



NONPOINT SOURCE SUCCESS STORY

Illinois

Indian Creek Watershed Project Protects Downstream Water Quality

Waterbody Improved

An unnamed tributary of Indian Creek failed to support its aquatic life designated use when assessed in 2012, and it was subsequently listed in 2012 on the Illinois Integrated Water Quality Report and Clean Water Act (CWA) section 303(d) list. The unnamed Indian Creek tributary was listed for low dissolved oxygen. The unnamed tributary flows into Indian Creek, which is a tributary of the Vermilion River—an important drinking water source. To reduce nutrient (nitrate and phosphorus) levels in this highly agricultural watershed, partners implemented best management practices (BMPs) and conducted education and outreach from 2010 to 2016. When reassessed in 2016, the waters of this unnamed tributary were found to fully support their aquatic life designated use.

Problem

An 8.3-mile stretch of an unnamed tributary for Indian Creek (IL_DSPAA-01) was placed on Illinois' CWA section 303(d) list of impairments in 2012 for failing to support its aquatic life designated use. The Indian Creek watershed consists of three 12-digit HUC watersheds (071300020203, 071300020204, and 071300020205) in portions of Livingston and McLean counties in central Illinois (Figure 1). Indian Creek is a tributary to the Vermilion River (Illinois Basin), which serves as a drinking water source for two Livingston County communities. Land use in the watershed is dominated by agricultural cropland (e.g., corn, soybeans, wheat, hay). Small livestock farms are also present. The land is relatively flat and heavily tile-drained.

The impairment was attributed to low dissolved oxygen levels observed in the period from 2010 to 2013. According to the Illinois Environmental Protection Agency (Illinois EPA), dissolved oxygen levels should be at least 5.0 milligrams per liter (mg/L) during March to July and have daily mean average of 6.0 mg/L. Additionally, from August through February, dissolved oxygen levels should be no less than 3.5 mg/L at any time, with a daily 7-day average of ≥ 4.0 mg/L and a mean monthly average ≥ 5.5 mg/L as a daily mean averaged over 30 days. The waterbody was found to be out of compliance for both of these intervals.

Project Highlights

Illinois EPA awarded a CWA section 319(h) grant to Conservation Technology Information Center (CTIC) for 2010–2013, and another for 2013–2016. During this 6-year period, CTIC worked with multiple partners

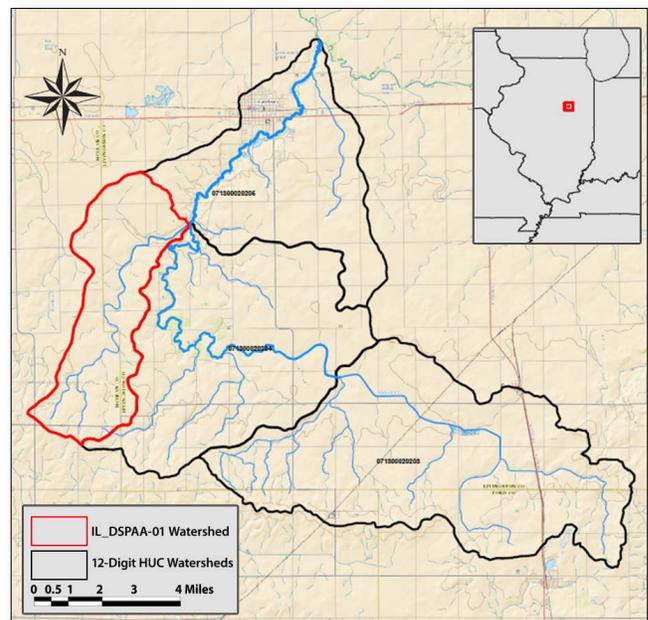


Figure 1. The Indian Creek watershed is in central Illinois.

and sponsors to conduct education and outreach to farmers and landowners in the Indian Creek watershed to adopt conservation practices on cropland to reduce nutrient (nitrogen and phosphorus) loading.

The goal of this project was to determine what water quality improvements result when producers adopt comprehensive conservation systems on 50 to 75 percent of acres in the watershed. In all, conservation practices were implemented on 57 percent of the acres in the watershed. These practices include approximately 2,500 acres of crops put into conserva-



Figure 2. Roger Windhorn, NRCS Soil Scientist, instructs an audience while standing in a soil pit at the 2014 Indian Creek summer tour.

tion crop rotation and 1,500 acres of fields placed into reduced tillage/residue management systems.

The Livingston County Soil and Water Conservation District (SWCD) used Mississippi River Basin Initiative funding by the U.S. Department of Agriculture's Natural Resource Conservation Service (NRCS) to provide additional technical and financial assistance for adoption of conservation practices. The SWCD staff conducted personal visits with more than 100 farmers in the Indian Creek watershed to offer technical assistance and to encourage enrollment in NRCS' financial assistance programs. The SWCD staff also directed the steering committee that provided input and guidance during the project.

CTIC worked with area farmers to host demonstration sites for conservation practices and nutrient use-efficiency trials. These demonstrations and trials were showcased during annual summer field tours and winter meetings (Figure 2). CTIC also provided media outreach, developed fact sheets and brochures, provided project information on their website, and produced video vignettes of farmers in the watershed who were involved in the project.

Farmers and landowners in the watershed who enrolled in NRCS programs such as the Conservation Stewardship Program and the Environmental Quality Initiatives Program adopted conservation practices such as nutrient management plans, cover crops, and waste and compost storage structures.

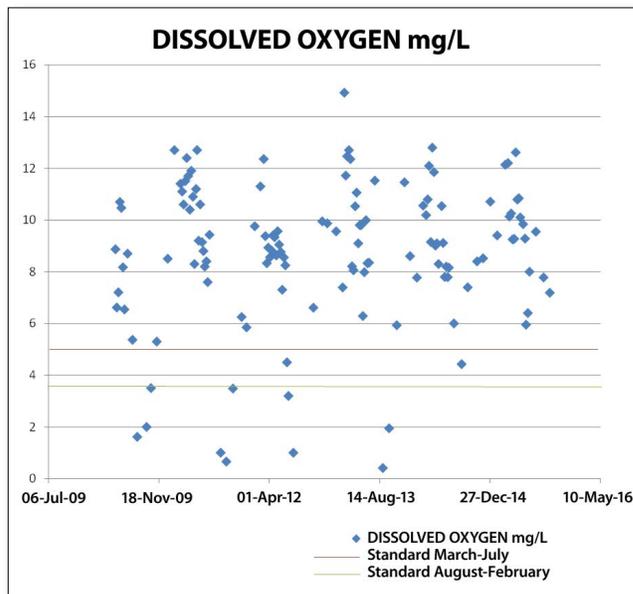


Figure 3. Dissolved oxygen levels improved over time.

Results

The BMPs installed removed nitrogen, phosphorus and sediment from the unnamed tributary to Indian Creek, which led to increased dissolved oxygen levels and improved overall water quality (Figure 3). The draft 2016 Illinois Integrated Water Quality Report and CWA section 303(d) list assessed waterbody segment IL_DSPAA-01, Unnamed Tributary to Indian Creek, as *Full Support for Aquatic Life Use*. Dissolved oxygen levels are now meeting water quality standards.

Partners and Funding

In 2010 and again in 2013, Illinois EPA provided the CTIC with two CWA section 319(h) grants totaling \$744,888, in addition to providing water quality monitoring of the watershed. The U.S. Geological Survey provided cost-share for a stream gage and nitrate probe. The Livingston County NRCS provided additional technical and financial assistance to farmers and landowners in the Indian Creek watershed using Mississippi River Basin Initiative funding (\$1.11 million).



U.S. Environmental Protection Agency
Office of Water
Washington, DC

EPA 841-F-16-001JJ
December 2016

For additional information contact:

Trevor Sample
Illinois Environmental Protection Agency
217-782-3362 • Trevor.Sample@illinois.gov