



Fredell



Godfrey



Barrow

Blue Lake alum treatment caps Isanti SWCD’s protection work



BWSR awarded the Isanti SWCD a \$384,630 Clean Water Fund grant in 2022 and 2024. It followed a 2018 grant for \$251,000 to address runoff and phosphorus-loading in the watershed.

ZIMMERMAN — With an alum treatment targeting in-lake phosphorus, the Isanti Soil & Water Conservation District this fall embarked upon the final phase of Clean Water Fund-supported efforts to protect Blue Lake’s water quality.

“Blue Lake was teetering on becoming an imperiled, endangered lake because of too much phosphorus,” said Bill Fredell, vice president of the 147-member Blue Lake Improvement District (LID), which prompted protection efforts and provided matching funds. “This is the most cost-effective way to preserve the lake for the future.”

Phosphorus feeds the algae that can turn lakes green. While not yet impaired, Blue Lake was starting to produce more algae blooms. Monitoring in 2016 revealed slightly elevated phosphorus and chlorophyll-a levels.

“This is Phase 2 of a larger goal to protect



Blue Lake. Phase 1 was dealing with the external sources of phosphorus,” said Lydia Godfrey, Isanti SWCD outreach assistant. A [2018 Clean Water Fund grant](#) from the Minnesota Board of Water and Soil Resources supported the initial work within the watershed, which reduced upland phosphorus-loading by more than 40%.

“We did the most cost-effective projects there,” Godfrey said.

A diagnostic study determined that an alum

SOLitude Lake Management operator Justin Barrow, on shore, on barge, above, and project manager Joel Barrow, on barge and at left, monitored the tanks of aluminum sulfate and sodium aluminate as they refilled Sept. 14 at the Blue Lake access in Stanford Township. A second alum treatment is set for 2024. Photo Credits: Ann Wessel, BWSR

VIDEO: [“Isanti SWCD: Blue Lake Alum Treatment”](#)



Guided by GPS, a SOLitude Lake Management crew applied alum to targeted areas of Blue Lake. A Clean Water Fund grant from the Minnesota Board of Water and Soil Resources supported the Isanti SWCD project, which addresses in-lake phosphorus. The 2022 treatment wrapped up on Sept. 15. The Blue Lake Improvement District provided the 25% grant match.

treatment was the best next step to protect the lake. A \$384,630 Clean Water Fund grant BWSR awarded to the SWCD in 2022 supports that work.

A crew from SOLitude Lake Management completed the first of two planned alum applications on Sept. 15. A second alum treatment planned for 2024 will cap the SWCD's Clean Water Fund-supported work centered on the popular recreational lake.

"You look in the lake and you can see fish and (plants) on the bottom, which you couldn't see yesterday," Godfrey said while September's 73-acre treatment was underway.

Together, the two treatments will reduce phosphorus by an estimated 590 pounds a year — exceeding the SWCD's 360-pound annual reduction goal by more than 150%.

Tadd Barrow, a Fairmont, Nebraska-based water quality specialist with SOLitude, described the treatment as he and the rest of the crew waited for a truck to arrive with more aluminum sulfate.

"We essentially 'mow the lawn' going back and forth across the lake, applying

“ Clean Water Funds make this kind of a project possible. Without it, it would be cost-prohibitive for a lake association to fund on its own. Or it would take a long, long time to save up the yearly assessments to do this kind of a project.

— Bill Fredell,
Blue Lake Improvement District vice president

aluminum sulfate. The aluminum sulfate will form a flock that settles — it almost looks like snow falling through the water," Barrow said. "It resides on the bottom of the lake. It's a very, very thin layer that is porous. Water can move through that layer. As that water comes through, that aluminum sulfate is grabbing onto the phosphorus, which is trying to leach into the water column that stimulates that algae growth."

The crew uses GPS to guide application. Automated valves and flow meters ensure accurate distribution and coverage.

A treatment can be effective from five to 20-plus years, depending upon conditions including the dose rate, amount of phosphorus-loading from the watershed and number of sites to which the alum can bind.

"We're hoping that the result of this alum treatment will be quite dramatic, and it will prove to people that we can do even more, so that we get to a point where there's absolutely no phosphorus runoff into the lake — or as little as possible. That way we'll be able to preserve the lake for a long time into the future," Fredell said.

Fredell, who lives in Edina,

has been visiting the lake since he was a child. Over the years, he's seen the shift from summer homes like his to year-round lake residences.

"This is a lake that people love. This is their home. This is their summer home. And they have friends here. It's a community asset that is very worthy of our protecting," Fredell said. "Blue Lake is an enormous resource for Isanti County. It's one of the few deep lakes in the county, and it has traditionally been a very healthy lake."

Thirty-one feet at its deepest point, 263-acre Blue Lake supports game fish and panfish including walleye, largemouth bass, Northern pike, bluegills, sunfish, perch and crappies. It draws anglers, recreational boaters and swimmers.

"This is a very popular recreational lake. It's very cherished by those in the county. It's also very cherished by the people that live on the lake. This project would not be possible if it wasn't for the efforts of the residents on Blue Lake, especially the Blue Lake Improvement District as well as both of the townships," Godfrey said.



The Minnesota Board of Water and Soil Resources' mission is to improve and protect the state's water and soil resources by working in partnership with local organizations and private landowners.
Website: www.bwsr.state.mn.us