

Mississippi River-Reno Watershed

Watershed approach

Minnesota has adopted a watershed approach to address the state's 80 major watersheds. This approach looks at the drainage area as a whole instead of focusing on lakes and stream sections one at a time, thus increasing effectiveness and efficiency. This watershed approach incorporates the following activities into a 10-year cycle:

1. Monitoring water bodies and collecting data over two years on water chemistry and biology.
2. Assessing the data to determine which waters are impaired, which conditions are stressing water quality, and which factors are fostering healthy waters.
3. Developing strategies to restore and protect the watershed's water bodies, and report them in a document called Watershed Restoration and Protection Strategies (WRAPS).
4. Coordinating with local One Watershed-One Plan efforts for implementation of restoration and protection projects.

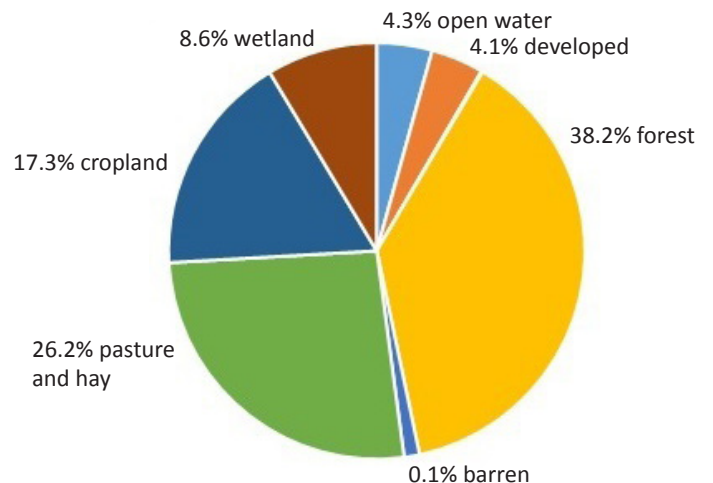
The Minnesota Pollution Control Agency (MPCA) leads the technical work and coordinates and supports strategy development with local partners. The main purpose of the WRAPS report is to summarize all the technical information so that local partners can use it for planning and implement the best strategies in prioritized locations.



Watershed characteristics

- Size: 124 square miles in Minnesota with the majority of the watershed in Iowa
- County: Houston
- Ecoregion: Driftless Area
- Municipality: Caledonia
- Most of the land is forest, grassland and pasture
- Tributary to the Mississippi River
- The 8-digit hydrologic unit code (HUC): 07060001

Land use in the Reno Watershed



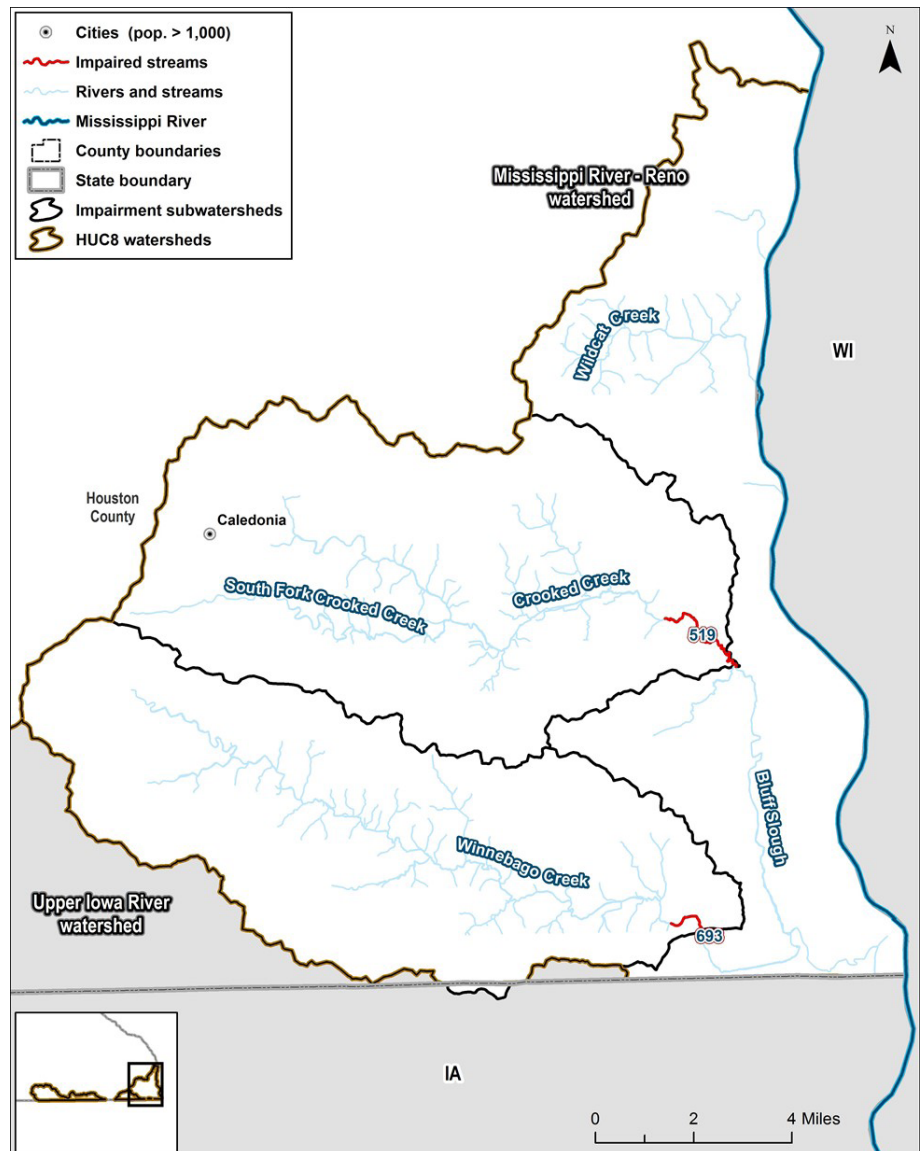
Assessments: Are waters meeting standards?

The Mississippi River-Reno is a small watershed in Houston County with rolling bluffs, thick woodlands and plunging valleys. Many of its streams are spring-fed cold-water systems that support trout fishing. There is no main river in the watershed, just a collection of tributaries that flow directly into the Mississippi River.

During the first phase of the watershed approach – intensive watershed monitoring – the MPCA collected data about biology such as fish populations, chemistry such as pollutant levels, and flow to determine if streams were meeting water quality standards designed to ensure that waters are fishable and swimmable. Waters are “impaired” if they fail to meet standards. The map at right shows the impairments for streams in the Mississippi River – Reno Watershed.

The MPCA and partners assessed 10 streams sections in the Minnesota portion of the watershed for meeting water quality standards:

- Six meet water quality standards designed to protect fish and other aquatic life
- Four fail to meet water quality standards at times for bacteria and/or sediment levels



Excessive levels of sediment and bacteria are the major issues that need to be addressed in the Mississippi River-Reno Watershed, according to the monitoring, assessment and stressor identification work. High levels of sediment and bacteria can hurt aquatic life and recreation:

- Excessive sediment can cloud the water which reduces light penetration for beneficial plants and favors undesirable algae species.
- Excessive sediment can also interfere with proper gill functioning of fish and macroinvertebrates (bugs).
- Bacteria levels in streams indicate sewage or manure in the water, and may create conditions where water is unsafe for swimming.

Overall, the streams studied had healthy fish and macroinvertebrate populations. But bacteria levels continue to be a focus of research to determine their sources and impact to aquatic life and recreation.

Restoration and protection strategies

The MPCA and local government organizations recommend the following strategies for restoring impaired waters and protecting high quality waters in this watershed:

- Implement strategies and recommendations of the Root River One Watershed One Plan.
- Address bacteria impairments by improving animal feedlots, septic systems and pasture management.
- Reduce sediment input from riparian corridors by fencing off cattle pastures and row crops. Also restore streambanks where needed.
- Re-establish quality riparian corridor buffers to increase habitat for fish and other aquatic life, such as with woody debris, coarse particulate organic matter inputs, and stream shading.
- Protect high quality waters through soil conservation practices, pasture management and livestock access.
- Protect springs and further investigate dissolved oxygen problem areas.



Key conclusions of first cycle

While sediment, elevated stream temperatures, nutrient levels and inadequate habitat are hurting the fish and bug communities in some places, most of the streams in the Minnesota portion of this watershed are meeting water quality standards.

Next steps

The Mississippi River – Reno Watershed approach began in 2015 and culminated with the WRAPS document published in December 2019. The restoration and protection strategies listed in the WRAPS report will be the basis for developing local implementation plans, via the Root River One Watershed One Plan, to restore and protect water resources. The report lays out goals, milestones and responsible entities to address protection and restoration priorities in the watershed. The targets are intended to provide guidance and “measuring sticks” to assess the watershed’s health and success of actions taken. The watershed is scheduled for its next intensive water monitoring in 2025.

Full report

To view the full report, go to www.pca.state.mn.us/water/watersheds/mississippi-river-reno or search for “Reno” on the MPCA website at www.pca.state.mn.us.

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