Long Lake Aquatic Plant Management Plan

(2012 Update)

The Long Lake Protection and Rehabilitation District is pleased to announce the availability of the updated aquatic plant management plan for your review. Members of the advisory committee who developed the plan are listed to the right. The plan includes strategies for controlling curly leaf pondweed, protecting native plant populations, and preventing establishment of additional invasive species. You can download a copy of the plan on the Polk County Land and Water Resources Department (LWRD) website: http://www.co.polk.wi.us/landwater/ or visit the Balsam Lake public library to view a copy.

Advisory Committee Members
Monica Brengman (LLPRD Board)
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We Would Love to Hear from You
Comment on the plan by email:
harmonyenv@amerytel.net
Or write to:
Harmony Environmental
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Your comments through August 25, 2012 will be considered in finalizing the plan.

Plan Goals
The goals of the plan are as follows . . .

1) Improve water quality and clarity.

2) Protect and restore healthy rooted native aquatic plant communities.

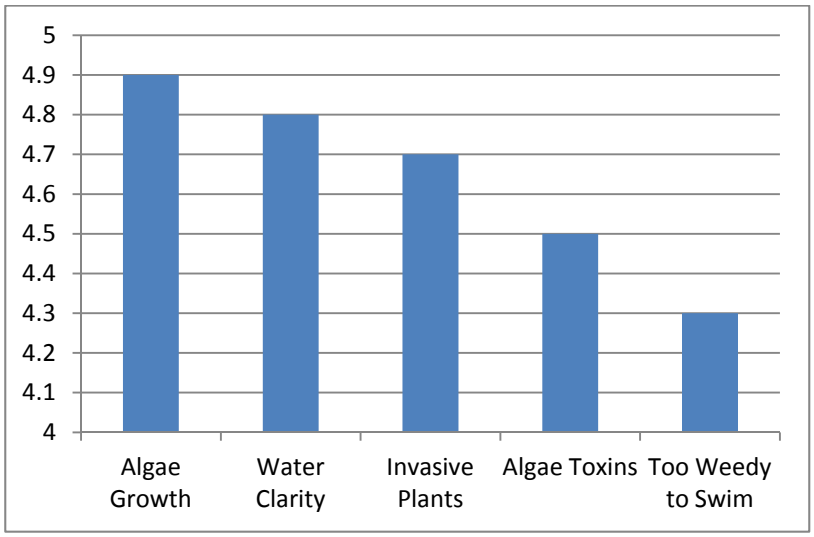
3) Balance recreation and riparian needs with protection of native plants and the fishery.

4) Prevent the introduction of Eurasian water milfoil and other invasive, non-native aquatic species.

5) Rapidly respond to eliminate any newly introduced invasive, non-native aquatic plant species.

Residential Survey Results

Thanks to those of you who returned surveys to help guide this plan. We had a great response rate of 61%! Full survey results are included as an appendix to the plan. Responses told us that residents were most concerned about algae growth, water clarity, invasive plants, and algae toxins. Management efforts with strong support included invasive species prevention, curly leaf pondweed control, resident education, and protection of sensitive habitat areas.



Greatest Perceived Negative Impact to Long Lake (Scale 0 to 6)

Native Plants in Long Lake

Native plants are extremely important to the health of Long Lake. Native plants provide fish and wildlife habitat, stabilize bottom sediments, reduce the impact of waves against the shoreline, and prevent the spread of non-native invasive plants – all critical functions for the lake. There are relatively few different species of native plants in Long Lake when compared with nearby lakes. The highest diversity of aquatic plant life is found in the shallow bays at either end of the lake.

If plants were not present in the lake, the water would be much greener. With no rooted plants, nutrients in bottom sediments would be stirred up, and plants wouldn't take the nutrients out of the water. The result would be even more algae growth! With shallow, mucky bottomed lakes like Long Lake, the lake is generally dominated by either rooted native aquatic plants and clear water or few aquatic plants and algae with pea-green water. Frankly, Long Lake is somewhere in between these extremes, and a clear water lake with aquatic plants is the more desirable scenario!

Photo by Jeremy Williamson

Curly Leaf Pondweed Management

Curly leaf pondweed is a non-native plant that is present throughout much of the area where plants grow in Long Lake. This plant grows early in the season before many of the native plants are actively growing, and generally dies back by early July. When the plants die back, nutrients are released into the water column. Phosphorus is the nutrient that increases algae growth in the lake. A water quality study underway this year will provide insight into how significant this source of nutrients is to algae growth in Long Lake.

<u>Identifying Curly Leaf Pondweed</u>

CLP is shown in the photo below. The plant grows in water from 3 – 12 feet deep. Its leaves are strap-shaped with round tips and curly edges.

Curly Leaf Pondweed

Lake residents have supported extensive treatment of curly leaf pondweed in the past few years. Previous studies indicated that curly leaf pondweed contributed as much as thirty percent of the lake phosphorus. While these treatments have resulted in excellent control during the growing season, the plant is so far returning in about the same acreage each year. This occurs because the reproductive structures for CLP – turions - can live in the lake sediments for several years. A critical result of a curly leaf pondweed treatment program is to reduce these turions in lake sediments so they can't germinate in following years. We will be monitoring sediment turions beginning in 2012 to check progress.

The initial CLP herbicide treatment objective from 2007 was to reduce CLP in the lake to 10 acres. Given results over three years of extensive treatment, this objective does not seem realistic, and we have adjusted the objective to 20 acres in the current plan. Meanwhile, we are recommending continuing treatment of essentially all curly leaf pondweed in the lake for two more years. After the 2014 treatment, we will re-assess the cost and effectiveness of the CLP treatment program. We will also look at plant survey results to be sure the CLP treatments aren't negatively impacting native plants in the lake. Our intent is for native plant growth to recover as curly leaf pondweed is removed from the lake.

Maintaining an Individual Waterfront Access Corridor

As part of the plan, homeowners may maintain an individual access corridor up to thirty feet wide and 150 feet out into the lake in front of their property. To prevent invasion of invasive species, this corridor should be as narrow as possible. The individual access corridor may be maintained by hand (rake or hand pulling) without a permit. If native plants or curly leaf pondweed is impeding navigation, herbicide treatment may be allowed. *Herbicide treatment always requires a permit from DNR*. The DNR will require verification that nuisance conditions impede navigation before a permit is issued. A lake district representative will assist with this verification.

The Lake District does not pay for waterfront access corridor treatment. With the current extensive CLP treatment, individual corridor CLP treatment should not be needed. In future years, it may be permitted. Because the accepted treatment for CLP occurs early in the season when water temperatures are between 50 and 60 degrees F, nuisance conditions must be documented the season before treatment. If verification of a CLP nuisance condition is accepted by DNR, treatment might be allowed for up to three years without additional verification. However, a permit must be applied for and issued each year.

What Qualifies as a Nuisance Level of Native Aquatic Plants?

Native aquatic plants that grow so thick that they impede navigation in individual corridors may qualify for treatment. As with curly leaf pondweed, a permit is always required for herbicide treatment, and navigation impairment must be demonstrated.

Procedure for Individual Corridor Permitting (CLP or native plants)

- Aquatic herbicide applicators might contact a homeowner directly offering their services.
- A homeowner may also wish to contact an herbicide applicator with evidence of a nuisance condition.
- Separate verification is required for CLP or native plants.
- If the homeowner and the applicator agree that nuisance conditions exist, contact the lake district representative for review.
- The applicator then sends in a permit application with verification of nuisance conditions.
- The DNR issues a permit if nuisance conditions are judged to be present from pictures, mapped invasive species beds, and/or on-site verification.

What to include in an aquatic herbicide permit application

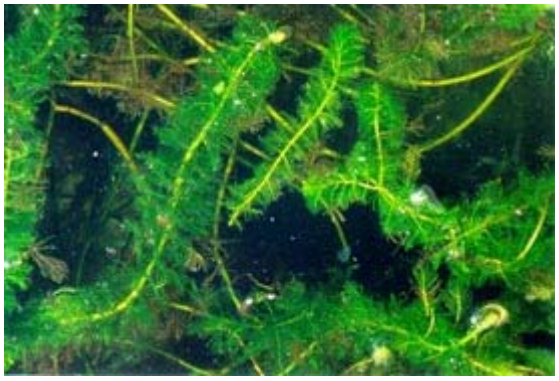
- All required information on application form
- Indicate when plants cause problems and how long problems persist
- Include dated photos of nuisance conditions from previous season
- List depth at end of dock
- Provide examples of specific activities that are limited because of presence of nuisance aquatic plants
- Describe practical alternatives to herbicide use that were considered. These might include:
  - Hand removal/raking of aquatic plants
  - Extending dock to greater depth
  - Altering the route to and from the dock
  - Use of another type of watercraft or motor i.e., is the type of watercraft used common to other sites with similar conditions on this lake?

Aquatic Invasive Species Threats

Non-native invasive aquatic species threaten lakes in Northern Wisconsin. These species disrupt natural habitats and replace native species. The list of potential invasive species threats is long and includes animals such as zebra mussels, and plants such as Eurasian water milfoil and hydrilla. With curly leaf pondweed already established in the lake, Eurasian water milfoil (EWM) remains a top invasive species threat to the lake. Long Lake is susceptible to EWM infestation because it has mucky bottom sediments and nutrient-rich water. It is also close to many Twin Cities and Wisconsin lakes with EWM already present.

Once established in a lake, EWM can take-over rapidly, spreading with plant fragments and runners. The plant produces fragments after fruiting once or twice during the summer. These shoots may then be carried by water currents or inadvertently picked up by boaters. Milfoil is readily dispersed by boats, motors, trailers, bilges, live wells, or bait buckets, and can stay alive for weeks if kept moist. Like CLP, EWM gets a jump-start on native plants by growing early in the spring. Dense stands of EWM inhibit recreational uses like swimming, boating, and fishing. The plants form mats on the lake surface that can shade out native plants. Water quality declines when EWM brings up nutrients from the sediment to the water column.

Eurasian water milfoil is a submersed aquatic plant native to Europe, Asia, and northern Africa. Like the native milfoils, the Eurasian variety has slender stems whorled by submersed feathery leaves and tiny flowers produced above the water surface. Eurasian water milfoil has 9-21 pairs of leaflets per leaf, while Northern milfoil typically has 7-11 pairs of leaflets. Coontail is often mistaken for the milfoils, but does not have individual leaflets.



Eurasian Water Milfoil

Additional Invasive Threats

Zebra Mussels
(from MN Sea Grant)

Purple Loosestrife
(by Elizabeth Czarapata)

Preventing Aquatic Invasive Species
The best way to prevent the spread of invasive species is to be absolutely sure that your boats and trailers are clean – no vegetative fragments should be present. Live wells should also be drained. In fact, it is illegal to transport aquatic plants on boats, trailers, and equipment in Wisconsin. Polk County also has an ordinance that makes it illegal to transport aquatic plants.

The LLPRD will be continuing a Clean Boats, Clean Waters program at the boat landing(s). This program offers standardized methods and materials to remind boaters of the threats of invasive species and the methods available to prevent their introduction.

What if Invasive Species Invade Long Lake?
The Aquatic Plant Management Plan includes a contingency plan in case new invasive species are found in the lake. The first step of the contingency plan is regular and careful monitoring to detect invasion before an invader is well-established. If you learn to identify invasive species, you can help in this effort. Contacts and procedures are also established once an invasive species is confirmed. We are proposing establishing a $5,000 non-lapsing contingency fund so the LLPRD is able to act quickly to address invasive threats that enter the lake.

Important Contacts
Invasive Plant Identification
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Aquatic Plant Management Plan
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