

2019 Late-Summer Delineation Survey for Eurasian Watermilfoil

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

Surveyed August 23, 2019



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



Purpose of Survey

This late-summer survey was designed to locate any areas of Eurasian watermilfoil (EWM) remaining in the littoral portion of Crookneck Lake (#49-0133) after treatment earlier in 2019.

Survey Method

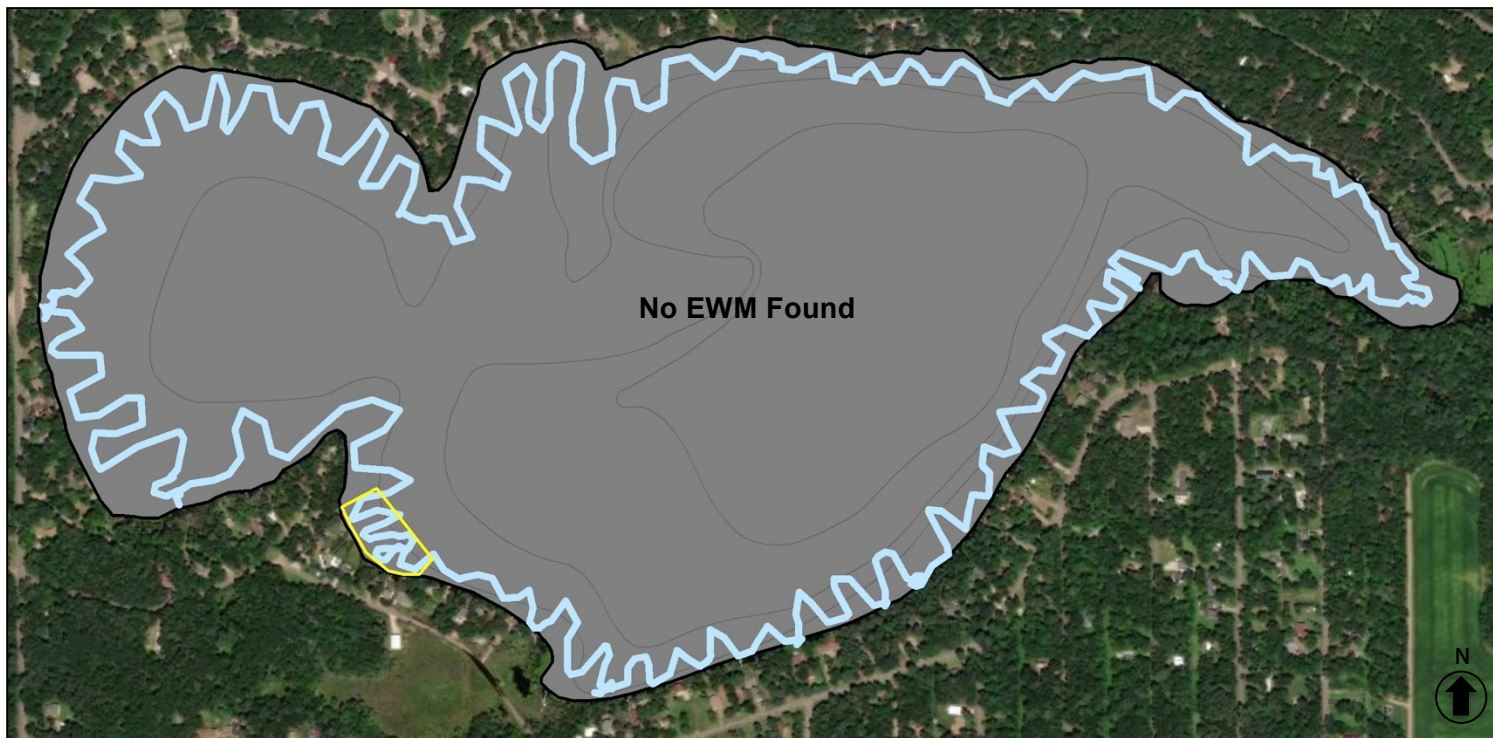
EWM Delineation Survey

Freshwater Scientific Services surveyed Crookneck Lake on August 23, 2019. During this survey, we navigated a meandering path over the littoral portion of the lake (generally ≤ 15 ft). While navigating this search path, we used a combination of surface observations, sonar readings, and rake tosses to locate any areas of EWM growth, assess the density of the growth, and to 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 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, EWM height, and 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 Path
□ Treated Plot

Surveyed: August 23, 2019
Methods: Visual, Sonar, Rake
Surveyor: JA Johnson

 **Certified Lake Manager**
www.NALMS.org

Map produced for the
Crookneck Lake Improvement District by:


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No Eurasian Watermilfoil Found

The lack of EWM in the lake during this late-summer survey strongly suggests that the herbicide treatment conducted earlier in the year effectively controlled EWM. However, some roots or seeds may remain in the previously infested area. For this reason, we highly recommend that the treated area be inspected again in 2020 to determine if there is any regrowth of EWM that may need to be managed.

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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