2022 Hydrilla Field Season Update

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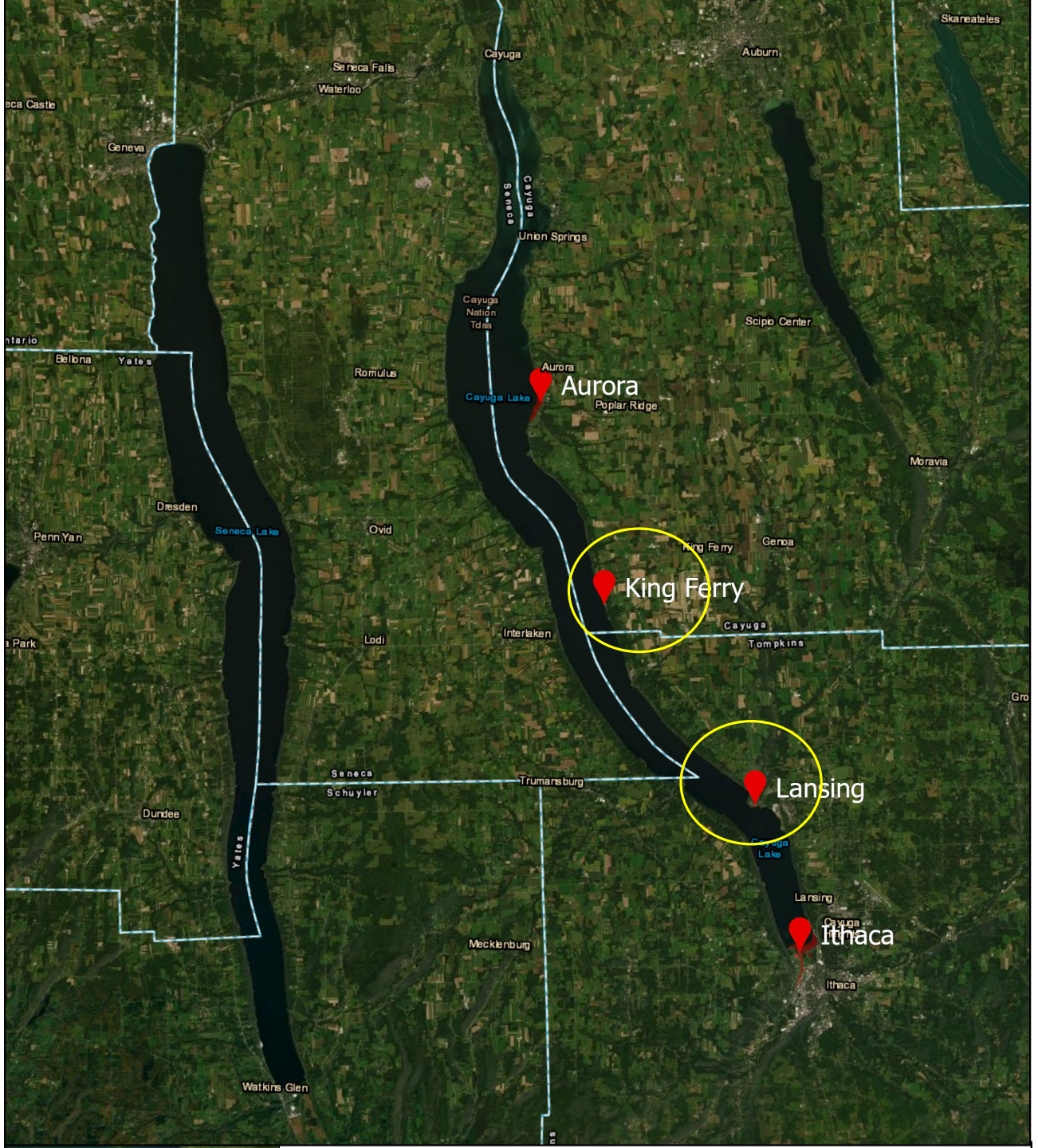
Goals: Control and monitor Hydrilla infestations, Early detection of new infestations

- Coordinate treatment
- Conduct macrophyte and tuber sampling within infestation(s) to monitor Hydrilla population
- Survey for new infestations
  - Point-intercept rake toss surveys throughout targeted areas
    - Cayuga Lake (known infestations)
    - Lake Ontario embayments
    - neighboring waterbodies near known infestations
    - Locations susceptible to spread- boat launches, marinas

Management Efforts

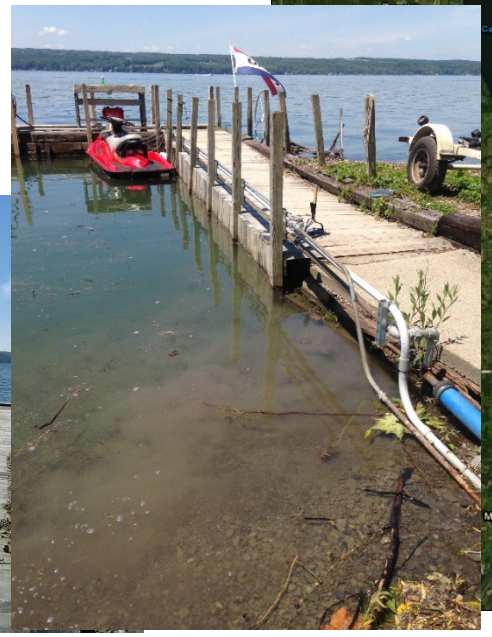
- King Ferry - private marina
- Lansing - private marina



King Ferry

King Ferry Hydrilla Infestation

- Detected Fall 2018
- Dredged and treated with a contact herbicide 2019
- Monitored in 2020, 2021, and 2022
  - No Hydrilla detected!



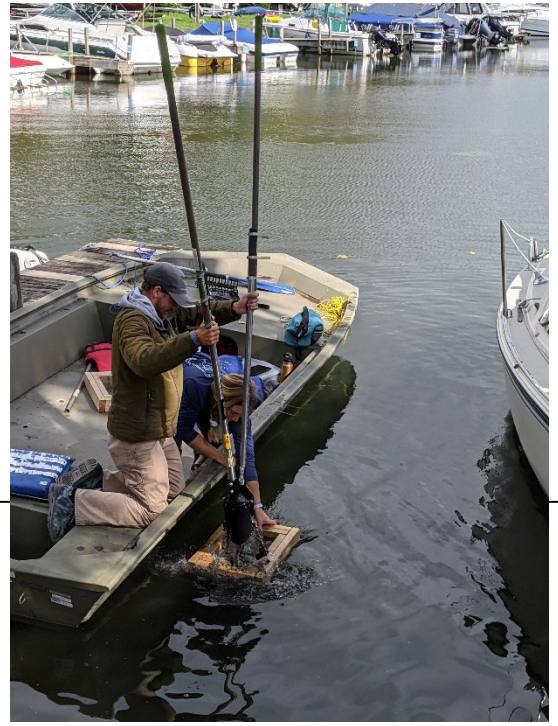
Lansing

Lansing Hydrilla Infestation

- Initial report: 8/27/19
- Treated using a copper-based contact herbicide fall 2019
- Treated using systemic herbicide (fluridone, Sonar H4C) 2020, 2021, and 2022
  - 8 weekly applications July to August

Lansing Hydrilla Infestation

- Tuber sampling
  - 6/15/2022
    - Samples collected wherever Hydrilla has been previously documented
    - 59 sediment samples collected
    - No tubers found

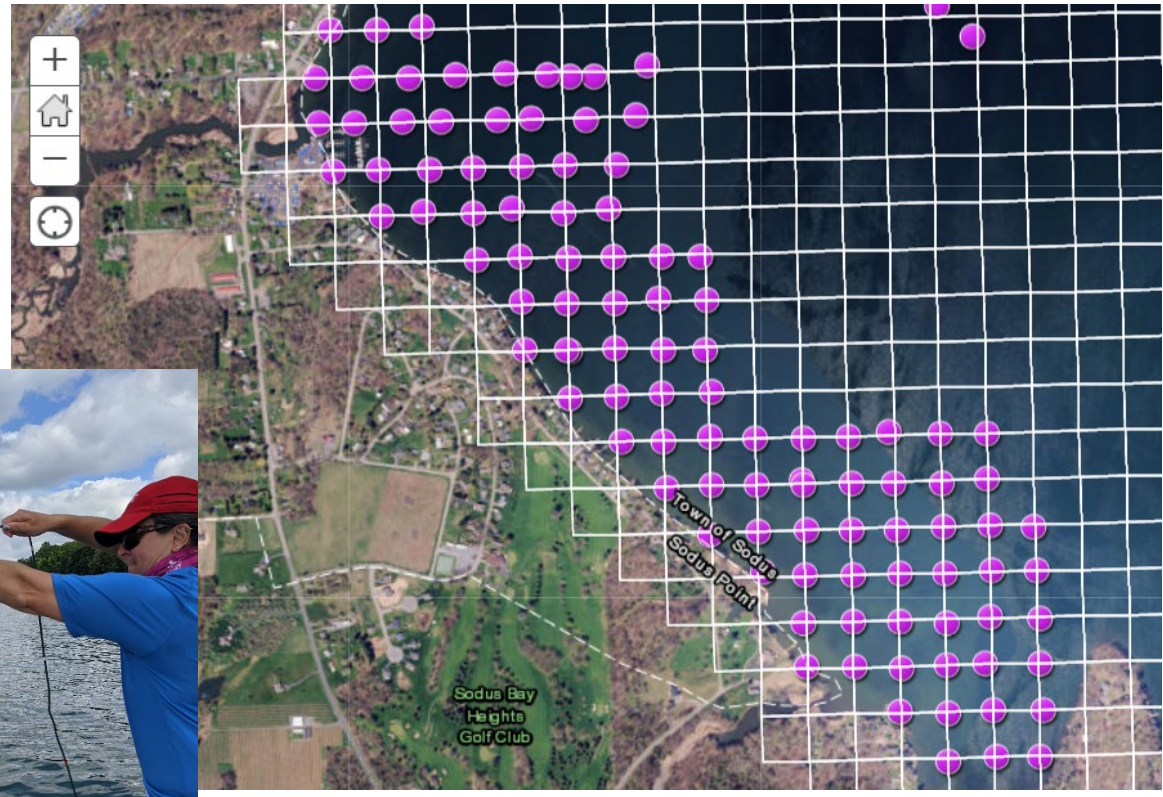


2022 Field Season

2022 Survey Design- No known Hydrilla

- Point-intercept survey on a 100 m^2 grid in waterbodies with no known Hydrilla populations
  - Rake toss
    - Adapted from Madsen 1999
  - Within 1 mile of the launch/marina
  - In water depths up to 25ft
    - Growing range of Hydrilla

Example sampling grid design



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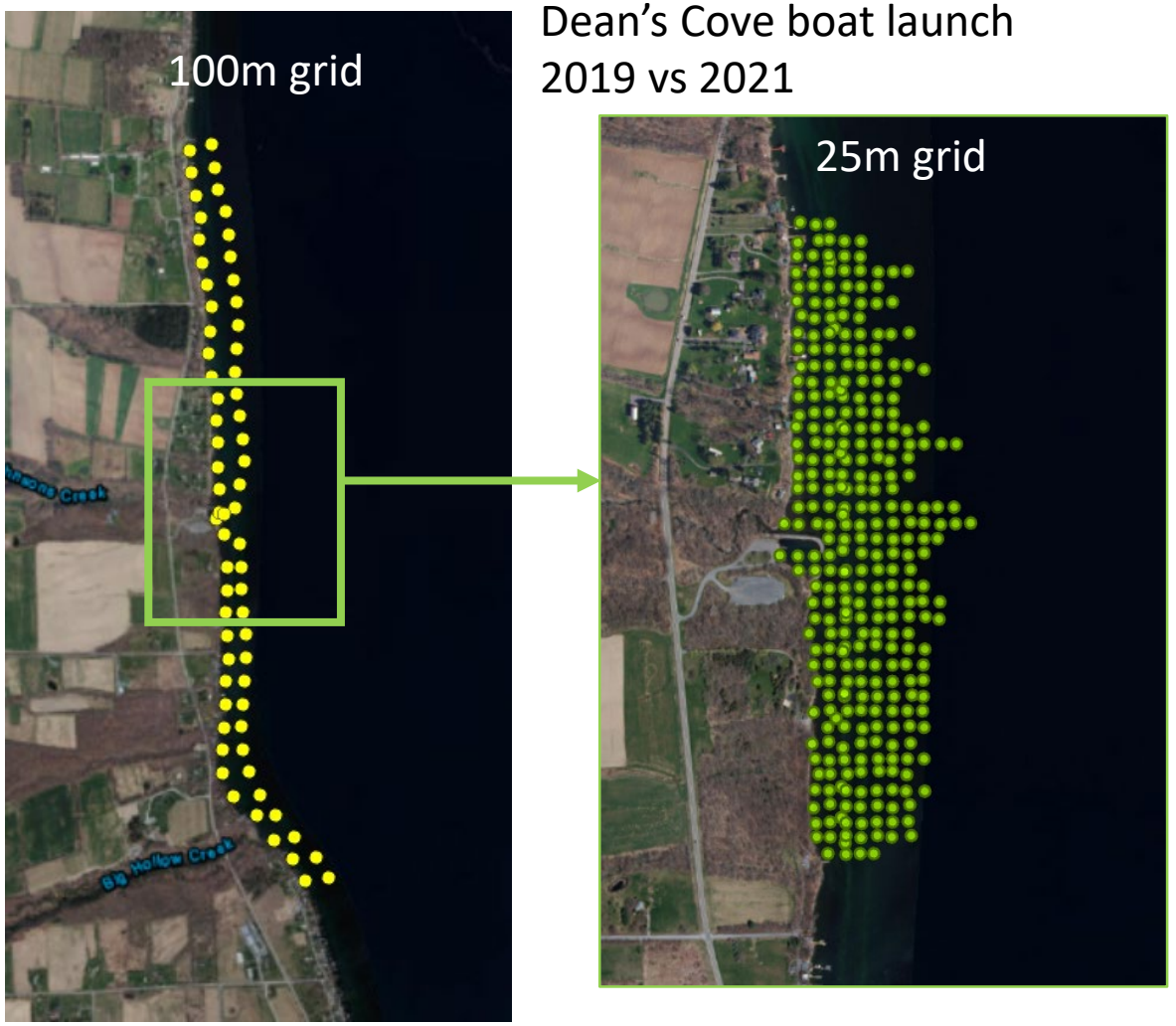
2022 Survey Design- Known Hydrilla

In waterbodies with known Hydrilla populations (Cayuga Lake)

- 25 m^2 grid
- Within ~0.3 mile of the launch/marina
- Water depths up to 25ft

Example site:
Dean's Cove boat launch
2019 vs 2021



2022 Survey Design

- Non-systematic Rake Tosses
  - Visual observation of dense plants
  - Along docks
  - Concurrent with other projects
    - Community science Macrophyte Survey Program (data not included)

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Finger Lakes Macrophyte Survey Pro

Welcome to the 2021 Macrophyte Survey Program training prot
give you all the information you need to **Know. Observe.** and **Re**
invasive species (AIS) in the Finger Lakes. As the economic and e
the region, protecting the Finger Lakes from this threat is param

One of the most effective ways to prevent the adverse impacts
populations early before they are able to establish and spread.
the early detection of AIS thereby helping to protect our lakes,
from the negative effects from invasives.

What Are We Looking For?
Based on regional priorities and input from working group meet
New York State DEC, this program targets the identification and
highly invasive species:

- Hydrilla (*Hydrilla verticillata*)
- Water chestnut (*Trapa natans*)
- Starry stonewort (*Nitellopsis obtusa*)

Each of these three plants pose a significant threat to the Finger
There are, however, a number of other invasive species that you
through your sampling this summer. These include:

- Eurasian watermilfoil (*Myriophyllum spicatum*) (COMMC
- Curly-leaf pondweed (*Potamogeton crispus*) (COMMON
- European frog-bit (*Hydrocharais morsus-ranae)* (SEVERA
- Brittle naiad *(Najas minor*) (FEW POPULATIONS)
- Variable watermilfoil (*Myriophyllum heterophyllum*) (FE
- Parrot feather (*Myriophyllum aquaticum*) (FEW POPULA
- Fanwort (*Cabomba caroliniana*) (FEW POPULATIONS)
- Brazilian elodea (*Egeria densa*) (NOT IN THE REGION)

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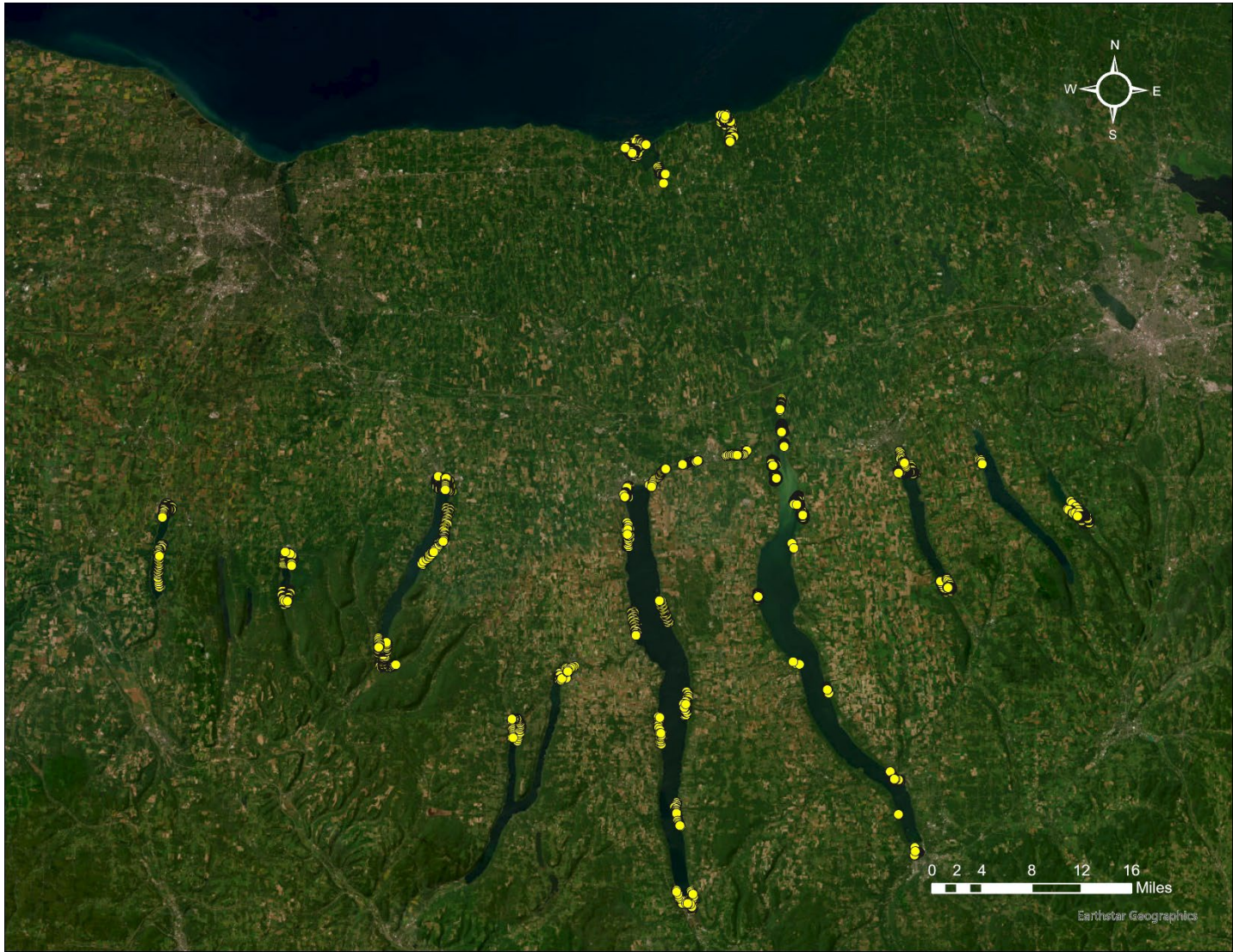
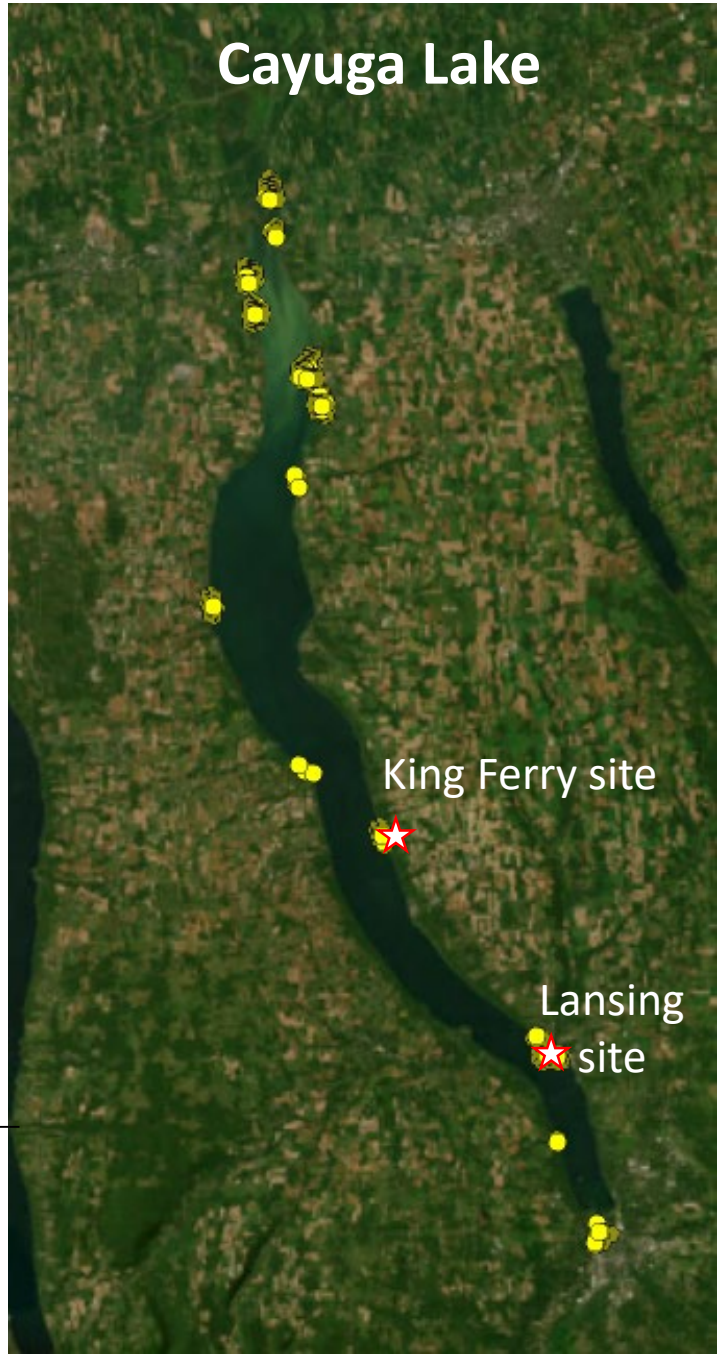
2022 Survey Summary

- 12 waterbodies
- 12,269 rake tosses
- 10 counties
- 75 days in the field
- Hydrilla detected in Cayuga Lake
  - No new waterbodies



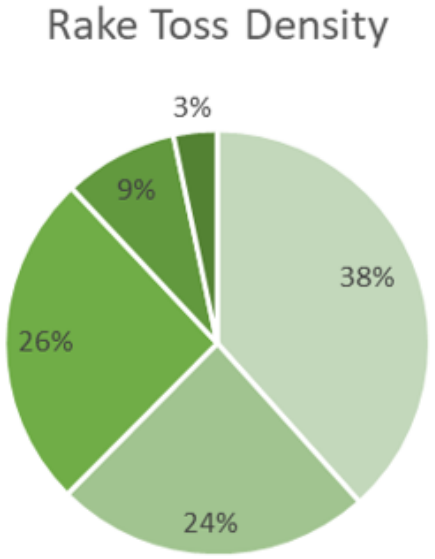
On Cayuga Lake:

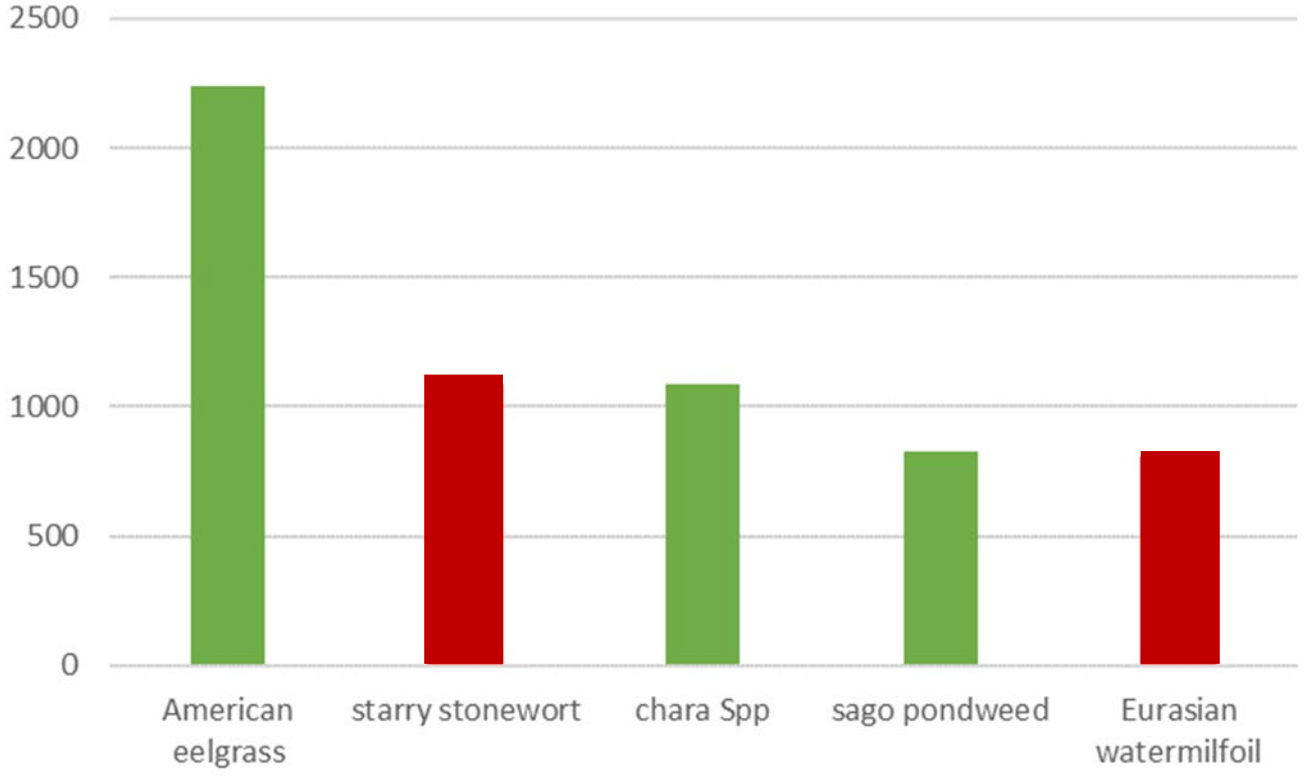
- 7,137 rake tosses
  - 1,169 to monitor Hydrilla control sites
    - 132 King Ferry, 1,037 Lansing
  - 5,968 as part of point-intercept surveys around boat launches and marinas
    - 25m^2 grid
- In addition – provided people for USACE monitoring efforts in Ithaca and Aurora
  - 13 days throughout season



Macrophytes Across All Sites

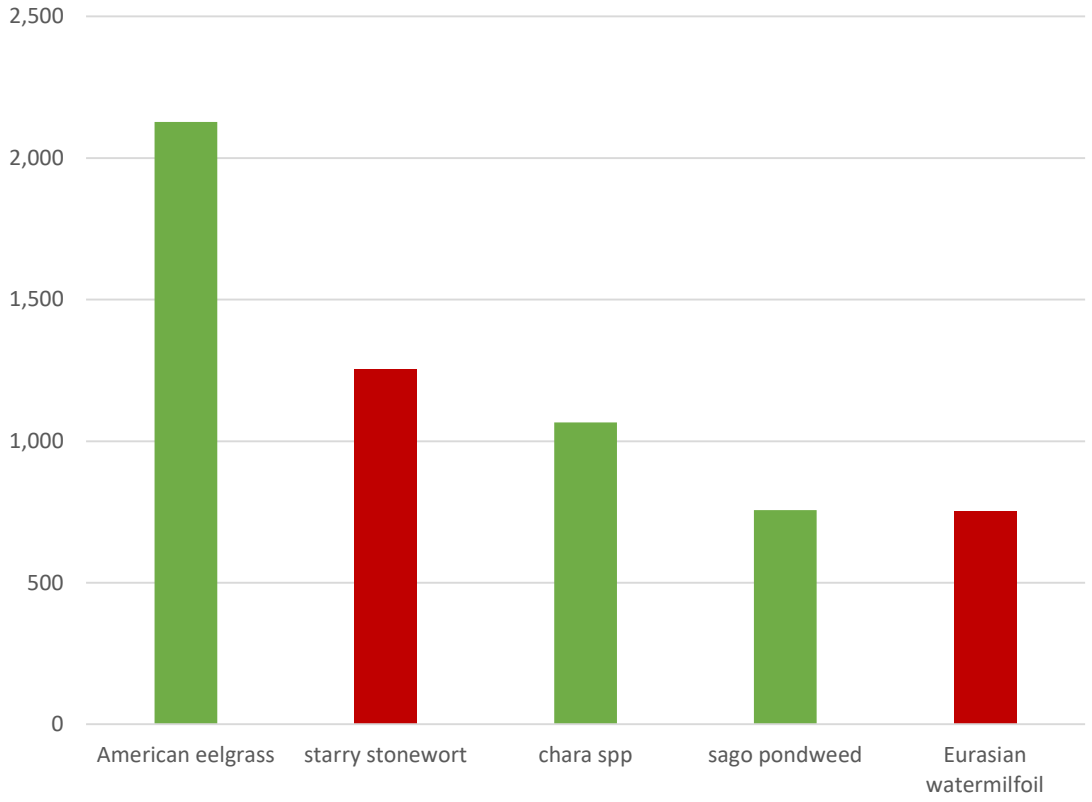
- 41 submersed macrophyte species detected
  - includes unknown species, pondweed species, algae



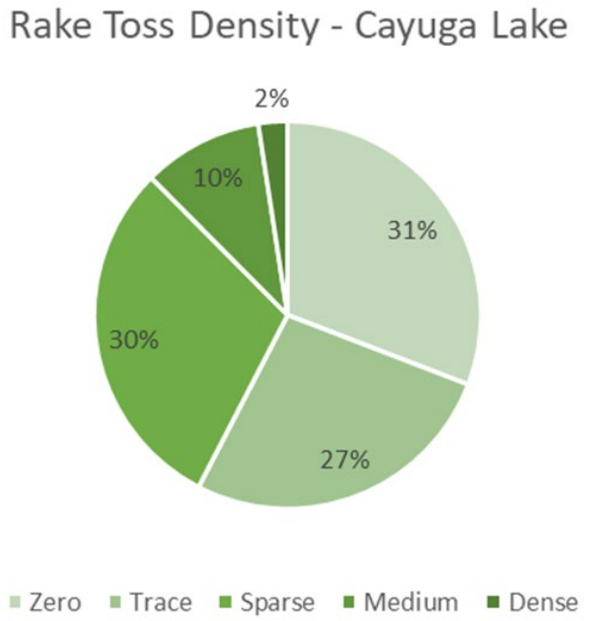


Macrophytes on Cayuga Lake

- 35 submersed macrophyte species detected
  - includes unknown species, pondweed species, algae



State-endangered
Najas marina, spiny naiad



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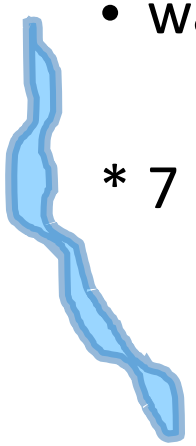
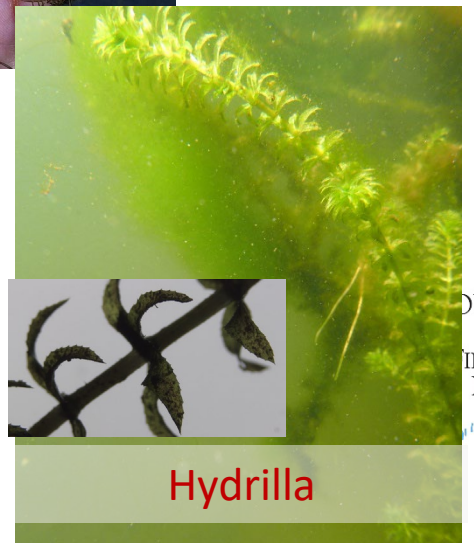
Invasive Species Across Sites

- 8 invasive species detected
  - starry stonewort*
  - Eurasian watermilfoil*
  - curly-leaved pondweed*
  - brittle naiad*
  - Hydrilla*
  - American lotus*
  - European frogbit
  - water chestnut*



* 7 on Cayuga Lake



Additional Surveys

- SCUBA
  - Lansing- no Hydrilla detected
  - North end of Aurora
- Visual encounter/Meander surveys
  - North end of Aurora
  - Sheldrake

Looking ahead

- Control & monitor Hydrilla populations
- Survey areas susceptible to spread
- Provide educational resources, programming
  - KNOW – OBSERVE – REPORT
  - FLXplantID@gmail.com

The most critical step in addressing a new invasive species is to know that it exists.

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