

Water storage among benefits of Murray SWCD wetland restoration



Clean Water Fund and Outdoor Heritage Fund dollars support BWSR's RIM Wetlands Easement program.

It took 15 years, six conservation easements and four Murray County landowners, but the resulting project restored nearly 160 acres of wetlands within about 210 acres of perpetual easements, providing improved water quality, increased water storage and enhanced wildlife habitat.

The \$141,890 project successfully restored two depressional wetlands — one of them 132 acres, the second measuring 27 acres.

When John Stenke and his sister Elizabeth Nelson enrolled 111 acres in the Minnesota Board of Water and Soil Resources' (BWSR) Conservation Reserve Enhancement Program (CREP II) in 2007, their goal was to restore two large depressional wetlands on their family farm and neighboring properties. Stenke had farmed the land for many years but crops frequently flooded in the former wetland areas.

Murray Soil & Water Conservation District (SWCD) staff approached the neighbor who owned part of the drained wetlands. The neighbor declined to participate in the project, and the planned wetland restorations were not completed. After the neighboring land sold in 2015, Murray SWCD staff worked with the new landowner to enroll approximately 20 acres into the new Reinvest in Minnesota (RIM) Wetlands Easement program. At that time, Stenke and Nelson enrolled another 44 acres. Other neighbors enrolled 35 more acres on adjoining property.

With the additional easements and the permanent protection of the roughly 210 acres, it became possible to restore the two large former wetlands in their entirety.

"It was a long process that paid off in the end," said Craig Christensen,

Two wetlands totaling nearly 160 acres were restored in Murray County to provide additional water storage, improve water quality and enhance wildlife habitat. The larger 132-acre wetland can be seen in the foreground of this November aerial photo; the smaller 27-acre wetland is visible in the background on the left. Photo Credit: Murray SWCD

Murray SWCD program manager.

The wetlands had been drained by miles of private and public drainage tile. Because the wetlands within the project area were at the upstream end of the Murray County Ditch 30 (CD 30) drainage system, it was possible to abandon part of the drainage system and restore the wetlands.

Christensen said the project has yielded multiple benefits.

“The primary benefit of wetland restorations is to provide water storage benefits. When engineers design wetland restorations, they allow for necessary detention storage and associated fluctuations of water levels or ‘bounce’ that results from storm event runoff and spring snowmelt, all of which helps take pressure off of downstream drainage systems and rivers,” Christensen said. “The benefits to wildlife are secondary, but for a project like this, significant with respect to waterfowl nesting habitat and food for migrating birds. The upland habitat part of these conservation easements provides nesting cover for upland birds, songbirds, deer and other mammals. The uplands also offer pollinators habitat and safe zones from insecticides used in farming.”

The Murray SWCD staff collaborated with BWSR engineering staff to survey and design the project. Before construction started, landowners successfully petitioned

“ Taking that tile off the drainage system takes the maintenance burden off of the drainage authority. ”

— Jim Luniewski, BWSR senior engineering technician



An inlet structure feeds water to a structure containing an internal weir that helps control water levels in the larger of the two restored wetlands. The water control structure connects to County Drainage Ditch 30.

Photo Credit: BWSR



Rock riprap was installed along a township road abutting the restoration site to protect against rodent and wave damage. A stretch of the road was raised and resurfaced during construction. The road's side slopes were flattened to reduce erosion. **Photo Credit:** BWSR

the Murray County Board of Commissioners, which serves as the drainage authority for CD 30, to abandon 6,700 feet of public drainage tile that would no longer be needed

once the project lands were taken out of crop production.

Construction was completed in two phases, beginning in December

2018 and finishing in January 2020. It included disabling all subsurface tile within both wetlands and installing two outlet structures to manage and control water levels in each wetland. The structure on the larger, downstream wetland outlets directly into CD 30.

Work also involved constructing about 10 tile outlets to provide continued, unimpeded drainage from adjoining properties at higher elevations, allowing those waters to enter and be filtered by the wetlands.

“Taking that tile off the drainage system takes the maintenance burden off of the drainage authority,” said Jim Luniewski, BWSR senior engineering technician. “All those landowners were given outlets into the basins.”

Construction also included working with the township road authority to protect a township road bordering one of the wetlands. That work involved raising and resurfacing a segment of the road, flattening the side slopes, and installing rock riprap to protect against rodent and wave damage.

In the years since construction wrapped up, Christensen said that Stenke has reported an increase in wildlife at the site.

“John Stenke is an avid wildlife enthusiast and hunter, and he really enjoys seeing all the ducks and geese on his wetland,” Christensen said.