Invasive Species

Brook Schryer

October 26th 2019

Aquatic Program Specialist

Invading Species Awareness Program

Schedule

1. **Who is the OFAH and ISAP?**
2. **What are AIS and TIS?**
3. **AIS and TIS profiles**
4. **Prevention Methods**
5. **How to Report**
6. **Questions**


Play
Clean
Go

1. Who is the OFAH?

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

Our Mission

- Protection of our fishing, hunting & trapping heritage/enhancement of opportunities;
- Promote and encourage safe and responsible participation; and,
- Champion the conservation of Ontario's fish and wildlife resources.

Core Values

- Promote & encourage the conservation of fish & wildlife, their habitats, and the ecosystems that support them, to ensure sustainable benefits for all Ontarians
- Guided by its grassroots democracy/conservation insights of passionate anglers, hunters & trappers who volunteer their knowledge and time

1. Who is the ISAP?

Education/awareness partnership of the OFAH & MNRF.

ONTARIO'S INVADING SPECIES AWARENESS PROGRAM

Generate Education & Awareness

- 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
- Early detection of Asian carps

2. Definitions

Alien Species (*introduced species, non-native species*)

- Plants, animals, and micro organisms.
- Introduced by human action outside their natural past or present distribution.

Aquatic Invasive Species (AIS)

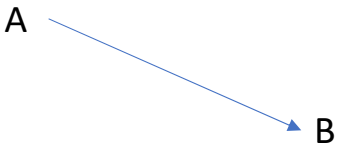
- Fish, animal, plant species, as well as pathogens.
- Introduced into a new aquatic ecosystem outside of their known range.
- Having harmful consequences for the natural resources in the native aquatic ecosystem and/or the human use of the resource.

Terrestrial Invasive Species (TIS)

- Trees, shrubs, or herbaceous plants
- Moved from their native range to an introduced area where they are crowding our native species
- Harmful consequences to the economy, the environment, and humans

2. Pathways

- **Pathways**
  - Are the way plants, animals, insects etc. are transported from one place to another
- **Natural Pathways**
  - Dispersal by wind, water currents, animals, etc.
- **Man-made Pathways**
  - Recreational boating, live bait, horticultural plantings, firewood movement, etc.



1. Targeted Outreach

Focus on key pathways for introduction/spread.

4. Species Profiles

4. Round Goby

Photos: Gary Blight

What is it?

- A small bottom-dwelling fish.
- Native to Eastern Europe and first reported in the St. Clair River, ON in 1990.

Pathway of Introduction and Spread

- Shipping.
- Movement of live bait.
    - Illegal to possess live RG in Ontario.
    - Illegal to use as bait for fishing.

Habitat

- Cobble, gravel, sandy substrates, with/or without vegetation.
- Near shore and deep waters, in lakes and rivers.
- Withstands low levels of dissolved oxygen.

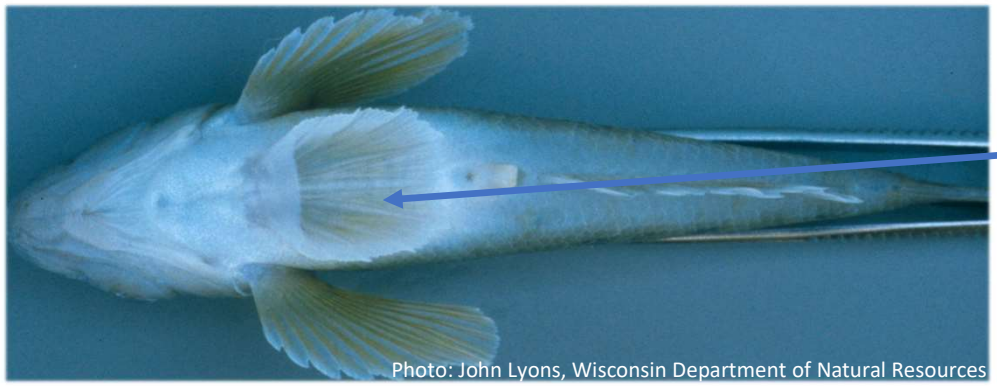
4. Round Goby

Impacts

- Competes with native benthic fish.
- Density can reach more than 125/square metre of lake bottom.
- Eats fish eggs and larvae, may pose a threat to sports fish populations.
- Linked to Botulism type E outbreaks.

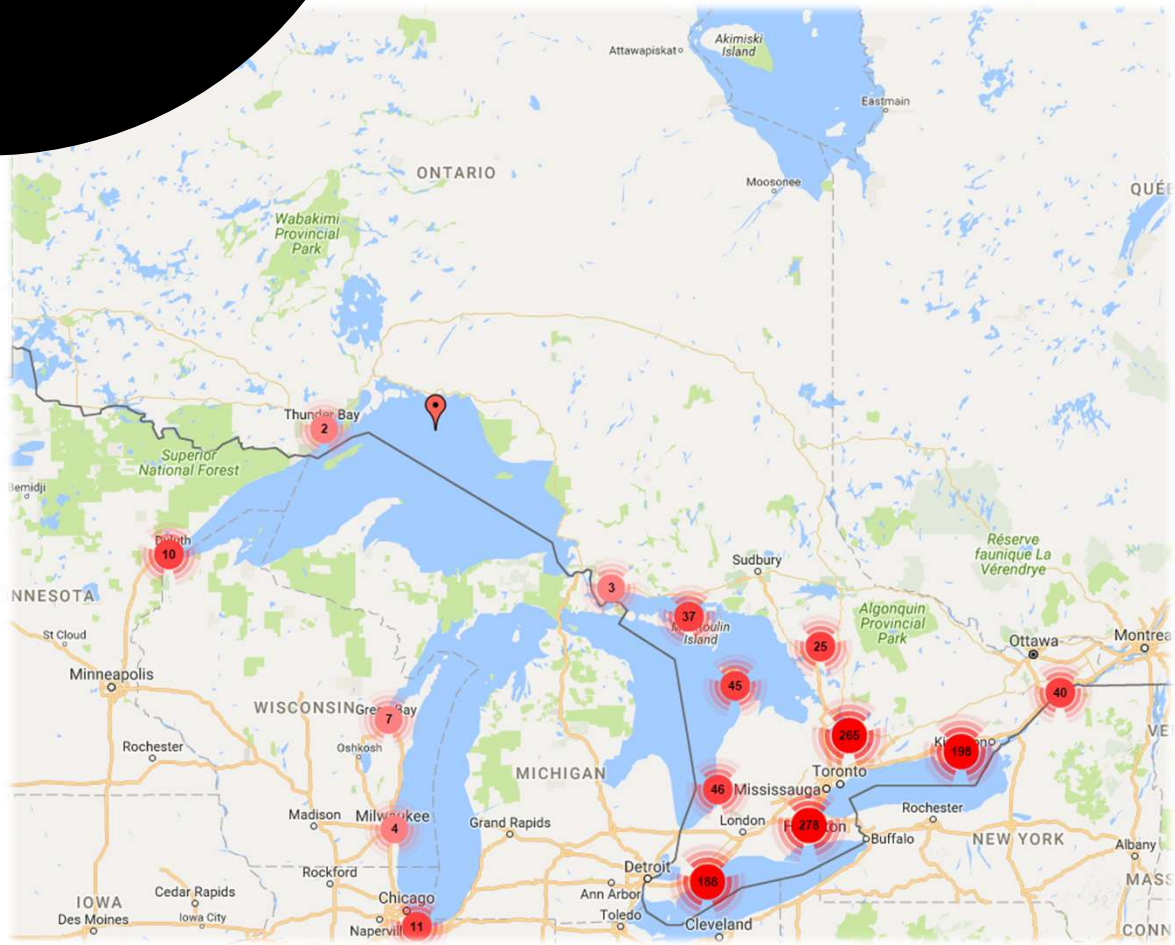
4. Round Goby

- Black spot on 1st dorsal fin
- Small scales covering most of body
- Snout rounded and blunt
- Cylindrical, total length 6-16 cm



Fused pelvic fin forming disk

4. Round Goby


Attawapiskat
Akimiski Island
Eastmain
ONTARIO
Moosonee
Wabakimi Provincial Park
Thunder Bay
2
Superior National Forest
Duluth
10
Sudbury
Réserve faunique La Vérendrye
3
37
25
Algonquin Provincial Park
Ottawa
Montrea
45
40
St Cloud
Minneapolis
WISCONSIN
7
Rochester
Oshkosh
265
198
MICHIGAN
Toronto
46
Mississauga
Madison
Milwaukee
4
Grand Rapids
London
278
Rochester
Buffalo
NEW YORK
Albany
Detroit
188
Rockford
Cedar Rapids
Chicago
Ann Arbor
Toledo
Cleveland
IOWA
Des Moines
Iowa City
11

4. Zebra Mussels

What is it?

- Small freshwater mussels
- Native to the Ponto-Caspian regions of Eurasia

Pathway of Introduction and Spread

- Introduced via ballast water
- Recreational boats and gear
- Larval stages (veligers) spread in water

Habitat

- Broad range of habitats
- Major limiting factor: Calcium availability

4. Zebra Mussels

Impacts

- Increases water clarity through filtering behaviour.
- Serious biofouler.
- Declines or complete loss of native mussel populations.
- Negatively impacts plankton levels.
- Bioaccumulates contaminants and passes them up the food chain.

4. Zebra Mussels

4. Eurasian watermilfoil

What is it?

- Submerged perennial plant.
- Native to Eurasia and first reported in Ontario in 1961.
- Coined the ‘zombie plant’ in 2017 by the media/Quebec.

Pathway of Introduction and Spread

- Introduced via ballast water.
- Spread inland via fragments from boaters/anglers.
- Natural dispersal via seeds and fragmentation.

Habitat

- 1-3 m deep lakes and rivers

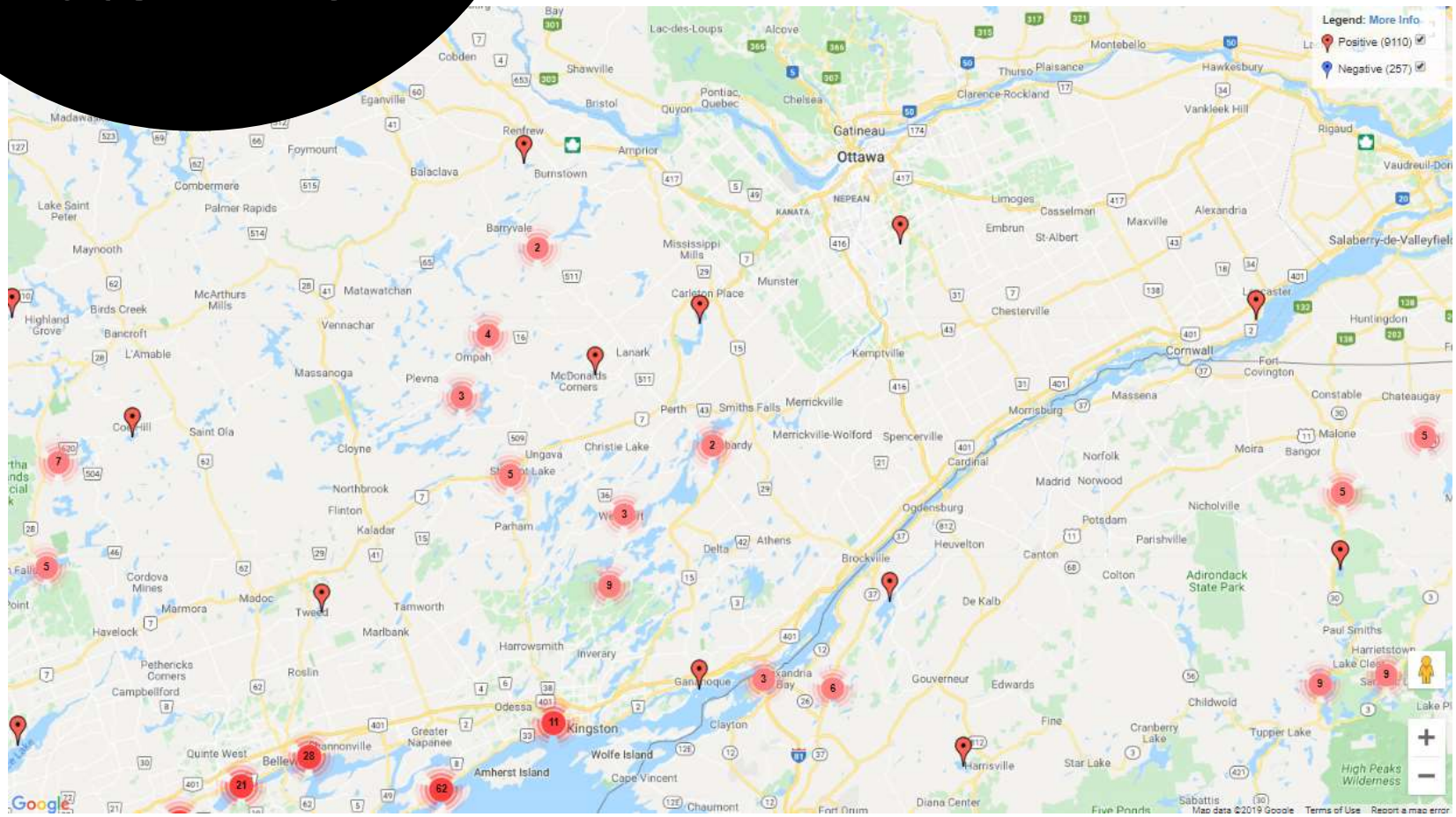
4. Eurasian watermilfoil

Portland State University

Impacts

- Forms dense monocultures over large areas
- Suppresses native vegetation and decreases biodiversity
- Impedes recreation
- Hybridizes with native milfoil species

4. Eurasian watermilfoil



4. European Common Reed

What is it?

- Perennial grass.
- Native to Eurasia.
- In 2005, Agriculture and Agri-foods Canada called it the “worst invasive plant species.”

Pathway of Introduction and Spread

- Horticultural trade as ornamental plant (now a ‘restricted’ species in Ontario).
- Natural spread via rhizomes.
- Spread via seeds (2000 per plant) and success is variable.

Habitat

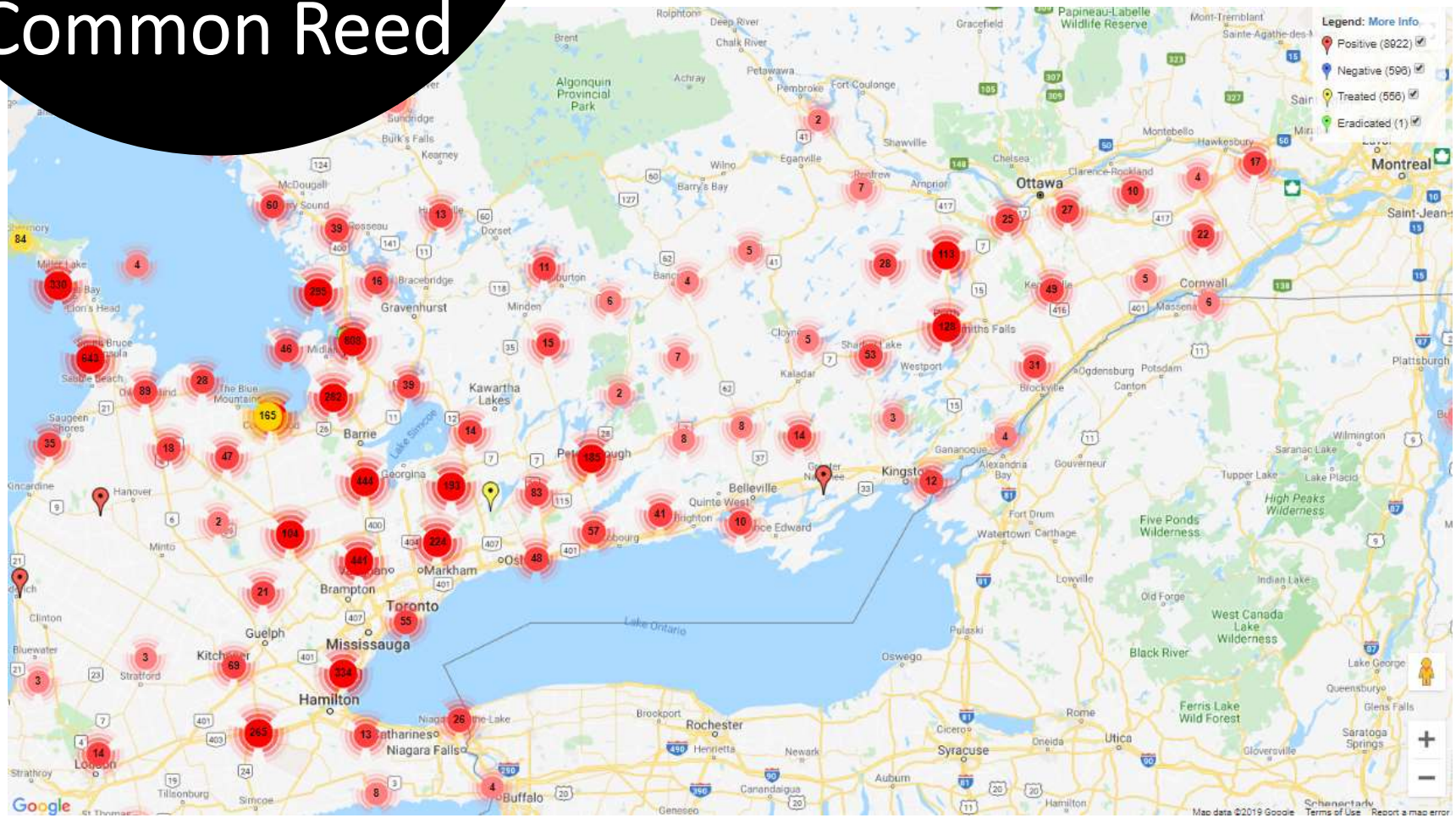
- Riparian areas as well as disturbed areas (roadsides)

4. European Common Reed

Impacts

- Allelopathic: releases toxins from roots to affect nearby plant growth
- Forms large monocultures and outcompetes native plants (reduces biodiversity).
- Threatens habitat for wildlife species (e.g. ducks, deer, etc.).

4. European Common Reed



4. Garden plants

What are they?

- Plants brought to North America and sold in the horticultural industry.
- Many are still sold today.

Pathway of Introduction and Spread

- Horticulture.
- Seeds can spread by
    - Wind
    - Water
    - Trail use

Habitat

- Grow in gardens, roadsides, ditches, etc.
- Invades old fields and native habitats such as open woodlands.

Plants include, but are not limited to:

- Periwinkle
- English ivy
- Goutweed
- Garlic mustard
- European buckthorn
- Japanese knotweed (*Restricted*)
- Dog-strangling vine (*Restricted*)







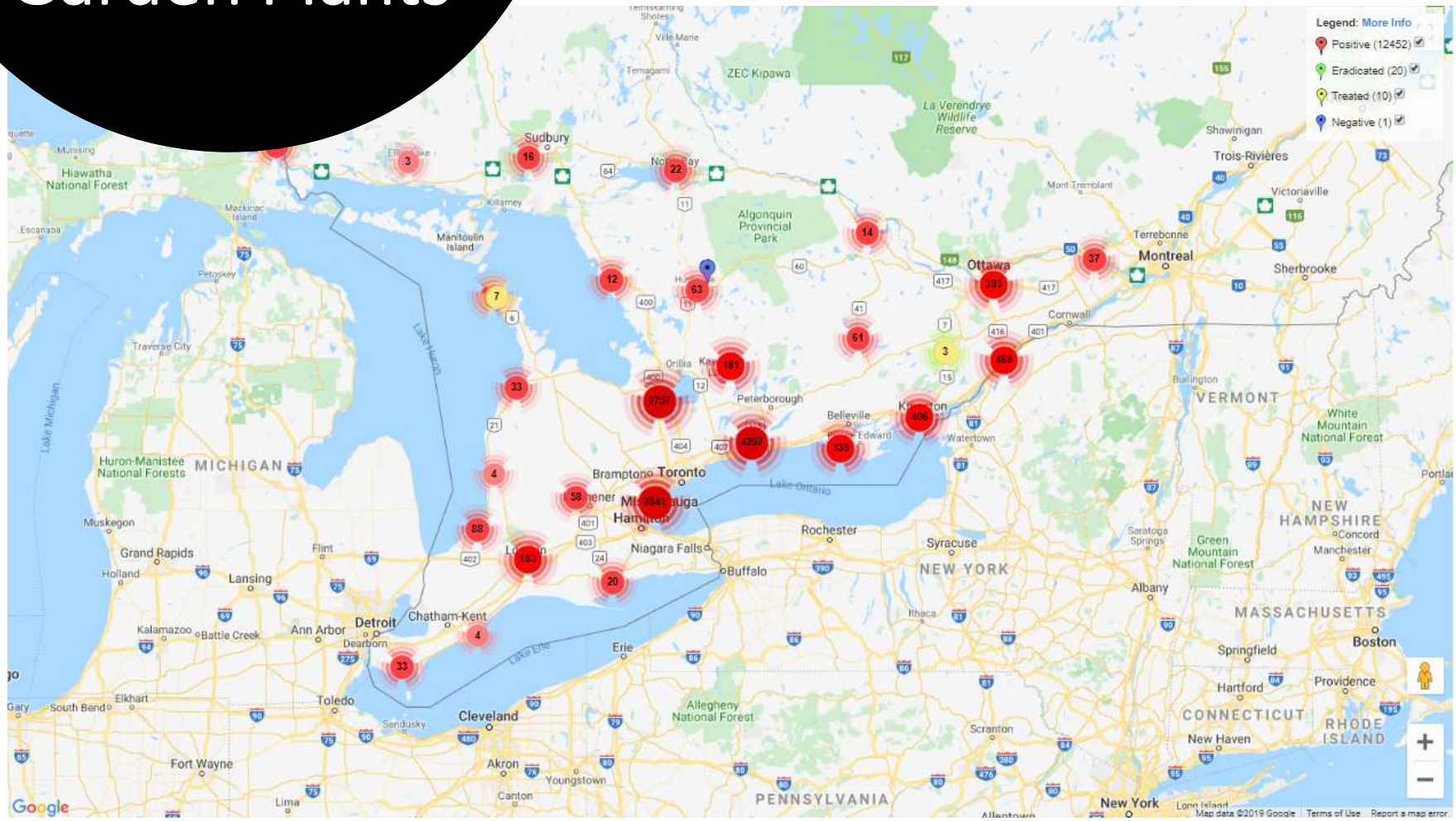
(*Restricted*)

Garden Plants

Impacts

- Can out-compete native plants by shading them out, decreasing biodiversity.
- Extremely difficult to manage once established (successful management/eradication can take 3-4 years)
- Angry neighbours

Garden Plants



5. Prevention

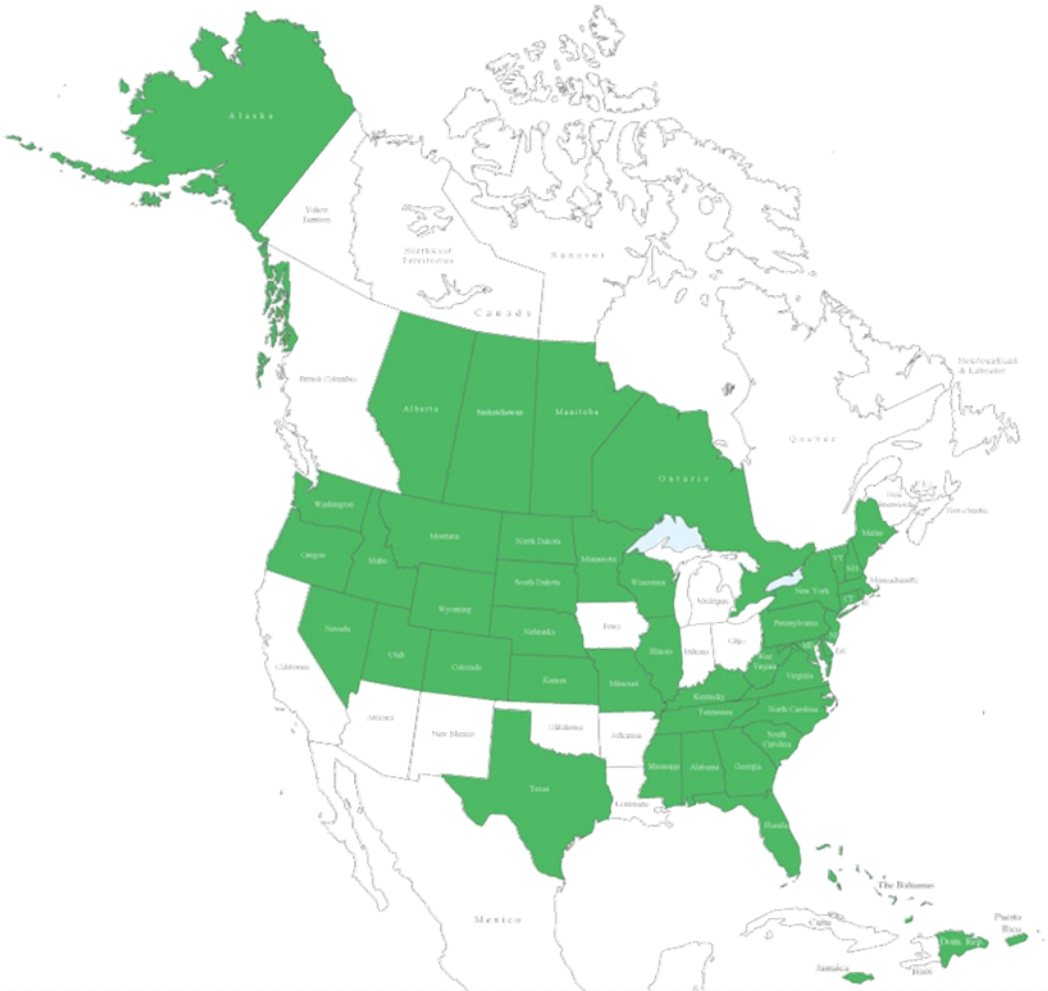
- Learn how to identify invasive species!
- Clean, Drain, Dry
- Play, Clean, Go
- Grow Me Instead
- Don’t dump your bait!
- Never release unwanted pets
- Don’t transport fire wood
- Report!

6. Report!

- Invading Species Hotline: 1-800-563-7711
- Email: info@invadingspecies.com
- Create an EDDMapS profile: www.eddmaps.org/ontario
- Join our iNaturalist project: https://www.inaturalist.org/projects/invasive-species-in-ontario

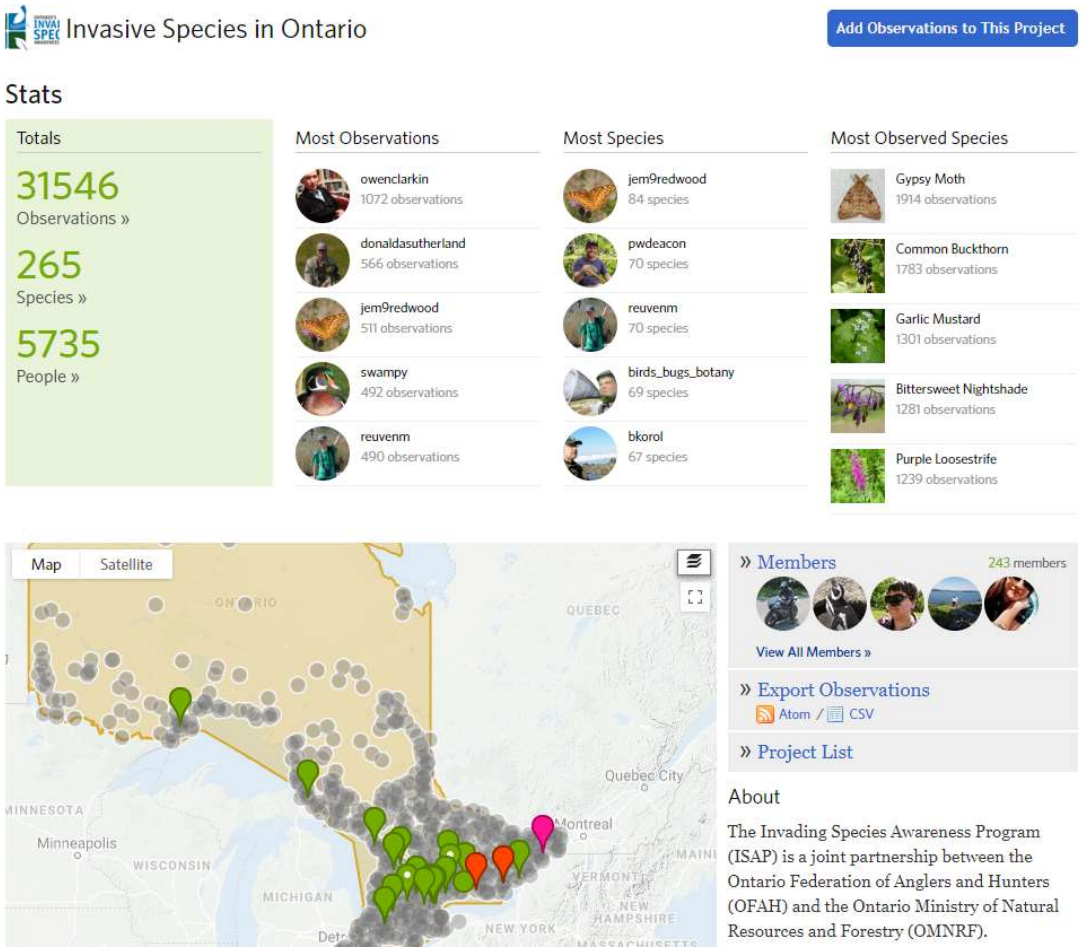
6. EDDMapS

- Launched in 2005 by the Centre for Invasive Species Ecosystem Health at the University of Georgia
- Was later adapted for Ontario in 2014
- Data is the foundation for a better understanding of invasive species distribution
- As of yesterday, there are 49,979 reports from Ontario



6. iNaturalist

- Project started in January, 2018
- Pulls report data that ‘fits’ our project
  - Georeference
  - Species
  - Willing to share lat/long
- Data is collated into EDDMapS to create a better landscape of IS in Ontario
- As of yesterday, there were 30,712 reports in the project
- Total of over 65,000 reports between iNaturalist and EDDMapS



7. Questions?

OFAH Invading Species Awareness Program
Ontario Federation of Anglers and Hunters
4601 Guthrie Drive
P.O. Box 2800
Peterborough, Ontario Canada
K9J 8L5

Invading Species Hotline:
1-800-563-7711

Email: Brook_Schryer@ofah.org
Call: 1-705-748-6324 ex.227