



Golden Sands
Resource Conservation
& Development Council, Inc.



Aquatic Invasive Species Quick Guide

Hydrilla (*Hydrilla verticillata* (L. f.) Royle)

Description: Hydrilla, sometimes called water thyme, is a submersed, non-native, perennial aquatic plant in the Hydrocharitaceae family. Long stems contain many whorls of 4-8 short leaves, and tend to be bushy near the top. Leaves are serrated on both sides, and contain several spines on the underside of the midvein. Scaly tubers are produced in the sediments. Dense, overwintering turions can also form in the leaf axils. Small, white, female flowers are produced on long, slender stalks that rise to the surface. Green, male flowers release from the plant and float freely on the surface. Hydrilla prefers soft sediments in nutrient-rich waters.

North American Distribution: Along the west, south, and east coasts of the U.S.. Also documented in TN, IN, IA, and WI.



Hydrilla has long, branching stems with whorls of 4-8 leaves.



Leaves have whorls of 4-8 leaves that are serrated on the margins and have teeth under the midvein.

Dispersal Vectors: Native to Asia and Africa, Hydrilla was introduced to North America through the aquarium trade. Fragments of the plant are readily dispersed by water currents, boat trailers, anchors, motors, and other recreational equipment. Tubers are eaten by waterfowl and remain viable. Hydrilla has been sold through the aquarium trade, and was likely spread to local waters via illegal aquarium dumping. Hydrilla has been found attached to water lilies ordered over the Internet.

Ecological Impacts: Hydrilla forms dense monocultures and can shade out native vegetation. These dense colonies also restrict fish passage, and can cause stunting of fish populations as predator fish have trouble hunting for food. Dense mats can create areas of stagnant water, perfect for mosquito breeding habitat. Hydrilla mats can prevent boat passage, fishing, and swimming.

Control Options: Manual removal of Hydrilla is possible, but usually impractical if large mats are present. Plants must be removed carefully so that turions, tubers, or fragments are not left behind. Mechanical harvesting is widely used and effective at removing vegetation near the surface. Harvesting is not species-selective and can cause further spread through fragmentation.

Fluridone was the most heavily used herbicide for many years, but Hydrilla developed a resistance to this chemical. Endothall-based herbicides are now more common in many areas where fluridone-resistant Hydrilla is prevalent, but plants appear to be developing a resistance to this chemical as well. Use of these herbicides can destroy the stems and leaves, but tubers, turions, and seeds are not destroyed and may re-sprout. Most states require chemical use permits for any herbicide treatments in standing water or wetland situations.

Several biological control agents have been used to control Hydrilla. Grass carp (*Ctenopharyngodon idella*) effectively suppress Hydrilla by feeding on stems and leaves, but they are not species-selective and often destroy much of the aquatic plant community. Grass carp are illegal to possess or transfer in many states. An aquatic weevil (*Bagous affinis*) feeds on the tubers, but only when they are exposed to the atmosphere. Larvae of a fly (*Hydrellia pakistanae*) feed on the leaves, but cause insignificant damage to the plant.



Hydrilla produces small, scaly tubers in the sediments.

Additional Information:

Hetrick, S.A. and K.A. Langeland. 2012. Hydrilla management in Florida lakes. University of Florida IFAS Extension Publication #SS-AGR-361. <http://edis.ifas.ufl.edu/ag370>

Global Invasive Species Database. 2006. *Hydrilla verticillata*. <http://www.issg.org/database/species/ecology.asp?si=272&fr=1&sts=sss&lang=EN>

Photo Credit: Paul Skawinski

This Quick Guide is part of a series on aquatic invasive species, and may be reproduced for educational purposes. Visit us at www.uwsp.edu/uwexlakes/clmn or www.goldensandsrcd.org/our-work/water to download this series of handouts.

Developed by Golden Sands Resource Conservation & Development (RC&D) Council, Inc. as part of an aquatic invasive species (AIS) education program, supported by an AIS grant from the Wisconsin Department of Natural Resources.