Crystal Lake, Scott County, Minnesota, August 2024

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

Point Intercept Survey: August 6, 2024

Prepared for:
Prior Lake-Spring Lake Watershed District

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

Summary

Crystal Lake (MnDNR ID #70-006100) is a 30 acre lake located in Scott County, Minnesota. An aquatic plant point intercept 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.

Crystal Lake has a moderate diversity of submerged aquatic plants, with 6 species of rooted submerged plants found (Table 1). Also the entire shoreline was ringed with wetland plant species.

Coontail was the dominant aquatic plant. White lilies were seen at 64% of the sample sites. No Eurasian watermilfoil nor curlyleaf pondweed were found in this survey.

Table 1. The percent occurrence of summer aquatic plants for Crystal 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.

	Crystal Lake August 6, 2024 (55 sites)		
	Occurrence	**% Occurrence**	**Density**
Cattails (*Typha spp*)	1	2	1.0
Duckweed (*Lemna spp*)	4	7	1.0
Spatterdock (*Nuphar variegata*)	2	4	1.5
White water lilies (*Nymphaea odorata*)	35	64	1.5
Bladderwort (*Utricularia spp*)	1	2	1.0
Chara (*Chara spp*)	1	2	2.0
Coontail (*Ceratophyllum demersum*)	39	71	2.4
Elodea *(Elodea canadensis)*	3	5	1.0
Flatstem pondweed (*Potagometon zosteriformis*)	30	55	1.3
Sago pondweed (*Stuckenia pectinata*)	1	2	1.0
Aquatic Plant Coverage (ac)	27 ac		
Total submerged species	6		

Figure 1. White water lilies were common in Crystal Lake.

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Crystal Lake, Scott County (MnDNR ID: 70-006100)
Size: 30 acres (source: PLSLWD website)
Maximum depth: 26 feet (source: PLSLWD website)

Introduction

An aquatic plant survey was conducted on 30 acre Crystal 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 Crystal Lake was conducted by Blue Water Science on August 6, 2024 and 55 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.

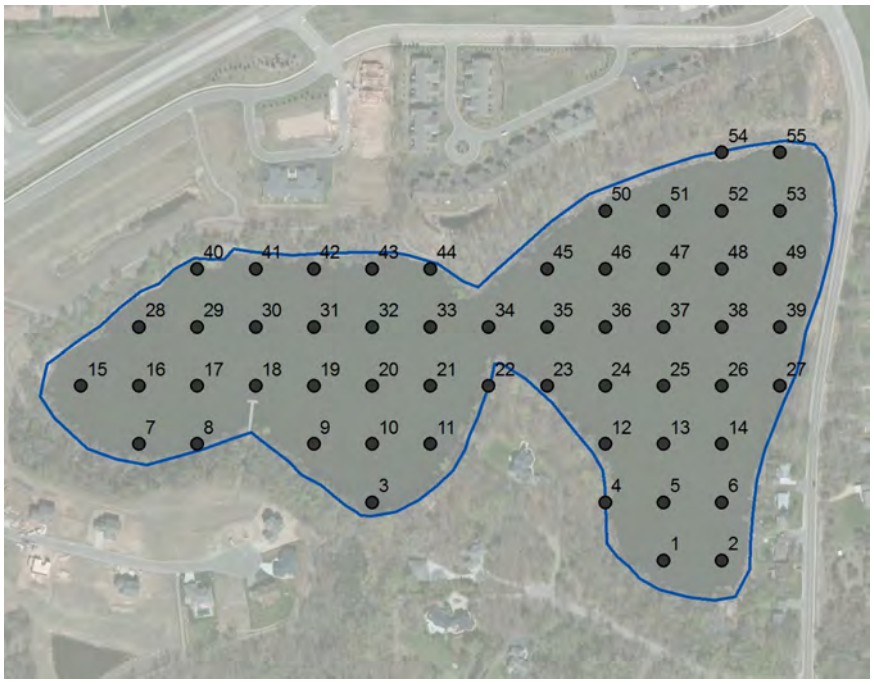

Figure 2. Sample location map for the aquatic plant survey conducted on Crystal Lake.

Results

Results of the summer aquatic plant survey conducted on August 6, 2024 found there were 6 submerged plants (Table 2)(Figure 3). Coontail was the dominant aquatic plant.

Neither Eurasian watermilfoil nor curlyleaf pondweed were observed in this survey. A species richness map along with distribution maps of 3 dominant aquatic plants are shown in Figure 4.

Table 2. The percent occurrence of summer aquatic plants for Crystal Lake on August 6, 2024. Percent occurrence is calculated based on the number of times a plant species occurs at a sampling station div ided into the total number of stations for the survey.

	Crystal Lake August 6, 2024 (55 sites)		
	Occurrence	% Occurrence	Density
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Total submerged species	6		

Figure 3. Coontail was the most common plant found in Crystal Lake in 2024.

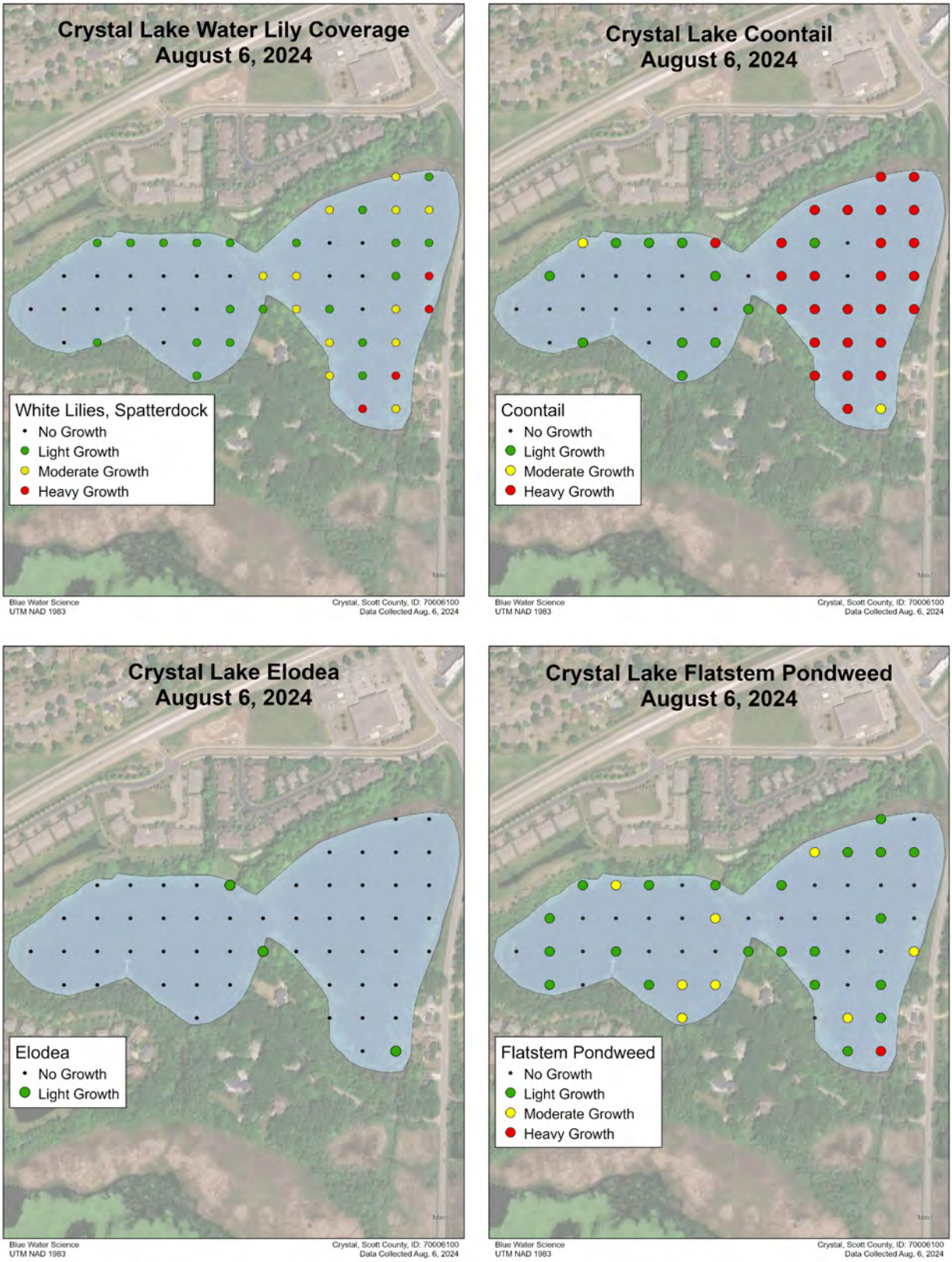

Figure 4. Crystal Lake aquatic plant maps.
Key: green dot = light growth, yellow dot = moderate growth, and red dot = heavy growth.

Table 3. Crystal Lake, individual site data collected on August 6, 2024.

Site	Depth (ft)	Cattails	Duck-weed	Spatter-dock	White lilies	Bladder wort	Chara	Coontail	Elodea	Flatstem	Sago	Fila algae
1	5		1		3			3		1		2
2	3				2			2	1	3		3
3	5				1			1		2		
4	1	1			2			3				1
5	5		1		1			3		2		2
6	4				3			3		1		2
7	6									1	1	
8	4			1	1			1				
9	1									1		
10	9				1			1		2		
11	8				1			1		2		
12	4				2			3		1		
13	6				1			3				3
14	5				2			3		1		2
15	7											
16	15									1		
18	15									1		
20	14											
21	1				1							
22	4				1			1	1	1		
23	4				2			3		1		
24	6				1			3		1		
25	7							3				
26	7			2				3				
27	4				3			3		2		1
28	7							1		1		
32	14											
33	9							1		2		
34	5				2							2
34												
35	7				2			3				2
36	10							3				
37	15											
38	7				1			3		1		
39	5				3			3				
40	3		1		1	1		2		1		
41	5				1			1		2		
42	5				1		2	1		1		
43	6				1			1				
44	2		1		1			3	1	1		1
45	6				1			3		1		
46	8							1				
47	14											
48	6				1			3				
49	5				1			3				
50	6				2			3		2		
51	6				1			3		1		
52	5				2			3		1		
53	5				2			3		1		
54	3				2			3		1		2
55	4				1			3				2
Average		1.0	1.0	1.5	1.5	1.0	2.0	2.4	1.0	1.3	1.0	1.9
Occur (55 sites)		1	4	2	35	1	1	39	3	30	1	13
% occurrence		2	7	4	64	2	2	71	5	55	2	24

Summary of Point Intercept Surveys for 2016, 2019, and 2024

Table 4. The percent occurrence of summer aquatic plants for Crystal Lake on September 1, 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.

	September 1, 2016 (55 sites) % Occurrence	July 9, 2019 (55 sites) % Occurrence	August 6, 2024 (55 sites) % Occurrence
Cattails (*Typha spp*)			2
Duckweed (*Lemna spp*)	7		7
Spatterdock (*Nuphar variegata*)			4
White water lilies (*Nymphaea odorata*)	60	60	64
Bladderwort (*Utricularia spp*)			2
Chara (*Chara spp*)			2
Coontail (*Ceratophyllum demersum*)	80	84	71
Elodea *(Elodea canadensis)*		5	5
Northern watermilfoil (*Myriophyllum sibiricum*)	2	4	
Curlyleaf pondweed (*Potamogeton crispus*)	2	11	
Stringy pondweed (*Potagometon sp*)		11	
Flatstem pondweed (*Potagometon zosteriformis*)	18	47	55
Sago pondweed (*Stuckenia pectinata*)	2	2	2
Aquatic Plant Coverage (ac)	24.6 ac (82%)	29.5 (98.2%)	27 ac (90%)
Total submerged species	5	7	6

Figure 5. Aquatic plant conditions in Crystal Lake on August 6, 2024.

General Findings of This Study

- Emergent plants along the shoreline were abundant and offer good wildlife habitat.
- Submerged plants and lilies were common and covered about 89% of the bottom area.
- Coontail was the most abundant plant but flatstem pondweed was common as well.
- Plants were common out to a depth of 10 feet and sporadically sampled at a maximum depth of 15 feet.

Figure 6. Flatstem pondweed was common in Crystal Lake.