



Missouri Department of Natural Resources

Total Maximum Daily Load Information Sheet

East Fork Tebo Creek and Elm Branch

Water Body Segment at a Glance:

County: Henry
Nearby Cities: Windsor
East Fork Tebo Creek
Length of impaired segment: 12 miles
Length of impairment within segment: 1.0 mile
Pollutant: Low Dissolved Oxygen
Source: Windsor SW Wastewater Treatment Plant
Water Body ID: 1282



Elm Branch

Length of impaired segment: 3.0 miles
Pollutant: Low Dissolved Oxygen
Source: None Given
Water Body ID: 1283

Scheduled for TMDL development: 2012

Description of the Problem

Beneficial uses of Elm Branch

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

Use that is impaired

- Protection of Warm Water Aquatic Life

Standards that apply

- In the Missouri Water Quality Standards, found in 10 CSR 20-7.031 Table A, the criterion for dissolved oxygen, or DO, in streams is a minimum of 5 mg/L (milligrams per liter or parts per million).

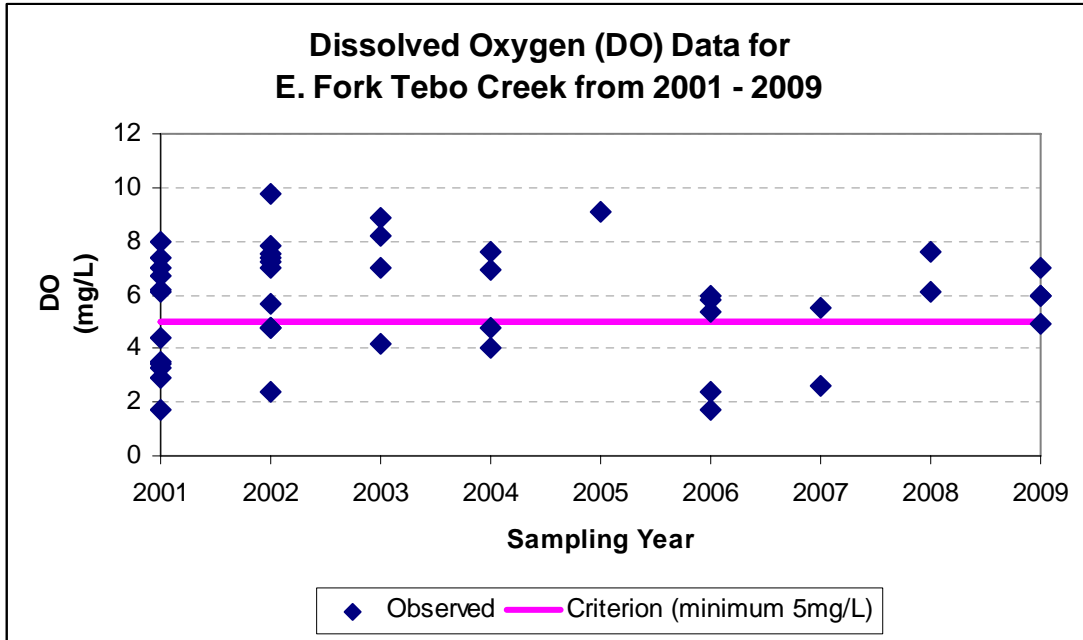
Background information and water quality data

East Fork Tebo Creek is a rural creek in northeastern Henry County. It flows southeast into Tebo Creek. Elm Branch is a tributary to East Fork Tebo Creek, joining it about one mile south of Windsor, Mo. Dissolved oxygen is important as many aquatic organisms require high levels of oxygen to survive and water quality conditions in these creeks appear to not be protective of aquatic life. For dissolved oxygen, if more than 10 percent of measurements in a water body fail to meet the water quality criterion that water body is judged to be impaired. In the case of Elm Branch, the dissolved oxygen impairment is based on data gathered by the U.S. Geological Survey in 1988-89. Four of nine samples (44 percent) did not meet the water quality criterion. It is not known what is causing the dissolved oxygen to be low.

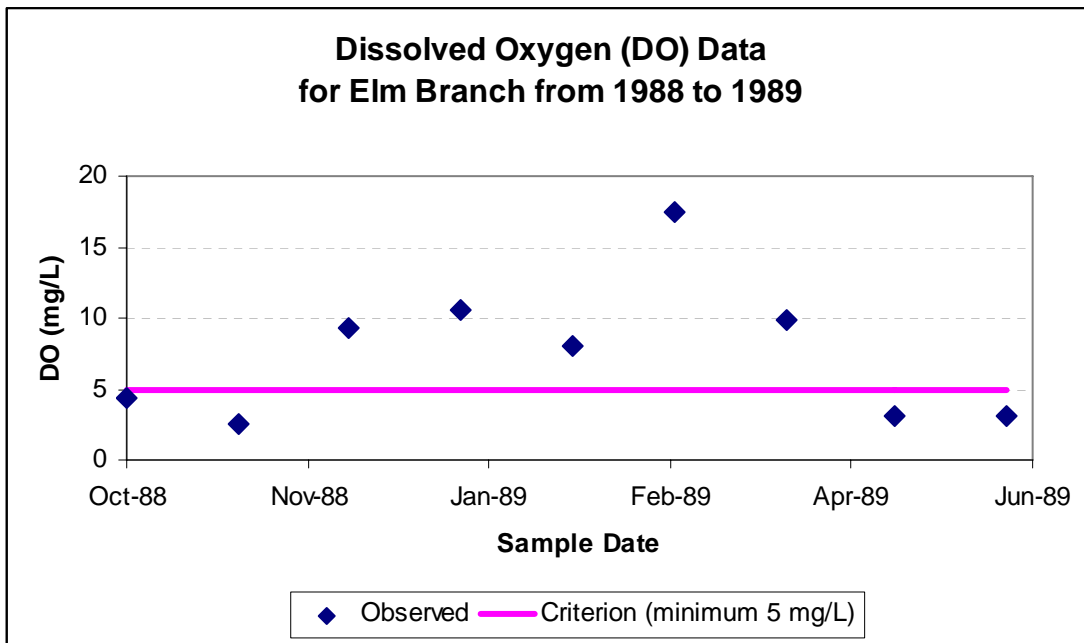
In East Fork Tebo Creek, the dissolved oxygen impairment was based on data collected by the department from 2001-09. During that time, 13 of 23 samples (56 percent) did not meet the criterion of 5 mg/L. These samples were taken 0.8 mile below the Windsor Southwest Wastewater Treatment Plant, or WWTP, which is believed to be causing the DO to be low. Samples collected upstream of the WWTP do not violate the criteria and that segment is not judged to be impaired by low dissolved oxygen.

Wastewater effluent that is high in biochemical oxygen demand, or BOD, will lower the dissolved oxygen in a stream and stress, or be lethal to, the aquatic organisms that require dissolved oxygen to survive. Like all wastewater discharges in Missouri, the Windsor SW WWTP must meet the requirements of a discharge permit issued by the Missouri Department of Natural Resources. The limits in this permit can be adjusted to prevent the creek from being impaired.

Graphs showing dissolved oxygen data for these streams are presented on the next page. Values below the criterion line show a violation. A map showing the location of the streams and water quality sampling sites can be found on page 4.

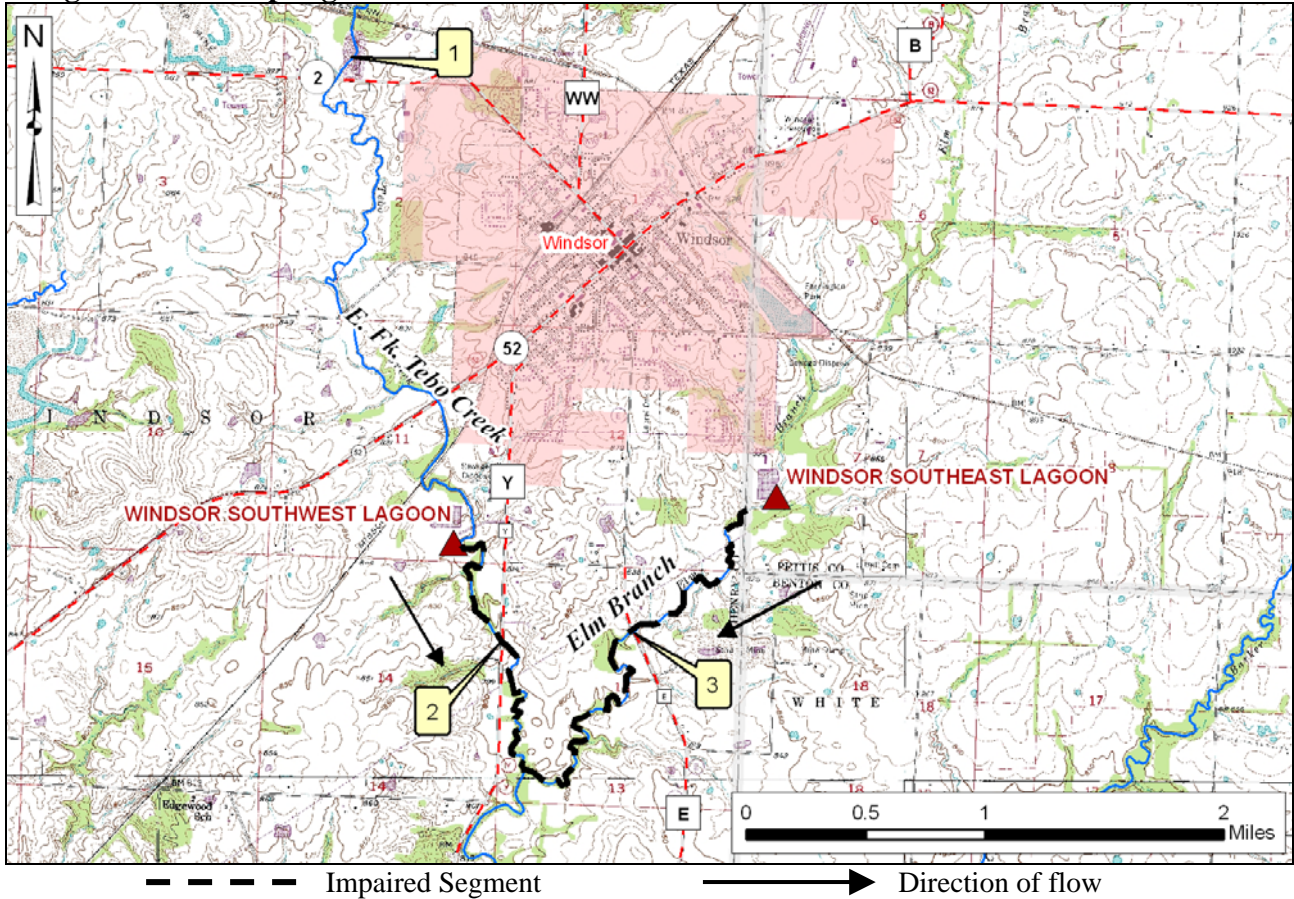


Source: Department of Natural Resources



Source: U.S. Geological Survey

Map Showing East Fork Tebo Creek and its Tributary, Elm Branch, in Henry County, Mo., along with the Sampling Sites



- Sample Sites**
- 1 – E. Fk. Tebo Cr. 0.1 mi. north of State Highway 2
 - 2 – E. Fk. Tebo Cr. at Indiana St (Highway Y)
 - 3 – Elm Br. at Highway E

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
 73-522-9920 fax
 Program Home Page: www.dnr.mo.gov/env/wpp/index.html