

Summary

Monitoring and Assessment

Lake Superior-South Watershed



Why is it important?

The undeveloped nature of the Lake Superior-South Watershed, along Minnesota's North Shore within the Lake Superior Basin, is undoubtedly a key reason for the high water quality found in most parts of the watershed.

This watershed covers 624 square miles of St. Louis and Lake counties, with nearly half of the land under state ownership (42%). Almost 90% is forested. The watershed is home to several small cities and supports diverse species of wildlife and fish populations.

It contains 1,067 miles of streams of which 800 are designated as coldwater. Its immaculate waters produce some of the state's highest-quality stream trout fisheries.

The watershed is a valuable resource for drinking water, habitat for aquatic life, recreational opportunities and timber production.

Key issues

Overall, water quality conditions are good and can be attributed to the forest and wetlands that dominate the watershed's land cover. Many stream segments have exceptional biological, chemical, and physical characteristics and should be considered for additional protections to preserve their high quality. The top five stream resources include: McCarthy Creek, Unnamed Creek (West Branch Little Knife River), Gooseberry River, Stewart River and Captain Jacobson Creek.

Problem areas do occur but are typically limited to the lower reaches of streams where stressors from land use practices may accumulate. Impairments are likely a function of both natural and human-caused stressors. Historical and recent forest cover changes, along with urban/industrial development, draining of wetlands and damming of streams are likely stressors affecting biological communities within the watershed.

Impairments found in lakes and/or streams include:

- Turbidity, *E. coli* bacteria
- Mercury in the water column or fish tissue
- Dissolved oxygen
- Biological impairments in fish and aquatic macroinvertebrates

Highlights of report

- Forty-two of the 695 stream segments within the Lake Superior-South Watershed were assessed for aquatic life, recreation and/or consumption.
- Twenty-eight stream segments fully supported aquatic life while 11 did not. Nine stream segments fully supported aquatic recreation while three did not.
- Biological monitoring results identified numerous sensitive fish and macroinvertebrate species in many of this watershed's drainages. The Gooseberry River drainage did not have a single impairment.

Highlights continued

- Aquatic consumption impairments, caused primarily by atmospheric deposition of mercury from the global burning of fossil fuels, are one of the widest spread impairments in the watershed, including many lakes and rivers.
- Six lakes (Bean, Bear, Christianson, Lax, Nicado, and Tettegouche) were assessed for aquatic consumption from 1981 to 2012. Three (Lax, Nicado, and Tettegouche) were considered to be impaired for mercury in fish tissue. Two stream segments on the Lester River were assessed for mercury in fish tissue; both of the segments did not support aquatic consumption. In addition, three other streams (Lester River, Knife River, and Beaver River) were assessed for mercury in the water column, and all three did not support aquatic consumption.
- High levels of *E. coli* bacteria were found in Chester, Skunk, and Tischer Creeks, resulting in aquatic recreation impairments.
- Twenty-two Lake Superior beaches were assessed for the support of aquatic recreation; only Burlington Bay and Leif Erickson Park were listed as impaired.

About this study

In 2011, the Minnesota Pollution Control Agency (MPCA) began an intensive watershed monitoring effort of this watershed's surface waters. Included in this effort were the Beaver, Gooseberry, Split Rock, Knife, Sucker and Lester Rivers. As part of this effort, the MPCA joined with the St. Louis River Alliance to conduct water chemistry sampling at six streams. In 2013, a holistic approach was taken to assess all surface waterbodies within the watershed for support of aquatic life, recreation and consumption (where sufficient data was available). During this process, data from other agencies, groups and individuals were collected and used in the assessment of designated beneficial uses.



Full report

To view the full report, go to www.pca.state.mn.us/index.php/view-document.html?gid=21216 or search for "Lake Superior South Watershed" on the MPCA website.

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