Cayuga Lake Hydrilla Management Plan 2021-2026

Cayuga Lake Hydrilla Task Force

March 2021

Executive Summary:

The federally listed noxious weed *Hydrilla verticillata* (monoecious biotype) was first discovered in New York State in 2008. It is now found in several counties and is prohibited under 6 NYCRR Part 575. Once hydrilla becomes established it is extremely difficult and expensive to remove and it alters native habitats, impacts fisheries, prohibits water recreation, and affects local economies. Except for three infestations, the majority of hydrilla growth in New York is confined to small isolated ponds and lakes. The three large-scale infestations in New York State are in Cayuga Lake - Tompkins/Cayuga Counties; the Tonawanda Creek - Buffalo County/Erie Canal, Niagara County; and the New Croton Reservoir/Croton River - Westchester County. Each infestation presents different challenges that influence management decisions.

The first of multiple populations in Cayuga Lake was discovered in 2011. The Tompkins County Local Hydrilla Task Force (Tompkins County Soil & Water Conservation District, City of Ithaca, Tompkins County – Cornell Cooperative Extension, Racine Johnson Aquatic Ecologists) began its control, monitoring, and education efforts soon after its discovery. Hydrilla has since been discovered at four additional locations in Cayuga Lake and multiple entities such as the Finger Lakes Partnership for Regional Invasive Species Management and United States Army Corps of Engineers have taken the lead on the projects outside of the Ithaca area. Given the many organizations and agencies now involved in hydrilla management projects for Cayuga Lake the need for a coordinated approach to communication, notification, surveying, treatment, education and outreach, and water sampling has become essential. This document provides an overview of individual projects and lake-wide resources as well as recommendations for a more cohesive collaboration and more defined organizational roles.

To address the complexities of multiple treatment locations on Cayuga Lake, the Cayuga Lake Hydrilla Task Force has outlined Phase 1 of hydrilla management in a five-year plan that relies heavily upon adaptive management. This plan describes the methods that will be in place from 2021 – 2026 and the additional work (expanding communication, education and outreach, assessing impacts, centralized coordination, long-term monitoring) that needs to occur in order to support the project in the future. Annual reports for each season will be added to the appendix along with a monitoring plan that extends beyond the treatment period (beyond 2026). Flexibility is essential for this project and assessments will be conducted at the end of each season. Annual updates will provide an evaluation of the previous season's results. It is the intention of the Task Force to continue to deliver a thorough and effective control and management plan that can serve as a template for other projects.

Contents

INTRODUCTION: 6
Hydrilla in New York 6
Timeline of Cayuga Lake Infestation Detections 6
Generic Hydrilla Management Options 8
OUTREACH AND COMMUNICATION 11
Education Materials 11
Public Stakeholder Meetings: 12
Field Season Biweekly Project Calls: 12
Cayuga Lake Hydrilla Management Webpage 13
Branding and Marketing: 13
Shoreline Signs 13
MONITORING 13
Non-Treatment Locations: 13
Treatment locations: 14
Tuber density survey: 14
CONTROL AND MANAGEMENT 16
Aurora **Error! Bookmark not defined.**
Ithaca **Error! Bookmark not defined.**
King Ferry **Error! Bookmark not defined.**
Lansing **Error! Bookmark not defined.**
ADAPTIVE MANAGEMENT 20
PERMITTING 21
ADDITIONAL IMPACT ASSESSMENT 22
Cyanobacteria Testing 22
Ongoing Project Concerns 23
Annual Project Budgets **Error! Bookmark not defined.**
Aurora: **Error! Bookmark not defined.**
Ithaca: **Error! Bookmark not defined.**
King Ferry: **Error! Bookmark not defined.**
Marketing and Branding **Error! Bookmark not defined.**
Education and Outreach **Error! Bookmark not defined.**
Cayuga Lake Hydrilla Task Force 24

Task Force Goals 24
Task Force Participants 24
ADDITIONAL RESOURCES 25
LITERATURE CITED 26

List of Acronyms

CCETC	Cornell Cooperative Extension-Tompkins County
CFS	Cubic Feet per Second (1 CFS = 1.858 Million Gallons per Day)
DEC	New York State Department of Environmental Conservation
NYCDEP	New York City Department of Environmental Protection
DLF	DEC Division of Lands and Forests
DOH	New York State Department of Health
DOW	DEC Division of Water
EAF	Environmental Assessment Form
ELAP	Environmental Laboratory Approval Program
EPA	United States Environmental Protection Agency
NYNHP	New York Natural Heritage Program
OPRHP	New York State Office of Parks, Recreation and Historic Preservation
PPM	Parts per Million (1 ppm = 1 milligram per liter)
PPB	Parts per Billion (1 ppb = 1 microgram per liter)
PRISM	Partnership for Regional Invasive Species Management
SAV	Submerged Aquatic Vegetation
SEQR	State Environmental Quality Review
TCSWCD	Tompkins County Soil and Water Conservation District
USACE	United States Army Corps of Engineers

INTRODUCTION:

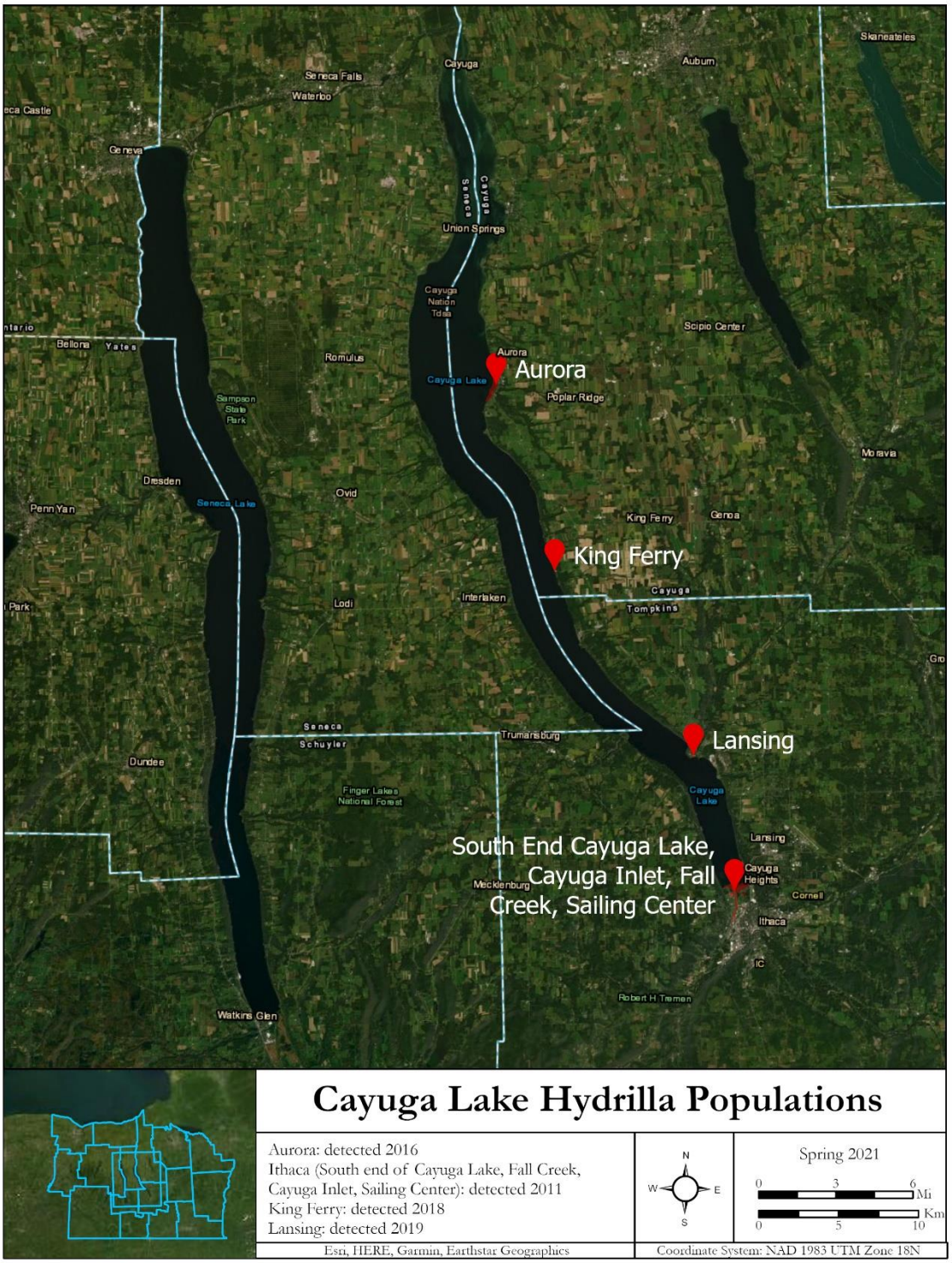
The objective of this document is to provide an initial five-year management plan for the control of *Hydrilla verticillata*, a highly invasive aquatic plant in Cayuga Lake, in the towns of Aurora, Ithaca, King Ferry, and Lansing in Cayuga and Tompkins County, New York and the response to new infestations in Cayuga Lake should they be reported within this time period. The plan provides transparent information to stakeholders and other interested parties as to the intentions of the Cayuga Lake Hydrilla Task Force to control and manage hydrilla in Cayuga Lake, and the various constraints, possibilities, and potential impacts thereof.

Hydrilla in New York

Hydrilla verticillata is a federally listed noxious weed that is prohibited in New York (6 NYCRR Part 575). Its monoecious biotype (having both male and female organs on the same plant) can overwinter in waters throughout New York State. Hydrilla was first found in 2008 in Orange County and can now be found in several counties in New York State. Infestations have been identified in small isolated ponds and lakes as well as in in three larger areas. One large-scale infestation is in Tonawanda Creek, Buffalo County and the Erie Canal, Niagara County and was discovered in 2012. Another large-scale infestation is in the Croton River and New Croton Reservoir, Westchester County. The third is a series of populations found in Cayuga Lake. Hydrilla was discovered in 2011 in Cayuga Inlet, Cascadilla Creek, and Linderman Creek in Ithaca, Tompkins County and has been found in other areas of the lake in subsequent years. All three infestations have enormous potential to spread to other waterbodies in New York.

Timeline of Cayuga Lake Infestation Detections

- Summer 2011 Cayuga Inlet, Ithaca
- Fall 2011 Cascadilla Creek, and Linderman Creek, Ithaca
- 2013 Fall Creek and Stewart Park, Ithaca
- 2015 Cornell Sailing Center, Ithaca
- 2016 Wells College boat house (Cayuga Lake, Little and Paines Creeks), Aurora
- 2018 Don’s Marina, King Ferry/Genoa
- 2019 Finger Lakes Marine Service, Lansing
- 2019 Merrill Family Sailing Center, Ithaca


Cayuga Lake Hydrilla Populations
Aurora: detected 2016
Ithaca (South end of Cayuga Lake, Fall Creek, Cayuga Inlet, Sailing Center): detected 2011
King Ferry: detected 2018
Lansing: detected 2019
Spring 2021
N
W
E
S
0 3 6 Mi
0 5 10 Km
Esri, HERE, Garmin, Earthstar Geographics
Coordinate System: NAD 1983 UTM Zone 18N
Aurora
King Ferry
Lansing
South End Cayuga Lake, Cayuga Inlet, Fall Creek, Sailing Center
Cayuga
Seneca Falls
Waterloo
Auburn
Skaneateles
Geneva
Union Springs
Cayuga Nation Tdaa
Scipio Center
Bellona
Yates
Romulus
Cayuga Lake
Poplar Ridge
Sampson State Park
Dresden
Penn Yan
Seneca Lake
Ovid
Moravia
King Ferry
Genoa
Interlaken
Lodi
Tompkins
Seneca
Schuyler
Trumansburg
Dundee
Finger Lakes National Forest
Lansing
Cayuga Heights
Mecklenburg
Cornell
Ithaca
Robert H Treman
Watkins Glen

Developing a coordinated effort across the region

Hydrilla control, monitoring, education and outreach, and communication across Cayuga Lake is being achieved by many different entities. This plan seeks to develop an outline for developing a coordinated effort that opens communication, data sharing and participation by the region's stakeholders. This step will be achieved by developing a regional project coordinator that will provide a centralized point of contact for each of the ongoing control projects and any future projects developed. DEC Region 7 Aquatic Invasive Species Coordinator will become overall project lead for Cayuga Lake Hydrilla Projects (Cayuga Inlet/Fall Creek, Finger Lakes Marina in Lansing, King Ferry, and Aurora) with the goal of preventing spread of hydrilla by boats and associated equipment to other locations within Cayuga Lake, additional Finger Lakes and to Lake Ontario. AIS Coordinator will work closely with his/her AIS Strike Team in collaboration with the FL PRISM Strike Team to monitor existing treatment sites and survey areas surrounding those sites as well as additional areas of Cayuga Lake where hydrilla has not yet been documented.

Generic Hydrilla Management Options

No action:

No active management, including the use of physical, biological, or chemical control methods, would be employed. Existing populations will continue to grow and spread to new locations. Each season, hydrilla will grow into dense mats that will outshade and outcompete native plants and then will decompose and decrease the dissolved oxygen in the water, which may result in fish kills. As the infestation spreads throughout Cayuga Lake, it will put the Finger Lakes, Great Lakes, and surrounding inland waterbodies at risk of infestation. Intensive education and outreach in the surrounding area would be undertaken to raise awareness about hydrilla and other aquatic invasive species to help prevent the spread of these species by human activity (transported on recreational water vehicles such as kayaks, canoes, and boats). In addition, annual monitoring of the infestation through volunteer efforts would be recommended.

Physical Control:

Benthic barriers: Benthic barriers or mats can be effective management tools in limited instances (infestations of less than 0.25 acre) but are ineffective if eradication is the goal. Benthic barriers have been used in a very limited capacity as a supplemental control agent in the hydrilla control projects in Cayuga Lake Inlet/Fall Creek and Tonawanda Creek/Eric Canal. Benthic barriers were used to cover small patches of hydrilla at the south end of Cayuga Lake for several seasons. It is unclear if tubers beneath the mats have remained viable. This will be determined when mats are removed in early 2021 for treatment of the infested areas.

Dredging/ Excavation: Removal of sediment containing hydrilla tubers is a viable option for small, contained areas. Dredge spoils are considered hazardous so transport

and disposal of the spoils are carefully regulated. Linderman Creek in Ithaca was dredged in 2012 and Don's Marina in King Ferry was dredged in 2019. Currently hydrilla growth has not been detected in either project area.

Diver Assisted Suction Harvesting (DASH): This method is often used for aquatic invasive plants without tubers such as Eurasian watermilfoil (*Myriophyllum spicatum*). It relies upon divers to correctly identify individual plants and to completely remove each plant (tubers and all) from the sediment. Plants are then placed at the end of a suction tube and transported to a container or bag at the opposite end of the suction tube. Often water clarity will be impacted by suspension of sediment and plants will need to be disposed in a safe location away from water. DASH has been used in the Cayuga Inlet, but it was found to be ineffective for control purposes due to breakup and dispersal of the brittle plant matter.

Biological Control:

Triploid (sterile) grass carp is a biological control agent used to control aquatic vegetation in small ponds or lakes where fish can be retained within the waterbody. Sterile grass carp have been used for containment in two New York hydrilla sites, but eradication is unlikely at sites with extensive tuber banks due to the inability of the fish to prevent repeated germination of hydrilla sprouts. These fish were not considered for Cayuga Lake due to the lake's size, connectivity to other waters, and the inability to prevent carp from escaping to other parts of the watershed. No other biological control agents are currently available for hydrilla.

Chemical Control:

Several herbicides have been used to control hydrilla. Autumn treatments combining contact (copper-based herbicides or endothall) and systemic herbicides can provide both short- and long-term benefits. Contact herbicides immediately kill the above-ground parts of plants and can hinder growth of new reproductive structures (i.e., turions and tubers). Systemic herbicides can provide longer-term control by eliminating the below-ground parts of plants that can overwinter and sprout into new plants each spring. This cycle needs to be repeated until the tuber bank in the sediment is exhausted and plants are not sprouting each spring when the water temperatures exceed 60 degrees Fahrenheit.

Active ingredients approved for use in New York State for control of hydrilla include copper, endothall, imazamox, diquat, fluoridone, flumioxazin, and florpyrauxifen-benzyl. There are several factors to consider when selecting an herbicide and specific formulation.

General outline for all projects:

- **Confirmation**-review of photos and actual samples by experts to verify species identification
- **Delineation –** conduct aquatic plant surveys to determine extent and distribution of populations and look for native species of concern

- **Planning** – determine appropriate methods and roles of individual stakeholders including surveys, treatment, monitoring, and communication/education/outreach
- **Bidding**- if contractors are needed, seek bids and award contract
- **Permitting**- seek necessary permits for planned work
- **SEQR**- submit State Environmental Quality Review as needed
- **Pre-treatment aquatic plant survey**- conduct aquatic plant surveys of designated treatment area making sure to include both invasive and native plant records
- **If Chemical treatment**
    - notify landowners and others of treatment schedule and place signage along shoreline of area to be treated;
    - apply treatment according to label recommendations
    - collect water samples to monitor concentration of herbicide at designated points in treatment area
    - repeat or continue treatment as needed
- **Post-treatment aquatic plant survey**
- **Tuber density survey**
- **Data analysis and debrief**
- **Education and outreach**- continued during entire season and beyond including stakeholder meetings

CAYUGA HYDRILLA TASK FORCE

Member	**Past Tasks**
Cayuga County Department of Health	Provide water sample collection regime
Cayuga Lake Watershed Network	Education and outreach; stakeholder meetings
City of Ithaca	Assistance with permit applications, water sampling collection regime
Cornell Cooperative Extension- Tompkins County	Develop and maintain www.stophydrilla.com
Finger Lakes PRISM	Aquatic plant survey along Cayuga Lake shoreline and at Lansing and King Ferry locations: treatment and tuber density monitoring of the former two infestations.
Discover Cayuga Lake	Education and outreach
New York State Department of Environmental Conservation- Invasive Species Coordination Section	Funding plus limited coordination
New York State Department of Environmental Conservation- Pesticide Compliance	Permitting requirements and herbicide concentration monitoring protocols
New York State Office of Parks, Recreation, and Historic Preservation	Education and outreach and boat stewards at select locations

SePRO	Herbicide manufacturer and visual survey dive team
SOLitude Lake Management	Contractor hired to conduct herbicide treatment and water quality monitoring
Tompkins County Department of Health	Monitors water sample collection for drinking water purposes
Tompkins County Soil & Water Conservation District	Permit applications, landowner notifications, Water sampling, Coordination, Fund management, oversight of plant/tuber monitoring
US Army Corps of Engineers	Landowner notifications, treatment, aquatic plant surveys, and limited tuber density monitoring near Aurora and in south Cayuga Lake
Racine-Johnson Aquatics	Aquatic plant and tuber density monitoring; installation of benthic mats. Annual report.

OUTREACH AND COMMUNICATION

Education Materials: Project will make use of existing materials developed by DEC, Finger Lakes PRISM, and Cayuga Lake Watershed Network. Existing materials include the following:

- Finger Lakes PRISM hydrilla video and 'Most Wanted' posters
- DEC waterproof ID cards and sheets
- Hydrilla Hunt brochures at lakeside boxes
- Hydrilla Newsletter

The file for the hydrilla fact sheet can be found on the species webpage http://www.dec.ny.gov/animals/104790.html. Waterproof hydrilla ID sheets and cards can be requested from the DEC Invasive Species Coordination Section (ISCS) at isinfo@dec.ny.gov or 518-402-9405.

Responsible use of the lake by boaters, anglers, and swimmers will be an integral part of preventing the spread of hydrilla in future years. Outreach regarding compliance and awareness of 6 NYCRR Part 576 Aquatic Invasive Species Spread Prevention will be increased in the Cayuga Lake area, particularly at boat launches and public access areas. More information on the regulations of Part 576 and aquatic invasive species spread prevention can be found on the webpage https://www.dec.ny.gov/animals/99141.html Aquatic invasive species tip strips can be requested from the DEC ISCS (see above for contact information).

Cayuga Lake Watershed Network, City of Ithaca, Tompkins County Soil and Water Conservation District, and Cornell Cooperative Extension- Tompkins County will work

closely together to update the CCE project website, develop the newsletter, and expand the reach of project education and outreach efforts.

Watercraft Inspection Stewards Program

New York State Watercraft Inspection Stewards Program exists to educate watercraft users about aquatic invasive species, teach recreationists how to clean, drain and dry their watercraft and equipment (through courtesy inspections), and foster public stewardship. In 2020 stewards were deployed at the following locations to prevent the spread of AIS to and from Cayuga Lake:

Allan Treman State Park (1,992 inspections)

Cayuga Lake State Park (2,609 inspections)

Dean's Cove (710 inspections)

Frontenac Park (4,740 inspections)

Long Point State Park (3,347 inspections)

Mudlock Boat Launch (994 inspections)

Taughannock Falls State Park (505 inspections)

More information about boat steward programs can be found on the webpage http://www.dec.ny.gov/animals/107807.html The NYS Watercraft Inspection Steward Program (WISP) was audited by the State Comptroller's office in 2019. We will work closely with OPRHP (NYS Parks) and Finger Lakes PRISM WISP to address better placement of standard signage, visible steward locations at boat launches, and focus on interacting with the public that has not yet encountered boat stewards (https://www.osc.state.ny.us/files/state-agencies/audits/pdf/sga-2020-19s26.pdf)

Public Stakeholder Meetings: One post-season meeting to review the past season outcomes and adapt plans for the next season. DEC Region 7 Aquatic Invasive Species (AIS) Coordinator will organize the stakeholder meetings in collaboration with stakeholders. FL PRISM and CLWN will co-host.

Field Season Biweekly Project Calls: One-hour calls will keep all project participants up to-date about what is going on where and any challenges that have arisen. DEC Region 7 AIS Coordinator will lead these calls. Calls may run from mid-May to the end of October.

Off-season Planning Calls: All projects participants will be invited to discuss the last field season and devise strategies for addressing any challenges faced on an as needed basis during the off-season.

Cayuga Lake Hydrilla Management Webpage: Updates for all site projects as well as activity schedules will be housed on a webpage on the Finger Lakes PRISM website. Annual updates, work plans, and survey results will be made available on the project webpage as well (http://fingerlakesinvasives.org/hydrilla_control/). A link for this page will be inserted on the DEC hydrilla webpage.

Branding and Marketing: The Finger Lakes PRISM is currently developing products for the hydrilla campaign that can be used throughout the watershed. These materials can be found at http://fingerlakesinvasives.org/hydrilla_control/. DEC Protect Your Waters campaign will also provide several products for the public via boat stewards.

Shoreline Signs: As per the request of the Task Force, permanent, weatherproof, signs with information about the project will be created for public access areas as funding allows.

Public Outreach and Notifications:

a. Hydrilla Project Webpage: Will be hosted on FL PRISM website. A project storyboard will be embedded into website

b. Press release: CLWN will work with FL PRISM to draft press release for overall project. USACE will review.

c. Social media: CLWN can post videos on Youtube, post on Facebook and Instagram. CLWN will work with FL PRISM on posts.

d. FL PRISM Hydrilla poster: Marketing collateral will be shared with other accounts

    i. TC SWCD will post announcements to Facebook

    ii. DEC will post to Facebook, Twitter, and Instagram

    iii. USACE can re-share posts

    iv. City of Ithaca can also re-share posts

e. CLWN and CCE-Tompkins County will update websites

MONITORING

Non-Treatment Locations: The Finger Lakes PRISM AIS Survey Team and the DEC R7 AIS Strike Team will conduct large scale surveys and monitoring in Cayuga Lake starting in late July – August at treatment locations and additional potential sites for establishment. The Finger Lakes PRISM AIS Survey team will cover the north end of Cayuga Lake from Sheldrake Point to King Ferry and DEC Region 7 AIS Strike Team will cover the south end of Cayuga Lake from the same locations. Results of the surveys will be included in the annual project report available on the project webpage.

The teams will use BioBase concurrently with on the water surveys to determine aquatic plant hot spots as BioBase only provides information about vegetation abundance (density), not information about species present. BioBase is an automated vegetation, bathymetric, and bottom hardness mapping system that relies upon sonar (https://www.biobasemaps.com/). The teams will then use a combination of point intercept survey, visual surveys, and photo surveys to assess each hot spot. Teams will use standardized methods of recording data (point grids, etc.). Defining a coarse grid within 20' of water for routine large-scale monitoring would be the ideal goal with an additional fine grid for areas being managed and adjacent areas.

Treatment locations: In the Ithaca area, teams surveys will conduct multiple aquatic plant surveys in and around treatment areas using traditional rake tosses and snorkel and dive surveys. Results of the surveys will be included in the annual project report available on the project webpage. For continuing projects, the surveys of treated areas for the season will serve as the pre-treatment survey for the following season.

Aquatic plants will be surveyed throughout Aurora, King Ferry, and Lansing during and post-treatment to track herbicide efficacy on known hydrilla populations and detect hydrilla plants outside of current treatment areas. In South Cayuga Lake seven seasons-worth of monitoring data has not documented significant impacts on native plants using endothall, fluridone, and copper. Pre-treatment surveys will occur up to one month prior to treatment as needed and multiple post-treatment surveys will be conducted starting at four to six weeks after treatment (multiple surveys may be conducted to detect outliers). During a desktop analysis, survey grids of various scales, depending on level of detail needed, will be placed over sections of Cayuga Lake. Intersection locations of the grid will serve as sampling points with two rake tosses conducted at each. A double-sided rake head will be tossed 10 feet from the intersection points on the grid and pulled in toward the boat or shore. Up to two tosses will be made at each intersection. The surveyor will identify and record the plant species found on the rake and estimate the percentage of each plant species in the sample. When identification is questionable, voucher specimens will be collected for verification by local botany experts identified by the Cayuga Lake Hydrilla Task Force. GPS point locations (survey grids) will remain the same throughout the length of the project. The protocol for this procedure is outlined in Doyle 2015 and 2016a. Samples from the rake toss will be identified to species when possible and percent cover estimated. Additional information about this protocol can be found in several publications (Johnson 2014; Doyle 2014, 2015, 2016a and b; Madsen 1999).

Additional recommended methods for surveys in and around the treatment areas include snorkel and dive surveys for plants potentially missed by rake tosses and outside the standard survey locations. The goal is to find any additional plants that need to be treated during the season.

Tuber density survey: Given that tubers can remain viable 7-10 years, the Team will return to designated locations for the surveys (for repeated measures over time) to

evaluate the effectiveness of treatment on the hydrilla tuber bank. Density of tubers in each sediment core sampled will be used to assess effectiveness of herbicide treatment. Controlling tuber development is key to preventing further establishment of hydrilla. The teams will conduct tuber monitoring at several locations recorded from past seasons (GPS coordinates will be provided to teams). Sampling will be conducted with a 10.2-cm diameter sediment core puller. One sediment core (0.008 m2) per site will be collected at designated sites and sieved, and tubers and turions will be collected and counted to provide information on tuber density to assess effectiveness of herbicide treatment. USACE, FL PRISM, and NYSDEC will share the coordinates for the tuber density and vegetation surveys for the teams to ensure repeated measures.

As the project progresses and the tuber banks are reduced finding tubers becomes very challenging and time-consuming. The Task Force will use the threshold currently being employed by North Carolina State University (Dr. Erika Haug, personal communication) and SOLitude Lake Management (SLM).

Protocol followed by NC State:

1) Pull 30 cores. If 10 or more tubers total are found in those 30 cores sampling is complete.
2) If less than 10 tubers in the first thirty cores were found increase sample size to 50 cores at that site (20 more cores).
3) These numbers are loosely based on the results from Spencer (1994). For example, if a core is 10.2cm in diameter which covers roughly 0.008m^2 and 30 cores are collected the area sampled is 0.24 m^2 (this is 30 *0.008). If 10 tubers are found in that area (0.24m^2) a proportion can be set up and cross-multiplied and divided to calculate the number of tubers in a meter square.

10 tubers/0.24m2 = x tubers/1m2 solve for x. x=42 tubers

Plug 42 tubers into equation 4 from the Spencer publication assuming a 20% variance is acceptable:

50.5708*42^1.2668/(0.2*42)^2 = 81.6 cores

if willing to accept higher variability since the numbers are so low the number of cores can be reduced -->40% or SE = 0.4

50.5708*42^1.2668/(0.4*42)^2 = 33 cores

If the average number of tubers per meter square is high, confidence will be high in the results from fewer cores. Tuber distribution is not normal therefore if tubers are not found effort will need to be increased. However, there is only so much effort that is feasible given the time and resources, so it is capped at 50 cores per site.

When making calculations for number of cores sampled one needs to consider thesize of the corer and account for acceptable variability.

Because tubers can remain viable for 7-10 years, a monitoring plan will be put in place after the last planned treatment in 2026.

CONTROL AND MANAGEMENT

A combination of survey and monitoring techniques will be used by the Task Force. Point intercept/rake toss methods will be used at different scales depending on location: 25m x 25m within treatment areas and 50m x 50m in buffer zones around treatment areas. Different teams will be assigned depending on location and a combination of motorboats and kayaks will be used for the rake toss surveys depending on depth. Snorkel and dive surveys will be used to supplement rake toss efforts in select locations. Surveys will take place throughout the season at treatment locations.

The treatment zone includes the Southern End of Cayuga Lake (in front of Stewart Park), the southwest corner of Cayuga Lake (in front of the Allan Treman State Park), Cayuga Inlet (near Cass Park), Cornell Sailing Center and spot treatments in Fall Creek and the Fall Creek Lagoon. The pellet formulation of fluridone and supplemental spot treatments of chelated copper will be used at all infestation sites (other than dredged sites). At locations near drinking water intakes schedule water sample and analysis will take place.

CAYUGA INLET:

Treatment on a 3.1-acre plot near Cass Park in the Cayuga Inlet will occur with pellet formulation of fluridone over a 10-week period **(Figure 1).** This treatment will be performed by Solitude Lake Management in conjunction with funds secured through the U.S. Army Corps of Engineers.

Figure 1. 2020 Fluridone Treatment Plot

SOUTHWEST CORNER OF CAYUGA LAKE:

Treatment on two separate plots (13.5-acres total) north of Allan Treman Marina/State Park will occur with the pellet formulation of fluridone over a 10-week period (Figure 2). This treatment will be performed by Solitude Lake Management in conjunction with funds secured through U.S. Army Corps of Engineers.

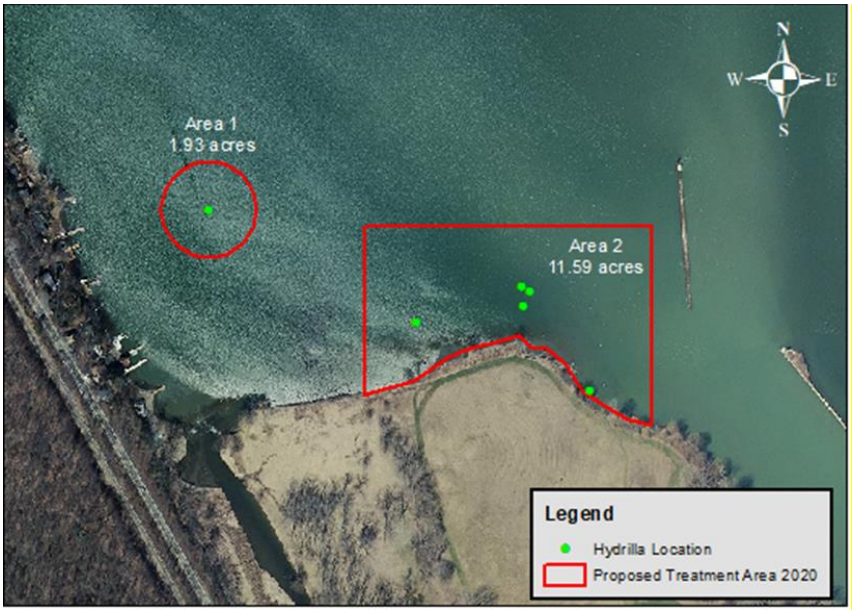


Figure 2. 2020 Fluridone Treatment Plots

CAYUGA LAKE:

Treatment on a 50.4-acre plot in front of Stewart Park and along the eastern shoreline south of the Cornell Sailing Center in the southern shelf of Cayuga Lake occurred with pellet formulation of fluridone over a 10-week period (Figure 3). This was performed by Solitude Lake Management and done in conjunction with funds secured through the US Army Corps of Engineers. Because hydrilla was found slightly west of the Stewart Park treatment area, a granular copper spot treatment will be applied to the 6-acre plot on in July. Solitude Lake Management slightly adjusted the fluridone application area to include this western patch in the remaining fluridone treatments. In August, a second patch of Hydrilla was spotted to the west of the Stewart Park treatment area, along the break wall, and and granulated copper will be applied to the 1.6-acre plot on in August.

Figure 3. Stewart Park treatment area

FALL CREEK:

While there was not any treatment of Hydrilla in Fall Creek in 2019, monitoring efforts continued in the area. Following monitoring in the late fall of 2019, Hydrilla was located along the shoreline of the golf course, and in February/March 2020 the City of Ithaca dredged out the area. Benthic mats were placed by Racine-Johnson along the golf course shoreline during the spring and summer months. Following additional monitoring of Fall Creek and the Fall Creek Lagoon, multiple Hydrilla patches were located. More benthic mats were placed inside the Fall Creek Lagoon, totaling 8,700sf. In spring 2021 all benthic mats were removed by Racine-Johnson. A granular copper treatment was applied to a 3.4-acre and a 1.6-acre plot on August 27, 2020 (Figure 4). SOLitude Lake Management will apply pellet formulation of fluridone to both Fall Creek and Fall Creek Lagoon in 2021 as per the U.S. Army Corps of Engineers treatment plan. In Figure 6, green marks depict the 2019 Hydrilla locations and red marks depict the 2020 Hydrilla locations.

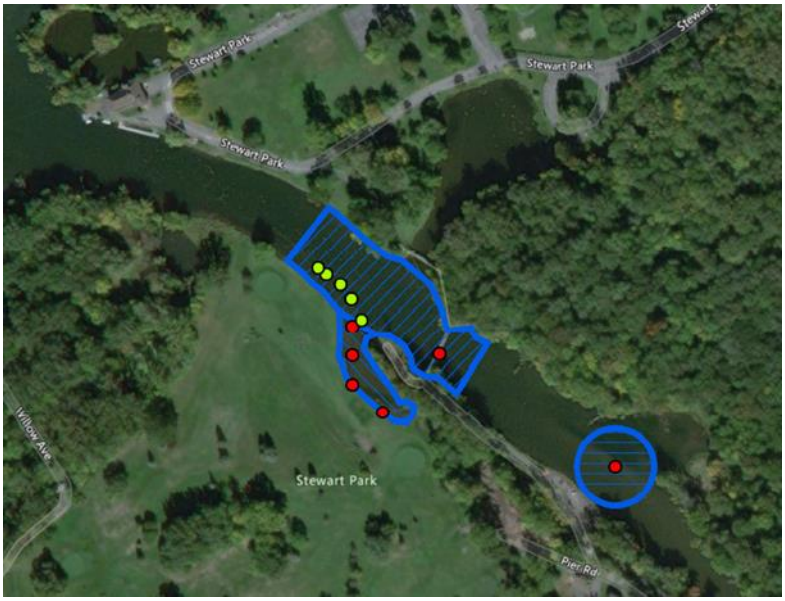


Figure 4. Fall Creek copper treatments

Additional information can be found in the annual report for each season from 2021-2025 (separate pdfs).

ADAPTIVE MANAGEMENT

Given the complexity and significance of the Cayuga Lake Hydrilla Management Projects, it is critical to recognize that flexibility and adaptability are essential. Each year of management will involve its own process of analyzing the success of the previous year's efforts, determining and implementing the appropriate control strategy, proper documentation of variables and results, and follow-up monitoring and communication, etc. In other words, a detailed plan for each season is not described herein because it is anticipated that each year will be more progressive and fine-tuned. Instead, it is expected that the efforts for the current year will be dependent on the previous year. In addition, we intend to have a monitoring program in place for several years after treatment ends.

Massachusetts Wildlife Climate Action Tool

PERMITTING

King Ferry and Lansing Project Sites: DEC regulates the use of aquatic herbicides under 6 NYCRR Article 15 Part 327 Use of Chemicals to Control Aquatic Vegetation. An application for this permit will be submitted annually for the use of herbicide as proposed in the project description and according to product label restrictions as the choice of herbicide, flow rates, target area, etc., may be modified each year. PRISM staff will need to work closely with NYSDEC Region7 staff to determine permitting needs for each season. Both marinas at these locations are somewhat contained, but water exchange with the surrounding lake occurs.

In addition, a Notice of Intent (NOI) is required to be completed and submitted to the Bureau of Water under the State Pollution and Discharge Elimination System (SPDES). An individual permit will be required for this project and will need to be obtained each year. A Pesticide Discharge Management Plan and Integrated Pest Management Plan will also be submitted with the NOI.

Under 6 NYCRR Article 24 Parts 663-664, the DEC regulates activities conducted in wetlands greater than 12.4 acres in size, such as vegetation removal and pesticide applications. However, if USACE is conducting the treatment in potential wetland areas at the south end of the lake, no Article 24 permit is needed (will be covered under USACE NEPA compliance).

Any hydrilla control activity in the Cayuga Lake that proposes to alter vegetation populations greater than 10.0 acres will constitute a Type 1 Action under the State Environmental Quality Review Act (SEQRA). DEC R7 will work closely with Finger Lakes PRISM if SEQR is required. In 1981, a Programmatic Environmental Impact Statement (EIS) for the Aquatic Vegetation Control Program was prepared to satisfy

SEQR for projects with impacts covered in the document. In addition, an Environmental Assessment Form (EAF) was prepared to address impacts not included in the EIS, which include impacts to wetland vegetation and endangered species. Both King Ferry and Lansing project sites are less than 10 acres.

Aurora and Ithaca sites (and all other open water locations): USACE has sovereign immunity within the navigable waters of the nation and is not required to submit applications for state permits. However, USACE is responsible for preparing its own documents to demonstrate its compliance with the National Environmental Policy Act (NEPA). USACE has greater flexibility in adapting its treatment plans depending on field season conditions and survey findings.

Notification letters

- Two separate letters one from USACE and one from FL PRISM/SWCD (USACE needs to meet substantive requirements for permits even with sovereign immunity)
- Same or similar start dates for treatment
- Content of letter:
    - Here is our anticipated schedule and we will let you know if there are changes
    - One paragraph detailing that there are multiple projects happening on the Lake this season: this is one of several projects to control hydrilla
    - Letters will include lakewide project brochure: USACE may have funds to produce this

ADDITIONAL IMPACT ASSESSMENT

Cyanobacteria Testing

The cyanobacteria *Aetokthonos hydrillicola* causes avian vacuolar myelinopathy (AVM), a deadly neurological disease, in waterfowl and the bald eagles that consume them. *A. hydrillicola* produces a toxin in the presence of bromine that causes a neurological breakdown producing unique holes in the brain and spinal cord and then death (Breinlinger et al. 2021; Wilde et al. 2015). Samples of hydrilla from the Cayuga Lake could be sent to Dr. Susan Wilde at University of Georgia. More information about this research can be found at https://www.warnell.uga.edu/research/dr-susan-wilde-avm-research.

Ongoing Project Concerns

- Sustainable funding
- Likely spread of hydrilla to boat launches and marinas
- Delays in reports of suspicious plants to the Task Force
- Missed patches of hydrilla in open water locations
- SAV surveys being complemented with snorkel and dive surveys
- Coordination of notification letter distribution among all projects so that landowners do not receive multiple notifications
- State induced hurdles such as permitting requirements, treatment restrictions, response delays, etc.

Cayuga Lake Hydrilla Task Force

Task Force Goals

- 99% reduction of hydrilla at all known locations within the next five years
- Continued adaptive management for all site projects
- Transparent and timely communication of project activities and results
- Continued monitoring of site locations for aquatic invasive plants and surveys of additional locations along both shores of Cayuga Lake
- Biannual Task Force meetings during field season
- Biweekly communications during the field season
- Extensive long-term education and outreach efforts (with emphasis on Clean, Drain, Dry protocol and reporting)

Task Force Participants

Angel Hinickle, Tompkins County Soil and Water Conservation District

Bob Johnson, Racine Johnson Aquatic Ecologists

Cathy McGlynn, New York State Department of Environmental Conservation

Don Nelson, New York State Department of Environmental Conservation

Hillary Lambert, Cayuga Lake Watershed Network

Hilary Mosher, Finger Lakes Partnership for Regional Invasive Species Management

Jon Negley, Tompkins County Soil and Water Conservation District

Kate Monacelli, Finger Lakes Partnership for Regional Invasive Species Management

Michele Wunderlich, Cayuga County Soil and Water Conservation District

Mike Greer, US Army Corps of Engineers

Roxy Johnston, City of Ithaca

Sharon Anderson, Cornell Cooperative Extension- Tompkins County

Bill Foster, Discover Cayuga Lake

Cayuga County Department of Health

Jon Gosselin and Mark Heilman, SePRO

Glenn Sullivan and Emily Mayer, SOLitude Lake Management

Tompkins County Department of Health

ADDITIONAL RESOURCES

Cornell Cooperative Extension- Tompkins County:
http://ccetompkins.org/environment/invasive-nuisance-species/aquatic-invasives/hydrilla

Finger Lakes PRISM: http://fingerlakesinvasives.org/invasive_species/hydrilla/

New York State Department of Environmental Conservation:

Aquatic Invasive Species in New York State https://www.dec.ny.gov/animals/50121.html

Hydrilla https://www.dec.ny.gov/animals/104790.html

ENSR International. 2005. Fluridone Ecological Risk Assessment Final Report. Bureau of Land Management Contract No. NAD010156 ENSR Document Number 09090-020-650. 92 pp.
http://digitalcommons.usu.edu/cgi/viewcontent.cgi?article=1139&context=govdocs

Syracuse Environmental Research Associates, Inc. 2008. Fluridone: Human Health and Risk Assessment Final Report. SERA TR-052-10-02a. 177 pp.
https://www.fs.fed.us/foresthealth/pesticide/pdfs/0521002a_Fluridone.pdf

USEPA. 1986. Pesticide Fact Sheet (No. 81). Fluridone. 5pp.

USEPA. 2004b. Human Health Risk Assessment for Fluridone Tolerance Registration Eligibility Decision. PC Code 112900. DP Barcode D306456. 35 pp.
http://fluoridealert.org/wp-content/pesticides/fluridone.hrs.aug.2004.pdf

LITERATURE CITED

Breinlinger, S., T.J. Phillips, B.N. Haram, J. Mareš, J.A. Martínez Yerena, P. Hrouzek, R. Sobotka, W. M. Henderson, P. Schmieder, S. M. Williams, J. D. Lauderdale, H. Dayton Wilde, W. Gerrin, A. Kust, J. W. Washington, C. Wagner, B. Geier, M. Liebeke, H. Enke, T. H. J. Niedermeyer, and S. B. Wilde. 2021. Hunting the eagle killer: A cyanobacterial neurotoxin causes vacuolar myelinopathy. Science. 371: Vol. 371, Issue 6536.

Doyle, C. 2014. Croton River: 2014 Delineation of hydrilla and other submerged aquatic vegetation (SAV) in the Croton River System. Allied Biological, Inc., Hackettstown, NJ. 27 pp. plus appendices

Doyle, C. 2015. Hudson River Hydrilla Survey: 2015 Hydrilla Monitoring in the Croton River (NY) and Nearby Waters (Hudson River). Allied Biological, Inc., Hackettstown, NJ. 61 pp. plus appendices

Doyle, C. 2016a. Croton River: 2016 Delineation of Hydrilla and other Submersed Aquatic Vegetation (SAV) in the Croton River. 37 pp. plus appendices

Doyle, C. 2016b. New Croton Reservoir: 2016 Delineation of Hydrilla and other Submersed Aquatic Vegetation (SAV) in the New Croton Reservoir. 41 pp. plus appendices

Doyle, C. 2017. Delineation of Hydrilla and Other Submersed Aquatic Vegetation (SAV) in the Croton River. SŌLitude Lake Management. 65 pp. plus two separate appendices (C and D).

Johnson, R.L. 2014. 2013 Monitoring report of the Cayuga Inlet and Southern Cayuga Lake monoecious hydrilla eradication project. Racine-Johnson Aquatic Ecologists, Ithaca, NY. 203 pp. http://ccetompkins.org/resources/2013-hydrilla-monitoring-plan

Madsen, J. 1999. Point intercept and line intercept methods for aquatic plant management. Aquatic Plant Control Technical Note. https://emrrp.el.erdc.dren.mil/elpubs/pdf/apcmi-02.pdf

Nawrocki, J.J., R.J. Richardson, and S.T. Hoyle. 2016. Monoecious hydrilla tuber dynamics following various management regimes on four North Carolina Reservoirs. Journal of Aquatic Plant Management. 54:12-19.

North Carolina Division of Public Health. 2015. Public Health Evaluations for Potential Exposures to Fluridone or Endothall Used for Treatment of Hydrilla verticillata in the Eno River, Orange and Durham Counties, NC. 30 pp. http://www.dec.ny.gov/docs/lands_forests_pdf/fluridoneevaleno.pdf

Spencer, D.F., G.G. Ksander, and L. C. Whitehand. 1994. Estimating the abundance of subterranean propagules of submersed aquatic plants. Freshwater Biology. 31:191-200.

Wilde, S. B., J. R. Johansen, H.D. Wilde, P. Jiang, B.A. Bartelme, and R.S. Haynie. 2015. *Aetokthonos hydrillicola* gen. et sp. nov.: Epiphytic cyanobacteria on invasive aquatic plants implicated in Avian Vacuolar Myelinopathy. Phytotaxa 181(5): 243-260.

Appendices

Notification: Letter Template and Protocol

Press Release Template

Cayuga Lake Network Press Release Template

Cayuga Lake Watershed Network
Public Outreach Workplan
For Hydrilla on Cayuga Lake

Template of Notification Letter

Date of Notice: April 17, 2018

Dear Riparian Property Owner/User:

The Cayuga Hydrilla Task Force proposes to conduct an application of the aquatic herbicide Y to control the growth and spread of the highly invasive aquatic plant species *Hydrilla verticillata* at X in Cayuga Lake. Hydrilla is a federally listed noxious weed and a prohibited species in New York.

We have chosen a method of control that allows for use of a low concentration of herbicide (Z). Protocol for treatment and many other project details can be found on the project webpage www.

The Task Force will carefully monitor the concentration of herbicide throughout the treatment areas in Cayuga Lake during the treatment to determine that an effective concentration of herbicide is being maintained. We are also working closely with NYSDEC Region 7 Pesticide Compliance to ensure that the herbicide is used according to approved label requirements.

The treatment is being carried out by XYZ, licensed applicators registered with the New York State Department of Environmental Conservation (#-----). NYSDEC Aquatic Pesticide Permit applications have been submitted requesting approval for the application of the herbicide Y. Treatments are anticipated to occur between May 28 and October 31, 2020 and will proceed only after the issuance of NYSDEC permits.

Prior notification of the exact dates of treatment will be provided to residents of X and signs will be posted in public areas during application.

Label water use restrictions at applied herbicide concentrations (Z) are as follows:

Product	Swimming	Fishing	Livestock Watering	Drinking	Irrigation
Herbicide	None	None	None	None	??

Product labels are available for review at this website XYZ. Shoreline of the public access areas will be posted at the time of treatment indicating the applicable water use restrictions. In the event that you, as a riparian owner or vested riparian user, have any objections to the proposed program, please contact the following agency in writing **within 21 days** of receipt of this notice. Lack of comment will be considered consent to the treatment and water use restrictions.

Bureau of Pesticides
NYSDEC, Region 7
1285 Fisher Avenue
Cortland, NY 13045

If you need further information, have questions regarding treatments, or require hard copies of the product labels, please contact (contact, organization, phone number) or (contact, organization, phone number) during business hours.

Template of a Press Release

Cayuga Lake Hydrilla Task Force begins new season of hydrilla management

Cayuga Lake, NY – The Cayuga Lake Hydrilla Task Force is poised to begin its new season of hydrilla management in Ithaca, Lansing, Aurora, and King Ferry. From mid-May to late October Task Force members will working together to address the existing infestations of the invasive aquatic plant hydrilla and prevent the establishment of new populations.

Many organizations and agencies work together as the Task Force: Cayuga Watershed Network, Cayuga County Soil & Water Conservation District, City of Ithaca, Cornell Cooperative Extension-Tompkins County, Finger Lakes PRISM, New York State Department of Environmental Conservation, New York State Office of Parks, Recreation, and Historic Preservation, Racine Johnson Aquatic Ecologists, SOLitude Lake Management, Tompkins County Soil & Water Conservation District, and U.S. Army Corps of Engineers.

Task Force members and volunteers will be educating the public by hosting Hydrilla Hunters training workshops, providing hydrilla brochures at boat launches, and deploying watercraft inspection stewards at strategic locations to inspect boats not only to prevent the movement of hydrilla to new areas of Cayuga Lake and beyond but also to keep new invaders out.

Watercraft inspection stewards will be at boat launches to educate visitors on procedures used to prevent the spread of AIS, ways to identify AIS, protocols for reporting an AIS discovery, and local AIS laws and regulations.

In addition, Task Force members will monitor and treat existing populations of hydrilla to prevent their spread. Hydrilla creates dense mats of vegetation that can impact fishing and boating and can also harm habitat for native fish and plants.

“This will be the first season in which we will be coordinating all our efforts across the lake. I am excited to see how combining our resources will affect the projects and what strides we will make in protecting Cayuga Lake,” said Hilary Lambert, Cayuga Lake Watershed Network.

“The health of Cayuga Lake is vital to our communities and we will do our best to spread the word about aquatic invasive species prevention to lakeshore communities and recreationists,” said Hilary Mosher, Coordinator of the Finger Lakes Partnership for Regional Invasive Species Management. “Working with local communities is the key to our success.”

For more information on the Cayuga Lake Hydrilla Task Force, including educational materials, location, and volunteer opportunities, visit XX.

Press Release

June 11, 202X

Hydrilla Monitoring, Treatments Scheduled for Cayuga Lake's South End

Contact: Hilary Lambert steward@cayugalake.org

Cayuga Lake hydrilla update

Thanks to vigilant monitoring and effective treatment response, hydrilla (Hydrilla verticillata) was absent from Cayuga Inlet and Fall Creek from 2015-2018. However, in fall 2019, hydrilla patches were mapped in Cayuga Inlet and the southwestern corner of the lake. The patches offshore of Stewart Park and around the Merrill Sailing Center were treated in 2019 and are being monitored.

Treatment schedule for the south end of Cayuga Lake

To control and eradicate the aggressive aquatic plant hydrilla present in the vicinity of Stewart Park on Cayuga Lake in the city of Ithaca, the U.S. Army Corps of Engineers Buffalo District (USACE Buffalo) proposes to apply the aquatic herbicides fluridone (Sonar® H4C) and chelated copper (Harpoon® Granular) within an approximately 51-acre project area along approximately 5,500 linear feet of shoreline along Stewart Park, the Cornell Community Sailing Center, and Cass Park on Cayuga Inlet (see attached map, "Hydrilla Treatment Areas Map 2020").

The USACE Buffalo project is being closely coordinated with a project being completed by the Tompkins County Soil and Water Conservation District (TCSWCD) within the same vicinity on Cayuga Lake. The TCSWCD hydrilla project will address two areas, approximately 13.6 acres in size, north of Allan H. Treman State Marine Park (see map).

For the USACE Buffalo project, the initial application of Sonar® H4C is targeted for the week of June 22, 2020, and a total of 10 treatments will occur between June and August. Additionally, if there is any significant re-establishment of hydrilla beds in the 51-acre project area, those beds may be spot treated with Harpoon® Granular, on or about the week of August 10, 2020. These spot treatment applications are not expected to exceed approximately 10 acres. Signs will be posted along the lake when the herbicide is applied.

For the TCSWCD project, the application schedule will be the same as the USACE project areas with initial application of Sonar H4C the week of June 22, 2020, and a total of 10 treatments

between June and August.

There are no restrictions for fishing, swimming, or livestock/pet water consumption at the proposed application rates of Sonar® H4C and Harpoon® Granular. There are restrictions for using water treated with Sonar® H4C for irrigation. There are also potable water restrictions for water treated with Sonar® H4C and Harpoon® Granular if treated water concentrations are above the thresholds indicated in Table 1, "Water Use Restrictions" (attached).

2

For the USACE Buffalo project, questions about herbicide concentrations following application should be directed to Katie Evans at (716) 684-8060 or kevans@ene.com, or to Michael Greer (716) 879-4229 michael.j.greer@usace.army.mil .

For the TCSWCD project, please direct questions to Angel Hinickle AHinickle@tompkins-co.org

Product labels are available for review on Solitude Lake Management's website: https://www.solitudelakemanagement.com/product-labels-new-york-updates. Hard copies of the labels can be requested by contacting Katie Evans at (716) 684-8060 or kevans@ene.com.

Following each treatment, Tompkins County Health Department and Bolton Point will conduct water quality monitoring and the results will be posted to the County website.

For questions concerning water use please contact:

Tompkins County Health Dept

55 Brown Road

Ithaca, NY 14850

607-274-6688

Cayuga Lake Hydrilla Team contact information

Angel Hinickle, Tompkins County Soil & Water Conservation District, AHinickle@tompkins-co.org

Michael Greer, US Army Corps of Engineers, Michae.J.Greer@usace.army.mil

Cathy McGlynn, NYS Department of Environmental Conservation, catherine.mcglynn@dec.ny.gov

Kathryn Monacelli, Finger Lakes Institute/PRISM, desjardin@hws.edu

Hilary Mosher, Finger Lakes Institute/PRISM, mosher@hws.edu

Sam Beck-Andersen, Finger Lakes Institute/PRISM, beck-andersen@hws.edu

Robert Johnson, Racine-Johnson Aquatic Ecologists, LLC. bob.johnson.ponds@gmail.com

Michele Wunderlich, Planner, Cayuga County mwunderlich@cayugacounty.us

Cayuga County Department of Health, https://www.cayugacounty.us/467/Hydrilla

Tompkins County Department of Health, https://tompkinscountyny.gov/health/eh/water/hydrilla

Hilary Lambert, Cayuga Lake Watershed Network, steward@cayugalake.org

Jenn Tufano, Cayuga Lake Watershed Network, programs@cayugalake.org

Cayuga Lake Watershed Network
Public Outreach Workplan
For Hydrilla on Cayuga Lake

April 15th – November 1st

March 14, 2021

During the past ten years working to unify people along Cayuga Lake's 92-mile shoreline around hydrilla identification, reporting and response, the Cayuga Lake Watershed Network (CLWN) has found that integrated teamwork is best for public education, fast response, and effective action.

This Workplan is built around:

- Continuing with outreach practices that have worked in the past and developing new and innovative public outreach and volunteer science tools within the context of hydrilla leadership from NYS DEC.
- Working closely with the FL PRISM (Partnership for Regional Invasive Species Management) in Geneva NY, to bring their Aquatic Invasive Species and Hydrilla campaigns to the public around Cayuga Lake;
- Working locally via the Cayuga Lake Hydrilla Task Force, coordinated by the Tompkins County Soil and Water Conservation District Office in Ithaca.
- Flexibly sharing outreach, education and monitoring tools with Discover Cayuga Lake (aka Cayuga Lake Floating Classroom), lakeshore associations, municipalities and the public, with information sharing to the other two shoreline counties of the Cayuga Lake watershed, Seneca and Cayuga.
- Cooperating with the US Army Corps of Engineers, hydrilla treatment program managers for the open lake and on the Aurora shoreline. We work with USACE and other parties to write and issue press releases about planned treatments, public meetings, etc.
- Communicating with the 19 shoreline municipalities around Cayuga Lake, in three counties, Cayuga, Seneca, and Tompkins. Over the past five years, hydrilla has been found in the lake at several new locations, and has re-appeared in Cayuga Inlet, where it had not been found since aggressive treatment began in fall 2011. Hydrilla is not a south end problem any more – it is lakewide. It does not stop at county boundaries.
- Working with the Finger Lakes Regional Watershed Alliance, comprised of lake associations or other representative organizations from each of the eleven Finger

Lakes. The other lake groups look for leadership to Cayuga Lake's hydrilla management response.

Our goal: Work with the public and involved agencies and consultants via education and volunteerism to prevent the spread of hydrilla more widely in Cayuga Lake and beyond to the Finger Lakes and, potentially, the wider Great Lakes region.

Work Plan

April – June

Participate in group planning meetings via conference calls and zoom. For the south end, Aurora, & FL PRISM. (2 + meetings per month).

Will work with the mayor and village board in Aurora to get information to about 25 lakeshore residents and businesses regarding the need to check and clean their boats regularly.

In cooperation with the monitoring and testing teams, will write and issue a media release about the new DEC-FL PRISM hydrilla program leadership and Cayuga Lake-wide plans for 2021 and beyond. Will contact local south end newspapers to ensure publication.

Will also write and issue press releases when the treatment season begins and as needed during the summer and fall, in cooperation with DEC, USACE, FL PRISM, TCSWCD, etc.

Work with Finger Lakes PRISM to recruit and train hydrilla-focused volunteers for their macrophyte survey program (program announcement was shared to listservs and social media in early March).

Goal is to add 10 – 20 new volunteers/Hydrilla Hunters, especially along the Cayuga and Seneca county shorelines. Asking them to patrol a specific area of shoreline on a regular basis.

Will hold a lakewide macrophyte program recruitment drive via listservs, media outreach, and social media during the Invasive Species Awareness Week in NYS.

We will regularly consult with FL PRISM and DEC, and report to FLRWA.

The Finger Lakes PRISM and Finger Lakes Institute in Geneva NY at Hobart & William Smith Colleges are coordinators for hydrilla and other invasive species work.

The Finger Lakes Regional Watershed Alliance (FLRWA) is comprised of watershed groups/lakeshore associations from the eleven Finger Lakes. We share hydrilla and other information and resources regionwide.

Two updates - about hydrilla around the lake, and the need to monitor and report - will be shared with the list of 19 lakeshore municipalities, in summer and fall.

During June a brief article about hydrilla and how volunteers can help stop its spread will be written and shared, suitable for printing in municipal newsletters.

Share information with the Cayuga Lake public about the Watercraft Stewards program. An article in the CLWN's mid-year issue (June-July) will focus on this great program.

Coordinated and trained out of the Finger Lakes Institute/FL PRISM and funded by NYS DEC and other funders, the Cayuga Lake Watercraft Stewards will probably be located at Tompkins County's Taughannock Falls State Park and the Robert Treman Marine State Park. In Seneca and Cayuga counties, they will be at Dean's Cove Public Launch, Long Point State Park, Cayuga Lake State Park, and Mud Lock.

July – August

Participate in group planning meetings via conference calls and zoom. For the south end, Aurora, & FL PRISM.

Work with Finger Lakes PRISM to encourage hydrilla-focused volunteers to conduct Hydrilla Hunts with lake raking along the shoreline on specific weekends.

Working with FL PRISM, we will engage the (estimated) 15 Hydrilla Hunters who are already active, and will provide "lake rakes" and instructions to new volunteers.

Will do radio interviews with the Cayuga Radio and Finger Lakes Radio stations – estimated 2-3 interviews from June – October.

By early July, the 60+ hydrilla information sites around the lake will be set up at docks, launches, marinas, and parks. Our staff works with FL PRISM staff to set up and regularly check on these information boxes.

We will update and print the hydrilla information materials and FL PRISM hydrilla i.d. and reporting kits as needed, and will work with the USACE to include their project brochures.

The brief online newsletter *Hydrilla Hunter Happenings* will be issued as needed (estimated 3 – 4 one-page issues from July – October). Distributed to listservs, social media.

Two articles will be published in CLWN's quarterly newsletter *Network News* (summer and fall or winter issues). Available online at www.cayugalake.org, shared to the CLWN and CayugaHydrilla listservs, and in print. Each issue reaches an estimated 1500 readers.

At least two updates - about hydrilla around the lake, and the need to monitor and report - will be shared with the list of 19 lakeshore municipalities, in summer and fall.
During June a brief article suitable for printing in municipal newsletters will be shared with this group.

September – October
Participate in group planning meetings via conference calls and zoom. For the south end, Aurora, & FL PRISM.

Will hold Hydrilla Hunts on two October weekends, to include established volunteers, the public, and the south end paddling community (Stand Up Paddlers, kayaks, canoes). Provide tables where “suspects” can be turned in for expert evaluation.
Results are shared with the finders and the public.

Will dismantle and store the hydrilla i.d. information boxes from around the lake – FL PRISM & CLWN.

Recruit speakers for the annual end-of-season public report-out in late October or early November, either via an in-person public meeting, or a webinar format online.
Publicity via email, quarterly newsletter, website, listservs, media release, social media. Estimated audience of 40+. The meeting will be recorded and available at CLWN’s YouTube channel.

Reports written and submitted as required.