



Pair of Swans on Swamp Lake, Scott County, Minnesota, August 2024

Aquatic Plant Point Intercept Survey for Swamp Lake, Scott County, Minnesota, 2024

Plant Survey Co;nducted August 6, 2024

Prepared for:
Prior Lake-Spring Lake
Watershed District



Prepared by:
Steve McComas
Jo Stuckert
Connor McComas
Blue Water Science

March 10, 2025

Aquatic Plant Point Intercept Survey for Swamp Lake, Scott County, Minnesota, 2024

Summary

Swamp Lake (MnDNR ID #70-011100) is a 53 acre lake located in Scott County, Minnesota. An aquatic plant survey was conducted on August 6, 2024 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 100% of the lake area (Figure 1). Five species of submerged aquatic plants were observed on August 6, 2024.

No Eurasian watermilfoil was found in this survey.

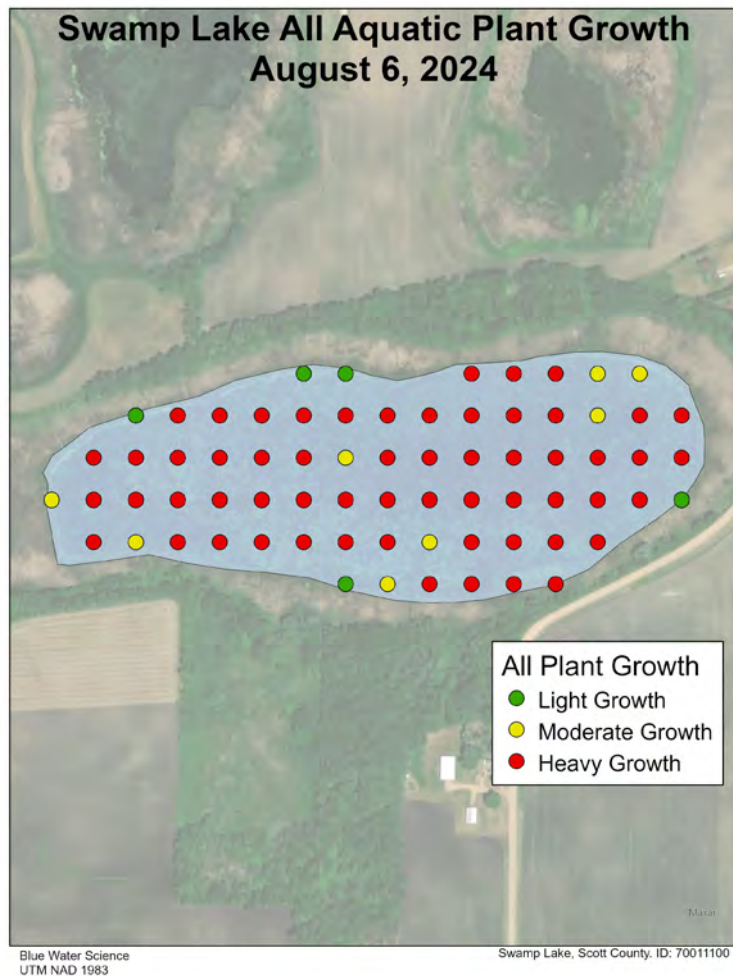


Figure 1. Native Plant Coverage Map. Plants were growing abundantly and water clarity was good.

Aquatic Plant Point Intercept Survey for Swamp Lake, Scott County, Minnesota, 2024

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 August 6, 2024. 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 August 6, 2024 and 71 points were sampled. Sample points were placed 50 meters apart on a grid that covered the lake (Figure 2). 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 2. Sample location map for the aquatic plant survey conducted on Swamp Lake.

Results

Results of the summer aquatic plant survey conducted on August 6, 2024 found there were 5 submerged plants, 3 floatingleaf species, and 1 emergent species (Table 1). Aquatic plants covered about 100% of the lake at light to heavy densities (Table 1). The dominant plants were coontail and flatstem pondweed (Table 1). The species richness was good with multiple species found at most sample sites (Figure 3). Plant species distribution and abundance for 4 common plant species are shown in Figure 4.

Eurasian watermilfoil was not observed in this survey.

Table 1. The percent occurrence of summer aquatic plants for Swamp Lake on August 6, 2024. 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 August 6, 2024 (71 sites)		
	Occurrence	% Occur	Density
Cattails (<i>Typha spp</i>)	4	6	1.0
Duckweed (<i>Lemna spp</i>)	3	4	1.3
Watershield (<i>Brasenia schreberi</i>)	6	8	1.0
White water lilies (<i>Nymphaea sp</i>)	67	94	2.5
Coontail (<i>Ceratophyllum demersum</i>)	64	90	2.6
Chara (<i>Chara spp</i>)	2	3	1.0
Star duckweed (<i>Lemna trisulca</i>)	24	34	1.0
Flatstem pondweed (<i>Potamogeton zosteriformis</i>)	43	61	1.4
Sago pondweed (<i>Stuckenia pectinata</i>)	32	45	1.1
Aquatic Plant Coverage (ac)	53 ac (100%)		
Total submerged species	5		

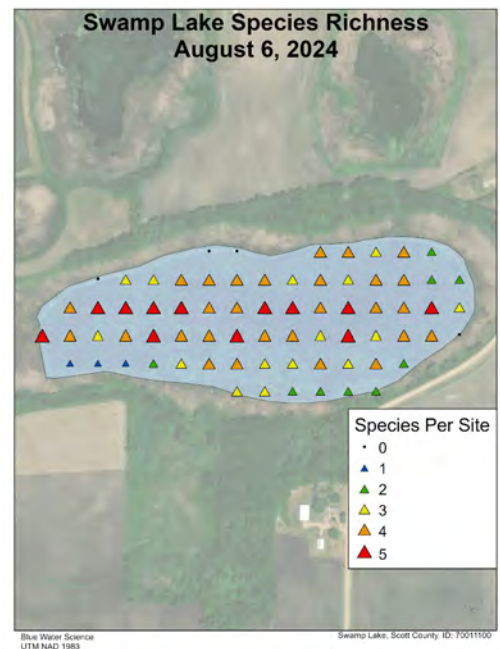
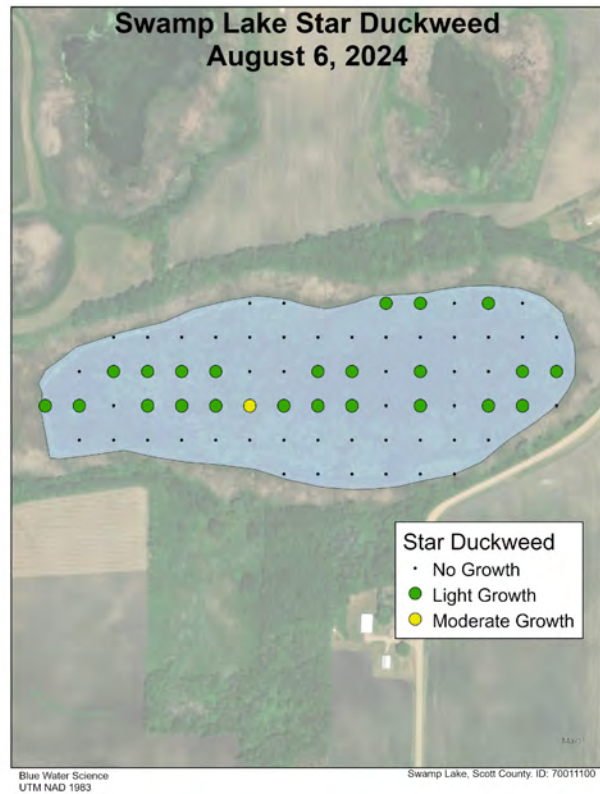
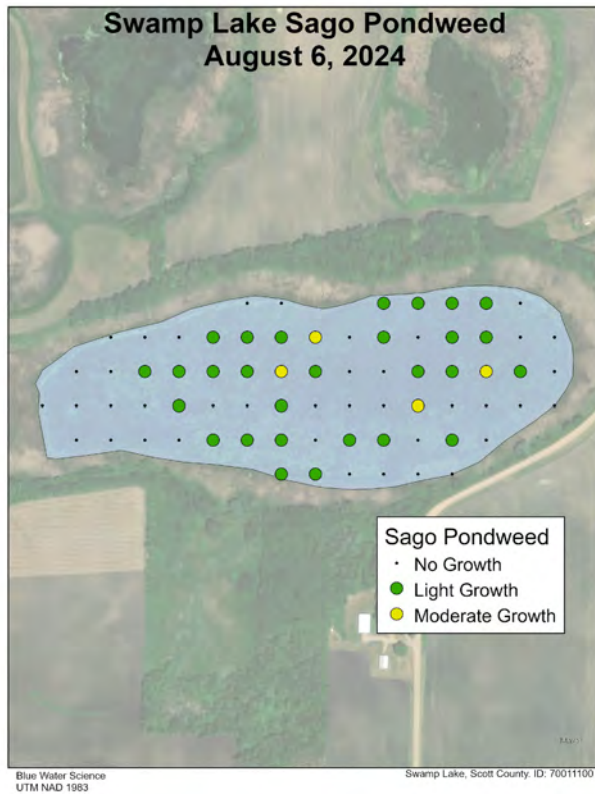
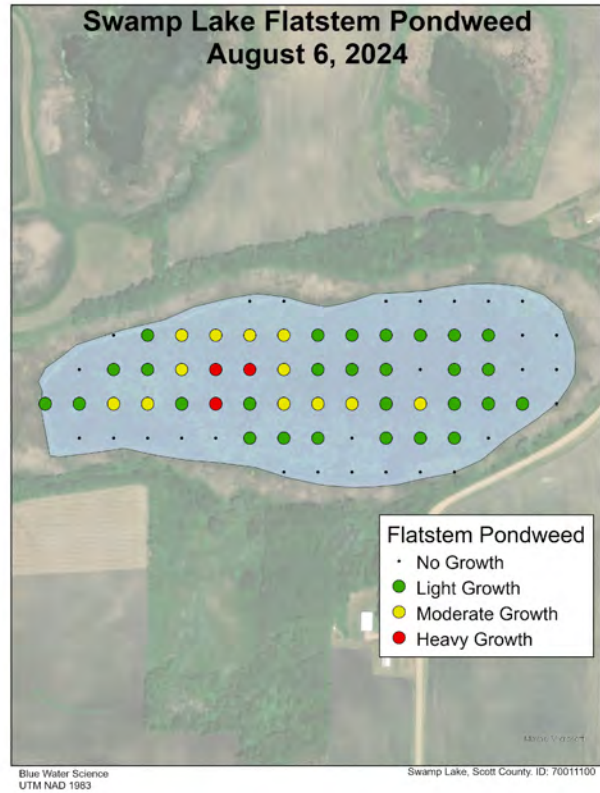
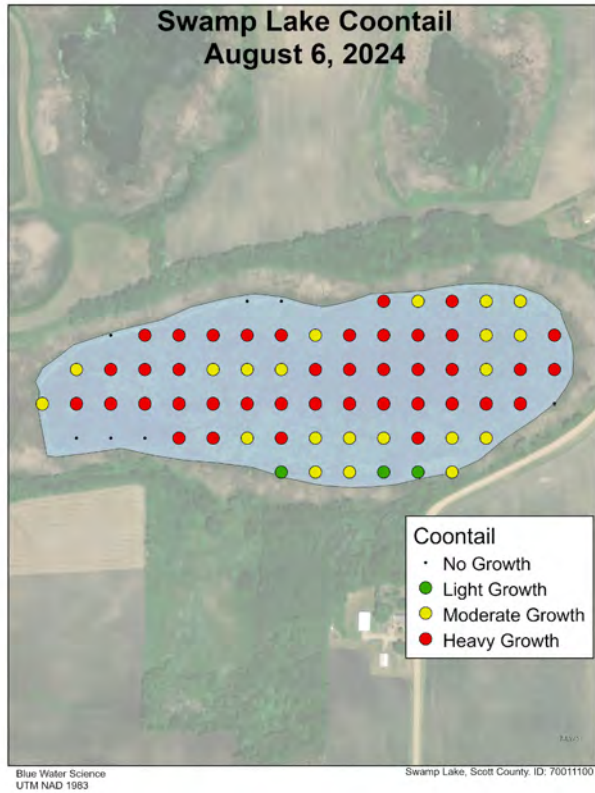


Figure 3. Swamp Lake species richness map.



**Figure 4. Swamp Lake coverage maps for coontail (top-left), flatstem pondweed (top-right), sago pondweed (bottom-left), and star duckweed (bottom-right).
Key: green dots = light growth, yellow dots = moderate growth, and red dots = heavy growth.**

Table 2. Swamp Lake, individual site data collected on August 6, 2024.

Site	Depth (ft)	Cattails	Duckweed	Watershield	White lilies	Chara	Coontail	Flatstem	Sago	Star duckweed
1	2				1		1		1	
2	2				2		2		1	
3	2				3		2			
4	2				3		1			
5	1				3		1			
6	1				3		2			
7	2				3					
8	2				2					
9	2.5				3					
10	3				2		3			
11	3				3		3		1	
12	3				3		2	1	1	
13	3				3		3	1	1	
14	2.5				3		2	1		
15	2.5				2		2		1	
16	2.5				3		2	1	1	
17	2.5				3		3	1		
18	2.5				3		2	1	1	
19	2.5				3		2			
20	2		2	1	1		2	1		1
21	2.5		1		2		3	1		1
22	2.5				3		3	2		
23	2.5				1		3	2		1
24	3				2		3	1	1	1
25	3				1		3	3		1
26	3				3		3	1		2
27	3				2		3	2	1	1
28	4				2		3	2		1
29	3				2		3	2		1
30	3.5				3		3	1		
31	3				3		3	2	2	1
32	3				3		3	1		
33	3.5				2		3	1		1
34	3				3		3	1		1
35	1	1								
36	2		1	1	3	1	2			
37	3				3	1	3	1		1
38	3				3		3	1	1	1
39	4				3		3	2	1	1
40	3.5				2		2	3	1	1
41	3				3		2	3	1	
42	3				2		2	2	2	
43	3				2		3	1	1	1
44	3			1	2		3	1		1
45	3.5			1	2		3	1		
46	3.5			1	1		3		1	1
47	3.5				2		3	1	1	
48	3				3		2	1	2	
49	3			1	3		3		1	1
50	3				3		3			1
51	1	1								
52	2.5				3		3	1		
53	2.5				3		3	2		
54	2.5				2		3	2	1	
55	3				3		3	2	1	
56	3				3		3	2	1	
57	3				3		2	1	2	
58	3				3		3	1		

Table 2. Swamp Lake, individual site data collected on August 6, 2024.

Site	Depth (ft)	Cattails	Duckweed	Watershield	White lilies	Chara	Coontail	Flatstem	Sago	Star duckweed
59	2.5				2		3	1	1	
60	2.5				3		3	1		
61	3.5				2		3	1	1	
62	3				2		2	1	1	
63	2				3		2			
64	2				3		3			
65	1	1								
66	1	1								
67	2				2		3		1	1
68	2				3		2		1	1
69	2				3		3		1	
70	2				2		2		1	1
71	2				2		2			
Average		1.0	1.3	1.0	2.5	1.0	2.6	1.4	1.1	1.0
Occurrence (71 sites)		4	3	6	67	2	64	43	32	24
% occurrence		6	4	8	94	3	90	61	45	34

Table 3. The percent occurrence of summer aquatic plants for Swamp Lake on August 31, 2016, July 9, 2019, and August 6, 2024. 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.

	August 31, 2016 (71 sites) % Occur	July 9, 2019 (71 sites) % Occur	August 6, 2024 (71 sites) % Occur
Cattails (<i>Typha spp</i>)			6
Duckweed (<i>Lemna spp</i>)			4
Watershield (<i>Brasenia schreberi</i>)		2	8
White water lilies (<i>Nymphaea sp</i>)	43	41	94
Coontail (<i>Ceratophyllum demersum</i>)		36	90
Chara (<i>Chara spp</i>)			3
Star duckweed (<i>Lemna trisulca</i>)			34
Stringy pondweed (<i>Potamogeton sp</i>)		52	
Flatstem pondweed (<i>Potamogeton zosteriformis</i>)	6	39	61
Sago pondweed (<i>Stuckenia pectinata</i>)	26	51	45
Aquatic Plant Coverage (ac)	50.8 ac (96%)	51.4 ac (97%)	53 ac (100%)
Total submerged species	3	4	5

General Findings of This Study

- Swamp Lake has a shoreline with mostly native vegetation which offers good wildlife habitat.
- Submerged, floatingleaf, and emergent plants covered 100% of the lake area.
- Coontail and flatstem pondweed were the dominant submerged aquatic plants. White lilies were common as well.
- Swamp Lake has the potential to have good water quality based on the abundant aquatic plant community.



Native aquatic plant conditions on August 6, 2024.