Missouri Department of Natural Resources

Total Maximum Daily Load Information Sheet

Watkins Creek

Water Body Segment at a Glance:

County: St. Louis
Nearby City: St. Louis
Water Body ID: 1708
Impaired Length: 1.4 miles
Watershed Size: 6.5 square miles
Pollutants: Bacteria and Chloride
Source: Urban Nonpoint Sources

State Map Showing Location of Watershed

Scheduled for TMDL development: 2012 for Bacteria and 2014 for Chloride

Description of the Problem

Designated beneficial uses of Watkins Creek

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

Uses that are impaired

- Protection of Warm Water Aquatic Life
- Whole Body Contact Recreation – Category B

Standards that apply

- Missouri's Water Quality Standards at 10 CSR 20-7.031(4)(C) states that the *E. coli* bacteria count shall not exceed 126 colonies per 100 milliliters of water (126 col/100 mL) for Category A and 206 col/100 mL for Category B waters. This count is the geometric mean during the recreational season (April 1- October 31) in waters designated for whole body contact recreation.
- The criteria for chloride are found in 10 CSR 20-7.031 Table A. The chronic criterion is 230 milligrams per liter (mg/L or parts per million) and the acute criterion is 860 mg/L.

Background information and water quality data

Watkins Creek is a small urban creek at the northern edge of St. Louis, Mo. and is a tributary to the Mississippi River. The creek is designated as Category B for the whole body contact recreation use,

which means it has places deep enough for total immersion (i.e., swimming), but they may be on private lands and are not designated as public swimming areas. Watkins Creek is listed as impaired by bacteria and chloride on the state's 2010 303(d) List of impaired waters, which was approved by the U.S. Environmental Protection Agency on Oct. 6, 2011.

The Department judges a stream to be impaired by bacteria if the water quality criterion for *E. coli* is exceeded in any of the last three years for which there is adequate data (minimum of five samples taken during the recreational season). Watkins Creek was first added to the 303(d) List as impaired by bacteria in 2004-06, prior to the five-sample requirement. Although there are less than five recreational season samples available for each year of data, the available *E. coli* data do not show good cause for delisting.

High counts of *E. coli* are an indication of fecal contamination and 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. Missouri's whole body contact bacteria criteria are based on specific levels of risk of acute gastrointestinal illness. The level of risk correlating to the category B criterion is no more than 10 illnesses per 1,000 swimmers in fresh water (1 percent).

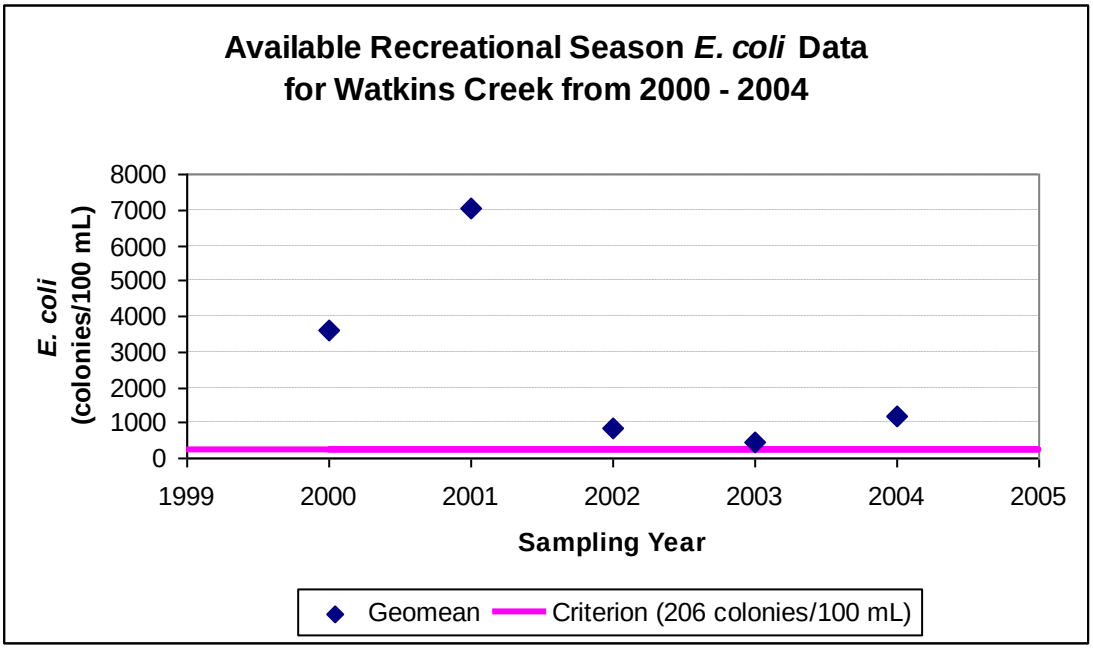


Figure 1

For chloride, the listing methodology stipulates that only one exceedance of the chloride criteria in the last three years of available data constitutes an impairment. Chloride criteria are protective of the warm water aquatic life use. Data collected by the U.S. Geological Survey show three occurrences of the chronic criterion of 230 mg/L being exceeded in Watkins Creek during the last three years of available data, 2002, 2003 and 2004 (Figure 2). For this reason, Watkins Creek is listed as impaired for chloride.

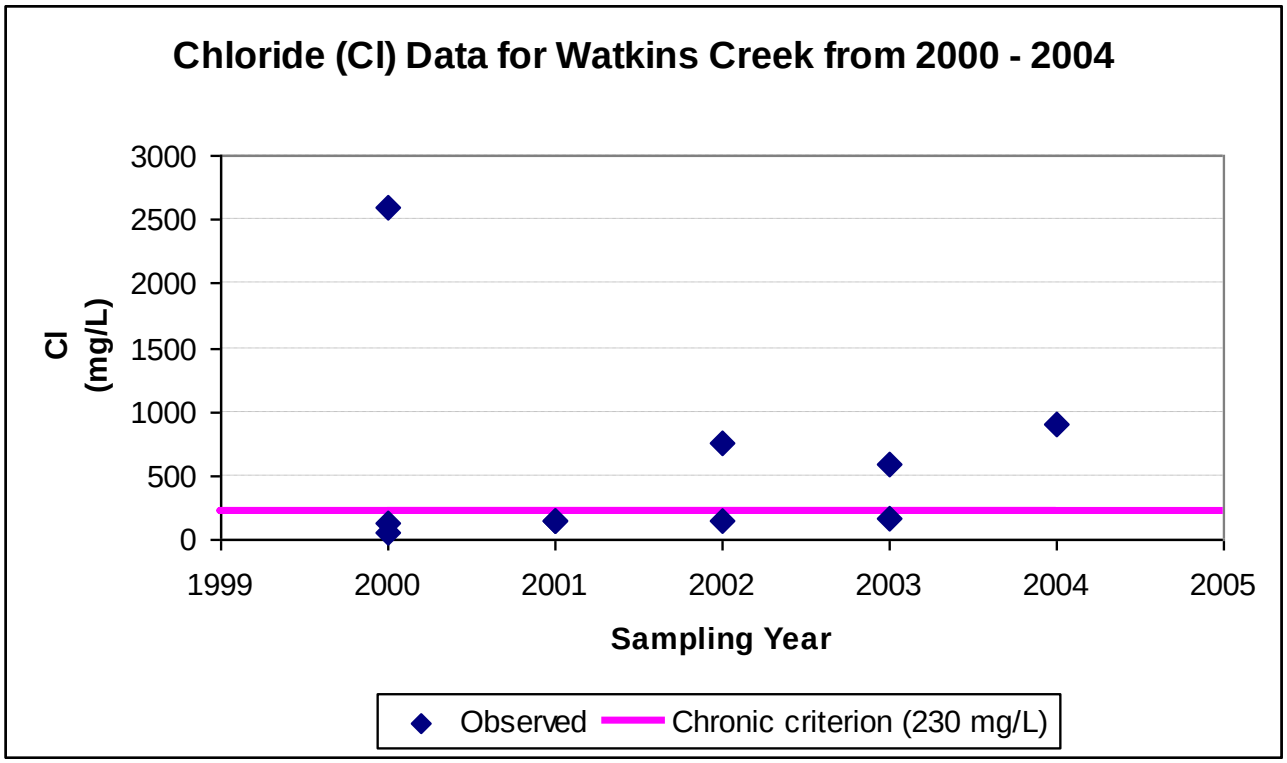
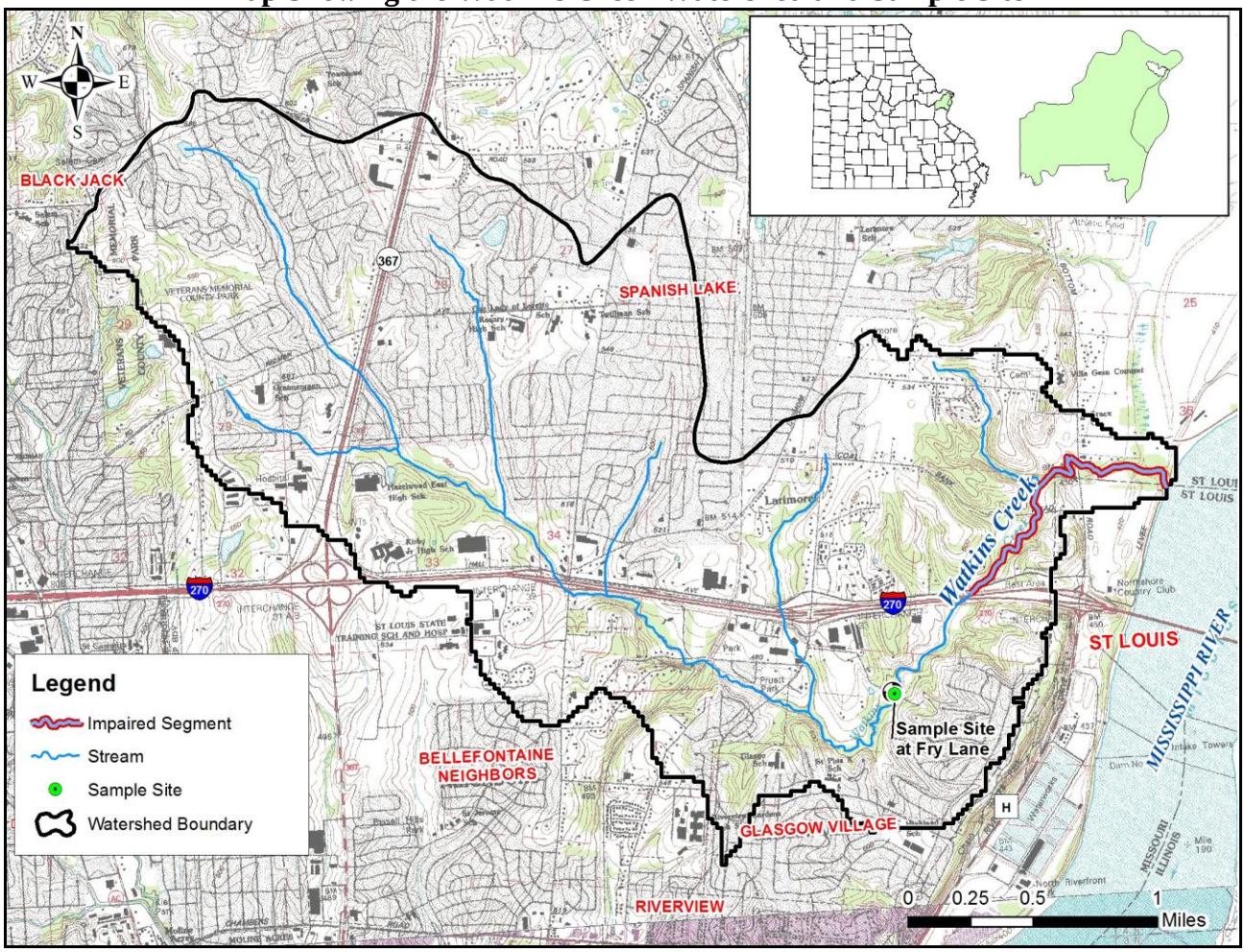


Figure 2

Map Showing the Watkins Creek Watershed and Sample Site



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

Updated: Jan. 2012