



Section 319

NONPOINT SOURCE PROGRAM SUCCESS STORY

Indiana

Funds Leveraged to Restore Biotic Community in Metcalf Ditch

Waterbody Improved

The Indiana Department of Environmental Management (IDEM) added Metcalf Ditch and its tributaries to Indiana's Clean Water Act (CWA) section 303(d) list of impaired waters because of impaired biotic communities in 2002. Using CWA section 319 funds, project partners developed a watershed management plan, educated stakeholders about proper agricultural and septic system management, and implemented best management practices (BMPs) throughout the watershed to address residential and agricultural nonpoint source pollution. Recent monitoring data show that the Metcalf Ditch and Tributaries segment fully supports its aquatic life use designation. As a result, IDEM has removed this segment from the state's 2012 CWA section 303(d) list of impaired waters.

Problem

Metcalf Ditch and its tributaries include a total of 14.3 stream miles in the Buck Creek watershed, a subwatershed of the St. Joseph River watershed in northeast Indiana's Maumee River Basin in DeKalb County (Figure 1). In 2000 IDEM's watershed monitoring program staff collected information on chemical, physical and biological parameters in the watershed to determine whether the waters were meeting water quality criteria and their designated uses. Data collected for the Buck Creek watershed revealed an Index of Biotic Integrity (IBI) score of 22 for the fish community. An IBI score greater than 36 is considered supportive of the aquatic life designated use, whereas a score below 36 indicates non-support (i.e., impaired biotic communities). On the basis of these data, IDEM added this segment to the 2002 CWA section 303(d) list of impaired waters.

IDEM identified nonpoint source runoff as the main contributor to the biotic community impairment; no pollutant was identified as the cause of the impairment in the listing. The Buck Creek watershed lies within a predominantly agricultural area, but it also includes the southern tip of the city of Butler. Land use suggests that elevated sediment and nutrient levels were the cause of the impairment. Key pollutant sources in the watershed include runoff from row cropping, livestock grazing and animal feeding, as well as leaking and failing septic systems.

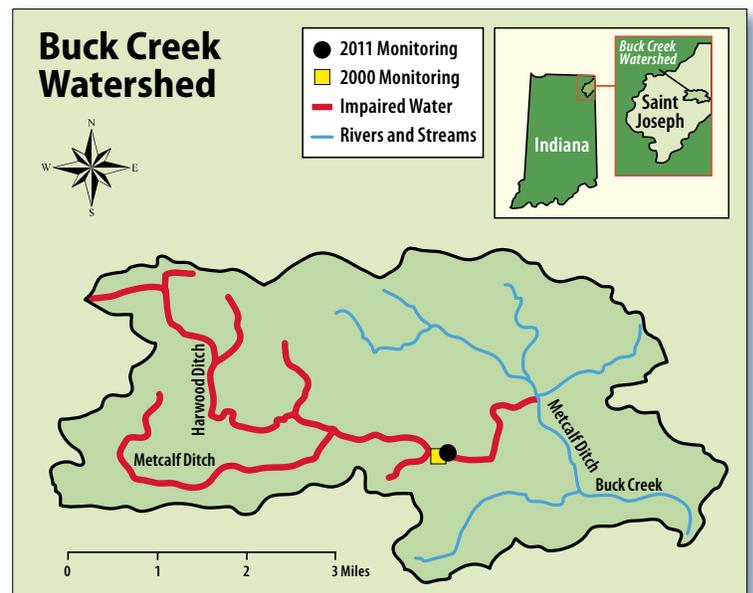


Figure 1. Metcalf Ditch and its tributaries, located in the Buck Creek watershed in northeast Indiana.

Project Highlights

Since 1990 IDEM has supported a total of 15 CWA section 319 nonpoint source projects and 205(j) water quality management planning projects in the greater St. Joseph River watershed. Project funds have been used to develop a comprehensive watershed management plan, identify critical

areas and priority actions to improve water quality, implement BMPs to address failing septic systems, install tree plantings, and encourage landowners to use agricultural BMPs. Key agricultural practices implemented in the watershed include 24,437 linear feet of filter strips; 200 feet of grassed waterway; 194 conservation plans; 121 acres of residue management; 1,575 acres of precision application technology used to apply nutrients; and 198 acres of plant tissue testing and analysis to improve nitrogen management. Other practices include installing a grade control structure and a wetland septic system, repairing two septic systems, planting 23.4 acres of trees, and improving 35 acres of forest.

Between 1997 and 2004, IDEM used CWA section 319 funds to fund technical experts, who provided recommendations on implementing agricultural BMPs. After 2004 these positions were funded by the U.S. Department of Agriculture's Natural Resources Conservation Service. Implementation of the St. Joseph River watershed management plan continues throughout the watershed.

Results

BMPs reduced the amount of nonpoint source pollution entering the Buck Creek watershed, allowing habitat in the streams to improve (Figure 2). IDEM conducted follow-up monitoring of the fish community in 2011. The Metcalf Ditch and Tributaries segment received an IBI score of 36, indicating that it fully supports its aquatic life use. As a result, IDEM removed the segment from the state's CWA section 303(d) list for its aquatic life use impairment in 2012.

Partners and Funding

Major partners in these watershed efforts included the nonprofit St. Joseph River Watershed Initiative Partnership, the City of Fort Wayne, the DeKalb County Soil and Water Conservation District (SWCD), and the Indiana Department of Natural Resources. Because the St. Joseph River serves as the drinking water source for Fort Wayne, the second-largest city in Indiana, interest in the watershed is high.

Since 1990 IDEM has directed \$900,747 in CWA section 319 funds and \$53,997 in CWA section 205(j) funds, as well as \$543,300 in local in-kind



Figure 2. Buck Creek in the summer of 2011, after extensive BMP implementation.

and cash match, to conduct water quality efforts in the St. Joseph watershed. In addition, between 1994 and 2011, IDEM directed \$1,780,836 of CWA section 319 funds to implement agricultural BMPs statewide and to support regional staff tasked with teaching farmers about water quality and the funding resources that are available to improve it. Local partners leveraged these resources with additional state and federal funds to develop the St. Joseph River watershed management plan, identify critical areas, spur the development of subwatershed groups, implement BMPs, and educate residents about ways to restore the biotic community in the Buck Creek watershed.

From 2000 to 2002, the DeKalb County SWCD used \$75,600 in CWA section 319 funds to pilot a septic system repair cost-share program. The program resulted in repairs to 43 septic systems in the county. The SWCD also used \$10,000 in state Clean Water Indiana funds to leverage \$44,400 in federal dollars to install 24,437 linear feet of filter strips along Metcalf Ditch in 2008–2009.

Aside from CWA funding, groups working to improve water quality in the area brought in an estimated \$1,740,000 in state and federal grants to the greater Maumee River watershed (including Buck Creek) during the period 2005–2012. State-funded awards comprised \$66,864 of those total project dollars.



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