

Invasive Plants in Pennsylvania

Eurasian water-milfoil

Myriophyllum spicatum L.



Richard Old, XID Services

Background:

Eurasian water-milfoil is native to Europe, Asia and northern Africa. It was accidentally introduced into the U.S. sometime between the late 1800s and 1940s, either from the aquarium trade or attached to boats.

Range:

This aquatic invader can now be found throughout most of the continental U.S., with concentrations around the Great Lakes, New England and Pacific Northwest.

Description:

This submerged aquatic invasive has stems that grow up to the water's surface, usually 10 feet in length but potentially as much as 30 feet. The delicate leaflets give the plant a feathery appearance.

Habitat:

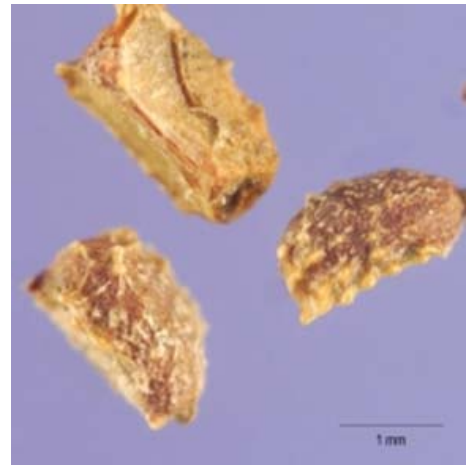
Found in lakes, ponds and other aquatic environments where stagnant to slow moving water is found. It prefers fresh water but can tolerate brackish conditions. This plant thrives in disturbed areas.



Alison Fox, Univ. of Florida

Biology and Spread:

Most regeneration of this plant is from its rhizomes, but new plants may emerge from each joint on the stem and root upon contact with mud. The plants produce seeds (*see image below*) but they are not considered an important means of dispersal.



Steve Hurst, USDA NRCS

Ecological Threat:

Once this plant becomes established the dense mats of leaves block light, leading to a decline in the abundance of native plants. It can also reduce habitat for fish spawning and breeding and impact recreational uses.

How to Control this Species:

Prevention

Monitoring and prevention are the most important steps to keep milfoil under control, since it can be difficult to treat once it's present. Check all equipment and boats for plant fragments before leaving the area. Remove all debris, bag and dispose of.

Limiting disturbance to lake bottoms and the native vegetation growing there will help minimize the chances of Eurasian water milfoil colonizing the area.

Manual and Mechanical

Large harvesting equipment can be used to mechanically remove large infestations of milfoil. A rake can be used for smaller infestations.

Harvesting should take place before most native plants emerge, usually early summer. Substantial regrowth may occur if harvesting takes place too early in the season. Multiple harvests in the same growing season work best. All plant fragments must be removed for adequate control.

Lowering or raising the water level can be effective in reducing the plants' growth. Shade barriers may also be used to reduce overall growth rates.

Chemical

Fluridone is a selective herbicide that can be used to treat milfoil and several other invasive aquatic weeds, although it can also harm native aquatic plants, so its use should be limited. Application should be made before or during the early stages of plant growth.

Look-A-Likes:

There is a native version of watermilfoil – Northern watermilfoil (*Myriophyllum sibiricum*) that looks very similar to the Eurasian species, so extreme care must be taken when treating a waterbody. It also resembles our native coontail (*Ceratophyllum* spp.) and the invasive parrot's-feather (*Myriophyllum aquaticum*).



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Eurasian Watermilfoil



Species at a Glance

Eurasian watermilfoil is a feathery submerged aquatic plant that was once commonly sold as an aquarium plant. It quickly forms thick, damaging mats that are causing harm in shallow areas of rivers and lakes throughout North America.

Species Description

Eurasian watermilfoil has small (<2 cm long) feathery leaves that are arranged in whorls of 3-6 (four leaves per whorl is common) around slender stems. The plant grows underwater from roots attached firmly in the sediment. Tiny pink flowers grow on shoots that rise above the water's surface. In Pennsylvania, these plants usually die back to the roots during the winter. Eurasian watermilfoil may be confused with bladderworts, hornworts, mermaid weeds, and other leafy milfoils.

Native & Introduced Ranges

Eurasian watermilfoil is native to Europe, Asia, and northern Africa. It was first discovered in the eastern United States in the 1940s but may have arrived as early as the late 1800s.

Since its introduction, it has spread across inland lakes and streams, clinging to boats and waterfowl. The history of its spread in the United States is not well documented because it bears such a close resemblance to native species of watermilfoil; however, it is now known to be established in nearly every U.S. state, and at least three Canadian provinces. In Pennsylvania, Eurasian watermilfoil is common in lakes, ponds, and rivers in all regions of the Commonwealth.

Biology & Spread

Eurasian watermilfoil does not rely on seeds for reproduction because they germinate poorly under natural conditions. Instead, it reproduces by fragmentation, which is when plant fragments break off and float via water currents, allowing it to disperse long distances. It can also cross land to new waters when these fragments, which can stay alive for weeks if kept moist, hitchhike on boats, boat trailers, motors, and fishing equipment.

Habitat

Eurasian watermilfoil is an extremely adaptable plant that is able to thrive in a variety of conditions. It is generally found in water less than 20 ft (6 m), and mats form in waters less than 15 ft (4.5 m). It grows in still to flowing waters, and tolerates a wide temperature range, even surviving under ice.

Impacts

Threat to Biodiversity

The rapid growth rate of Eurasian watermilfoil allows it to form dense mats across the water's surface. These mats shade out native plants growing beneath. The reduction in native plant growth results in monotypic stands of watermilfoil that provide only a single habitat and food source for other organisms. In addition, lower numbers of nutrient-rich native plants impact the composition of aquatic invertebrates and may impair the ability of some fish species to spawn. Thick mats of milfoil can also slow the flow of moving water, decreasing the amount of oxygen available to fish and other organisms.

Economic Costs

Dense mats of Eurasian watermilfoil choke waterways and interfere with recreational activities such as swimming, fishing, and waterfowl hunting. They can also interfere with boating, as plant fragments become wrapped around propellers. Heavy infestations can obstruct industrial and power generation intakes and harm the economy by reducing local property values.

Prevention & Control

The physical or chemical removal of Eurasian watermilfoil mats can be expensive and are usually only temporary measures. Even the smallest plant fragment can colonize an uninfested area, making permanent removal extremely difficult. Preventing the spread of Eurasian watermilfoil to new areas is the best way to prevent further ecological impacts. Learn how to identify Eurasian watermilfoil from native milfoil species. Always remove any visible mud, plants, and debris from boats, trailers, and equipment before leaving a water body. Eliminate water from all equipment before transporting. Clean gear and equipment with either hot water (140°F/60°C), or salt water; OR let boats and equipment dry thoroughly for at least five days before entering a new water body.

References:

- Wisconsin Department of Natural Resources. 2008. Eurasian Watermilfoil. Factsheet.
- Rhoads, A.F., & Block, T. A. 2000. Eurasian Watermilfoil (*Myriophyllum spicatum* L.). Morris Arboretum of the University of Pennsylvania fact sheet.
- State of Washington Department of Ecology. Non-native invasive freshwater plants – Eurasian Watermilfoil.

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