

Water Use Restrictions

Select areas of Houghton Lake will be treated periodically throughout the summer beginning in approximately June. Below is a list of herbicides that may be used in the lake, and their associated use restrictions.

Renovate 3 or Renovate OTF (active ingredient **triclopyr**):

- 24-hour restriction on swimming in the treatment area.
- Irrigation of established lawns and grasses — no restrictions.
- Irrigation of ornamentals, crops, and non-crops — 120 days or until assay indicates a non-detectable level

Navigate or Aqua-Kleen (active ingredient **2,4-dichlorophenoxyacetic acid**):

- 24-hour restriction on swimming in treatment area.
- Irrigation of lawn, grasses and turf - no restrictions.
- Do not use water from treated areas for irrigating plants or mixing sprays for agricultural or ornamental plants, unless an approved assay indicates the 2,4-D concentration is 100 parts per billion (or less).
- Do not use water from treated areas for potable water, unless an approved assay indicates the 2,4-D concentration is 70 parts per billion (or less).

Reward (active ingredient **diquat dibromide**):

- 24-hour restriction on swimming in treatment area.
- 5-day restriction on crop irrigation.
- 1-day animal consumption of treated water.
- 3-day restriction of domestic water supplies.

At the time of treatment, signs will be posted along the shoreline within 100 feet of treatment areas that indicate what herbicides were used and specific use restrictions that apply.

This year's treatments will be conducted by:
PLM Lake and Land Management Corporation
8865 100th Street, SE
Alto, MI 49302
(616) 891-1294

Certified Applicators:
Jason Broekstra
Lynn Benedict
Jaimee Conroy
Bre Grabill, Dusty Grabill
Steve Hanson
Jake Hunt, Nathan Karsten
Dani Maxey, Pat McLamara
Stephanie Mervau
Casey Mickelson
Audrey Miller, Lucas Slagel
Jeff Tolan,
Andy Tomaszewski
Jacob Ware

The following products may be used but have no restrictions:
Cygnnet Plus (adjuvant)
PolyAn (sinking agent)
Water Dye (tracer)

Houghton Lake Improvement Board
P.O. Box 843
Houghton Lake, MI 48629

Resident
Houghton Lake, MI 48629

Standard
U.S. Postage Paid
Permit 15
Houghton Lake, MI
48629



Houghton Lake Improvement Board

Newsletter — Spring 2009

Project Update

This is the third year of the current five-year management plan for Houghton Lake being implemented under the direction of the Houghton Lake Improvement Board. As in previous years, our primary focus is the control of the invasive aquatic plant Eurasian milfoil in Houghton Lake. Thus far, we have been successful at keeping this plant in check and are working to sustain this success. This newsletter is being mailed community-wide to provide an update of what is being done to improve and protect Houghton Lake.

In addition to plant control, the Lake Board has been coordinating annual water quality monitoring, whole-lake vegetation surveys, information and education, and watershed management programs. Given the number of projects in which the Lake Board is involved, we have begun preparing an Annual Report that summarizes all activities performed during the year. In addition, we have compiled a number of historical studies and information about Houghton Lake. All of this information, including the 2008 Annual Report, is posted on our new web site www.houghtonlakeboard.org. If you want to know more about Houghton Lake, visit the web site!

Mark Your Calendar

In 2009, Houghton Lake Improvement Board will hold regular meetings at 7:00 p.m.

Following are the meeting DATES & LOCATIONS.

- June 23 • Roscommon Township Hall
- July 28 • Markey Township Hall
- August 25 • Lake Township Hall
- September 22 • Denton Township Hall
- November 17 • Roscommon Township Hall

To receive regular updates on the activities of the Lake Improvement Board via email, contact the board at lakeboard@mail.com

Environmental Consultant:
Progressive AE



• IMPORTANT NEWS •

from

The Houghton Lake Improvement Board

Roscommon County and the four townships surrounding Houghton Lake (Denton, Lake, Markey, and Roscommon) have all adopted ordinances that prohibit the use of lawn fertilizers containing phosphorus.

The ordinances became effective on January 1, 2009.

Fertilizers containing phosphorus should not be applied to any lawn in Roscommon County unless a soil test has been performed that indicates a phosphorus deficiency, or a new lawn is being established from seed or sod.

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Where can I purchase phosphorus-free lawn fertilizer?

Many local vendors should have phosphorus-free fertilizers available. Look at the label on the fertilizer bag. If the middle number is zero, the fertilizer is phosphorus-free.

Why the fuss about phosphorus?

Phosphorus is the nutrient that most often stimulates excessive growth of aquatic plants, leading to a variety of problems known collectively as eutrophication. Elevated phosphorus levels are causing premature aging of many Michigan lakes. Once in a lake, a single pound of phosphorus can generate hundreds of pounds of aquatic vegetation.

What else can I do to protect area lakes and streams?

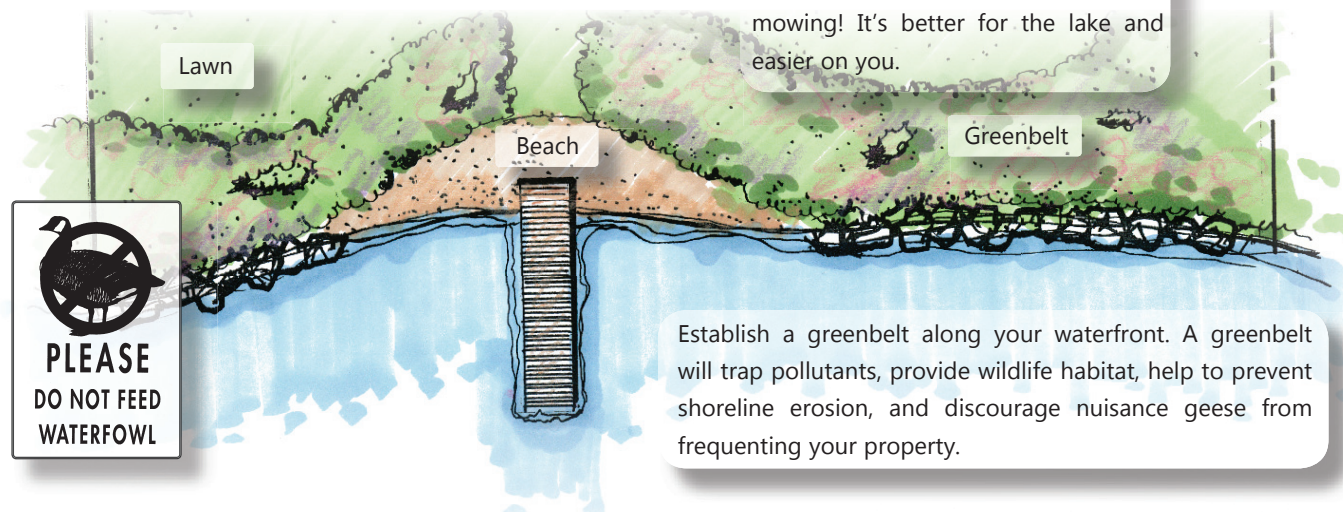
- Use the minimum amount of fertilizer recommended on the label—more is not necessarily better!
- Water the lawn sparingly to avoid washing nutrients and sediments into the lake.
- Don't feed ducks and geese near the lake. Waterfowl droppings are high in nutrients and may cause swimmer's itch.
- Don't burn leaves and grass clippings near the shoreline. Nutrients concentrate in the ash and can easily wash into the lake.
- Don't mow to the water's edge. Instead, allow a strip of natural vegetation (i.e., a greenbelt) to become established along your waterfront. A greenbelt will trap pollutants, provide wildlife habitat, and discourage nuisance geese from frequenting your property.

- Where possible, promote infiltration of stormwater into the ground. Build a rain garden to capture runoff from driveways and downspouts. For more information on rain gardens, visit www.raingardens.org.
- Don't dump anything in wetlands. Wetlands are nature's natural purifiers.



Look for the middle number!
A zero in the middle means phosphorus free!

Minimize lawn area. Less turf means less fertilizer, less pesticides—and less mowing! It's better for the lake and easier on you.



Establish a greenbelt along your waterfront. A greenbelt will trap pollutants, provide wildlife habitat, help to prevent shoreline erosion, and discourage nuisance geese from frequenting your property.

• SWIMMER'S ITCH FACTS •

Compliments of

The Houghton Lake Improvement Board

What Is It?

Swimmer's itch is a patchy red skin rash associated with itching on the parts of the body that have been in the water. The medical term for swimmer's itch is "cercarial dermatitis." The itching occurs within 48 hours of infection and may last up to 7 days. In rare instances, swimmer's itch can be severe if a large portion of the body is infected.

Swimmer's Itch Control

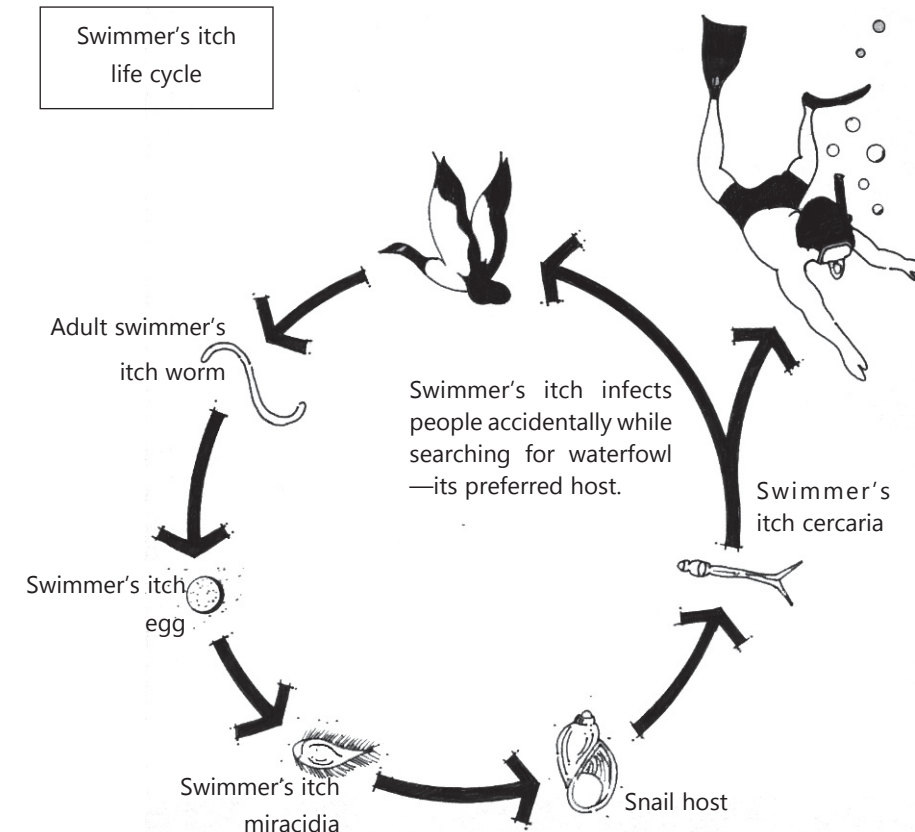
Past efforts to control swimmer's itch on lakes statewide have focused primarily on the application of copper sulfate to kill infested snails. This approach has not proven entirely effective, and, if applied improperly, copper is potentially toxic to fish and other aquatic organisms.

What You Can Do

At present, there are no infallible methods for preventing swimmer's itch. Until an effective method of control is perfected, here are some things you can do to prevent swimmer's itch:

- After leaving the water, towel off immediately, shower, and scrub with brown soap.
- Use a waterproof sunscreen. This forms a chemical barrier that may discourage the cercariae.
- Avoid swimming in shallow shoreline areas, especially if the wind has been blowing steadily toward shore.
- Swim in deeper water. The cercariae that cause swimmer's itch are usually found in shallow waters and most easily attach to relatively inactive bodies. Babies sitting along the shore are most vulnerable.
- An antihistaminic or mild corticosteroid cream purchased over the counter in pharmacies can be beneficial. If the initial itching is severe, then scratching can cause abrasions and skin infections may develop. If the symptoms persist for longer than 3 days, you should consult a physician or dermatologist.
- Don't feed the waterfowl. You could be encouraging ducks and geese that are infested with the swimmer's itch parasite to remain in the area.

Swimmer's itch life cycle



• EXOTIC AQUATIC PLANTS •

Compliments of

The Houghton Lake Improvement Board

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What is an “exotic” species?

An exotic species is one that is found outside of its natural range. Exotic plant species that are currently a threat to Michigan lakes include Eurasian milfoil (*Myriophyllum spicatum*), starry stonewort (*Nitellopsis obtusa*), hydrilla (*Hydrilla verticillata*), and phragmites (*Phragmites australis*). Eurasian milfoil, starry stonewort, and hydrilla are submersed species that grow underwater and phragmites is an emergent plant that grows along the water’s edge.

Why are many exotic plants a nuisance?

Outside their natural range, many exotic aquatic plants have no natural competitors or predators to help keep them in check. Exotic aquatic plants often have aggressive and invasive growth tendencies. They can quickly outcompete native plants and gain dominance.

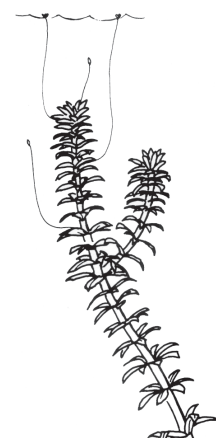
Depending on the plant, dispersion can be by fragments, seeds, tubers or through over-wintering buds called turions. For example, Eurasian milfoil was first introduced to the United States in the 1940’s and spread rapidly by “vegetative propagation” whereby fragments of the plant break off, take root, and grow into new plants. Eurasian milfoil forms a thick canopy at the lake surface that can degrade fish habitat and seriously hinder recreational activity. Once introduced into a lake, Eurasian milfoil often out-competes and displaces more desirable plants.

Like Eurasian milfoil, starry stonewort, hydrilla, and phragmites spread quickly and crowd out native plants.

What can be done to control exotic species?

Many exotic plants are transported on boats and boat trailers. If you trailer your boat from lake to lake, you should wash your boat and trailer before re-launching. With exotic species, an ounce of prevention is worth a pound of cure!

Early detection and rapid response is critical to preventing exotic species from getting a foothold and gaining dominance in a lake. The loss of natural diversity that often accompanies exotic plant infestations can have dire environmental consequences. Depending on the exotic plant, eradication may not be possible. However, you have the best chance of control if your lake is monitored. Once an exotic plant infestation is detected, appropriate management options can be considered.



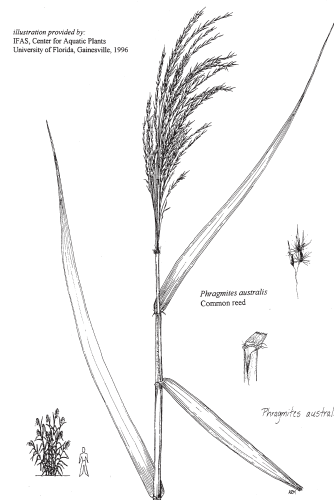
Hydrilla



Eurasian milfoil



Starry stonewort



Phragmites

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• THE MIDDLE GROUNDS •

Compliments of

The Houghton Lake Improvement Board

The “Middle Grounds” are located in the central portion of Houghton Lake and include about 200 acres. Much of the Middle Grounds are less than three to four feet deep. The Middle Grounds have long provided a unique refuge area for fish and wildlife.

In the early 1900’s extensive stands of wild rice existed in the Middle Grounds. The rice beds provided a food source and habitat for many types of waterfowl. Wild rice has been in decline in Houghton Lake since the 1980’s. Reasons cited for the decline in Houghton Lake include disease, ice sheer, water level, increases in water turbidity, and competition with other plant species. While the exact cause of the decline is unclear, wild rice is slowly beginning to re-establish in the lake.

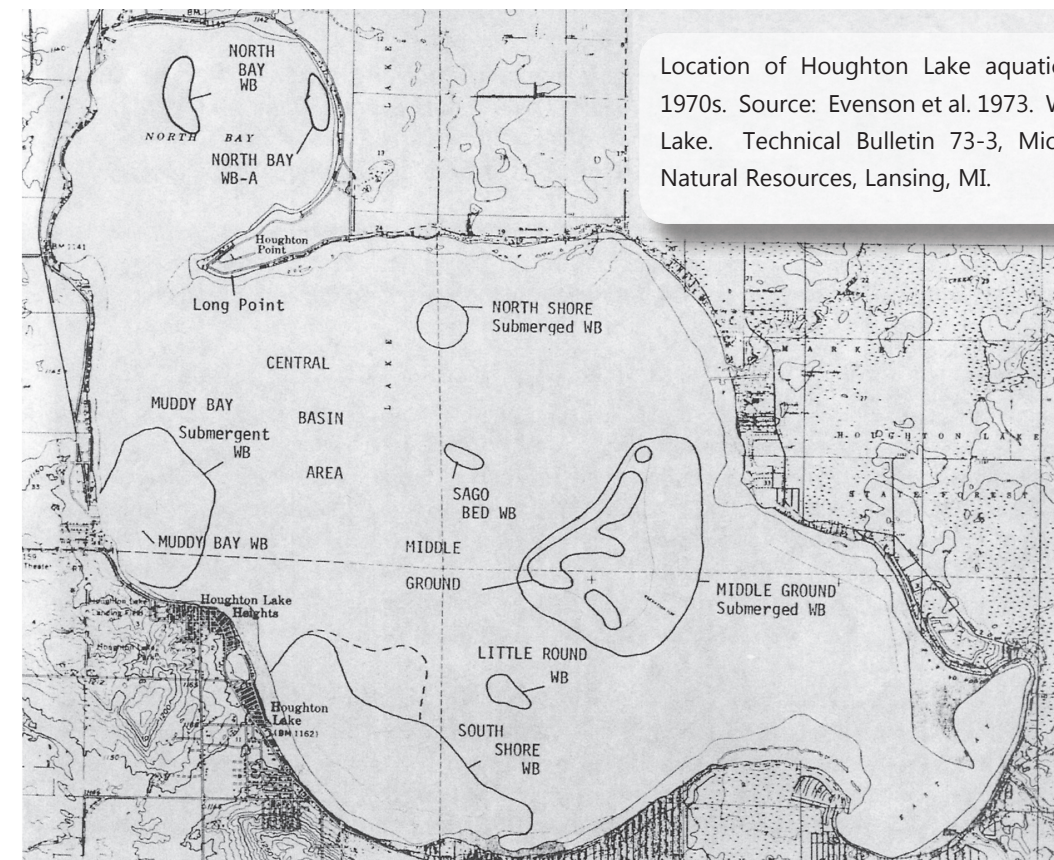
One thing that will surely slow the regrowth of wild rice is boat traffic. In the days of old, before speedboats, boating probably did not have much of an impact on the wild rice. Today, things are different. A boat traveling 30 or 40 mph across the middle grounds certainly leaves its mark.

Vast portions of Houghton Lake are suitable for high-speed boating. However, the middle grounds are not one of them! Please do what you can to avoid impacting this area and help restore an important part of Houghton Lake’s heritage.



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Location of Houghton Lake aquatic plant beds in early 1970s. Source: Evenson et al. 1973. Waterfowl at Houghton Lake. Technical Bulletin 73-3, Michigan Department of Natural Resources, Lansing, MI.

Early Detection—Rapid Response—Better Control!

Invasive aquatic plant control is a problem facing communities throughout Michigan. One of the most problematic plant species is Eurasian milfoil. In a recent publication entitled, *Aquatic Plant Management: Best Management Practices in Support of Fish and Wildlife Habit* published by the Aquatic Ecosystem Restoration Foundation¹, problems with Eurasian milfoil are described as follows:

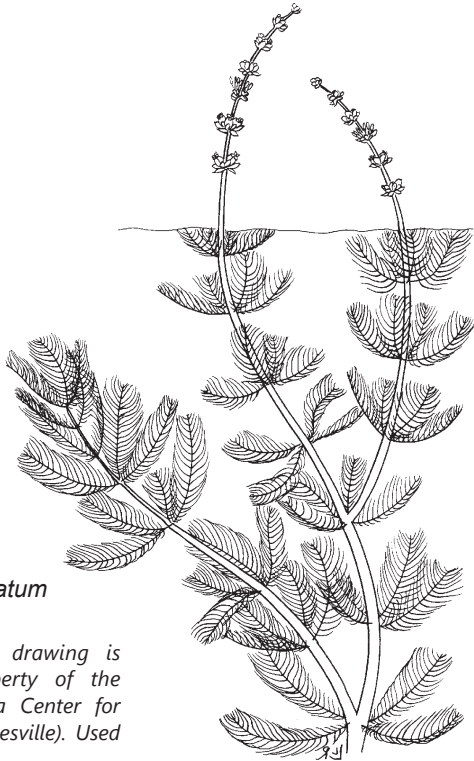
Problems associated with this species include its aggressive displacement of native vegetation, and alteration of fish and wildlife habitat by formation of impenetrable mats with dense upper canopies that reduce light and decrease water flow. These significant changes in habitat quality quickly affect fish, wildlife, and other aquatic organisms.

Over time, Eurasian watermilfoil will out-compete or eliminate more beneficial native aquatic plants, severely reducing natural plant diversity within a lake. Eurasian watermilfoil is rarely used for food by wildlife, and can displace many aquatic plants that are valuable food sources for waterfowl, fish, and insects. Dense stands of Eurasian watermilfoil provide habitat for mosquitoes and may increase populations of some species of these insects.

Fish populations may initially experience a favorable increase when Eurasian watermilfoil first invades a site. However, the abundant and aggressive growth of this weed will counteract any short-term benefits. Its typically dense growth habit make Eurasian watermilfoil beds poor spawning areas for fish and may lead to populations of small-sized specimens. Loss of oxygen and light caused by the dense mats can also affect the characteristics of fish populations. At high densities, Eurasian watermilfoil's foliage supports a lower abundance and diversity of invertebrates to serve as fish food. While dense cover does allow high survival rates of young fish, larger predator fish lose foraging space and are less efficient at obtaining their prey. Thus dense Eurasian watermilfoil stands are reported to reduce expansion and vigor of warm-water fisheries.

The growth and senescence [die-back] of dense Eurasian watermilfoil colonies also reduce water quality and water circulation, and cause lower levels of dissolved oxygen.

1 Getsinger, K., M. D. Moore, E. Dibble, E. Kafcas, M. Maceina, V. Mudrak, C. Lembi, J. Madsen, R. M. Stewart, L. Anderson, W. Haller, C. Layne, A. Cofrancesco, R. Newman, F. Nibling, K. Engelhardt. 2005. *Aquatic Plant Management: Best Management Practices in Support of Fish and Wildlife Habitat*. Aquatic Ecosystem Restoration Foundation.



Eurasian milfoil
Myriophyllum spicatum

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In 2002, a whole-lake treatment of Houghton Lake was conducted with a herbicide called Sonar®. Since that time, the Houghton Lake Improvement Board has been working hard to ensure Eurasian milfoil does not regain dominance in the lake. Thus far, our efforts have been successful! In 2008, six years after the whole-lake Sonar treatment, less than 7% of Houghton Lake required treatment of milfoil.

This year we will remain vigilant and continue with our “early detection—rapid response—better control” approach. In June, biologists will conduct an extensive survey of the lake and plant samples will be collected from several thousand points in the lake to identify Eurasian milfoil locations. Each point will be GPS-referenced and this information will be provided to our herbicide applicator. Milfoil beds will then be treated and a follow-up survey will be conducted later this summer to determine if any additional treatment is warranted. As in previous years, the only plant being targeted for control in Houghton Lake is Eurasian milfoil.

HOUGHTON LAKE PLANT CONTROL HISTORY				
	Herbicides (acres treated)			Milfoil Weevils (# Stocked)
	Sonar®	Contacts	Systemic	Acres Harvested
2002	20,044	17		
2003			32	
2004			44	81 5,000
2005		50	395	84 28,000
2006		59	444	105
2007		106	660	30,000
2008		20	1,310	35