

An aerial photograph of two interconnected lakes, Malcolm and Ardoch, surrounded by a dense forest. The trees are in various stages of autumn, showing shades of green, yellow, and orange. The water is a deep blue-green color. A white house is visible on the right side of the lakes. The text "Malcolm & Ardoch Lakes" is overlaid in a large, white, sans-serif font, centered horizontally across the middle of the image.

Malcolm & Ardoch Lakes

Summer 2019

How to Identify Eurasian Watermilfoil

Invasive

Native

- Usually 12-21 leaflet pairs per leaf
- Delicate, feather like leaves
- Leaflets are typically the same length
- Leaves are limp when out of water

- Usually 7-10 leaflet pairs per leaf
- Rigid, feather like leaves
- Bottom leaflets are typically longer
- Leaves will remain rigid and spread from the stem when out of water

Mouth of Ardoch Lake

2018



- Area: ~ 570 Sq Metres
- High density with less dense areas as you move away from the centre of the patch
- One burlap mat laid

2019



- Area: ~ 2090 Sq Metres
- The density of the patch ranges from low to high
- Six more burlap mats were laid

Drone Flight Requirements

Clearance

- We must have special permission to fly in specific areas near the lake to the Tomvale airstrip.

Posting

- Lake members and visitors must be made aware of all drone operations as a safety precaution

Ground crew/ boat crew

- The drone must stay within visual line of sight at all times. Observers are placed around the flight area to ensure the drone is always in VLOS.
- Boat crews must intercept boat traffic heading into the flight zone and be prepared to recover a “downed” drone.

Light filters

- Polarization filters are used to reduce unwanted light that may cause the imagery to be washed out or create a glare
- Stats that affect flights ie. wind velocity, cloud coverage, precipitation





Data Collection

Carleton University



- Collecting and analyzing sampling data to help determine factors which promote EWM growth as well as determine if and how benthic barriers alter the lake.

Drone operations



- Collecting valuable data relating to the Eurasian Water Milfoil infestation in the form of orthomosaics and aerial imagery.
- These maps are used to track patch size, volume, density, plant health, and elevation.

Controlling strategies

Hand pulling



- Hand pulling is efficient in shallow water.
- When removing the plant it is important to remove the roots and place the plant away from the water as it can re-root within days.

Laying burlap



- The goal is to test whether burlap smothers the EWM making recreational use of the lake possible.
- The first sheet of burlap was laid in September 2018 at the mouth of Ardoch.
- 14 more sheets of biodegradable burlap were laid in June this year.

Weevils



- The miffoil weevil chews away at the stem and cortex of the EWM plant.
- It is suggested that 100-200 weevils per square metre may be required to see a decline in patch size.