River Murray
Water Resources Report

South Australia

Government of South Australia

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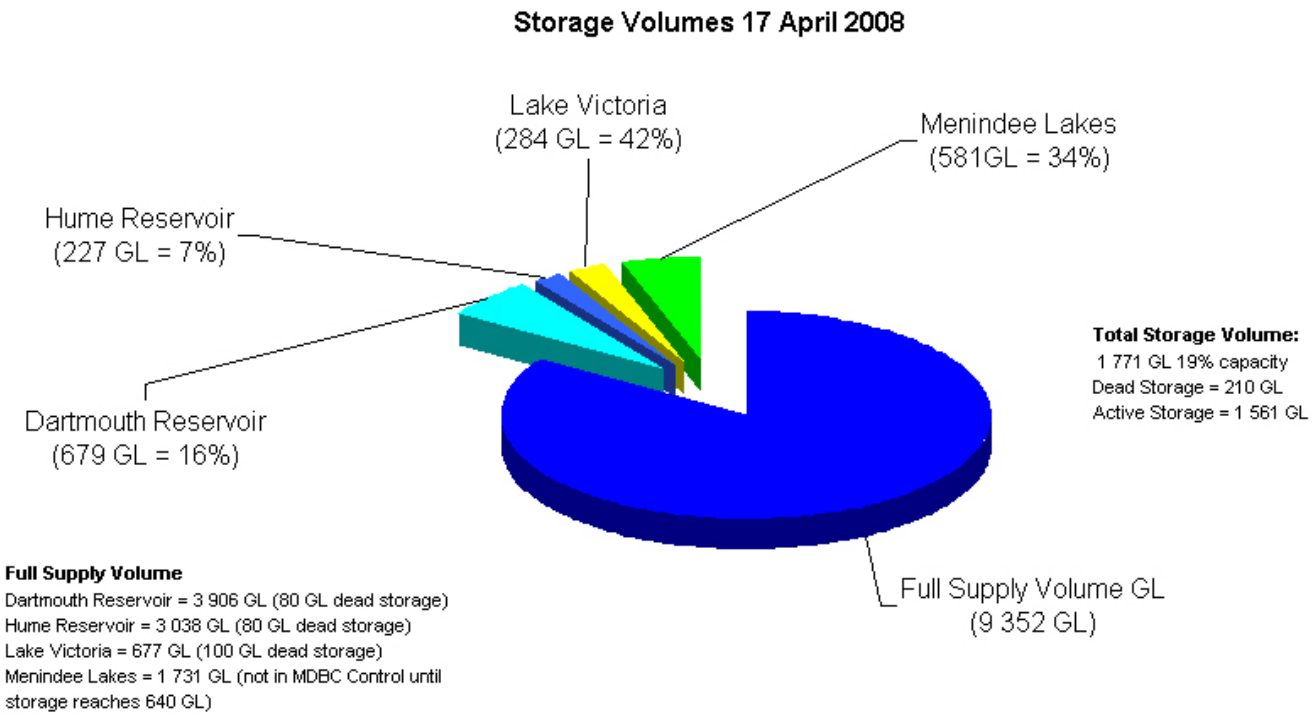
Observations at a glance

- High temperatures and low rainfall across much of the southern Murray-Darling Basin have reduced inflows into the River Murray and storages.
- A total of 62 GL flowed into the River Murray system during March 2008, compared to about 40 GL in March 2007.
- The current volume in Murray-Darling Basin storages is 1 771 GL (19% capacity). This includes 581 GL in Menindee Lakes, all of which is owned by NSW.
- Flows to South Australia have been reduced to 2 300 ML/day compared to the normal April entitlement flow of 4 500 ML/day.
- There is a small positive flow to the Lower Lakes (700 ML/ day or less past Wellington), but water levels in Lake Alexandrina and Albert continue to drop.

Summary of Murray-Darling Basin storages

Inflows remain well below average for this time of year despite near-average rainfall across the upper River Murray catchment and along the most of the River Murray upstream of South Australia. **Figure 1** shows the volume of water in Murray-Darling Basin storages is currently 1 771 GL (19% capacity), more than at the same time last year (900 GL, 10% capacity). The long-term average storage volume (including Menindee Lakes) for mid April is about 5 020 GL.

Figure 1: Storage volumes at 17 April 2008



The storage volume in Menindee Lakes is currently 581 GL (34% capacity) and remains under NSW control until the storage volume reaches 640 GL. New South Wales has been releasing water from Menindee Lakes into the Lower Darling weir pool. It is therefore unlikely that the threshold of 640 GL will be reached without further inflows into the Barwon/Darling River system.

Since early January 2008 about 160 GL has been released from Menindee Lakes. This water does not increase the volume of water available for allocation to South Australia, as it remains a NSW asset under the current water sharing rules. Under these rules the states own their tributary inflows with the exception of the Kiewa River.

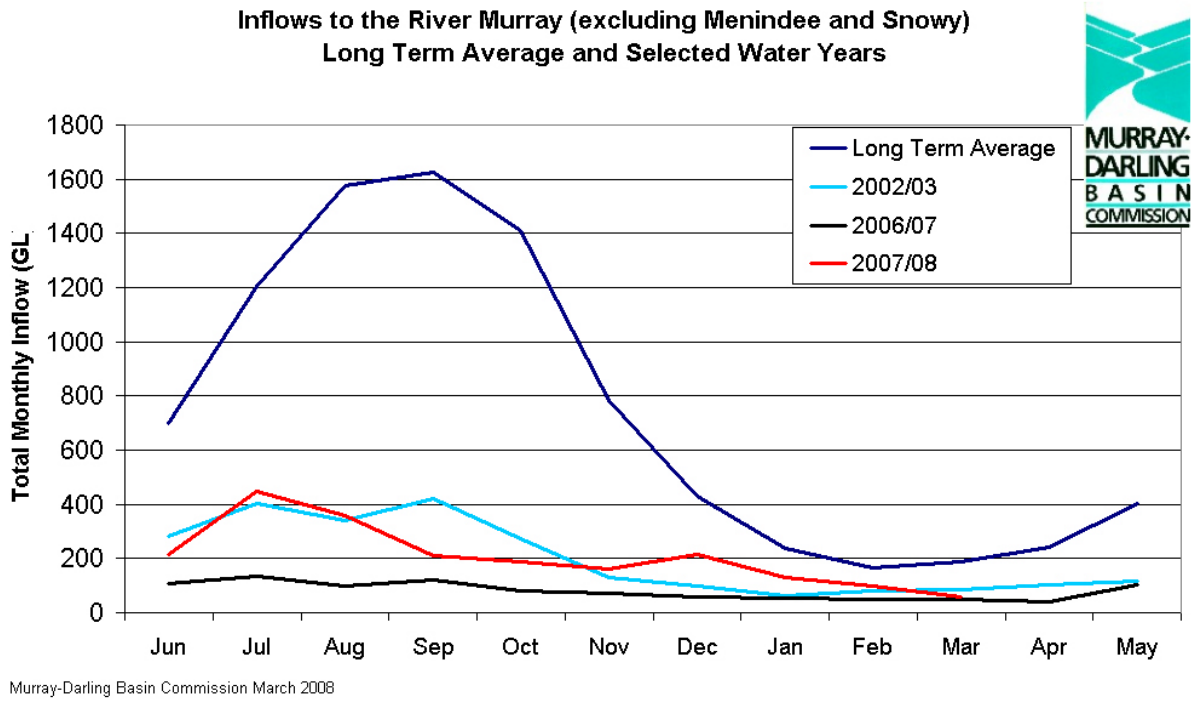
Inflows and rainfall

River Murray system inflows remain extremely low as a result of above average temperatures during March 2008 combined with only average rainfall. For increased inflows to occur, above average rainfall is required to generate greater runoff and to wet the soil profile.

A total of 62 GL flowed into the River Murray system during March 2008 (excluding Darling inflows), which was better than the approximately 40 GL inflow received in March 2007, but much less than the long-term average inflow for March of about 188 GL.

The modelled long-term average River Murray inflow (excluding Menindee and Snowy Hydro Scheme releases) for the June-March period is 8 320 GL. So far this year less than 2 100 GL have been received, or just 25% of the long-term average. These figures highlight the fact that the southern Murray-Darling Basin is still in significant drought. **Figure 2** shows the long-term River Murray system inflows during 2002-03, 2006-07 and 2007-08.

Figure 2: River Murray inflows



Murray-Darling Basin Commission March 2008

River operations

The Murray-Darling Basin Commission continues to manage the River Murray system in order to conserve water for meeting demands in 2008-09. Releases from Hume Reservoir have been reduced in response to lower demands over the past week. A number of weir pools upstream of the South Australian border were temporarily lowered during the hot weather in early and mid March 2008 to assist flows along the River Murray. Recent rainfall and reduced demand have provided an opportunity to start refilling some of these weir pools.

A number of wetlands are still blocked off from the main channel either by regulators, temporary banks or through the temporary lowering of weir pools. Recovery of water levels and flows in 2008-09 will be critical to the management of these environments, which provide habitat to a diverse range of fauna and flora. Some wetlands have now been blocked for more than 12 months and are showing signs of significant stress.

Flow to South Australia is being managed to meet demands (diversions and losses above Wellington) and allow a small positive flow into the Lower Lakes. Since 11 April 2008, the daily flow into South Australia has been reduced to 2 300 ML/day compared to the normal minimum April entitlement flow of 4 500 ML/day. Further reductions will occur over the coming months, and this will affect weir pool levels and salinity along the River Murray in South Australia, particularly below Lock 1. The flow over Lock 1 is currently averaging 1 410 ML/day and the flow past Wellington is about 700 ML/ day.

Salinity and water levels

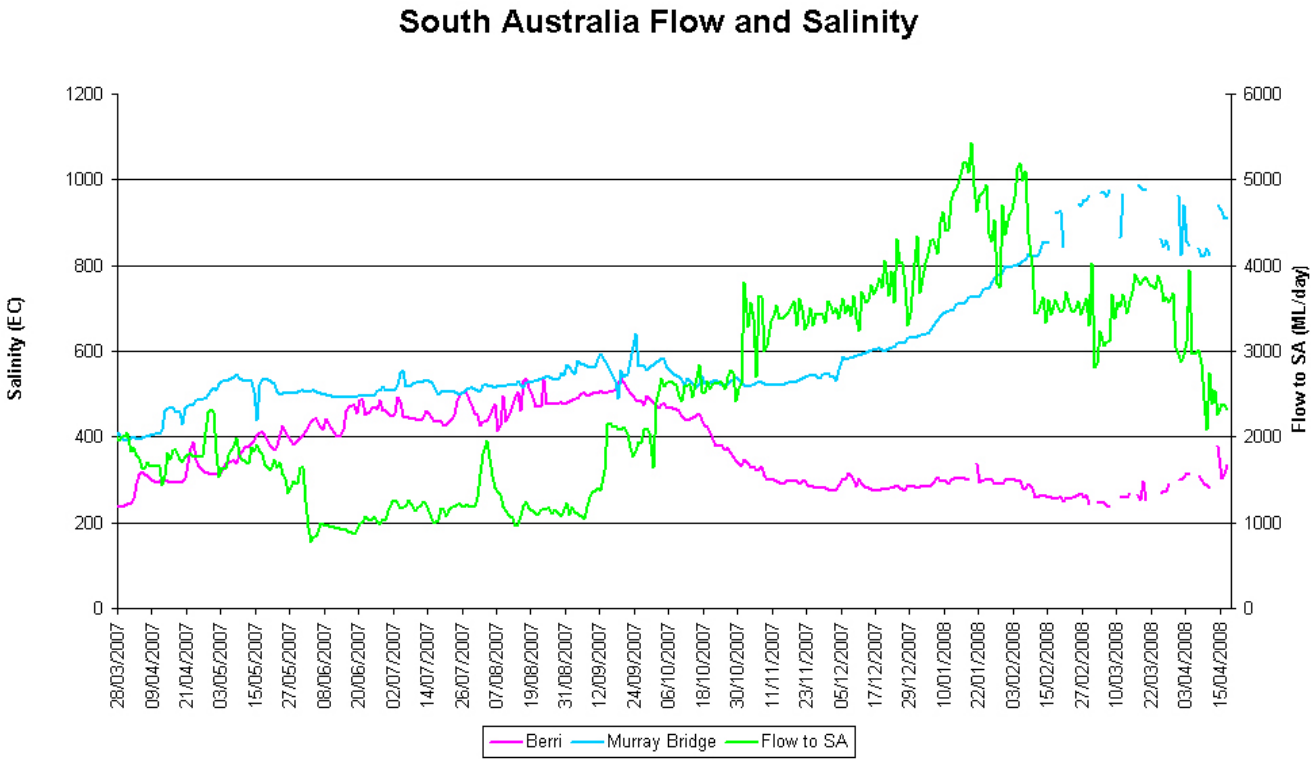
Table 1 shows current water and salinity levels in South Australia. Salinity levels above Lock 1 remain relatively low. At Morgan, salinity averaged 420 EC over the last week compared to an average of about 350 EC at the same time last year. Below Lock 1 salinity continues to rise due to reduced flows across the border and over Lock 1. The salinity at Murray Bridge averaged about 890 EC last week and in Lake Alexandrina (Milang) salinity averaged 3 570 EC.

Table 1: Water and salinity levels

	Actual Water Levels at 17/04/08		Full Supply Level Level	Variation from Pool Level	Current EC Level
	U/S mAHD	D/S m AHD	U/S of Weir m AHD	U/S of Weir m AHD	
Lock 6	19.26	16.24	19.25	0.01	213
Lock 5	16.29	13.26	16.30	-0.01	249
Lock 4	13.22	10.04	13.20	0.02	280
Lock 3	9.84	6.24	9.80	0.04	319
Lock 2	6.14	3.32	6.10	0.04	366
Lock 1	3.26	-0.48	3.20	0.06	466
Lake Alexandrina (Milang)	-0.40				4154
Lake Albert (Meningie)	n/a				not available
Goolwa					23535
Water levels and salinity below Lock 1 are affected by wind and will vary throughout the day and are daily records					
EC Readings below Lock 1 are daily averages and will vary throughout the day					

Most weir pools in South Australia remain at their full supply level, with the exception of downstream of Lock 1. There is not enough water available to South Australia for dilution and river maintenance flows to maintain water levels below Lock 1. Water level in Lake Alexandrina is currently minus 0.5m AHD (50cm below sea level) compared to about 0.17m AHD in early April last year. Lake Albert is currently about -0.5m to –0.6m AHD. Cooler weather will result in reduced evaporation in the Lower Lakes leading to a stabilisation of water levels over the next two months. **Figure 3** shows flows and salinity levels in South Australia.

Figure 3: Flows and salinity levels



The Department of Water, Land and Biodiversity Conservation regularly updates its salinity and water level forecasts for Lake Alexandrina. The most recent forecast may be found at: http://www.dwlbc.sa.gov.au/murray/drought/index.html#ForecastsfortheRiverMurrayinSA

Current water availability and irrigation allocations

Formal advice from the Murray-Darling Basin Commission on the end of March 2008 position has confirmed that there has been no improvement to water availability for sharing between the states from the end of February 2008. This is due to the effects of the very hot and dry conditions experienced over most of March, which brought very low inflows and high water loss.

The 62 GL of inflows to the River Murray system during March consisted of 40 GL of minimum inflows that were already accounted for in the projection for the end of year total and 22 GL (above the minimum) of mainly tributary inflows that are not part of the shared resources. The

total predicted River Murray water available for sharing between the states from 1 June 2007 to 31 May 2008 therefore remains at 2 640 GL.

South Australia's share of this under the current water sharing rules agreed by First Ministers remains at 1 070 GL. This is the lowest volume allocated to South Australia in over 50 years. In 1944-45, South Australia was allocated 940 GL and in 1914-15 only 1 354 GL. This is compared to 2006-07, when South Australia was allocated 1 500 GL and in 1967-68, when it was allocated 1 589 GL.
As a result of low inflows during March, the Minister for the River Murray announced on 16 April 2008 that River Murray water allocations in South Australia would remain unchanged at 32% for the rest of 2007-08.

Under the current water sharing rules, the three states share improvements to the **shared resources** only. The **shared resources** are the inflows into Hume and Dartmouth Dams and the Kiewa River, releases from the Snowy Hydro-electric Scheme plus releases into Lake Victoria from Hume Dam.

Inflows from tributaries such as the Goulburn, Ovens, Darling and Murrumbidgee Rivers remain a **state resource** and do not increase the shared resource volume for distribution.

Rainfall outlook

The Bureau of Meteorology advises that the chance of greater than average rainfall across the Murray-Darling Basin over the next three months (April to June 2008) is 50-70%. Information on the rainfall outlook can be obtained from the Bureau of Meteorology website www.bom.gov.au

Water entitlements, setting allocations and accounting for losses

As a result of drought and expansion of the interstate water trade market in the southern connected parts of the Murray-Darling Basin, there have been several frequently asked questions about the differences and similarities between New South Wales, Victoria and South Australia in relation to water entitlements, processes for setting water allocations each year, and how losses are accounted for. A Frequently Asked Question and Answer Sheet has been prepared by the Department of Water, Land and Biodiversity Conservation to provide information on these issues. This document may be found at:
http://www.dwlbc.sa.gov.au/murray/drought/index.html#Waterentitlementsandsettingallocations

Murray-Darling Basin National Plan

At a meeting in Adelaide on 26 March 2008, Prime Minister Kevin Rudd and First Ministers from across the Murray-Darling Basin forged an historic agreement on the future management of the Basin. All parties agreed to a Memorandum of Understanding for a new approach to drive reform in securing water for households, farmers and the long-term health of the Murray Darling Basin. Key elements of the Memorandum of Understanding are:

- One independent, expert-based Murray-Darling Basin Authority, which encompasses the functions of the Murray-Darling Basin Commission
- A Basin Plan prepared by the independent Authority by 2011 that:
  - provides for improved environmental outcomes (including increased environmental flows)
  - sets enforceable, sustainable diversion limits for the Basin and catchment water resources
  - provides for sustainable industry needs and critical human needs
- No state will have the power to block or veto the Basin Plan
- Arrangements for SA to store water in the upstream storages to provide for SA's critical human needs
- Each state will manage its share of the water resource within the Cap set by the independent Authority
- $10 billion available for:
  - priority infrastructure projects to deliver water savings
  - purchase or buy-back of water entitlements
  - other water reform outcomes
- Specific reference was made to the Lower Lakes, Coorong and Murray Mouth in the context of the need for improved environmental outcomes

For further information on the Memorandum of Understanding visit:
www.dwlbc.sa.gov.au/murray/drought/index.html#MurrayDarlingdealdelivered

Further information on River Murray conditions and rainfall forecasts can be obtained from the following websites:

Department of Water, Land and Biodiversity Conservation **www.dwlbc.sa.gov.au**
SA Murray-Darling Basin NRM Board **www.samdbnrm.sa.gov.au**
Murray-Darling Basin Commission **www.mdbc.gov.au**
SA Water Daily Reports **www.riverland.net.au/%7Eheinz/ex-flow-frame.htm**
Bureau of Meteorology **www.bom.gov.au**
Queensland Department of Primary Industry **www.longpaddock.qld.gov.au**