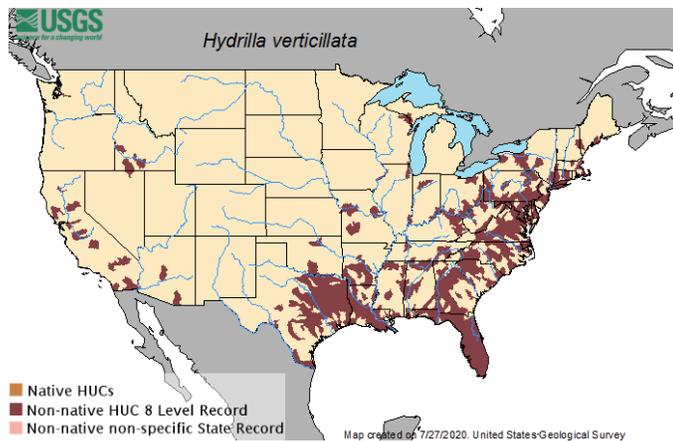




Aquatic Nuisance Series: Hydrilla

Hydrilla (*Hydrilla verticillata*), also commonly called water thyme, is a submersed perennial herb. It is considered the world’s worst invasive aquatic plant. It was first observed in New Jersey in 2003. So far it is mainly found in southern New Jersey, but it has also been confirmed just north in New York state. Its name comes from the Greek nine-headed serpent and this plant lives up to its bad reputation.

It is a non-native species originating in India, south Asia and Korea. Hydrilla can reproduce four different ways: fragmentation, tubers, turions (buds in leaf axil), and seeds. Once established in a lake, it is extremely difficult to control and remove.



Description and Habitat

Hydrilla thrives in almost any condition, including low and high nutrient waterbodies. It will establish in fine muck to sand to larger cobble. It will grow in lakes as well as in streams and rivers. I will take up CO₂ faster than other plants, thus denying them this important part of photosynthesis. Its ability to grow in low light, allows it to get a jump on other vegetation and crowd out the sun’s rays.

Fragmentation is thought to be the primary means Hydrilla uses to move from lake to lake. Even fragments that have dried out can still enter a waterway and start a new patch. The turions make this plant especially tough to control. The above ground turions help it spread into new areas of a lake. The turions under the

lake bottom can be inactive for up to six years before sprouting. This allows the infestation to continue year after year, despite effective treatments.



Dense mat of hydrilla in Croton River; Photo: C. McGlynn, NYSDEC

Hydrilla promotes growth of a cyanobacteria (*Aetakhthonos hydrillicola* [eagle killer]) that lives on the surface of the plant and whose toxins can be taken up the food chain. It has been documented to kill aquatic birds such as ducks and geese. The effects of the toxin bio-magnify so that even eagles can die as a result.

Management and Control

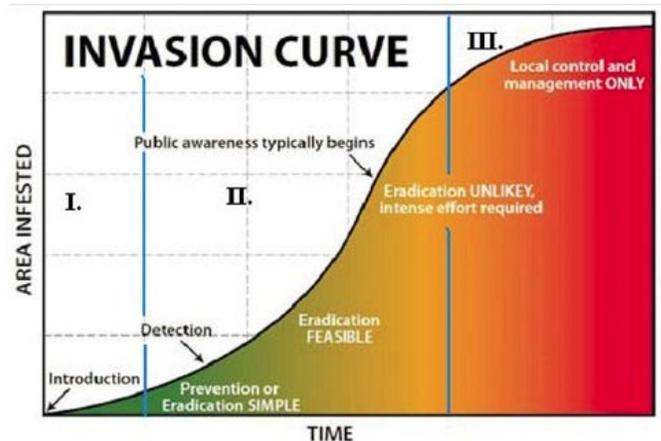


Image from Southwest Montana Science Partnership’s Module on Plants and Pollinator

The key to all nuisance plants in prevention, but as the above graph shows, once Hydrilla is established, control is the best you can hope for. Early identification is crucial to protecting your lake from a yearly nuisance.

Some lakes have tried biological control with carp, but carp will clean out all vegetation. Chemical options, such as endothall (Aquathol K) and fluridone (SONAR), are effective in the short term, but do not prevent growth in the following year. Mechanical methods should only be used in lakes where Hydrilla is already dominant since fragments may spread after removal of the biomass. Physical barriers, such as benthic mats, have been used, but due to the hydrilla turions taking up to six years to sprout; this is a long-term solution.

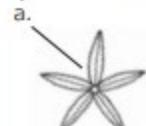
Additional Resources

<https://www.youtube.com/watch?v=syyI039vAZA>

<https://njaes.rutgers.edu/pubs/publication.php?pid=E352>

<http://ccetompkins.org/environment/aquatic-invasives/hydrilla/about-hydrilla>

<https://www.niipp.net/files/niipp/files/hydrilla/uploads/file/Hydrilla%20ID%20Sheet%204.pdf>

INVASIVE		NATIVE
		
<p>Michael J. Grodowitz, U.S. Army Engineer Research and Development Center</p>	<p>Christian Fischer, www.commons.wikimedia.org</p>	<p>Paul Skawinski, Aquatic Plants of the Upper Midwest</p>
 <h3 style="color: red;">HYDRILLA</h3> <p><i>Hydrilla verticillata</i> INVASIVE</p> <ul style="list-style-type: none"> a. whorls of more than 3 leaves b. leaves often have visibly toothed edge c. leaf vein often has small visible spines <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  <p>a.</p> </div> <div style="text-align: center;">  <p>b.</p> </div> <div style="text-align: center;">  <p>c.</p> </div> </div>	 <h3 style="color: red;">BRAZILIAN ELODEA</h3> <p><i>Egeria densa</i> INVASIVE</p> <ul style="list-style-type: none"> a. whorls of more than 3 leaves b. leaves do not have visibly toothed edge c. leaf vein is smooth underneath <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  <p>a.</p> </div> <div style="text-align: center;">  <p>b.</p> </div> <div style="text-align: center;">  <p>c.</p> </div> </div> <p style="text-align: center; font-size: small;">Illustrations: Center for Aquatic and Invasive Plants, University of Florida</p>	 <h3 style="color: green;">AMERICAN ELODEA</h3> <p><i>Elodea canadensis</i> NATIVE</p> <ul style="list-style-type: none"> a. whorls of exactly 3 leaves b. leaves do not have visibly toothed edge c. leaf vein is smooth underneath <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  <p>a.</p> </div> <div style="text-align: center;">  <p>b.</p> </div> <div style="text-align: center;">  <p>c.</p> </div> </div>