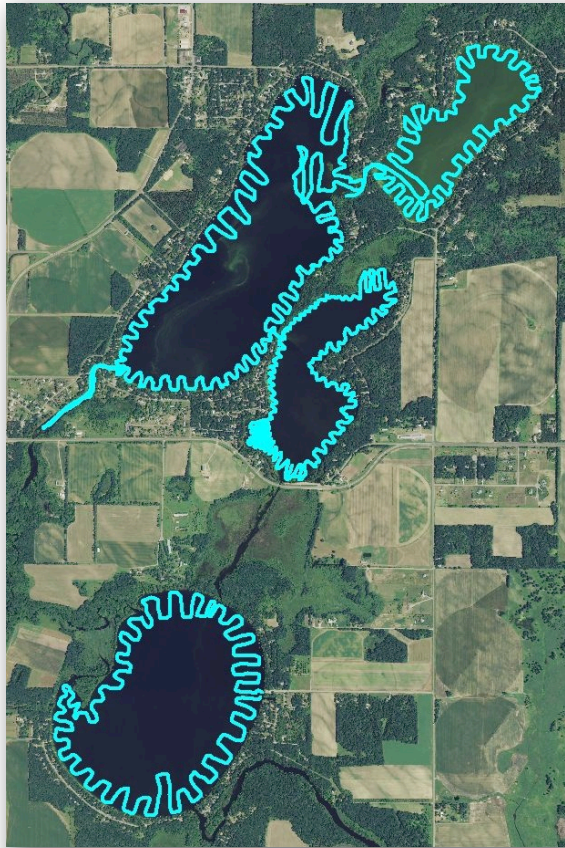


Eurasian Watermilfoil in the Briggs Lake Chain

(WBIC# 71-0141, 71-0145, 71-0146, and 71-0147)

Sherburne County, MN

Late-Summer Delineation Survey – September 10-11, 2015



Survey, Analysis, and Reporting by:

James A. Johnson – *Aquatic Ecologist, Freshwater Scientific Services, LLC*



Certified Lake Manager
www.NALMS.org

Funding Provided by:

Briggs Lake Chain Association – Clear Lake, MN

Purpose of Survey

This survey was designed to locate and delineate areas of Eurasian watermilfoil (*Myriophyllum spicatum*, henceforth referred to as EWM) in Briggs Lake, Julia Lake, Rush Lake, and Big Elk Lake in the late summer of 2015. This late-summer survey was conducted to (1) track any changes in the extent of the previously documented EWM infestation in Rush Lake, (2) assess whether EWM has spread to any other lakes in the chain, and (3) to help guide vegetation management planning in the coming years.

Survey Method

EWM Delineation Survey

Freshwater Scientific Services surveyed Briggs, Julia, Rush and Big Elk Lake on Sep 10-11, 2015. During these surveys, we navigated a meandering transect over the portion of the lakes that supported plants (roughly out to the 10-ft depth contour). In all, we surveyed a total path length of 29 miles across all 4 lakes. While navigating this search path in a boat, we used a combination of surface observations, rake tosses, sonar readings, and an underwater video camera to locate and delineate areas of EWM growth. Sonar and visual assessments were conducted continuously, with subsequent rake tosses to assess EWM abundance at ~250 locations where sonar indicated vegetation that was not visible from the surface.

Results & Management Context

EWM in the Briggs Chain

During the Sep 2015 survey, we found EWM only in Rush Lake; we did not find any evidence of expansion into the other lakes (no EWM plants or fragments). In Rush Lake, we did not find any areas where EWM was growing densely enough to impair recreation, but we did find several small clumps of EWM (<10 stems) growing to the surface in areas shallower than ~4 ft (see page 4). These EWM plants appeared to be healthy and growing actively, but did not have much surface branching and did not appear to be autofragmenting (producing fragments with roots that naturally break free and drift to new areas) at the time of the survey.

The extent of the EWM along the southern shoreline appeared to be substantially reduced compared to 2014 (see page 4). This suggests that the past herbicide treatments have been effective in the areas where they were allowed. However, isolated patches of EWM remain in the area where treatment was not allowed due to the presence of water lilies.

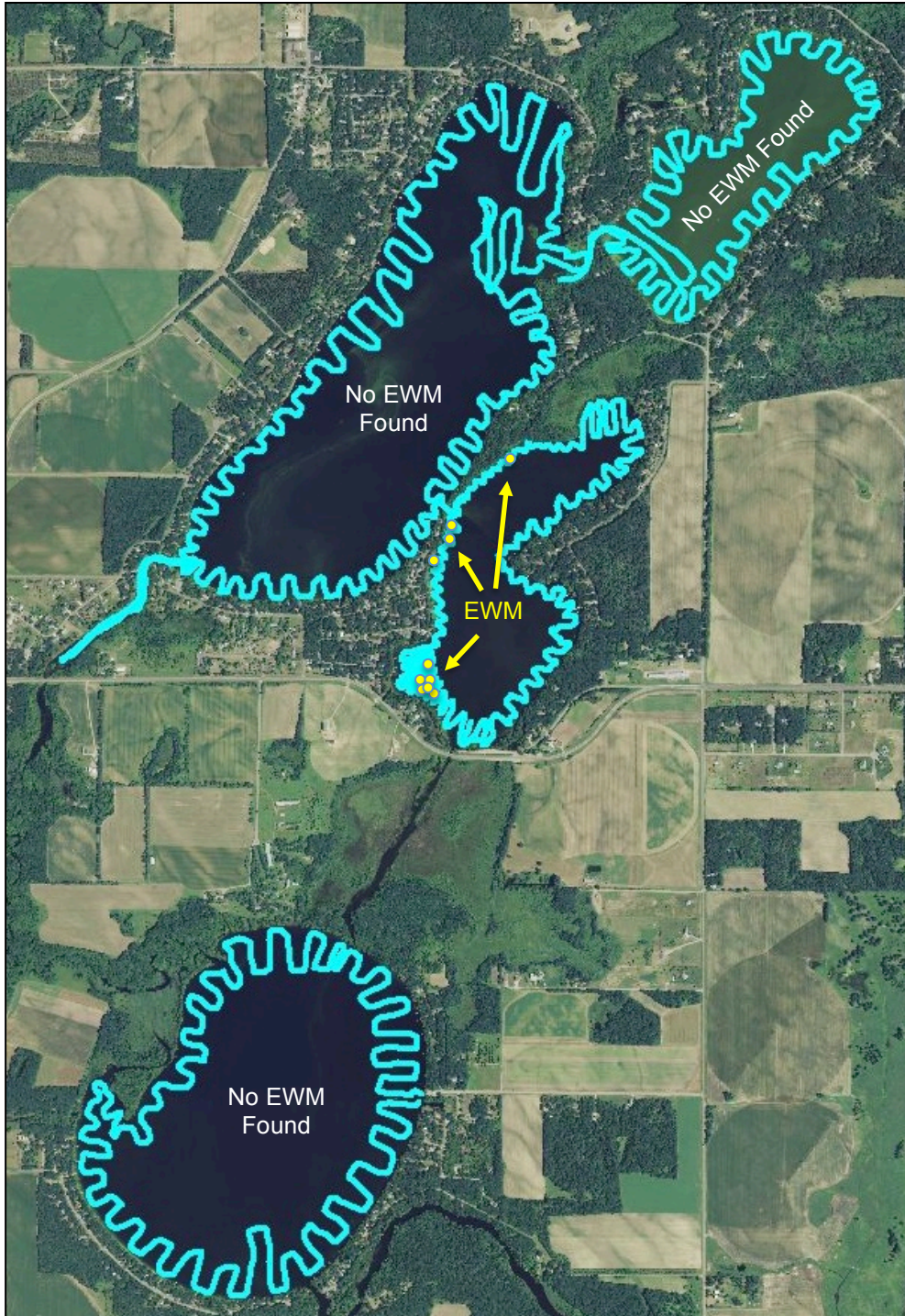
We also found a few isolated EWM plants farther north along the western shore than in 2014. Several of these new EWM locations were just south of the channel leading to Briggs Lake, and one isolated EWM plant was found growing along the northern shore. These new EWM locations indicate that EWM is still spreading in Rush Lake, so active searching and management should be continued. Furthermore, the new EWM patches near the Briggs-Rush channel suggests that the risk of spread to Briggs is substantially higher than in the past. Accordingly, these patches near the channel should be aggressively managed and monitored.

Recommended Actions

- (1) Periodic inspections and hand-pulling of EWM plants around the Rush channel in 2016
- (2) Discuss options for EWM treatment in southern Rush Lake with DNR staff
- (3) Install signs at each end of the channels between the lakes asking boaters to reverse their motors before entering a new lake to remove any attached plant fragments

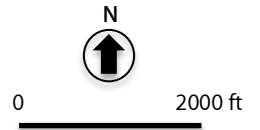
Briggs Lake Chain

2015 Delineation of Eurasian Watermilfoil



— Surveyed Path
(29 miles)

● EWM Found



Surveyed: Sep 10-11, 2015
Surveyor: JA Johnson
Affiliation: Freshwater Sci. Serv.
Methods: Rake, Sonar, Visual

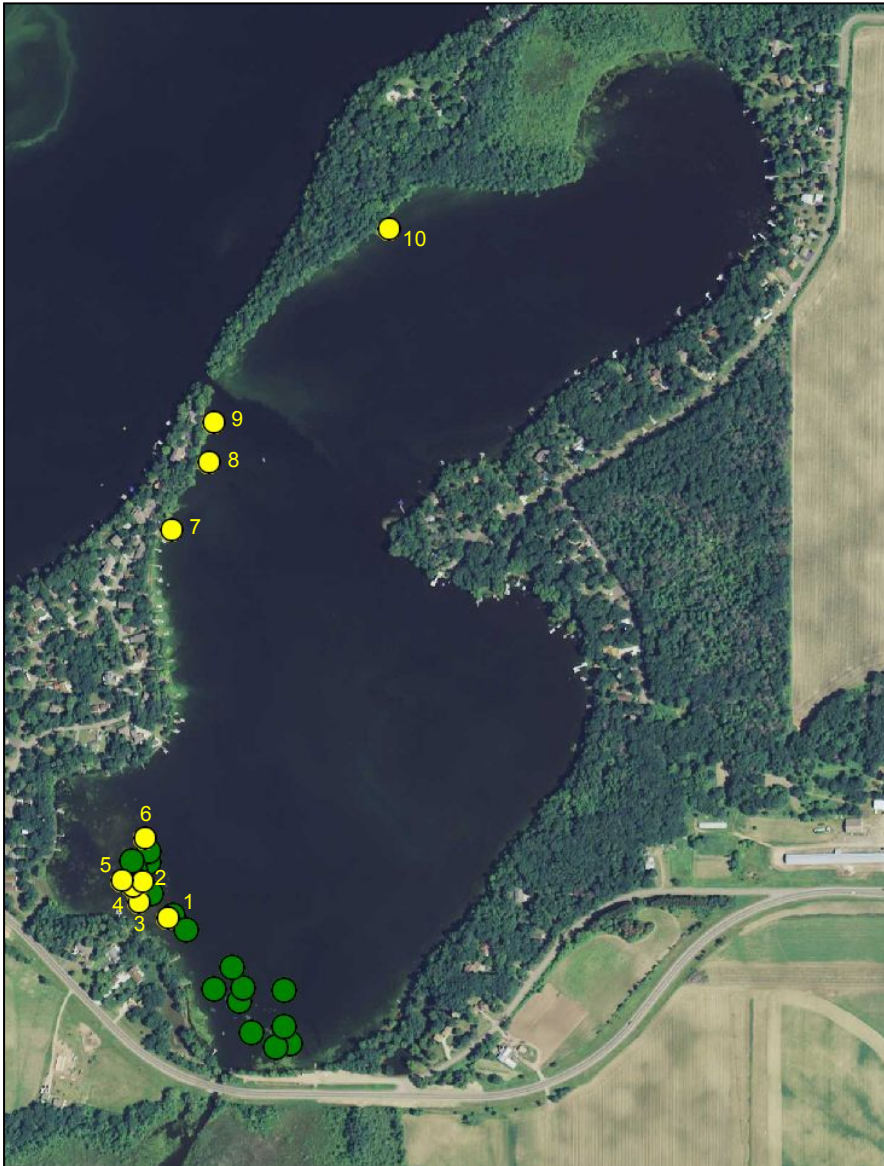


Map produced for the
Briggs Lake Chain Association by:

FRESHWATER ●
Scientific Services, LLC
18029 83rd Avenue North
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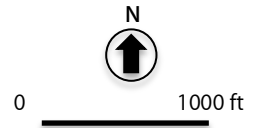
EWM in Rush Lake

Changes in EWM Distribution: 2014-2015



Eurasian Watermilfoil

- 2015 EWM location
- 2014 EWM location



Surveyed: Aug 2014 & Sep 2015
 Surveyor: JA Johnson
 Affiliation: Freshwater Scientific Services
 Methods: Visual, Sonar, Rake, Camera

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Table 1. Description and location of sites where EWM was found in Sep 2015.

EWM Point	Water Depth (ft)	EWM Height (ft)	EWM Density (1-3)	Lat	Long
1	3.0	3.0	1	45.486405	-93.937340
2	3.0	3.0	1	45.486598	-93.937857
3	2.6	2.6	1	45.486791	-93.937954
4	3.0	3.0	1	45.486850	-93.937791
5	2.3	2.3	1	45.486868	-93.938145
6	3.3	3.3	1	45.487386	-93.937752
7	2.3	2.3	1	45.491234	-93.937340
8	2.0	2.0	1	45.492086	-93.936704
9	3.0	3.0	1	45.492574	-93.936631
10	2.3	2.3	1	45.495006	-93.933560

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/shorelandmgmt/apg/regulations.html>

Estimated Cost of Herbicides (MDNR)
<http://files.dnr.state.mn.us/assistance/backyard/shorelandmgmt/apg/pests.pdf>

List of Herbicide Retailers and Applicators in MN
http://files.dnr.state.mn.us/assistance/backyard/shorelandmgmt/apg/companies_selling_approved_aquatic_herbicides.pdf

Milfoil Genetic Testing (for verifying native, Eurasian, or hybrid milfoil)
<http://www.gvsu.edu/wri/thum/milfoil-genetic-identification-services-15.htm>

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