NEW YORK STATE

Department of Environmental Conservation

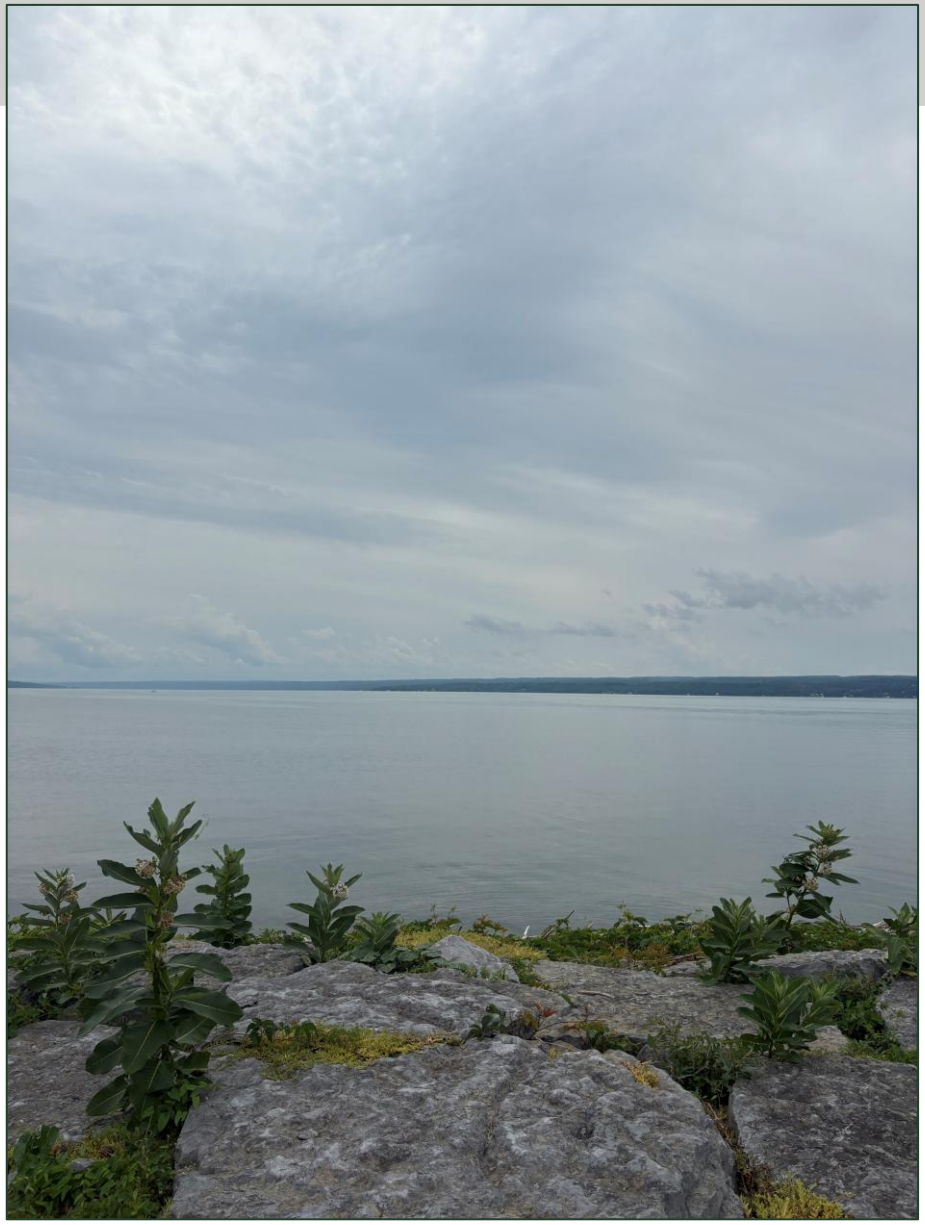
Cayuga Lake Hydrilla Control 2025 Updates

Cayuga Lake Watershed Network Community Conference
Update by Emily Timkey-Benzinger
Aquatic Invasive Species Coordinator, Region 7

1/22/2026

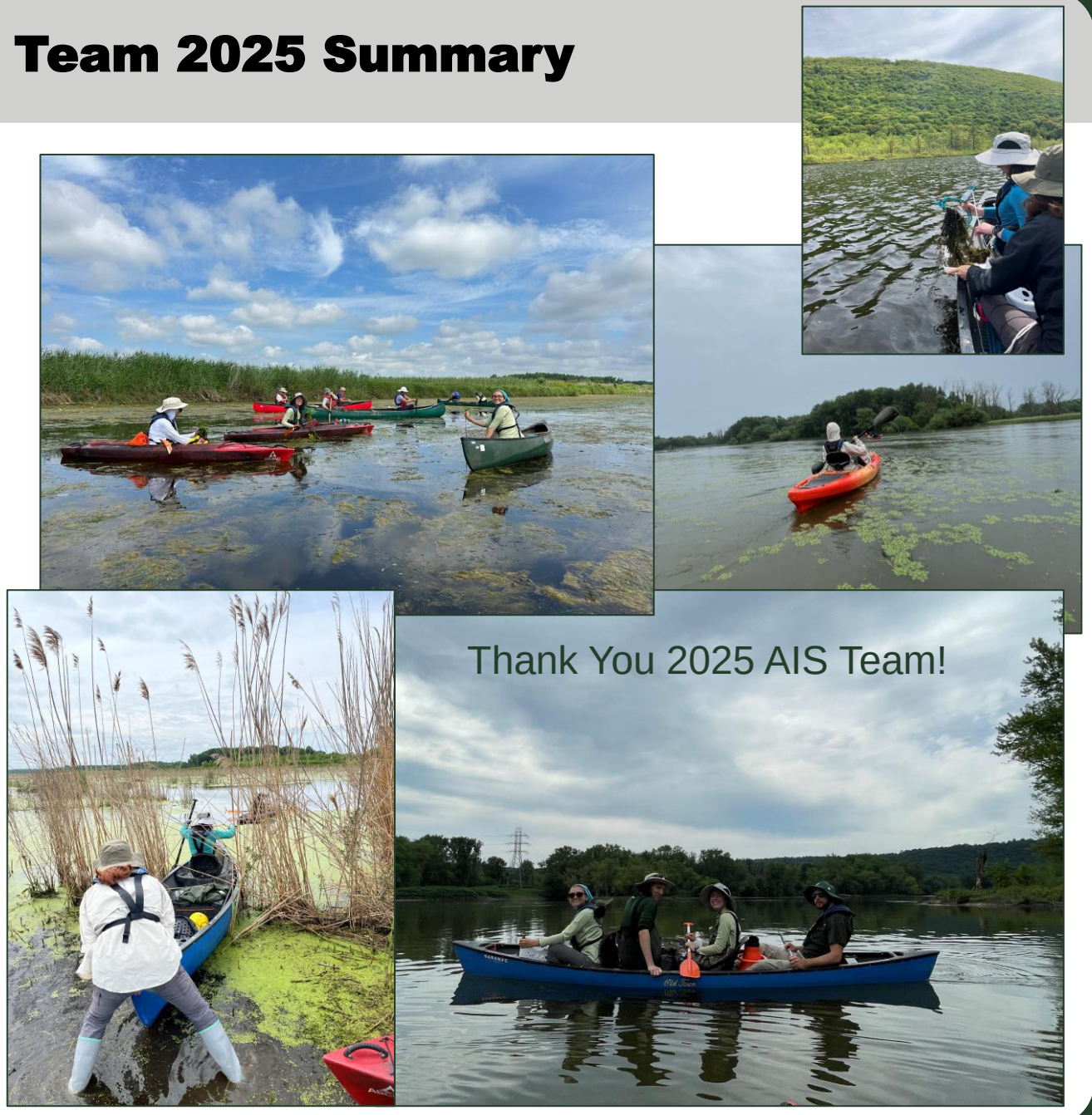
Agenda

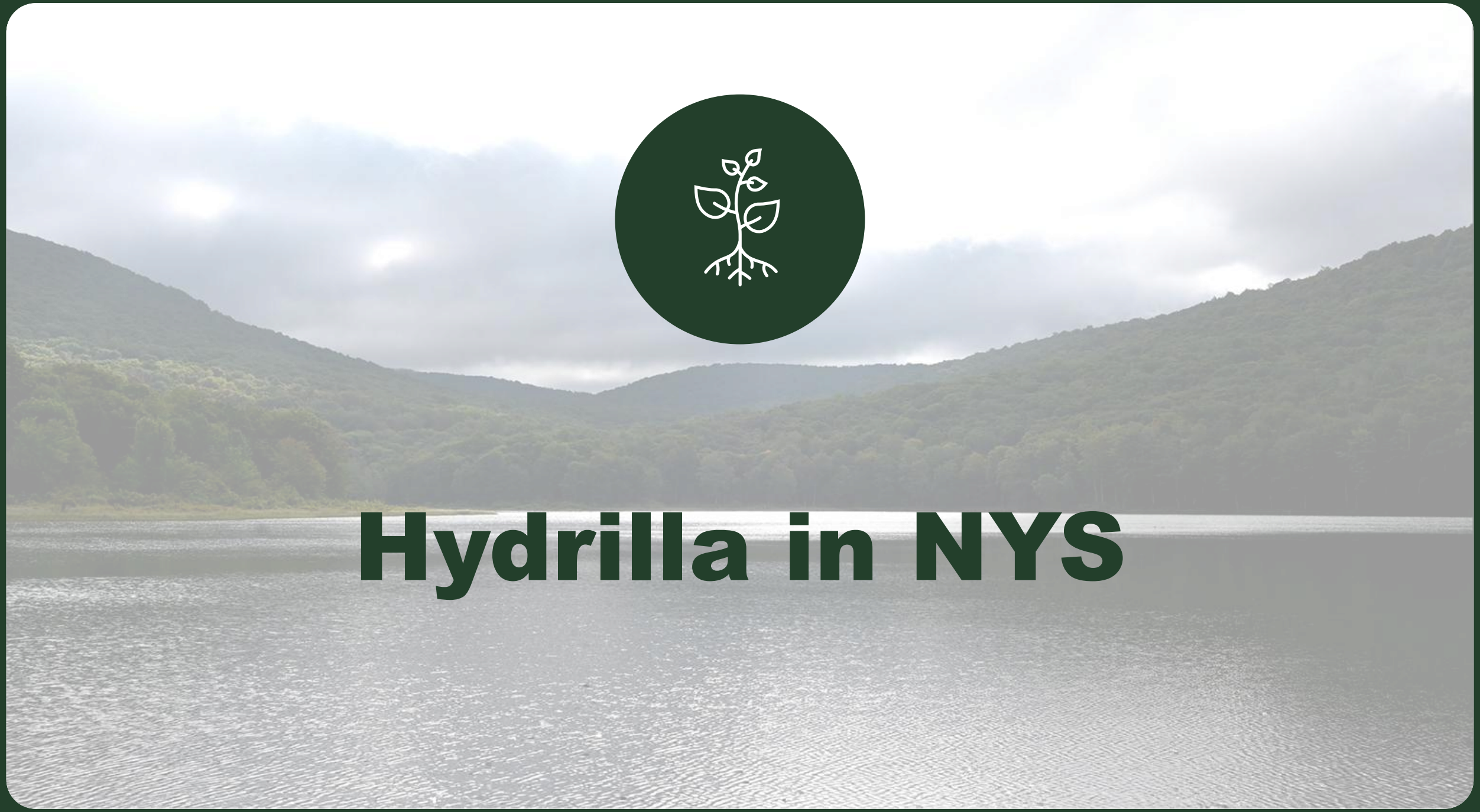
- 2025 Field Season Summary
- Hydrilla History in NYS
- NYS Hydrilla Monitoring Methods
- NYS Hydrilla Control Projects- 2025
  - Cayuga Lake Treatments



Region 7 Aquatic Invasive Species Team 2025 Summary

- **630 Acres** Monitored for SAV on Cayuga Lake
  - Additional 122 acres in region 7
  - **752** acres total in Region
- **52.7** Surface Acres Managed for Hydrilla
- **40.5 Miles** of river monitored
  - Susquehanna river (12 miles SAV monitoring, 17 miles for eDNA)
  - Little Nanticoke creek (3 Miles
  - Little Salmon river (1.5 miles)
  - Seneca River (7 Miles)
- Water chestnut removal **~8,000 lbs**
  - Montezuma WMA/ National Wildlife refuge, Hunts Pond, Oneida Lake
- Carolina fanwort monitoring in Seneca River and Little Salmon Creek with SLELO and FL PRISM

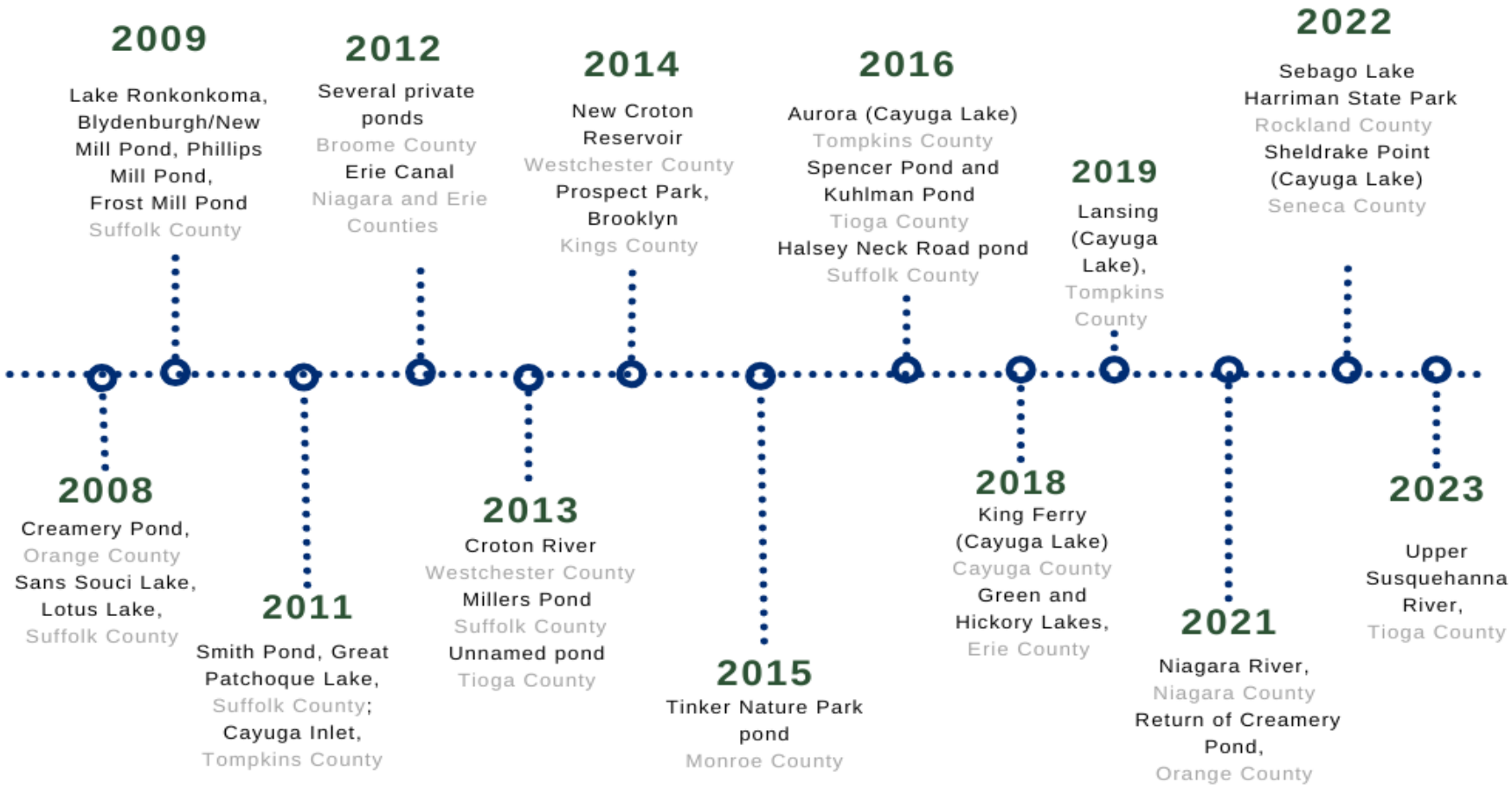


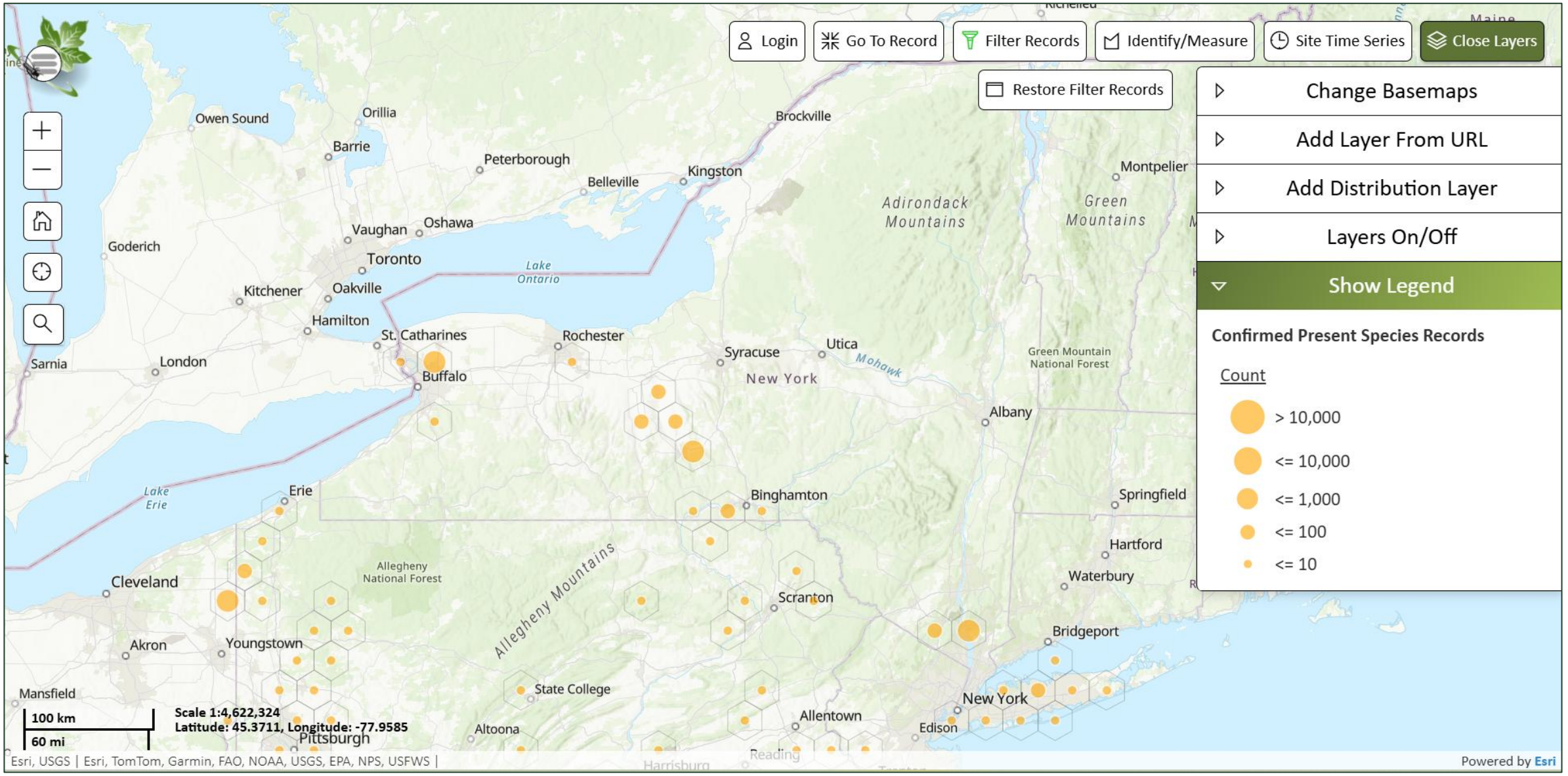


Hydrilla in NYS

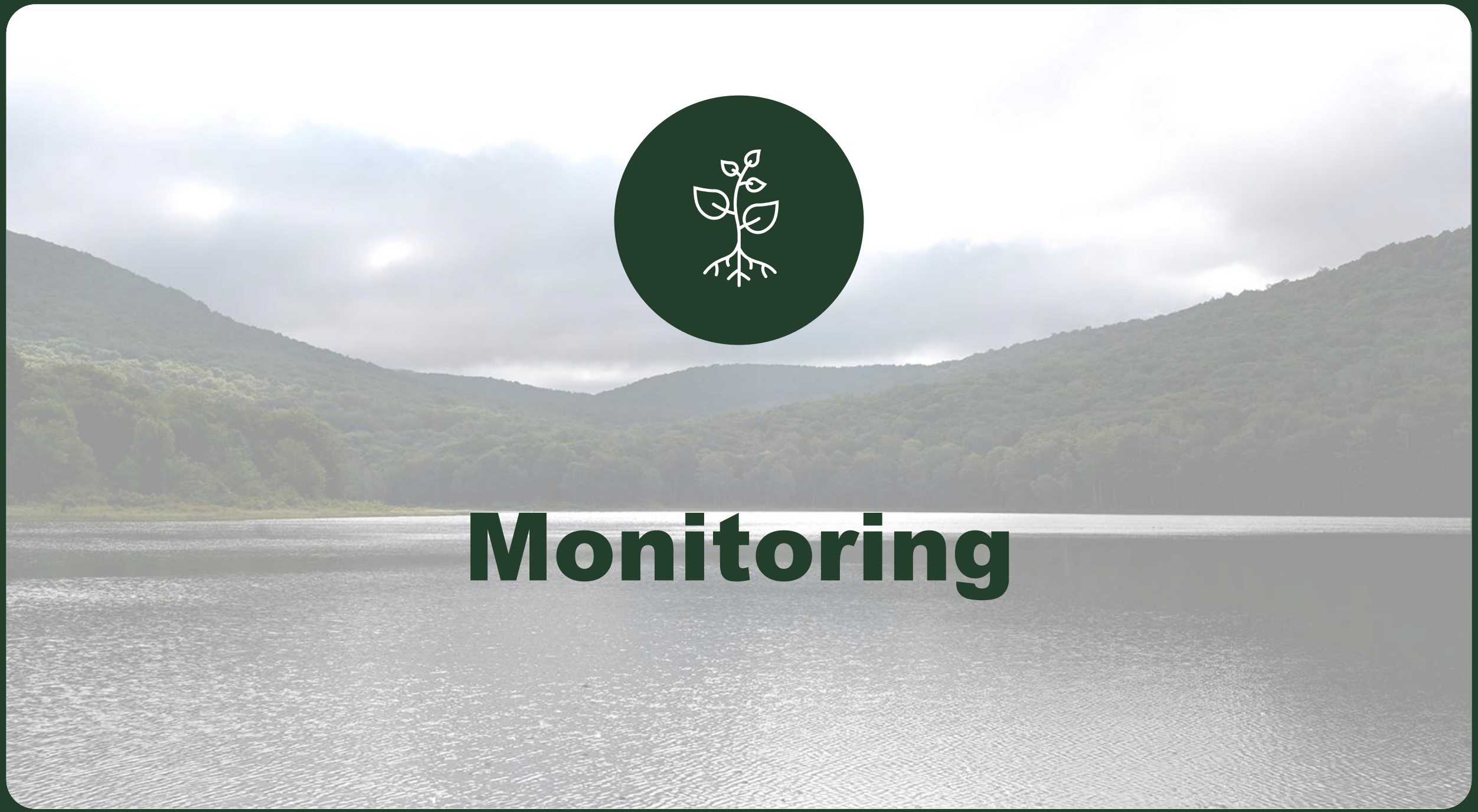
Hydrilla in NYS

Hydrilla First Discovered in NYS



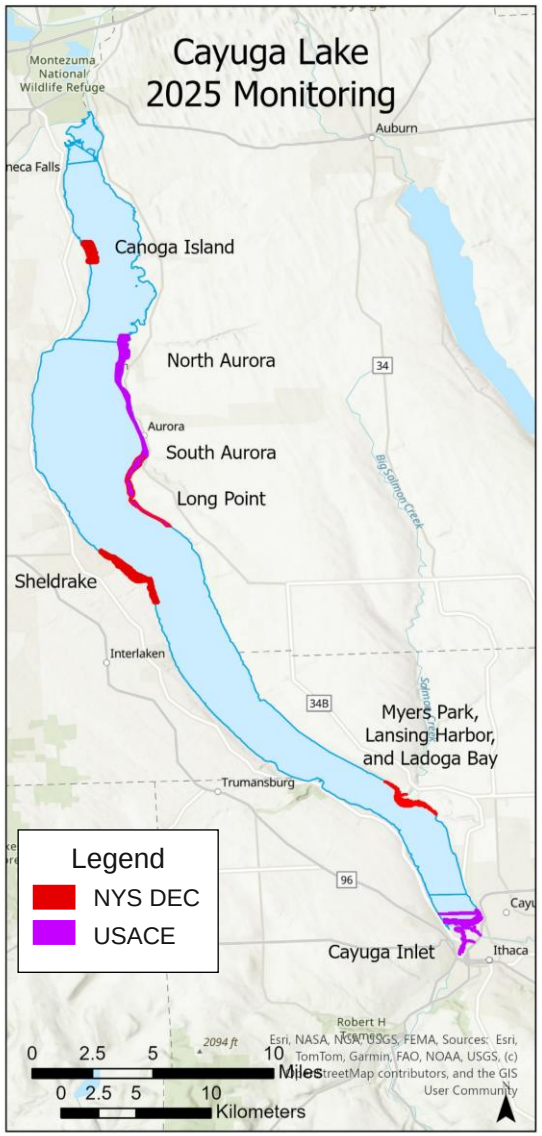


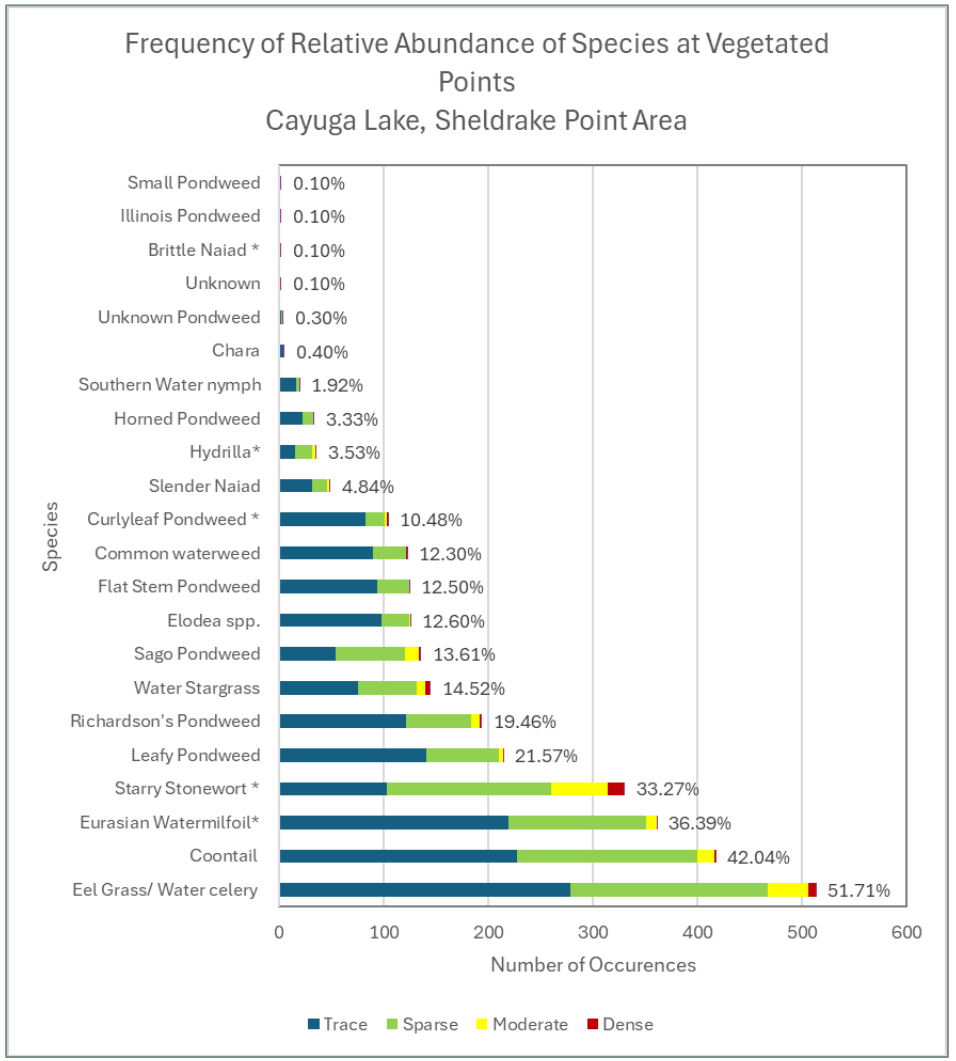
Hydrilla distribution in NYS. Image from iMapInvasives (NYS Invasive species database)

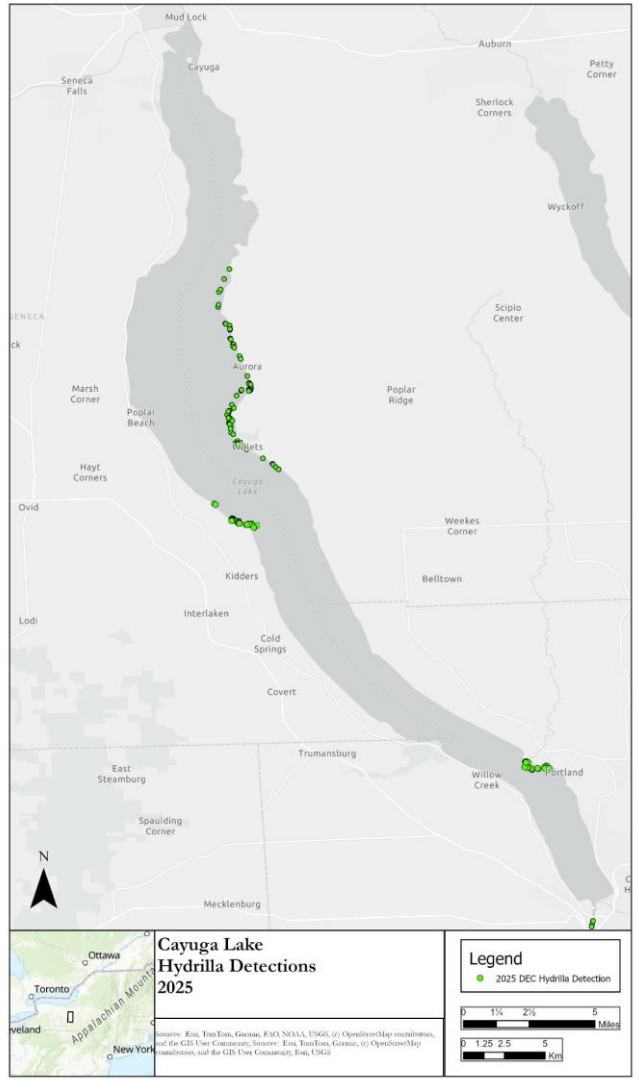


Monitoring

Monitoring

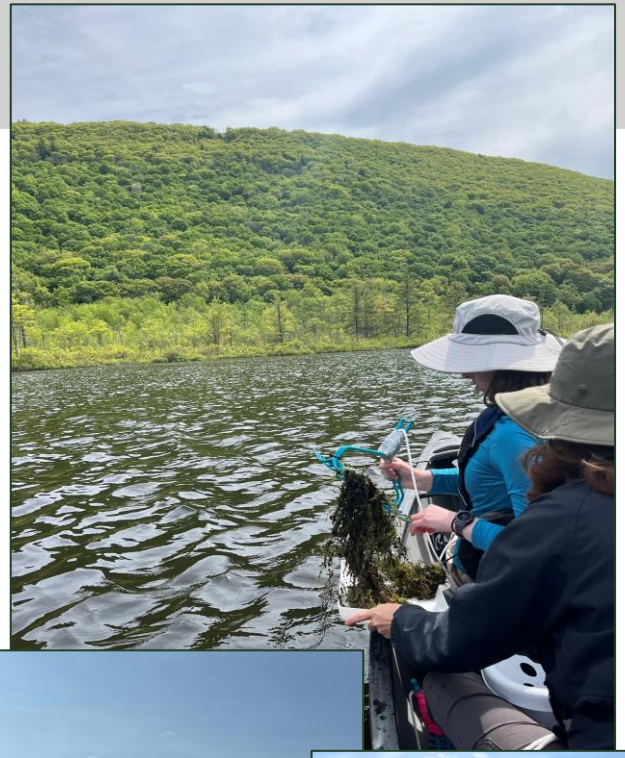

Cayuga Lake
2025 Monitoring
Montezuma National Wildlife Refuge
Auburn
Canoga Island
North Aurora
Aurora
South Aurora
Long Point
Sheldrake
Interlaken
Myers Park, Lansing Harbor, and Ladoga Bay
Trumansburg
Cayuga Inlet
Ithaca
Legend
NYS DEC
USACE
0 2.5 5 10 Miles
0 2.5 5 10 Kilometers
Esri, NASA, NGA, USGS, FEMA, Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, (c) OpenStreetMap contributors, and the GIS User Community

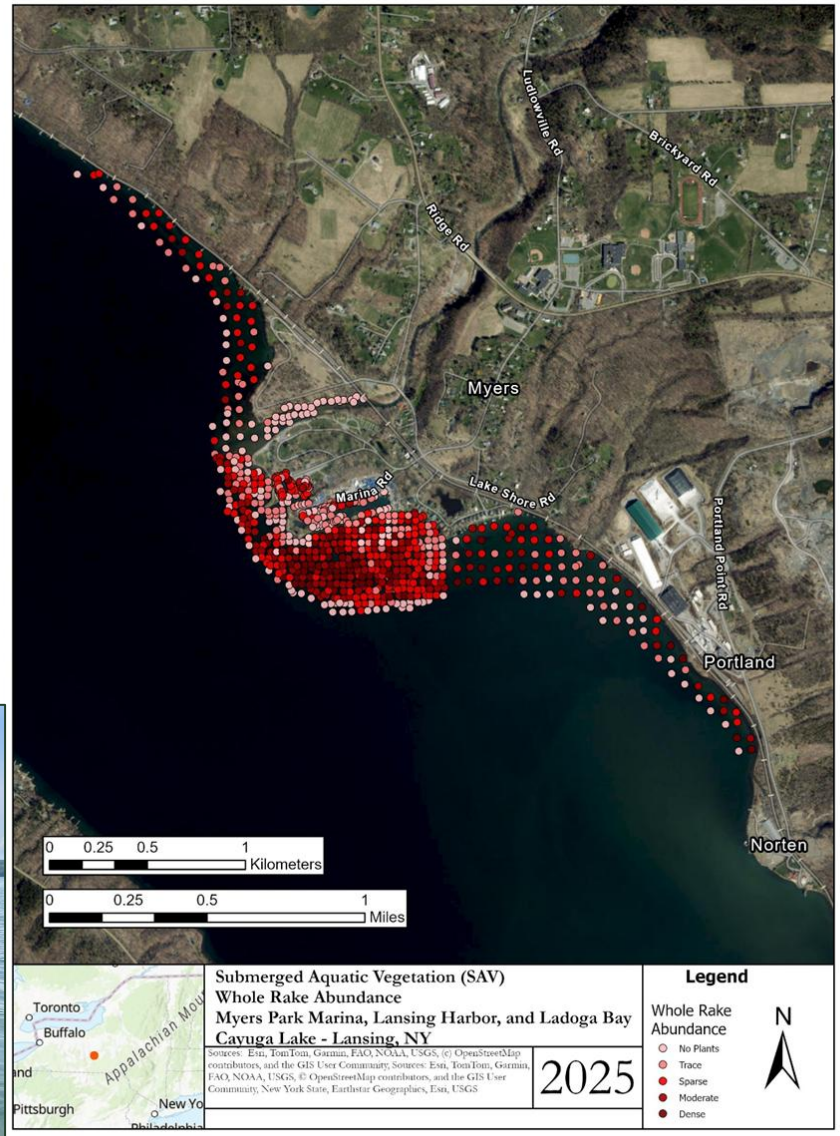

Frequency of Relative Abundance of Species at Vegetated Points
Cayuga Lake, Sheldrake Point Area
Species
Small Pondweed 0.10%
Illinois Pondweed 0.10%
Brittle Naiad * 0.10%
Unknown 0.10%
Unknown Pondweed 0.30%
Chara 0.40%
Southern Water nymph 1.92%
Horned Pondweed 3.33%
Hydrilla* 3.53%
Slender Naiad 4.84%
Curlyleaf Pondweed * 10.48%
Common waterweed 12.30%
Flat Stem Pondweed 12.50%
Elodea spp. 12.60%
Sago Pondweed 13.61%
Water Stargrass 14.52%
Richardson's Pondweed 19.46%
Leafy Pondweed 21.57%
Starry Stonewort * 33.27%
Eurasian Watermilfoil* 36.39%
Coontail 42.04%
Eel Grass/ Water celery 51.71%
0 100 200 300 400 500 600
Number of Occurences
Trace Sparse Moderate Dense


Cayuga Lake
Hydrilla Detections
2025
Legend
2025 DEC Hydrilla Detection
Miles
Km

How Do We Monitor?

- **Point Intercept Survey (PIS) for Submerged Aquatic Vegetation (SAV)**
- A grid is used to determine points
  - 50m Grid for early detection sites
  - 25m Grid for known hydrilla locations
- At least two (DEC) rake tosses* are performed at each point on either side of the vessel, with total vegetation density and individual species density collected.
- Density is recorded using the following scale:
  - Zero (0)
  - Trace (1)
  - Sparse (2)
  - Moderate (3)
  - Dense (4)
- **SONAR/ BioBase**





USACE use 1 rake toss per point

Whole Rake Abundance

Trace (1)

Sparse (2)

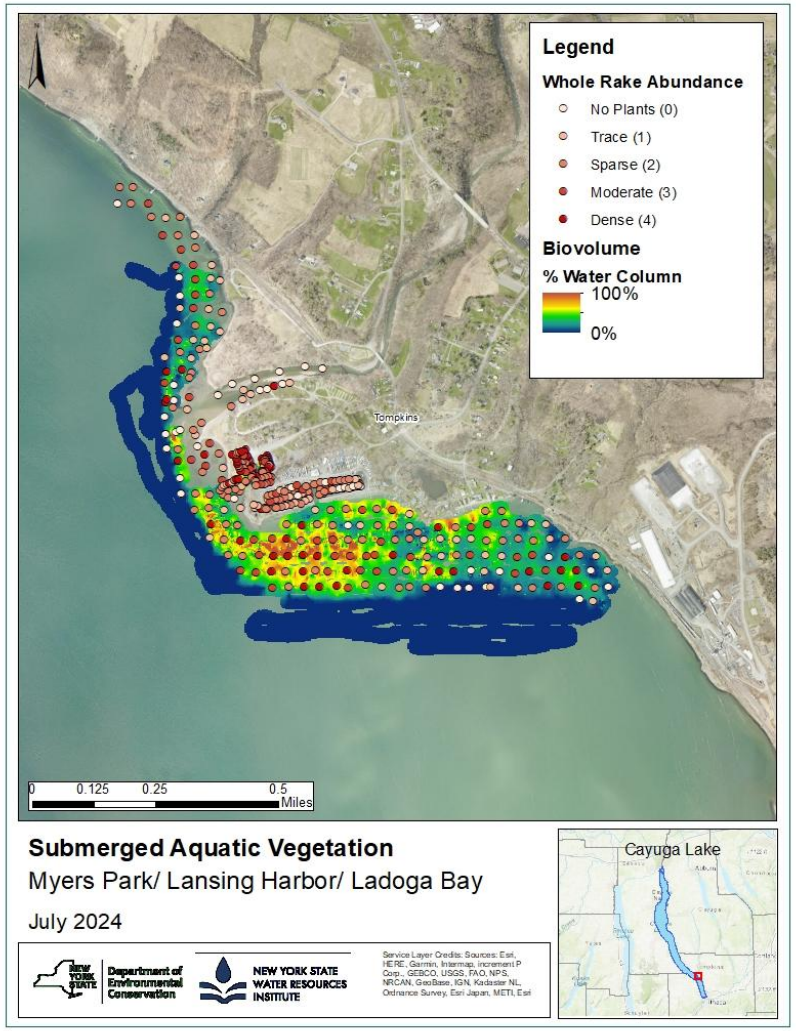
Moderate (3)

Dense (4)

Photos: Lindsay Yoder, R9 AIS Coordinator

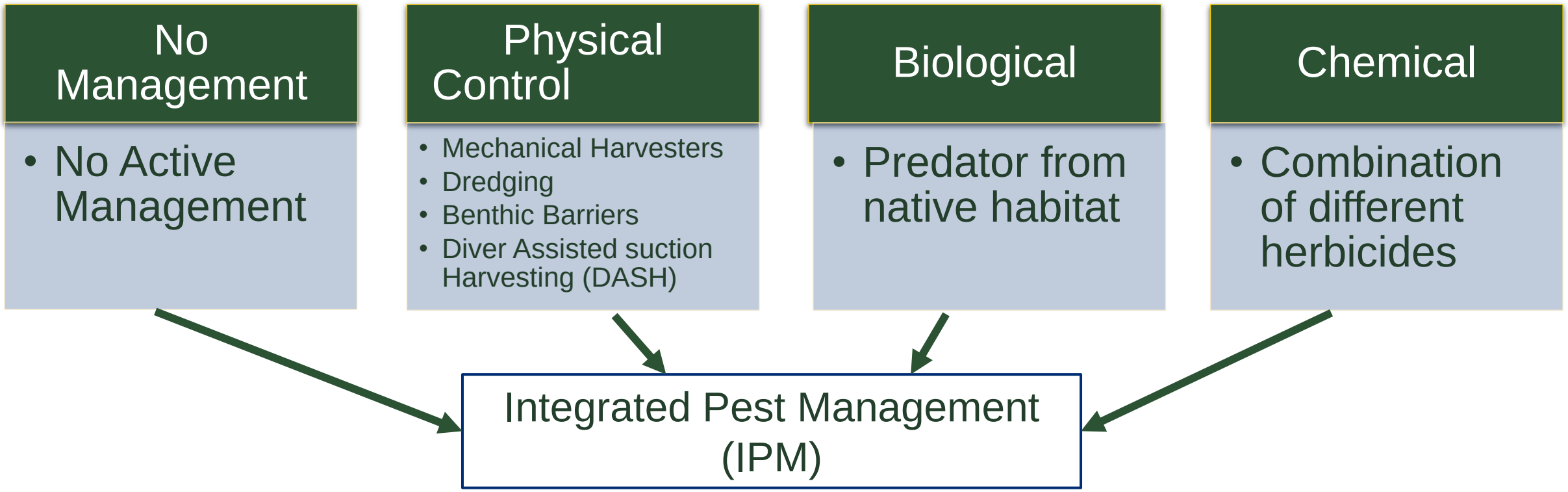
BioBase

- Record depth, Biovolume, Bottom Hardness
- Biovolume
  - The percent of the water column that contains vegetation
    - Ex.
      - Water depth is 10ft.
      - A submerged plant is 7 ft tall.
      - Biovolume would read as 0.70 or 70%
      - On map red = lots of plants. Blue = no plants



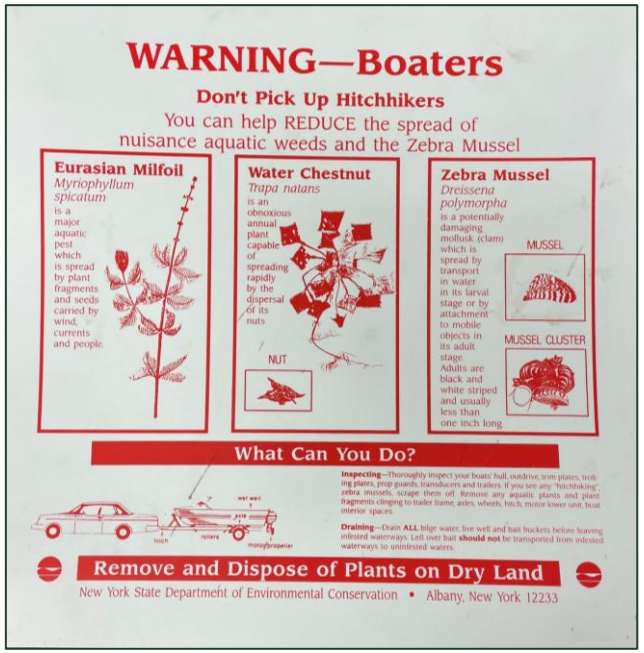
Invasive Species Control Strategies

Invasive species management strategies



No Management

- Existing populations will continue to grow and spread to new locations in Cayuga and other waterbodies
  - Surrounding waterbodies will be at risk of hydrilla spread
- Increase in outreach efforts to prevent spread



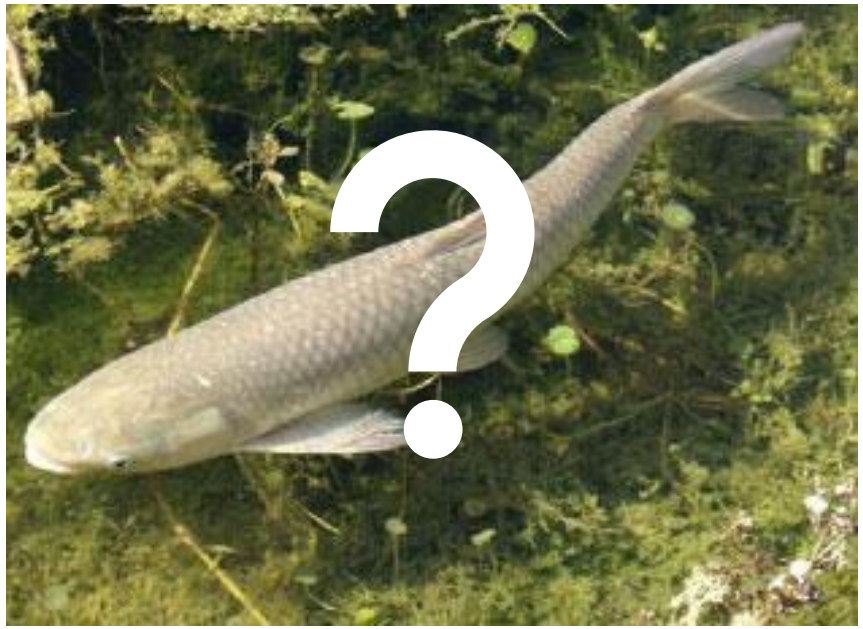
Physical Control

- Mechanical Harvesters
  - Hydrilla spreads by fragmentation…
- Benthic Barriers
  - Limited by water depth, current/ waves
- Diver Assisted suction Harvesting (DASH)/ hand pulling
  - Not ideal for large areas
  - Cannot suck up tubers in sediment
- Dredging
  - Successful in small areas

Mechanical Harvesting of Water Chestnut on the Seneca River

Biocontrol

- Sterile (triploid) grass carp



Credit Photo by Pam Fuller; U.S. Geological Survey
Source Invasive.org

- No other biological control agents are currently available for hydrilla

Chemical

- Effective at low doses
- Selective
- Ideal for large scale infestations
- Additional permits are required
  - Article 15 (Aquatic Pesticide)
  - Article 24 (wetlands)

Herbicides used in Cayuga Lake Hydrilla Control

Sonar H4C

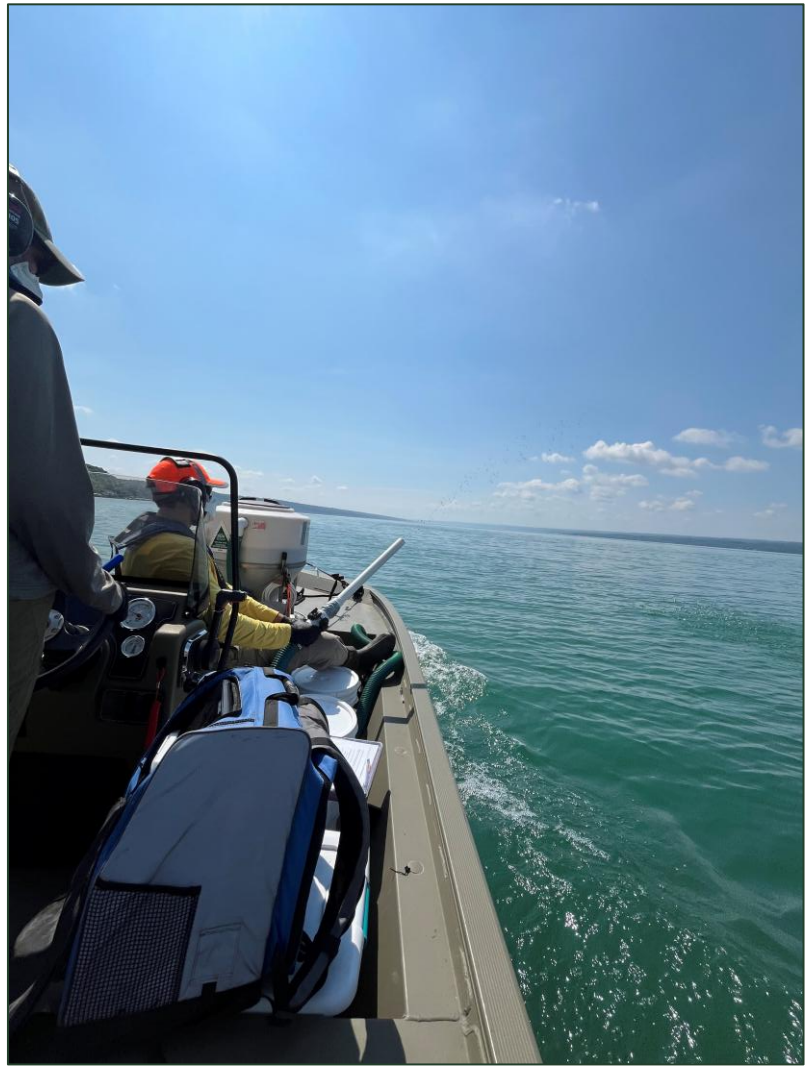
- Active ingredient – Fluridone
- Selective systemic herbicide
  - The herbicide acts by inhibiting photosynthesis, causing affected plants to turn white (chlorosis) and eventually die
- Low concentrations must be maintained over an extended period of time to be effective
  - Target of 3-5 ppb

Activity	Restriction
Swimming and bathing	prohibited **while product is being actively applied**
Fishing and/or fish consumption	prohibited for **zero days** following application
Livestock watering	prohibited for **zero days** following application
Irrigation or spraying of agricultural crops	prohibited for **See irrigation instructions below***
Use of potable water	prohibited for **zero days** following application
Use of water for domestic purposes	prohibited for **zero days** following application
Other uses	**No restriction**

***Irrigation**: Do not use water from a Sonar-treated area for hydroponic farming or greenhouse and nursery plants unless concentrations are less than 1 ppb. Do not use water from a Sonar-treated area for irrigation of woody ornamental plants unless concentrations are less than 5 ppb. For tobacco, tomatoes, peppers or other plants within the Solanaceae Family and newly seeded crops or newly seeded grasses such as overseeded golf course greens, do not use water treated with this product if concentrations are greater than 5 ppb. Do not use treated water if measured fluridone concentrations are greater than 10 ppb for other irrigation uses including watering of established turf, established crops and ornamental species.

Treatment week	Application rate (ppb)
1	20
2	20
3	13.5
4	13.5
5	13.5
6	13.5
7	13.5
8	13.5
9	13.5
10	13.5
Total	**148**

Sonar H4C Application Schedule



Harpoon Granular

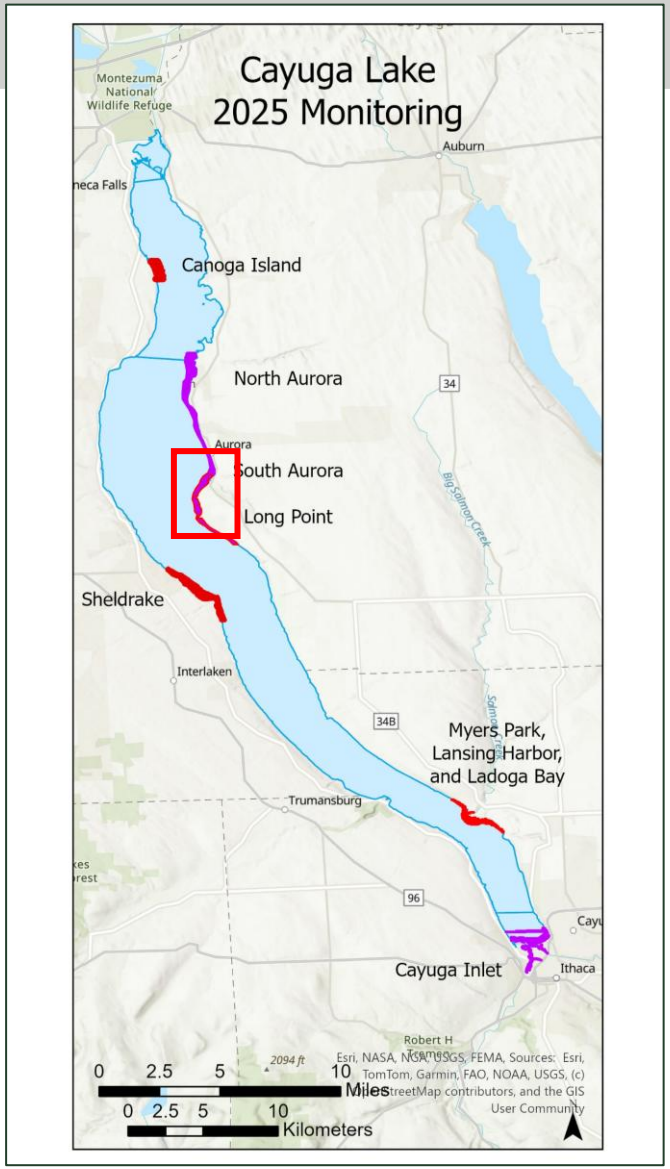
- Active ingredient - Copper Ethylenediamine Complex (chelated copper)
- Contact herbicide
- Used as a spot treatment to control hydrilla.
  - Spot treatment locations are determined during summer monitoring events.

Activity	Restriction
Swimming and bathing	prohibited only while product is being actively applied
Fishing and/or fish consumption	No restriction
Livestock watering	No restriction
Irrigation or spraying of agricultural crops	No restriction
Use of potable water*	< 200 ppb (NYSDOH)
Use of water for domestic purposes	No restriction
Other uses	No restriction

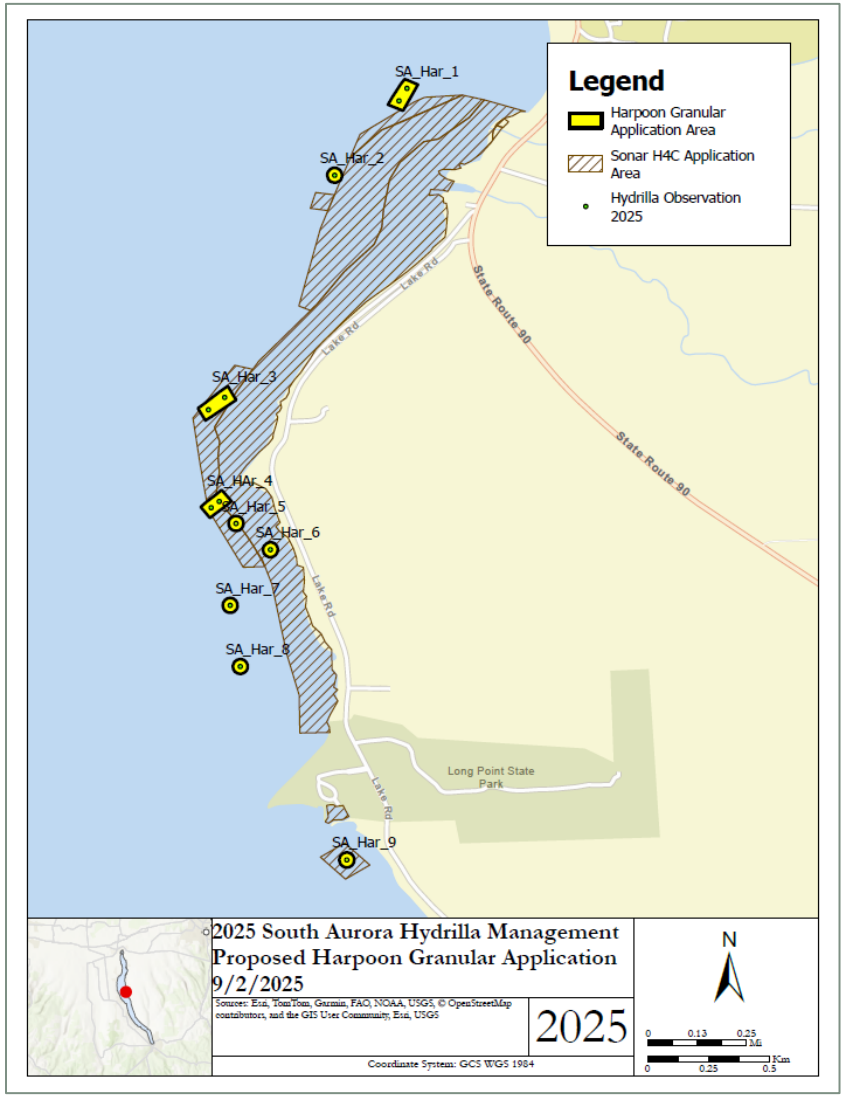
NYSDEC Hydrilla Control 2025

South Aurora

- Sonar H4C Application (by Contractor)
  - Part of a 3 year contract (2024 – 2026)
  - Sonar Applied once a week for 10 weeks to maintain desired concentration (3 -5ppb)
  - Water sample collected 24-48 hours post application and taken to Community Science Institute for analysis.
- Harpoon Granular application as spot treatment
  - 7.5 Acres at 1 ft plant height
- Area monitored by NYSDEC, USACE, USFWS, and FLPRISM in June, August and September.



South Aurora - 2025



Harpoon Granular Application

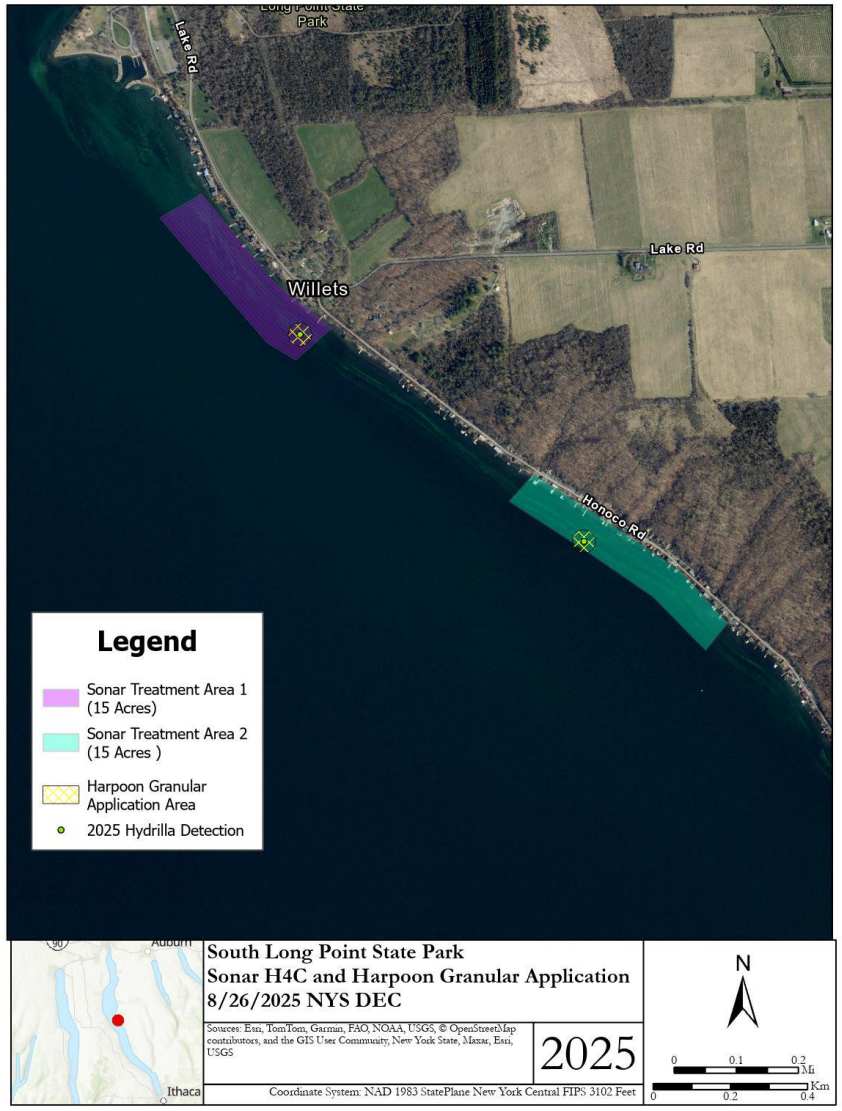
Sonar H4C Application Area and Water Sample Points

Water sample results for each location are available at respective county health dept websites and

[Region 7 AIS Program]

Long Point

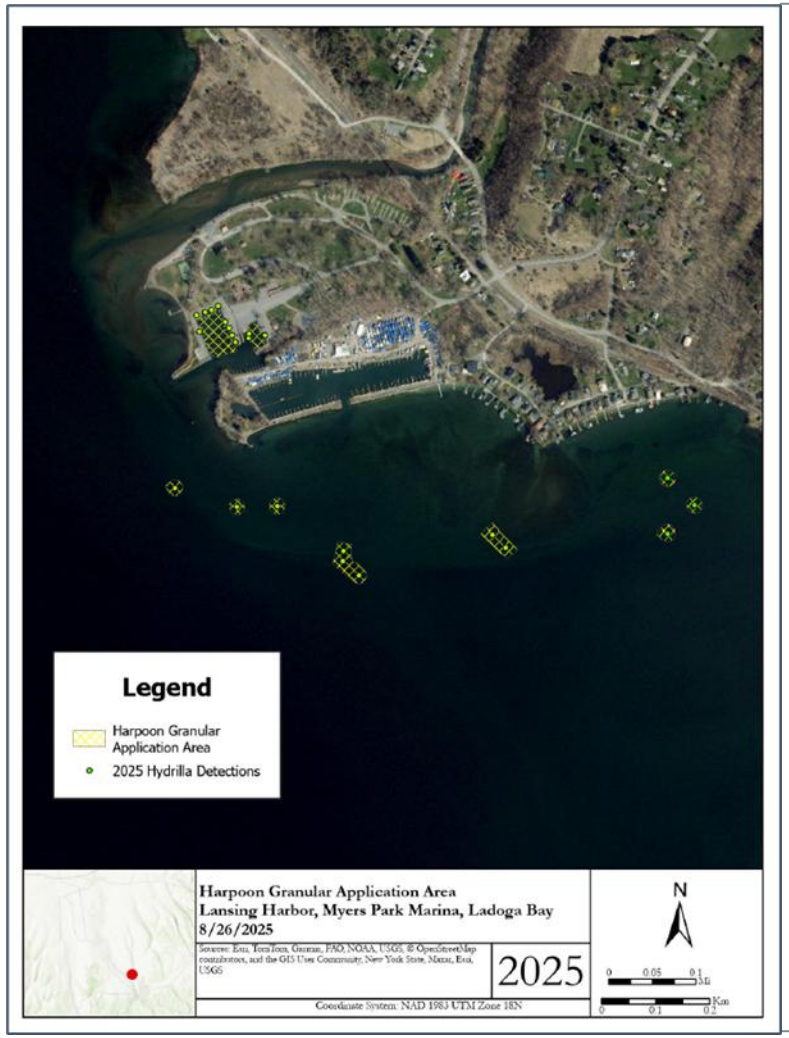
- Sonar H4C Application by Regional AIS Coordinator
  - Sonar Applied once a week for 10 weeks to maintain desired concentration
  - Water sample collected 24-48 hours post application and taken to Community Science Institute for analysis.
- Harpoon Granular application as spot treatment
  - 1.4 Acres at 1 ft plant height
- Area monitored by NYSDEC, USACE, USFWS, and FLPRISM in June, August and September



Sonar H4C Application Areas and Harpoon Granular application.

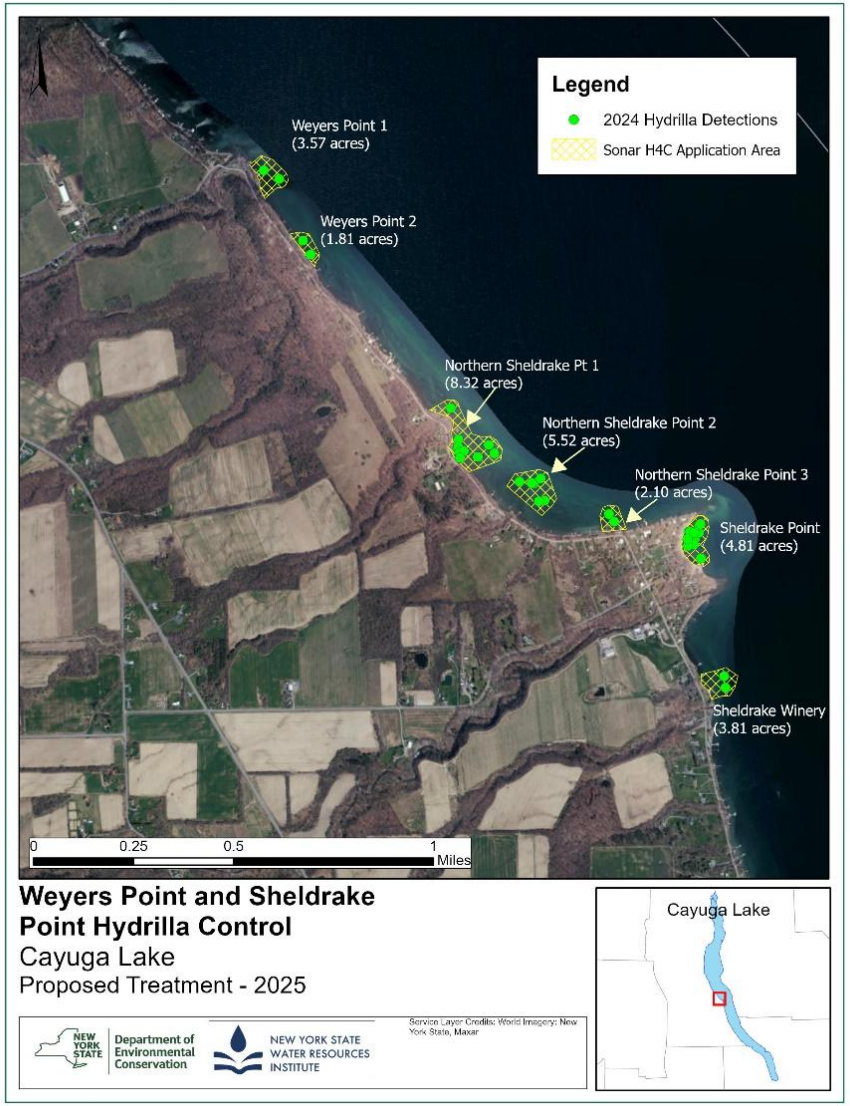
Myers Park Marina, Lansing Harbor, and Ladoga bay

- Sonar H4C Application by Regional AIS Coordinator
  - Sonar Applied once a week for 10 weeks to maintain desired concentration
  - Water sample collected 24-48 hours post application and taken to Community Science Institute for analysis.
- Harpoon Granular application as spot treatment
  - 3.4 Acres at 1 ft plant height
- Area monitored by NYSDEC, and FLPRISM

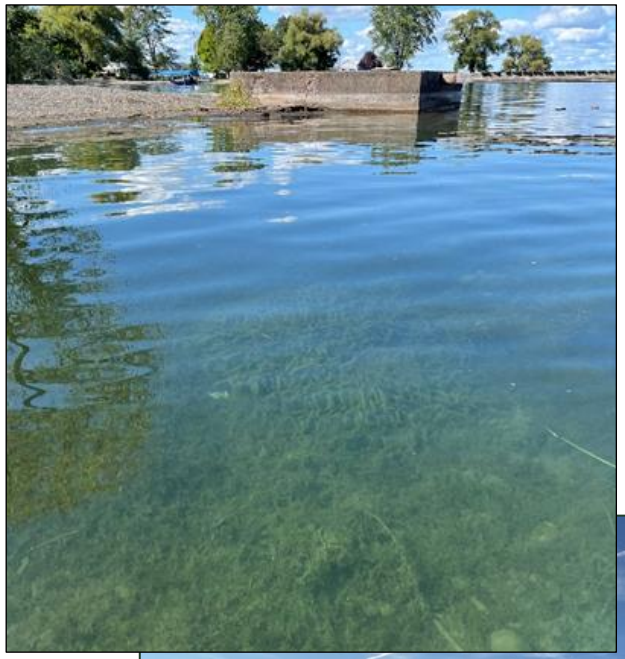


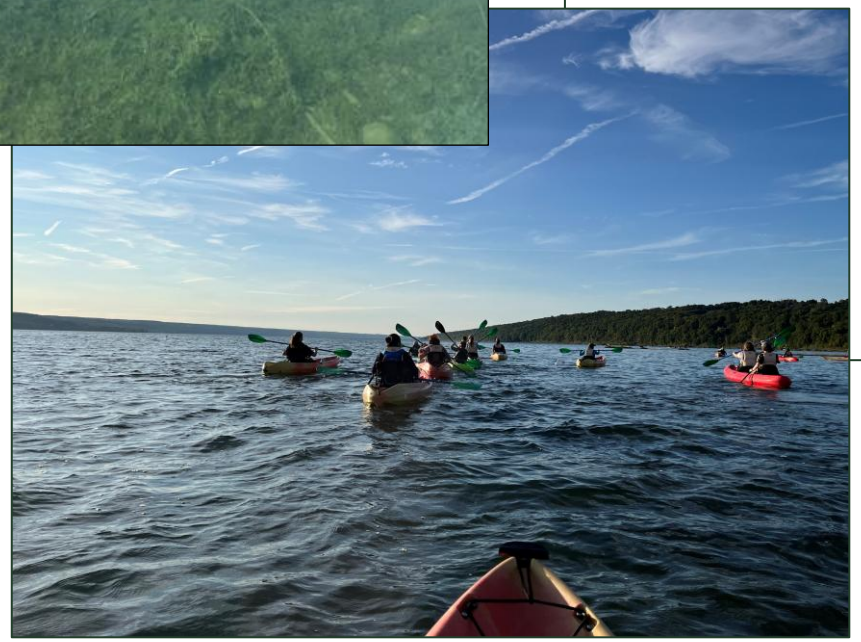
Sheldrake

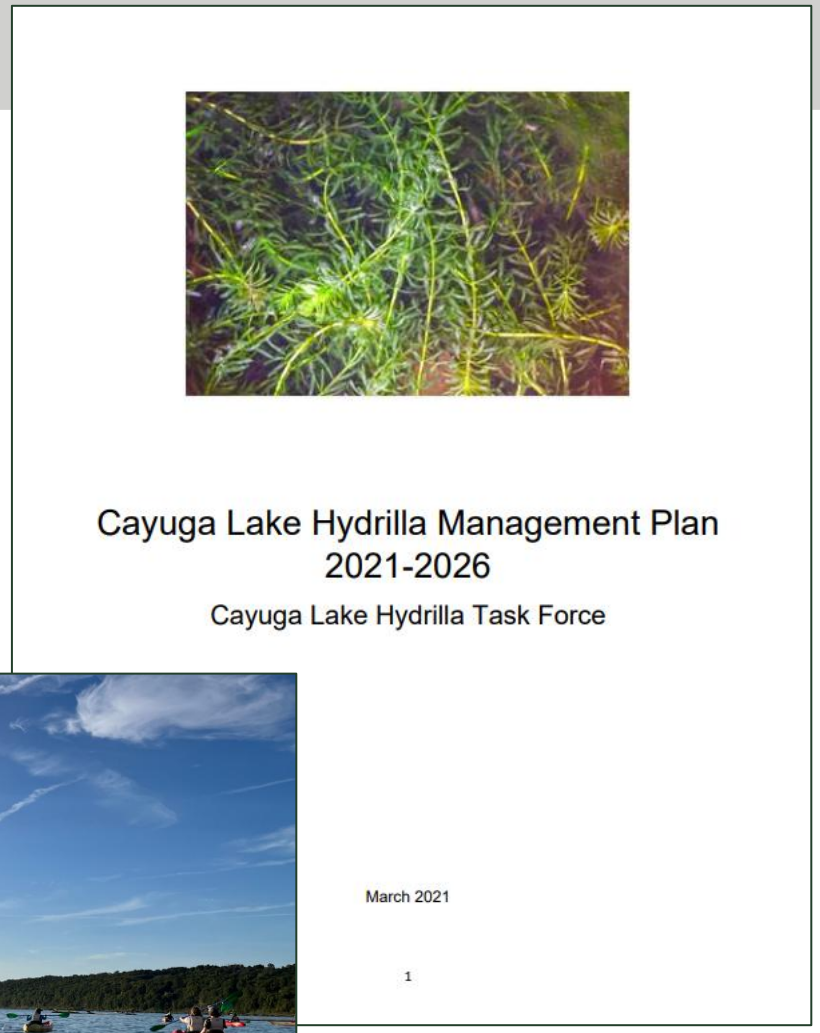
- Sonar H4C Application by Contractor
  - Sonar Applied once a week for 10 weeks to maintain desired concentration (3 - 5ppb)
  - Water sample collected 24-48 hours post application and taken to Community Science Institute for analysis.
    - Thank you Seneca County SWCD!!
- Area monitored by NYSDEC, and FLPRISM



Looking Forward







- With USACE stepping down from control efforts, NYS DEC will now be the lead agency on the Cayuga Lake Hydrilla Control Project.
- The Cayuga Lake Hydrilla Management Plan (2021 – 2026) will be updated to reflect changes in control efforts and resource availability.
- Currently, DEC is putting together finalized treatment plans for 2026

Contact

Emily Timkey-Benzinger

(She/her)

Aquatic Invasive Species Coordinator, Region 7

NYS Water Resource Institute at Cornell University

Bureau of Invasive Species and Ecosystem Health

Invasive Species Coordination Section

New York State Department of Environmental Conservation

Office: (607) 218-3805 | Cell: (518)-487-0696 |

Emily.Timkey-Benzinger@dec.ny.gov

R7AIS@dec.ny.gov

More information about the NYS DEC Region 7 AIS Program:

Region 7 AIS Program

Department of Environmental Conservation