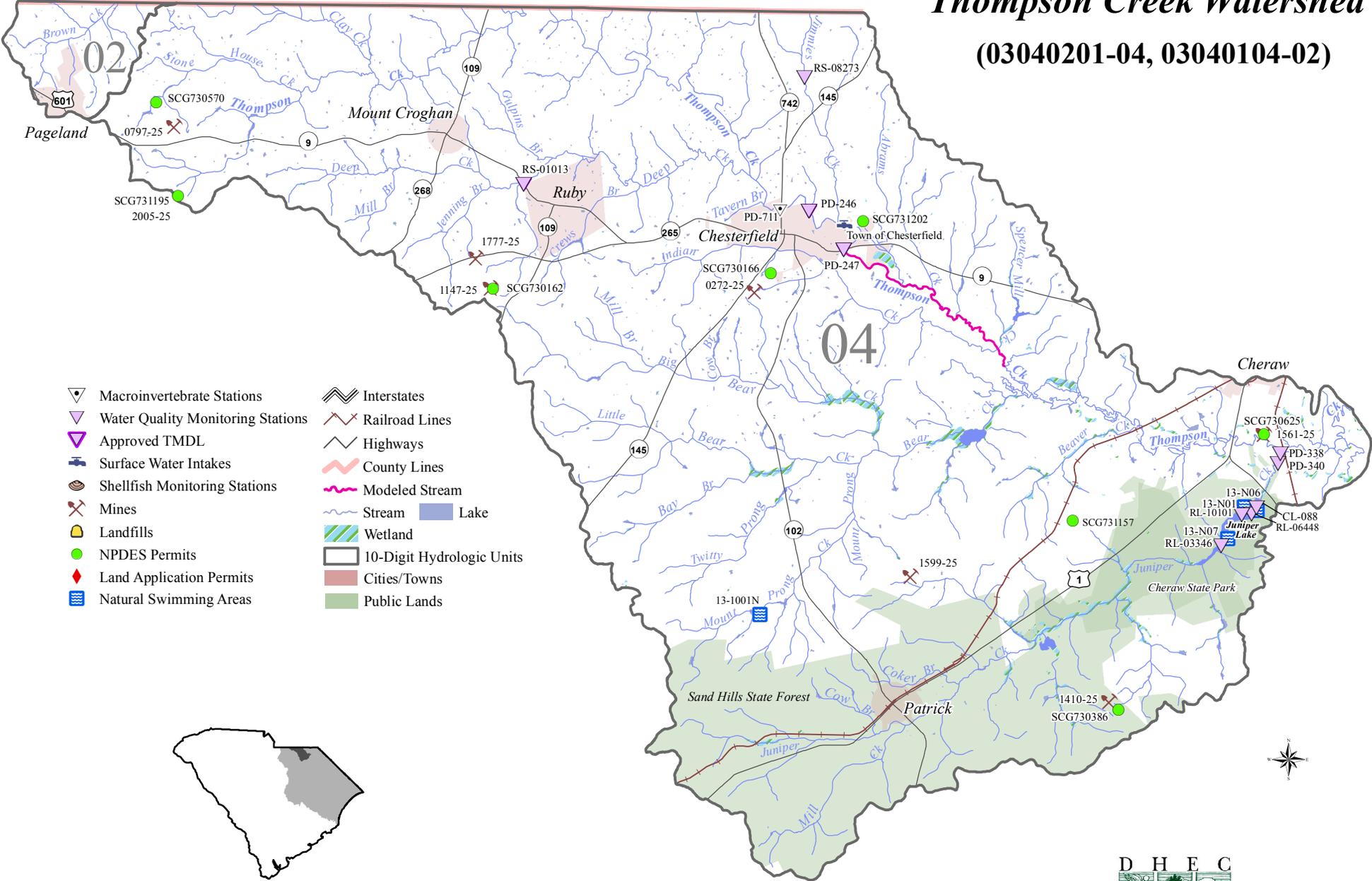
Special Projects

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)



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|--|-----------------------------------|--|---------------------------|
| | Macroinvertebrate Stations | | Interstates |
| | Water Quality Monitoring Stations | | Railroad Lines |
| | Approved TMDL | | Highways |
| | Surface Water Intakes | | County Lines |
| | Shellfish Monitoring Stations | | Modeled Stream |
| | Mines | | Stream |
| | Landfills | | Lake |
| | NPDES Permits | | Wetland |
| | Land Application Permits | | 10-Digit Hydrologic Units |
| | Natural Swimming Areas | | Cities/Towns |
| | | | Public Lands |

