

Eagle Lake, MI

“As an environmental scientist and president of the Eagle Lake - Paw Paw Association, Paw Paw Twp, Michigan, I am glad to share that our lake residents are very pleased with the effectiveness of using weevils to manage Eurasian water milfoil (EWM). Owners’ expenses on this 200 acre lake have been limited to a one-time cost of \$142 per owner. Compared to other S.E. Michigan lakes our people have paid only a fraction of that paid for other control options.

Our trust in EnviroScience, Inc. was assured when the company cut the number of weevils stocked in 2003 due to the marked EWM decline and spread of weevils stocked the previous two years.

In 2006, regardless of the management strategy, a EWM resurgence occurred in area lakes. Based on input from other experts, we decided to take no action and within a season our native and stocked weevils began to respond. I am pleased to have been able to share our Eagle Lake, Paw Paw, Twp. experience with weevils and our involvement with EnviroScience, Inc. with lake associations in and beyond Michigan.”

- Charles Cubbage, Ph.D.

EnviroScience, Inc. | 3781 Darrow Road | Stow, Ohio 44224

Phone: 800.940.4025 | Fax: 330.688.3858 | Email: info@EnviroScienceInc.com
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MILFOIL SOLUTION
The Natural Choice for Eurasian Watermilfoil Control

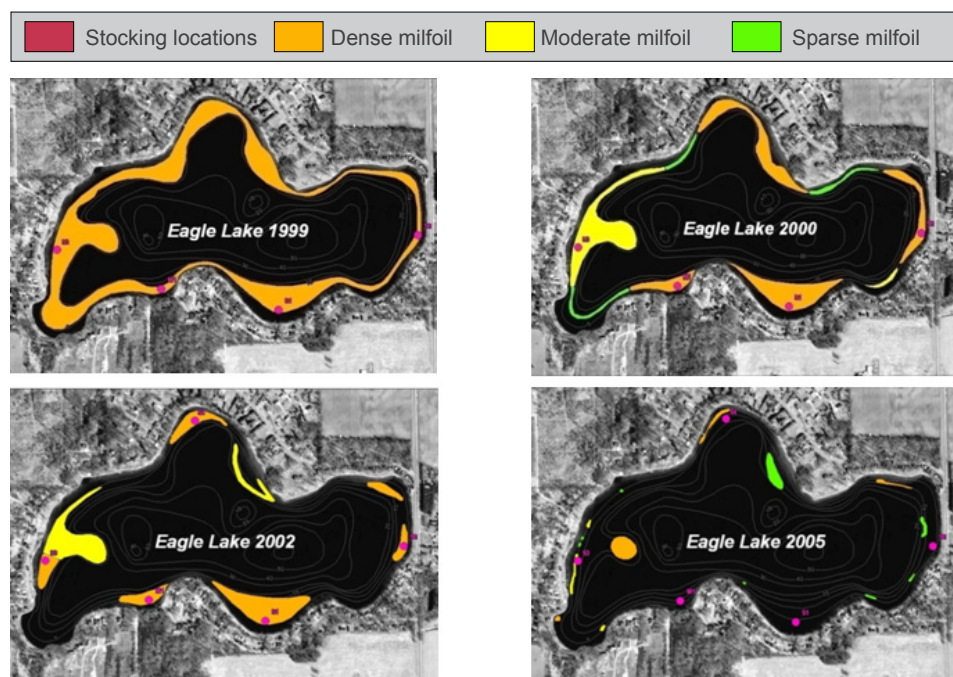
Milfoil Solution®, formerly known as The MidFoil® Process, is the only environmentally sound and effective long-term control for Eurasian watermilfoil, one of the most intensively managed invasive aquatic weeds in North America.

Our strong network of university, faculty and research staff allows us to provide world class expertise and service. In addition to our broad range of Lake Management services, EnviroScience is the exclusive provider of the Milfoil Solution® management program for Eurasian watermilfoil control. Milfoil Solution® is the only natural, non-chemical alternative for controlling the growth of Eurasian watermilfoil.



EAGLE LAKE, MI

Lake Management and The Milfoil Solution®



Eagle Lake is located in Van Buren County, Michigan, in the Kalamazoo River Basin. The lake has a surface area of 192 acres with an average and maximum depth of 24.5 feet and 60 feet, respectively. Ten to 15% of the shoreline is natural, and the remaining 85 - 90 percent is residential. Due to a nearly complete band of Eurasian watermilfoil (milfoil) around the lake, the residents sought a management program. With strong support for a natural plan, Eagle Lake began a three-year Milfoil Solution® stocking program during the summer of 2001. Between 2001 and 2003, a total of 35,000 weevils were stocked in four milfoil beds and a monitoring site was established.

The initial survey conducted in 2001 found relatively dense beds of milfoil within the surveyed sites. Laboratory analysis of collected stem samples found evidence of an indigenous population of weevils, which indicated that the lake provides a favorable environment for the weevils. A total of 15,000 weevils were stocked in 2001. Field observations in the follow-up survey noted an increase in the population of native species in the stocked sites. The milfoil remained relatively thick, but damage indicative of weevils was more prolific than what was observed during the initial survey.

The stocking of 10,000 weevils in 2002 produced results that indicated that the weevils were established and producing significant results. Field observations noted weevil damage in each of the stocked sites and an overall increase in weevil density. Along with a decrease in milfoil density the amount of native vegetation increased.



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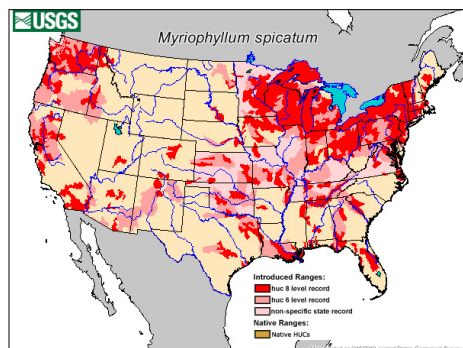


The Milfoil Weevil

A Native Insect

The milfoil weevil (*Euhrychiopsis lecontei*) is a beetle native to North America that specializes on Eurasian watermilfoil (EWM). As part of the Milfoil Solution® program, it is intentionally introduced into the water body where this invasive plant is a problem in order to establish a resident population to control EWM on a long-term basis.

As adults they seek out healthy milfoil to lay eggs. In general, two to three more generations will continue to reproduce and move throughout the lake in one season. In the fall, the adults move to shore to overwinter and return in the early spring as soon as the ice melts off the water. The native weevil is a specialist on EWM and its native host Northern watermilfoil, and does not damage any other aquatic plants. As EWM decreases in the treated lake, the beetle population gradually declines to a self-sustaining level.



In 2003, a total of 10,000 weevils were stocked in two sites. Due to size and density of the beds of milfoil within in S1 and S3 the decision was made to stock additional weevils to expedite milfoil control. Only a few scattered strands of milfoil were left in S2, so it was not possible to survey this site. S1 was stocked with an additional 4,000 weevils. S3 and S4 were each stocked with 3,000 weevils.

The overall program resulted in growth and dispersal of the weevil population throughout the original stocking sites. The milfoil throughout the surveyed sites was either extremely sparse or heavily damaged. The beds of milfoil in S2, S3, and M1 were all but gone. All that remained of these once healthy dense beds of milfoil was a few sparse patches of sickly stems. Pockets of milfoil remained in S1 and S4, but it was largely unhealthy. Much of the remaining milfoil had brownish stems and was falling out of the water column. During the final survey, no milfoil was observed to be topped out or even near the surface. As the milfoil decreased the number and distribution of native aquatic plant species increased.

Since 2003, the weevil population has kept the milfoil at non-nuisance levels, with little expansion. A resurgence of milfoil occurred in 2006, but by early 2007 the weevil population “caught up” and again, got the milfoil back under control.



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AQUATIC PLANT IDENTIFICATION

Why is Identification Important?

How to Send Us a Sample or Photograph for Identification

Send Digital Photos via E-mail:

Select the top 10-12 inches of 2-4 plant samples, lay them in a light colored pan of water deep enough so that the leaflets float freely from the stem, and take two or three photos. You may also want to send photographs of the entire infested area. Please send them to info@EnviroScienceInc.com

or Overnight a Sample in Mail:

Again, select the top 10-12 inches of 2-4 plants, place them in a large zip-lock bag with a damp (not wet) paper towel. Pack in small box with some material to prevent the contents from damage. Ship overnight or 2nd Day Air to:

EnviroScience, Inc.

Attn: Lake Management

3781 Darrow Rd.

Stow, OH 44224

Please include as much of the following information as possible:

Lake/County/State

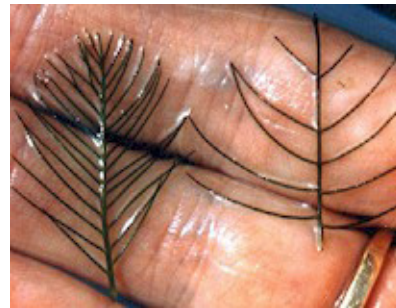
Date Collected

Collector's name

Contact information: Name, organization, address, phone, and email

After identification, what's the next step?

If the plant sample is positively identified as Eurasian watermilfoil or a hybrid version of the plant species, than the next step is learn more about your waterbody and assess the extent of the milfoil infestation. If your community requires one of our representatives to attend a meeting or give a presentation, please contact us with a scheduled meeting date and we will be glad to give a presentation and answer all questions regarding our process. Our team prides itself on communicating all aspects of our program and providing full-personal attention to our clients.



Eurasian (left) vs. Northern watermilfoil

In addition to contacting us with any questions, one very important action you should take is to verify exactly which species of milfoil you are dealing with.

Differentiating between the various types of milfoil can be very difficult and require an expert. To complicate matters even more, Eurasian watermilfoil can hybridize with at least two of the native North American varieties of milfoil. Sometimes, the only way to definitively identify these hybrids is via genetic analysis.

Regardless, proper identification of your problem plant(s) is key to developing a successful management program. We can help by confirming the identity of the milfoil present in your lake. Where hybridization of the milfoil may be an issue, we can arrange for genetic testing of your samples.

Milfoil Species

Eurasian watermilfoil

(Myriophyllum spicatum)



- White to pink stem
- 3 to 6 leaves per whorl
- 14 to 20 pairs of leaflets

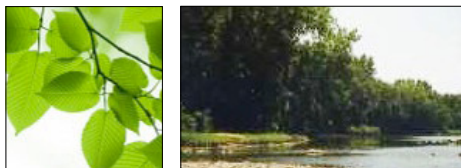
[Click here to read the complete Aquatic Plant Identification white paper](#)



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EnviroScience performs ecological monitoring, toxicology, commercial diving, lake management and emergency response for transportation and other industries.



ABOUT ENVIROSCIENCE, INC.

For over twenty years, EnviroScience has provided highly specialized services to federal, state, and municipal government agencies as well as industrial, engineering and private sector clients. From biomonitoring and environmental compliance support to underwater inspections and diving services, our reputation for excellence has been built one project at a time - with technically-sound protocols, detailed reports, and superior client service.

EnviroScience performs ecological monitoring, toxicology, commercial diving, lake management and emergency response for transportation and other industries.

EnviroScience has assembled a comprehensive team of biologists to provide environmental services throughout the United States. The company was created with the concept that a small, specialized biology firm could offer cost-effective, high quality services by eliminating the overhead of a larger parent company. This concept still holds true today, as our scientists explore the latest in environmental legislation and regulations and incorporate the most up to date technology to gather and report data. Despite tremendous growth, our services remain tightly focused and technically comprehensive. Since 1989, EnviroScience has supported environmental design and regulatory requirements servicing federal, state and municipal governments, as well as industrial, engineering and private clients.

EnviroScience continues to grow and currently consists of three divisions.

- **Bioassay:** Starting as a bioassay laboratory, the company gained a reputation for providing quality testing at competitive prices.
- **Ecological Biomonitoring:** As business expanded into surrounding states, clients began to request additional biomonitoring services. In response, EnviroScience formed a very specialized Ecological Division with a multi-disciplinary staff of highly trained biologists. The division offers a wide range of ecological services including aquatic surveys, wetland delineations, terrestrial surveys, and mussel surveys.
- **Milfoil Lake Management:** Aspiring to stay at the forefront of environmental design, EnviroScience added a Lake Management division featuring the exclusive Milfoil Solution® program. The division leads the way in biocontrol and is staffed with experts in watershed and lake management. All three of the divisions have been successful in working together to provide an extensive matrix of environmental services.

Contact us today for help with your environmental problems.

[Click here to read all of our white papers](#)



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