



## Moora Moora Reservoir Operating Rules

Moora Moora Reservoir is a small reservoir located in the upper reaches of the Glenelg River catchment in the heart of the Grampians National Park. The reservoir is the primary source of supply to Supply System 6 of the Wimmera Mallee Pipeline (WMP). The catchment covers an area of about 40 km<sup>2</sup> and acts as a sub-catchment for the Rocklands Reservoir catchment. Moora can also receive water directly from the upper Glenelg River via transfers along the Moora Inlet Channel. Figure 1 presents the general layout of Moora Moora Reservoir.

Moora Moora Reservoir has a reasonably large surface area for its volume and has high evaporative losses during the warmer months. Average annual rainfall is approximately 1,000 mm and wetter years can generate inflows larger than the reservoir capacity. This means the reservoir can spill regularly and management of flows in excess of the reservoirs requirements are a common activity.



Moora Moora Reservoir's capacity, or Full Supply Level (FSL), is 219.95 m AHD which provides a volume of 6,300 ML. The reservoir is operated at a level 0.3 m below FSL between June and October to provide some freeboard to cater for winter inflows. There is no spillway at Moora Moora Reservoir, however excess inflows are managed by an overflow regulator on the inlet channel (where water can back up and spill into the drainage lines that run towards the Glenelg River) and by the outlet structure (where boards can be removed from the top of the outlet gate to allow water to spill into the Moora outlet channel).

When Moora Moora Reservoir is full and conditions are wet, the inlet channel is typically closed to minimise further inflows. The overflow regulator and outlet structures pass flows (including flood flows) to the Glenelg River above Rocklands Reservoir, with minimal inconvenience or impact.

Flows are also able to be diverted directly into the Moora Channel from the Glenelg River catchment downstream of the Moora outlet. Demands downstream of Moora Moora Reservoir can often be met solely from direct harvesting into the channel rather than releasing water from the Reservoir itself. This is the preferred mode of supply where possible.

It is possible to transfer water via the Moora channel, Distribution Heads and Burnt Creek to Taylors Lake. These transfers are ceased during very wet conditions as they can lead to excessive flows in Burnt Creek if the Wartook catchment is also experiencing wet conditions.

Little Cut regulator is the last point on the Moora channel where water can be directed back to the Glenelg River. Little Cut is used to regulate flows on the Moora channel and is left fully open when the channel is not in use to allow any unanticipated water to flow back to the Glenelg River.

## Supply to Brimpaen Storages

Moora Moora Reservoir is the primary source of supply to the Brimpaen storages. Water from the Reservoir is released when natural flows from Big Chord (Upper Glenelg), Moora Channel (from pick-up) or the MacKenzie River are not sufficient to meet the supply requirements of the storages.

Water quality from the upper Glenelg River and the Moora system is generally good, however there can be colour and dissolved organics associated with Moora water. Low salinity is normal. For water supply purposes, the major operational consideration is to manage high turbidity events due to rainfall and associated pick-up in the Moora Channel. During periods of high turbidity, water is passed directly to the Mackenzie River. As turbidity lessens, water can resume being harvested into the storages.

Regular releases from Moora Moora Reservoir generally only need to occur from October to May. From June to September there is usually sufficient naturally occurring flow and/or channel pick-up to supply the Brimpaen storages.

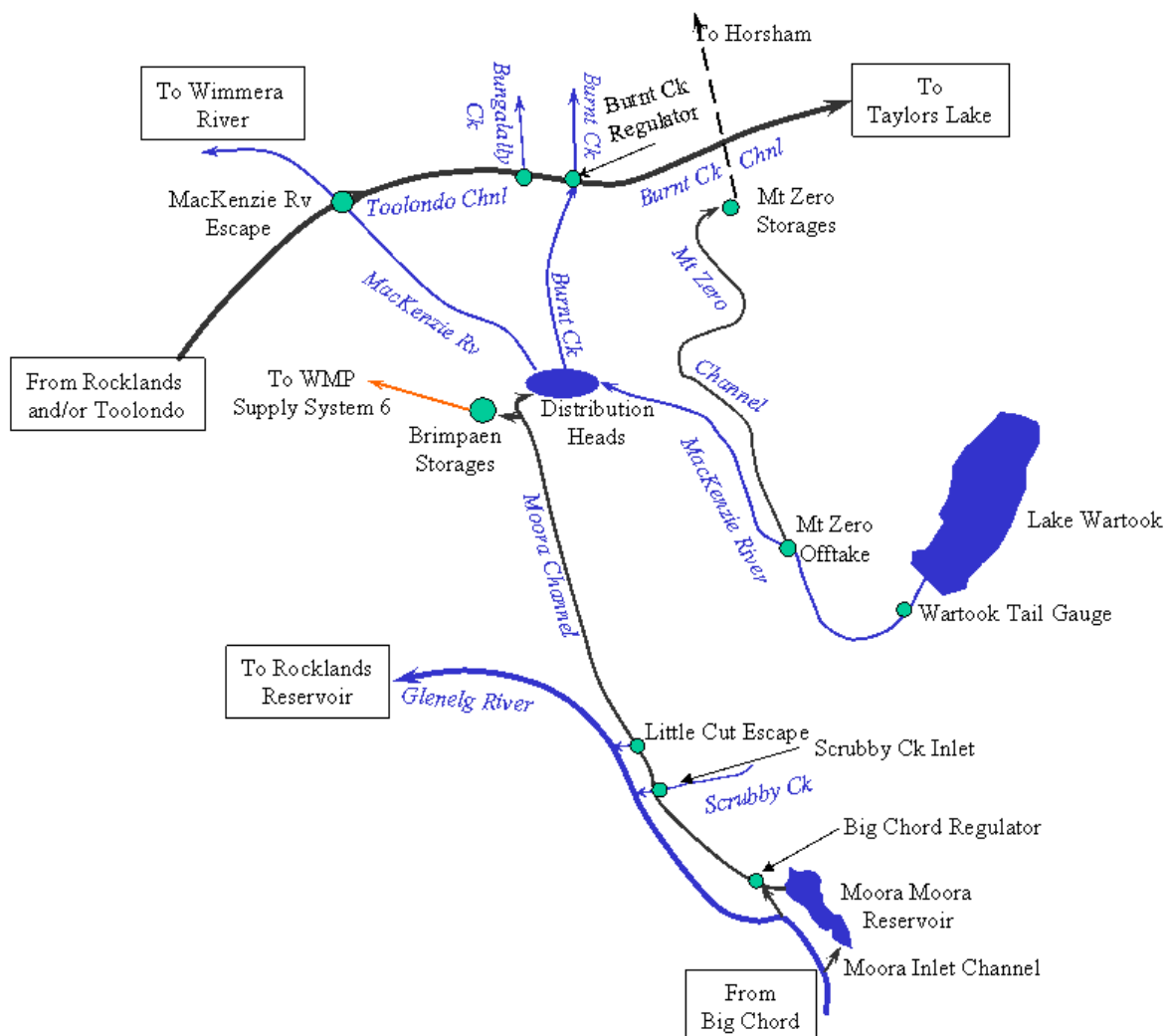


Figure 1: General layout of Moora Moora Reservoir

## Overview of January 2011 Flood Event

Moora Moora Reservoir went into the January 2011 flood event at 96% capacity. Little was known about the amount of rainfall and volume of spill during that time because the site was inaccessible. All spill volumes during this period were diverted into the Glenelg River to Rocklands Reservoir. There was no serious damage to any structures during the flood.

Moora Facts and Figures	
Full Supply Level	219.95m AHD
Full Supply Volume	6,300 ML
Spillway Level	219.95m AHD
Crest Level	220.64m AHD
Maximum Discharge through Outlet	65 ML/d
Catchment Area	147 km <sup>2</sup>
Surface Area	4.1 km <sup>2</sup>
Major Tributary	Moora Moora Creek
Average Inflow (2009)	9,900 ML

## Current Operating Rules

- > Operate the reservoir to FSL between November and May.
- > Operate at a level 0.3 m below FSL between June and October.
- > All water in excess of FSL and downstream demands is directed back to the Glenelg River by default.

## Proposed Operating Rules

No proposed changes. \*

## Glossary

AHD – Australian Height Datum, used for altitude measurement. Zero is the mean sea level for the period 1966-68.

Freeboard - Height between normal maximum operating level and the top of the bank or spillway.

Full Supply Level - The normal maximum operating level of a reservoir behind a dam.

\* – these rules are not subject to negotiation as they are necessary for water supply purposes.

*Reference: Grampians headworks system fact sheet*

September 2011