

2020 Summer Delineation Survey for Curlyleaf Pondweed & Eurasian Watermilfoil

Crookneck Lake (# 49-0133)
Morrison County, MN

Surveyed July 3, 2020



Survey, Analysis, and Reporting by:
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Purpose of Survey

This early-summer survey was designed to assess the density of curlyleaf pondweed (CLP) at the time of peak abundance and to identify any treatable areas of Eurasian watermilfoil (EWM) in the vegetated portion of Crookneck Lake (#49-0133). This information will help to guide CLP and EWM management and is required as a part of the DNR permitting process.

Survey Method

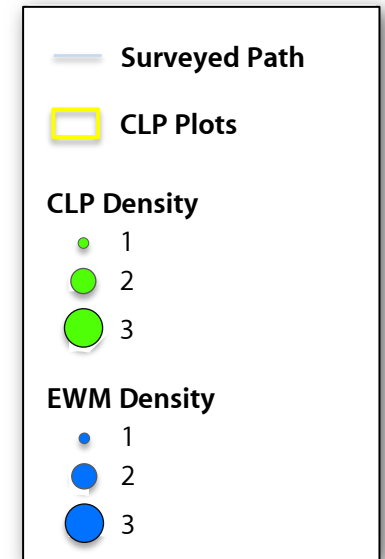
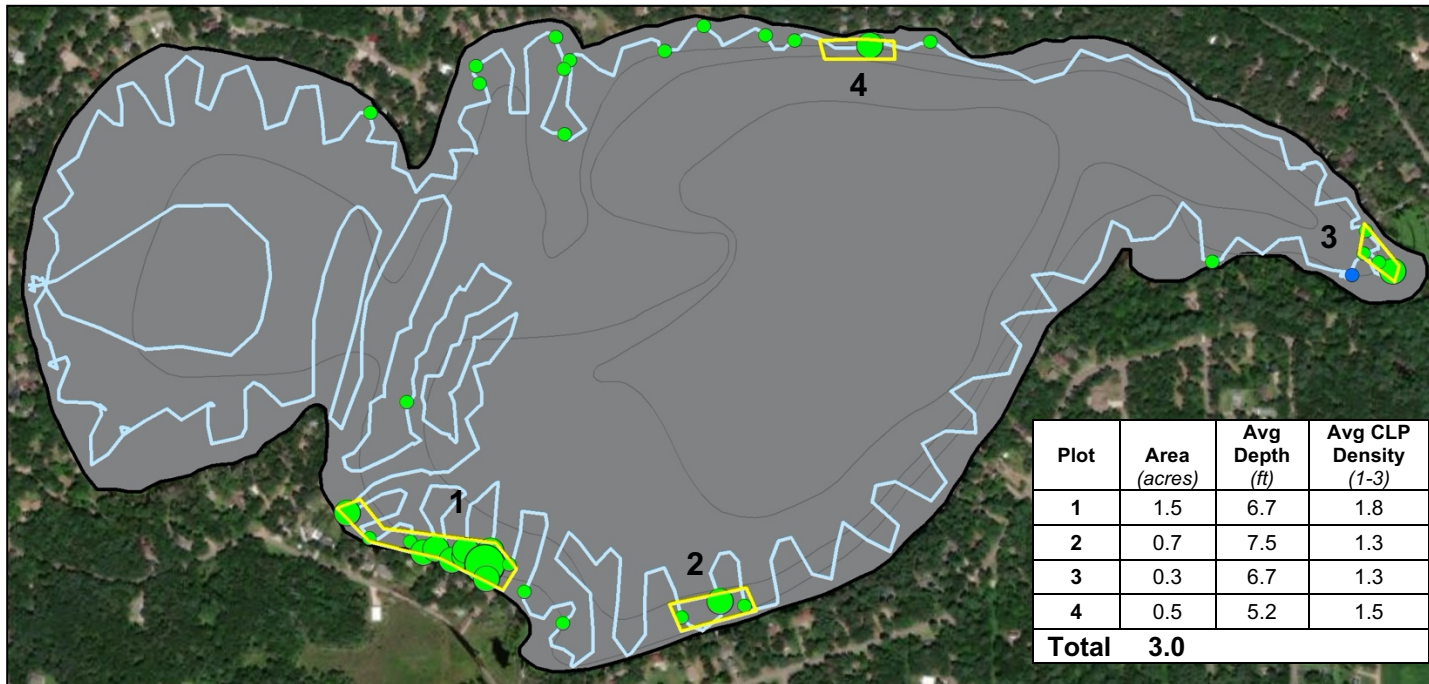
CLP & EWM Delineation Survey

Freshwater Scientific Services surveyed Crookneck Lake on July 3, 2020. During this survey, we navigated a meandering path over the littoral portion of the lake while using a combination of surface observations, sonar readings, and rake tosses to locate areas of CLP or EWM growth, assess growth density, and delineate the edges of potential treatment plots.

At each sampled location, we dragged a sampling rake over approximately 10 square feet of lake bottom and recorded the CLP or EWM density based upon the number of plants (stem count) retrieved on the rake. We used a hand-held Garmin GPS unit (GPS-MAP78) to record each of the sampled locations, and documented water depth, CLP/EWM height, and CLP/EWM abundance (rake density rating; 1 to 3 scale as described below). The recorded water depths, plant heights, and rake densities were linked to the appropriate 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

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Surveyed: July 3, 2020
Methods: Rake, Sonar, Visual
Surveyor: JA Johnson



Management Recommendations

CLP: We found two narrow bands of moderately-dense CLP growing along the southern shore and two additional areas with small patches of denser CLP in the far east and north. Other than these areas, we found only sporadic individual CLP plants growing among dense native plants. The plot areas identified in the map above should be considered for treatment with diquat or endothall in the spring of 2021.

EWM: We found only one EWM plants (single stem) during the survey. This plant was pulled for positive identification and included the entire plant (including roots). Accordingly, no EWM management is required.

Map produced for the
Crookneck Lake Improvement District by:



Online Resources & Contacts

Minnesota Administrative Rules for Aquatic Plant Management

<https://www.revisor.mn.gov/rules/?id=6280>

Minnesota DNR – Aquatic Plant Management Regulations & Permit Application Forms

<http://www.dnr.state.mn.us/apm/index.html>

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