

Water weed woes are under control

Goulburn-Murray Water (GMW) and the Murray-Darling Basin Authority (MDBA) have successfully been able to manage the growth and spread of the waterweed *Egeria densa* in Lake Mulwala by periodically lowering the water level of the lake, exposing the weed to the open air.

Egeria densa

Over the last 15 years, the environmental and aesthetic values of Lake Mulwala, along with its recreational use, have at times been impacted by the waterweed *Egeria densa* (*Egeria*).

The highly invasive nature of *Egeria* results in it outcompeting and displacing native submersed vegetation like floating pondweed and ribbonweed.

Apart from these undesirable environmental effects, when it is abundant and widespread *Egeria* can also restrict the usage of the lake, making it difficult to launch a boat, troll a lure, swim, or water ski without getting tangled in the weed.

Lake 'Drawdowns'

Egeria is a submersed aquatic macrophyte that is intolerant to drying out. It is entirely reliant on vegetative reproduction as it can't produce seed.

Lowering of the lake's water level (known as a 'drawdown') and exposing the weed to open air has proved to be an effective way of controlling its distribution and abundance across the whole lake.

Between 1993 and 2007, Lake Mulwala was only drawn down once for weir maintenance. This prolonged period of stable water levels, along with Lake Mulwala's suitability for plant growth, provided ideal conditions for *Egeria* to flourish.

By 2008 *Egeria* occupied about 60 percent of the volume of Lake Mulwala. That same year the lake was drawn down in the course of day-to-day operations but this drawdown wasn't deep enough to expose all the *Egeria*. In subsequent years, deliberate drawdowns

were conducted during winter to the point where the weed was exposed to the open air. The table below provides a summary.

YEAR	DEPTH OF DRAWDOWN BELOW FULL SUPPLY LEVEL (m)	EFFECT ON EGERIA
2008	2.86	Minimal effect. The drawdown was not deep enough to expose the lake bed where <i>Egeria</i> was growing.
2009	5.43	Dramatic effect. All <i>Egeria</i> was exposed, reducing it from 60% to 1% of the lake's volume.
2011	3	Good effect. Maintained <i>Egeria</i> at its lowest level since monitoring began
2015	3.5	Results currently unknown. A repeat of the standard survey in 2016 will determine whether the 2015 drawdown has kept <i>Egeria</i> under control



Side by side comparison

In 2008 (left), most of the *Egeria* below the surface of these mounds remained alive throughout the drawdown because it was protected from frost and drying out. Source: DEDJTR, Victoria

In the 2015 drawdown (right) the mounds were thinner and most of the *Egeria* was dead. Source: Peter Shaw (Murray-Darling Basin Authority).

Community Feedback

Local stakeholders have been supportive of the drawdowns because they have been effective in managing *Egeria* and its associated problems, as well as providing opportunities for foreshore maintenance.

Another important benefit of the drawdowns was a boost in tourism in the area with visitors coming to see the drawn down lake at a time of year when tourist numbers are traditionally very low.

Managing Egeria

Like most weeds, Egeria can't be eradicated entirely but can be managed. Lowering of water level to expose the weed to air and dry it out is the only feasible management option for controlling Egeria over the whole lake.

Based on the success of this in Lake Mulwala, as well as the positive community feedback, this will continue to be method for managing Egeria in the lake into the future.

Community Reference Group

The Lake Mulwala Community Reference Group was formed in 2005 through the development of the Lake Mulwala Land and On-Water Management Plan.

The group is made up of representatives from Corowa and Moira Shire Councils, as well community representatives.

Their focus is on building and establishing partnerships between the community, special interest groups, and governments. They provide advice on implementing and monitoring the Land and On-Water Management Plan and play an active role in community engagement.

The group has endorsed a set of aims for vegetation in the lake, including:

- keeping the lake relatively weed free for all aquatic sports
- preventing Egeria from growing and decomposing in front of lake-front houses and tourist amenities (for aesthetic reasons)
- encouraging a healthy mix of aquatic plants to provide a better habitat for native fish to flourish
- preventing downstream spread.

The Future

GMW and the MDBA are now working to develop a set of guidelines for the ongoing operational management of Egeria.

The guidelines will capture the lessons learned and the effects of drawdowns on in-lake ecological processes as well as stakeholder feedback.

They will be implemented as part of normal operations in an effort to achieve the Community Reference Group's aims and will be adapted over time as knowledge and information improves.

Advice of upcoming drawdowns will be issued as early as possible, and coordinated with scheduled maintenance work on the lake whenever possible.



Winter 2008 Drawdown
Egeria reaching the water surface. The abundance of Egeria is exaggerated by the lower water levels.
Source: DEDJTR, Victoria



Winter 2015 Drawdown
The same location with no Egeria, but small areas of native floating pondweed reaching the water surface.
Source: DEDJTR, Victoria

This will provide local government and community stakeholders with greater certainty for their planning purposes.

More Information

For more information about the active management of Egeria densa in Lake Mulwala, contact Goulburn-Murray Water's Yarrowonga office:

Goulburn-Murray Water
Burley Road
YARRAWONGA Vic 3730
(03) 5743 9300