



Wright Soil & Water Conservation District Manager Luke Johnson and the SWCD staff are working with willing landowners to curb primary sources of gully erosion affecting the North Fork Crow River. After 11 erosion-control structures were installed in this 230-acre Cokato Township field, discharge at the outlet dropped from 97 cubic feet per second to about 5 cfs, based on 10-year storm estimates. Three phases of Clean Water Funds totaling \$431,675 target a 10-mile stretch of river. **Photo Credits:** Ann Wessel, BWSR

North Fork Crow River clean-up stabilizes gullies, retains topsoil



COKATO — The Wright Soil & Water Conservation District’s work to clear up the North Fork Crow River, a 120-mile-long stretch that joins the main branch and the Mississippi River in Wright County, starts in farm fields like this one.



The North Fork Crow River, which has biological and turbidity impairments, runs from the headwaters in Pope County to the confluence with the main fork. The Crow River joins the Mississippi River near Dayton.



In the first phase of a three-phase project, Wright SWCD in 2013 installed two large grade-stabilization structures — one drains about 40 acres, the other about 15 acres — to fix a gully that was delivering sediment into the North Fork Crow River. The land is seen here from a county park; the distant treeline marks the river.

“This is the biggest problem site and this is our main focus,” Wright SWCD Manager Luke Johnson said as he pulled in to a field approach facing a long, grassy ridge — one of 11 erosion-control structures situated to slow gully-carving, soil-eroding runoff.

The 230-acre field isn’t particularly hilly. But the velocity of runoff increased over a 3,000-foot-long stretch, cutting gullies up to 4 feet deep and 6 feet wide. Sometimes it took a bulldozer to fix them.

Now, five water and sediment control basins break up that stretch. The grassy ridge — a grade-stabilization structure aligned with tillage — temporarily retains water, which is slowly metered through an outlet marked by a perforated orange pipe.

It’s one of seven projects completed since 2013. Combined, they drain about 345 acres along a 10-mile stretch that’s among the most degraded reaches of the North Fork Crow River.

The Minnesota Board of Water and Soil Resources awarded Wright SWCD



Wright SWCD Manager Luke Johnson heads toward the North Fork Crow River in Marysville Township, where one structure treated three gullies. It was one of five projects completed in the first phase of a three project designed to curb gully erosion.



Kokato Lake lies downstream from a 230-acre field where 11 erosion-control structures are part of Wright SWCD efforts to address biological and turbidity impairments in the North Fork Crow River. Kokato Lake flows into the North Fork Crow River.

three rounds of Clean Water Funds totaling \$431,675 to address biological and turbidity impairments in the North Fork Crow River. Projects focus on stanching gully erosion, which LiDAR mapping and ground-truthing identified as a primary source of sediment and phosphorus entering the river.

“We wouldn’t have been able to do most of these projects without those dollars,” Johnson said.

The three-phase project totals \$585,000 — including Environmental Quality Incentives Program financial assistance from the Natural Resources Conservation Service, plus landowner matches.

“The sediment reduction will help with the (water quality) of the river. It should also help with fish spawning and fish habitat as well as the macroinvertebrates and everything else. It just makes the river healthier for them — so more food, more fish; more fish, more recreation,” Johnson said.

The North Fork is a Minnesota State Water Trail, centerpiece of some



Wright SWCD Manager Luke Johnson leaves the field at a spot where water had carved a gully, which extended through an RV park.

city parks and site of a few popular fishing spots.

“It’s a jewel in the rough, where the people that know about it cherish it,” said Watershed Coordinator Diane Sander of Crow River Organization of Water, a joint powers board. “Any way we can stabilize those banks will help reduce the amount of sediment and anything that is attached to those soil particles and impacting the water.”

On the east end, that means dealing with urban runoff. The west end is more agricultural.

Work in the 230-acre Cokato Township field, which sits at the edge of an RV park and just upstream from Cokato Lake, finished in November 2015.

Farm manager Lawain Biermann of Iowa-based Hertz Farm Management said the first test came months later.

“We had a very major rain event the following spring. It’s amazing how well it worked.

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If I look at a yield map today vs. what it was before, we definitely have better, more consistent production — because with these basins we ended up improving our drainage as well. It’s just a more controlled release of water rather than a big flash.

We had very few drowned-out areas,” Biermann said. “If I look at a yield map today vs. what it was before, we definitely have better, more consistent production — because with these basins we ended up improving our drainage as well. It’s just a more controlled release of water rather than a big flash.”

Discharge at the outlet dropped from 97 cubic feet per second to about 5 cfs, based on 10-year storm estimates.

While some land came out of production — about a



— Lawain Biermann, farm manager

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tenth of an acre per basin according to the SWCD’s calculations — Biermann said crops now grow in spots previously damaged by runoff from heavy rains. In response to landowner Loren Borg’s concerns about farming around basins and berms, SWCD staff modified plans to align structures parallel to the road. Biermann and Borg work together to develop plans carried out by the farm operator.

“The cropland we gave up was not a significant amount when I look at how much more weather-proof the farm

is now that we’ve put those berms in,” Biermann said.

Cost was another concern.

“It can be a significant investment. But this owner is looking at the long-term benefits to controlling or reducing soil erosion and trying to weigh that against the immediate costs,” Biermann said.

Borg and other landowners’ share of project costs totaled about 10 percent.

“One thing that was so helpful in getting this installed was the cost-share funding. If that’s not there, I wouldn’t say it would be impossible, but it’s much more difficult to do this without the assistance,” Biermann said.

As many as five more projects could be funded in 2018 and 2019 with the \$229,000 remaining grant funds.

The three-phase project is projected to keep 860 pounds of phosphorus and 761 tons of sediment — the equivalent of 58 dump truck loads — out of the North Fork Crow River annually.



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.