

# Vilas County Lake Planning Grant: Eurasian Water Milfoil Monitoring & Prevention

## FINAL REPORT

*Project Number LPL-343*



Prepared for the Vilas County  
Land, Air & Water Conservation Committee  
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## **Grantee**

**Vilas County Land, Air & Water Conservation Committee**

## **Project Title**

**Vilas County Lakes Eurasian Water Milfoil  
Monitoring & Prevention**

## **Project Number**

**LPL-343**

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# Table of Contents

<b>Abstract</b>	<b>1</b>
<b>Introduction</b>	<b>2</b>
<b>Goals for Eurasian Water Milfoil Project</b>	<b>3</b>
<b>Project Accomplishments</b>	<b>4</b>
<b>Volunteer Milfoil Monitor Training</b>	<b>4</b>
<b>Milfoil Spot Checks of Boat Landings</b>	<b>5</b>
<b>Milfoil Monitoring Mapping</b>	<b>5</b>
<b>Milfoil Alert Signs</b>	<b>6</b>
<b>Exotic Species Prevention Model Sign</b>	<b>6</b>
<b>Traveling Milfoil Display</b>	<b>7</b>
<b>Lake Organization Development</b>	<b>8</b>
<b>Appendices</b>	
<b>Appendix A - Vilas County Lake Network Flier</b>	
<b>Appendix B - Pocket Milfoil Sample Card</b>	
<b>Appendix C - List of Milfoil Monitoring Volunteers Trained by Lake</b>	
<b>Appendix D - Milfoil Training Workshop Evaluations: Compiled Results</b>	
<b>Appendix E - Map of Vilas County Lakes with Eurasian Water Milfoil</b>	
<b>Appendix F - Map of Vilas County Lakes with Milfoil Monitoring Volunteers</b>	
<b>Appendix G - Map of Vilas County Lakes with Milfoil Alert Signs Posted at Boat Landings</b>	
<b>Appendix H - Northwoods Lake Fair 60 Second Survey</b>	
<b>Appendix I - Grant Agreement</b>	



# Abstract

A Vilas County Lake Planning Grant project focusing on Eurasian Water Milfoil Monitoring & Prevention was initiated in the spring of 1996, and continued to be implemented through 1999. The project was designed to significantly increase the number of lakes in Vilas County being monitored on a regular basis for the invasion of Eurasian water milfoil. Monitoring was accomplished in two ways – through training of 54 volunteer lake monitors, and through spot checks conducted at the public boat landings throughout the county.

Spot checks were conducted by the Lake Conservation Specialist at a total of 164 boat landings. These checks indicated no additional spread of Eurasian water milfoil beyond Big Sand Lake and the Eagle River Chain of Lakes where it had been previously documented. Monitoring results were added to Vilas County's lake management computer database and mapped.

A series of 12 volunteer training workshops were conducted by the Lake Conservation Specialist. The trainings included a slide presentation on exotic species and Eurasian water milfoil, training on where and how to check for the presence of milfoil, hands-on training on how to identify Eurasian versus native milfoils and other aquatic plants, and what to do if they locate the exotic species.

New Eurasian water milfoil alert signs (plastic) were installed and existing signs were repaired/replaced at 81 public lake/river landings in the county. An additional 46 landings were checked that already had signage in place. This resulted in a total of 121 Vilas County lakes with Eurasian water milfoil signs posted at boat landings.

A model sign with color photographs of potential exotic species invaders (including Eurasian water milfoil) was designed, constructed and installed at Big Sand Lake to prevent milfoil from being transported into other nearby lakes. The model sign has since been replicated for three other boat landings in Vilas County.

A traveling display/exhibit focusing on prevention and monitoring of Eurasian water milfoil was developed and utilized for the volunteer training workshops, the 1996 Northwoods Lake Fair, and the Lac du Flambeau Lakes Fest in 1997, 1998 and 1999.

Educational assistance was provided to groups interested in forming volunteer lake organizations. Lake associations were formed on Annabelle Lake, Bills

Lake, Finger Lake, Hiawatha Lake, Ike Walton Lake, Lake of the Hills, Horsehead Lake, Long Lake and Armour Lake.

## Introduction

Invasion of aquatic exotic species is a critical concern for the state's 15,000 lakes. Vilas County lakes have not been spared from the impacts of exotics. Major ecosystem impacts have occurred caused by the invasion of carp, rusty crayfish, curly leaf pondweed and others.

Eurasian water milfoil (*Myriophyllum spicatum*) spread across the United States since the 1940s, and now occupies waters in at least 35 states including Wisconsin. This milfoil took root in southern Wisconsin during the 1960s, dominating the shallow waters of dozens of lakes. By the 1980s, Eurasian water milfoil spread into northern Wisconsin and is now found in Vilas County lakes.

Major, expensive remediation efforts have been required and must be maintained on most of the lakes where milfoil has taken over. However in northern Wisconsin, including the vast majority of the 1320 lakes of Vilas County, preventing the spread of Eurasian water milfoil is the most important lake management strategy currently needed.

Education is a primary means of preventing the invasion of milfoil, and is a major focus of this project. Developing a system of monitoring lakes to ensure early detection of milfoil establishment is also critical so efforts can be made to control the expansion of problem areas at the earliest possible time.

As of October 1992, Eurasian water milfoil was detected in Vilas County in Big Sand Lake (Phelps) and in the Eagle River Chain of Lakes including Catfish, Duck, Eagle, Otter, Scattering Rice, Voyageur, Watersmeet and Yellow Birch lakes. The Eagle River Chain, in particular, is one of the most popular boating areas in northern Wisconsin, causing great concern as a potential source of spreading the plants.

During the summer of 1994, Eurasian water milfoil spread almost completely around Big Sand Lake, causing major problems for lake property owners and other boating users. According to DNR aquatic plant specialists that inspected the lake, milfoil was found growing as much as 15 feet up from the bottom, and

ringed the lake so densely that people had to cut swaths to boat out into open water for waterskiing.

One family on Big Sand Lake complained of taking their new pontoon boat out onto the lake, getting it tangled up in the milfoil, and burning up a new 40 hp outboard motor. The lake association and Big Sand Lake Club were working to contract with a weed harvesting service to cut back some of the weed growth in critical lakeshore areas.

Vilas County has recently begun to take an active role in assisting with lake management efforts through the training of water clarity volunteer self-help monitors. A primary purpose of this project is to extend and expand the existing lake volunteer training and education efforts.

Prior to this project, the DNR self-help volunteer monitoring program listed only 3 volunteers trained to monitor aquatic plants on their lakes, and about 25 additional self-help monitors that had received packets, but were not necessarily trained, for monitoring the invasion of milfoil on their lakes.

## Project Goals

The following goals were targeted for the Vilas County Eurasian Water Milfoil Monitoring & Prevention Project:

- 1) Recruit and train at least 50 new Eurasian water milfoil monitoring volunteers for Vilas County lakes. Conduct at least two workshops to train the volunteers on plant identification and monitoring techniques.
- 2) Place Eurasian water milfoil alert signs at the approximately 196 public boat landings in the county.
- 3) Conduct a spot check at the 196 public boat landings in the county for the presence of Eurasian water milfoil.
- 4) Develop one exotic species prevention sign at a key boat landing to serve as a model for other lake organizations (similar to Iron River photographic sign).
- 5) Input Eurasian milfoil volunteer monitor information and milfoil presence data from the spot checks into the Vilas County lake GIS database (also submitted to the DNR lake database). Develop countywide GIS map printout highlighting lakes with milfoil monitors and with documented milfoil presence.

- 6) Develop a traveling display/exhibit focusing on milfoil monitoring and prevention for use at the Northwoods Lake Fair educational event.
- 7) Assist with the development of one or more additional lake organizations in Vilas County (lake association or lake district).

# Project Accomplishments

## Volunteer Milfoil Monitor Training

A major goal for the project was to recruit and train at least 50 new volunteers to monitor their lakes for the presence of Eurasian water milfoil. The project was successful in training a total of 54 volunteers who are now actively monitoring their lakes in Vilas County.

A variety of strategies were utilized to recruit these volunteers. These included a direct mailing to the Vilas County Lake Network, an educational network that included all lakes served by lake management organizations, over 169 lakes with self-help volunteer water clarity monitors, and an additional 170 lake contacts. A copy of the mailing is included in Appendix A. Other recruitment strategies included newspaper press releases and fliers distributed through the Vilas County Lakes Association meetings and other educational programs such as the Northwoods Lake Fair and Lac du Flambeau Lakes Fest events.

A total of 12 Eurasian water milfoil volunteer training sessions were sponsored throughout Vilas County during the summer of 1997. The programs were conducted by the Vilas County Lake Conservation Specialist and lasted an average of one hour.

A slide presentation on exotic species and Eurasian water milfoil was developed using photographs from the DNR, UW-Extension and other sources. The training included the slide presentation, where and how to check for the presence of milfoil, hands-on identification practice on Eurasian versus native milfoils and other aquatic plants, and information on what to do for verification if the volunteers locate the exotic species. Each volunteer received a folder containing instructions and reporting forms, a "Knock it Off" bumper sticker, and other exotic species information. Laminated pocket cards with actual Eurasian water milfoil samples were developed and distributed to each volunteer along with the laminated milfoil identification cards. A pocket sample card is included in Appendix B.

A list of the trained volunteers by lake is included in Appendix C. In many cases, a lake organization sent more than one volunteer to be trained so the burden of monitoring did not fall on just one person. The 54 volunteers trained through the project represent 31 lakes in the county.

Written evaluations were collected following the workshop sessions. A compilation of the evaluation results (n=49) is included in Appendix D.

Following the training workshop, the volunteers were very to somewhat comfortable in identifying Eurasian water milfoil (ave. 1.37 with 1=very comfortable, 2=somewhat comfortable, 3=somewhat uncomfortable, 4=not comfortable). Volunteers rated their understanding of where and how to look for Eurasian water milfoil in their lake between good and excellent (ave. 1.59 with 1=excellent, 2=good, 3=fair, 4=poor). Their understanding of what to do if they find Eurasian water milfoil in their lake was excellent to good (ave. 1.28), while their understanding of prevention strategies for Eurasian water milfoil was good to excellent (ave. 1.74). The volunteers clearly felt milfoil monitoring will be very important to protect their lake (ave. 1.18 with 1=very important, 2=somewhat important, 3=somewhat unimportant, 4=unimportant).

### **Milfoil Spot Checks of Boat Landings**

Spot checks were conducted by the Lake Conservation Specialist at a total of 164 boat landings located throughout the county. Direct observations were made of plant fragments on or near the shore at the landing.

On two of the lakes (Forest Lake and Lake of the Hills), milfoil fragments were found that were positively identified as Eurasian water milfoil. A follow-up field inspection by boat was conducted on both of the lakes by the Lake Conservation Specialist and a DNR Aquatic Plant Manager. No evidence of Eurasian water milfoil establishment was found. It was concluded that although fragments were found, Eurasian water milfoil had not become established in either lake.

The spot checks and field inspections indicated no additional spread of Eurasian water milfoil beyond the lakes where it had been previously documented.

Following is the list of lakes with known infestations of Eurasian water milfoil in Vilas County:

- Big Sand Lake
- Eagle River Chain of Lakes:
  - Catfish Lake
  - Duck Lake
  - Eagle Lake
  - Otter Lake
  - Scattering Rice Lake
  - Voyageur Lake
  - Watersmeet Lake
  - Yellow Birch Lake

## **Milfoil Monitoring Mapping**

Monitoring results from the spot checks were added to Vilas County's lake management computer database as a separate data field. The database is compatible with the county's geographic information system so the results were able to be mapped using ArcView GIS software. Mapping and database merger with the GIS system was conducted with assistance from Doug Prigge, GIS Technician from Vilas County's Land Records Department.

A GIS map of the Vilas County lakes with Eurasian Water milfoil is included as Appendix E.

The names and addresses, lakes, and training dates of the volunteers trained for monitoring milfoil was also added to Vilas County's lake management computer database. A GIS map of the lakes with milfoil monitoring volunteers is included in Appendix F.

## **Milfoil Alert Signs**

In conjunction with the milfoil spot checks, the Lake Conservation Specialist checked to see if the boat landing site had a sign board or free standing post with plastic Eurasian water milfoil Alert signs installed. The signs are placed in order to increase the awareness of boaters of the need to prevent the spread of the exotic species. The 12" x16" signs warn boaters to remove all aquatic plants from boats and trailers, and provide an explanation of how Eurasian water milfoil can become established in lakes.

A total of 164 boat landings were visited. (Note that the original project proposal over-estimated the number of boat landings in the county.)

New Eurasian water milfoil alert signs were installed and existing signs were repaired or replaced at 81 public lake/river landings in the county. An additional 46 landings were checked that already had signage in place in good condition. This resulted in 121 Vilas County Lakes with Eurasian water milfoil alert signs posted at boat landings (some lakes have multiple boat landings). A GIS map of the Vilas County lakes with Eurasian water milfoil alert signs posted at boat landings is included in Appendix G.

The remainder of the landings either had no place for a sign or were for walk-in access only and did not require signage.

This project work was coordinated with DNR staff responsible for maintaining fishing regulation signs at the boat landings. Additional sign maintenance will continue to be done cooperatively in future years.

### Exotic Species Prevention Model Sign

A large free-standing sign with color photographs of potential exotic species invaders (including Eurasian water milfoil) was designed and constructed to serve as a model that other lake organizations could use as an exotic species prevention education strategy. The sign was installed at Big Sand Lake in the Town of Phelps to prevent the existing infestation of Eurasian water milfoil from being transported into other nearby lakes.

The final sign was 4 feet by 4 feet in size with brown wood frame, yellow copy, aluminum extrusions for mounting and a clear polycarbonate sign face cover. The sign was mounted on 4"x4" wood posts at the public boat landing. A photograph showing the installed sign follows:



This model sign has since been replicated for three other boat landings on the popular North & South Twin Lakes. These lakes are also in the Town of Phelps and are located near Big Sand Lake, so are at increased risk for milfoil infestation.

## Traveling Milfoil Display

A traveling display/exhibit focusing on prevention and monitoring of Eurasian water milfoil was developed. This display includes mounted posters, photographs, identification characteristics, and prevention tips including how to clean off boats and trailers. The table-top display was generally used in conjunction with actual specimens of both Eurasian water milfoil and native species.

The display was set up and utilized as an educational tool for the volunteer training workshops. The Lake Conservation Specialist and UWEX Resource Agent staffed the traveling display at the 1996 Northwoods Lake Fair, a regional event held in Rhinelander at Hodag Park on June 22<sup>nd</sup>. The Lake Fair was visited by about 1500 people interested in learning about lakes and lake management.

A copy of the Northwoods Lake Fair exit survey (from a sampling of lake fair participants) is included in Appendix H. Exotic species information was specifically noted a couple of times when people were asked what they learned at the fair which they expect to use or apply.

The display was also utilized for the Lac du Flambeau Lakes Fest in 1997, 1998 and 1999. This event was sponsored by the Lac du Flambeau Band of Lake Superior Chippewa Indians and held in Vilas County in downtown Lac du Flambeau. The traveling display can be seen in the following photo taken at the Lakes Fest in 1999:



## **Lake Organization Development**

The final project goal was to provide educational assistance to at least one group interested in forming volunteer lake organizations (either lake associations or lake districts). Both the Lake Conservation Specialist and UWEX Resource Agent provided this assistance to a number of lake groups during the project.

Typical educational assistance included conducting an initial orientation meeting to a small steering committee of interested lake property owners. This was followed by a larger public informational meeting for all the lake property owners on what a lake organization is, how it can be organized and what kinds of activities lake organizations typically undertake. When a majority indicate they are interested in forming an association, follow-up educational meetings are conducted to provide information on options for bylaws and incorporation.

Lake associations were formed on Annabelle Lake in 1996, Bills Lake, Finger Lake, Hiawatha Lake, and Ike Walton Lake in 1997, and Lake of the Hills, Horsehead Lake, Long Lake and Armour Lake in 1998. Key officer contacts and mailing addresses of each of these new organizations follows:

Annabelle Lake Association – Pat Williams, Secretary, P.O. Box 144, 10967  
Annabelle Shores, Presque Isle, WI 54557

Armour Lake Association – Jim Knuth, President, P.O. Box 68, Presque Isle,  
WI 54557

Bills Lake Association – Wally Obermann, President, 1690 Bills Lake Rd.,  
Lac du Flambeau, WI 54538

Friends of Finger Lake, Inc. – Chuck Wolfer, President, 2424 Finger Lake Rd.,  
Eagle River, WI 54521

Hiawatha Lake Association – Joe Michor, President, 16035 Luella Dr.,  
Brookfield, WI 53005 (Town of Winchester)

Horsehead Lake Association – Lynn Strauss, Secretary/Treasurer, P.O. Box  
142, Presque Isle, WI 54557

Ike Walton Lake Association - Llona Clausen, President, P.O. Box 425, Lac du  
Flambeau, WI 54538

Lake of the Hills Association – Will Campbell, President, 4575 Lake Hills Landing  
Rd., Conover, WI 54519

Long Lake Association – Cameron Davis, President, P.O. Box 202, Phelps,  
WI 54554

## **Appendix List**

**Appendix A - Vilas County Lake Network Flier**

**Appendix B - Pocket Milfoil Sample Card**

**Appendix C - List of Milfoil Monitoring Volunteers**

**Trained by Lake**

**Appendix D - Milfoil Training Workshop Evaluations:**

**Compiled Results**

**Appendix E - Map of Vilas County Lakes with Eurasian**

**Water Milfoil**

**Appendix F - Map of Vilas County Lakes with Milfoil**

**Monitoring Volunteers**

**Appendix G - Map of Vilas County Lakes with Milfoil Alert**

**Signs Posted at Boat Landings**

**Appendix H - Northwoods Lake Fair 60 Second Survey**

**Appendix I - Grant Agreement**