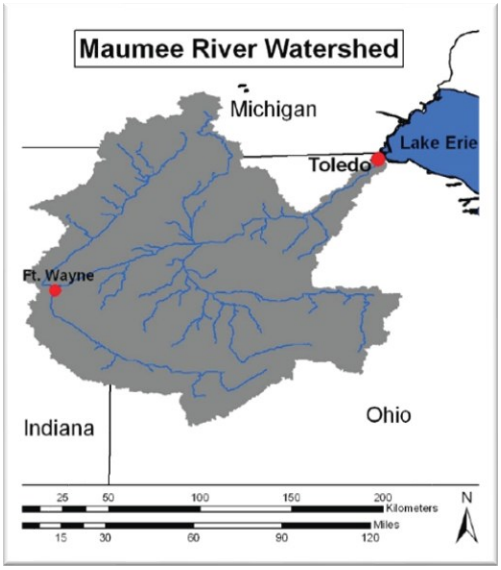
US Army Corps of Engineers

Phosphorous Optimal Wetland Demo

Maumee River Watershed, Ohio

GLRI Nonpoint Source Pollution Focus Area

Project Location: The project is located within the Maumee River Watershed of Lake Erie. Project specific location lies within the township of Defiance, Ohio with an alternative location in the township of St. Marys, Ohio.



Description of Problem: High levels of harmful algae choke aquatic life, creating "dead zones" devoid of oxygen in the Great Lakes, harming coastal economies and threatening human health due largely to phosphorus runoff. While most of the Great Lakes are cold and deep, thereby providing a natural buffer against the effects of harmful algae, warmer and shallower embayments may be hit harder. The Great Lakes Restoration Initiative (GLRI) Task Force announced special efforts to protect four such "priority watersheds" from phosphorus runoff: Lower Fox River, Wisconsin; Saginaw River, Michigan; Maumee River, Ohio; and Genesee River, New York.

Proposed Project: This project seeks to construct a test bed demonstration wetland with the goal of optimizing the absorption of phosphorous. Outcomes sought include identification of potential phosphorous limits, standard operating procedures for development, and ultimately the improvement of tributary water quality. The project seeks to prove the concept of phosphorous optimization in a field wetland setting as a methodology that may be applied as an alternative to reduce nonpoint source pollution into Great Lakes tributaries.

Figures 1-2 Phosphorous Optimal Design Concept and Final Construction

Partners and Collaboration: The US Army Corps of Engineers, Buffalo District is working with the Engineer Research and Development Center (ERDC) in collaboration with the townships of Defiance and St. Marys, Ohio. Additional collaboration is underway with local non-federal partners (Soil and Water Conservation Districts, state and local municipalities).

February 2022

Project Benefits: Benefits include increased effectiveness of nonpoint source pollution control and the potential for an innovative solution to reduce nutrient loads from agricultural watersheds. These benefits correlate to downstream and ultimately Lake Erie water quality.

Measure of Progress	Project Output
3.2.2 - Number of GLRI-funded projects implemented to reduce the impacts of untreated urban runoff on the Great Lakes	1 Project

Project Status: Buffalo District in coordination with ERDC is managing a contract with LimnoTech to support field research and monitoring of the demonstration wetland constructed in Defiance, OH. Demonstration wetland construction was completed in June 2021 and a 5-year monitoring program was established via contract with LimnoTech and through partnerships with ERDC, USGS, and the USEPA.

Project Budget	
FY 2021	$1,300,000
FY 2022	$350,000
FY 2022 Requirement	$350,000

Project Milestones	
Construction Award	SEP 2020 (A)
Construction Completion	MAR 2021 (A)
Multi-year Research Onset	JUN 2021 (A)
Research Completion and Tech Transfer	JUN 2026

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Great Lakes RESTORATION