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2020 Aquatic Invasive Species Surveys

Maple Lake *(#86-0134)*
Wright County, MN

Survey, Analysis, and Reporting by:
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Survey Methods

Aquatic Invasive Species (AIS) Surveys

Freshwater Scientific Services, LLC completed several surveys for aquatic invasive species in designated portions of Maple Lake in 2020:

(1) A lake-wide delineation survey for Eurasian watermilfoil (June 5)
(2) An early-summer delineation survey for flowering rush (July 27)
(3) Two intensive AIS sentinel surveys in the areas surrounding the public boat access sites on the far east and far west ends of the lake (July 27, and September 17)

Eurasian Watermilfoil

Freshwater Scientific Services, LLC completed a late-spring delineation survey for Eurasian watermilfoil (EWM) in Maple Lake on June 5, 2020. During this survey, we navigated a meandering search path over the vegetated portion of the lake. While navigating this path, we used a combination of surface observations, rake tosses, and sonar readings to locate and delineate areas of EWM growth. Sonar and visual assessments were conducted continuously, with subsequent rake tosses to assess EWM abundance at locations where plants were not identifiable from the surface.

Flowering Rush

We surveyed the entire shoreline of Maple Lake for flowering rush on June 27, 2020. For this survey, we navigated a search path along shore, roughly following the 3-ft contour, while using visual inspection to locate flowering rush. Whenever we found flowering rush, we recorded the location using a handheld GPS unit and assessed water depth and growth density (rated 1 to 3). These locations were later mapped using GIS software and results were provided to PLM Lake & Land Management to help plan management and apply for permits.

Boat Access AIS Surveys

For the purpose of these surveys, we did not document Eurasian watermilfoil, curlyleaf pondweed, or flowering rush in the surveyed plots. The focus of these surveys was to search for any new invasive plants or animals in the area immediately surrounding the 2 public access sites (total of 6 acres searched). On each of the survey dates (July 27 and Sept 17), we navigated a tight winding path through the survey plots while using visual inspection, sonar, and frequent rake tosses to look for AIS. Any locations with new AIS were marked using a handheld GPS unit for later mapping.

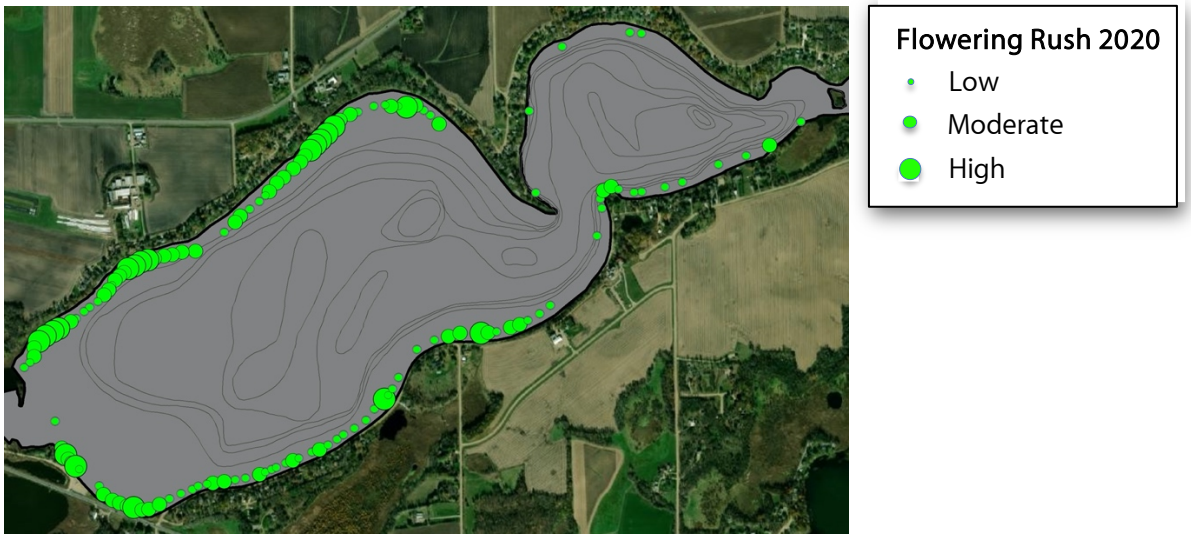
Findings

Eurasian Watermilfoil Delineation Survey

See the 2020 EWM delineation report for details.

Flowering Rush

We found light to moderate density stands of flowering rush in the western half of the lake. Many of these areas were substantially larger and denser than in previous years, suggesting that the infestation has spread rapidly and is beginning to become established. Without management, flowering rush will likely continue to spread and increase in density. Past work on the Detroit Lakes suggests that hand-pulling or cutting does not control flowering rush, and may lead to more rapid spread within the lake. Instead, they have had success treating areas of flowering rush twice in one growing season with diquat (injected below the water surface). We recommend that you work with your DNR AIS Specialist and applicator to develop a similar herbicide strategy for Maple Lake.



Boat Access AIS Surveys & Zebra Mussels

We did not find any new aquatic invasive species (AIS) during either of the two surveys conducted in the areas surrounding each of the public boat access sites. However, we did find a high number of small zebra mussels attached to plants in the western survey area (none found in the east). Although a small number of zebra mussels have been found in the lake in previous years, we found 100's per rake toss in 2020. All of the zebra mussels we observed were <3mm long, indicating that there is active breeding of zebra mussels in the lake.

Given the high number of newly settled zebra mussels observed, the zebra mussel infestation in Maple Lake has become established. Consequently, we expect that the abundance and size of zebra mussels will increase dramatically in 2021 and 2022. Lake homeowners should be especially diligent about decontaminating any boats, docks, or boat lifts that are being moved to other lakes. Although there are ongoing research projects being conducted in Minnesota that are exploring possible strategies to effectively manage zebra mussels on a lake-wide scale, we do not currently have management tools to address the established infestation in Maple Lake.

Online Resources & Contacts

Minnesota Administrative Rules for Aquatic Plant Management
https://www.revisor.mn.gov/rules/?id=6280

Minnesota DNR – Aquatic Plant Management Regulations & Permit Application Forms
http://www.dnr.state.mn.us/apm/index.html

Minnesota DNR – Flowering Rush
https://www.dnr.state.mn.us/invasives/terrestrialplants/herbaceous/floweringrush.html

Minnesota DNR – Zebra Mussels
https://www.dnr.state.mn.us/invasives/aquaticanimals/zebramussel/index.html

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