



Mapping Milfoil from the Air: A Proposed Drone-Based Monitoring Project for Moira Lake – A Summary

Overview

The Moira Lake Property Owners' Association (MLPOA) is proposing an innovative, community-driven project to improve how we monitor Eurasian Water Milfoil (EWM)—a fast-growing invasive plant that threatens recreation, biodiversity, and water quality in Moira Lake. This proposed project is pending funding approval through the Invasive Species Action Fund (ISAF) for implementation during the 2026 growing season.

If approved, the project would use drone imagery and on-water surveys to map EWM across key shoreline and nearshore areas of Moira Lake. The goal is to generate accurate, detailed vegetation maps to help guide future management decisions and build a model that other communities can replicate.

What's Happening

Drone Surveys

Granite Ridge Education Centre (GREC) will lead drone operations, capturing high-resolution aerial imagery of up to 400 hectares of Moira Lake's priority shoreline and nearshore zones during peak EWM growth (July–August 2026). These drone flights will provide a bird's-eye view of plant distribution and surface matting.

On-the-Water Surveys

MLPOA volunteers will conduct standardized shoreline and rake toss surveys from boats to confirm what the drones are capturing. These surveys will be recorded using the Survey123 app to ensure spatial accuracy and consistency in plant identification.

These on-water observations are vital: they serve as the “ground truth” for interpreting the drone data and rely directly on the strong volunteer base and protocols already developed through MLPOA’s ongoing surface mapping project.

Geospatial Analysis

Once data is collected, students at GREC—under staff supervision—will use GIS software to analyze and cross-reference drone imagery with the existing surface data. This initial analysis will help create draft maps of EWM distribution, which will then be refined and finalized with support from Quinte Conservation.

Quinte Conservation will also be responsible for integrating all spatial datasets into a professional mapping framework and ensuring long-term stewardship of the data.

Why It Matters to MLPOA Members

- **More Accurate Mapping:** Combining drone imagery with confirmed on-water surveys gives a clearer picture of where EWM is growing and how dense it is.
- **Better Planning:** These maps will help inform decisions about mechanical removal or other methods in the future.
- **Local Involvement:** MLPOA members can take part directly in monitoring and prevention efforts.
- **Youth Engagement:** GREC students will gain valuable experience in GIS and environmental analysis.
- **Stronger Stewardship:** By building on our surface mapping project, we’re creating a scalable model for EWM detection that strengthens community capacity.

Deliverables You’ll See

- **Detailed, geo-referenced maps** showing EWM distribution in Moira Lake
- **A plain-language guide:** *Citizen Science Guide: Drone Mapping, On-Water Validation & GIS for EWM*
- **A digital dataset** that supports future monitoring and action planning
- **Community presentations** to share results and engage property owners

Project Timeline (Pending Funding Approval)

- **Spring 2026:** Volunteer recruitment, training, and site planning
 - **Summer 2026 (July–August):** Drone flights and on-water surveys
 - **Fall 2026:** Data processing, mapping, and drafting reports
 - **Winter 2026/2027:** Final reporting and community presentations
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How You Can Help

- **Volunteer:** Join our survey team to assist with on-water observations
 - **Learn:** Attend a training session to understand how to identify EWM and prevent its spread
 - **Stay Informed:** Watch for updates and mapping presentations from MLPOA
 - **Prevent the Spread:** Always Clean, Drain, and Dry your boat and gear between waterbodies
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Looking Ahead

This drone mapping initiative builds on the success of MLPOA's surface mapping project but uses new technology to expand coverage and improve data quality. Together, these efforts strengthen our ability to detect and manage EWM—and protect the health, enjoyment, and biodiversity of Moira Lake.

Pending funding, this project will represent a major step forward in lake stewardship. Stay tuned for updates and opportunities to get involved.

For more information contact the MLPOA at moira.lake.poa@gmail.com.