Water quality, fish habitat shape Clearwater River streambank work

CLEAN WATER LAND & LEGACY AMENDMENT

YOUR Clean Water Fund AT WORK

Clean Water Funds are the sole source of BWSR Watershed-Based Implementation Funding. DNR Conservation Partners Legacy grants are funded by the Outdoor Heritage Fund. Thirty-three percent of sales tax revenue from the Legacy Amendment is distributed to the Clean Water Fund; 33% to the Outdoor Heritage Fund.

CLEARBROOK — A mile-long streambank stabilization on the Clearwater River is designed to restore fish passage and habitat, and improve water quality in the 35-mile-long upstream stretch impaired for nutrients, E. coli and sulfates.

Work began in summer 2026.

The site north of Clearbrook is where the naturally meandering stream meets the 35-mile-long reach dredged and straightened by the U.S. Army Corps of Engineers (USACE) in the 1950s for agricultural drainage — a common practice at the time. Without bends in the river to slow it down, fast-moving water ate away at the banks, resulting in steep, vertical drops. Channels had started to form across the floodplain.

A 2024 fix installed rock riffles to tame the velocity and reduce erosion. It stabilized the banks, and restored floodplain wetlands within highly erodible peat soils.

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>
> — Chester Powell, Clearwater SWCD water plan coordinator and program technician

“It improved habitat and the river and protected water quality, protected the water supply, and restored or improved wetlands, the floodplain,” said Corey Hanson, the water quality coordinator for the Red Lake Watershed District (RLWD), which is the Clearwater River watershed partnership’s fiscal agent.

Ten years after the project was installed, a routine streambank assessment showed exacerbated erosion, unstable banks and dangerously fast flows. Geomorphology data showed an abrupt change in stream

VIDEO: [“Clearwater River: Planned Stabilization”]

Minnesota Board of Water and Soil Resources’ mission: Work with partners to improve, protect the state's land, water resources. [www.bwsr.state.mn.us]

Clockwise from top left: *In October 2025, Corey Hanson, Red Lake Watershed District water quality coordinator, left, and Chester Powell, Clearwater SWCD water plan coordinator and program technician, visited the site of a planned streambank stabilization on the Clearwater River. Downstream from the rock riffles installed in 2004, the banks are eroding and the flows are dangerously fast. Rock riffles were installed in 2004 where the naturally meandering stream meets the 35-mile-long reach dredged and straightened in the 1950s for drainage.* **Photo Credits:** Ann Wessel, BWSR

stability downstream from the grade-stabilization structures. The vertical drops had moved farther upstream. They were steeper, and no longer met the Minnesota Department of Natural Resources (DNR) standards for fish passage.

"Our largest (resource benefit) is keeping the river stable. Since a majority of the water in the watershed is draining into this river, we want this to be our stronghold within the watershed. This is our main resource," said Chester Powell. A Clearwater Soil & Water Conservation District (SWCD) water plan coordinator and program technician, he is also the Clearwater River watershed One Watershed, One Plan coordinator.

The project is the No. 1 priority for the Clearwater River watershed partnership.

It grew to a mile-long project after surveys, hydrologic modeling, concept reviews and discussion among RLWD, DNR and Houston Engineering staff showed the potential for habitat improvements and a longer-term erosion fix.

The Clearwater flows to the Red Lake River, which joins the Red River in East Grand Forks. Its 1,360-square-mile watershed includes Red Lake County and parts of Beltrami, Clearwater, Mahnomen, Pennington and Polk counties. From east to west, the landscape changes from wetlands and forest to cultivated wild rice paddies and ag drainage.

"We have great habitat upstream, and there's great fish habitat downstream," Hanson said.

In the headwaters area near Bagley, part of the river is a spring-fed designated trout stream. At the outlet of Clearwater Lake, RLWD

DNR records show 41 documented fish species in this general area of the Clearwater River, including walleye, Northern pike, smallmouth bass, channel catfish, white suckers, golden redhorse and shorthead redhorse.

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— Mike Kelly, DNR northwestern regional clean water specialist

monitoring consistently shows sediment levels too low for the lab to measure. Near the mouth of the river at Red Lake Falls, the Clearwater is known as a good fishing spot.

"For fish to get into that better habitat, those deeper pools that (a naturally) meandering stream has, they need to be able to move through that ditch section and move through this section where those grade control structures were likely too steep for them to move through," said Mike Kelly, DNR northwestern regional clean water specialist.

The $872,875 project includes five grade-stabilization structures and one rock arch rapids to cut velocity, and three toe-wood sod mats to stabilize the banks.

It draws $232,875 from Watershed-Based Implementation Funding (WBIF) grants the Minnesota Board of Water and Soil Resources (BWSR) awarded to the watershed partnership in 2023 and 2025. WBIF paid for the conceptual and technical design, and will cover some erosion control elements tied to water quality improvement.

"This was one of the projects that was at the top of our mind for things that they could do with that funding to improve water quality," Hanson said.

The DNR provided a $492,000 Conservation Partners Legacy grant in 2025. The balance comes from a $100,000 Red River Watershed Management Board water quality grant and $54,200 in RLWD funds.

"We want to see a more stable stream — reduce that erosion, improve the water quality downstream. We want to see better habitat for fish in this section of river. We want to see fish be able to pass upstream through this section of river, and to connect the upstream and downstream water body," Kelly said.

The toe-wood sod mats — masses of tree roots that stabilize the bank — also shelter insects and smaller fish. Deeper pools give fish a place to escape predators or over-winter. Riffles can serve as spring spawning beds.

"There are multiple habitat benefits with our macroinvertebrates, around fish passage, major waterfowl usage with all the rice production nearby. So we do want to keep that natural geomorphology here and not just the dredged main stem of the river as we get farther downstream. We want to keep that habitat quality there," Powell said.

This is the third streambank stabilization project retired state lawmaker Rod Skoe has been involved with since the 1980s, when he volunteered to serve on the Clearwater River Water Quality Advisory Group. His property borders the project site.

"Our farm probably wouldn't be there if it wasn't for the channelization, but on the other hand, you have to try to make sure that you're not causing problems downstream," Skoe said. He produces cultivated wild rice, along with red potatoes, edible beans and soybeans.

"We want to help. We don't want to contribute to the problem that's occurring up in Lake Winnipeg if we can help it," Skoe said, referring to the increasingly frequent algae blooms.

Written by Ann Wessel, BWSR conservation marketing coordinator