

Restoring Great Lakes Coastal Systems

James Cole and Nicole Van Helden



Sandra Scott



National Park Service



U.S. EPA



Doug Wilcox



De Jonge/U.S. EPA



USFWS



Great Lakes Echo



U.S. EPA



kwalliance.org



National Park Service



Richard Vroom/Environment Canada

- 1) Lake-level management
- 2) Coastal resilience through natural solutions
- 3) Integrated coastal management in 4
significant coastal areas

Lake Michigan's Green Bay





Coastal Wetland and Tributary Tool



Coastal Wetland and Tributary Decision Support Tool,...

Coastal Wetland and Tributary Decision Support Tool
Green Bay Watershed

Gray Canvas Topo Map Aerial Photo

Layers—Legend appears if you click nested plus signs

Layer Visibility

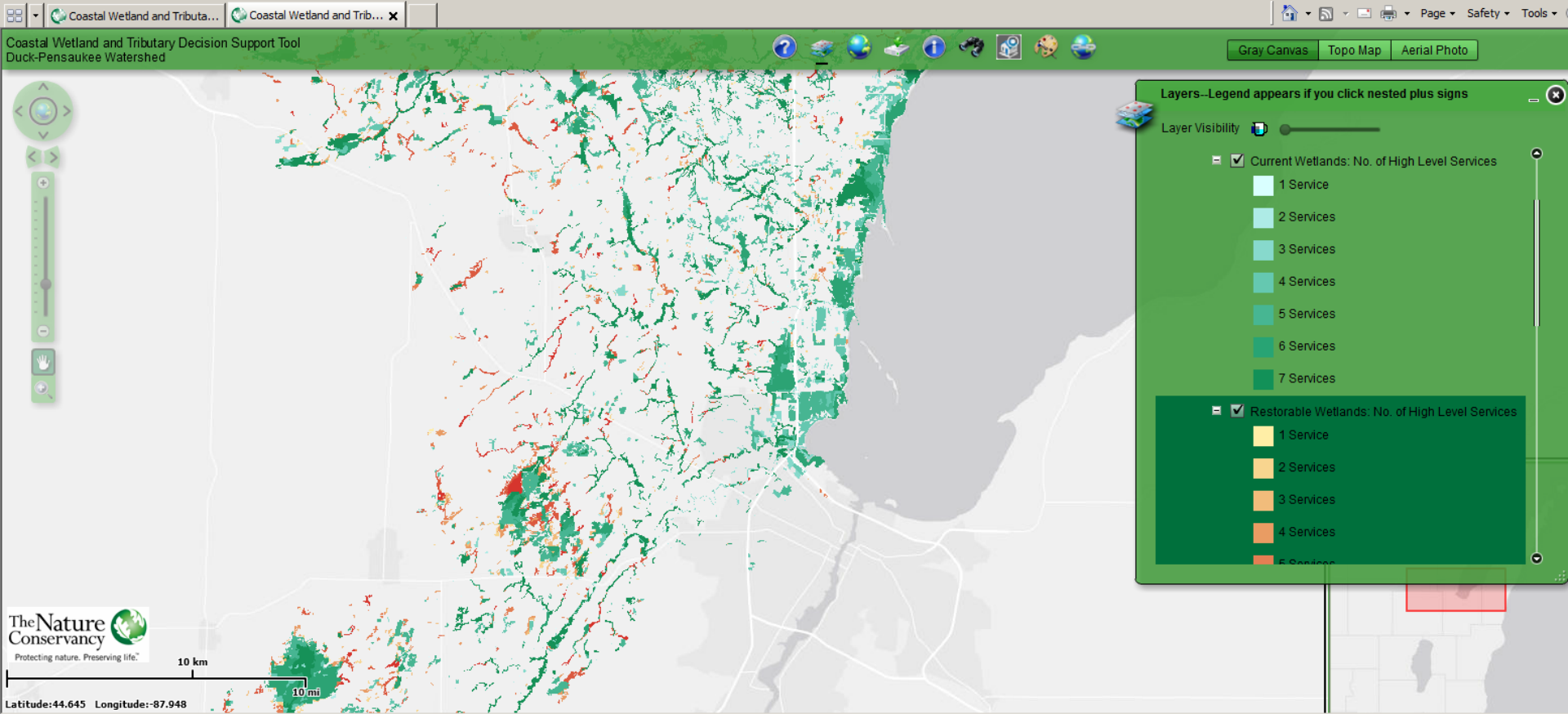
- Coastal Wetland Services Assessments
- Areas with Important Coastal Wetlands
- National Wetlands Inventory—zoom in to view
- Migratory Bird Habitat—darker = more valuable
- Important Bird Areas
- Risk of Fish Habitat Degradation
- EPA Areas of Concern
- Brown Co. Tax Parcels—zoom in to view
- Other Tax Parcels (Oconto Co. included)—zoom in
- Protected Areas
- Conservation Easements
- 2006 Land Cover

Latitude:44.939 Longitude:-87.579

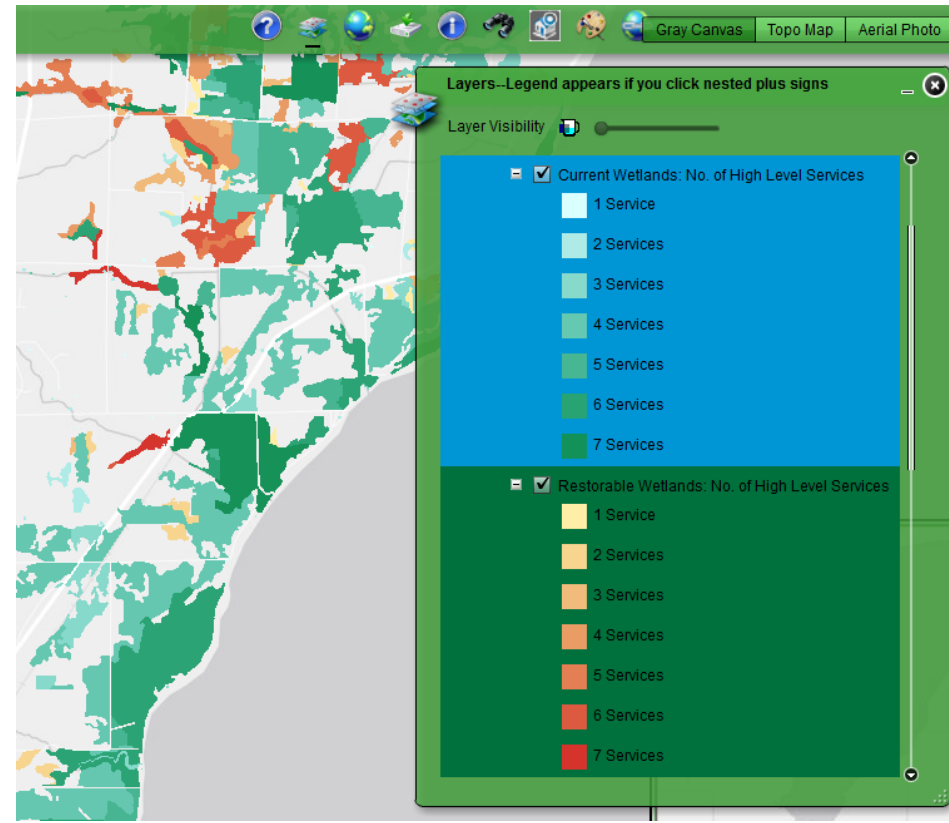
50 km 40 mi

Done Local intranet | Protected Mode: Off

Wetland Protection and Restoration



- Flood Abatement
- Water Quality Protection
- Surface Water Supply
- Carbon Storage
- Shoreline Protection
- Fish Habitat
- Wildlife Habitat



Additional Layers

Coastal Wetland and Tributary Decision Support Tool, Duck-Pensaukee Watershed - Windows Internet Explorer

https://maps.tnc.org/duckpentool/

File Edit View Favorites Tools Help

Convert Select

Favorites Home - Green Bay Content WI CONNECT - Thrive Across America Deltek Time & Expense - Login GLAS Access Suggested Sites Get more Add-ons Add to Wish List

Coastal Wetland and Tribu... Coastal Wetland and Tribu... x

Coastal Wetland and Tributary Decision Support Tool
Duck-Pensaukee Watershed

Gray Canvas Topo Map Aerial Photo

Layers—Legend appears if you click nested plus signs

Layer Visibility

- Shoreline Protection
- Fish Habitat
- Wildlife Habitat
- Wetland Service Losses: 1800's to Present
- Areas with Important Coastal Wetlands
- National Wetlands Inventory—zoom in to view
- Migratory Bird Habitat—darker = more valuable
- Important Bird Areas
- Threatened Fish Occurrences
- Risk of Fish Habitat Degradation
- EPA Areas of Concern
- Brown Co. Tax Parcels—zoom in to view
- Outagamie Co. Tax Parcels—zoom in to view
- Protected Areas
- Conservation Easements
- 2006 Land Cover

The Nature Conservancy
Protecting nature. Preserving life.™

Latitude: 44.674 Longitude: -88.024

1 km 0.5 mi

Local intranet | Protected Mode: Off

100%

3:58 PM
12/3/2012

How Tool Is Being Used

Proactive land protection/restoration

Criteria for grant funders

Wetland mitigation decisions

Promote importance of wetland services

Justification for decision making

Priorities
Partners
Funds

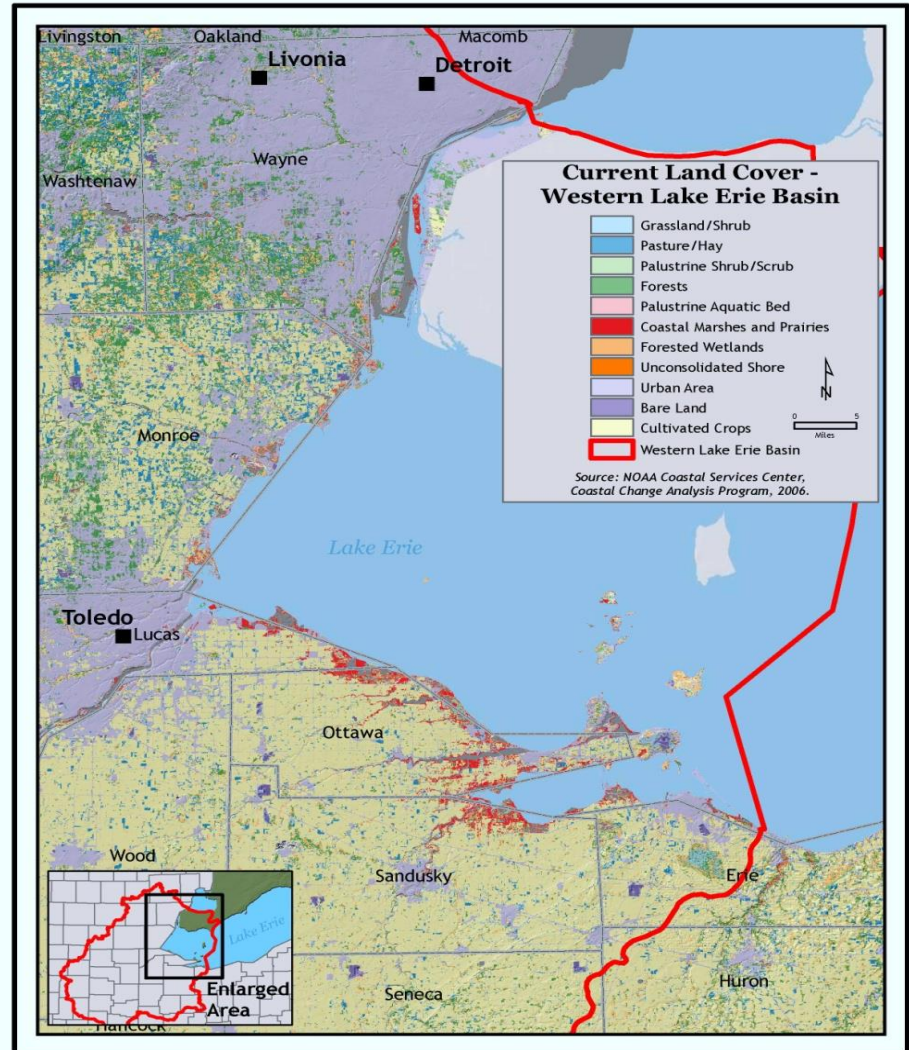


'Whole System' Conservation and the Western Lake Erie Coasts

James Cole, Lake Erie Coastal Conservation Director – TNC Ohio

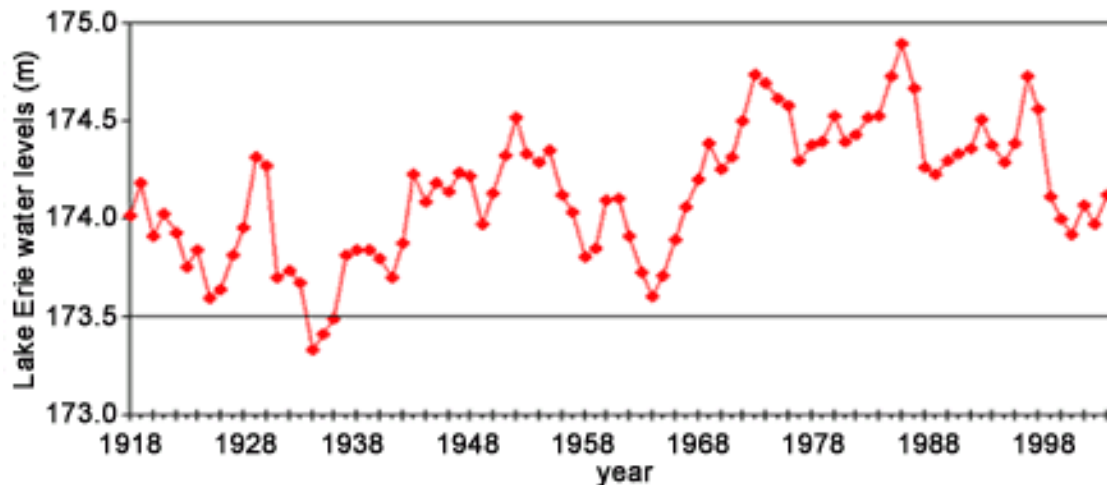
Ecosystem Stressors in Western Lake Erie

- Over 96% of the original wetland habitats along the U.S. shoreline of western Lake Erie have been lost since the 1860s (Herdendorf 1987, Mitsch and Wang 2000).



Ecosystem Stressors in Western Lake Erie

- Most of the remaining coastal wetlands (~84%) have been isolated by earthen dikes to protect them from wave attack and to promote migratory bird habitat (Johnson et al. 1997)



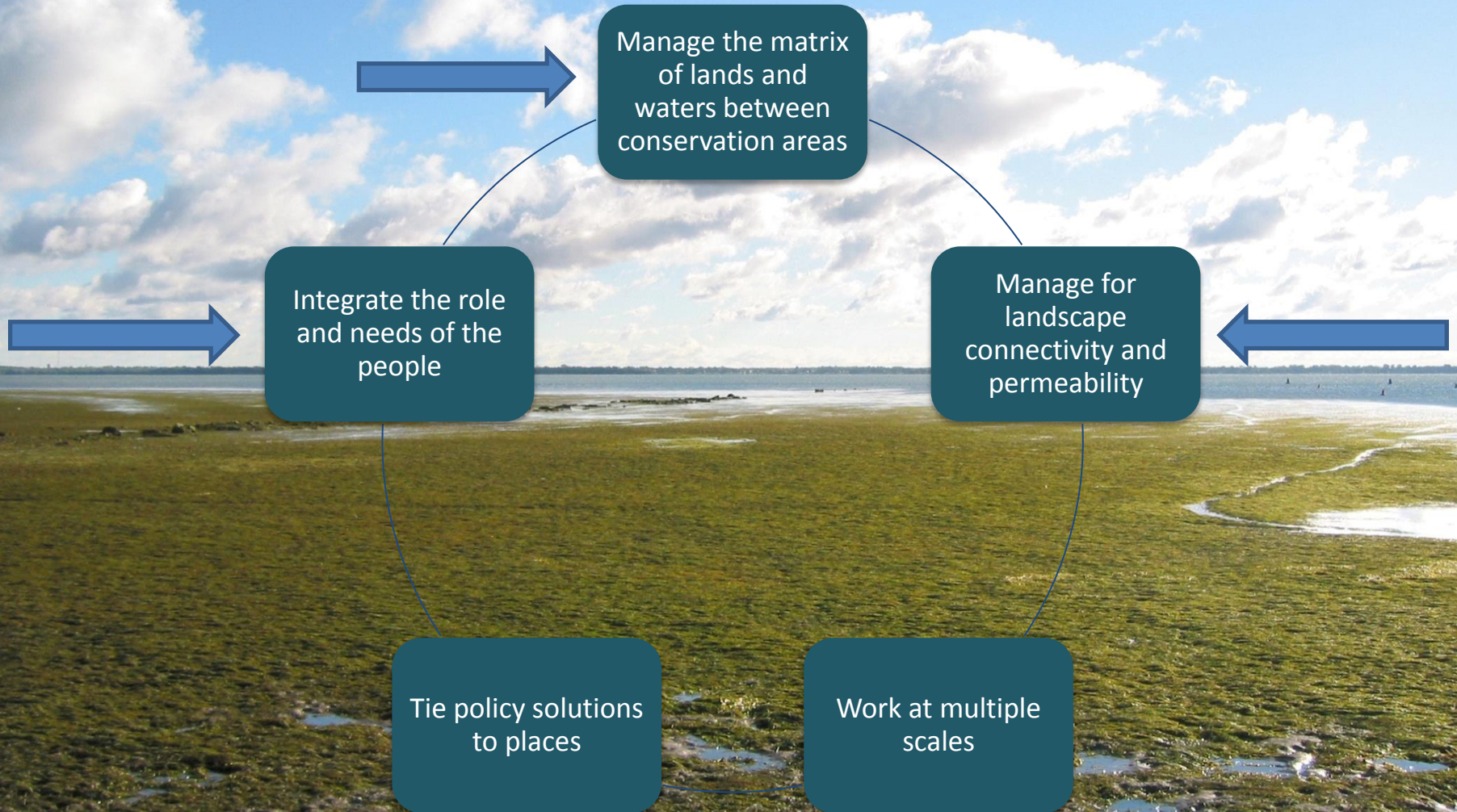
Setting Measurable Goals for WLE Coastal System (2030)

Long-term goal ('whole system' scale):

- Restore 40% natural landcover within 1 mile of the shoreline
- Increase coastal wetland area by 10%
- At least 25% of the coastal wetland area will be hydrologically connected to Lake Erie's nearshore system



'Whole System' Conservation in WLE



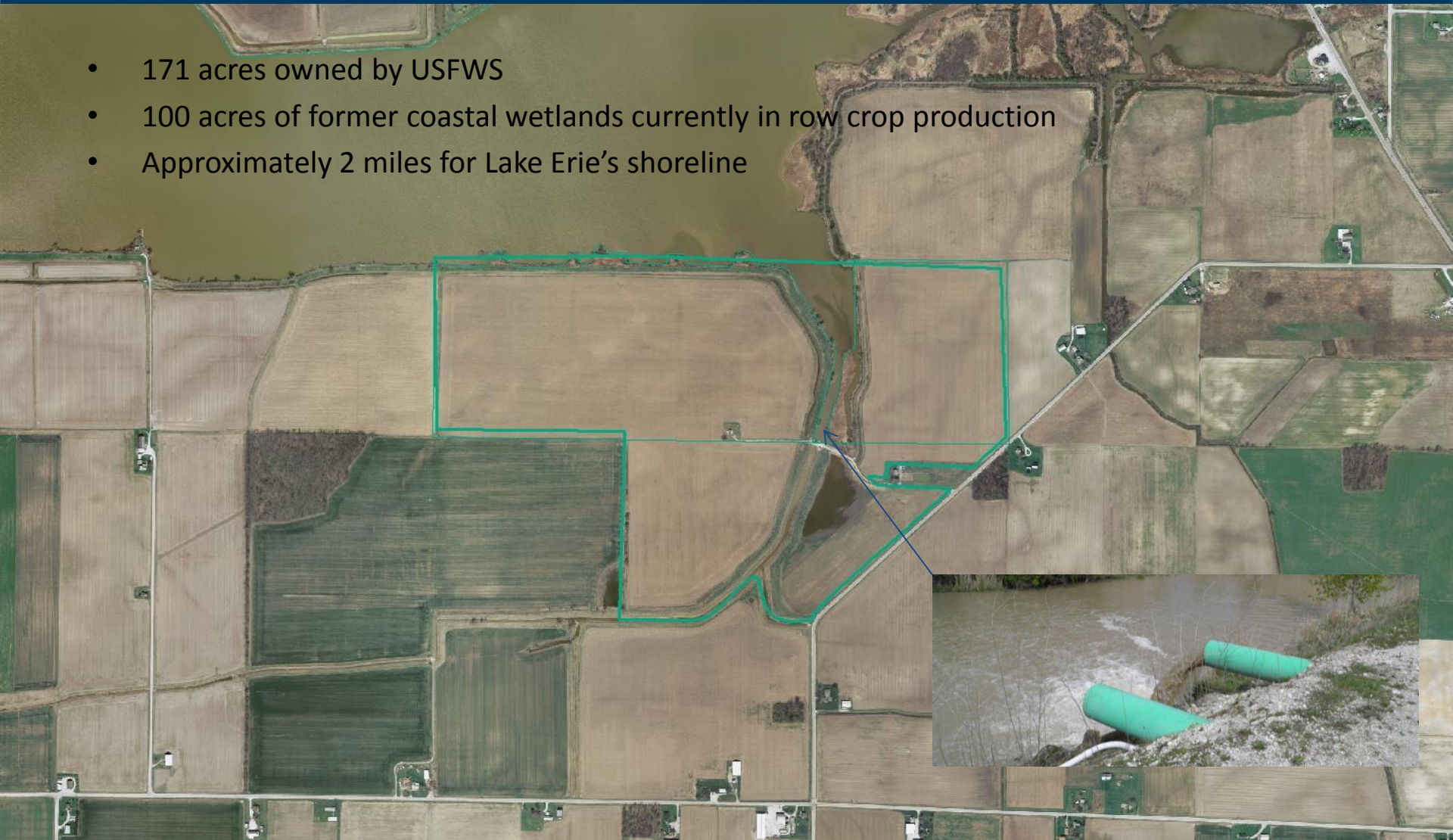
Coastal Habitat Restoration in the Maumee AOC

- Project totaling ~575 acres of restoration
- NOAA federal agreement for AOC habitat restoration
- Contribute to delisting three BUIs
 - Degradation of Fish and Wildlife Populations
 - Degradation of Benthos
 - Loss of Fish and Wildlife Habitat
- Demonstrate management actions that mimic and restore natural ecological functions/processes



The Blausey Tract

- 171 acres owned by USFWS
- 100 acres of former coastal wetlands currently in row crop production
- Approximately 2 miles for Lake Erie's shoreline

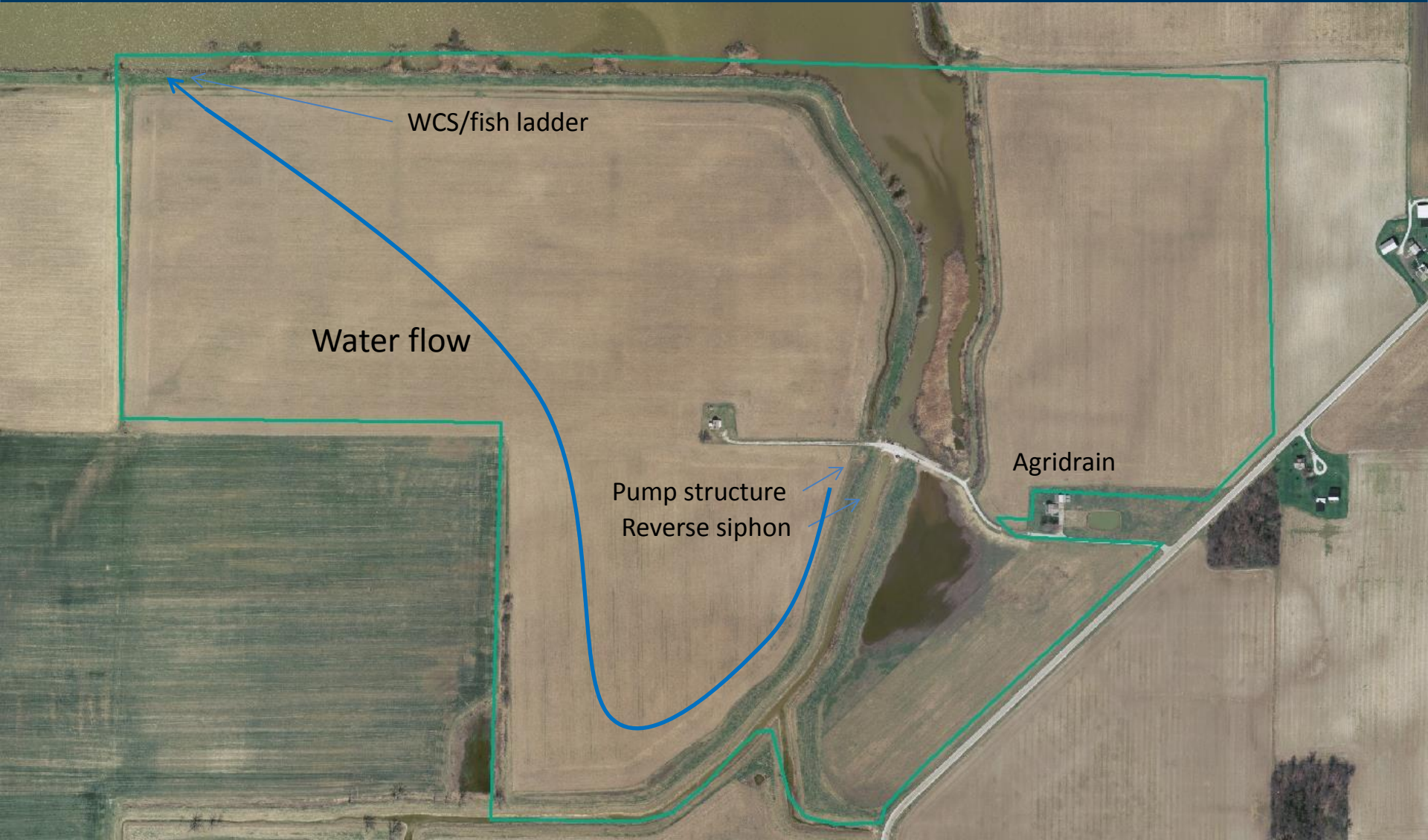


Blausey Restoration

- 100 acres of former coastal wetlands taken out of production
- Sub-surface drain tiles disabled
- Elevate peripheral topographic contours along the western side of the property
- Install a water conveyance system that includes water control and fish passage structures



Blausey New Infrastructure



WCS/fish ladder

Water flow

Pump structure
Reverse siphon

Agridrain

Blausey New Infrastructure

