

2018 Curlyleaf Pondweed Delineation Survey

Red Cedar Chain of Lakes

Balsam, Mud, Red Cedar, & Hemlock Lake
Barron & Washburn County, WI

Surveyed June 4–5, 2018



Survey, Analysis, and Reporting by:

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Purpose of Surveys

We conducted a late-spring delineation survey to locate and map areas of curlyleaf pondweed (CLP) throughout the Red Cedar Chain of Lakes around the time of peak CLP abundance. Results from this survey will help to evaluate the effectiveness of past CLP control strategies and guide management decisions over the coming years.

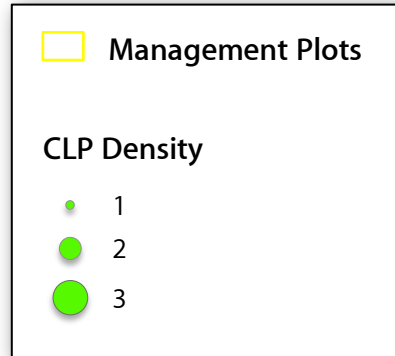
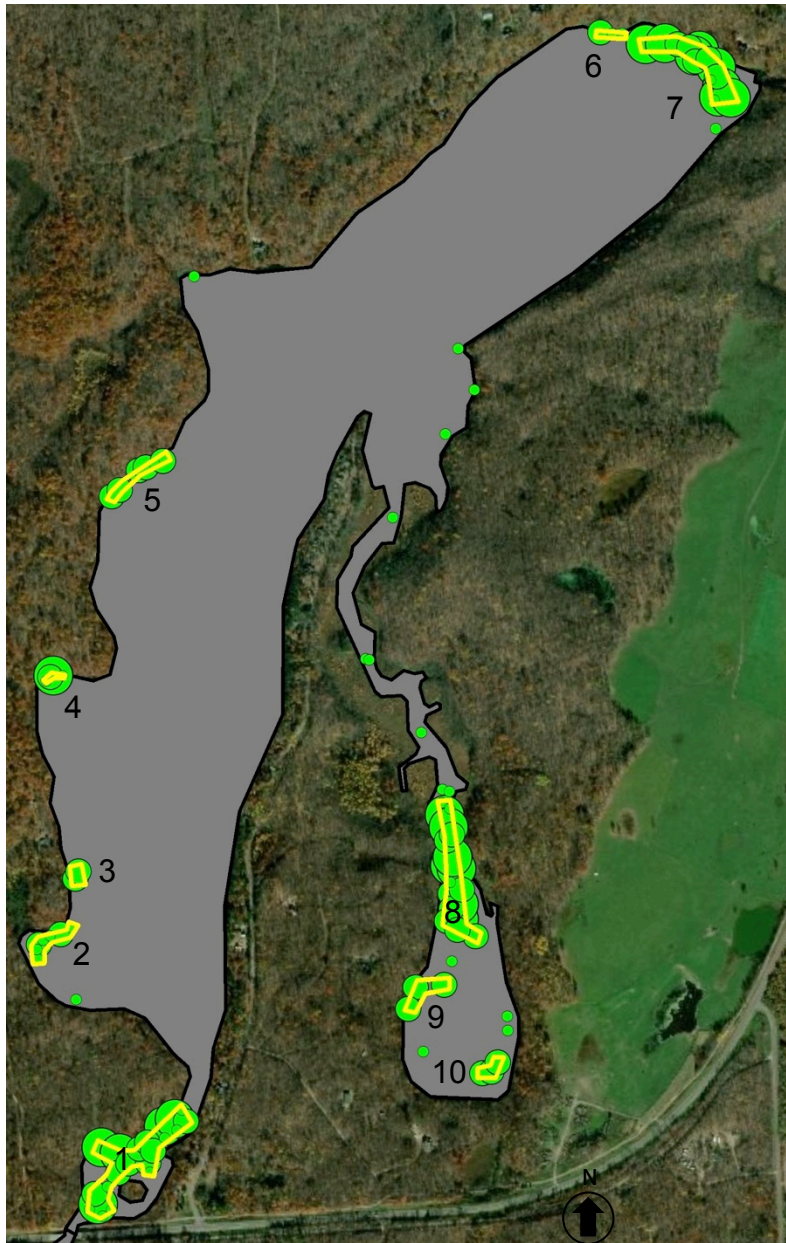
Survey Methods

Curlyleaf Pondweed Delineation Survey

Freshwater Scientific Services surveyed the entire nearshore area of the Red Cedar Chain (from shore out to the 15-ft contour) during the first week of June 2018. During this survey, we navigated a meandering search path over the search area while using a combination of surface observations, sonar readings, and rake tosses to locate and delineate areas of CLP growth. When we encountered CLP, we marked the location, recorded the water depth, and rated the density of the growth using visual and rake density scores as described in the table below. For rake samples, we dragged a sampling rake over approximately 10 square feet of lake bottom and recorded CLP density based upon the number of plants (stem count) retrieved on the rake. The recorded water depths and density scores were linked to the recorded GPS locations and then mapped using desktop GIS software.

Score	Visual	Rake
1	Light / Solitary plants	1-2 stems
2	Moderate / Scattered dense patches	3 to 9 stems
3	Dense / Uniform dense growth	10+ stems

2018 Delineation of Curlyleaf Pondweed Balsam & Mud Lake



Plot	Acres	Avg Depth (ft)	Avg CLP Density (1 to 3)
1	3.8	3.9	1.9
2	0.8	3.5	1.3
3	0.3	4.1	2.0
4	0.1	2.9	1.8
5	0.7	3.4	1.8
6	0.2	4.5	1.3
7	2.5	4.6	2.4
8	2.7	2.6	2.2
9	0.8	2.7	2.0
10	0.4	1.5	2.0

Surveyed: June 4-5, 2018
 Methods: Visual, Sonar, Rake
 Surveyor: JA Johnson

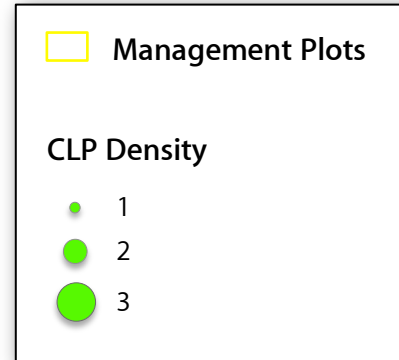
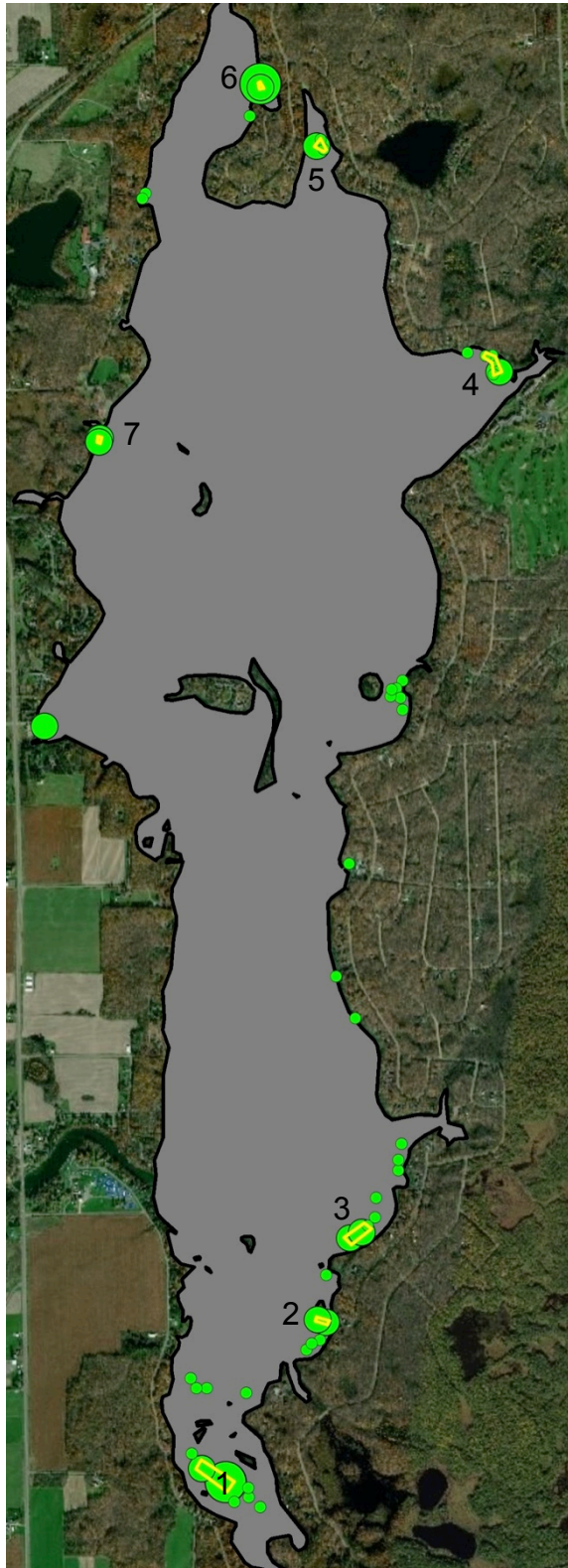


Map produced for the
 Red Cedar Lakes Association by:



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2018 Delineation of Curlyleaf Pondweed Red Cedar Lake



Plot	Acres	Avg Depth (ft)	Avg CLP Density (1 to 3)
1	2.6	4.1	2.5
2	0.3	6.7	2.0
3	1.4	8.6	1.7
4	0.9	8.4	1.2
5	0.4	9.8	1.3
6	0.1	3.3	2.5
7	0.1	6.6	2.0

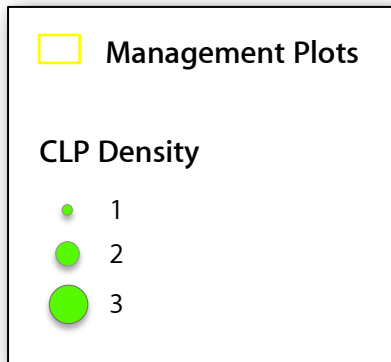
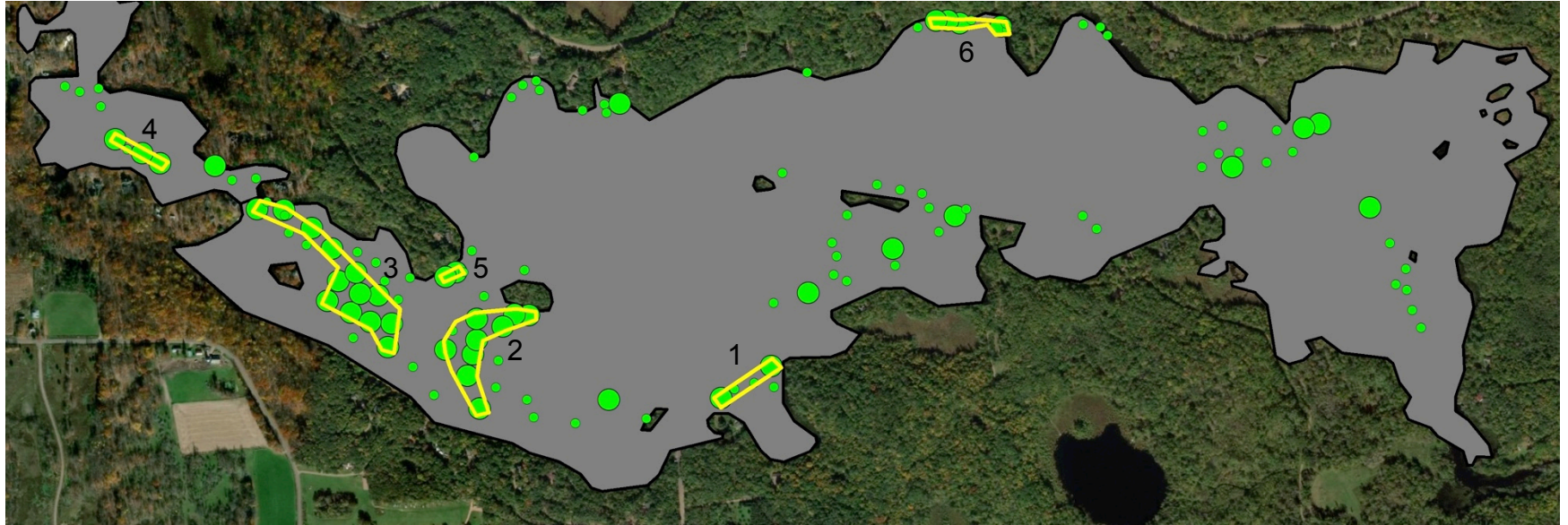
Surveyed: June 4-5, 2018
 Methods: Visual, Sonar, Rake
 Surveyor: JA Johnson



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2018 Delineation of Curlyleaf Pondweed Hemlock Lake



Plot	Acres	Avg Depth (ft)	Avg CLP Density (1 to 3)
1	1.0	9.1	1.5
2	4.0	6.7	1.9
3	5.6	6.4	1.8
4	0.6	5.3	1.8
5	0.2	6.3	1.7
6	0.8	4.3	1.6

Surveyed: June 4-5, 2018
 Methods: Visual, Sonar, Rake
 Surveyor: JA Johnson



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