

# RIVER MURRAY FLOW REPORT

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Report #06/2015

Issued 10:00 am 13 February 2015

This supersedes the previous flow report issued by the Department of Environment, Water and Natural Resources (DEWNR) on 6 February 2015. The next flow report will be provided on Friday 20 February 2015.

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 January 2015, the total River Murray System inflow was approximately 155 GL which is well below the January long-term average of 260 GL. Inflow to Menindee Lakes (from the Darling System) during January 2015 was 0 GL, which is well below the December long-term average of 125 GL.

The flow to South Australia during January 2015 was approximately 267 GL (compared to 240 GL in January 2014 and the January long-term average of 435 GL). The flow comprised:

- 217 GL of January Entitlement Flow; and
- approximately 50 GL of environmental water from the Commonwealth Environmental Water Holder.

## STORAGE VOLUMES

Murray-Darling Basin storage volumes at 11 February 2015 and 11 February 2014

Storage	Full Supply Volume (GL)	11/02/2015 (GL)	11/02/2014 (GL)	Long-term average (end of February)
Dartmouth	3 856	3 081 (80%)	3 534 (92%)	
Hume	3 003	1 280 (43%)	1 603 (53%)	
Lake Victoria	677	387 (57%)	463 (68%)	
Menindee Lakes	1 731*	132**(8%)	504 (29%)	
<b>TOTAL</b>	<b>9 267</b>	<b>4 880 (53%)</b>	<b>6 104 (66%)</b>	<b>5 922 (64%)</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 dropped to below 480 GL and control switched to the New South Wales Government.

Given that the Menindee Lakes remain under New South Wales control, there is less flexibility in the way water can be delivered to South Australia in 2015, unless the storage position improves significantly.



## RAINFALL AND TEMPERATURE OUTLOOK

The latest Bureau of Meteorology weather outlook for February to April 2015 indicates a drier than normal season for large parts of the Murray-Darling Basin with temperatures likely to be warmer than normal.

Climate influences include some residual warmth in the tropical Pacific Ocean and a warm central Indian Ocean. The late summer to early autumn period is the time of year when El Niño events naturally drop away.

For the latest forecast on the likelihood of El Niño establishing in 2015, please refer to the following website: <http://www.bom.gov.au/climate/enso/>

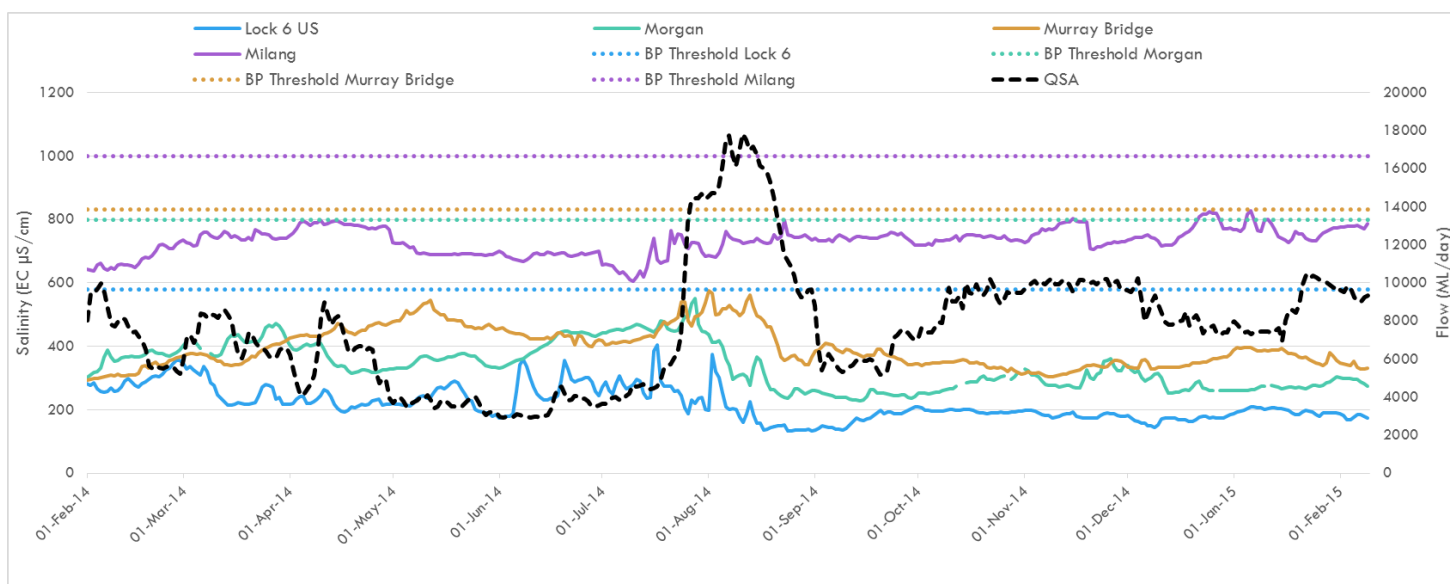
## WATER QUALITY - Salinity

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 February 2014 to February 2015. 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.

SA River Murray Daily Average Salinity



## FLOW OUTLOOK

The flow at the South Australian border is approximately 9.4 GL/day and will remain around this rate during the coming week. It comprises the normal February Entitlement Flow of 6.9 GL/day plus environmental water from the Commonwealth Environmental Water Holder (CEWH). The environmental water is being delivered to provide in-channel, Lower Lakes and Coorong environmental and water quality benefits. In particular, it will enable the maintenance of barrage flows to the Coorong in the coming months. South Australia is working with the CEWH to seek further opportunities to deliver environmental water during summer.

The flow over Lock 1 is approximately 6 GL/day and will decrease to around 5.5 GL/day in 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.

### **WATER TRADE FROM THE MURRUMBIDGEE RIVER VALLEY REOPENED**

On 12 January 2015, New South Wales Department of Primary Industries announced the resumption of water trade out of the Murrumbidgee Valley.

### **MANAGEMENT OF SOUTH AUSTRALIA'S DEFERRED WATER**

The Murray-Darling Basin Authority advised that on 1 February 2015, South Australia had 42.8 GL of water deferred and stored in Dartmouth (29.5 GL for critical human water needs and 13.3 GL for private carryover use in future dry years). Volumes stored are adjusted for net evaporation losses until delivered to South Australia.

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

### **MURRAY MOUTH**

Dredging operations at the Murray Mouth commenced on 9 January 2015 to maintain connectivity (exchange of water) between the river and the Southern Ocean. Dredging is now occurring in the Tauwitche channel and the Goolwa channel, with the second dredge commencing operations on 6 February. As at 6 February, the Murray Mouth was closed to boating traffic for a period of up to three weeks. For more information refer to the Notice to Mariners at:

[http://webapps.transportsa.com.au/news/templates/dtei\\_template2010.aspx?articleid=2865&zoneid=15](http://webapps.transportsa.com.au/news/templates/dtei_template2010.aspx?articleid=2865&zoneid=15)

Exclusion Zones established around the dredging operations are still in place to ensure public safety. For more information refer to the Notice to Mariners at:

[http://webapps.transportsa.com.au/news/templates/dtei\\_template2010.aspx?articleid=2865&zoneid=15](http://webapps.transportsa.com.au/news/templates/dtei_template2010.aspx?articleid=2865&zoneid=15)

There is also a partial park closure in place for the northern tip of the Coorong National Park. For more information refer to the following:

[http://www.environment.sa.gov.au/parks/Safety/Park\\_closures/141219-coorong-national-park](http://www.environment.sa.gov.au/parks/Safety/Park_closures/141219-coorong-national-park)

Signage has been installed at appropriate locations and flyers have been distributed advising of Exclusion Zones.

Any boats navigating through the Murray Mouth region, in particular through the Goolwa channel in close proximity to the mouth, should proceed with caution due to sandbars being present at shallow depth. Boats equipped with 'echo sounders' are strongly encouraged to regularly check depths and avoid travelling through at low tide.

### **BARRAGE OPERATIONS AND WATER LEVELS IN THE LOWER LAKES**

The water level in Lake Alexandrina is approximately 0.57 m AHD and Lake Albert is approximately 0.57 AHD. Barrage releases will be prioritised through Tauwitche and Goolwa (approximately 70:30 ratio), adjacent to the fishways. Releases will be targeted to maximise outcomes for the Goolwa channel and Coorong salinity. Pulsed releases may be undertaken to help achieve these outcomes when tidal and wind conditions are favourable. SA Water will continue to operate the barrages to minimise any negative salinity impacts from reverse flow events. All fishways are operating.

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.

### **WEIR POOL OPERATIONS**

Lock 1 is approximately 0.10 m below normal pool level of 3.2 m AHD to enable engineering investigations to be undertaken at the weir.

### **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 river depth.

### **CONSTRUCTION WORKS**

#### *Lock 7 – advanced notice*

Remedial works at Lock 7 commenced on 27 January 2015 and will take approximately 12 weeks to complete. The works are necessary to maintain the structural integrity of the Lock chamber. During this period Lock 7 will be closed to navigation.

#### *Pike Floodplain*

Construction works are underway at Bank B and C on the Pike Floodplain to reinstate fish passage and hydraulic connectivity between the River Murray and Mundic Creek. Works are expected to be ongoing until July 2015. This activity will not cause restrictions to navigation on the main channel of the River Murray. Mundic Creek Road will be closed while works are underway.

#### *Yatco Lagoon*

Work is underway to relocate pump offtakes from Yatco Lagoon and install new pump offtakes on the River Murray. The construction work is expected to be completed by mid-2015.

#### *Katarapko Floodplain, Murray River National Park*

Construction works have commenced on the Katarapko Floodplain. Road and waterway access to Bank N, Bank K, South Arm Road Crossing, Eckert Creek Bridge, Eckert Creek Log Crossing and the Stone Weir will be restricted during construction. These works will improve water flow and movement of native fish through Katarapko and Eckert Creeks. Work at Bank N, Bank K, Eckert Creek Bridge and South Arm Road Crossing is due for completion by the end of March 2015. Eckert Creek Log Crossing is due for completion by mid-June 2015.

## 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 11 February 2015

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	30.88	33.81	33.32
Lock 9 Kulnine	764.8	27.40	27.33	30.03	29.44
Lock 8 Wangumma	725.7	24.60	24.13	27.60	27.19
Lock 7 Rufus River	696.6	22.10	22.13	25.70	25.24
Lock 6 Murtho	619.8	19.25	19.26	21.03	20.50
Renmark	567.4	-	-	18.54	18.04
Lock 5	562.4	16.30	16.32	18.07	17.50
Lyrup	537.8	-	-	16.85	16.26
Berri	525.9	-	-	15.81	15.74
Lock 4	516.2	13.20	13.24	15.65	15.08
Loxton	489.9	-	10.15	15.05	14.12
Cobdogla	446.9	-	9.88	13.44	12.38
Lock 3	431.4	9.80	9.83	13.16	12.02
Overland Corner	425.9	-	6.28	12.73	11.58
Waikerie	383.6	-	6.24	11.26	10.24
Lock 2	362.1	6.10	6.12	10.28	9.30
Cadell	332.6	-	3.27	9.17	8.08
Morgan	321.7	-	3.19	8.85	7.65
Lock 1 Blanchetown	274.2	3.20	3.13	6.81	5.38
Swan Reach	245.0	0.75	0.62	6.06	4.51
Mannum PS	149.8	0.75	0.61	3.15	1.90
Murray Bridge	115.3	0.75	0.54	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>

<http://www.sawater.com.au/SAWater/Environment/WaterProofingAdelaide/TheRiverMurray/RMOU/Dailyflow.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>

Department of Environment, Water and Natural Resources

<http://www.environment.sa.gov.au/Home>

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