

Early Spring Whole Lake Aquatic Plant Survey on Bass Lake

A preliminary data summary submitted to the Bass Lake Clean Water Coalition

April 29, 2022

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Background: Bass Lake is a 199-acre lake located in Faribault County. It is one of the most popular recreational lakes in the region. Historical accounts suggest that curlyleaf pondweed has been the dominant submersed aquatic plant species in the lake for several decades; however, no attempt has been made to quantify its distribution or turion bank within the lake. Additionally, Eurasian watermilfoil was first identified in the lake in 2019 which is the first positive record of this species in Faribault County. The newly organized Bass Lake Clean Water Coalition has sought assistance in developing a management program to address both species. In order to develop a management plan, it is imperative to first quantify the aquatic plant community in Bass Lake since no historical data exists. Therefore, an early season whole lake point intercept survey was conducted to assess the distribution of aquatic plants in the lake.

Material and Methods: The aquatic plant community was assessed on April 28, 2022. The survey was conducted using the point-intercept method that consisted of surveying points that were established on a 100-meter grid with a total of 82 points sampled lake-wide (Madsen and Wersal 2017, 2018) (Figure 1). At each point, the presence of aquatic plants was sampled using a plant rake and water depth determined using hydroacoustic equipment or a sounding rod. Spatial data were recorded using the FarmWorks Site Mate Software on a Trimble Yuma tablet PC. The software was used to display the survey grid for navigation as well as to collect geospatial data. Data were collected using a database template and pick lists specifically constructed for this project. For each species, presence was averaged over all sampled points for a given lake to determine the frequency of occurrence.

Results: During the survey there were four aquatic plant species documented at survey points (Table 1). Northern watermilfoil (native species) was observed at 14.6% of the sample points. Coontail (native species) was observed at 8.5% of sample points. The non-native Eurasian watermilfoil was observed at 1.2% of sample points. Elodea (*Elodea canadensis*) was observed growing between sample points and therefore no statistics were calculated for it. Interestingly, no curlyleaf pondweed (*Potamogeton crispus*) was observed growing anywhere on the lake. In other Minnesota lakes where curlyleaf pondweed has been documented, peak biomass and turion production occurs between mid-May and June (Woolf and Madsen 2003). Knowing the life history of curlyleaf pondweed in Minnesota, it was surprising that even small plants or turions were not observed during this survey. It has been a cool spring and there is a possibility of delayed growth. However, there were four other submersed aquatic plants that had initiated

growth this season. It is recommended that another survey be conducted towards the end of May 2022 to ensure that the distribution of curlyleaf pondweed is accurately documented.



Figure 1. Point intercept survey points on Bass Lake that were sampled on April 28, 2022

Table 1. Percent occurrence of aquatic plants in Bass Lake during the April 28, 2022, survey.

Species	Common Name	Frequency of Occurrence (%)
<i>Ceratophyllum demersum</i>	coontail	8.5
<i>Myriophyllum sibiricum</i>	northern watermilfoil	14.6
<i>Myriophyllum spicatum</i>	Eurasian watermilfoil	1.2
<i>Typha sp.</i>	cattail	1.2

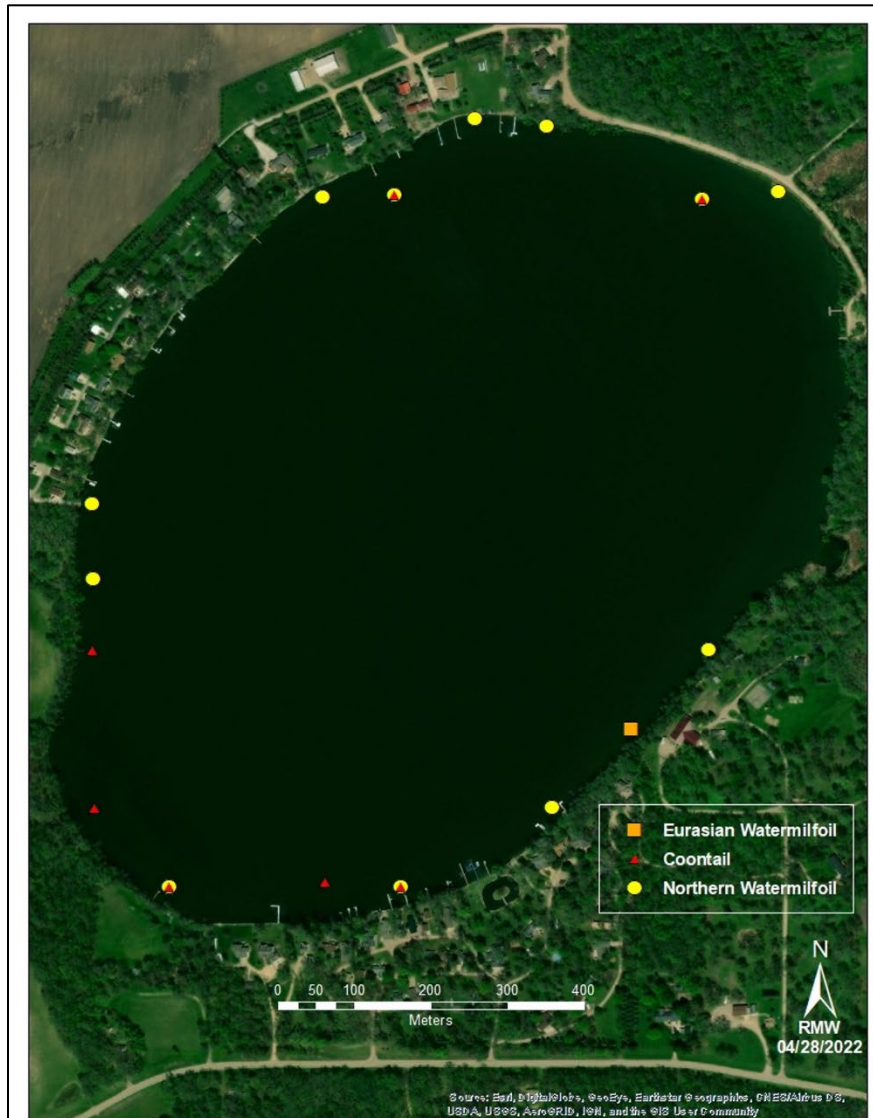


Figure 2. Distribution of common submersed aquatic plants observed during the point intercept survey conducted on April 28, 2022.

Literature Cited

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