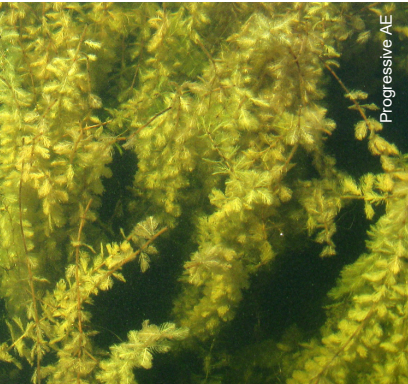


Primary plants targeted for control in Hardwood Lake include Eurasian milfoil and starry stonewort. Both of these plants are non-native (exotic) species that tend to be highly invasive and have the potential to spread quickly if left unchecked.



Eurasian milfoil (*Myriophyllum spicatum*)



Starry stonewort (*Nitellopsis obtusa*)

Plant control activities conducted on Hardwood Lake in 2017 are summarized in the table below.

**HARDWOOD LAKE  
2017 NUISANCE AQUATIC PLANT CONTROL SUMMARY**

Treatment Date	Plants Targeted	Acres Treated
May 22	Starry stonewort, curly-leaf pondweed	9
June 12	Starry stonewort, Eurasian milfoil, algae	14
July 11	Starry stonewort, algae	25
July 19	Harvest pondweeds, wild celery, starry stonewort	11
July 26	Starry stonewort, algae	20
September 12	Eurasian milfoil, Phragmites	2
Total		81

More information on Hardwood Lake can be found on the Hardwood Lake Association's website ([www.hardwoodlake.org](http://www.hardwoodlake.org)).

# Hardwood Lake Aquatic Plant Control Program Annual Activity Summary

A publication of the Hardwood Lake Improvement Board

February 2018

**Hardwood Lake Improvement Board**  
P.O. Box 358  
Prescott, MI 48756-0358

William Cliff, Chair  
*Richland Township Representative*

David Sommers, Secretary  
*Hardwood Lake Resident Representative*

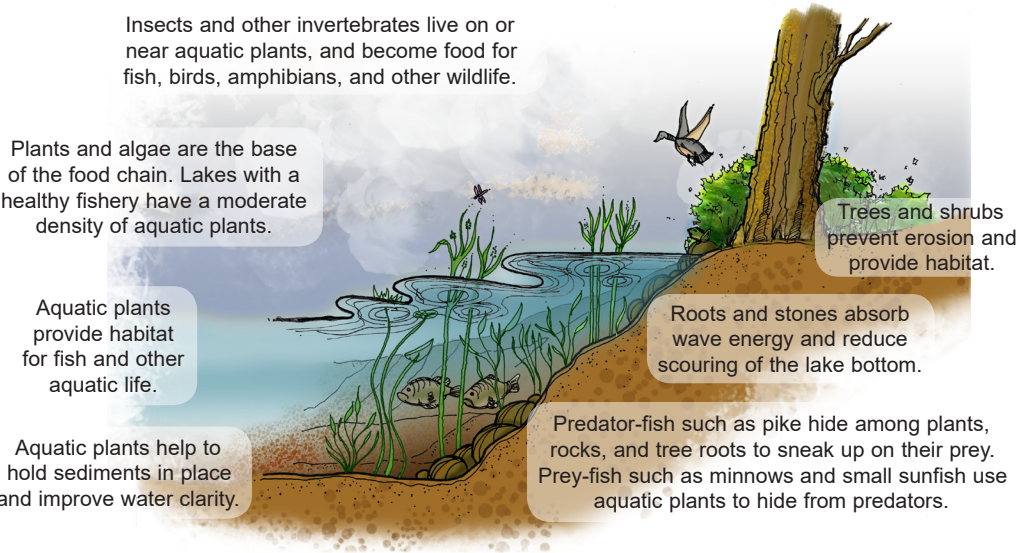
Shirley Parent, Treasurer  
*Logan Township Representative*

Mike DeMatio  
*Ogemaw County Drain Commissioner*

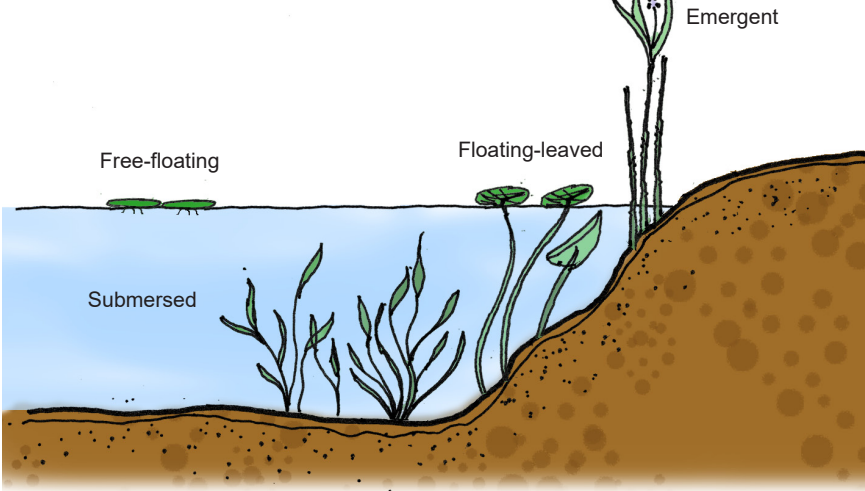
Pete Hennard  
*Ogemaw County Commissioner*

Since 1996, a nuisance plant control program has been ongoing on Hardwood Lake. The primary objective of the program is to prevent the spread of invasive aquatic plants while preserving beneficial plant species. The program is financed through special assessment of lake residents in accordance with the Lake Improvements portion of the Natural Resources and Environmental Protection Act. This report contains an overview of plant control activities conducted on Hardwood Lake in 2017.

Aquatic plants are an important component of lakes. They produce oxygen during photosynthesis, provide food, habitat and cover for fish, and help stabilize shoreline and bottom sediments.

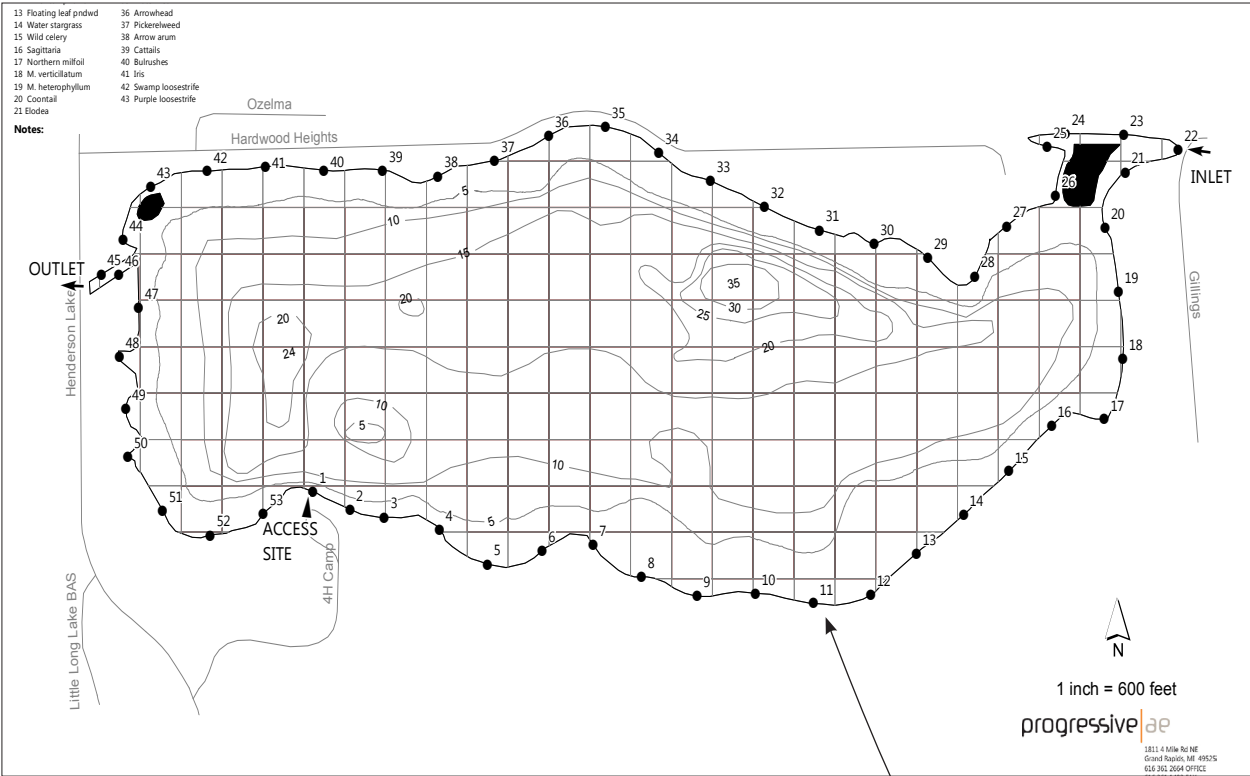


There are four main aquatic plant groups: submersed, floating-leaved, free-floating, and emergent. Each plant group provides important ecological functions. Maintaining a diversity of aquatic plants is important to sustaining a healthy fishery and a healthy lake.



*Environmental Consultant*  
Progressive AE

Plant control in Hardwood Lake involves the select use of herbicides and mechanical harvesting to control invasive plant growth. Plant control activities are coordinated under the direction of an environmental consultant, Progressive AE. Biologists from Progressive conduct GPS-guided surveys of the lake to identify problem areas, and detailed treatment maps are provided to the plant control contractors, Aquatic Services for treatments and West Michigan Aquatic Weed Removal for mechanical harvesting. Follow-up surveys are conducted throughout the growing season to evaluate results and the need for additional treatments. In 2017, surveys of the lake were conducted on May 18, June 6, July 6, July 24, and August 10.



GPS reference points established along the shoreline of Hardwood Lake are used to guide plant surveys and to accurately identify the location of nuisance plant growth areas.

In addition to the surveys of the lake to identify invasive plant locations, a vegetation survey of Hardwood Lake was conducted on August 10, 2017 to evaluate the type and abundance of all plants in the lake. The table below lists each plant species observed during the survey and the relative abundance of each. At the time of the survey, 10 submersed species, 1 free-floating species, 2 floating-leaved species, and 7 emergent species were found in the lake. Hardwood Lake maintains a good diversity of beneficial, native plants species.

HARDWOOD LAKE AQUATIC PLANTS August 10, 2017			
Common Name	Scientific Name	Group	Percent of Sites Where Present
Large-leaf pondweed	<i>Potamogeton amplifolius</i>	Submersed	58
Chara	<i>Chara</i> sp.	Submersed	28
Thin-leaf pondweed	<i>Potamogeton</i> sp.	Submersed	22
Wild celery	<i>Vallisneria americana</i>	Submersed	16
Flat-stem pondweed	<i>Potamogeton zosteriformis</i>	Submersed	14
Eurasian milfoil	<i>Myriophyllum spicatum</i>	Submersed	12
Starry stonewort	<i>Nitellopsis obtusa</i>	Submersed	6
Slender naiad	<i>Najas flexilis</i>	Submersed	4
Coontail	<i>Ceratophyllum demersum</i>	Submersed	4
Curly-leaf pondweed	<i>Potamogeton crispus</i>	Submersed	2
Duckweed	<i>Lemna minor</i>	Free-floating	8
White waterlily	<i>Nymphaea odorata</i>	Floating-leaved	82
Yellow waterlily	<i>Nuphar</i> sp.	Floating-leaved	58
Cattail	<i>Typha</i> sp.	Emergent	38
Pickerselweed	<i>Pontederia cordata</i>	Emergent	26
Lake sedge	<i>Carex lacustris</i>	Emergent	22
Bulrush	<i>Scirpus</i> sp.	Emergent	22
Iris	<i>Iris</i> sp.	Emergent	14
Swamp loosestrife	<i>Decodon verticillatus</i>	Emergent	8
Arrowhead	<i>Sagittaria latifolia</i>	Emergent	2