



EURASIAN WATER-MILFOIL

Myriophyllum spicatum

What is Eurasian Water-milfoil (EWM)?

Invasive species disrupt the stability of lakes and threaten native plants and animals. One invasive species of special concern is Eurasian water-milfoil (EWM). EWM was introduced into North America and has spread to numerous water bodies across the nation. During the 1960s, this aggressive submersed plant found its way into Michigan waters.

Eurasian water-milfoil forms thick underwater beds of tangled stems and a vast canopy mat of vegetation at the water's surface. These dense beds cause loss of native plants, degrade water quality, and may reduce habitat for fish, invertebrates and wildlife. They also hinder boating, swimming and fishing. Many lake organizations and local governments devote much of their management budgets to control this invasive plant. EWM costs citizens of Michigan millions of dollars in plant control and lost tourism revenue annually.

How does it spread?

This prolific plant spreads by shoots and runners that creep along the beds of lakes and rivers. EWM has become a successful invader primarily by means of stem fragments transported from one water body to another. A single fragment can take root and form a new colony. Commonly it's transported by boats and trailers, but could also be transported on SCUBA gear, water skis or waterfowl.

EWM is most successful in lakes disturbed by cultural activities such as shoreline construction, watershed runoff, aquatic plant control projects, heavy boat traffic, or stressed by pollution. It has difficulty becoming established in waters with healthy populations of native plants.

What does Eurasian water-milfoil look like?

EWM is one of eight water-milfoil species found in Michigan and the only one that is not native. The most common native water-milfoil in Michigan lakes is northern water-milfoil (*Myriophyllum sibiricum*). It bears a strong resemblance to EWM but it is not prone to the rapid growth and canopy formation that make EWM a nuisance.

It is important to be able to distinguish EWM from similar aquatic plants.

- EWM is a submersed aquatic plant with feather-like leaves arranged in whorls (circles) on the stem.
- There are usually 12 to 21 pairs of leaflets per leaf.
- The leaves have a distinct feathery appearance, with the lower leaflet pairs about half the length of the midrib.
- Stem tips are tassel-like.
- Branching is abundant in water 3 to 10 feet deep.

How do you control EWM?

Early detection of EWM growth is critical in stopping the plant from becoming a widespread problem. The best chance to halt this non-native invader is when it first appears on the scene. EWM often appears near boat landings and at disturbed sites.



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Michigan Sea Grant College Program
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New colonies are best removed before they expand. Hand pulling and removal from the water is a simple and effective control method for small areas. Harvesting, raking or screening the bottom also works well. Milfoil can be effectively treated with selected chemicals early in the summer before plants flower.

A permit from the Michigan Department of Environmental Quality is required for chemical treatment or bottom screening. Because of the potential to disrupt the lake's beneficial native plants, whole-lake herbicide treatment is not generally permitted, unless EWM has spread over the entire lake surface.

Biological control of EWM is still an uncertain approach. A small aquatic weevil (*Euhrychiopsis lecontei*) feeds on milfoil and actually prefers EWM. Weevils are found in many Michigan lakes. To locate a weevil, look in milfoil stems for signs of damage. Small holes or weak spots in the stems often point to weevil damage. These holes allow water to enter the stem, expose the plant to bacterial infection and decrease the plant's buoyancy. The plant will drop lower into the water column and will not canopy out on the surface. Over time, weevils can impact the populations of EWM, but complete eradication is unlikely. Additional research and development is needed before biological control with weevils can be considered a precise management tool.

How can you help?

EWM is often moved between water bodies by small fragments transported on recreational equipment. Commonly it is transported by boats, trailers, bail buckets, live wells and fishing equipment. To help prevent the spread of EWM and other invasive species, please take the following steps:

- Inspect and remove any visible mud, plants, fish or animals before transporting.
- Drain water from equipment (boat, motor, trailer, live wells) before transporting.
- Dispose of unwanted live bait in the trash.
- Learn to recognize EWM.
- Start a volunteer watercraft inspection demonstration program to help educate boaters on how and where EWM and other invasives are most likely to hitch a ride into waterways.
- Begin monitoring boat landings, marinas and inlets for the first sign of invasion.
- If you suspect a new infestation, report it to your Michigan Sea Grant Extension office www.miseagrant.umich.edu/about/contact.html, or contact Michigan State University's inland lake specialist at wandellh@msu.edu or (517) 432-1491.

Michigan law now restricts the possession of Eurasian water-milfoil.

Adapted from: The Facts on Eurasian Water-milfoil, produced by Wisconsin's Clean Boats, Clean Waters program.