

RIVER MURRAY FLOW REPORT

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Report #15/2016

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This supersedes the previous flow report issued by the Department of Environment, Water and Natural Resources (DEWNR) on 22 April 2016. The next flow report will be provided on Friday 6 May 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 1,000 ML.

FLOW OUTLOOK

The flow at the South Australian border is approximately 4.1 GL/day and will decrease to around 3 GL/day during the coming week. It comprises the normal April Entitlement Flow of 4.5 GL/day less deferred Entitlement Flow plus environmental water.

The flow over Lock 1 is approximately 3.2 GL/day and will decrease to around 2.8 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 April 2016, the Commonwealth Environmental Water Holder (CEWH) and the Murray-Darling Basin Authority's *The Living Murray* are expected to provide up to 50 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 additional environmental water to be delivered during the remainder of 2015-16.

MANAGEMENT OF SOUTH AUSTRALIA'S DEFERRED WATER

The Murray-Darling Basin Authority confirmed that on 1 April 2016 South Australia had 161.6 GL of deferred water in storage. Of this total, 101.8 GL is stored for critical human water needs and 59.8 GL for private carryover use in future dry years. Volumes stored are adjusted for net evaporation losses until delivered to South Australia.

DEWNR will continue to pursue opportunities to defer additional Entitlement Flow during 2015-16. 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 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.

The initial water resource availability outlook for the South Australian River Murray in 2016-17 has been based on multi-history modelling. This modelling is used to project water availability under different inflow scenarios. For example, a 95 per cent Annual Exceedance Probability (AEP) scenario means only five in 100 years would be expected to have lower water availability. The 95 per cent AEP scenario projects maximum water availability for South Australia of up to 1,310 GL by 30 June 2017. This compares with 1,850 GL in a full Entitlement Flow year.



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Such probability-based projections should be treated as indicative only for the forecast period and may be subject to revision during the water year, as more information on actual conditions becomes available.

Future improvements to water allocations above the guaranteed minimum opening allocation of 36 per cent will be based on actual water resource availability improvements, rather than on forecast improvements. Under this allocation approach, if water availability reaches 1,310 GL, then allocations would reach 65 per cent. At a water resource availability of 1,560 GL, allocations would be 100 per cent.

Projected maximum entitlement flow and associated closing allocations under different water availability scenarios

	Very dry (95% AEP)	Moderate (75% AEP)	Average (50% AEP)
SA Entitlement Flow (GL)	1,310	1,560	1,750
Irrigators (%)	65	100	100

Under worst-case scenario conditions, improvements to allocations would be extremely limited. Any improvements to the opening allocations will be announced through future River Murray Flow Reports, until a 100 per cent water allocation is achieved.

The actual opening water allocation will be announced before 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 includes:

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

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.

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 24 April 2016, approximately 1 216 100 cubic metres of sand had been removed. Routine monitoring confirms an improvement in the condition of both channels as a result of dredging, but dredging is expected to remain in place until substantial high flows return.

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.

Any boats navigating through the Murray Mouth area 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 at low tide.

BARRAGE OPERATIONS AND WATER LEVELS IN THE LOWER LAKES

The water level in Lake Alexandrina is approximately 0.58 m AHD and in Lake Albert is approximately 0.60 m AHD. During the week ending 26 April 2016, total barrage releases were approximately 3.5 GL. Barrage releases at Tauwichee are providing freshwater flow to the Coorong estuary to improve salinity levels and maintain fish habitat. All 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

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.

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

It is reasonably common for algal blooms to be reported at this time of the year in the Murray-Darling system upstream of South Australia. However, algal blooms are uncommon in the main channel of the River Murray in South Australia.

SA Water's monitoring results show that numbers of blue-green algae have recently increased upstream of Berri (to the border) but do not represent a threat to use of River Murray water for irrigation. It is advisable to avoid contact of obviously green discoloured water or scums as it may cause skin irritations in some people.

The algal bloom in South Australia is separate to, and the dominant species is different to, the bloom being reported upstream in Victoria. Samples of the bloom collected 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.

At times it may be necessary to divert water through Lake Victoria to reduce the risk of interstate blooms extending into South Australia. Based on previous experience, it is expected that this action can help suppress the establishment of an algal bloom.

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.

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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 27 April 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	30.88	33.81	33.32	32.28
Lock 9 Kulnine	764.8	27.40	27.45	30.03	29.44	28.80
Lock 8 Wangumma	725.7	24.60	24.46	27.60	27.19	26.79
Lock 7 Rufus River	696.6	22.10	22.01	25.70	25.24	24.92
Lock 6 Murtho	619.8	19.25	19.24	21.03	20.50	20.11
Renmark	567.4	-	-	18.54	18.04	17.38
Lock 5	562.4	16.30	16.31	18.07	17.50	17.05
Lyrup	537.8	-	-	16.85	16.26	15.68
Berri	525.9	-	13.23	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	-	-	13.44	12.38	11.52
Lock 3	431.4	9.80	9.81	13.16	12.02	10.93
Overland Corner	425.9	-	6.17	12.73	11.58	10.27
Waikerie	383.6	-	6.22	11.26	10.24	9.06
Lock 2	362.1	6.10	6.10	10.28	9.30	8.25
Cadell	332.6	-	3.16	9.17	8.08	6.82
Morgan	321.7	-	3.15	8.85	7.65	6.20
Lock 1 Blanchetown	274.2	3.20	3.10	6.81	5.38	4.42
Swan Reach	245.0	0.75	0.49	6.06	4.51	3.09
Mannum PS	149.8	0.75	0.49	3.15	1.90	1.46
Murray Bridge	115.3	0.75	0.45	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 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>

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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