

CAYUGA LAKE, AURORA AND ITHACA, NY HYDRILLA CONTROL DEMONSTRATION PROJECT

AQUATIC PLANT CONTROL RESEARCH
PROGRAM, RIVERS AND HARBORS ACT OF
1958 (P.L. 85-500), AS AMENDED

Michael Greer, Program Manager, ANS Research
& Aquatic Plant Control Research Programs

Richard Ruby, Biologist

Michael Voorhees, Biologist

Buffalo District

1 December 2022



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Photo: Ithaca CVB



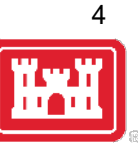
GOAL: PROTECT WHAT'S IMPORTANT



1. Public safety – responsible use of a well understood herbicides
2. Protect and restore the Great Lakes/Finger Lakes and the associated ecological and economic benefits
3. Significantly reduce the risk of hydrilla spreading and potentially eradicate it in the project area



SELECTED HERBICIDES AND USE RESTRICTIONS



Product	Irrigation – Row crops, turf, trees or plants	Irrigation – Newly seeded areas, including overseeded golf course greens	Irrigation – Nursery, Greenhouse, Hydroponics	Drinking, culinary or food processing purposes
Harpoon (chelated copper)	None	None	None	< 200 ppb
Sonar H4C (fluridone pellet)	7 days	Fastest required	< 1ppb	< 50 ppb*
Sonar Genesis (fluridone liquid)	7 days	Fastest required	< 1ppb	< 50 ppb*

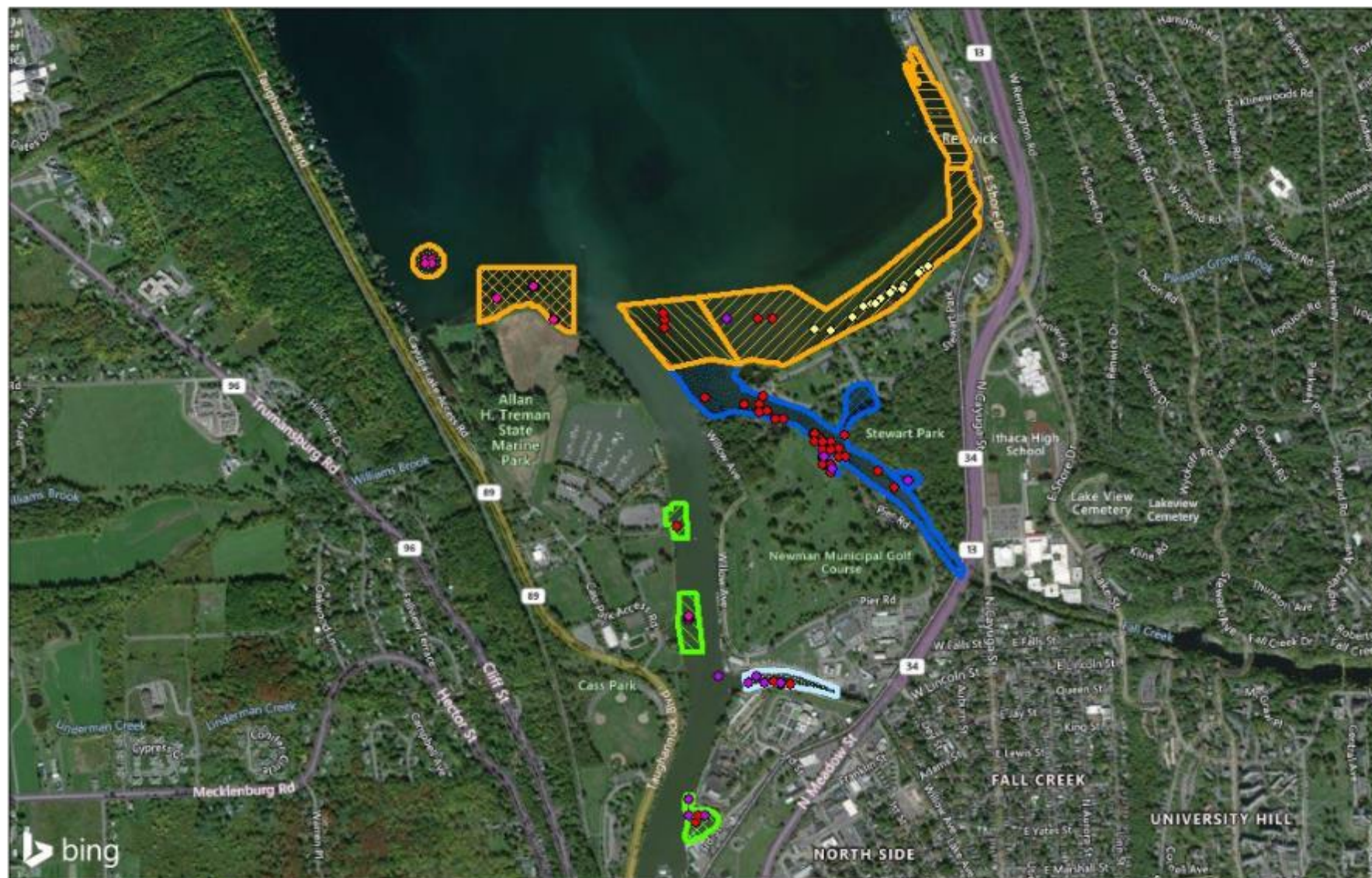
* Applications of these products will be below the listed thresholds.



ITHACA



Photo: Ithaca CVB



2022 Potential Fluridone Treatment Areas Cayuga Lake at Ithaca, NY



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FALL CREEK

7



Fluoride Treatment Areas (93.6 acres)
Sonnet Park 1 (27.5 acres)
Sonnet Park 2 (22.5 acres)
CL - Trumans State Marine Park Launch (1.5 acres)
Fall Creek (18.7 acres)
Golf Course Lagoon (0.6 acres)
Fall Creek Lagoon (0.7 acres)
Sonnet Park Lagoon (2.5 acres)

Fall Creek Treatment Areas
Cayuga Lake at Ithaca, NY

0 0.05 0.1 0.2 Miles



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Sonar H4C, 3.8 acres

- 2 applications @ 20 ppb
- 8 applications @ 9 ppb
- Weekly on Thursdays
- Jun 16 – Aug 18

Sonar Genesis, 18.7 acres (main channel)

- Injection system treatments at 2.5 ppm daily rate based on creek flow
- Operation Pulsed if flow $80 \text{ cfs} < \text{Flow} < 160 \text{ cfs}$
- Operation suspended if flow above 160 cfs
- Jun 16 – Sep 1



STEWART PARK CORNELL COMMUNITY SAILING CLUB

8



Fluoride Treatment Areas (93.6 acres)

- Stewart Park 1 (2.76 acres)
- Stewart Park 2 (12.8 acres)
- Cornell Community Sailing Club (3.4 acres)
- Trenton State Marine Park 1 (11.6 acres)
- Fall Creek (13.7 acres)
- Stewart Park Lagoon (2.5 acres)

Cayuga Lake East Treatment Areas
Cayuga Lake at Ithaca, NY

0 0.05 0.1 0.2 Miles



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Sonar H4C, 40.0 / 3.4 acres

- 2 applications @ 20 ppb
- 8 applications @ 9 ppb
- Weekly on Thursdays
- Jun 30 – Sep 1



TREMAN STATE MARINE PARK

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Fluridone Treatment Areas (93.6 acres)

- Stewart Park 1 (27.5 acres)
- Stewart Park 2 (12.5 acres)
- Treman State Marine Park 1 (11.6 acres)
- Treman State Marine Park 2 (2.0 acres)
- Fall Creek (18.7 acres)

Cayuga Lake West Treatment Areas
Cayuga Lake at Ithaca, NY

0 0.05 0.1 0.2 Miles



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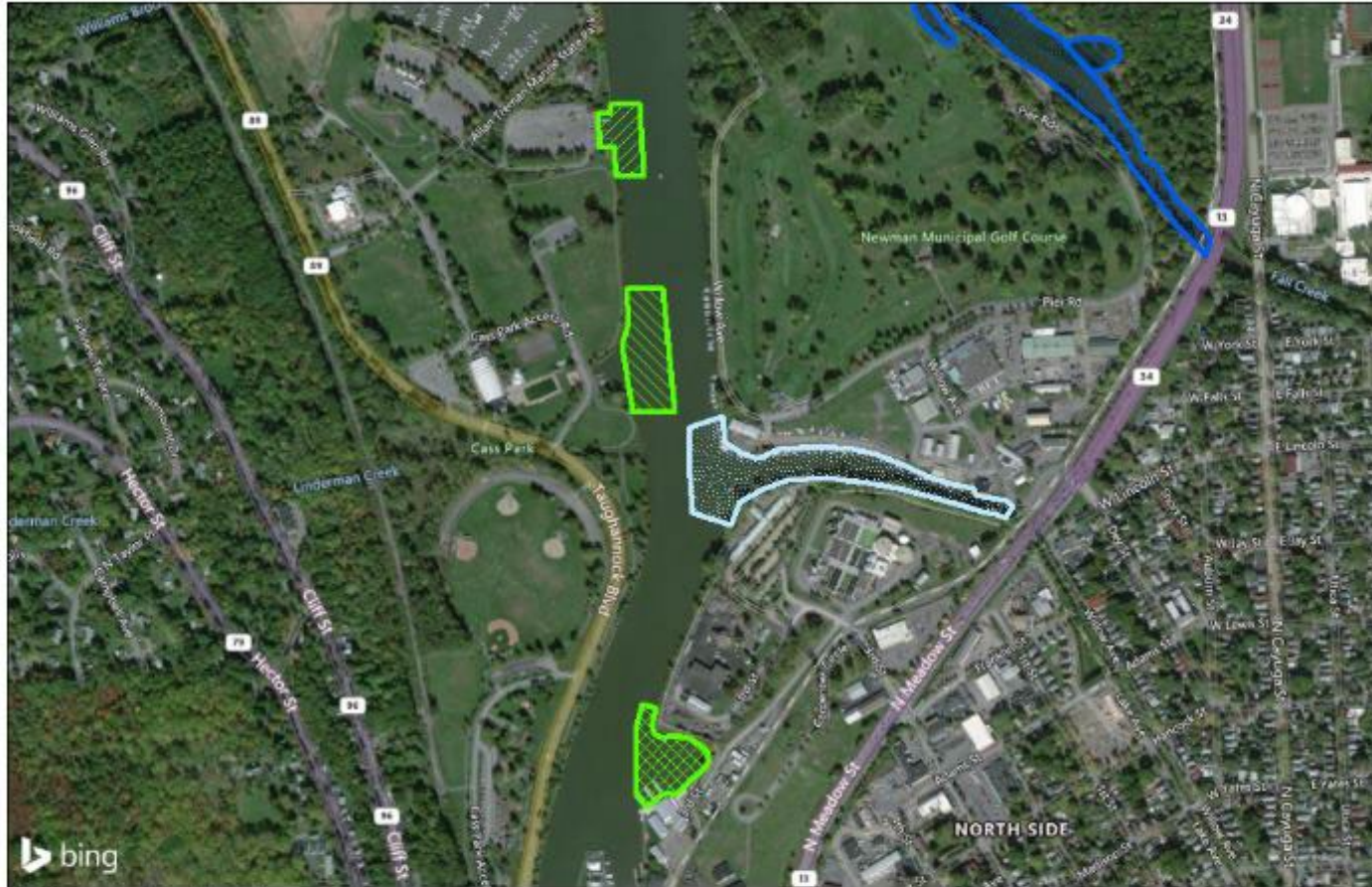
Sonar H4C, 13.6 acres

- 2 applications @ 20 ppb
- 8 applications @ 13.75 ppb
- Weekly on Thursdays
- Jun 30 – Sept 1



CAYUGA LAKE INLET

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Florida Treatment Areas (93.6 acres)
CI - Treason State Marine Park Launch (1.5 acres)
CI - Cass Park (3.1 acres)
CI - Cassell Creek Bay (2.5 acres)
Cassadilla Cove (6.7 acres)
Fall Creek (18.7 acres)
Golf Course Lagoon (9.6 acres)
Fall Creek Lagoon (6.7 acres)

Cayuga Inlet Treatment Areas
Cayuga Lake at Ithaca, NY

0 0.075 0.15 0.3
Miles



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Sonar H4C, 14.0 acres

- 2 applications @ 20 ppb
- 8 application @13.75 ppb
- Weekly on Thursdays
- Jun 30– Sep 1



CAYUGA LAKE INLET SUPPLEMENTAL

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Harpoon Granular (chelated copper), Cornell Crew Club Bay
2.5 Acres

- 1 spot treatment
- Sep 2

2022 Chelated Copper Spot Treatment Area
Cayuga Lake at Ithaca, NY

Chelated Copper Spot Treatment Areas
CI - Cornell Crew Bay (2.5 acres)

0 0.025 0.05 0.1 Miles

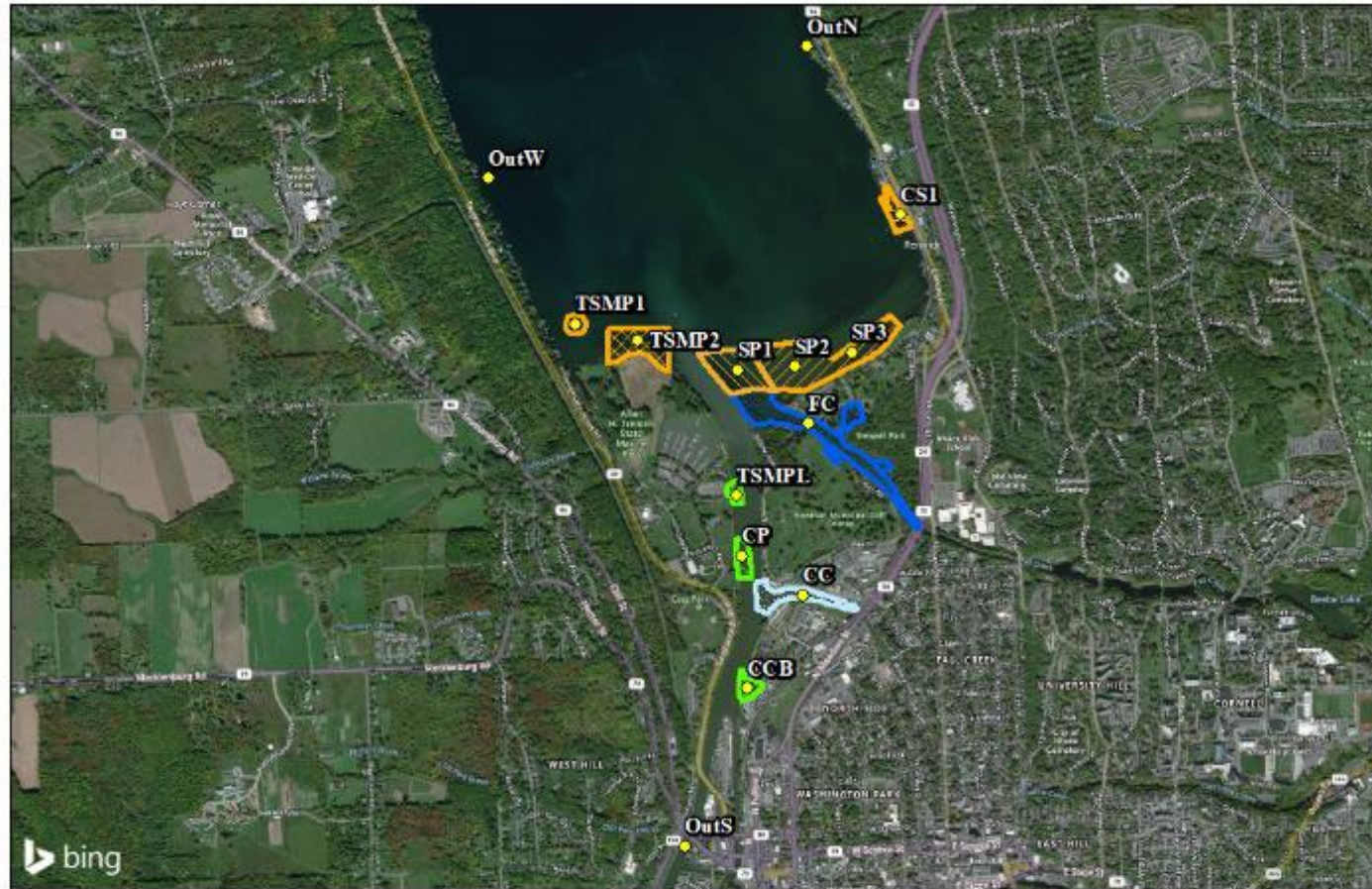


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WATER MONITORING

12



- Continuing Florida's Sample Sites
- Fluridone Treatment (A sites) (93.6 acres)
 - Stewart Park 1 (27.5 acres)
 - Stewart Park 2 (12.4 acres)
 - Carlisle Community Rolling Club (3.4 acres)
 - Treman State Marine Park 1 (1.0 acres)
 - Treman State Marine Park 2 (2.8 acres)
 - C.I. - Treman State Marine Park Launch (1.8 acres)
- C.I. - East Park (0.4 acres)
- C.I. - Carlisle Cove Bay (2.5 acres)
- Carlisle Creek (0.7 acres)
- Fall Creek (0.7 acres)
- Golf Course Lagoon (0.4 acres)
- Fall Creek Lagoon (0.7 acres)
- Stewart Park Lagoon (1.9 acres)

2022 Fluridone Water Sample Sites
Cayuga Lake at Ithaca, NY

0 0.275 0.55 1.1 Miles



Water samples were collected weekly during the treatment period, including finished drinking water

Fall Creek
Range <1 – 7.5 ppb
Most common <1 ppb
Frequent 1 – 5.8 ppb

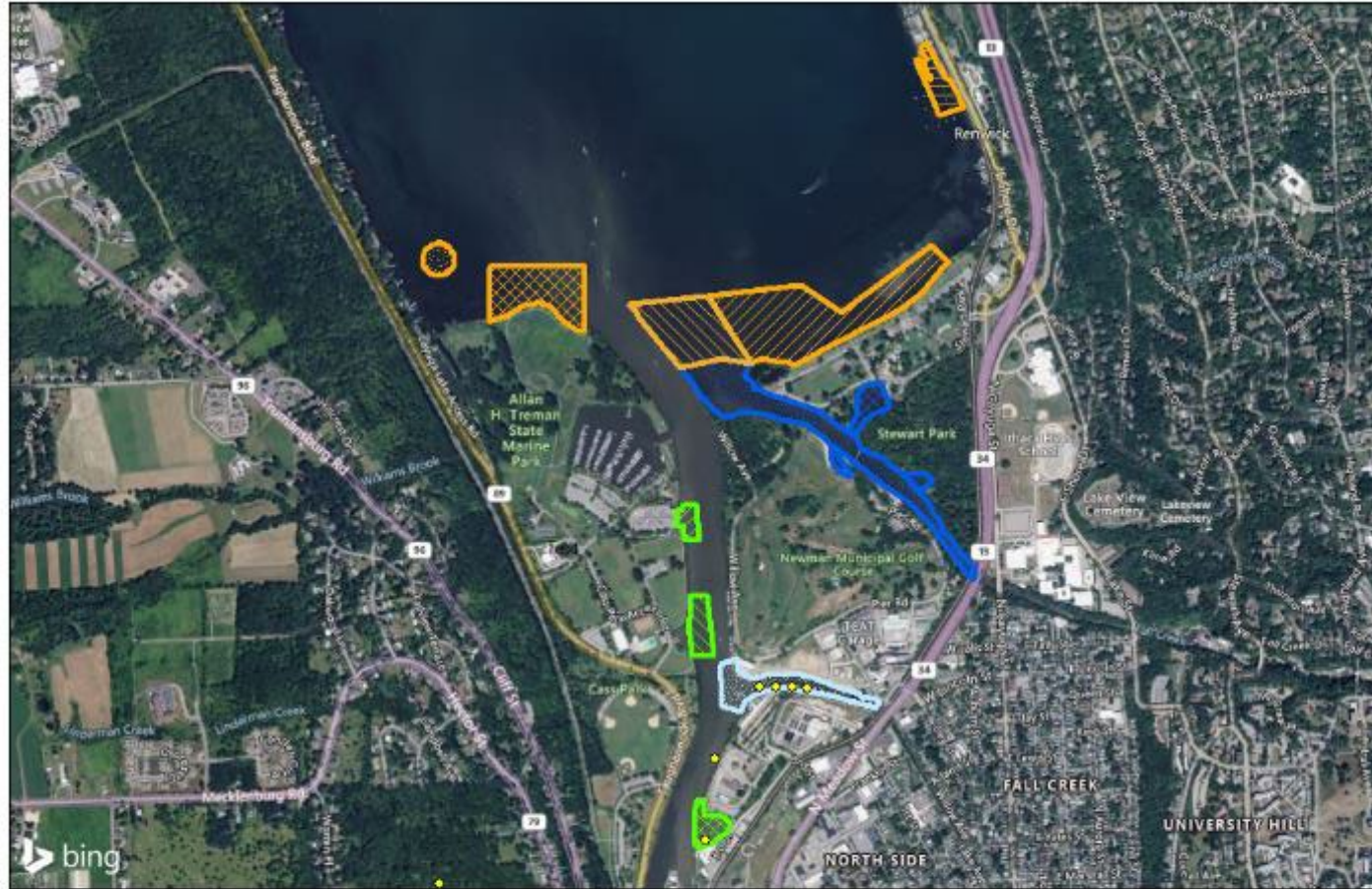
Cayuga Inlet
Range <1 – 6.5 ppb
Most common <1 ppb
Frequent 1 – 3.1 ppb

Treman SMP
Range <1 – 15.2 ppb
Most common <1 ppb
Frequent 1 – 5.8 ppb

Stewart Park
Range <1 – 7.7 ppb
Most common <1 ppb
Frequent 1 – 3 ppb

All Bolton Point water results <0.5 ppb

POINT INTERCEPT SAMPLING



- Hydrilla %occurrence was < 1% for all dates sampled and 0.0% in October
- Frequency of other aquatic plants in the project area is high.
- Fall Creek and portions of the Cayuga Lake Inlet are areas of concern.



2022 PIS Hydrilla Locations
Cayuga Lake at Ithaca, NY





Aurora



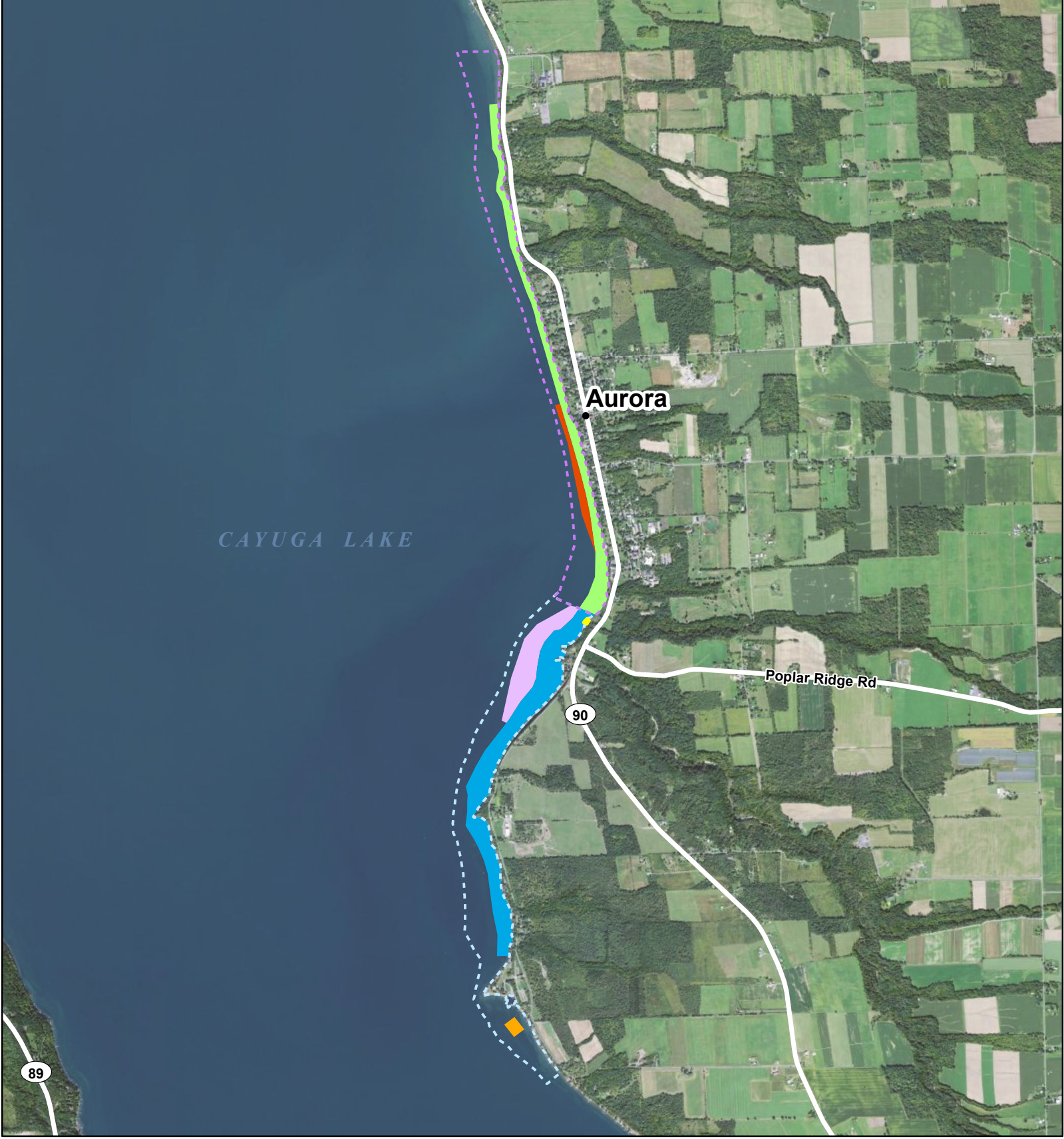


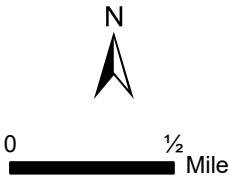
Figure 1-1 Aurora Hydrilla Treatment Areas- Summer 2022
Cayuga Lake, Cayuga County, New York

NYSDEC Treatment Areas

- Little Creek (0.2 acres)
- Long Point (2.7 acres)
- Southern Shallow (89 acres)
- Southern Deep (31.4 acres)
- NYSDEC Monitoring Area

USACE Treatment Areas

- Northern Deep (11.3 acres)
- Northern Shallow (58.1 acres)
- USACE Monitoring Area





Treatment

Northern Shallow (58.1 acres):

Sonar H4C

2 applications @ 20 ppb

8 applications @ 13.75 ppb

Weekly on Wednesdays;

Jun 29 – Sep 7*

Northern Deep (11.3 acres):

4 applications @ 10 ppb

4 applications @ 8.75 ppb

Weekly on Wednesdays;

Jun 29 – Aug 17



2022 Fluridone Treatment Areas
Cayuga Lake at Aurora, NY

0 1,100 2,200 4,400
Feet



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Water Monitoring

Water samples were collected weekly during the treatment period, including finished drinking water

Northern Shallow (58.1 acres):

Range <1 – 7.8 ppb
Most common <1 ppb
Frequent 1.0 – 1.7 ppb

Northern Deep (11.3 acres):

Range <1 – 16.2* ppb
Most common <1 ppb
Frequent 1.1 – 2.9 ppb

All finished drinking water samples < 0.5 ppb



2022 Water Sample Locations
Cayuga Lake at Aurora, NY

0 2,300 4,600 9,200 Feet





Cumulative Point Intercept Sampling

The percent occurrence of hydrilla was $<0.6\%$ throughout the year

Had effective control within treatment areas

Still have good frequency of occurrence of other SAV



2022 PIS Hydrilla Locations
Cayuga Lake at Aurora, NY

0 1,100 2,200 4,400
Feet



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Sept/Oct Point Intercept Sampling

Underscores effective control within treatment areas when compared to cumulative sampling data



2022 Fluridone Treatment Areas
Cayuga Lake at Aurora, NY

0 1,100 2,200 4,400
Feet



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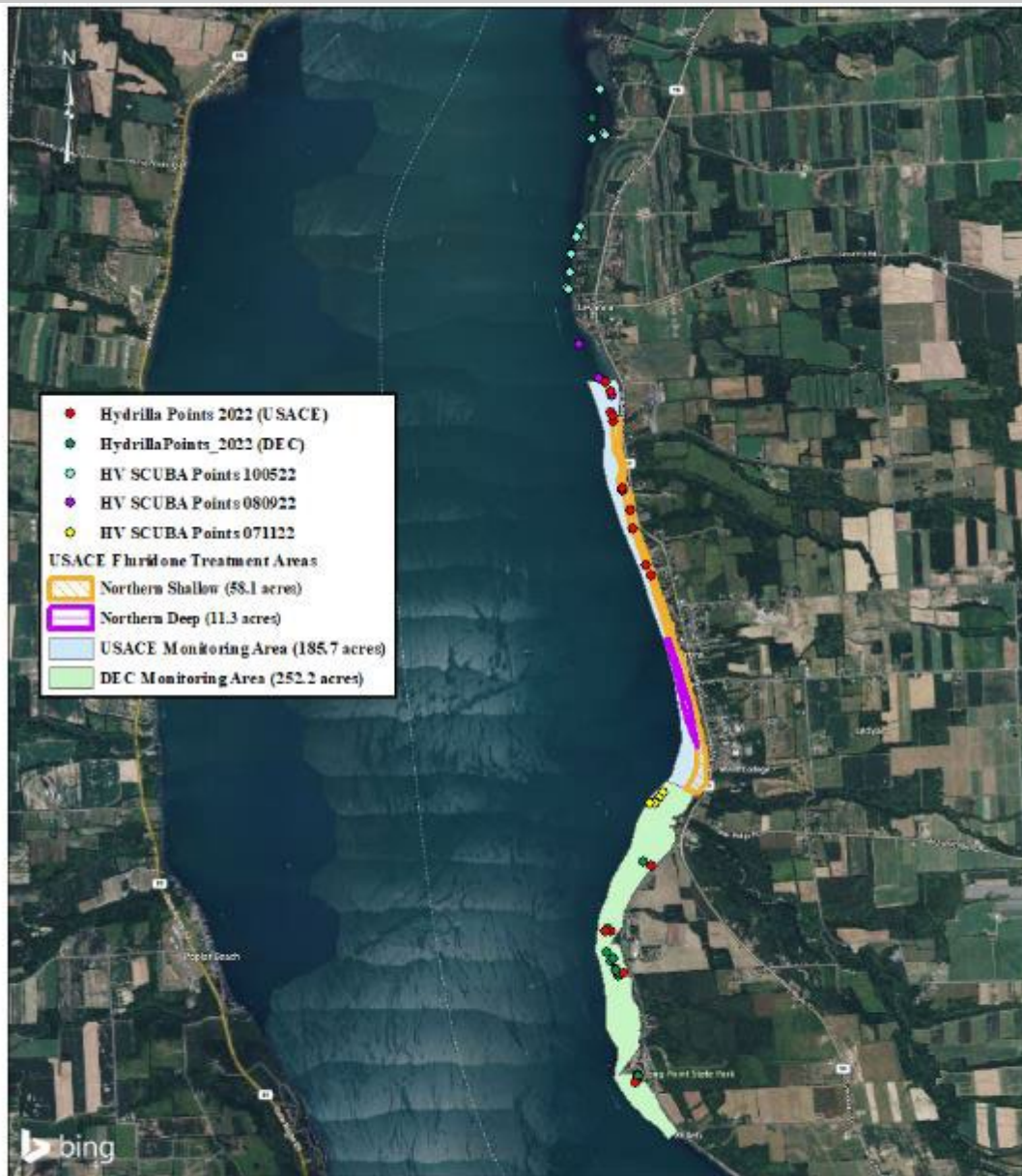


New Hydrilla Locations

Identified from mid-August through October 2022

- North of Gully Road to Great Gully Cove Road
- Long Point State Park near

Projected monitoring area for 2023 would increase to 650 acres



2022 Hydrilla Locations
Cayuga Lake at Aurora, NY

0 3,000 6,000 12,000
Feet



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PATH FORWARD



- Complete data processing and analysis
- Prepare post-treatment summary reports, end of calendar year
- Confer with experts and stakeholders to draft plans for 2022
 - Ithaca – continue to address hydrilla in Inlet and Fall Creek
 - Aurora – address hydrilla found north of Gully Road to Great Gully Cove Road and additional patch found near Long Point State Park



ADDITIONAL RESOURCES



- New York Invasive Species Information: <http://www.nyis.info/>, select hydrilla from the aquatic plants tab
- Cornell Cooperative Extension/Tompkins County: www.stophydrilla.org, includes FAQs regarding fluridone
- Finger Lakes PRISM: <http://fingerlakesinvasives.org/>
- Cayuga Lake Watershed Network: <http://www.cayugalake.org/>
- Center for Aquatic and Invasive Plants: <http://plants.ifas.ufl.edu/node/183>
- SOLitude Lake Management:
<http://www.solitudelakemanagement.com/product-labels-new-york-2017>
- Great Lakes Hydrilla Collaborative: <http://hydrillacollaborative.com/>