

MANAGING THE MENINDEE LAKES IN 2003-04

December 2003

Information Paper No. 8

INTRODUCTION

This is the eighth information paper prepared during the current drought to provide information about the on-going management of the Menindee Lakes. It forms part of a series of regional information papers published by the Department of Infrastructure, Planning and Natural Resources (DIPNR) on natural resources management.

Over the past two and a half years the flows into the Menindee Lakes have been the lowest recorded for any other similar period. A comparison against other drought periods since European settlement, Figure 1, clearly demonstrates the severity of the current dry period.

DIPNR is continuing to work with Australian Inland, State Water and regional industry groups to manage flows and the Menindee Lakes to secure water supply as drought continues.

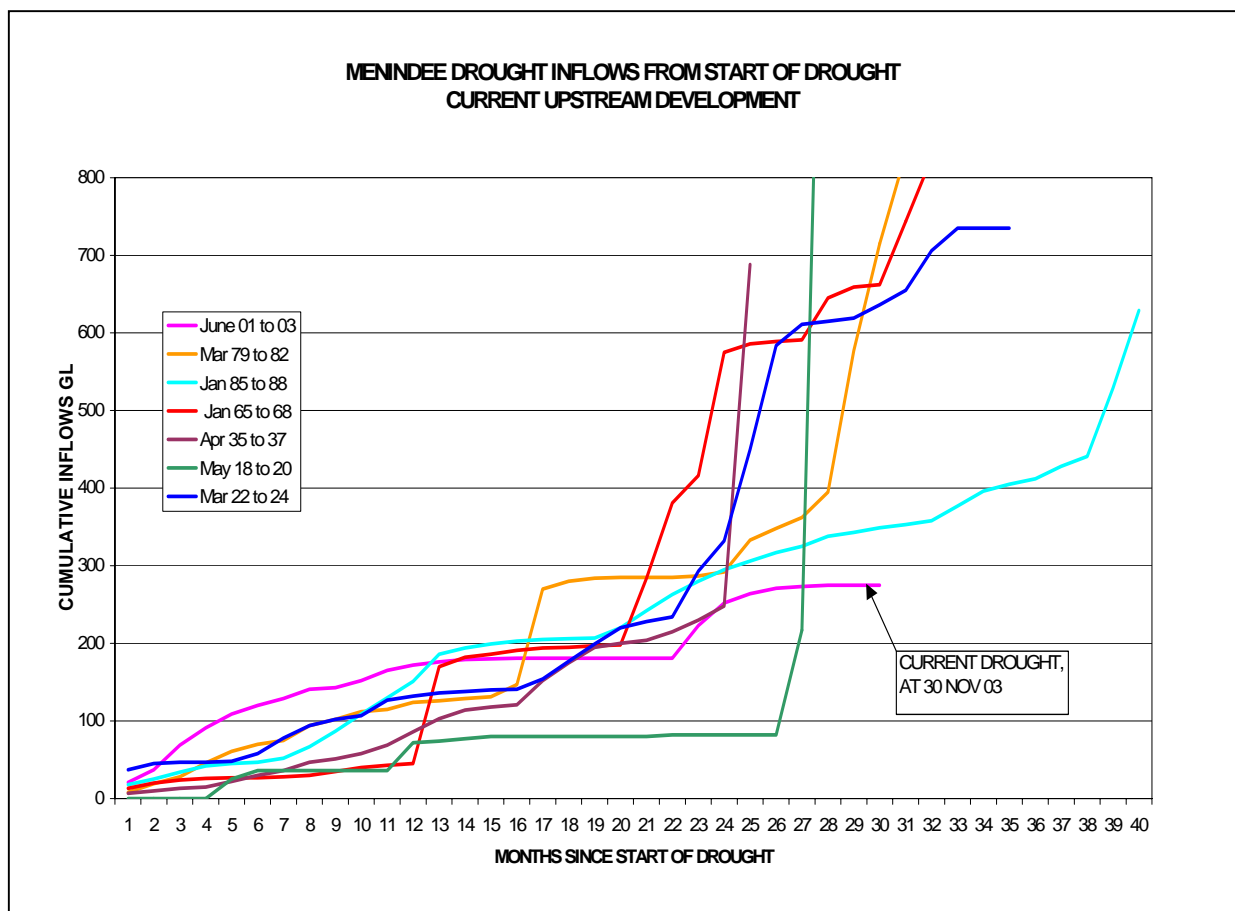


Fig 1: Inflows since commencement of drought

WATER MANAGEMENT

i. Flows in the Darling River upstream of Menindee

Since the last information paper was distributed in early July 2003, there was a small increase in flow at Wilcannia in early September 2003, but the river has since ceased to flow upstream of Menindee.

A flow in the Darling River upstream of Wilcannia occurred as a result of flows in the Border Rivers at the beginning of October. The flow in this event at Goondawindi peaked at 5,600 megalitres per day (ML/d) with a total volume of 4,600 gigalitres (GL). By the time the flow reached Mungindi, the peak had reduced to 1,600 ML/d with a total volume of 2,100 GL.

By the time the flows reached Bourke during November, the peak was reduced to 650 ML/d.

Because of the dry state of the river, losses were high and the flow failed to reach Wilcannia.

A more recent flow has passed in to the Barwon-Darling River, with flow at Goondawindi peaking at 5,500 ML/d on the 10th of December. A preliminary estimate of the volume that may reach the Menindee Lakes is 5 GL but this is an early estimate and will depend on losses along the river, especially between Wilcannia and Lake Wetherell.

ii. Flows downstream of Menindee

Since April 2003, releases have been made from Lake Wetherell only as there is no water able to be released from any of the other lakes in the system.

The releases have ranged between 150 and 190 ML/d and have been made to meet the minimum town water, stock and domestic and irrigation requirements for citrus, grapes and other fruit crops. Since July 2003, no water has been available for other irrigation.

Lake	Apr 03	May 03	Jun 03	Jul 03	Aug 03	Sep 03	Oct 03	Nov 03
Wetherell	1,330	1,550	1,560	1,550	1,860	2,260	3,940	3,140

Table 1: Releases from the Menindee Lakes – April to November 2003 (gigalitres)

At the lower end of the system, flow at Burtundy weir during this time have ranged between 10 and 20 ML/d with occasional small increases as a result of local rainfall.



Figure 2: Burtundy weir

iii. Volume remaining in the lakes

The water remaining in the Menindee Lakes system is currently only 2.3 percent of the storage scheme's capacity.

Water available for consumptive use is limited to Lake Wetherell, which includes Lake Tandure, and to Copi Hollow.

Only a small residual pool remains in Lake Cawndilla which is expected to dry soon and a residual pool remains in Lake Speculation, which has been separated from the main body of Lake Menindee for over a year.

Lake	Est. Volume at 20 th Jun 03	% capacity	Est. Volume at 20 th Nov 03	% capacity
Lake Wetherell	63,700 ML	32.5	43,525 ML	22.6
Lake Pamamaroo	0	0	0	0
Copi Hollow	4,000 ML	34	2,500	21.0
Lake Menindee	0	0	0	0
Lake Cawndilla	7,500 ML	1		
Total	75,200 ML	4.65 %	46,025 ML	2.3%

Figure 3: Storage levels at the end of November 2003

FUTURE ACCESS TO WATER

Surface Water Availability

Since July 2003 access to water for irrigation has been limited to permanent plantings including citrus, grapevines and for other orchard crops.

The volume available was estimated by NSW Agriculture and DIPNR to be sufficient for production and was limited to the area planted at 30 June 2003.

In September 2003, DIPNR announced increases in water availability for permanent plantings in the Menindee area and the Lower Darling River Valley. This met the increasing irrigation needs of the crops as the weather warmed up.

Similarly, from January the crop requirements will increase and the following volumes will be available for irrigation until the end of March 2004.

CROP TYPE	TOTAL WATER AVAILABLE 1 st January 2004 to 31 st March 2004
Vines	6.1 ML/ha
Citrus	7.8 ML/ha
Other Orchards	8.0 ML/ha
All Other	0.0 ML/ha

Access to water for stock and domestic purposes is not limited, where that water is available, but users should be very conservative with use.

There is no water available to be diverted to the Great Anabranche for stock and domestic purposes.

Water for town water supplies to Broken Hill, Menindee and Sunset Strip is managed by Australian Inland while water supply for Pooncarie is managed by Wentworth Shire Council. Any restrictions on town water use will be announced by Australian Inland or Wentworth Shire Council respectively.

Groundwater Access

Groundwater availability in the Lower Darling River valley is limited to a lens of fresh water adjacent to the Darling River. Most other groundwater is very salty, with salinity in many places exceeding that of seawater.

In an attempt to provide additional water for stock and domestic and irrigation supply, some groundwater bores have been approved in the past six months.

To protect the groundwater resources, a statutory embargo was gazetted in September. The embargo on new applications for groundwater for irrigation applies to a zone of 5 kilometres either side of the Darling River, extending from the influence of Weir 32 to a zone 5 kilometres north of the Murray River, between the Murrumbidgee Junction and the SA border.

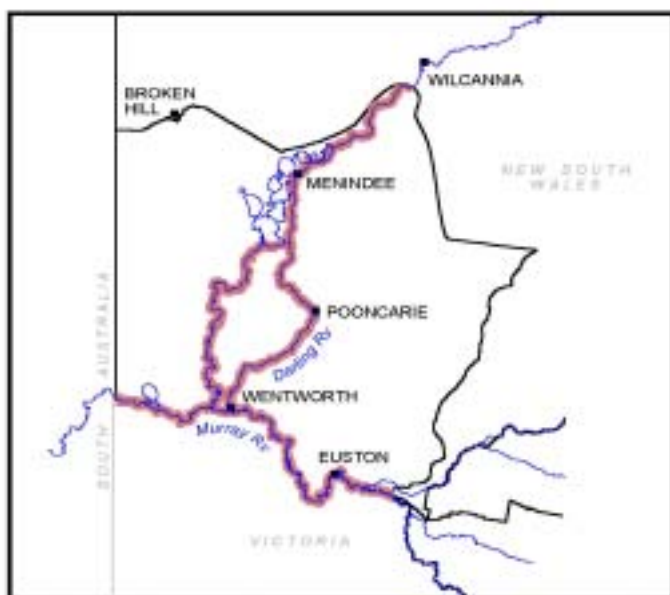


Figure 4:

Map of the Lower Murray Darling area showing the fresh groundwater lens

The embargo has been implemented to protect the supply and quality of water for existing irrigators and does not apply to stock, domestic, farming and town water supplies.

Holders of existing surface water entitlements irrigating horticultural crops, as at 1st July 2003, are also exempted from the embargo.

PROTECTING TOWN WATER SUPPLY

Under legislation, town water supply is the highest priority for management, and throughout the drought, government agencies have worked together with Australian Inland to ensure that water supply for Broken Hill has the highest priority.

It is generally desirable to ensure town water supplies extend at least 18 months into the future. However, with the continuing drought this has not been possible.

The current water available in the Menindee Lakes is estimated to be sufficient to meet Broken Hill's needs through until September 2004 with some additional reserves available in local water storages.

However, if releases were continued from Lake Wetherell to the Lower Darling River below Weir 32, this security of supply would reduce pretty quickly.

To protect town water supply for Broken Hill and Menindee, releases from Lake Wetherell to the Lower Darling River downstream of Weir 32 will cease from the 31st December 2003.

To further protect water supply for Broken Hill and Menindee, State Water will be undertaking temporary works to seal Weir 32 to prevent water leaking downstream.

EMERGENCY WATER SUPPLY FOR IRRIGATION

Without significant inflows to the lakes it is not possible to continue to supply water users in the Menindee area and downstream of Weir 32 from the remaining water in Lake Wetherell.

i. Irrigation upstream of Weir 32

Approval has recently been given for the installation of a floating pump system to recover additional water from the residual pool of Lake Tandure. This water would not be available for consumptive use without pumping and the volumes pumped will be available for irrigation upstream of weir 32.

ii. Irrigation downstream of Weir 32

Without flows downstream of Weir 32, water supply for stock and domestic will be very limited.

Irrigators with permanent plantings between Weir 32 and Ashvale station will be able to divert from the residual pools of the Darling River to supplement any groundwater availability.

Volumes pumped cannot exceed those previously mentioned.

WATER QUALITY

The water quality of the Lower Darling River is continuing poor with increasing high salinity. A high blue green algae alert currently applies to the Burtundy reach.

Lower Darling River - Salinity

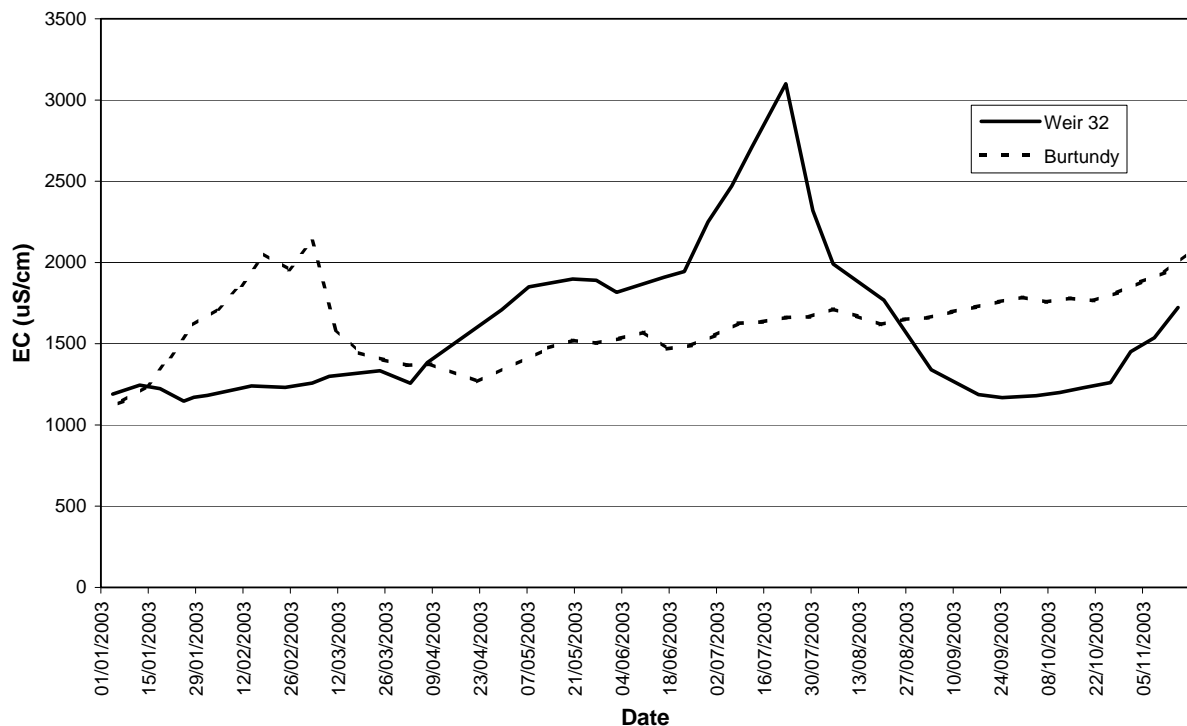


Figure 3: Salinity at Weir 32 and Burtundy

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.

Since the beginning of the year, salinity in **Weir 32** peaked at 3,100 EC (early July), but is currently around 1,700 EC. However, unless there are inflows that dilute the existing saline water, salinity levels are expected to increase in the coming months.

Salinity at **Burtundy** peaked at 2,130 EC earlier in the year (early March) and subsequently decreased to 1,350 EC in late April. However, salinity has steadily increased and is currently at 2,060 EC.

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 3,000 EC in the coming months.

Blue-Green Algae

The Department is continuing its algae monitoring program and will continue to provide advice when necessary. Recent monitoring has not detected any cases of blue green algae within the Menindee Lakes.

However, it is expected that algae blooms will become more prevalent in the coming summer months, particularly with no flow downstream of Weir 32. It is important to be aware of, 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 Fax 03 50213328	(Mike Erny)
Albury	Dean Street Albury, NSW, 2640	Phone 02 60416777 Fax 02 60414223	(David Harriss)
Deniliquin	Edwardes Street Deniliquin, NSW, 2710	Phone 03 58819200 Fax 03 58813465	(Digby Jacobs)

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

Menindee	Candilla Street Menindee, NSW, 2879	Phone 08 80914401 Fax 08 80914265	(Mike Arandt)
----------	--	--------------------------------------	---------------



Department of
Infrastructure, Planning and Natural Resources
Murray-Murrumbidgee Region