

# MANAGING THE MENINDEE LAKES IN 2003

June 2003

Information Paper No. 6

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## INTRODUCTION

This is the sixth information paper prepared in 2002-03 to explain the on-going management of the Menindee Lakes during the continuing drought.

Since the last information paper was distributed in early May 2003, flow increased to 1200 megalitres per day (ML/day) at Wilcannia on 14<sup>th</sup> May but has since fallen to less than 250 ML/day and will continue to fall unless there is more rain throughout the catchment area.

The volume that has passed into Lake Wetherell will help secure town water supply to Broken Hill and Menindee through 2003 and 2004. However, there is insufficient water currently available to meet other consumptive purposes after June 2003.



Darling River downstream of Menindee main weir, May 2003



**Department of Infrastructure, Planning & Natural Resources  
Murray Region**

## WATER MANAGEMENT

### 1. Flows

The longest recorded period of no flows in the Darling River at Menindee, 362 days, occurred in 1902/03. In 2002-03, there was 203 days of no recorded flow into the Menindee Lakes from 14<sup>th</sup> Sep 2002 to 5<sup>th</sup> April 2003. Since flows commenced on 5<sup>th</sup> April 2003, a total of approximately 95,600 ML has passed Wilcannia, resulting in an additional 63,600 ML being available in Lake Wetherell.

### 2. Releases

From November 2002 to April 2003, releases to the Lower Darling River were from Lake Wetherell and Lake Cawndilla. Since April releases have been made from Lake Wetherell only.

With Lakes Pamamaroo and Menindee now dry and only a residual pool in Lake Cawndilla, releases can only be made from Lake Wetherell.

Lake	Nov 02	Dec 02	Jan 03	Feb 03	Mar 03	Apr 03	May 03	Jun 03
Wetherell	4,550	4,650	1,860	1,052	462	1,330	1,550	1,500
Cawndilla	21,000	7,600	7,600	9,255	8,010	3,200	2,430	180

**Table 1: Releases from the Menindee Lakes as at 15<sup>th</sup> June 2003**

### 3. Remaining Volumes

- The estimated volume of water remaining in Copi Hollow is 4,000 ML.
- The estimated volume of water remaining in Lake Wetherell is 63,700 ML.

Collectively, the water in Lake Wetherell and Copi Hollow is reserved to meet the town water needs of Broken Hill and Menindee until December 2004.

- The estimated volume of water remaining in Lake Cawndilla is 7,500 ML.

The residual pool at Lake Cawndilla is no longer accessible for diversion.

<b>Lake</b>	<b>Est. Volume at 21 May 03</b>	<b>% capacity</b>	<b>Est. Volume at 20 June 03</b>	<b>% capacity</b>
Lake Wetherell	64,276 ML	33 %	63,700 ML	32.5 %
Lake Pamamaroo	0	0	0	0
Copi Hollow	4,500	38	4,000	34
Lake Menindee	0	0	0	0
Lake Cawndilla	13,451	2	7,500	1
<b>Total</b>	<b>82,227 ML</b>	<b>5.09 %</b>	<b>75,200 ML</b>	<b>4.65 %</b>

**Table 2: Storage levels at 20<sup>th</sup> June 2003**

**WHY BROKEN HILL AND MENINDEE NEED 70,000 MEGALITRES**

The priority for water supply in drought is firstly for town water supply and for basic landowner rights (stock and domestic purposes), before irrigation needs.

The licensed entitlement issued to Australian Inland for Broken Hill and Menindee town water supply is for 9,975 megalitres per year. An additional entitlement for 25 megalitres per year is issued for the school oval and sports ground in Menindee.

The combined average annual water use in Broken Hill and Menindee is approximately 7,500 ML.

To ensure that there is sufficient water available to meet town water requirements to the end of 2004, provision must be made for evaporation losses over the coming 18 months and for the volume in Lake Wetherell and Copi Hollow that will not be accessible for diversion.

Considering these issues, without any inflows into the Menindee Lakes it is estimated that up to 70,000 megalitres is needed to ensure town water supply to Broken Hill and Menindee.

## EMERGENCY WATER SUPPLY

While there is sufficient water quantity to meet town water supply, there is no water available for release from the Menindee Lakes after June 2003 to meet downstream needs for stock and domestic supplies or for irrigation.

There is a need to provide emergency water for these purposes to ensure that every attempt is made to provide for essential stock and domestic needs and for the survival of permanent crops as the drought continues.

The produce from citrus, horticulture and vineyards in the Lower Darling River Valley, including the Menindee area, contributes up to \$30 million per year to the economy of far-west New South Wales.

In an attempt to minimise the potential for crop death, the Department of Infrastructure, Planning & Natural Resources, NSW Agriculture and local growers have worked together to identify the minimum water requirements that may be needed to help keep the fruit trees and vines alive.

**While no water will be released from the Menindee Lakes after June 2003, licensed water users will be able to pump minimum volumes from the remaining river pools under the following interim arrangements.**

- i. **Period the arrangements apply:** The interim arrangements will apply from 1<sup>st</sup> July 2003 to 30<sup>th</sup> September 2003, unless advised otherwise by the Department of Infrastructure, Planning & Natural Resources.
- ii. **Stock and domestic purposes:** Diversions must be kept to an absolute minimum.  
  
Water diverted for licensed stock and domestic purposes must not be used for commercial irrigation.
- iii. **Anabranch replenishment:** As there is no water available for diversion from Lake Cawndilla, there is no ability to provide stock and domestic supplies to the Great Anabranch.

iv. **Irrigation:** Licensed irrigators will be allowed to divert the following total volumes during the period 1<sup>st</sup> July 2003 to 30<sup>th</sup> September 2003.

Diversions are allowed from the authorised pump sites only.

<b>citrus</b>	<b>1.0 megalitres per hectare planted</b>
<b>orchards</b>	<b>0.4 megalitres per hectare planted</b>
<b>vineyards</b>	<b>0.25 megalitres per hectare planted</b>

There is no guarantee that these volumes will prevent plantings from defoliation or death. Additional measures such as severe canopy pruning and best application and monitoring of water will also contribute. Increasing surface water salinity is also a significant threat.

There has been a number of requests that water should be made available to irrigate lucerne and perennial pasture. However, there is simply not enough water to meet all requirements. The comparative costs of re-establishing pasture compared to fruit trees and vines have also been considered in the decision not to allow irrigation of pasture after 30<sup>th</sup> June 2003.

### **ASSISTANCE FOR IRRIGATORS**

An information paper “*Rising Salinity in the Murray and Darling Rivers and Implications for Horticultural Activities*” was developed by the Murray Darling Water Management Action Plan (MDWMAP) Committee.

This paper was mailed out to all licensed irrigators in the Lower Darling River valley during 2002. For a copy, please contact Jeremy Giddings at NSW Agriculture, Silver City Highway, Dareton, Phone: 03 50274409, Fax: 03 50274319.

Under MDWMAP, Salt Kits are also available which include a hand held meter for salinity, and a soil test kit. The kits normally retail for over \$100, but are currently available for \$48.

MDWMAP will also pay for a bus to enable Lower Darling irrigators to visit the Bourke area and see how plantings survived during similar water restrictions during the 2002-03 summer.

MDWMAP is also funding a project with NSW Agriculture and CSIRO to record and monitor the impacts on crops of irrigating with minimal amounts of high salinity water. This will certainly help managing in similar circumstances in the future.

## WATER QUALITY

The water quality of the Lower Darling River is continuing poor with blue-green algae blooms continuing in some locations and increasing high salinity.

### Salinity

The continuing dry weather, falling levels in the Menindee Lakes and the poor quality of water passing into the Menindee Lakes has caused surface water salinity levels to rise.

Salinity in Copi Hollow recently reached 1,800 EC, but is currently around 1,700 EC. However, unless there are inflows that dilute the existing salinity, as evaporation causes the salts to concentrate, salinity levels are expected to increase in the coming months.

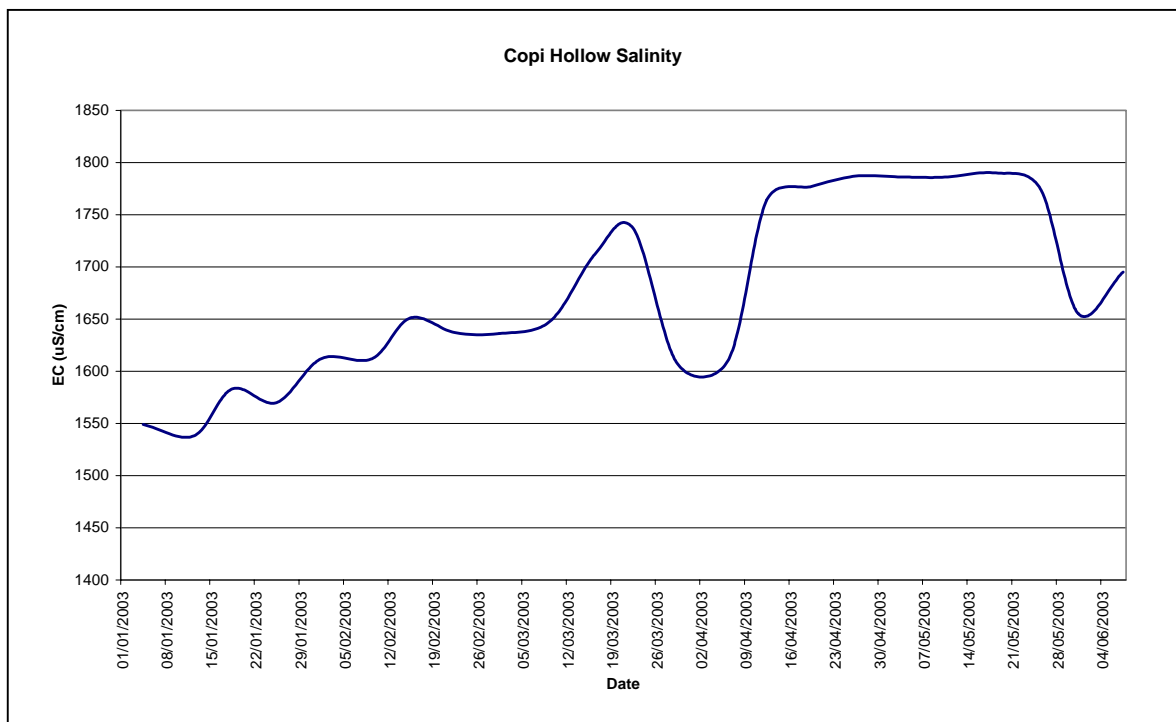
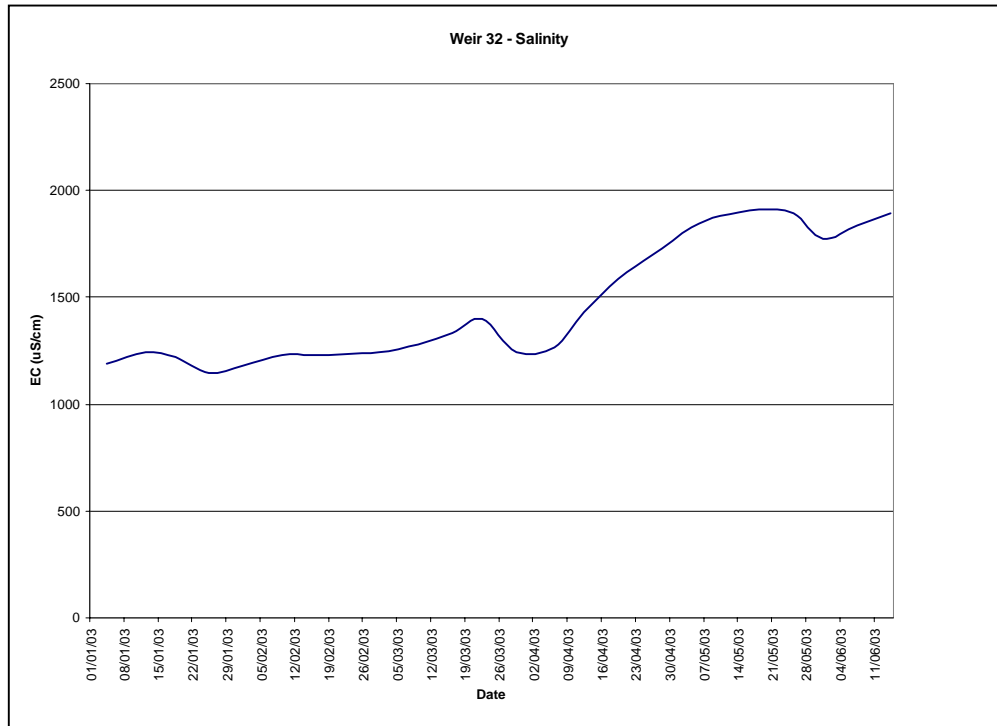


Figure 1: Salinity in Copi Hollow

Salt concentrations at greater than 1,500 EC will cause detrimental impacts on soils and irrigated crops. Water at salt concentrations greater than 2,000 EC will become increasingly unpalatable for human consumption, but the salt present in those concentrations does not pose a health risk to healthy people.

It is expected that the salinity of water released to the Lower Darling River will continue to increase until fresher inflows occur and may exceed 4,000 EC in the coming months.



**Figure 2: Salinity at Weir 32**

### **Blue-Green Algae**

As the drought continues, blue-green algae blooms have persisted in the Darling River and the Menindee Lakes storage.

The Department of Infrastructure, Planning and Natural Resources has increased its water quality monitoring and reporting program. Since February, algal blooms at high alert levels have been recorded in the upstream section of Lake Wetherell and in Copi Hollow with blooms at medium alert levels in Lake Cawndilla.

Given the current low water levels within the lakes, algae blooms may continue throughout the cooler months and people need to remain vigilant and exercise caution if they suspect there is blue-green algae in the water.

It is anticipated that with inflows to the lakes system and given the current weather trends, blue-green algae counts should be reducing. Also, the rate of algae growth should slow with cooler water temperatures. However, it is important to be aware and to avoid drinking, cooking or being in contact with discoloured water or water which has a musty odour.

## FURTHER INFORMATION

Information regarding the management of the Menindee Lakes is available from the offices of the **NSW Department of Infrastructure, Planning and Natural Resources** at:

Buronga	Enterprise Way Buronga, NSW, 2739	Phone 03 50219400 (Mike Erny) Fax 03 50213328
Albury	Dean Street Albury, NSW, 2640	Phone 02 60416777 (David Harriss) Fax 02 60414223
Deniliquin	Edwardes Street Deniliquin, NSW, 2710	Phone 03 58819200 (Digby Jacobs) Fax 03 58813465

or at the office of **State Water** in Menindee:

Menindee	Candilla Street Menindee, NSW, 2879	Phone 08 80914401 (Mike Arandt) Fax 08 80914265
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or visit the Department's **website** at:

[http://www.dlwc.nsw.gov.au/care/water/rural\\_water\\_mngmt/index.html#Murray](http://www.dlwc.nsw.gov.au/care/water/rural_water_mngmt/index.html#Murray)



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