



NONPOINT SOURCE SUCCESS STORY

Indiana

Aquatic Life Use Restored in a Tributary to South Fork Wildcat Creek

Waterbody Improved

Agricultural activities related to crop cultivation and livestock rearing contributed nonpoint source pollution to an unnamed tributary to the South Fork Wildcat Creek (SFWC), which caused the waterbody to fail to support its aquatic life use. As a result, the Indiana Department of Environmental Management (IDEM) added this waterbody to its 2002 Clean Water Act (CWA) section 303(d) impaired waters list for biotic communities. Project partners developed a watershed management plan and implemented best management practices (BMPs) to improve water quality in the stream. The waterbody now supports its aquatic life use. IDEM will propose to remove this waterbody from its list of impaired waters in 2020.

Problem

This unnamed tributary to the SFWC (assessment unit INB0738_T1002) is a small headwater stream in the Wildcat Creek watershed in Clinton County, Indiana (Figure 1). It is in the eastern portion of the highly agricultural Jenkins Ditch-SFWC watershed and is predominantly surrounded by cultivated crops. The main stem of the SFWC is forested; however, most of the headwaters of this segment have no riparian buffer.

Water quality sampling performed by IDEM in 1998 revealed a low index of biotic integrity (IBI) score, indicating that the stream was unhealthy (Figure 2). In Indiana, streams that support a well-balanced aquatic community will have an IBI score greater than or equal to 36. Fish community data collected by IDEM in 1998 showed that this tributary to the SFWC scored only a 22. This result caused IDEM to list the stream on its 2002 CWA section 303(d) list of impaired waters for impaired biotic communities. To address this and other impairments, IDEM developed a total maximum daily load (TMDL) for *Escherichia coli*, total suspended solids, and nitrate-nitrite in 2008 for the SFWC watershed.

Story Highlights

Stakeholders have long been interested in improving the health of the SFWC watershed. From 1999 to 2003, the Indiana Association of Soil and Water Conservation Districts (IASWCD) used grants to fund two technical assistant positions to help reduce the backlog of conservation practices within the larger Wildcat Creek

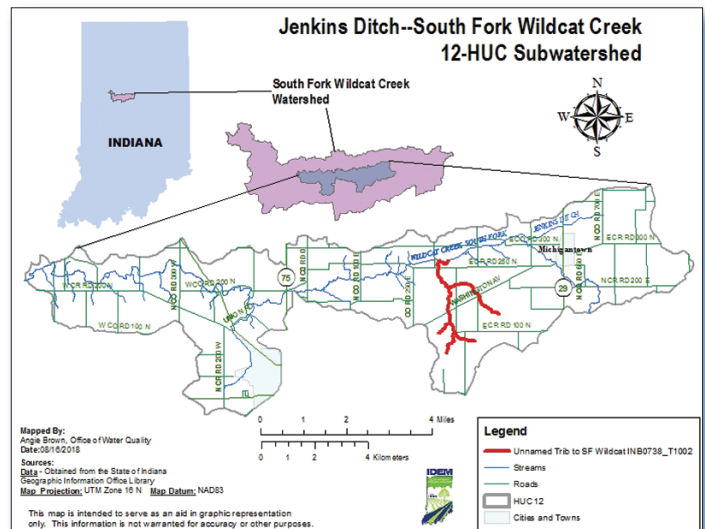


Figure 1. The unnamed tributary of the South Fork Wildcat Creek is in the Jenkins Ditch--South Fork Wildcat Creek 12-digit watershed.

watershed. The technical assistants helped landowners design, survey and implement conservation practices, placing priority on practices that could address the identified water quality concerns.

Using funds provided through the IASWCD, the Wildcat Creek Watershed Network (now known as the Wildcat Creek Watershed Alliance) hired an executive director/watershed coordinator to develop a long-term strategic plan for the larger Wildcat Creek watershed, which includes SFWC. This strategic plan formed the foundation of future planning and implementation efforts that helped improve the unnamed tributary.



Figure 2. South Fork Wildcat Creek was unhealthy before restoration efforts took place.

From 2005 to 2012, watershed partners conducted education and outreach through stakeholder meetings, public workshops, field days, newsletters, and community cleanups to raise awareness and prompt behavior changes in community members within the entire SFWC watershed community. Workshop topics included information on BMPs such as the use of cover crops, proper septic system management and soil health maintenance. In 2009 Clinton County Soil and Water Conservation District (SWCD) received a CWA section 205(j) grant to prepare a nine-element watershed plan for SFWC. Implementation of the plan began in 2012. So far, landowners have installed a variety of BMPs to improve the health of the SFWC, including cover crops, waste utilization and waste management, well decommissioning, an animal mortality facility, conservation cover, no-till, exclusion fence, pasture and hay plantings, heavy use area protection, stream crossing, nutrient and pesticide management, a watering facility, a manure transfer facility, filter strips and grassed waterways.

Results

IDEM returned to the SFWC tributary for follow-up monitoring in 2017. This monitoring showed an improved IBI score of 46 at the mouth of the stream, which exceeds the minimum IBI of 36 that is needed to indicate support of a well-balanced aquatic community. Habitat showed marked improvements in reduction of silt, as well as deeper pools, less embedded riffles, and a bank that had recovered from severe erosion. On the basis of these data, IDEM will propose to remove the stream from its impaired waters list in 2018.

Partners and Funding

Various partners have implemented several projects in the greater SFWC watershed over the years. In the late 1990s, the IASWCD undertook efforts to provide strategic planning and technical assistance to the larger Wildcat Creek watershed using \$189,500 in CWA section 319 funding. The Wildcat Creek Watershed Alliance took over implementation of the Wildcat Creek Watershed Management Plan in 2006 using \$150,000 in CWA section 319 funds. The U.S. Department of Agriculture's Natural Resources Conservation Service provided further funding and technical assistance through a variety of programs in the Jenkins Ditch–SFWC watershed between 2004 and 2017, totaling \$7,951,224. Between 2001 and 2017, the Clinton County SWCD used a variety of funding sources (including private funds and CWA section 205(j) and 319 funds) to write a nine-element plan specific to the SFWC watershed and to provide cost share on BMP installations in the watershed, at a cost of \$754,628.



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