



Arctic Lake, Scott County, Minnesota, 2012

Aquatic Plant Evaluation for Arctic Lake, Scott County, Minnesota

[Plant Survey Conducted September 5, 2012]

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Summary

Arctic Lake (MnDNR ID #70-085) is a 24 acre lake located in Scott County, Minnesota. An aquatic plant survey was conducted on September 5, 2012 by Blue Water Science to characterize conditions of native aquatic plants and to look for the non-native Eurasian watermilfoil.

Arctic Lake has a low diversity of submerged aquatic plants, with no species of rooted submerged plants found. The only submerged plant observed was an aquatic moss found at two sites (Figure 1). However, the entire shoreline was ringed with native wetland plant species.

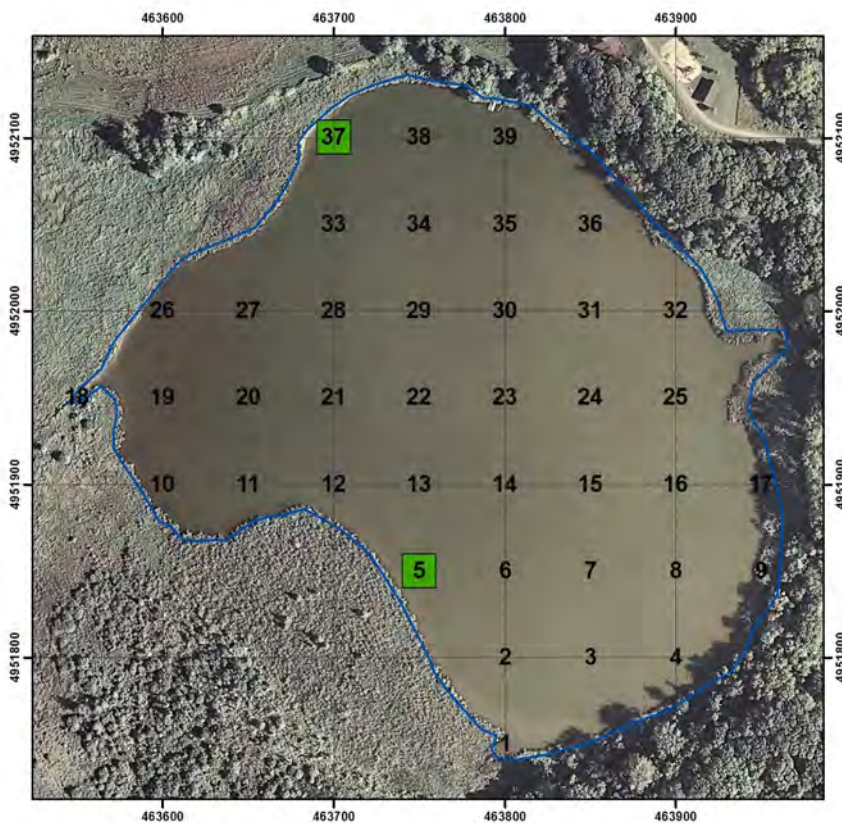


Figure 1. Aquatic moss coverage for Arctic Lake on September 5, 2012. Green squares = light growth.

Arctic Lake, Scott County (ID: 70-085)

Size: 24 acres

Maximum depth: 30 ft

Introduction

An aquatic plant survey was conducted on 24 acre Arctic Lake, located in Scott County, on September 5, 2012. The objective of the survey was to characterize the aquatic plant community.

Methods

A point intercept aquatic plant survey of Arctic Lake was conducted by Blue Water Science on September 5, 2012, and all points out to 15 feet were sampled. Sample points were placed 50 meters apart on a grid that covered the lake (Figure 1). At each sample point, a sampling rake was lowered into the water and a plant sample was taken. The plant species were recorded and the density of each species was assigned. Densities were based on the coverage on the teeth of the rake. Density ratings were from 1 to 5 with 1 being sparse and 5 being a nuisance. Based on these sample sites, a plant distribution map was constructed.

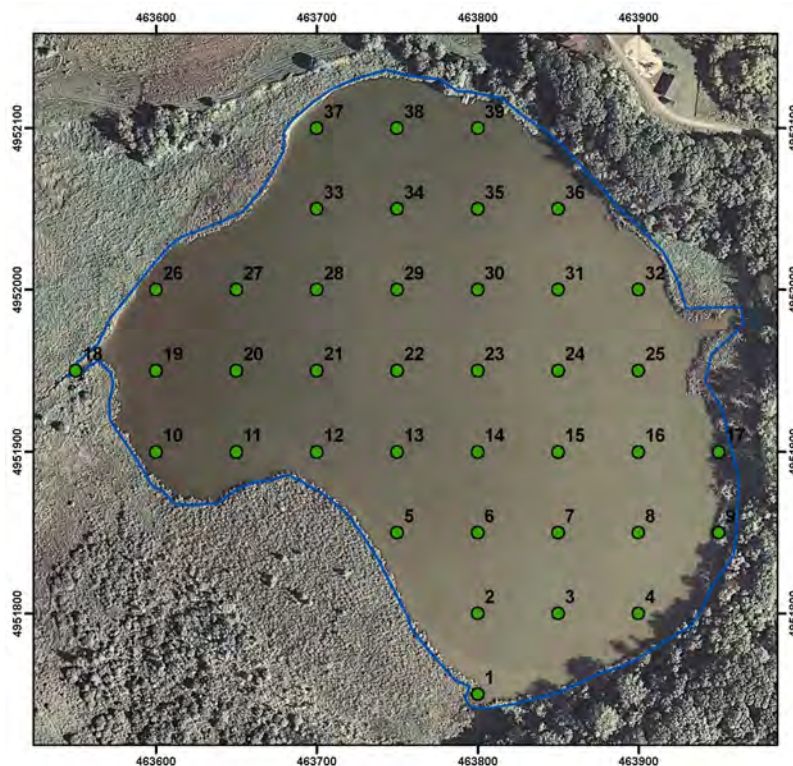


Figure 1. Sample location map for the aquatic plant survey conducted on Arctic Lake.

Results

Results of the summer aquatic plant survey conducted on September 5, 2012 found there were no rooted submerged plants and the only submerged aquatic plant observed was an aquatic moss at two sites (Table 1). The aquatic moss was found at water depths of 6 feet (Table 2). Lake water levels drop off relatively quickly after 8 feet (Figure 2) and no plants were found deeper than 6 feet.

Eurasian watermilfoil was not observed in this survey.

Table 1. Arctic Lake aquatic moss occurrence and density for the September 5, 2012 survey based on 39 sites. Density ratings are 1-5 with 1 being low and 5 being most dense.

	All Stations (n=39)	
	Occur	Average Density
Aquatic moss	2	1.0

Table 2. Occurrence of submerged plants by depth in Arctic Lake out to a depth of 6 feet.

Depth (feet)	Aquatic Moss
1	0
2	0
3	0
4	0
5	0
6	2
7	0
8	0
9	0
10	0
11	0
12	0
13	0
14	0
15	0
Total Sites (all depths)	2

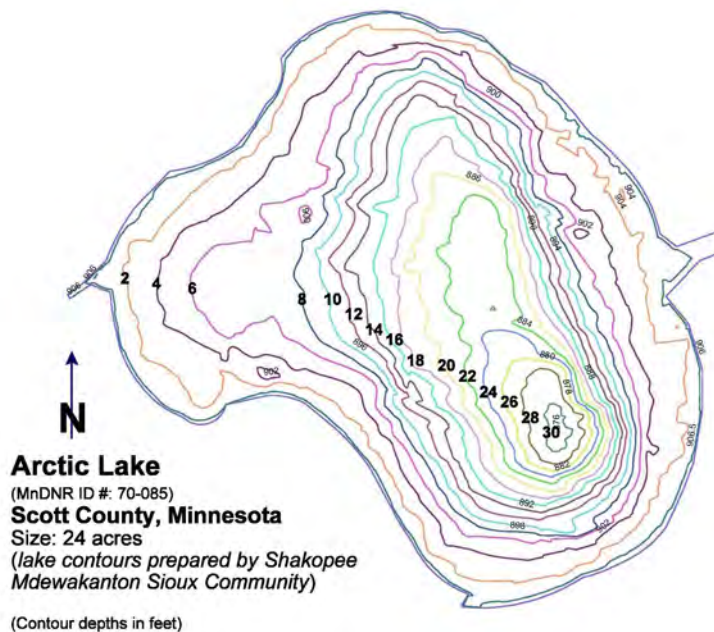


Figure 2. Arctic Lake contour map.

However, abundant native emergent plants are distributed around the perimeter of Arctic Lake. In 2012 the only submerged aquatic plants that were found were an aquatic moss (Figures 2 and 3).

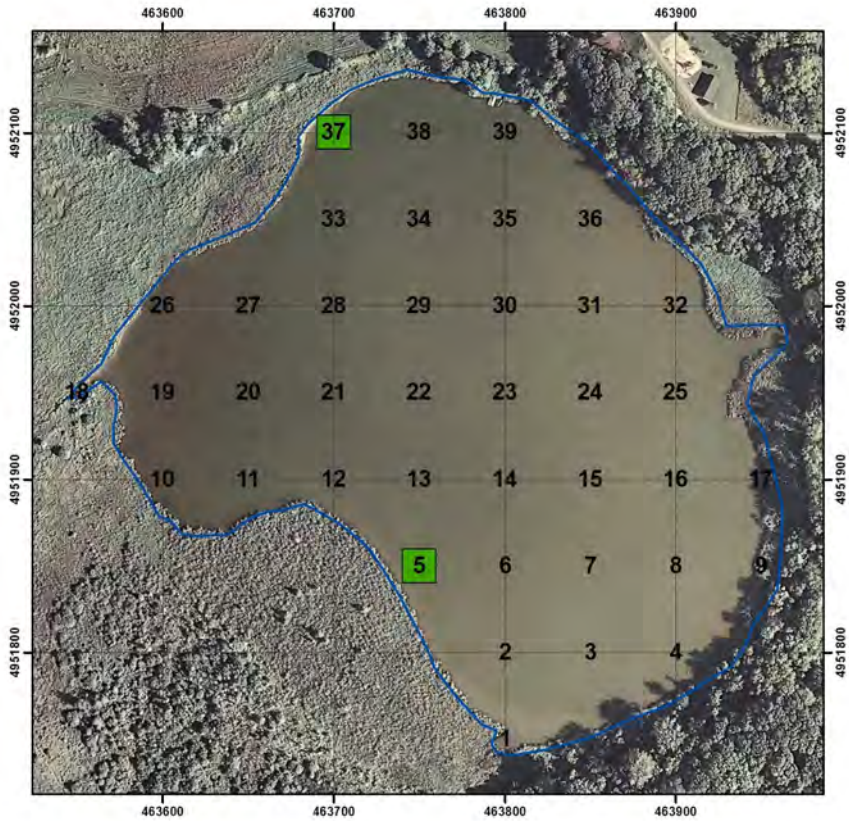


Figure 2. Aquatic moss site locations in for Arctic Lake on September 5, 2012. Green squares = light growth.



Figure 3. Aquatic plants were sparse in Arctic Lake. [left] Aquatic moss. [right] Aquatic moss on sample rake.

General Findings of This Study

- Emergent plants along the shoreline were abundant and offer good wildlife habitat.
- Submerged plants were rare. The reasons for low plant abundance are likely a combination of low light penetration (Secchi disc was 1.5 feet on September 5, 2012) and the impact of bottom feeding fish such as carp.
- An increase in submerged plants probably will not occur unless the carp population in Arctic Lake is reduced.

