

U.S. National Early Detection and Rapid Response System for Invasive Plants

EDRR Fact Sheet

Randy G. Westbrooks. U.S. Geological Survey, Whiteville, North Carolina. USA.
Brittany Cartrette. Southeastern Community College, Whiteville, North Carolina.

Common Name: Hydrilla

Scientific Name: *Hydrilla verticillata* (L.) F. Royle

Family: Hydrocharitaceae

Description: A submersed, rooted aquatic plant that can grow at depths of 20'. **Stems** slender branched, up to 25' long. **Leaves** strap-like and pointed, in bottle-brush whorls of 3-8, up to 0.8" long, 0.1" wide, with serrated margins. **Leaf midribs** reddish in color, undersides with small sharp teeth. **Flowers** tiny, white, with 6 petals, on long stalks. **Reproduction** occurs sexually through the production of seeds. It also occurs vegetatively by fragmentation of the stem, or by sprouting of axillary turions (in the leaf axils) and subterranean turions (attached to the roots).



Genetic Forms: Hydrilla occurs in both monoecious (both male and female flowers on the same plant) and dioecious (male and female flowers on different plant) forms. The dioecious form occurs in the southeastern U.S., California, Poland, Malaysia, Indonesia, and Panama. The monoecious form has been found in the Mid-Atlantic Region of the U.S. (Potomac River near Washington, D.C.), in India, and Indonesia.

Similar Plants: Hydrilla can be confused with Brazilian elodea (*Egeria densa* Planch.) and Canadian waterweed (*Elodea canadensis* Michx.). The leaf midrib of Brazilian elodea is smooth; the leaf midrib of Hydrilla is toothed. The leaves of Canadian waterweed occur in whorls of three along the stem and are up to 0.2" wide.

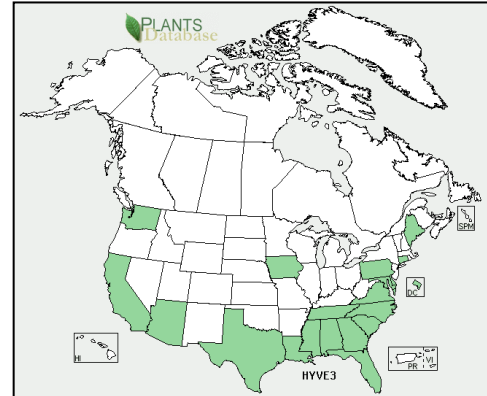
Habitat: Hydrilla invades slow-moving or still water systems, such as ditches, ponds, lakes, rivers, and tidal zones (up to 7% salinity). It can grow in water a few inches deep, to water that is more than 20' deep. It can grow in low to high nutrient conditions. In the U.S., southern populations overwinter as perennials; northern populations (e.g., Connecticut) die back and re-grow from turions in the hydrosol. It can also grow in very low light conditions (1% of full sunlight). This last characteristic gives it a distinct competitive advantage over most other aquatic plants.

Native Range: Africa or Asia – now widespread around the globe.

Pathways of Introduction and Spread: Hydrilla was first introduced into the U.S. in the late 1940s as an aquarium plant from Ceylon (now Sri Lanka). It is now spread primarily as fragments on boats and boat trailers.

U.S. and Canada Distribution:

Ecological and Economic Impacts: Hydrilla is one of the worst aquatic weeds in the United States. It forms dense submersed mats at the surface of the water that can cover hundreds of acres. The dense mats reduce water flow, clog irrigation and hydroelectric equipment, interfere with recreation (boating, fishing, swimming), outcompete native aquatic plants, alter water chemistry, and reduce oxygen levels. In Florida, millions of dollars are spent annually in efforts to keep Hydrilla under "maintenance control".



Physical and Mechanical Control: Lake draw downs are sometimes used in reservoirs with water control structures to allow exposed plants to die and decompose. This is effective if done while the turions are developing in the fall, and prior to their regrowth in the spring. Mechanical harvesters are sometimes used to remove hydrilla from the water for disposal on dry land.

Chemical Control: A number of registered herbicides are used for temporary control of hydrilla. Examples include contact herbicides such as copper sulfate ([Komeen](#) and others), diquat ([Reward](#)), endothall ([Aquathol](#) and others); as well as the systemic herbicides fluridone ([Sonar](#)) and bensulfuron methyl ([Londax](#) and others).

Biological Control: The triploid White Amur (*Ctenopharyngodon idella*), a sterile grass carp from China, has been used under permit to control infestations of hydrilla in some states, in contained water bodies. They are effective in canals systems (e.g., the Imperial Irrigation District of southern California), in small ponds, and lakes, where the fish can be contained, and the removal of all aquatic vegetation is acceptable. A number of insects, including two weevils, two leaf-mining flies, and an aquatic moth, have been introduced to control hydrilla.

Regulatory Status: Hydrilla is listed as a [U.S. Federal Noxious Weed](#). It is regulated as a state noxious weed in [Alabama](#), [Arizona](#), [California](#), [Colorado](#), [Connecticut](#), [Florida](#), [Maine](#), [Massachusetts](#), [Mississippi](#), [Nevada](#), [New Mexico](#), [North Carolina](#), [Oregon](#), [South Carolina](#), [Texas](#), [Vermont](#), and [Washington](#).

Online Resources:

Hydrilla Fact Sheet – USDA Forest Service – Weed of the Week Series.

URL: http://na.fs.fed.us/fhp/invasive_plants/weeds/hydrilla.pdf

Hydrilla Images - U-GA Bugwood Image Gallery.

URL: <http://www.invasive.org/weedcd/species/3028.htm>

Hydrilla Profile – Center for Aquatic and Invasive Plants – University of Florida.

URL: <http://plants.ifas.ufl.edu/node/183>

Hydrilla Profile - USDA Plants Database.

URL: <http://plants.usda.gov/java/profile?symbol=HYVE3>