

Summary

Watershed Restoration and Protection Strategies Report

Snake River Watershed (St. Croix Basin)



Why is it important?

The Snake River Watershed is located in the St. Croix River Basin. The northern portion is located in what is known as the Northern Lakes and Forest ecoregion dominated by forests and wetlands. The southern portion is located in the North Central Hardwood Forest ecoregion and is a mixture of forest, grassland, pasture/hay and cropland. The river flows southeast to its confluence with the St. Croix River in Pine County. The St. Croix is one of the most popular rivers in the state for recreation.

The Snake River watershed supports a diverse range of aquatic species including fish and freshwater mussels, as well as a number of terrestrial threatened and endangered species. The watershed is also home to several outstanding resources such as the Mille Lacs Wildlife Management Area, the Solana State Forest, and the Rum River State Forest, which provide critical habitat for many species and support recreational activities such as hiking, fishing, and wildlife viewing.

Many groups are participating in restoration and protection efforts, including the Snake River Watershed Management Board (SRWMB), Citizen Advisory Committee, the Cross Lake and Pokegama Lake associations, and the Anne River Watershed Alliance. Individuals too are encouraged to get involved.

Key issues

In-depth monitoring and analysis show water quality is good in the north half of the watershed where lakes and streams need protective measures to keep them healthy. These measures include managing timber harvests and other activities to prevent erosion and other impacts than can eventually pollute the waters.

Water quality becomes progressively worse in the southern half as the landscape changes from primarily forests and wetland to pasturelands with some croplands. Lakes and streams that fail to meet standards are considered "impaired." To restore these impaired waters to state standards, the report recommends, among other things, managing cattle access to streams and lakes to reduce levels of phosphorous (a nutrient that can produce excessive algae growth); *E. coli*, a potentially harmful bacteria, and sediment, which reduces clarity and can harm aquatic animals.

Highlights of report

- Of the 128 streams in the watershed, 54 were assessed for biotic integrity and 19 were found to fully support aquatic life. Four were identified as impaired for aquatic life while 31 were intermittent and/or lacked data to make a determination.
- Seven river reaches in the watershed were identified as impaired for fecal coliform/*E. coli* bacteria.
- There are 87 lakes in the watershed. Of the lakes that were assessed, six were found to be impaired for nutrients.

- The most common stressors in the Snake River impaired reaches were stream channel sedimentation and disturbance to the vegetative cover (riparian region) along the river. Other stressors include low dissolved oxygen concentrations and lack of connectivity for fish passage due to dams.
- Wastewater treatment facilities were identified as primary sources of phosphorous pollution in the Knife, Middle Snake, Groundhouse and Lower Snake rivers.
- There are six impaired lakes and seven impaired stream reaches that have received Total Maximum Daily Load (TMDL) allocations. These allocations refer to the maximum amount, or load, of pollutant that a water body can receive and still meet standards. The Snake River watershed is one of several that drain to Lake St. Croix, which is impaired for nutrients.
- Some of the waterbodies in the Snake River watershed are impaired for mercury; however, this report does not cover toxic pollutants. For more information on mercury impairments, see the statewide mercury TMDL information at: <http://www.pca.state.mn.us/wfhy9ef>.
- Several non-impaired water bodies in the watershed are currently, and will continue to be, threatened by a variety of stressors. Several agencies such as local Soil and Water Conservation Districts, lake associations, SRWMB, MPCA, Department of Natural Resources, Board of Water and Soil Resources and the Nature Conservancy are working to protect non-impaired areas.

About this report

Watershed Approach

Phase 1: Monitor and assess health of waters

Phase 2: Identify conditions stressing biological life

Phase 3: Determine maximum pollutant loads

Phase 4: Determine Watershed Restoration and Protection Strategies

Start process over every 10 years

Minnesota has adopted a “watershed approach” to address the state’s 81 major watersheds. This approach incorporates water quality assessment, watershed analysis, civic engagement, planning, implementation, and measuring results into a 10-year cycle that addresses both restoration and protection.

Waters not meeting state standards are still listed as impaired and TMDL studies are performed as they have been in the past, but in addition the watershed approach includes a more cost-effective and comprehensive assessment of the watershed’s overall health. A key aspect of this effort is to develop and utilize watershed-scale models and other tools to help state agencies, local governments and other watershed stakeholders determine how to best proceed with restoring and protecting lakes and streams. This report summarizes past assessment and diagnostic work and outlines ways to prioritize actions and implement strategies.



Full report

To view the full report visit the Snake River Watershed (St. Croix Basin) page on our website.

Contact person

Christopher Klucas
Minnesota Pollution Control Agency
christopher.klucas@state.mn.us
651-757-2498

