

AQUATIC PLANT POINT-INTERCEPT SURVEYS

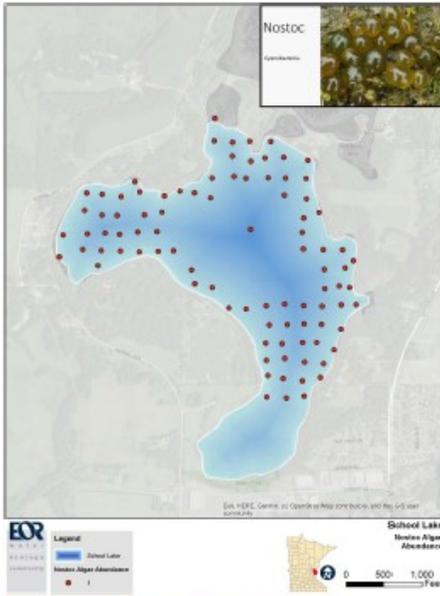


Figure 4. School Lake Nostoc Algae distribution and abundance – August 2020.

Aquatic plant point-intercept surveys were conducted for six lakes in 2017, two lakes in 2018, five lakes in 2019, and five lakes in 2020.

The point-intercept method is considered the standard protocol by Minnesota Department of Natural Resources (DNR) for sampling aquatic macrophytes (plants) because it offers a methodology that is quantitative (e.g., frequency of occurrence), repeatable (can be used to track trends in aquatic plant communities over time), and georeferenced (can be used to compare plant communities within different areas of a lake). From these data, a Floristic Quality Index (FQI)

was calculated for each lake that measures the diversity and health of the aquatic plant community.

The average FQI score for Minnesota Lakes in the North Central Hardwood Forest (NCHF) ecoregion is 23.7 ± 8 with a median of 22.5. A study of 41 Minnesota lakes surveyed across the state, as part of the US Environmental Protection Agency’s National Lakes Assessment Project, yielded a maximum FQI score of 30. In 2016, the Minnesota DNR developed a robust geodatabase of aquatic plant surveys and associated FQI scores from more than 3,600 lakes across the state. FQI scores ranged from 0 to 49 with a median of 25.1 ± 9 .



The FQI scores for Little Horseshoe (16.6), Mandall (21.0), and Pioneer (15.7) have lower than median FQI scores for assessed lakes in Minnesota. Rabour (24.3) has a near median FQI score, and School (30.0) has a considerably higher than median score and is amongst the highest FQI scores observed for lakes in Chisago County.

Above: School Lake Nostoc Abundance

Below: Sample Collection on Rabour Lake

Partners:

- Chisago County
- Chisago Lakes Lake Improvement District
- Emmons & Olivier Resources Inc.

Lakes Surveyed in 2017:

- Fish
- Horseshoe
- Kroon (DNR survey)
- Little
- North Center
- Spider

Lakes Surveyed in 2018:

- Chisago
- West Rush

Lakes Surveyed in 2019

- Little Comfort
- North Goose
- North Lindstrom
- South Goose
- Wallmark

Lakes Surveyed in 2020

- Little Horseshoe
- Mandall
- Pioneer
- Rabour
- School



LAKE IMPROVEMENT DISTRICT