

Exotic Aquatic Plant Management



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EXOTIC AQUATIC PLANT SPECIES

Exotic aquatic plant species cause many of the most serious weed problems in lakes and ponds. Exotic plants are plant species that are not native to this area and have been introduced here inadvertently. Because they have few natural enemies in this region, they tend to grow unchecked often forming dense mats at the water's surface. These dense mats displace native vegetation, reducing diversity and can have serious implications to the aquatic habitat.

The most common exotic aquatic plant species in Michigan are Eurasian watermilfoil (*Myriophyllum spicatum*), Curlyleaf pondweed (*Potamogeton crispus*) and Starry stonewort (*Nitellopsis obtusa*). Other less common species include European frog-bit (*Hydrocharis morsus-ranae*), Cabomba (*Cabomba caroliniana*) and Parrot feather (*Myriophyllum aquaticum*). However, the majority of management efforts focus on the three main species.

EURASIAN WATERMILFOIL

Eurasian watermilfoil is native to Europe, Asia and northern Africa. It was introduced to the United States as early as the 1940s. Since its introduction, it has been identified in 45 states. Eurasian watermilfoil grows in dense stands in water less than one foot to depths of greater than twenty feet, depending upon water clarity. These dense stands in mid to shallow depths will often form surface canopies shading out native plants, restricting water use and altering habitat for fish and other organisms.

Eurasian watermilfoil can reproduce by seed or fragmentation. However, fragmentation is thought to be the main mode of distribution across waterbodies and within a waterbody. Boat activity

can increase fragmentation, but auto-fragmentation can occur multiple times within the growing season. These fragments are buoyant and will float to new areas where they will produce roots, settle to the bottom and start a new colony.



Although hybridization of Eurasian watermilfoil and native milfoil species have made control more difficult in some situations, Eurasian watermilfoil and its hybrid variations are almost exclusively through the use of aquatic herbicides. Other options exist, such as suction dredging or sediment covers, these options only apply to limited areas and do little to combat lake-wide infestations. Mechanical harvesting is not recommended for Eurasian watermilfoil as it increases fragmentation, has very limited control time, is not cost effective and tends to increase the distribution and density of Eurasian watermilfoil.

MICHIGAN LOCATIONS

Alto Location
8865 100th St. SE
Alto, MI 49302-9221

Morrice Location
10785 Bennett Dr.
Morrice, MI 48857-8760

Evart Location
9826 S Industrial Drive
Evart, MI 49631

Gaylord Location
2455 South Otsego Ave.
Gaylord, MI 49735

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CURLYLEAF PONDWEED

Curlyleaf pondweed is native to Europe and is thought to have been introduced to the United States as early as the mid-19th century. It typically grows in water depths of three to fifteen feet. Like Eurasian watermilfoil, Curlyleaf will form dense stands and often forms surface canopies from mid-May to Mid-June. However, unlike Eurasian watermilfoil, Curlyleaf pondweed canopies will usually disappear by early July each year as the plants complete their growing cycle.



Leslie J. Mehrhoff, University of Connecticut, Bugwood.org

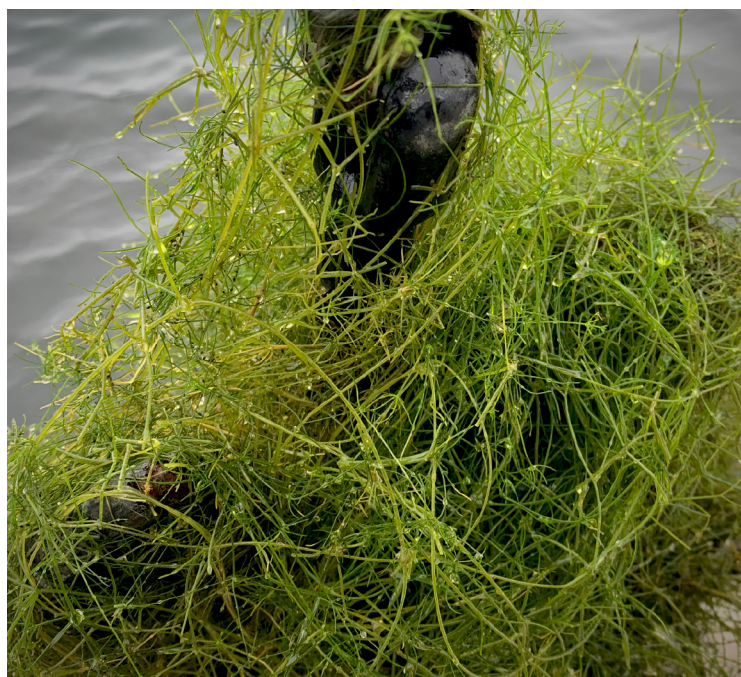
Reproduction of Curlyleaf pondweed is mainly through the production of buds called turions. These turions are formed on the plants early in the spring and drop to the bottom sediments. There they can remain dormant or germinate and produce seedlings which will remain dormant through the fall and winter. Once spring water temperatures reach around fifty degrees Fahrenheit, the seedling will grow towards the surface at an estimated rate of 1 to 2 inches per day. As they grow, turions are produced and the cycle repeats.

Control options for Curlyleaf pondweed include aquatic herbicides and mechanical harvesting. Mechanical harvesting can be an effective tool, but aquatic herbicides are usually far more cost effective. Either management option, if done prior to turion production, may help control future growth of Curlyleaf pondweed. However, turions may lay dormant in the sediments for more than five years so multiple years of either approach would be needed before reductions in Curlyleaf pondweed populations could be expected.

STARRY STONEWORT

Starry stonewort is native to Europe and Asia. It was first discovered in the St. Lawrence River in 1978. In 1983, it was found in the Detroit River near Belle Isle and has since infested many Michigan lakes. Starry stonewort is a macroalgae, and not a vascular aquatic plant. It resembles a close relative, the native macroalgae Chara. Unlike Chara, which is generally thought of as beneficial to aquatic environments, Starry stonewort will form dense blankets often several feet thick covering over native vegetation habitat and fish spawning areas.

Reproduction occurs through either star shaped structures called bulbils that are seed like formations or through vegetative spread. Fragments of Starry stonewort are capable of producing new colonies when transported within a waterbody or between waterbodies.



Control methods for Starry stonewort include copper products and other herbicides that are effective for algae, or mechanical harvesting. Mechanical harvesting can increase the spread of Starry stonewort and may not be economically advantageous compared to herbicides due to its high density and quick regrowth. Other control methods like suction dredging may be effective in small areas or for new infestations, but is not feasible for large areas or combating lake-wide infestations.

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