

Eurasian Watermilfoil Delineation

Crooked Lake (# 02-0084)

Anoka County, MN

Surveyed June 15, 2018



Survey, Analysis, and Reporting by:

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Purpose of Survey

This survey was designed to locate and delineate areas of Eurasian watermilfoil (EWM) in Crooked Lake (#02-0084). This information will help to guide EWM management in Crooked Lake, and is required as a part of the DNR permitting process for hand-pulling or herbicide treatment.

Survey Method

Delineation Survey

Freshwater Scientific Services surveyed the entire nearshore area of Crooked Lake (<15 ft) on June 15, 2018. During this survey, we navigated a meandering search path over the nearshore area. While navigating this search path, we used a combination of surface observations, sonar readings, and rake tosses to locate and delineate areas of EWM growth. When we encountered EWM, we marked the location, recorded the water depth, and rated the density of the growth using visual and rake density scores as described in the table below.

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

For rake samples, we dragged a sampling rake over approximately 10 square feet of lake bottom and recorded the EWM and CLP density based upon the number of plants (stem count) retrieved on the rake. The recorded water depths and density scores were linked to the appropriate GPS locations and then mapped using desktop GIS software.

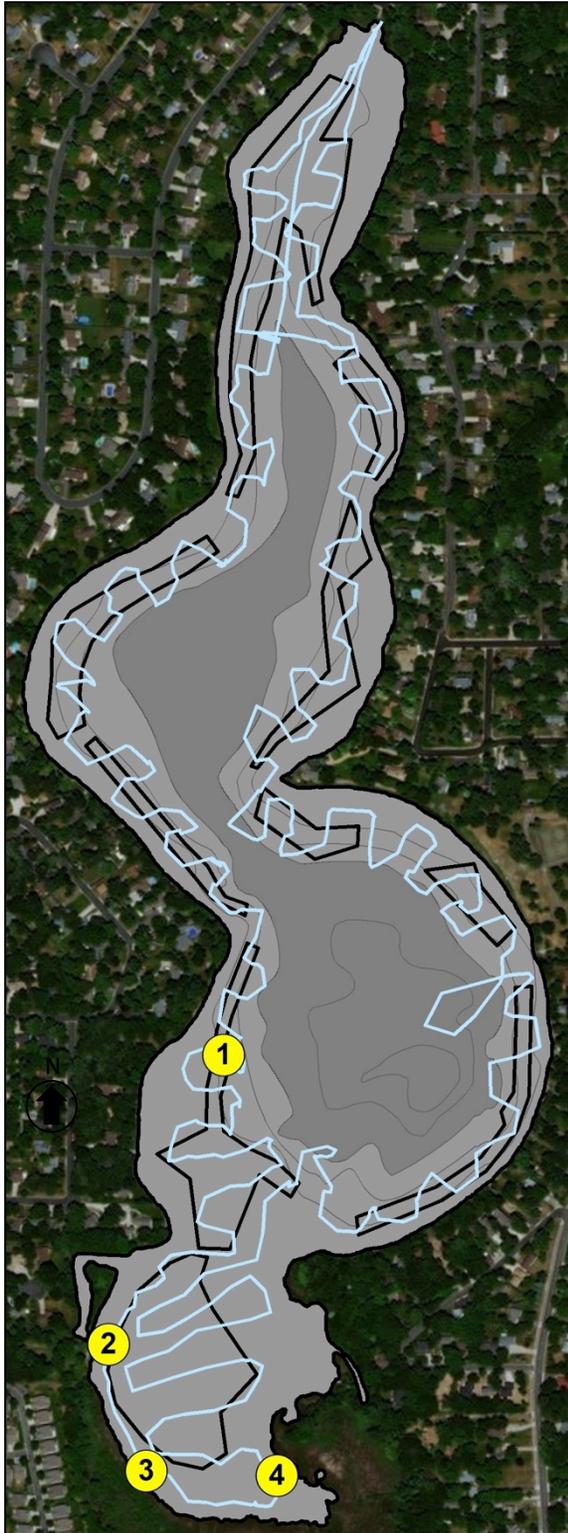
Findings

Summary of EWM Survey Results

We found only 4 isolated locations with very sparse EWM during the June 2018 survey (see map on page 3). One of these locations was in the main lake basin in 10 feet of water. The small piece (3 in. long) of EWM found at this deep site was not actively growing and appeared to be nearly dead (possibly due to lack of light). The remaining three locations of EWM were all in the shallow southern bay and consisted of only a few EWM plants that would be easily removed through hand-pulling. Other than these 4 locations, we observed no additional EWM plants in Crooked Lake during the June survey.

Note: During the spring CLP survey in May, we did find substantially more EWM in the southern bay, but it appears that these EWM plants were controlled by the spring diquat treatment in that area (targeting CLP). Given that diquat is a contact herbicide, we may see some resprouting of EWM plants in these areas. Accordingly, I recommend conducting a limited EWM search/delineation in the southern bay this fall to determine if additional hand-pulling or herbicide treatment is warranted.

2018 Delineation of Eurasian Watermilfoil Crooked Lake (# 02-0084)



Eurasian Watermilfoil

-  2016 EWM Plots (treated)
-  2018 Search Path
-  EWM Locations – June 2018 (solitary plants)

Point	Depth (ft)	Lat	Long
1	9.2	45.208153	-93.343912
2	1.3	45.205174	-93.345564
3	1.3	45.203876	-93.345005
4	1.6	45.203834	-93.343107

A GPX file containing these points has been provided along with this report. This file can be loaded onto most GPS units to help navigate to these locations for hand-pulling.

Surveyed: June 15, 2018
 Methods: Visual, Sonar, Rake
 Surveyor: JA Johnson



Map produced for the
 Crooked Lake Area Association by:



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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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