

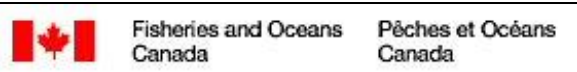
St. Marys River Partnerships for Aquatic Invasive Species Detection

Great Lakes Panel on ANS

June 27, 2024

Presentation prepared by:

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The St. Marys River is 74.5 miles in length and connects Lake Superior with Lake Huron.

The Soo Locks/compensating works separate Lake Superior (upper river) and Lake Huron (lower river).

The Great Lakes Fishery Commission's Lake Huron Committee established a St. Marys River Fishery Task Group with federal, state, tribal, and university participation. This group has spurred other collaborations between partner agencies.



The St. Marys River is a unique waterway

1

Large system with diverse aquatic habitats

- rapids
- riverine connections
- lakes
- wetlands

2

Supports a diverse and healthy fish community

Despite high recreational fishing pressure (2nd only to Saginaw Bay for MI waters of Lake Huron)

3

International boundary waters with multiple stakeholders including international and Great Lakes shipping

Fisheries are managed by multiple agencies

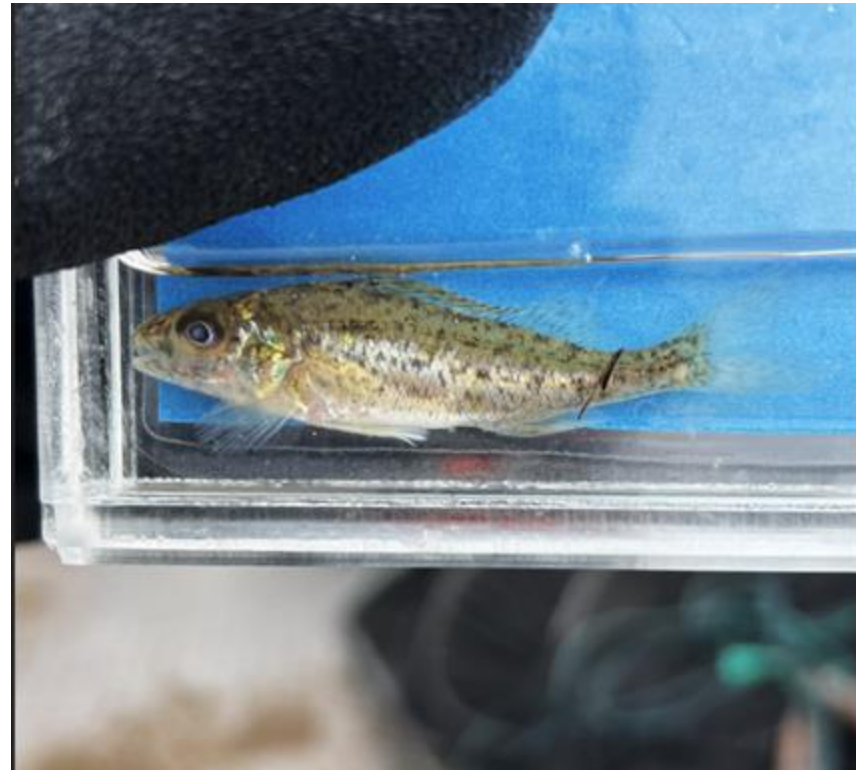
Invasive Species

Invasive Species Vectors:
recreational anglers,
shipping, and others.

Invasive species threaten
the rich diversity of the
St. Marys River and the
recreational/subsistence
fishery along this
international corridor.

Some Invasives Present within the St. Marys River

- Sea Lamprey
- Ruffe
- Round Goby
- Tubenose Goby
- Didymo
- European Frogbit
- Dreissenids



Ruffe captured in October 2023 by Sault Tribe. Photo: Ron McKechnie

Great Lakes
Water Quality
Agreement
Annex 6 –
Aquatic
Invasive
Species

The St. Marys River is an AIS priority for multiple agencies under the Great Lakes Water Quality Agreement Annex 6 for aquatic invasive species

“ Through this Annex the Parties shall establish a binational strategy to prevent the introduction of Aquatic Invasive Species (AIS), to control or reduce the spread of existing AIS, and to eradicate, where feasible, existing AIS within the Great Lakes Basin Ecosystem.”

– International Joint Commission,
<https://ijc.org/en/who/mission/glwqa/annex6>
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Great Lakes AIS Early Detection Survey

- USFWS led AIS Early Detection Program
- High-risk locations based on introduction pathways
- Comprehensive sampling to detect new invasive fish and invertebrates
- Annual, on-going sampling

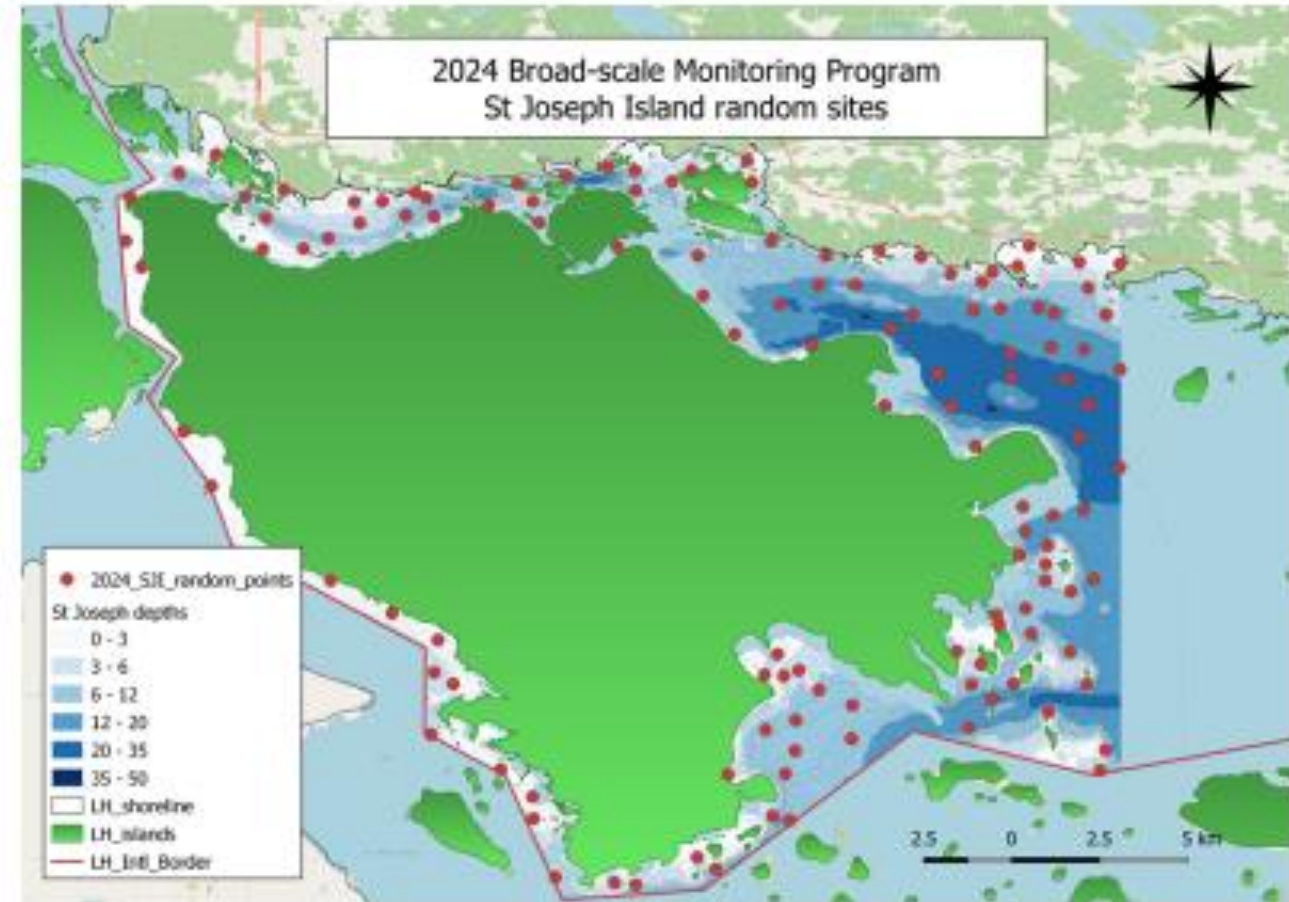


St. Joseph Island Broad-scale Monitoring Survey (BsM)

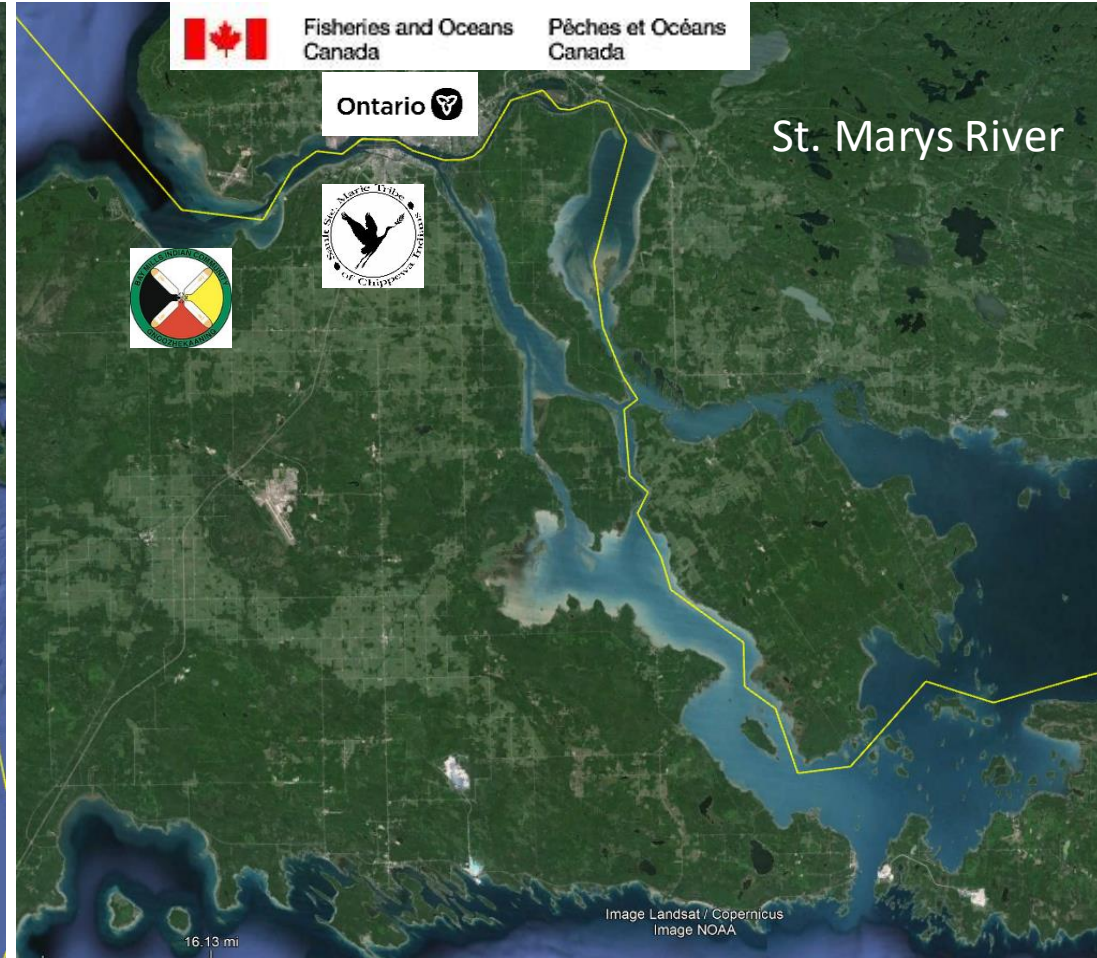
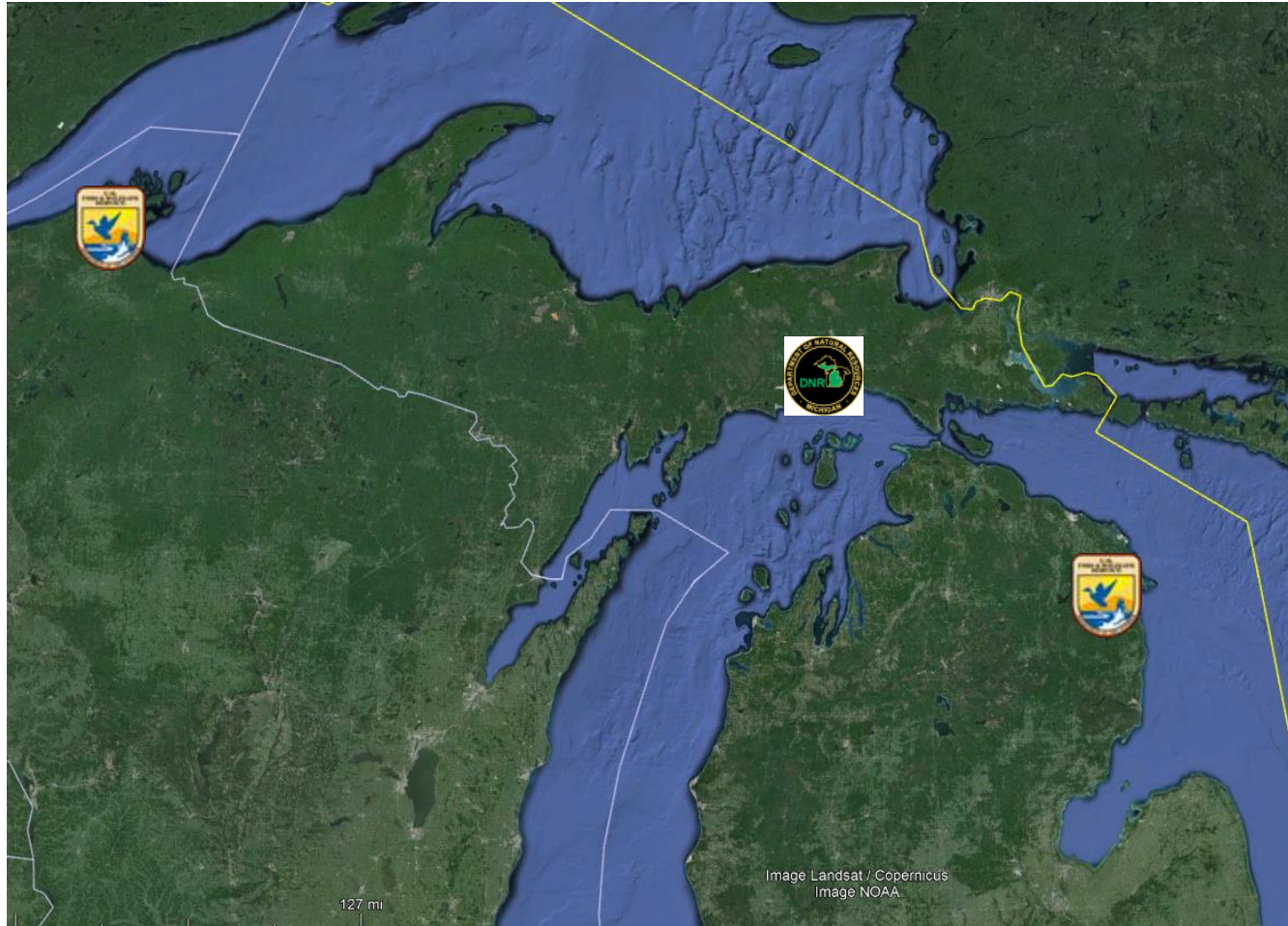
The Broad-scale method uses a combination of two types of gillnets:

- “Large mesh” North American (NA1) gillnet that target fish larger than 20 cm in length, the size range of interest to anglers;
- “Small mesh” Ontario Small mesh (ON2) gillnet that target smaller fish (size range of interest to large fish)

Set Duration	Large Mesh: min sixteen hours; max twenty two hours Small Mesh: min twelve hours; max twenty two hours
Gear Length	Large Mesh: 49.6m (8 mesh sizes per gang x 3.1m panels x 2 gangs) Small Mesh: 25.0m (5 mesh sizes per gang x 2.5m panels x 2 gangs) <i>with option for use of single gang net</i>
Gear Height	Large Mesh: 1.8m (option of 0.9m for 1-3m stratum) Small Mesh: 1.8m (option of 0.9m for 1-3m stratum)
Mesh Series	Large Mesh: 38, 51, 64, 76, 89, 102, 114, 127 (stretch mm) Small Mesh: 13, 19, 25, 32, 38 (stretch mm)



St. Marys River AIS Partners



St. Marys River AIS Early Detection Survey Partnership

- Comprehensive fishery survey
- Multiple gear types
- Standard FWS gear/protocol/locations, and shared data
- Partnerships are critical to finding invasives in this large system while still rare are potentially controllable.



Invasive species of high concern



Invasive



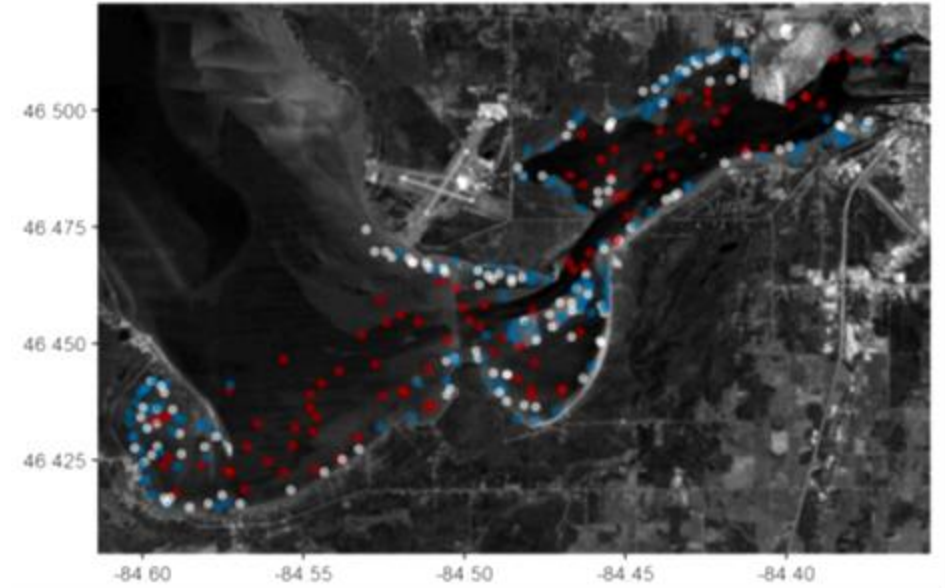
Native

Invasive species of high concern



AIS Early Detection in Upper St Marys River

Year	E-fish	Fyke	Trawl	Richness			Total Catch
				Gill Net	Non-Native	Total	
2010	15	15	15				
2011	15	15	15				
2012	15	14	16				
2013	19	20	10				
2014	12	20	10				
2015	17	20	10				
2016	7	15	10				
2017	19	14	7		7*	44*	29,030*
2018							
2019	20	20		11	4	31	7,305
2020							
2021	6	6		6	3	25	3,176
2022	10	7		19	4	28	1,271
2023	12	24		8	4	34	14,931



E-fishing (white), fyke nets (blue), bottom trawls/ gill nets (red)

Partners:

- ON Ministry of Natural Resources & Forestry
- Fisheries & Oceans Canada
- Bay Mills Indian Community

Contact: Mike Seider, Mike_Seider@fws.gov

*Sum of 2010-2017 efforts 55,713

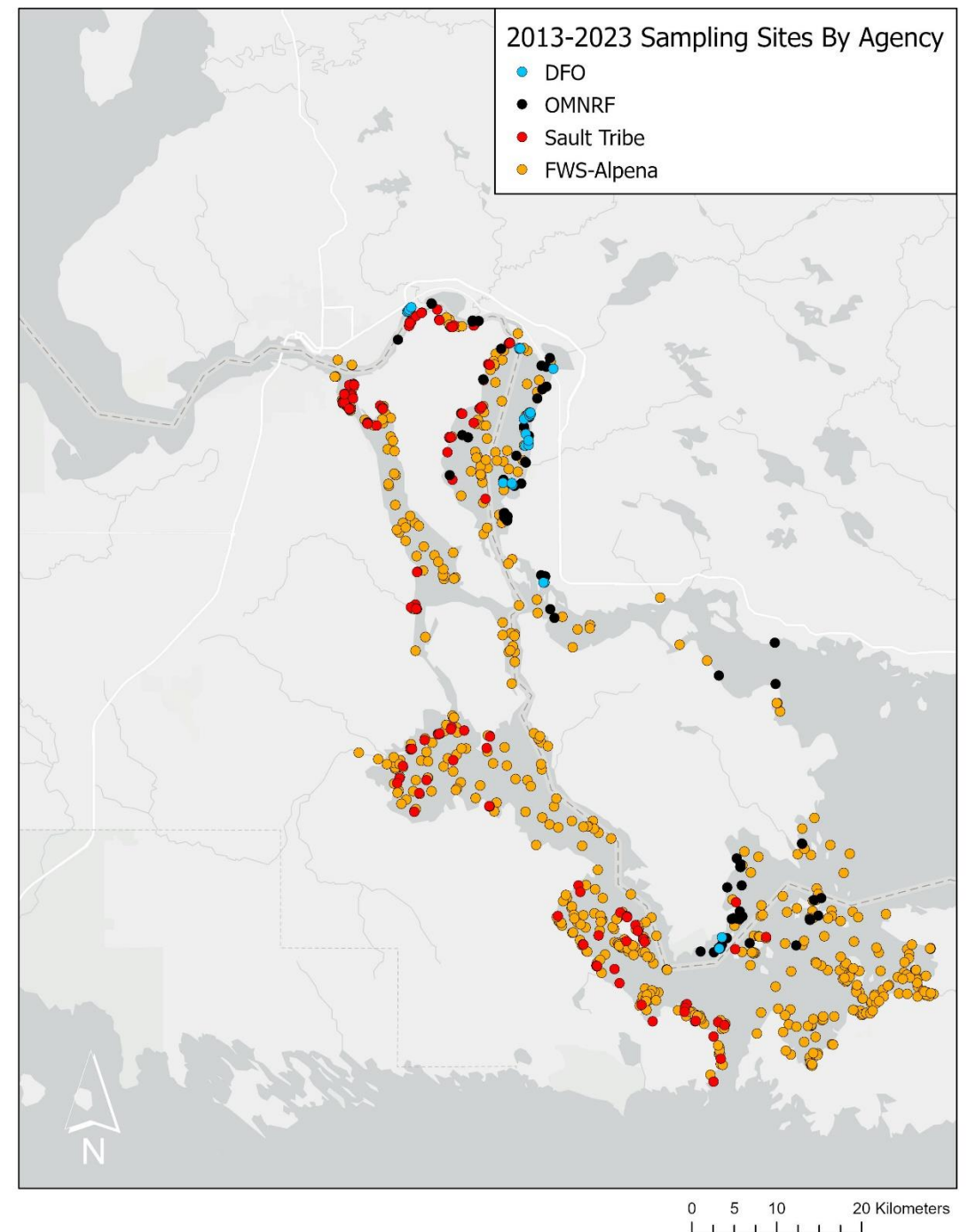
AIS Early Detection in the Lower St. Marys River

- No novel invasive species were collected
- Existing invasive fish (Ruffe, Round Goby, and Tubenose Goby) have been detected and persist

Sampling: May – October, 2013-2023
163,237 Fish were examined, 75 species

Gear	Effort
Electrofishing	302
Fyke Nets	262
Bottom Trawl	202
Gill Net	46
Minnow Trap	25
Total	837

Contact: Anjanette Bowen, Anjanette_Bowen@fws.gov



Partnership Successes

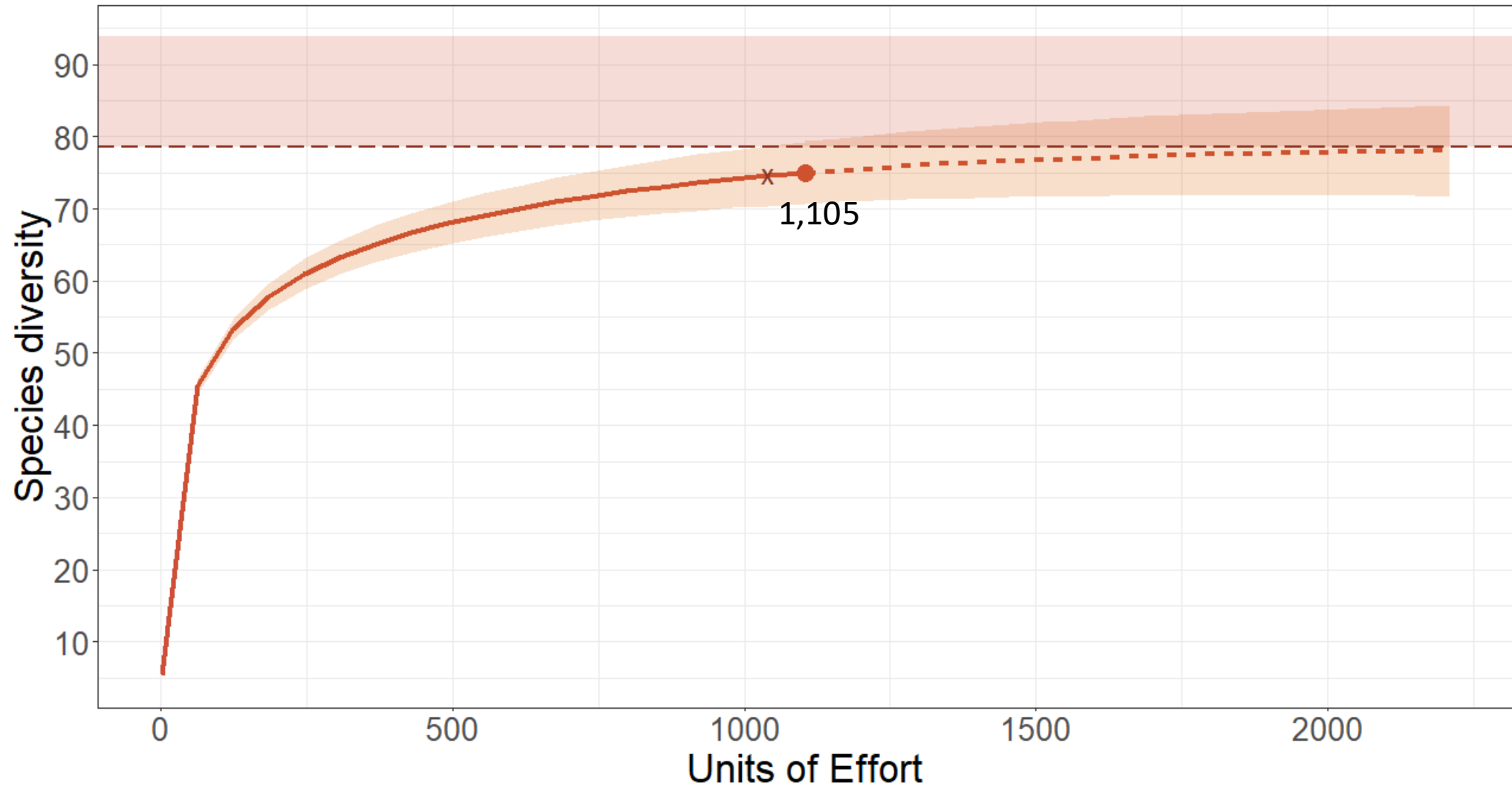
- Ruffe captures by multiple agencies
- Early notifications for recreational findings via network
- The power of the partnership amplifies the ability of multiple small offices to detect invasives across the river



Collaboration helps us meet goals

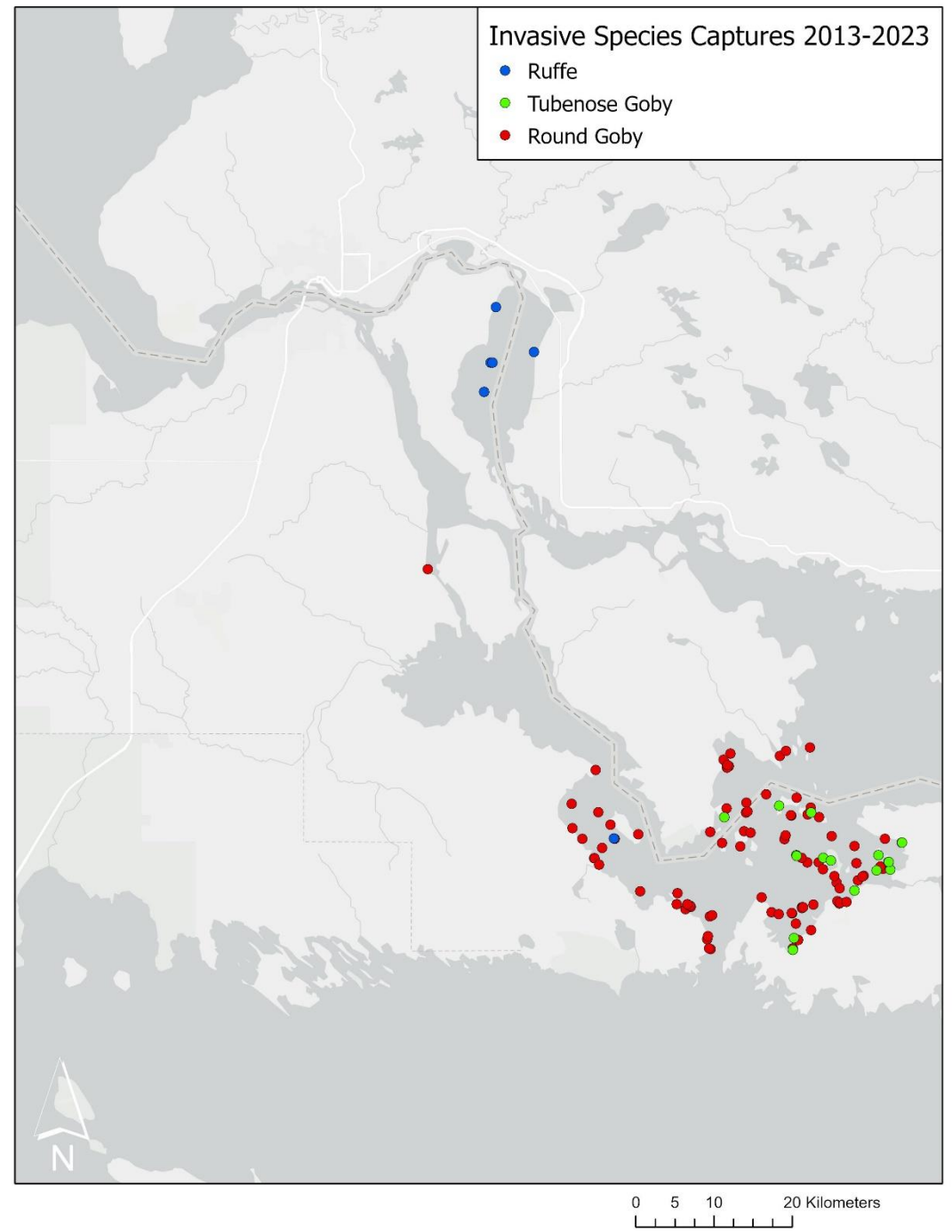
2013-2023, Lower River Analysis
75 of 78.5 predicted species
95% met species detection efficiency target

St. Marys River



Persisting Species in the Lower St. Marys River

- Ruffe is spreading downstream
- Round goby distribution is slowly spreading upstream
- Tubenose goby in Potagannissing Bay



St. Marys River

- Unique system with diverse fisheries
- At risk for invasives
- Monitoring is imperative
- Partnerships make effective monitoring possible
- Work ongoing and growing





Thank You

Questions?

Acknowledgements

Great Lakes Restoration Initiative
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