

# Developing Scalable Harmful Algal Bloom (HAB) Prevention Technologies in the Ohio Region

USACE Harmful Algal Bloom Research & Development Initiative

Delivering scalable freshwater HAB prevention, detection and management technologies through collaboration, partnership and cutting-edge science

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**PROBLEM:** Harmful algal blooms (HABs) are becoming more common and severe in the waters of the United States. Best management practices to treat this issue are needed, but their performance in the field must be monitored to determine the optimal designs for reducing nutrient loads.

**OBJECTIVES:** First, quantify the nutrient reductions at sites with already implemented BMPs on legacy-P fields. Then, Use existing results to guide site selection, design, and implementation of BMPs on new fields.

**APPROACH:** Leverage existing networks (Pilot Watershed, Public Private Partnership) to recruit farmers and field sites for BMP implementation. Continue existing monitoring efforts by collecting and analyzing water samples, while adding new sites. Analyze results and use in modeling efforts to identify scalable options

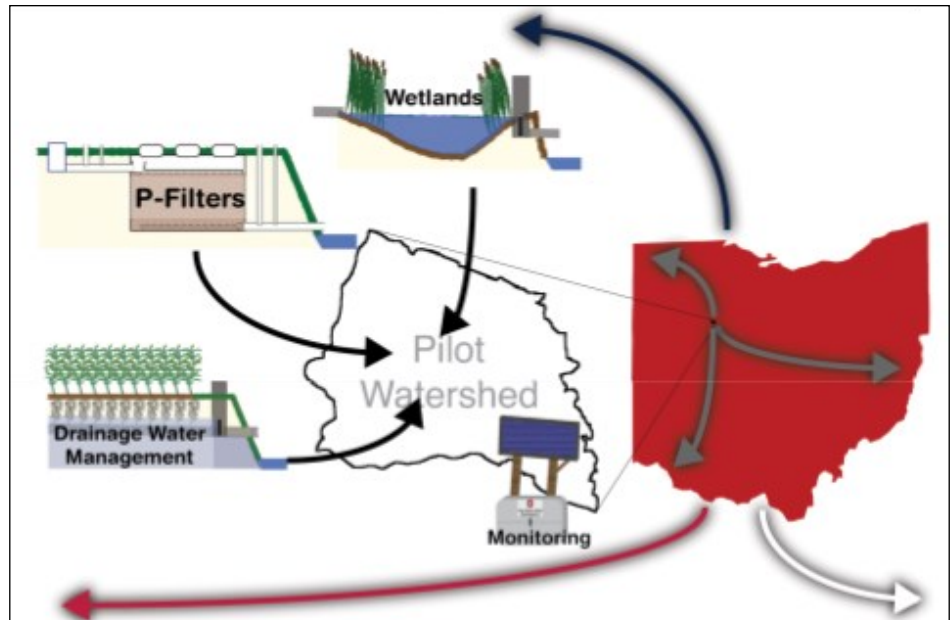


Figure 1: A conceptual diagram for the experiment

Date	Major Milestone
FY23, Q1	Recruited and designed wetland and P-filter practice (Montpelier site)
FY23, Q1	Identified field in Pilot Watershed for testing automated drainage water management
FY23, Q1	Website created for project ( <a href="http://u.osu.edu/habsolutions">u.osu.edu/habsolutions</a> )

**VALUE TO USACE MISSION:** Scalable solutions to preventing HABs are needed to protect regional and national waters where nonpoint nutrients are the source of the issue.

**PARTNERSHIP/LEVERAGING OPPORTUNITIES:** This work will leverage multiple collaborations and other work units including: *Pilot Watershed: Shallow Run, Hardin County Ohio* - United States Department of Agriculture, Regional Conservation Partnership Program, and H2Ohio, *Developing Public-Private Partnerships (PPPs) to Target Legacy Phosphorus Fields to Increase Water Quality and Availability* - United States Department of Agriculture, Agriculture and Food Research Initiative, and *Beneficial Implementation of Byproducts to Reduce P Loss from Agricultural Land* - Ohio Department of Higher Education Harmful Algal Bloom Research Initiative.