Management of Yellow Waterlily in the Goulburn River Weir Pool

Fact Sheet

February 2009

G-MW's Goulburn Weir weed management program is targeting infestations of the Yellow Waterlily and will protect water quality for all water users.

The large expanses of shallow, protected and slow moving water within the Goulburn Weir Pool are an ideal habitat for the growth of submerged and emergent aquatic plants. These weeds include the Yellow Waterlily (*Nymphaea mexicana*), Senegal Tea Plant, Parrots Feather and Fanwort. All of these weeds originate from the Americas, and possibly transferred as a result of the careless disposal of aquarium plants (eg. discarding aquarium contents into the Weir Pool).

Waterlily is the most aggressive and has spread to cover 80 hectares of the Goulburn Weir pool. The weed does not impede operations of the Weir but it does impact on water quality and local amenity. For these reasons, G-MW is working with local stakeholder groups to address the weed problem at Goulburn Weir.

Waterlily infestation in the Goulburn Weir choking backwaters, adding organic load to water column and reducing exchange of water from the river channel

For over a century the Goulburn catchment has supported a range of agriculture and local communities. As a result of erosion and run-off there is up to a meter of nutrient rich sediment and decaying organic material in some backwaters, which has the potential to impact on aquatic life and water quality eg. a black water event.

In 1996, Waterlily covered around 200 hectares of the Weir Pool leading to a decline in water quality. Over the next seven years to 2003, G-MW's spray program using Roundup Biactive (glyphosate with an aquatic registration) reduced the area to about 30 ha.

Managing Waterlily into the future

In 2007, the Waterlily population re-established itself around the weirpool triggering concerns from water diverters, recreation users and local residents regarding poor water quality and access to the water.

G-MW worked with local stakeholders and agencies including DPI Fisheries and Chemical Standards Branch, EPA Victoria, DSE Biodiversity and Ecosystems and the Department of Human Services to develop an agreed management program to address the Waterlily infestations. The resulting risk-based management plan provides a framework for managing the spraying risks to water quality at Goulburn Weir.

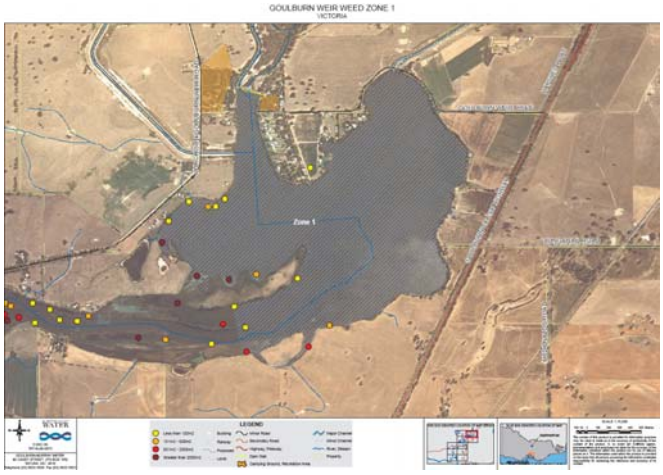
Under the new framework, G-MW will continue to tackle the aquatic weed problem in-line with environmental controls to protect water quality. G-MW has adopted a cautious approach with a focus on best practice, continual improvement and learning during the program. G-MW expects the program to continue for more than 5 years.

Balancing Water Quality and Weed Management

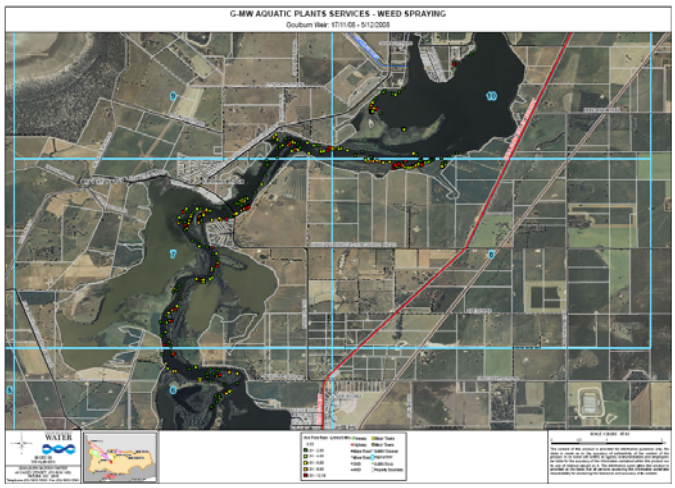
When treated with Roundup Bi-active the Waterlily die, sink and subsequently decay (speed of which depends on water temperature). This process consumes dissolved oxygen (DO) in the water which can impact on water quality and aquatic life.

Small infestations (<2000m^2) in the river channel and open backwaters where water turnover is relatively high, are best suited to spraying, provided DO is >5mg/L at the site and Tahbilk monitoring station. Closed backwaters that are choked with Waterlily represent a higher risk of producing low DO levels. These infestations will be treated in cooler months (autumn) when DO levels are >5mg/L and water temperatures are <20°C, and only 20% of the large infestations (>2000m^2) will be treated at any one time.

Monitoring G-MW's Weed Management Program



G-MW has mapped the infestations and categorized them according to risk. These maps are used to direct spray contractors to Waterlily infestations that fit into the designated spray suitability criteria.



During spraying, G-MW is also using a global positioning system to monitor spray location and output every 15s. This data is then collated and projected onto a map overlay and daily records are produced of areas that have been treated.

A report summarizing control activities will be circulated regularly to the Reference Committee.

Investigating alternative weed management techniques

In 2007, a pilot program was undertaken to compare Waterlily management options. Mechanical harvesting and Roundup Biactive spraying were trialed to assess the effectiveness of treatments and their impact on water quality.

The results from the trial program showed that:

- Mechanical harvesting effectively removed Waterlily from the water body, however 100% re-grew in 8 months
- Roundup Biactive provided 95% control and residues levels in the treatment area were well below the recommended guideline for the protection for aquatic ecosystems (ANZECC[1]).
- Roundup Biactive residues were also lower than the Australian Drinking Water Guidelines limits.

An ongoing residue monitoring program will also be implemented during the spraying program to ensure that water quality is protected.

Further information

For information regarding the program please contact

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Goulburn Murray Water
03 5484 0406 or 03 5833 5500

[1] Australian and New Zealand Environmental Conservation Council