



Section 319

NONPOINT SOURCE PROGRAM SUCCESS STORY

Iowa

Multi-Agency Effort Cleans Up Clear Creek

Waterbody Improved

Runoff from agricultural areas and waste from leaking septic systems sent pollution to Clear Creek, causing the stream to not meet several of Iowa's water quality standards. As a result, the Iowa Department of Natural Resources (DNR) added a 7-mile segment of Clear Creek to the state's Clean Water Act (CWA) section 303(d) list of impaired waters in 2004. Watershed partners implemented agricultural best management practices (BMPs) and coordinated construction of a wastewater treatment facility to replace leaking septic systems. Water quality improved, prompting DNR to remove Clear Creek from Iowa's list of impaired waters in 2010.

Problem

The 66,000-acre Clear Creek watershed in east-central Iowa includes Clear Creek (Figure 1), and the North Branch and Deer Creek subwatersheds. Agriculture is the primary land use within the watershed. In 2003, the Clear Creek Watershed Advisory Board, a subcommittee of the Johnson County Soil and Water Conservation District, led an assessment and watershed planning effort in the Clear Creek watershed. During the assessment in September 2003, volunteers conducting a "snapshot" monitoring event through the DNR IOWATER volunteer monitoring program discovered high levels of bacteria and visible floating wastewater debris in Clear Creek. The suspected sources of the bacteria and debris were rural households with inadequate septic systems in a nearby unsewered community. Other key pollutants of concern were sediment and phosphorus delivery from agricultural lands and animal feeding operations.

The water quality conditions in this segment of Clear Creek, as documented by subsequent volunteer monitors and by Iowa DNR staff, violated several of Iowa's narrative water quality standards, including: "Such waters shall be free from materials attributable to wastewater discharges or agricultural practices producing objectionable color, odor or other aesthetically objectionable conditions." These standards protect the general uses of Iowa's surface waters. In 2004, DNR added Clear Creek to the state's CWA section 303(d) list of impaired waters because it did not fully support its general uses.



Figure 1. Clear Creek flows through east-central Iowa.

Project Highlights

In 2006, a group of partners launched the Clear Creek Watershed Project, which focused on reducing sediment loading in the North Branch subwatershed. Using CWA section 319 funds and other funding sources, 30 landowners installed numerous practices. They restored five acres of wetlands, developed nutrient management plans for 615 acres, implemented pasture and hay land plans on 34 acres,



Figure 2. A landowner installed three water and sediment control basins to control gully erosion (background) and a 100-foot native grass filter strip (foreground).



Figure 3. A landowner planted 100-foot filter strips on each side of Deer Creek and installed fencing to keep cows out of the creek during the fall-to-spring stalk grazing season.

planted 94 acres of grassed waterways, added three grade stabilization structures, and installed 134 water and sediment control basins (Figure 2). They also planted 15,275 feet of filter strips (Figure 3), implemented 28 acres of conservation cover (i.e., establishing and maintaining permanent vegetative cover to reduce soil erosion and sedimentation), converted 340 acres to no-till planting, created 18 acres of contour buffers, and built 5,400 feet of fencing for livestock.

In addition, project partners addressed leaking septic systems. The board of the Clear Creek Watershed Project teamed up with the Iowa County Soil and Water Conservation District and successfully obtained a \$500,000 state Watershed Improvement Review Board (WIRB) grant, which sponsored the Conroy Sewer Service construction project. The WIRB grant, coupled with U.S. Department of Agriculture (USDA) Rural

Development Block Grant loans and a state Community Development Block Grant, enabled the group to address the water quality impairment relatively swiftly, constructing a new wastewater treatment system for the unincorporated community of Conroy in December 2008. The new wastewater treatment facility replaced many leaking or failing septic systems. This sponsorship demonstrated the value of multi-agency collaboration in the Clear Creek watershed, as the soil and water conservation district (the only partner eligible to receive the WIRB grant) procured funding that directly contributed to achieving watershed restoration goals.

Results

The Clear Creek Watershed Project established a sediment loading reduction target goal of 30 percent. Using Iowa's sediment delivery calculator, DNR determined that the conservation

practices used by landowners in the Clear Creek watershed prevented an estimated 8,397 tons of sediment per year from reaching Clear Creek—a nearly 40 percent reduction. The DNR also estimates that landowners reduced phosphorus delivery by 10,081 pounds per year. In 2009 DNR staff conducted a field check, finding that Clear Creek showed improved water quality conditions with no evidence of untreated or poorly treated wastewater in the stream. The DNR determined that Clear Creek no longer violates Iowa's narrative water quality standards and now fully supports its general uses. As a result, DNR removed the 7-mile segment of Clear Creek from the state's list of impaired waters list in 2010.

Partners and Funding

Many partners contributed to the multifaceted water quality project, including the DNR, Iowa Department of Agriculture and Land Stewardship—Division of Soil Conservation, Iowa WIRB, Iowa Department of Economic Development, USDA Rural Development, USDA Natural Resources Conservation Service and USDA Farm Services Agency.

Several funding sources supported the installation of practices to control soil erosion and phosphorus delivery: the EPA CWA section 319 program (\$250,000), Iowa Department of Agriculture and Land Stewardship—Division of Soil Conservation's Water Protection Fund (\$196,560), USDA Environmental Quality Incentive Program (\$166,775), USDA Conservation Reserve Program (\$60,940) and the Iowa Financial Incentive Program (\$75,000). Landowners contributed another \$182,460 toward practices in the project.

Additional funding sources supported the effort to remediate pollution from areas of the community not serviced by sewers. The sources included WIRB funds (\$500,000), a USDA Rural Development Block Grant loan (\$500,000), a Community Development Block Grant (\$200,000) and funds from the Poweshiek Rural Water Association (\$30,707). In addition, the local project sponsors received a state Iowa Infrastructure Investment Initiative grant (\$47,000).

Having an existing project with a plan of action, assessment and water quality information was instrumental in obtaining the WIRB funds and other funds that followed.



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