

Upper Iowa River 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.

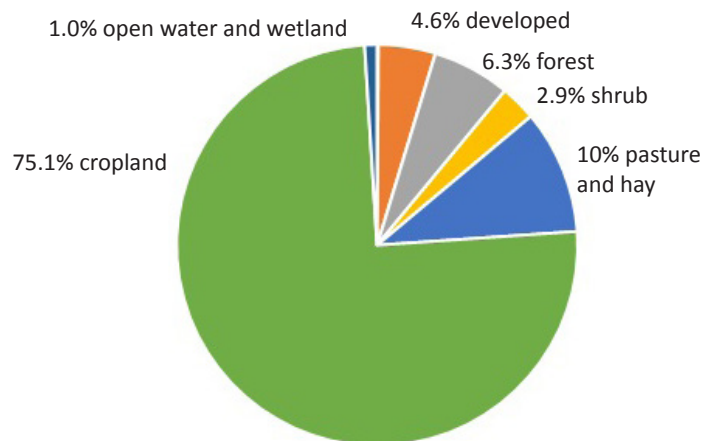
The Minnesota Pollution Control Agency (MPCA) leads the technical work and coordinates and supports strategy development with local partners. The main purpose of the WRAPS report is to summarize all the technical information so that local partners can use it for planning and implement the best strategies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



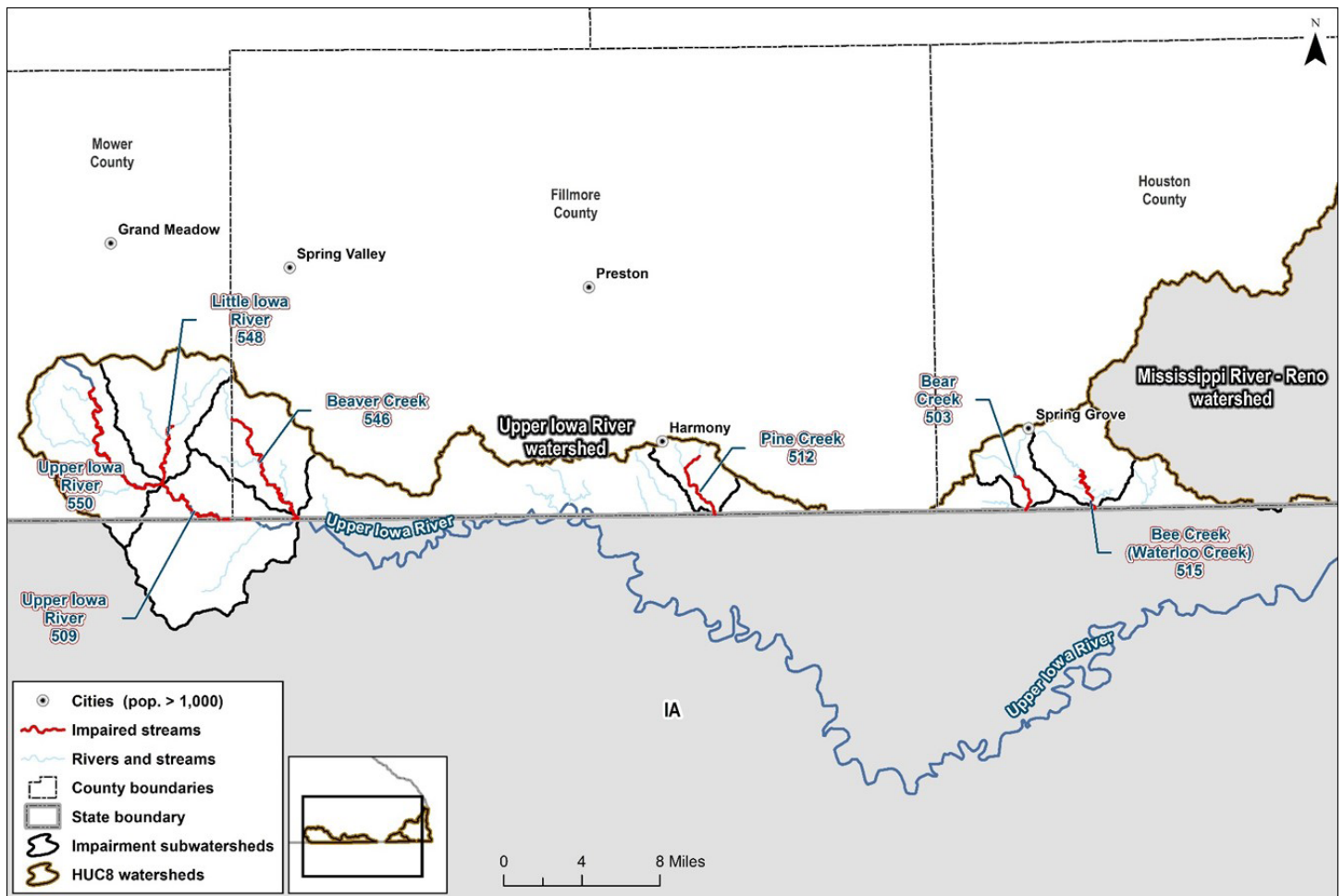
Watershed characteristics

- Size: 217 square miles in Minnesota, 1,001 square miles total with the majority in Iowa
- Counties: Mower, Fillmore and Houston
- Ecoregion(s): Majority is in the Driftless Area; western portion in the Western Corn Belt Plains
- Municipalities: Harmony and Spring Grove
- Land use: Primarily cropland and grassland/pasture
- Tributary to: Mississippi River
- The 8-digit hydrologic unit code or HUC: 07060002

Land use in the Upper Iowa Watershed



Assessments: Are waters meeting standards?



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 above shows the impairments for streams in the Upper Iowa River Watershed.

The MPCA and partners assessed 25 stream sections in the Minnesota portion of the Upper Iowa River Watershed to see if they met standards:

- Seven were impaired for bacteria and will be addressed through a Total Maximum Daily Load study
- Five were impaired for nitrogen levels and/or fish and bug populations not meeting expectations, and will be addressed through the WRAPS process
- Three met water quality standards for fish and bugs
- Ten had insufficient information for assessment

Based on intensive water monitoring, impaired waters are common throughout the Upper Iowa River Watershed. The full WRAPS document provides details about impairments in the watershed. Generally, impairments include the following:

- Altered hydrology: Artificial drainage is driving many of the problems in the watershed.
- Bacteria: *E. coli* and/or fecal coliform can indicate sewage or manure in water and also make the water unsafe for swimming.
- Biology (fish and/or macroinvertebrates): Number and type of creatures are indicators of water’s health (seven impaired stream sections in the watershed).
- Turbidity and Total Suspended Solids: Soil and other particles make the water murky and smother habitat for aquatic life.
- Nitrate: Excess nitrate/nitrogen is a stressor for biology in five stream sections.

Restoration and protection strategies

The Upper Iowa Watershed is located in an active region for water resource restoration and protection activities. With new information from the state's watershed approach, the numerous existing plans, studies, and stakeholder engagement efforts provide the basis for the restoration and protection strategies.

The MPCA and partners recommend the following:

- 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 nitrogen in the watershed by using appropriate fertilizer rates, implementing buffers and planting cover crops.
- Manage habitat and stream connectivity, treat drain tile water, and incorporate two-stage ditches to reduce altered hydrology impacts.
- Protect high quality waters meeting aquatic life standards.
- Fill data gaps for streams sections lacking water quality data.



Key conclusions of first cycle

There are widespread bacteria impairments throughout the Minnesota portion of the watershed. Culverts and other barriers block fish passage and altered hydrology from artificial drainage is also negatively impacting the fish. Nitrogen levels, lack of habitat and altered hydrology are also negatively impacting the bugs.

Despite the impairments, high quality waters exist in the watershed, including Bee Creek, which is proposed for designation as an "exceptional use" stream.

The Upper Iowa River is known for fishing and canoeing. An estimated 315,000 angling trips are taken in the watershed each year.

Next steps

The Upper Iowa River 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/upper-iowa-river or search for "Upper Iowa" on the MPCA website at www.pca.state.mn.us.

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