

TIME TO EXPLORE


Cleveland Metroparks

A Hydrilla project in Ohio's Lake Erie Basin

Detection, Control, and
Prevention

Great Lakes
RESTORATION



- 
- I. Introduction
 - II. Hydrilla in CM
 - III. Detection
 - IV. Control
 - V. Prevention
 - VI. Conclusion

Cleveland Metroparks



- 18 Reservations
- Founded in 1917
- 23,000+ acres
- Emerald Necklace around Cleveland
- Three marinas
- 10-15% wetlands
- 100+ sites, checked annually for hydrilla

Cleveland Metroparks Hydrilla Discovery



Greathouse Wetlands, West Creek Reservation, Parma, Ohio 2011

Infestations

- Hydrilla first detected in 2011
- Accidentally moved w/ *P. cordata*
- High retention sites
- 90+ sites surveyed in 2012

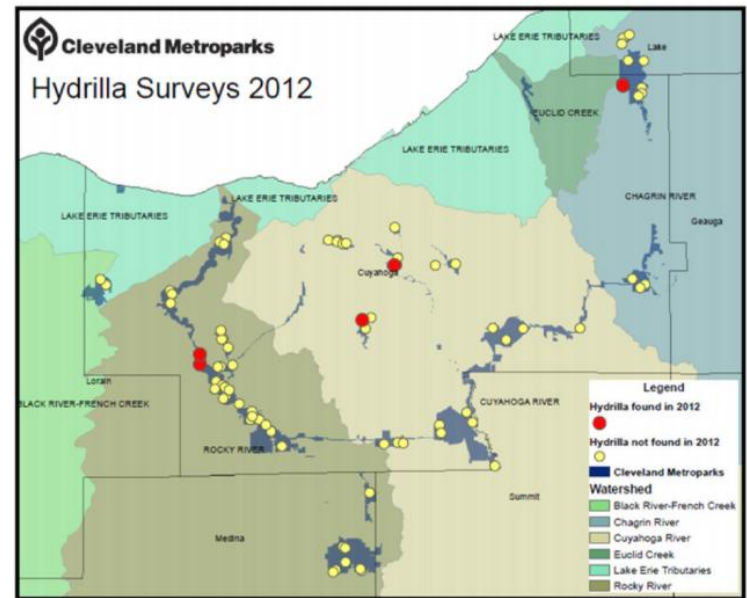


Table 1. Locations of hydrilla-infested waterbodies in Cleveland Metroparks

Site Name	Size (acres)	Reservation	Watershed	County	Year Found
Sunset Pond	5.20	North Chagrin	Chagrin River	Cuyahoga	2012
Sanctuary Marsh	3.70	North Chagrin	Chagrin River	Cuyahoga	2012
Blue Heron Marsh	2.50	Ohio & Erie Canal	Cuyahoga River	Cuyahoga	2011
Greathouse Wetlands	1.14	West Creek	Cuyahoga River	Cuyahoga	2011
Wash-Out Wetlands	0.44	West Creek	Cuyahoga River	Cuyahoga	2013
Wallace Lake	17.60	Mill Stream Run	Rocky River	Cuyahoga	2011

Infestations

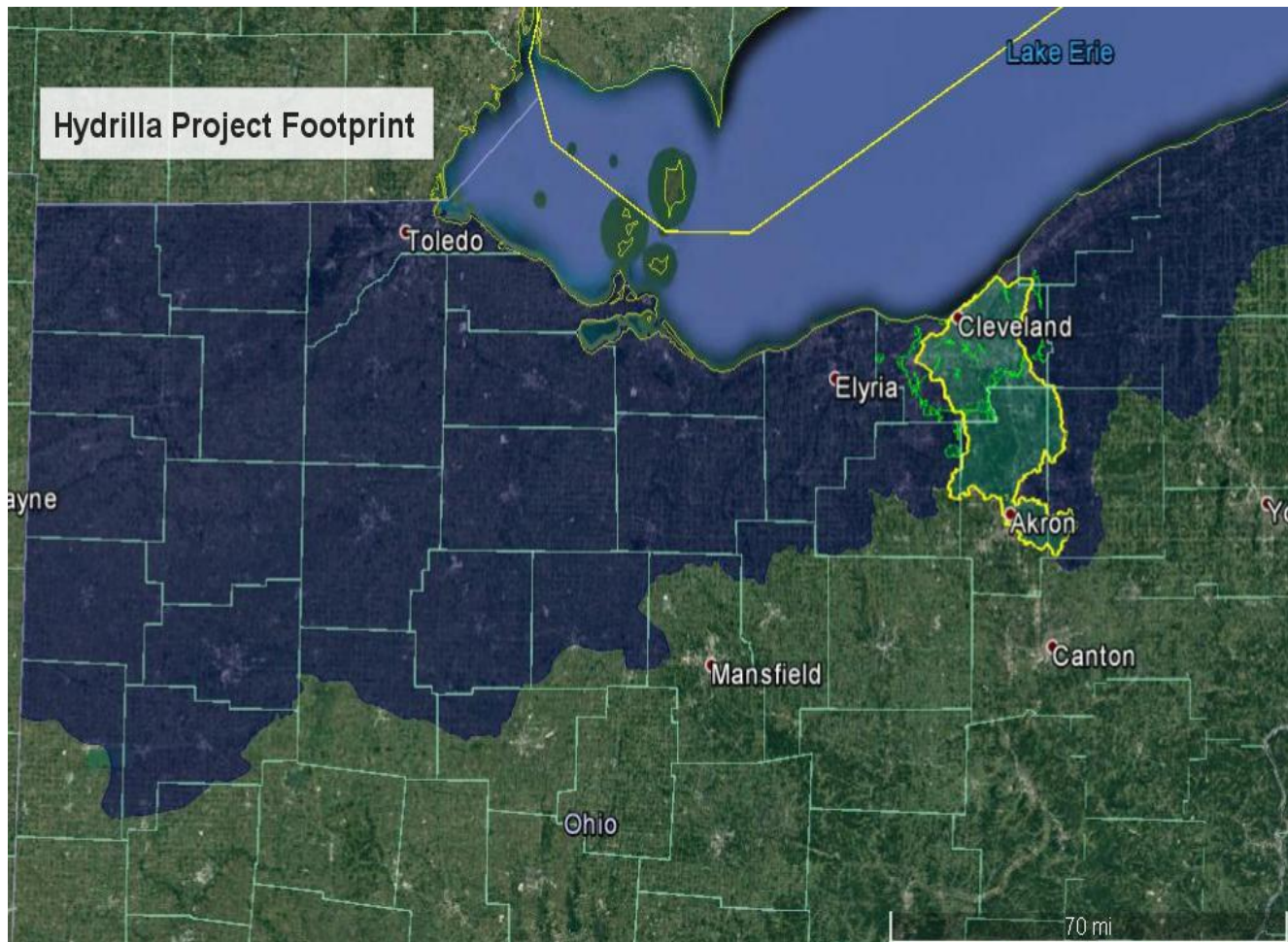
- Sediment curtain piloted
- Dredge of wetlands considered
- Herbicide test plots created
- Restricted fishing, swimming, boating at Wallace Lake



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CM Hydrilla Project (2017-2018)



Lake Erie Basin

- outreach/training
- joint surveys
- shared resources
- fund, treat
25 new acres



Cuyahoga AOC

- expanded detection
- collaborate



Cleveland Metroparks

- 100+ sites
- 23,000+ acres

Early Detection and Rapid Response in Lake Erie Basin

Detection



Methods: Detection

June - October

Rake Tosses

Boat surveys

Wader surveys

Sediment (tuber) sampling

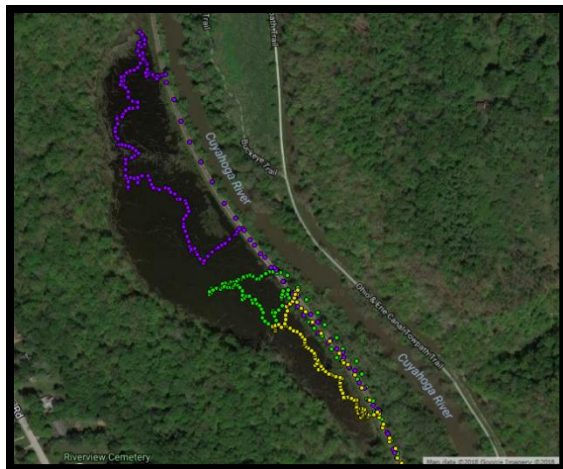
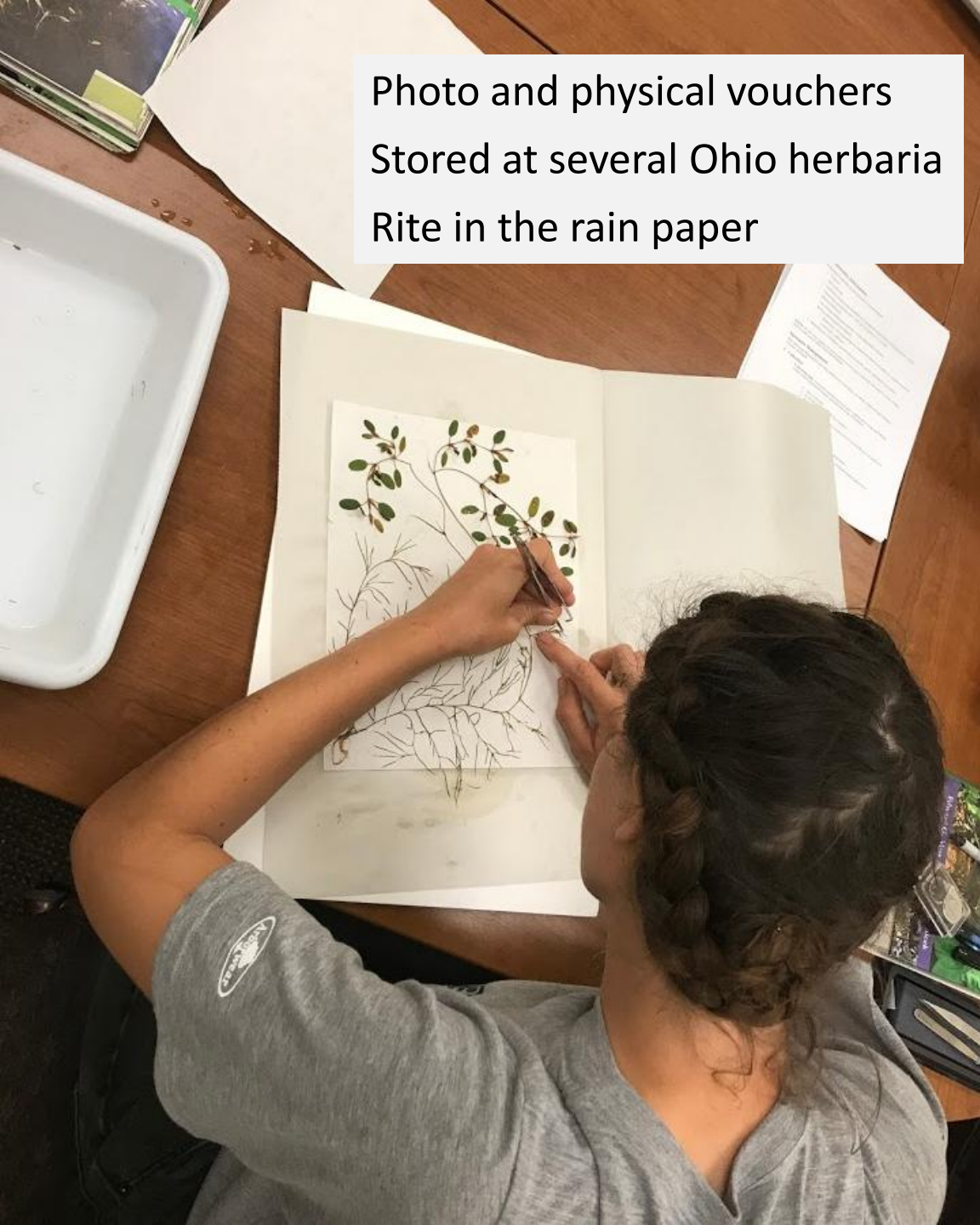


Photo and physical vouchers
Stored at several Ohio herbaria
Rite in the rain paper



Contractor and Herbicide Funding

Year	Funding source(s)	Herbicide	Cost
2011	CM operating budget	Reward, Cutrine Plus	\$39.10
2012	ODNR, CM operating budget	Reward, Cutrine Plus, Sonar	\$2,794.02
2013	ODNR, CM operating budget	Sonar AS, Sonar Q	\$12,820.39
2014	ODNR, CM operating budget	Sonar Genesis	\$14,448.96
2015	ODNR, CM operating budget	Sonar One, Sonar AS, Sonar Genesis	\$35,575.00
2016	ODNR, CM operating budget	Sonar One, Sonar AS	\$33,475.00
2017	GLRI	Sonar One, Sonar AS, Sonar H4C	\$34,117.00
2018	GLRI, CM operating budget	Sonar One, Sonar AS, Sonar H4C	\$33,475.00

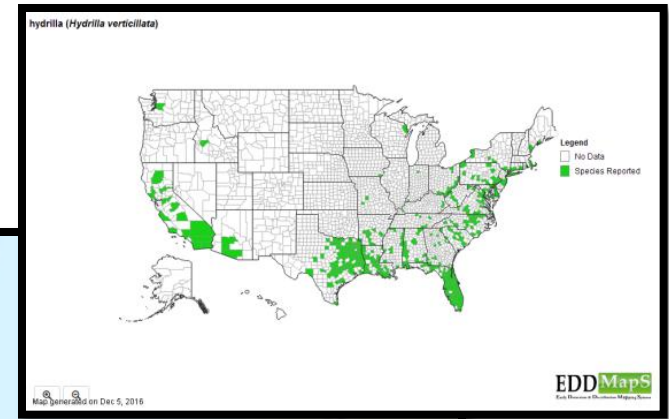
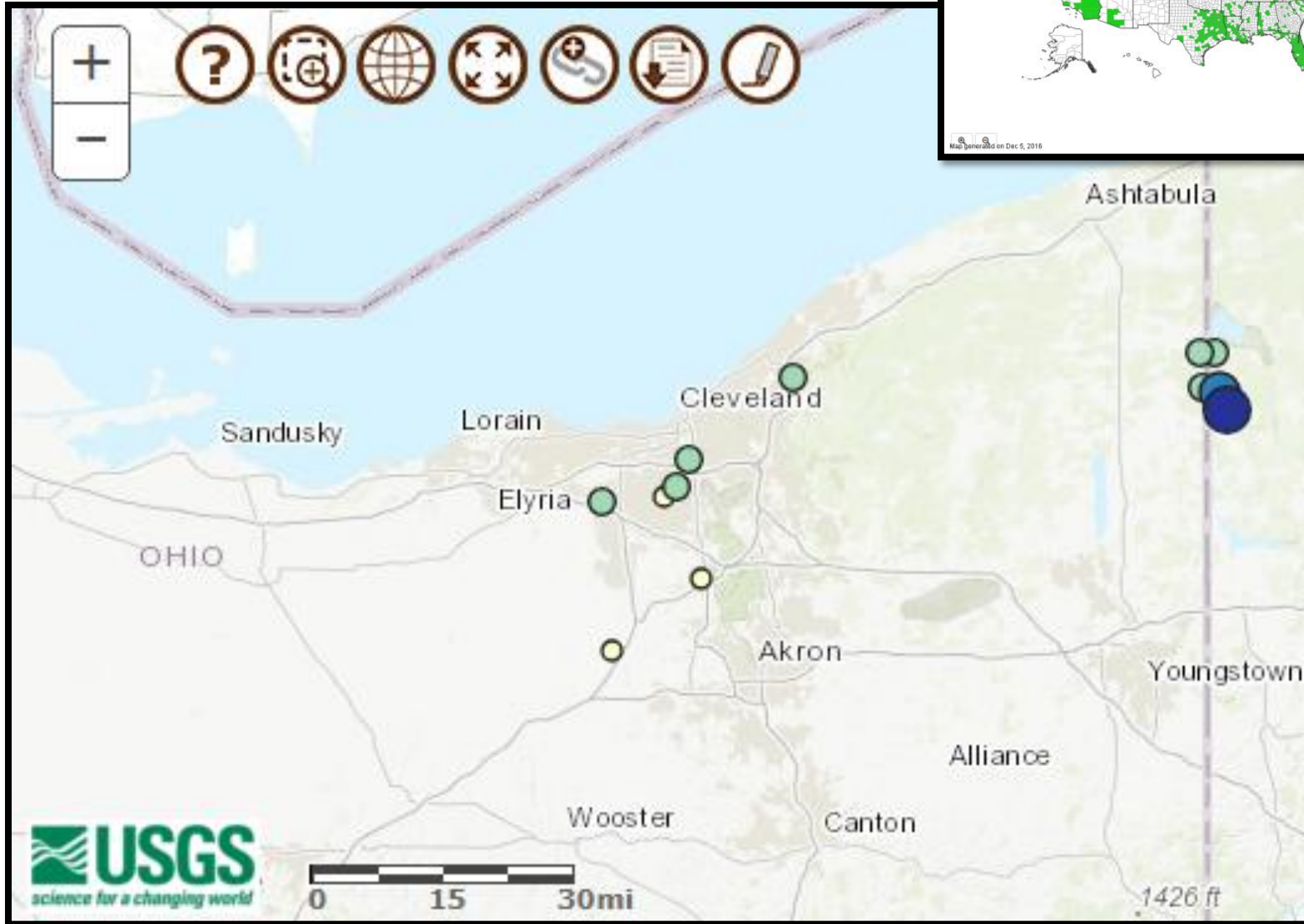
Total: \$166,771.47

CM – Cleveland Metroparks
 ODNR – Ohio Department of Natural Resources
 GLRI – Great Lakes Restoration Initiative



Hydrilla Distribution

Records in 29 states, 2017¹





Control

Three
examples

Cleveland Metroparks
Parma
Medina

Hydrilla in shallow wetlands

Greathouse Wetlands

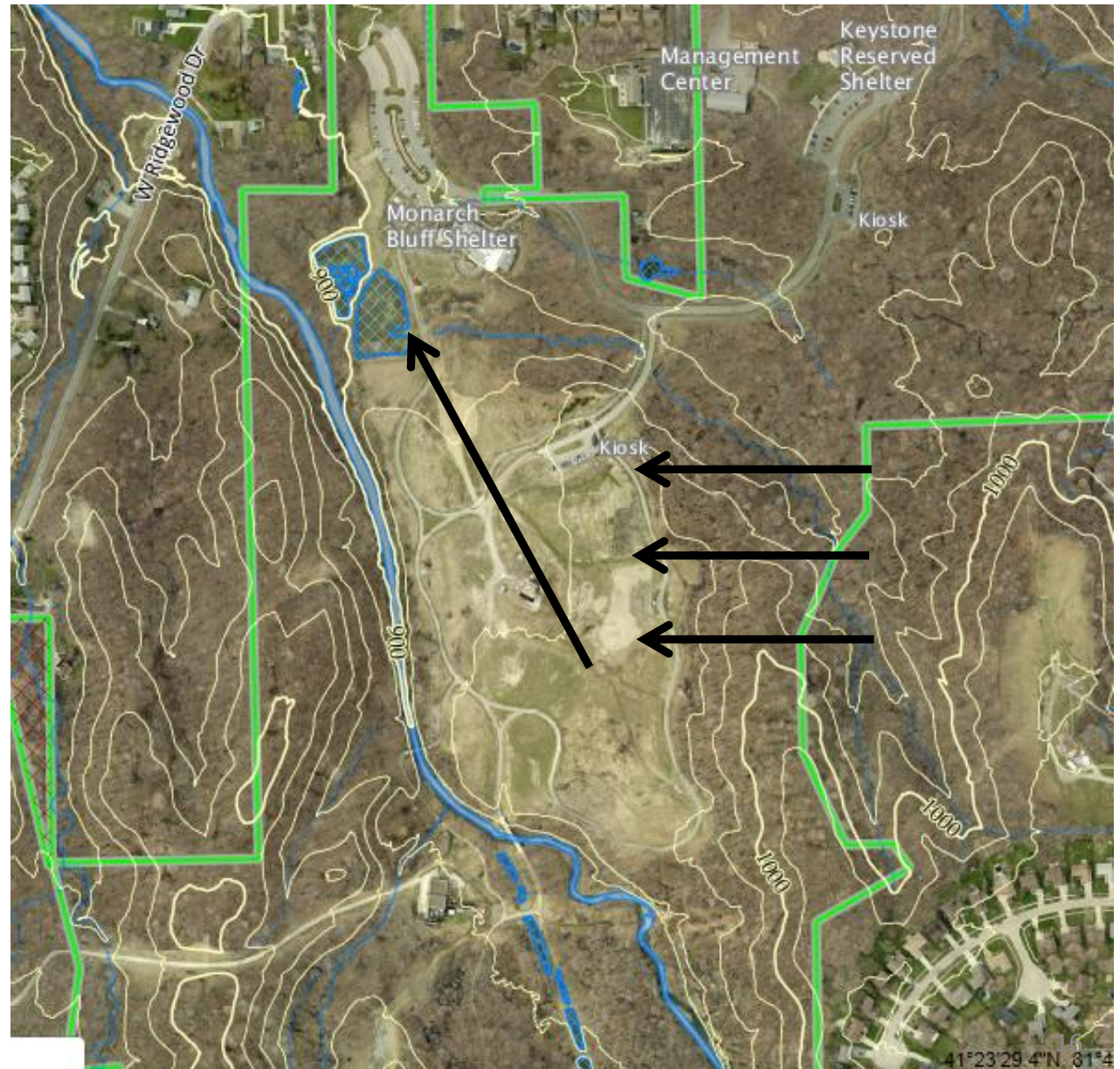
2 - 4 feet deep

Hydrologically dynamic
accept runoff from a
capped landfill

Flood in spring
Dry in the summer

Challenge to maintain
fluridone concentrations

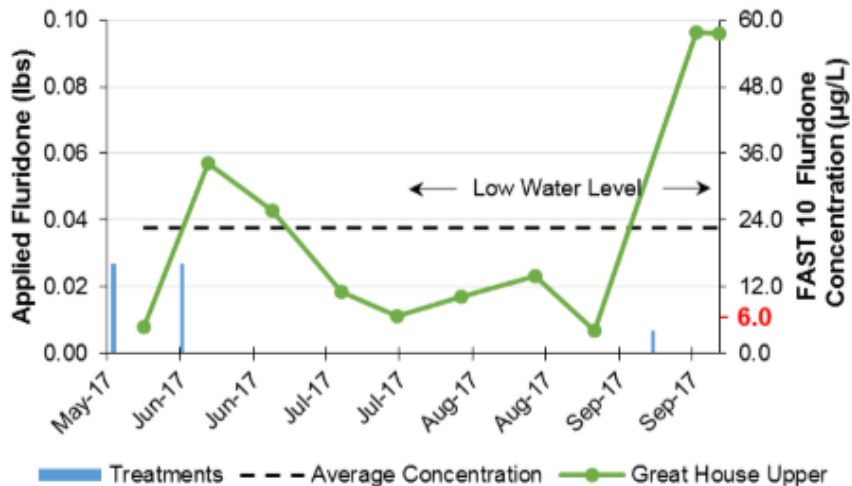
Now use Sonar H4C,
results encouraging



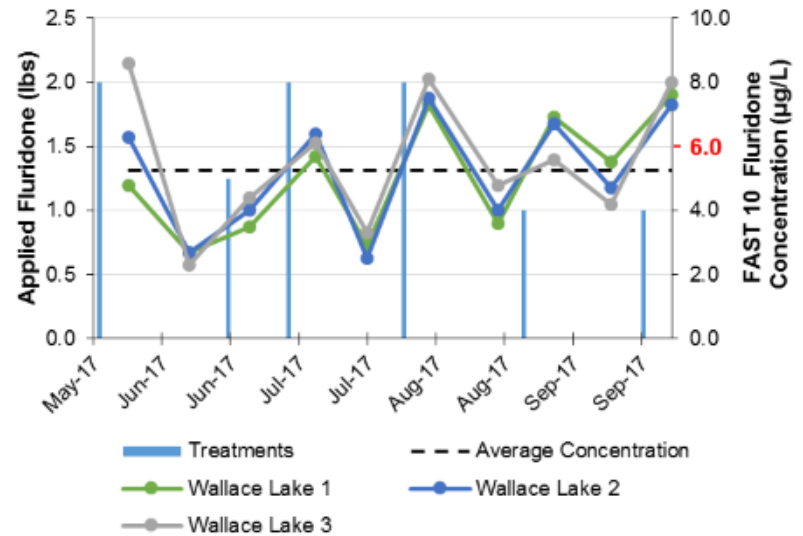
Control

May – October
 Fluidone 6ppb, target
 FasTESTs every ~ two weeks

Greathouse Wetlands Sonar H4C



Wallace Lake Sonar AS



2017 charts courtesy of

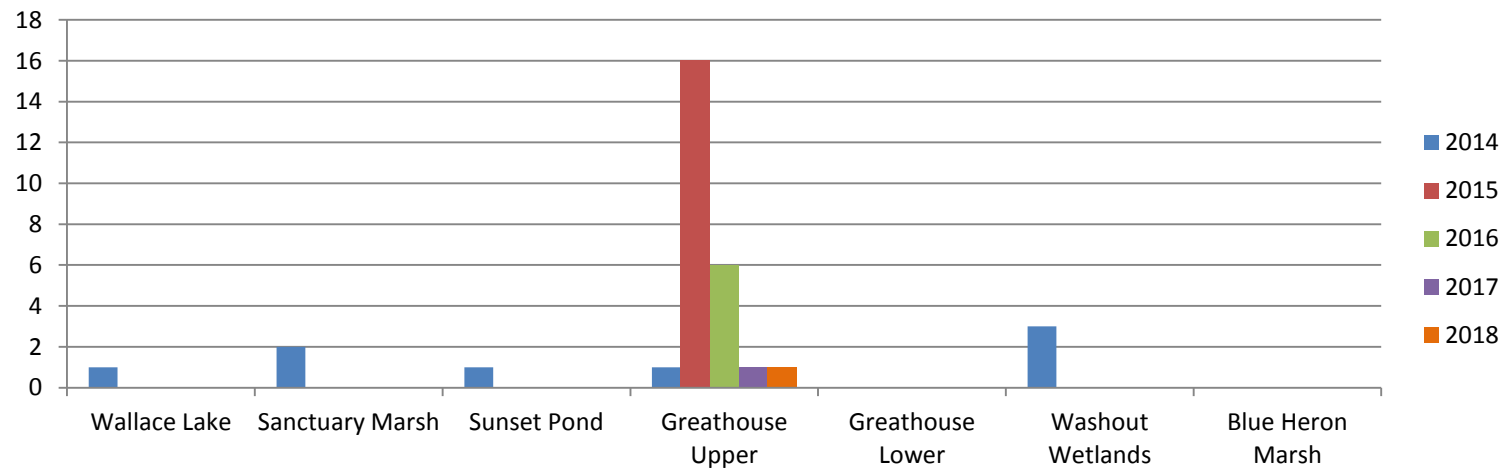


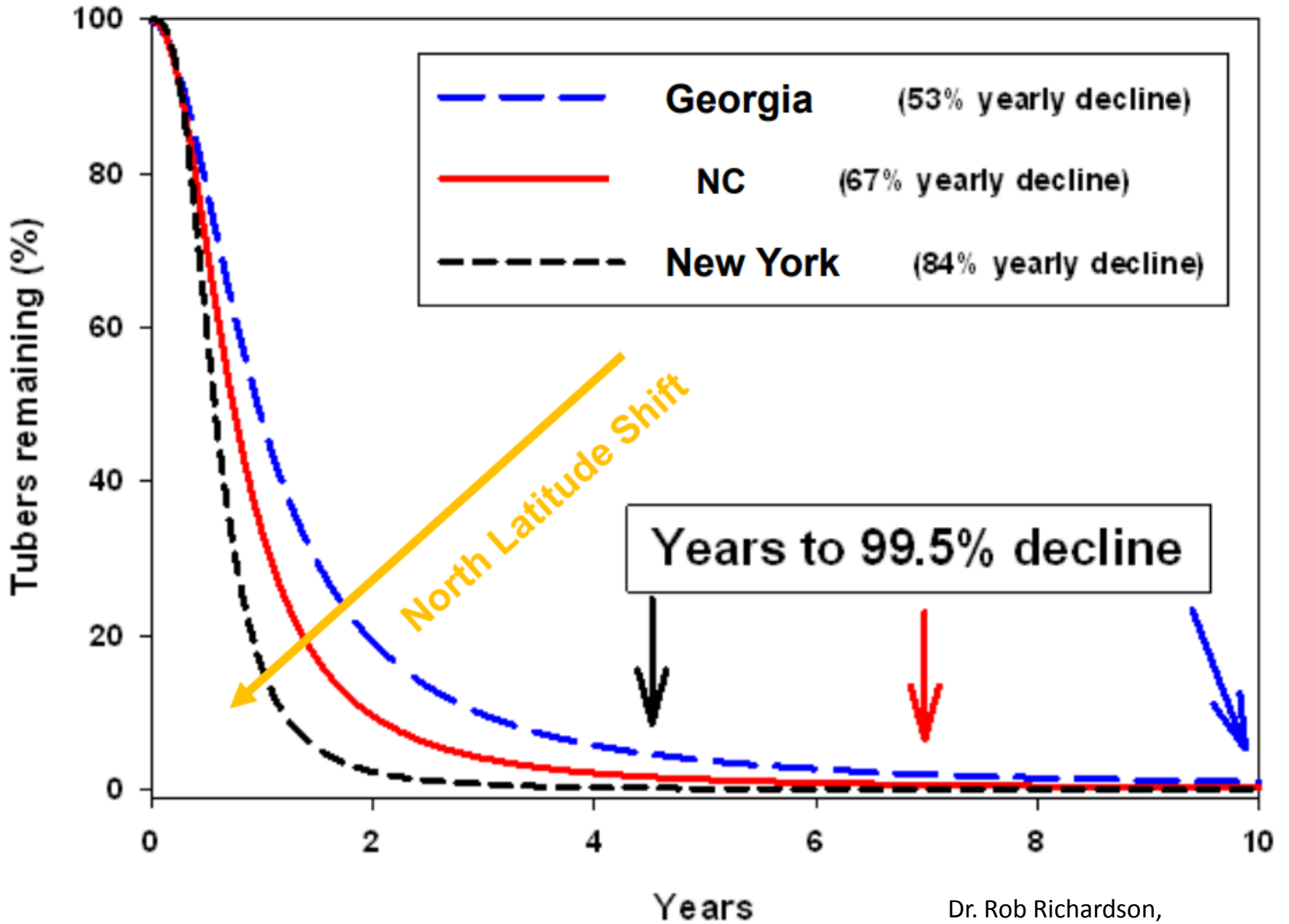
Tuber sampling in Cleveland Metroparks

2017 & 2018 Summary of tuber sampling

Reservation	Site	Sprouting hydrilla tubers	Non-sprouting hydrilla tubers	Number of core samples
North Chagrin	Sanctuary Marsh	0	0	303
	Sunset Pond	0	0	100
Ohio & Erie Canal	Blue Heron Marsh	0	0	203
West Creek	Greathouse Wetlands- Lower	0	0	200
	Greathouse Wetlands- Upper	0	2	327
	Wash-Out Wetlands	0	0	100
Mill Stream Run	Wallace Lake	0	0	350
Total				1583

Sprouted + Unsprouted Hydrilla Tubers in Cleveland Metroparks

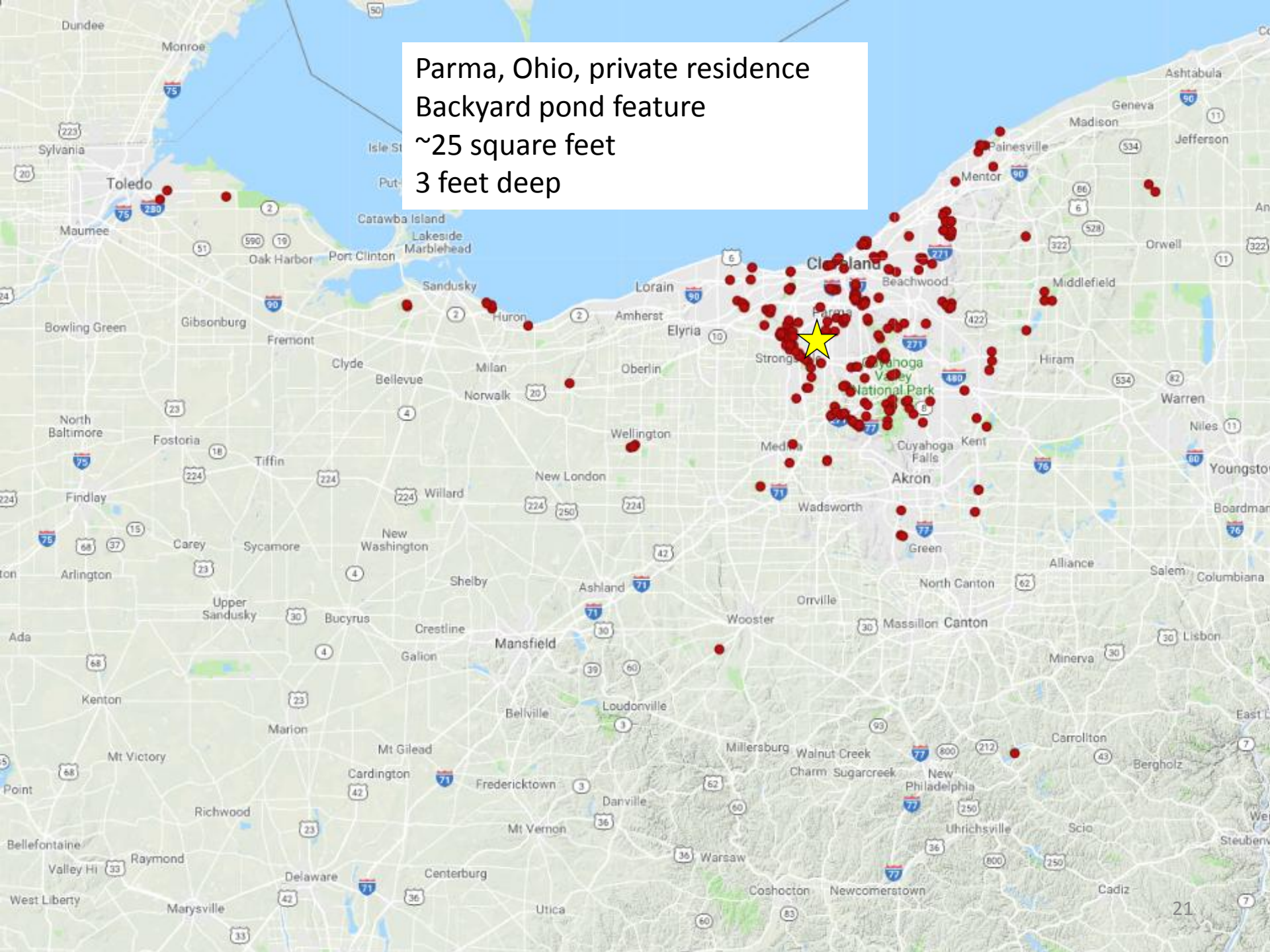




Cleveland Metroparks: Winding down treatment and monitoring

Site	Year detected	Date of last detection and type of plant material	Year proactive treatment ends (4 years after last hydrilla detection)	Annual tuber and vegetative surveillance ends (8 years after last hydrilla detection)
OEC, Blue Heron	2011	2014 (vegetation)	2019	2022
Greathouse Wetlands	2011	2018 (tuber, upper wetland only)	2023	2027
Washout Wetlands	2013	2014 (3 tubers)	2019	2023
Sunset & Sanctuary	2012	2014 (vegetation, sanctuary)	2019	2023
Wallace Lake	2011	2014 (tuber)	2019	2023

Parma, Ohio, private residence
Backyard pond feature
~25 square feet
3 feet deep





Control: Physical Removal



Removed all vegetation, vacuumed clean



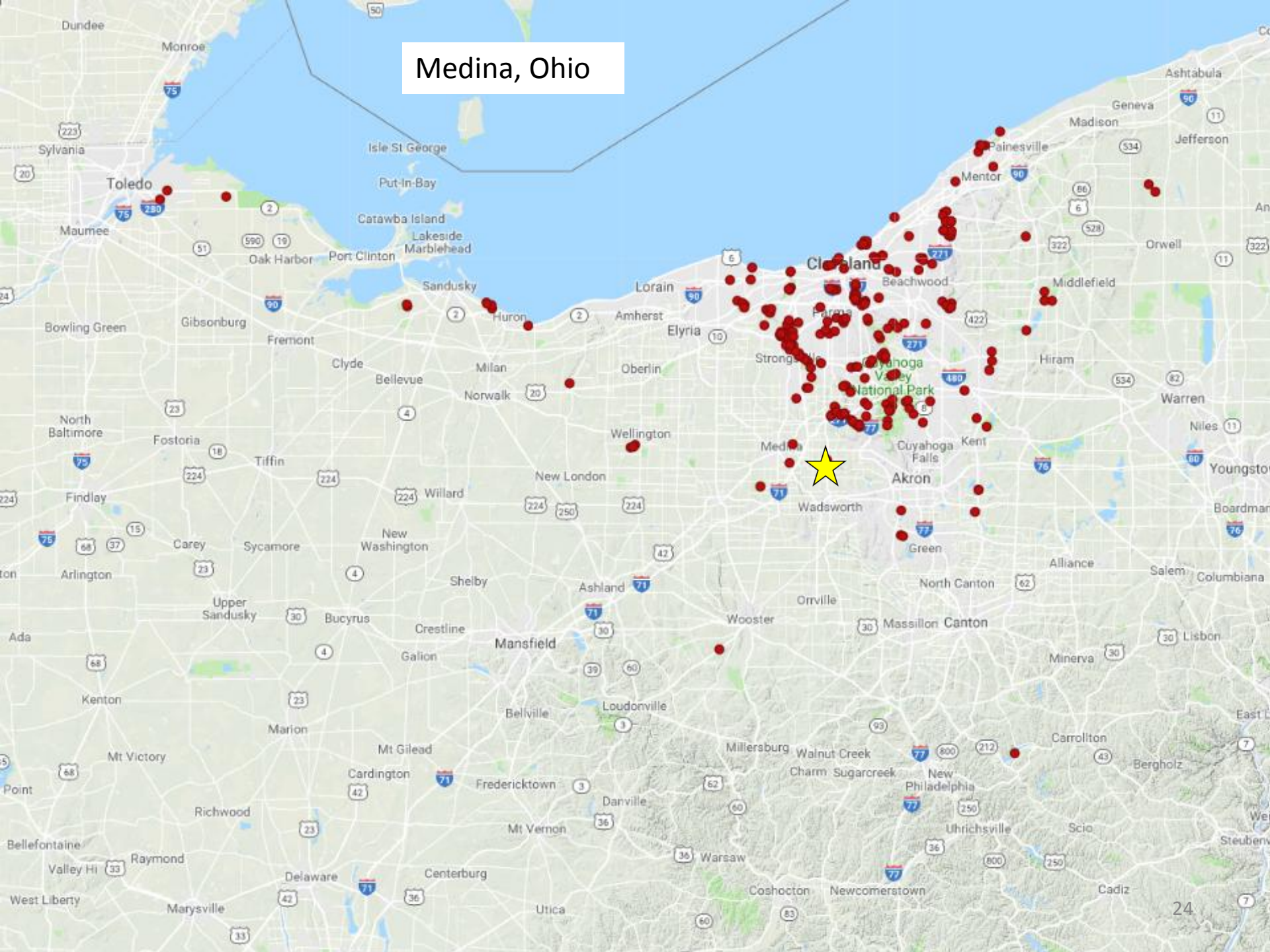
Hydrilla tuber in typha root wad

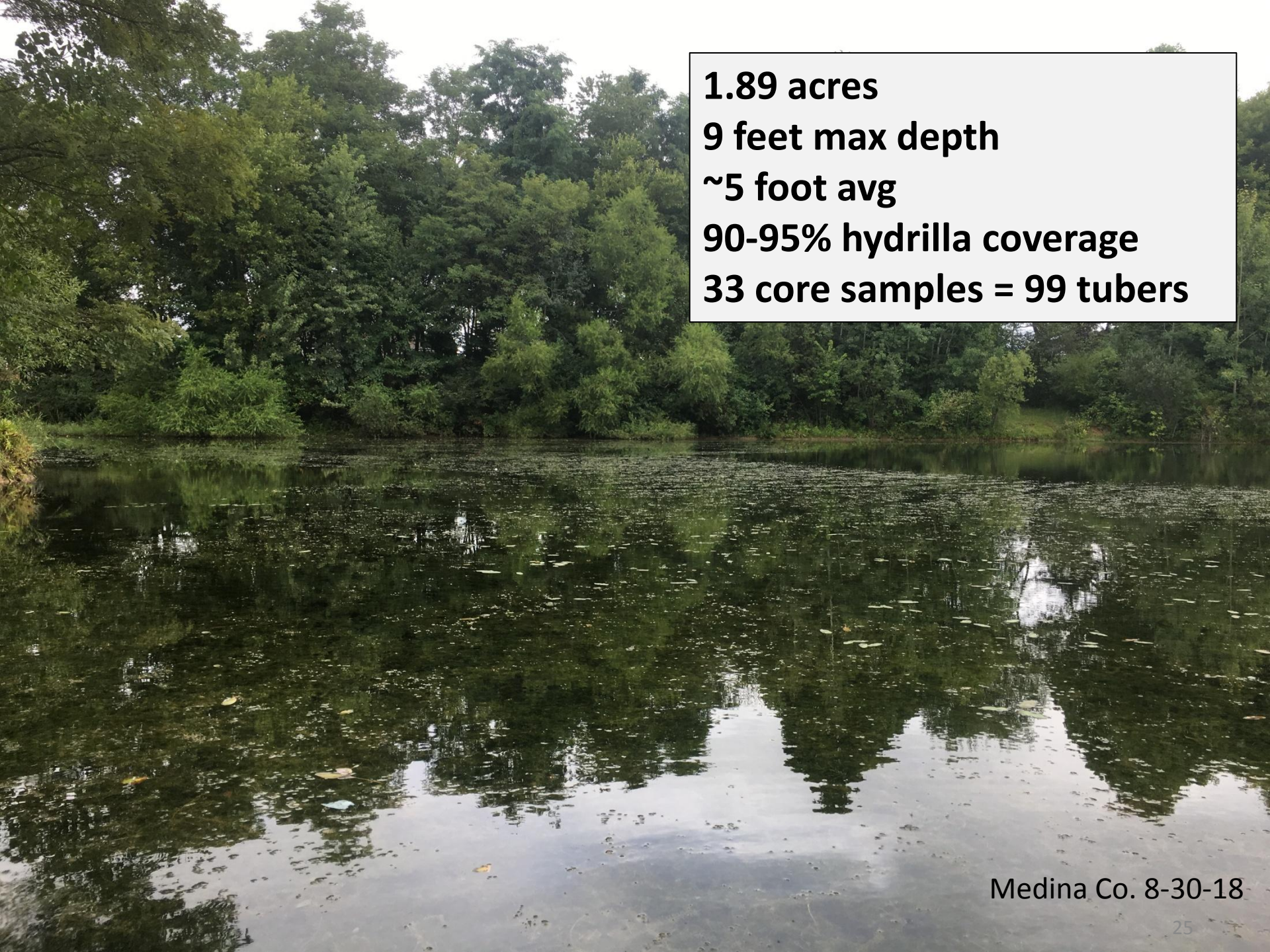
Homeowner correctly identified hydrilla, found CM through Google search

Provided homeowner list of native plants

Hydrilla free so far...

Medina, Ohio





1.89 acres
9 feet max depth
~5 foot avg
90-95% hydrilla coverage
33 core samples = 99 tubers

Medina Co. 8-30-18

A different perspective on hydrilla



Control: Herbicides

Nautique: ~1.5 gallons per surface acres

Sonar One: 30 ppb targeted

Contact herbicide to damage,
facilitate better uptake of Sonar

Discovered 8-28-18, applied on 9-24-18

Set to revisit every 15 days

Did not apply Nautique,
Needed to recheck safety protocol



Prevention

Tubers pulled
from waders



Prevention: Decontamination

Virkon, 3% bleach solution

Clean between sub watersheds

Distributed kits to partners

Promote national programs



**STOP AQUATIC
HITCHHIKERS!**
Be A Good Steward. Clean. Drain. Dry.
StopAquaticHitchhikers.org

Prevention: Detective Work

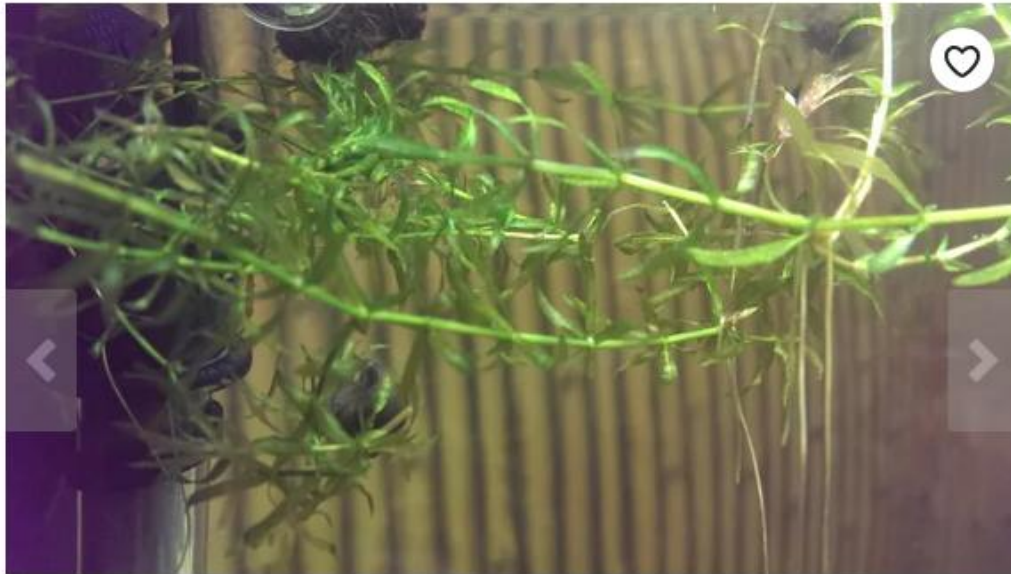


9-8-18



8-8-18

Prevention: Detective Work



Q zoom

SALE Live pond aquarium plant

\$1.99

Ask a question

Quantity

1

Add to cart

Overview

- Handmade item
- Material: live plant
- Favorited by: [124 people](#)
- Gift message available

🏪 This shop accepts Etsy gift cards

Description

You will receive a bunch of rooted guppy grass. It does well in ponds and lighted aquariums. You can bury the roots in substrate or let the plants float freely if you have baby fish that need cover. This plant grows pretty quick and will spread in your aquarium. The warmer the water the faster it grows! If you root it in a pond it will come back year after year :)

Confirmed hydrilla
Reported to ODA
Still a need to human
Intervention &
enforcement



Prevention: Education and Outreach

Worked with 43 landowners from 2017 - 2018

- joint surveys
- distributed AIS guides

Work closely with Ohio Sea Grant

Detection and decontamination kits in 2018

Crooked River Cooperative Weed Management Area

Upload observations to USGS, GLANSIS, EDDMapS, iNaturalist





Aquatic Invasive Plant Survey (Lake Erie Basin)

About

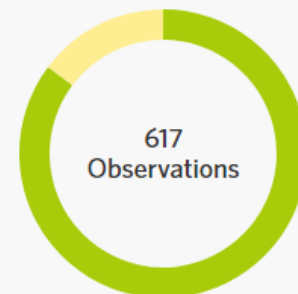
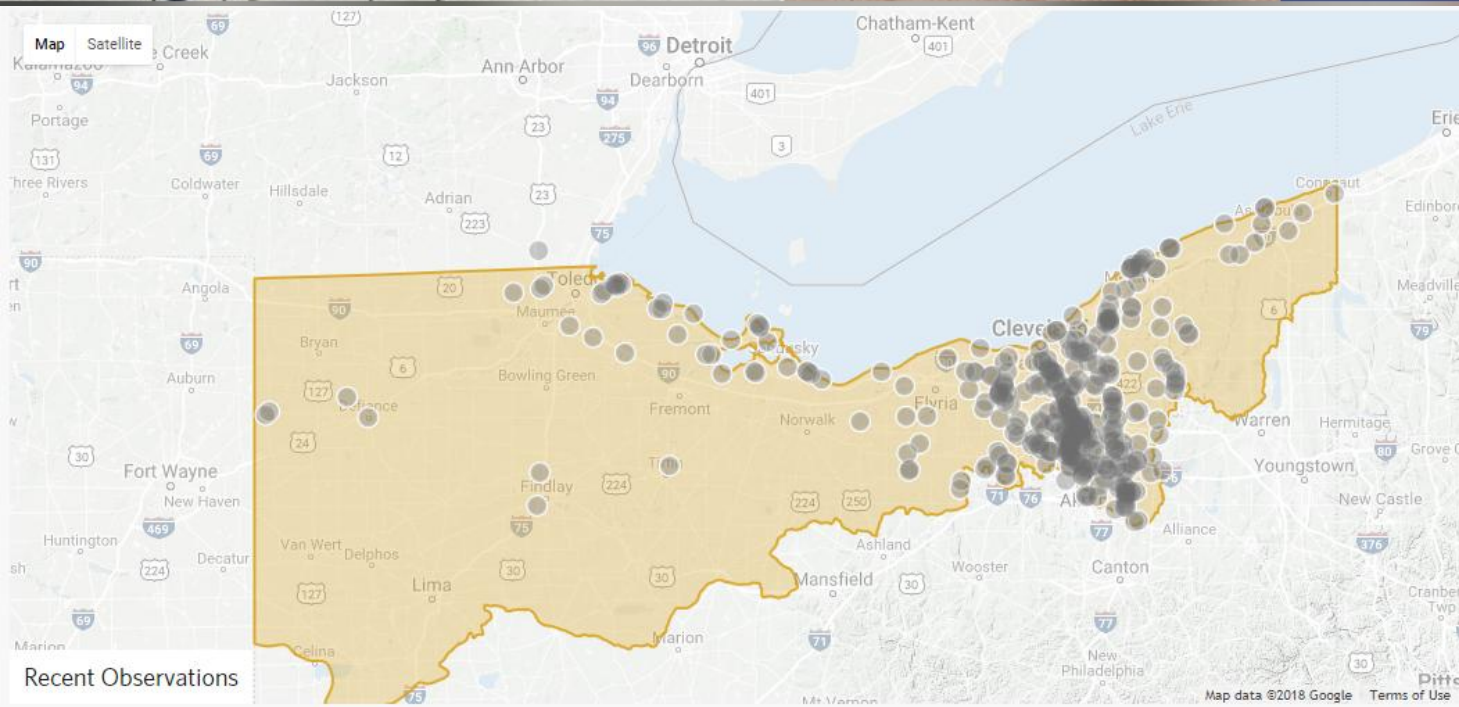
Members 14

This project is to collect information on the distribution and abundance of aquatic invasive plants in Ohio's Lake Erie basin. It is a part of Cleveland Metroparks survey for Hydrilla verticillata, "the world's worst water weed," which runs from 2017-2018.

[Read More >](#)

[Edit Project](#)

[NEWS](#)



- Research Grade
- Needs ID
- Casual



Most Observed Species

Purple Loosestrife	152
Common Reed	94
Yellow Iris	85
Crisp-leaved Pondweed	69
Reed Canary Grass	44
Brittle Naiad	40

[View All](#)

[View Yours](#)

34

Recent Observations



Other AIS detected by Cleveland Metroparks





HYDRILLA REPORTING FORM

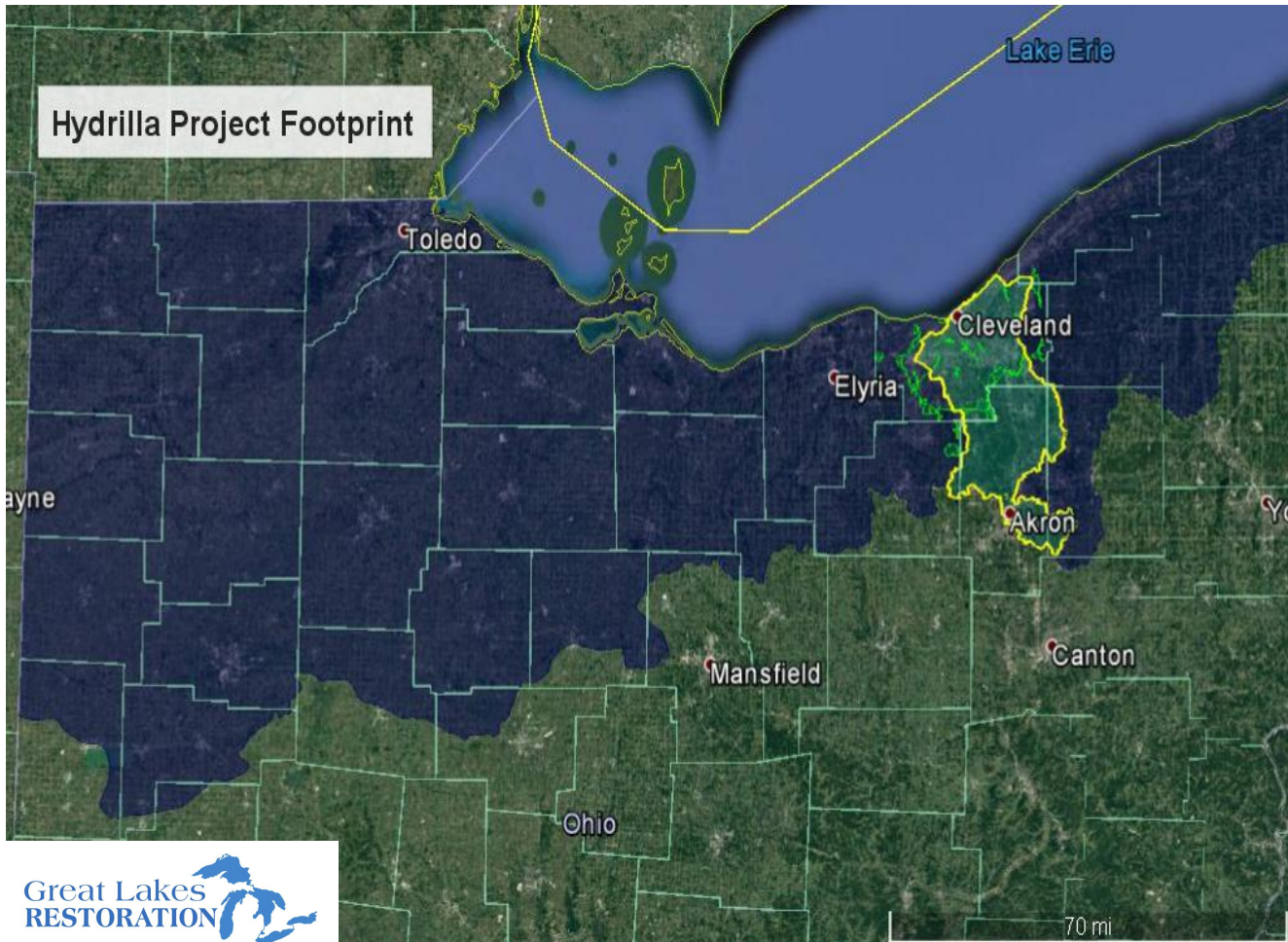
[Home](#) | [About](#) | [Conservation](#) | [Natural Resources](#) | [Current Issues](#) | [Hydrilla Verticillata](#) | [Hydrilla Reporting Form](#)

Leveraged CM volunteers – “Hydrilla Hunters”

1. Investigate waterbodies
2. Toss small rakes
3. Identify hydrilla, share observations with CM

Three site reports to date

Ohio's investment in hydrilla management



\$102,704.41*

Contractor and herbicide

\$316,830

GL- 00E01923

\$143,900

2019 ODNR funding

\$563,434.41

Early Detection and Rapid Response in Lake Erie Basin

*To avoid double counting, contractor/herbicide costs from GL – 00E01923 removed from cost



Review

- 1.) Cleveland Metroparks hydrilla project funded through 2019
 - ready to stop proactive herbicide treatment at many CM sites
- 2.) Easily accessible data helps everyone
 - range, abundance, occurrences... Better able to stop the spread with accurate, timely observations
- 3.) An educated network of AIS detectors with reporting pathways is critical
 - share your observations with non-scientists
 - find a bigger voice (social network, press releases)
- 4.) Great Lakes Hydrilla Collaborative help to close aquaculture hydrilla vector
 - empowered, aware consumer culture
- 5.) Decontamination protocols are important, replicable



Kyle Lanzer, Cleveland Metroparks

Thank You

Claire Weldon
Grant Manager

Jennifer Hillmer
Quality Assurance Manager

Kerrie Bercher, Shannon Hustosky, Scott McDougald, Scott Nelson
Hydrilla Strike Team

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Detection, Control, and
Prevention

**Great Lakes Restoration Initiative
GL- 00E01923
2017-2018**





Hydrilla caricature

Jeff Reibe, Naturalist,
Cleveland Metroparks,
Artist



Hydrilla alien invader

Angela Oster,
Independent Artist
in Rocky River, Ohio