



Twisted creek, restored habitat

In Rochester, \$1.5 million stream reconstruction on former golf course site provides water quality improvement, flood control



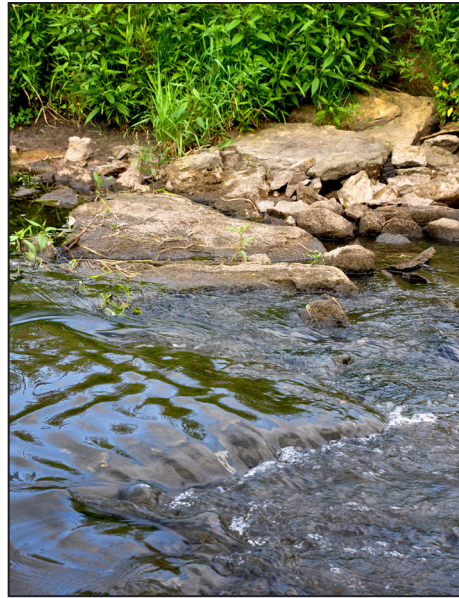
ROCHESTER — A \$1.5 million stream reconstruction and habitat restoration project on Rochester's west side has virtually eliminated the erosion problem that once fed 550 tons of sediment a year — the equivalent of 42 dump truck loads — into Cascade Creek.

Sediment can degrade fish habitat and carry pollutants such as phosphorus that feed algae and turn lakes green.

The creek is impaired for turbidity and aquatic life.

The Olmsted Soil & Water Conservation District project addressed water quality and flood control while creating wildlife habitat on nearly 40 acres of a former golf course. Olmsted County holds the easement, which protects the land from development. The city eventually will own the parcel, which one day

Olmsted SWCD Director Skip Langer explains the South Branch Cascade Creek restoration and wetland development project to Leigh Johnson, Meadow Lakes Villas Homeowners Association president; and homeowner Mary Till. The 40-acre restoration on the site of a former Rochester golf course will keep more than 550 tons of sediment a year out of Cascade Creek.
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Ann Wessel



Left: Root wads help to stabilize the banks of the South Branch of Cascade Creek. **Middle:** Rocks were placed to slow the water, create habitat and stabilize the streambed of the South Branch of Cascade Creek. Curves were designed to help curb the velocity. **Right:** Wetlands eventually will fill with water. Logs and roots will help to create habitat. Engineers hope the wetlands will distract beavers and keep them from damming the creek.

could connect to 180-acre Cascade Lake Park via bike trail.

“We literally dug a new channel,” said Skip Langer, Olmsted SWCD manager.

“The channel was incised, so it was constantly eroding both sides of the streambanks,” Langer said. “We raised the channel. We excavated the floodplain and reconnected the channel to the floodplain. We also built five wetland basins on this former golf course area, and then returned the highly manicured turf grass to native vegetation.”

Minnesota Department of Natural Resources staff designed the velocity-slowing curves, bank-stabilizing root wads and habitat-creating rock riffles. They selected native grasses, sedges and wildflowers to plant on the streambanks and upland prairie.

“We constructed a new channel based on the sinuosity, dimension and

Project partners

Olmsted Soil & Water Conservation District is the Cascade Creek project and grant manager. The following partners were involved.

MATCHING FUNDS: Olmsted County, city of Rochester

DESIGN: Minnesota Department of Natural Resources’ ecological and water resources staff and engineering staff

MONITORING: DNR (stream gauges, fish, invertebrates); Minnesota Pollution Control Agency (water quality); U.S. Geological Survey (sediment loads)

CONTRACTOR: Fitzgerald Excavating

shape of a channel higher in the watershed that had decent stability. We took a survey on that stable area, and then we mimicked it,” Langer said.

Today, the creek reconstruction that finished last winter and the prairie planted two seasons ago look wild.

By late summer, deep-rooted, bank-stabilizing wildflowers bloomed yellow, white and purple. Slender sedges arched over the water. The 40-acre habitat hummed with

insects, attracted songbirds and concealed great blue herons. Egrets stalked prey. Ducks appeared in greater numbers.

Only the five wetland basins, built this spring in the final construction phase, still looked manmade. They will treat stormwater, trap sediment, provide flood attenuation and eventually provide wildlife habitat. Engineers hope the wetlands will distract beavers and keep them from damming the creek.

One day, nongame fish species could be reintroduced.

Meanwhile, Nick Proulx, a clean water specialist with the DNR, said by incorporating shallow spots and deep pools — bits of the abandoned stream — the wetlands will provide microhabitats for spawning fish, invertebrates and shorebirds. Eliminating mowed grass should discourage Canada geese.

Two Clean Water Fund grants totaling \$975,000 from the Minnesota Board of Water and Soil Resources plus a \$198,800 Conservation Partners Legacy Grant from the Outdoor Heritage Fund are in play. Rochester provided \$215,000 in matching funds. Olmsted County provided \$50,000 in matching funds plus \$9,000 worth of in-kind services.

Work on the South Branch of Cascade Creek was nearly 20 years in the making.

It’s one of the subwatersheds draining

into Rochester that was left untreated after a 1978 flood, which brought federal assistance. Discussions started in 1999. Planning started in 2008. The first of two Clean Water Fund grants for the project became available in 2012. Plans evolved as permits were granted or denied, and as ownership of the now-defunct Meadow Lakes Golf Course changed.

“This project gives us an opportunity to do water quality work in the watershed and to provide some treatment to that untreated watershed,” Langer said.

Work started in 2014 with basins constructed on private property higher in the watershed. It finished this summer with a final 15-acre seeding within the 40 acres.

During a late summer site visit, Langer identified dozens of plants for Leigh Johnson and Mary Till, whose backyards overlook the creek.

Johnson is president of the Meadow Lakes Villas Homeowners Association. Till acted as the liaison between the SWCD and neighboring property owners. Over the course of the project, she’s explained reasons for the 30-foot-tall dirt piles, the dead trees placed in the constructed



The redesigned South Branch of Cascade Creek mimicked the sinuosity, dimension and shape of a stable channel elsewhere in the watershed.



Aquatic plants bloomed in mid-August in the South Branch of Cascade Creek in Rochester. The restoration also included upland prairie plantings.

wetlands for turtles, the unmowed native grass. She requested a list of plants to relay in a newsletter.

Till shares her enthusiasm for bird-watching with neighbors, building excitement about the bit of nature in their backyard.

She moved here three years ago, but she’s heard neighbors’ stories about the most recent flood in 2007. For some, “it has been a constant worry,” Till said.

Johnson, who moved here in 2011, remarked on the change.

“**When it floods ... water and sediment get distributed into the floodplain. When the water connects with the floodplain it reduces velocities, it takes some of the erosive nature out of those flows. It’s not confined to that incised channel anymore. It’s quite a reduction and I think the result is awesome.**”

— Skip Langer, Olmsted SWCD

“In the wintertime you could go down into the creek and you could be standing on the ice and I couldn’t reach up to the top of the banks. It was probably 7-plus feet that you were deep,” Johnson said. “Now we look at this wonderful creek ... With the floodplain and the flood fringe above that, when we get a lot of rain it fills up. In a day and a half it’s back down.”



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.
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