



Natural Shoreline on Actic Lake, Scott County, Minnesota, 2016

Aquatic Plant Point-Intercept Survey for Arctic Lake, Scott County, Minnesota

[Plant Survey Conducted August 29, 2016]

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Aquatic Plant Point-Intercept Survey for Arctic Lake, Scott County, Minnesota

Summary

Arctic Lake (MnDNR ID #70-0085) is a 33 acre lake located in Scott County, Minnesota. An aquatic plant survey was conducted on August 29, 2016 by Blue Water Science to characterize conditions of native aquatic plants and to look for the non-native Eurasian watermilfoil.

A total of 39 points were surveyed, but no rooted submerged plants were found. However, the entire shoreline was ringed with native wetland plant species.



Figure 1. The shoreline of Arctic Lake was mostly undeveloped.

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Arctic Lake, Scott County (MnDNR ID: 70-008500)

Size: 33 acres (source: PLSLWD website)

Average depth: 9.5 feet (source: PLSLWD website)

Maximum depth: 30 feet (source: PLSLWD website)

Introduction

An aquatic plant survey was conducted on 33 acre Arctic Lake, located in Scott County, on August 29, 2016. The objective of the survey was to characterize the aquatic plant community.

Methods

An aquatic plant point-intercept survey of Arctic Lake was conducted by Blue Water Science on August 29, 2016 and all points 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.

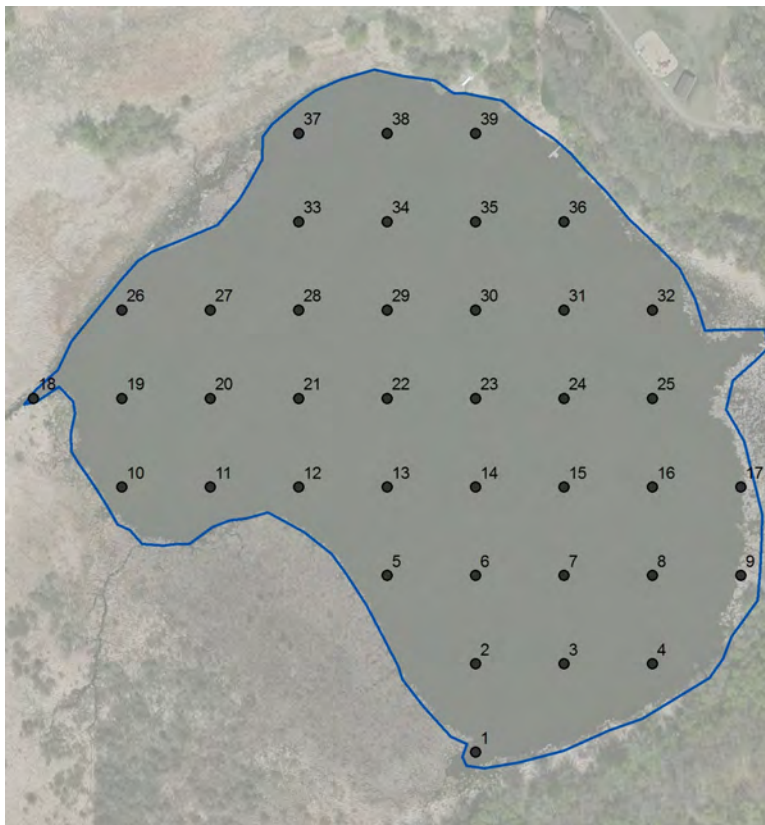


Figure 1. Sample location map for the aquatic plant survey conducted on Arctic Lake.

Results

Results of the summer aquatic plant survey conducted on August 29, 2016 found there were no rooted submerged plants (Table 1). Lake water levels drop off relatively quickly after 8 feet (Figure 2).

Eurasian watermilfoil was not observed in this survey.

Table 1. Arctic Lake aquatic moss occurrence and density for the August 29, 2016 survey based on 39 sites. Density ratings are 1-5 with 1 being low and 5 being most dense.

| | September 5, 2012 All Stations (n=39) | | August 29, 2016 All Stations (n=39) | |
|--------------|--|-----------------|--|-----------------|
| | Occur | Average Density | Occur | Average Density |
| Aquatic moss | 2 | 1.0 | | |
| No plants | 37 | | 39 | |

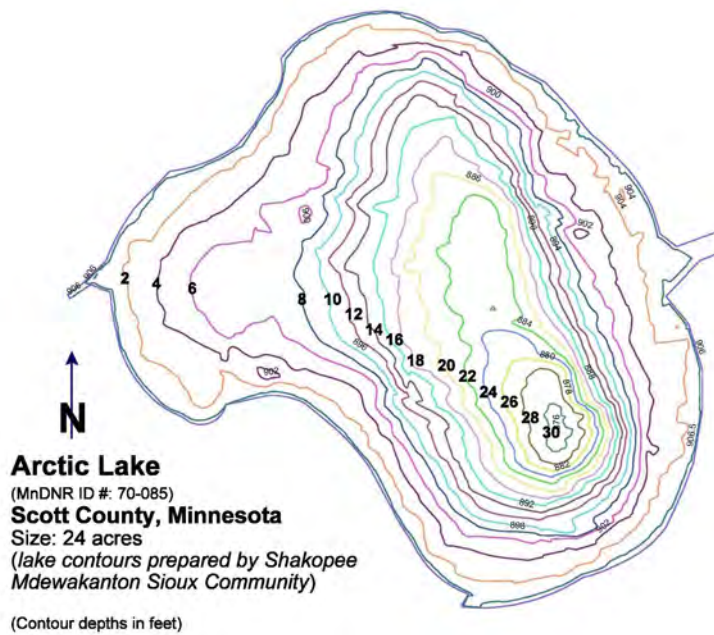


Figure 2. Arctic Lake contour map.

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 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.



Figure 3. This dock on Arctic Lake is nestled on a natural shoreline. The rest of Arctic Lake's shoreline is natural as well.