

Total Maximum Daily Load Information Sheet

Pearson Creek

Water Body Segment at a Glance:

| | |
|-------------------------------------|--------------------------------------|
| County: | Greene |
| Nearby Cities: | Springfield |
| Length of Classified Segment | 8.0 miles |
| Length of impairment: | 2.0 miles |
| Pollutants: | Bacteria |
| Source: | Multiple Point and Non-point Sources |
| Water Body ID: | 2373 |



State map showing location of watershed

See also [Unknown Toxicity Information Sheet](#)

TMDL Development Date: 2014

Description of the Problem

Beneficial uses of Pearson Creek

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

Use that is impaired

- Whole Body Contact Recreation – Category A

Standards that Apply

- Missouri's water quality criteria for bacteria are found in 10 CSR 20-7.031(4)(C), where it states that the *E.coli* bacteria count shall not exceed 126 colonies per 100 milliliters of water (126 col/100 mL) as a geometric mean during the recreational season (April 1- October 31) in waters designated for whole body contact recreation (Category A).

Background Information and water quality data

Pearson Creek (also spelled Pierson) drains a 23.4 square mile watershed. The northern and eastern portions of the watershed are primarily agricultural lands. Agricultural activities include dairy farming and pasturing beef cattle. The western and southern portions of the watershed consist primarily of urban development, located on the eastern edge of Springfield, Mo. Pearson Creek joins the James River just above the municipal drinking water intake. Output from springs provides a significant amount of flow to the creek.

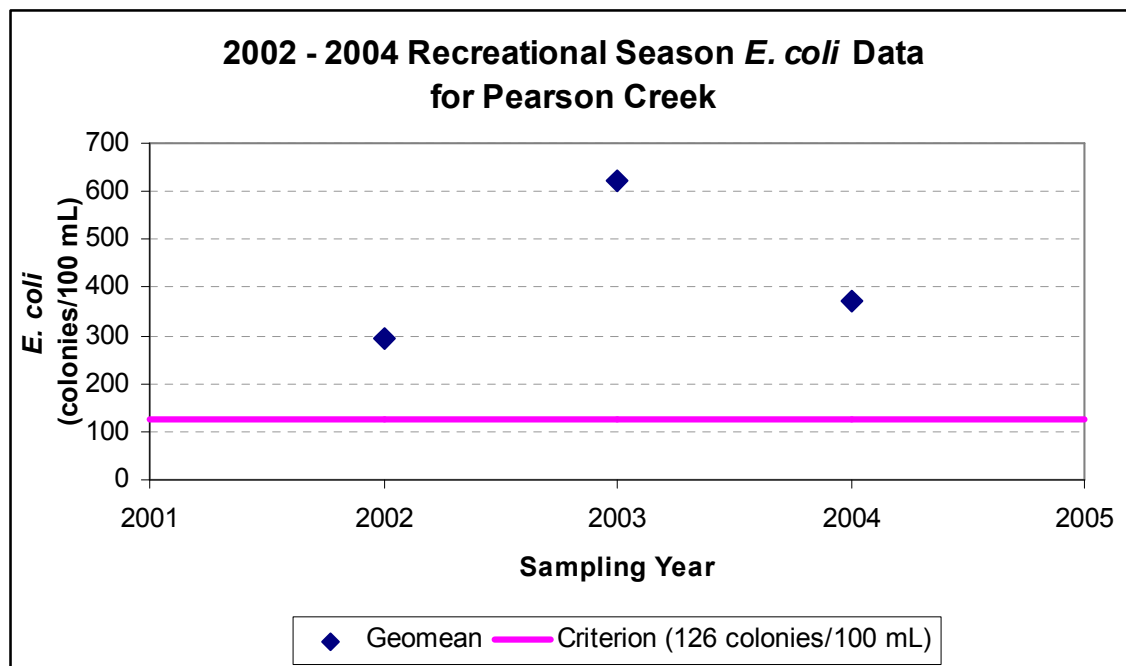
For whole body contact recreation waters, Category A means there are swimming areas which are open to and fully accessible by the public. The impairment for Pearson Creek is based on data collected by the

U.S. Geological Survey from 2000 to 2004. The listing methodology states that, to not be considered impaired, a water body must meet the water quality criterion in each of the last three years for which data are available and that the geometric mean, or geomean, must consist of at least five data points within the recreational season. In Pearson Creek, the geomean exceeded the Category A criterion of 126 col/100 mL during the recreational season in each of the last three years for which there is available data.

Excessive amounts of fecal bacteria in surface water used for recreation are an indication of an increased risk of pathogen-induced illness to humans. Infections due to pathogen-contaminated waters include gastrointestinal, respiratory, eye, ear, nose, throat and skin diseases. *E. coli*, are bacteria found in the intestines of warm blooded animals and are used as indicators of the risk of waterborne disease from pathogenic (disease causing) bacteria or viruses. Most *E. coli* strains are harmless, but some can cause serious illness in humans and are occasionally responsible for product recalls. The harmless strains are part of the normal flora of the intestines, and can benefit their hosts by preventing the establishment of pathogenic bacteria within the intestine^{1,2}. Missouri's bacteria criteria are based on specific levels of risk of acute gastrointestinal illness. The levels of risk correlating to these criteria are no more than eight illnesses per 1,000 swimmers in fresh water.

No specific sources of bacteria have been identified, but it is believed the impairment comes from storm water runoff from the Springfield metropolitan area, as well as rural sources. Storm water is known to wash many types of pollutants, including animal feces, from the watershed into its receiving water body.

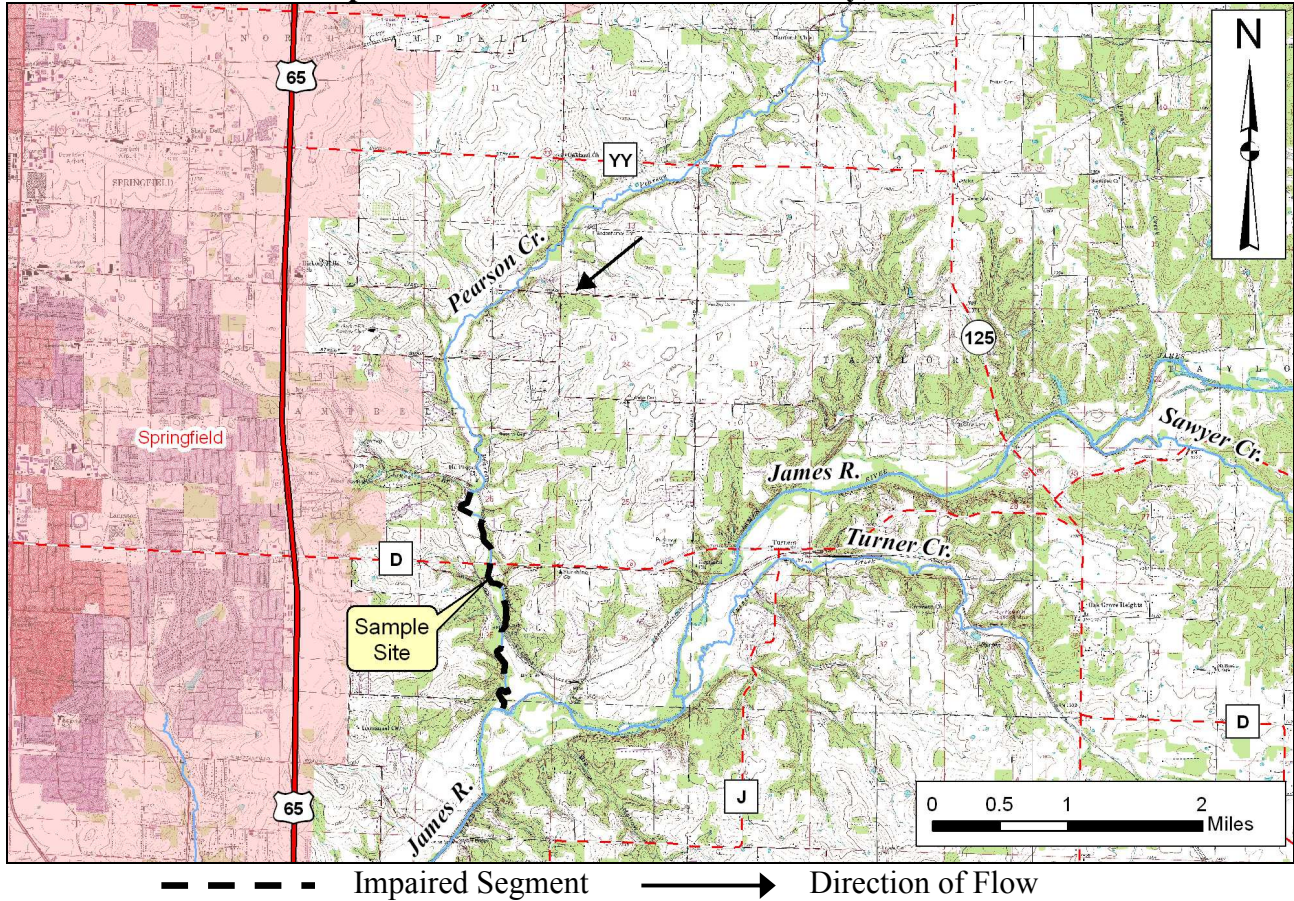
People can protect themselves from waterborne illness by avoiding contact with contaminated water. However, when swimming anywhere, it is wise to take common sense precautions. These include washing hands before eating, showering after swimming and avoiding exposure to questionable water if you have open cuts or wounds.



¹ Hudault S, Guignot J, Servin AL (July 2001). ["Escherichia coli strains colonising the gastrointestinal tract protect germfree mice against Salmonella typhimurium infection"](#). *Gut* **49** (1): 47–55

² Reid G, Howard J, Gan BS (September 2001). "Can bacterial interference prevent infection?". *Trends Microbiol.* **9** (9): 424–8.

Map of Pearson Creek in Greene County, Missouri



For more information call or write:
Missouri Department of Natural Resources
Water Protection Program
P.O. Box 176, Jefferson City, MO 65102-0176
1-800-361-4827 or 573-751-1300 office
573-522-9920 fax
Program Home Page: www.dnr.mo.gov/env/wpp/index.html