

# LAKE MULWALA



*You probably know Lake Mulwala for its boating, skiing and excellent fishing. What you may not know is how valuable the Lake is to the River Murray System. It plays a part in the lives of irrigators, the community, and wetlands and waterbirds downstream.*

*By managing and varying the level of Lake Mulwala we can provide water at crucial times for irrigators and for the natural environment. This information guide is here to explain the operation of your lake and how important it is to our river system.*

# >>How Lake Mulwala was created

In 1939 Yarrowonga Weir was built across the Murray River between Yarrowonga in Victoria and Mulwala in New South Wales to create Lake Mulwala. It is located immediately downstream of where the Murray and the Ovens River meet and upstream from the Barmah Millewa forest.



Michael Bell

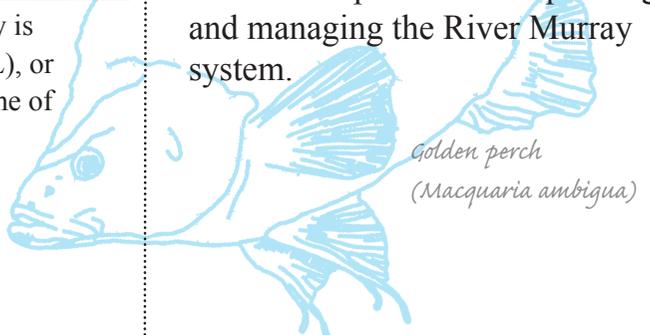
Lake Mulwala’s storage capacity is around 130,000 Mega litres (ML), or roughly one quarter of the volume of Sydney Harbour.

**DID YOU KNOW?**  
Yarrowonga weir was officially opened 50 years after it was built. It was completed in 1939, but the ceremony was put off due to the outbreak of World War II.

# >>Who operates Yarrowonga weir

Yarrowonga Weir is operated and maintained by Goulburn-Murray Water, on behalf of the Murray-Darling Basin Commission (MDBC). This operation is directed by the River Operations team at River Murray Water (RMW), the

MDBC’s internal water business, which is responsible for operating and managing the River Murray system.



Golden perch (Macquaria ambigua)

**DID YOU KNOW?**  
Until 1969 the maximum operating level in Lake Mulwala was 124.9m. Additional steel plates were welded to the top of the weir gates and now the maximum operating level is 125.15m.

# >>Why Yarrowonga weir was built

Yarrowonga Weir was built to raise water levels in order to allow water to flow by gravity into the major irrigation supply channels Mulwala Canal (NSW) and Yarrowonga Main Channel (Vic). Roughly half of the water that is diverted from the River Murray for irrigation is diverted into these large channels.

# >>How the Lake is operated

Unlike our regular calendar year, Lake Mulwala is operated by two main “seasons”: irrigation season and winter. The operations of the two seasons are very different and depend heavily on weather conditions and irrigators’ demand for allocated water.

# >>Irrigation season operations

The “official” irrigation season in Victoria and NSW Murray System channels usually extends from mid August to mid May. During the irrigation season, Yarrowonga weir is used to raise water levels to a height range needed to allow water to flow into Yarrowonga Main Channel (Vic) and Mulwala Canal (NSW).

The water level in Lake Mulwala will vary within a range of about 124.6 m AHD to 125.15 m AHD for several reasons. During the irrigation season River Murray Water assesses daily

orders for irrigation water supplies and releases sufficient water from Hume Dam to meet the orders.

**DID YOU KNOW?**  
Summer evaporation losses of water from Lake Mulwala are typically 1000 ML per day, but they can increase to 2000 ML per day when temperatures exceed 40° C and there are strong winds. (The equivalent of 50mm/day reduction in level of water)

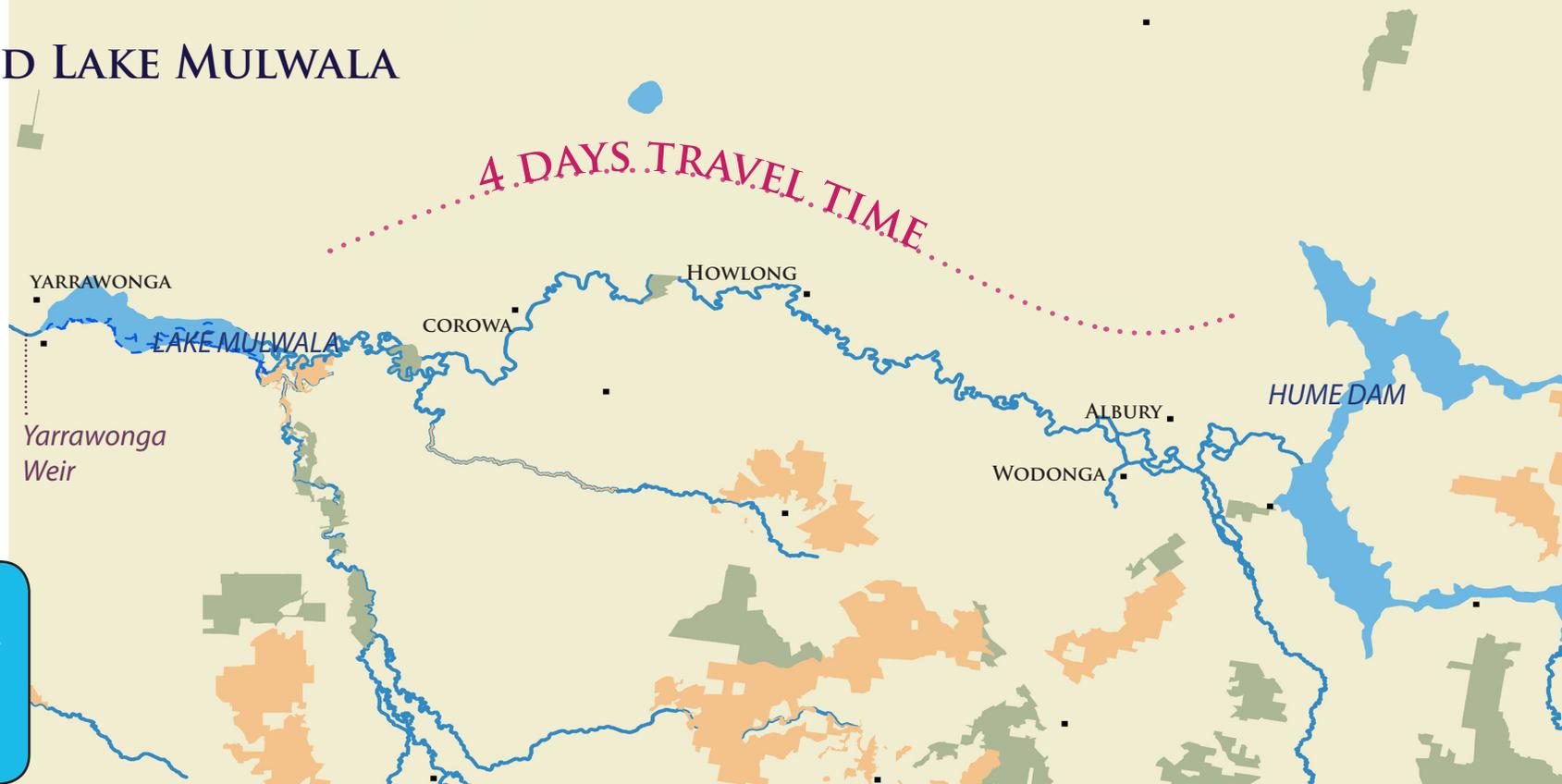
However, it takes about four days for water released at Hume Dam to reach Lake Mulwala. Within that time weather can change, and if conditions are warmer than predicted over the last four

days, irrigators may request more water.

These greater demands can cause Lake Mulwala to fall slightly. On the other hand, if conditions are cooler or it rains in the irrigators’ area, irrigators may use less than was ordered. These lower demands can cause Lake Mulwala to rise slightly.



# BETWEEN HUME AND LAKE MULWALA



## MAP LEGEND

- Nature Reserve/Park
- Forest Reserve
- Water body (e.g. Lake)
- Townships
- Watercourses
- Travel time

**DID YOU KNOW?**  
RMW directs the operation of the River Murray System to share the water amongst NSW, Victoria and South Australia.

## >> “Rain rejections”

Even the best weather forecasters find it difficult to predict thunderstorms. When rainfall is greater than previously forecast, there can be a very sudden fall in irrigation demand. However, the water ordered over the previous four days is already on its way from Hume Dam. This drop in irrigation demand because of rain on irrigators’ properties is called a “rain rejection”. It means that the extra water will either be stored in Lake Mulwala, causing the water levels to rise, or be released downstream. As the downstream river channel is full during most of the irrigation season (supplying irrigators

downstream), any extra releases downstream from Yarrowonga Weir will cause water to flow into the Barmah-Millewa Forest.

This forest is the largest River Red Gum forest in Australia and is recognised as a wetland of international significance under the Ramsar Convention.

Under natural conditions the forest would generally be wet in winter-spring but dry during summer. Excessive summer flooding of Barmah-Millewa Forest, which may be due to rain rejections, can alter the fragile balance of conditions needed for the vegetation,

as well as native animal populations, to remain healthy.

Therefore, RMW tries to prevent unseasonal flooding of Barmah-Millewa as far as possible. The lower the water level in Lake Mulwala when a rain rejection occurs, the more water can be stored in the lake minimising unseasonal flooding of the forest. However this level must remain high enough to maintain irrigation supplies.

## >> Winter operations

The winter operating season for Lake Mulwala is generally from mid May to

early August. It is during this period that it may be necessary to draw down Lake Mulwala to allow maintenance on the weir below normal lake levels or for the storage of floodwaters.

Flood events usually occur during the winter operating season, meaning Lake Operators must ensure that floodwaters from the Ovens, Kiewa and Murray Rivers are safely passed downstream. This usually involves having the lake at low levels to provide a measure of operational flexibility, particularly during high flows.

## >> Glossary

### **River Murray System**

*The main course of the River Murray and anabranches including tributaries entering the River Murray upstream of Albury and the Darling River downstream of the Menindee Lake storage. This includes the Edward River System and it also includes dams and weirs such as Hume and Dartmouth Dams Yarrawonga Weir.*

### **Weir**

*A dam placed across a river or canal to raise or divert the water or to regulate or measure the flow of the water. Under high flow conditions most of the crest of a weir is overtopped and downstream water level is only marginally lower than upstream water level.*

### **Snag**

*Fallen trees and dead branches in the river channel.*

### **Mega litre (ML)**

*A Mega litre is 1,000,000 litres and is roughly equal to the volume of an Olympic swimming pool.*

### **Ramsar Convention**

*The broad aim of the Convention on Wetlands (Ramsar, Iran 1971) is to halt the worldwide loss of wetlands and to conserve those that remain through wise use and management. The Convention was signed by representatives at the town of Ramsar in 1971. There are now more than 135 Contracting Parties to the Convention who have designated the Ramsar List of Wetlands of International Importance.*

### **Australian Height Datum (AHD)**

*A datum is a known or assumed point used as a basis for inference or reckoning. In navigation and surveying, the mean sea-level is a common datum-line. AHD, the Australian Height Datum was adopted in May 1971, and is the datum to which all mapping is referenced in Australia. This datum surface passes through a carefully calculated mean sea level.<sup>1</sup>*

#### **DID YOU KNOW?**

The dead snags found in Lake Mulwala are excellent habitat for Murray Cod and other fish and birds. Lake Mulwala is one of Australia's premier Murray cod recreational fisheries and an important breeding ground for the species.

*Lake Mulwala is an extremely important part of the River Murray System. The ability to regulate flows four days travel time downstream of Hume allows very efficient use of water by irrigators supplied from Lake Mulwala. This also means water can be effectively managed to minimise impact to properties, the environment and to the river channel itself.*

*For more information on how your Lake is essential to the River Murray System please call the Murray-Darling Basin Commission on (02) 6279 0100, or visit the website:*

[www.mdbc.gov.au](http://www.mdbc.gov.au)

<sup>1</sup> Reference from (<http://e-nrims.dwlbc.sa.gov.au/1pgs/glossary1.htm>)