Monitoring and assessment report summary

Vermilion River Watershed

Why is it important?

The Vermilion River Watershed is located in Northeast Minnesota and drains an area of roughly 1,000 square miles. A contributor to the Rainy River basin, it is mostly known for Lake Vermilion – a large waterbody located in the south-central portion of the watershed with exceptional fishing.

With moderate development pressure as compared to other watersheds in Minnesota, the Vermilion is largely unscathed by human development.

Highlights of report

- Biological communities and water chemistry samples collected in 2015 indicate that overall waterbodies are in good condition except for a few identified impairments.

About this study

In 2015, the Minnesota Pollution Control Agency (MPCA) performed biological monitoring activities on streams and rivers within the Vermilion River Watershed (8-digit HUC code 09030002). Based on the Intensive Watershed Monitoring (IWM) design, staff established sampling stations near the outlets of smaller contributing watersheds. Each of the selected locations was sampled to identify the aquatic communities of fish as well as macroinvertebrates (bugs). These communities endure past and present water quality conditions and respond somewhat predictably to various stressors, which make them an ideal indicator of overall water quality conditions.

That same year, MPCA monitored 33 stations in the Vermilion, sampling them for biology as part of this effort. In addition, staff also established nine monitoring stations located at the outlets of medium-sized tributary streams, sampling for a suite of water chemistry parameters from May through September of 2015 and 2016. All water chemistry data indicated high quality water available to support the biological communities. Low levels of bacteria were present across the watershed.

Heavy rains, which occurred statewide during the summer of 2015, raised water levels enough to limit our ability to sample in the watershed some weeks. Despite this, most of the initially selected locations were sampled later on during the summer with most of them displaying good-to-excellent aquatic communities.

Major reaches within the watershed include the Vermilion River, Pike River, Sand River, Echo River, Elbow River, West Two River, and East Two River. Several other smaller tributary reaches are also present. The biological data and water quality information were used to evaluate the condition of the waters in 2017.

Lakes within the watershed were predominantly high quality, with low algae levels and high clarity. This is reflective of the watershed being dominated by forested and wetland resources. Of particular note are pristine lakes, which draw visitors from across the state, Pelican, Crane, Vermilion, and Eagles Nest Chain. These resources have excellent water quality.

Full report

A Watershed Monitoring and Assessment Report which summarized the findings of the monitoring and assessment results was completed July 2018 and is available here: https://www.pca.state.mn.us/sites/default/files/wq-ws3-09030002b.pdf

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