

H2Ohio Funding and Project Overview



Rachel DeNoewer, H2Ohio Wetlands Asst Program Manager
Ohio Department of Natural Resources

Melanie Coulter, Conservation Manager
Black Swamp Conservancy



Department of Agriculture

Department of Natural Resources

Environmental Protection Agency

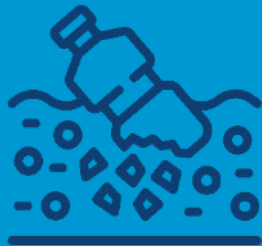
Lake Erie Commission

H2Ohio Overview

H2Ohio is Governor Mike DeWine's statewide water quality initiative designed to address complex issues impacting Ohio's waters. Launched in 2019, H2Ohio uses a comprehensive approach guided by science and data to:



Reduce algal blooms



Stop pollution



Improve access to clean drinking water

by supporting **best farming practices**; restoring **natural infrastructure to reduce nutrients**; reducing **road salt runoff**; supporting **litter cleanups, dam removals, and land conservation**; and revitalizing **water infrastructure**.



Department of
Agriculture

Department of
Natural Resources

Environmental
Protection Agency

Lake Erie
Commission





Department of Agriculture

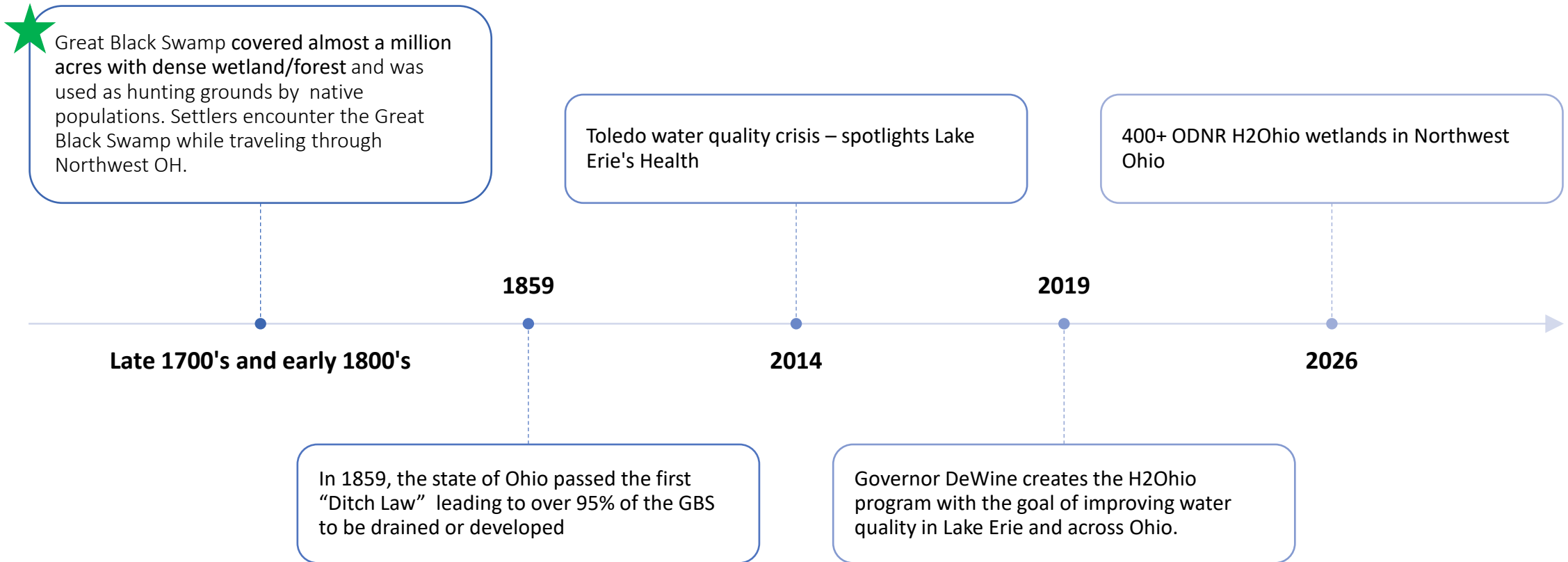
Department of Natural Resources

Environmental Protection Agency

Lake Erie Commission



An Oversimplified Northwest Ohio Water Quality Timeline



Department of Agriculture

Department of Natural Resources

Environmental Protection Agency

Lake Erie Commission





The mission of Black Swamp Conservancy is to preserve and protect natural habitats and family farms in northwest Ohio, now and for future generations.



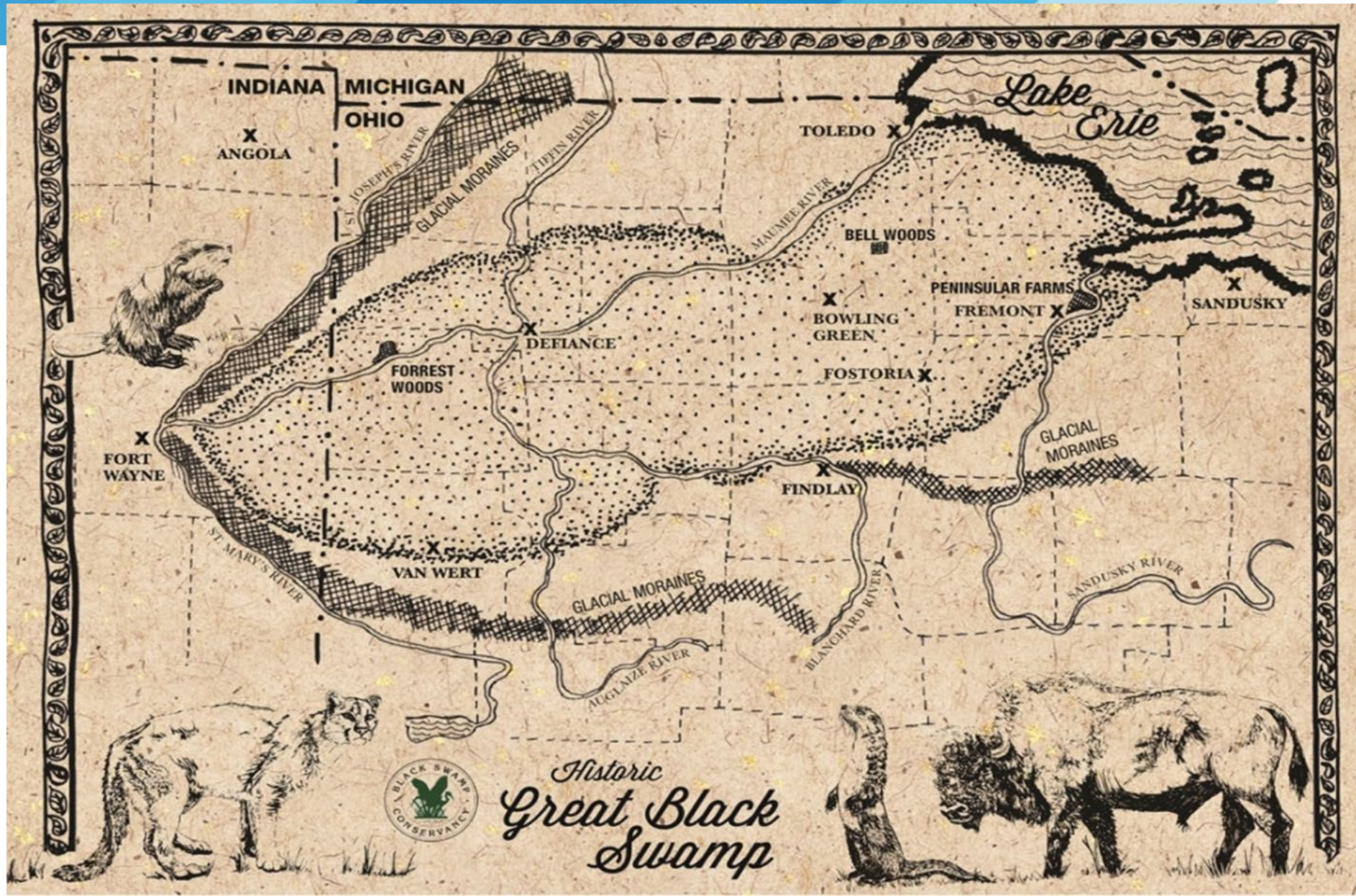
Department of
Agriculture

Department of
Natural Resources

Environmental
Protection Agency

Lake Erie
Commission





Department of
Agriculture

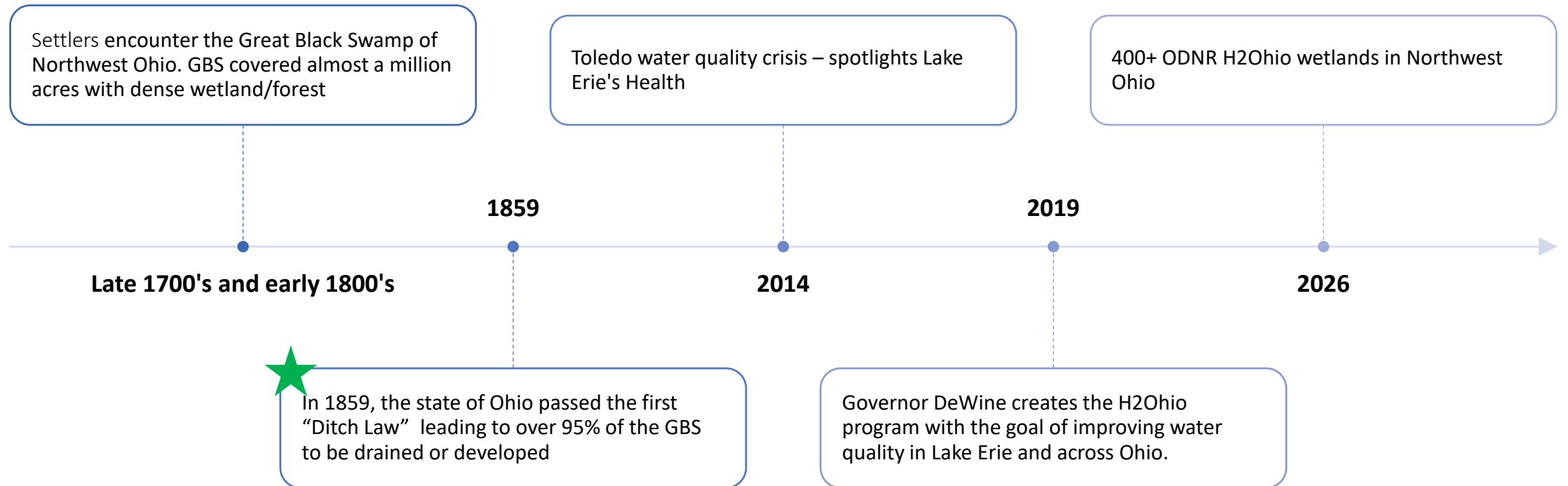
Department of
Natural Resources

Environmental
Protection Agency

Lake Erie
Commission



An Oversimplified Northwest Ohio Water Quality Timeline



Department of
Agriculture

Department of
Natural Resources

Environmental
Protection Agency

Lake Erie
Commission





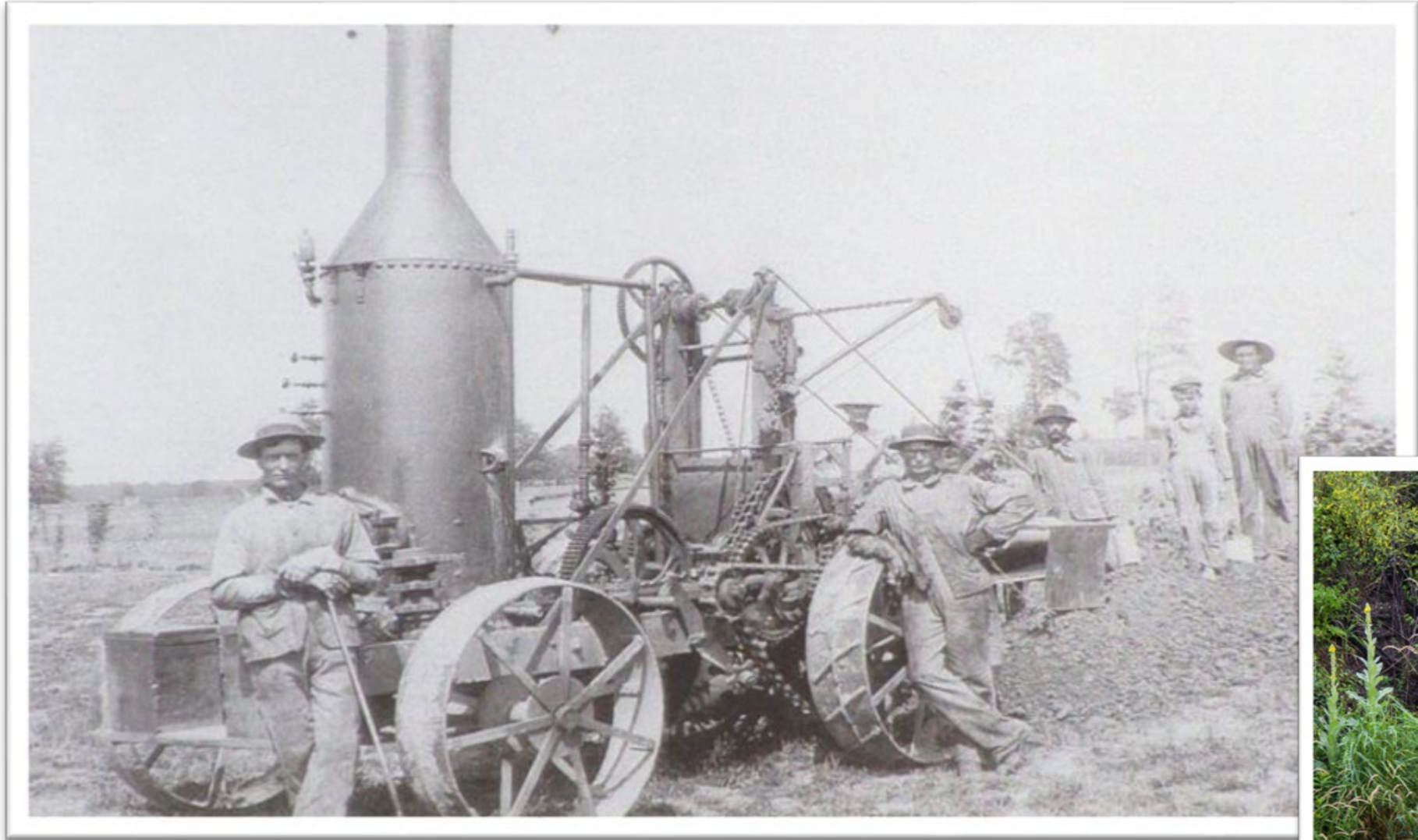
Department of
Agriculture

Department of
Natural Resources

Environmental
Protection Agency

Lake Erie
Commission





Department of
Agriculture

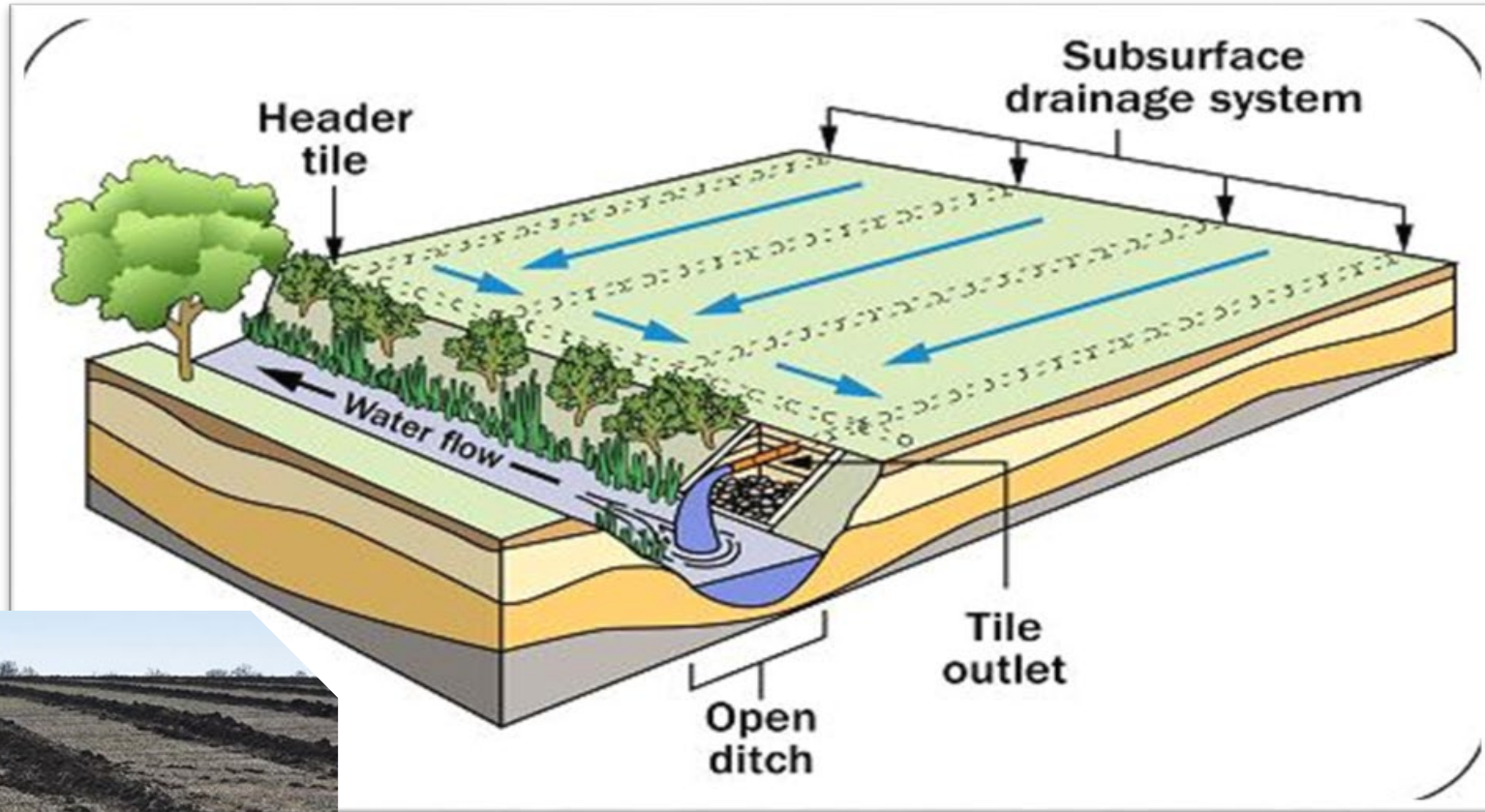
Department of
Natural Resources

Environmental
Protection Agency

Lake Erie
Commission

H2Ohio

Altered Hydrology



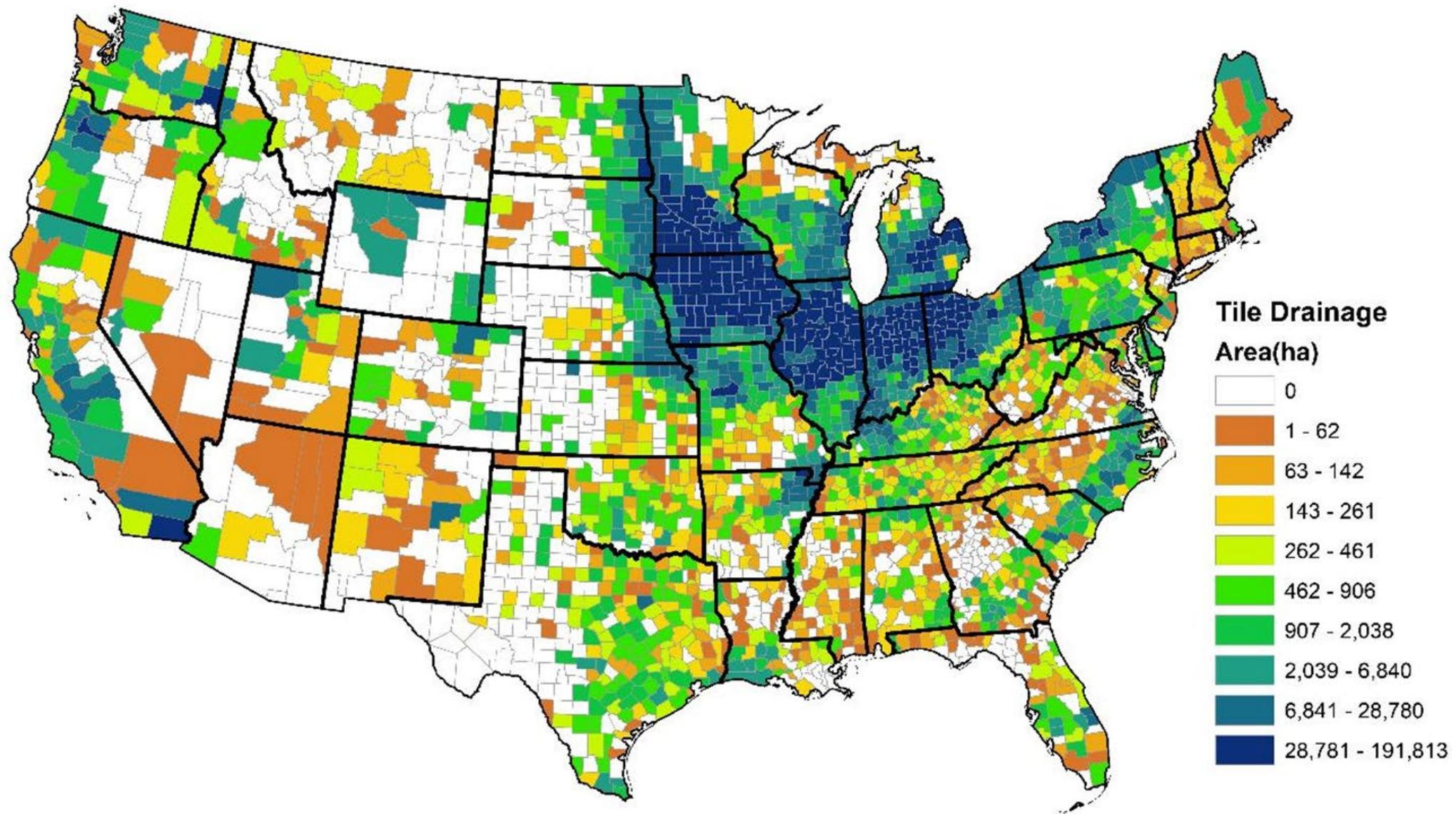
Department of
Agriculture

Department of
Natural Resources

Environmental
Protection Agency

Lake Erie
Commission





Department of
Agriculture

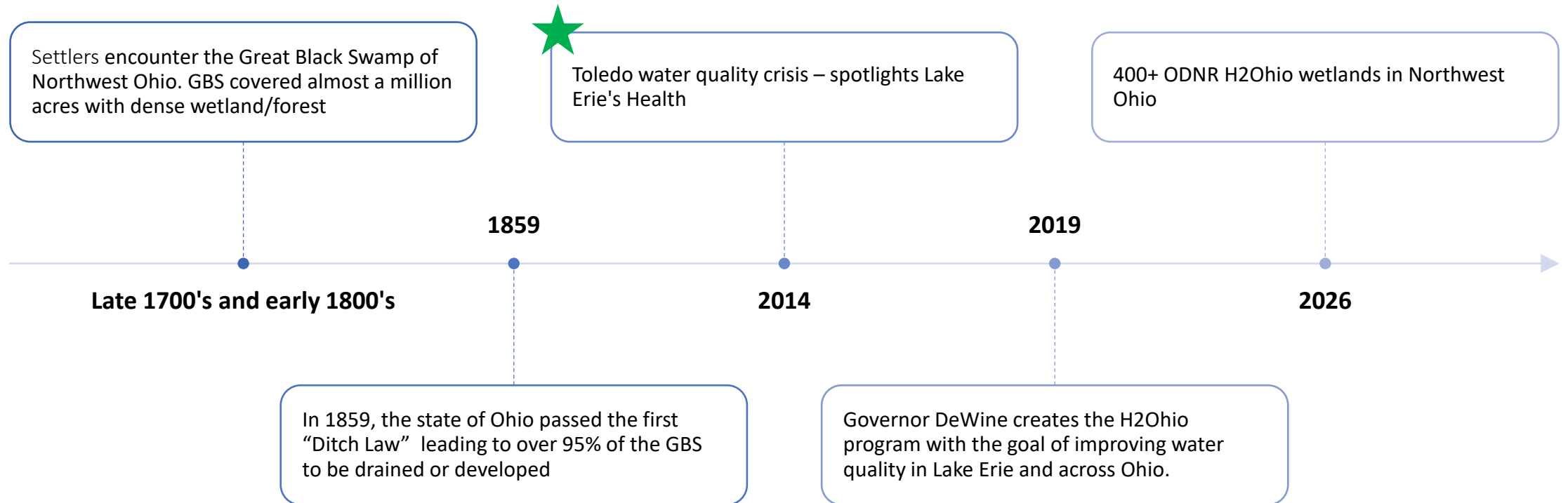
Department of
Natural Resources

Environmental
Protection Agency

Lake Erie
Commission



An Oversimplified Northwest Ohio Water Quality Timeline



Department of
Agriculture

Department of
Natural Resources

Environmental
Protection Agency

Lake Erie
Commission





Department of
Agriculture

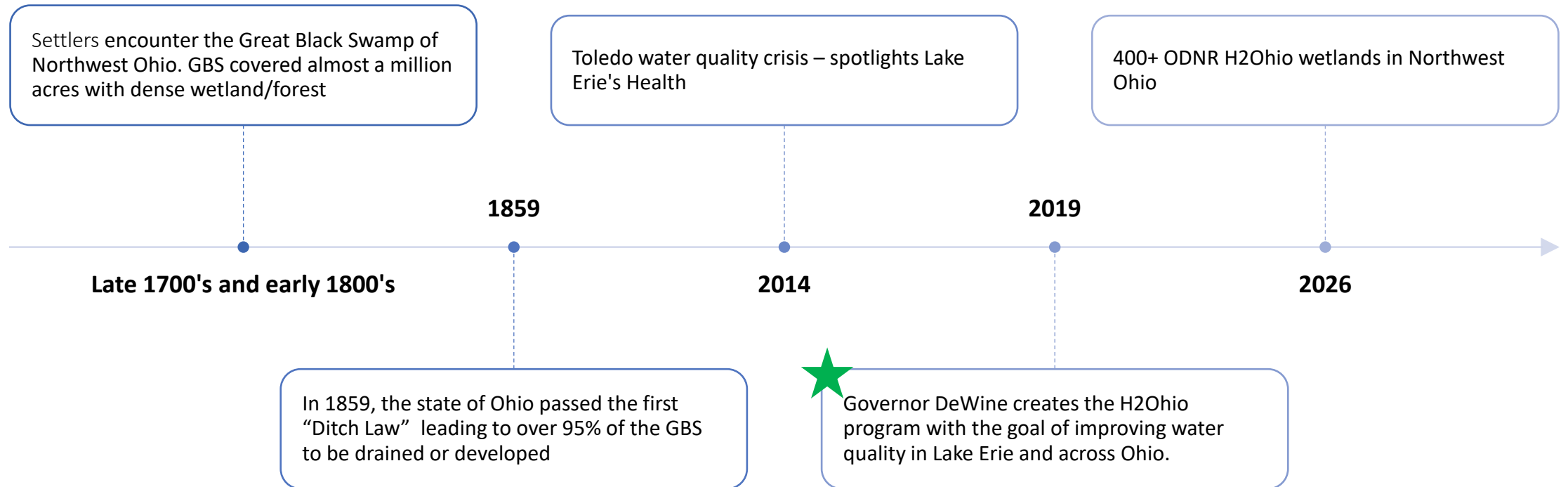
Department of
Natural Resources

Environmental
Protection Agency

Lake Erie
Commission

H2Ohio

An Oversimplified Northwest Ohio Water Quality Timeline



Department of
Agriculture

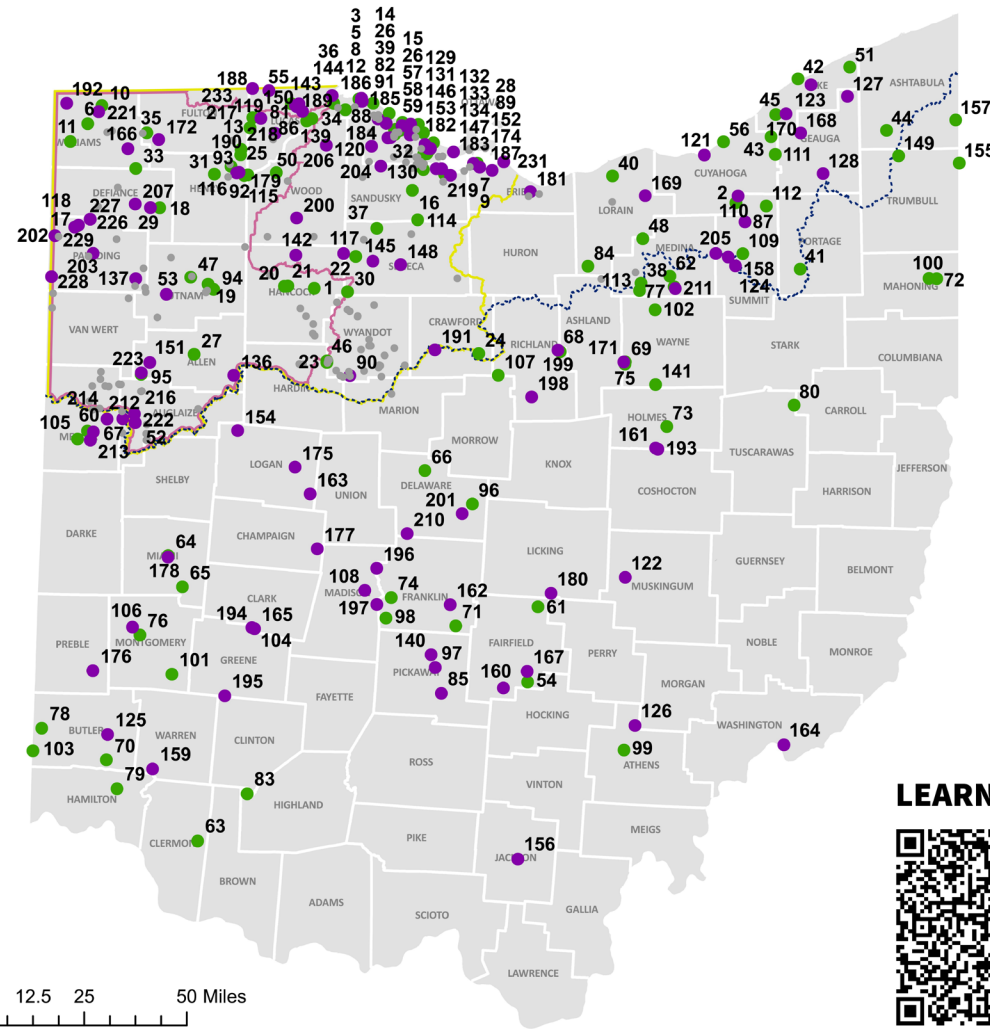
Department of
Natural Resources

Environmental
Protection Agency

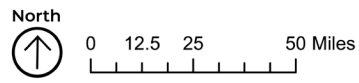
Lake Erie
Commission



H2Ohio Wetlands Projects by Status



- Completed Projects
- Projects in Progress
- Water Quality Incentive Program Projects
- Western Lake Erie Basin
- Maumee River Watershed
- Lake Erie/Ohio River Watershed Divide



LEARN MORE



Department of Agriculture

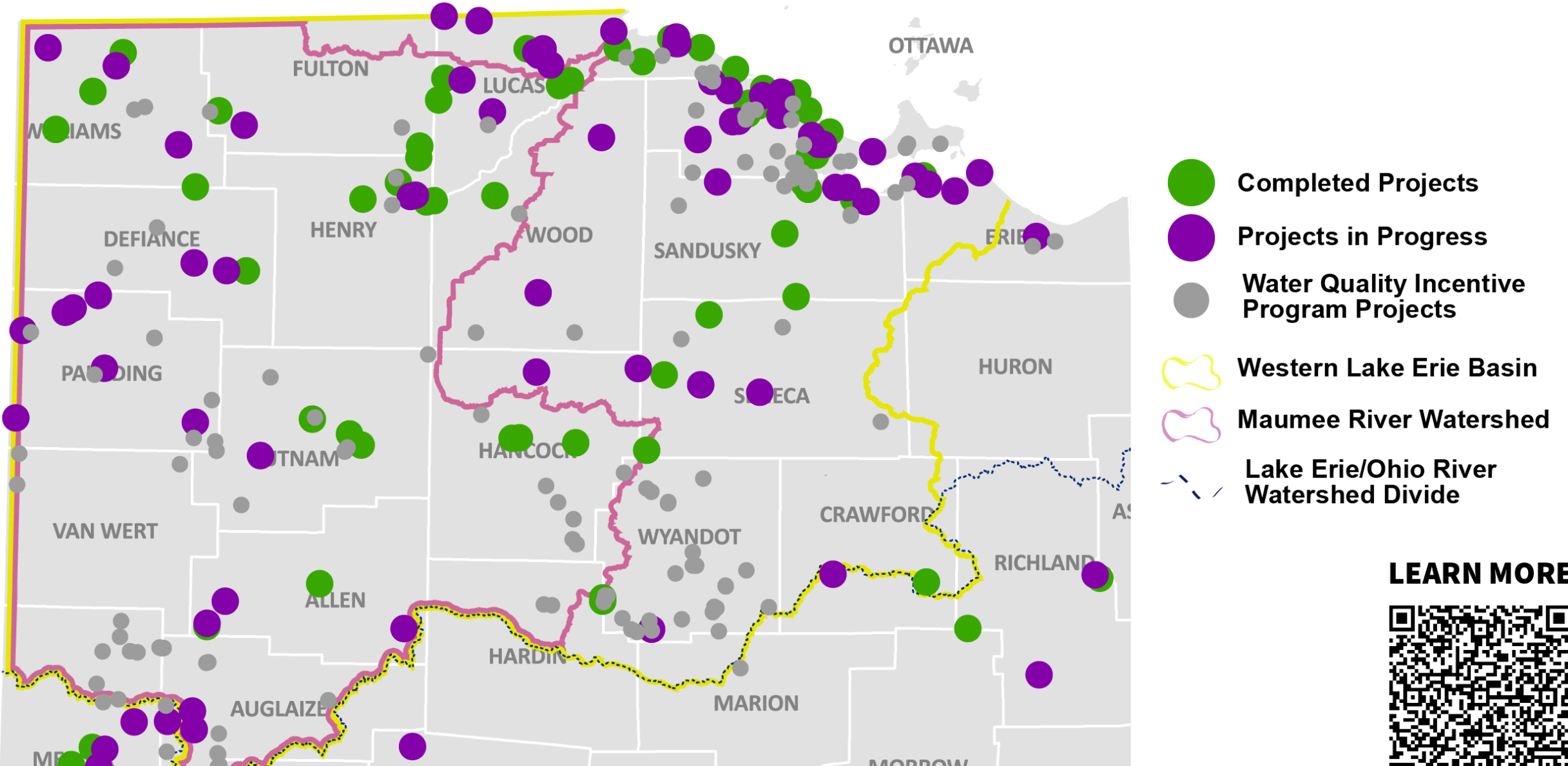
Department of Natural Resources

Environmental Protection Agency

Lake Erie Commission



H2Ohio Wetlands in Northwest Ohio



LEARN MORE



What makes a good site for a H2Ohio Project?

- **Site has strong hydrological connection**
 - [Ability to intercept/interact with surface water]
- **Site contains hydric soils**
 - [Soils with the ability to hold water]
- **Site can capture a large watershed drainage**
- **Site can slow the movement of water and hold it longer on the landscape**
- **Natural Infrastructure project is designed for nutrient reduction as the primary focus**



Questions we ask partners: How does water enter and leave the wetland? What are the sources of water to the wetland? Is the wetland managed with control structures or pumps? What kind of drainage area feeds into the wetland?



Department of
Agriculture

Department of
Natural Resources

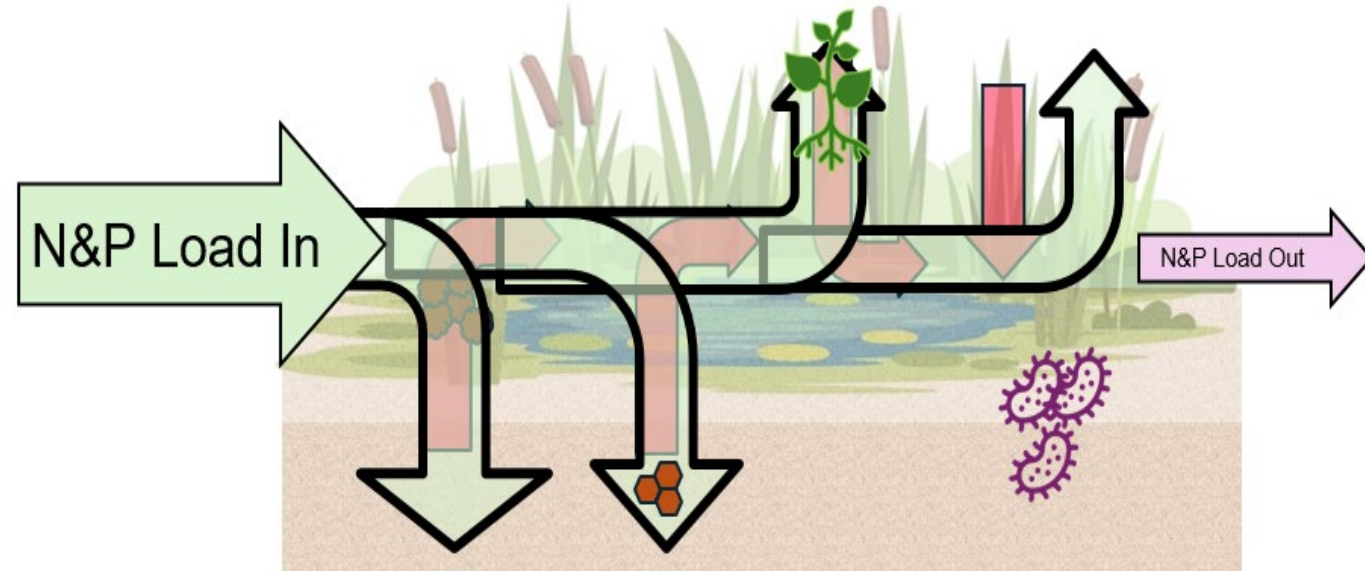
Environmental
Protection Agency

Lake Erie
Commission



Three Means of Nutrient Retention

- Particulate / Sediment Settling & Burial
- Uptake & Storage by Plants
- Denitrification & Sorption



How We Design Wetlands for Nutrient Capture

- Slow the water DOWN – increase residence time
- Put plants in the water
- Specialty features: denitrification riffles, beaver dam analogs



Department of
Agriculture

Department of
Natural Resources

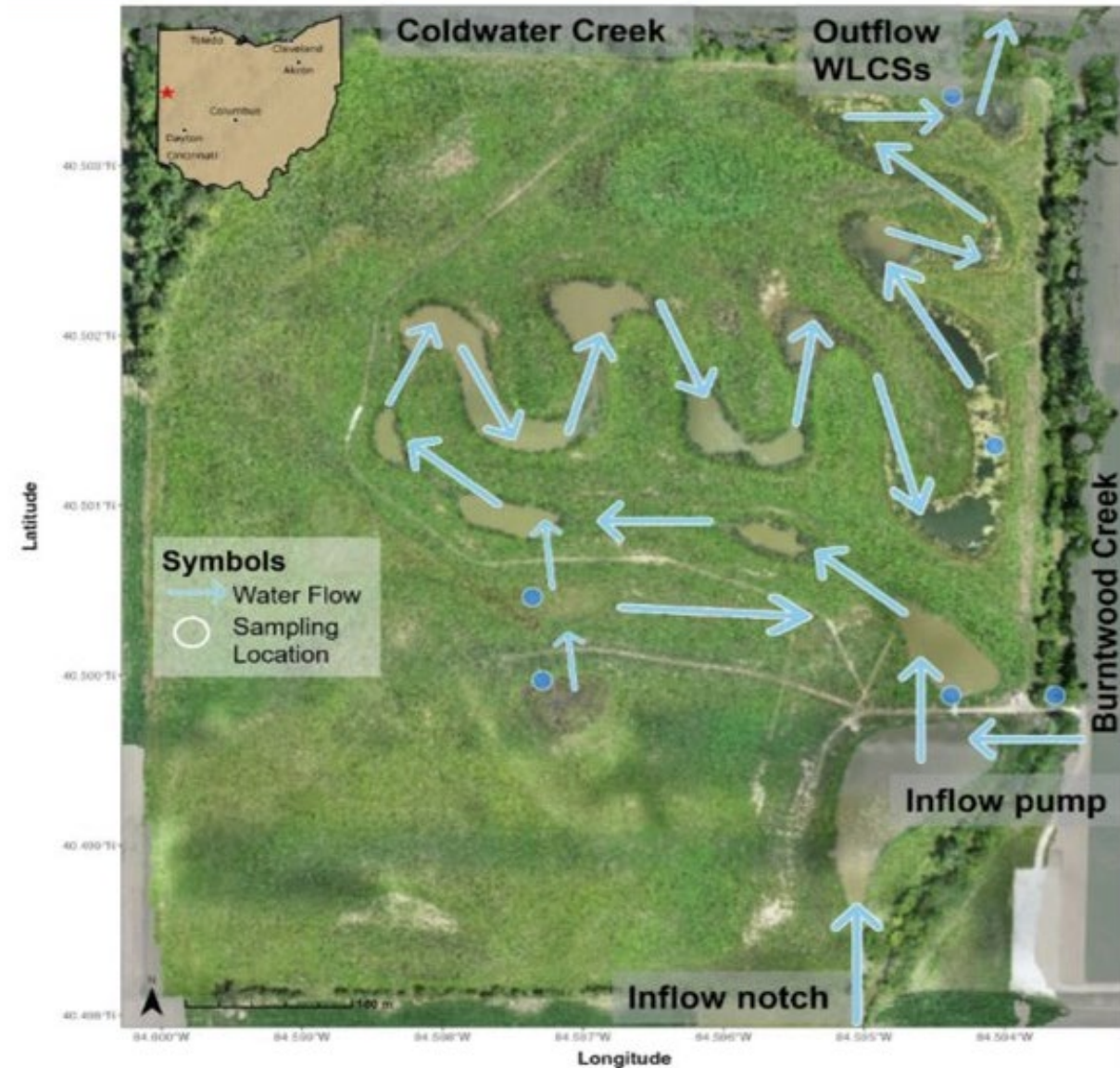
Environmental
Protection Agency

Lake Erie
Commission



How We Design Wetlands for Nutrient Capture

- **Slow the water DOWN – increase residence time**
 - Test soil Phosphate Sorption Capacity
 - Design pools with some flow or other means to avoid prolonged anoxic conditions
- **Put plants in the water**
 - focus on new plant growth, bigger plants and more diversity
- **Specialty features:**
 - denitrification riffles, beaver dam analogs, seepage berms, phosphorus traps, soil amendments, etc



Department of
Agriculture

Department of
Natural Resources

Environmental
Protection Agency

Lake Erie
Commission



H2Ohio/ BSC Project Overview: Forder Bridge Floodplain Reconnection

H2Ohio Funding Selection Highlights:

Funded: 2020

Completed: June 2021

Status: Completed

County: Paulding

Watershed: Maumee River

Funding Amount: \$513,000

Expected phosphorus reduction:

24 lbs/yr

Restoration Results:

Wetland: 4 acres

Reforestation: 1 acre

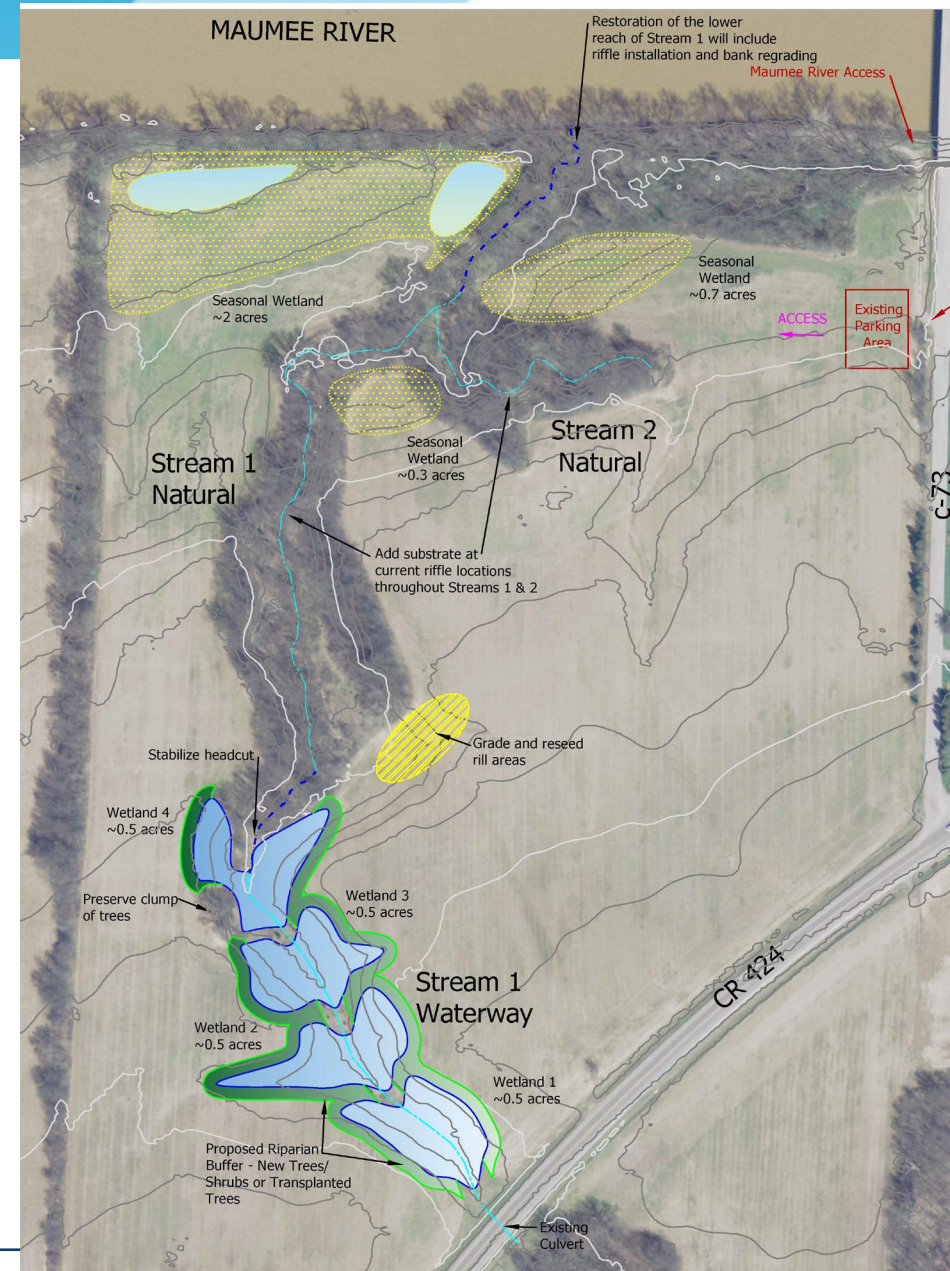
Meadow: 1 acre

Stream Restoration: 680 ft

Stream Stabilization: 1600 ft

Phosphorus reduction:

43 lbs/yr



Department of
Agriculture

Department of
Natural Resources

Environmental
Protection Agency

Lake Erie
Commission



H2Ohio/ BSC Project Overview: Forder Bridge Floodplain Reconnection



Department of
Agriculture

Department of
Natural Resources

Environmental
Protection Agency

Lake Erie
Commission



H2Ohio/ BSC Project Overview: Forder Bridge Floodplain Reconnection



Department of
Agriculture

Department of
Natural Resources

Environmental
Protection Agency

Lake Erie
Commission



H2Ohio/ BSC Project Overview: Forder Bridge Floodplain Reconnection

Native Plant & Wildlife Response:

Carex lacustris

Grey Tree Frogs

Northern Leopard Frogs

Wandering Glider

Powdered Dancer

Royal River Cruiser

Dusky Dancer

Green Heron



Department of
Agriculture

Department of
Natural Resources

Environmental
Protection Agency

Lake Erie
Commission



H2Ohio/ BSC Project Overview: St. Joseph's River Restoration Projects

H2Ohio Funding Selection Highlights:

Funded: 2020/2021

Completed: 2021

Status: Completed

County: Williams

Watershed: Maumee River Watershed

Funding Amount: \$2,253,200

Expected phosphorus reduction:
46 lbs/yr

Restoration Results:

Acquired: 94 acres

Wetland: 53 acres

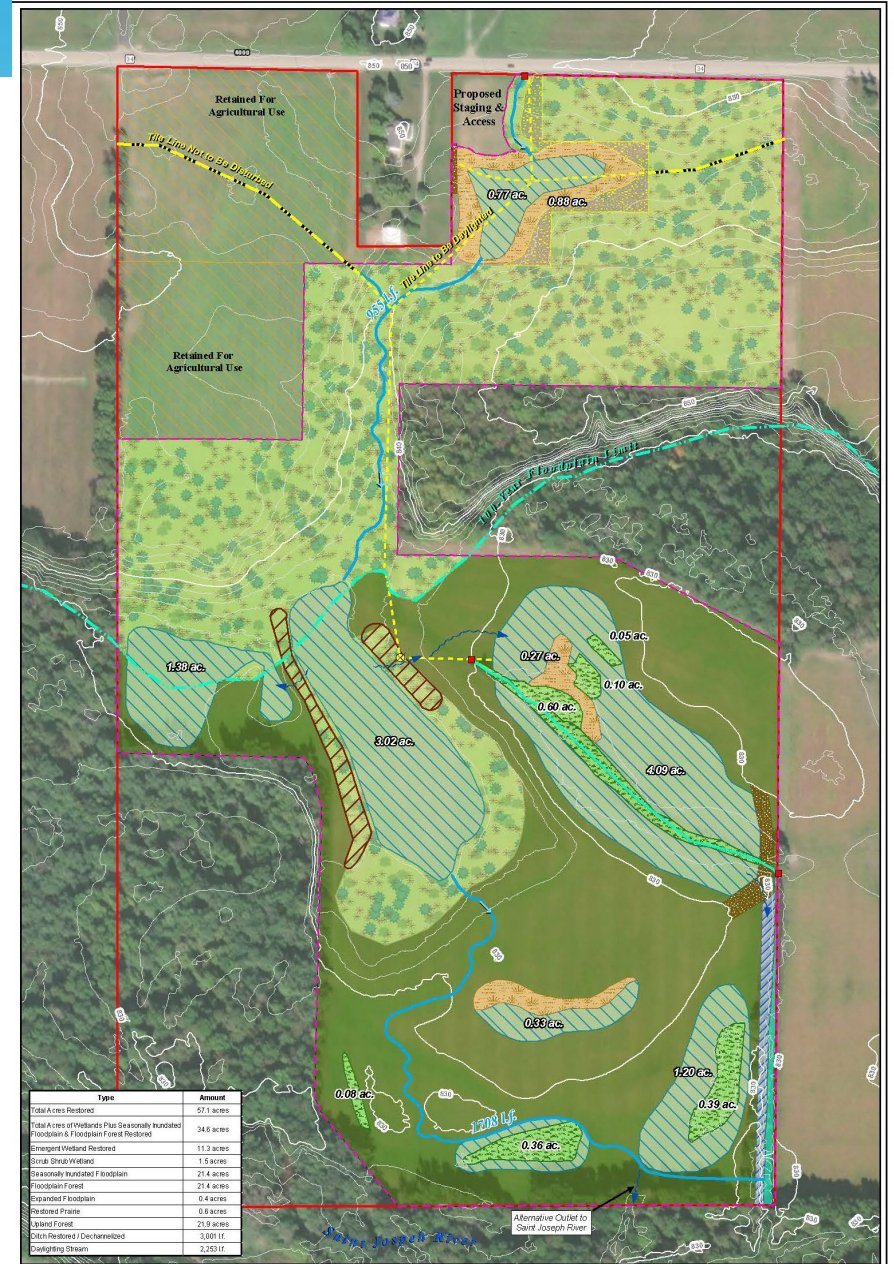
Wetland improved: 19 acres

Reforestation: 54 acres

Prairie: 2 acres

Stream Restoration: 1 mile

Phosphorus reduction:
63-140 lb/yr



Department of
Agriculture

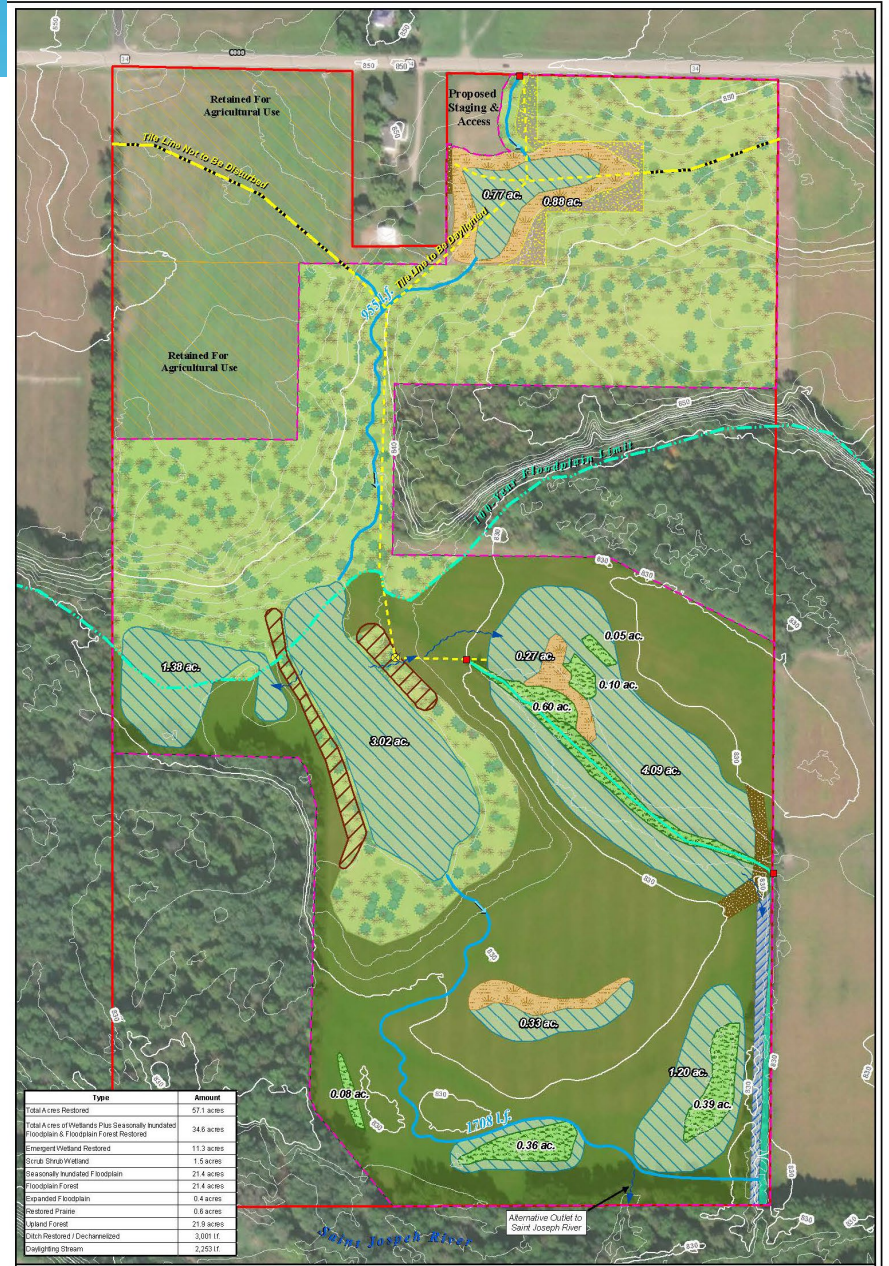
Department of
Natural Resources

Environmental
Protection Agency

Lake Erie
Commission



H2Ohio/ BSC Project Overview: St. Joseph's River Restoration Projects



Department of
Agriculture

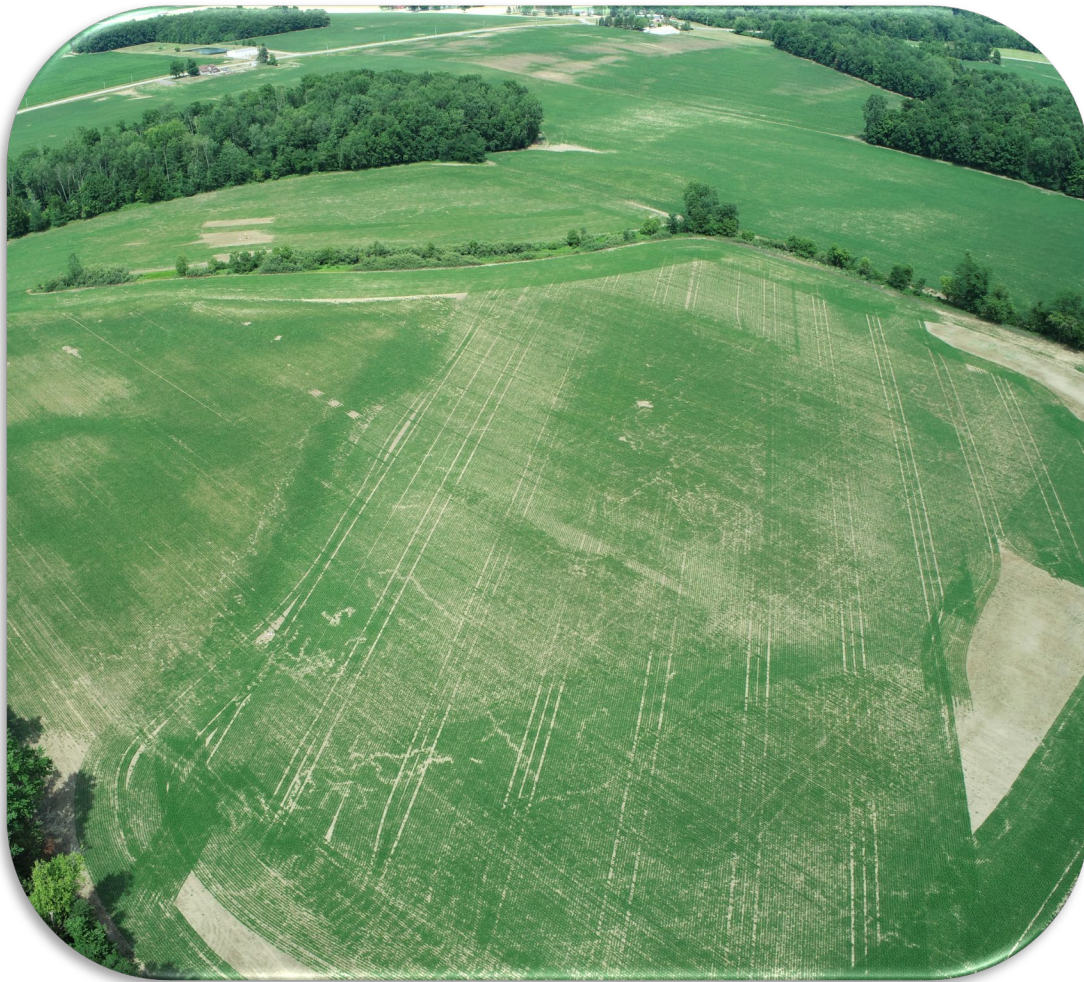
Department of
Natural Resources

Environmental
Protection Agency

Lake Erie
Commission



H2Ohio/ BSC Project Overview: St. Joseph Floodplain Preserve



Department of
Agriculture

Department of
Natural Resources

Environmental
Protection Agency

Lake Erie
Commission



H2Ohio/ BSC Project Overview: St. Joseph's Confluence Preserve



Department of
Agriculture

Department of
Natural Resources

Environmental
Protection Agency

Lake Erie
Commission



H2Ohio/ BSC Project Overview: St Joseph River Restoration Projects

Native Plant & Wildlife Response:

River Otter

Beaver

Spotted Sandpiper

Woodcock

Willow Flycatcher

Wood Duck

Northern Map Turtle

Blue Spotted Salamander

Blanchard's Cricket Frog

Copperbelly Watersnake ?

Citrine Forktail

Slaty Skimmer

Smoky Rubyspot



Department of
Agriculture

Department of
Natural Resources

Environmental
Protection Agency

Lake Erie
Commission



H2Ohio/ BSC Project Overview: Weisgerber-Pohlmann Nature Preserve

H2Ohio Funding Selection Highlights:

Funded: 2021

Completed: 2022

Status: Completed

County: Williams

Watershed: Maumee River

Funding Amount: \$641,869

Expected phosphorus reduction:
7lbs/yr

Restoration Results:

Acquired: 75 acres

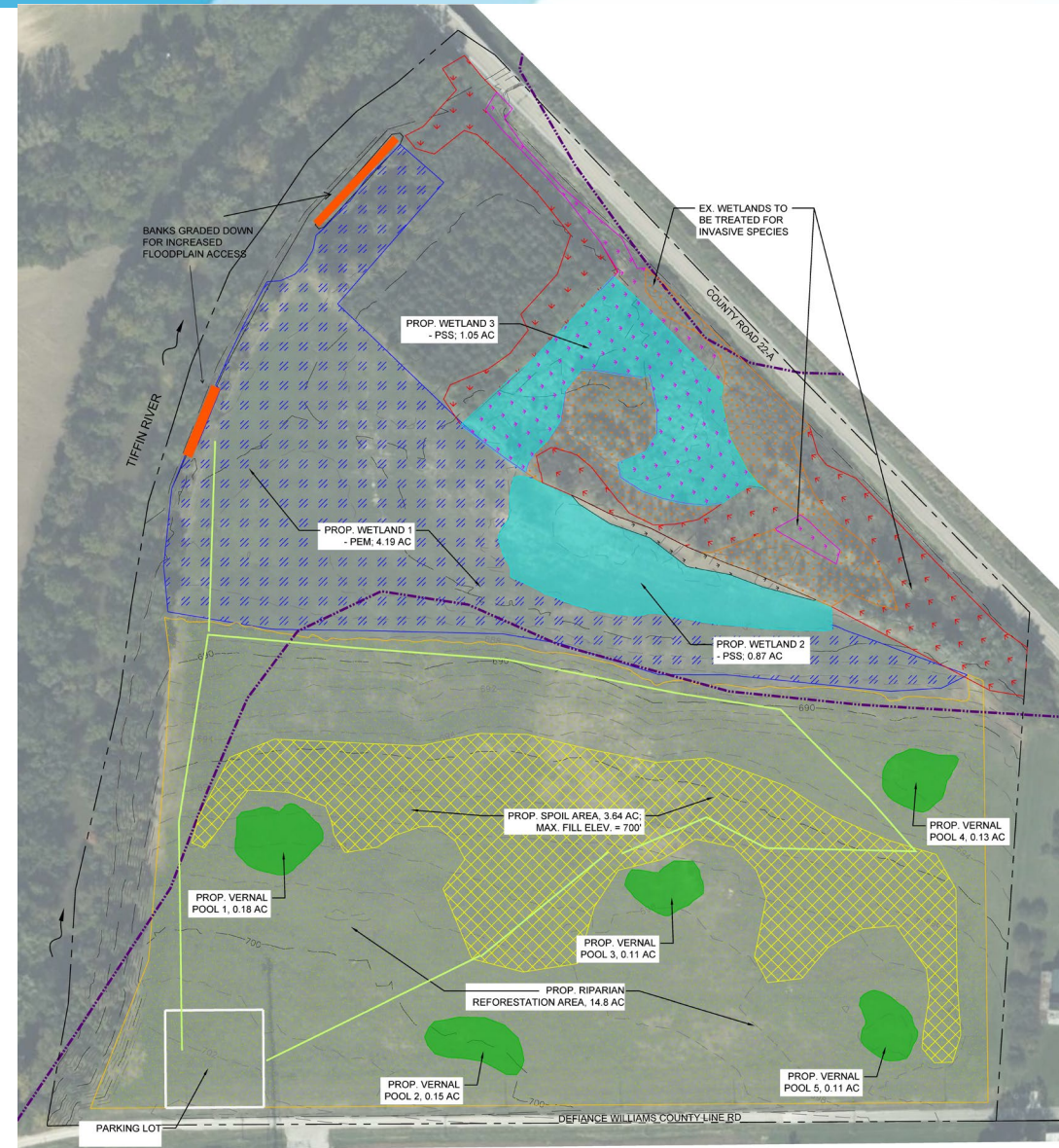
Wetland: 7 acres

Reforestation: 15 acres

Floodplain Reconnection: 500ft

Phosphorus reduction:

5 - 15 lb/yr



Department of
Agriculture

Department of
Natural Resources

Environmental
Protection Agency

Lake Erie
Commission





H2Ohio/ BSC Project Overview: Weisgerber-Pohlmann Nature Preserve



Department of
Agriculture

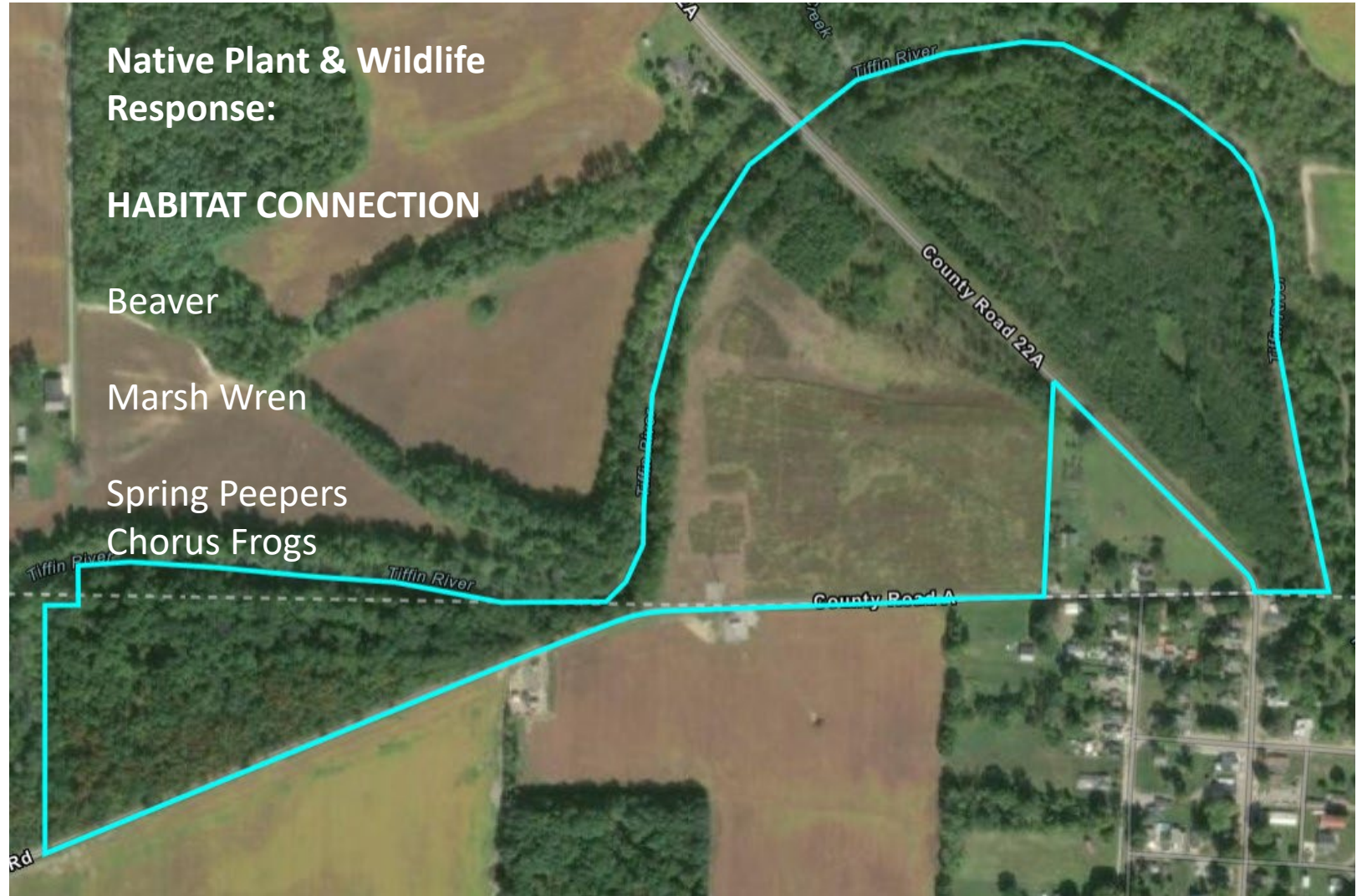
Department of
Natural Resources

Environmental
Protection Agency

Lake Erie
Commission



H2Ohio/ BSC Project Overview: Weisgerber-Pohlmann Nature Preserve



Department of
Agriculture

Department of
Natural Resources

Environmental
Protection Agency

Lake Erie
Commission



H2Ohio Wetland Monitoring Program



Department of
Agriculture

Department of
Natural Resources

Environmental
Protection Agency

Lake Erie
Commission



Monitoring Program Updates and Insights

- 2023 Annual Report: 23 monitored sites (7 Focal)
- 2024 Annual Report: 32 monitored sites (7 Focal)

General Project Insights

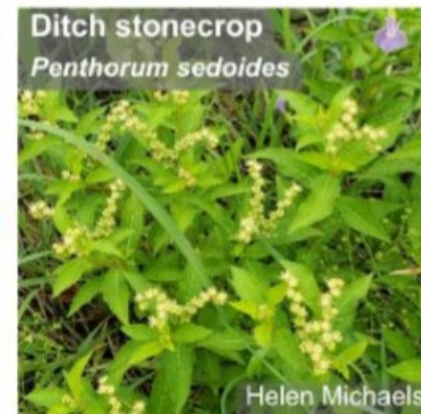
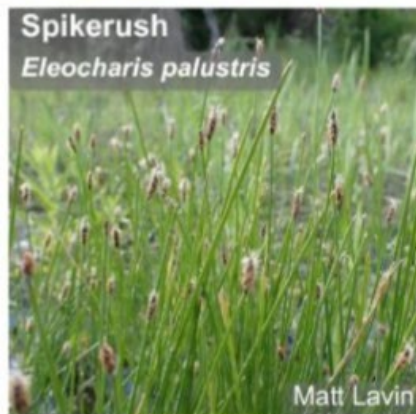
- Watershed to wetland ratio
- Watershed land use
- Elevated N and P concentrations in influent
- Frequent inundation (surface runoff and floodwater)
- Drainage patterns.

Hydrology:

- To maximize nutrient retention, wetland designs should optimize the volume of captured water and its residence time
- Retention time sweet spot showing 3-6 days as best for nutrient reduction
- Connection, connection, connection

Plantings:

- Woody vegetation demonstrates the highest ability to absorb nutrients
- Other plants that are showing high performance nutrient reduction are listed at right.



H2Ohio

BY THE NUMBERS

499



Wetland projects

19,829

Acres of wetland and associated habitat restoration

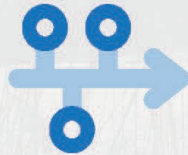


340

Completed wetland projects

\$186,932,785

Total funding invested



91

Conservation partners

269

Water Quality Incentive Program (WQIP) partners



Department of Natural Resources



Department of Agriculture

Department of Natural Resources

Environmental Protection Agency

Lake Erie Commission

H2Ohio



Questions?



Department of
Natural Resources
ohiodnr.gov



Department of Agriculture

Department of Natural Resources

Environmental Protection Agency

Lake Erie Commission

H2Ohio

Three blue wavy lines are positioned below the "H2O" portion of the "H2O"hio logo, suggesting water or a liquid state.