

American Lotus in Cates Lake, Scott County, Minnesota, 2016

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

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[Plant Survey Conducted August 29, 2016]

Prepared for:  
Prior Lake-Spring Lake  
Watershed District



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

## Summary

Cates Lake (MnDNR ID #70-001800) is a 30 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.

Cates Lake has a low diversity of submerged aquatic plants, with 5 species of rooted submerged plants found. The entire shoreline was ringed with native wetland plant species.

**Table S1. The percent occurrence of summer aquatic plants for Cates Lake on August 29, 2016. Percent occurrence is calculated based on the number of times a plant species occurs at a sampling station divided into the total number of stations for the survey.**

	Cates Lake August 29, 2016 (53 sites)		
	% Occurrence	Occurrence	Density
Cattails ( <i>Typha sp</i> )	4	2	5.0
American lotus ( <i>Nelumbo lutea</i> )	25	13	2.6
White waterlilies ( <i>Nymphaea sp</i> )	43	23	1.9
Coontail ( <i>Ceratophyllum demersum</i> )	89	47	2.2
Elodea ( <i>Elodea canadensis</i> )	17	9	1.1
Eurasian watermilfoil ( <i>Myriophyllum spicatum</i> )	8	4	1.5
Cabbage ( <i>Potamogeton amplifolius</i> )	2	1	2.0
Flatstem pondweed ( <i>P. zosteriformis</i> )	2	1	1.0
Aquatic Plant Coverage (ac)	28		
Total submerged species	5		



**Figure S1. American lotus was found in Cates Lake.**

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

Cates Lake, Scott County (MnDNR ID: 70-001800)

Size: 30 acres (source: PLSLWD website)

Maximum depth: 13 feet (source: PLSLWD website)

## Introduction

An aquatic plant survey was conducted on 30 acre Cates Lake, located in Scott County, on August 29, 2016. The objective of the survey was to characterize the aquatic plant community and to look for Eurasian watermilfoil.

## Methods

An aquatic plant point-intercept survey of Cates Lake was conducted by Blue Water Science on August 29, 2016 and 54 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.

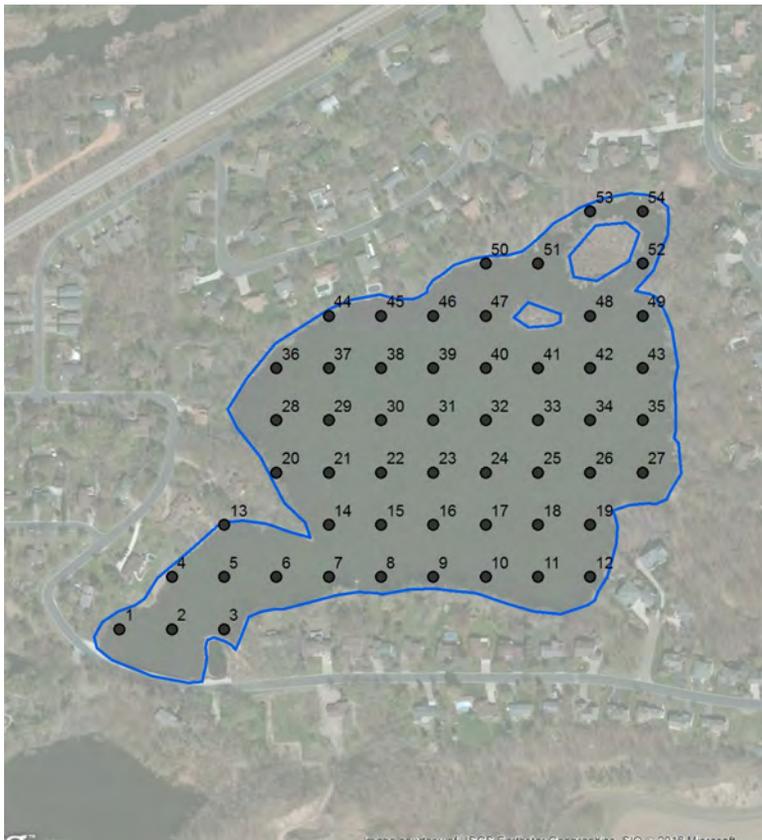


Figure 1. Sample location map for the aquatic plant survey conducted on Cates Lake.

## Results

Results of the summer aquatic plant survey conducted on August 29, 2016 found there were 5 submerged plants (Table 1)(Figure 2).

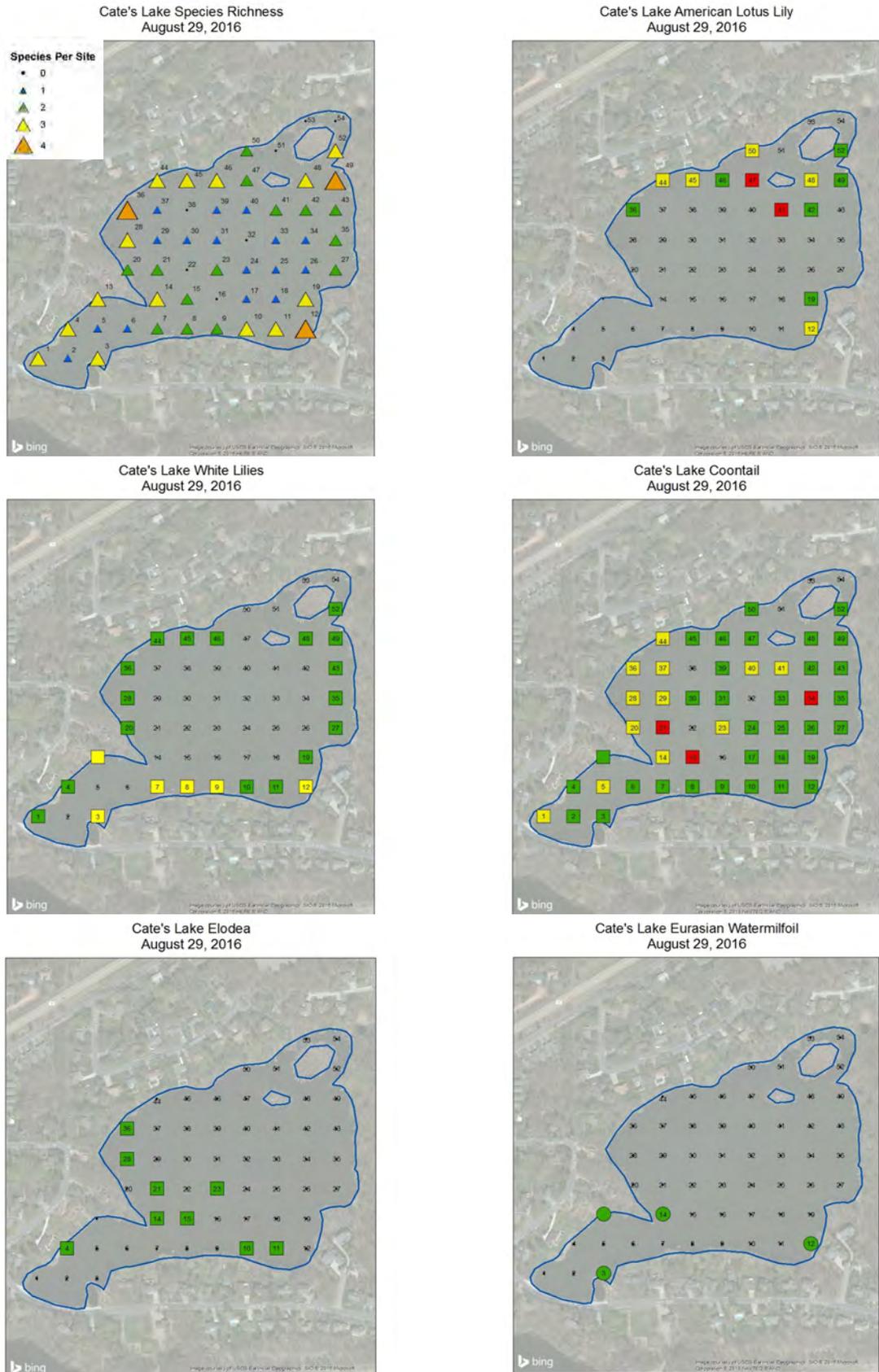
Eurasian watermilfoil was observed in this survey at 4 sites.

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**Table 2. Previous aquatic plant conditions on September 14, 2007 (survey was conducted by Blue Water Science).**

American Lotus	Common along the NW shoreline, growing out to a depth of 6 feet.
White lilies	Growing in the nearshore area around much of the lake out to water depth of about 5 feet (Figure 1).
Smartweed	Rare, found along NW side of the lotus beds.
Coontail	Most common plant in the lake, found growing out to 8-foot water depth. Coontail covers about 80% of the lake bottom.
Elodea	Sparse, found on the NW and west sides of the lake.
Eurasian watermilfoil	Scattered around Cate's Lake, but most common in the southern half of the lake. It was growing to the surface in patches in shallow water, within 30 feet of the shore in only a couple of spots (primarily in the southern half of the lake).



**Figure 2. Cates Lake aquatic plant coverage maps. For individual species maps: green = light growth, yellow = moderate growth, and red = heavy growth.**

**Table 3. Cates Lake, individual site data collected on August 29, 2016.**

Site	Depth (ft)	Cattails	American lotus	White lily	Cabbage	Coontail	Elodea	EWM	Flatstem	No Plants
1	6			2	2	3				
2	8					2				
3	3			3		2		2		
4	7			2		2	1			
5	10					3				
6	10					2				
7	6			3		1				
8	5			3		2				
9	6			3		2				
10	6			2		2	1			
11	7			2		2	1			
12	6		3	3		2		1		
13	3			3		2		2		
14	6					3	1	1		
15	5					4	1			
16	9									1
17	7					2				
18	8					1				
19	6		2	1		2				
20	6			1		3				
21	7					4	1			
22	9									1
23	8					3	1			
24	9					1				
25	7					2				
26	8					2				
27	6			2		2				
28	6			2		3	1			
29	8					3				
30	8					1				
31	10					1				
32	9									1
33	9					1				
34	5					4				
35	6			1		2				
36	5		1	1		3	2			
37	7					3				
38	10									1
39	8					2				
40	8					3				
41	8		4			3				
42	7		2			2				
43	6			1		1				
44	6		3	2		3				
45	5		3	1		2				
46	5		2	2		2				
47	5		4			1				
48	5		3	1		2				
49	5		2	1		1			1	
50	4		3			2				
51	land									1
52	1		2	1		1				
53	1	5								
54	1	5								
Average		5.0	2.6	1.9	2.0	2.2	1.1	1.5	1.0	
Occurrence (53 sites)		2	13	23	1	47	9	4	1	5
% occur		4	25	43	2	89	17	8	2	

## General Findings of This Study

- Native shoreline conditions offer good wildlife habitat.
- Submerged plants were abundant covering 28 out of 30 acres.
- The rare American lotus lily was observed at 13 sites.
- Eurasian watermilfoil was found at 4 sites.



Figure 3. Looking at Cates Lake from the shoreline on August 29, 2016.