

October

2024

TOWNLINE LAKE

PLANT CONTROL SUMMARY

PREPARED FOR:
TOWNLINE LAKE IMPROVEMENT BOARD
MONTCALM COUNTY, MI

TOWNLINE LAKE IMPROVEMENT BOARD

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ENVIRONMENTAL CONSULTANT

Progressive Companies

AQUATIC HERBICIDE APPLICATOR

Michigan Lakefront Solutions

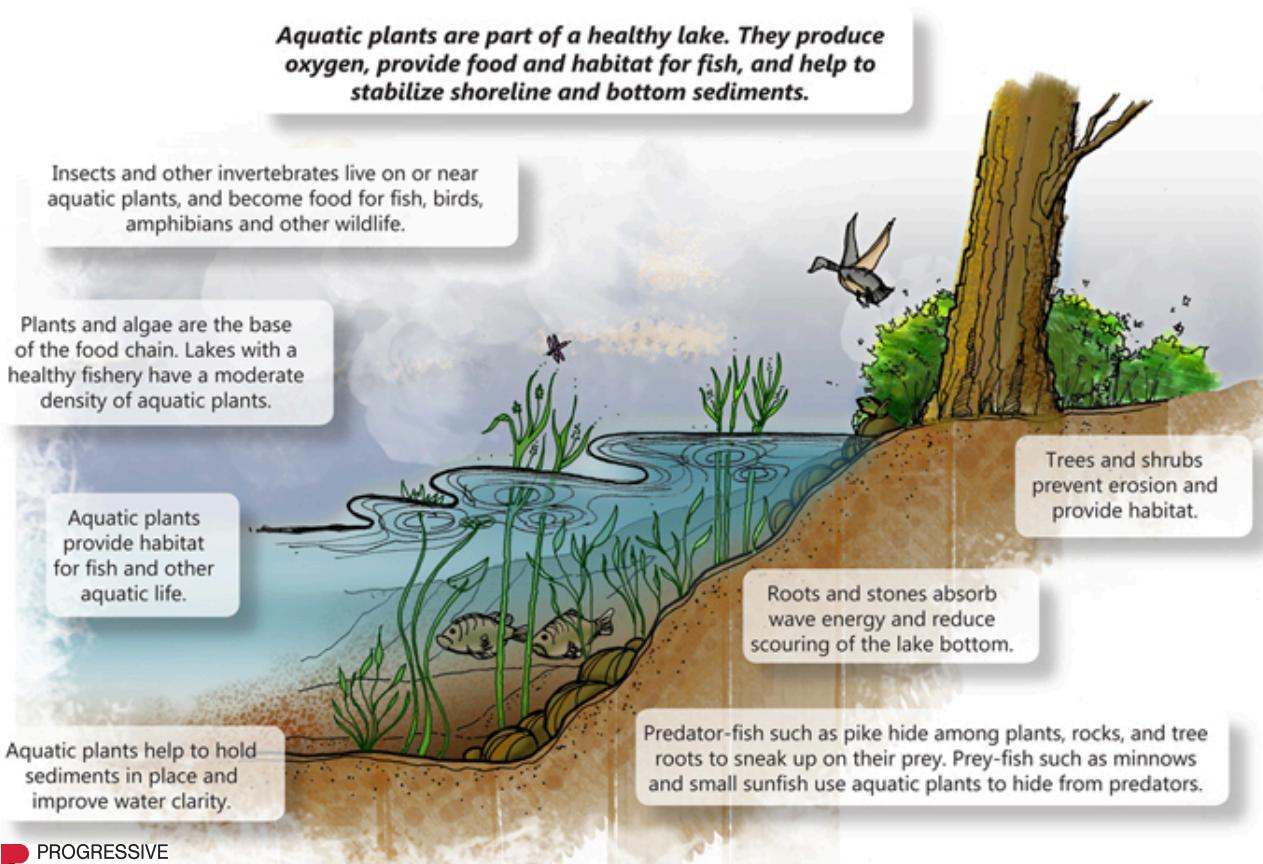
MECHANICAL HARVESTER

PLM Lake & Land Management



PROGRAM SUMMARY

A nuisance aquatic plant control program has been ongoing on Townline Lake for many years. The primary objective of the program is to prevent the spread of invasive aquatic plants while preserving beneficial native plant species. This report contains an overview of plant control activities conducted on Townline Lake in 2024.



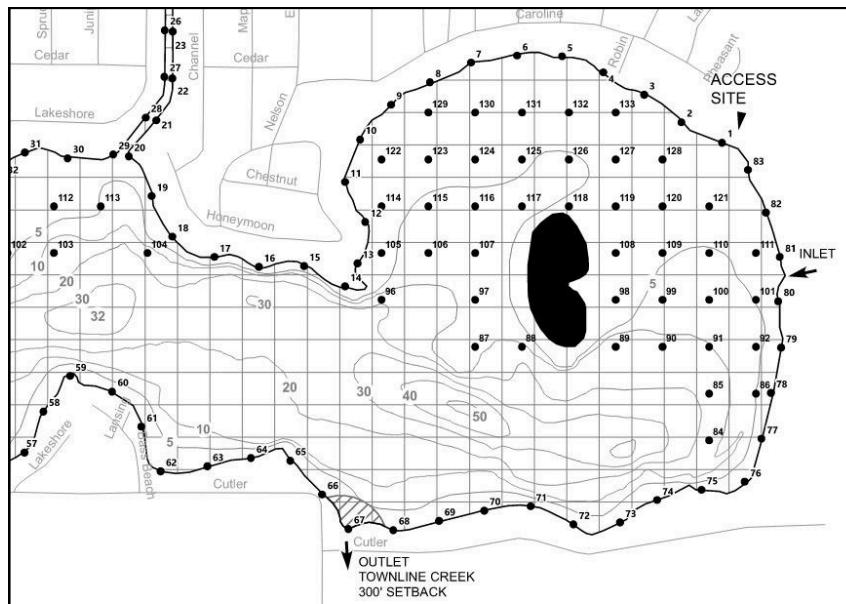
Aquatic plants are an important component of lakes. They produce oxygen during photosynthesis, provide food, habitat and cover for fish, and help stabilize shoreline and bottom sediments. There are four main aquatic plant groups: submersed, floating-leaved, free-floating, and emergent. Each plant group provides important ecological functions. Maintaining a diversity of native aquatic plants is important to sustaining a healthy fishery and a healthy lake. Invasive aquatic plant species have negative impacts to the lake's ecosystem. It is important to maintain an active plant control program to reduce the introduction and spread of invasive species within Townline Lake. Plant control efforts in 2024 consisted of five aquatic plant surveys, three herbicide treatments, and one mechanical harvesting event.

PLANT CONTROL

Plant control activities are coordinated under the direction of an environmental consultant, Progressive Companies. Scientists from Progressive conduct GPS-guided surveys of the lake to identify problem areas, and georeferenced plant control maps are provided to the plant control contractors. GPS reference points are established along the shoreline and in the shallow areas of the lake. These waypoints are used to accurately identify the location of invasive and nuisance plant growth areas.



Eurasian milfoil
Myriophyllum spicatum

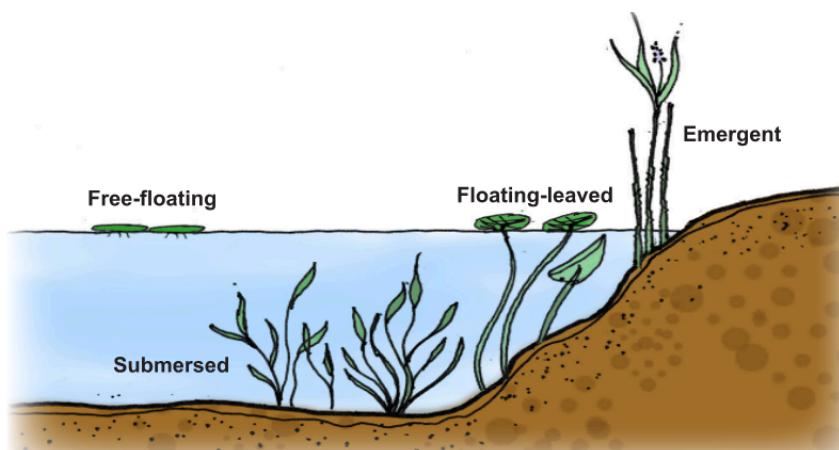


Curly-leaf pondweed
Potamogeton crispus



Starry stonewort
Nitellopsis obtusa

Primary plants targeted for control in Townline Lake include hybrid milfoil, curly-leaf pondweed, and starry stonewort. These plants are non-native (exotic) species that tend to be highly invasive and have the potential to spread quickly if left unchecked. Plant control activities conducted on the lake in 2024 are summarized in Table 1.



2024

PLANT CONTROL

TABLE 1. TOWNLINE LAKE 2024 PLANT CONTROL ACTIVITIES

Date	Plants Targeted	Acreage
May 22	Hybrid milfoil, curly-leaf	110.75
June 25	Nuisance natives, <i>Chara</i> , starry stonewort	14.00
July 22	Starry stonewort	5.50
July 25	Harvesting	20.50
Total		150.75

In 2024, a total of 130.25 acres of Townline Lake were treated with aquatic herbicides. Hybrid milfoil was treated with the systemic herbicide, ProcellaCOR, for season-long control. A large curly-leaf pondweed treatment occurred on May 22 using contact herbicides which provided control of the invasive plant. Starry stonewort and nuisance *Chara* were treated with chelated copper products and flumioxazin. A total of 20.50 acres of mechanical harvesting was performed on the lake in late July to remove nuisance densities of native plants.

PLANT INVENTORY SURVEY

In addition to the surveys of the lake to identify invasive plant locations, a detailed vegetation survey of Townline Lake was conducted on August 14 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, 12 submersed species, one free-floating species, two floating-leaved species, and six emergent species were found in the lake. Townline Lake supports expansive rooted plant growth and maintains a moderate diversity of beneficial, native plant species.

TABLE 2. TOWNLINE LAKE 2024 PLANT INVENTORY DATA

Common Name	Scientific Name	Group	Percentage of sites where present
Wild celery	<i>Vallisneria americana</i>	Submersed	68
<i>Chara</i>	<i>Chara</i> sp.	Submersed	67
Thin-leaf pondweed	<i>Potamogeton</i> sp.	Submersed	60
Slender naiad	<i>Najas flexilis</i>	Submersed	56
Large-leaf pondweed	<i>Potamogeton amplifolius</i>	Submersed	40
<i>Elodea</i>	<i>Elodea canadensis</i>	Submersed	16
Coontail	<i>Ceratophyllum demersum</i>	Submersed	13
Hybrid milfoil	<i>Myriophyllum</i> sp.	Submersed	8
Illinois pondweed	<i>Potamogeton illinoensis</i>	Submersed	5
Starry stonewort	<i>Nitellopsis obtusa</i>	Submersed	3
Curly-leaf pondweed	<i>Potamogeton crispus</i>	Submersed	2
Water stargrass	<i>Heteranthera dubia</i>	Submersed	1
Duckweed	<i>Lemna minor</i>	Free-floating	5
White waterlily	<i>Nymphaea odorata</i>	Floating-leaved	27
Yellow waterlily	<i>Nuphar</i> sp.	Floating-leaved	8
Swamp loosestrife	<i>Decodon verticillatus</i>	Emergent	15
Purple loosestrife	<i>Lythrum salicaria</i>	Emergent	7
Cattail	<i>Typha</i> sp.	Emergent	5
Arrowhead	<i>Sagittaria latifolia</i>	Emergent	4
<i>Iris</i>	<i>Iris</i> sp.	Emergent	3
Bulrush	<i>Schoenoplectus</i> sp.	Emergent	2

Exotic invasive species