

# RIVER MURRAY FLOW REPORT and WATER RESOURCES UPDATE

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Report #33/2014

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**This supersedes the previous flow report issued by the Department of Environment, Water and Natural Resources (DEWNR) on 8 August 2014. The next flow report will be provided on Friday, 22 August 2014.**

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

## WATER RESOURCES UPDATE

During July 2014, the total River Murray System inflow was approximately 1 290 GL, which is slightly above the July long-term average of 1 240 GL. Inflow to Menindee Lakes (from the Darling System) during July 2014 was 0 GL, which is well below the July long-term average of 150 GL.

The flow to South Australia during July 2014 was approximately 215 GL (compared to 105 GL in July 2013 and the July long-term average of 630 GL). The flow comprised:

- 108.5 GL of July Entitlement Flow;
- minus approximately 15 GL of July's Entitlement Flow, which was delivered early to assist with construction activities at Lake Victoria;
- plus approximately 17 GL of under-delivered Entitlement Flow;
- plus unregulated flow.

The flow to South Australia is currently around 16.5 GL/day, which comprises the August Entitlement Flow of 4 GL/day plus unregulated flow.

## STORAGE VOLUMES

### Murray-Darling Basin storage volumes at 13 August 2014 and 13 August 2013

Storage	Full Supply Volume (GL)	13/8/2014 (GL)	13/8/2013 (GL)	Long-term average (end of August)
Dartmouth	3 856	3 641 (94%)	3 764 (98%)	
Hume	3 003	2 206 (73%)	2 698 (90%)	
Lake Victoria	677	606 (90%)	598 (88%)	
Menindee Lakes	1 731*	346**(20%)	1 244 (72%)	
<b>TOTAL</b>	<b>9 267</b>	<b>6 799 (73%)</b>	<b>8 304 (90%)</b>	<b>7 127 (77%)</b>

\*Menindee Lakes can be surcharged to 2 015 GL

\*\*Menindee Lakes are now under New South Wales control

## MENINDEE LAKES

Under the Murray-Darling Basin Agreement, the Murray-Darling Basin Authority controls the Menindee Lakes until the stored water volume decreases to 480 GL. The New South Wales Government assumes control of the storage at 480 GL and maintains control until the volume in storage exceeds 640 GL. On 18 February 2014, the volume in the Menindee Lakes decreased to below 480 GL and the control switched to the New South Wales Government.



## RAINFALL AND TEMPERATURE OUTLOOK

The latest Bureau of Meteorology weather outlook for August to October 2014 indicates a drier than normal season with warmer temperatures likely for south-eastern Australia.

For the latest forecast on the likelihood of El Niño establishing in 2014, please refer to the following website: <http://www.bom.gov.au/climate/enso/>

## WATER ALLOCATION OUTLOOK

South Australia will receive its full Entitlement Flow of 1 850 GL in 2014-15.

## MANAGEMENT OF SOUTH AUSTRALIA'S DEFERRED WATER

On 1 July 2014, South Australia had deferred and stored 30 GL of its Entitlement Flow to meet critical human water needs use in future dry years and 20 GL for private carryover use in future dry years. The volume of deferred water in the upstream storages is adjusted for net evaporation losses until it is delivered to South Australia. After adjustments for evaporation losses, on 1 July 2014 there was 29.6 GL to meet critical human water needs in future dry years and 19.9 GL for private carryover. The Murray-Darling Basin Authority has advised DEWNR that the 6.6 GL stored for private carryover in Lake Victoria will spill.

South Australia cannot defer any water while receiving unregulated flow and is therefore not proposing to defer any Entitlement Flow during August 2014 and the risk of spill is likely to remain high until the end of Spring 2014.

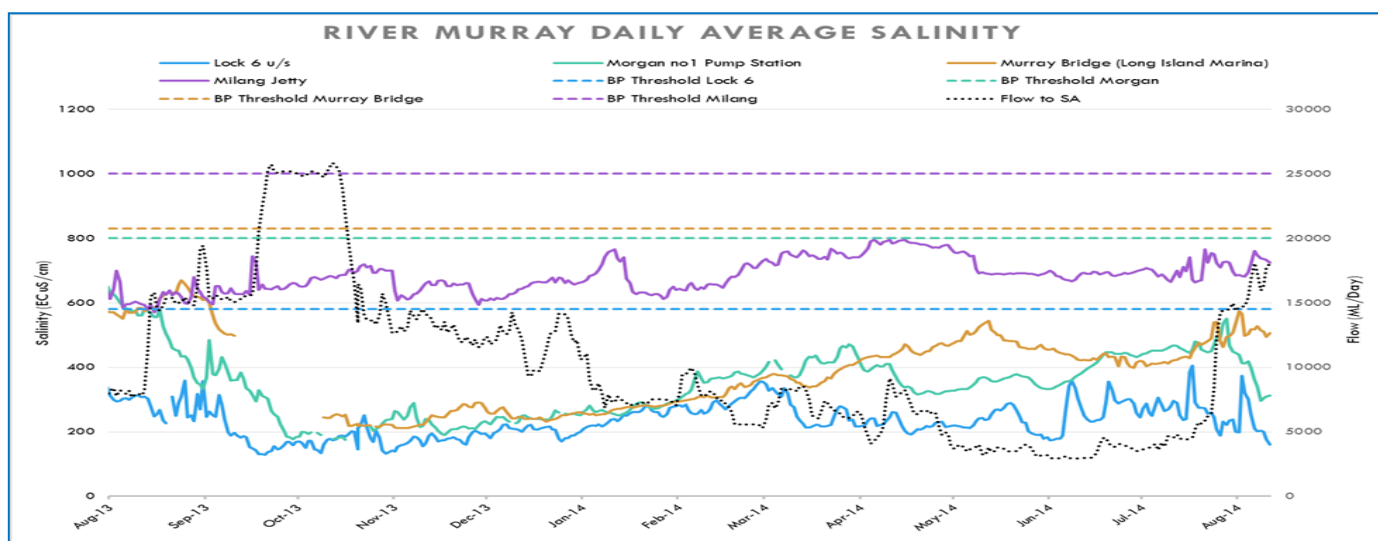
DEWNR is investigating opportunities to defer additional Entitlement Flow during 2014-15.

## WATER QUALITY - Salinity

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 from August 2013 to August 2014. The dashed-lines identify the Basin Plan thresholds for the corresponding colour coded location. It confirms that salinity has not exceeded the threshold 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 16.5 GL/day and will decrease to around 14 GL/day during the coming week, depending on upstream river and storage operations, extractions, and rainfall events. The flow comprises the normal August Entitlement Flow of 4 GL/day plus unregulated flow. It is expected that the flow to South Australia will recede rapidly back to Entitlement Flow in the next few weeks.

Construction works at the Lake Victoria outlet regulator will continue into early September 2014. These works are restricting the outlet capacity. DEWNR is working closely with the Murray-Darling Basin Authority and SA Water to manage the flow to South Australia during this time.

The flow over Lock 1 is approximately 16 GL/day and will decrease to around 15 GL/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.

## WEIR POOL OPERATIONS

DEWNR is currently raising the Lock 1 and 2 weir pools within their normal operating range (up to 0.3 m above full supply level) to take advantage of unregulated flow. DEWNR is currently considering raising these weir pools to slightly above their normal operating range to mimic natural water level variability, which has been largely removed through river regulation. It is anticipated that the weir pools may be raised up to 0.5 m above full supply level, or 0.2 m above the maximum normal operating range. The objective is to promote a range of benefits, specifically restoration of ecological function. Further advice in relation to this potential action will be provided in a separate media release.

## BARRAGE OPERATIONS AND WATER LEVELS IN THE LOWER LAKES

The water level in Lake Alexandrina is approximately 0.85 m AHD and approximately 0.81 m AHD in Lake Albert. The levels are currently being lowered to a target of 0.70 m AHD, with possible further lowering depending on the duration of unregulated flow. The aim of the short-term water level raising is to assist with improving water quality in Lake Albert.

SA Water will continue to operate the barrages to minimise any negative salinity impacts from reverse flow events. When conditions are conducive to opening the barrages, releases will be prioritised through Tauwichee and Goolwa. All fishways are in operation.

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.

## WATER QUALITY – Blue-Green Algae

The New South Wales Government (through Regional Algal Coordinating Committees) has a red alert warning for toxic blue-green algae at Balranald on the Murrumbidgee River, where water is unsuitable for recreational and stock watering purposes.

Although toxic blue-green algal blooms pose no threat to South Australia at this stage, the Murray-Darling Basin Authority and the relevant South Australian Government agencies are regularly monitoring the situation.

## 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, downstream of Lock 7 and 8 and in South Australia. All watercraft users should be aware of the risk of submerged navigation hazards, and should regularly check the river depth.

## CONSTRUCTION WORKS

### *Yatco Lagoon*

Work has commenced to relocate pump offtakes from Yatco Lagoon. Work to install new pump offtakes on the River Murray will commence in the coming months. The construction work is expected to be completed by early 2015.

### *Lock 4*

Remedial works at Lock 4 are expected to be completed later today. The Lock is expected to be operational for navigation in the next few days.

### *Deep Creek (Pike Floodplain)*

Work to replace the Deep Creek regulating structure and construction of a vertical slot fishway commenced on 4 August 2014. On 11 August 2014, work commenced to block-off Deep Creek from the River Murray through the installation of a coffer dam. Deep Creek flow will be maintained throughout the construction period via a temporary diversion pipe. Construction is expected to be completed by mid-December 2014. Traffic conditions on the Lock 5 Road will be changed during this period.

### *Chowilla*

Construction of the Chowilla Creek Environmental Regulator and associated structures has been completed. Chowilla Creek will be re-opened to navigation during the coming week. Please see Public Notices in the media for details.

### *Lake Victoria Outlet Regulator*

Remedial works on the Lake Victoria Outlet Regulator are underway and expected to be completed in late August 2014. The works are necessary to improve the structural integrity of the regulator.

Camping is not allowed in the area immediately downstream of the regulator during the construction period. There are alternate camping sites nearby, along Rufus River.

### *Lock 11*

The mechanised gates at Lock 11 (Mildura) are now installed. The weir pool has been reinstated and the Lock is operational for navigation.

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## 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 August 2014

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	30.81	33.81	33.32
Lock 9 Kulnine	764.8	27.40	27.58	30.03	29.44
Lock 8 Wangumma	725.7	24.60	25.00	27.60	27.19
Lock 7 Rufus River	696.6	22.10	22.17	25.70	25.24
Lock 6 Murtho	619.8	19.25	19.19	21.03	20.50
Renmark	567.4	-	16.33	18.54	18.04
Lock 5	562.4	16.30	16.30	18.07	17.50
Lyrup	537.8	-	13.35	16.85	16.26
Berri	525.9	-	13.26	15.81	15.74
Lock 4	516.2	13.20	13.21	15.65	15.08
Loxton	489.9	-	10.53	15.05	14.12
Cobdogla	446.9	-	9.94	13.44	12.38
Lock 3	431.4	9.80	9.82	13.16	12.02
Overland Corner	425.9	-	6.78	12.73	11.58
Waikerie	383.6	-	6.46	11.26	10.24
Lock 2	362.1	6.10	6.26	10.28	9.30
Cadell	332.6	-	3.76	9.17	8.08
Morgan	321.7	-	3.68	8.85	7.65
Lock 1 Blanchetown	274.2	3.20	3.44	6.81	5.38
Swan Reach	245.0	0.75	1.11	6.06	4.51
Mannum PS	149.8	0.75	0.84	3.15	1.90
Murray Bridge	115.3	0.75	0.81	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)

<http://www.mdba.gov.au/river-data/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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