

From Shore to Shore

*"For Minnesota citizens promoting
the health of our rivers and lakes"*

Newsletter 55
Jan-Feb 2004

on the web at www.shorelandmanagement.org/citizen/index.html

Calendar of Events

Shoreland Revegetation Series

March 11 & 25, 2004—

Fergus Falls

March 19 & April 16, 2004 —

Thief River Falls

Planting dates TBA for the above series.

Intro to Shoreland Revegetation

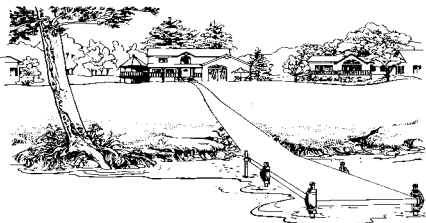
April 23, 2004—Grand Rapids

Shoreland Volunteer Training

March 13, 2004 — Mora

April 23, 2004 — Brainerd

For more details of these and other shoreland workshops, including registration options and fees, visit: www.extension.umn.edu/water/shore



Minnesota Water 2004

March 23-24, 2004—Minneapolis

Conference website:

<http://coafes.umn.edu/Water2004/>

2004 Lakes and Rivers Conference

April 29 - May 1, 2004—Deerwood

For information, contact MLA at 218-824-5565 or visit www.mnlakes.org

Curly-leaf pondweed: no sure answers to a growing problem

Curly-leaf pondweed has been identified in over 500 water bodies in Minnesota. This non-native aquatic plant is often characterized as an invasive nuisance species and during the past few years many shoreland property owners have experienced increasing problems caused by its growth and spread. Requests for information and assistance with managing curly-leaf pondweed infestations have increased over the past two years. In response, the University of Minnesota Extension Service Shoreland Education Program recently offered three workshops to help property owners, local units of government, and lake association leaders better understand how to manage this nasty invader.

Workshops in Big Lake, Nisswa, and Richfield attracted nearly 150 participants who learned about the value of preserving native aquatic plants, the life cycle and characteristics of curly-leaf pondweed, various management methods (cutting, harvesting, chemical and physical options), recent research, and the permitting process for curly-leaf pondweed control. Speakers included representatives from the University of Minnesota Extension Service, Minnesota Sea Grant, Minnesota DNR, local governments, Minnesota Lakes Association, and private consultants and lake management professionals. Lake association leaders also shared their experiences in managing curly-leaf pondweed. The take-home messages for attendees: Preventing the introduction of curly-leaf pondweed into a water body is the only real "control." There is, to date, no "silver bullet" method of eradicating curly-leaf pondweed once it has invaded a water body. Several factors need to be considered (with the help of natural resource professionals) before selecting an appropriate management method for a lake. Management of curly-leaf pondweed is costly, ongoing, requires a DNR permit, and may alter the ecology of the lake.

These workshops were co-sponsored by the Water Resources Center, Sea Grant Program, Minnesota Extension Service, Minnesota Lakes Association, and the Initiative Foundation.

Included in this issue of From Shore to Shore is a curly-leaf pondweed identification handout for you to use, make copies, and share.

Eurasian watermilfoil and fluridone herbicide

Many Minnesotans are familiar with Eurasian watermilfoil, or simply, milfoil. Milfoil is an invasive and non-native, submersed aquatic plant that causes problems when it produces mats of vegetation on the water's surface. These mats, which are more extensive than those produced by native plants, can interfere with recreation and access to open water.

Controlling milfoil in lakes where it has been introduced can be a big challenge. Our experience over the past ten years with this plant is that permanent eradication or elimination of the non-native plant from a lake is not a realistic goal. A realistic goal is to manage problems caused by milfoil.

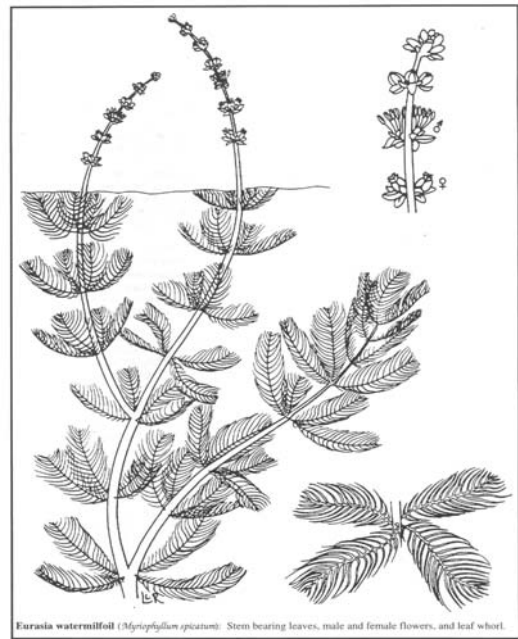
Physical methods such as cutting and harvesting can be effective in controlling milfoil. The use of herbicides is believed by many people to be the easiest, least expensive, and most effective strategy. One product that has generated much interest among Minnesotans interested in control of milfoil is fluridone, which is the active ingredient in Sonar™ or Avast!™ herbicides.

My purpose in writing this article is to describe the background within which the Department of Natural Resources (DNR) is evaluating the potential use of fluridone in Minnesota.

There are two categories of herbicides allowed for control of submersed aquatic plants: contact herbicides or systemic herbicides. Generally, contact herbicides act more quickly than do systemic herbicides.

Contact herbicides only affect the plant parts contacted, usually just leaves and stems. As a result, control produced by contact herbicides often is of shorter duration than control produced by systemic herbicides. The latter can be absorbed by the plant and moved within the

plant. This means that systemic herbicides can control roots and other underground plant parts, as well as stems and leaves. Generally, control of submersed aquatic plants in Minnesota is repeated annually.



Eurasia watermilfoil (*Myriophyllum spicatum*). Stem bearing leaves, male and female flowers, and leaf whorl.

It is important to remember that any use of herbicides in Minnesota lakes requires a permit from the DNR. In Minnesota, herbicides are usually applied as 'spot-treatments' to control submersed plants in limited areas adjacent to privately-owned shoreline. These areas may extend along 50 to 100 feet of each property's shoreline and 100 to 150 feet lake-ward. On a whole-lake basis, the cumulative total of spot-treatments is not allowed to exceed 15 percent of the littoral zone, the area that is 15 feet deep or less. This limit is necessary because submersed plants, even milfoil, can provide habitat for fish and wildlife, protect water quality, and limit erosion of shorelines. This limit allows sufficient control for access and recreation on most lakes and a variance can be issued to allow larger treatments, if necessary.

(Eurasian watermilfoil continued)

With this background in mind, let's consider fluridone, a systemic herbicide. The principal difference between fluridone and other herbicides is that fluridone cannot be used effectively for spot-treatments, but must be applied to whole bays or lakes. The principal reason for considering fluridone is that milfoil is highly susceptible to this herbicide, which can provide lake-wide and multi-year control of this non-native plant.



At present, the DNR does not allow operational whole-lake treatment with fluridone to control milfoil due to the lack of conclusive information on the selectivity of fluridone. If this herbicide could remove only milfoil and allow native plants to survive or, better yet, increase, then the DNR would have fewer reservations about use of this product. The purpose of the DNR's continuing evaluation of fluridone is to increase our understanding of the effects of this product on native plants, as well as possible indirect effects on water quality and perhaps other aspects of lake ecosystems. The overall challenge for users of Minnesota's lakes and the DNR is to determine whether the benefit of controlling milfoil by whole-lake treatment with fluridone is worth the risk of possible harm to lakes. In a following article, I will provide an update on the DNR's continuing evaluation of this herbicide.

Article submitted by: Chip Welling; Coordinator, Eurasian Watermilfoil Program; Minnesota Department of Natural Resources; 500 Lafayette Road; Saint Paul, MN 55155-4025; 651-297-8021; chip.welling@MnDNR.state.mn.us

Did You Know?

The University of Minnesota Shoreland Education Team has joined up with the Woodland Advisors Program to submit a proposal to the Legislative Commission on Minnesota's Resources. We are looking for funding to hire a coordinator, who would help us combine efforts and share resources between the two programs to increase and strengthen our volunteer network and the support that we provide to our volunteers. Particularly in these times of shrinking state budgets, volunteers like you are critical to extending the work of agencies and helping improve our environment at the local level.

COUNTY PLANT SALES!

An annual spring event sponsored by many Soil and Water Conservation Districts (SWCDs) in Minnesota counties is the *Tree and Shrub Sale*. These sales offer Minnesota residents a cost-effective source of plant materials to revegetate their properties for erosion control and habitat restoration. Participating counties offer a unique selection of native and non-native trees and shrubs. Sales are not limited to county residents—anyone can order as long as they can arrange to pick up the plants at the designated distribution point in the county on designated distribution dates in the spring. Contact your local SWCD for more information.

Featured below are Sherburne and Itasca County SWCDs that have taken the *Tree and Plant Sale* one step further—they are also offering ***native wildflower, grass and sedge seedlings*** specially selected for shorelands and adjacent uplands in their region. Property owners in these and adjacent counties are encouraged to take advantage of this opportunity to provide the following benefits to their properties:

- Protect against shoreline erosion—deep-rooted sedges (grass-like plants) at the water's edge resist erosion from waves and ice
- Revegetate bare soil and poor turf— native shoreland and upland grass and flower species adapted to the site conditions will produce a healthy groundcover that will resist erosion
- Improve wildlife habitat—providing native ground, shrub and tree layers of vegetation to your property will increase the number of butterfly, bird, and other wildlife species that visit
- Minimize chemical and water use—native plants adapted to the site require **no** herbicides, pesticides, or fertilizers; and once established they do not require watering
- Enhance natural beauty—flowers, grasses, shrubs and trees can provide vivid colors and interesting leaf textures in every season of the year

Sherburne County SWCD Tree, Shrub, and Native Plant Programs

A flat of 60 native shoreland flowers, grasses and sedges (representing 10 perennial species) is available for \$57.00 including tax. Plant orders will be accepted through May 1 and be available for pick-up in early June.

Bare-root trees and shrubs are available in bundles of 25 for \$25/bundle. Pick-up dates for trees and shrubs will be in late April or early May.

For more information and order forms contact Gina Hugo at (763) 241-1170 ext. 101 or gina.hugo@mn.usda.gov

<http://www.sherburneswcd.org>

or visit the following website:

<http://www.sherburneswcd.org>

Itasca County SWCD Native Plant Sale

Native perennial flowers, grasses and sedges are available in 4-packs of perennials for \$6/pack of four plants.

Native trees are available as containerized seedlings and are sold in bundles of 10 for \$10/bundle.

Native shrubs are available in 4-inch pots and are sold in bundles of 5 pots for \$20/five shrubs

The deadline for ordering is April 1, 2004. Anticipated pick-up dates are May 16 & 17, 2004.

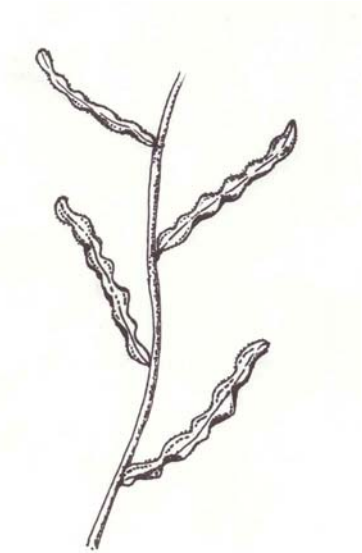
To request an order form and brochure, or for additional information, contact Andy or Kathy at 218-326-0017 or andy.arens@mn.usda.gov



The University of Minnesota is committed to the policy that all persons shall have equal access to its programs, facilities, and employment without regard to race, color, religion, national origin, sex, age, marital status, disability, public assistance status, veteran status or sexual orientation.

Identification of Curly leaf pondweed (*Potamogeton crispus*)

Mary Blickenderfer & Eleanor Burkett



Alternate leaf pattern on stem

Curly leaf pondweed is an exotic rooted, submersed aquatic plant, similar in appearance to many native species of pondweed commonly found in Minnesota lakes and streams.

Identification

Curly leaf pondweed can be distinguished from other aquatic plant species using the following two attributes:

- 1) their leaves attach to the stem in an *alternate pattern* (typical of pondweeds), AND
- 2) the summer leaves have *finely serrated margins* (only found in curly leaf pondweed)

In addition, the leaves are very wavy and may be reddish in color, but these are not unique to curly leaf pondweed.

Habitat

Curly leaf pondweed is considered a deep-water plant, but will also colonize in shallow water. In a lake where it is dominant, it may start in 1 to 2 feet of water and extend out to depths of 10 feet or more. Because it can tolerate low light curly leaf pondweed grows well in disturbed sites and can grow under algae blooms or ice.

The strong rhizomes anchoring the plants into sediment allow curly leaf to grow in areas with strong wave action or streams with moderate velocity.

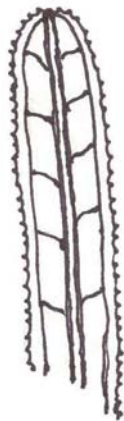
Life cycle

Curly leaf pondweed also has a unique life cycle, which gives it competitive advantages over many other aquatic plants.

As the water cools in autumn, it sprouts from buds on small dormant stem structures (called “turions”) lying on the lake bottom. The small winter plants remain alive under the ice and snow. When the ice melts and water temperature warms in the spring, it begins a period of rapid growth of summer leaves. Mats of these leaves may float at or near the water surface.

Later in the spring, flower spikes are produced that emerge above the water surface. By June, the fruits are mature on the stalks and drop to the sediment. The seeds in these fruits have very low germination rates.

Prior to dying back in mid-summer, curly leaf pondweed produces large numbers of small turions in leaf axes along its stem. When the parent plant dies, these living turions disperse by water movement, sink to the lake bottom, and lie dormant during the summer when other aquatic plants are actively growing. Reproduction of curly leaf pondweed is primarily through these turions.



*Serrated leaf margin
2 x normal size*

References:

Boorman, S., Korth, R. & Temte, J. (1997). Through the Looking Glass: A Field Guide to Aquatic Plant Management. Wisconsin Lakes Partnership
Crowell, W. Curlyleaf Pondweed: New Management Ideas for an Old Problem. Minnesota Lakes Association Reporter 7:1.

Curly-leaf pondweed look-alike:

Potamogeton richardsonii (Richardson's pondweed)

Compare Richardson's pondweed and curly-leaf pondweed using the description and illustrations below. Use this information to distinguish between these plants.

<p>Richardson's pondweed <i>Potamogeton richardsonii</i></p>	<p>Curly-leaf pondweed <i>Potamogeton crispus</i></p>
<ul style="list-style-type: none"> • leaf margin is entire (smooth) 	<ul style="list-style-type: none"> • leaf margin is serrated (toothed)
<ul style="list-style-type: none"> • leaf base clasps the stem 	<ul style="list-style-type: none"> • leaf base does not clasp the stem
<ul style="list-style-type: none"> • leaf tip comes to a point 	<ul style="list-style-type: none"> • leaf tip is blunt/rounded
