



Cornell University
Cooperative Extension



Hydrilla: Ask the Expert Event with James Balyszak CCE Invasive Species Program

June 6, 2013

Twitter: NY Invasive Species (@NYInvasiveSpp)

Twitter: StopHydrilla.org (@stophydrilla)

Questions and Answers:

- **Q: How effective is drawdown as a control technique for Hydrilla and what depth is recommended in order to completely eliminate populations? Does the effectiveness depend on snowfall and winter temperatures?**

A: For drawdown to be effective, the soil temperatures and sediment need to experience a hard freeze to affect the hydrilla tubers. Drawing down the water will expose the sediment to air temperatures, which must fall below freezing for a semi-extended time. Snow cover will act to insulate the exposed sediment, which can reduce drawdown effectiveness.

- **Q: What should we do if we think we find hydrilla?**

A: If you find suspicious plant growth outside of the Cayuga Inlet, take a photo of the plant against a light-colored background. You can then go to Stophydrilla.org and select "Report Hydrilla Suspects" Or contact the Hydrilla Program Director by phone at 607-257-2340 or by email at stophydrilla@gmail.com

Follow this link for an informational brochure, which includes instructions for reporting/documenting suspected sightings:

http://cctompkins.org/sites/all/files/347/stophydrilla_0.pdf

- **Q: When is it safe to use the water after the contact herbicide treatment (Aquathol)?**

A: **Aquathol (active ingredient Endothall):**

- Swimming and bathing are prohibited for 1 day after application according to Special Local Need Label # EPA SLN No. NY-080004.
- Animal and Livestock watering is prohibited for 14 days after application.
- Irrigation or spraying of annual nursery or greenhouse crops including hydroponics and newly seeded or transplanted annual crops, newly seeded or transplanted ornamentals, and newly sodded or seeded turf is prohibited for 7 days after application.
- Use of water for human consumption is prohibited when concentrations of the active ingredient (endothall) is greater than 50 ppb in the treated water.

- **Q: When is it safe to use the water after the systemic herbicide treatment (Sonar)?**

A: **Sonar (active ingredient Fluridone):**

- Do not use Sonar Genesis or Sonar One treated water for hydroponic farming until concentrations of the active ingredient (fluridone) is less than 1 ppb.

- Do not use Sonar Genesis or Sonar One treated water for irrigating greenhouse or nursery plants until concentrations of the active ingredient (fluridone) is less than 1 ppb.
 - Irrigation or spraying of established tree crops and established row crops, turf, or plants is prohibited for 14 days after application.
 - Irrigation or spraying of newly seeded crops or seedbeds is prohibited until concentrations of the active ingredient (fluridone) are below 10 ppb.
 - ****There are no restrictions on swimming, while Sonar Genesis and Sonar One are in use.** Water quality monitoring/sampling results can be found on Stophydrilla.org. Follow this link for information on the Cayuga Inlet Hydrilla Eradication Project (including water monitoring info & results): http://ccetompkins.org/environment/invasive-species/management-plan#water_monitoring
- **Q: Why are herbicides necessary? Are there any other types of control?**
A: The Hydrilla Task Force reviewed all available management alternatives for hydrilla (physical, chemical, biological, and no-action). Based on extent of infestation in Cayuga Inlet, and hydrilla's ability to reproduce through broken fragments and hydrilla tubers ability to remain dormant for many years in the sediment, herbicide controls provide the most feasible and effective means of control. To view the Hydrilla Task Force: Cayuga Inlet Management Plan, visit our website at: stophydrilla.org
Physical removal (in the form of Diver Assisted Suction Harvesting, D.A.S.H) was attempted in 2011, but was unsuccessful. A diver utilized a suction hose connected to a pump system on-board a boat, to hand-pull hydrilla from the Cayuga inlet and feed it into the suction hose. From there the hydrilla & debris was captured in a filter bag, allowing the water to escape back into the Cayuga inlet. Unfortunately the D.A.S.H and physical removal caused a great deal of turbidity (creating a difficult work environment for the diver), and fragmentation of hydrilla (which could lead to greater spread of hydrilla).
- **Q: Who makes up the Hydrilla Task Force? Who are its stakeholders?**
A: The Hydrilla Task Force of Tompkins County is comprised of a multitude of local, regional, and statewide stakeholders, including: NYS-Department of Environmental Conservation, Tompkins County Soil & Water Conservation District, City of Ithaca, Cornell Cooperative Extension, Health Department, Water Resources Council, the Floating Classroom, national experts, scientists & peer reviewers, private contractors (sampling, monitoring, herbicide applicators), Lake Associations, and support from State & Federal Officials, the Finger Lakes National Forest, Montezuma National Wildlife Refuge, and the general public.
These stakeholders help to make up several sub-committees of the Hydrilla Task Force, which include: the Statewide Hydrilla Task Force, Local Task Force, Task Force Management Committee, and Task Force Outreach Committee.
- **Q: Why don't you use grass carp for biological control?**
A: Grass carp are a means of biological control for a number of aquatic plant species. Grass carp do not target specific species, but instead have a wide ranging diet, which means that they would also consume native, non-invasive, and beneficial plant species, in addition to

hydrilla. This could have an adverse impact on non-target plant species. In addition, the Cayuga Inlet is not a closed system; therefore keeping the stocked carp in the Cayuga Inlet treatment area only would not be possible, as they would have the ability to leave the Cayuga inlet and enter the lake.

A number of insects exist that prey upon hydrilla as well, and provide another means of biological control. Unfortunately, none of these insects can survive in the colder temperatures observed in the northern climates (including NY State), and are therefore not a feasible option for biological control in the Cayuga Inlet.

For facts regarding the use of insects for hydrilla control in warmer climates, follow this link: <http://plants.ifas.ufl.edu/node/185>

- **Q: How do you identify hydrilla?**

A: Hydrilla has small, lance shaped leaves that form in whorls of 4-8 (spiraling around the central stem). The edges of the leaves are sharply toothed, having serrated “teeth” along the leaf margins. A major determining characteristic of hydrilla is its tubers, which are small, white to yellowish, potato-like structures attached to its roots. Tubers are found below the sediment, and are capable of remaining dormant and viable in the sediment for many years, only to sprout new plants in the future.

Click the following link for an excellent handout containing information on hydrilla identification:

<http://csetompkins.org/sites/all/files/347/HydrillaCayugaLakeMarinaMailer2013.pdf>

- **Q: Are there opportunities to get involved with hydrilla efforts? How can the public help?**

A: The best thing that the public can do is to be informed, stay updated (via stophydrilla.org), and help to spread the word, not the plant! Boaters, anglers, and recreationalists can implement “Clean Boating Practices” to help prevent the spread of hydrilla & other invasives to water bodies. Before you enter and leave a waterway:

- Check for and remove any visible plants or debris from your vessel and equipment. Dispose of these materials away from the waterway
- Clean and drain your boat & equipment away from the waterway
- Dry everything that came in contact with water

- **Q: Where has hydrilla been found in New York State?**

A: An isolated pond in Broome County; Creamery Pond in Orange County; 6 ponds & lakes on Long Island, including Lake Ronkonkoma; Tonawanda Creek near Buffalo, NY; and the Cayuga Inlet in Ithaca, NY.

- **Q: What is going to happen in Western New York now that hydrilla has been discovered there?**

A: Currently, the project group in Tonawanda is working on determining a lead agency/group for the project. Once established, the project group will conduct sampling/monitoring to determine the extent of the infestation, which will help them to

develop their management plan and actions for the 2013 season. Currently, they are planning on a single, contact herbicide treatment in the infested area.

The proposed reliance on the contact herbicide endothall as the primary tool for hydrilla eradication means that initiation of treatment timing will be critical to the success of the project. Therefore determination of sprouting dynamics and when hydrilla may start to form new tubers will be crucial. The Army Corps of Engineers has some funding dedicated to the hydrilla project and plan to initiate tuber sampling during the week of June 3rd in coordination with the US Fish & Wildlife Service. Additional sampling efforts will be planned for July, August, September, and October. This sampling will help to determine the timing of treatment implementation. Stay tuned for more info & updates on the efforts in Western New York.

- **Q: Is there a timeline for the 2013 herbicide treatments for the Stewart Park/Cass Park Inlet Areas?**

A: Permits have been obtained from the NYS Department of Environmental Conservation by the Tompkins County Soil & Water Conservation District. We anticipate the Aquathol K treatment to occur between June 15th and August 1st of 2013. We anticipate the Sonar Genesis and Sonar One treatments will take place in the timeframe of July 15th to November 30, 2013. Once Sonar treatment begins, it will continue for a period of 60 -90 days.

Application of these herbicides will proceed only after the necessary permits from the NYS Department of Environmental Conservation are obtained, sufficient aquatic vegetation is present, and weather conditions are favorable. Prior notification of the exact dates of treatment will be provided by a public notice in the Ithaca Journal and at stophydrilla.org

- **Q: How long will treatments go on for?**

A: Contact herbicide treatment (Aquathol) will be completed in a single day. Once systemic herbicide (Sonar) treatment begins, it will continue for a period of 60 -90. Start date will be determined by presence/quantity of vegetative growth of hydrilla in the Cayuga Inlet (as observed through ongoing sampling & monitoring), and weather conditions.

- **Q: How did hydrilla get to the Cayuga Inlet? To the U.S.? Where is it from?**

A: Hydrilla first arrived in the U.S. in Florida in the late 1950's through the aquarium trade. An aquarium was most likely dumped into a local waterway, and from there hydrilla spread throughout Florida and beyond. The strain of hydrilla in the southern states (dioecious hydrilla) originated in Sri Lanka.

The strain of hydrilla found in the northern climates (monoecious hydrilla), including the Cayuga Inlet, originated in Korea, and has the ability to withstand colder environments. While we cannot pinpoint the exact cause of the infestation in the Cayuga Inlet, there are several possibilities. Transport of hydrilla fragments on a boat/trailer/equipment from an infested water body to the Cayuga Inlet is the most likely cause. An illegal aquarium dumping is also a possibility. Unfortunately, hydrilla was discovered after the infestation had become established, so it is nearly impossible to determine the original cause of the infestation.

- **Q: Why is hydrilla such a problem?**

A: Hydrilla has the capability of growing extremely fast (up to a foot per day!), and can grow in low-light/low-nutrient environments. In addition, hydrilla is a brittle plant, breaking and fragmenting easily when disturbed by boat traffic and recreation. It can reproduce easily through these leaf and stem fragments which are easily transported. Its tubers (root structures below the sediment) can remain viable and dormant for many years, only to give rise to new plants down the line.

All of these factors allow hydrilla to outcompete native vegetation for space and nutrients, displacing beneficial vegetation and organisms. If nothing is done, hydrilla can completely take over a water body (growing in 25-30 feet of water), rendering it unusable for boating, fishing, swimming, and recreation. This can lead to negative impacts on water quality, the health of the ecosystem, recreation, economic viability of water front businesses, and property values.

- **Q: I heard that there are plans to dredge the Cayuga Inlet. How/will dredging affect the hydrilla efforts?**

A: Plans are currently tentative regarding the dredging efforts in the Cayuga Inlet. However, there exists the potential for beneficial collaboration between the hydrilla eradication efforts and the dredging efforts.

Dredging could be a form of physical control/removal for hydrilla in the Cayuga inlet. If implemented properly, the physical removal of sediments from the Cayuga inlet during the dredging process could remove the hydrilla tuber population (found in the sediment) from the Cayuga inlet as well. Without a tuber population present, hydrilla could not form new plants. However, a great deal of care needs to be taken to ensure the dredging spoils are removed, and taken off-site. This will ensure that any tubers present do not make it back into the waterway. Dredging efforts would also need to ensure that ALL tubers are removed, and that no tubers remain to give rise to new hydrilla populations in the future. This is quite challenging as the hydrilla tubers are quite small and some may escape removal during the dredging process.

- **Q: How is this project being funded? What are the costs?**

A: There are many costs associated with the ongoing hydrilla eradication efforts. These would fall into 3 primary categories (in order of decreasing expense):

1. **Herbicide Treatments:** Cost of herbicides, permits, herbicide applications by licensed professionals, and water quality testing/monitoring.
2. **Hydrilla/Plant Monitoring & Sampling:** Extensive plant/tuber sampling and monitoring (both native & non-native) coincides directly with in-field herbicide treatments. This plant monitoring/sampling helps to determine the extent of infestation, treatment start dates, effects of treatment on hydrilla and native plant populations, and crucial information on monoecious hydrilla as a species (of which very little is currently known).
3. **Education/Outreach:** the Hydrilla Task Force Outreach committee is committed to actively reaching out and educating stakeholders and the general public with regards to hydrilla & other invasives, as well as what can be done to prevent their spread.

Outreach/education takes the form of public events, meetings, website updates (stophydrilla.org), Facebook, Twitter, published articles, printed materials, etc... Partial funding of the project has been obtained through NYS Parks, Recreation, & Historic Preserve, the City of Ithaca, West Shore Homeowners Association, NYS Department of Environmental Conservation, and U.S. Fish & Wildlife Services. However, continued funding and public support will be needed to carry out hydrilla eradication efforts beyond 2014/2015. Hydrilla is a pervasive plant, and the efforts of the Task Force must continue until it is completely eradicated from the Cayuga Inlet.

- **Q: Where else in the country is Hydrilla a problem? What are those states doing to address the infestations?**

A: Hydrilla can be found across the U.S. Ranging from states in the south (such as Florida, Georgia, the Carolinas, and over to Texas) all the way up to the northeast (New York, Connecticut, Pennsylvania, and Maine) and even on the west coast in California. Dioecious hydrilla is found in the warmer area infestations, with monoecious hydrilla being found in the colder climate infestation areas (including New York). Follow this link for a more detailed map of hydrilla infestations in the United States:

http://www.nyis.info/user_uploads/images/Hydrilla_map.jpg

Various management, control, and eradication efforts are being implemented throughout these infested areas. Depending on the size and extent of the hydrilla infestation, the political and social climate, available funding, and available resources, these management efforts range from: localized management, broad scale management and control, eradication, and in some places no-action.

Active management, control, and eradication can involve numerous strategies, which include: herbicides (contact and systemic), bio-controls (such as triploid grass carp and insects), physical/mechanical removal (harvesting, suction removal), dredging, water draw-down, etc... Again, there are a number of factors that ultimately determine which management strategy is ultimately utilized.