

MANAGING THE MENINDEE LAKES IN 2006-2007

May 2006

Information Paper 2006-1

State
water



NSW Government

DEPARTMENT OF NATURAL RESOURCES

INTRODUCTION

The drought is continuing throughout North Western NSW and Southern Queensland, and flows in the Darling River and inflows to the Menindee Lakes have remained low. As a consequence, the water levels in the lakes have continued to fall.

This paper provides information about the management of flows upstream and downstream of the Lakes during the last year and the proposed management of flows and water supply in 2006-07, if conditions remain dry.

WATER AVAILABILITY

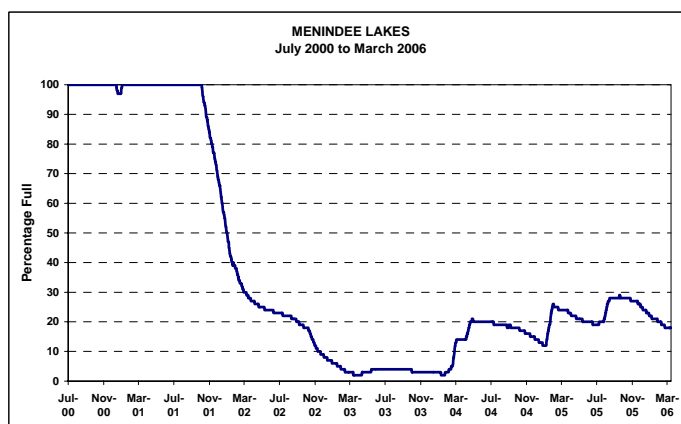
The Menindee Lakes were last full in 1999/2000.

Rainfall in the upstream catchment in January 2005 resulted in a total flow of about 340,000 megalitres (ML) past Wilcannia in January and February, and resulting in an additional 323,000 ML flowing into the Menindee Lakes.

A further 160,000 ML flowed past Wilcannia in July and August 2005 about 150,000 ML flowing into the lakes.

*Note; 1,000 cubic metres = 1 megalitre
 1000 megalitres (ML) equals one gigalitre (GL).
 The Menindee Lakes full supply level is about 1,600GL
 The system can be surcharged during floods up to about 2,000GL

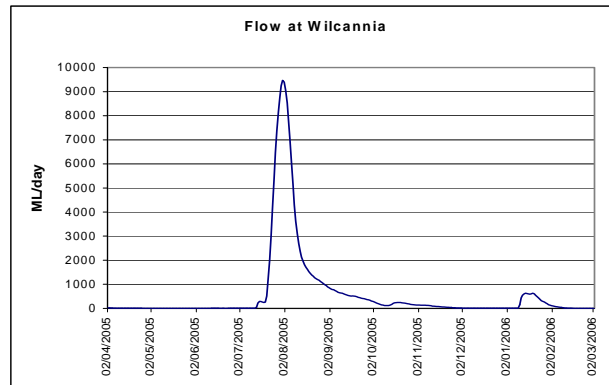
Fig 1: Storage in Menindee July 2000 to March 2006



Since 2000 with low rainfall in the catchment areas and low inflows the water storage levels in the Menindee Lakes has continued to reduce. The two larger lakes, Menindee and Cawndilla have been dry since 2003 and the inflows that have occurred have been stored in Lake Pamamaroo and Lake Wetherell.

During the same period releases from the Lakes have been necessary to meet local and downstream needs in New South Wales. Evaporation has also been very high, especially in spring and summer of 2005-06.

Fig 2: Flow at Wilcannia from 1 April 2005 to 30 April 2006



Between 1 April 2005 and 30 April 2006, a total of 93,000 ML has been released to the Lower Darling River from Lakes Wetherell and Pamamaroo.

Since September 2005, the storage volume has reduced from 488,000 ML to 286,000 ML (17 % of capacity) at the end of April 2006.

Releases from the lakes are currently being made in order to target a passing flow of about 90 ML/day at Weir 32. This is well below the recommended flows that would be made if the lakes had more water available.

Table 1: Total Volumes in Lakes Wetherell and Pamamaroo – June 2005 to March 2006 (GL)

Storage volume	Jun 05	Jul 05	Aug 05	Sep 05	Oct 05	Nov 05	Dec 05	Jan 06	Feb 06	Mar 06	Apr 06
	334	392	484	486	469	433	381	349	310	293	286

MANAGEMENT OF WATER WITHIN THE LAKES

The management of water stored in the Lakes system has been to minimise evaporation by managing the distribution of volumes between Lakes Wetherell and Pamamaroo.

The Department of Natural Resources assumes that if there is minimum inflows during the next 2 years, the best strategy is to preferentially release water from Lake Wetherell until the water is off the shallow floodplain section of the lake. This ensures that the water is stored in the deeper river channel section.

Releases are then made from Lake Pamamaroo exclusively until the lake is empty, after which the remaining water in Lake Wetherell is released. This strategy minimises the water lost to evaporation by minimising the surface area.

WATER MANAGEMENT PROPOSED FOR 2006/07

i. Priority for water supply

The highest priority for the immediate management of the Menindee Lakes is to ensure water supply for Broken Hill and Menindee and for high security water entitlement holders for at least 18 months without further inflows.

At mid-May 2006, there is just sufficient water stored in the Menindee Lakes to ensure 18 months supply to Broken Hill and Menindee.

ii. River flows

During autumn 2006, flows in the Lower Darling River have been reduced below the minimum flows recommended in the Water Sharing Plan for the Murray and Lower Darling Rivers. This low flow release strategy will continue through winter while ever there are no adverse water quality or environmental impacts.

iii. Town water supply

At the beginning of May 2006, there was sufficient water to meet town water supply requirements for 18 months.

Should drought conditions continue the proposed operations will be continuously reviewed to ensure water supply needs of Broken Hill, Menindee and stock and domestic purposes are maintained for as long as possible.

Any inflows into the Menindee Lakes during 2006-07 will be stored in the first instance to ensure there is at least 18 months supply for town water and stock and domestic purposes before being made available for irrigation.

iv. Irrigation supply

Water is available for all licensed high security irrigation in the Lower Darling River valley in 2006-2007.

At this stage, unless there are further inflows that provide enough water to extend town water supply beyond 18 months, water for licensed General Security irrigation will not be made available.

Unused general security water from the 2005/06 season may be carried over to a maximum of 50% of allocations for use in 2006/07. Consistent with the Water Sharing Plan for the Murray and Lower Darling Rivers, irrigators with on-farm storage are allowed to carryover more than 50% of their used allocation.

WATER ORDERS

From 1 July 2006, State Water Corporation will be enforcing the water access licence condition to order water. Water orders are required to:

- Ensure equity amongst all customers
- Provide State Water with advice regarding which water access licence is to be debited from. (Under the new *Water Management Act 2000* customers now have multiple water access licences)
- Reduce the risk of end of system shortfalls
- Provide more accurate data for Available Water Determinations (allocation announcements)

Initially all water orders should be lodged with Customer Service Officer Jeff Finch. Eventually all water orders will be registered on the Water Information Exchange system that is currently being developed.

Jeff Finch
Customer Service Officer
Fax: (03) 5051 6258
☎: (03) 5051 6215
e-mail: Jeff.Finch@statewater.com.au

Volumetric penalties up to five (5) times the volume of water extracted without a water order will be applied from 1 July 2006.

HOW IS CARRYOVER MANAGED

Irrigators who do not use all their allocation this year will automatically be allowed to carryover and use the unused volume in 2006/07.

All irrigators without an on-farm storage can carryover a maximum of 50% of their entitlement.

Irrigators with an on-farm storage can carryover a maximum of 50% of their entitlement plus the airspace volume in the storage at 30 June. If storages are empty the maximum volume of carryover is 50% of entitlement plus the volume of the storage.

The Water Sharing Plan specifies that water available by way of carryover will be reduced to account for the additional evaporation losses that it will incur. Based on modelling of the likely evaporation from the Lakes and the projected level of carryover, the volume of carryover for each licence will be reduced by 5% at the start of the 2006/07 season.

WATER TRADE

Customers should consider their water requirements for next season carefully.

Irrigators who determine that they will not have sufficient volume to undertake their watering program have the option of buying water this season, 2005/06 and carry over unused general security water into the 2006-07 season.

Alternatively, those water users who will have surplus water or do not need carryover water for 2006/07 can sell any water that they do not need this year.

All water allocation assignments (temporary trades) must be lodged with State Water by 5 pm on Wednesday 31 May.

HOW WILL FUTURE INFLOWS BE MANAGED

Until there is sufficient water in the Menindee Lakes to assure Broken Hill 18 month supply, extractions upstream of Menindee from unregulated flow will be closely monitored. Irrigators access to unregulated flows will be restricted or embargoed until there is enough water to guarantee Broken Hill water supply for 21 months.

If there is a significant inflow, how the water is managed will depend on the volume. The initial inflows will be stored to ensure that Lake Wetherell and Pamamaroo are full.

If there is additional water available, depending on how much, decisions have to be made about how this is managed. For example, there will be major 'losses' as the first water that passes into Lakes Menindee and Cawndilla will soak into the bed of the lakes. If there is only enough water to soak into the bed it may be best to allow the smaller volumes to flow down the Lower Darling, and be stored in Lake Victoria.

All of these decisions will have to be made depending on the circumstances at the time, and in cooperation with the Murray-Darling Basin Commission.

PROBABILITIES OF FUTURE INFLOWS

Long-term climate and river flow records would suggest that there is a high likelihood of significant inflows into the Menindee Lakes in any 12 month period.

However, given the highly variable nature of flow in the Darling River, the water management arrangements have been developed on a worse-case scenario, that assumes minimum inflows

In the short term, probabilities for inflow to Menindee Lakes over a 12 month period from 1 July 2007 are;

- 90% (9 in 10) chance of 279 GL inflows
- 75% (3 in 4) chance of 654 GL inflows
- 50% (1 in 2) chance of 1,590 GL inflows

The longer range rainfall forecasting tools are suggesting that there is about a 1 in 2 chance that the rainfall throughout New South Wales until the end of July will be about average. However, because of the dry catchment conditions, average rainfall will not result in average stream flows.

WHAT IF INFLOWS DO NOT OCCUR?

If there has been no significant inflow into the Menindee Lakes by July 2007, the Department of Natural Resources will re-assess Broken Hill's security to determine the strategy required to maximise supplies available to meet essential supplies.

As was done in January 2004 flows downstream of Weir 32 may be reduced or stopped to ensure supply. This decision will only be taken as a last resort.

GROUNDWATER ACCESS

In 2003/04, irrigators were granted groundwater licences enabling them to access small groundwater sources close to the Darling River.

If general security allocations are zero, and if licensed irrigators need to supplement their allocations, these works can be used to access supplies up to the volume of the ground water licence.

If the General Security allocation increases or irrigators have carryover, they should first contact Jeff Finch of State Water to verify their water accounts and then contact Peter Winton of the Department of Natural Resources (telephone (03) 5051 6211) to determine the volume of groundwater available.

FURTHER INFORMATION

Information regarding the management of the Menindee Lakes is available from the offices of the NSW Department of Natural Resources and State Water at:

Buronga	Enterprise Way Buronga, NSW, 2739	Phone 03 50516200 Fax 03 50516259
Albury	Dean Street Albury, NSW, 2640	Phone 02 60248800 Fax 02 60414223
Deniliquin	Edwardes Street Deniliquin, NSW, 2710	Phone 03 58983900 Fax 03 58813465
Menindee	Candilla Street Menindee, NSW, 2879	Phone 088094401 either Fax 08 80914265

ISBN: 0 7347 5727 1

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