

Tributary Use and Large-Scale Movement of Grass Carp: Research to Inform Control Efforts in Lake Erie

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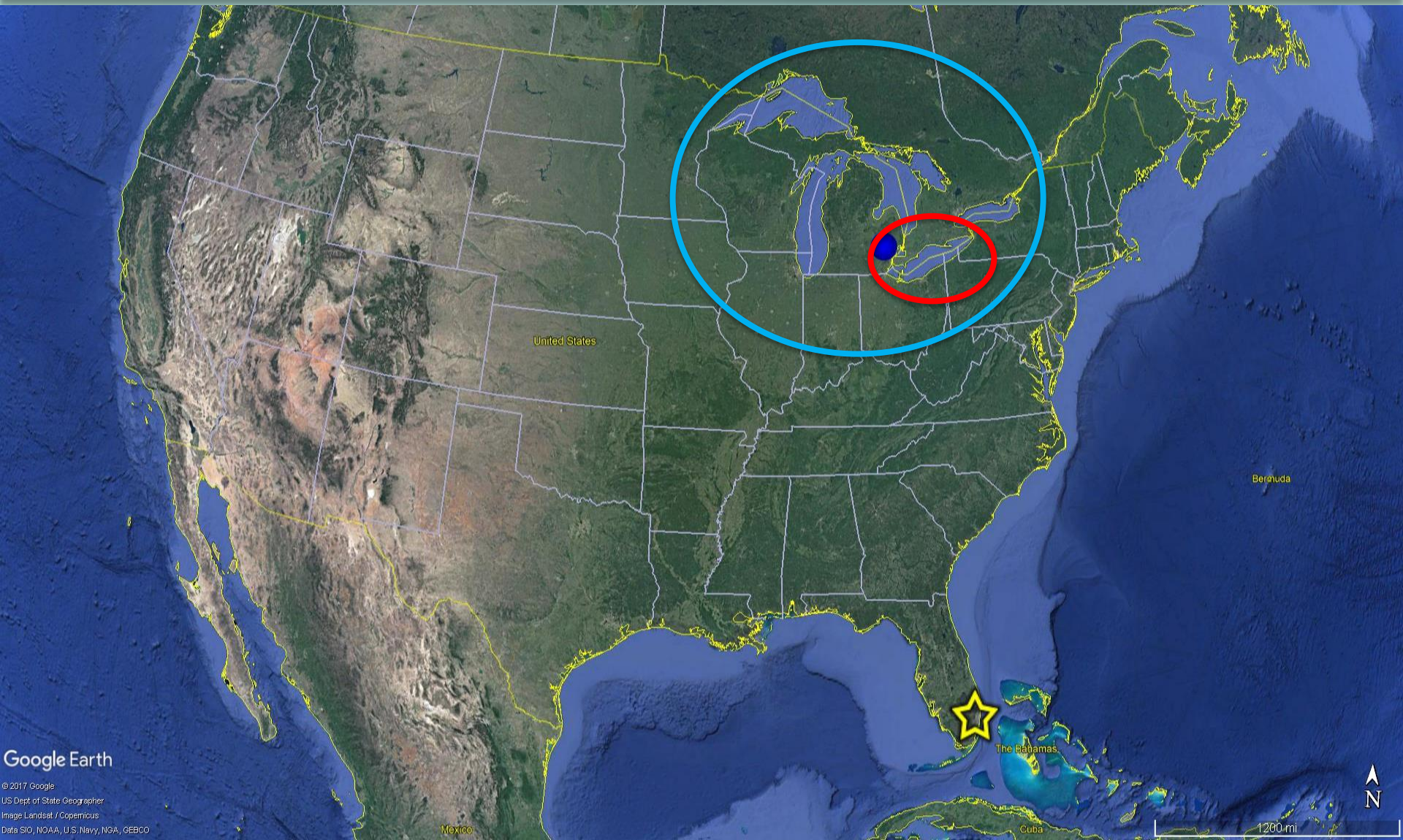
2-Fisheries Division, Michigan Department of Natural Resources

3-Great Lakes Science Center, United States Geological Survey

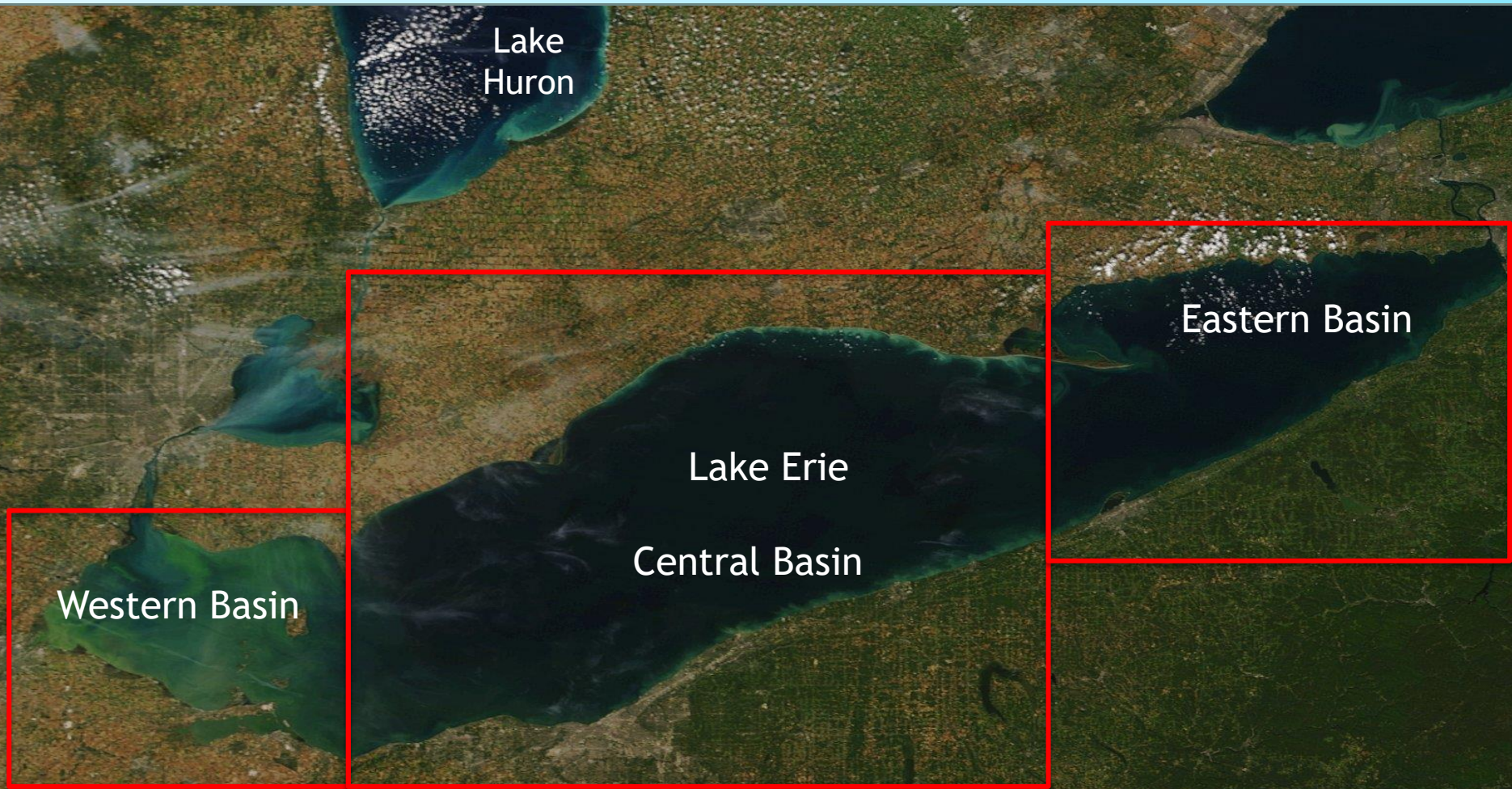
4-Division of Wildlife, Ohio Department of Natural Resources



Laurentian Great Lakes



Study Location



Grass Carp (*Ctenopharyngodon idella*)



- ❖ Earliest records of capture in early 1980s.
- ❖ Suitable spawning habitat and natural reproduction in Sandusky River
- ❖ Risk of detrimental effects if uncontrolled in Lake Erie.

Study Objectives

1. Identify tributary use of grass carp in Western Lake Erie
2. Determine how far upstream grass carp migrate and locate areas of aggregation.
3. Determine the extent of inter-basin movements of grass carp in Lake Erie and potential for expansion into Lakes St. Clair and Huron.

Study Methods

- Acoustic Telemetry

GLATOS

Great Lakes Acoustic Telemetry
Observation System

Unraveling the mysteries of fish in the Great Lakes

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Explore Tool



Denotes Receiver Station

The map depicts ongoing receiver deployments by default. Place your cursor over points on the map to view additional information about projects and receivers. Use the tools below to filter receivers by project, operating schedule, acoustic frequency, model and receiver deployment status.

Filter by project



- ☒ BHLAS: Buffalo Harbor Lake Sturgeon 203
- ☒ CHBSL: Cheboygan River Sea Lamprey Esc... 55
- ☒ CLOSL: Sea Lamprey River Plume Navigati... 33
- ☒ CRSAC: CAWS Asian Carp Telemetry 29
- ☒ DFOWS: Direct Movement of Non-indigen... 135
- ☒ DRMLT: Drummond Island Lake Trout Spa... 751
- ☒ EGRWE: Lake Erie Grand River Walleye 22
- ☒ ELEWE: Eastern Lake Erie Walleye 110
- ☒ ELOBB: Eastern Lake Ontario Black Bass 145

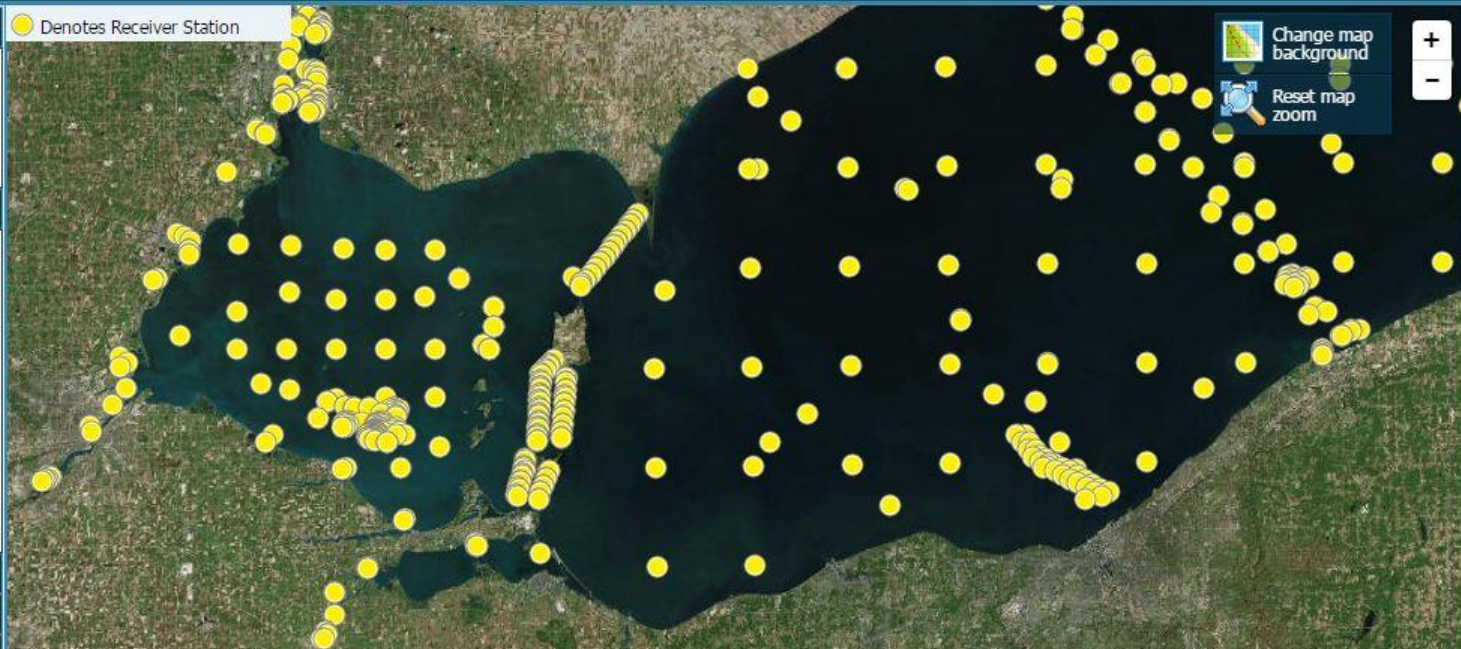
Filter by operating schedule



Filter by acoustic frequency



Filter by model



Change map background
Reset map zoom



Tributary Selection



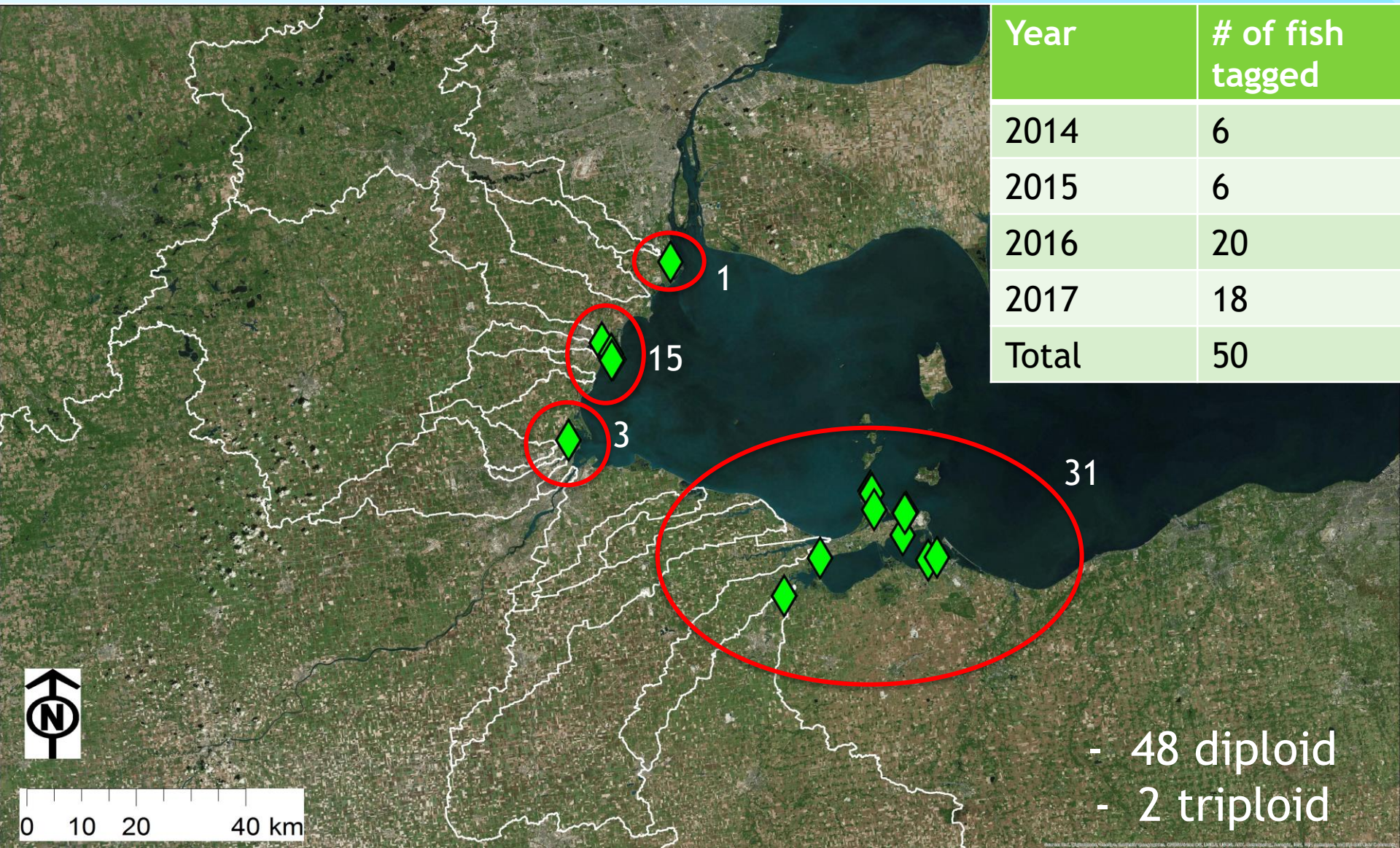
Tributaries Meeting Criteria



Transmitter implantation



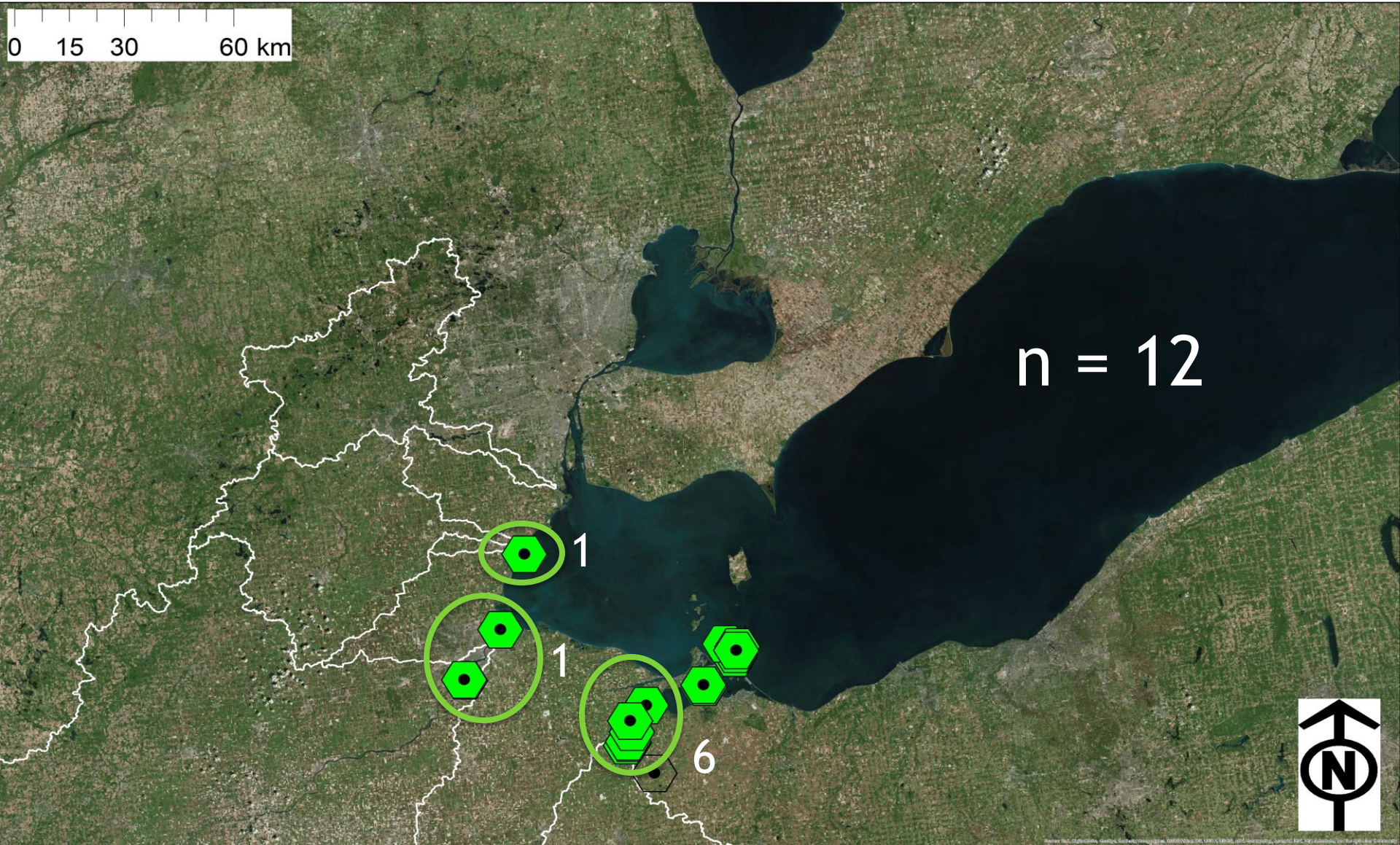
50 Grass Carp Tagged and Released



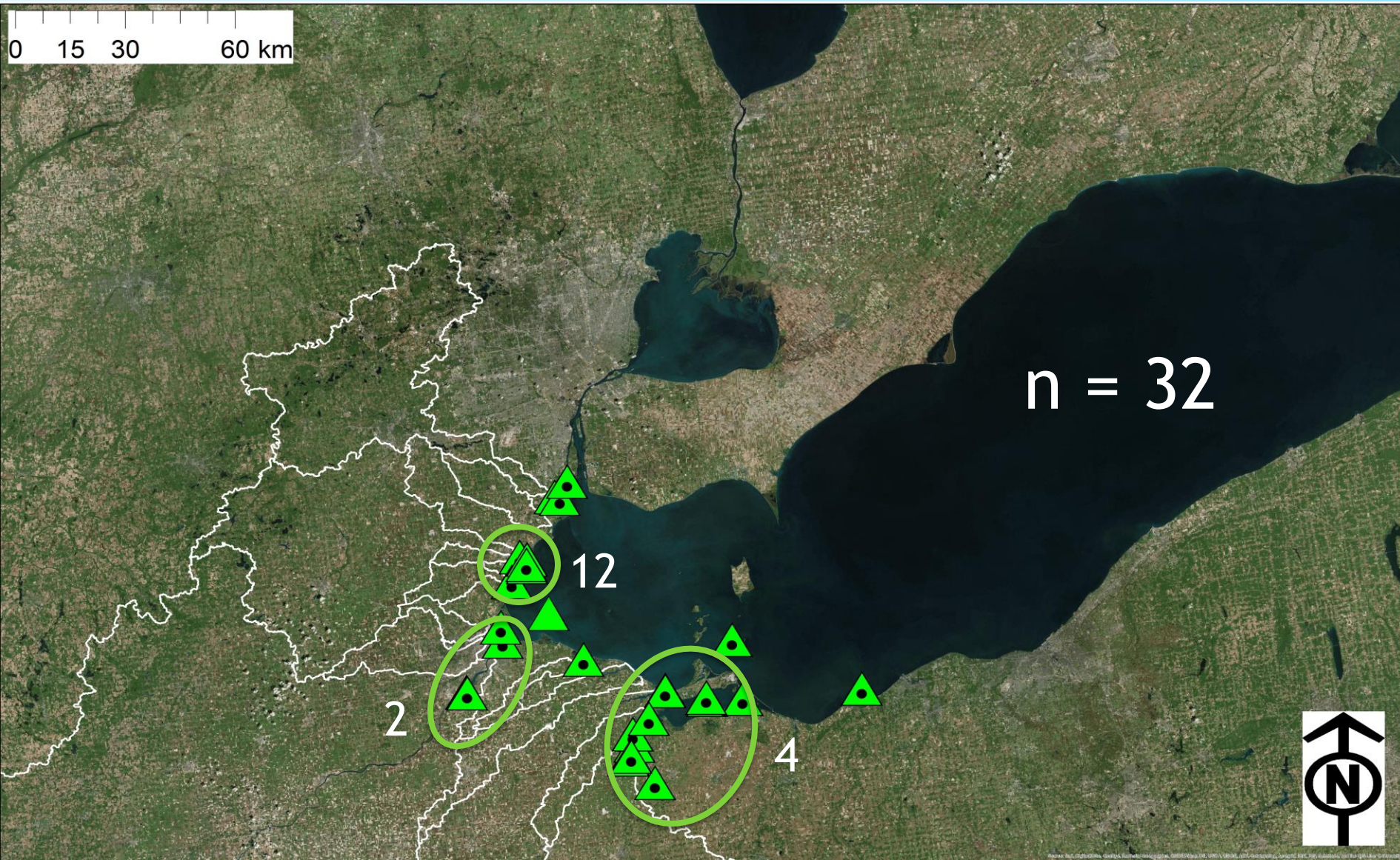
Grass Carp Detections in 2015

0 15 30 60 km

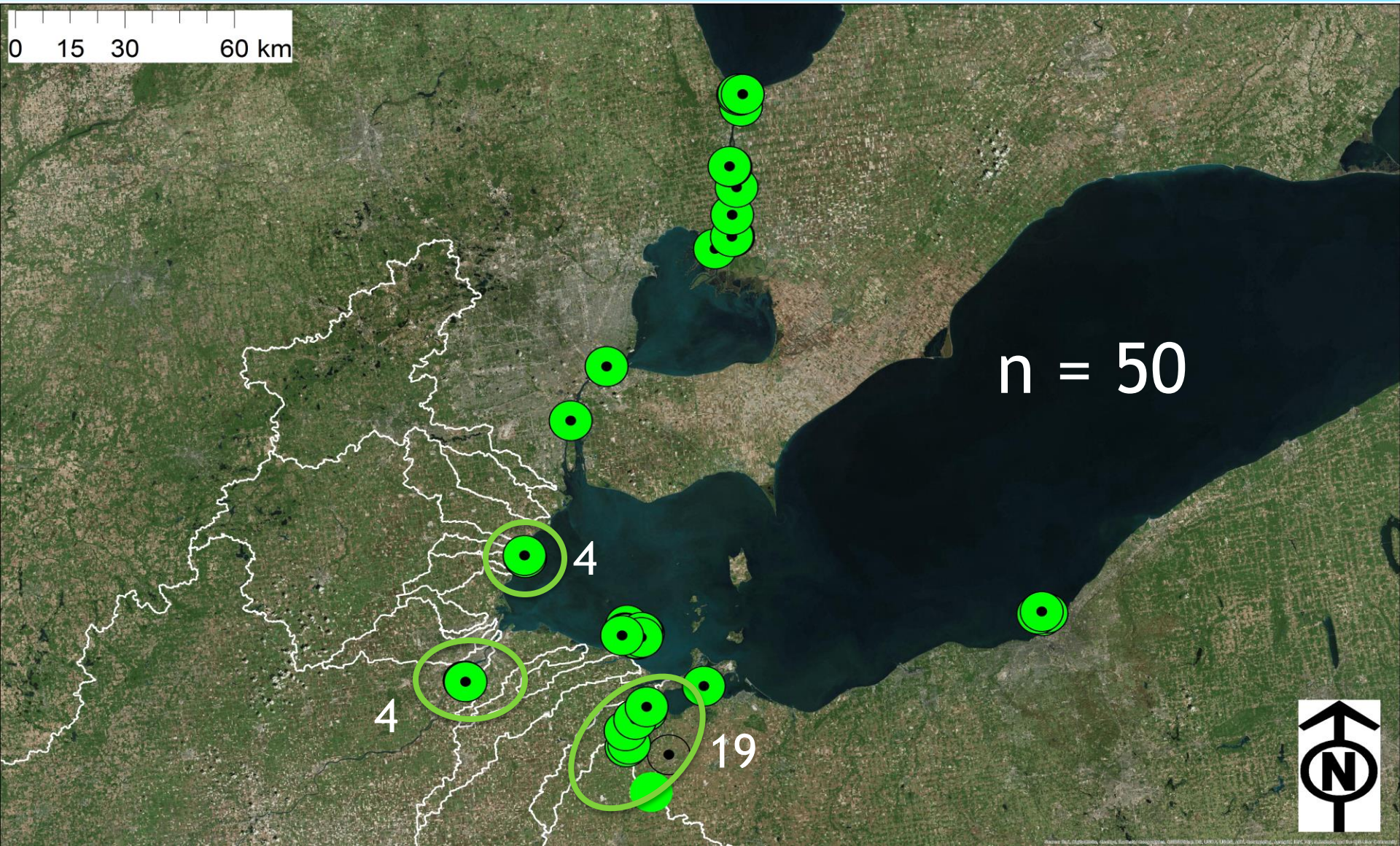
n = 12



Grass Carp Detections in 2016



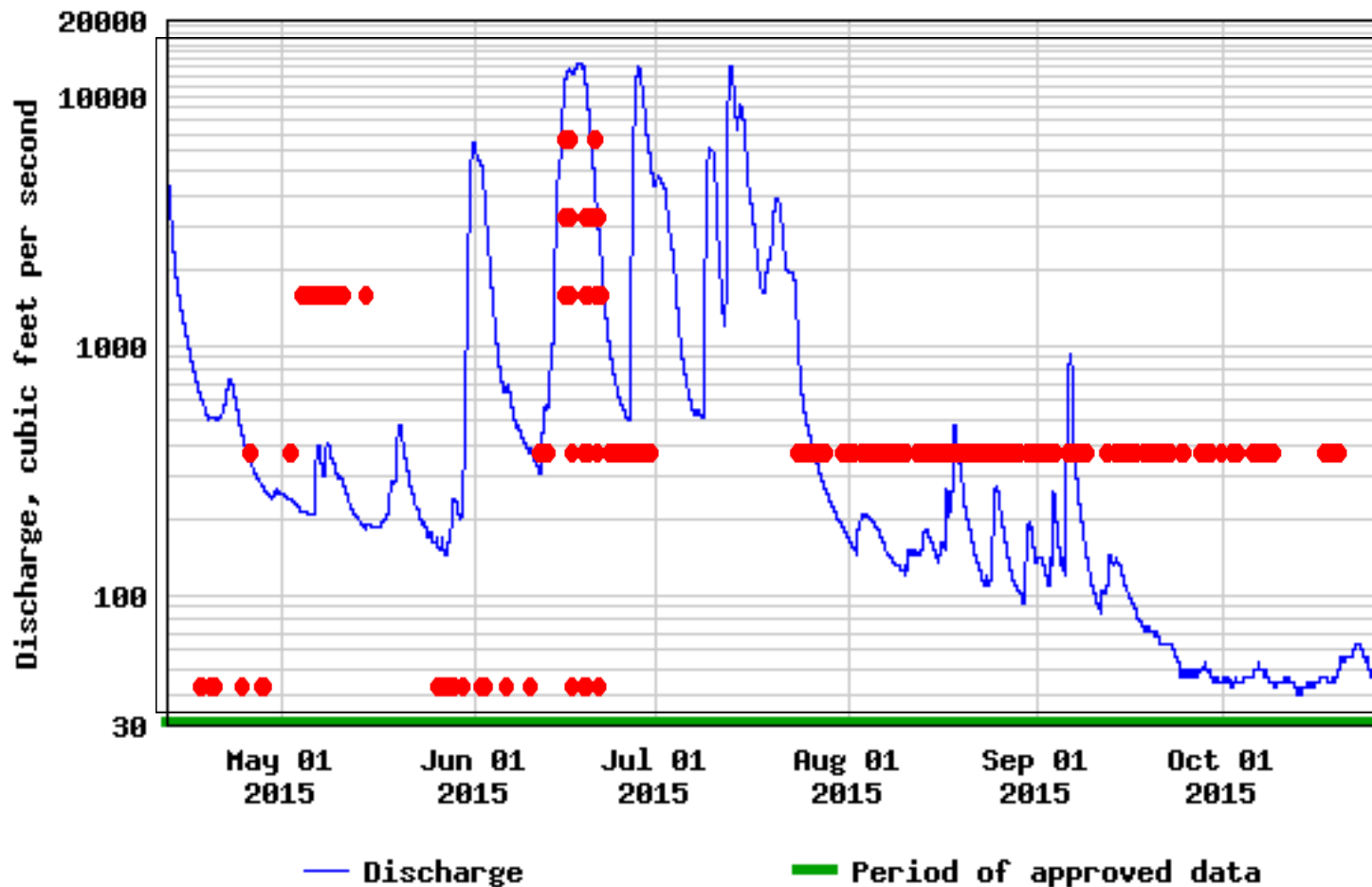
Grass Carp Detections in 2017



Sandusky River 2015



USGS 04198000 Sandusky River near Fremont OH



River
Kilometer

22

21

16

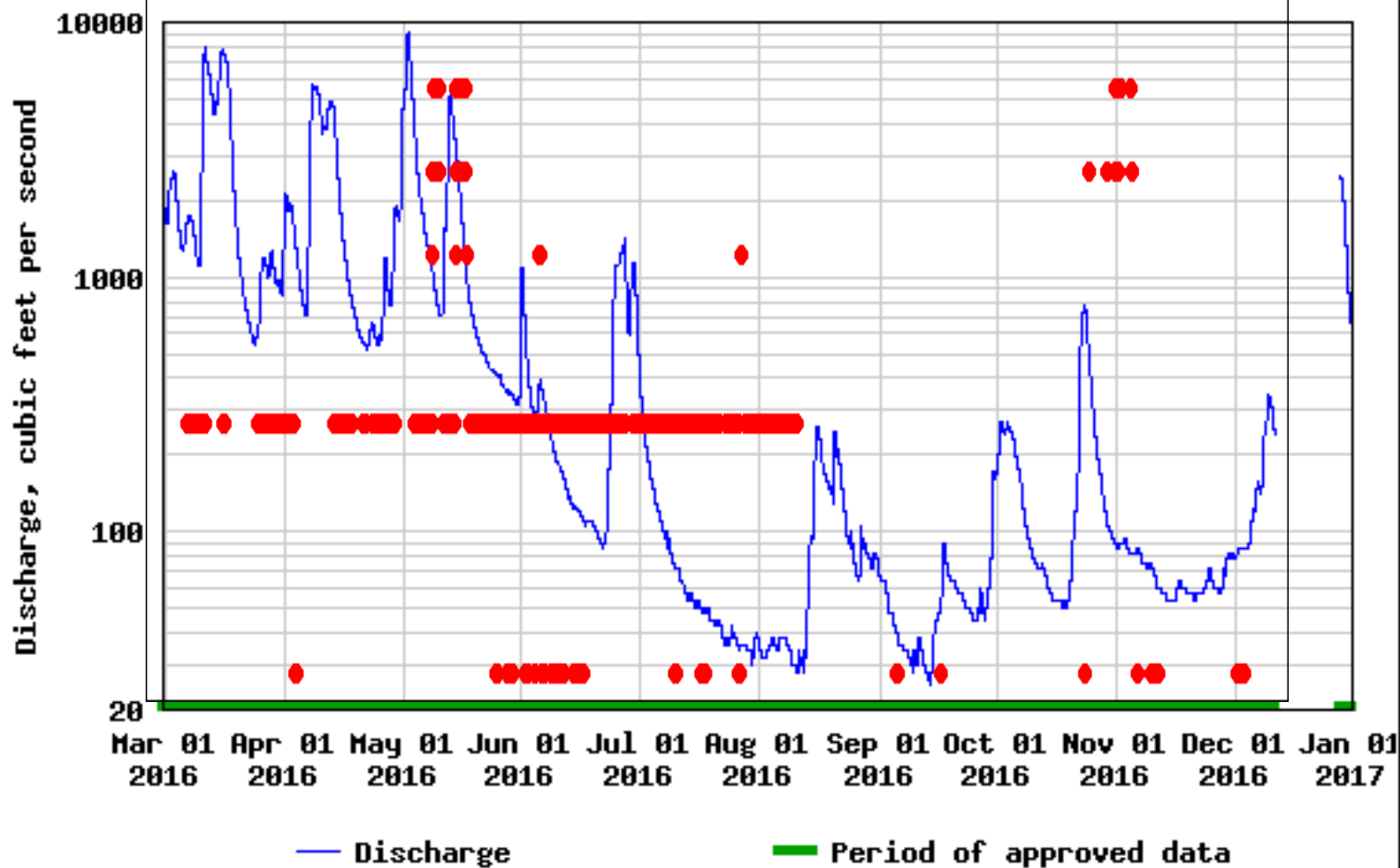
9

0.5

Sandusky River 2016



USGS 04198000 Sandusky River near Fremont OH



River
Kilometer

22

21

16

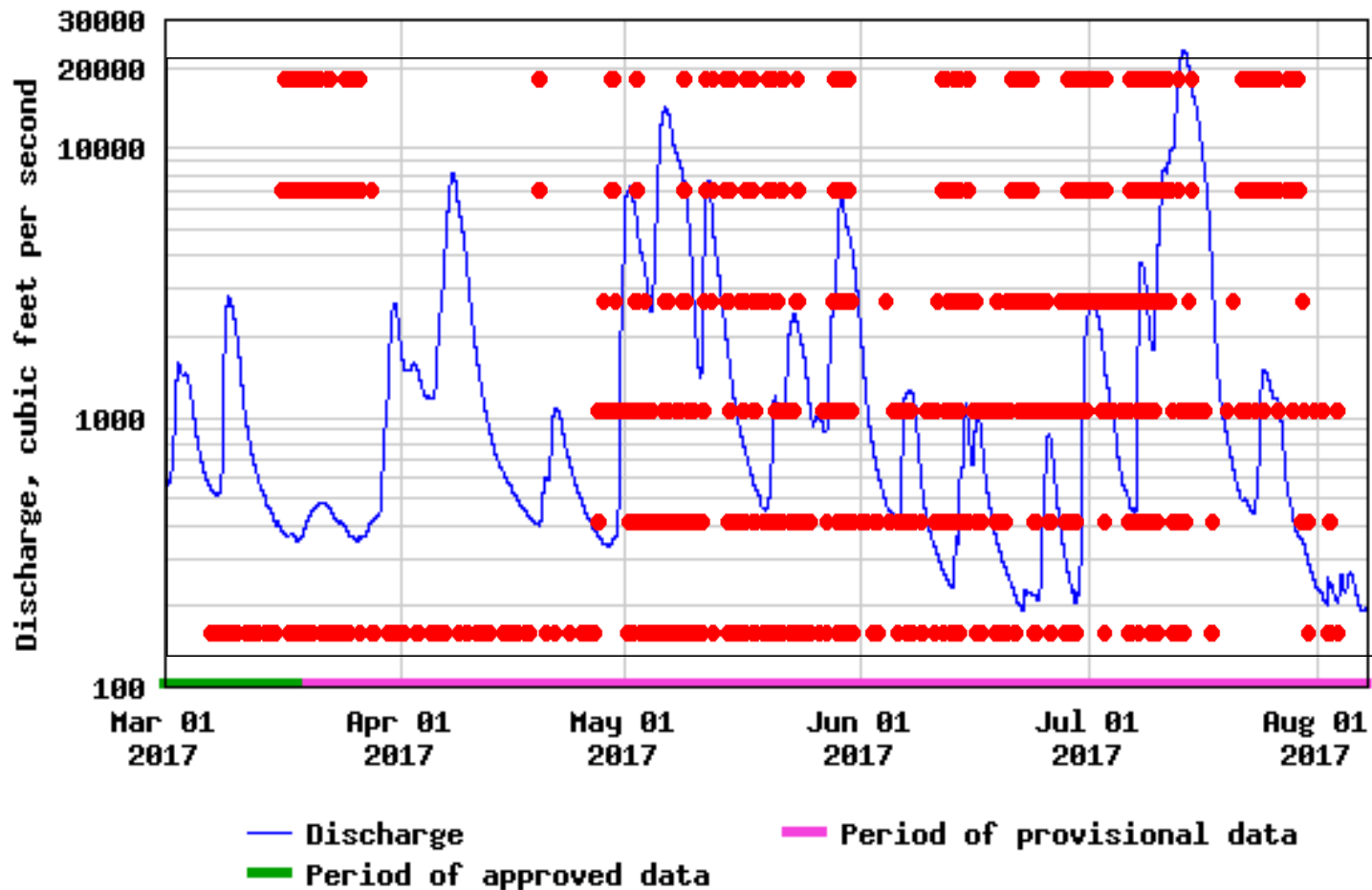
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0.5

Sandusky River 2017



USGS 04198000 Sandusky River near Fremont OH



River
Kilometer

22

21

13

7

2

0.5

Summary of findings to date

- Three high use tributaries
- Inter-basin and inter-lake movements are occurring
 - Large movements in excess of 100km
- Locations and timing of movements informative
 - Sandusky River Exercise

Uses for Prevention

- Inform models focused on grass carp
 - Risk of spread
 - Structured decision making model
- Understand timing to implement efforts
 - Direct capture of adults
 - Efforts to capture eggs



Funded by:



Collaborators:

MICHIGAN STATE
UNIVERSITY



CMU
CENTRAL MICHIGAN
UNIVERSITY



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Questions?

