Diverse and Important Underwater Forests: Aquatic Plants in Birch Lake

By Dawn Tanner/Special to the Press

Apr 3, 2024 Updated Apr 3, 2024 – White Bear Press

Healthy native plants include bladderworts with pretty yellow flowers and duckweed which is often confused for algae but is a native plant.

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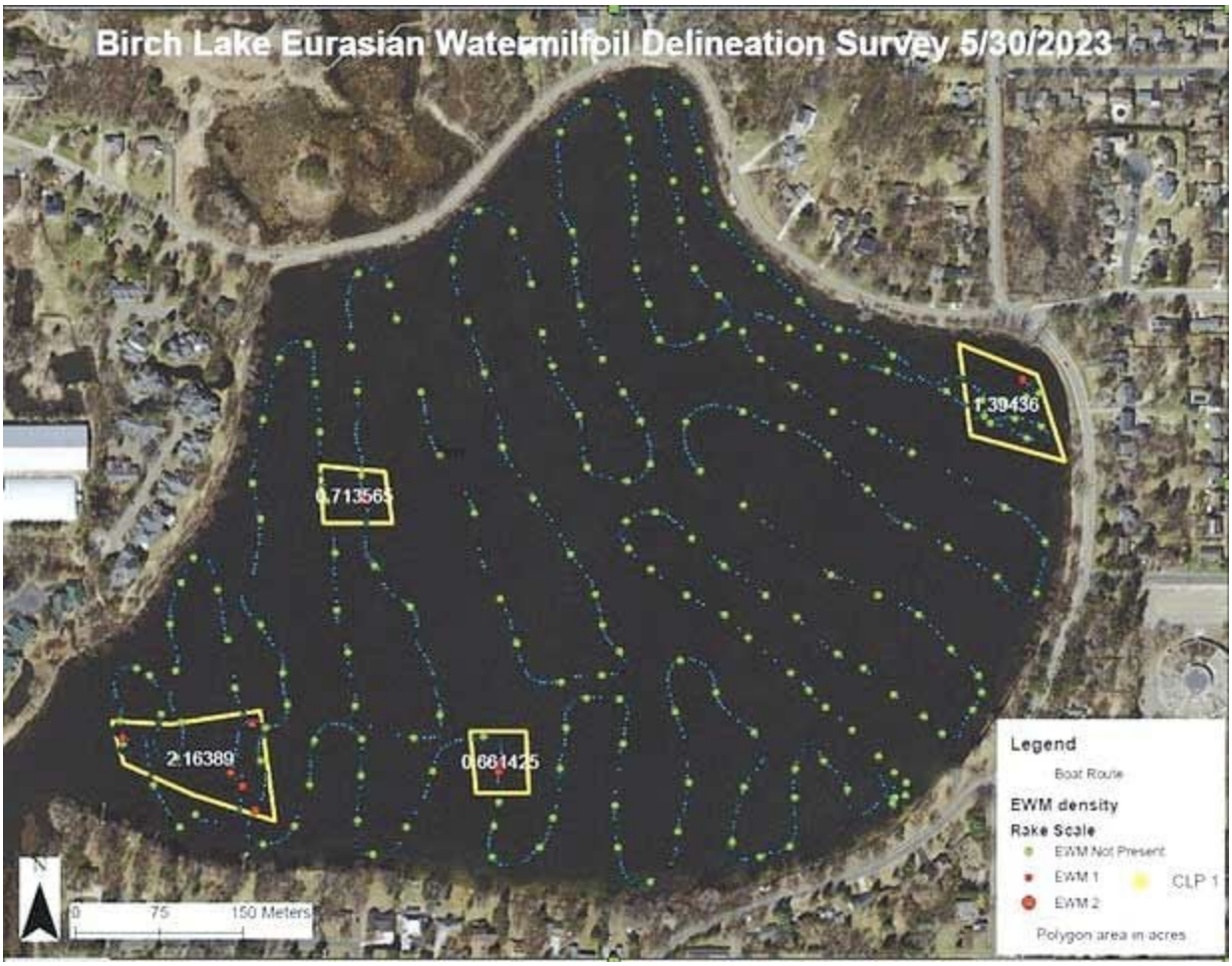

Eurasian watermilfoil infestation was identified in 4.9 areas of Birch Lake, as surveyed in 2023 by VLAWMO and RCSWCD. Following removal, EWM was at such low levels only 1 plant was detected.

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As the winter—whatever we had of it this year—turns to spring, Minnesotans gaze longingly at our lakes. We can hardly wait to spend time swimming, fishing, paddling, boating, sitting lakeside with family and friends, and more. Our lakes, rivers, and streams connect us in many ways.

The underwater forests that help provide habitat for wildlife and keep our waterways healthy are often an underrated component of summers in and on the water. Healthy native aquatic plants are a sign of good and even improving water quality. These native plants take up nutrients from lakes and streams and keep the water clear; instead of algae, especially blue-green algae, taking up the nutrients and making the water murky and green.

Birch Lake, in White Bear Lake, is a healthy urban lake and a standout in the Vadnais Lake Area Watershed. Its native plant community is diverse, with some rare species and even a couple of new records for Ramsey County reported last year, as a result of close observation and surveys.

Keeping this lake healthy is a goal of the Vadnais Lake Area Water Management Organization (VLAWMO) and partners. Working toward this goal, a partnership project focused on removing invasive aquatic plants has been underway over the past 3 years. Partners in the project include the Birch Lake Improvement District (BLID), Ramsey County Soil and Water Conservation Division (RCSWCD), Minnesota Department of Natural Resources (MN DNR), and the Dive Guys, which is a local company that removes invasive aquatic plants.

The project is now in its third year; however, projects can't begin without solid data and good science. Work toward the current project began in 2019, with an aquatic plant survey and a focused effort to understand where invasive Eurasian watermilfoil (EWM) was found in the lake. Results of that survey showed that 11.4 acres of Birch Lake were infested with EWM. Using that information, partners in the watershed worked together to apply for a MN DNR Aquatic Invasive Species Control Grant. The proposal was awarded a 2-year grant to for removal of EWM. VLAWMO provided funds and staff to assist on pre and post surveys—which are a requirement of the grant—and technical assistance in managing the grant. BLID provided funds, and was reimbursed for a portion of those funds through the grant, for hand-pulling of EWM with the Dive Guys.

Eurasian watermilfoil removal began in 2022 and continued in 2023. Dive Guys removed approximately 125 pounds of EWM over 2 days in 2022. In 2023, only a single day of hand-pulling was needed. A new infestation of invasive Curly-leaf pondweed was also detected as part of this focused project. That infestation was reported to MN DNR and removed as part of the project. During the post survey in 2023, only 1 EWM location and no Curly-leaf pondweed plants were detected. These invasive plant species have been reduced to such low levels that they were difficult to detect on the survey. Ongoing survey and removals will help to maintain the progress made on the

project and could allow eradication of these invasive plants over time, with dedicated ongoing partnership efforts.

Eurasian watermilfoil is an invasive plant that originally came from Europe and Asia. In Minnesota, EWM also hybridizes with native Northern watermilfoil. The resulting hybrid plants are invasive too. The University of Minnesota has been working to identify hybrid EWM strains and better understand targeted removal strategies. As part of the Birch Lake project, EWM was collected and sent to the lab for genetic analysis. These samples were identified as hybrid watermilfoil and are reported in a statewide database that is available at: z.umn.edu/milfoilmap.

We now have improved understanding about the invasive plants in Birch Lake and have reduced their abundance. We have also been learning more about the native plants in Birch Lake. In conducting observations as part of the surveys for the project, we see that the healthy, diverse native plant community, with especially abundant fern pondweed and large-leaf pondweed, appear to be helping to keep the lake healthy and preventing the invasive plants from simply reestablishing in areas where they were removed. These native plants provide clean water, habitat for fish, food for wildlife, and are beautiful and important in and of themselves.

In addition to surveys conducted by local partners, the Minnesota Biological Survey (MBS) with the MN DNR, recently visited lakes in our watershed, including Birch Lake during 2023. What they found in Birch Lake was exciting. Two native plants species were documented that are new records for Ramsey County. These are Spiny-spore quillwort and Slender watermilfoil. Both of these plants are found in shallow areas and not as likely to be sampled by the standard protocol. The standard protocol involves using the head of a rake tied to a rope to sample plants from the lake bottom. These new records emphasize the importance of having an aquatic plant expert visit and look closely. They also highlight the importance of Birch Lake and its native plant community.

Twenty-one native plants species were previously identified in the 2019 plant survey in Birch Lake. Three new species were added as part of the MBS survey in 2023, for a total of at least 24 native aquatic plant species. Birch Lake provides a surprising example of diversity below its surface. A healthy plant community is more resilient to environmental stressors such as extreme storm events, water-level fluctuations, drought, and can help prevent establishment of new invasive species.

There's more than initially meets the eye when we look into a clear lake and observe a tangle of plants. Supporting those native plants means supporting clear lakes and improved water quality. Want to learn more? Check out the plant surveys for each lake under Waterbodies on the VLAWMO website at www.vlawmo.org.

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