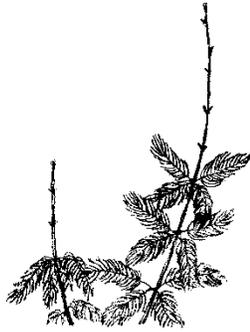


What is Eurasian watermilfoil?

It is a non-native, invasive submersed aquatic plant that is native to Europe and Asia. It was discovered in the eastern US sometime before 1950. In Minnesota, it was first recorded in Lake Minnetonka in 1987.



How to identify it

Eurasian watermilfoil typically has 12 to 21 pairs of leaflets. The native northern watermilfoil, with which it is often confused, usually has 5 to 9 pairs.



Why is it a problem?

Milfoil can interfere with recreational and other uses of lakes and rivers by producing dense mats at the water's surface. These mats are similar to, but can be more extensive than, those produced by native vegetation. Matted milfoil can displace native aquatic plants and alter environmental conditions, which in turn may harm fish and wildlife.

Where is milfoil a problem?

In Minnesota, milfoil has caused problems in lakes by producing extensive mats where water depths are less than 15 feet, water clarity is high (mid-summer Secchi disk readings of six feet or more), and the fertility of the bottom ranges from moderate to high.

Milfoil has not caused extensive problems in every body of water where it is established. Milfoil generally does not produce mats at the surface in water more than 15 feet deep. In lakes with low

water clarity (mid-summer Secchi disk readings less than six feet), milfoil has not produced mats in water more than six feet deep, if at all. In areas of lakes where the fertility of the bottom is low, for example in sandy areas, the growth of milfoil and aquatic plants in general tends to be low.

When is milfoil a problem?

Milfoil may cause problems in a lake one year, but not the next. This appears to be mainly due to the weather, which can cause variations from year to year in environmental conditions in lakes, especially clarity, temperature, and depth of water. These in turn can cause large variations in the abundance of aquatic plants, including milfoil.

What can be done about problems?

Problems caused by milfoil can be managed by treatment with herbicides or mechanical removal of plants (see fact sheet entitled "How to control Eurasian watermilfoil"). On lakes where matted milfoil causes unavoidable problems in public-use areas, the Minnesota Department of Natural Resources (DNR) offers limited funding for control by lake associations or local units of government. Funding is available only to organizations on lakes that have public water access.

How does it spread?

Milfoil is believed to spread from one body of water to another primarily by the unintentional transfer of plant fragments, primarily on trailered boats.

What can be done to prevent spread?

The most important action that you can take to limit the spread of milfoil and other aquatic invasive plants is to remove all vegetation from your watercraft before you move it from one body of water to another.

If you think that you have found a new infestation of Eurasian watermilfoil, please contact the DNR (see list of contacts on next page). It is very helpful to send a sample of the suspected milfoil plants to the DNR for identification. Put suspected milfoil in a zip-loc bag and mail it to the regional contact.

Regulatory Classification

Eurasian watermilfoil and its hybrids are classified as *prohibited invasive species* in Minnesota. It is illegal to possess, buy, sell, transport, and introduce.

How to Control Milfoil

Past experience in Minnesota and elsewhere has shown that eradication or elimination of Eurasian watermilfoil, hereafter called milfoil, from lakes is not a realistic goal. Nevertheless, problems caused by milfoil can be managed by controlling the plant.

Mechanical control of milfoil

Mechanical control means to cut or pull milfoil; this may be done by hand or with equipment such as rakes or cutting blades. An owner of lakeshore property may cut or pull submerged aquatic plants, including milfoil, in an area of 2,500 square feet or less, as long as the area will extend along no more than 50 feet of shoreline or one-half of your frontage, whichever is less, without obtaining a permit from the Minnesota Department of Natural Resources (DNR). This area may include a channel 15 feet wide to open water. All plants that are mechanically controlled must be removed from the lake. Any other control of milfoil or other aquatic plants requires a permit from the DNR.

Another method of mechanical control in small areas is the use of an Automated Untended Aquatic Plant Control Devices (AUAPCD), such as the Crary WeedRoller. Use of these devices requires a permit from the DNR.

In large areas, mechanical control usually involves the use of floating, motorized harvesters that cut plants and remove them from the water for subsequent disposal on land. Mechanical control with motorized harvesters or AUAPCD should only be done in lakes where the plant has spread throughout the lake since these methods can create fragments that increase milfoil's spread within a lake.

Use of herbicides to control milfoil

There are a small number of herbicides that are approved for control of milfoil and other aquatic plants in Minnesota lakes. Any application of herbicide to public waters in Minnesota requires a permit from the DNR Division of Fisheries.

Systemic herbicides and milfoil

Systemic herbicides are taken up by plants and can move within the plant, e.g., from leaves to roots. There are two systemic herbicides used for control of milfoil in Minnesota: 2,4-D and triclopyr. Both herbicides can kill leaves, stems, and roots, which can result in control that lasts a whole season or possibly longer. Triclopyr and 2,4-D are most effective when applied to actively growing milfoil,

which usually means treatments in spring and early summer before July. Triclopyr and 2,4-D provide selective control because they reduce milfoil and a few native species, but do not harm most native submersed aquatic plants. *Note: Mention of a particular product in this sheet does not constitute endorsement by the DNR.*

Contact herbicides and milfoil

Contact herbicides damage or kill only parts of plants with which they come into contact; they are not taken up by plants or moved within the plant. There are two contact herbicides used in Minnesota: endothall and diquat. Control of plants with contact herbicides may be short-lived because roots are not killed, so the plants grow back. Repeated treatments within a season may be necessary. It is not necessary that milfoil be actively growing in order to be controlled with contact herbicides, so they are effective whenever they are applied. Contact herbicides are generally considered to be non-selective, though some selectivity may be achieved by making treatments when certain species are not growing, for example, during early spring.

Limits on the amount of control

The DNR limits the amount of control of milfoil to protect lakes, not to protect milfoil. Unlimited control of milfoil can cause excessive loss of associated native plants, problematic reductions in habitat for fish and wildlife, and decreases in water quality. Also, removal of native vegetation can create an opportunity for invasion by milfoil.

Permits and technical assistance

To apply for permits to control aquatic plants, please contact the nearest area office of the Division of Fisheries. If you would like more information on prevention or management of milfoil or other aquatic invasive species, contact the nearest staff in the DNR Invasive Species Program:

Southern MN, New Ulm 507-359-6079

Northwest MN, Park Rapids 218-699-7293

Northeast MN, Grand Rapids 218-999-7805

Central and West Central MN,
Brainerd 218-833-8645;
Fergus Falls 218-739-7576 ext. 259

Central and Southeast MN,
St. Paul 651-259-5828

Statewide, DNR Central Office - St.
Paul 651-259-5100

