

# 2020 Spring Delineation Survey for Curlyleaf Pondweed & Eurasian Watermilfoil

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

Surveyed May 12, 2020



**Survey, Analysis, and Reporting by:**  
James A. Johnson – *Aquatic Ecologist*



**Certified Lake Manager**  
[www.NALMS.org](http://www.NALMS.org)

## Purpose of Survey

This spring survey was designed to assess the density of curlyleaf pondweed (CLP) and remnant stands of Eurasian watermilfoil (EWM; old plants remaining from previous year) in the designated portions of Crookneck Lake (#49-0133) where these plants were found growing in the past. This information will help to guide CLP and EWM management in 2020 and is required as a part of the DNR permitting process.

## Survey Method

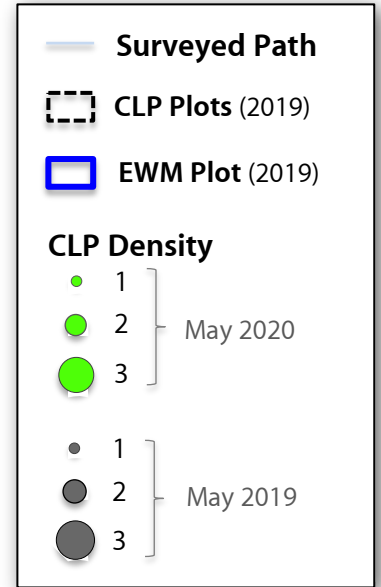
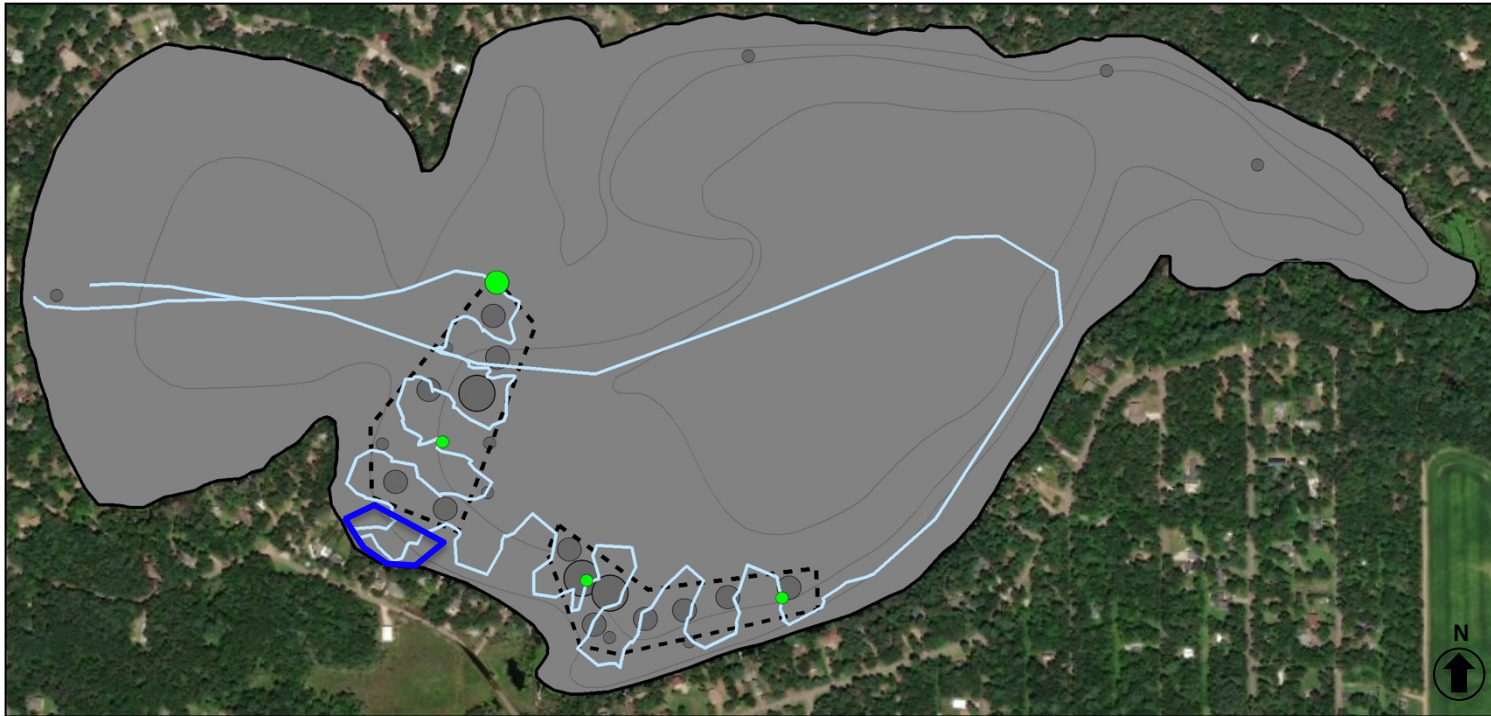
### CLP & EWM Delineation Survey

Freshwater Scientific Services surveyed Crookneck Lake on May 12, 2020. During this survey, we navigated a meandering path over the designated plot areas while using a combination of surface observations, sonar readings, and rake tosses to locate areas of CLP and 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, native plants present, 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

## 2020 Spring Delineation of Curlyleaf Pondweed & Eurasian Watermilfoil Crookneck Lake (#49-0133)



### Management Recommendations

**CLP:** We found only a few CLP plants during our 2020 survey. This suggests that the 2019 treatment effectively controlled CLP. Given the long cold spring, the lake may experience some delayed CLP sprouting later in May of 2020. However, we do not expect any areas of nuisance CLP in 2020. Accordingly, we are recommending no treatment for CLP in the spring of 2020.

**EWM:** We did not find any remnant stands of EWM during our 2020 survey.

We will be surveying the entire littoral portion of the lake in June to document any CLP or EWM regrowth and will update these recommendation accordingly.

**Surveyed:** May 12, 2020  
**Methods:** Rake, Sonar, Visual  
**Surveyor:** JA Johnson



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>

### **Christine Jurek**

Invasive Species Specialist

Minnesota DNR

[christine.jurek@state.mn.us](mailto:christine.jurek@state.mn.us)

(320) 223-7847

### **Wendy Crowell**

AIS Management Coordinator

Minnesota DNR

[wendy.crowell@state.mn.us](mailto:wendy.crowell@state.mn.us)

(651) 259-5085