



Minnesota
Pollution
Control
Agency

South Fork Crow River Lakes Total Maximum Daily Load

Excess Nutrients Project Overview

Water Quality/Impaired Water #8.23a • June 2010

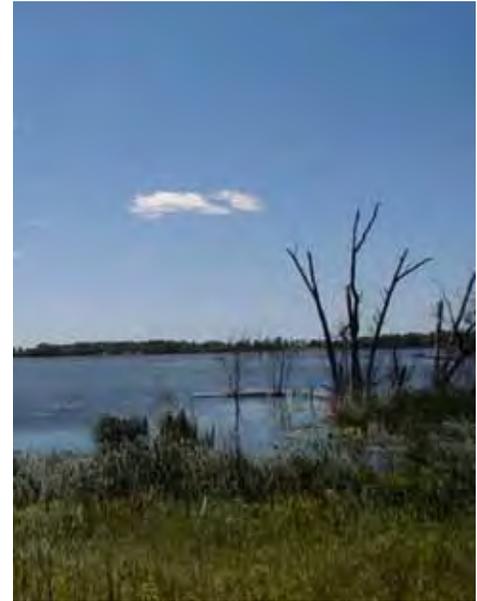
Located in a mostly rural area of Carver County, Eagle, Oak and Swede Lakes make up the South Fork Crow River Lake System. The lakes were placed on the Minnesota Pollution Control Agency (MPCA) impaired waters list in 2002, 2004 and 2004, respectively. All three lakes exceed the state's water quality standard for nutrients (phosphorus), which reduces their beneficial use for aquatic recreation.

The lake system and Crow River flow to the northeast, ultimately discharging into the Mississippi River. The entire South Fork Crow River Watershed encompasses roughly 72,600 acres and the subwatersheds for the three lakes in this Total Maximum Daily Load (TMDL) study account for approximately 3,500 acres. Forty-four percent of the lakes' land use is agricultural and five percent is developed.

Addressing water quality concerns

Based on monitoring data, water quality in the South Fork Crow River Lakes is considered poor. All have high levels of nutrients and frequent algal blooms. While phosphorus is an essential nutrient for algae and plants, it is considered a pollutant when it stimulates excessive algae growth.

Carver County conducted a TMDL study for the three waterbodies. A TMDL sets the maximum quantity, or load, of a given pollutant a waterbody can receive and continue to meet state water quality standards.



Swede Lake

Primary phosphorus sources

Agriculture is the watershed's primary land use and runoff from those areas is the major external phosphorus contributor to Eagle Lake and Oak Lake. Internal loading is also a significant source of phosphorus to these two lakes and the primary source for Swede Lake. Internal loading sources include rough fish (e.g., carp), curlyleaf pondweed, wind mixing and/or boat propeller disturbance of sediments, and sediment release.

Proposed reductions

Total phosphorus water quality goals will be set at 60 micrograms per liter ($\mu\text{g/L}$). These goals reflect Minnesota's phosphorus standard for shallow lakes in the North Central Hardwood Forest Ecoregion.

To achieve the TMDL's water quality goals, phosphorus contributions to and within the South Fork Crow River Lakes must be reduced by 42 to 96 percent.

Implementation strategies

To reach the reduction goals, Carver County and its partners will focus on implementing best management practices to limit runoff from rural and urban lands. Various in-lake management strategies will be evaluated and implemented to reduce internal lake loading.

Within a year of the TMDL report's approval by the U.S. Environmental Protection Agency, a final implementation plan that allocates watershed loads will be developed.

Because of the uncertainties involved in the TMDL's development and the success of management strategies used to reduce pollution, it is necessary to use an "adaptive management" implementation approach. This approach involves continual evaluation and monitoring of implementation actions taken to reduce pollution over a period of several years.

For more Information

To contact the MPCA project manager for this TMDL, visit the project web page

at: <http://www.pca.state.mn.us/water/tmdl/index.html>

Alternatively, you may call the MPCA at 651-296-6300 or 800-657-3864 and ask for the Metro and St. Croix Unit (in the Watershed Section).

General information on TMDLs can be found on the Web

at: <http://www.pca.state.mn.us/water/tmdl/index.html> and <http://www.epa.gov/owow/tmdl/>.