

Mississippi River Basin Healthy Watershed Initiative

MIDDLE EEL PROJECT

Final Project Report

March, 2017

Through the Mississippi River Basin Healthy Watersheds Initiative (MRBI), NRCS and our partners work with producers and landowners to implement voluntary conservation practices that improve water quality, restore wetlands, enhance wildlife habitat and sustain agricultural profitability in the Mississippi River Basin.

The Middle Eel Project Snapshot

FOCUS AREA

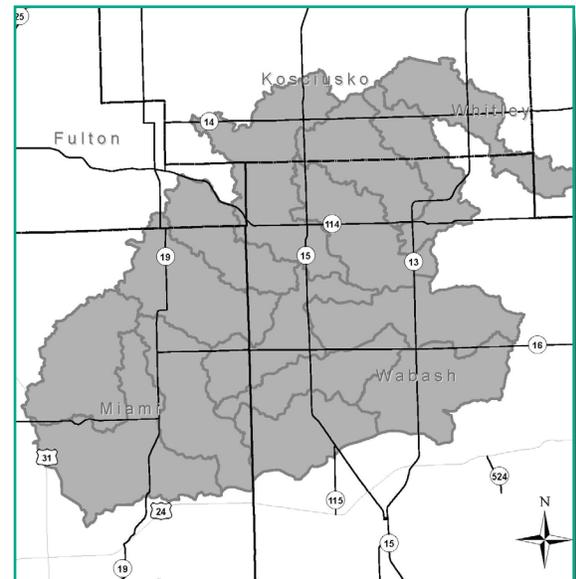
The project focuses on fifteen predominantly agricultural 12-digit watersheds within the Middle Eel River watershed. These subwatersheds cover parts of Fulton, Kosciusko, Miami, Wabash and Whitley counties in northwest Indiana.

GOAL OF PROJECT

Nutrient and Sediment removal, advanced ag productivity through conservation practices/systems, improve upland wildlife habitat, wetlands, water quality, in-stream habitat, safe recreational use of river by humans.

PROJECT OBJECTIVES

- Identify high priority nonpoint source concerns.
- Work closely with partners to market and install approved best management practices (BMPs) that specifically address priority resource concerns.
- Quantify the type and number of BMPs installed.
- Monitor the quantity of in-stream levels of phosphorus, nitrogen and total suspended solids before and after installation of Best Management Practices.
- Quantify in-stream habitat and biological integrity of each watershed.
- Determine the presence and absence of freshwater mussels in each watershed.



PRIMARY PARTNERS

- Manchester University - Lead Partner
- Indiana Department of Environmental Management
- Indiana State Department of Agriculture
- Agricultural Resource Service - National Soil Erosion Lab
- United States Geological Survey
- Wabash Soil and Water Conservation District
- Miami Soil and Water Conservation District
- Kosciusko Soil and Water Conservation District

OTHER PARTNERS

- Waterborne Environmental, Inc.
- Friends of Miami County's Bridges
- Miami County Council
- Miami County Highway Department
- Stockdale Mill Foundation
- North Manchester Historical Society
- Tippecanoe Audubon Society
- Arrowhead RC&D

PARTNER CONTRIBUTIONS

From 2010-16 Manchester University contributed nearly \$111,000 for water quality monitoring/analysis and grant administration.

For more information, visit Indiana NRCS at: www.in.nrcs.usda.gov



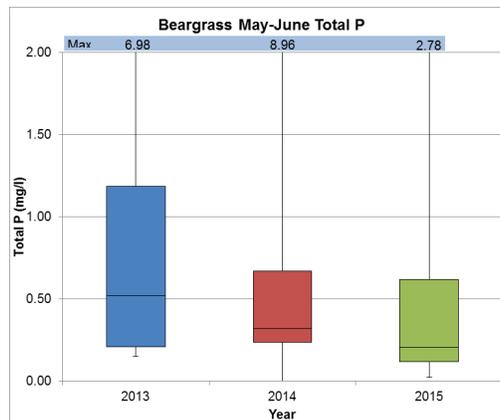
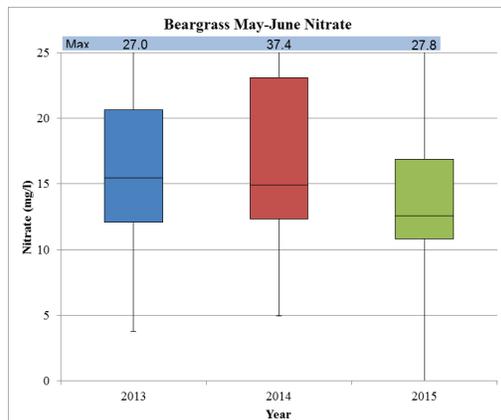


MODELED REDUCTIONS*

Year	Sediment (lbs)	Phosphorus (lbs)	Nitrogen (lbs)	Practices
2013	47,226,731	27,322	54,689	197
2014	108,805,171	64,470	128,957	822
2015	81,608,842	49,205	94,752	1,306
2016	59,212,599	37,858	64,480	499

*based on the Region 5 Model, which shows reductions from all assisted practices, meaning installed with local, state or federal program dollars. Region 5 Model does not account for dissolved nutrients, or practices installed without financial assistance. The Indiana Conservation Partnership began using the Region 5 Model to track collective reductions in 2013.

WATER QUALITY IMPACTS



ENVIRONMENTAL QUALITY INCENTIVES PROGRAM

Fiscal Year	Allocated Dollars	Obligated Dollars
2010	\$146,938	\$149,106
2011	\$594,481	\$808,227
2012	\$594,481	\$1,100,802
2013	\$594,481	\$1,450,000
2014	\$594,481	\$735,000
2015	\$390,000	\$549,782
2016	\$450,000	\$226,534
TOTAL	\$3,364,862	\$5,019,451

ECONOMIC IMPACTS*

Expenditure: \$301,643
Jobs Created: 6
Total Sales: \$569,745
Value added: \$297,092
Income: \$241,034

* Based on the Gentner Consulting Group, Inc. Economic model for the National Fish Habitat Partnership Program

BIOLOGICAL IMPACTS

- Reintroduction of clubshell (Pleurobema clava) to the Eel.
- Pilot study in 2015 where 150 clubshell placed in the Eel. In 2016, 149 of the 150 were located.
- In the summer of 2016, 3,000 clubshell placed in the Eel. In all of the surveys of the Eel only dead shells of this species were found.
- While it would not be possible to say that a particular conservation practice has improved the water quality to a level that would support this species, the water quality has clearly been improving.



PROJECTS ENHANCING EFFORTS OF MRBI

- 2009-2012 Indiana Department of Environmental Management Section 319 Grant for \$1 million to write a watershed management plan, identify priority areas for nutrients, provide cost-share assistance for practices, and monitor water quality.
- 2013-2015 Indiana Department of Environmental Management Section 319 grant for \$500,000. This grant continued previous work in the Middle Eel River, and added four student technicians.
- \$120,000 grant from the U.S. Fish and Wildlife Service and the Ohio River Basin Fish Habitat Improvement to remove two dams in the Eel River (Liberty Mills and North Manchester).
- \$50,000 grant from the Cargill Foundation. The final installment of this money was received in spring 2011.
- Paired-watershed study grant from Indiana State Association of Soil and Water Conservation Districts for \$56,000 (Beargrass and PawPaw).
- \$114,000 grant was received from the Indiana Department of Natural Resources to conduct research on the population structure of black bass (smallmouth bass, largemouth bass, and rockbass) over 50 miles of the Eel River.
- \$10,000 Mussel Reintroduction from USFWS (2014-2016) Project complete
- \$15,000 upland conservation in Beargrass Creek USFWS(2014- 2016) Project complete
- \$56,000 joint grant with the Indiana Corn Marketing Council and the Indiana Soy Bean Alliance for a paired-watershed study on Beargrass Creek and Pawpaw Creek. This is one year funding (2014-2015) with an option of annual reauthorization over 5-years. Reauthorized through 2018.
- \$15,000 grant from the United States Fish and Wildlife Service for the Beargrass Creek and Pawpaw Creek paired-watershed study.
- \$150,000 grant from the Ohio River Basin Fish Habitat Partnership to build a fish ladder at the Stockdale dam in the Eel River. Total for grant is \$300,000 including in-kind match from MU of \$25,000, \$116,000 from BK Riverfish LLC, and \$10,000 from Stockdale Mill Foundation.
- \$60,000 grant from the Environmental Defense Fund to support the Beargrass Creek and Pawpaw Creek paired-watershed research 2014-2016.
- \$60,000 from USFWS for construction of a natural channel design (two-stage ditch) above the upstream gage station in Beargrass Creek (2015-2016) Project completed
- \$38,000 from the Ohio River Basin Fish Habitat Partnership to remove a third dam from the Eel River near the small town of Mexico. RM30. (2015-2016) Project completed
- \$150,000 private gift for conservation work in the Eel River basin.
- \$150,000 319 grant for implementation cost share in Beargrass Creek watershed (2016-2018)

OTHER PROJECTS IN THE WATERSHED

- Section 319 Grants that developed a watershed management plan and provided dollars for best management practice implementation.
- National Water Quality Initiative (NWQI) watershed contained in the project area (Beargrass added 2013, and in 2016 Silver added)
- Pilot of the Field to Market tool in Beargrass watershed through a subcontract with Manchester University's Middle Eel watershed coordinator.
- On Farm Network active in the project area.
- Conservation Cropping Systems Initiative Paired watershed study in two 12-digit watersheds contained in the project area: Beargrass and PawPaw. Manchester University monitoring practice adoption in the Beargrass, PawPaw is the control watershed.
- Environmental Defense Fund CIG project in the Beargrass watershed, looking for conservation saturation to test 'watershed approach' in the Mississippi River Basin Initiative. Utilized Ag Conservation Planning Framework (ACPF) model out of Iowa (Mark Tomer, ARS). Social Indicator studies were utilized as a part of this project (Linda Prokopy, Purdue University).

