



## Maumee AOC Advisory Committee

December 10, 2020 9:30am – 12:00pm

### [Join Microsoft Teams Meeting](#)

[1 614-721-2972](tel:16147212972) Conference ID: 631 233 489#

### AGENDA

- **Overview of Meeting & Agenda** (Mike Pniewski, Chair) (5 mins)
- **VOTE: Minutes** (Mike) (5 mins)
- **MAP Spotlight:** WildMAP27a-17 Sandhill Crane Wetland Restoration (Alexis Sakas, TNC) (15 mins)
- **Berger Ditch/Wolf Creek E. coli Source Tracking Study** (Chris Kephart, USGS) (15 mins)
- **2020 Sampling in Otter Creek and Ottawa River** (Marc Mills, US EPA-ORD) (15 mins)
- **Update from BUI 3a, 6, 14a Biological Subcommittee** (Josh Miller, USGS) (15 mins)
  - Status of TBD projects
    - Process to arrive at recommendations
    - HUCs with no recommended projects (3)
    - HUCs with recommended projects (2)
  - Status of pending Maumee River projects
  - Status of pending Ottawa River projects
- **VOTE: Two Recommended AquaMAP TBD Projects (BUI 3a, 6, 14a)** (5 mins)
- **Ohio EPA Updated BUI Status and Recommended Final MAPs List** (Cherie Blair, Ohio EPA) (15 mins)
- **VOTE: One Recommended MiscMAPs/Final Mgmt. Action Project List** (5 mins)
- **US EPA Task Force Leader Report** (Leah Medley, GLNPO) (5 mins)
- **Ohio EPA AOC Coordinator Report** (Cherie) (10 mins)
  - WildMAPs, AquaMAPs, SedMAPs update
  - Maumee AOC field work in 2021
- **Facilitating Organization's Report** (Kris Patterson, PCS) (10 mins)
  - Financial update
  - Outreach activities
  - Update on future activities
- **Meetings for 2021**
  - Second Thursday of the month, once per quarter at 9:30 (Feb. 11, May 13, Aug. 12, Dec. 9) (5 mins)
- **Public Comments & Adjourn** (5 mins)



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### MINUTES

Mike Pniewski, Chair welcomed everyone to the virtual meeting. Attendance included the following: Cherie Blair, Alexis Sakas, Jim Carter, Joey Sink-Oiler, Vanessa Steigerwald Dick, Deanna Bobak, Beth Sparks-Jackson, Melanie Coulter, Tammy Newcomer-Johnson, Kris Patterson, Jenny Carter-Cornell, Mike Pniewski, Deborah Millsap, Karen Keil, Chris Kline, Sally Gladwell, Chris Kephart, Amber Bellamy, Scott Butterworth, Archie Lunsey, Tim Schetter, Leah Medley, Lynn Ackerson, Josh Miller, Jessica Wilbarger, Ryan Darton, Paul Hotz, plus 3 unknown users

**Vote on Minutes:** Mike called for a vote on the August minutes. Chris Kline made a motion to approve the minutes as written, Jenny Carter-Cornell seconded and Kris went through roll call. The motion passed with 8 yes votes.

**Presentation:** Alexis Sakas, TNC gave a MAP Spotlight update on WildMAP27a-17 aka Sandhill Crane Wetland Restoration. Alexis shared a presentation highlighting the significant work to prepare for implementation at the site with detailed sonar imaging to trace drainage tiles and groundwater monitoring to understand the site hydrology. Prep work at the site has started and work on restoration will begin in earnest next year. The presentation is available on [maumeeaac.org](http://maumeeaac.org).

**Presentation:** Chris Kephart, USGS gave a presentation on the Berger Ditch/Wolf Creek E. coli Source Tracking Study. The sampling work is complete & data is being analyzed. The markers present indicate that the e coli is significantly driven by birds and in some areas, has inputs of human sewage. The presentation is available on [maumeeaac.org](http://maumeeaac.org).

**Presentation:** Marc Mills, US EPA-ORD gave a presentation on the 2020 Sampling in Otter Creek and Ottawa River. ORD is doing post-remedy confirmation sampling on the Ottawa River and pre-remedy sampling on Otter Creek so that water & sediment chemistry can be analyzed and effects on benthos, birds, fish, and other organisms can be studied over time.

**Subcommittee update:** Josh Miller, USGS and Beth Sparks-Jackson updated the group on the work from BUI 3a, 6, 14a Biological Subcommittee. Beth & Josh went over a summary of the process the subcommittee used over the last several years, especially most recently in identifying more specific projects in the correct HUCs to meet the BUIs. Even with all the subcommittee's work, there are 3 HUCs with no recommended projects that have impairments and don't meet some or all BUI removal metrics. There are 2 HUCs with recommended projects; Beth gave a brief overview of the projects. The subcommittee held an optional virtual meeting for the committee members that went more in depth on the projects in November. The subcommittee intends to circulate some more global, ecosystem approaches and recommendations to other partners, such as Soil & Water Conservations Districts, to encourage actions that would improve known impairments since the MAAC could not identify discrete projects for numerous HUCs. The University of Toledo and Hull and Associates are working on collecting information and making recommendations on the specific Maumee River projects; however, US EPA is working on reaching out to the applicable Tribes so that formal consultation can be efficient and integrated early on in the future. US EPA and Ohio EPA agreed that the MAAC can proceed with preparing the MAP list without the Maumee River mainstem and lower Ottawa River projects. US EPA is working on assessing the recovery results from the 2010 GLLA project on the lower Ottawa River. Once this data and BUI status are fully evaluated, the MAAC may propose projects in this HUC.



**AquaMAP list vote:** After a brief reminder from Cherie Blair on how important it is to finish making recommendation for the MAP lists and forward them to Ohio EPA for consideration, Mike called for a vote on the two recommended AquaMAP TBD Projects (BUI 3a, 6, 14a) that were previously identified by the sub-committee. Chris Kline proposed accepting the recommended projects for inclusion on the AquaMAP recommended projects list for Ohio EPA & US EPA. Melanie Coulter seconded and the motion passed with 8 yes votes. Tim Schetter, Toledo Metroparks, abstained.

**BUI Status and Recommended Final MAPs:** Cherie Blair, Ohio EPA briefly summarized the Ohio EPA Updated BUI Status and Recommended Final MAPs List. She distributed a handout, available on [maumeeaac.org](http://maumeeaac.org). There is a total of approximately \$85 million requested and \$26 million has been received so far in the last five years. A few highlights include the following:

- results from the limited turtle sampling show that even though the state of Ohio is not removing the consumption limits on turtles, turtle meat samples meet AOC criteria so the AOC program will not be recommending any MAPs.
- For BUI 4, unfortunately, the bullhead study was canceled for 2020. When the sampling can occur, if it still shows impairment, the state anticipates they can monitor conditions once additional WildMAP & AquaMAP projects are implemented to see if that work benefits the impairment enough. No other management actions will be recommended at this time.
- For BUI 10, the advisory at Hecklinger Pond will be removed. The City, health department, and Ohio EPA reviewed past data.
- Ohio EPA has worked with various state and federal partners to identify management actions necessary for addressing contaminated sediment and developed a SedMAP list to identify the next steps and estimated costs towards remediated issues on the lower Maumee River, Swan Creek, and Otter Creek.

**MiscMAP list vote:** After a brief summary from Cherie Blair of the geese deterrent project proposed at Maumee Bay State Park, Mike called for a vote to recommend it. Sally Gladwell made a motion to recommend it, with Jenny Carter-Cornell seconding. It passed with 9 yes votes. This will be the one project on a Recommended MiscMAPs/Final Mgmt. Action Project List as it's targeting the beach closing BUI and no other projects are focused on that BUI. Other identified work to address beach closings, such as addressing the human e coli sources, frequent localized algae issues, and other remaining impairments, will be forwarded to other programs and/or agencies.

**US EPA Report:** Leah Medley, GLNPO reminded the MAAC committee that US EPA is looking forward to getting the completed MAP lists and has more requests for funding already than can be fulfilled under current anticipated available funding. It could be that FFY2021 monies for quarters 1 & 2 are already requested. She applauded the group for continuing to work diligently on this through the pandemic.

**Ohio EPA AOC Coordinator Report:** Cherie updated the group on tentatively planned work for 2021.

- o Cherie let everyone know if they missed the movie premiere, Ohio EPA's short video called Benefitting our Communities, Restoring our Waters, it is on Ohio EPA's Youtube channel, including a version with the Q&A from the panelists. It was well attended with over 100 participants between the two showings.
- o Cherie noted, that with the approval of remaining projects, and those recommended by Ohio EPA, three Management Action Project (MAP) lists will be forwarded to the agencies for consideration. Once approved by US EPA, these represent complete Management Action Project lists, with the agreed upon exception of projects for the lower Maumee River mainstem, lower Ottawa River, and more defined future GLLA removal projects, which is a notable milestone in the AOC process that makes the AOC eligible (but not guaranteed) for GLRI Tier 1 funding. Cherie distributed updated WildMAPs, AquaMAPs, SedMAPs tables.
- o Cherie shared that hopefully FWS will be able to get out in the field in 2021 for the delayed 2020 fish sampling. US EPA – ORD will be continuing sampling on Ottawa River & Otter Creek. Ohio EPA is still working on determining the sampling plan for 2021 and has limited staffing.



**Facilitating Organization's Report:** Kris Patterson, PCS, updated the group briefly on the 2020 activities and grant status.

- Financial update – PCS has spent approximately \$65,000. The extension and additional funding is in place through March 2022 now, which gives us additional flexibility for tasks delayed or changed due to COVID.
- Outreach activities – Kris noted that due to COVID, PCS has increased the digital outreach & encouraged everyone to follow the social media and let Kris know of opportunities to highlight your work in the AOC. A project highlight on Penn 7 is up on the website & on social media. We are working on a few more of those, as well as an annual report. Kris presented on the AOC projects at a conference and Amanda wrote an article for Buckeye Bulletin earlier. The video premiere short videos are also on our social media.
- Update on future activities – Amanda has changed jobs so for now, Kris will be the primary support for the MAAC with Sondra supporting outreach. We are waiting to determine how things change in 2021 to determine if more in person opportunities can be planned. We are focusing on outreach through the website, presentations, and social media.

Meetings were set for 2021 as the following: Second Thursday of the month, once per quarter at 9:30 (Feb. 11, May 13, Aug. 12, Dec. 9)

**There were no public comments & the meeting adjourned early.**

# SANDHILL CRANE WETLANDS



*Water Resource  
Restoration Sponsor  
Program &*



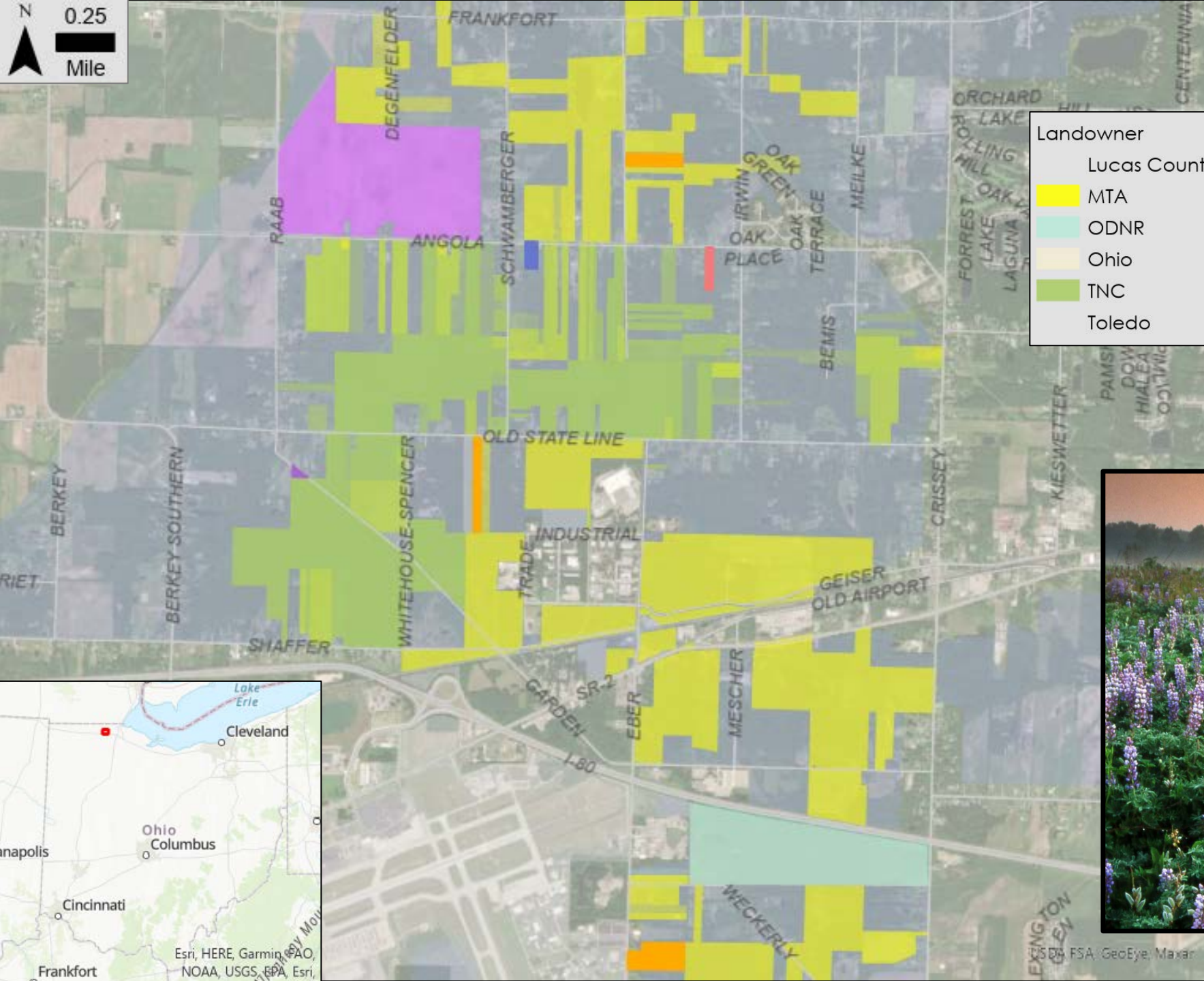
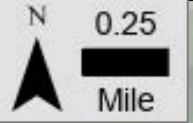
Great Lakes  
RESTORATION



The Nature  
Conservancy

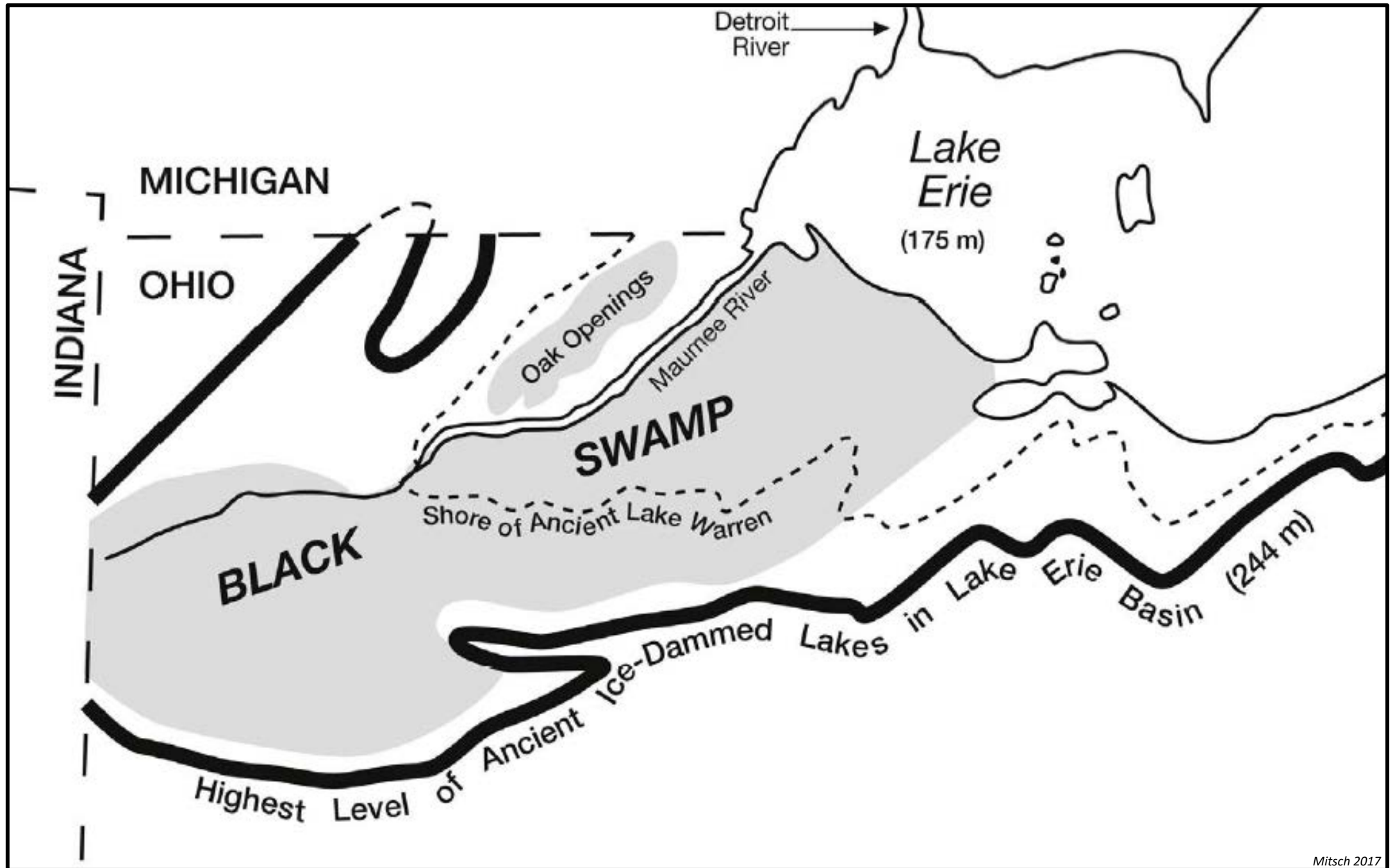


Alexis Sakas



Landowner		Priority Conservation Area	
Lucas County	MTA	Honey Do	Sandhill Crane Wetlands
ODNR	Ohio	Mousehouse	Perry
TNC	Toledo	MTA Acquisitions - D'Amore, Carter, Griswold	





# Sandhill Crane Wetlands

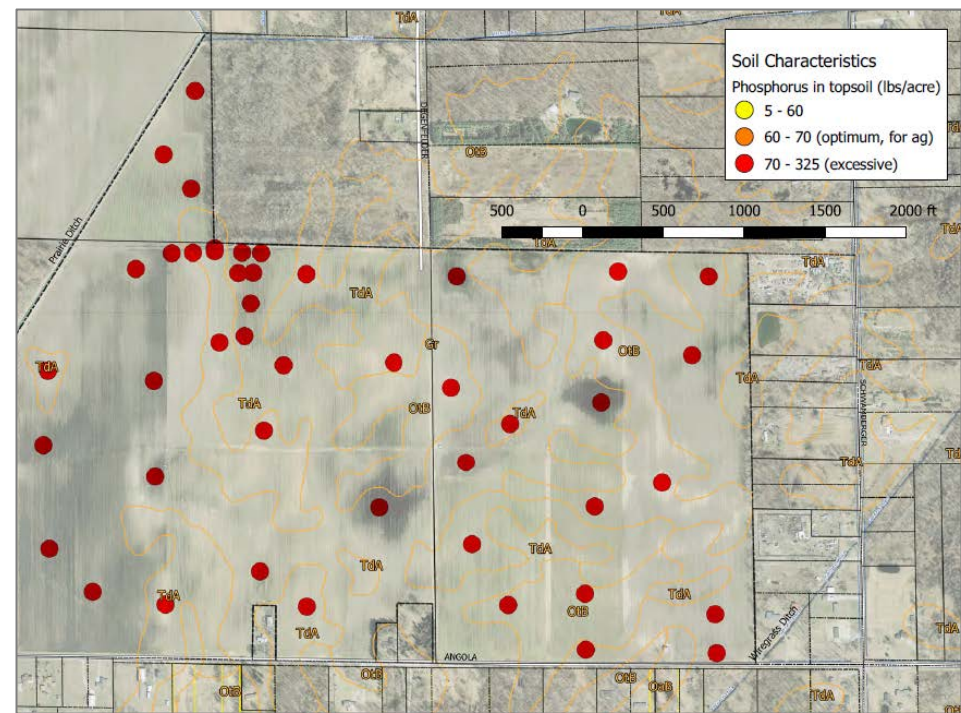






Restoration Approach

- Soil
- Flora







## Restoration Approach

- Soil
- Flora
- Fauna
- Topography

© TNC



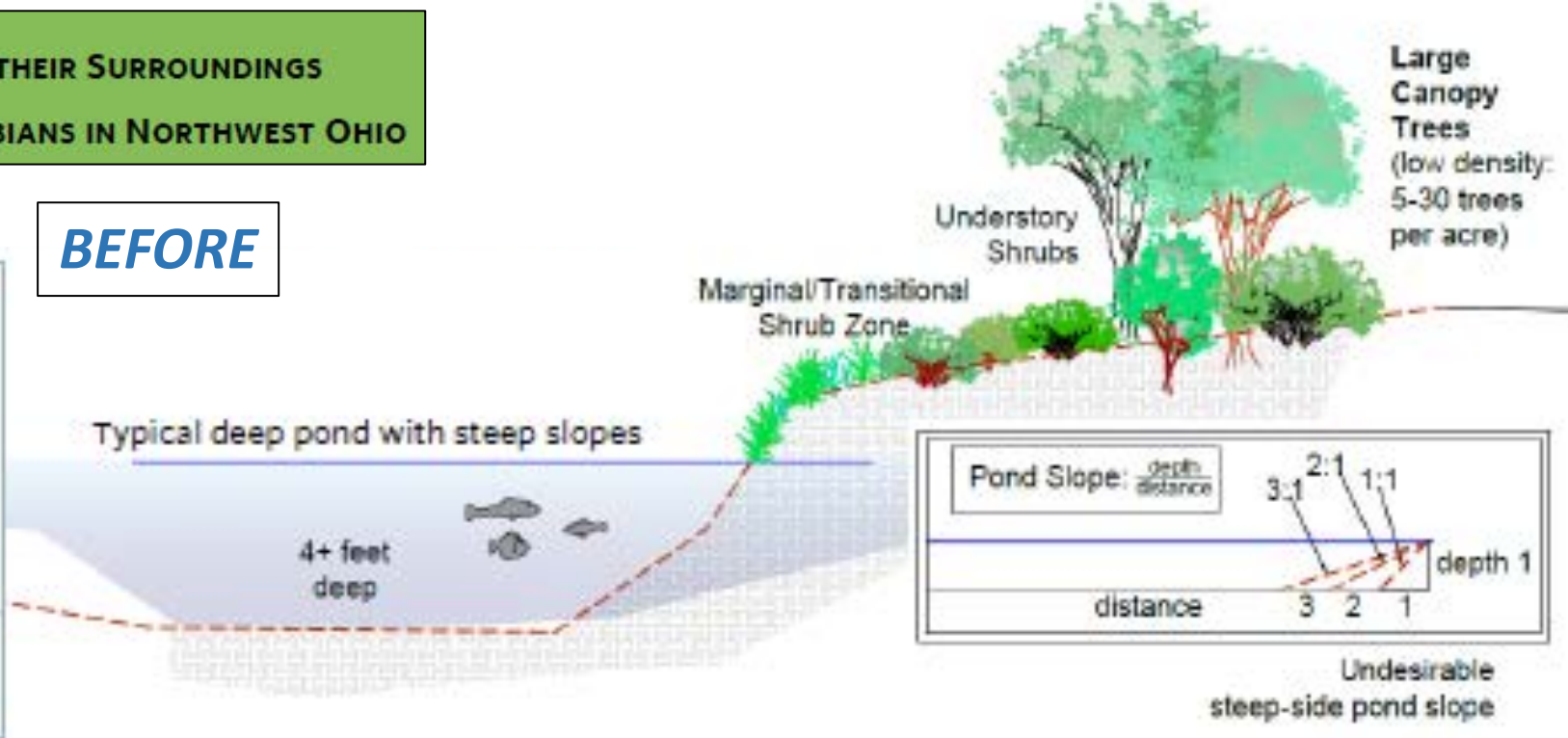
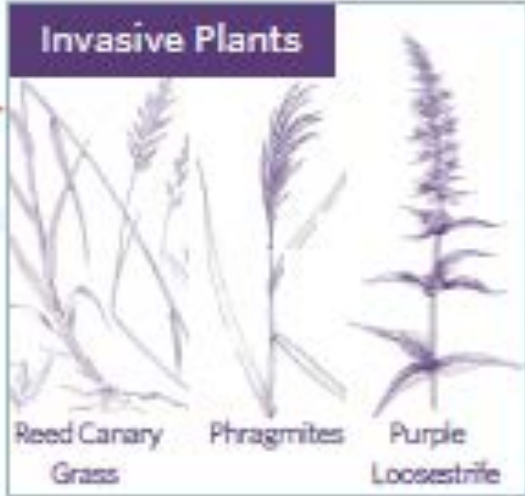
© Angie Cole



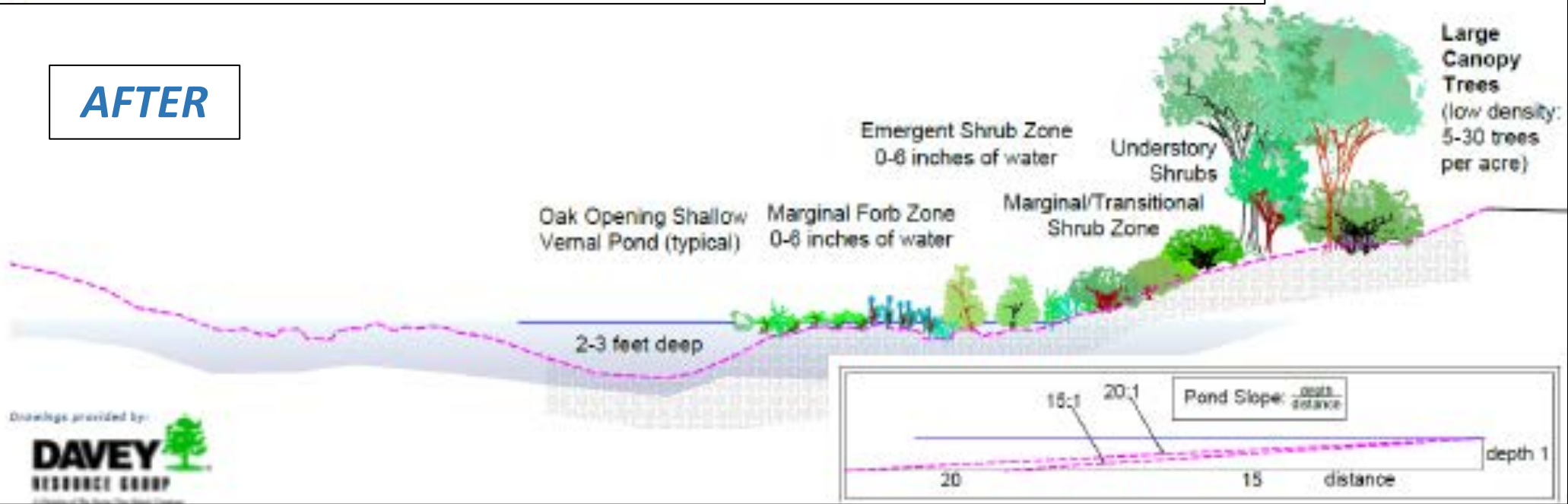


**MODIFYING PONDS AND THEIR SURROUNDINGS  
TO BENEFIT BIRDS AND AMPHIBIANS IN NORTHWEST OHIO**

**BEFORE**

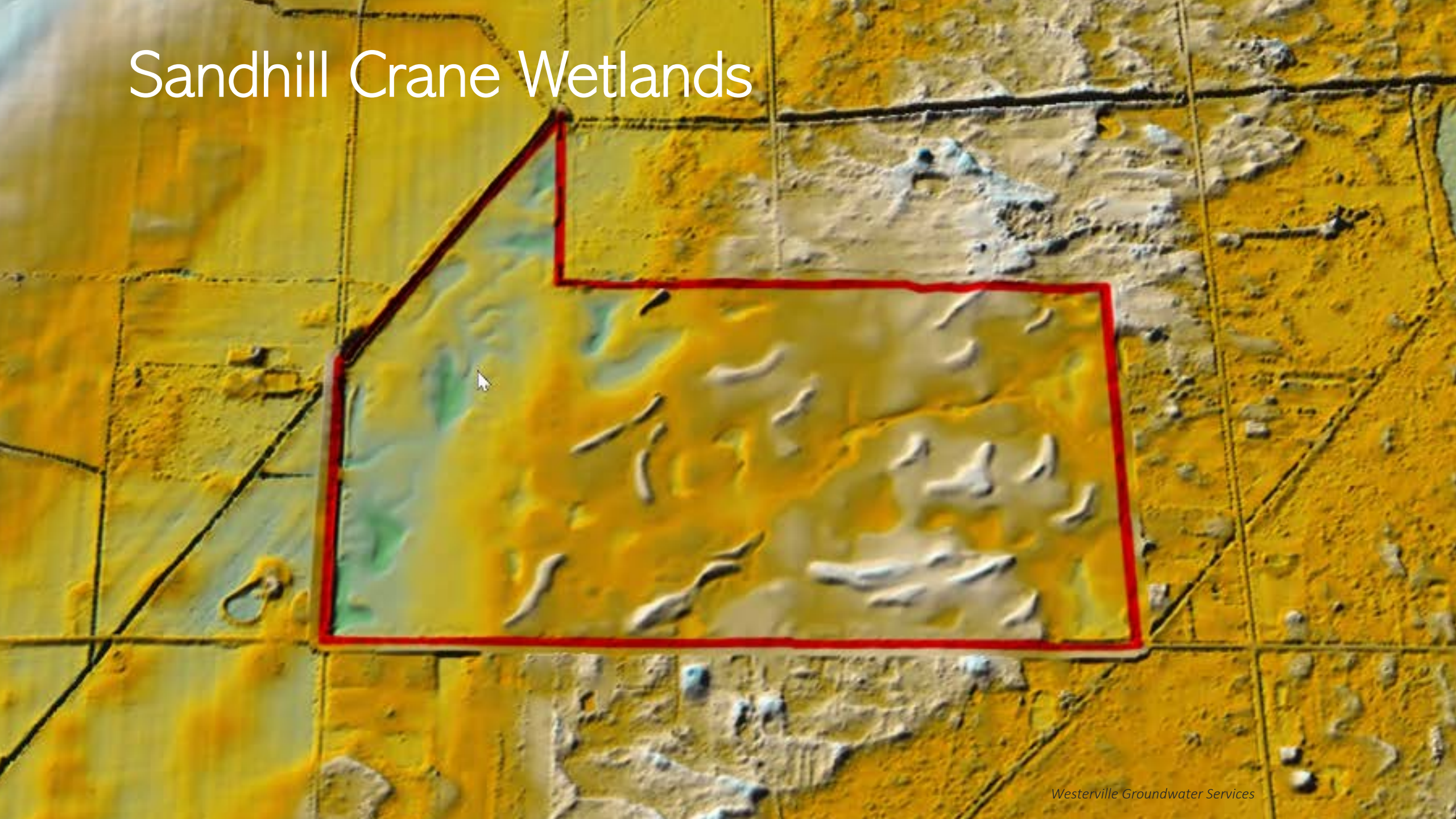


**AFTER**





# Sandhill Crane Wetlands



# Restoration Approach

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- Soil
- Flora
- Fauna
- Topography
- Hydrology

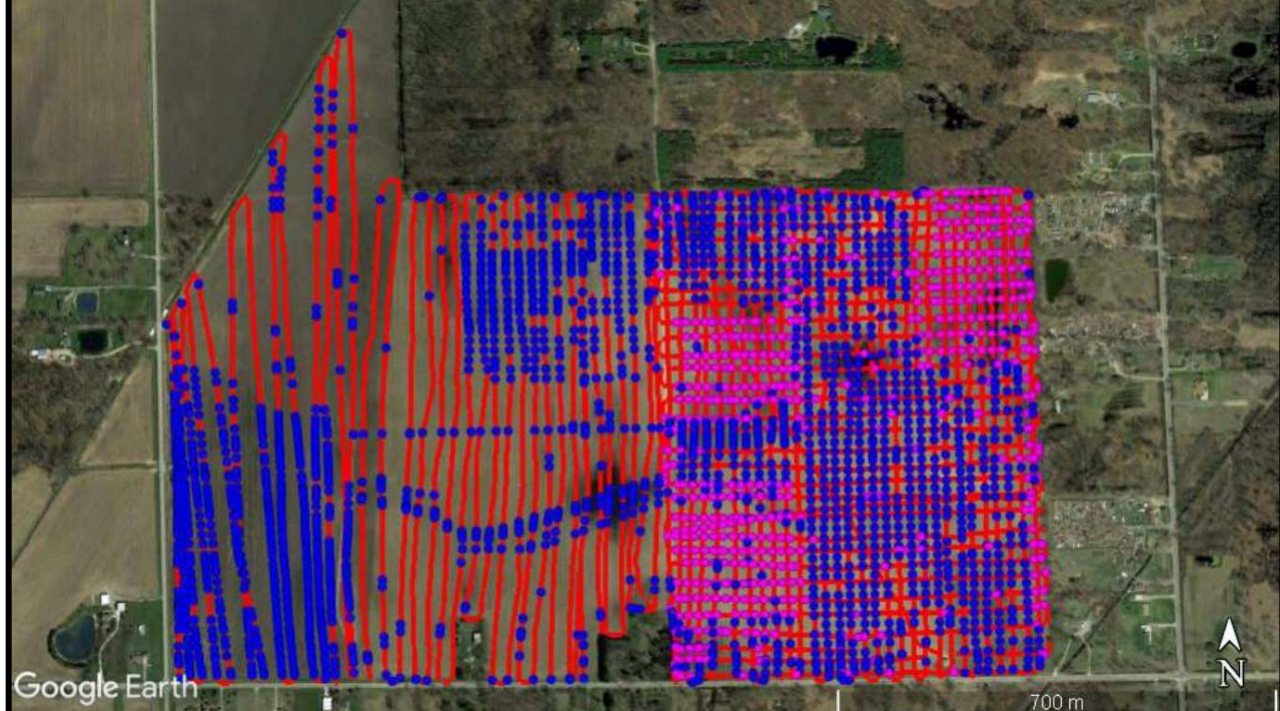




# Hydrology Infrastructure

Ground penetrating radar

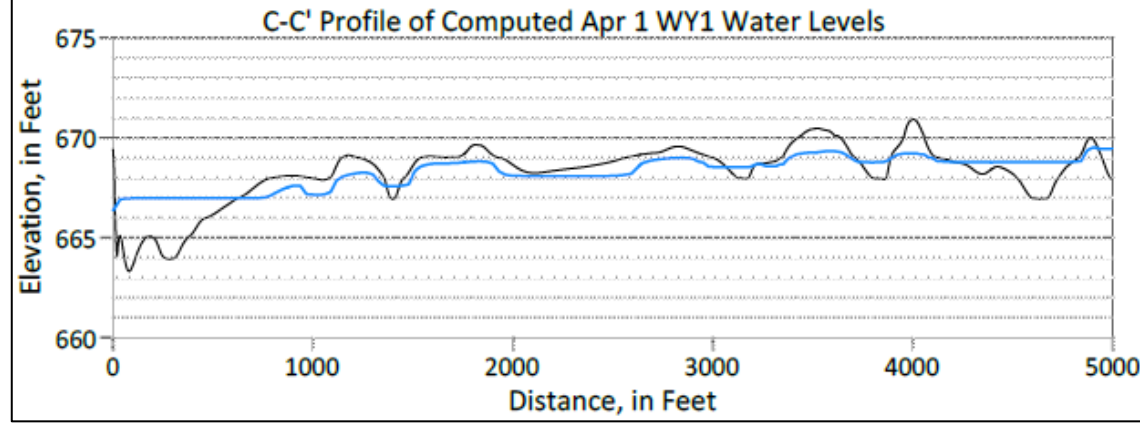
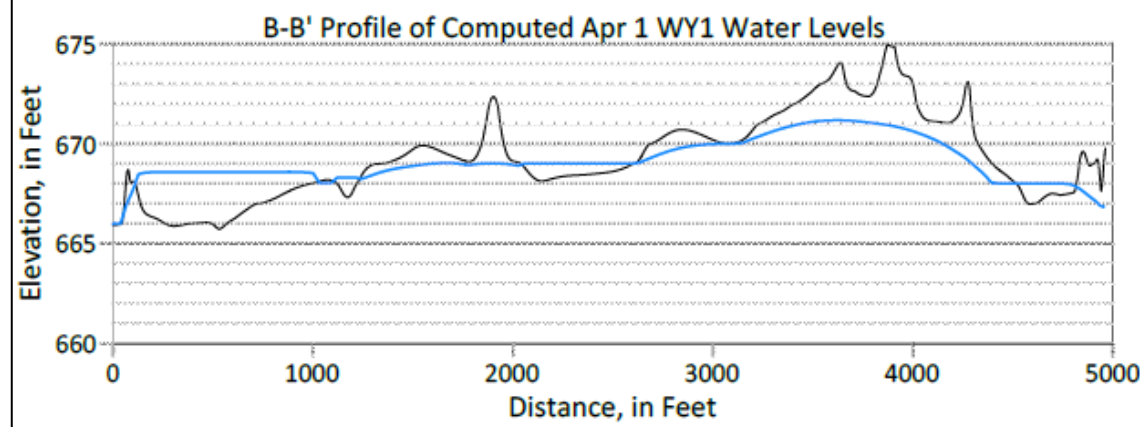
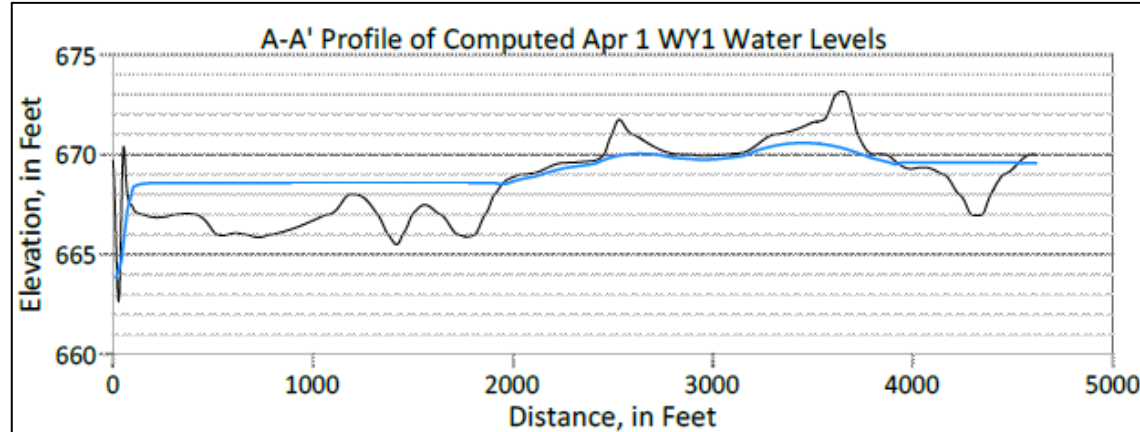
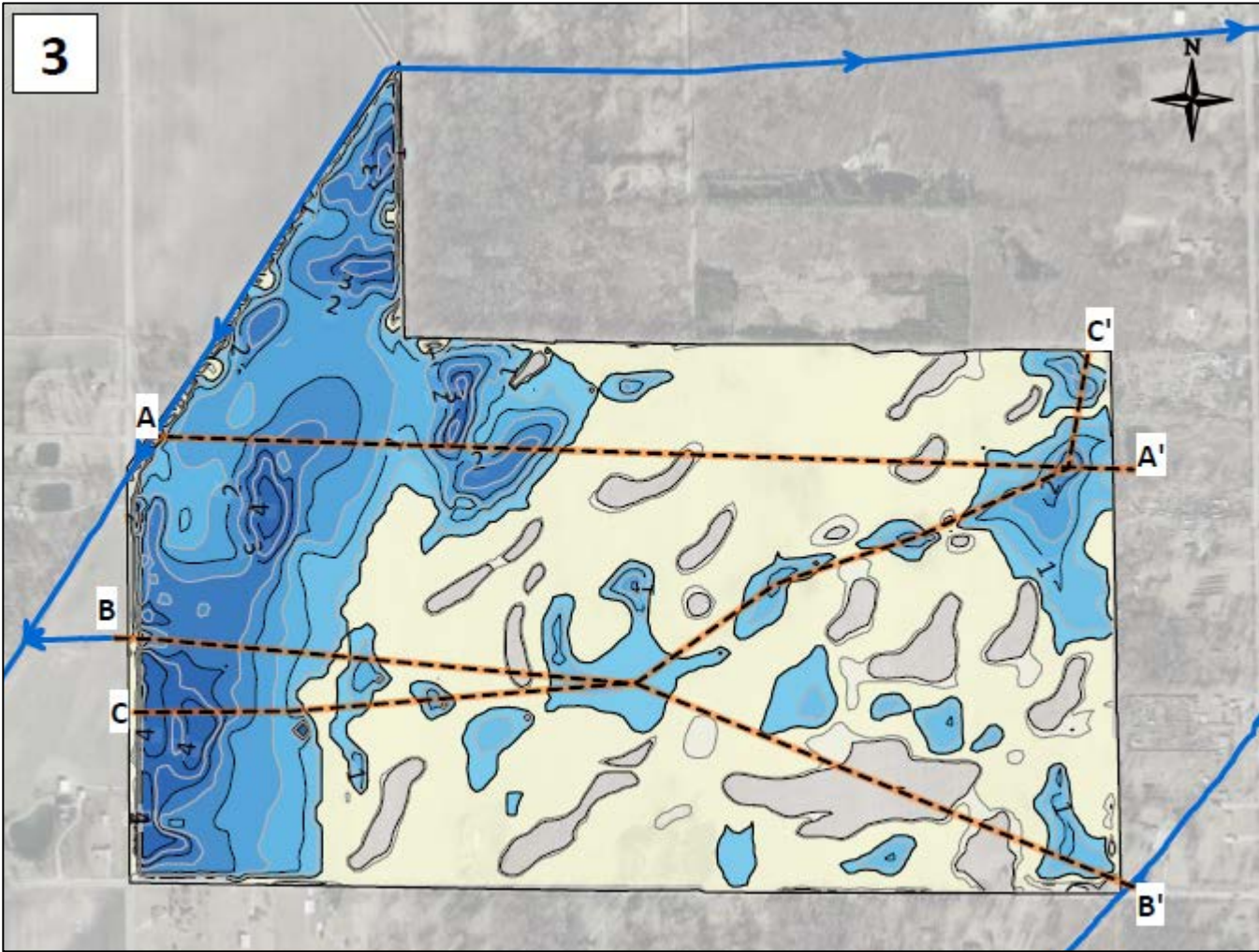
*Transects & positive detections* →→



*Interpretation* →→



# Surface-water – Groundwater Model



On the 280 acres of **critical wet and upland prairie habitat** restored through this project...



acres will be scraped to provide shallow depressions for aquatic species and emergent vegetation



miles of agricultural drainage tile will be decommissioned



of additional storm-water storage will be provided



native species will be seeded



native saplings will be planted

*Thanks!*

[alexis.sakas@tnc.org](mailto:alexis.sakas@tnc.org)

419.867.1521 x 3240



# Characterizing Fecal Contamination Sources in the Maumee AOC

Christopher M. Kephart  
USGS OKI Water Science Center  
Ohio Water Microbiology Laboratory

# OWML capabilities and applications

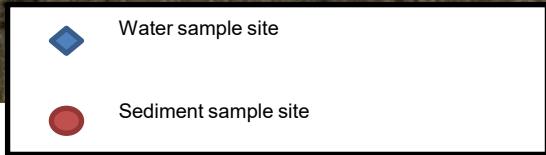
- Groundwater / surface water assessment
- Recreational water quality monitoring
- **Microbial source tracking**
- Cyanobacterial Harmful Algal Blooms
- Taste and odor issues

# Microbial Source Tracking

- Concept: the intestinal microbes of animal groups are different
- Differences can lead to unique host-associated genetic sequences or markers
- *Bacteroides* – most widely used bacterium for microbial source tracking
  - Found exclusively in the feces of humans and animals
  - “Markers” available for humans, cattle, ruminants, canines, waterfowl, swine, poultry, and horses
- These markers are quantified by qPCR



# 2019 MST at MBSP Beaches





# Sample analyses

- *E. coli*/by Colilert
  - Cove 2, Cove 4, and Inland Lake- Univ. of Toledo analysis
  - Berger Ditch and sediments – USGS OWML analysis
- MST markers (USGS)
  - HF183 – human-associated marker (Green and others, 2014)
  - GFD – waterfowl-associated marker (Green and others, 2012)

# MST Results by Site

	Human (HF183)				Waterfowl (GFD)		
	# Analyzed	# Detected	% Detected	Avg. Conc. (copies/100 mL)	# Detected	% Detected	Avg. Conc. (copies/100 mL)
<b>Cove 2</b>	26	1	4%	720 (1)	3	12%	3,900
<b>Cove 4</b>	26	1	4%	1,200 (1)	2	8%	3,600
<b>Inland Lake</b>	25	0	0%	--	11	44%	3,600
<b>Berger Ditch</b>	12	7	58%	6,100	2	17%	3,000

# 2020 Longitudinal Study in Berger Ditch and Wolf Creek



# Sample Collection

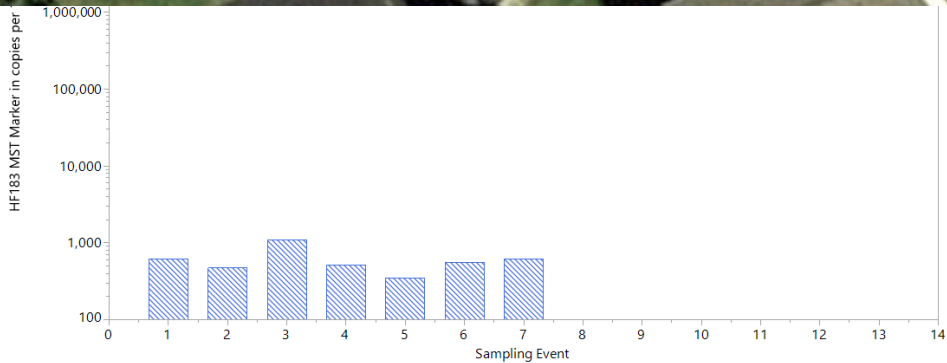
- 13 Sampling events May 27<sup>th</sup> – October 8<sup>th</sup>
- Nominally 13 sites
  - Curtice Rd → Park Rd. 1
- Relatively dry conditions throughout
- Analysis for human MST marker and *E. coli*



# Curtice Rd.

Station Name = 1B - Wolf Creek @ Curtice Rd. upstream

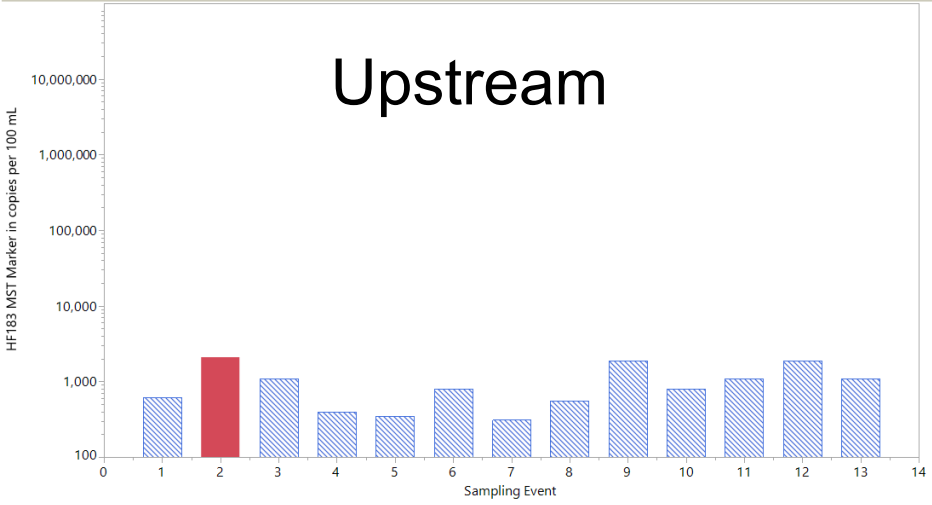
Station Name = 1A - Wolf Creek @ Curtice Rd. storm drain



# Curtice Rd.

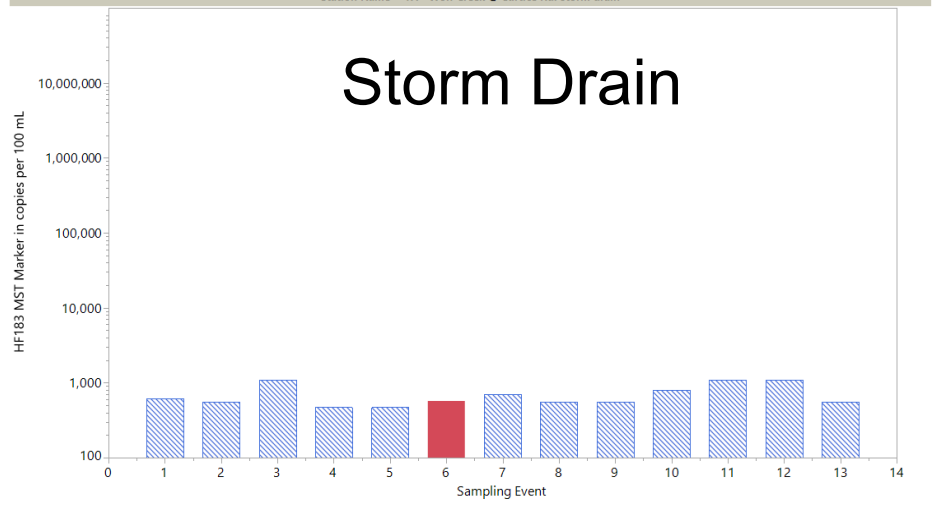
Station Name = 1B - Wolf Creek @ Curtice Rd. upstream

## Upstream



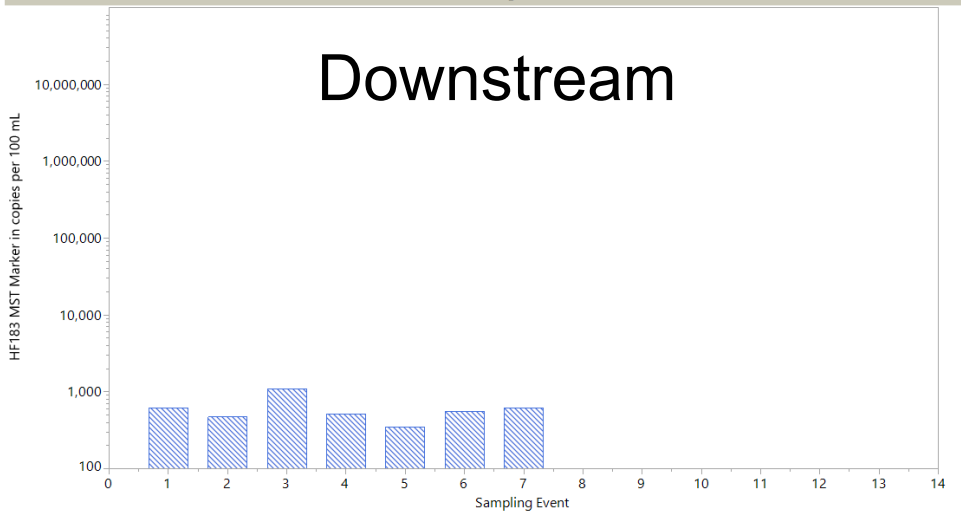
Station Name = 1A - Wolf Creek @ Curtice Rd. storm drain

## Storm Drain



Station Name = 1C - Wolf Creek @ Curtice Rd. downstream

## Downstream



# Brown Rd.

Station Name = 2B - Wolf Creek @ Brown Rd. upstream

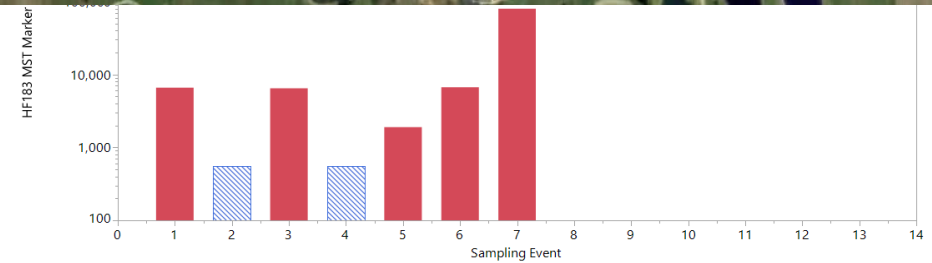
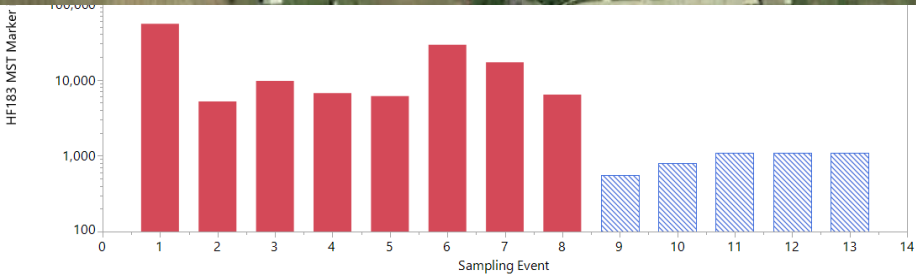
## Upstream

er in copies per 100 mL

Station Name = CB Brown

## Catch Basin

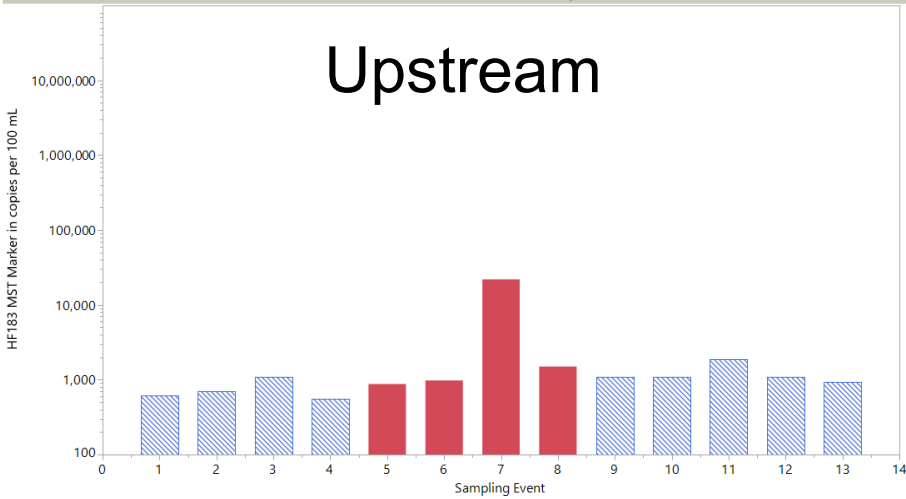
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# Brown Rd.

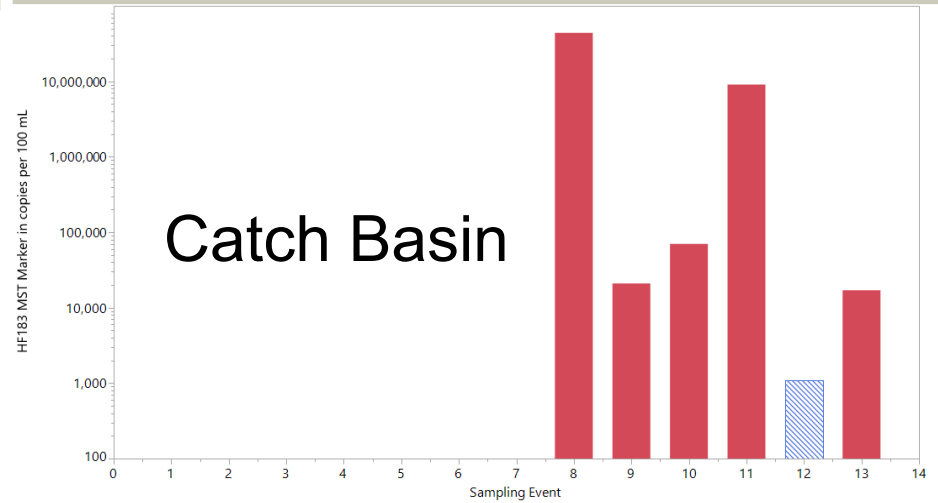
Station Name = 2B - Wolf Creek @ Brown Rd. upstream

## Upstream



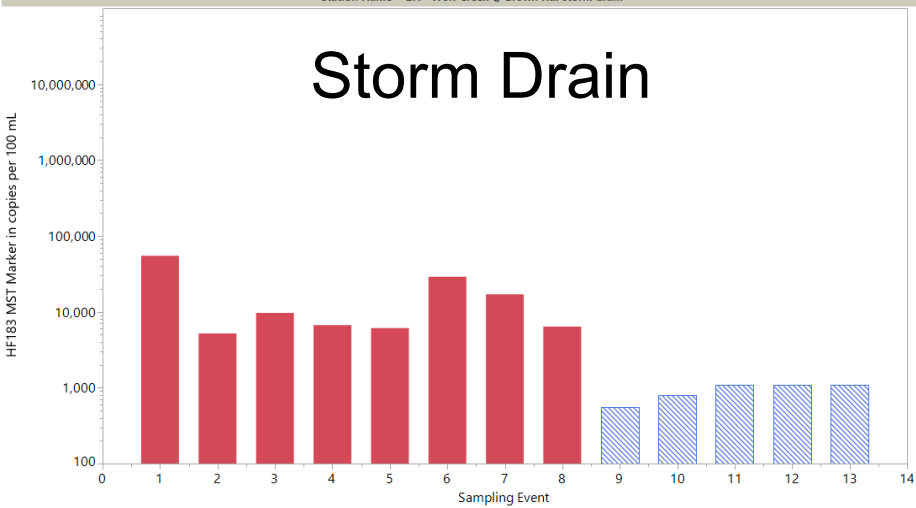
Station Name = CB Brown

## Catch Basin



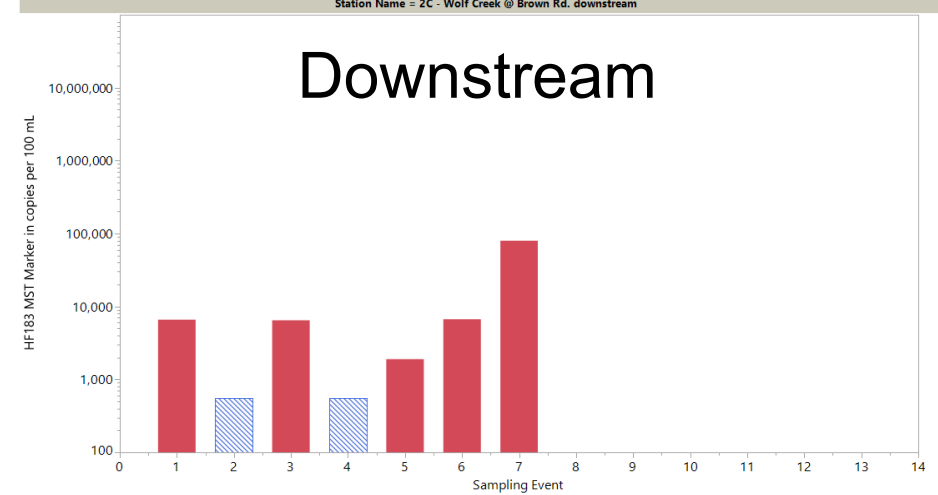
Station Name = 2A - Wolf Creek @ Brown Rd. storm drain

## Storm Drain



Station Name = 2C - Wolf Creek @ Brown Rd. downstream

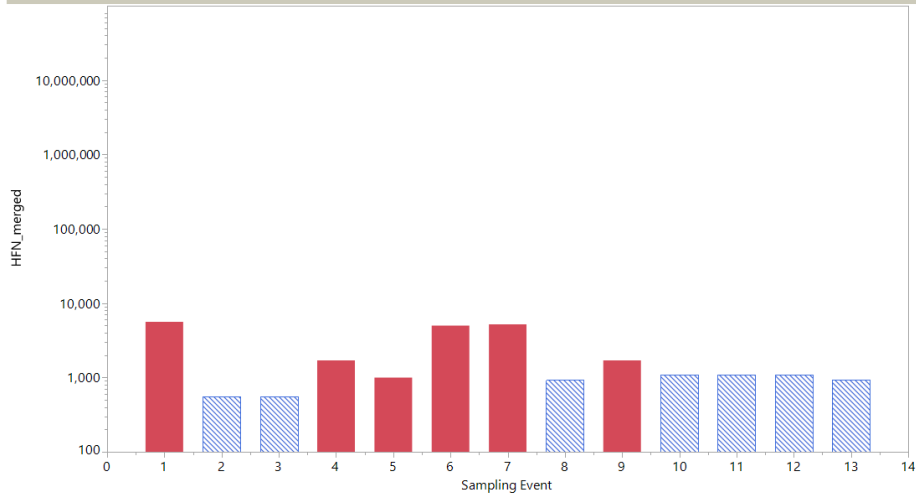
## Downstream



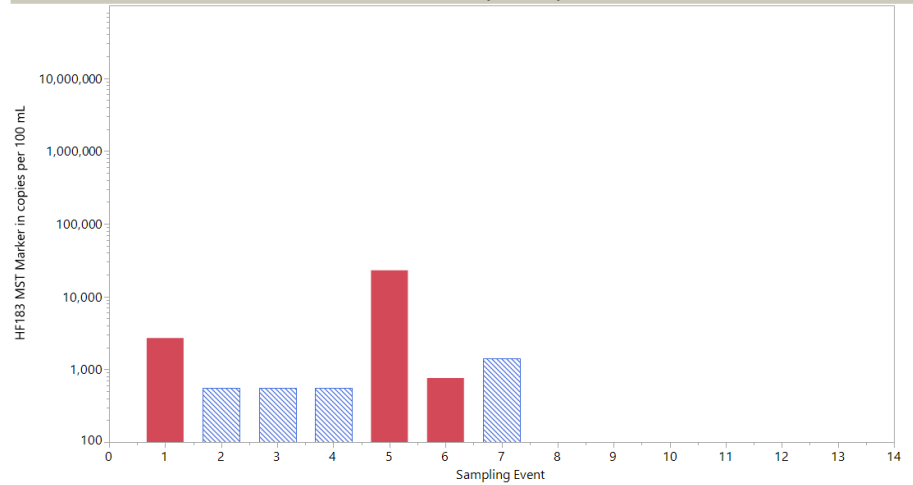


# Stadium Rd. and Aubry Ditch

Station Name = 4A - Wolf Creek @ Stadium Rd.



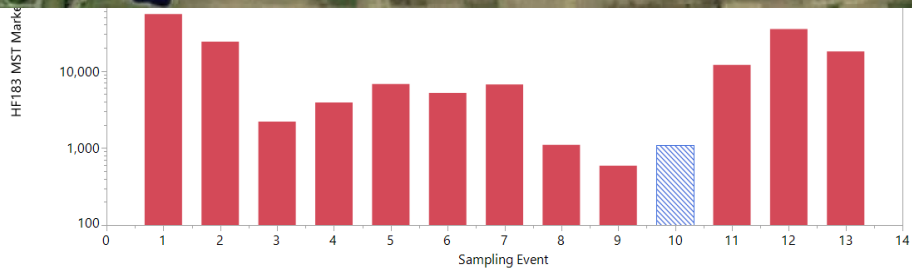
Station Name = 3A - Aubry Ditch @ Bury Rd.



# Corduroy Rd.

Station Name = 5B - Wolf Creek @ Corduroy Rd. upstream

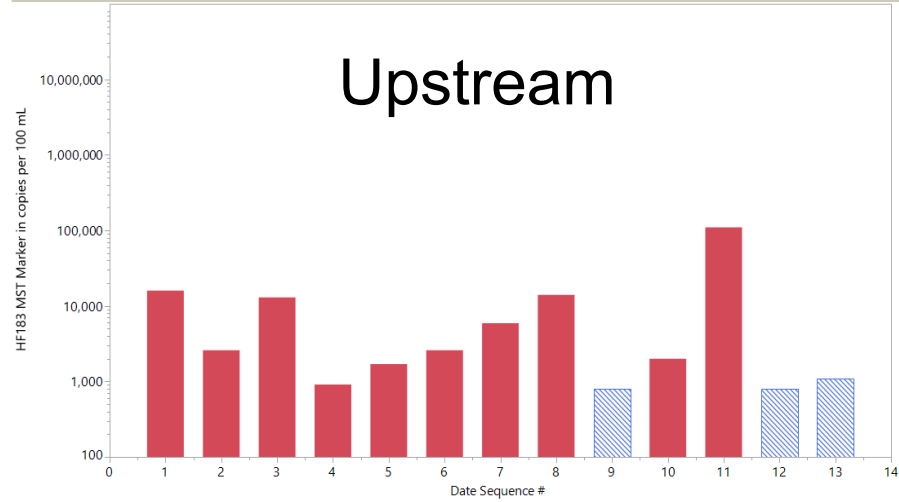
Station Name = CB Corduroy



# Corduroy Rd.

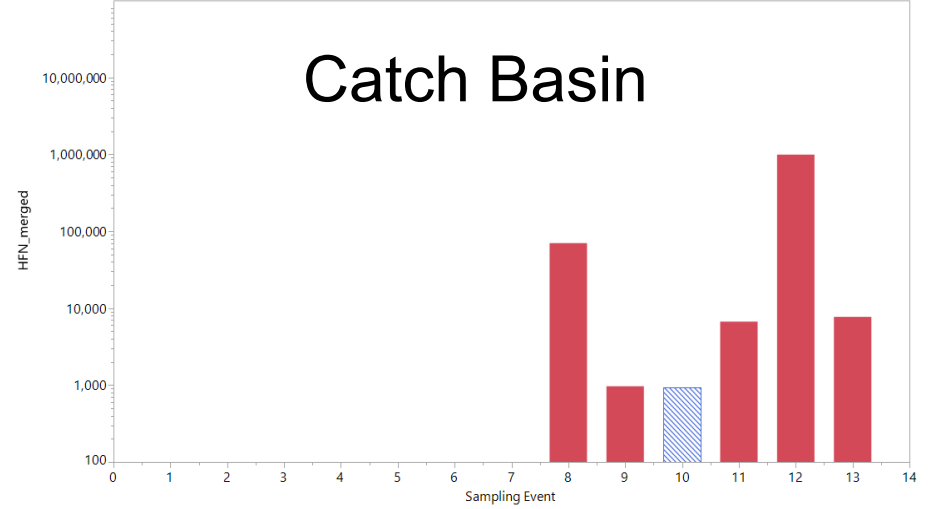
Station Name = 5B - Wolf Creek @ Corduroy Rd. upstream

## Upstream



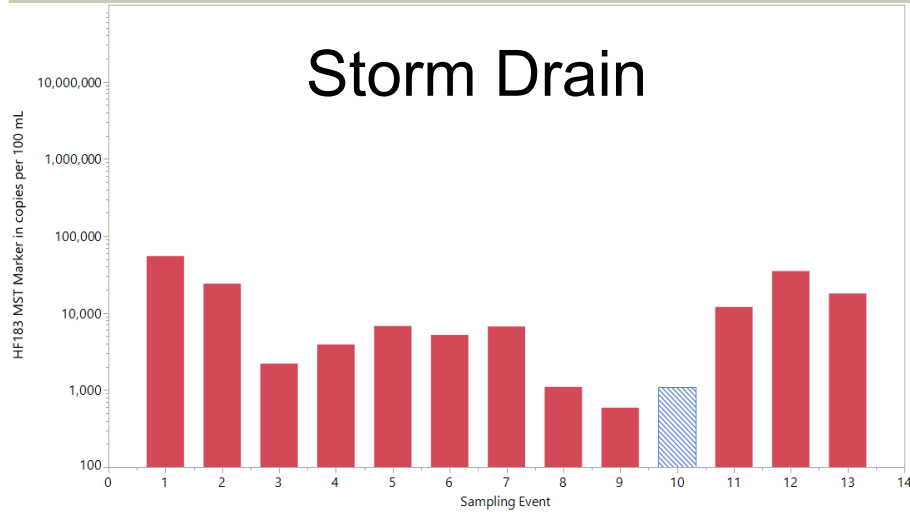
Station Name = CB Corduroy

## Catch Basin

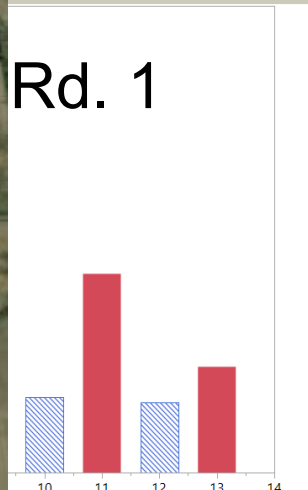
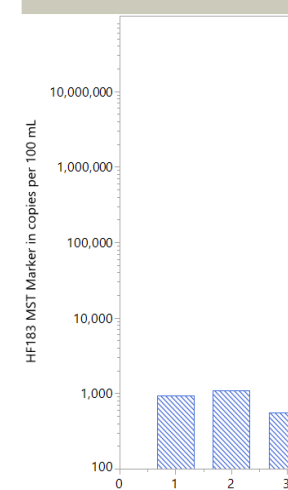
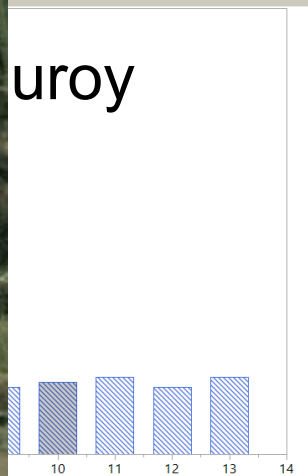
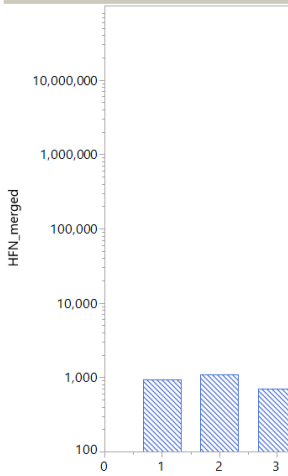
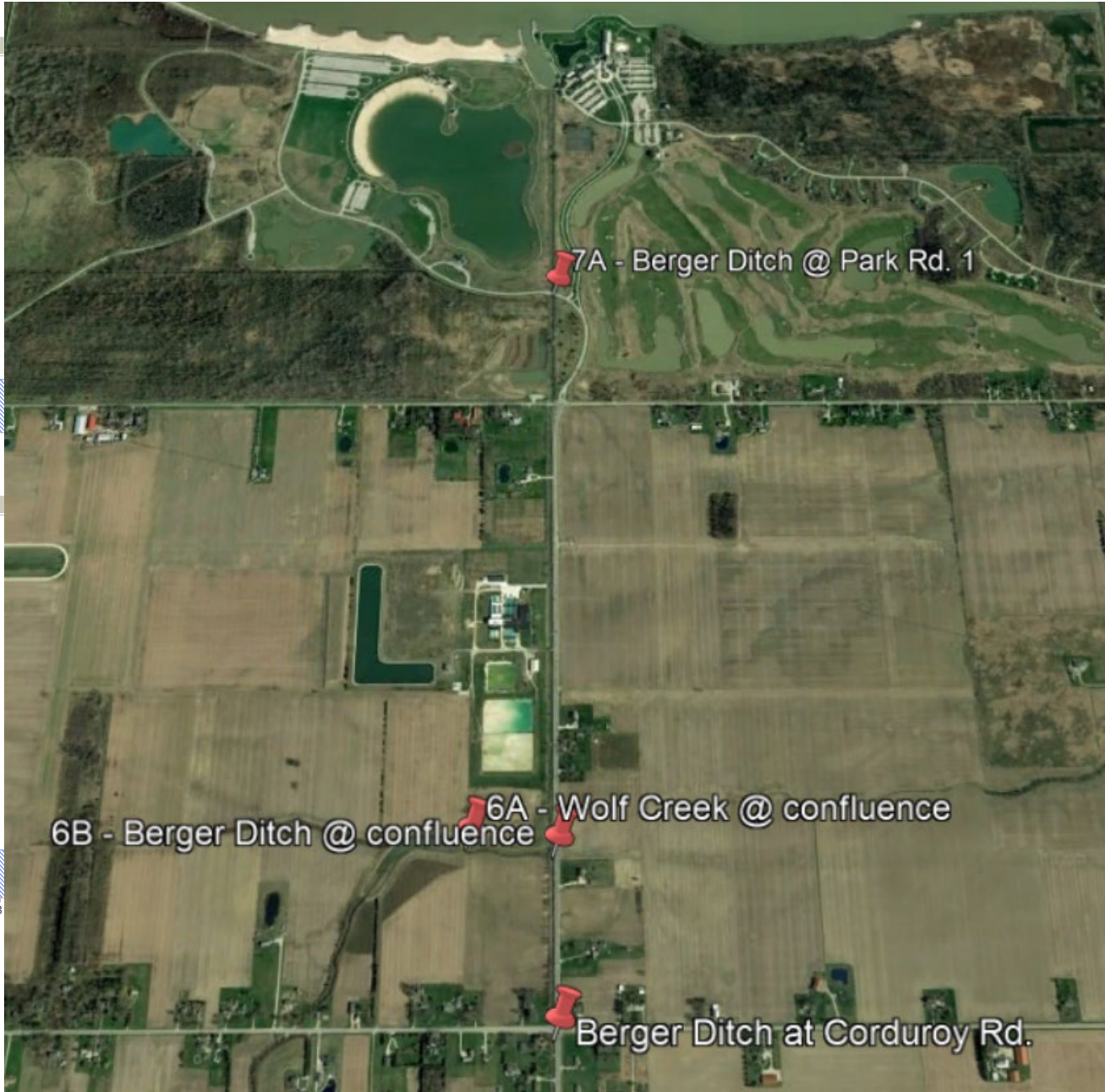


Station Name = 5A - Wolf Creek @ Corduroy Rd. storm drain

## Storm Drain



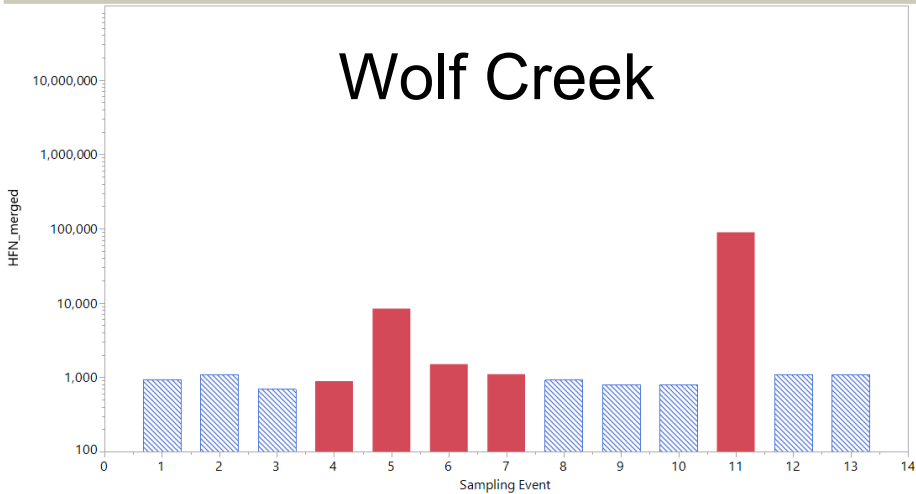
# Confluence and MBSP



# Confluence and MBSP

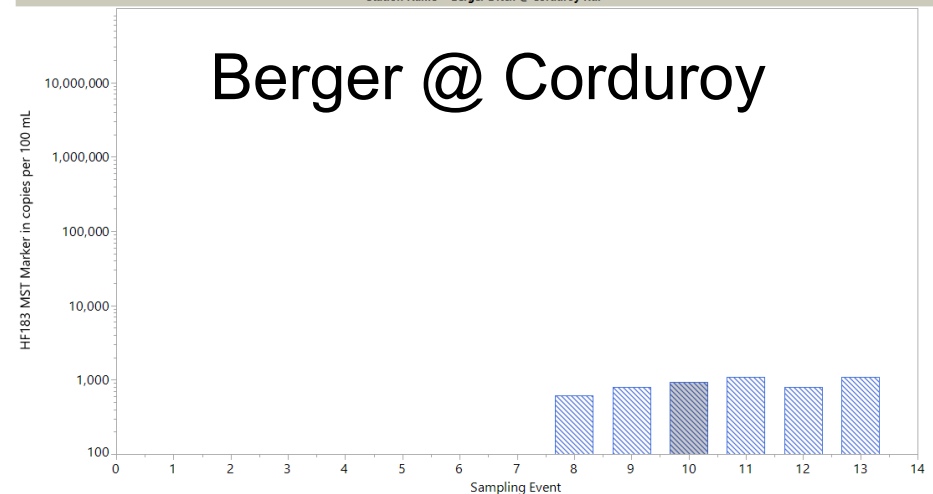
Station Name = 6A - Wolf Creek @ confluence

## Wolf Creek



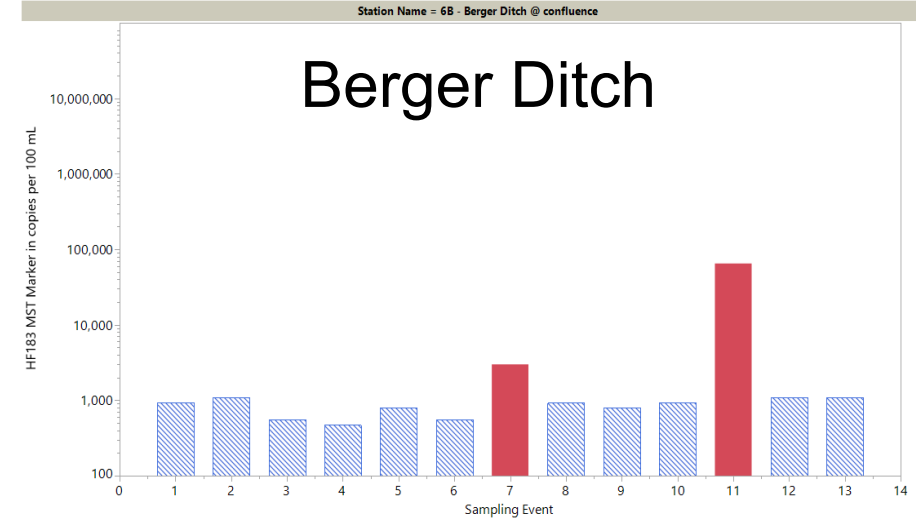
Station Name = Berger Ditch @ Corduroy Rd.

## Berger @ Corduroy



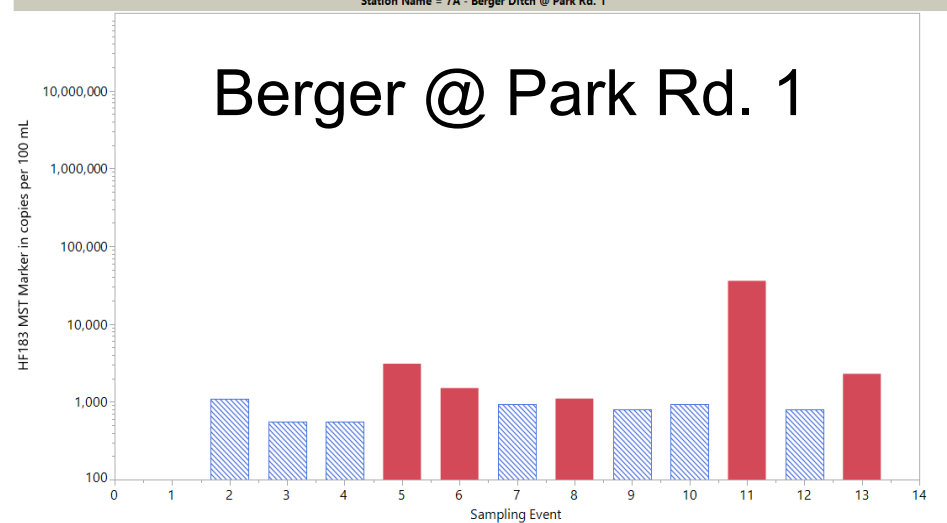
Station Name = 6B - Berger Ditch @ confluence

## Berger Ditch

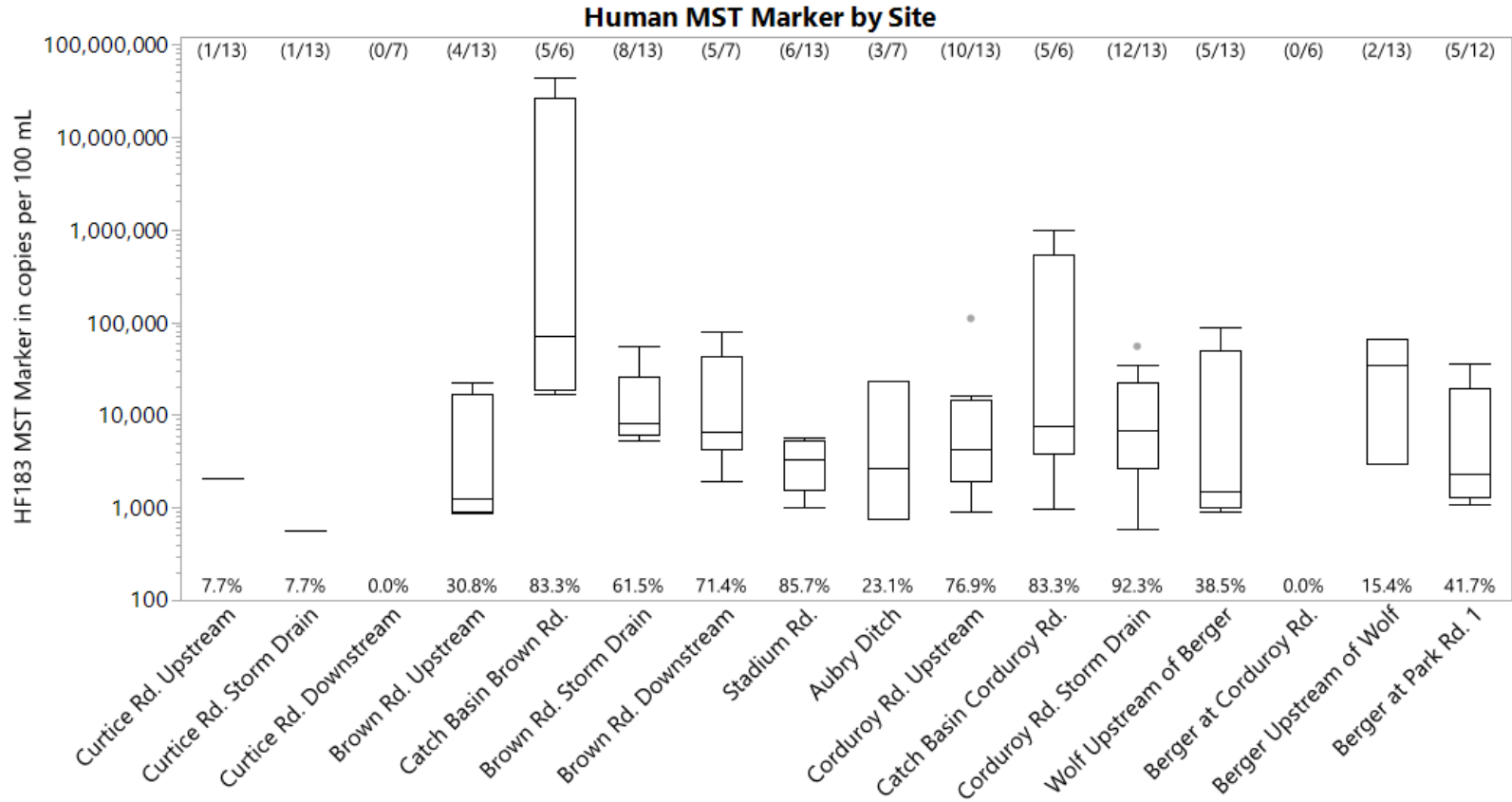


Station Name = 7A - Berger Ditch @ Park Rd. 1

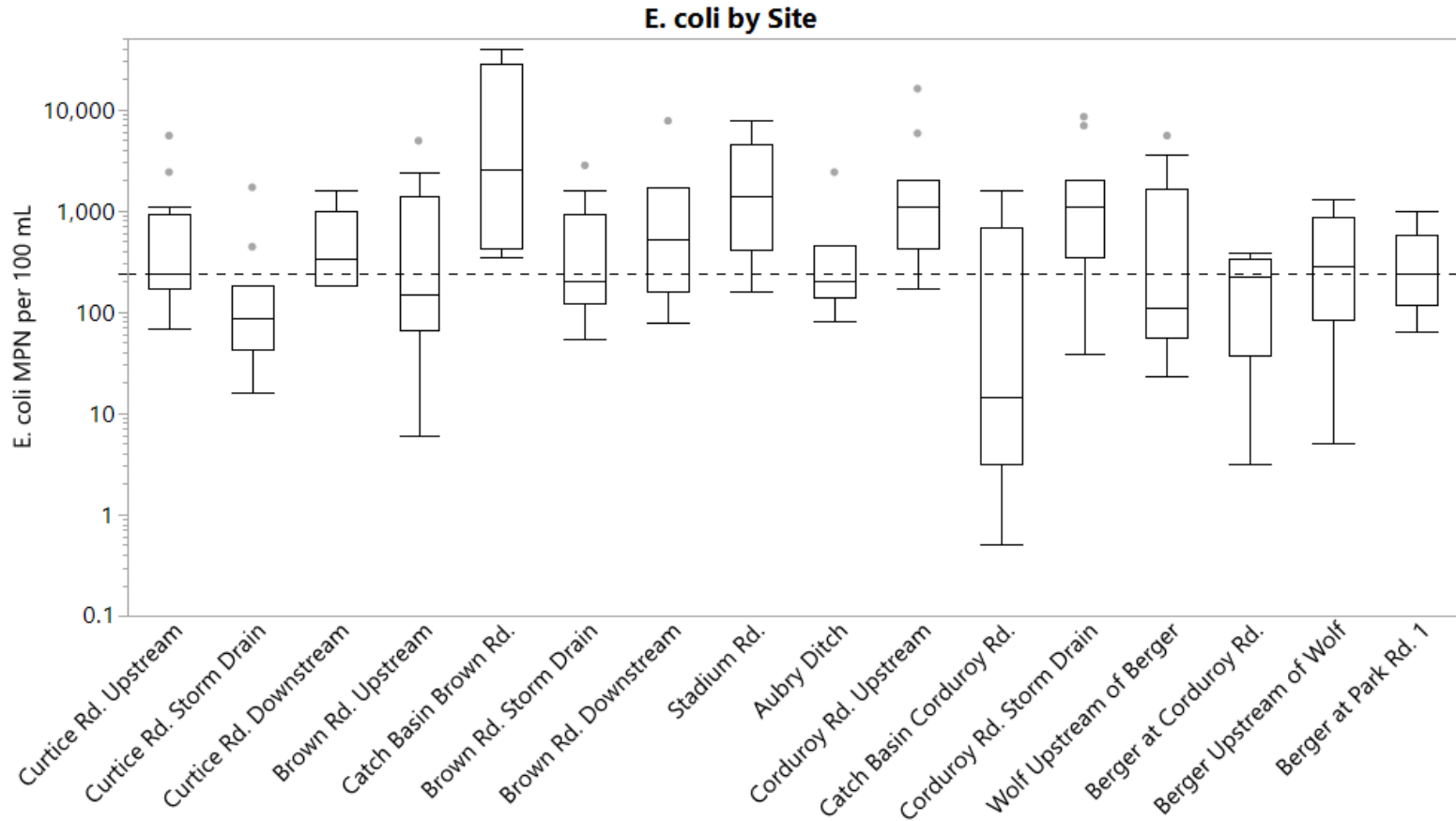
## Berger @ Park Rd. 1



# Human MST Marker All Sites



# *E. coli* All Sites



# 2020 Observations

- Confirmation of persistent high *E. coli* concentrations from human sources along Berger Ditch/Wolf Creek
- Key inputs appear to be coming from storm water drains at Brown Rd. and Corduroy Rd. with suspected septic influence



# Additional Information



<https://pubs.usgs.gov>

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A search input field with a small 'x' icon on the left and a magnifying glass icon on the right. The text 'Search terms' is visible inside the field.

Chris Kephart, [ckephart@usgs.gov](mailto:ckephart@usgs.gov)  
614-430-7780

