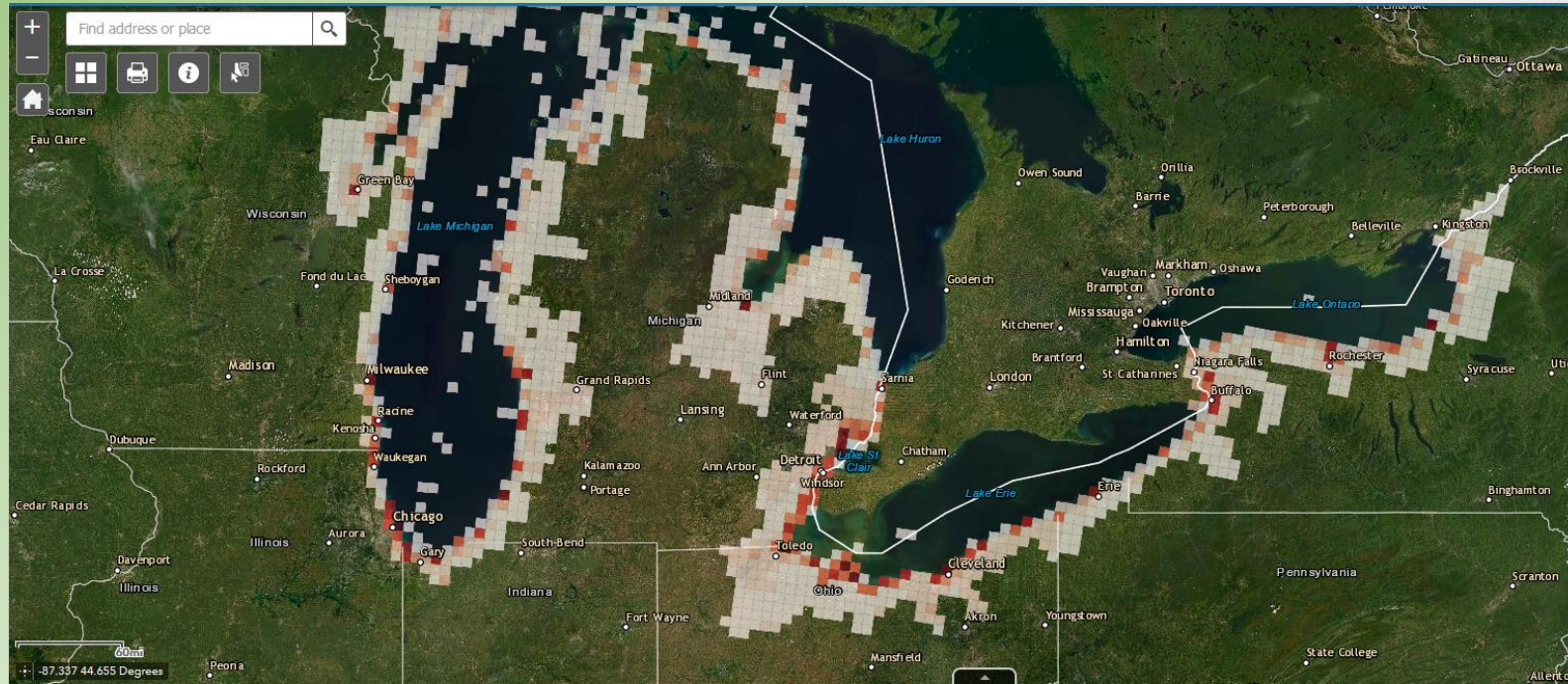


EARLY DETECTION OF INVASIVE AQUATIC PLANTS IN COASTAL WATERS OF THE GREAT LAKES



Regional aquatic plant surveillance program based on

- the TNC sampling protocol and
- the species watch list and site priorities identified by the Interstate Team in previously funded projects.

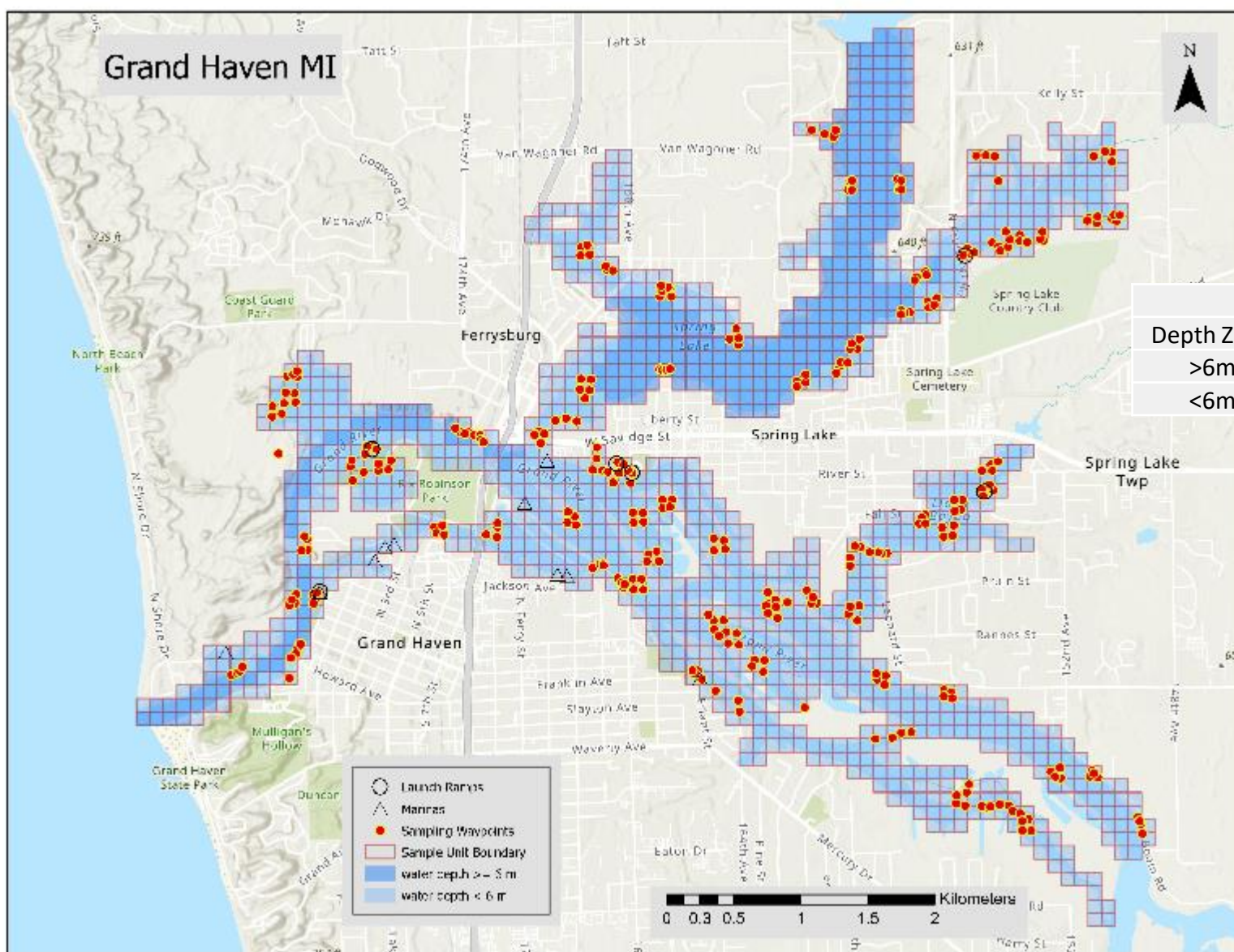
- 3 year baseline survey using TNC AIP sampling protocol
 - Implemented by the Great Lakes Environmental Center (GLEC) with oversight by TNC and in collaboration with interested state, tribal, and federal agencies.
 - Targeting many of the as yet unsurveyed top 25 priority sites and
 - a number of additional sites based on emergent risks or regional incursion response efforts.



State	Site Name	Proposed Year Sampled
Michigan	Grand Haven*	2022
	Gross Pointe Shores/Lake St. Clair*	2022
	Clinton River Mouth*	2023
Wisconsin	Sturgeon Bay	2023
	Green Bay/Fox River Mouth*	2024
Indiana	Calumet River Mouth*	2022
	Portage-Burns Waterway*	2022
Pennsylvania	Erie/Presque Isle*	2024
Ohio	Lorain/Black River Mouth*	2023
	Fairport Harbor/Grand River Mouth*	2023
	Geneva-on-the-Lake	2023
	Ashtabula/Ashtabula River Mouth	2023
	Conneaut/Conneaut Creek Mouth	2023
	Toussaint River Mouth*	2024
	Vermilion/Vermilion River Mouth	2024
	Eastlake/Chagrin River Mouth or Rocky River Mouth	2024



Grand Haven, Michigan



Species Richness			
Depth Zone	Mean	Median	Range
>6m	0	0	0
<6m	7	7	0-17

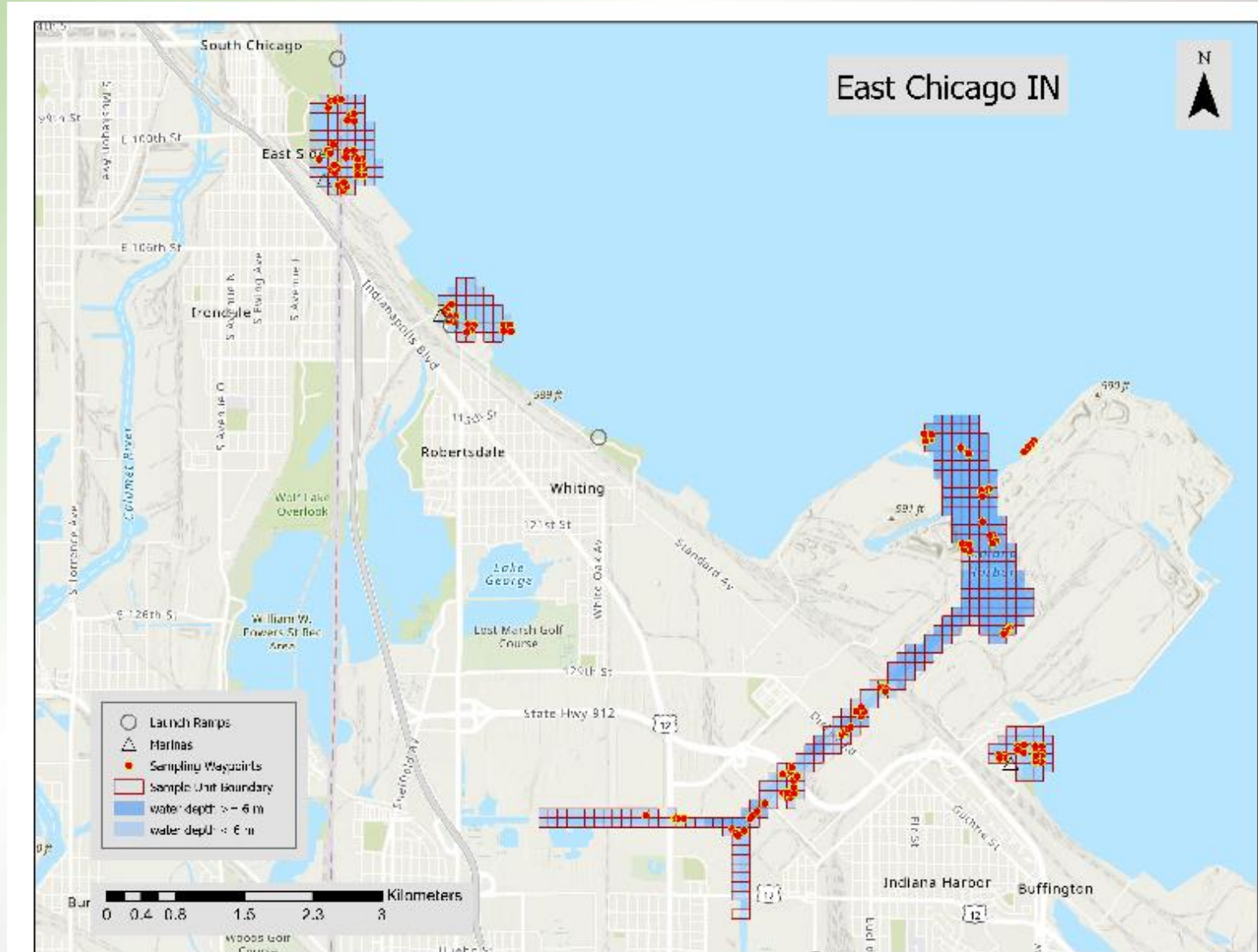
Taxon List

- Carex spp
- Ceratophyllum demersum (CEDE4)
- Chara spp. (CHARA)
- Elodea canadensis (ELCA7)
- Elodea nutallii (ELNU)
- Heteranthera dubia
- Hydrocharis morsus-ranae** (HYMO6)
- Lemna minor (LEMI3)
- Lemna trisulca (LETR)
- Lemna turionifera (LETU)
- Myriophyllum spicatum** (MYS2)
- Najas flexilis (NAFL)
- Najas guadalupensis (NAGU)
- Nelumbo lutea (NELU)
- Nuphar advena (NUAD)
- Nuphar variegata (NUVU)
- Nymphaea odorata (NYOD)
- Peltandra virginica
- Polygonum amphibium (POAM8)
- Pontederia cordata (POCO14)
- Potamogeton crispus** (POCR3)
- Potamogeton spp. (POTA)
- Potamogeton zosteriformis (POZO)
- Shoenoplectus acutus (SCAC3)
- Spirodela polyrhiza (SPPO)
- Stuckenia pectinata (STPE 15)
- Typha spp. (TYPHA)
- Vallisneria americana (VAAM3)
- Wolffia spp. (WOLFF)

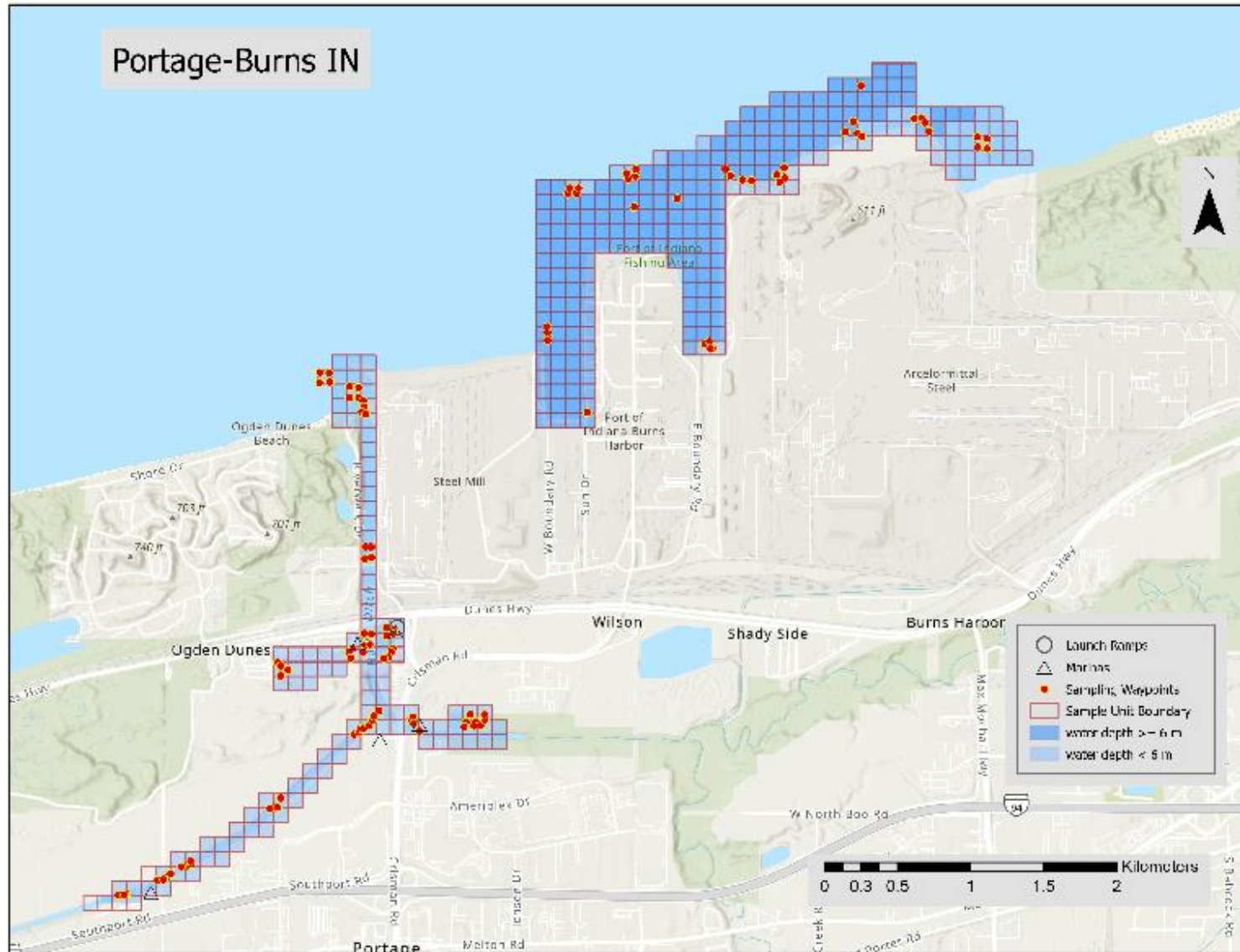
East Chicago, Indiana

Depth Zone	Species Richness		
	Mean	Median	Range
>6m	1	0	0-5
<6m	3	3	0-8

Taxon List
Ceratophyllum demersum (CEDE4)
Chara spp. (CHARA)
Elodea canadensis (ELCA7)
Elodea nutallii (ELNU)
Heteranthera dubia
Myriophyllum spicatum (MYSP2)
Najas guadalupensis (NAGU)
Najas minor (NAMI)
Nitellopsis obtusa (NIOB)
Phragmites australis (PHAU7)
Potamogeton crispus (POCR3)
Potamogeton richardsonii (PORI2)
Potamogeton spp. (POTA)
Stuckenia pectinata (STPE 15)
Vallisneria americana (VAAM3)



Portage Burns Waterway, Indiana



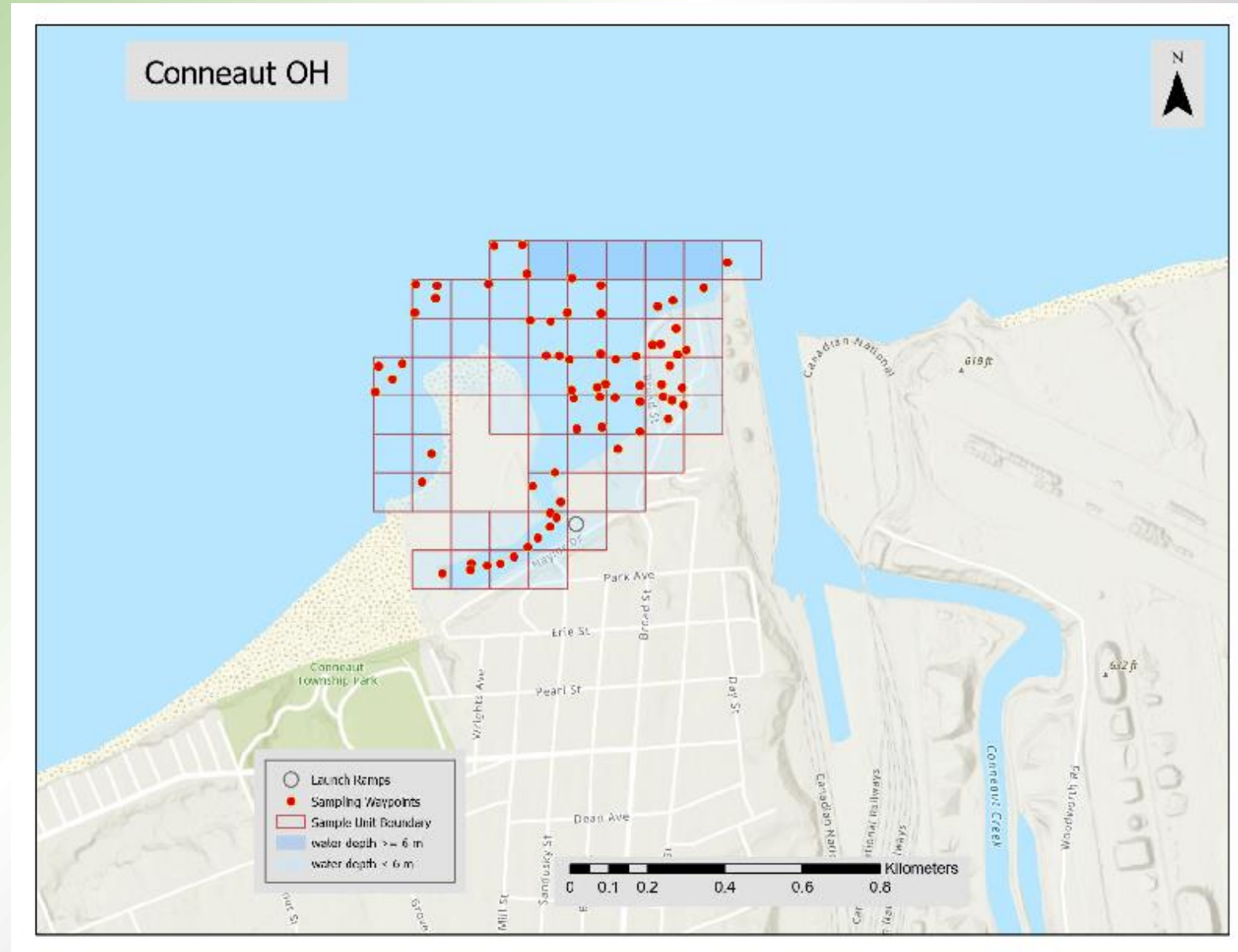
Depth Zone	Species Richness		
	Mean	Median	Range
>6m	0	0	0
<6m	2	2	0-8

Taxon List
Ceratophyllum demersum (CEDE4)
Elodea nutallii (ELNU)
Lemna turionifera (LETU)
Myriophyllum spicatum (MYSP2)
Najas guadalupensis (NAGU)
Najas minor (NAMI)
Nymphaea odorata (NYOD)
Peltandra virginica
Phragmites australis (PHAU7)
Potamogeton spp. (POTA)
Sagittaria spp. (SAGIT)
Spirodela polyrhiza (SPPO)
Stuckenia pectinata (STPE 15)
Wolffia spp. (WOLFF)

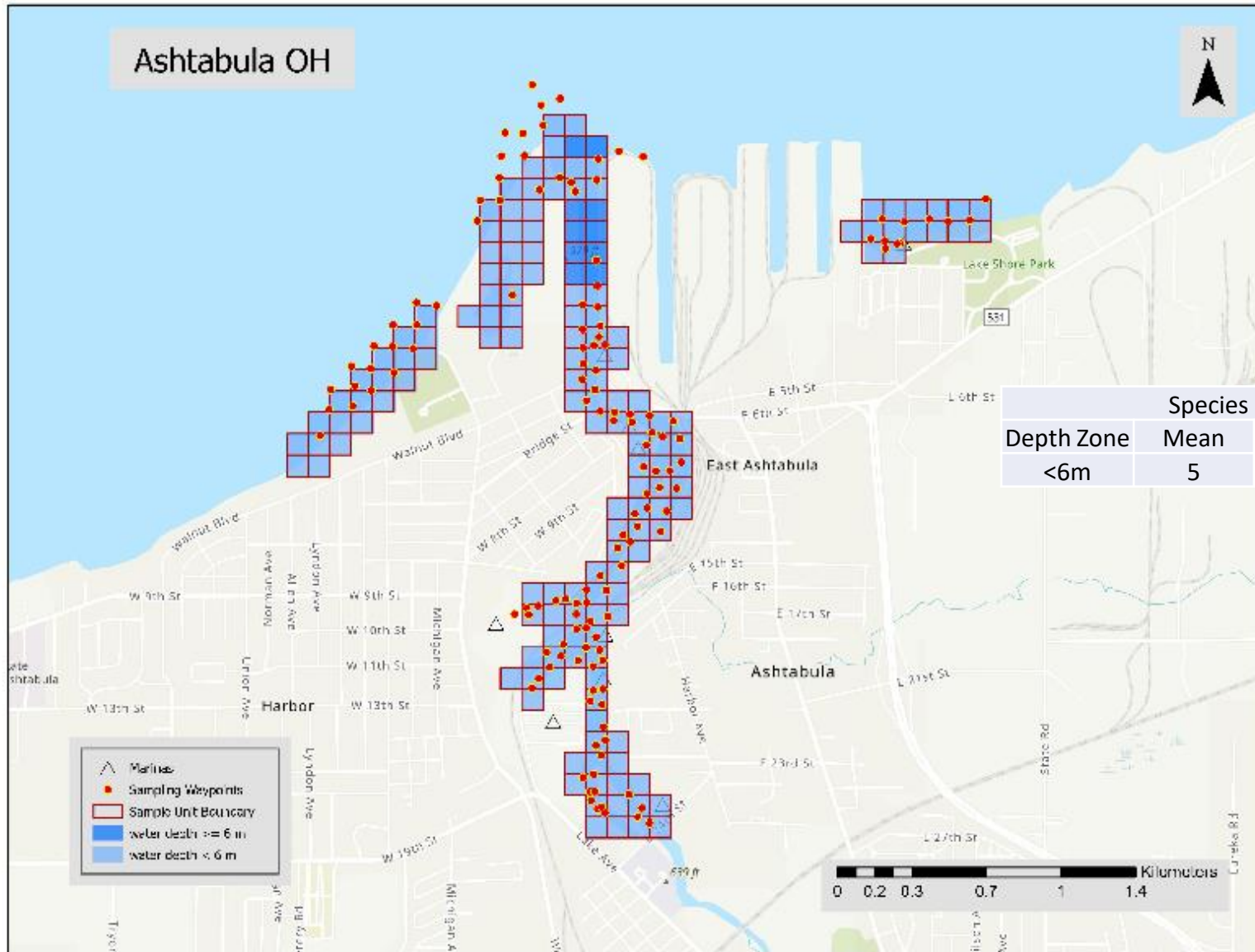
Conneaut, Ohio

Depth Zone	Species Richness		
	Mean	Median	Range
<6m	6	4	0-13

Taxa List
Ceratophyllum demersum (CEDE4)
Elodea canadensis (ELCA7)
Elodea nutalii (ELNU)
Heteranthera dubia
Myriophyllum spicatum (MYSP2)
Najas guadalupensis (NAGU)
Najas minor (NAMI)
Nitella spp. (NITE)
Nymphaea odorata (NYOD)
Potamogeton crispus (POCR3)
Potamogeton nodosus (PONO2)
Potamogeton richardsonii (PORI2)
Potamogeton spp. (POTA)
Stukenia pectinata (STPE 15)
Vallisneria americana (VAAM3)



Ashtabula, Ohio



Species Richness			
Depth Zone	Mean	Median	Range
<6m	5	5	0-17

Taxa List

Allisma spp. (ALISM)
 Ceratophyllum demersum (CEDE4)
 Elodea canadensis (ELCA7)
 Elodea nutalii (ELNU)
 Heteranthera dubia
Iris pseudacorus
 Lemna turionifera (LETU)
 Lythrum salicaria (LYSA2)
 Myriophyllum spp. (MYRIO)
Myriophyllum spicatum (MYSP2)
 Najas guadalupensis (NAGU)
Najas minor (NAMI)
 Nitella spp. (NITE)
 Nuphar advena (NUAD)
 Nuphar variegata (NUVU)
 Nymphaea odorata (NYOD)
 Peltandra virginica
 Phragmites australis (PHAU7)
 Potamogeton amplifolius (POAM5)
 Pontederia cordata
Potamogeton crispus (POCR3)
 Potamogeton nodosus (PONO2)
 Potamogeton pusillus (POPU7)
 Potamogeton richardsonii (POR12)
 Potamogeton spp. (POTA)
 Spirodela polyrhiza (SPPO)
 Stuckenia pectinata (STPE 15)
 Utricularia vulgaris (UTMA)
 Vallisneria americana (VAAM3)
 Zannichellia palustris (ZAPA)

Next Summer...

Michigan

- Clinton River Mouth/Lake St. Clair

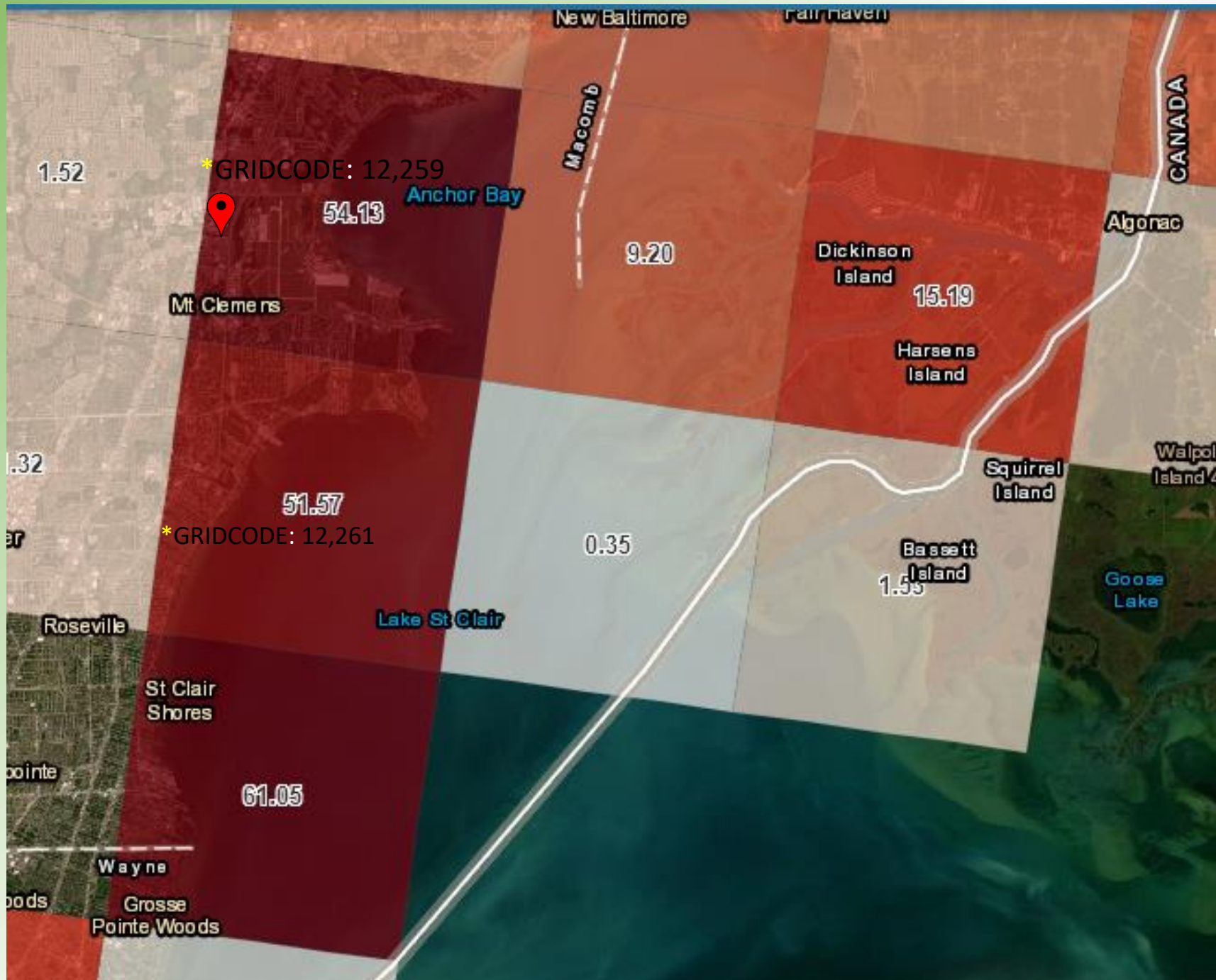
Wisconsin

- Sturgeon Bay

Pennsylvania/Ohio

- Erie/Presque Isle
- Ohio sites require input

State	Site Name	Proposed Year Sampled
Michigan	Grand Haven*	2022
	Gross Pointe Shores/Lake St. Clair*	
	Clinton River Mouth*	2023
Wisconsin	Sturgeon Bay	2023
	Green Bay/Fox River Mouth*	
Indiana	Calumet River Mouth*	2022
	Portage-Burns Waterway*	2022
Pennsylvania	Erie/Presque Isle*	2023
Ohio	Lorain/Black River Mouth*	
	Fairport Harbor/Grand River Mouth*	
	Geneva-on-the-Lake	
	Ashtabula/Ashtabula River Mouth	2022
	Conneaut/Conneaut Creek Mouth	2022
	Toussaint River Mouth*	
	Vermilion/Vermilion River Mouth	
	Eastlake/Chagrin River Mouth or Rocky River Mouth	



Ohio and Pennsylvania Sites

