November 2024

HESS LAKE

PLANT CONTROL SUMMARY

PREPARED FOR:
HESS LAKE IMPROVEMENT BOARD
NEWAYGO COUNTY, MI

PROGRESSIVE COMPANIES

HESS LAKE IMPROVEMENT BOARD

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ENVIRONMENTAL CONSULTANT

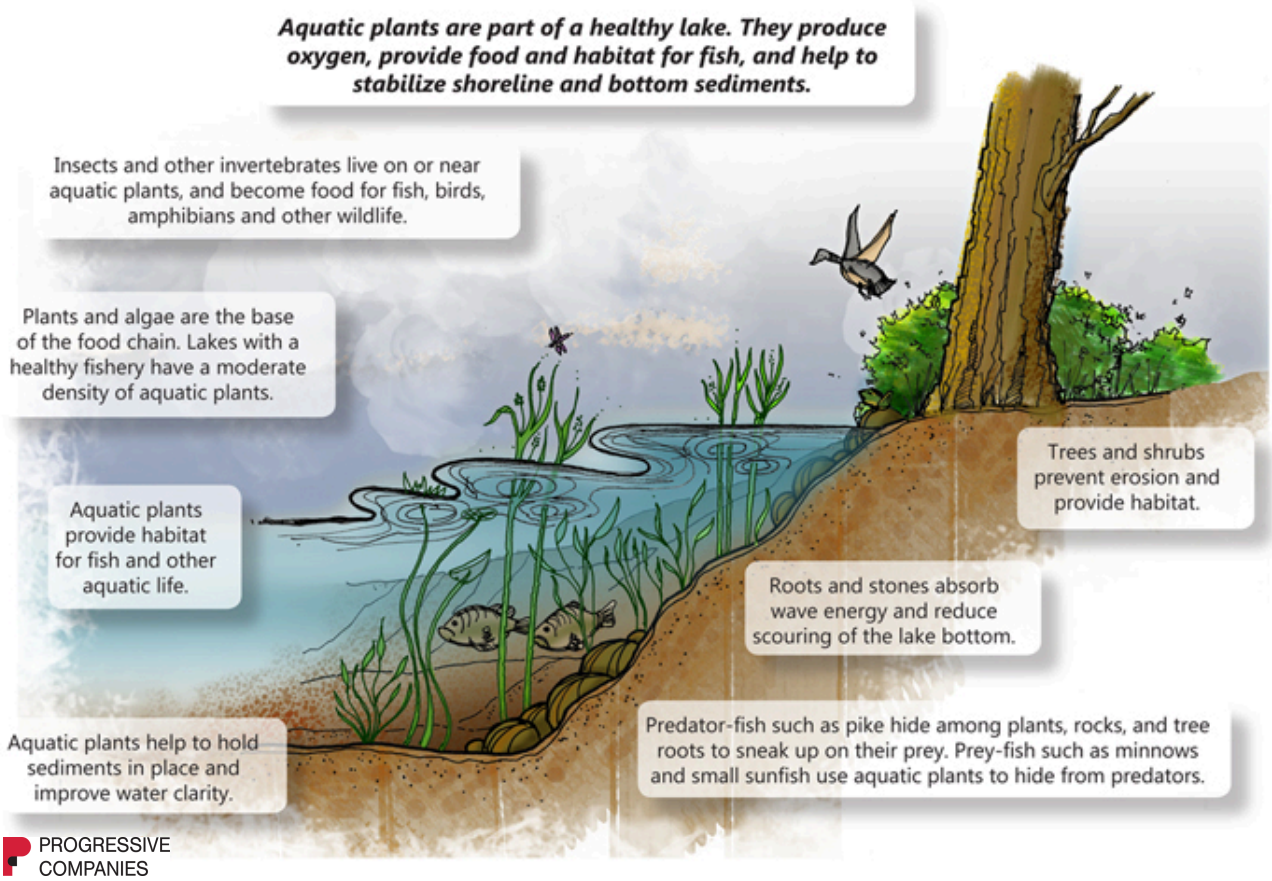
Progressive Companies

AQUATIC HERBICIDE APPLICATOR

Savin Lake Services

PROGRAM SUMMARY

A nuisance aquatic plant control program has been ongoing on Hess 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 Hess 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 Hess Lake. Plant control efforts in 2024 included four aquatic plant surveys and one herbicide application consisting of 14.75 acres targeting Eurasian milfoil.

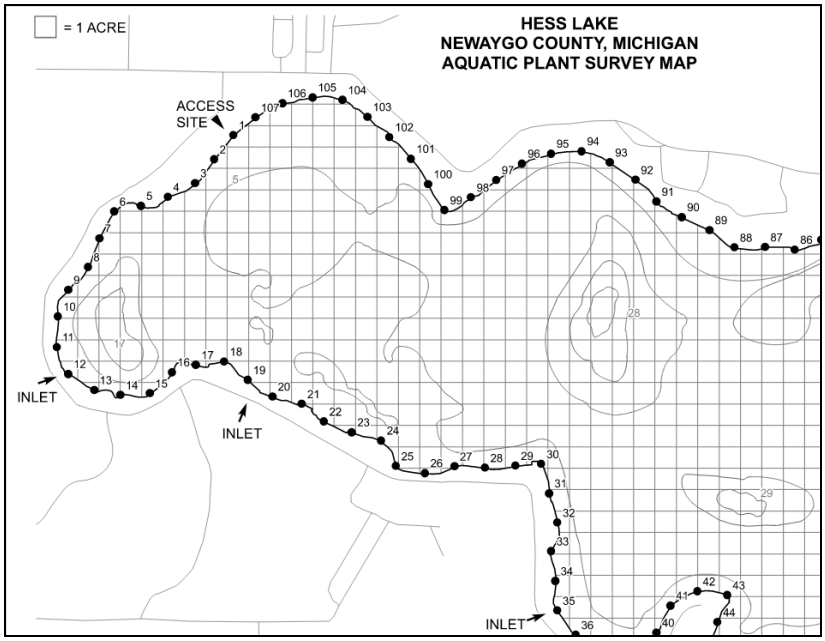
PLANT CONTROL

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. GPS reference points are established along the shoreline and where plant growth is found during the hydroacoustic survey. These waypoints are used to accurately identify the location of invasive and nuisance plant growth areas.

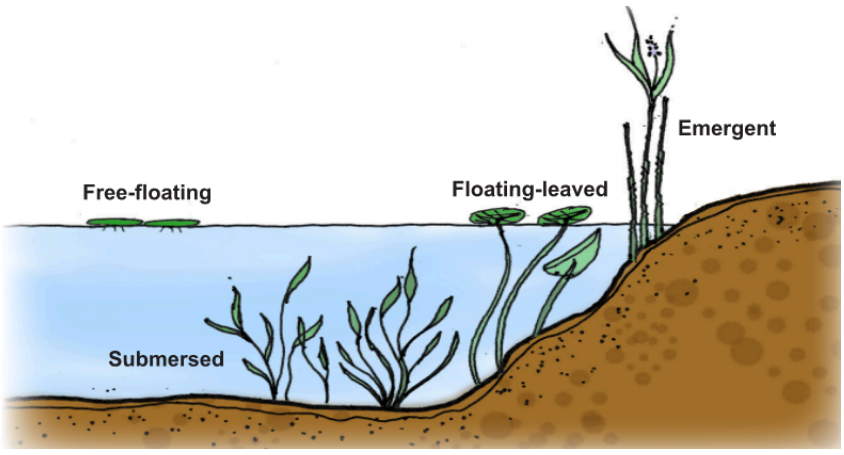
Eurasian milfoil (*Myriophyllum spicatum)* has reddish tips and can grow to the lake's surface.

Eurasian milfoil leaves are whorled around the stem and have 12 or more leaflet pairs.

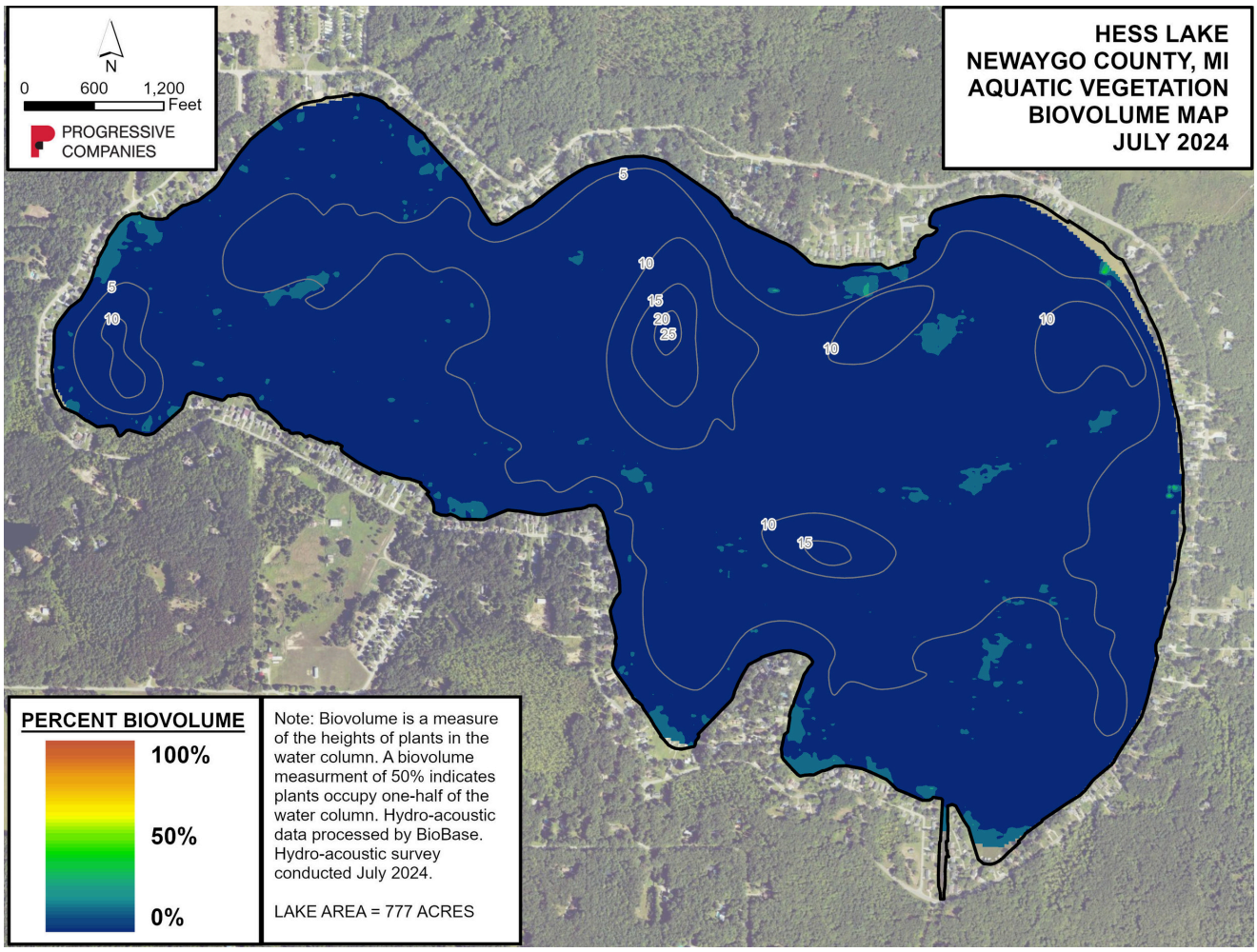
Eurasian milfoil leaves are flimsy and collapse when plants are taken out of the water.



Primary plants targeted for control in Hess Lake include Eurasian milfoil and curly-leaf pondweed. 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



As part of ongoing efforts to monitor rooted aquatic plant growth in Hess Lake, a full-lake hydro-acoustic survey is conducted each year in late-summer to measure plant biovolume, or the height of plants in the water column. This is accomplished by navigating by boat across Hess Lake at 100-foot intervals while recording high definition SONAR. SONAR logs are uploaded to BioBase* where they are processed. Once processed, Progressive imports the processed data into ArcPro GIS software in order to create the map shown above. In 2024, similar to recent years, the majority of the lake is shown in blue, indicating very little plant growth is found in Hess Lake. For more hydro-acoustic maps, please visit HessLakeImprovementBoard.org/aquatic-plants.

* BioBase LLC, 445 Minnesota St. Ste 1500, St. Paul, MN 55101

PLANT INVENTORY SURVEY

In addition to the surveys of the lake to identify invasive plant locations, a detailed vegetation survey of Hess 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 survey and the relative abundance of each. At the time of the survey, three submersed species, two floating-leaved species, and eight emergent species were found in the lake. *Chara* was found at the sandbar in the western portion of the lake during mid-summer surveys but was absent during the August survey. This is likely due to wave action and heavy recreation of the sandbar throughout the summer months. This is consistent with findings in 2023. Hess Lake does not readily support rooted-plant growth, with the exception of lily pads, due to the turbidity reducing light penetration to the lake bottom.

HESS LAKE 2024 PLANT INVENTORY DATA

Common Name	Scientific Name	Group	Percentage of sites where present 2024	Percentage of sites where present 2023
Eurasian milfoil	*Myriophyllum spicatum*	Submersed	9	17
Coontail	*Ceratophyllum demersum*	Submersed	4	5
Sago pondweed	*Stuckenia pectinata*	Submersed	3	0
Curly-leaf pondweed	*Potamogeton crispus*	Submersed	0	3
White waterlily	*Nymphaea odorata*	Floating-leaved	42	38
Yellow waterlily	*Nuphar* sp.	Floating-leaved	7	8
Iris	*Iris* sp.	Emergent	11	7
Purple loosestrife	*Lythrum salicaria*	Emergent	9	10
Arrowhead	*Sagittaria latifolia*	Emergent	7	7
Swamp loosestrife	*Decodon verticillatus*	Emergent	7	8
Cattail	*Typha* sp.	Emergent	4	4
Phragmites	*Phragmites australis*	Emergent	2	2
Pickerelweed	*Pontederia cordata*	Emergent	2	2
Lake sedge	*Carex lacustris*	Emergent	1	0
Bulrush	*Schoenoplectus* sp.	Emergent	0	1

Exotic species