

Eurasian Watermilfoil: Options for Control

Eurasian Watermilfoil, a class-B designate noxious weed in Lincoln County, Washington (*Myriophyllum spicatum*). Eurasian watermilfoil is a feathery, submersed aquatic plant native to northern Europe and Asia. It was introduced into North America around the late 1800's.

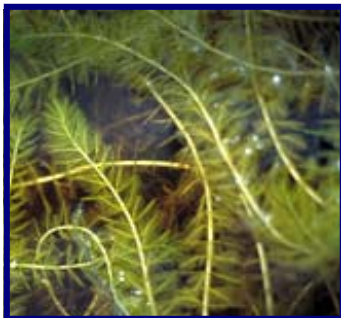
Eurasian milfoil, a **highly invasive** non-native plant, is **one of the worst aquatic plant pests in North America**. Like native aquatic milfoils, it has **feather-like** underwater leaves and emergent flower spikes. Usually leaf shape and size can distinguish it from other milfoil species. However,



Much of the spread in the U.S. is due to boating movement.



Small flowers borne on leafless, reddish spikes, which stand a few inches above water, submerge after pollination.



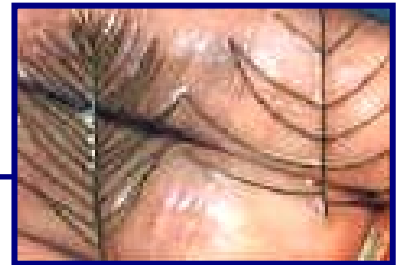
The thick mats it produces can impact wildlife and fish, and decrease property values.



Eurasian milfoil is a variable species, often making it **difficult to identify** without chemical or **DNA analysis**. Because it is an

extremely invasive plant, it is important to distinguish Eurasian milfoil from native milfoils. **Every effort should be made to prevent the spread of this plant.** The best way to distinguish Eurasian watermilfoil from the native Northern watermilfoil is to place the weed in a plastic bag and take to your County Noxious Weed Control Board office for technical help. Where they may have to send it off for verification.

Eurasian watermilfoil reproduces mainly by floating plant fragments produced by waves and boaters, which are then spread by water currents making the plant difficult to contain. New plants develop when the fragments sink to the bottom and root.



Non-native Eurasian watermilfoil on the left, native Milfoil on the right.



Leaves in comb-like clusters or whorls of 3 to 4.



Milfoil grows rooted in water from 1 to 33 feet deep, regularly reaching the surface while growing in water 10 to 17 feet deep, and can survive under ice.

Key identifying traits

- Each Eurasian watermilfoil leaf generally has **12 or more leaflet pairs**. This feature can be used 70 percent of the time to distinguish Eurasian from other native milfoil species.
- **Leaves** appear to look like fine herring bones or **feather-like**.

Biology and ecology

- **Perennial** plant, **highly invasive**. Occurs in ponds, lakes, reservoirs, and slow flowing rivers and streams.
- Grows in **shallow** or **deep** water, **fresh** or **brackish** water, a **wide temperature range** as well as a pH from 5.4 to 11.
- Grows best in **fine textured** inorganic soil where it can get **plenty of sunlight**.
- **Spreads** by plant **fragments** and **rhizomes**, sprouting by seed is rare.
- **New shoots** begin to grow from the over wintering **root crowns** when **water temperature** reaches about **60 degrees F** in the **spring**.
- **Flowering** generally occurs in July. Auto fragmentation usually occurs after flowering.
- Plants die back to the **roots** in the fall. These roots store carbohydrates in order to initiate the **rapid growth** in the spring.



⇒ Milfoil can interfere with boating, fishing, and swimming, when one encounters the dangerous dense mats of vegetation that can form. The vegetation can become entangled in boat propellers and boating equipment. Milfoil has also been known to clog irrigation pipes and water and power generation intakes.

It's most commonly mistaken for Northern watermilfoil.

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For this and other publications see our website at: www.co.lincoln.wa.us/weedboard

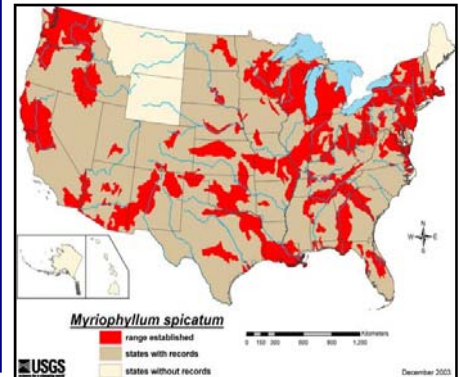


Chemical control

The most effective and commonly used herbicide is 2,4-D (2,4-dichlorophenoxy acetic acid). It is effective in concentrations as low as 1 ppm for an exposure period of 48 hours when there is no water movement. A concentration of 5 ppm for only 1 hour will kill all plants. Application of 2,4-D at high concentrations was reported to have no direct impact on aquatic fauna or water quality.



Cross-section shows the usual four-leaf whorl, each leaf having 11 to 16 leaflet pairs.



Control Measures

- **Prevention:** Learn to identify plants; beware of and check for plant **fragments** transported on watercraft and trailers.
- **Biological:** Milfoil weevil augmentation studies for Eurasian management are being **proposed** for Washington State.
- **Cultural:** **Drawdowns** can be successful, but there are many variables; air temperature, substrate composition (sand vs. clay), etc.
- **Mechanical:** Harvesting, rotovation, pulling, dredging and bottom barriers.
- **Chemical:** 2,4 D has been the **product of choice** in controlling this plant due to its selective nature of not harming most native plants.
- Other herbicides include diquat, fluridone, triclopyr.
- Systemic herbicides taken up through the entire plant are most successful.
- **Read the label** instructions before applying.



Milfoil reproduces rapidly and can infest an entire lake within two years of introduction.



Eurasian watermilfoil can dangerously interfere with recreational activities.



Milfoil adversely effects fish habitat by raising temperature and changing the pH in the water column.

Photos and references courtesy of : An Aquatic Plant I.D. Manual for WA Freshwater Plants; Jane Alden Stevens; WSNWCB, written findings; University of California, Agriculture and Natural Resources; www.ecy.wa.gov; Invadingspecies.com.