



Upper Wapsipinicon 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.

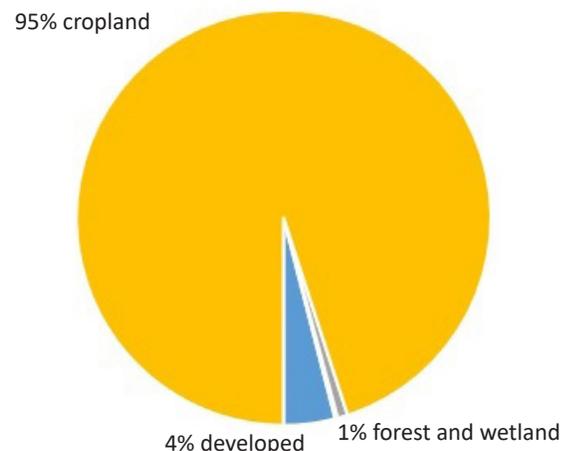
The Minnesota Pollution Control Agency (MPCA) leads the technical work and coordinates and supports strategy development with local partners. The main purpose of the WRAPS report is to summarize all the technical information so that local partners can use it for planning and implement the best strategies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



Watershed characteristics

- Size: 13 square miles in Minnesota with the majority of the watershed in Iowa
- County: Mower
- Ecoregion: Western Corn Belt Plains
- Most of the land is cropland
- Tributary to the Cedar River
- The 8-digit hydrologic unit code (HUC): 07080102

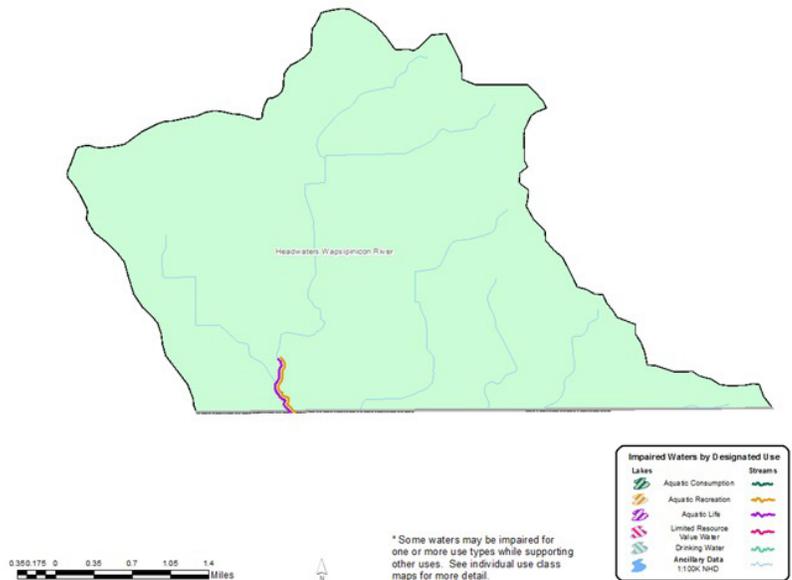
Land use in the Wapsipinicon watershed



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 at right shows the only stream with impairments in the Upper Wapsipinicon Watershed.

The MPCA and local partners assessed three stream sections for meeting standards:



- One stream section has bacteria levels too high to meet standards. The MPCA is addressing this impairment through a Total Maximum Daily Load (TMDL) study. This stream’s fish and bug populations also failed to meet expectations for this type of stream, as far numbers and diversity of species. These impairments are addressed through the WRAPS.
- Two stream sections have insufficient information for assessment at this time.

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

Based on intensive water monitoring and stressor identification work, the following factors are affecting fishing and swimming conditions in the Upper Wapsipinicon River Watershed:

- Altered hydrology: Artificial drainage, such as channelized ditches and field tiling, is driving many of the problems in the watershed. Inadequate flow, caused by rapid drainage, appears to affect aquatic habitat at times. (Photo at right shows extensive tile drainage into a stream.)
- Bacteria: *E. coli* and/or fecal coliform bacteria can indicate sewage or manure in water and also make the water unsafe for swimming.
- Biology (fish and/or macroinvertebrates): There are fewer fish and bugs, and fewer species of them, than expected for this type of streams.
- Nitrate: Excess nitrate/nitrogen is a stressor for biology in this watershed.
- Additional monitoring is needed to further understand how nutrients, oxygen, sediment and physical barriers (culverts and road crossings) impact biology.
- Aquatic habitat conditions: While there is good stream channel stability, smothered stream bottoms and low flow conditions are impacting the quality and availability of fish and macroinvertebrate habitat.



Restoration and protection strategies

The Upper Wapsipinicon River Watershed is a small watershed. Because of its size, the watershed offers an opportunity to see changes in water quality that may be more noticeable and faster than watersheds of a larger scale. General strategies that will help improve water quality include:

- Reducing nitrates from field surface runoff through improved nutrient management
- Minimize altered hydrology impacts through agricultural tile drainage treatment and storage
- Address failing septic systems, improve animal manure management, and ensure animal feedlot compliance



Key conclusions of first cycle

- Like many southern Minnesota streams, bacteria is causing an impairment for aquatic recreation, meaning levels can make it unsafe at times for swimming and other activities.
- Altered hydrology is playing a critical role in the impairments of the watershed.
- Nitrates, inadequate habitat and altered hydrology are negatively impacting fish and macroinvertebrates.
- More monitoring in this small watershed is needed to better understand and quantify the health of water resources.

Next steps

The Wapsipinicon 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, through the Cedar 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 MPCA and local partners began conducting the second round of intensive water monitoring in this watershed in 2019 and will finish it in 2020.

Full report

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

Contacts

Minnesota Pollution Control Agency

Emily Zanon, watershed project manager: emily.zanon@state.mn.us
507-206-2613

Mower Soil and Water Conservation District

Justin Hanson, district administrator: justin.hanson@mowerswcd.org
507-434-2603