Curlyleaf Pondweed Sampled in Fish Lake, April 2024

Curlyleaf Pondweed Delineation in Fish Lake, Scott County, Minnesota

Curlyleaf Pondweed Delineation: April 23, 2024

Prepared for:
Prior Lake/Spring Lake Watershed District

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Size: 176 acres
Littoral area: 74 acres
Maximum depth: 28 feet

Overview

Fish Lake is located within Scott County. A meandering survey in 2024 was used to characterize the status of curlyleaf pondweed. A total of 103 sites were sampled. Curlyleaf pondweed was sampled at 3 sites out of 103 sites on the April 23, 2024 delineation survey. No curlyleaf pondweed treatment is recommended at this time.

Methods

Nearshore Meander Survey: A curlyleaf pondweed meandering survey was conducted using a meandering path around the entire lake. At each sample point, plants were sampled with a rake sampler.

Curlyleaf Pondweed Delineation: At the time of the spring curlyleaf delineation in April, only a fraction of the peak curlyleaf biomass is present compared to what could be present in June, at its peak. Therefore, CLP growth surveyed in April is delineated prior to curlyleaf developing peak biomass.

Predicting curlyleaf growth at it's peak abundance in June is based on curlyleaf stem counts on a rake sampled in April. After a short sweep of about 1-foot (which samples about 0.1 m^2), if one or two stems (10-20 stems/m^2) were collected on the rake sweep, it was predicted that this area would produce only future light growth at its peak and was not delineated for treatment. Alternatively, sites where 3 stems (30 stems/m^2) were collected per rake sample future potential growth was considered to be moderate. However, 4 curlyleaf stems (40 stems/m^2) or more per rake sample generally indicated some plants had developed runners and would likely produce heavy growth in the next few weeks and this site would be marked for potential treatment. Curlyleaf at heavy growth can have stem densities of 400 stems/m^2 or greater. This early season survey method used for determining curlyleaf pondweed spot herbicide treatments is similar to the methodology published in a peer reviewed journal (McComas et al, 2015)*.

Rake Sample	Early Season Density (stems/m^2)	Potential Future Growth	Map Color Code
1-2 stems	10-20 stems/m^2	Light	Green
3 stems	30 stems/m^2	Moderate	Yellow
4+ stems	40+ stems/m^2	Heavy	Red

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*McComas, S.R., Y.E. Christianson, and U. Singh. 2015. Effects of curlyleaf pondweed control on water quality and coontail abundance in Gleason Lake, Minnesota. Lake and Reservoir Management, 31:109–114. https://doi.org10.1080/10402381.2015.1014583

Results

Curlyleaf Pondweed Delineation Results: On April 23, 2024 a curlyleaf pondweed delineation survey sampled 103 sites (Figure 1). Curlyleaf pondweed was growing most frequently in 4-7 feet of water. Curlyleaf pondweed was found at 3 out of 103 sample sites. Because of the scattered nature of the CLP, no treatment is recommended.

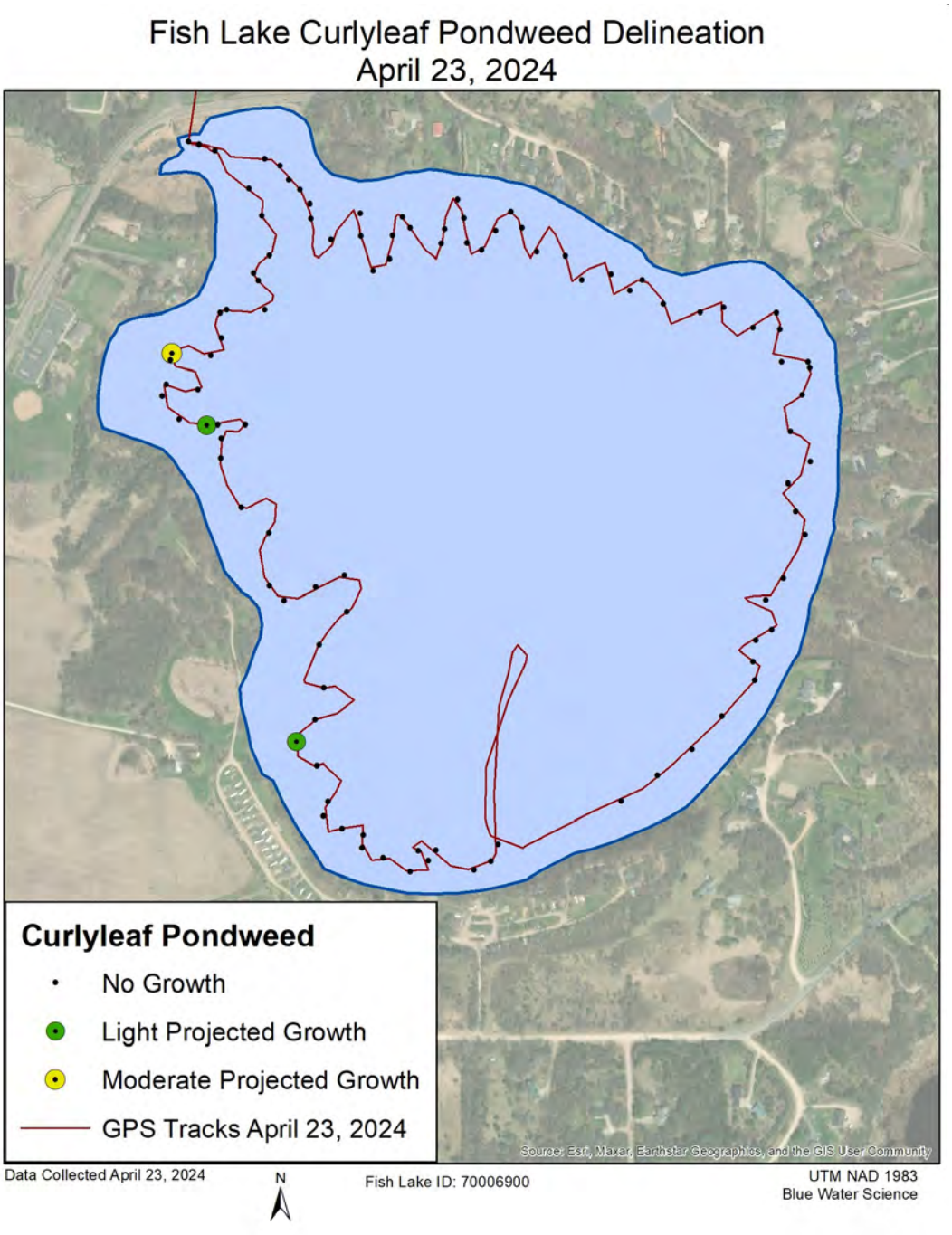

Figure 1. Fish Lake potential growth of curlyleaf pondweed on April 23, 2024.

APPENDIX

2024 DELINEATION: Fish Lake individual site data collected by Blue Water Science on April 23, 2024.

Site	Depth (ft)	CLP stems
426		
439	4	3
445	7	1
460	6	1
511	8	
514	10	
520	9	
522	10	
528		
Average		1.7
Occurrence (103 sites)		3

Curlyleaf pondweed on April 23, 2024.