Aquatic Invasive Species Threatening Eastern Ontario

ROBERT MCGOWAN

AQUATIC PROJECT SPECIALIST

OCTOBER 21, 2023

Overview

- Who we Are
- Invasive Fish
- Invasive Aquatic Plants
- Invasive Invertebrates
- Clean, Drain, Dry

(OFAH,2019)

(Terry, 2023)

Who Are We?

Largest non-profit, charitable fish & wildlife conservation organization in Ontario.

ONTARIO'S INVADING SPECIES AWARENESS PROGRAM

Education/awareness partnership of the OFAH & MNRF

- Focus on key pathways for introduction and/or spread

Facilitate Monitoring & Early Detection

- Invading Species Hotline
- EDDMapS Ontario

Support Surveillance, Control, & Response

- Water soldier eradication
- Mysterysnail Management and Removal Program
- Wild Pig Surveillance Program
- Early detection of Asian carps

Species Profiles

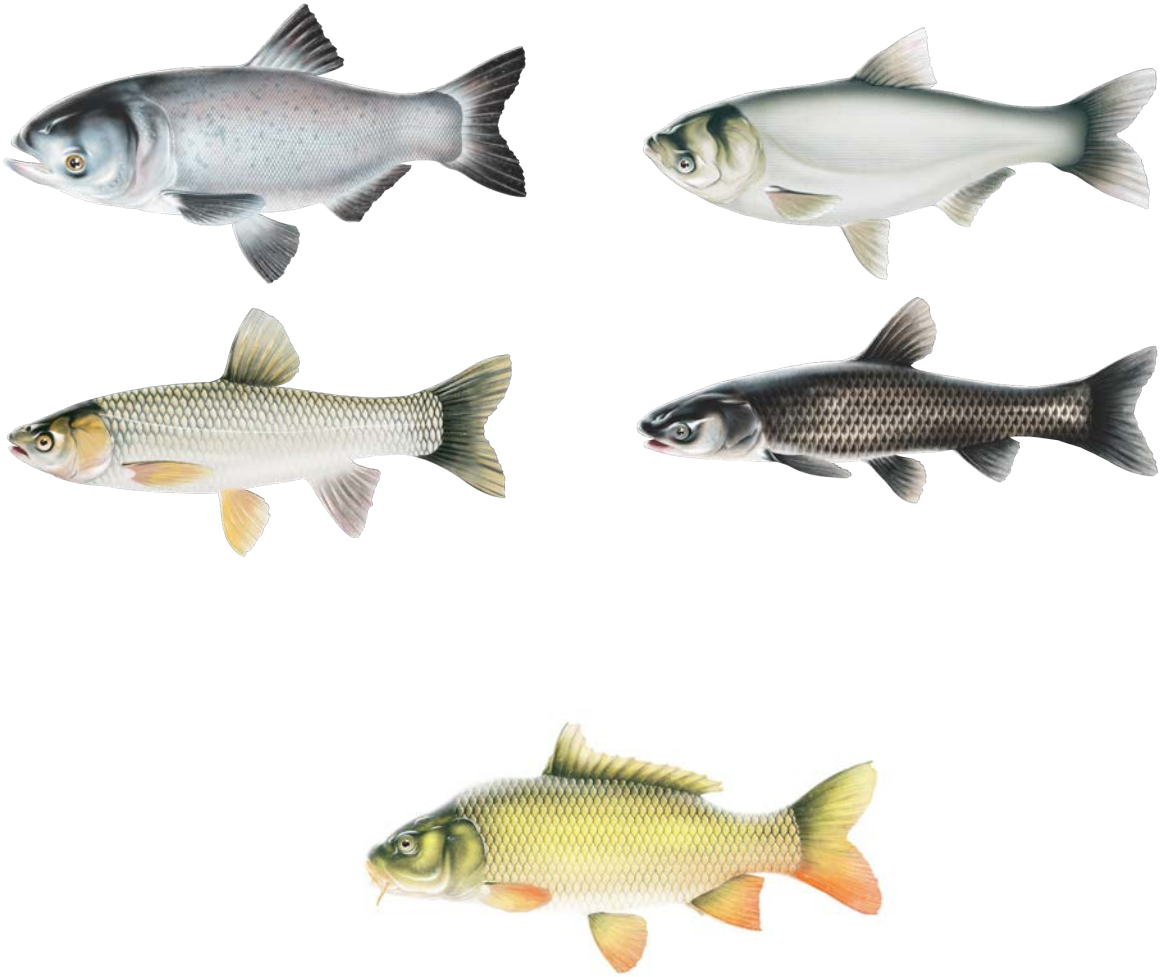
Impacts of Invasive Fishes

- Compete for food and resources;
- Reproduce quickly;
- Eating habits can threaten valued species (e.g., SAR, sports-fishes, etc.);
- Destruction of habitat;
- Can negatively impact reproduction of native species;
- Predating on native species at all life stages;
- Can increase algal blooms in some circumstances;
- Economic losses due to depleted fisheries;
- Threats to humans; and
- Hybridization, amongst others…

Asian Carps 101

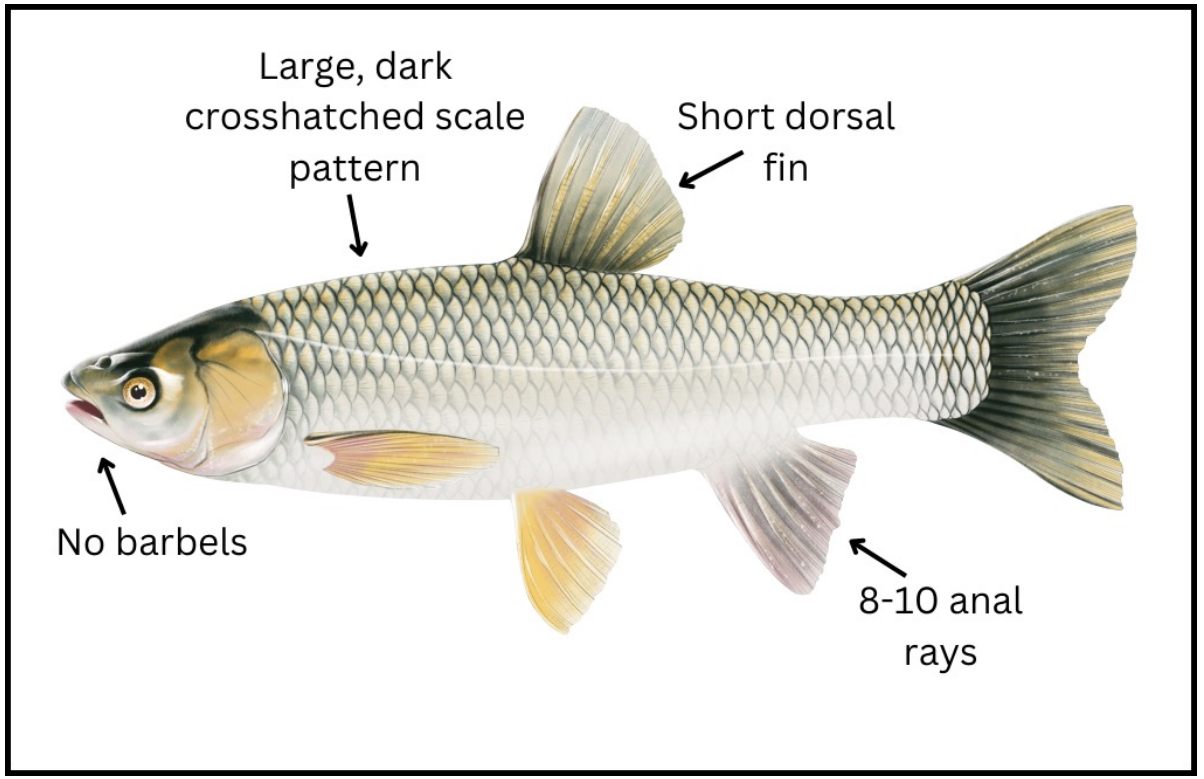
ISA Species

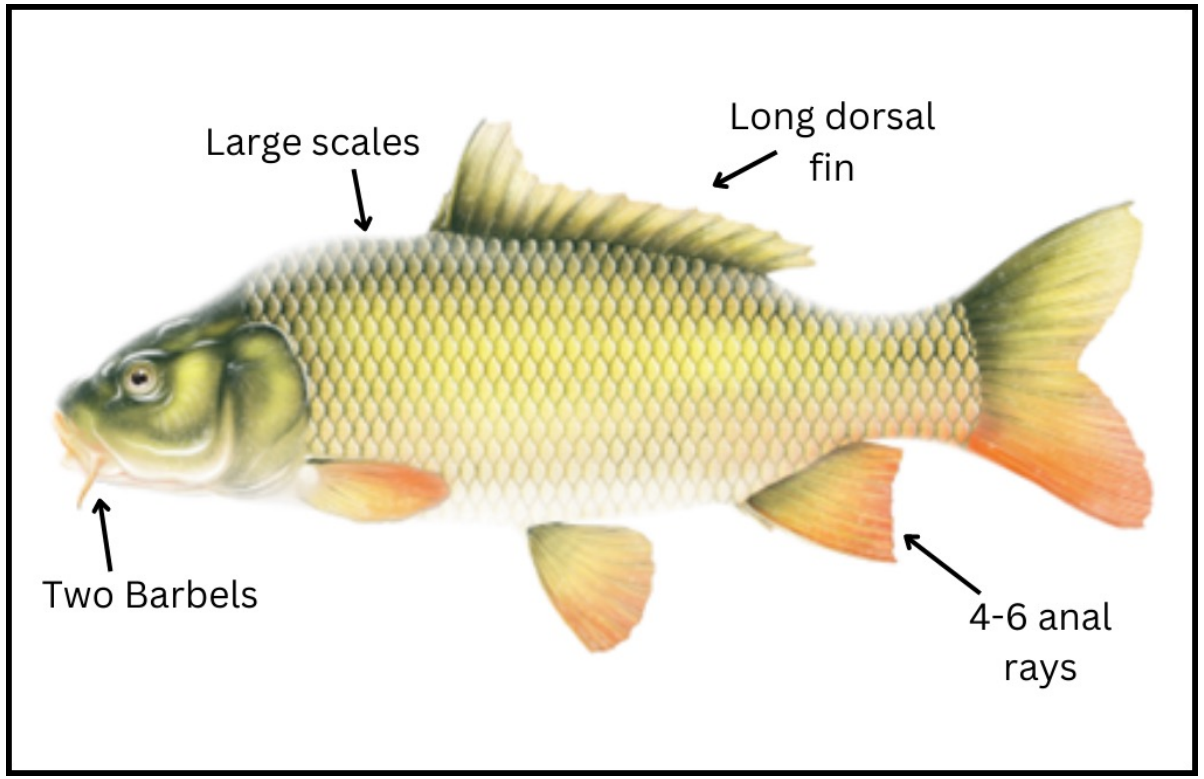
- 4 species of Asian carps (Bighead, Silver, Grass, and Black)
  - Common Carp (*Cyprinus carpio*) is NOT one of the Asian carps
- Introduced to aquaculture ponds in the 1960's and 1970's
- Escaped enclosures into the Mississippi River
- Electrical barrier currently managed by the US Army Corps of Engineers
- **NO** established populations in Ontario's waters



Grass Carp

ISA Species

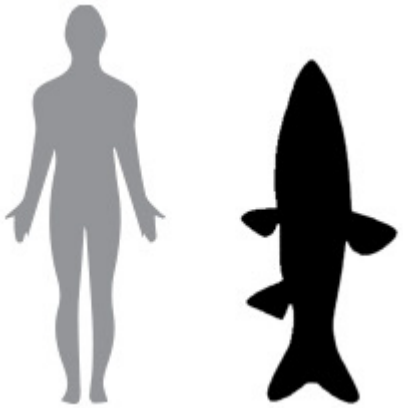




Grass Carp (*Ctenopharyngodon idella*)

ISA Species

Most imminent threat to Ontario's waters, approximately 40 fish either captured or found, and no reproducing populations in Ontario's waters at this time.



Fast Facts:

Origin: Large rivers and lakes in eastern Asia from southern Russia to northern Vietnam.

Diet: Feed on aquatic plants but can also consume detritus, insects, small fish, earthworms and other invertebrates .

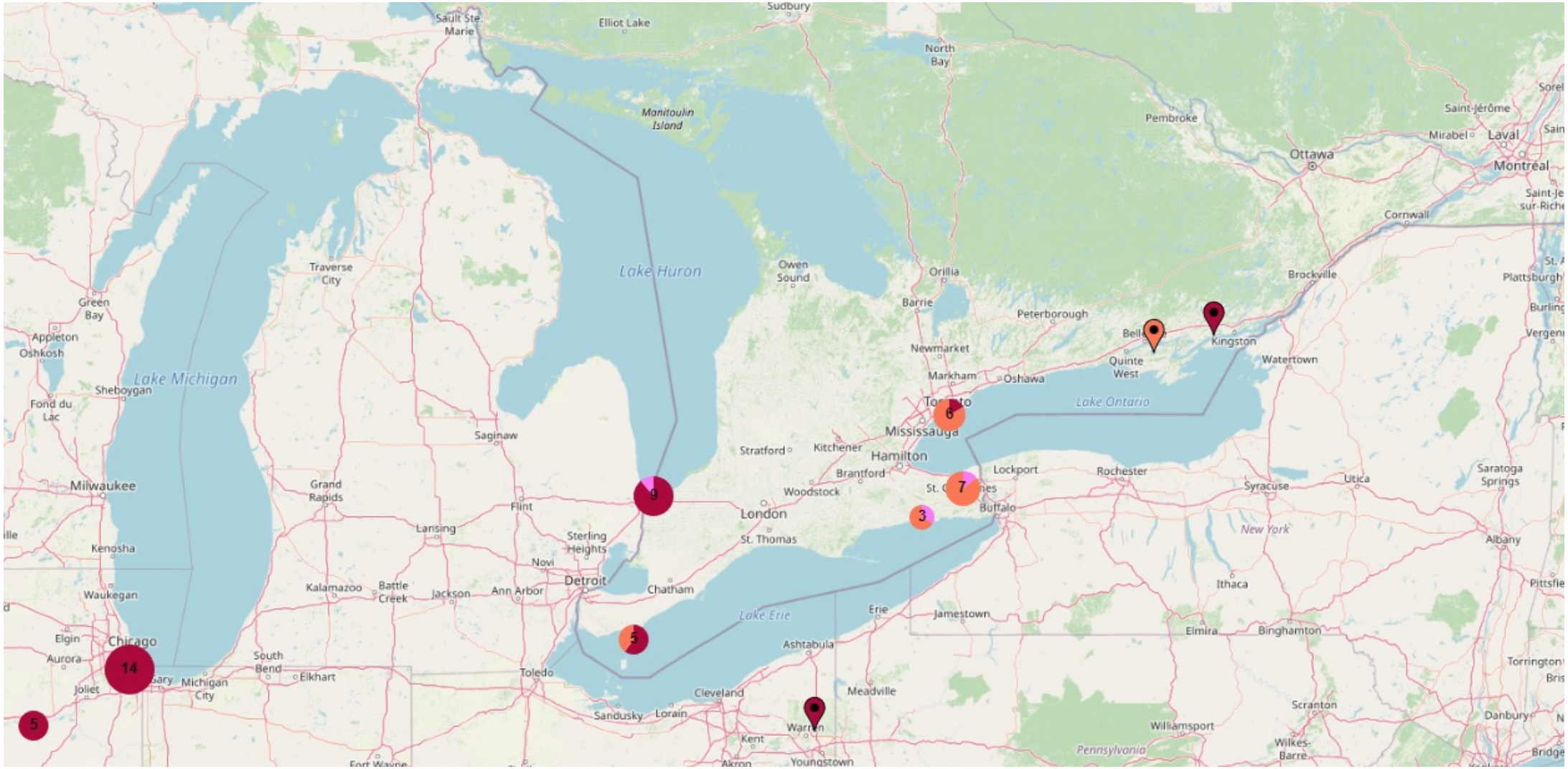
Life Span: 5 - 11 years

Size: Maximum: 45 kg, 1.5 meters

Did You Know?

Grass carp can only digest about half of the plant material that they consume each day, the remaining material is expelled into the water, enriching it and promoting algal blooms.

Grass Carp Distribution



(EDDMapS, 2023)

Round Goby (*Neogobius melanostomus*)

(Lynda Corkum New York State)

Round Goby Impacts

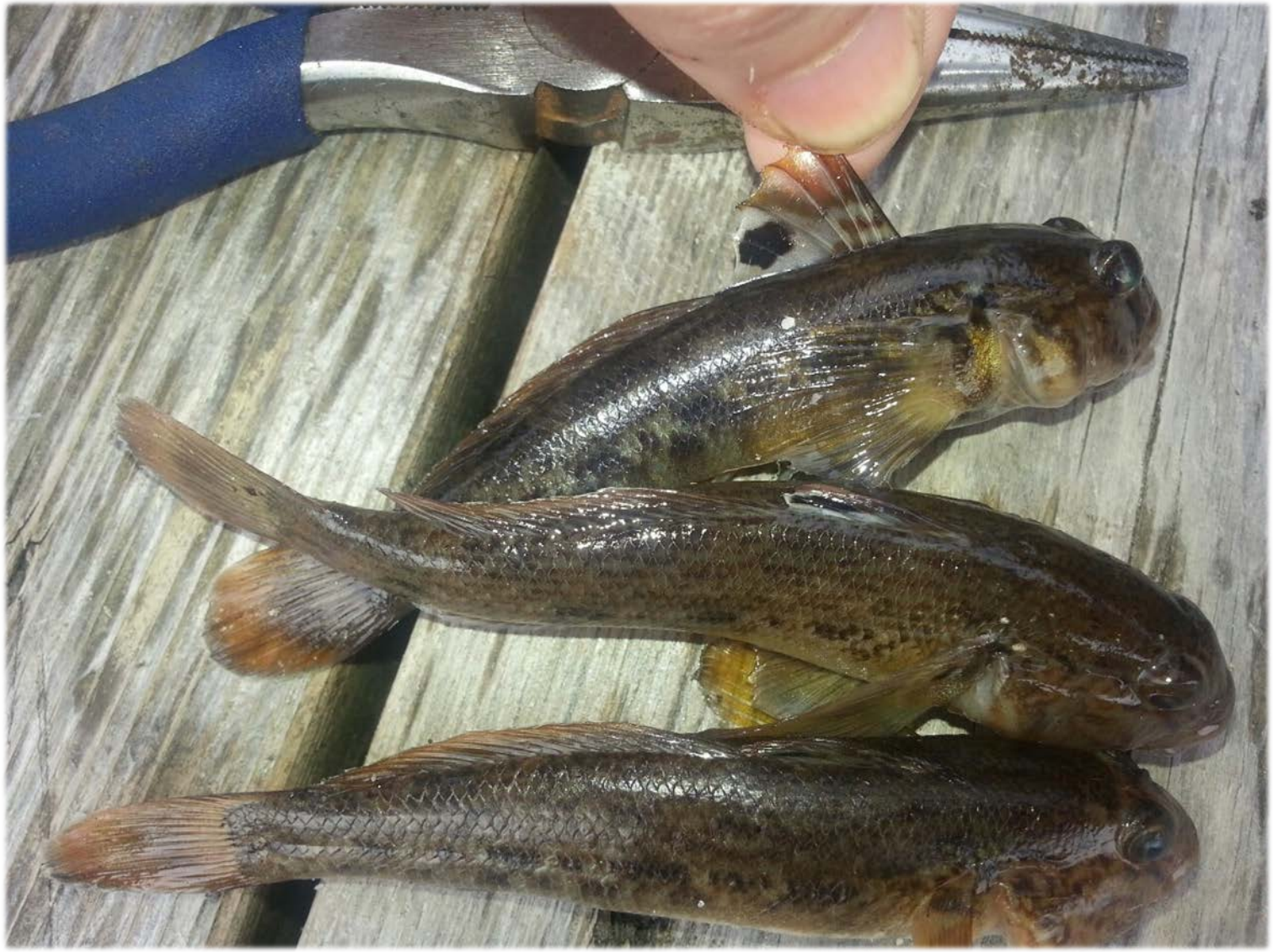
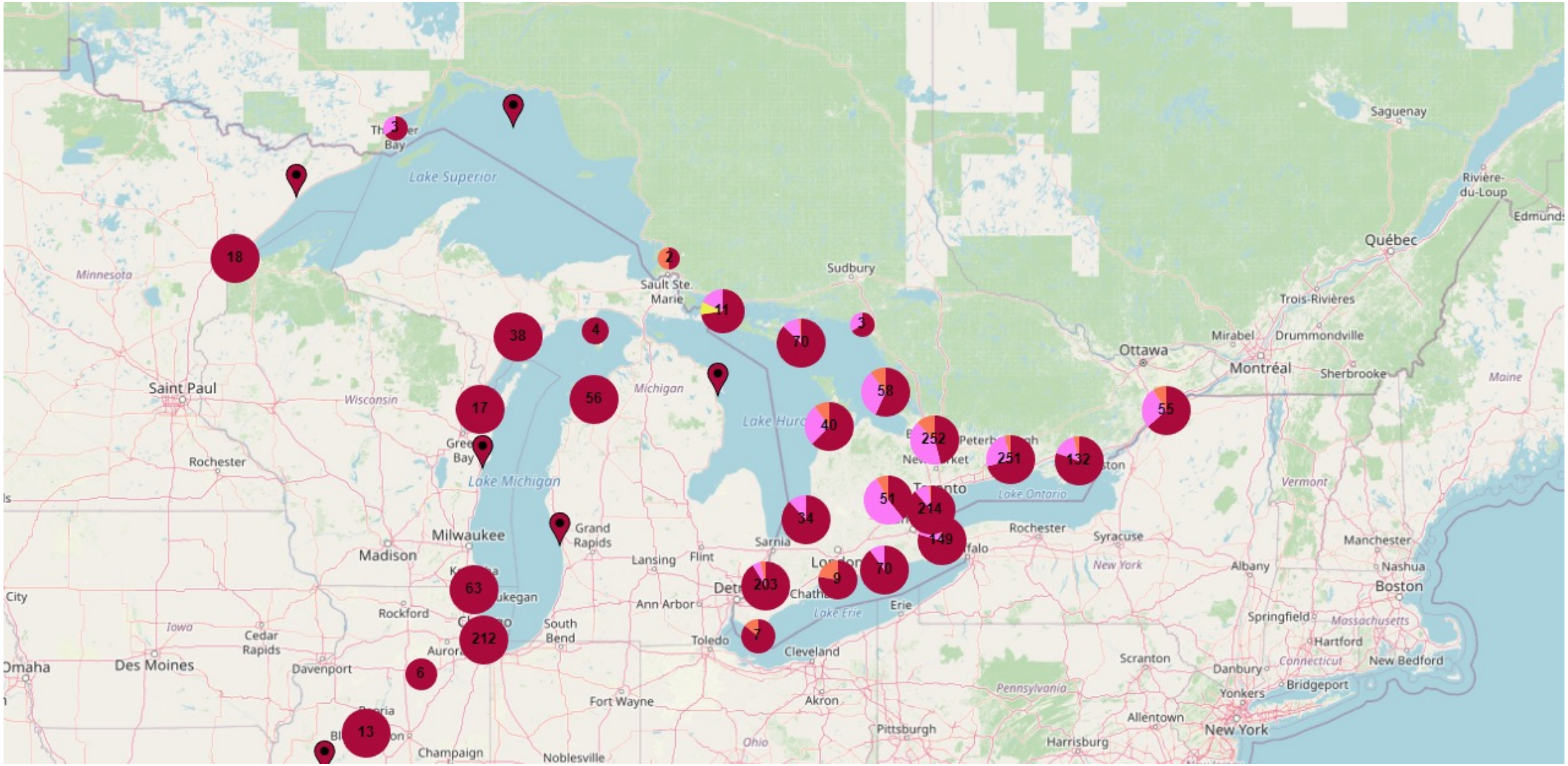


Photo credits: Thom Foster

Round Goby Distribution



(EDDMapS, 2023)

Photo: Heather Smith

Impacts of Invasive Aquatic Plants

- Compete for sunlight and space;
- Reproduce and spread quickly;
- Crowding-out of native plants can be a threat to native species (e.g., SAR, waterfowl, etc.);
- Negatively impacts recreation;
- Typically create dense stands;
- Can increase algal blooms;
- Can cause die-offs of fishes;
- Economic losses due to loss of ecotourism;
- Threats to humans;
- Hybridization, amongst others…

European Water Chestnut *Trapa natans*

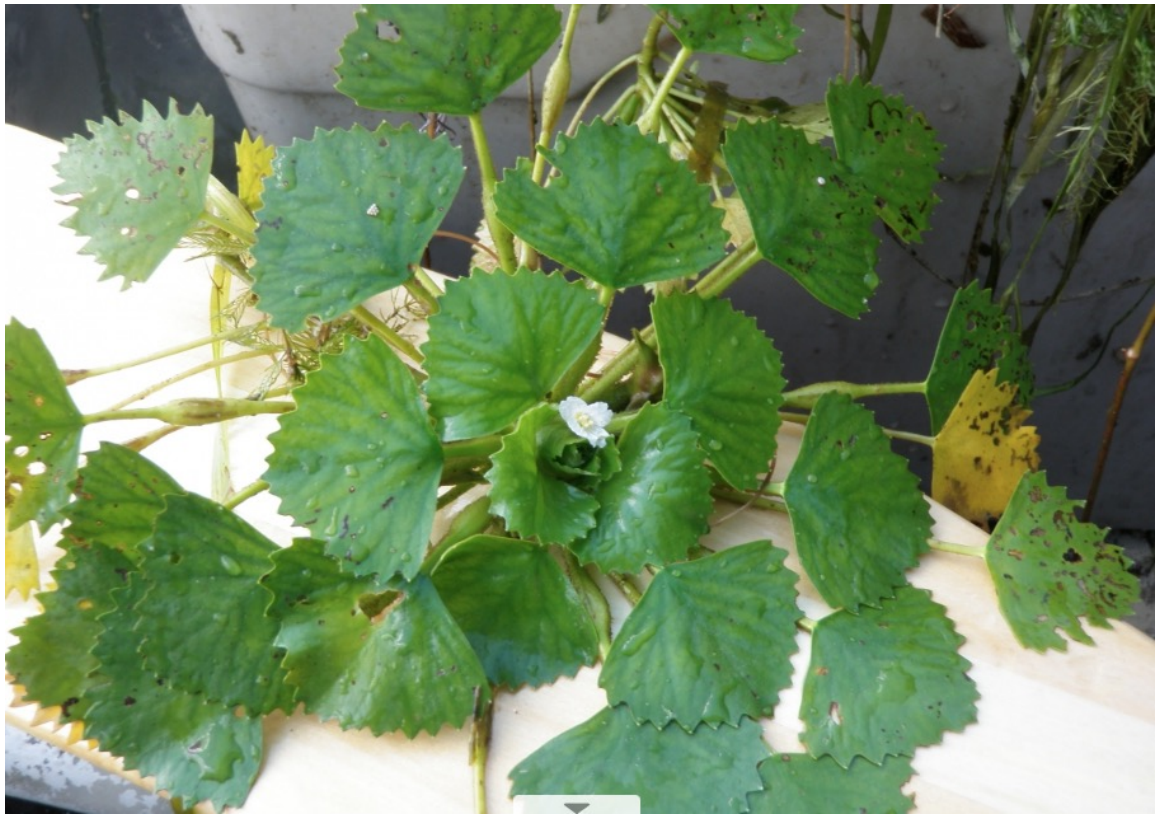
ISA Species

(University of Florida)

(Leslie J Mehrhoff)

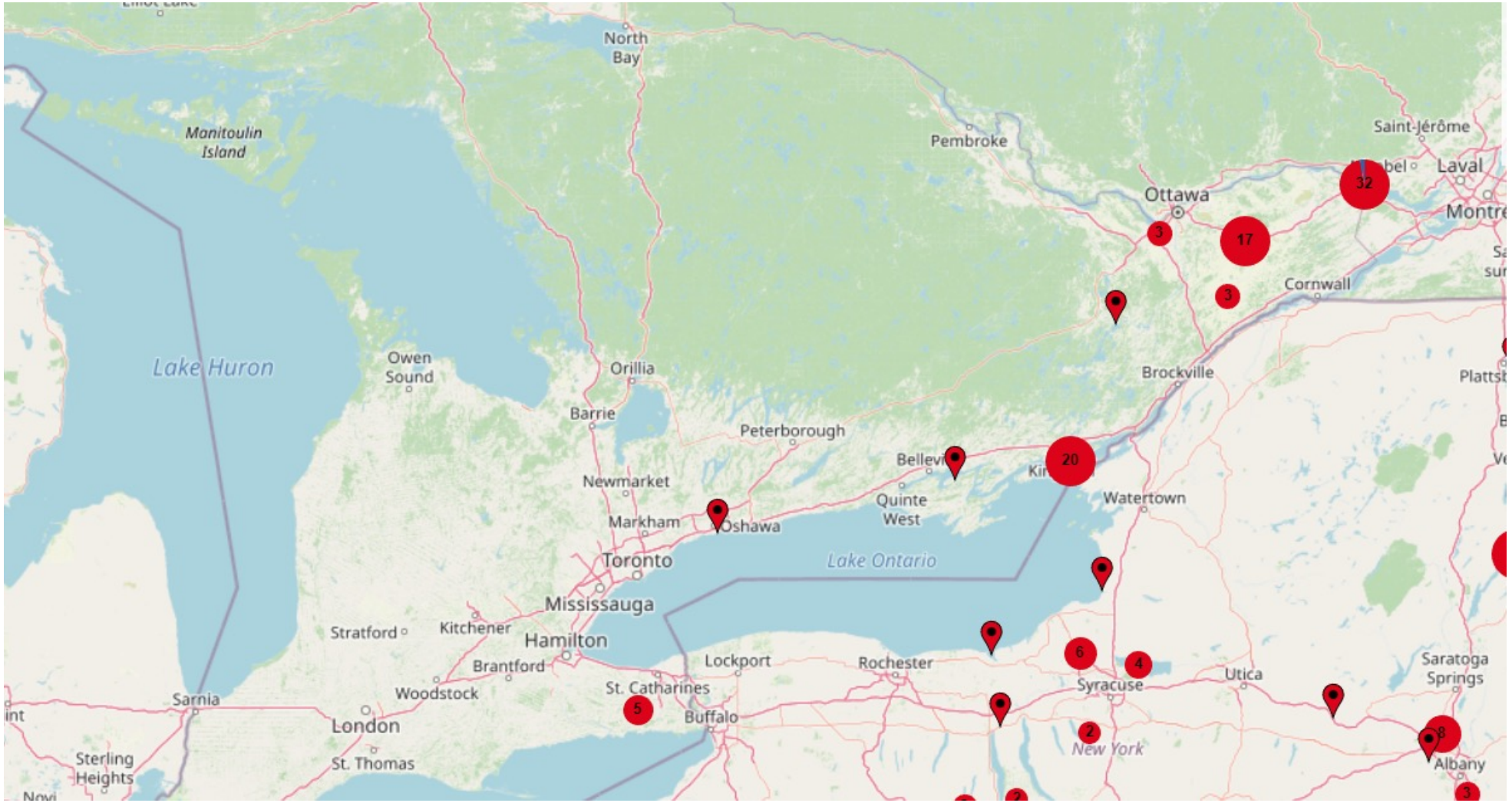
European Water Chestnut *Trapa natans* **ISA Species**

(ISAP, 2023)



(ISAP, 2023)

European Water Chestnut *Trapa natans* **ISA Species**



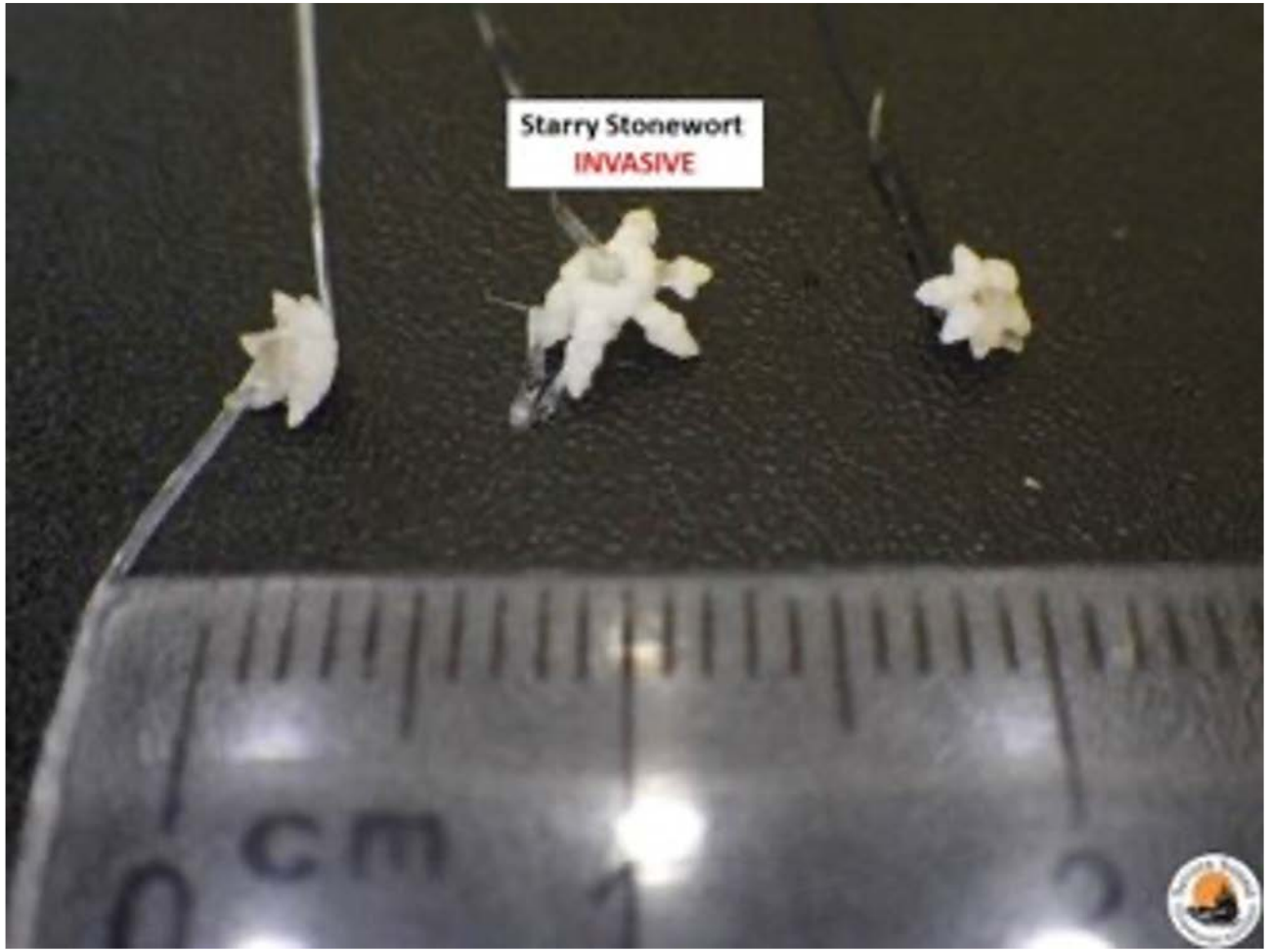
(EDDMaps, 2023)

Starry Stonewort *Nitellopsis obtusa*

(invadingspecies.com)

(USGS, 2023)

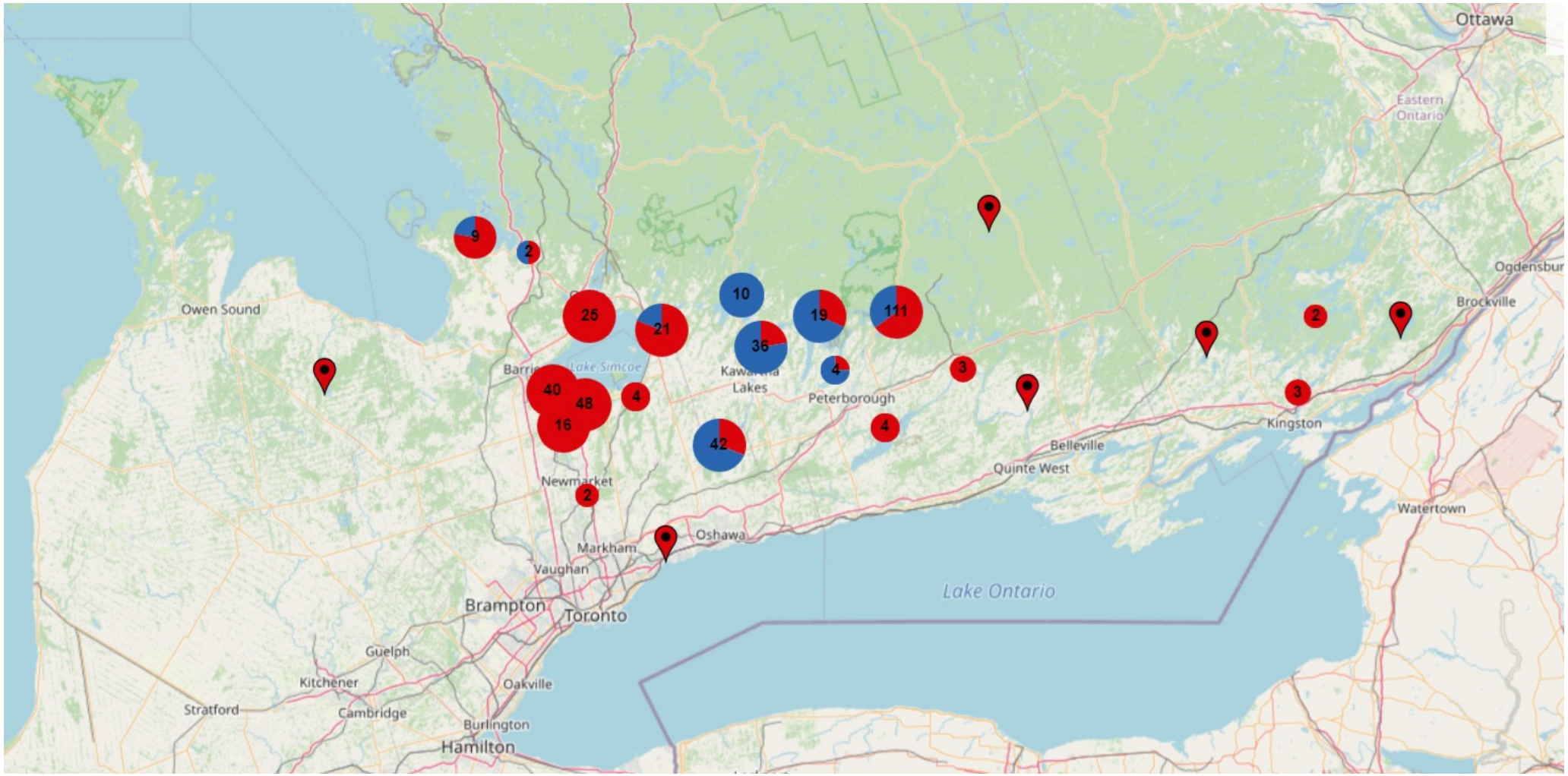
Starry Stonewort *Nitellopsis obtusa*



(SSEA, 2020)

(McGowan, 2019)

Starry Stonewort *Nitellopsis obtusa*



(EDDMaps, 2023)

Water Soldier (*Stratiotes aloides*)

ISA Species

Photo credits: OFAH (Left) & Buchanan (Right)

Without Control It Will Spread

Summer 2013

(V. MCullugh, 2013)

Summer 2014

(V. MCullugh, 2014)

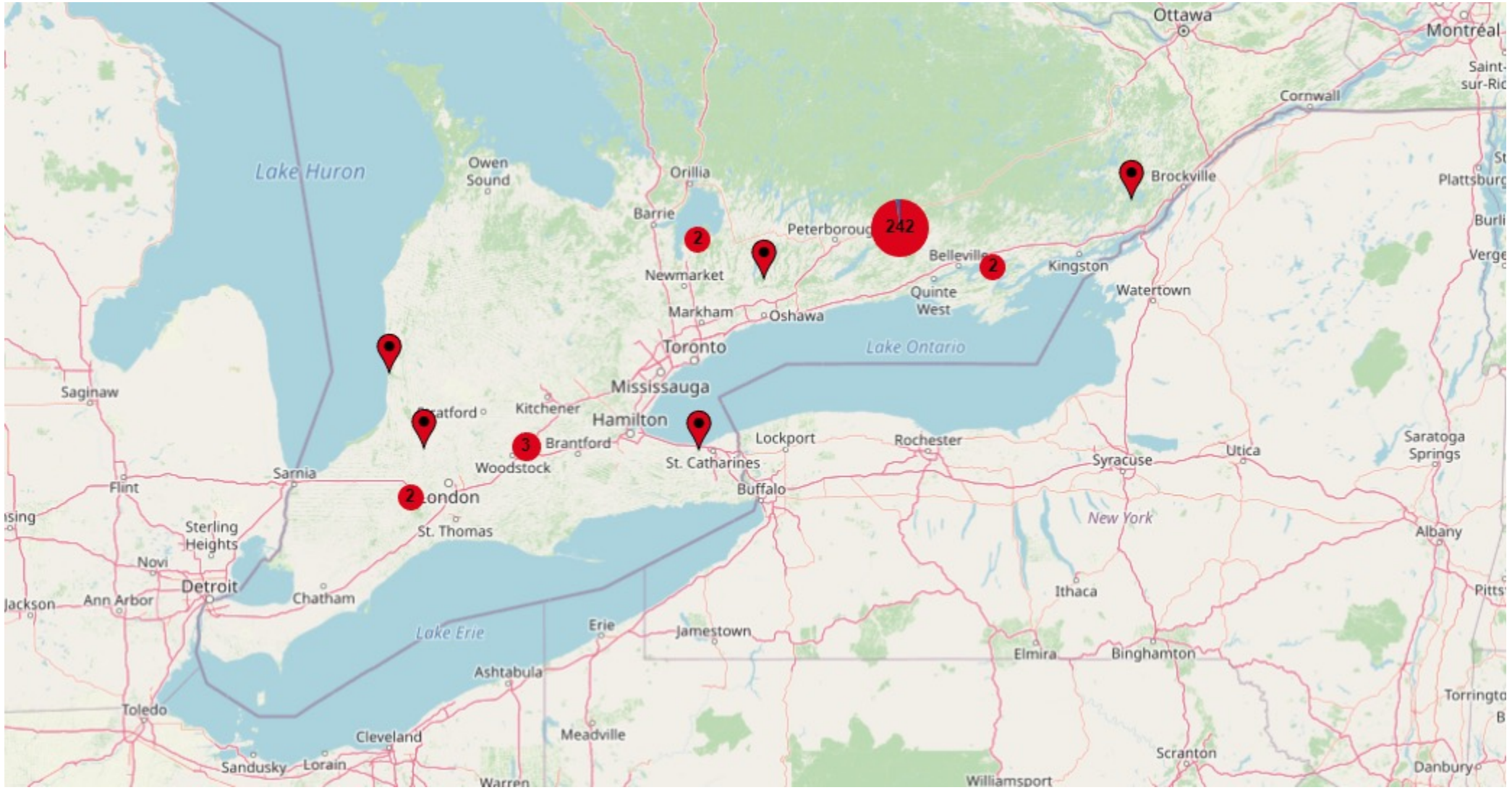
Spring 2015

(V. MCullugh, 2015)

August 2015

(V. MCullugh, 2015)

Water Soldier Distribution



(EDDMapS, 2023)

Impacts of Invasive Invertebrates

- Compete for food and space;
- Reproduce and spread quickly;
- Typically possess competitive advantages over similar native species (e.g., mysterysnails, rusty crayfish, etc.)
- Crowding-out of native species can be a threat to native species (e.g., SAR, waterfowl, sports-fishes etc.);
- Negatively impacts recreation;
- Some species go through large die-off events;
- Economic losses due to loss of ecotourism;
- Threats to humans;
- Introduction of parasites (e.g., trematodes, swimmers' itch, etc.)
- Some species can hybridize, amongst others…

Zebra Mussels (*Dreissena polymorpha*)

Identification:

•Average 2-2.5 cm, reaching up to 4 cm long

•Sits flat on its underside.

•Triangular in shape.

•Black or brown with white to yellow zigzagged patterns.

•Color patterns can vary.

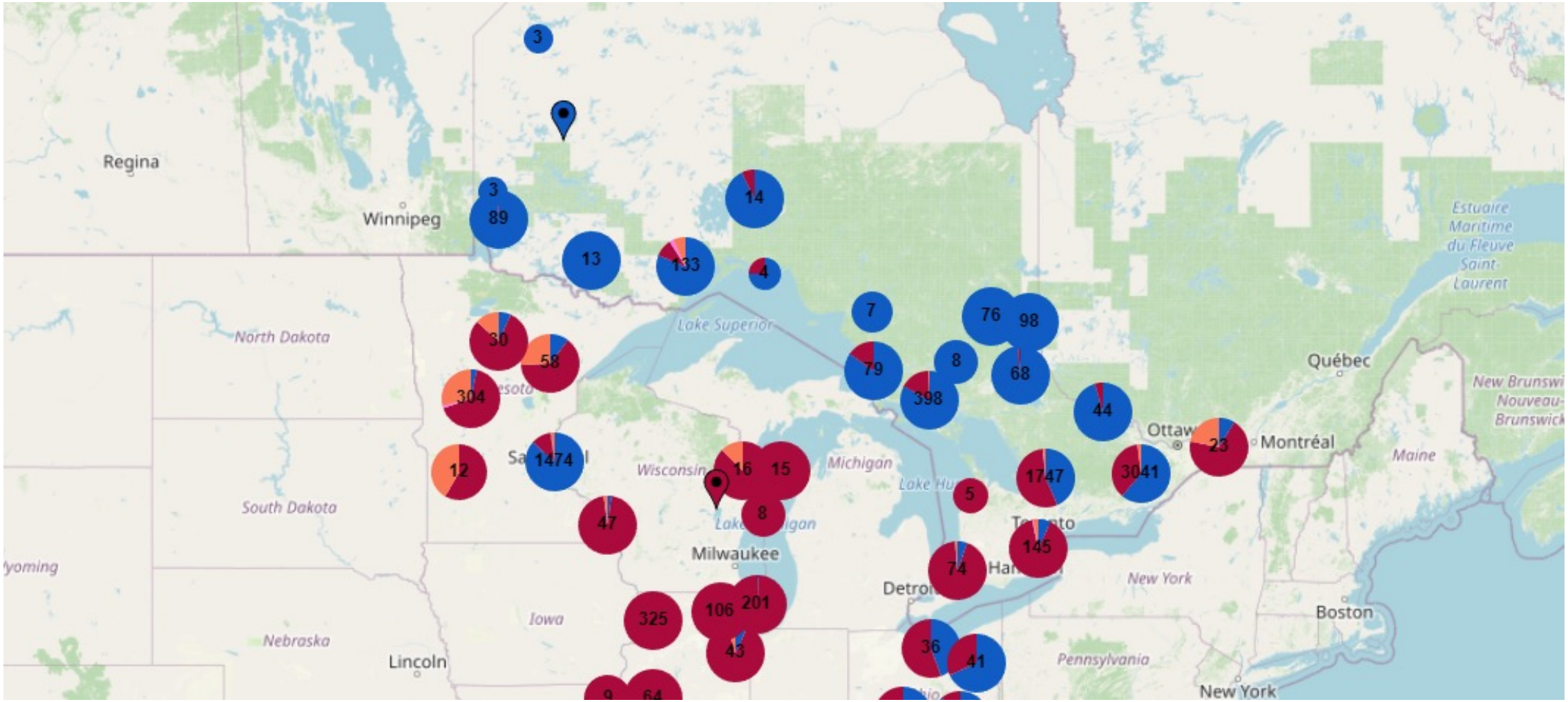
Lookalikes only include the other invasive bi-valve, Quagga mussel

Photo credits: Amy Benson

Zebra Mussels Impacts

Photo credits: Wikimedia Commons

Zebra Mussels Distribution



(EDDMapS, 2023)

Rusty Crayfish (*Faxonius rusticus*)

(Photo credits: Dr. Munro, OFAH

Identification:

•Rusty crayfish are large; adults can reach 7.5 to 13 centimetres rostrum (partof shell in front of eyes) to tail.

•Rusty patches on each side of the shell.

•Grayish-green to reddish-brown claws with black bands near the tips.

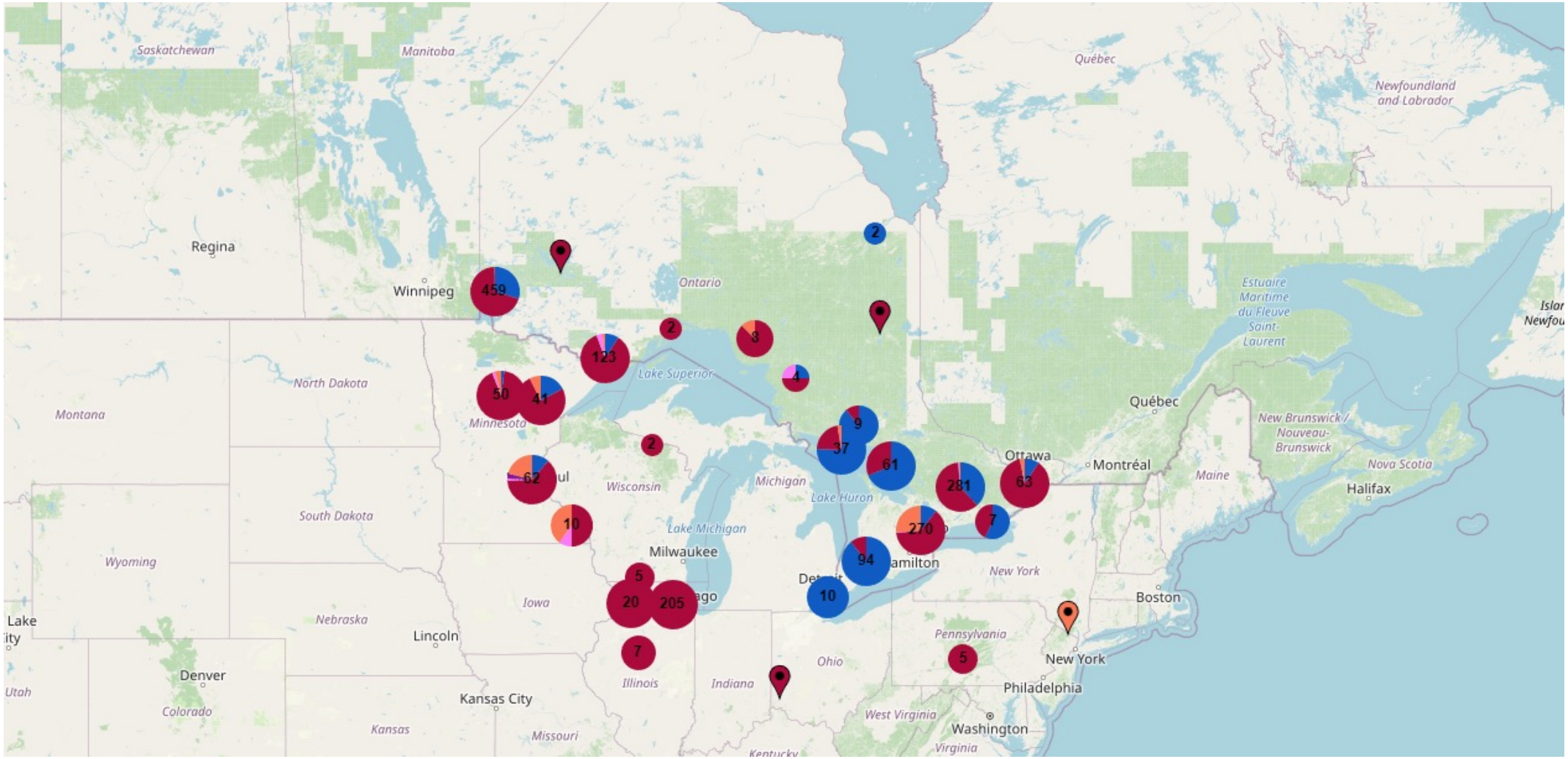
•Claws have an oval gap when closed.

•The rostrum, is smooth, pinched and distinctly concave.

Rusty Crayfish Impacts

(Photo credit: Doug Watkinson)

Rusty Crayfish Distribution



(EDDMapS, 2023)

Clean, Drain, Dry

CLEAN

1. Hull
2. Below the waterline
3. Transom area
4. Trailer
5. Watercraft interior (anchors, buoys, fishing gear, etc.)

DRAIN

1. Pull transom plug
2. Lower motor to release excess water
3. Drain live-well
4. Drain all other areas that may contain water (e.g. ballast tanks)

DRY and DISINFECT

1. If time permits, dry vessel for at least 5 days
2. Use a 10% household bleach solution to clean live well

AIS Resources

- www.invadingspecies.com
- www.asiancarp.ca
- https://nas.er.usgs.gov/
- www.EDDMapS.org
- www.ontario.ca/page/managing-invasive-species-ontario

Get in touch!

Invading Species Hotline: **1-800-563-7711**

Email: **robert_mcgowan@ofah.org**

Program Email: isap@ofah.org

@invspecies

Ontario

ONTARIO'S INVADING SPECIES AWARENESS PROGRAM

ONTARIO FEDERATION OF ANGLERS AND HUNTERS