

RIVER MURRAY FLOW REPORT and WATER RESOURCES UPDATE

Report #29/2013

Issued 10:00 am 19 July 2013

This supersedes the previous flow report issued by the Department of Environment, Water and Natural Resources (DEWNR) on 12 July 2013. The next flow report will be provided on Friday, 26 July 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 June 2013, the total River Murray System inflow was approximately 445 GL, which is just over half the long-term June average of 740 GL. Inflow to Menindee Lakes (from the Darling System) during June 2013 was approximately 18 GL, which is well below the long-term June average of 135 GL.

The flow to South Australia during June 2013 was approximately 117 GL (compared to 643 GL in June 2012), which comprised 90 GL of Entitlement Flow and approximately 27 GL of environmental water.

The flow to South Australia is currently 4 500 ML/day, which comprises the July Entitlement Flow of 3 500 ML/day and a small volume of unregulated flow. The unregulated flow is a result of Lake Victoria being near full and recent rainfall. The last time South Australia received unregulated flow was late October 2012.

The major Murray-Darling Basin Authority controlled storages are holding around 81 per cent capacity.

STORAGE VOLUMES

Murray-Darling Basin Authority storage volumes at 17 July 2013 and 17 July 2012

| Storage | Full Supply Volume (GL) | 17/07/2013 (GL) | 17/07/2012 (GL) | Long-term average (end of July) |
|----------------|----------------------------|--------------------|--------------------|------------------------------------|
| Dartmouth | 3 856 | 3 662 (95%) | 3 432 (89%) | |
| Hume | 3 003 | 2 033 (68%) | 2 931 (98%) | |
| Lake Victoria | 677 | 594 (88%) | 473 (70%) | |
| Menindee Lakes | 1 731* | 1 256 (73%) | 1 965 (114%) | |
| TOTAL | 9 267 | 7 545 (81%) | 8 801 (95%) | 6 659 (72%) |

*Menindee Lakes can be surcharged to 2 015 GL

RAINFALL AND TEMPERATURE OUTLOOK

The latest Bureau of Meteorology weather outlook for July to September 2013 indicates that a wetter than normal season is likely for most of Australia, with a greater than 60 per cent chance of exceeding the median rainfall over south-eastern Australia. Cooler days and warmer nights are more likely for south-eastern Australia.



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Climate influences include a developing negative Indian Ocean Dipole (IOD), a neutral-to-cool tropical Pacific, and warm sea surface temperatures around the coast of Australia. A negative IOD during winter-spring increases the chance of above-average rainfall over southern Australia.

WATER ALLOCATION OUTLOOK

South Australia will receive its full Entitlement Flow of 1 850 GL in 2013-14. As a result, on 30 May 2013, the Minister for Water and the River Murray, Hon Ian Hunter MLC, announced that South Australian River Murray Water Access Entitlement Holders will have access to 100 per cent water allocation in 2013-14.

SOUTH AUSTRALIA'S STORAGE RIGHT

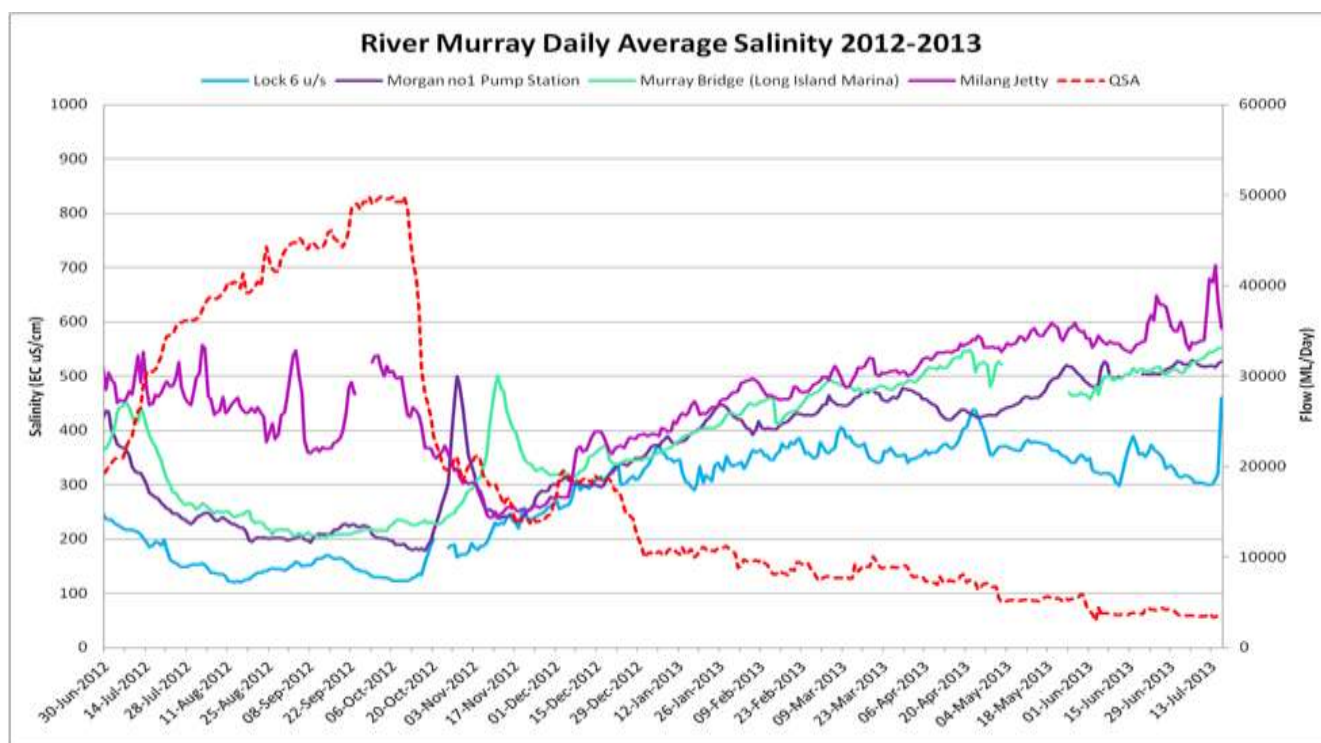
To date, South Australia has not deferred any Entitlement Flow for carryover into 2013-14. South Australian River Murray Water Access Entitlement Holders were informed in April 2013 (via letter) that no Entitlement Flow had been deferred for use in 2013-14. The Department of Environment, Water and Natural Resources is currently investigating opportunities to defer and store an amount of Entitlement Flow in 2013-14.

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 as follows and 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) for the past twelve months. 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 issues experienced at the site

FLOW OUTLOOK

The flow at the South Australian border is approximately 4 500 ML/day (July Entitlement Flow plus unregulated flow) and will remain around this rate during the coming week, depending on upstream operations and rainfall events. The Bureau of Meteorology is currently forecasting heavy rainfall over catchments across north-eastern Victoria. This may change the outlook for unregulated flow volumes and advice will be provided in future River Murray Flow Reports.

DEWNR is currently negotiating additional environmental water for 2013-14 from the Commonwealth Environmental Water Office (CEWO) and Murray-Darling Basin Authority through The Living Murray Program. When details about the timing and volume of environmental water delivery are provided by the CEWO, the information will be included in the River Murray Flow Report.

Lake Victoria storage is at 88 per cent capacity.

The flow over Lock 1 is approximately 2 500 ML/day and is likely to increase to around 3 500 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 0.64 m AHD and approximately 0.67 m AHD in Lake Albert. During the coming week, barrage operations will target a water level between 0.60 m AHD and 0.65 m AHD in both Lakes. All barrage fishways are in operation and are being supplemented with attractant flows in adjacent bays. Barrage releases are being prioritised through the Goolwa and Tauwichee barrages to maintain an open and functioning Murray Mouth and encourage diadromous fish migration. SA Water will continue to operate the barrages to minimise any negative salinity impacts from reverse flow events during high tide or swell conditions.

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/RMWD/Pages/default.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

Under current flow, seasonal conditions and tidal activity, sand is being deposited inside the Murray Mouth and may present navigation hazards. Mariners are advised to navigate with caution when operating in the vicinity of the Murray Mouth.

As many of the weir pool water levels are near normal, river users should be aware of the risk of submerged navigation hazards such as sandbars, particularly downstream of Locks 7 and 8.

CONSTRUCTION WORKS

Currency Creek

The Currency Creek Regulator is being removed by Maritime Constructions Pty Ltd. A dredge commenced operations on 24 April 2013, with removal of the regulator estimated to take 4 months to complete. Maritime Constructions Pty Ltd are operating 24 hours a day, 7 days a week until the work is completed.

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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 on the upgrade of the weir on Pipeclay Creek at Chowilla to improve the management of flows into the Chowilla anabranch and to enable fish passage. Public access around the weir will be 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 as at 17 July 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 | 27.58 | 30.03 | 29.44 |
| Lock 8 Wangumma | 725.7 | 24.60 | 24.83 | 27.60 | 27.19 |
| Lock 7 Rufus River | 696.6 | 22.10 | 22.10 | 25.70 | 25.24 |
| Lock 6 Murtho | 619.8 | 19.25 | 19.23 | 21.03 | 20.50 |
| Renmark | 567.4 | - | 16.30 | 18.54 | 18.04 |
| Lock 5 | 562.4 | 16.30 | 16.29 | 18.07 | 17.50 |
| Lyrup | 537.8 | - | 13.25 | 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 | - | - | 15.05 | 14.12 |
| Cobdogla | 446.9 | - | - | 13.44 | 12.38 |
| Lock 3 | 431.4 | 9.80 | 9.84 | 13.16 | 12.02 |
| Overland Corner | 425.9 | - | 6.26 | 12.73 | 11.58 |
| Waikerie | 383.6 | - | 6.30 | 11.26 | 10.24 |
| Lock 2 | 362.1 | 6.10 | 6.17 | 10.28 | 9.30 |
| Cadell | 332.6 | - | - | 9.17 | 8.08 |
| Morgan | 321.7 | - | 3.33 | 8.85 | 7.65 |
| Lock 1 Blanchetown | 274.2 | 3.20 | 3.24 | 6.81 | 5.38 |
| Swan Reach | 245.0 | 0.75 | 0.54 | 6.06 | 4.51 |
| Mannum PS | 149.8 | 0.75 | 0.59 | 3.15 | 1.90 |
| Murray Bridge | 115.3 | 0.75 | 0.60 | 2.06 | 1.26 |

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

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FURTHER INFORMATION

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

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:

www.waterconnect.sa.gov.au/RMWD/Pages/default.aspx

www.sawater.com.au/SAWater/Environment/TheRiverMurray/River+Murray+Levels.htm

www.mdba.gov.au/water/live-river-data

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 on the discharge of acid drainage water into 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

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:

www.mdba.gov.au/programs/tlm/

Regularly updated daily water level information can be found at the following websites:

SA Water

www.sawater.com.au/SAWater/Environment/TheRiverMurray/River+Murray+Levels.htm

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

Department of Environment, Water and Natural Resources

www.waterconnect.sa.gov.au/RMWD/Pages/default.aspx

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