

Chateaugay Lake Boat Launch Aquatic Plant Survey July 1, 2008

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Introduction

On July 1, 2008, Dan Kelting and Corey Laxson from the Adirondack Watershed Institute of Paul Smith's College conducted an aquatic plant survey of the boat launch site located on the Chateaugay Lake Narrows. An approximately 7 acre area delineated in Figure 1 was surveyed using a 0.1 acre grid overlay of the site. A GPS unit (Trimble GeoXT) was used to navigate a motor boat through each grid cell, within which plants observed from the surface were recorded by species. This information was used to produce the 0.1 acre resolution aquatic plant survey map shown in Figure 2 and the frequency of occurrence of each species observed shown in Table 1. After the grid survey was completed, the GPS unit was used to map all Eurasian watermilfoil beds on the site, the locations of which are depicted in Figure 3. Dan Kelting then conducted a SCUBA dive reconnaissance of the site that included diving the milfoil beds and the entire width of the Narrows.

Findings

Twelve species of aquatic plants were identified (Figure 2 and Table 1), eleven of which are considered native and commonly found in Adirondack lakes. Eurasian watermilfoil (hereafter called milfoil) was the only non-native species identified. No rare or threatened species were observed. Milfoil and eelgrass were the most frequently observed species, occurring in 56 percent of the grid cells (Figure 2 and Table 1). Canadian waterweed and coontail were the third and fourth most frequently observed species, occurring in 48 and 44 percent, respectively, of the grid cells.

Dense milfoil beds with a combined area of 60,411 square feet (1.39 acres) were identified at four locations on the site (Figure 3). The largest bed was 49,928 square feet and crosses both the main navigation channel of the Narrows and the navigation channel from the boat launch to the Upper Lake. If left untreated, there is a high likelihood that boats moving from the boat launch to the Upper Lake will carry milfoil fragments on lower units up the Narrows and potentially into the Upper Lake; likewise, boats moving through the Narrows will carry milfoil fragments up and down the Narrows.

The milfoil beds consist of large multi-stem plants that are at or near the surface and smaller milfoil plants that are emerging from the lake bottom. Mechanical fragmentation from propellers was obvious and explains why plants were not at the surface in some

locations, these largely being in the navigation channels. Other species observed in the milfoil beds included eelgrass, Canadian waterweed, and coontail, but these species occurred in low numbers with milfoil being the dominant plant. The depth of water where the beds were located ranged from 6 to 10 feet, with most beds starting in about 8 feet of water. The bottom was a loose sediment that was at least 3 feet thick, estimated by pushing arm into the sediment up to the shoulder while diving. No trees or other obstacles that would impair divers or placement of benthic mats were observed.

Recommendation

Ideally benthic mats should be placed on all of the dense beds identified in the survey, followed by hand harvesting of the scattered milfoil plants mixed in with the other species throughout the site. It would require 180 benthic mats to cover the beds. If only 100 benthic mats are available, then we recommend placing them on the areas shown in red in Figure 4. These areas were selected because they represent the main navigation areas. After the 100 benthic mats were deployed the immediate adjacent areas and scattered milfoil plants would be hand harvested. The larger remaining green areas would not be hand harvested, but the mats should be redeployed to these areas in May, 2009, thus achieving control over the entire site.

The benthic mats should be constructed with 5 pieces of rebar per mat to give them sufficient weight to push the plants down and to lie on the bottom.

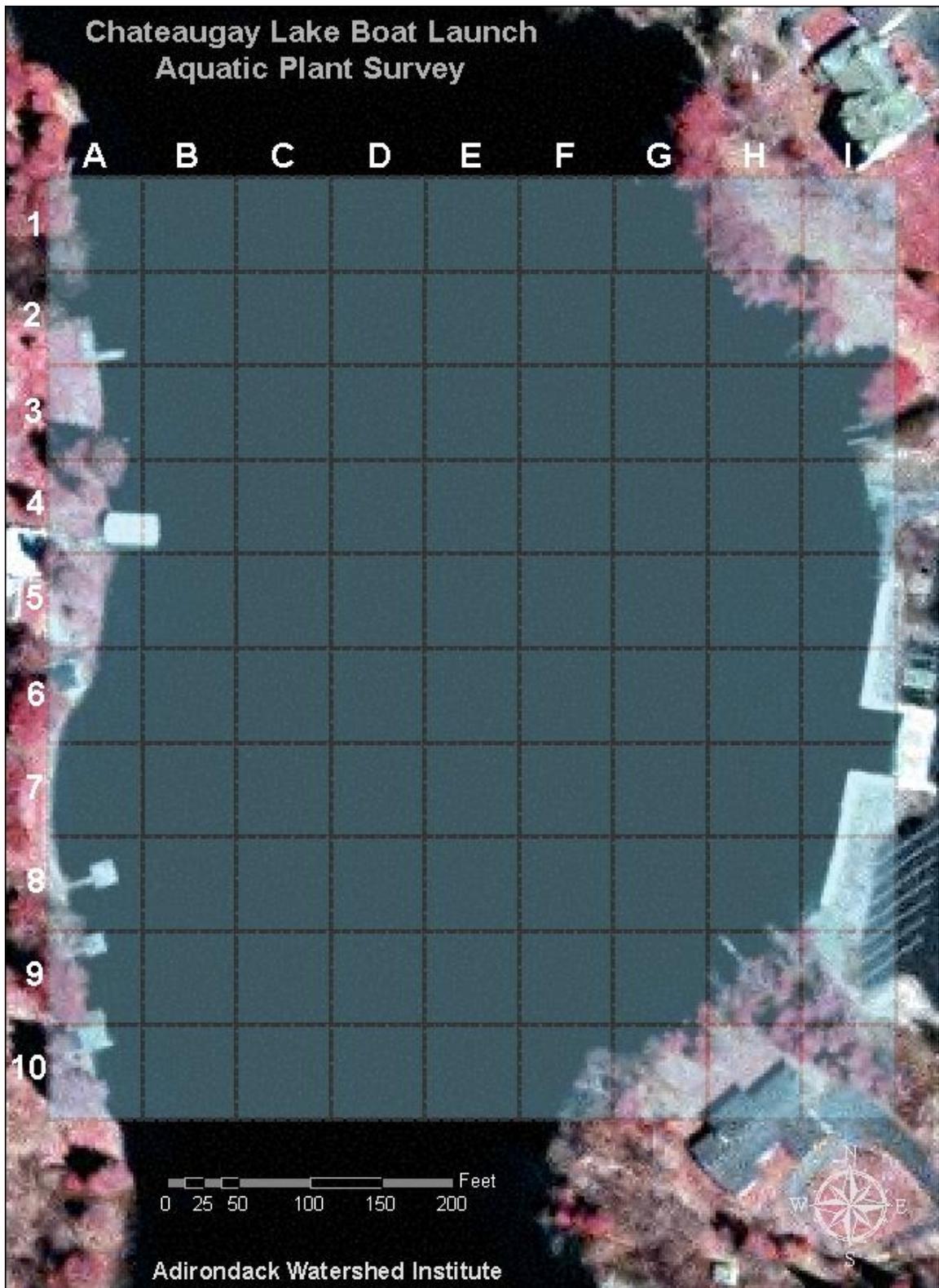


Figure 1. Digital color orthophoto showing 7 acre work area and 0.10 acre sampling grid overlay used for the aquatic plant survey conducted on July 1, 2008.

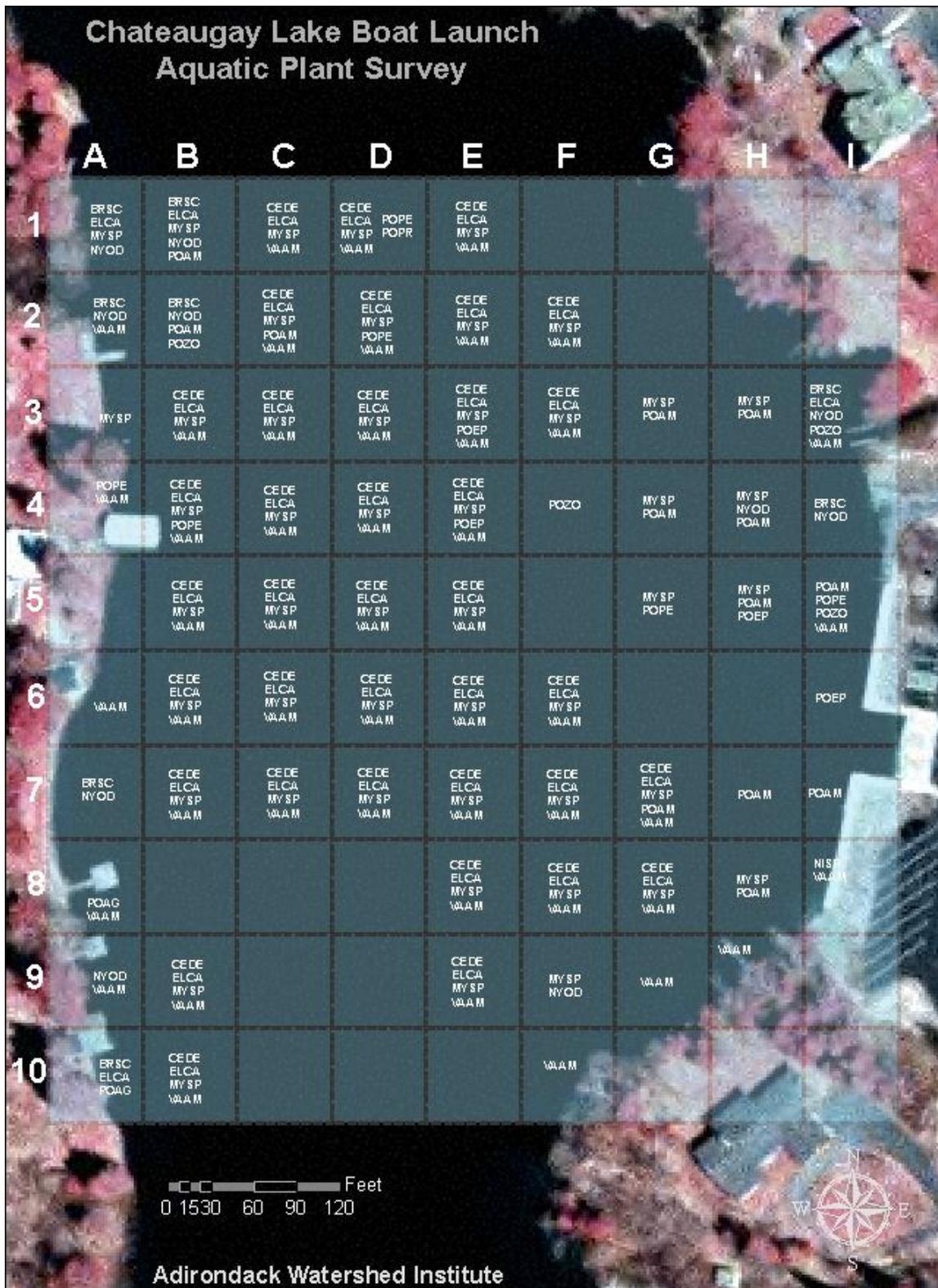


Figure 2. Aquatic plants observed in each 0.10 acre survey grid on July 1, 2008. Plants are indicated by their four letter species code, with codes being defined in Table 1.

Common Name	Scientific Name	Code	% Freq. of Occurrence
Eurasian water-milfoil	<i>Myriophyllum spicatum</i>	MYSP	56
Eelgrass	<i>Vallisneria americana</i>	VAAM	56
Canadian waterweed	<i>Elodea canadensis</i>	ELCA	48
Coontail	<i>Ceratophyllum demersum</i>	CEDE	44
Bassweed	<i>Potamogeton amplifolius</i>	POAM	15
White waterlilly	<i>Nymphaea odorata</i>	NYOD	11
Watershield	<i>Brasenia schreberi</i>	BRSC	9
Claspingleaf pondweed	<i>Potamogeton perfoliatus</i>	POPE	7
Flatstem pondweed	<i>Potamogeton zosteriformis</i>	POZO	5
Ribbonleaf pondweed	<i>Potamogeton epihydrus</i>	POEP	4
Water knotweed	<i>Polygonum amphibium</i>	POAQ	2
Whitestem pondweed	<i>Potamogeton praelongus</i>	POPR	1

Table 1. Percent frequency of occurrence of the aquatic macrophytes visible during the Chateaugay Lake boat launch survey of July 1, 2008. Frequency of occurrence is calculated as the percentage of 0.10 acre sampling plots that each of the species is present in.



Figure 3. Green areas show Eurasian watermilfoil beds surveyed on July 1, 2008.



Figure 4. Minimum recommended treatment areas for installing benthic mats shown in red.