

# RIVER MURRAY FLOW REPORT and WATER RESOURCES UPDATE

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Report #45/2013

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This supersedes the previous flow report issued by the Department of Environment, Water and Natural Resources (DEWNR) on 8 November 2013. The next flow report will be provided on Friday, 22 November 2013.

In this report, for ease of representation, large volumes of water are expressed in gigalitres (GL), while smaller volumes are expressed in megalitres (ML). One GL is equal to 1 000 ML.

## WATER RESOURCES UPDATE

During October 2013, the total River Murray System inflow was approximately 530 GL, which was well below the October long-term average of 1 415 GL. Inflow to Menindee Lakes (from the Darling System) during October 2013 was approximately 5 GL, which was also well below the October long-term average of 170 GL.

The flow to South Australia during October 2013 was approximately 623 GL (compared to 1 068 GL in October 2012), which comprised 170.5 GL of Entitlement Flow, approximately 51 GL of environmental water and approximately 401.5 GL of unregulated flow.

The flow to South Australia is currently around 13 000 ML/day, which comprises the November Entitlement Flow of 6 000 ML/day plus environmental water. The major Murray-Darling Basin Authority controlled storages are holding around 87 per cent capacity.

## STORAGE VOLUMES

Murray-Darling Basin Authority storage volumes at 13 November 2013 and 13 November 2012

Storage	Full Supply Volume (GL)	13/11/2013 (GL)	13/11/2012 (GL)	Long-term average (end of November)
Dartmouth	3 856	3 807 (99%)	3 813 (99%)	
Hume	3 003	2 580 (86%)	2 929 (98%)	
Lake Victoria	677	639 (94%)	667 (99%)	
Menindee Lakes	1 731*	1 007 (58%)	1 866 (108%)	
<b>TOTAL</b>	<b>9 267</b>	<b>8 033 (87%)</b>	<b>9 275 (100%)</b>	<b>7 308 (79%)</b>

\*Menindee Lakes can be surcharged to 2 015 GL

## RAINFALL AND TEMPERATURE OUTLOOK

The latest Bureau of Meteorology weather outlook for November 2013 to January 2014 indicates that south-eastern Australia has an equal chance of a wetter or drier than normal season, with warmer temperatures.

The climate is being influenced by a neutral Indian Ocean Dipole, neutral tropical Pacific, and locally warm sea surface temperatures around most of Australia.



## WATER ALLOCATION OUTLOOK

South Australia will receive its full Entitlement Flow of 1 850 GL in 2013-14. As a result, South Australian River Murray Water Access Entitlement Holders will have access to 100 per cent water allocation in 2013-14. A total volume of 835 GL has been progressively reserved under the Murray-Darling Basin Agreement clause 103 (minimum reserve) to assist with supplying South Australia's Entitlement Flow in 2014-15.

## SOUTH AUSTRALIA'S STORAGE RIGHT

The Department of Environment, Water and Natural Resources continues to pursue opportunities to defer and store an amount of Entitlement Flow during 2013-14 for use in future years.

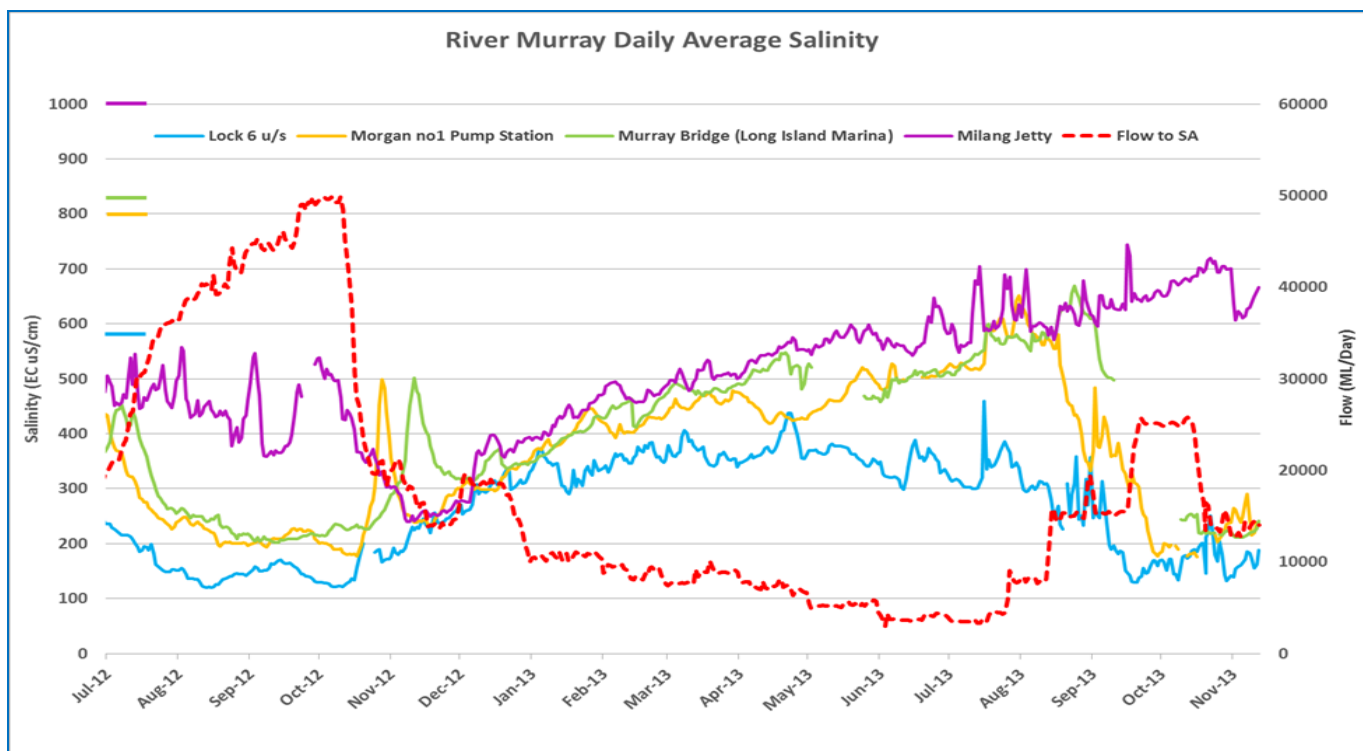
To date, South Australia's ability to defer and store water has been limited by unregulated flows and the high risk of spill from upstream storages. If South Australia had deferred and stored water in Hume Reservoir it would have spilled and been lost. As unregulated flow to South Australia has recently ceased and the risk of spill from the upstream storages is no longer high, South Australia is now planning to defer and store at least 10 GL of its Entitlement Flow in December 2013 for critical human water needs use in future years.

## WATER QUALITY

A number of targets are identified under the Basin Plan, which all Basin States must have regard to in managing River Murray flows. The targets for real-time salinity are identified below. Salinity must not exceed these values for 95 per cent of the time:

- 580 EC at Lock 6
- 800 EC at Morgan
- 830 EC at Murray Bridge
- 1 000 EC at Milang

The following graph shows the salinity at these locations and the flow to South Australia (QSA) from July 2012 to November 2013. It confirms that salinity has not exceeded the target at any of these four locations during this period.



Note: Data gaps are due to technical monitoring issues experienced at the site

## FLOW OUTLOOK

The flow at the South Australian border is approximately 13 000 ML/day and will reduce to around 12 000 ML/day during the coming week, depending on upstream river and storage operations, extractions, and rainfall events. The flow comprises the November Entitlement Flow of 6 000 ML/day plus environmental water from The Living Murray and Commonwealth Environmental Water Holder. South Australia will continue to receive environmental water during November and December 2013. Around 330 GL of environmental water from upstream is expected to be delivered to South Australia during November to December 2013. The environmental water will:

- maintain a flow at the border higher than normal Entitlement Flow;
- manage the rate of recession;
- provide improved conditions for juvenile fish survival;
- provide environmental benefits in the Coorong; and
- provide in-channel ecological and water quality benefits.

The flow over Lock 1 is approximately 11 000 ML/day and will reduce to around 10 000 ML/day during the coming week, depending on weather conditions and extractions.

It is important to note that flow forecasts in this advice are based on the information available at the time of preparation. They may change as new gauging information becomes available, or due to rainfall events or changed operations upstream. Flow forecasts are dependent on predictions made by the Bureau of Meteorology, Murray-Darling Basin Authority and water management agencies in upstream jurisdictions. They will be revised as new information becomes available.

## BARRAGE OPERATIONS AND WATER LEVELS IN THE LOWER LAKES

The water level in Lake Alexandrina is approximately 0.79 m AHD and approximately 0.65 m AHD in Lake Albert. Barrage operations will target a water level of 0.70 m AHD in both Lakes by the end of November. Water levels are likely to be increased in December to 0.80 m AHD to store some water and allow for ongoing barrage flows. Barrage releases are being prioritised through the Tauwichee and Goolwa barrages to maintain an open and functioning Murray Mouth, promote native fish migration and manage Coorong water levels for ecological outcomes. All barrage fishways are in operation and are being supplemented with attractant flows in adjacent bays. SA Water will continue to operate the barrages to minimise any negative salinity impacts from reverse flow events.

To see live salinity data at various locations on the River Murray and in the Lower Lakes, please refer to the following website: <http://www.waterconnect.sa.gov.au/Systems/RTWD/SitePages/Home.aspx>

Water levels and barrage operations are monitored closely by various agencies of the South Australian Government, Murray-Darling Basin Authority and Commonwealth Environmental Water Office.

## NAVIGATION ISSUES

Sandbars in the vicinity of the Murray Mouth may cause navigation hazards. Mariners are advised to navigate with caution when operating in the area. Sandbars are also present along sections of the River Murray in South Australia and all watercraft users should be aware of, and regularly check, the river depth.

## CONSTRUCTION WORKS

### *Currency Creek*

Subject to confirmation by the Commonwealth Government under the Environment Protection and Biodiversity Conservation Act 1999 (Cwlth), water-based works to remove the Currency Creek Regulator are completed. The boating exclusion zone has been removed. The site has a few items of plant and equipment remaining, and a stockpile of rock material that was removed from the regulator. These will be removed when weather conditions improve to enable access.

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### Chowilla

Construction of the Chowilla Creek Environmental Regulator and associated structures is ongoing. For public safety reasons the Chowilla Creek remains closed to navigation at the construction site. Works are also underway to upgrade the weirs on Pipeclay Creek and Slaney Creek to improve the management of flows into the Chowilla anabranch and to enable fish passage. Public access around the weirs is restricted during this construction program.

### RIVER MURRAY WATER LEVELS

Below is a table of River Murray water levels at a number of locations from Lock 10 (near Wentworth) to Murray Bridge.

#### River Murray Water Levels on 13 November 2013

Location	River km	Normal Pool Level	Current Level (m AHD)	1974 Flood Level (m AHD)	1993 Flood Level (m AHD)
Lock 10	825.0	30.80	30.82	33.81	33.32
Lock 9 Kulnine	764.8	27.40	27.51	30.03	29.44
Lock 8 Wangumma	725.7	24.60	24.95	27.60	27.19
Lock 7 Rufus River	696.6	22.10	22.14	25.70	25.24
Lock 6 Murtho	619.8	19.25	19.25	21.03	20.50
Renmark	567.4	-	16.31	18.54	18.04
Lock 5	562.4	16.30	16.29	18.07	17.50
Lyrup	537.8	-	13.31	16.85	16.26
Berri	525.9	-	13.25	15.81	15.74
Lock 4	516.2	13.20	13.23	15.65	15.08
Loxton	489.9	-	10.40	15.05	14.12
Cobdogla	446.9	-	9.95	13.44	12.38
Lock 3	431.4	9.80	9.83	13.16	12.02
Overland Corner	425.9	-	6.58	12.73	11.58
Waikerie	383.6	-	6.30	11.26	10.24
Lock 2	362.1	6.10	6.19	10.28	9.30
Cadell	332.6	-	3.48	9.17	8.08
Morgan	321.7	-	3.38	8.85	7.65
Lock 1 Blanchetown	274.2	3.20	3.23	6.81	5.38
Swan Reach	245.0	0.75	0.95	6.06	4.51
Mannum PS	149.8	0.75	0.84	3.15	1.90
Murray Bridge	115.3	0.75	0.75	2.06	1.26

Note that the above water levels may be affected by local wind conditions.

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## FURTHER INFORMATION

The WaterConnect website is South Australia's comprehensive water information portal and can be accessed at: <http://www.waterconnect.sa.gov.au>

Up-to-date River Murray flow and water level information can be accessed at the Department of Environment, Water and Natural Resources, SA Water and Murray-Darling Basin Authority websites:

<http://www.waterconnect.sa.gov.au/Systems/RTWD/SitePages/Home.aspx>  
[www.sawater.com.au/SAWater/Environment/TheRiverMurray/River+Murray+Levels.htm](http://www.sawater.com.au/SAWater/Environment/TheRiverMurray/River+Murray+Levels.htm)  
[www.mdba.gov.au/water/live-river-data](http://www.mdba.gov.au/water/live-river-data)

The Department of Environment, Water and Natural Resources has published a series of inundation maps for the River Murray. They are available at: <http://www.waterconnect.sa.gov.au/Systems/RMIM/Pages/default.aspx>

Information on the management of acid drainage water in the Lower River Murray can be accessed online at: [http://www.epa.sa.gov.au/environmental\\_info/water\\_quality/acid\\_sulfate\\_soils\\_ass/lower\\_river\\_murray\\_reclaimed\\_irrigation\\_area\\_lmria](http://www.epa.sa.gov.au/environmental_info/water_quality/acid_sulfate_soils_ass/lower_river_murray_reclaimed_irrigation_area_lmria)

Details of river height and rainfall information in the River Murray within Victoria and New South Wales are available at the Bureau of Meteorology website: <http://www.bom.gov.au/vic/flood>

Information provided by the Commonwealth Environmental Water Office can be accessed at: [www.environment.gov.au/ewater/southern/murray/lower-murray.html](http://www.environment.gov.au/ewater/southern/murray/lower-murray.html)

Information on The Living Murray can be accessed at: <http://www.mdba.gov.au/about-basin/environmental-sites>

Information is also available from the SA Water Hotline on **08 8595 2299**

Department of Environment, Water and Natural Resources  
<http://www.environment.sa.gov.au/Home>

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