

Missouri Department of Natural Resources

Total Maximum Daily Load Information Sheet

South Indian Creek

Water Body Segment at a Glance:

Counties:	Newton and McDonald
Nearby City:	Stella
Water Body ID:	3259
Segment Length:	8.7 miles
Watershed Size:	48.7 square miles
Pollutant 1:	Bacteria
Pollutant 2:	Aquatic Macroinvertebrate Bioassessments
Source 1:	Rural nonpoint sources
Source 2:	Unknown



Statewide Map Showing Location of Watershed

Scheduled for TMDL development: 2015 for bacteria; 2022 for aquatic macroinvert. bioassess.

Description of the Problem

Designated beneficial uses of South Indian Creek

- Livestock and Wildlife Watering
- Protection of Warm Water Aquatic Life
- Cold Water Fishery
- Protection of Human Health (Fish Consumption)
- Whole Body Contact Recreation – Category B

Uses that are impaired

- Whole Body Contact Recreation – Category B (bacteria impairment)
- Protection of Warm Water Aquatic Life (aquatic macroinvertebrate bioassessment)

Standards that apply

Missouri's Water Quality Standards at 10 CSR 20-7.031(4)(C) states 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 colonies 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(3) 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(3)(D)].
- Waters shall be free from physical, chemical, or hydrologic changes that would impair the natural biological community [10 CSR 20-7.031(3)(G)].

Background information and water quality data

South Indian Creek is a tributary of Indian Creek in the Elk River watershed and is designated for whole body contact recreation. The department judges a stream to be impaired by bacteria if the applicable whole body contact recreational season *E. coli* 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 for which sufficient data was collected. The geometric mean of this data exceeded the whole body contact category B criterion and the stream was judged to be impaired.

Recreational Season *E. coli* Data

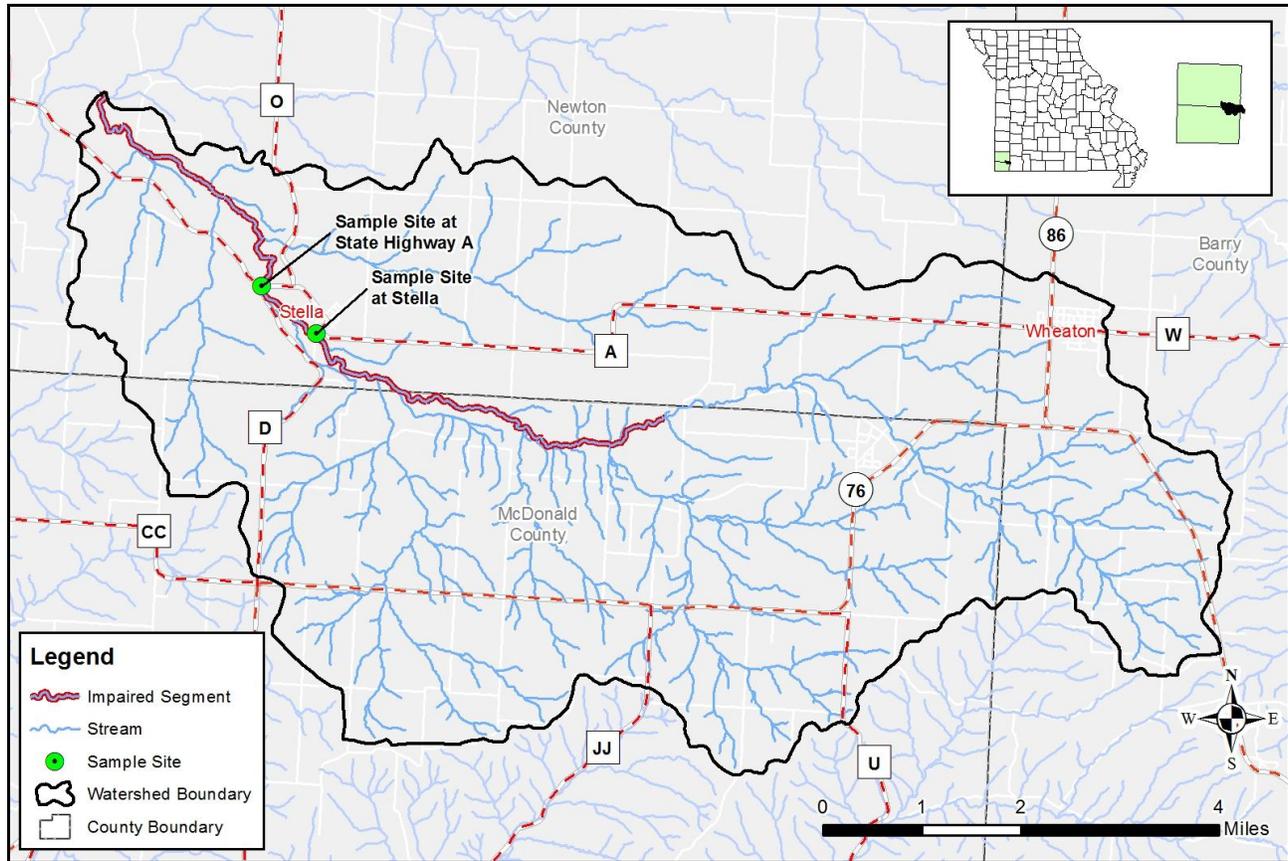
<i>Sampling Year</i>	<i>E. coli Geometric Mean (counts/100mL)</i>	<i>Criterion (counts/100mL)</i>	<i>Exceedance?</i>
2007	556	206	Yes

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. Scores of 16 or greater are considered healthy and reflect an unimpaired condition. Scores less than 16 indicate an impaired condition, which may be caused by toxicity or habitat issues within the waterway. Additional monitoring may be necessary to determine if the cause of the low scores is due to a chemical or physical condition. 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. 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. For this reason, the stream is judge to be impaired.

Aquatic Invertebrate Monitoring Data

<i>Sampling Organization</i>	<i>Sampling Site</i>	<i>Sampling Location</i>	<i>Date</i>	<i>Score</i>
MoDNR	3259/4.0	Sample Site at Stella	Fall 2009	12
MoDNR	3259/4.0	Sample Site at Stella	Spring 2010	12

Map Showing the South Indian Creek Watershed



For more information call or write:

Missouri Department of Natural Resources

Water Protection Program

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NOTE: The final South Indian Creek TMDL will use the most recent and available data and information.