

MID-MURRAY STORAGE PROJECT

AUGUST 2007

LAKE CHARM

The Victorian Government's decision to decommission Lake Mokoan and rehabilitate the Winton wetland system will result in significant additional flow to the Murray River. The Mid-Murray Storage Project in the Kerang Lakes will capture a portion of this additional flow and store this in Lake Boga, Lake Charm and Kangaroo Lake.

Harvesting some of this additional flow enables a reduction in the required releases to the Murray from the Snowy Scheme. This then allows increased flows to be released into the Snowy River from the Snowy Scheme. Return of environmental flows to the Snowy River is a key commitment of the Victorian Government.

Other than the capacity available in Lakes Boga, Charm and Kangaroo, the only existing Murray system storage located downstream of Lake Mokoan is Lake Victoria. As Lake Victoria currently spills in most years it provides limited opportunity to capture any additional River Murray flows.

The Mid-Murray Storage Project also has the potential to reduce supply capacity shortfalls in peak demand periods which can be experienced on the Murray downstream of the channel capacity constraint at the Barmah Choke.

A fact sheet has been prepared for each of the Mid-Murray Storage Project lakes providing more information on the background, associated infrastructure, proposed operation, water quality, recreation, tourism and environmental aspects.

BACKGROUND

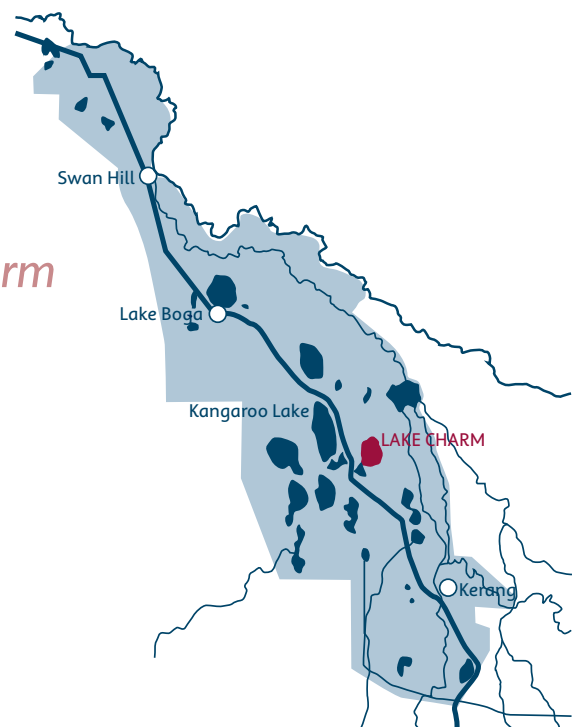
Lake Charm is one of a group of shallow natural lakes situated between Kerang and Swan Hill. Since the late 1880s Lake Charm and other natural lakes and streams have been used as irrigation carriers. As an appendage to the system, water naturally entered and left Lake Charm via the same opening as the water level in the system rose and fell.

In 1969, as part of the reconstruction of the Torrumbarry Irrigation System, a regulator was placed across the inlet to Lake Charm. During large floods along the No. 7 or Lakes Channel, the regulator was overtopped and uncontrolled inflow to Lake Charm occurred. At all other times there was controlled inflow to the lake and no outflow, except for evaporation and diversion for irrigation.

Since construction of the regulator between Lake Charm and Little Lake Charm there has been a gradual accumulation of salt in the lake and the salinity had steadily risen to approximately 5,000 EC. With the exception of the infrequent flood overtopping the regulator, the only removal of salt from the lake was via irrigation diversion.

A system of flushing works has been constructed to discharge saline waters from Lake Charm to the River Murray during periods of high River Murray flows. These works comprise a 150 ML/d pump station, and a channel to convey these pumped flows to Sheepwash Creek. Lake Charm is now currently moderately saline (typical salinity around 3,500 EC), and has consequently been isolated from the irrigation supply system since 1969.

Lake Charm



MID-MURRAY STORAGE PROJECT

OPERATING RANGE

Operating Range for Lake Charm is 73.0m to 73.92m AHD.

The current operating range for Lake Charm is typically 73.52 to 73.92 AHD.

The proposed operating range for Lake Charm is 73.0 to 73.92 AHD, which is the design operating range of the Lake Charm flushing pumps. The suction pipes for some private diversion pumps which operate from the lake may require extensions. This issue will be the subject of further investigation.

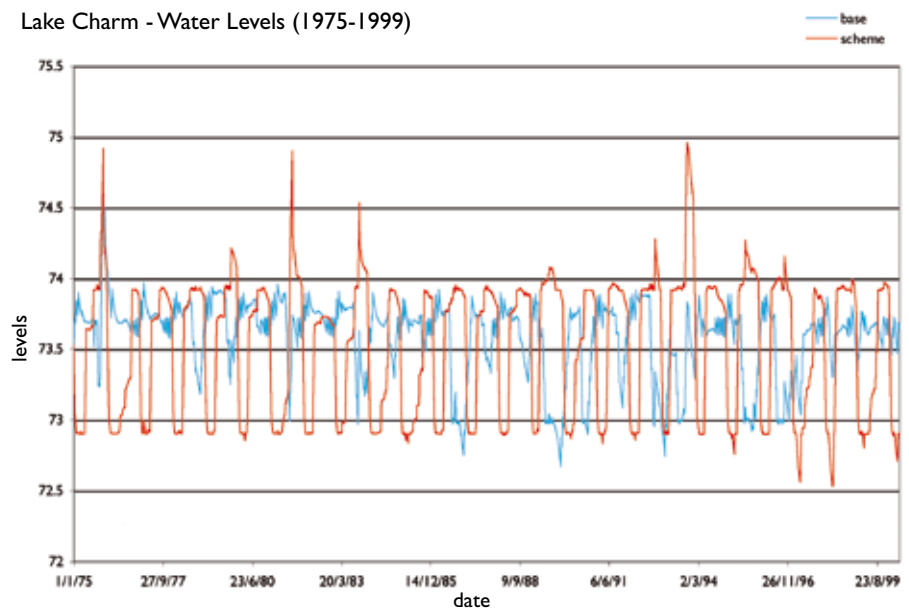
While the maximum and minimum operating levels will be unchanged, the lake will experience greater seasonal fluctuation in water levels, as can be seen in the graph below.



Lake Charm sunset. Photo – Tom Lowe

The lake will continue to be filled via the Torrumbarry Systems No.7 channel.

Lake Charm - Water Levels (1975-1999)



FUTURE LAKE OPERATION

When Lake Charm becomes part of the Mid-Murray Storage system, normal operation would result in the lake being filled during the period from May to November each year. The lake will continue to be filled via the Torrumbarry Systems No.7 channel.

The existing Lake Charm flushing pumps will be used to discharge water from Lake Charm when required in January and February, or earlier in the season if possible. Existing flushing pump operating rules (which restrict operation to periods when downstream salinity impacts can be minimised) will need to be reviewed and modified to support the inclusion of Lake Charm as a Mid-Murray Storage.

Level marker peg showing maximum operating range of 73.92m AHD. Photo – Tom Lowe





Ski boat racing at Lake Charm Photo – Tom Lowe

Recreation at Lake Charm – which includes yachting, water skiing, recreational fishing and swimming - should not be adversely affected by the proposed operating regime.

RECREATION AND BOATING

The lake will be filled to the upper level of the operating range during May to November. As flows are discharged during January and February to supply irrigation demands, the lake will experience lower operating levels in February through to the end of the water sports season in April. In some seasons the lake could be approximately 0.5 to 1 metre lower than historic levels.

The seasonal fluctuation in water levels is not expected to have a noticeable effect on the recreational activities and values of the lake, as the lake is relatively deep. The recreation at Lake Charm - which includes yachting, water skiing, recreational fishing and swimming - should not be adversely affected by the proposed operating regime.

In summary, no significant effects on tourism and recreation are expected at Lake Charm when it operates as a Mid-Murray Storage.

WATER QUALITY

The increased through flow through the Lake is expected to result in improved water quality, with lake salinity levels predicted to fall over time. An increase in water quality may be of benefit to gardens, maintenance of hot water systems, car washing, etc. Local residents pumping from the lake are likely to experience a minor increase in pump costs for water for stock and domestic and irrigation purposes, and the potential extension of suction lines, but it is likely to be quite small in comparison to the overall benefits.

MID-MURRAY STORAGE PROJECT

FREQUENTLY ASKED QUESTIONS

Q
What will be the impact of groundwater inflows at Lake Charm during the low operation periods?

A
It is expected that the regular movement of water to and from Lake Charm will reduce salinity over time.

Q
Where will the water come from to supply Lake Charm?

A
Water to be stored in Lake Charm will be diverted from the River Murray at Torrumbarry Weir and delivered to Lake Charm through the Torrumbarry systems No. 7 channel.

Q
How will water be drawn from Lake Charm?

A
The water from Lake Charm would exit via the Lake Charm Pump Station and be delivered to the Sheepwash Creek and from there to the Loddon River and ultimately the River Murray.

Q
What will be the effect on water quality in Lake Charm?

A
Modelling indicates a gradual decline in salinity at Lake Charm.

Q
What impact will fluctuating levels have on irrigators pumping out of the lakes?

A
Because the current operating level is to be retained, no impact on irrigators and diverters is expected. Further investigation will be undertaken to confirm if this is the case.

MID-MURRAY STORAGE PROJECT OVERVIEW

- The Mid-Murray Storage Project will contribute up to 19,000 megalitres of water annually to the Snowy River.
- Uses more existing storage capacity of Lake Boga, Lake Charm and Kangaroo Lake.
- “Through flows” in the Lakes keeps the environment healthy.
- Lake Charm will continue to benefit from recreation and tourism.
- A viable irrigation system – providing a more reliable water supply and improving profitability for irrigators.
- Improved water quality in the Lakes.
- Cost sharing opportunities for local irrigators.
- For more information, see Overview Fact Sheet.

FURTHER INFORMATION

Other fact sheets available on the website are:

- Project Overview
- Overview of the Torrumbarry Area
- Lake Boga
- Kangaroo Lake

Abbreviations used in this fact sheet

ML = megalitres

ML/d = Megalitres per day

AHD = Australian Height Datum