

Pilot projects to control curly-leaf pondweed or Eurasian watermilfoil on a lake-wide or bay-wide basis for ecological benefits during 2009

Description of Grants Available from the Minnesota Department of Natural Resources

2 December 2008

Summary of the Grant Program

The Minnesota Department of Natural Resources (MnDNR) is offering funds for pilot projects to control curly-leaf pondweed, milfoil, or both on a lake-wide or bay-wide basis for ecological benefits as well as to provide relief from the nuisances caused by the plants. A limited amount of MnDNR staff time will be available for aquatic plant surveys to help evaluate future lake-wide treatments.

Eurasian watermilfoil (hereafter called milfoil) and curly-leaf pondweed are non-native invasive aquatic plants that can interfere with recreational and other uses of lakes by producing dense mats at the water's surface. These mats can also displace native plants. In addition, curly-leaf usually dies back in mid-summer, after which undesirable algal blooms often develop.

Who may apply for funds for pilot projects?

Funds for pilot projects are available from the MnDNR to organizations such as lake associations, conservation districts, watershed districts, and municipalities (hereafter called cooperators). To be eligible for this program, a lake must have at least one public water access. Potential cooperators must have a federal tax identification number.

Requirements and restrictions on pilot projects

Previously funded projects

******You must submit an application to receive funds under this category******

To the extent that funding is available, projects that received grant funds in previous years for the control of curly-leaf pondweed and milfoil or for the control of curly-leaf pondweed alone will continue to be funded unless:

- Lake-wide treatment appears to be causing more harm than good;
- The percent frequency of curly-leaf pondweed in the treated lake or bay falls below 10 percent; or
- The lake has already received funding for lake-wide treatment for five years.

If funding is limited, higher priority will be assigned to projects based on the numbers and quality of samples or observations of Secchi disk transparency, concentrations of total phosphorus, concentrations of chl a, and concentrations of herbicide following treatment of the lake.

Requirements for new projects:

- Results of a previous survey of submersed aquatic plants in the lake using the point-intercept method should be available. Surveys must have been completed at least as recently as 2006, that is, within the last three years.
- A plan for improving water quality must exist.
- A plan for reducing the need for additional treatment must exist.
- Grants may not be made for the use of chemicals that are likely endocrine disruptors.

Please see “Criteria for Evaluating Grant Applications” for a complete list of project ranking criteria.

If, after review of the grant criteria, you believe your project is a good candidate, ***except for the requirement for a previous survey of aquatic plants***, you may submit a preliminary grant application to the Invasive Species Specialist in your region (see list below and Figure 1).

If you have the required previous aquatic plant survey, and you intend to submit an application, please send a short e-mail or leave a message for the Invasive Species Specialist for your region stating your intention to apply. All we need to know is the lake name and the county in which it is found. This will help us to process applications as quickly as possible.

If you would like to discuss the situation on your lake and the grant program please contact the Invasive Species Specialist for your region (Figure 1).

Invasive Species Specialists by Region

Northwest (Park Rapids): Darrin Hoverson
218-266-2106, darrin.hoverson@dnr.state.mn.us

West Central (Fergus Falls): Howard Fullhart
218-739-7576 ext. 230, howard.fullhart@dnr.state.mn.us

Northeast (Grand Rapids): Rich Rezanka
218-999-7805, richard.rezanka@dnr.state.mn.us

Central (Brainerd): Dan Swanson
218-833-8645, dan.swanson@dnr.state.mn.us

Central and Southeast (St. Paul): Brittany Hummel
651-259-5828 brittany.hummel@dnr.state.mn.us

Southern (New Ulm): Joe Eisterhold
507-359-6079 joe.eisterhold@dnr.state.mn.us

Assistance is also available from:

Ecological Resources Grants Coordinator (Saint Paul): Wendy Crowell
651-259-5085 wendy.crowell@dnr.state.mn.us

Aquatic Invasive Species Management Coordinator (Saint Paul): Chip Welling
651-259-5149.1 chip.welling@dnr.state.mn.us

Deadline for application: 30 January, 2009

To learn more about this offer, please read on.

DNR Contacts for Aquatic Invasive Plant Management Grants

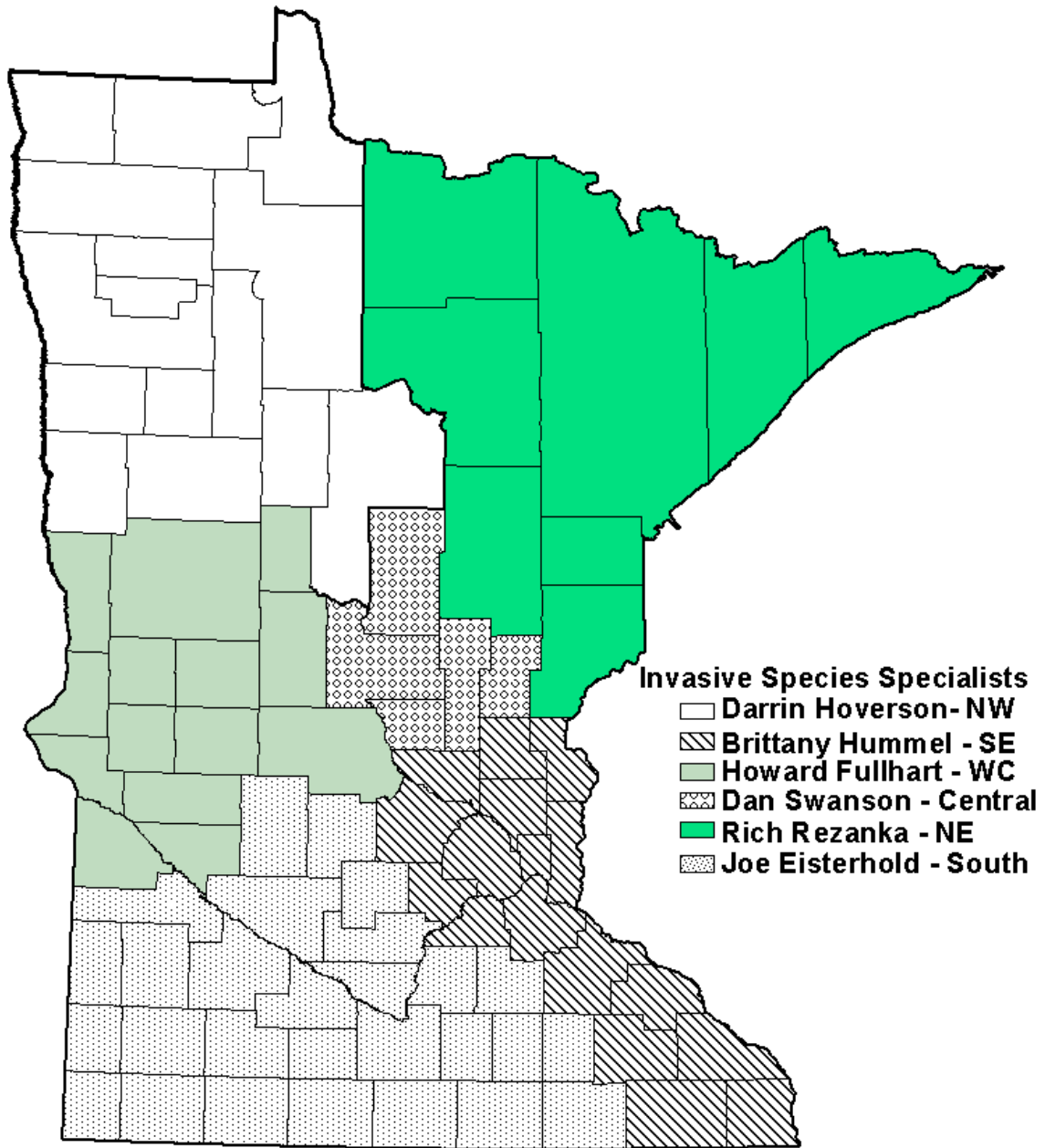


Figure 1. Invasive Species Specialists by region

Table of contents	Page
Problems caused by curly-leaf pondweed and Eurasian watermilfoil	4
Description of grants for pilot projects to control curly-leaf pondweed and/or milfoil	4
Permit to control aquatic plants and lake vegetation management plans	5
Eligible pilot projects	5
Aquatic plant surveys	6
Level of funding available	6
Eligible expenses	7
Responsibilities of cooperators who receive grants.....	7
Resources to help you complete your application for a grant	8
Application Procedure and Timeline	8
Required information to be included with your request for reimbursement.....	10
Appendix A. Protocols for treatment	11

Problems caused by Eurasian watermilfoil and curly-leaf pondweed

Eurasian watermilfoil (*Myriophyllum spicatum*) (hereafter called milfoil) and curly-leaf pondweed (*Potamogeton crispus*) are non-native invasive species that cause problems in Minnesota. Both plants 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 or curly-leaf can displace native aquatic plants and alter environmental conditions, which in turn may harm fish and wildlife. In addition, curly-leaf is unique because it usually dies back at the end of June or early in July. This may result in rafts of dying plants piling up on shorelines, and often is followed by an increase in phosphorus (Bolduan et al., 1994¹) and undesirable algal blooms.

Description of grants for pilot projects to control curly-leaf pondweed and/or milfoil

The purpose of offering these funds is to allow a limited number of well-planned lake-wide or bay-wide projects to control curly-leaf pondweed or milfoil or both to go forward in order to learn from them and to potentially achieve some ecological benefits from them. Each funded project will be carefully monitored so that we can better predict how and where to use these approaches in the future.

Lake-wide or bay-wide treatments are those that attempt to treat all, or almost all, of the target plant in a lake or bay. While we recognize the desire to control curly-leaf pondweed and milfoil to improve lake use, we are focusing the limited funds of this grant program on projects that are designed to provide ecological benefits, as well as providing relief from the nuisance conditions caused by the plants. Ecological benefits include increases in the frequency or abundance of native submersed plants and, in the case of curly-leaf pondweed, may include reductions in

¹ Bolduan, B.R., G.C. Van Eeckhout, H.W. Quade, and J.E. Gannon. 1994. *Potamogeton crispus*: the other invader. *Lake and Reservoir Management*. 10:113-125.

levels of phosphorus and algae, which should increase water clarity.

Acceptable proposals must have the following goals:

- a. To reduce curly-leaf pondweed or milfoil or both lake – wide (or bay-wide) in the year of treatment
- b. To provide long –term reduction in curly-leaf pondweed or milfoil or both in the lake
- c. To increase native submersed plants
- d. In the case of curly-leaf pondweed control projects, to reduce levels of phosphorus and algae, and to increase water clarity

During the 2007 legislative session, the Minnesota Legislature established new standards for grants. Specifically, it is now required that applicants for a grant to manage invasive plants in public waters must have a workable plan for improving water quality and reducing the need for additional treatment. In addition, the legislature specified that grants may not be made for chemicals that are likely endocrine disruptors.

In order to meet the new legislative requirements, applicants for this grant program must have a workable plan for improving water quality. Please see the document “Water Quality Plan Requirements” for guidance on the types of plans that will meet this requirement.

Permit to control aquatic plants and lake vegetation management plans

Before a pilot project may proceed, the cooperator must obtain a permit to control aquatic plants from the MnDNR Aquatic Plant Management Program for the proposed treatment. The conditions for issuance of the permit will be described in an accompanying lake vegetation management plan (LVMP). The LVMP will be developed by the MnDNR with review by the applicant, and may require the cooperator to provide certain materials to support completion of the plan. The LVMP should describe how the need for additional treatment will be reduced in the future.

Eligible pilot projects to control curly-leaf and/or milfoil

Pilot projects to control curly-leaf and/or milfoil that are eligible to receive a grant from the MnDNR involve treatment with herbicides to control the invasive aquatic plants. The DNR will provide guidance on which herbicides can be used for these projects (see Appendix A). In order to provide long-term reduction of curly-leaf pondweed the treated lake must be treated for several years in a row. This is so that the bank of turions (curly-leaf pondweed propagules in the lake sediment) will be depleted. In the event that the 2009 treatment causes significant negative impacts to the native plant community or water quality in the treated lake, the MnDNR will work with the cooperator to develop an alternate treatment plan.

Aquatic plant surveys

To be eligible to receive a grant from the MnDNR for a pilot project, applicants are required to provide results of pre-treatment surveys of submersed aquatic plants in the lake, or bay, using the point-intercept method, completed at least as recently as 2006. The minimum pre-treatment data required is aquatic plant frequency data for mid summer and two point intercept surveys in the spring and summer are preferred.

Because not all potentially eligible lakes have the required pre-treatment data, the MnDNR may choose to collect pre-treatment aquatic plant survey data on some lakes.

Level of funding: for pilot projects to control curly-leaf and/or milfoil

In 2009 up to \$400,000 will be available from the MnDNR for these grants. These funds are paid to cooperators as a reimbursement for work that has been completed. This offer of funds is a competitive grant program. There is no guarantee that there will be sufficient funds available from the MnDNR to provide grants to all applicants with reasonable projects. Funds made available through this program must be spent during the calendar year when they are offered and will not be carried over into following years.

Funds from the MnDNR usually do not cover the entire cost of a pilot project. In 2008, funds from the MnDNR covered a range of 17 to 100% of the costs of treatments made as part of pilot projects (Table 1). It is expected that recipients of grants or cooperators from the MnDNR will commit to providing local matching funds necessary to implement the project over a period of at least three years.

Table 1. Examples of the amount of state funds paid to cooperators for treatments made as part of pilot projects to control curly-leaf pondweed or milfoil or both lake-wide in 2008.

County	Lake	Littoral acres	Acres treated in 2008	state funds available for control	state funds paid for control	Estimated full cost of control	state funds as % of full cost	Herbicide used
Crow Wing	Lower Mission	452	211	\$25,000	\$25,000	\$58,000	43%	endothall
Hennepin	Weaver	76	69	\$10,000	\$10,000	\$16,000	61%	endothall
Morrison	Crookneck	131	13	\$10,000	\$5,000	\$5,000	100%	endothall
Ramsey	Silver	71	58	\$10,000	\$10,000	\$58,000	17%	endothall and triclopyr
Ramsey	Kohlmans	74	74	\$10,000	\$10,000	\$38,000	27%	endothall and triclopyr

The MnDNR will arrange for **and fund** the required aquatic plant monitoring for lakes offered funding for control work in 2009. The actual amount granted each approved project will depend on the number of approved projects and the size of the littoral zones of the lakes approved for grants. The following table provides an estimate of the amount that will be granted to each project, based on the size of the lake's littoral zone. If several bays are proposed for treatment on one lake, the littoral acres of the bays will be combined to determine the amount of funding available. You can find the size of the littoral zone of a lake by going to the **DNR Lake Finder**. <http://www.dnr.state.mn.us/lakefind/index.html> . Once you find a lake in Lake Finder, you can look under **Lake Information** for the size of the lake and the size of its littoral zone.

Lake or bay Littoral Acres	Estimated Grant Amount for control projects
0-150	\$10,000
151-300	\$15,000
301-450	\$20,000
451-600	\$25,000
Greater than 600	\$30,000

Eligible expenses for pilot projects eligible for reimbursement by the MnDNR

The following expenses incurred by a cooperator will be eligible for reimbursement by the MnDNR under this program: cost for application of herbicide, cost of herbicide, and the cost of analyses to determine concentrations of herbicide in treated lakes if needed.

If you plan to apply for funding, please follow the instructions in this announcement carefully. If you have any questions, please contact your **Invasive Species Specialists** (see the list and map on pages 2- 3).

Responsibilities of cooperators who receive grants from the MnDNR for pilot projects

- Obtain two bids from herbicide applicators for treatments that follow the protocols for treatment accepted by MnDNR.
- Select an applicator and arrange for treatment.

Attached is a list of licensed commercial applicators of aquatic herbicides.

- Monitor water clarity bi-weekly from May through September for using a Secchi disk. The Minnesota Pollution Control Agency (PCA) Citizen Lake Monitoring Program has instructions on how to collect Secchi depth data. Secchi disk data must be provided to the **MnDNR Invasive Species Specialist in your region (see pages 2 and 3) by November 15, 2009**. You can sign up as a lake volunteer to collect Secchi depths and

purchase a Secchi disk from the PCA for ten dollars. For Information about the program, call Jennifer Klang (651-282-2618 or 800-657-3864) or visit the website:

<http://www.pca.state.mn.us/water/clmp.html>

- Monitor spring lake water temperatures in order to determine the correct timing for treatment.
- Obtain a commitment from lakeshore owners to do minimal other treatment of native aquatic vegetation for nuisance control, so that the effects of the lake-wide treatment can be determined.

Resources to help you complete your application:

- The MnDNR website www.dnr.state.mn.us. In particular the DNR Lake Finder <http://www.dnr.state.mn.us/lakefind/index.html> . Once you find the lake in Lake Finder you can look under Lake Information for the size of the lake and the size of its littoral zone. You can look under Lake Maps to view and download a depth map of the lake.
- **DNR Invasive Species Specialists and other staff** are available to answer any questions you may have about this grant program (see pages 2 - 3.).

Application Procedure and Timeline to obtain funds for Lake-wide control of milfoil, curly-leaf pondweed, or both.

Preliminary Project Review

If you would like a quick review of your project and advice on whether or not to fill out the full application, please complete the **Preliminary Grant Application Form** and return it no later than **12 January, 2009** to the Invasive species specialist for your region. It is not necessary to complete this before completing the full application. You must submit a full grant application regardless of whether you submit a Preliminary application or not.

Submittal of an application for a grant

To help us process applications as quickly as possible, if you intend to submit an application please send a short e-mail, or leave a message for the Invasive Species Specialist in your region (see pages 2 – 3) stating your intention to apply. All we need to know is the lake name and the county in which it is found. This is not required, but would be appreciated.

Step 1. Applicants: Return a completed Grant Application Form with the required materials no later than **30 January, 2009 to:**

Wendy Crowell

Ecological Resources Grants Coordinator
Minnesota Department of Natural Resources
Ecological Resources, Box 25
500 Lafayette Rd
St. Paul, MN 55155

Wendy.crowell@dnr.state.mn.us

Step 2. The Ecological Resources Grants Coordinator, Wendy Crowell, will record the date the grant application came in and send a note back telling the applicant it was received. The grant proposal will then be forwarded to an Invasive Species Specialist for review.

Step 3. Applicants: Submit an application for a permit to control aquatic plants.

Applications should be sent to the MnDNR Aquatic Plant Management Program. Information about the program can be found on the MnDNR website:

<http://www.dnr.state.mn.us/eco/apm/index.html>. A permit must be obtained before any work can proceed.

Step 4. MnDNR grant review committee: Review applications for grants and permits and determine which projects will receive a permit to make the proposed treatment and funding, as well as the specific amount of funding available for each project. We will review applications as soon as we receive them, and contact both **recipients of grants** and applicants who will not receive a grant. This will be done by **March 3, 2009**. The review committee will include Invasive Species Specialists, DNR Fisheries staff, and other staff from the Division of Ecological Resources.

Step 5. Non-governmental organizations that are offered a grant for more than \$25,000 must submit a copy of their most recent financial statement for review, such as an IRS Form 990.

Step 6. The grant review committee will forward its' recommendations to the Ecological Resources Grants Coordinator, Wendy Crowell, who will write grant agreements and send them to recipients of grants. At this point all grant application materials that have been submitted in response to this grant offer will become public data.

Step 7. Recipients of grants: Review the grant agreement and return a signed copy to the Ecological Resources Grants Coordinator, Wendy Crowell. **You must return a signed Grant Agreement to the MnDNR before proceeding with your project.** Work done without a signed grant agreement will not be eligible for reimbursement by the MnDNR.

Step 8. Recipients of grants: Solicit at least two competitive bids for the proposed work and select a contractor to do the work **before** proceeding with the proposed control project. Attached is a list of licensed commercial applicators of aquatic herbicides. Omission of a firm or company from the attached lists is not meant to exclude any legitimate firm or company from consideration, nor is inclusion in the attached list intended as an endorsement by the MnDNR.

Exceptions to the requirement that organizations obtain competitive bids will be made for multi-year projects that were started in a previous year.

Step 9. MnDNR: Contact the successful applicant to finalize the details of the proposed treatment. Depending on the treatment method, the target plant, and the weather, treatments should proceed between **mid-April and mid-May**.

Step 10. Recipients of grants and MnDNR: Monitoring: Recipients of grants will arrange for secchi depths and spring water temperatures to be collected. MnDNR will arrange for aquatic plant monitoring.

Step 11. Recipients of grants: Pay the contractor for the work undertaken and request reimbursement from the MnDNR. After a grant agreement between the organization and the MnDNR has been fully executed and the proposed work has been completed, the cooperator may bill the MnDNR for any amount up to the maximum specified in the grant agreement, and be reimbursed. Requests for reimbursement should be sent to the Ecological Resources Grants Coordinator, Wendy Crowell and must include all required information listed below.

Required Information, to be included with your request for reimbursement.

- Copies of bids received.
- A description of methods used for control of milfoil or curly-leaf pondweed, the name of herbicide and rate of application, date(s) when work was done, and maps of area(s) showing areas actually treated, if they were different from area(s) originally proposed for treatment.
- If funding was provided for the collection of aquatic plant data;
 - a copy of the original invoices from the contractor with itemized costs and proof of payment.
 - A description of survey methods, date(s) when work was done,
 - Electronic copies of the original data to include the GPS coordinates of all sample points, including points where no plants were found.
 - A written report of the results of the survey, to include data analysis described in the following protocols for aquatic plant surveys accepted by the MnDNR.
- Copy of invoice from the contractor, with proof of payment.
- Copies of all data, such as Secchi depth and water temperatures, collected by the cooperator.
- A request made in writing for reimbursement, preferably on stationery of the cooperator's organization, and signed by the cooperator for reimbursement by the MnDNR.

Step 12. MnDNR: Reimburse the cooperator for eligible costs associated with the treatment or pre-treatment monitoring.

Appendix A. Protocols for treatment.

Past lake-wide projects used the following treatment methods: early-season treatment of curly-leaf pondweed with endothall, early-season treatment with fluridone, early season treatment of curly-leaf and milfoil with endothall and 2, 4-D or triclopyr, and early-season treatment of milfoil with 2,4-D or triclopyr. These are treatment methods that have shown promise based on research done in controlled environments.

New legislation passed in 2007 prohibits the DNR from providing grants for treatment with herbicides that are likely endocrine disruptors. Because of this requirement we are not able to offer grants for the use of 24-D.

MnDNR staff will work with grant recipients and their contracted herbicide applicator to assure the treatments are done with an acceptable herbicide, at the proper time, and with the proper rate of herbicide. Actual areas that will be treated should be based on pretreatment plant surveys conducted in April 2009.

Below are the types of treatments that have been approved under this program in the past.

Lake-wide endothall treatments of curly-leaf pondweed

These treatments treat almost all of the curly-leaf in the lake or bay. Treatment of areas more than one acre in size are done at a low rate, 0.75 ppm to 1.0 ppm with 1.5 ppm used for areas less than one acre in size. The treatments are done when water temperatures are between 50 and 60 F, and are increasing.

Lake-wide combination of endothall and triclopyr treatments of Eurasian watermilfoil

These treatments treat almost all of the Eurasian watermilfoil in the lake. Treatments are done at a low rate, with the combination of endothall (1.0 ppm) and triclopyr (0.25 ppm - 1.0 ppm). The treatments are done when water temperatures are between 50 and 60 F, and are increasing. .

Whole Lake treatment with fluridone herbicide

General Protocols for whole lake treatments with fluridone

For deep lakes that typically stratify, measurements of temperatures over a complete depth profile are taken regularly prior to the expected date of treatment in order to determine if the lake has stratified, and the depth of the epilimnion. Fluridone herbicide will only mix into the epilimnion, so it is extremely important to know the depth of the epilimnion at the time of treatment in order to determine the amount of fluridone to apply. The amount of fluridone to be applied to the lake is determined by using the volume of the epilimnion.

Samples of water for analysis of concentrations of fluridone are taken from at least four locations in the lake at 1 day, 3 days, 7 days, 14 days, and 21 days after treatment, and then again at 1 day, 3 days, 7 days, 14 days, 30 days, and 60 days following the second or "bump" treatment. Samples of water for analysis of concentrations of fluridone can be taken by lake

residents, or any responsible party, and sent to SePro Corp for analysis. For information about the analyses, directions for collection of samples, and “Chain of Custody” forms, please go to: <http://www.sepro.com/default.php?page=labservices> . Results of FastTest™ immunoassays should be provided to the MnDNR as soon as they are available so that we can help determine the timing and rate of application for the second treatment.

Specific Protocols for treatments of milfoil with fluridone

Prior to planning treatment of a lake with fluridone to control milfoil, an assay of the susceptibility of the milfoil in the lake proposed for treatment should be done. SePro Corp can provide PlanTest™, which can do this assay. In general, for milfoil treatments, fluridone should be applied at a low rate (4.0 - 4.5 ppb), with a “bump” treatment at 25 - 30 days to bring the concentration back up to 4.0 ppb. The initial treatment should occur in the spring (mid-May). If curly-leaf pondweed is also present and causes a significant nuisance, treatment should be done earlier (mid to late April) to control that species as well as milfoil.

Specific Protocols for treatments of curly-leaf pondweed with fluridone

In general, curly-leaf treatments should be done at a lower rate (4.0 ppb), with a similar bump treatment after 25 - 30 days, and the initial treatment should be done as soon as possible after ice out.