

RIVER MURRAY FLOW REPORT and WATER RESOURCES UPDATE

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Report #29/2014

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This supersedes the previous flow report issued by the Department of Environment, Water and Natural Resources (DEWNR) on 11 July 2014. The next flow report will be provided on Friday, 25 July 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 June 2014, the total River Murray System inflow was approximately 580 GL, which is below the June long-term average of 740 GL. Inflow to Menindee Lakes (from the Darling System) during June 2014 was 0 GL, which is well below the June long-term average of 135 GL.

The flow to South Australia during June 2014 was approximately 105 GL (compared to 115 GL in June 2013 and the June long-term average of 390 GL). The flow comprised the June Entitlement Flow of 90 GL plus approximately 15 GL of July's Entitlement Flow delivered early to assist with construction activities at Lake Victoria and minimising the risk of spill of water held for private carryover.

The flow to South Australia is currently around 6 GL/day, which comprises the July Entitlement Flow of 3.5 GL/day plus unregulated flow due to recent rainfall in upstream catchments.

STORAGE VOLUMES

Murray-Darling Basin storage volumes at 16 July 2014 and 16 July 2013

| Storage | Full Supply Volume (GL) | 16/7/2014 (GL) | 16/7/2013 (GL) | Long-term average (end of July) |
|----------------|----------------------------|--------------------|--------------------|---------------------------------------|
| Dartmouth | 3 856 | 3 562 (92%) | 3 662 (95%) | |
| Hume | 3 003 | 1 815 (60%) | 2 025 (67%) | |
| Lake Victoria | 677 | 503 (74%) | 594 (88%) | |
| Menindee Lakes | 1 731* | 361**(21%) | 1 254 (72%) | |
| TOTAL | 9 267 | 6 241 (67%) | 7 535 (81%) | 6 659 (72%) |

*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.



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RAINFALL AND TEMPERATURE OUTLOOK

The latest Bureau of Meteorology weather outlook for July to September 2014 indicates a drier than normal season is likely for New South Wales with the rest of southern connected Basin likely to receive an equal chance of a drier or wetter season. Warmer temperatures are more likely for most of 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 May 2014, South Australia had deferred 30 GL of its Entitlement Flow into storage 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. There is currently a high risk of some private carryover water spilling from Lake Victoria. South Australia is not proposing to defer any additional water while the Entitlement Flow remains low and the risk of spill from Lake Victoria remains high.

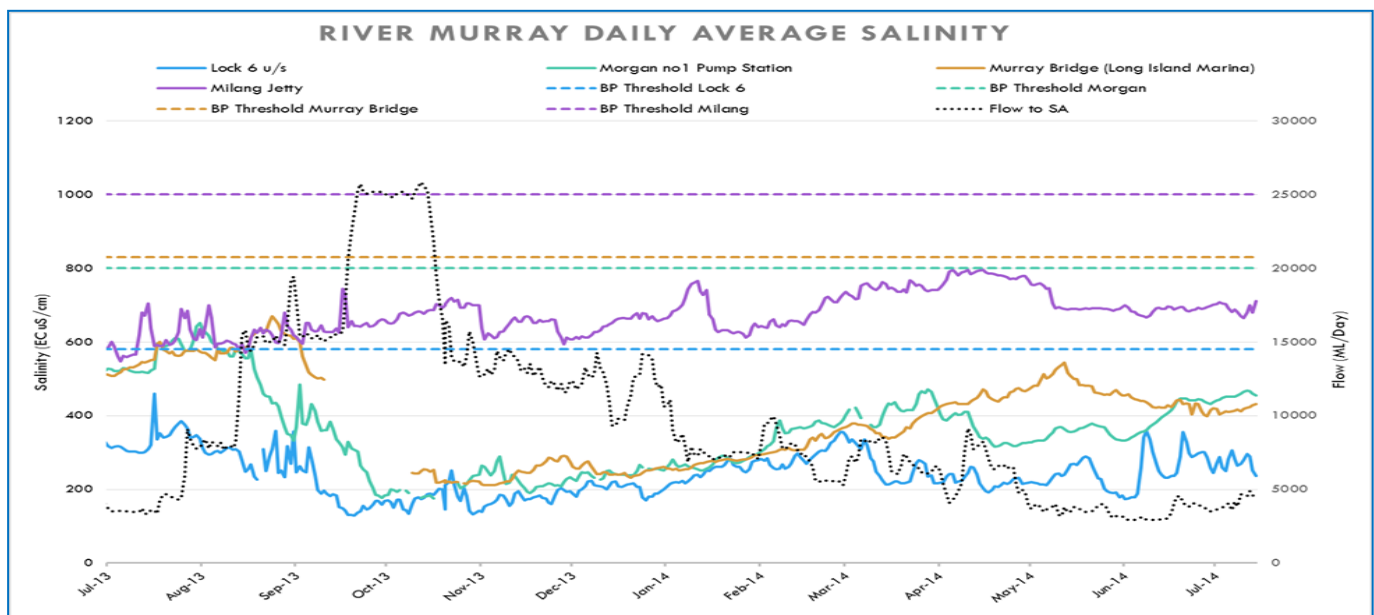
DEWNR is investigating opportunities to defer additional Entitlement Flow during 2014-15.

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 July 2013 to June 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 6 GL/day and will remain around this rate during the coming week, depending on upstream river and storage operations, extractions, and rainfall events. The flow comprises the normal July Entitlement Flow of 3.5 GL/day plus unregulated flow due to recent rainfall in upstream catchments.

Construction works at the Lake Victoria outlet regulator will continue into early August 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 6 GL/day and will remain around this rate 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 0.73 m AHD and approximately 0.80 m AHD in Lake Albert. The main reason for the difference between the water levels is wind effect. The volume of water in the Lower Lakes is being managed to optimise water availability for continuous barrage releases during winter. 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

Due to recent rainfall and inflows, most of the interstate red alert warnings for toxic blue-green algae have been lifted. The New South Wales Government (through Regional Algal Coordinating Committees) still 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

Swan Reach River Vessel Waste Disposal Station

Swan Reach River Vessel Waste Disposal Station remedial works are now complete and the station is fully operational.

Lock 4

Remedial works at Lock 4 commenced on 5 May 2014 and are expected to be completed by early August 2014. The works are necessary to improve the structural integrity of the Lock chamber. During this period Lock 4 will be closed to navigation.

Chowilla

Construction of the Chowilla Creek Environmental Regulator and associated structures is nearing completion. For public safety reasons, the Chowilla Creek remains closed to navigation at the construction site at this time.

Lake Victoria Outlet Regulator

Remedial works on the Lake Victoria Outlet Regulator are underway and expected to be completed around the end of July 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

Installation of mechanised gates at Lock 11 (Mildura) commenced on 15 July 2014 and is expected to be completed in mid-August 2014. During this period the water level in the Lock 11 weir pool will be drawn down to a very low level and the Lock will be closed to 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 16 July 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 | 30.78 | 33.81 | 33.32 |
| Lock 9 Kulnine | 764.8 | 27.40 | 27.51 | 30.03 | 29.44 |
| Lock 8 Wangumma | 725.7 | 24.60 | 24.55 | 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 | 16.37 | 18.07 | 17.50 |
| Lyrup | 537.8 | - | 13.24 | 16.85 | 16.26 |
| Berri | 525.9 | - | 13.22 | 15.81 | 15.74 |
| Lock 4 | 516.2 | 13.20 | 13.20 | 15.65 | 15.08 |
| Loxton | 489.9 | - | 10.15 | 15.05 | 14.12 |
| Cobdogla | 446.9 | - | - | 13.44 | 12.38 |
| Lock 3 | 431.4 | 9.80 | 9.92 | 13.16 | 12.02 |
| Overland Corner | 425.9 | - | 6.39 | 12.73 | 11.58 |
| Waikerie | 383.6 | - | 6.43 | 11.26 | 10.24 |
| Lock 2 | 362.1 | 6.10 | 6.26 | 10.28 | 9.30 |
| Cadell | 332.6 | - | 3.50 | 9.17 | 8.08 |
| Morgan | 321.7 | - | 3.43 | 8.85 | 7.65 |
| Lock 1 Blanchetown | 274.2 | 3.20 | 3.37 | 6.81 | 5.38 |
| Swan Reach | 245.0 | 0.75 | 0.79 | 6.06 | 4.51 |
| Mannum PS | 149.8 | 0.75 | 0.72 | 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.

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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.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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