

A large group of people are seated at long, light-colored folding tables arranged in rows under a large tent with orange and white striped walls. The people are mostly seen from the back, looking towards the front of the tent where a presentation is taking place. The scene is outdoors, with grass visible at the bottom. The text is overlaid on the upper half of the image.

It Takes a Village: Partnerships and Projects in the WLEB

Jessica D'Ambrosio
The Nature Conservancy

The Nature Conservancy

- ✓ Largest Conservation Organization in the World (50 states, 70 countries)
- ✓ Established in 1960s
- ✓ 501c3, public and private funding
- ✓ Started out buying and preserving unique habitats
- ✓ Evolved our mission to encompass protecting the land and water upon which all life depends





SLAVT

HOW THEY WERE NAMED

The Conservancy's Approach

- Interrupt the Nutrient Sources and Delivery Pathways.
 - Practices: SWCDs + Landowner + Public funding
- Boots on the Ground to Build Capacity and Knowledge.
 - Field Days + Learning Network
- Deliver/Transfer Science-based Information.
 - Mapping + Modeling + Tools

Sauder Village Historical Museum

- **Issue:** Extreme rain flooded property; damaged historical artifacts.
- **Solution:** Find ways to manage water runoff + educate public + recreation opportunities
- **Strategy:** Master Plan. Build Capacity. Public Grant (Great Lakes Commission).

Sauder Village, Fulton SWCD, Ohio DNR
Division of Wildlife, TNC

Sauder Village Wetland Project



15 ac-ft storage volume; 11 acres water; 5 acres native grasses & wildflowers; 3 acres Oak Savanna; 9 acres natural cover; 1 mile walking trail

GLRI/OEPA Sediment Reduction

- **Issue:** Sediment and nutrients pollution affecting Maumee River Basin.
- **Solution:** BMP practices to reduce sediment/nutrients; information transfer
- **Strategy:** Install practices. Monitor efficacy. Teach others about practices.

Landowners, Ohio State University, OSU Extension, Putnam SWCD, USDA-ARS, TNC

BMP Handbook

- ✓ Printed guide and online web resource, <http://agbmps.osu.edu>
- ✓ Focus on Ohio, Indiana, and Michigan tile drained landscapes.
- ✓ Distributed to all 88 counties in Ohio



**A Field Guide to Identifying
Critical Resource Concerns and
Best Management Practices
for Implementation**



THE OHIO STATE UNIVERSITY
COLLEGE OF FOOD, AGRICULTURAL,
AND ENVIRONMENTAL SCIENCES

Outreach

- ✓ 2 Field days
- ✓ 4 Factsheets
- ✓ 9 Public presentations
- ✓ 5 Project site signs
- ✓ 4 Newsletter articles
- ✓ 3 Printed press pieces
- ✓ 1 Project poster

20,000 indirect; 750 direct engagement

SEDIMENT & NUTRIENT REDUCTION BMPs IN TILE DRAINED FARMLAND

Great Lakes RESTORATION

Blind Inlet Case Study
Putnam County, OH

PROJECT HISTORY AND PURPOSE

The Maumee River is the largest water body in the Lake Erie Basin. More than 80% of the land in the basin is used for agriculture. The soils are mainly clay, deposited in the part of the Great Black Swamp, and have extensive subsurface drainage that facilitates drainage of farmland.

The Maumee River watershed has received a lot of attention for the amount of fine sediment causing channel maintenance activities. Channel maintenance activities give rise to abundant nitrogen, which further degrades water quality.

Blind Inlets are a conservation practice for soils with low permeability. They are designed to drain and filter surface runoff before it enters the water body. Blind inlets are well suited to handle up to 2 inches of runoff in a field that needs to be drained.

In 2014, Putnam County and the Ohio Environmental Protection Agency (OEPA) began a project to install blind inlets in Putnam County. Between 2016-2018, 7 of the blind inlets were installed. Funding for this project was provided by the Ohio Environmental Protection Agency.

Site Physical Characteristics

Drainage Area: 1075 acres
Channel Slope, Average: 0.16%
Project Length: 1,500 linear feet
Landowner: William and Jane Oedy

Project Costs

Earth Work Costs: \$11,399.00

- Mobilization: \$1,060.00, lump sum
- Site Preparation, clearing and grubbing: \$900.00
- Soil Excavation, Hauling, Leveling: \$9,439.00
 - ❖ 7,300 cubic yards @ \$1.15 per cubic yard, removal from channel
 - ❖ 4.8 cubic yards per linear foot of channel

Outlet repair, protection and erosion control: \$6,660.00
Seed and Seeding, 1.15 acres: \$5,475.00
Miscellaneous Labor, clean up: \$1,356.00

Engineering, survey, and inspection: \$0 (designed, surveyed and inspection done by Putnam County Engineer, OSU, and Putnam Soil and Water Conservation District)

Total Costs

Total Cost: \$24,890.00
Cost per linear foot: \$16.59
of p removed per year: 120 lbs

Before Construction

During Construction

After Construction

hio Ohio Environmental Protection Agency

USDA Agricultural Research Service

The Nature Conservancy Protecting nature. Restoring life.

Western Lake Erie Basin Agriculture Project Office
210 Clinton Street, Defiance OH 43512
419.782.0422
nature.org/ohio



BMPs

- ✓ 1.5 miles, two-stage ditch
- ✓ 2 P-filter/bioreactors*
- ✓ 11.5 miles, grassed surface drains
- ✓ 50 tile blowout repairs
- ✓ 15 water control structures
- ✓ 9 blind inlets
- ✓ Cascading waterway

*Estimated** Load
Reduction to
Maumee River:
N (lbs/yr): 17,000
P(lbs/yr): 2,000
Sed (tns/yr): 1,600

Sediment & Nutrient Reduction

BMPs

Best Management Practices

In Tile Drained Farmland

This project included implementation & monitoring of the following practices:

FOCUS: Surface Water Drainage

Solution: Surface Ditches planted to grass

Bare soil is vulnerable to erosion and should be vegetated whenever possible to prevent soil loss and sediment pollution. Planting grass to surface field ditches will remove nutrients by creating a biological filter.



FOCUS: In-Field & Edge-of-Field Filters

Solution: Blind Inlets & Phosphorus Filter - Woodchip Bioreactor Systems

In-field and edge-of-field treatment practices can be installed to remove nutrients, especially dissolved reactive phosphorus and nitrates, before they discharge into ditches and streams. Blind inlets occur at low spots in the field. Bioreactors and phosphorus filters are located at a tile outlet.



FOCUS: Drainage Ditches

Solution: Two-stage Ditches

Drainage ditches serve as outlets for the subsurface tile system and function to quickly remove water from a flat landscape. Two-stage ditches improve on traditional ditches by creating "benches" to filter tile water while still providing drainage capacity.



FOCUS: Subsurface Tile Drainage

Solution: Drainage Control Structures & Tile Blowout Repairs

Drainage tile management and repair is key in the balance of productive farms and a healthy watershed. Drainage control structures allow the farmer to manage water leaving the tile and store water for future use. Repairs to tile blowouts reduce the ability of soil to enter the tile system.



Concerned about keeping soil and nutrients in your fields?

Visit agbmps.osu.edu and contact your local SWCD to learn what you can do about it on your farm.

Ohio EPA 319 Projects

- **Issue:** Water management and HABs.
- **Solution:** BMP practices to manage water and nutrients

Landowners, Allen SWCD, Seneca SWCD,
Hancock SWCD, Hancock Co Commissioners,
USDA-ARS, ODA, TNC

Coming soon!

3,100 linear ft Cascading Waterway (Allen Co)
14-acre wetland (Hancock Co)
Phosphorus Demo Farm: P-filters, waterways,
infiltration areas (Seneca Co)



New in 2019:

Working with Supply Chain Partners in WLEB

Kellogg's: Supporting U.S. Farmers
Syngenta: Innovation for Nature Collaboration

- Learning and training programs for farmers and Ag retailers
- Implementing practices to improve water quality
- Tracking environmental outcomes of in-field soil health management



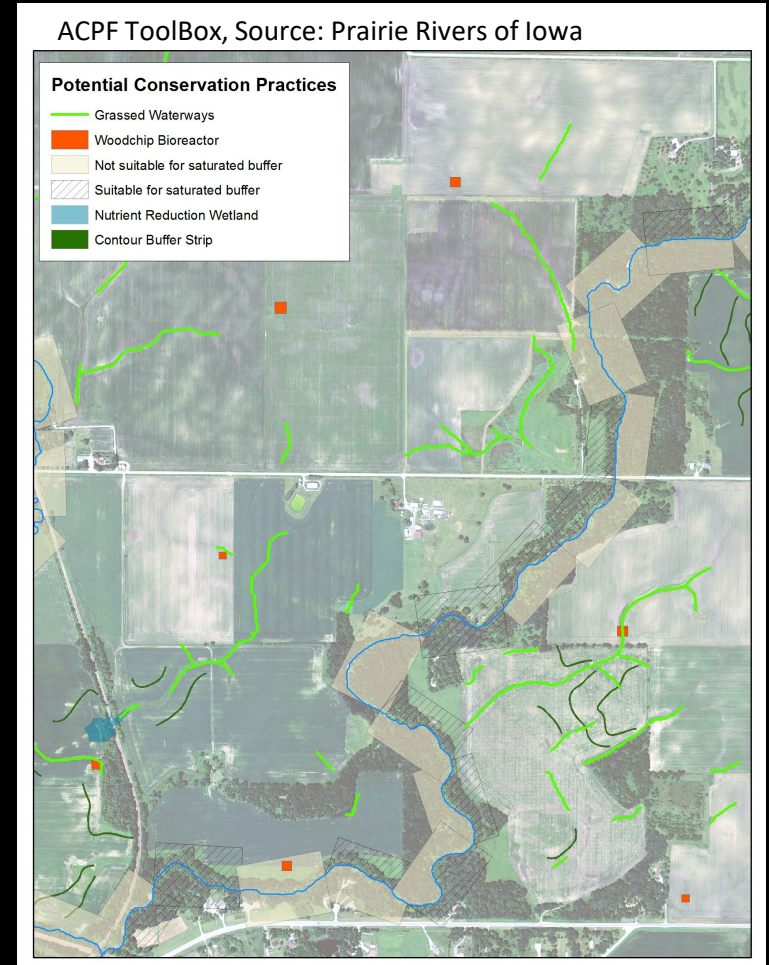
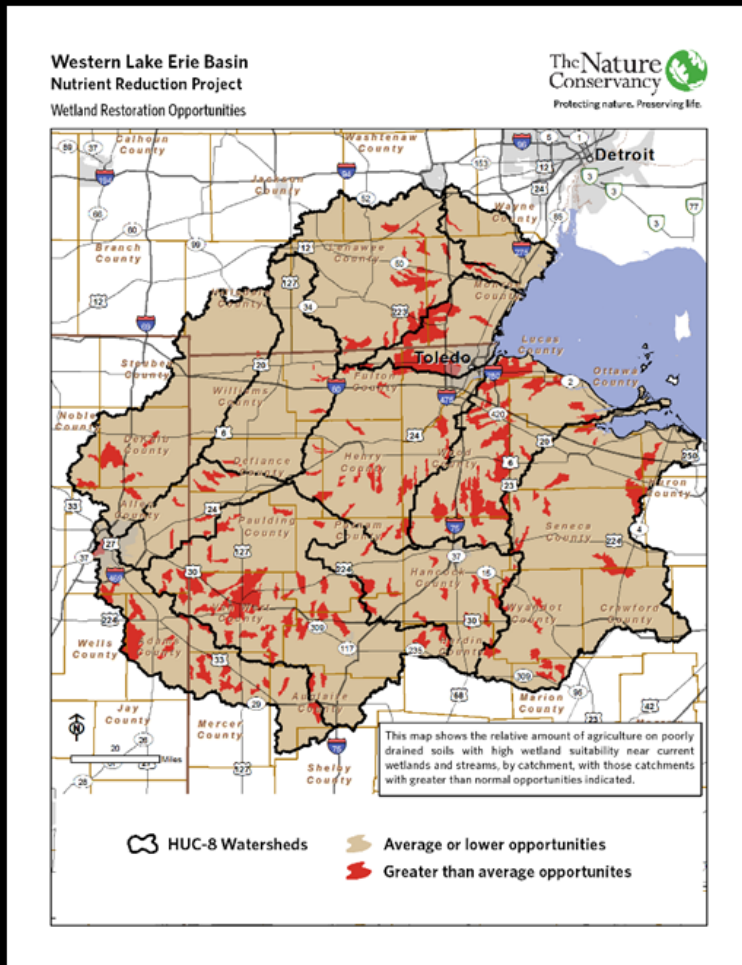
Coming in
2020:

Farmer-led Soil Health Learning Program Pilot

- Learning and training programs for farmers by farmers
- Coordinated, Multiple touchpoints
- Assembling a steering committee (farmers, Extension, TNC, NGO partners, SWCDs...)



Coming in 2020: Delivering Science-based information



= Right practice, right place
decision support

Thank You!

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