Summary

Stressor Identification

North Fork Crow River Watershed

Why is it important?

The North Fork Crow River watershed is located in south-central Minnesota, flowing from its headwaters northwest of Paynesville, to the confluence with the South Fork Crow River in Rockford, and drains into the Mississippi River near Dayton. Land use in the nearly 120-mile long watershed is mostly agricultural, with the exception of the eastern portion, which is metro-fringe urban and commercial.

Much of the landscape of this drainage area has been modified since it was settled and that has likely played a role in the widespread water quality problems detected throughout the watershed. Agencies, watershed groups and local citizens are collaboratively working to address these problems in the North Fork Crow River watershed.

Key issues

Due to timber removal, draining of wetlands, and modifying stream channels, lakes and streams in the North Fork Crow River watershed are showing signs of stress from pollution, such as:

- **Higher levels of nutrients**
- **Higher levels of nitrates**
- **Lower levels of dissolved oxygen**

These factors can all cause water quality conditions that threaten aquatic life, recreation, and fish consumption.

Highlights of report

- The report summarized the key causes, or "stressors", contributing to impaired fish and aquatic macroinvertebrate communities in this watershed. A comprehensive review of existing biological, chemical, and physical data was performed to create a broad list of candidate causes for impairments.
- Loss of habitat due to stream channelization appears to be a major contributor to biological impairments in the headwaters of the North Fork Crow River watershed. Also in a several-mile stretch downstream of Lake Koronis.
- Total suspended solids appears to be a significant stressor to aquatic life in the lower half of the North Fork Crow and Lower Crow rivers. From about Kingston to the Mississippi River, total suspended solid concentrations are frequently above water quality standards to protect aquatic life.
- Increased deposits of fine sediment in the streambed is likely a stressor, especially in the channelized stream reach below Lake Koronis.
- Nitrate-N concentrations exceed standards on occasion, and may be an aquatic life stressor in the North Fork Crow river, from its headwaters to Lake Koronis. Common pesticides were detected, but concentrations were generally low. Additional sampling is recommended.

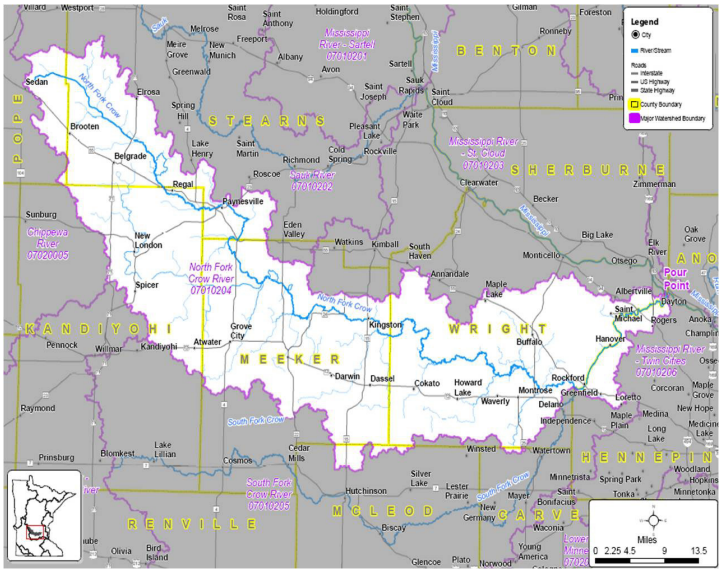
Highlights
continued

- Low dissolved oxygen concentrations and high dissolved oxygen fluctuations are likely stressing fish and macroinvertebrate communities in the lower North Fork Crow and Lower Crow rivers.
- The carp-control dam at the outlet of Lake Koronis limits fish passage between the lake and the portion of the North Fork Crow river, below the dam. The dam, as well as water quality problems in Lake Koronis and Rice Lake, is likely to be negatively impacting downstream reaches of the North Fork Crow River.

About this study

Monitoring of many of the lakes and streams began in 2009, as part of the MPCA's intensive watershed monitoring effort. Those results can be found in the North Fork Crow River watershed Monitoring and Assessment report, which is the first step of the watershed restoration and protection strategy (WRAPS) process, and is available on the MPCA website.

This report, the second WRAPS step, or stressor identification, is to find and evaluate factors, natural and human, which are likely responsible for the impaired condition of the fish and macroinvertebrate communities. An important part of stressor identification is to understand the natural features and processes occurring in the watershed, and gaining understanding of the extent of various human activity throughout the watershed that may have potential to degrade streams, rivers, and lakes.



Full report

To view the full report, go to http://www.pca.state.mn.us/wfhydcf ? http://www.pca.state.mn.us/index.php/water/water-types-and-programs/watersheds/north-fork-crow-river.html

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