

RIVER MURRAY FLOW REPORT

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Report #21/2016

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This supersedes the previous flow report issued by the Department of Environment, Water and Natural Resources (DEWNR) on 3 June 2016. The next flow report will be provided on Friday, 17 June 2016.

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 1000 ML.

FLOW OUTLOOK

The flow at the South Australian border is approximately 2.9 GL/day and will decrease to around 2.7 GL/day during the coming week. It comprises the normal June Entitlement Flow of 3 GL/day less deferred Entitlement Flow plus environmental water.

The flow over Lock 1 is approximately 2.8 GL/day and will decrease to around 2.4 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. The forecasts will be revised as new information becomes available.

ENVIRONMENTAL WATER

During June 2016, the Commonwealth Environmental Water Holder (CEWH) and the Murray-Darling Basin Authority's *The Living Murray* are expected to provide up to 16 GL of environmental water to South Australia. The environmental water will provide in-channel, Lower Lakes and Coorong environmental and water quality benefits.

DEWNR is continuing discussions regarding environmental water to be delivered during 2016-17.

MANAGEMENT OF SOUTH AUSTRALIA'S DEFERRED WATER

The Murray-Darling Basin Authority confirmed that, on 1 June 2016, South Australia had 194.2 GL of deferred water in storage. Of this total, 123 GL is stored for critical human water needs and 71.2 GL for private carryover use in future dry years. Volumes stored are adjusted for net evaporation losses until delivered to South Australia.

Opportunities to defer and store water are considered on the basis of how Entitlement Flow is managed, plus operational flow objectives for water quality and weather conditions.

WATER ALLOCATIONS AND CARRYOVER

Water access entitlement holders will be provided with a minimum opening allocation of 36 per cent in 2016-17. Should the water resource availability improve from the current very dry conditions across the Murray-Darling Basin, then these improvements will be translated into improvements in water allocations.

Improvements to the opening water allocations will be announced through future River Murray Flow Reports.

The actual opening water allocation will be announced by 1 July 2016.

Carryover will be granted in 2016-17. Carryover can only be granted to eligible River Murray water access entitlement holders (up to a maximum of 20 per cent of entitlement volume). Eligibility criteria include:

- underuse in 2015-16; and
- final meter readings submitted to DEWNR by 31 July 2016.

If you don't have a water meter you may still be eligible for carryover but you must contact DEWNR by 31 July 2016.



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Unused water allocations traded into South Australia in 2015-16 will also be included in determining 2015-16 underuse and eligibility for carryover in 2016-17.

All environmental water that is part of South Australia's Entitlement Flow (including water owned by CEWH, Murray-Darling Basin Authority's *The Living Murray*, and the South Australian Government) will be delivered and used by the end of 2015-16. Therefore no environmental water will be carried over into 2016-17.

MURRAY MOUTH

Dredging operations at the Murray Mouth commenced on 9 January 2015 to maintain connectivity (exchange of water) between the Coorong and the Southern Ocean.

Dredges are operating in the Tauwitche and Goolwa Channels. At 5 June 2016, approximately 1 319 700 cubic metres of sand had been removed. The dredges are currently working 24 hours a day, 7 days a week, to move the significant volume of sand that was transported into the Murray Mouth as a result of storm events in late-May.

Mariners are advised that there are a number of shallow zones in the Murray Mouth. Mariners should follow all directions in the area and reduce their speed. Boats equipped with echo sounders are strongly encouraged to regularly check depths and avoid travelling at low tide. Mariners are reminded that navigation through the Murray Mouth is only permitted during daylight hours and that Exclusion Zones established around the dredging operations remain in place to ensure public safety. For more information refer to the Notice to Mariners at:

<http://dpti.sa.gov.au/news/?a=247918>

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

Signage has been installed at appropriate locations advising of Exclusion Zones.

BARRAGE OPERATIONS AND WATER LEVELS IN THE LOWER LAKES

The water level in Lake Alexandrina is approximately 0.63 m AHD and in Lake Albert is approximately 0.66 m AHD. The difference in water levels is due to wind effects.

During the week ending 7 June 2016, total barrage releases were less than 1 GL. The barrages are closed to minimise the risk of seawater entering Lake Alexandrina due to adverse conditions but will be re-opened when conditions improve. Fishways are operational to provide a fish passage between Lake Alexandrina and the Coorong.

SA Water will continue to operate the barrages to minimise any negative salinity impacts from reverse flow events.

Water levels and barrage operations are monitored closely by South Australian Government agencies, the Murray-Darling Basin Authority and Commonwealth Environmental Water Office.

WEIR POOL OPERATIONS (*current*)

The Lock 1 weir pool remains approximately 0.1 m below the normal pool level of 3.2 m AHD to enable engineering investigations to be undertaken at the weir.

WEIR POOL OPERATIONS (*potential*)

DEWNR is currently considering raising the Lock 2 and 5 weir pools, during spring (August to October), above their normal operating range. Raising of Lock 6 is also being considered in association with the potential operation of the Chowilla Regulator. While these events are being planned, any operation or activity will depend on the flow to South Australia and availability of environmental water across the Murray-Darling Basin.



Weir pool manipulations aim to reinstate some of the natural variability of water levels in the River Murray system, which have been lost due to river regulation. The manipulations will assist to improve lateral connectivity, health, resilience and biodiversity of the river channel, floodplain and wetlands. Weir pool manipulations are an increasingly common feature of routine river operations.

CHOWILLA WATERING

A range of environmental watering actions are being considered for the Chowilla Floodplain Icon site during 2016-17. These include potential further testing of the Chowilla Regulator to a higher level in conjunction with raising Lock 6. This will only occur if flow in the River Murray is in excess of 15 GL/day and environmental water is made available.

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 Locks 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.

WATER QUALITY – Algal Blooms

A red alert warning for blue-green algae remains in place downstream of Yarrowonga to Lock 9 weir pool.

SA Water's monitoring results show that current levels of blue-green algae in South Australia do not represent a threat to use of River Murray water for irrigation. It is advisable to avoid contact with obviously green discoloured water or scum as it may cause skin irritations in some people. Samples collected in South Australia have been extensively tested for the presence of a range of known toxins and none were detected.

SA Water increases sampling whenever a water quality event is detected to allow for timely action. SA Water, SA Health and DEWNR have been monitoring the occurrence of blue-green algal blooms in Victoria, NSW and South Australia. SA Water uses the water quality data to continually adjust operations to minimise impacts to water treatment plants and other users located along the River Murray.

The Murray-Darling Basin Authority and the relevant South Australian Government agencies are regularly monitoring the situation. If the situation changes, advice will be provided to the community.

WATER TRADE CUT-OFF DATE

The South Australian Government has announced the introduction of a cut-off date for water access entitlement holders to receive guaranteed processing and determining of River Murray allocation trade applications for the 2015-16 water year.

The cut-off date is the third Friday in June. This means for 2015-16, water allocation trade applications received by 17 June 2016 are guaranteed to be processed within the same water year.

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 8 June 2016

| Location | River km | Normal Pool Level | Current Level (m AHD) | 1974 Flood Level (m AHD) | 1993 Flood Level (m AHD) | 2011 High Water Level (m AHD) |
|--------------------|----------|-------------------|-----------------------|--------------------------|--------------------------|-------------------------------|
| Lock 10 | 825.0 | 30.80 | 30.84 | 33.81 | 33.32 | 32.28 |
| Lock 9 Kulnine | 764.8 | 27.40 | 27.44 | 30.03 | 29.44 | 28.80 |
| Lock 8 Wangumma | 725.7 | 24.60 | 24.62 | 27.60 | 27.19 | 26.79 |
| Lock 7 Rufus River | 696.6 | 22.10 | 22.16 | 25.70 | 25.24 | 24.92 |
| Lock 6 Murtho | 619.8 | 19.25 | 19.19 | 21.03 | 20.50 | 20.11 |
| Renmark | 567.4 | - | - | 18.54 | 18.04 | 17.38 |
| Lock 5 | 562.4 | 16.30 | 16.34 | 18.07 | 17.50 | 17.05 |
| Lyrup | 537.8 | - | 13.28 | 16.85 | 16.26 | 15.68 |
| Berri | 525.9 | - | 13.26 | 15.81 | 15.74 | 15.16 |
| Lock 4 | 516.2 | 13.20 | 13.25 | 15.65 | 15.08 | 14.75 |
| Loxton | 489.9 | - | 9.99 | 15.05 | 14.12 | 13.42 |
| Cobdogla | 446.9 | - | 9.86 | 13.44 | 12.38 | 11.52 |
| Lock 3 | 431.4 | 9.80 | 9.83 | 13.16 | 12.02 | 10.93 |
| Overland Corner | 425.9 | - | 6.24 | 12.73 | 11.58 | 10.27 |
| Waikerie | 383.6 | - | 6.29 | 11.26 | 10.24 | 9.06 |
| Lock 2 | 362.1 | 6.10 | 6.17 | 10.28 | 9.30 | 8.25 |
| Cadell | 332.6 | - | 3.22 | 9.17 | 8.08 | 6.82 |
| Morgan | 321.7 | - | 3.20 | 8.85 | 7.65 | 6.20 |
| Lock 1 Blanchetown | 274.2 | 3.20 | 3.15 | 6.81 | 5.38 | 4.42 |
| Swan Reach | 245.0 | 0.75 | 0.57 | 6.06 | 4.51 | 3.09 |
| Mannum PS | 149.8 | 0.75 | 0.61 | 3.15 | 1.90 | 1.46 |
| Murray Bridge | 115.3 | 0.75 | 0.55 | 2.06 | 1.26 | 1.21 |

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 salinity, 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:

<https://www.waterconnect.sa.gov.au/Systems/RTWD/Pages/Default.aspx>

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

<http://livedata.mdba.gov.au/>

The latest news, information and announcements about the River Murray and Basin Plan are available at:

[*River Murray Update*](#).

The Department of Environment, Water and Natural Resources has published a series of inundation maps for the River Murray. They are available at:

<https://www.waterconnect.sa.gov.au/Systems/RMIM/SitePages/Home.aspx>

Information on the management of acid drainage water in the Lower River Murray can be accessed at:

http://www.epa.sa.gov.au/environmental_info/water_quality/programs/acid_sulfate_soils/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/managing-water/environmental-water/delivering-environmental-water/living-murray-program>

Chowilla Floodplain Icon Site management

<http://www.environment.sa.gov.au/Chowilla-floodplain>

Department of Environment, Water and Natural Resources

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

Information provided by the Department of Transport, Energy and Infrastructure on boat licences, registering motor boats, owning and operating water craft, and boat and marine safety can be accessed at:

www.sa.gov.au/boatingmarine

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