

# Lac qui Parle River

## HUC: 07020003



### Why is it important?

The Minnesota Pollution Control Agency (MPCA) uses biological monitoring and assessment as one way to determine the condition of the state's rivers and streams. Examining fish and aquatic macroinvertebrate (bug) life and related habitat provides a measure of overall community health. If fish and bug communities are unhealthy, stressors or factors causing harm to aquatic life must be identified. Stressor identification is a key component of the major watershed restoration and protection projects being carried out under Minnesota's Clean Water Legacy Act.

### Description

The Lac qui Parle River Watershed begins in South Dakota and drains an area of approximately 1,100 square miles (704,000 acres). Approximately 70% of this area lies within portions of Minnesota's Lac qui Parle, Yellow Medicine, and Lincoln counties. The watershed was historically primarily prairie grassland, but is now dominated by cropland for agricultural use. Corn and soybeans are the most prevalent crops.

### Key issues

The five major elements of a healthy stream system are stream connections, hydrology, stream channel assessment, water chemistry and stream biology. If one or more of the components are unbalanced, the stream ecosystem may fail to function properly and is listed as an impaired water body.

A lack of habitat was identified as a stressor in 81% of the stream reaches and eutrophication and altered hydrology being 66% and 62%, respectively. Many of the stressors are interrelated such as habitat and hydrology. Unstable stream flow can cause unstable stream banks, filling in pools and riffles which is necessary habitat for many fish and aquatic bugs to survive.

### Highlights of report

The water quality watershed-wide is significantly degraded. Fewer than 3% of the assessed reaches were determined to be fully supporting for aquatic life. Assessment of the biological information led to 27 stream biological impairments; five fish biological stream impairments, eight macroinvertebrate biological impairments, and fourteen streams with both fish and macroinvertebrate impairments.

## Summary and recommendations

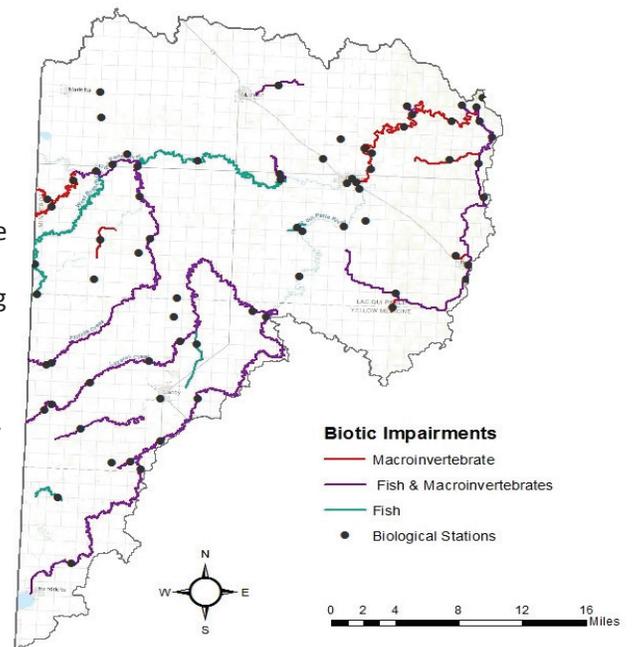
The most common stressors in the watershed are a lack of habitat, eutrophication and altered hydrology. Other identified stressors include suspended solids, low dissolved oxygen, connectivity, nitrates and temperature.

The stressors will need to be addressed in various ways; however, the most common stressors should be the primary focus of restoration efforts. These restoration efforts could include:

- Target riparian buffers where field drainage directly enter waterbodies.
- Intercepting and removing nutrient inputs as much as possible throughout the watershed.
- Address the multiple causes of bank erosion to decrease fine sediment.
- Practices to implement include increasing water storage, proper culvert and bridge sizing, riparian buffers with deep roots, stabilizing banks, and restoring connectivity and natural stream channels.

## About this study

Stressor identification is a formal and rigorous process that identifies stressors causing biological impairment of aquatic ecosystems and provides a structure for organizing the scientific evidence supporting the conclusions. The data collected during 2015 and 2016 monitoring season, as well as historic data obtained prior to 2015, were used to identify stream reaches that were not supporting healthy fish and macroinvertebrate communities at 52 unique monitoring stations across 35 stream sections.



## Full report

To view the full report, go to [www.pca.state.mn.us/sites/default/files/wq-ws3-09020309b.pdf](http://www.pca.state.mn.us/sites/default/files/wq-ws3-09020309b.pdf) or search for "Lake Superior South Watershed" on the MPCA website.

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