September 2025

UPPER HURON RIVER CHAIN OF LAKES

PLANT CONTROL SUMMARY

PREPARED FOR:
HAMBURG TOWNSHIP
LIVINGSTON COUNTY, MI

PROGRESSIVE COMPANIES

UPPER HURON RIVER CHAIN OF LAKES S.A.D LIAISON GROUP

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ENVIRONMENTAL CONSULTANT

Progressive Companies

AQUATIC HERBICIDE APPLICATOR

Aqua Weed Control, Inc.

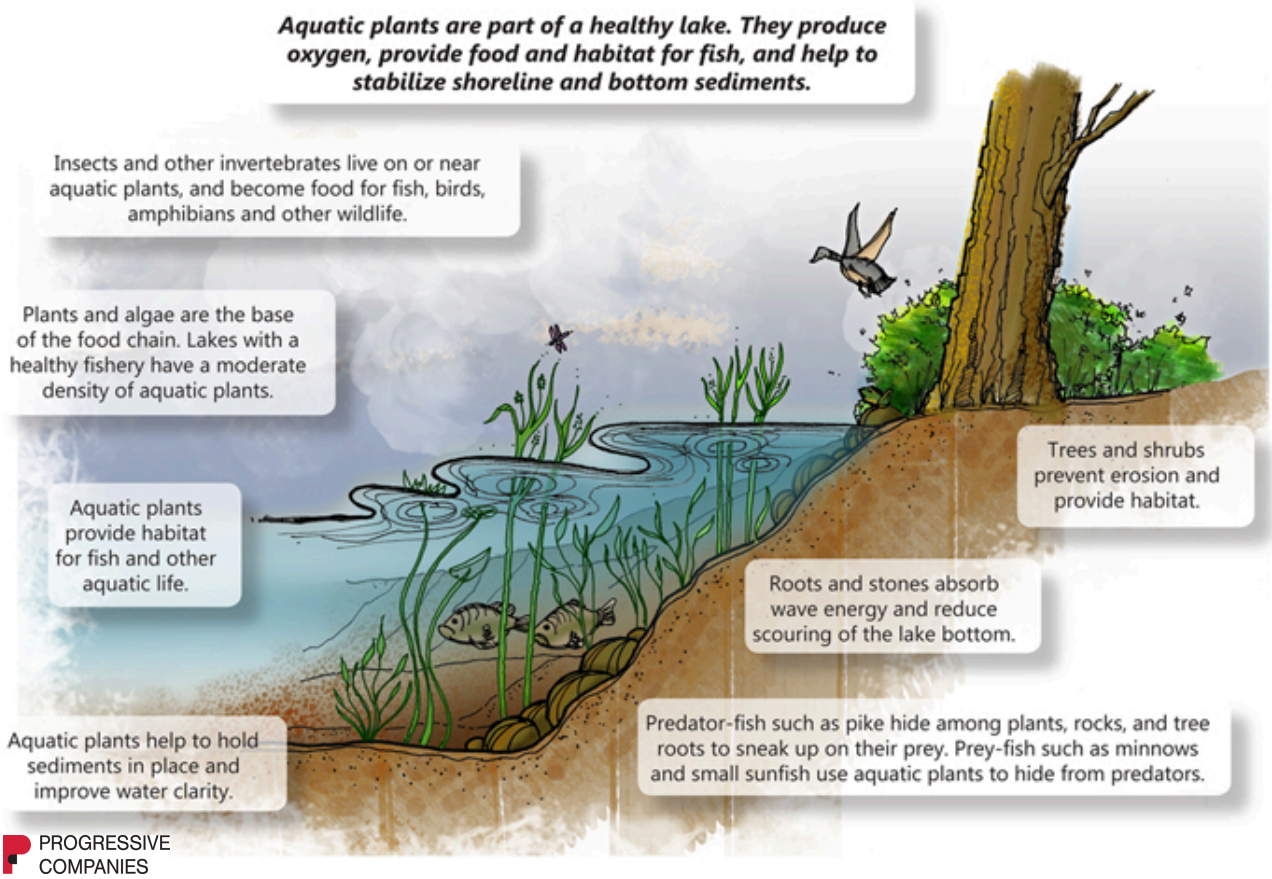
MECHANICAL HARVESTER

PLM Lake and Land Management



PROGRAM SUMMARY

A nuisance aquatic plant control program has been ongoing on the Upper Huron River Chain of Lakes (chain of lakes) since 2023. 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 the chain of lakes in 2025.



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 on the lake's ecosystem. It is important to maintain an active plant control program to reduce the establishment and spread of invasive species within the chain of lakes. Plant control efforts in 2025 consisted of aquatic herbicide treatments and mechanical plant harvesting.

PLANT CONTROL COORDINATION

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. GPS reference points are established along the shoreline and drop-off areas of the lake. These waypoints are used to accurately identify the location of invasive and nuisance plant growth areas.



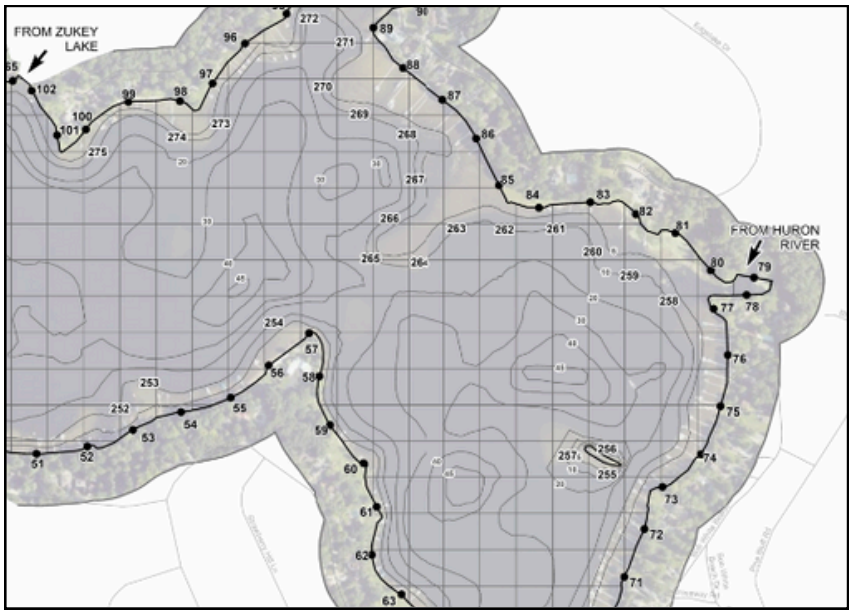
Eurasian milfoil
Myriophyllum spicatum



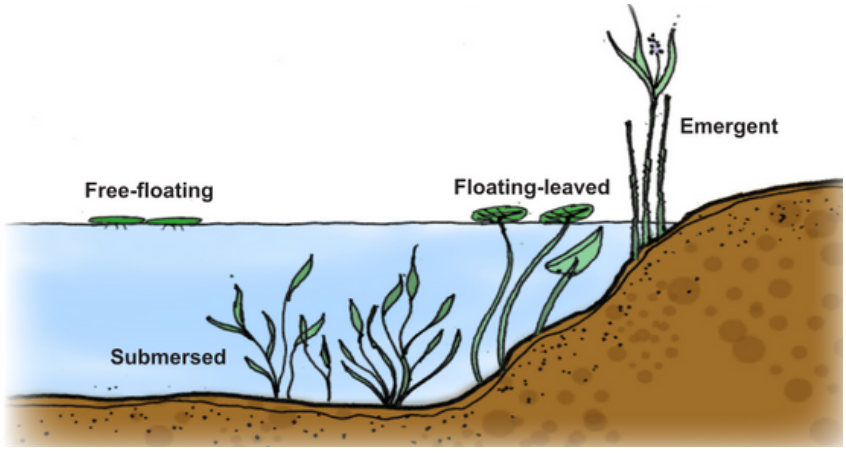
Curly-leaf pondweed
Potamogeton crispus



Starry stonewort
Nitellopsis obtusa



Primary plants targeted for control in the chain of lakes 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 2025 are summarized in Table 1.



PLANT CONTROL ACTIVITIES

TABLE 1. HURON RIVER CHAIN OF LAKES 2025 PLANT CONTROL ACTIVITIES

Date	Lake	Plants Targeted	Acreage
May 12	Gallagher Canal Loon Strawberry Zukey	Curly-leaf, algae Algae Curly-leaf E.milfoil, algae	6.00 0.25 4.00 4.25
June 9	Gallagher Loon Strawberry Connector Strawberry Zukey	E. milfoil, curly-leaf, algae, nuisance natives Curly-leaf, algae Curly-leaf, wild celery E. milfoil, curly-leaf E. milfoil, algae	12.75 3.75 6.00 17.00 4.00
July 24-31	Gallagher Loon Strawberry Connector Strawberry Zukey	Harvesting for nuisance natives	54.00
July 28	Gallagher Loon Strawberry Connector Strawberry Zukey Canal	E. milfoil, algae, wild celery E. milfoil, algae, wild celery Nuisance natives E. milfoil, starry stonewort E. milfoil, algae	9.75 4.00 1.00 7.50 3.50
August 26	Gallagher Loon Strawberry Connector Strawberry Zukey	Flowering rush, algae, nuisance natives Starry stonewort, algae, nuisance natives Wild celery, algae Starry stonewort E. milfoil, algae	6.25 2.75 6.50 10.75 4.75
Total			**168.75**

PLANT INVENTORY SURVEY

In addition to the surveys of the lake to identify invasive plant locations, a detailed vegetation survey of the chain of lakes was conducted on September 15th 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, 21 submersed species, three floating-leaved species, and eight emergent species were found in the lake. The chain of lakes maintain a good diversity of beneficial, native plant species.

TABLE 2. UPPER HURON RIVER CHAIN OF LAKES 2025 PLANT INVENTORY DATA

Common Name	Scientific Name	Group	Percentage of sites where present
Wild celery	*Vallisneria americana*	Submersed	81
Chara	*Chara* sp.	Submersed	35
Large-leaf pondweed	*Potamogeton amplifolius*	Submersed	26
Richardson's pondweed	*Potamogeton richardsonii*	Submersed	20
Variable pondweed	*Potamogeton gramineus*	Submersed	20
Illinois pondweed	*Potamogeton illinoensis*	Submersed	17
Coontail	*Ceratophyllum demersum*	Submersed	17
Bladderwort	*Utricularia vulgaris*	Submersed	11
Curly-leaf pondweed	*Potamogeton crispus*	Submersed	10
Sago pondweed	*Stuckenia pectinata*	Submersed	10
Slender naiad	*Najas flexilis*	Submersed	9
Eurasian milfoil	*Myriophyllum spicatum*	Submersed	9
Flat-stem pondweed	*Potamogeton zosteriformis*	Submersed	6
Starry stonewort	*Nitellopsis obtusa*	Submersed	6
Whitestem pondweed	*Potamogeton praelongus*	Submersed	3
Variable-leaf milfoil	*Myriophyllum heterophyllum*	Submersed	3
Submersed bulrush	*Schoenoplectus subterminalis*	Submersed	3
Southern naiad	*Najas guadalupensis*	Submersed	3
Thin-leaf pondweed	*Potamogeton* sp.	Submersed	2
Water stargrass	*Heteranthera dubia*	Submersed	1
Small pondweed	*Potamogeton pusillus*	Submersed	1
White waterlily	*Nymphaea odorata*	Floating-leaved	34
Floating-leaf pondweed	*Potamogeton natans*	Floating-leaved	23
Yellow waterlily	*Nuphar* sp.	Floating-leaved	16
Flowering rush	*Butomus umbellatus*	Emergent	17
Arrowhead	*Sagittaria latifolia*	Emergent	16
Bulrush	*Schoenoplectus* sp.	Emergent	8
Pickerelweed	*Pontederia cordata*	Emergent	8
Cattail	*Typha* sp.	Emergent	5
Lake sedge	*Carex lacustris*	Emergent	3
Buttonbush	*Cephalanthus occidentalis*	Emergent	1
Phragmites	*Phragmites australis*	Emergent	1

Exotic invasive species

DISCUSSION

In 2025, a total of 114.75 acres on the chain of lakes were treated with aquatic herbicides throughout the growing season. Management efforts targeted several invasive species using selective chemical treatments. Eurasian watermilfoil was treated using the systemic herbicides, triclopyr and florpyrauxifen-benzyl. An early season treatment for curly-leaf pondweed was conducted on May 12, using contact herbicides. This early treatment was effective in providing seasonal control of the invasive plant before its peak growth. Additionally, starry stonewort and nuisance algae were managed using chelated copper products. Due to the presence of the endangered snuffbox mussel (*Epioblasma triquetra*) in Strawberry Lake, the use of copper is prohibited. Therefore, Flumioxazin was used to control starry stonewort in Strawberry Lake. Herbicide applications are restricted within the river sections of the lake chain so no chemical applications were performed in these areas.

Compared to the 2024 season, herbicide use decreased by approximately 26%. This reduction is likely due to the early season treatment of curly-leaf pondweed, which historically was not permitted to take place until June 1st. The May treatment reduced the need for subsequent large-scale applications for algae control after plant die-off. Another contributing factor was the increased dominance of wild celery. This species can only be marginally controlled with aquatic herbicides. Chelated copper, although restricted in certain areas of the system, remains the most viable option for managing wild celery. However, its effectiveness is limited. While chelated copper has been applied in non-restricted zones, the flowing nature of the river ecosystem has made it challenging to achieve consistent control of wild celery using aquatic herbicides. As a result, herbicide use for this species has been reduced.

Mechanical harvesting was prescribed to manage nuisance native vegetation, particularly in areas with shared recreational use. The increase in harvesting was in response to both permit restriction and aquatic plant community changes over recent years. Due to the current permit restrictions and herbicide efficacy issues, wild celery was targeted heavily in the harvest. However, these efforts resulted in significant plant debris, likely due to inadequate removal of harvested biomass. The accumulation of floating fragments not only hinders navigation but also contributes to shoreline sedimentation and nutrient recycling, potentially fueling further aquatic plant and algae growth.

Given this observed increase in wild celery, future management strategies will incorporate modified methods at reducing the population to a more manageable level. Mechanical harvesting should continue, with an increased emphasis on removal of cut vegetation from the water to prevent secondary impacts. Herbicide treatments should target the control of invasive species and should not be used for beach grooming or general swim area maintenance. Management of swim areas and beach access should be the responsibility of individual property owners, except in cases where invasive species or excessive algal growth are present and warrant treatment.