



# EXOTIC AQUATIC PLANT WATCH



## Monitoring Procedures (pilot project)

---

---

Rooted aquatic plants are a natural and essential part of the lake, just as grasses, shrubs and trees are a natural part of the land. Their roots are a fabric for holding sediments in place, reducing erosion and maintaining bottom stability. They provide habitat for fish, including structure for food organisms, nursery areas, foraging and predator avoidance. Waterfowl, shore birds and aquatic mammals use plants to forage on and within, and as nesting materials and cover. However, sometimes a lake is invaded by an aquatic plant species that is not native to Michigan. Some of these exotic plants, like Curly-leaf Pondweed, Eurasian Milfoil and Hydrilla can be extremely disruptive to the lake's ecosystem and recreational activities.

These exotic plants can “take over” a lake by crowding out native species, causing population crashes of native plants and loss of biodiversity (the abundance and variety of plants). An overabundance of the exotic species can negatively affect fish populations, fishing and the recreational activities of property owners and lake users. Visit the web sites provided on the handout in your monitoring packet for more information on exotic aquatic plants

To avoid a takeover by exotic plants, it is necessary to use Integrated Pest Management (IPM) strategies: monitoring, early detection, rapid response, maintenance control and preventive management.

- Monitoring – Annual monitoring of the lake for exotic plants can determine if any are present in the lake, and if so, their location and abundance. If monitoring is done frequently and carefully, the first invasion colonies of an exotic plant should be detected.
- Early Detection – Finding the first colonies of an exotic plant invasion will permit a rapid response to control the plant in small areas before it can spread. If the invasion goes undetected for a few years, it may cover large areas of the lake.
- Rapid Response – Responding rapidly to a new invasion of an exotic plant will increase the probability of success in keeping it under control, and possibly even eradicating it. Treating small infested areas will be less expensive than treating large areas after the plant has spread.
- Maintenance Control – Continually monitoring and treating the exotic plant is time consuming and requires persistence and dedication, but it can keep the plant's population at low manageable levels. The alternative is to “give up” and

let the exotic plant populations expand to cover large areas of the lake, after which control will be very expensive.

- Preventive Management – Even if the monitoring effort reveals the presence of no exotic plants, the lake community should still implement the IPM strategy of preventive management. The lake community should take actions to prevent introductions by educating citizens about the threat of exotic species and monitoring likely points of introduction.

We have provided the publication *Integrated Pest Management for Nuisance Exotics in Michigan Inland Lakes* (MSU Extension Water Quality Series: WQ-56) to help you become familiar with IPM strategies. You should pay special attention to the information in Section I, Section II, and the Eurasian Milfoil and Curly-leaf Pondweed parts of Section III. Additionally, for an example of how a Michigan community using IPM strategies effectively managed the exotic aquatic plant Eurasian milfoil, read the article *Cisco Chain of Lakes: Invaded* by Poovey and co-authors published in *LakeLine*, Spring 2006 (North American Lake Management Society).

The purpose of this Cooperative Lakes Monitoring Program (CLMP) monitoring project is to provide lake communities with a strategy for monitoring for extremely troublesome exotic aquatic plants, so the community can detect early infestations of these disruptive species. If detected early the community can use IPM strategies to reduce the probability that the exotic infestation will cause significant disruptions to the lake ecosystem and recreational uses. Monitoring by the lake community is recommended even if a professional plant management company has been hired. Independent monitoring will help the community verify the success of plant management efforts and identify future needs.

Training and technical assistance are provided to the volunteer monitors to facilitate implementation and completion of a credible Exotic Aquatic Plant Watch project. Training in exotic plant identification will be provided during the CLMP training program at the Michigan Lake and Stream Associations' annual meeting, held every spring in late April. **It is required that volunteers participating in the CLMP Exotic Aquatic Plant Watch project take the CLMP training session.** Technical assistance is available to the volunteers through Michigan State University's Department of Fisheries and Wildlife (see contact information below).

Participants may mail questionable or unknown plant samples to MSU for identification. Response will typically be by email, but if necessary volunteers may make follow up telephone calls. MSU identification will only confirm or refute exotic species samples. Identification of other plants will not be made.

#### **A. Equipment Checklist**

- boating safety equipment and anchor
- copy of monitoring procedures
- three exotic aquatic plant identification cards

- a depth map of the lake
- global positioning system (GPS) unit
- weighted sounding line
- weighted rake and retrieving line (see instructions)
- zip-lock bags
- clipboard
- pencil or indelible ink pen

## B. Safety

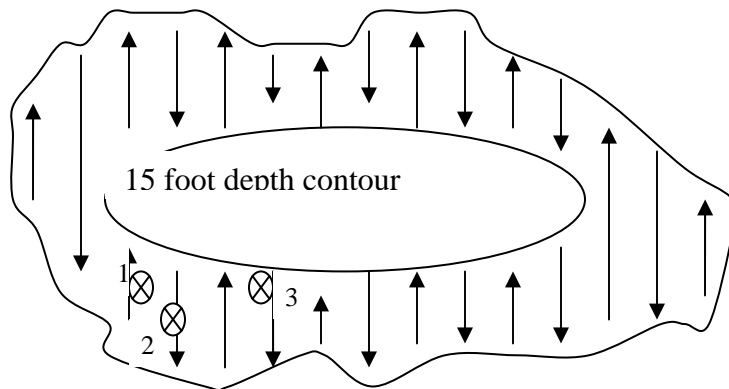
As with all CLMP sampling, the Exotic Aquatic Plant Watch samples should be collected when the weather conditions are safe. Be sure to sample with all of your safety equipment onboard (life jackets, back-up oars, etc.). Sample with a partner, remain low in the boat when collecting samples, and do not lean over the side.

## C. Sample Collection

Collect your samples on the first available day in mid-June to early-July that the weather is good. On the chosen monitoring day, prepare the boat, safety equipment and monitoring equipment and supplies. Bad weather may make monitoring dangerous. If weather conditions are hazardous on your chosen sampling day, postpone monitoring until later. If the lake to be monitored is large, multiple sampling teams may be needed or one sampling team may require several days.

Develop a systematic procedure for covering the lake surface area from shore out to the 15-foot depth contour. Using transects, move from one side of the lake to the other, viewing plants and casting the collection rake (*see instructions for building the rake in your sampling packet*). It is only necessary to sample from shore out to the 15-foot depth contour. Rooted aquatic plants in most lakes do not grow well in water deeper than 15 feet.

**The figure below is an example lake showing sampling transects and the location where three exotic plant colonies were found.**



While moving along the transects, collect plants and compare them with the exotic aquatic plant identification cards. If you find a plant that you are uncertain about, you can send a small sample of the plant to MSU using the contact information below. Take a six-inch piece of the plant, pat it dry but not completely dry, wrap in slightly damp paper towel, and place in a small plastic bag. Contact MSU support staff prior to sending plant samples for mailing instructions. Your samples will be identified and you will be contacted with the results.

If you should find an exotic plant, use your GPS unit to identify the colony's coordinates. You may use your unit's default coordinate system, but if possible, report coordinates in decimal degrees format (WGS84 map datum). Also, use pencil or indelible pen to mark the location of the plant on a paper lake depth map. Use a numbering system to identify each location on the map, and on a separate sheet identify each numbered location's GPS coordinates and the species found there.

(Alternatively, use your GPS coordinates and Google Maps or Google Earth online to create a map. For more information on using Google Earth visit the following links for "marking places" ([earth.google.com/userguide/v4/ug\\_placemarks.html](http://earth.google.com/userguide/v4/ug_placemarks.html)) and "using GPS devices with Google Earth" ([earth.google.com/userguide/v4/ug\\_gps.html](http://earth.google.com/userguide/v4/ug_gps.html)).

**Do not throw exotic aquatic plants that you collect on your sampling rake back into the lake. Keep the plants in the bottom of the boat and dispose of on land when you return to shore.**

Continue sampling and locating exotic plant colonies until the entire lake has been sampled. If time permits you may want to do two surveys, one in early summer (mid-June to July) and a second in late summer (September).

#### **D. Sampling Report**

Use the Exotic Aquatic Plant Watch data sheet as the cover for your report. Complete the data sheet and attach your lake map or Google Earth map and GPS coordinate sheet. You may also wish to include photographs or other supporting materials.

Please note – **a report should be completed even if no exotic plants are found.** Simply fill out the Exotic Aquatic Plant Watch data sheet and indicate that the survey was conducted, but no exotic plants were found. This simple report will serve as a record of your monitoring efforts for your lake community and for the CLMP program.

#### **E. Sampling Report Delivery**

When your report is complete, a copy must be sent to the CLMP Coordinator at the Michigan Department of Natural Resources & Environment (DNRE). You may send a paper copy to the mailing address below, or provide an electronic copy via email. Be sure to keep a complete copy of the report for your own records!

The complete report must be received **no later than October 30<sup>th</sup>**. Information received after this date may not be included in the CLMP Annual Report.

## **F. Training**

A training session will be held during the CLMP training program at the MLSA annual spring conference in late April. **It is required that each of the participating lake communities send at least one volunteer to this training session.** Some of the benefits of this session include increased assurance of quality control of data as well as the chance to discuss sampling with other volunteers and resource people.

## **G. Quality Assurance/Quality Control**

As part of the quality assurance/quality control (QA/QC) process for the CLMP, the Michigan Department of Natural Resources & Environment (DNRE) may ask you to submit plant samples or staff may conduct side-by-side sampling for selected lakes. Although quantitative assessment techniques will not be used in the Exotic Aquatic Plant Watch project, the DNRE will still employ quality control assessment procedures to evaluate the reliability of the data produced, consistency in data collection and appropriateness of procedures used, to determine if the pilot project should be expanded into a program element of the CLMP. If your lake is selected for the QA/QC process, you will be contacted to submit samples or to schedule a sampling date for side-by-side sampling.

## **H. Technical Support and Contact Information**

Should you need help identifying an exotic aquatic plant, have any questions/comments about the Exotic Aquatic Plant Watch procedures or the forms, or have problems during sampling please contact:

Dr. Jo Latimore  
Lake and Stream Outreach Specialist  
Department of Fisheries and Wildlife  
Michigan State University  
13 Natural Resources Building  
East Lansing, MI 48824-1222

Phone: 517-432-1491  
Email: [latimor1@msu.edu](mailto:latimor1@msu.edu)

Send your completed report to the CLMP Coordinator below. You may also contact the Coordinator if you have general administrative questions about the CLMP or if the person listed above is not available for plant identification:

Mr. Ralph Bednarz, CLMP Coordinator  
Dept. of Natural Resources & Environment  
Water Bureau  
Constitution Hall – 2<sup>nd</sup> Floor South  
525 West Allegan Street  
Lansing, Michigan 48933

Phone: 517-335-4211 (desk)  
FAX: 517-335-4381  
Email: [bednarzr@michigan.gov](mailto:bednarzr@michigan.gov)