



# Conservation in the glacial hills

Clean Water Fund grants target field fixes that cut erosion, benefit nutrient-impaired Lake Emily



STARBUCK – As he combined corn at night, Tom Beuckens anticipated the jolt that would indicate the spot where hard rains always cut a gully into the field.

“It was dark and I was waiting for my wheels to drop in, and nothing happened,” Beuckens said.

That’s when he knew the water and sediment control



Outlet Creek runs through Tom Beuckens’ land south of Starbuck. Over the years, he’s planted trees, installed waterways and, with recent Clean Water Fund aid, added water and sediment control basins in an effort to curb erosion on his 850-acre farm. **Photo Credits:** Ann Wessel, BWSR

basins were working.

He’d seen basins and berms on neighbors’ land, learned money was available, thought he might be able to fix the waterway that kept washing out.

“The projects got a little bigger than the one gully,” Beuckens said.

Seven basins constructed in that 94-acre field south of Starbuck plus two berms and a diversion on Beuckens’



**Top:** Holly Kovarik, left, Pope Soil & Water Conservation District manager, and Kevin Bigalke, Minnesota Board of Water and Soil Resources' Central Region manager, inspected a berm constructed this spring in Tom Beuckens' field south of Starbuck. **Right:** Kovarik inspected a diversion on Beuckens' land.

home site are part of Pope Soil & Water Conservation District's three-year, \$610,200 effort to clean up Lake Emily. The shallow fishing lake is impaired for nutrients.

The SWCD has worked with seven landowners on 67 practices since 2015. That year, it received a Clean Water Fund grant to identify sites with the greatest potential to cut the amount of phosphorus and sediment flowing in to Lake Emily. The SWCD is pursuing a third round of project funding for 2018, which would complete work that's in the design stages and could involve more landowners. It works with willing landowners, who pay 25 percent of the cost.

Contractors finished \$130,690 in improvements on Beuckens' land this spring.

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– Tom Beuckens  
 Starbuck

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“Dollars and cents – it's not going to pay me back in that respect. I don't know how that would pay back, other than keeping erosion down. I don't see a big benefit in return on my dollar – just the knowledge that I'm



keeping the sediment out of the creek and lakes,” Beuckens said.

Outlet Creek meanders through Beuckens 850-acre corn and soybean farm on its way from Lake Minnewaska to Lake Emily 6 miles to the southwest.

Beuckens moved to the farm in 1959 from the place his father had rented 5 miles away. He initially signed up for the Conservation Reserve Program in the 1980s, and went on to install waterways, plant shelterbelts and enroll in

the Minnesota Agricultural Water Quality Certification Program.

Recognizing those continuing conservation efforts, Pope SWCD staff this fall nominated Tom and Ann Beuckens for the Minnesota Association of SWCDs' 2017 Outstanding Conservationist Award. The winner will be chosen Dec. 5 from among eight finalists.

“On this farm, with the hills we have, you really have to watch so all the soil doesn't wash away,” Beuckens said of the continuing



conservation work. “I think if I was on flatter ground or didn’t have the steepness of the hills I’ve got, it wouldn’t be as much of a concern.”

Pope County’s rolling, glacial topography defines what sorts of projects work here: waterways, water and sediment control basins, and grade stabilization structures.

“We are predominantly an agricultural county, so most of the conservation work we’re doing, we’re working with agricultural landowners on active cropland,” said Pope SWCD Manager Holly Kovarik.

Kovarik completed a post-construction check of the berms and diversion in mid-October with Minnesota Board of Water and Soil Resources staff and engineer Ross Reiffenberger of West Central Technical Service Area. Beuckens gave them a tour of his home site, which included a bird’s eye view of Outlet Creek.

Directly across Pope County Road 18, Outlet Creek runs through Todd and Tom Johnshoy’s field. With help



*Outlet Creek cuts through Todd (right) and Tom Johnshoy’s field between lakes Minnewaska and Emily. An Erickson Excavating crew shaved clay off a hilltop to construct a series of water and sediment control basins. The structures are part of a Pope SWCD project, which uses a Clean Water Fund grant in an ongoing effort to clean up Lake Emily.*



from Todd’s son, Cory, the Johnshoys run about 2,850 acres of corn and soybeans.

In mid-October, contractor Rick Erickson and his excavating crew were moving clay down from the hilltop to construct some of the nine planned water and sediment control structures.

The \$69,430 project will cut erosion in the 175-acre field and keep sediment out of the stream.

“We see the need for controlling erosion,” Tom Johnshoy said.

He and Todd stopped by to see progress and talk about the site, where heavy rains used to cut washouts up to 18 inches deep.

“A lot of this soil ends up down here in the bottoms. With the river running this

close, the big thing is to clean up the water,” Todd Johnshoy said.

Among the Johnshoys’ initial concerns: How to farm around the grassed basins, which are designed to retain and then slowly release water. The basins will take just over 2 acres out of production.

“The biggest thing was where the structures were and how they were designed,” Tom Johnshoy said. “How it would affect

our being able to farm the ground – what changes we would have to make.”

Contractor Rick Erickson said the basins are designed to be compatible with farmers’ use of GPS to work the fields.

“I think of this as infrastructure. These are investments in the infrastructure in their field,” Kovarik said.

Without the Clean Water Fund grant, Tom Johnshoy said he and Todd, who previously constructed nine basins on another site without grant aid, wouldn’t have tackled a project of this size. The Johnshoys – who, like Beuckens, covered the 25 percent grant match – are now considering a contract for additional work on another field.

With one more 2016 project awaiting completion, to date the Natural Resources Conservation Service has provided about \$74,000 in cost-share and in-kind technical assistance.

Meeting Lake Emily’s



*Lake Emily, seen here with cattail fuzz resting on the surface, is impaired for nutrients. Outlet Creek connects it to Lake Minnewaska 6 miles to the northeast.*



*A gap in the cattails, at center, indicates where Outlet Creek enters Lake Emily. With a series of Minnesota Board of Water and Soil Resources-funded projects in the watershed, Pope SWCD aims to cut the phosphorus load entering the shallow lake.*

water quality goals would require cutting its annual phosphorus load by 35 percent – or 6,370 pounds. The 74 projects outlined in the 2016 and 2017 CWF grant applications would meet an estimated 98 percent of the Total Maximum Daily Load goal.

The 26 planned projects in the 2017 grant would reduce 607 tons of sediment and 520 pounds of phosphorus annually, meeting an estimated 26 percent – or 2,000 pounds – of the annual phosphorus reduction goal.

“Looking at Lake Emily, are we going to be able to delist tomorrow? We have a lot of work to do. We know that,” Kovarik said. “It’s going to be over a series of years.”

*The Minnesota Board of Water and Soil Resources’ mission is to improve and protect Minnesota’s water and soil resources by working in partnership with local organizations and private landowners. Website: [www.bwsr.state.mn.us](http://www.bwsr.state.mn.us).*

## Lake Minnewaska projects set stage for Lake Emily

Clean Water Fund projects aimed at delisting Lake Emily followed an earlier CWF project series meant to preserve the water quality of phosphorus-sensitive Lake Minnewaska upstream. Outlet Creek connects the two. The 13<sup>th</sup> largest lake in the state, Minnewaska is central to tourism in Starbuck and Glenwood, which sit on its western and eastern shores.

Three consecutive rounds of funding brought \$631,420 in projects to



*Lake Minnewaska, the largest lake in Pope County and 13th largest in the state, is at risk for excessive phosphorus. Pope SWCD received a series of Clean Water Fund grants that targeted sites contributing the most phosphorus.*

the landscape. Pope SWCD received implementation grants totaling \$493,800

from 2014 through 2016. Work started in 2013 with an additional \$30,350 Clean

Water Fund grant for terrain analysis.

Those grants resulted in 30 projects involving 11 landowners, with the potential for more as projects in the design phase are built.

Among the benefits: An 80 percent reduction in peak flooding downstream – the result of a series of projects on the south side of Lake Minnewaska – according to Reiffenberger’s modeling data.