November 2024

PAW PAW LAKE

PLANT CONTROL SUMMARY

PREPARED FOR:
WATERVLIET & COLOMA TOWNSHIP BOARDS
BERRIEN COUNTY, MI

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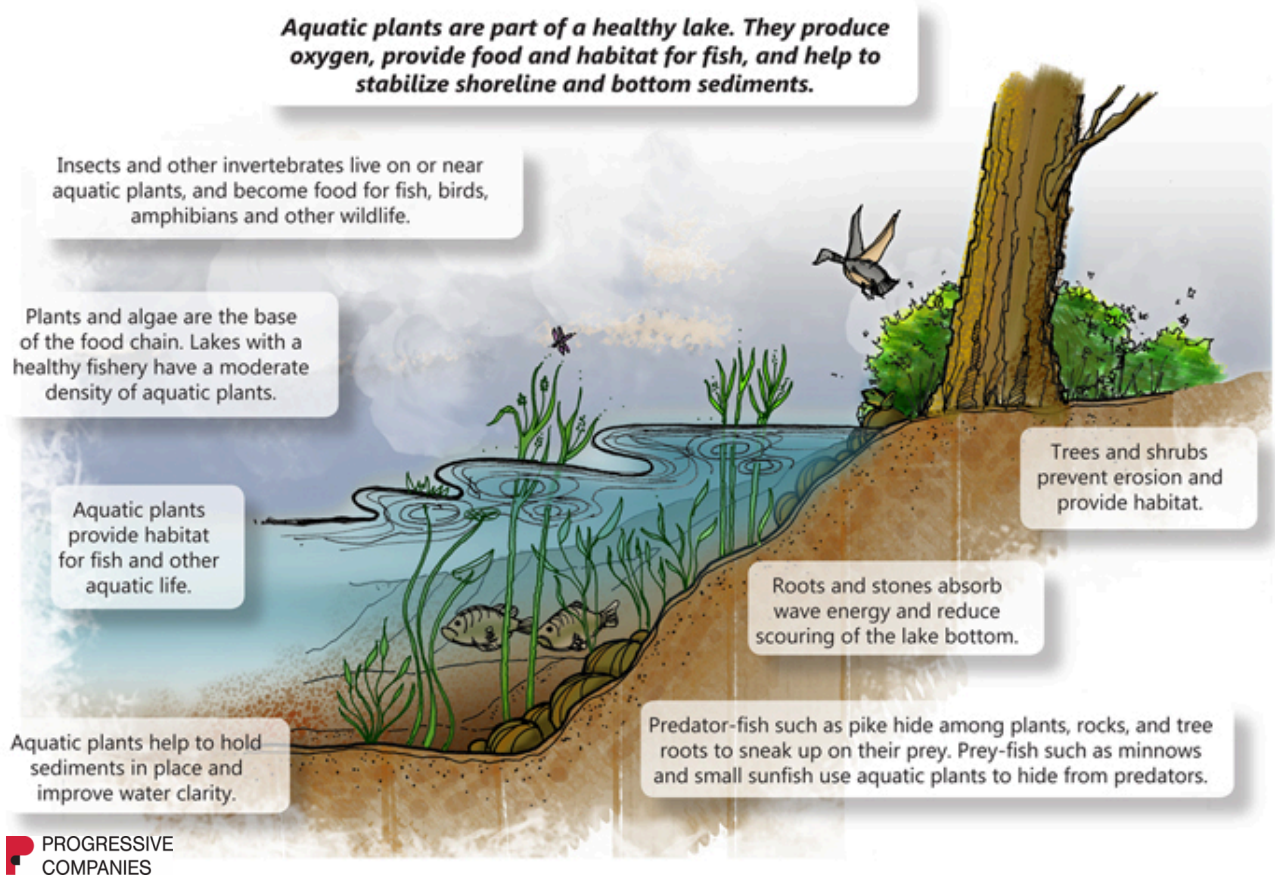
PLM Lake & Land Management Corp

PROGRAM SUMMARY

The primary objective of the plant control program on Paw Paw Lake 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 Paw Paw 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 Paw Paw Lake. Plant monitoring and control efforts in 2024 consisted of four surveys and three herbicide treatments.

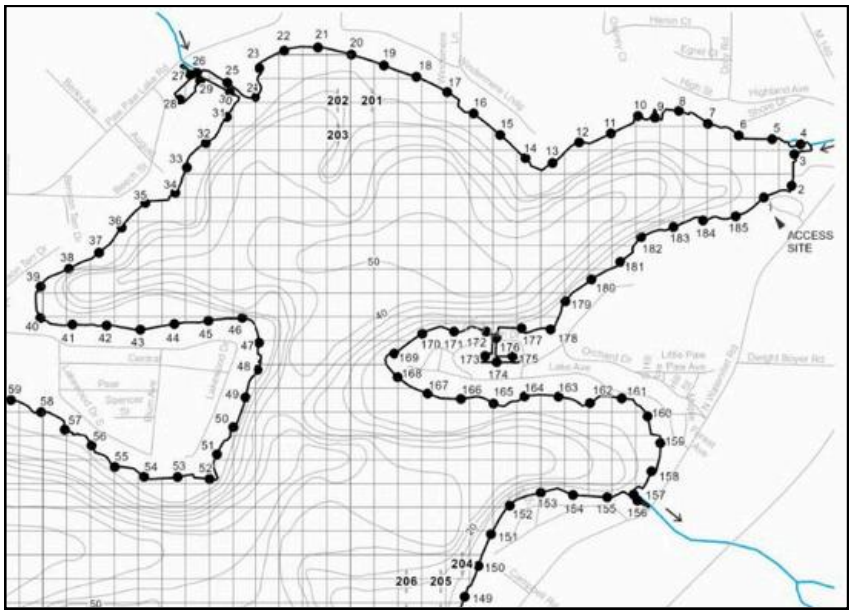
PLANT CONTROL

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 contractor, PLM Lake & Land Management Corp. GPS reference points are established along the shoreline and shallow areas of the lake. These waypoints are used to accurately identify the location of invasive and nuisance plant growth areas.

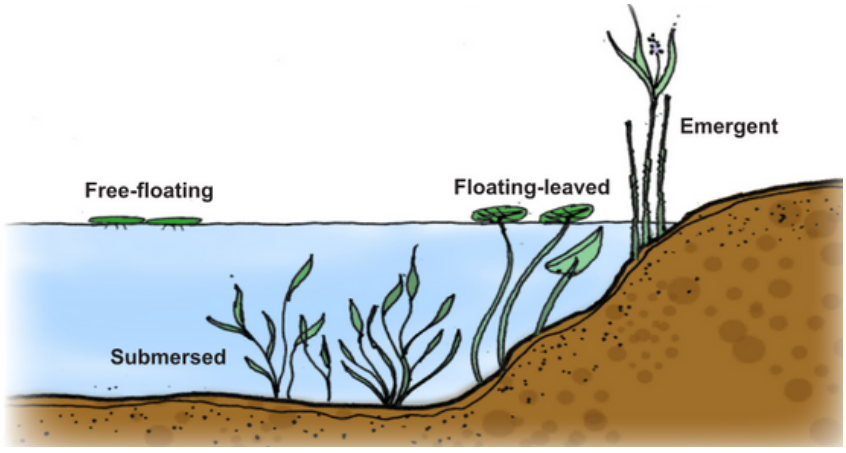
Eurasian milfoil
Myriophyllum spicatum

Curly-leaf pondweed
Potamogeton crispus

Starry stonewort
Nitellopsis obtusa



Primary plants targeted for control in Paw Paw Lake include Eurasian 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.



PLANT CONTROL

TABLE 1. PAW PAW LAKE 2024 PLANT CONTROL ACTIVITIES

Date	Plants Targeted	Acreage
May 22	E. milfoil, curly-leaf pondweed	81.75
June 18	E. milfoil, starry stonewort, nuisance natives, algae	55.50
July 17	E. milfoil, starry stonewort	28.25
Total		**165.50**

In 2024, 165.5 acres of Paw Paw Lake were treated with aquatic herbicides. Eurasian milfoil was treated with systemic and contact herbicides throughout the season. A large curly-leaf pondweed treatment occurred in May using contact herbicides which provided seasonal control of the invasive plant. To eliminate the use of copper products, contact herbicides were used to treat starry stonewort and nuisance algae.

Given the well-established Eurasian milfoil seed bank, new and persistent growth of this invasive plant was observed throughout the season, even within treatment areas. Moving forward, the most effective approach to curtailing future growth will be the strategic use of systemic herbicides. Starry stonewort was treated in June and July. Management of starry stonewort early in the season is crucial to prevent the navigational and recreational challenges typically associated with the growth of this invasive species.

PLANT INVENTORY SURVEY

In addition to the surveys of the lake to identify invasive plant locations, a detailed vegetation survey of Paw Paw Lake was conducted on August 26 to evaluate the type and abundance of all plants in the lake. The table below lists each plant species observed during the 2023 and 2024 inventory surveys and the relative abundance of each. At the time of the 2024 survey, 17 submersed species, one free-floating species, two floating-leaved species, and nine emergent species were found in the lake. Paw Paw Lake maintains a good diversity of beneficial, native plant species. Minimal changes in the plant community and composition were noted between 2023 and 2024.

TABLE 2. PAW PAW LAKE 2024 PLANT INVENTORY DATA

Common Name	Scientific Name	Group	2024 Percentage of sites where present	2023 Percentage of sites where present
Coontail	*Ceratophyllum demersum*	Submersed	56	48
Chara	*Chara* sp.	Submersed	55	41
Wild celery	*Vallisneria americana*	Submersed	47	27
Eurasian milfoil	*Myriophyllum spicatum*	Submersed	28	41
Slender naiad	*Najas flexilis*	Submersed	25	50
Large-leaf pondweed	*Potamogeton amplifolius*	Submersed	25	21
Flat-stem pondweed	*Potamogeton zosteriformis*	Submersed	22	28
Water stargrass	*Heteranthera dubia*	Submersed	16	1
Thin-leaf pondweed	*Potamogeton* sp.	Submersed	13	8
Starry stonewort	*Nitellopsis obtusa*	Submersed	13	12
Illinois pondweed	*Potamogeton illinoensis*	Submersed	8	4
Sago pondweed	*Stuckenia pectinata*	Submersed	5	1
American pondweed	*Potamogeton americanus*	Submersed	4	0
Curly-leaf pondweed	*Potamogeton crispus*	Submersed	4	2
Small pondweed	*Potamogeton pusillus*	Submersed	4	6
Variable pondweed	*Potamogeton gramineus*	Submersed	1	4
Elodea	*Elodea canadensis*	Submersed	1	1
Duckweed	*Lemna minor*	Free-floating	2	2
White waterlily	*Nymphaea odorata*	Floating-leaved	18	13
Yellow waterlily	*Nuphar* sp.	Floating-leaved	13	16
Arrowhead	*Sagittaria latifolia*	Emergent	10	10
Purple loosestrife	*Lythrum salicaria*	Emergent	8	10
Lake sedge	*Carex lacustris*	Emergent	4	5
Swamp loosestrife	*Decodon verticillatus*	Emergent	3	1
Cattail	*Typha* sp.	Emergent	2	2
Pickerelweed	*Pontederia cordata*	Emergent	1	4
Phragmites	*Phragmites australis*	Emergent	1	1
Bulrush	*Schoenoplectus* sp.	Emergent	1	3
Iris	*Iris* sp.	Emergent	0	1

Exotic invasive species