

Hydrilla

Hydrilla verticillata



Photo courtesy of Chris Evans, Bugwood.org

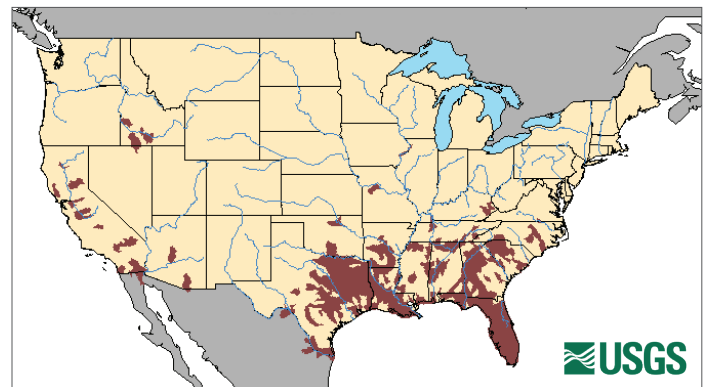
Hydrilla is a submerged, aquatic, perennial plant that many consider nature’s “perfect weed”. Hydrilla is a federally listed noxious weed, making it is illegal to possess, distribute, or transport in the United States. This plant grows and spreads at a very fast rate covering the surface of water bodies and restricting boating, fishing, swimming, and other recreational uses.

Species Description

Hydrilla is an aggressively growing perennial plant that roots itself to the bottom of lakes and other water bodies at depths of up to 12 ft (3.7 m). Its long, branching stems reach up to the water’s surface, where it quickly spreads and takes over. Hydrilla leaves occur in whorls of 3-8, are typically strap-like and pointed with small sharp teeth on the edge. Spines or conical bumps may be found on the midvein on the underside of the leaf, making it rough to the touch. Hydrilla can be found in two forms: dioecious, meaning that male and female structures are found on separate plants, and monoecious, meaning a single plant can have both male and female structures. During the late growing season, generally September-October, small white tubers form on the roots of Hydrilla. These tubers store food and enable the plant to over-winter.

Native & Introduced Ranges

Most likely native to Korea, Hydrilla was introduced into the United States in the 1950s. While the dioecious form appears to spread only south of South Carolina, the monoecious form is spreading both north and south and is the only form found in Pennsylvania. In Pennsylvania, Hydrilla was first reported in the mid-1990s in Adams and Bradford counties, and has since been identified in at least 25 counties spanning the entire state. Currently, Antarctica is the only continent without records of Hydrilla.



Biology & Spread

Both forms of Hydrilla have been introduced in the United States, most likely as aquarium plants. Once released, it easily spread across the United States through freshwater recreational activities such as boating and fishing. Hydrilla reproduces primarily vegetatively; even the smallest living plant fragment can float downstream and form a new plant. This makes it easy for pieces of Hydrilla stuck on boat motors, trailers, livewells or bait buckets to start new infestations. Tubers are also a key component of reproduction and spread as they can remain dormant in the sediment for several years before growing new plants.

Habitat

Hydrilla is able to grow in a wide variety of still and flowing water settings such as freshwater lakes, ponds, rivers, impoundments, and canals. It tolerates a wide range of pH, nutrient, and light levels. Hydrilla is somewhat winter-hardy; however, the optimum temperatures for growth is 68-81°F (20-27°C).

Impacts

Threat to Biodiversity

This invasive plant is characterized by its ability to grow quickly and form dense thick mats at the water surface. Under ideal conditions, Hydrilla can grow up to 2.5 cm (1 in) per day, per stem! These mats prevent sunlight from penetrating into the water and effectively shade out other species growing beneath. As the mats die and decay, bacteria deplete oxygen from the water. Hydrilla can also displace native plant life and shift balanced ecosystems to monocultures, which can alter populations of native fish and other wildlife.

Economic Costs

Hydrilla interferes with both commercial and recreational freshwater activities and can have an expensive impact. Thick mats can hinder agricultural and hydroelectric power production by reducing irrigation flow rates by up to 90 percent and by clogging water intake pipes and filters. Hydrilla impairs recreational activities like swimming, fishing, water skiing, and boating. Heavy growth can entangle and clog propellers, requiring frequent cleanings to travel even short distances.

Photo courtesy of Wilfredo Robles, Bugwood.org.



Prevention & Control

Hydrilla is difficult to eradicate. Most popular control methods include the use of herbicides in combination with biocontrols. Contact herbicides can provide temporary control, while systemic herbicides, which are absorbed and spread throughout the plant, provide more long-term control but tend to act slowly. Herbivorous fish have been used for Hydrilla control where allowed by law. Mechanical aquatic weed harvesters are used to temporarily open boating lanes, but the resulting plant fragments can spread vegetation faster and is therefore not recommended.

Preventing the introduction and spread of Hydrilla is the best way to protect natural habitats from harm.

- Know how to identify and report Hydrilla.
- Always check for and remove plants, mud, and debris from boats, trailers, clothing, and equipment before entering a water body and before leaving a water body.
- Drain all water from bait buckets, bilges, and live wells before transporting to new areas.
- Clean all gear and equipment with hot water (140°F or 40°C) or salt water, OR let boats and equipment dry thoroughly for at least five days before entering a new water body.
- When choosing plants for a pond or water garden, purchase from a licensed nursery and choose regionally native or non-invasive plants. Check with your state natural resource agency to confirm which plants to avoid for your region.

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References:

True-Meadows, S; Haug, E.J; and Richardson, R.J. 2013. Monoecious *Hydrilla*-A review of the Literature. *Journal of Aquatic Plant Management*. 54:1-11.

The University of Georgia, USDA Forest Service, & USDA APHIS PPQ. 2003. Invasive Plants of the Eastern United States: *Hydrilla*.

Posey, MH; Wigand, C; Stevenson, JC. 1993. Effects of an introduced aquatic plant, *Hydrilla verticillata*, on benthic communities in the upper Chesapeake Bay. *Estuarine, Coastal and Shelf Science* 37:539-555.

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