



Rice Lake, Scott County, Minnesota, 2022

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

[Plant Survey Conducted August 22, 2022]

Prepared for:
Prior Lake-Spring Lake
Watershed District



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

Summary

Rice Lake (MnDNR ID 70-6000) is a 30 acre lake located in Scott County, Minnesota. An aquatic plant survey was conducted on August 22, 2022 by Blue Water Science to characterize conditions of native aquatic plants and to look for the non-native Eurasian watermilfoil.

Rice Lake has a low diversity of submerged aquatic plants, with 2 species of rooted submerged plants found. Overall, plants covered 95% of the lake area. The entire shoreline was ringed with native wetland plant species as well.

Table 1. The percent occurrence of summer aquatic plants for Rice Lake on August 22, 2022. 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.

	Rice Lake August 22, 2022 (63 sites)		
	% Occurrence	Occurrence	Density
Spatterdock (<i>Nuphar luteum</i>)	52	33	2.3
White water lilies (<i>Nymphaea sp</i>)	70	44	2.0
Coontail (<i>Ceratophyllum demersum</i>)	84	53	2.3
Flatstem pondweed (<i>Potamogeton zosteriformis</i>)	30	19	1.0
Total submerged species	2		



Figure 1. Coontail and White lilies are widespread in Rice Lake.

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Rice Lake, Scott County (MnDNR ID: 70-6000)

Size: 30 acres (source: PLSLWD website)

Maximum observed depth: 3 feet

Introduction

An aquatic plant survey was conducted on 30 acre Rice Lake, located in Scott County, on August 22, 2022. 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 Rice Lake was conducted by Blue Water Science on August 22, 2022 and 63 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 nuisance. Based on these sample sites, a plant distribution map was constructed.

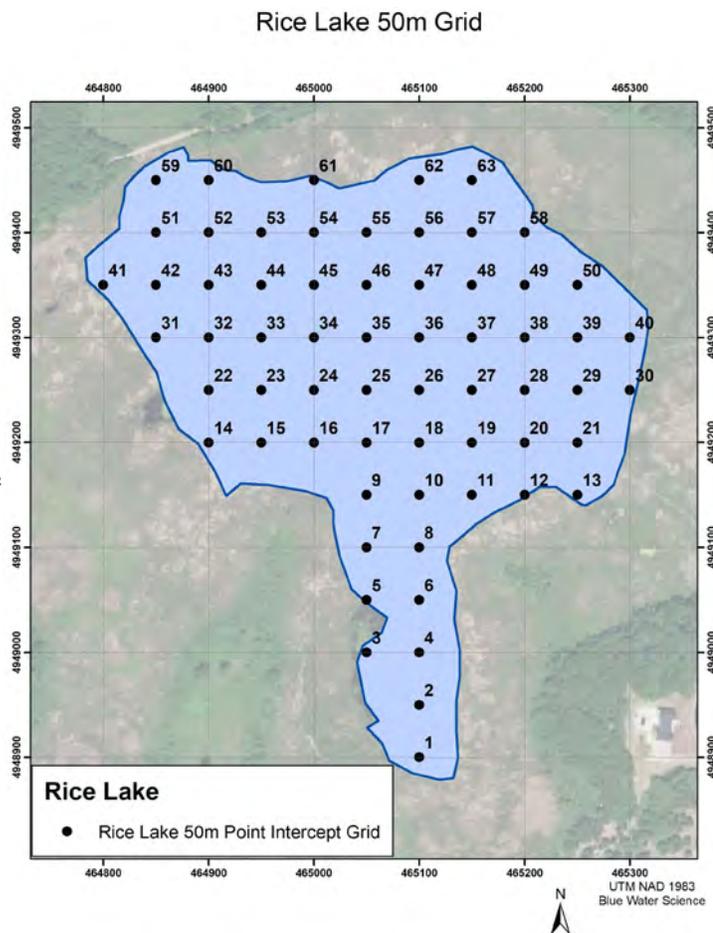


Figure 2. Sample location map for the aquatic plant survey conducted on Rice Lake.

Results

Results of the summer aquatic plant survey conducted on August 22, 2022 found two submerged plant species, coontail and flatstem pondweed (Table 2)(Figure 4).

Eurasian watermilfoil was not observed in this survey.

Spatterdock and white lilies were both widespread with white lilies being slightly more common.

Aquatic plant coverage was approximately 95%. Distribution and abundance plant maps are shown in Figure 2.

Table 2. The percent occurrence of summer aquatic plants for Rice Lake on August 22, 2022. 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.

	Rice Lake August 22, 2022 (63 sites)		
	% Occurrence	Occurrence	Density (0-3)
Spatterdock (<i>Nuphar luteum</i>)	54	34	2.3
White water lilies (<i>Nymphaea sp</i>)	71	45	2.0
Coontail (<i>Ceratophyllum demersum</i>)	84	53	2.4
Flatstem pondweed (<i>Potamogeton zosteriformis</i>)	30	19	1.1
Total submerged species	2		

Rice Lake Native Plant Coverage
August 22, 2022

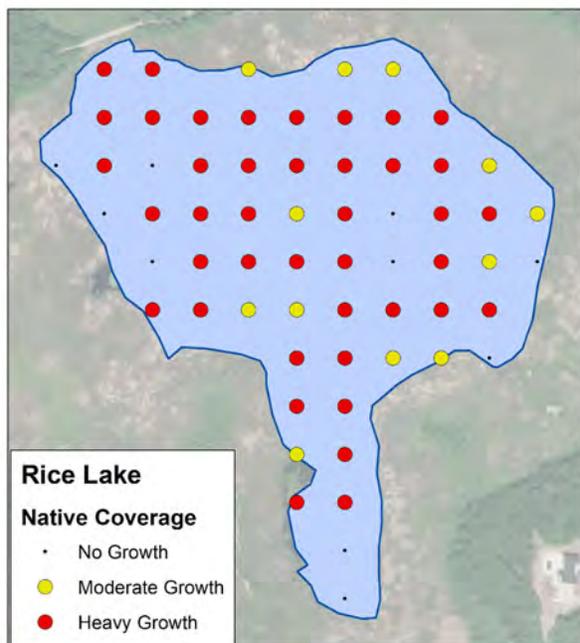
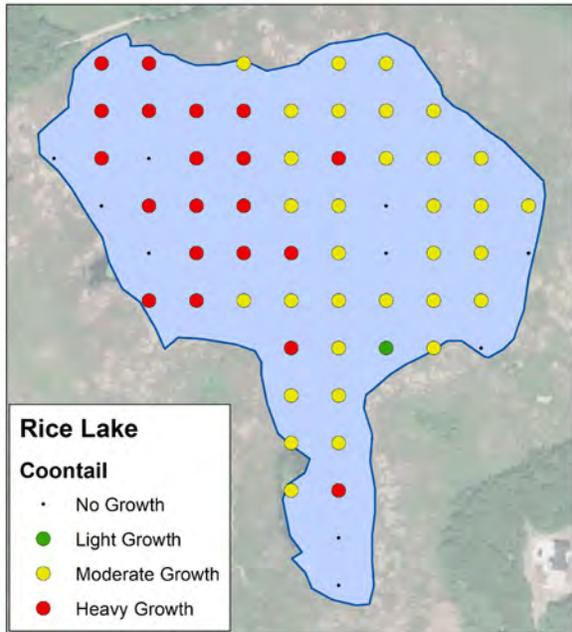
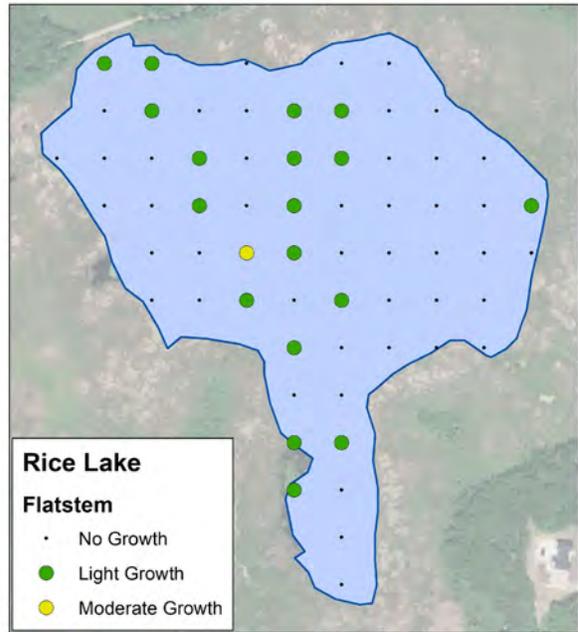


Figure 3. Native plant coverage in Rice lake on August 22, 2022.

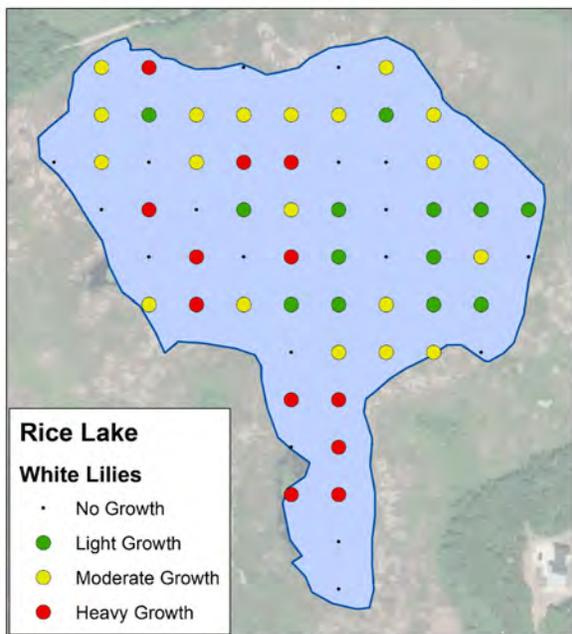
Rice Lake Coontail
August 22, 2022



Rice Lake Flatstem Pondweed
August 22, 2022



Rice Lake White Water Lilies
August 22, 2022



Rice Lake Spatterdock Lilies
August 22, 2022

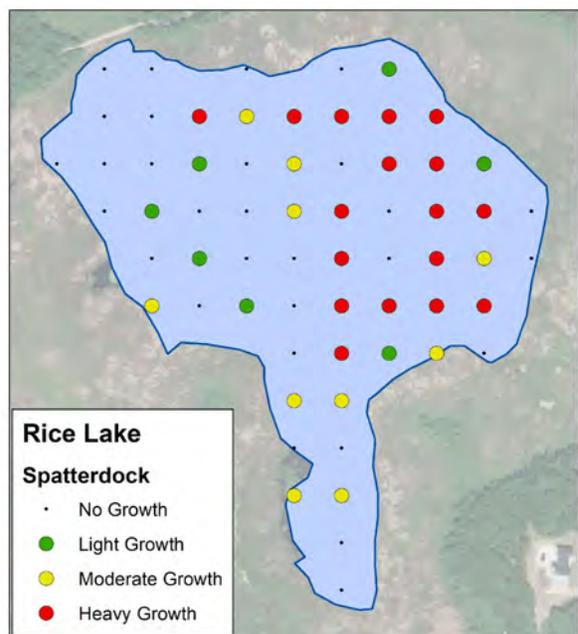


Figure 4. Rice Lake aquatic plant coverage maps. For individual species maps: green = light growth, yellow = moderate growth, and red = heavy growth.

Table 3. Rice Lake individual site data collected on August 22, 2022.

Site	Depth (ft)	Cattails	Spatterdock	White lilies	Coontail	Flatstem	No Plants
1	0						1
2	0						1
3	2		2	3	2	1	
4	1		2	3	3		
5	1				2	1	
6	1			3	2	1	
7	2		2	3	2		
8	2		2	3	2		
9	2				3	1	
10	2		3	2	2		
11	1		1	2	1		
12	2		2	2	2		
13	0	1					
14	1		2	2	3		
15	2			3	3		
16	2		1	2	2	1	
17	2			1	2		
18	2		3	1	2	1	
19	2		3	2	2		
20	2		3	1	2		
21	2		3	1	2		
22	2						1
23	3		1	3	3		
24	3				3	2	
25	2			3	3	1	
26	1		3	1	2		
27	0	1					
28	2		3	1	2		
29	2		2	2	2		
30	1						1
31	1						1
32	2		1	3	3		
33	3				3	1	
34	3			1	3		
35	3		2	2	2	1	
36	2		3	1	2		
37	0	1					
38	2		3	1	2		
39	2		3	1	2		
40	2			1	2	1	
41	0	1					
42	2			2	3		
43	2						1
44	2		1	2	3	1	
45	2			3	3		
46	2		2	3	2	1	
47	3				3	1	
48	2		3		2		
49	2		3	2	2		
50	2		1	2	2		
51	2			2	3		
52	3			1	3	1	
53	2		3	2	3		
54	2		2	2	3		
55	2		3	2	2	1	
56	2		3	2	2	1	
57	2		3	1	2		
58	2		3	2	2		
59	2			2	3	1	
60	2			3	3	1	
61	2				2		
62	2				2		
63	2		1	2	2		

General Findings of This Study

- Native shoreline conditions offer good wildlife habitat.
- Submerged plants were abundant covering nearly 95% of the open water area and coontail was the dominant plant. Coontail had an average density of 2.4 out of 3.
- Species diversity was low, 2 submerged plant species were observed and 2 floating leaf species were found.
- No non-native plant species were found in Rice lake.



Figure 5. [left] A rake of heavy coontail growth with flatstem present. [right] Coontail topping out the at surface.

Comparison to Previous Point Intercept survey on Rice Lake

Table 4. Coontail was the dominant aquatic plant in both surveys. Only 2 submerged plant species were observed in 2022 compared to 5 in 2017.

	Rice Lake September 27, 2017 (63 sites)	Rice Lake August 22, 2022 (63 sites)
	% Occurrence	% Occurrence
Spatterdock (<i>Nuphar luteum</i>)	52	33
White water lilies (<i>Nymphaea sp</i>)	40	44
Coontail (<i>Ceratophyllum demersum</i>)	86	84
Naiads (<i>Najas spp.</i>)	8	
Flatstem pondweed (<i>Potamogeton zosteriformis</i>)	17	30
Sago (<i>Stuckenia pectinata</i>)	8	
Bladderwort (<i>Utricularia spp.</i>)	6	
Total submerged species	5	2

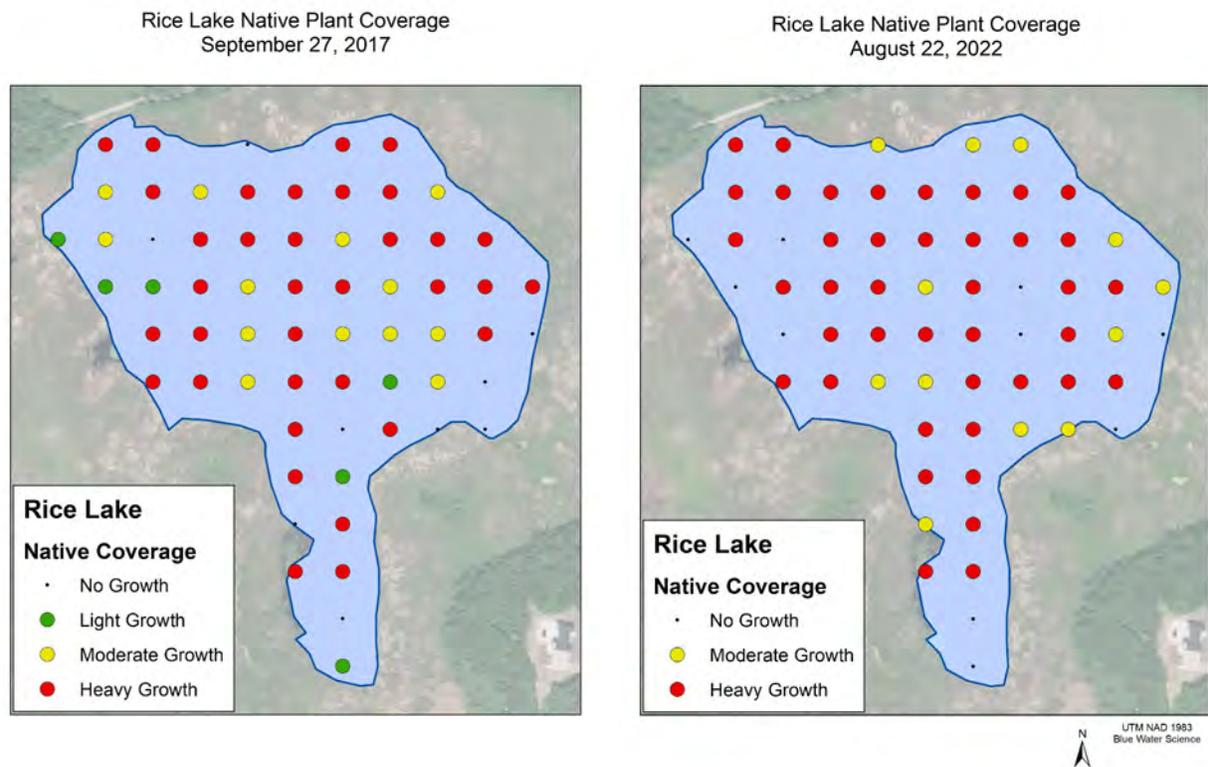


Figure 6. Native plant coverage in Rice Lake in 2017(left) and native plant coverage in 2022 (right).