

Curly Leaf Pondweed Delineation Report

Steve Henry Aquatic Survey Professionals

Lake Darling (DOW# 21-0080-00) County: Douglas

Surveyed: 4/24/2024 Water Temp (°F): 47-50 Air Temp (°F): 54-62

Method

Steve Henry with Aquatic Survey Professionals performed a Curly Leaf Pondweed delineation on Lake Darling following the methodology described by Minnesota Department of Natural Resources in the “Guidance for Delineating Invasive Aquatic Plants” (2020). The boat navigates the lake moving from shallow water out to the point where water is deep enough that no vegetation is present. Using visual, sonar, and rake observations populations of Curly Leaf Pondweed and any other invasive species encountered are detected and delineated. Observations and waypoints were made every 35 meters with closer spacings when delineating the edges of potential treatment areas. Curly Leaf Pondweed growth was rated on a 1-3 scale with 3 being Abundant.

Results

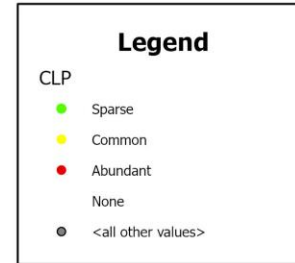
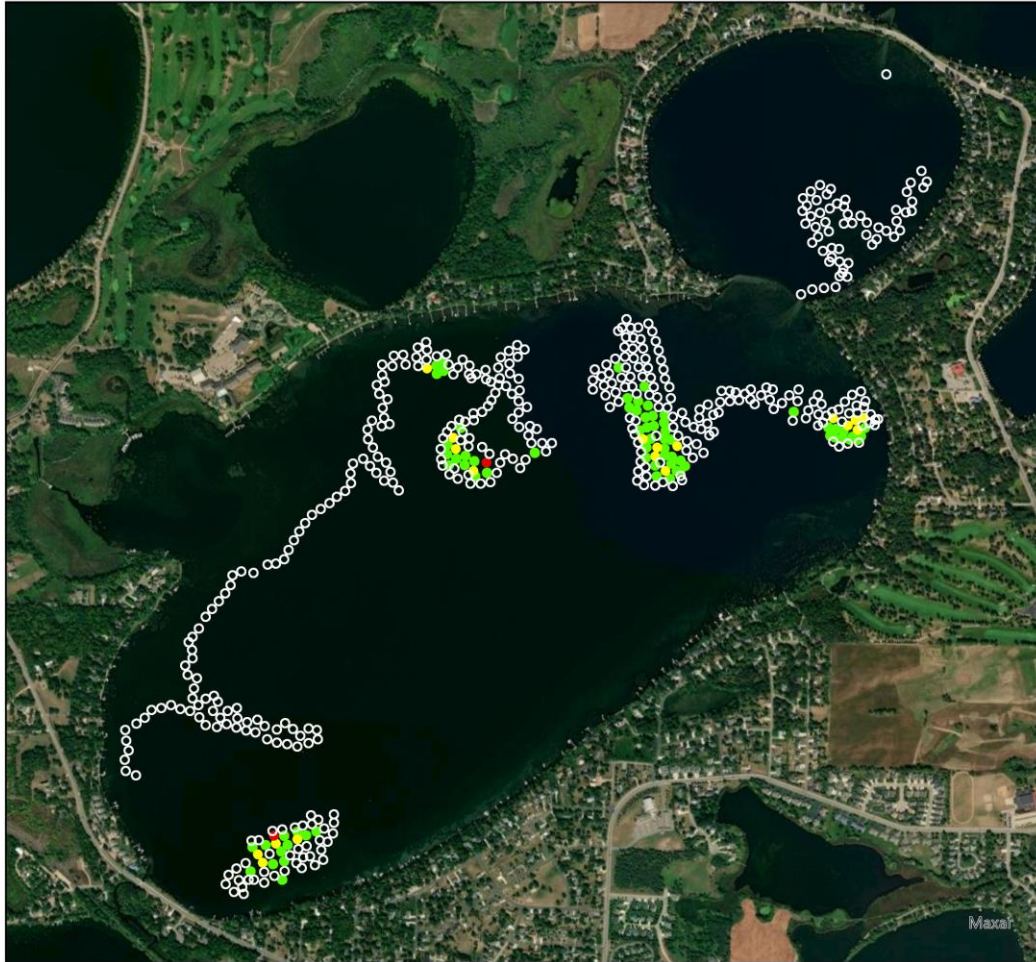
Curly Leaf Pondweed coverage was higher than in 2023 and similar to but less than 2022 although the growth stage was still early and generally small (6 to 12 inches). The treatments appear to be effective in reducing the coverage of Curly Leaf Pondweed in Lake Darling over several years. Additional areas of the lake were surveyed outside of the traditional delineation area and new patches of Curly Leaf Pondweed were discovered further off shore of the north shoreline and in the south east corner of the lake. Four potential chemical treatment areas were identified as noted on the included maps. In these areas Curly Leaf Pondweed was common and native plant growth was usually less common. Each of these areas had widespread Curly Leaf Pondweed and formed contiguous beds of invasive species. Additional sites with Curly Leaf Pondweed were documented but those areas had less extensive coverage of Curly Leaf Pondweed, greater growth of native aquatic plants, and were not sufficiently contiguous or large enough to propose treatment in those areas. Curly Leaf Pondweed was observed at 90 out of the 510 (17.6%) recorded waypoints. Curly Leaf Pondweed was found at depths ranging from 6– 14 feet but was found growing most commonly at 9 feet deep. On a 0-3 point growth rating scale, the most common density of growth was 1 which is Sparse see the ratings below.

Summary of the observational ratings for Curly Leaf Pondweed encountered on Lake Darling.

Rake Rating	# of Obs.	Percent
1: Sparse/Scattered	70	77.8%
2: Common	18	20%
3: Abundant	2	2.2%

There were 4 potential chemical treatment areas were identified totaling about 15.99 (16) acres. This is 2.8% of the lake’s legally defined littoral zone which is less than the 15% littoral maximum allowed by rule. See the maps on the following pages for additional information.

Lake Darling Curly Leaf Pondweed 2024 - All Points



Date Surveyed:
April 24th 2024

Water Temp:
47 to 50 Degrees

Weather:
Sunny and Slight Breeze from S
54 to 62 degrees

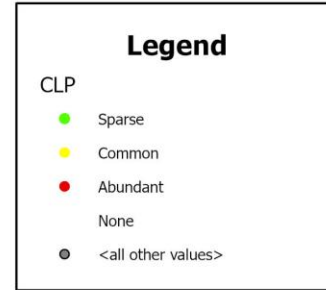
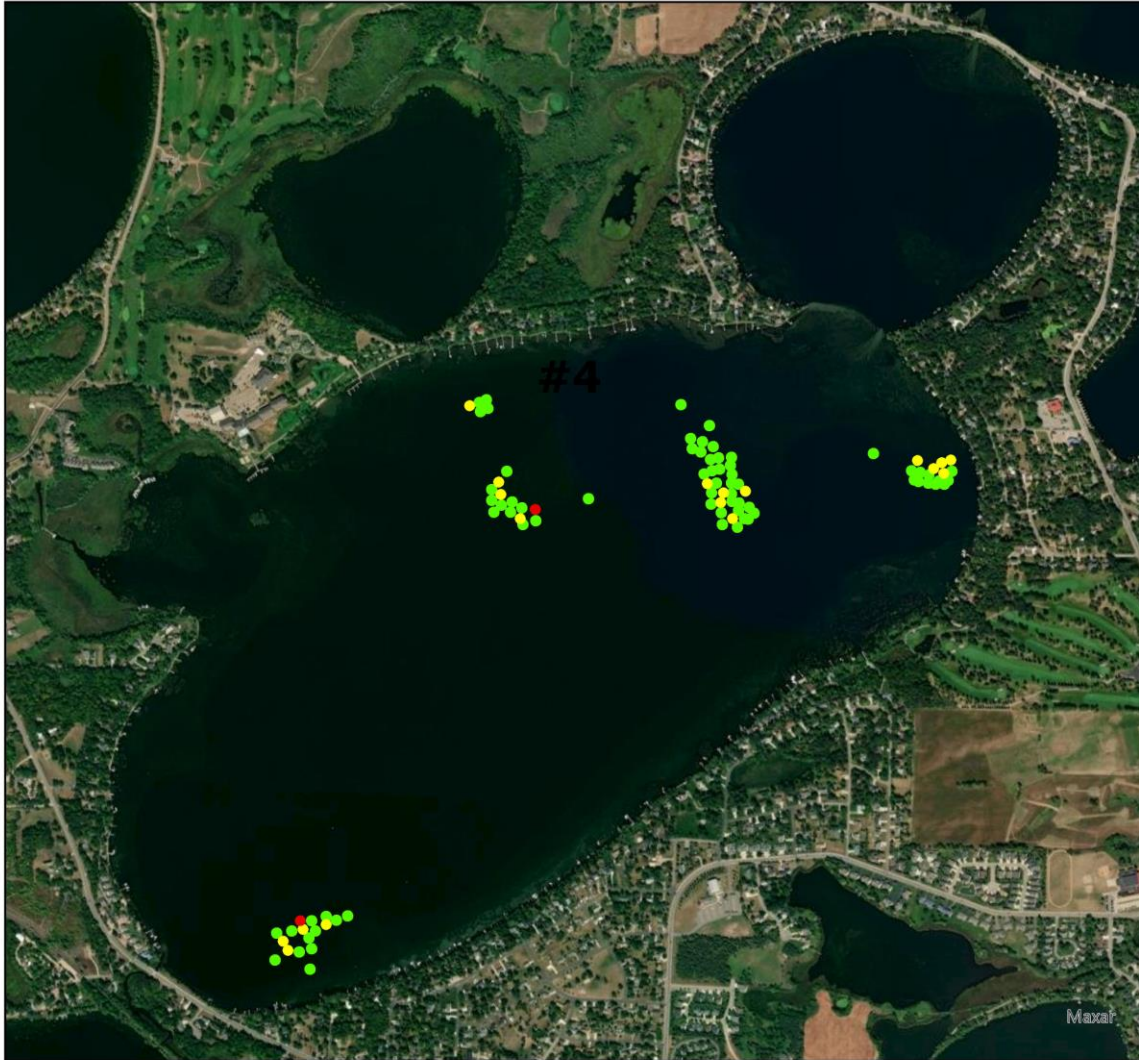
Surveyors:
Steve Henry

Shape # Acres Depth



Credits: Steve Henry
Aquatic Survey Professionals

Lake Darling Curly Leaf Pondweed 2024 - Just Sites With CLP



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Surveyors:
Steve Henry

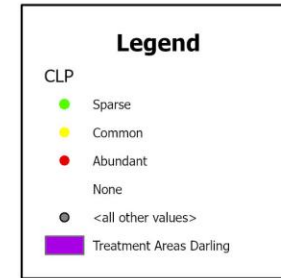
Shape #	Acres	Depth
#1	3.47 acres	9.5 feet ave.
#2	3.04 acres	8 feet ave.
#3	6.84 acres	9 feet ave.
#4	2.64 acres	9.5 feet ave.

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April 2024

Lake Darling Curly Leaf Pondweed 2024 - Treatment Shapes



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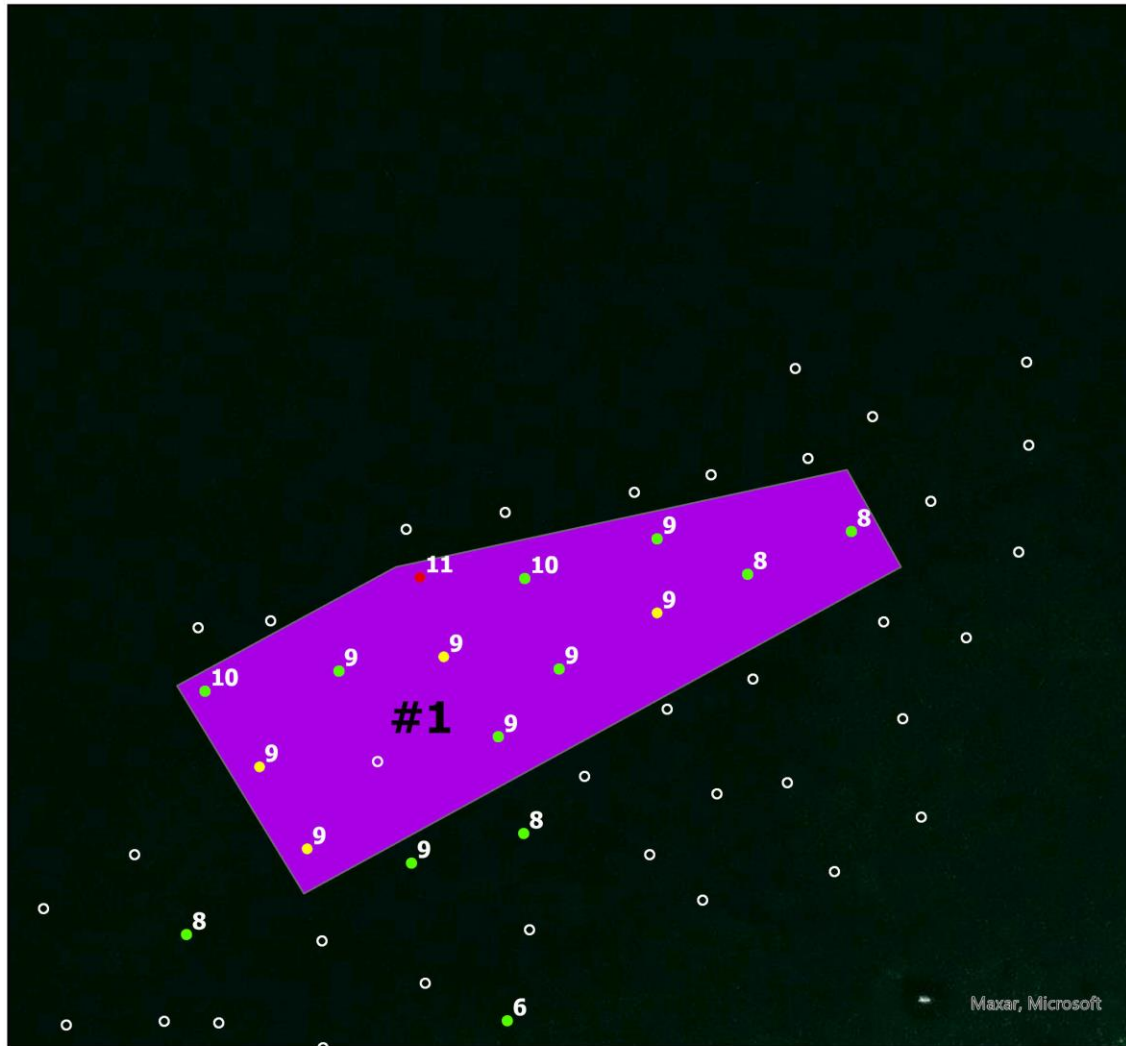
Surveyors:
Steve Henry

Shape # Acres Depth
#1 3.47 acres 9.5 feet ave.
#2 3.04 acres 8 feet ave.
#3 6.84 acres 9 feet ave.
#4 2.64 acres 9.5 feet ave.



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Lake Darling Curly Leaf Pondweed 2024 - All Points



Legend

CLP

- Sparse
- Common
- Abundant
- None
- <all other values>
- Treatment Areas Darling

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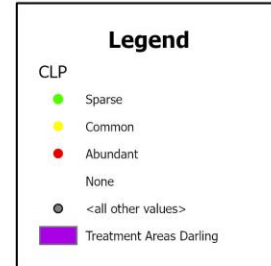
Surveyors:
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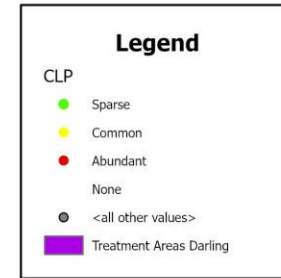
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Curly Leaf Pondweed Collected on Lake Darling



Fishing Net Retrieved From 12 Feet of Water on Lake Darling

Proposed Treatment Shape Figures

Shape #	Acres	Depth
1	3.47 acres	9.5 feet average
2	3.04 acres	8 feet average
3	6.84 acres	9 feet average
4	2.64 acres	9.5 feet average