

Middle Minnesota River- Mankato Watershed



Why is it important?

This report discusses monitoring and assessment results for tributaries to the Minnesota River from Redwood Falls to St. Peter. The Minnesota River-Mankato (or Middle Minnesota) Watershed drains 1,347 square miles (861,882 acres) and contains 1,564 miles of streams in portions of nine counties: Nicollet, Brown, Renville, Blue Earth, Redwood, Le Sueur, Cottonwood, Sibley, and a very small portion of Watonwan.

The Minnesota River is known to be a significant contributor of the Total Phosphorus (TP), Nitrate/Nitrite, and Total Suspended Solids (TSS) pollutant load in the Mississippi River. The mainstem Minnesota River monitoring and assessment results are discussed in a separate Large River monitoring and assessment report.

Key issues

- **Pollutants:** An MPCA load monitoring station on Seven Mile Creek is representative of the pollutant inputs to the mainstem Minnesota River among the tributaries in the Minnesota River-Mankato watershed. Data from this station frequently showed elevated levels of TSS, TP, and Nitrate/Nitrite.
- **Fish contaminants:** Fish contaminants in the watershed were tested at nine lakes for mercury and seven lakes for polychlorinated biphenyls (PCBs). Five lakes are impaired for mercury, while no lakes are impaired for PCBs.
- **Groundwater:** In this agriculture-dominated watershed, the primary groundwater concerns are arsenic in drinking water, and the quantity of groundwater. Increasing groundwater withdrawals coupled with slight decreasing flows in some streams reinforces the need for continued need for monitoring groundwater.
- **Wetland loss:** Approximately 44%, or 382,940 acres, of the historical wetlands have been lost since European settlement. Subwatersheds within the Minnesota River-Mankato Watershed have lost between 30-65% of the historical wetlands.
- **Many of the current wetlands are found in the floodplain of the Minnesota River, making the river valley a significant natural corridor. Wetlands that remain are likely to be degraded due to invasive species, altered hydrology, as well as nutrient enrichment. Restoration of drained wetlands would positively affect the condition of waterbodies within the watershed.**

Highlights of report

Eleven lakes and 74 streams were assessed for aquatic recreation and/or aquatic life. Biological data, including Indices of Biotic Integrity for lakes were used to assess aquatic life use on lakes. Two did not support aquatic life, while two were full support. Contributing watershed land uses are clearly impacting lakes in this watershed.

Of 97 individual stream sub-watersheds, 86 were assessed, with 14 supporting aquatic life, and none supporting of aquatic recreation. Of the non-supporting waters, 54 did not support aquatic life and 27 did not support aquatic recreation.

Fish community data were used to assess aquatic life use for 54 sub-watersheds, of which 18 were supporting of aquatic life and 36 were not supporting of aquatic life. Fish populations were often dominated by species tolerant of degraded habitat and water

Highlights (cont.)

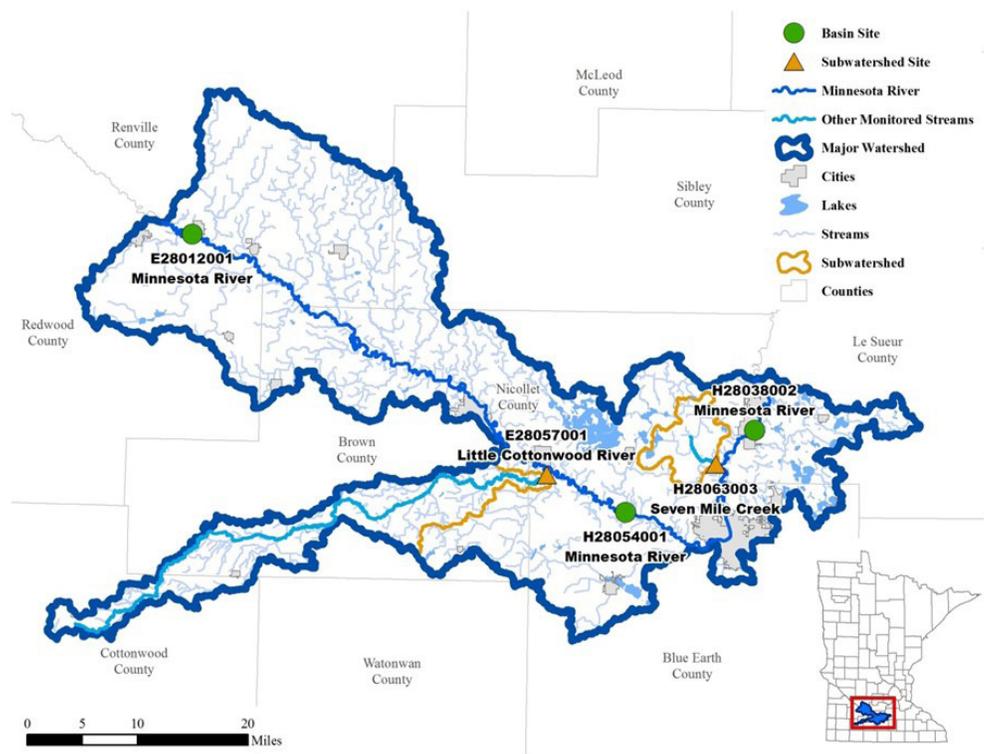
quality conditions, as well as variable hydrology. A similar pattern was noted among stream macroinvertebrates in the watershed; 70% of assessed stream reaches were determined to harbor impaired macroinvertebrate communities.

Recommendations

- Best Management Practices in more areas of the watershed could help reduce the pollutant load in the Minnesota River and downstream waters.
- Increasing groundwater withdrawals coupled with slight decreasing flows in some streams reinforces the need for continued need for monitoring groundwater.
- Wetlands that remain are likely to be degraded due to invasive species, altered hydrology, as well as nutrient enrichment. Restoration of drained wetlands would positively affect the condition of waterbodies within the watershed.

About this study

In 2013, the Minnesota Pollution Control Agency (MPCA) launched intensive monitoring using biological and water chemistry data. MPCA staff joined with local partners to complete stream water chemistry sampling at the outlets of 13 of the subwatersheds. In 2015, a holistic approach assessed all of the watersheds' surface waterbodies for support of aquatic life, recreation, and fish consumption where sufficient data were available.



Full report

To view the full report, go to www.pca.state.mn.us/water/watersheds/minnesota-river-mankato, or search for "Minnesota River-Mankato Watershed" on the MPCA website.

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