

MISSOURI
DEPARTMENT OF
NATURAL RESOURCES

Total Maximum Daily Load Information Sheet

South Indian Creek

Water Body ID: 3259

Water Body Segment at a Glance:

Counties:	Newton and McDonald
Nearby City:	Stella
Length:	8.7 miles
Pollutant 1:	<i>E. coli</i> bacteria
Source 1:	Rural nonpoint sources
Pollutant 2:	Aquatic macroinvertebrate bioassessments
Source 2:	Unknown



Statewide Map Showing Location of Watershed

Scheduled for TMDL development:

TMDL development schedules are subject to change.

The most current schedule for TMDL development is available on the department's website at dnr.mo.gov/env/wpp/tmdl/wpc-tmdl-progress.htm.

Other TMDLs:

In 2004, the U.S. Environmental Protection Agency approved a nutrient TMDL for this water body. This TMDL is available online at dnr.mo.gov/env/wpp/tmdl/3246-elk-r-record.htm.

Description of the Problem

A water body is considered impaired when it fails to meet applicable water quality standards. Water quality standards consist of designated uses, water quality criteria, an antidegradation policy and implementation procedures. South Indian Creek is impaired due to exceedances of water quality criteria that protect aquatic life and recreational uses.

Designated uses of Pearson Creek*

- Warm Water Habitat (WWH)
- Cold Water Habitat (CWH)
- Whole Body Contact Recreation Category B (WBC-B)
- Secondary Contact Recreation (SCR)
- Human Health Protection (HHP)
- Irrigation (IRR)
- Livestock and Wildlife Protection (LWP)

*In addition to these specific uses, all waters of the state are protected by the general water quality criteria that are specified in the state's Water Quality Standards at 10 CSR 20-7.031(4).

Use that is impaired

- Whole Body Contact Recreation Category B (WBC-B) ← *E. coli* bacteria
- General criteria ← Aquatic macroinvertebrate bioassessments

Criteria that apply

Missouri’s Water Quality Standards at 10 CSR 20-7.031(5)(C) and Table A state that for waters designated for whole body contact recreation category B, the *E. coli* bacteria count, measured as a geometric mean, shall not exceed 206 per 100 milliliters of water during the recreational season. The recreational season is defined as being from April 1 to October 31.

The state’s general water quality criteria at 10 CSR 20-7.031(4) are applicable to all waters of the state at all times. No water contaminant, by itself or in combination with other substances, shall prevent the waters of the state from meeting the following conditions:

- Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal, or aquatic life [10 CSR 20-7.031(4)(D)].
- Waters shall be free from physical, chemical, or hydrologic changes that would impair the natural biological community [10 CSR 20-7.031(4)(G)].

Assessment and water quality data

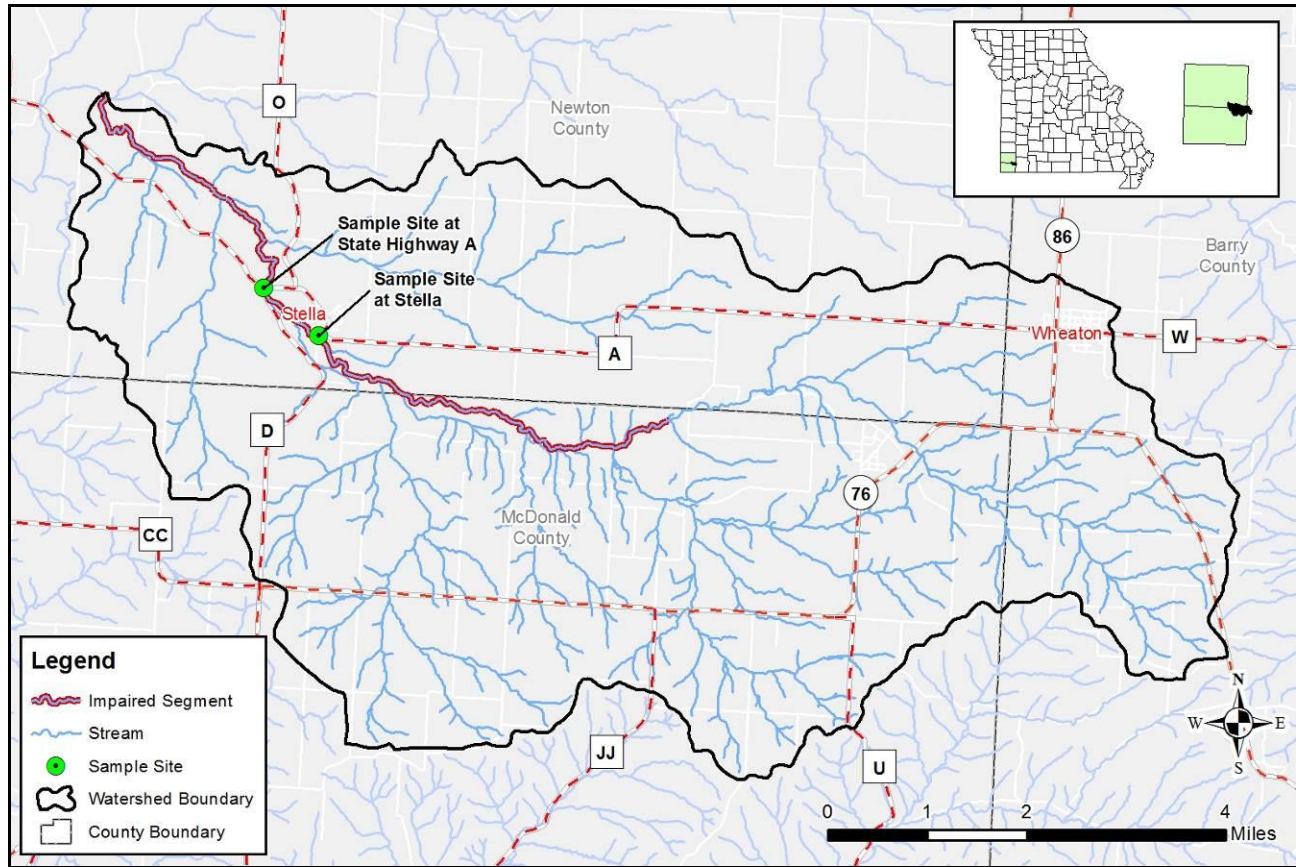
The department judges a stream to be impaired by *E. coli* if the criterion is exceeded in any of the last three years for which there is a minimum of five samples collected during the recreational season. For South Indian Creek, 2007 was the only year in which sufficient data was collected. The geometric mean of this data is 556/100mL which exceeds the category B criterion.

Invertebrate communities are judged to be impaired if the percent of sampling sites receiving a score of 16 or more is significantly less than for reference streams within the same ecological drainage unit. Scores less than 16 indicate an impaired condition, which may be caused by toxicity or habitat issues within the waterway. Aquatic invertebrate samples were collected from South Indian Creek in 2009 and 2010. These samples were analyzed and a score was determined to indicate the health of the aquatic community based on the numbers and types of species present. Additional monitoring may be necessary to determine if the cause of the low scores is due to a chemical or physical condition. If there are seven or fewer samples, as in the case of South Indian Creek, the department judges a stream as impaired if at least 75 percent of the samples score less than 16. For South Indian Creek, both samples collected scored less than 16.

Aquatic Invertebrate Monitoring Data

<i>Sampling Organization</i>	<i>Sampling Location</i>	<i>Date</i>	<i>Score</i>
DNR	Sample Site at Stella	Fall 2009	12
DNR	Sample Site at Stella	Spring 2010	12

Map of the South Indian Creek Watershed



TMDL for the South Indian Creek

The South Indian Creek TMDL will calculate the maximum amount of each listed pollutant that the stream can receive and still meet water quality standards. The TMDL will also identify all potential or suspected pollutant sources in the watershed and distribute the allowable pollutant loads among those various sources. When developed, the South Indian Creek TMDL will use the most current and available data. For this reason, the final TMDL may present information that differs from that contained in this information sheet.

For more information call or write:

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