



Swamp Lake, Scott County, Minnesota (Google Earth)

Aquatic Plant Point Intercept Survey for Swamp Lake, Scott County, Minnesota

[Plant Survey Conducted July 9, 2019]

Prepared for:
Prior Lake-Spring Lake
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Aquatic Plant Point Intercept Survey for Swamp Lake, Scott County, Minnesota

Summary

Swamp Lake (MnDNR ID #70-011100) is a 53 acre lake located in Scott County, Minnesota. An aquatic plant survey was conducted on July 9, 2019 by Blue Water Science to characterize conditions of native aquatic plants and to look for the non-native Eurasian watermilfoil.

Swamp Lake is a shallow lake with abundant aquatic plants growing throughout most of the basin covering about 94% of the lake area (Figure S1). Four species of submerged aquatic plants were observed on July 9, 2019.

No Eurasian watermilfoil was found in this survey.

Swamp Lake Native Plant Coverage
July 9, 2019

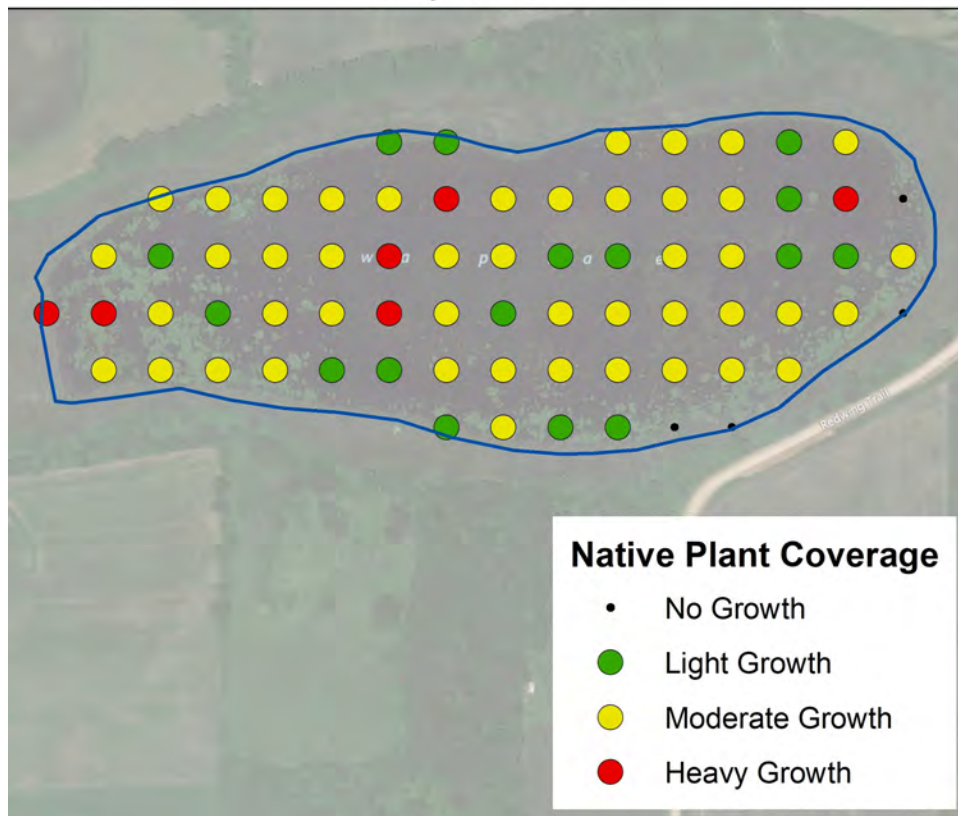


Figure S1. Native Plant Coverage Map. Plants were growing abundantly and water clarity was good.

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Swamp Lake, Scott County (MnDNR ID: 70-011100)

Size: 53 acres (source: PLSLWD website)

Maximum depth: 4 feet (source: PLSLWD website)

Introduction

An aquatic plant survey was conducted on 53 acre Swamp Lake, located in Scott County, on July 9, 2019. 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 Swamp Lake was conducted by Blue Water Science on July 9, 2019 and 71 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 3 with 1 being sparse and 3 being a heavy growth. Based on these sample sites, a plant distribution map was constructed.



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

Results

Results of the summer aquatic plant survey conducted on July 9, 2019 found there were 4 submerged plants and two floating leaf species (Table 1)(Figure 2). Aquatic plants covered about 94% of the lake at light to moderate densities (Table 1). The dominant plants were sago pondweed and stringy pondweed (Table 1). The species richness was good with multiple species found at most sample sites (Figure 2). Plant species distribution and abundance for 4 plant species are shown in Figure 3.

Eurasian watermilfoil was not observed in this survey.

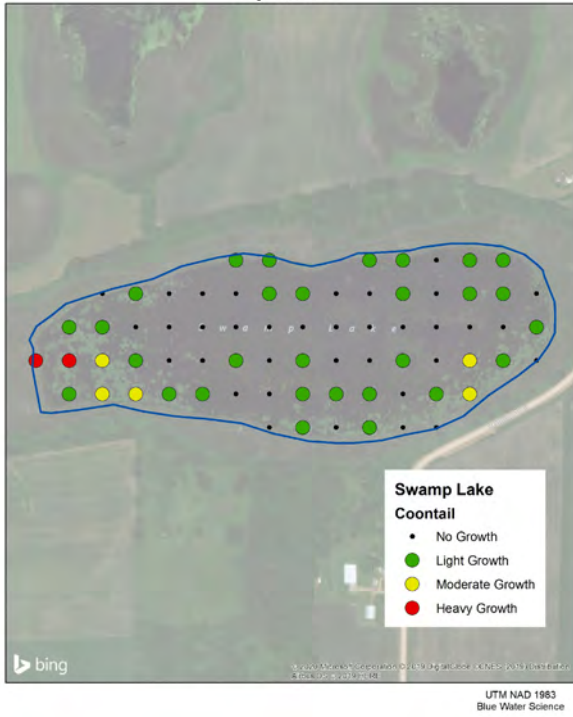
Table 1. The percent occurrence of summer aquatic plants for Swamp Lake on July 9, 2019. Percent occurrence is calculated based on the number of times a plant species occurs at a sampling station divided into the total number of stations for the survey.

	Swamp Lake July 9, 2019 (71 sites)		
	% Occurrence	Occurrence	Density
White water lilies (<i>Nymphaea sp</i>)	58	41	1.1
Watershield (<i>Brasenia schreberi</i>)	3	2	1.0
Coontail (<i>Ceratophyllum demersum</i>)	51	36	1.3
Flatstem pondweed (<i>Potamogeton zosteriformis</i>)	55	39	1.6
Sago pondweed (<i>Stuckenia pectinata</i>)	72	51	1.6
Stringy Pondweed (<i>Potamogeton sp</i>)	73	52	1.1
Aquatic Plant Coverage (ac)	51.4 (97%)		
Total submerged species	4		

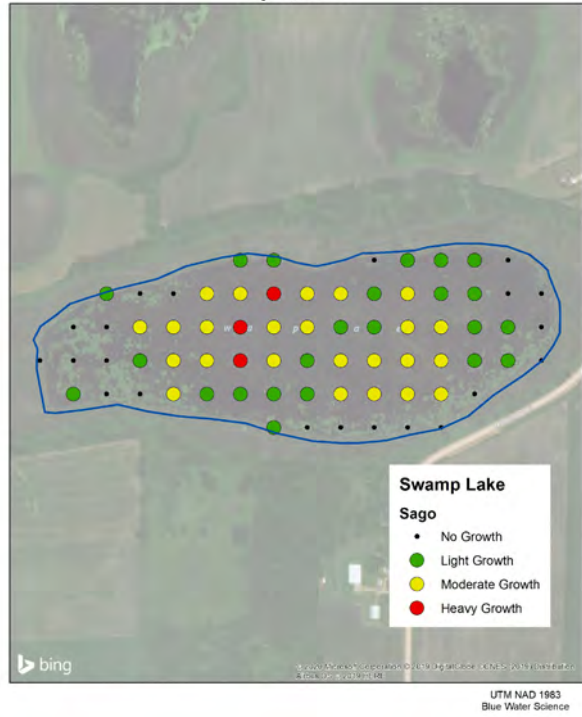


Figure 2. Swamp Lake species richness map.

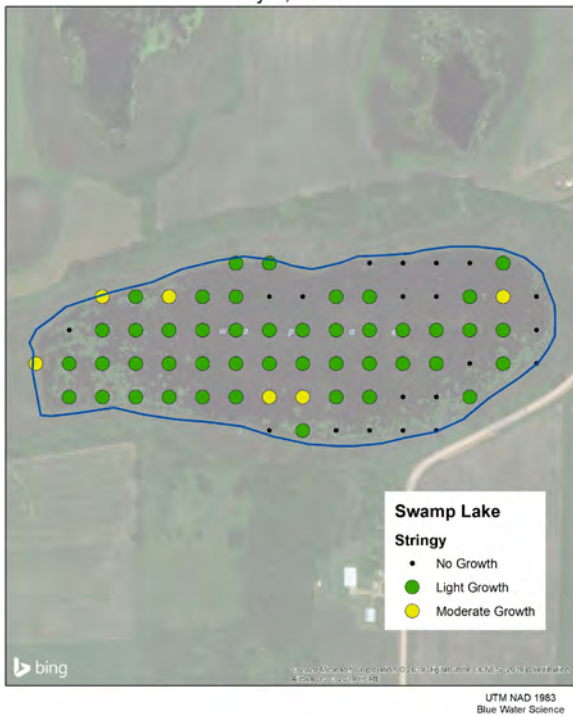
Swamp Lake Coontail
July 9, 2019



Swamp Lake Sago Pondweed
July 9, 2019



Swamp Lake Stringy Pondweed
July 9, 2019



Swamp Lake Flatstem Pondweed
July 9, 2019

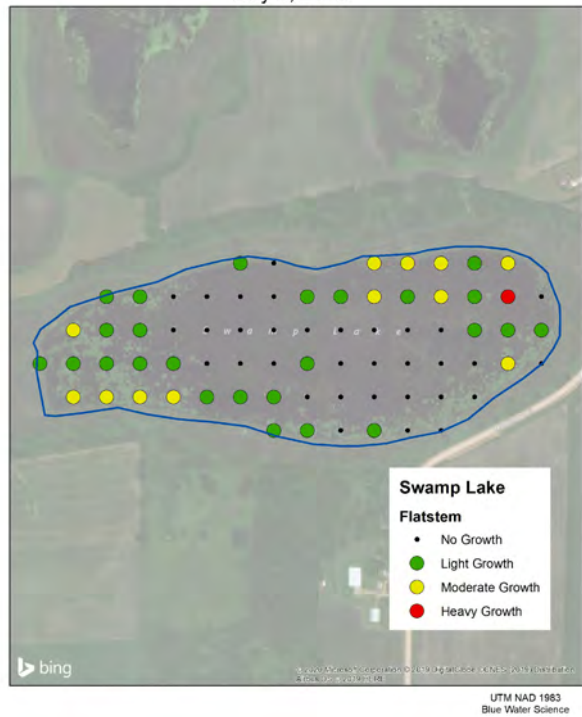


Figure 3. Swamp Lake coverage maps for coontail and sago pondweed [top]; stringy and flatstem [bottom] Key: green square = light growth, yellow square = moderate growth, and red square = heavy growth.

Table 2. Swamp Lake, individual site data collected on July 9, 2019.

Site	Depth (ft)	White lily	Watershield	Coontail	Flatstem	Sago	Stringy	No plants
1	2				1	1		
2	2	2		1	1		1	
3	2	1						
4	2	1		1	1			
5								1
6								1
7	33	1		1	2	1	1	
8	3	1		2	2		1	
9	3	1		2	2		1	
10	3	1		1	2	2	1	
11	3	1		1	1	1	1	
12	3	1			1	1	1	
13	4				1	1	2	
14	4			1		1	2	
15	4	1		1		2	1	
16	4	1		1		2	1	
17	4	1				2		
18	3	1		1		2		
19	2	1		2			1	
20	3	1		3	1		2	
21	3	1		3	1		1	
22	4	1		2	1		1	
23	4	1		1	1	1	1	
24	4	1			1	2	1	
25	4					2	1	
26	4			1		3	1	
27	4					2	1	
28	5			1	1	1	1	
29	4					2	1	
30	4					2	1	
31	4	1		1		2	1	
32	4					2	1	
33	4	1		2		1		
34	4	1		1	2	1	1	
35								1
36	3	2		1	2			
37	3	1		1	1		1	
38	3	1			1	2	1	
38	3	1			1	1	1	
39	4	1				2	1	
40	4	1				2	1	
41	4					3	1	
42	4					2	1	
43	4					2	1	
44	4					1	1	
45	4					1	1	
46	4					2	1	
47	4					2	1	
48	4				1	1	1	
49	4				1	1	1	
50	2	2		1	1			
51	3				1	1	2	
52	3	2	1	1	1		1	
53	4	1	1				2	
54	4	1				2	1	
55	3					2	1	
56	3			1		3		
57	3			1	1	2		
58	4	1			1	2	1	
59	4				2	1	1	
60	4			1	1	2		
61	4	1			2	1		
62	4	1		1	1	1	1	
63	3			1	3		2	
65	3	1		1	1	1	1	
66	2			1		1	1	
67	3	1		1	2			
68	3	1		1	2	1		
69	3	1			2	1		
70	3	1		1	1	1		
71	2	1		1	2		1	
Average		1.0	1.1	1.3	1.4	1.6	1.1	
Occurrence (71 sites)		2	41	36	39	51	52	3
% occurrence		3	58	51	55	72	73	

Swamp Lake White Lilies July 9, 2019

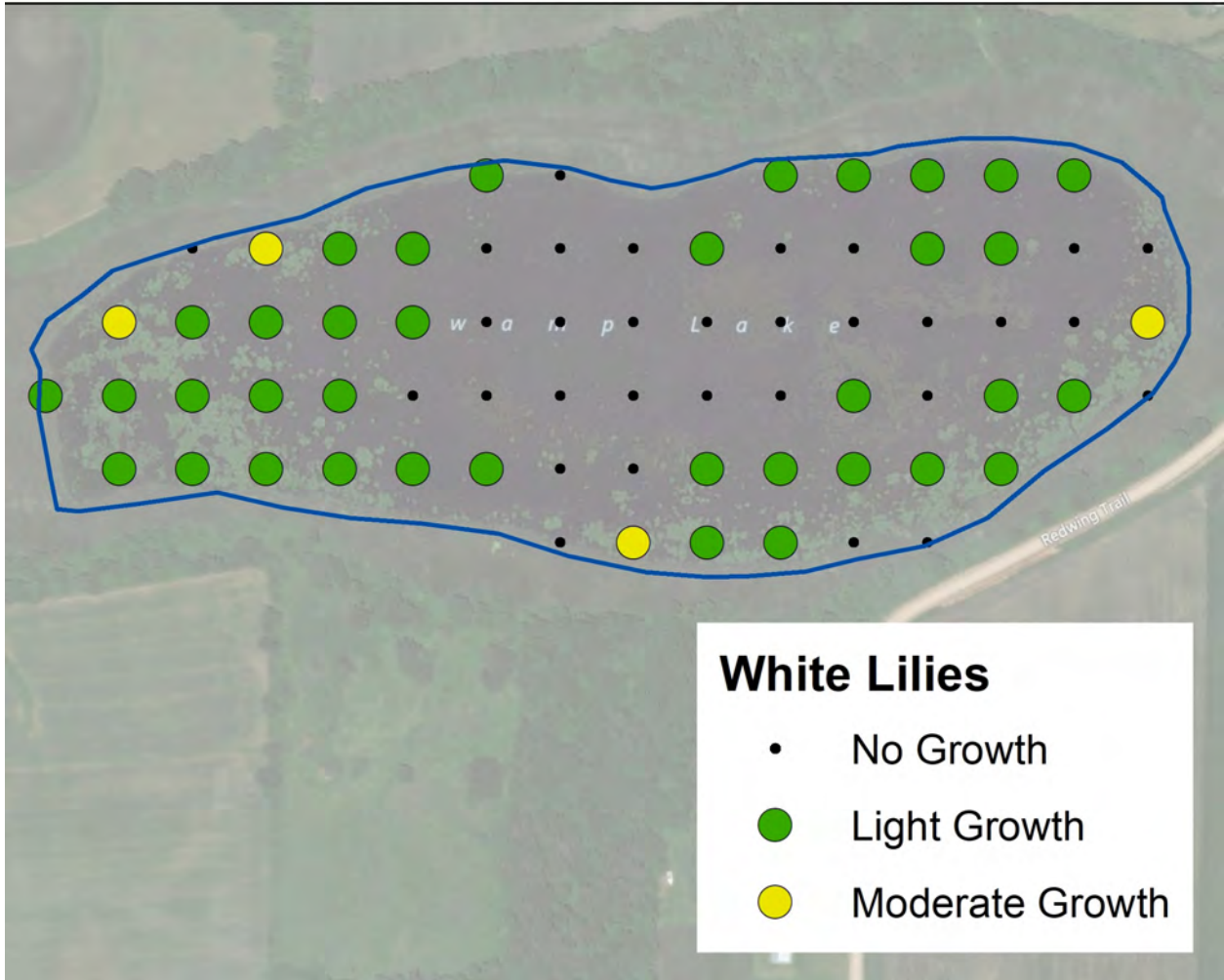


Figure 4. Water lily conditions in Swamp Lake in 2019.



Figure 5. Features of Swamp Lake.

General Findings of This Study

- Swamp Lake has a shoreline with mostly native vegetation which offers good wildlife habitat.
- Submerged plants covered about 94% of the bottom area.
- Stringy pondweed and sago pondweed were the dominant aquatic plant. White lilies were common as well.
- Swamp Lake has the potential to have good water quality based on the abundant aquatic plant community.



Figure 6. Native plants were found throughout most of Swamp Lake in 2019.