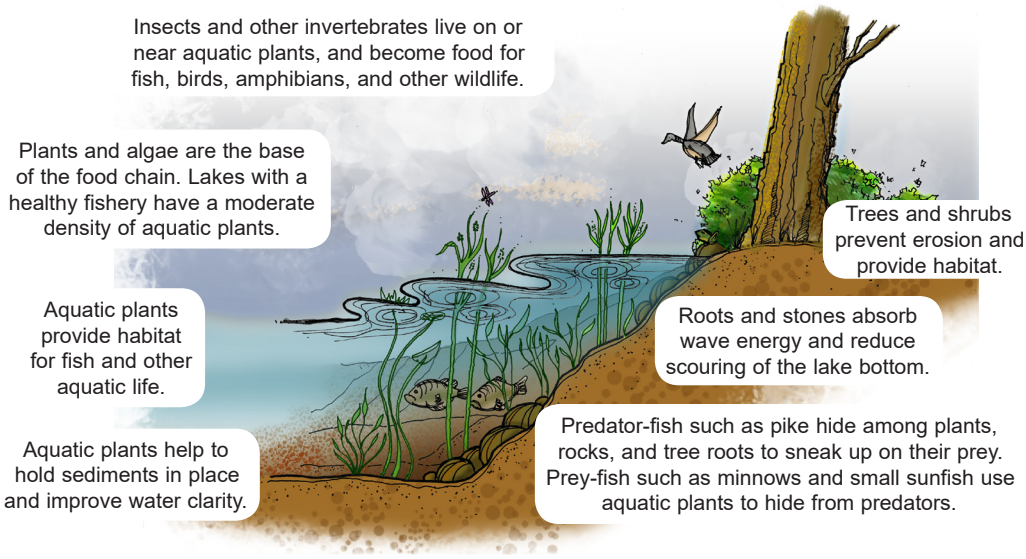
Long Lake
Aquatic Plant Control Program
Annual Activity Summary

October 2018

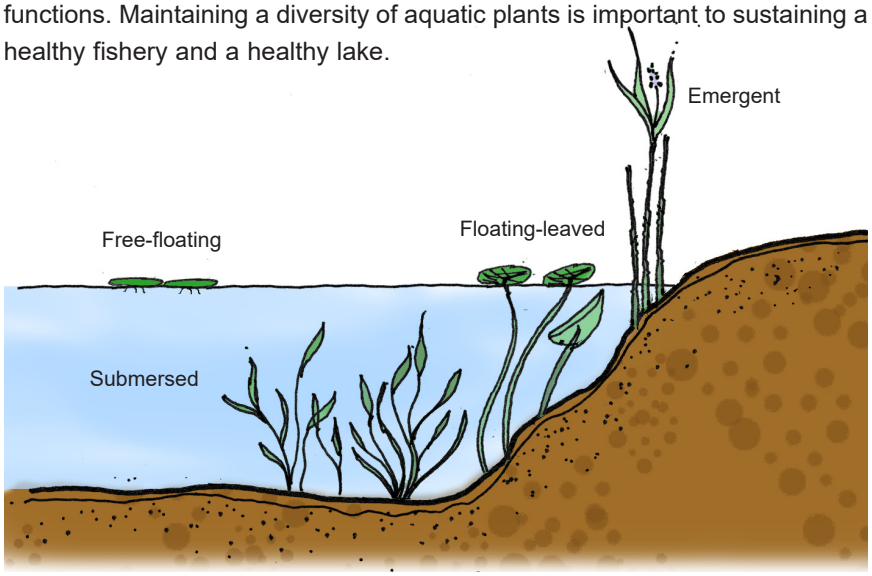
A publication of the Aloha Township Board and the Cheboygan Long Lake Area Association

Since 2015, a nuisance plant control program has been ongoing on Long 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 Township Public Improvement Statute. This report contains an overview of plant control activities conducted on Long Lake in 2018.

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.



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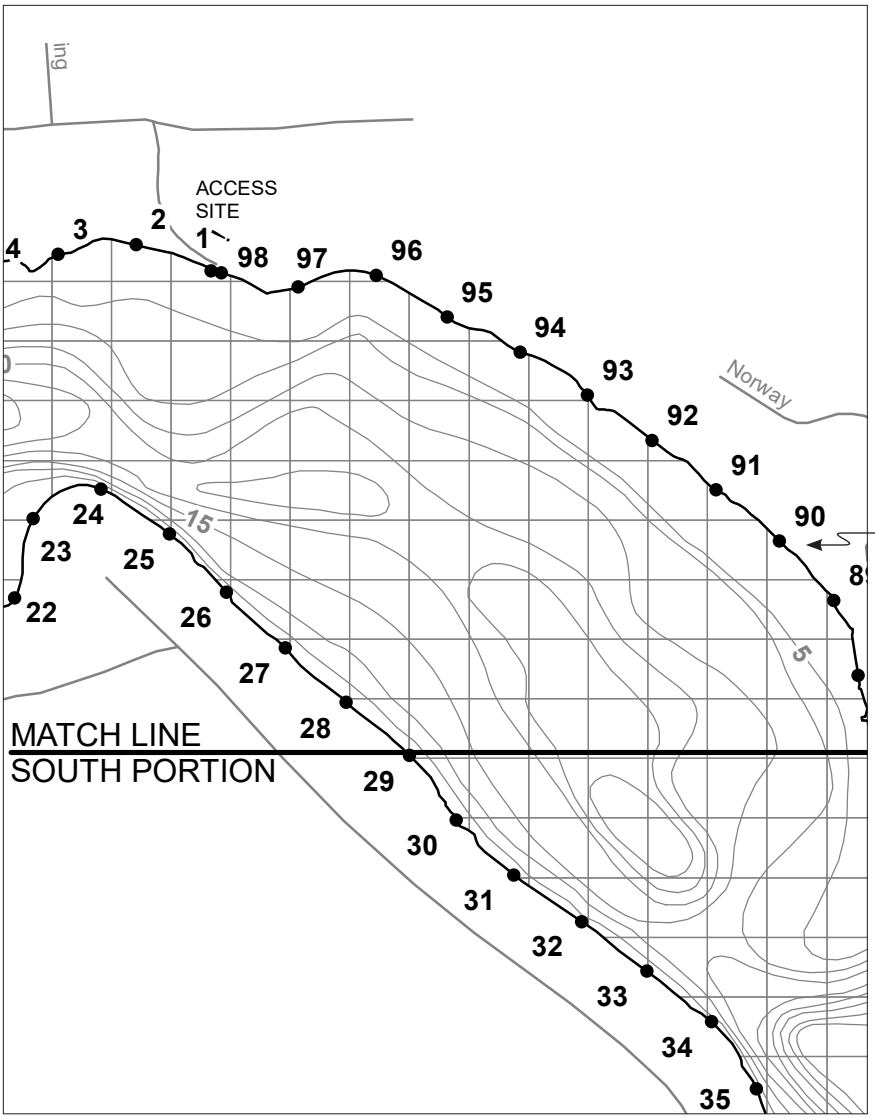
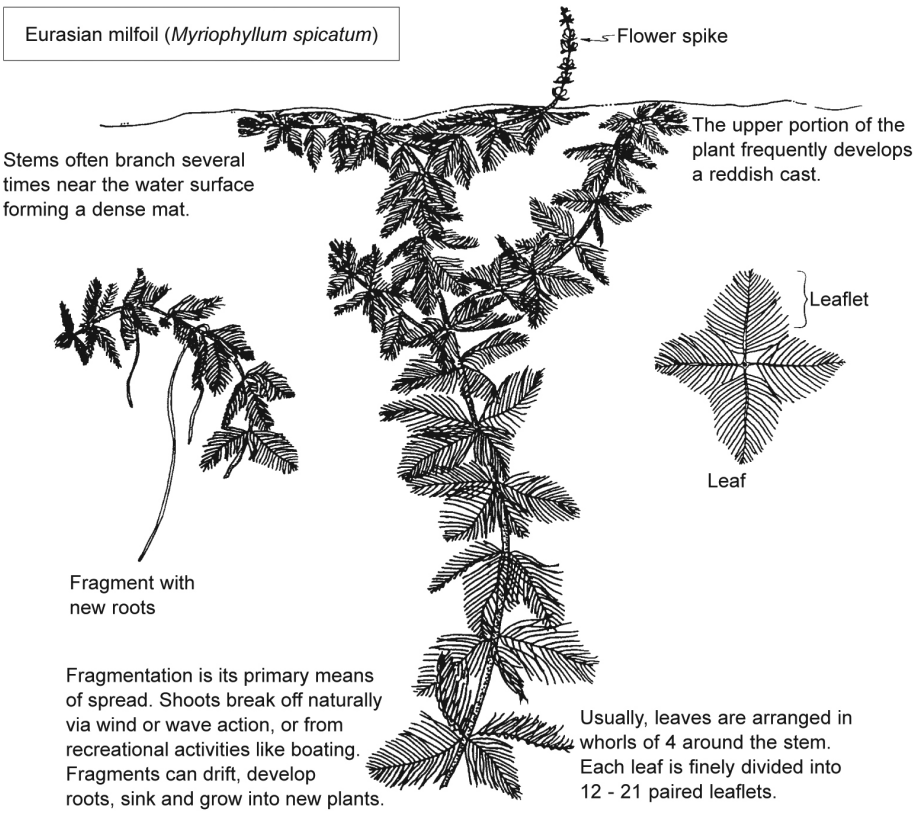
Plant control in Long Lake consists of the select use of herbicides to control invasive plant growth. Plant control activities are coordinated under the direction of an environmental consultant, Progressive AE. Biologists from Progressive conduct GPS-guided surveys of the lake to identify problem areas, and detailed treatment maps are provided to the plant control contractor, PLM Lake & Land Management Corp. Follow-up surveys are conducted throughout the growing season to evaluate results and the need for additional treatments. In 2018, surveys of the lake were conducted on June 5, July 11, and August 28.



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

Plant Control

The primary plant targeted for control in Long Lake is Eurasian milfoil (*Myriophyllum spicatum*). Eurasian milfoil is an invasive aquatic plant that was first introduced to the United States in the 1940s. Although it is an exotic species, it is currently widespread in Michigan. Eurasian milfoil is problematic in that it becomes established early in the growing season and can grow at greater depths than many native plants. Eurasian milfoil often forms a thick canopy at the lake surface that can seriously hinder recreational activity. Dense stands of Eurasian milfoil can adversely impact fisheries by degrading fish habitat, impairing feeding, and disrupting predator-prey interactions. Eurasian milfoil can spread rapidly by "vegetative propagation" whereby small pieces break off, take root, and grow into new plants. Once introduced into a lake, Eurasian milfoil often out-competes and displaces more desirable plants and becomes the dominant species. The treatment program in Long Lake is preventing Eurasian milfoil from gaining dominance in the lake.



Plant control activities conducted on Long Lake in 2018 are summarized in the table below.

LONG LAKE
2018 NUISANCE AQUATIC PLANT CONTROL SUMMARY

Treatment Date	Plants Targeted	Acres Treated
June 18	Eurasian milfoil	3
July 31	Eurasian milfoil	14.5
Total		17.5

In addition to the surveys of the lake to identify invasive plant locations, a more comprehensive vegetation survey was conducted on August 28, 2018 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, 15 submersed species, three floating-leaved species, one free-floating species, and four emergent species were found in the lake. Long Lake maintains an excellent diversity of beneficial, native plants species.

LONG LAKE AQUATIC PLANTS
August 28, 2018

Common Name	Scientific Name	Group	Percent of Sites Where Present
Chara	*Chara* sp.	Submersed	72
Slender naiad	*Najas flexilis*	Submersed	69
Illinois pondweed	*Potamogeton illinoensis*	Submersed	65
Wild celery	*Vallisneria americana*	Submersed	55
Thin-leaf pondweed	*Potamogeton* sp.	Submersed	34
Richardson's pondweed	*Potamogeton richardsonii*	Submersed	23
Large-leaf pondweed	*Potamogeton amplifolius*	Submersed	22
Floating-leaf pondweed	*Potamogeton natans*	Submersed	16
Eurasian milfoil	*Myriophyllum spicatum*	Submersed	3
Coontail	*Ceratophyllum demersum*	Submersed	2
White water crowfoot	*Ranunculus* sp.	Submersed	2
Crested arrowhead	*Sagittaria cristata*	Submersed	1
Green milfoil	*Myriophyllum verticillatum*	Submersed	1
Curly-leaf pondweed	*Potamogeton crispus*	Submersed	1
Submersed bulrush	*Schoenoplectus subterminalis*	Submersed	1
White waterlily	*Nymphaea odorata*	Floating-leaved	11
Yellow waterlily	*Nuphar* sp.	Floating-leaved	7
Water shield	*Brasenia schreberi*	Floating-leaved	4
Watermeal	*Wolffia punctata*	Free-floating	1
Bulrush	*Schoenoplectus* sp.	Emergent	12
Swamp loosestrife	*Decodon verticillatus*	Emergent	10
Cattail	*Typha* sp.	Emergent	9
Water smartweed	*Persicaria amphibia*	Emergent	8