Capital Improvement Project

Apple Valley: Long Lake Drawdown Pipe


Black Bullhead

The Long Lake drawdown pipe was installed as a permanent means to drawdown Long Lake in order to control curly leaf pondweed and the nuisance and rough fish.

The project was completed cooperatively by the:

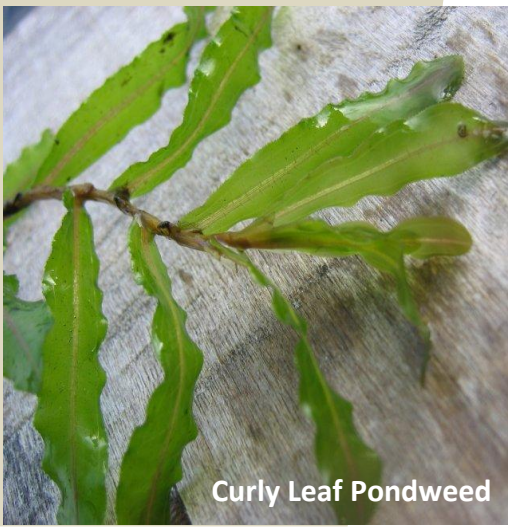
- City of Apple Valley
- Dakota County Soil and Water Conservation District
- Vermillion River Watershed Joint Powers Organization

Restoring Long and Farquar Lakes

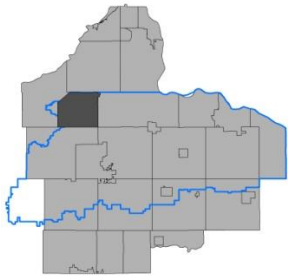
Years of stormwater runoff being delivered to Long and Farquar Lakes have contributed to elevated levels of nutrients in both lakes. In addition, the lakes contain curly leaf pondweed, an invasive aquatic plant, and nuisance fish populations; both have negative effects on the lakes' water quality.

In an effort to reduce or eliminate the curly leaf pondweed and rough fish, such as bullhead and other nuisance fish, the Vermillion River Watershed Joint Powers Organization partnered with the City of Apple Valley and the Dakota County Soil and Water Conservation District to install a permanent drawdown pipe at the outlet of Long Lake.

Cost-share funding from the Vermillion River Watershed Joint Powers Organization enabled the City of Apple Valley to complete the project. Controlled drawdowns can eliminate problem fish populations and can kill the curly leaf pondweed's turions (winter buds) by exposing them to freezing temperatures and dry conditions during the winter. Changing Long Lake from a curly leaf pondweed dominated plant community to a native plant dominated community will in turn lead to cleaner water that drains into Farquar Lake.


Curly Leaf Pondweed

Dense Growth of Curly Leaf Pondweed



City of Apple Valley, MN within the Vermillion River Watershed.

Vermillion River watershed reflecting life

Vermillion River Watershed Joint Powers Organization
14955 Galaxie Avenue
Apple Valley, MN 55124
www.dakotacounty.us
952-891-7000

The Vermillion River is a vital natural resource that is important to public health and recreation, as well as preserving unique wildlife habitats. It flows from New Market Township in Scott County, through residential and agricultural areas in central Dakota County, and cascades into a 100-foot ravine before it enters the Mississippi River near the Cities of Hastings and Red Wing, Minnesota. Throughout its journey, the river reflects urban and rural life within its 335-square mile watershed.

Problem:

- Large amounts of runoff carrying nutrients were being delivered to Long and Farquar Lakes
- Large amounts of internal lake nutrients
- Considerable amounts of curly leaf pondweed, an invasive plant, and nuisance fish species
- Excessive algae blooms
- Limited recreational opportunities

Actions:

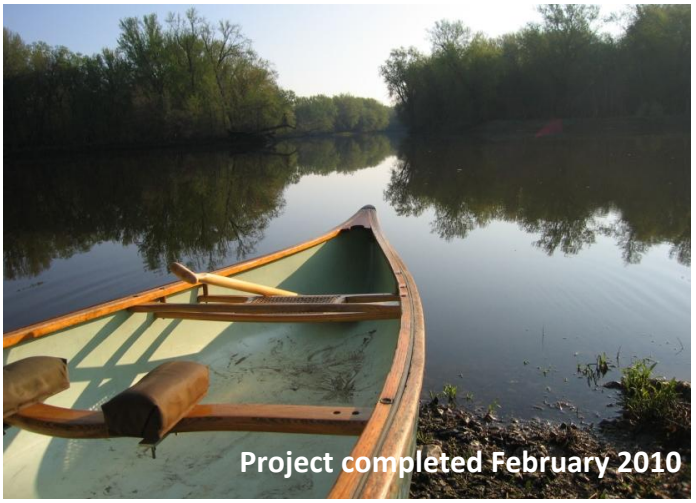
- Pumped the lake elevation down to expose lake bed sediments
- Installed a drawdown pipe in Long Lake to use for future lake drawdowns

Benefits:

- Reduces water quality problems such as algae blooms and low dissolved oxygen
- Changes lake from a curly leaf pondweed dominated community to a native plant dominated community
- Improves recreation and aesthetics on both lakes
- Provides pollution reductions necessary for Long and Farquar Lakes Total Maximum Daily Load (TMDL) study

Costs and contributions:

- City of Apple Valley: $165,304 – engineering and labor
- Vermillion River Watershed Joint Powers Organization: $60,000 – cost share
- Dakota County Soil and Water Conservation District: design and construction technical assistance



Project completed February 2010