

Pentwater Lake Aquatic Plant Control Program 2021 Activity Summary

A publication of the Pentwater Lake Improvement Board

Pentwater Lake Improvement Board

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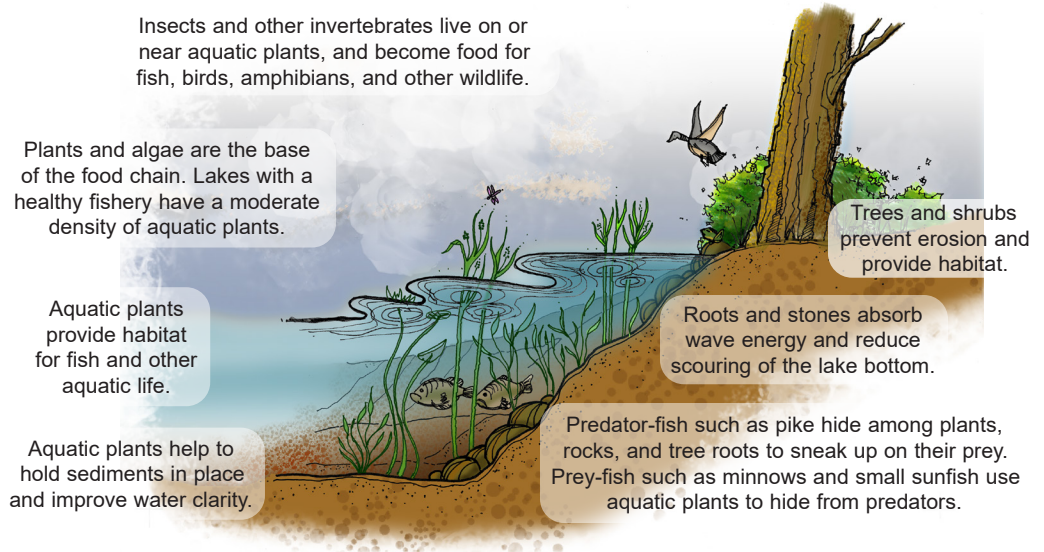
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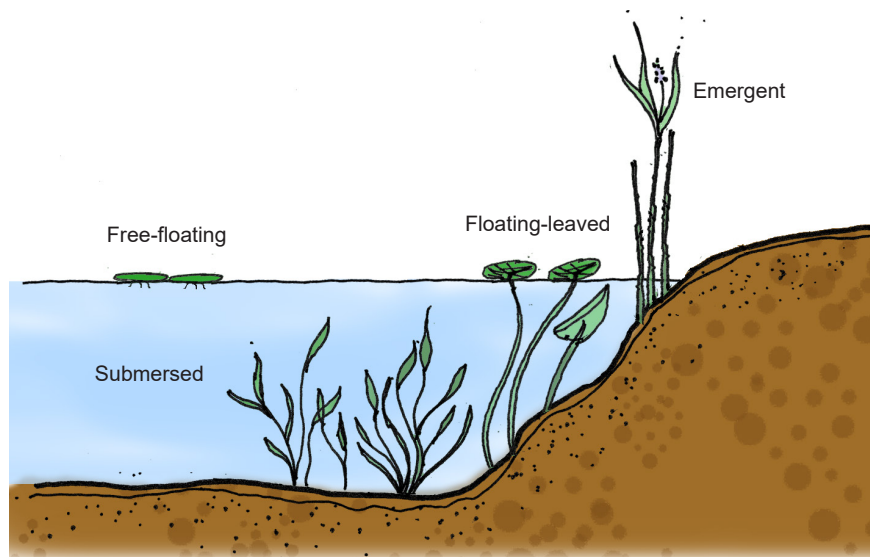
Michelle Martin
Oceana County Drain Commissioner

For the past several years, a nuisance plant control program has been ongoing on Pentwater Lake. The primary objective of the program is to prevent the spread of invasive aquatic plants while preserving beneficial plant species. This report contains an overview of plant control activities conducted on Pentwater Lake in 2021.

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.



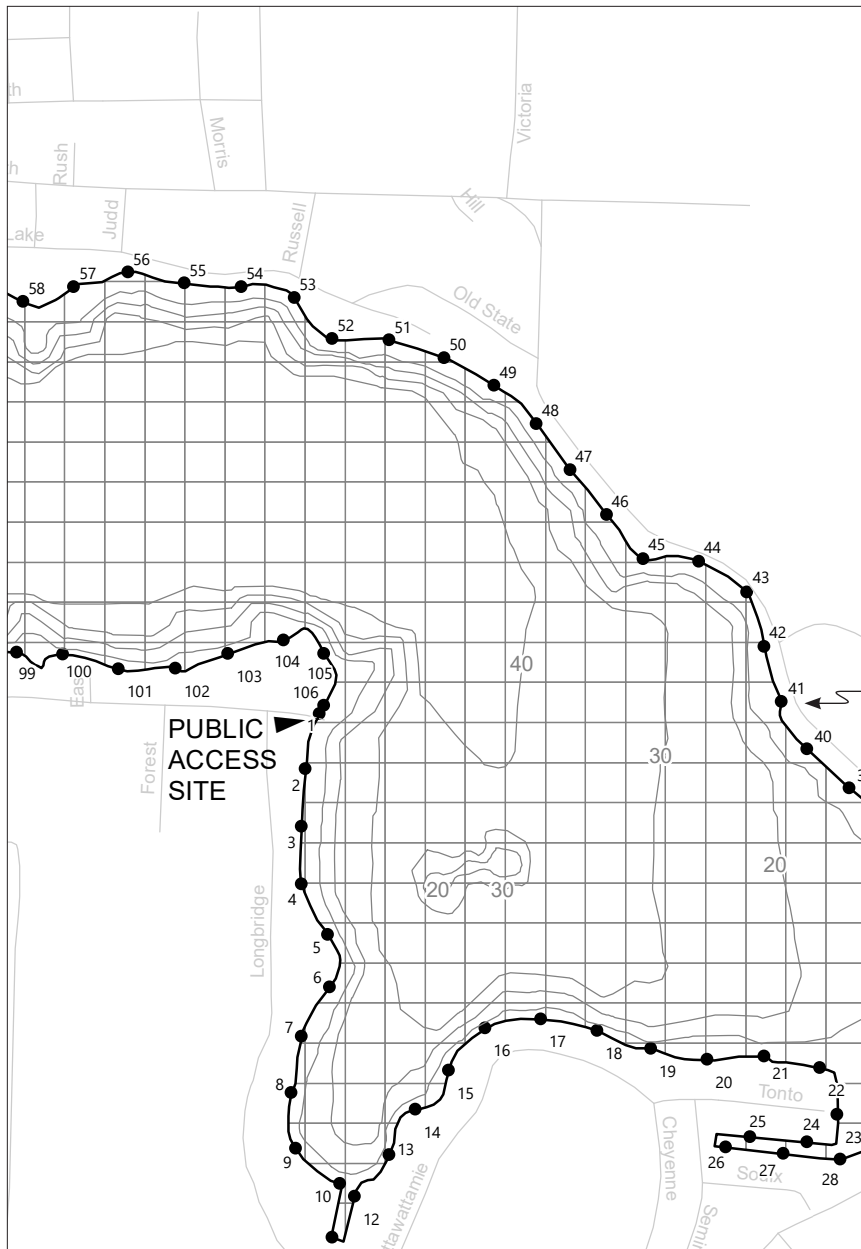
Environmental Consultant
Progressive AE

Herbicide Applicator
PLM Lake and Land Management

Harvesting Contractor
PLM Lake and Land Management

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 georeferenced plant control maps are provided to the plant control contractor.

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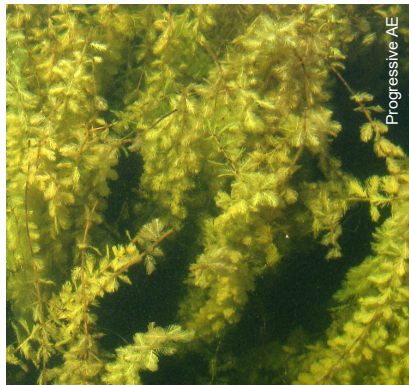


GPS reference points established along the shoreline of Pentwater Lake are used to guide plant surveys and to accurately identify the location of nuisance plant growth areas.

Plant Control

Plant control in Pentwater Lake involves the select use of herbicides and mechanical harvesting to control invasive plant growth. Primary plants targeted for control in Pentwater 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.

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Hybrid milfoil (*Myriophyllum* sp.)



Starry stonewort (*Nitellopsis obtusa*)

Plant control activities conducted on Pentwater Lake in 2021 are summarized in the table below.

PENTWATER LAKE 2021 NUISANCE AQUATIC PLANT CONTROL SUMMARY

Work Type	Date	Plants Targeted	Acres
Survey	June 1		
Herbicide	June 9	Hybrid milfoil, curly-leaf pondweed	11
Survey	July 19		
Herbicide	July 29	Nuisance native plants	1
Survey	August 25		
Harvesting	September 7-10	Starry stonewort	30
Survey	September 10		
Total			42

End-of-year Aquatic Plant Survey

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In addition to the surveys of the lake to identify invasive plant locations, a vegetation survey of Pentwater Lake was conducted on August 25 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, two free-floating species, two floating-leaved species, and four emergent species were found in the lake. Pentwater Lake maintains a good diversity of beneficial, native plants species.

PENTWATER LAKE AQUATIC PLANTS AUGUST 25, 2021

Common Name	Scientific Name	Group	Percent of Sites Where Present
Starry stonewort*	<i>Nitellopsis obtusa</i>	Submersed	65
Wild celery	<i>Vallisneria americana</i>	Submersed	62
Coontail	<i>Ceratophyllum demersum</i>	Submersed	58
Flat-stem pondweed	<i>Potamogeton zosteriformis</i>	Submersed	24
Richardson's pondweed	<i>Potamogeton richardsonii</i>	Submersed	24
Bladderwort	<i>Utricularia vulgaris</i>	Submersed	11
Chara	<i>Chara</i> sp.	Submersed	11
Water stargrass	<i>Heteranthera dubia</i>	Submersed	11
Hybrid milfoil*	<i>Myriophyllum</i> sp.	Submersed	11
Slender naiad	<i>Najas flexilis</i>	Submersed	9
Whitestem pondweed	<i>Potamogeton praelongus</i>	Submersed	8
Thin-leaf pondweed	<i>Potamogeton</i> sp.	Submersed	4
Elodea	<i>Elodea canadensis</i>	Submersed	3
Sago pondweed	<i>Stuckenia pectinata</i>	Submersed	2
Curly-leaf pondweed*	<i>Potamogeton crispus</i>	Submersed	1
Duckweed	<i>Lemna minor</i>	Free-floating	24
European frog-bit*	<i>Hydrocharis morsus-ranae</i>	Free-floating	9
Yellow waterlily	<i>Nuphar</i> sp.	Floating-leaved	8
White waterlily	<i>Nymphaea odorata</i>	Floating-leaved	3
Bulrush	<i>Schoenoplectus</i> sp.	Emergent	5
Cattail	<i>Typha</i> sp.	Emergent	3
Phragmites*	<i>Phragmites australis</i>	Emergent	2
Lake sedge	<i>Carex lacustris</i>	Emergent	2

Invasive exotic species*