

WLEB 2026

Projects in the Watershed



Table of Contents

Introduction.....	2
Western Lake Erie Basin (WLEB) Expanded Water Quality Monitoring Program	3
Edge-of-Field Monitoring	5
Investigating Cover-Crop Planting Methods for Establishment Success.....	7
Healthy Soils, Healthy Waters.....	9
Soil Health Investment Program (SHIP) Summary.....	11
Pay-for-Performance (PfP) Summary	14
Farmer-Led Conservation Group.....	15
Seneca State Game Area Wetland Restoration Pilot Project.....	16

Introduction

Lake Erie is a critical resource and natural feature, supporting life, recreation, and commerce for millions of Americans in the Great Lakes region. However, the lake has a long history of suffering from harmful algal blooms (HABs), which continue to this day. HABs are colonies of bacteria that grow in the water during summer months to form vast mats of what is commonly called “blue-green algae.” While some algal blooms cause a nuisance for coastal communities (e.g., *Cladophora*), HABs exude toxins that disrupt drinking water supplies and degrade aquatic habitats for one of the nation’s most important freshwater fisheries. The warm and shallow Western Lake Erie Basin (WLEB) is especially susceptible to these toxic blooms, and in 2016 the states of Michigan and Ohio and the province of Ontario initiated targeted efforts to collaboratively reduce HABs in the WLEB. Through the work and funding of state, provincial, and federal governments, as well as that of various academic and private institutions, projects have been developed to combat HABs in the WLEB.

This document provides an overview of some of these projects that are in progress in the WLEB watershed in Michigan.



Algal blooms in the Western Basin of Lake Erie.

Western Lake Erie Basin (WLEB) Expanded Water Quality Monitoring Program

The Alliance for the Great Lakes (AGL) and partners are implementing an expanded water quality monitoring network in five priority sub-watersheds to assist the Michigan Department of Agriculture and Rural Development's (MDARD) ability to track and monitor water quality and enable improved prioritization of conservation and land management practices to meet phosphorus reduction commitments. The project team has deployed 50 higher spatial density monitoring instrumentation with a particular focus on understanding phosphorus trends. The information gleaned from this effort will help MDARD better understand various drivers of nutrient transport and allow for better focusing of conservation efforts to combat nutrient pollution.

The project will run from 2024 to 2029 and cover five of Michigan's priority sub-watersheds:

- Lime Creek
- Stony Creek (South Branch River Raisin)
- Headwaters of the Saline River
- Nile Ditch
- S.S. LaPointe Drain

Area hydrology, sediment transport, phosphorus transport, and weather conditions in the sub-watersheds will be tracked by the project and publicly available in real-time on this [Dashboard](#).

Organizations

- Alliance for the Great Lakes (AGL)
- Freeboard Technology
- LimnoTech
- Michigan State University Institute for Water Research

Contact

Alliance for the Great Lakes: Angela Blatt, ablatt@greatlakes.org
Freeboard Technology / LimnoTech: Ed Verhamme, everhamme@limno.com
MSU Institute of Water Research: Jeremiah Asher, asherjer@msu.edu
Michigan Department of Agriculture and Rural Development: Michelle Selzer, SelzerM@michigan.gov

Update

This project was initiated in Fall 2024 and targets five priority sub-watersheds in Michigan's portion of the WLEB watershed. Efforts to build out the project are ongoing, and an update will be described at the 2026 State of the WLEB conference. The project's operating budget is over \$5M, with \$600K committed by the Erb Family Foundation and \$4.86M from the Michigan Department of Agriculture and Rural Development. Data collection began in Fall 2024, and data is publicly available.

Links

[Home Page](#)

[Public Dashboard](#)

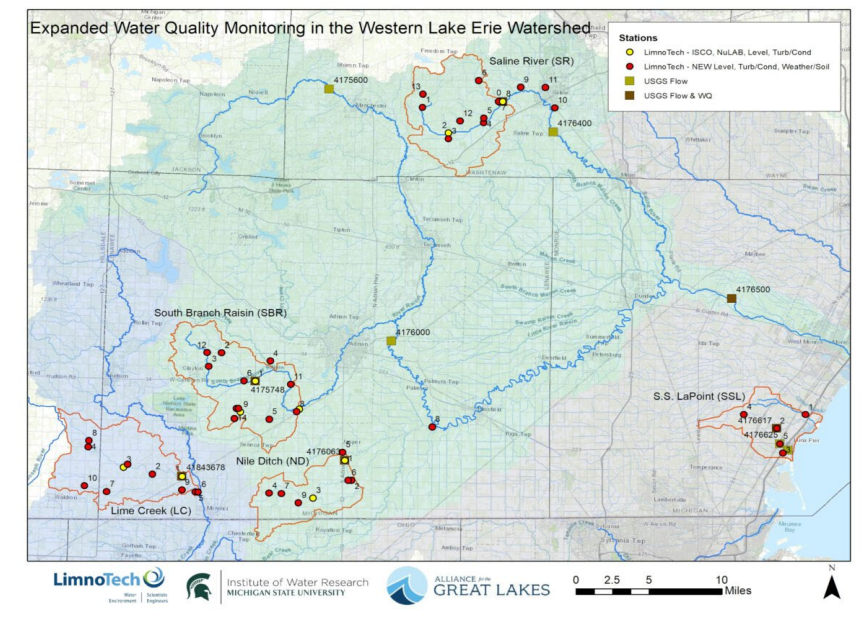
[Project Summary](#)

[Current Management Plan](#)

[Feb 2025 Webinar](#)

[April 2026 Webinar](#)

[Oct 2024 Press Release](#)



Monitoring locations: New sampling locations under this project are depicted with red and yellow circles ([Sampling-Locations_Nov-2024-1200x928.jpg](#)).

Edge-of-Field Monitoring

This Michigan State University Extension (MSU – Ext) project evaluated the performance of two conservation drainage practices for reducing phosphorus (P) loss. This project was an on-farm experiment in partnership with three producers in the Western Lake Erie Basin (WLEB). The project team evaluated controlled drainage at two sites and a saturated buffer at one site. The project began with the installation of monitoring instruments in 2018, with monitoring efforts through September 2025. Data analysis and report writing are underway, and the final report will be available by December 2026.

The project was funded with \$2.6M from the Michigan Department of Agriculture and Rural Development (MDARD) and initial funding provided by Michigan Department of Environment, Great Lakes, and Energy (EGLE). Agricultural commodity groups also contributed additional funds, including the Corn Marketing Program of Michigan and Michigan Soybean Committee.

Organizations

- Michigan State University (MSU – Ext)
- Lenawee Conservation District
- Michigan Department of Environment, Great Lakes, and Energy (EGLE)
- Michigan Department of Agriculture and Rural Development (MDARD)
- Michigan Soybean Association
- Corn Marketing Program of Michigan
- Michigan Alliance for Animal Agriculture

Contact

MSU Extension: Ehsan Ghane, ghane@msu.edu

Update

Monitoring work began in 2018. A 2025 report by Dr. Ghane based on this research highlights the following points:

- Legacy P dominates P loss while new P plays a minor role.
- Soils tested across the USA showed that they have enough legacy P to sustain high P loss for decades.

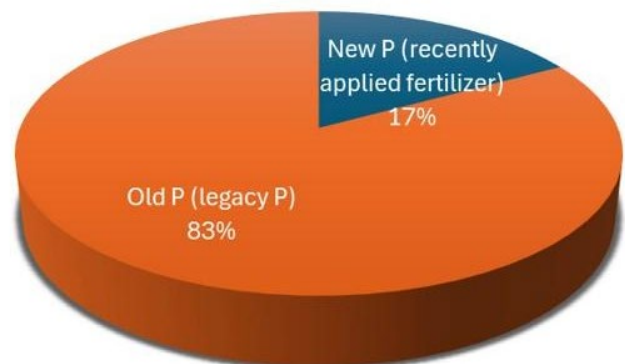
- A drawdown of soil test P (STP) by crop removal can address the legacy P problem, but this takes a very long time.
- Soils with very high STP levels required 16 years to halve their STP concentration without any fertilizer application. The higher the STP, the slower the drawdown, making it vital to avoid additional accumulation of legacy P through careful nutrient management.
- Nutrient management can address the smaller but still important contribution of new P loss over the short term.
- To make a big impact on Lake Erie’s water quality, we need to address the dominant legacy P in two ways: first, drawdown of the STP to achieve results over the long term, and second, by implementing water management to achieve results over the short term.
- Controlled drainage is effective for reducing phosphorus load from tile drainage water.
- Controlled drainage works in fields with slopes less than 2%, opposite to the previous assumption of being suitable only in fields with slope less than 1%.
- Controlled drainage is effective in reducing nitrate load in sandy soils.
- Based on our findings at the BL site, we expect saturated buffers to have a significant P reducing effect due to their dominant controlled drainage component.

Links

- [Legacy phosphorus: The enduring hidden driver of tile drainage loss - Agriculture and the Environment](#)
- [Manure timing matters: How to reduce phosphorus loss - Agriculture and the Environment](#)
- [Controlled drainage isn’t just for flat fields anymore - Agriculture and the Environment](#)
- [Saturated buffers: Proven practice with new surprises - Agriculture and the Environment](#)

Legacy phosphorus dominates losses, contributing over 83% of DRP in subsurface drainage discharge. Based on the data in [Osterholz et al. 2023](#).

Contributions to Phosphorus Loss



Investigating Cover-Crop Planting Methods for Establishment Success

The Michigan State University Extension (MSU – Ext) project’s purpose is to develop recommendations for planting cover crops into a corn crop by UAV (i.e., drones), plane, and field broadcast approaches and to educate producers on the best practices for interseeding cover crops into corn and soybean crops. The improved recommendation and education efforts will lead to increased acres of cover crops in the Western Lake Erie Basin (WLEB).

To achieve this goal, MSU - Ext worked with producers and custom applicators in the WLEB to develop a series of demonstrations and research plots on farms in three WLEB watersheds. These demonstration plots featured cover-crop interseeding into soybean or corn by airplane, highboy, and drone. The project will be completed with outreach, which will share the experiment results through articles, bulletins, and interactive 360° video footage.

Organization

MSU - Extension

Contact

MSU Extension: Madelyn Cleovsky, celovsk2@msu.edu

Update

Number of acres planted in WLEB counties from 2022 Ag Census data: Hillsdale (16,851 up from 13,829 in 2017), Washtenaw (10,025 up from 4,937 in 2017), Lenawee (24,700 up from 18,596 in 2017).

Two years of trials were seeded over standing corn or soybeans in September 2024 and September 2025. Four of the six sites established successfully, though growth in all six site years was limited due to drought conditions following cover-crop seeding in Fall 2024 and Fall 2025.

Preliminary results were shared at a plot walk and three farmer meetings in Southeast Michigan, as well as at a Midwest Cover Crops Council webinar January-March 2025. Final results have been summarized in an MSU Extension article and shared at field days and conferences in the Western Lake Erie Basin through December 2026.

Links

- ['Interseeding cover crops into corn and soybeans: lessons learned'](#)- MSU Extension article
- [Midwest Cover Crops Council webinar with preliminary results](#)
- [Cover Crop Poster](#)



(Left) Drone seeding cover crops into standing corn; (right) aerial-seeded cover crops emerging in standing soybeans (photo credit: Madelyn Celovsky).

Healthy Soils, Healthy Waters

The Michigan State University project is advancing knowledge of soil health and water quality in southeastern Michigan, focusing on regenerative practices in the Western Lake Erie Basin (WLEB). In addition to commonly targeted nutrients like phosphorus and nitrogen, this project also investigates the role of soil carbon in establishing healthy soils and improving nutrient retention and water quality. By linking farm management systems to soil health, and monitoring edge-of-field water quality, the team aims to improve predictions of management impacts. The project engages the agricultural community using a co-learning approach, and results will inform conservation program design. This effort is funded through 2029 with over \$4M from Michigan Department of Agriculture and Rural Development.

Organizations

- Michigan State University, W.K. Kellogg Biological Station
- Michigan State University, Department of Plant, Soil, and Microbial Sciences
- Michigan State University, Institute of Water Research
- University of Michigan, Department of Ecology and Evolutionary Biology
- Alliance for the Great Lakes
- Michigan Agriculture Advancement
- Michigan Association of Conservation Districts
- Lenawee Conservation District
- Michigan Climate Smart Farm Project

Contact

Michigan State University: Jennifer Blesh, blesh@msu.edu

Update

Between fall 2024 and spring 2025, the research team collected soil samples from 106 farm fields in the WLEB and 10 woodlots, which will serve as reference sites for soil health indicators in the region. About half of the WLEB farms signed up for the study through outreach activities (e.g., promoting the project at field days), and the other half were recruited through the networks of conservation technicians in Lenawee, Hillsdale, Monroe, and Washtenaw counties.

The team has completed the soil health analysis and shared individual reports with participants in summer 2025 and winter 2026. The team

interviewed all participants in Winter 2025 to gather detailed data on farm-scale land use, management history, and information on crop rotation, crop yields, nutrient management, and tillage practices for the fields we sampled. We are currently analyzing relationships between management systems, soil health outcomes, and potential for nitrogen and phosphorus retention in soil across sites.

The project team has recruited more than 20 participants (spanning 34 fields) to continue in the second phase of the study, where the team will monitor changes in soil health after three growing seasons with a new conservation practice. On 6 of these fields, the team from MSU's Institute of Water Research is conducting edge-of-field water quality monitoring. More than 1200 samples have been analyzed for total phosphorus, dissolved reactive phosphorus, and nitrate. Once we have data over a complete season, we will test for relationships between management and soil health data and water quality outcomes.

Link: [Sep 2024 Press Release](#)



(Left) Collecting cores to measure soil bulk density; (right) A cover crop mixture in the WLEB with high fall biomass.

Soil Health Investment Program (SHIP) Summary

The Michigan Department of Environment, Great Lakes, and Energy's (EGLE) Soil Health Investment Program (SHIP) provides incentive payments to producers in the Western Lake Erie Basin (WLEB) for implementing best management practices which will reduce the nutrient and sediment loading in cropland runoff being transported to surface waters. District technicians will use tools developed by the EGLE and other partners to prioritize outreach and conservation efforts on priority fields which are likely to be vulnerable to sediment and nutrient loss. This program is funded through September 2028 with over \$2M from the U.S. Environmental Protection Agency's Great Lakes Restoration Initiative.

Organizations

- Michigan Department of Environment, Great Lakes and Energy (EGLE), Water Resources Division
- Hillsdale Conservation District
- Lenawee Conservation District
- Monroe Conservation District
- Washtenaw Conservation District

Contact

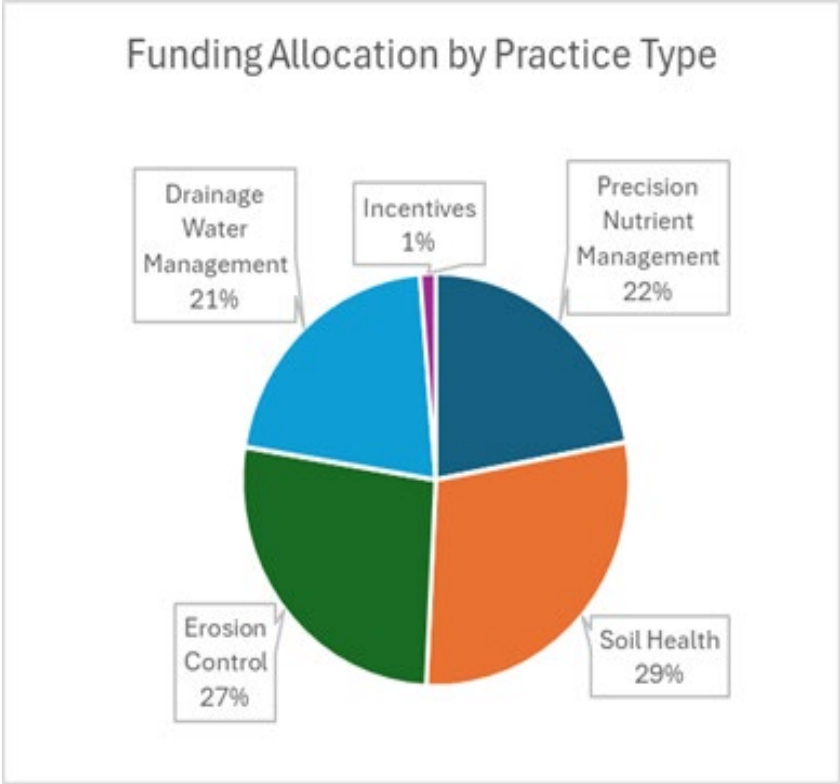
Michigan EGLE: Thad Cleary, clearyt@michigan.gov

Updates

- Enrollment (as of 6/1/2026) has resulted in 68 producer contracts totaling \$1,772,619.
- 50-acre goal of harvestable buffer practice enrollment was achieved.
- EGLE engineering design review averages less than a month for approval. 42% of designs for erosion control practices have been completed and approved for implementation.

Program practice implementation reported to date is highlighted in Figure 3.

Link: [EGLE WRD webpage](#)



SHIP Funding Allocation by Practice Type (percentage) as of June 2026.



Funding Allocation by Practice Type (dollars) as of June 2026.

Practice Implementation to Date (April 2026)			
Practice	Units	Contracted	Reported Amount
Precision Soil Sampling	ac	5,045	2,094
Commercial VRT P App	ac	3,316	28
Equipment	ac		
Reduced Tillage	ac	2,765	-
Cover Crops	ac	6,073	2,852
GW	ft.		2,260
WASCOB	ac		-
GSS	sq. ft.		-
BI	#	5	-
Saturated Buffer	ft.	1,500	-
DWM	ac	1,820	588
Harvestable Buffer	ac	50	12

SHIP Practice Implementation Reported as of April 2026.

Pay-for-Performance (PfP) Summary

Led by Michigan State University – Institute of Water Research (MSU-IWR), this new performance-based conservation program in the Western Lake Erie Basin (WLEB) will offer new strategies for allocating resources that maximize outcomes by focusing on performance. The program team and partners will enroll producers in conservation practices but, unlike traditional cost-share programs, will compensate producers based on water quality improvements—primarily reductions in phosphorus.

Combining Soil and Water Assessment Tool (SWAT) and Yield Stability modeling will result in an outreach tool that partners can use to broaden the conversation with producers and increase the opportunity to install more conservation practices in lower producing areas, reduce nutrient losses, and improve ecosystem services (e.g., groundwater recharge, pollinator habitat, and soil health). Specifically, the program will enhance the existing conservation delivery by building a network of supply chain organizations to enroll producers and promote the program among their clientele. The program will generate an expanded conservation outcomes package by adding ecosystem services considerations to the pricing thresholds determined for conservation practices that will lead to the greatest reduction of phosphorus.

All of the benefits resulting from this innovative conservation delivery program will be quantified and tracked via the [Great Lakes Watershed Management System](#) (GLWMS) - Nutrient Tracking Dashboard.

The project is funded through 2032 with \$12M from the Michigan Department of Agriculture and Rural Development (MDARD).

Organizations

- Michigan State University - Institute of Water Research (MSU-IWR)
- Michigan Department of Agriculture and Rural Development (MDARD)
- MSU - Extension
- MSU - Center for Regenerative Agriculture
- Alliance for the Great Lakes
- Michigan Agri-Business Association
- Lenawee Conservation District

Contact

MDARD: Michelle Selzer, selzerm@michigan.gov

MSU Institute of Water Research: Jeremiah Asher, asherj@msu.edu

Farmer-Led Conservation Group

Through the Farmer-Led Watershed Conservation Group, we work together to adopt practical conservation practices that build healthier soils, boost yields, cut input costs, and keep valuable nutrients on the land and out of our waterways. It's all about protecting our farms, our water, and our future in the Western Lake Erie Basin. The Western Lake Erie Basin Farmer-led Group (WLEB – FLG) has a core group of producers that partner with Conservation Districts to implement BMPs on their fields and share information for producers who might be interested in starting their conservation journey. This project is funded primarily through the ERB Family Foundation.

Organizations

- Michigan Association of Conservation Districts (MACD)
- River Raisin Watershed Council
- Washtenaw Conservation District
- Monroe Conservation District
- Lenawee Conservation District
- Hillsdale Conservation District
- Jackson Conservation District

Contact

River Raisin Watershed Council & WLEB FLG Coordinator: Lydia Lopez, waterstewardship@riverraisin.org

Link: [Farmer-Led Home Page](#)



Summer 2024 FLG meeting: (Left) a presentation in the pole barn; (right) an agricultural applicator drone on display.

Seneca State Game Area Wetland Restoration Pilot Project

Ducks Unlimited is leading project implementation on behalf of the Michigan Department of Natural Resources and other state agencies with the primary objective to advance wetland restoration as a best management practice (BMP) within the WLEB. Project partners have worked with landowners and the Lenawee County Drain Commissioner to acquire former wetland areas, restore their hydrology to intercept both onsite nutrients and offsite inflows arriving via the county drain network, and monitor nutrient dynamics throughout the site. In this pilot project, the restored areas and adjacent contributing upland are managed according to the DNR's Mission as a new state game area - open public lands for outdoor recreation that provide valuable wildlife habitat. Water quality monitoring was initiated in 2024 prior to restoration. Wetland and upland restoration efforts began in late 2025 and will continue through 2027.

This project is currently funded by the Michigan Natural Resources Trust Fund, Environmental Protection Agency Great Lakes Restoration Initiative funds, the American Rescue Plan Act of 2021, and the Michigan Wetland General Fund.

Organizations

- Michigan Department of Natural Resources (DNR)
- Michigan Department of Agriculture, and Rural Development (MDARD)
- Michigan Department of Environment, Great Lakes and Energy (EGLE)
- LimnoTech
- Lenawee County Drain Commissioner

Contact: Ducks Unlimited: Matthew Conrad, mconrad@ducks.org



Phase I restoration began in late 2025 for the Western Lake Erie Basin pilot wetland restoration project at the Seneca State Game Area in Lenawee County, MI, USA.