



Mississippi River- La Crescent Area 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 cycle repeated on a regular basis:

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.

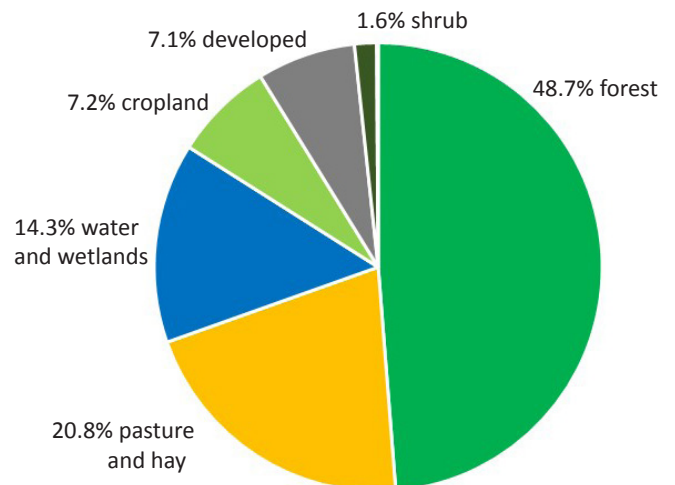
The Minnesota Pollution Control Agency (MPCA) leads the technical work and coordinates and supports strategy development with local partners. The main purpose of the WRAPS report is to summarize all the technical information so that local partners can use it for planning and implement the best strategies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



Watershed characteristics

- Size: 95 square miles in Minnesota
- Counties: Winona (69% of Minnesota portion) and Houston (31% of Minnesota portion)
- Ecoregion: Driftless
- Municipalities: La Crescent, New Hartford, Dresbach and Dakota
- Most of the land is forested
- Tributary to the Mississippi River
- The 8-digit hydrologic unit code (HUC): 07040006

Land use in the Mississippi River - La Crescent Area Watershed



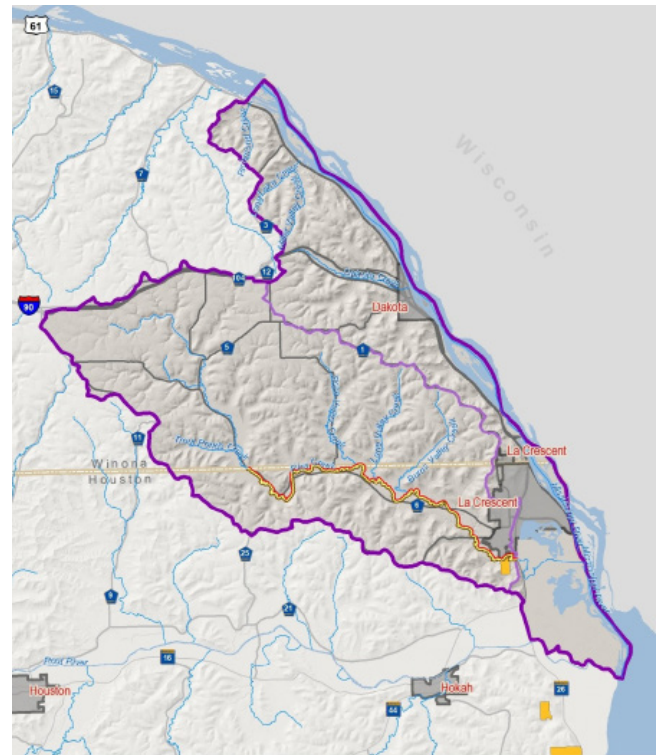
Assessments: Are waters meeting standards?

During the first phase of the watershed approach – intensive watershed monitoring – the MPCA collected data in 2015-2016 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. Impaired waters require a study called a Total Maximum Daily Load (TMDL), the maximum amount of a pollutant that a water body can accept and still meet standards.

There are no lakes in this watershed. Most of the streams in this watershed are supporting fish and other aquatic species. The map at right shows the only impaired stream section, Pine Creek in Houston County, in the Mississippi River-La Crescent Area Watershed.

Pine Creek is the largest cold-water tributary in the watershed, draining more than half of the entire watershed. Pine Creek is designated as a trout stream in Winona County, but not in Houston County. In this initial WRAPS process, the MPCA and local partners completed 2 TMDL studies for 1 stream section of Pine Creek in Houston County, which is impaired by bacteria and sediment:

- Bacteria can make the water unsafe for swimming.
- Sediment can make the water too cloudy for fish and other aquatic life to find food and perform other life functions.
- The fish and bugs from other streams indicate healthy populations of both.



Pine Creek in Houston County, outlined in yellow, has bacteria and sediment levels too high to meet water quality standards.

Stressors and pollutants: What factors are affecting fishing and swimming?

The Mississippi River - La Crescent Area Watershed is an area defined by wooded bluffs and spring-fed cold-water streams that flow directly to the Mississippi River. Streams in this watershed support good water quality, except for part of Pine Creek.

Based on intensive water monitoring, impairments and/or stressors in lower Pine Creek include the following:

- Temperature - Lack of shade, extreme bank erosion, ponded springs and sedimentation are creating thermal stress in Pine Creek, meaning the water may be too warm for trout and other fish species. Sediment in the water makes it cloudy, and cloudy water absorbs more sunlight and thus warms faster.
- Bacteria - *E. coli* and/or fecal coliform can indicate sewage or manure in water and also make the water unsafe for swimming.
- Biology (fish) - Pine Creek in Houston County has fewer species and numbers of fish than expected for this type of stream.
- Sediment - Excess sediment (also called total suspended solids) reduces visibility for fish, clogs fish gills, smothers stream habitat and limits fish reproduction.
- Aquatic habitat conditions - Stream bottoms smothered by sand and silt create limited places for fish and macroinvertebrates - snails, insects and other creatures - to live in watershed streams.



Erosion is leading to high levels of sand and silt in Pine Creek, a cold-water trout stream, that smothers the bottom of the stream, limiting habitat for fish and other aquatic species.

Restoration and protection strategies

This area is known for trout fishing and karst geography. The erosive effects of water have sculpted thick layers of limestone over thousands of years. The landscape is characterized by abundant sinkholes, springs, caverns, and underground waterways. Karst is like the Swiss cheese of rock. As water flows through karst, it mixes above and below ground. This mixing means pollutants on land can easily reach groundwater used for drinking. Protecting the streams are important for ensuring safe drinking water and for the economic impact of tourists visiting this area to fish, hike and camp.

Because of the naturally steep topography of the watershed, the Mississippi River – La Crescent Area Watershed is dominated by forest. Farming practices are mostly pastured livestock operations. There are nearly as many developed acres for residential and urban uses as there are cultivated acres for agriculture. General strategies that will help improve water quality of this watershed include:



Maintaining forests and vegetative buffers along streams are two key strategies to protecting streams in the Mississippi River-La Crescent Area Watershed.

- Protecting forested acres through Forest Stewardship Plans.
- Maintaining riparian vegetative buffers and adding more buffers where needed to increase stream shading for helping keep waters cool.
- Increasing water storage through water and sediment control basins (watershed-wide) and soil health practices on agricultural fields. Holding back water helps reduce erosion and thus sediment in streams.
- Addressing failing septic systems, improving animal manure management and ensuring animal feedlot compliance, all of which help reduce bacteria levels in streams.
- Maintaining good pasture management and improving pasture management where needed.
- Continued implementation of the City of La Crescent’s stormwater program to reduce urban runoff.
- Implementing stream channel restoration projects to improve stream bed habitat.

Key conclusions of first cycle

- The majority of waters in the Mississippi River – La Crescent Area are meeting water quality standards designed to protect fish and other aquatic life. These waters include Pine Creek in Winona County, Rose Valley Creek and Dakota Creek.
- Pine Creek in Houston County is impaired by bacteria and sediment levels.
- High sediment levels, warm temperature and lack of adequate habitat are hurting fish populations in part of Pine Creek.

Next steps

The Mississippi River-La Crescent Area Watershed approach began in 2015 with the WRAPS report published in spring 2020. The restoration and protection strategies listed in the WRAPS report will be the basis for developing local implementation plans. 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.

Full report

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

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