

Curly Leaf Pondweed Delineation Report

Steve Henry Aquatic Survey Professionals

Garfield Lake (DOW# 29-0061-00) County: Hubbard
Surveyed: 6/16&17/2026 Water Temp (°F): 67 Air Temp (°F): 58

Method:

Steve and Sawyer Henry with Aquatic Survey Professionals performed a Curly Leaf Pondweed delineation on Garfield Lake 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 density was recorded on a 1-3 scale with 3 being Abundant. Observations were also made in an effort to detect any other invasive species that could be present in the lake.

Results:

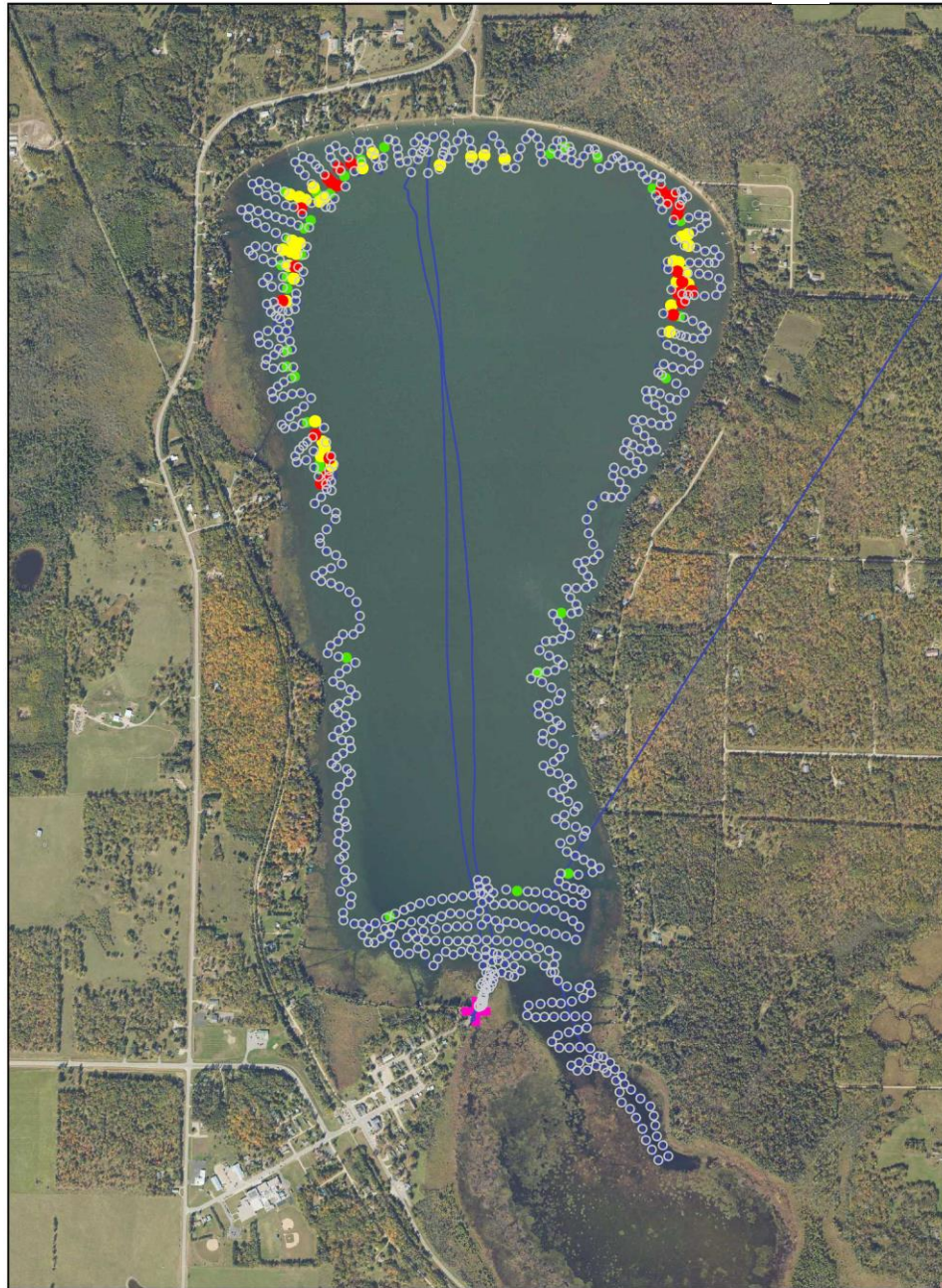
During the Garfield Lake survey 767 individual sample points were checked for Curly Leaf Pondweed and any other invasive species. Scattered dense patches of Curly Leaf Pondweed were observed during the delineation on the north end of the lake. Five major beds of Curly Leaf Pondweed, areas approaching or more than one acre, were documented during the survey. Most of these beds were rather deep, from 10 to 15 feet of depth which makes treatment more expensive and difficult. The depth range from 3 feet to 9 feet was dominated by extensive growth of a diverse native plant community. Additional sites with Curly Leaf Pondweed were documented but those areas had less extensive coverage of Curly Leaf Pondweed and/or greater growth of native aquatic plants. Some of these isolated patches of Curly Leaf Pondweed would be suitable targets for hand removal. Curly Leaf Pondweed was observed at 90 out of the 767 (11.7%) recorded waypoints. Curly Leaf Pondweed was found at depths ranging from 6– 17 feet with each of those depths occurring several times. Curly Leaf Pondweed was most commonly found growing at 12 feet deep. On a 0-3 point density rating scale, the most common density of growth was 2 which is Common see the ratings below.

Summary of the observational ratings for Curly Leaf Pondweed encountered.

Rake Rating	# of Obs.	Percent
1: Sparse/Scattered	32	35.5%
2: Common	35	38.9%
3: Abundant	23	25.6%

There were 5 potential chemical treatment areas identified totaling 11.2 acres. This is 2.1% of the lake’s legally defined littoral zone which is less than the 15% littoral maximum chemical treatment area allowed by State rules. See the maps on the following pages for additional information.

Garfield Lake - Hubbard Curly Leaf Pondweed



- ✚ Access
- Garfield2026 Delineation CLP
- Starry
- Sparse
- Common
- Abundant
- 0
- PostGarfield2026track

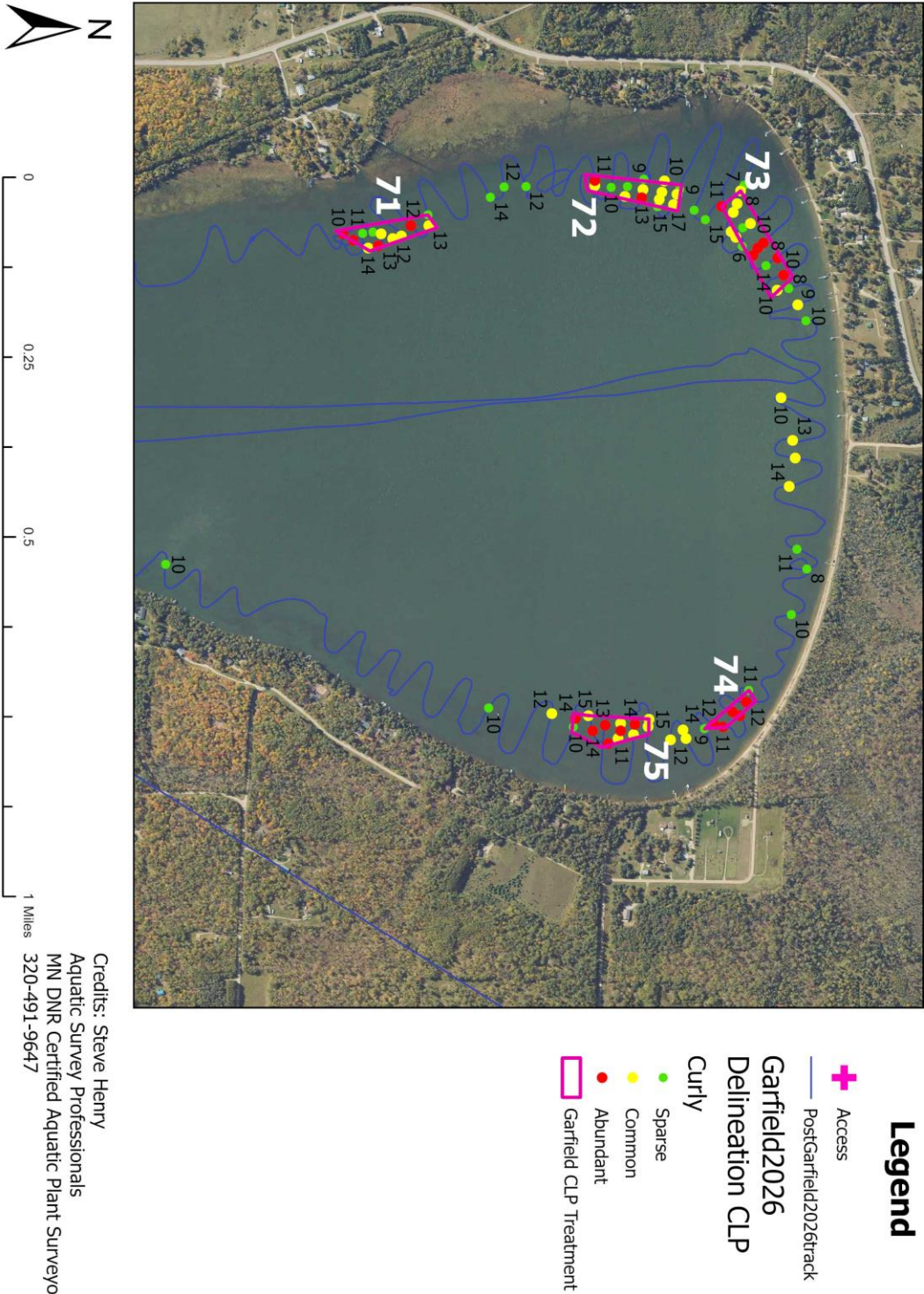


0 750 1,500 3,000 4,500 6,000 Feet

Credits: Steve Henry
Aquatic Survey Professionals
MN DNR Certified Aquatic Plant Surveyor

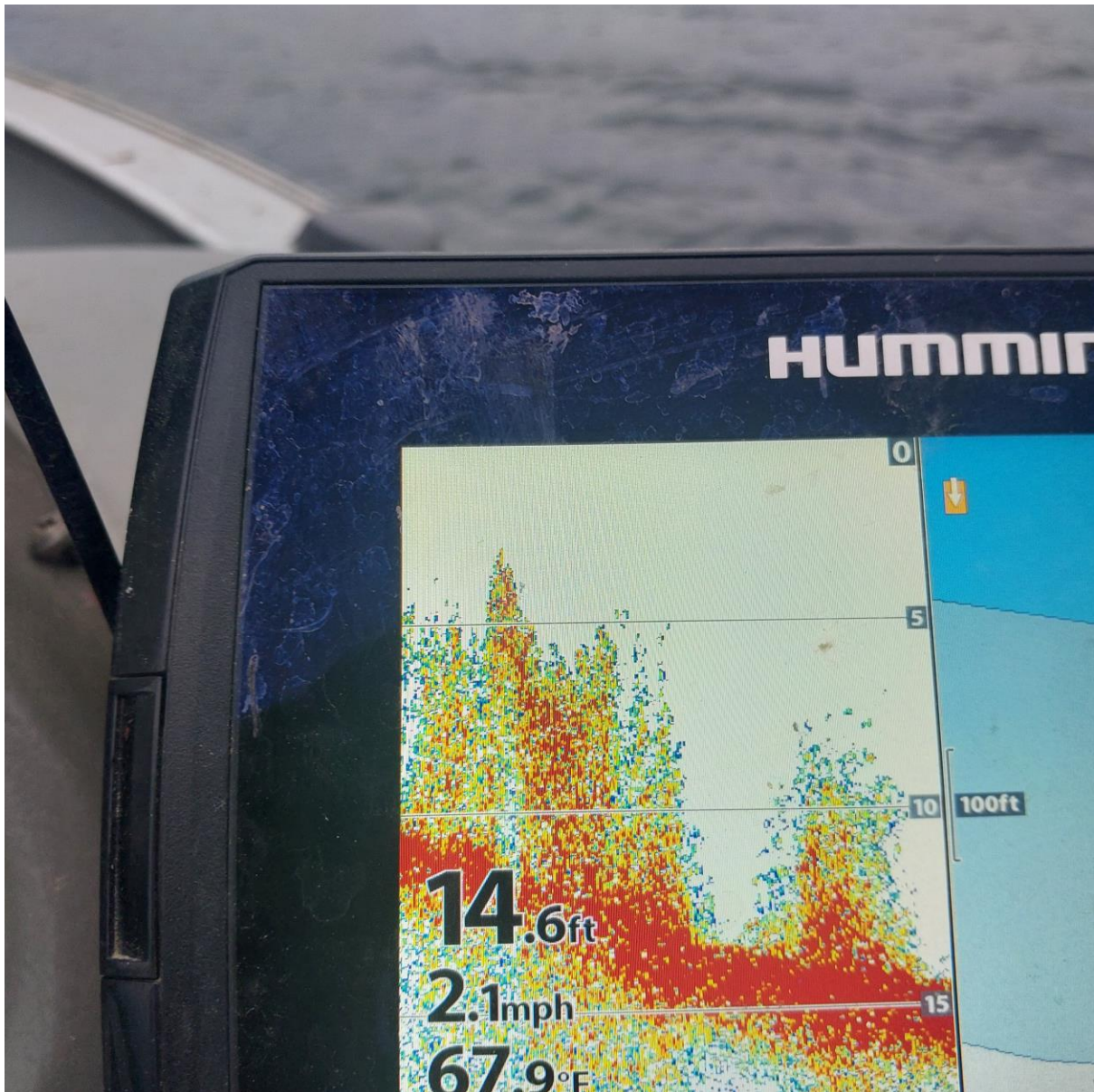
June 2026

Garfield Lake - Curly Leaf Treatment





**Curly Leaf Pondweed from Garfield Lake, often the beds in deep water were exclusively
Curly Leaf Pondweed and the growth was extensive!**



Dense Curly Leaf Pondweed returns a unique sonar signal. The dense (red) bed on the right is solely Curly Leaf Pondweed. On the left side is Flatstem Pondweed with a clump of Curly Leaf Pondweed growing up through it (the red pattern reaching higher).

Proposed Treatment Shape Figures

Shape #	Acres	Depth Average
71	2.2	12 feet
72	2.5	12 feet
73	3.4	11 feet
74	0.8	12 feet
75	2.3	13 feet

