# RIVER MURRAY FLOW REPORT and WATER RESOURCES UPDATE

**Public I2 A2**

**Report #42/2014**
**Issued 10:00 am 17 October 2014**

**This supersedes the previous flow report issued by the Department of Environment, Water and Natural Resources (DEWNR) on 10 October 2014. The next flow report, including the water resources update, will be provided on Friday, 24 October 2014.**

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 September 2014, the total River Murray System inflow was approximately 510 GL, which is less than a third of the September long-term average of 1,630 GL. Inflow to Menindee Lakes (from the Darling System) during September 2014 was 0 GL, which is well below the September long-term average of 200 GL.

The flow to South Australia during September 2014 was approximately 185 GL (compared to 590 GL in September 2013 and the September long-term average of 1,000 GL). The flow comprised:

- 135 GL of September Entitlement Flow;
- approximately 4 GL of unregulated flow;
- approximately 46 GL of environmental water from *The Living Murray* Program.

## STORAGE VOLUMES

**Murray-Darling Basin storage volumes at 15 October 2014 and 15 October 2013**

| Storage | Full Supply Volume (GL) | 15/10/2014 (GL) | 15/10/2013 (GL) | Long-term average (end of October) |
|---|---|---|---|---|
| **Dartmouth** | **3 856** | **3 600 (93%)** | **3 818 (99%)** | |
| **Hume** | **3 003** | **2 319 (77%)** | **2 852 (95%)** | |
| **Lake Victoria** | **677** | **633 (94%)** | **624 (92%)** | |
| **Menindee Lakes** | **1 731*** | **297**(17%)** | **1 128 (65%)** | |
| **TOTAL** | **9 267** | **6 849 (74%)** | **8 422 (91%)** | **7 498 (81%)** |

*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 control switched to the New South Wales Government.

Given Menindee Lakes remain under New South Wales control, there will be less flexibility with the way in which 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 October to December 2014 indicates a drier than normal season is more likely for broad areas of eastern Australia, with a roughly equal chance of exceeding median rainfall for the remainder of the Southern Connected Basin. Temperatures are likely to be warmer than normal for south-eastern Australia.

The climate influences include warmer than normal temperatures in the tropical Pacific Ocean and neutral Indian Ocean Dipole.

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/

## MANAGEMENT OF SOUTH AUSTRALIA'S DEFERRED WATER

The Murray-Darling Basin Authority advised that on 1 October 2014, South Australia had 42.9 GL of water deferred and stored in Dartmouth (29.6 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. South Australia is not proposing to defer any water while Lake Victoria is near capacity.

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

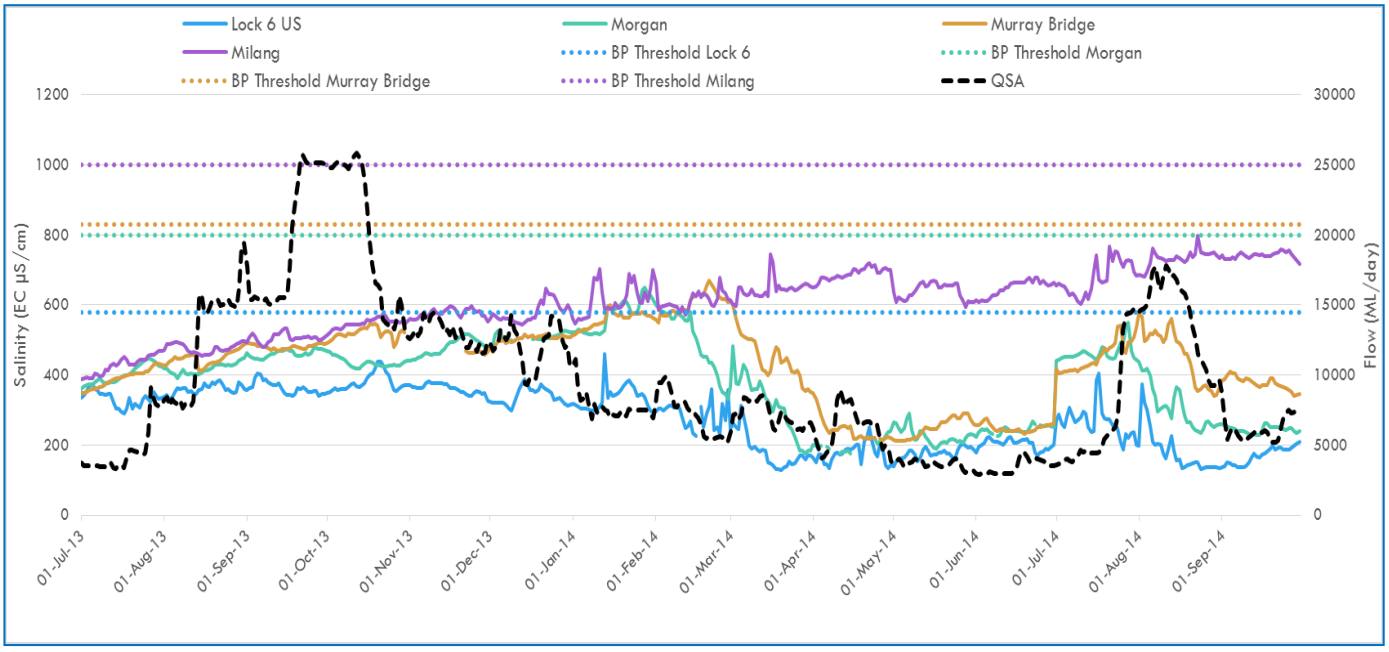
## WATER QUALITY - Salinity

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 September 2013 to September 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.

**SA River Murray Daily Average Salinity**



## FLOW OUTLOOK

The flow at the South Australian border is approximately 9.5 GL/day and will remain at this rate during the coming week, depending on upstream river and storage operations, extractions, and rainfall events. The flow comprises the normal October Entitlement Flow of 5.5 GL/day plus environmental water from the Murray-Daring Basin Authority's *The Living Murray* initiative. The environmental water is being delivered to test the Chowilla environmental regulator. South Australia is working with the Commonwealth Environmental Water Holder to seek opportunities to deliver environmental water during spring and summer.

The flow over Lock 1 is approximately 3.0 GL/day and will increase to around 5.0 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

Raising the water levels in the Lock 1 and 2 weir pools up to 0.2 m above the maximum normal operating range (0.5 m above full supply level) commenced on Wednesday 15 October 2014. The first phase, raising the water levels 0.10 m above the maximum normal operating range, will be complete on 18 October 2014. An assessment of the action will be undertaken before raising the water levels an additional 0.10 m (second phase) It is anticipated that the second phase will commence on Monday, 27 October 2014. Raising the water levels in this way is being done to mimic historic natural water level variability, which will promote a range of benefits, specifically restoration of ecological function. The weir pool raising is using environmental water.

If you would like to be kept informed on how the project is tracking please send your name, address and email details to: RiverineRecovery@sa.gov.au
Alternatively, you may call the Contact Officer, Ms Wendy Georganas on (08) 8463 3918.

## CHOWILLA OPERATIONS

Testing of the new environmental water management infrastructure on the Chowilla Floodplain commenced on 8 September 2014 and will continue until early December 2014. On 14 October 2014, the Chowilla regulator water level reached its target height of 19.10 m AHD, raised by approximately 2.70 m. On 15 October 2014, the Lock 6 water level reached its target height of 19.65 m AHD, which is 0.40 m above normal pool level. These water levels will be held for about two weeks, which will enable engineering checks to be undertaken to ensure that the structures can be operated as designed. Testing is also achieving environmental outcomes with water moving into wetlands and frog breeding occurring. More information can be found at:
www.environment.sa.gov.au/chowilla-floodplain

## BARRAGE OPERATIONS AND WATER LEVELS IN THE LOWER LAKES

The water level in Lake Alexandrina is approximately 0.70 m AHD and approximately 0.65 m AHD in Lake Albert. When conditions are favourable, barrage releases will be prioritised through Tauwitchere and Goolwa, adjacent to the fishways, targeting a volume of approximately 2 GL/day. 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.

**WATER QUALITY – Blue-Green Algae**

The New South Wales Government, through Sunraysia Algal Coordinating Committee, has issued a red alert warning for toxic blue-green algae on the Darling River at Tapio, where water is unsuitable for recreation, stock and domestic purposes.

Although this toxic blue-green algal bloom poses 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 river depth.

When weir pools are being raised above their normal operating range, it is advised that watercraft users are aware of changed river conditions and exercise caution.

**CONSTRUCTION WORKS**

*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 early 2015.

*Deep Creek (Pike Floodplain)*

Work to replace the Deep Creek inlet structure and construct a vertical slot fishway is underway. 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.

## 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 15 October 2014**

| Location | River km | Normal Pool Level (m AHD) | Current Level (m AHD) | 1974 Flood Level (m AHD) | 1993 Flood Level (m AHD) |
|---|---|---|---|---|---|
| Lock 10 | 825.0 | 30.80 | 30.90 | 33.81 | 33.32 |
| Lock 9 Kulnine | 764.8 | 27.40 | 27.56 | 30.03 | 29.44 |
| Lock 8 Wangumma | 725.7 | 24.60 | 25.34 | 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 | 19.67 | 21.03 | 20.50 |
| Renmark | 567.4 | - | - | 18.54 | 18.04 |
| Lock 5 | 562.4 | 16.30 | 16.42 | 18.07 | 17.50 |
| Lyrup | 537.8 | - | - | 16.85 | 16.26 |
| Berri | 525.9 | - | 13.22 | 15.81 | 15.74 |
| Lock 4 | 516.2 | 13.20 | 13.21 | 15.65 | 15.08 |
| Loxton | 489.9 | - | - | 15.05 | 14.12 |
| Cobdogla | 446.9 | - | - | 13.44 | 12.38 |
| Lock 3 | 431.4 | 9.80 | 9.82 | 13.16 | 12.02 |
| Overland Corner | 425.9 | - | 6.50 | 12.73 | 11.58 |
| Waikerie | 383.6 | - | 6.54 | 11.26 | 10.24 |
| Lock 2 | 362.1 | 6.10 | 6.42 | 10.28 | 9.30 |
| Cadell | 332.6 | - | - | 9.17 | 8.08 |
| Morgan | 321.7 | - | 3.62 | 8.85 | 7.65 |
| Lock 1 Blanchetown | 274.2 | 3.20 | 3.55 | 6.81 | 5.38 |
| Swan Reach | 245.0 | 0.75 | 0.73 | 6.06 | 4.51 |
| Mannum PS | 149.8 | 0.75 | 0.74 | 3.15 | 1.90 |
| Murray Bridge | 115.3 | 0.75 | 0.69 | 2.06 | 1.26 |

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

**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.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

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

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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