

December

2023

WIXOM LAKE BOTTOMLANDS ACTIVITY SUMMARY

PREPARED FOR:
WIXOM LAKE IMPROVEMENT BOARD
GLADWIN COUNTY, MI

WIXOM LAKE IMPROVEMENT BOARD

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Robert Kelly, Board Member
Hope Township

ENVIRONMENTAL CONSULTANT

Progressive AE

HERBICIDE APPLICATOR(S)

PLM Lake and Land Management
Hamilton Helicopters

MOWING CONTRACTOR(S)

Kappen Tree Services
KNL
Shoreline Brush Hog Service



PROJECT SUMMARY

In May of 2020, the Edenville Dam failed resulting in the rapid exposure of Wixom Lake's bottomlands. The exposed, fertile bottomlands provided ideal substrate for cottonwood and willow seed germination. These woody species have taken over the bottomlands and impose complications and safety concerns for the refill of Wixom Lake. The Wixom Lake improvement board with coordination from their environmental consultant, Progressive AE, and the 4-Lakes Task Force developed a plan to address the fast growing, terrestrial plant species. The project involves the use of select herbicides and mowing to clear out the bottomlands of woody growth prior to the lakes estimated refill in 2026. If unaddressed, these woody species have the potential to impose navigational hazards on the lake once refilled.

The project is financed by the Wixom Lake Improvement Board under Part 309 of the Environmental Protection Act, donations, and the Wixom Lake Association. Coordination of bottomland activities is under the direction of the environmental consultant, Progressive AE, utilizing georeferenced drone photography to delineate areas of woody growth. These areas were then digitized in a deliverable map with corresponding GPS locations to the herbicide and mowing contractors.

Herbicide applications were permitted by the Michigan Department of Environment, Great Lakes, and Energy (EGLE). A combination of helicopter and ground applications were used to treat the woody and non-woody (cattail) species throughout the bottomlands and canals. The helicopter applications covered large areas and used the herbicide Vastlan™ (triclopyr choline salt), which was donated by Corteva, and Imazapyr. The herbicide mix was applied at an 8:1 (triclopyr/imazapyr) ratio which was shown to be effective on mixed trees and shrubs in a previous study (Turner et. al., 2020) Canal treatments involved ground applications using glyphosate for emergent vegetation.

Coordination of the bottomland activities also involved mowing of the woody species after treatment. Mowing was also conducted around shore within an 80-foot buffer zone of helicopter treatments and areas where the woody tree species were heavily grown and would impose navigational issues when Wixom Lake is refilled.

Areas containing larger diameter tree species where conventional mowing equipment could not be used were mowed by Kappen Tree Service contracted by the Wixom Lake Improvement Board using heavier duty forestry mowers. The conventional mowing areas along the 80-foot setback was conducted by KNL and Shoreline Brush Hog Service. These areas were coordinated and financed by the Wixom Lake Association.

Treatment and mowing areas addressed in 2023 are shown in the series of maps broken up by the utilization type and show the extent of work done in 2023 (pages 3-6).

BOTTOMLANDS VEGETATION CONTROL

TABLE 1. WIXOM LAKE 2023 BOTTOMLAND CONTROL ACTIVITIES

Date	Application	Acres
June 22 - 26	Helicopter Treatment (Vastlan: triclopyr choline salt; imazapyr)	630
August 7 - 18	Bottomland Mowing (Kappen Tree Service)	169
August 30	Venice Canal Treatment (glyphosate)	10
September 12 - 28	Canal Treatments (glyphosate and/or triclopyr)	43
Periodically throughout 2023	Bottomland Mowing (Wixom Lake Association funded)	200
Total		1,052

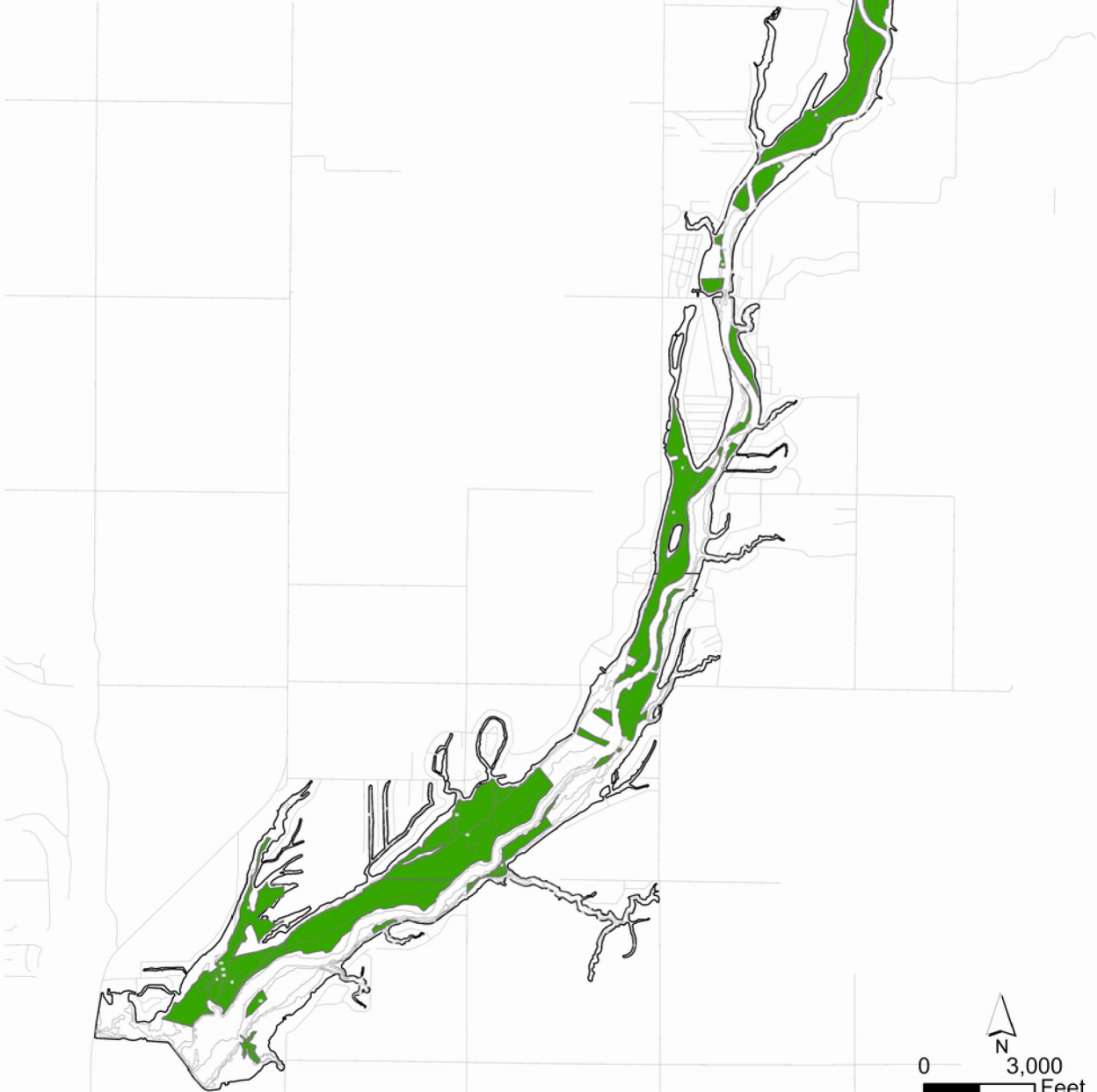
In 2023, a total of 688 acres of Wixom Lake were treated with aquatic herbicides. Cottonwood, aspen, and willow species were treated with the systemic herbicides, triclopyr and imazapyr. Cattails and non-woody vegetation in canals were treated with glyphosate. Approximately 369 acres of mowing was performed on the Wixom Lake bottomlands. Mowing was funded in part by the Wixom Lake Improvement Board and the Wixom Lake Association.



**WIXOM LAKE
GLADWIN COUNTY, MICHIGAN
2023 HELICOPTER
TREATMENT AREAS**

Legend

 2023 Helicopter Treatment Areas = 630 acres



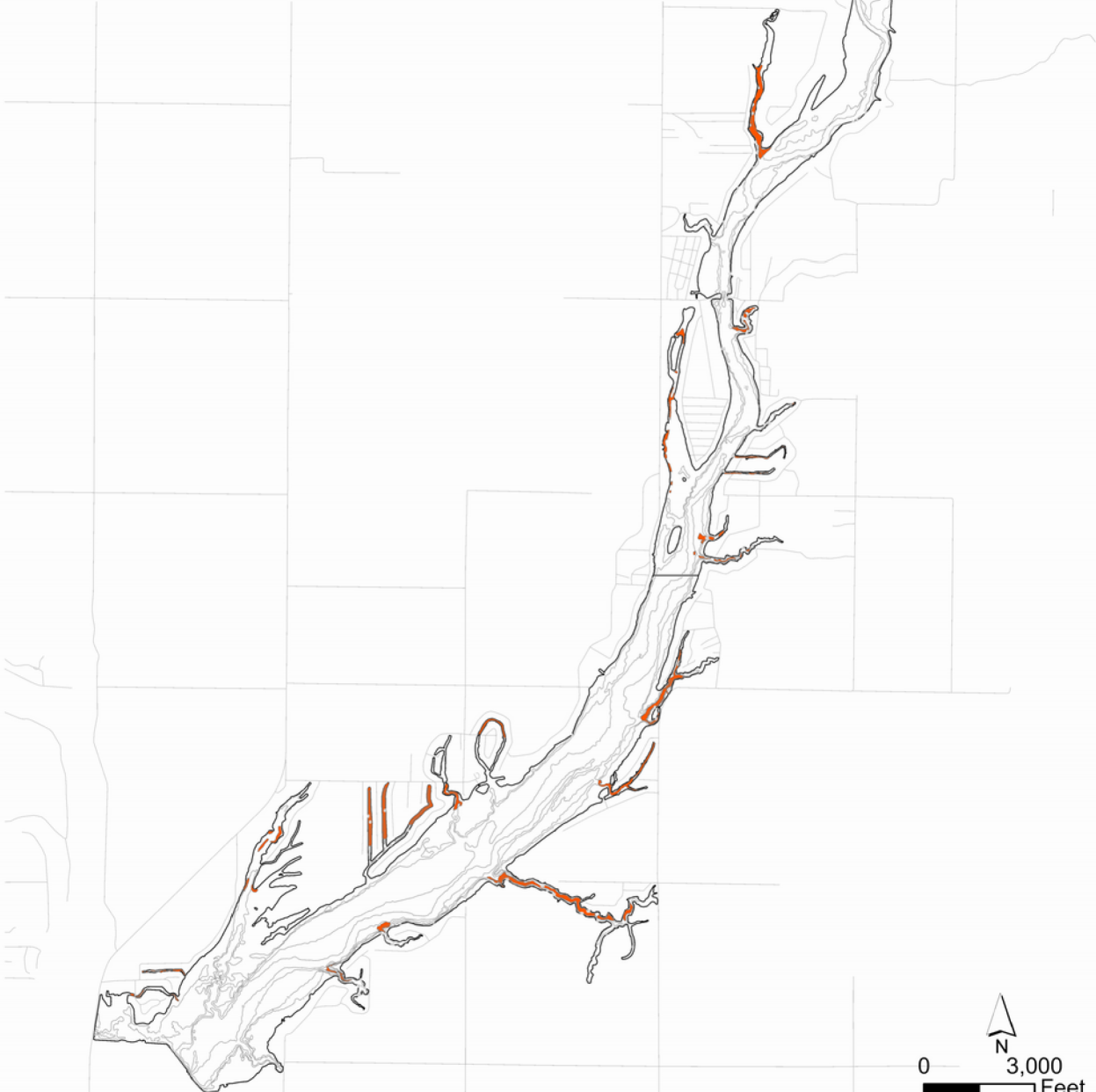
TOTAL LAKE AREA = 1,593 ACRES
REVISION DATE: DECEMBER 2023

0 3,000
Feet
progressive|ae

**WIXOM LAKE
GLADWIN COUNTY, MICHIGAN
2023 CANAL
TREATMENT AREAS**

Legend

 2023 Canal Treatment Areas = 53 acres



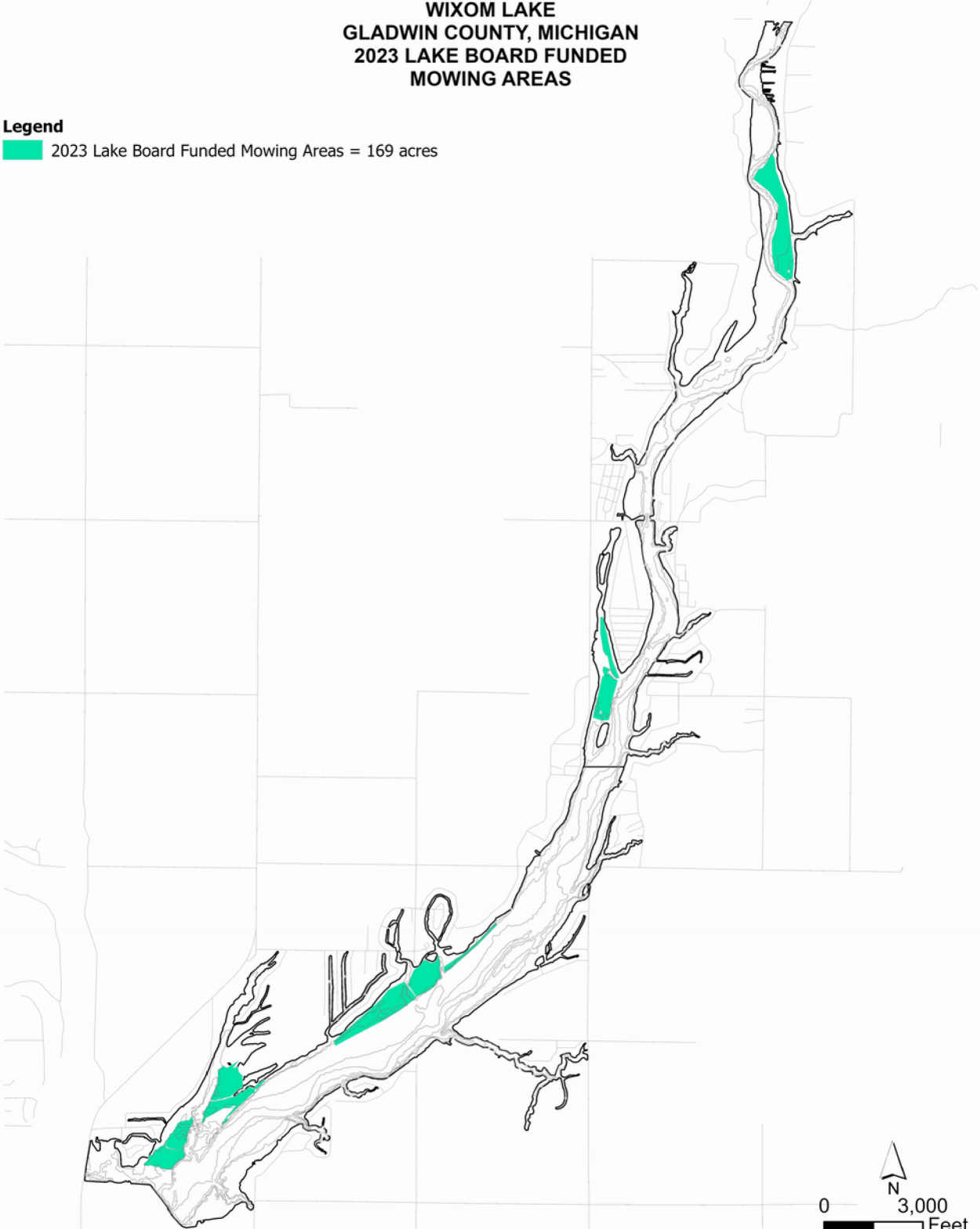
TOTAL LAKE AREA = 1,593 ACRES
REVISION DATE: DECEMBER 2023

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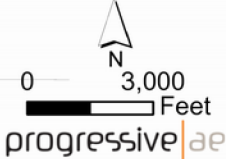
**WIXOM LAKE
GLADWIN COUNTY, MICHIGAN
2023 LAKE BOARD FUNDED
MOWING AREAS**

Legend

 2023 Lake Board Funded Mowing Areas = 169 acres




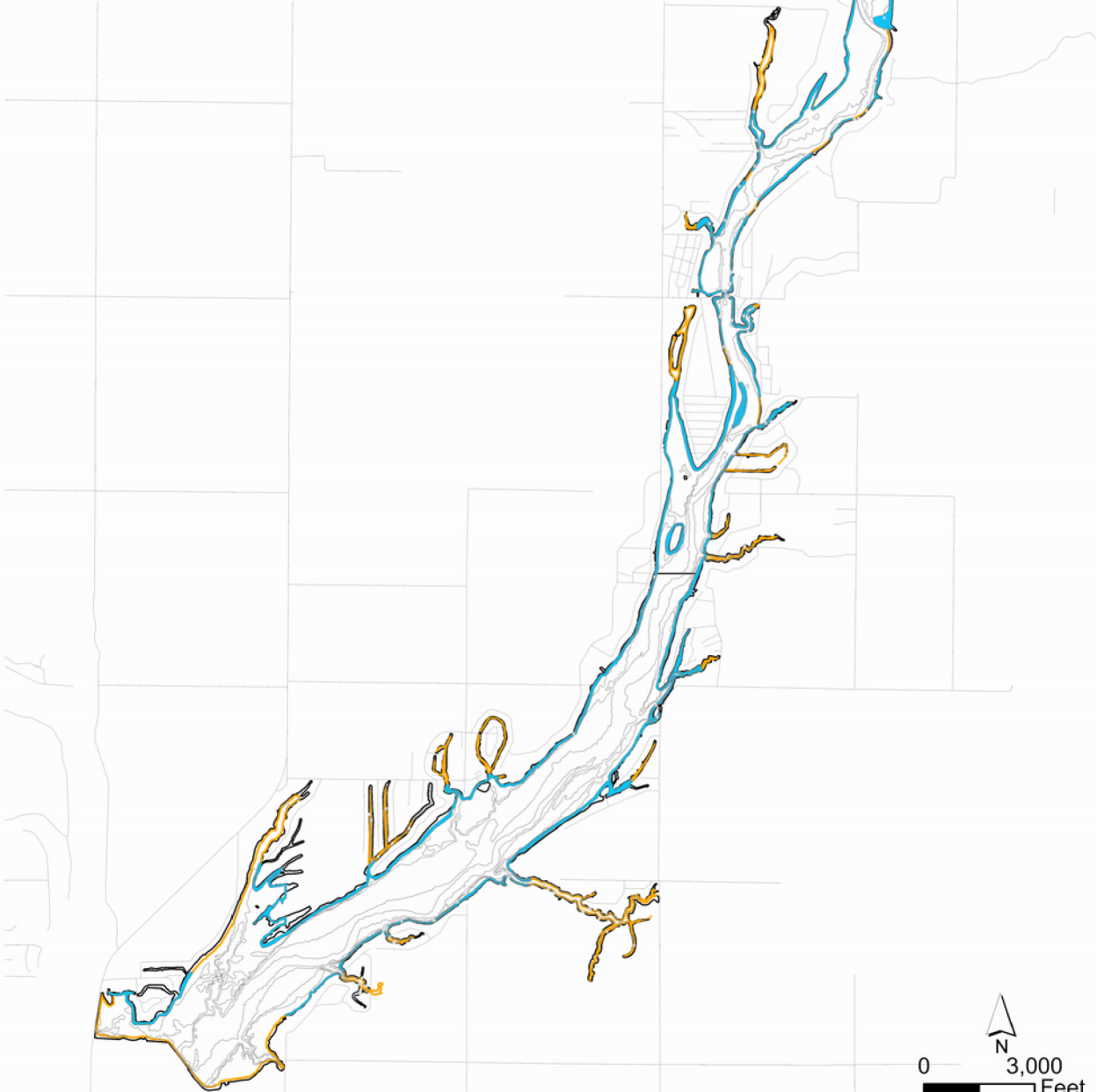
TOTAL LAKE AREA = 1,593 ACRES
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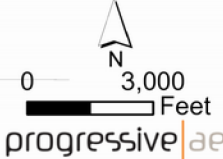
**WIXOM LAKE
GLADWIN COUNTY, MICHIGAN
2023 LAKE ASSOCIATION
MOWING AREAS**

Legend

-  2023 Lake Association Funded Mowing Areas = 200 acres
-  2024 Lake Association Remaining Mowing Areas = 134 acres



TOTAL LAKE AREA = 1,593 ACRES
REVISION DATE: DECEMBER 2023



REFERENCES

Turner, M. A., Gulsby, W. D., and C. A. Harper. 2020. Mixture of Triclopyr and Imazapyr More Effective than Triclopyr Alone for Hardwood Forest Stand Improvement. *Society of American Foresters*. 67(1):43-48. doi:10.1093/forsci/fxaa039.