

## Eurasian Watermilfoil Delineation: Lake John

(WBIC# 86-0288-00)

Wright County, MN

Spring Delineation Survey – May 11, 2015



### Survey, Analysis, and Reporting by:

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



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

Prepared for the Lake John Association (Annandale, MN) – May 2015

## Survey Methods & Findings

### Spring Delineation Survey

Freshwater Scientific Services, LLC completed delineation survey for EWM in Lake John (#86-0288-00) on May 11, 2015. During this survey, we navigated a meandering transect over the area where EWM had been treated in previous years (~21 acre plot in the SE portion of the lake). While navigating this transect, we used a combination of surface observations (using polarized sunglasses), 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 ~120 locations. At each of these rake locations, we dragged a sampling rake over approximately 10 square feet of lake bottom and recorded the EWM density based upon the number of curlyleaf 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, EWM plant height, and EWM abundance (rake density rating; 1 to 3 scale as described below).

#### EWM Rake Density Rating

1 = 1 to 2 stems per rake toss

2 = 3 to 9

3 = 10 +

We entered the recorded locations, water depths, EWM plant heights, and rake densities into desktop GIS software and projected results over aerial imagery of the bay. We then delineated beds of EWM growth in the surveyed areas, and calculated the area, and mean EWM density within each of the delineated beds (using point data).

### Findings

During the May 2015 survey, we found no EWM growing in the surveyed area. In the 2012 delineation survey, we positively identified EWM specimens collected from this area, so the lack of EWM in 2015 indicates that the past treatments in this area have been very effective at controlling EWM. However, in 2015 we did find young shoots of native whorled milfoil (*Myriophyllum verticillatum*) growing at sporadic locations in the surveyed area (see page 3). This native whorled milfoil typically has a higher leaflet count (7-17 pairs) than native Northern watermilfoil (*Myriophyllum sibiricum*; 5-9 leaflet pairs), and this higher leaflet count overlaps with the range for Eurasian watermilfoil (*Myriophyllum spicatum*; 12-21 leaflet pairs). Although most of the specimens we collected had fewer than 12 leaflets, we documented additional features to distinguish these sprouts as native whorled milfoil. These features included the existence of winter buds (dense clusters of leaves) at the base of each shoot, J-shaped stems emerging from these winter buds, tight spacing of leaflets along the stems (<1cm apart), and the overall shape of the leaflets (proximal leaflets substantially longer than distal leaflets). We observed all of these features to be present on the collected specimens, and are confident that these shoots are not Eurasian watermilfoil.

Based upon these findings, we recommend that the surveyed portion of the lake should not be treated in 2015. At this time it appears that past treatments have successfully controlled EWM in this area and that native plants are recolonizing after treatment. In previous studies, such treatments have provided several years of control, but EWM often returns after several years. Consequently, the Lake John Association should consider having the area surveyed periodically (every 2 to 3 years) to document any recolonization by EWM.

# 2015 Spring Delineation of Eurasian Watermilfoil Lake John (#86-0288-00)



**EWM Delineation Survey**

- Designated Survey Area
- Surveyed Path
- Locations with Whorled Milfoil

Surveyed: May 11, 2015  
Method: Visual, Rake, Sonar, Camera  
Surveyor: J.A. Johnson  
Affiliation: Freshwater Scientific Services, LLC



Map produced for the Lake John Association by:

**FRESHWATER** ●  
Scientific Services, LLC  
18029 83<sup>rd</sup> Avenue North  
Maple Grove, MN 55311  
fixmylake.com  
(651) 336-8696