Delisting achieved, partners consider possibilities for Stillwater's Lily Lake

Practices installed around Lily Lake, removed from the impaired waters list in 2022 and seen here in August 2023, focused on external phosphorus-loading. An alum treatment targeted internal phosphorus-loading. Clean Water Funds BWSR awarded to the Middle St. Croix WMO supported water-quality improvement work.
Photo Credits: Angie Hong, Washington Conservation District

CLEAN WATER LAND & LEGACY AMENDMENT

Community and city involvement augments Clean Water Fund work. Landowners and the city of Stillwater built 336 rain gardens and 100-plus other projects to aid water quality. Volunteers adopted 235 storm drains. Friends of Lily Lake and Sustainable Stillwater MN led buckthorn removal.

STILLWATER — The water-quality improvement work didn't stop once Lily Lake was removed from the state's impaired waters list — an effort that took 20 years, involved a host of partners, and tapped nearly $1 million in Clean Water Funds from the Minnesota Board of Water and Soil Resources (BWSR).

U.S. Environmental Protection Agency approval formalized the delisting in 2022.

"We're not done with Lily Lake," said Matt Downing, Middle St. Croix Watershed Management Organization (MSCWMO) administrator, in fall 2023. "Just because it's off the list doesn't mean it's going to stay off the list."

"Where do we go from here, and how do we make sure that we stay where we're at (in terms of water quality)?" Downing said. "That's the challenge moving forward."

Volunteers who collect water-quality monitoring data and spend time on rain garden upkeep — along with the Stillwater city and MSCWMO staff members (assisted by Washington Conservation District staff) who handle project maintenance — help to ensure that practices installed 15 to 20 years ago remain functional. Washington Conservation District technical staff also assist the WMO with maintenance.

A picturesque 41-acre lake in the heart of Stillwater, bordered by a small city park with a fishing pier, Lily Lake was once so clear that it supplied St. Paul restaurants with ice harvested in blocks and stored nearby. Thirty to 50 years ago, it was a city focal point.

"Just about everybody who's grown up in Stillwater has spent some time in and around Lily Lake," said Mike Lyner, Friends of Lily Lake's president and chairman. "A lot of people would play in Lily Lake. They

would fish in Lily Lake."

Over the years, growth brought urban development and parking lots that sent untreated runoff into the lake. Water clarity decreased to about 4 feet. Thick mats of weeds prevented boating.

The Minnesota Pollution Control Agency (MPCA) listed Lily Lake as impaired for aquatic recreation in 2002. The WMO and city started work on water quality improvements six years later.

Lily Lake achieved the phosphorus reductions necessary for delisting after a regional filtration basin was installed in fall 2021 and after an alum treatment was completed the following spring. Those MSCWMO projects drew from a $513,500 Clean Water Fund grant — the most recent of five Clean Water Fund grants BWSR awarded to the WMO since 2011 for work related to Lily Lake.

"That was kind of the capstone to push it solidly into the clear-water, high-quality state," Downing said. "After the alum treatment and the basin coming online, the clarity was off the charts."

Immediately after the spring 2022 alum treatment, Secchi disk readings measured water clarity at 34 feet. In 2022, clarity averaged about 16.5 feet, compared with just over 6.5 feet in 2021.

"Hopefully the city can maintain the water-quality status and improve it or keep it delisted and bring back the prominence of Lily Lake back to the community," said Stillwater City Engineer and Public Works Director Shawn Sanders.

The city of Stillwater worked closely with the MSCWMO on Clean Water Fund-backed projects, providing matching funds — most recently, a $70,000 match tied to the $513,500 grant — and reviewing project plans. The city owns the parkland where the large filtration basin was constructed. Previous work included commercial and residential stormwater retrofits, one large gully stabilization, an irrigation reuse project, three regional filtration basins and 19 curb-cut rain gardens.

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>
> — Matt Downing
> Middle St. Croix WMO administrator

Combined, those projects were projected to reduce annual phosphorus-loading to the lake by about 145 pounds. The filtration basin alone will keep an estimated 32 pounds of phosphorus out of the lake each year.

Downing's advice to others striving for water-quality improvements:

"Don't have unreasonable expectations, but also don't get discouraged if you don't see immediate results. ... It took 150 years, 200 years to screw it up. It's going to take more than two weeks to fix it."

His predecessors dealt with five- or 10-year stretches where the efforts did not appear to be producing results.

"The message that we've been talking about is the wholistic approach that it took. It takes time. This effort was not one project over the course of two years. It was 20 years of work. But it was the partnership — with the watershed, the city, the community, even the private (sector). And the state with all the funding — BWSR Clean Water Funding has provided grants," Downing said. "It takes a lot of time and investment from multiple places and people to get stuff done, and it's not going to happen overnight or with (only) one group."

Friends of Lily Lake and Sustainable Stillwater MN are among the groups working with the city and WMO.

Sustainable Stillwater MN has helped with education and communication. Friends of Lily Lake — established in 2013 as the Lily Lake Association — have collected Secchi disk and water temperature readings, planted plants in the filtration basin, and provided the city with a strategic vision for lakeshore and park development at Lily Lake.

"We were trying more creative ways to make use of the park," Lyner said. "What can we do to make the park more special again?"

Lyner described Lily Lake Park as a spot with the potential to once again become the heart of the city — away from the more touristy St. Croix River. The public swimming beach closed in 2012 after a child died from a brain infection, the result of inhaling water containing the amoeba Naegleria fowleri. While there are no plans to allow swimming, the city was building a floating launch for paddlers.

This season, the city also resurfaced two parking lots at Lily Lake Park. A few years ago, it updated the tennis courts and installed a pickleball court. Next year it will revamp the park's playground.

In consultation with trail-building experts and the city arborist, Friends of Lily Lake members are building a mile-long loop trail through a wooded area that will connect to neighborhoods with young children. They've collaborated with Sustainable Stillwater MN to replace invasive species with pollinator- and bird-friendly shrubs and plants.

One challenge the WMO faces now: Public perception of aquatic plants.

As water clarity improved, aquatic plants such as water lilies became more abundant. Not everyone recognizes it as a positive sign.

Sanders considers the Lily Lake delisting part of a bigger milestone: Three of the four lakes in or near Stillwater once classified as impaired for aquatic recreation have been removed from the impaired waters list: Lake McKusick in 2012, and Lily Lake and South Twin Lake in 2022. (The MCPA cited "restoration activities" as the reason for delisting Lake McKusick and Lily Lake; it cited "unknown reasons" for South Twin Lake's delisting.)

"So three of our four lakes have been delisted. And it's really just been actions by the city, by the conservation district, by volunteer groups who help clean out rain gardens — it's really been a conglomerate of effort to get these lakes delisted," Sanders said of the additional efforts sparked by Clean Water Fund-backed work. "It just seems like it's something special that we've had that happen in our community."