



Red Lake County SWCD projects save topsoil, improve river's water quality

Clean Water Funds from BWSR, backing from Red Lake Watershed District support agricultural practices that stanch field erosion, focus on Lower Clearwater River



Red Lake County SWCD received two more Clean Water Fund grants in 2022: \$231,200 for ag practices in the Hill River subwatershed; \$95,000 for County Ditch 57 multipurpose drainage management. Both drain to the Clearwater River.

RED LAKE FALLS — With farmers eager to stop field erosion, a map of prioritized projects, and Clean Water Funds to support the work, the Red Lake County Soil & Water Conservation District is tackling gully fixes designed to improve water quality in the sediment-impaired Lower Clearwater River.

“They’re really trying to save their own land,” said SWCD Board Chairman David Miller, who also farms in the county. “They don’t want to lose their topsoil. They don’t want to lose their ability to drain their fields and lose acreage. They see



these projects as a way to stop that erosion and improve the landscape.” The Minnesota Board of Water and Soil Resources awarded the SWCD a [Clean Water Fund](#) grant in 2015

to complete survey work, rank potential projects, meet with landowners and install the first round of best management practices. Implementation grants followed in 2020 and 2021. The three grants

Top: From left: Red Lake County SWCD technician Bob Bohland, District Manager Tanya Waldo, landowner Joe Ste. Marie and SWCD Board Chairman David Miller visit a Clean Water Fund-backed grade stabilization at the edge of Ste. Marie’s field on Sept. 9, 2021, in Terrebonne Township. It curbs erosion and treats runoff from 100 acres.
Left: The Clearwater River flows to the Red Lake River and then to the Red River.
Photo Credits: Ann Wessel, BWSR



Joe Ste. Marie talked with Red Lake County SWCD staff about the improvements he's seen since a grade stabilization structure was installed at the edge of his Terrebonne Township field. A 30-inch-wide, 130-foot-long pipe now carries water from the field to this point, where it is filtered before reaching a Clearwater River tributary.

VIDEO: [Ste. Marie explains the project; SWCD staff describe the impact of this and similar work.](#)

total \$609,060 and support \$761,330 in work estimated to keep 1,139 pounds of phosphorus and 1,587 tons of sediment — the equivalent of 122 dump truck loads — out of the Clearwater River each year. The work will keep an estimated 3,918 tons of topsoil in fields.

To date, the SWCD has worked with nine landowners to implement 33 projects tied to those grants. Two more are in the works; six more are planned.

Joe Ste. Marie, who grows 480 acres of wheat and soybeans, is among those who signed on. In September 2021, he stood at the edge of 60 acres in Terrebonne Township where a gully once sliced into his field and sent topsoil down a cliff to a Clearwater River tributary.

“The water comes down here and it just kept eroding and eroding, and I was

getting a big washout. Towards the end it was getting 20 feet deep and 8, 10 feet wide,” Ste. Marie said.

The Clean Water Fund-backed grade stabilization completed in October 2020 curbs erosion and treats runoff from a 100-acre watershed. A diversion and intake channel the runoff, slow it down and allow sediment and the pollutants it carries to settle out. A 130-foot-long, 30-inch-wide pipe carries the water, which is then filtered before it reaches the river.

Ste. Marie contacted SWCD Manager Tanya Waldo after he saw similar projects working in neighbors’ fields. Visible results and available funds have prompted more landowners to visit the SWCD’s three-person office.

“She’s very good at working with landowners, and very successful at getting grants, too,” Red Lake Watershed

District Water Quality Coordinator Corey Hanson said of Waldo, who has worked for the SWCD for 25 years. “I’m sure a lot of them know her and trust her, and she’s able to really get things done.”

The Red Lake Watershed District includes seven soil and water conservation districts, which it can provide with matching funds. In 2021, the watershed district contributed nearly \$22,000 to the Red Lake County SWCD for its sediment reduction work affecting the Clearwater and Red Lake rivers.

Since 2011, the SWCD has received \$1.9 million in Clean Water Funds from BWSR to implement agricultural practices that reduce sediment, plus drainage ditch work and multipurpose drainage management.

“Without the Clean Water

Details

PARTNERS: In addition to landowners and the Red Lake Watershed District, project partners have included Red Lake County, which helped with technical and engineering costs; and Enbridge, which has awarded the SWCD two Ecofootprint grants — \$78,905 in 2015, \$74,000 in 2016 — to support its work throughout the county.

TECHNICAL ASSISTANCE: Since the Red River Valley Conservation Service Area-Technical Service Area was under-staffed, the SWCD accomplished survey, design and construction work by hiring a retired TSA engineer in 2020, and contracting with Houston Engineering in 2021.

SIGN OF IMPROVEMENT: Evidence of water quality improvements are surfacing elsewhere in the Red Lake watershed. Where the Red Lake River meets the Red River at East Grand Forks, the rate of exceedance of the total suspended solids’ water quality standard dropped from 37.5% for the 2005-14 testing period to 25% for 2012-21. Hanson said contributing factors may include conservation work accomplished through One Watershed, One Plan; buffer law implementation; and lack of runoff during 2021 drought conditions.



Hanson

“It’s still very significantly impaired, but it’s also improved several percentage points,” Hanson said.

Funds, we wouldn't be able to do these projects. These projects have really brought awareness to the SWCD — probably brought more awareness to landowners as far as erosion that is occurring on their land," Waldo said, "giving them the desire to fix problems before they become worse."

Miller said Red Lake County farmland is especially susceptible to erosion because the primary crops — wheat and soybeans — leave little residue. Topography is another factor. Without grade checks, the steep slopes from the beach ridges to the valleys of the Red River and its tributaries are ripe for gully formation.

The lower reach of the Clearwater River, which joins the Red Lake River in Red Lake Falls, is impaired for total suspended solids. Hanson, whose duties include monitoring, said trend analysis in the Clearwater River Watershed Restoration and Protection Strategy report indicated that water quality conditions have been improving in the Clearwater River near Plummer and in Terrebonne Township.

"If we're reducing sediment, we're also reducing phosphorus, so we focus on the sediment," Hanson said.

Water quality projects affecting waters that drain north to Canada,



Above: A gully once cut into Joe Ste. Marie's Terrebonne Township field and sent topsoil down a cliff to a Clearwater River tributary. A diversion and intake now channel the runoff, slow it down and allow sediment and the pollutants it carries to settle out. A pipe carries the water, which is filtered before it reaches the river. **Below:** Sun filters through clouds over a Red Lake County field.

including the Clearwater and Red Lake rivers, help with nutrient load reductions recommended by the [International Joint Commission](#) to address the chronic algal blooms in Lake Winnipeg.

The Clearwater River flows 147 miles from its headwaters near Bagley to the Red Lake River in Red Lake Falls. Within Red Lake County, part of the river was channelized for drainage, and commercial wild rice paddies drew water from the river and then drained it back into the river after harvest. The river also draws paddlers and anglers to the county.

"Red Lake County doesn't actually have any natural lakes, so we rely on the

ivers that come through the county — the kayakers, the tubers, people that count on the rivers to expand their weekends and just enjoy nature," said Red Lake County SWCD technician Bob Bohland, who has since left the SWCD. "We're keeping phosphorus, we're keeping nitrate, we're keeping potassium out of the river system. It's creating cleaner water, less algae growth, just better habitat."

Since a Red Lake River dam removal near Crookston restored fish passage, anglers have been catching Red River species such as catfish in addition to walleye, smallmouth bass and Northern pike.

Hanson fishes the river near Red Lake Falls, and said

“**They don't want to lose their topsoil. They don't want to lose their ability to drain their fields and lose acreage. They see these projects as a way to stop that erosion and improve the landscape.**”

— David Miller, Red Lake County SWCD Board Chairman

the stretch upstream to Plummer makes for a scenic paddle.

"It's a nice river, and I think the people that live in that area really appreciate it for recreation," Hanson said.



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

