

The H2Ohio Wetland Monitoring Program

Managed by the Lake Erie and Aquatic Research Network (LEARN)
and the Ohio Department of Natural Resources (ODNR)

ABOUT THE PROGRAM

The H2Ohio Wetland Monitoring Program will assess the impacts that wetland restoration can have on removal of phosphorus and nitrogen, key nutrients that fuel eutrophication and harmful algal blooms, across Ohio. The ODNR-implemented wetland projects, part of the H2Ohio Initiative, represent a wide range of wetland types, restoration and construction approaches, and complexity.

To improve wetland design and management into the future, it's necessary to understand the processes happening within wetlands. This comprehensive approach to determining not only whether a wetland is effective, but also how the wetland systems work and how to better design and manage wetlands for nutrient removal, is led by scientists from throughout Ohio with expertise in wetland ecology, nutrient biogeochemistry, hydrology, plant sampling and identification, soil science, data synthesis and analysis.

CORE QUESTIONS

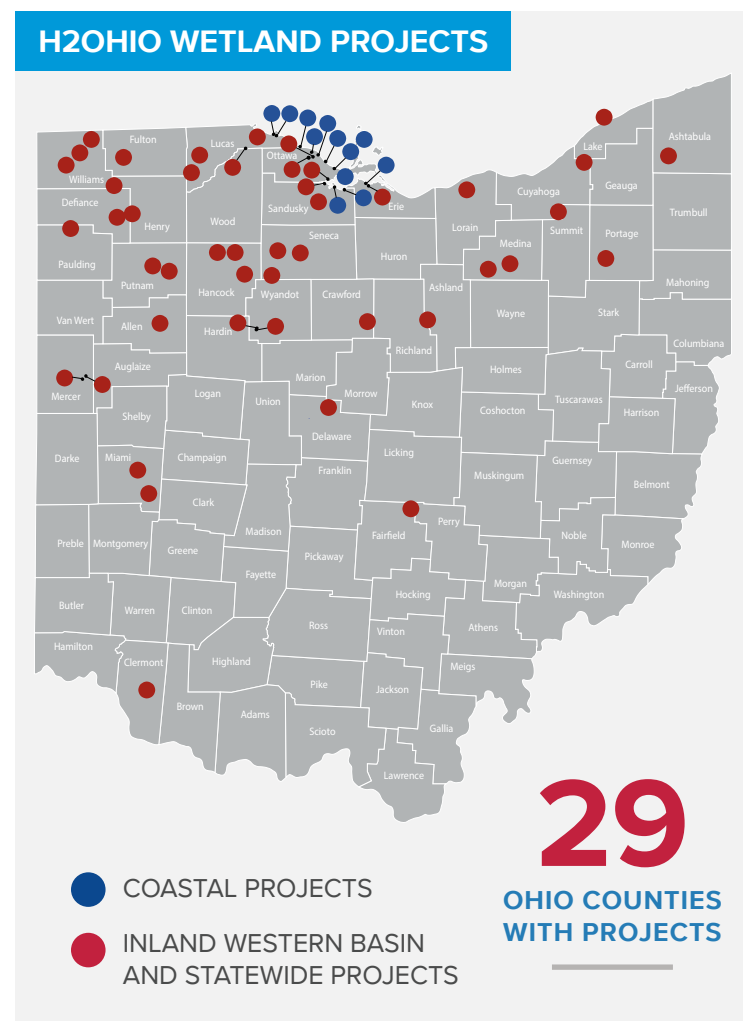
The core questions of the program are:

- ▶ Which types of wetland structure and function are associated with enhanced nutrient reduction and retention?
- ▶ Which wetland restoration approaches maximize cost-effectiveness for mitigating nutrient loads to water bodies?
- ▶ How can wetland restoration be effectively managed in the future?

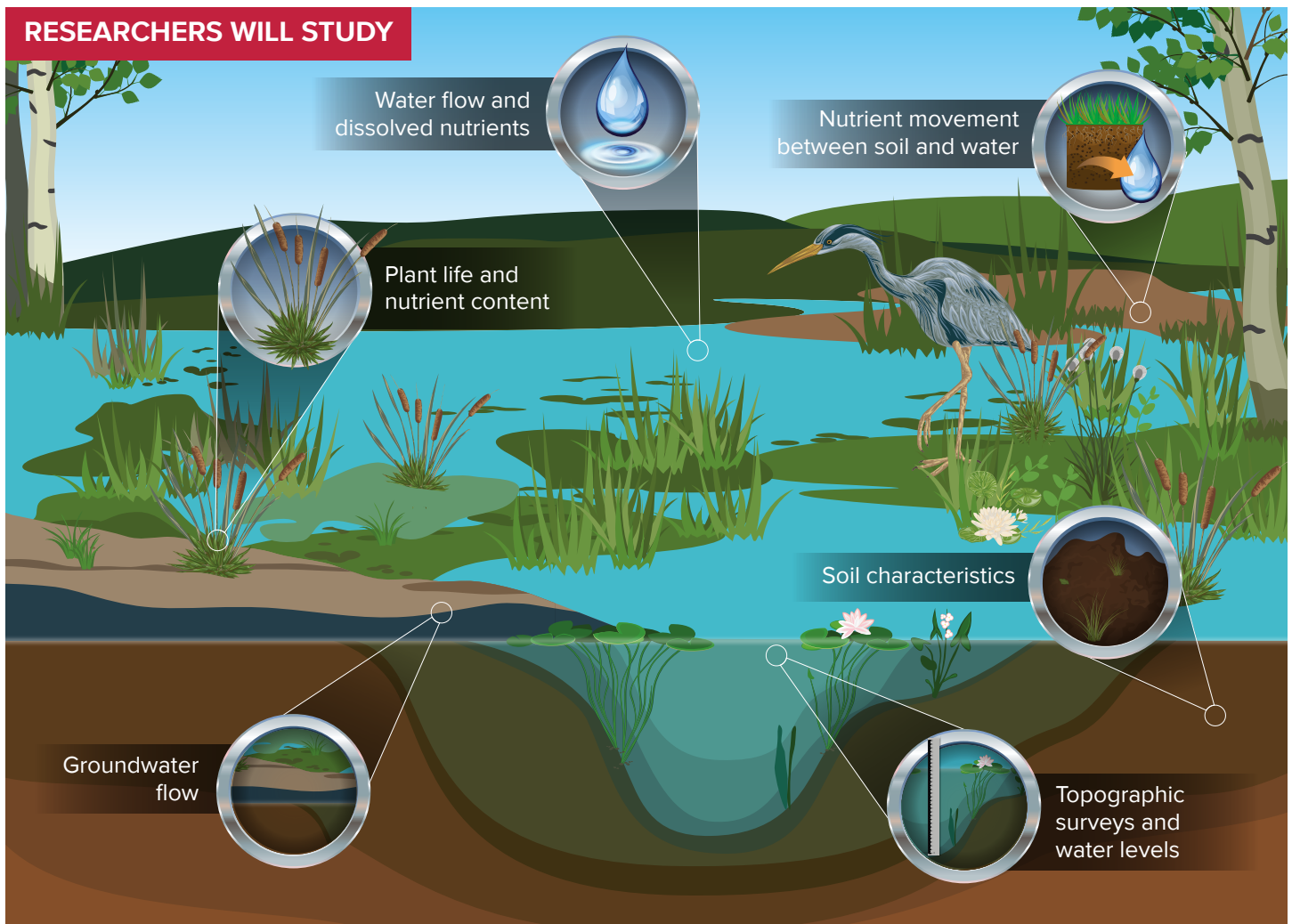
GOAL OF THE PROGRAM

The ultimate goal of the H2Ohio Wetland Monitoring Program is to assess nutrient removal by each of the H2Ohio wetland projects.

To better understand how different kinds of wetland projects process nutrients, researchers will intensively monitor all components of selected wetlands to complement widespread distributed monitoring across all projects. Knowledge gained from intensively monitored projects will inform assessments of the efficacy and cost-effectiveness of all H2Ohio wetland projects in terms of nutrients, as well as help the program improve monitoring strategies into the future.



RESEARCHERS WILL STUDY



THE FUTURE

These LEARN scientists will develop project-specific monitoring plans for each monitored wetland after design and construction are completed and preliminary data to characterize each project is collected. All monitoring activities across the program will be completed using standardized protocols that will be documented in an exhaustive field, lab and computational operations

manual. This manual can then be adapted for future wetland monitoring projects as needed.

Ultimately, the researchers hope that the data collected will inform management decisions, improve design of future H2Ohio efforts to maximize nutrient retention, and speak to the general cost-effectiveness of wetland restoration, construction and management to mitigate nutrient runoff to water bodies like Lake Erie.

Program Partners

Lake Erie and Aquatic Research Network
Ohio Department of Natural Resources
The Ohio State University
College of Food, Agricultural, and Environmental Sciences

Ohio Sea Grant and Stone Lab
Kent State University
The University of Toledo
Heidelberg University National Center for Water Quality Research

Old Woman Creek National Estuarine Research Reserve
Bowling Green State University
Wright State University



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