

RIVER MURRAY FLOW REPORT and WATER RESOURCES UPDATE

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Report #41/2017

Issued 10:00 am 13 October 2017

This supersedes the previous flow report issued by the Department of Environment, Water and Natural Resources (DEWNR) on 6 October 2017. The next report will be provided on Friday 20 October 2017.

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.

NEW WATER ALLOCATION PLAN FOR THE RIVER MURRAY PRESCRIBED WATERCOURSE

The new Water Allocation Plan for the River Murray Prescribed Watercourse was adopted by Government on 3 October 2017 and announced by the Minister for Water and the River Murray, Ian Hunter in Murray Bridge today (13 October 2017). For more information see the Media Release (attached in email).

The plan includes important information about the way we take and use water from the River Murray. To see the plan and find out what this means for you, please go to the [NR SAMDB website](#)

After July 2018, authorisations will be reissued to reflect some of the changes in the plan. Until then, your current authorisations remain valid. For further information about your authorisations:

- call the Berri water licensing team on (08) 8595 2053;
- drop in for a visit at 2 Wade Street, Berri ;or
- email dewnwaterlicensing@sa.gov.au

INCREASE IN IRRIGATION ALLOCATIONS IN DRY YEARS

The new Water Allocation Plan outlines a transparent approach to sharing South Australia's River Murray Entitlement. This will help businesses make informed decisions, especially in times of low water availability.

The State Government has decided to explicitly incorporate the Adelaide Desalination Plant (ADP) into how River Murray water allocations are made in dry years, when irrigators are facing allocations of lower than 100 per cent.

The new River Murray Water Allocation Plan pledges an extra 50 gigalitres of water to holders of irrigation and equivalent licenses in years when allocations are less than 100 per cent. This corresponds to an 8 per cent increase in irrigators' allocations from the Murray, up to allocations of 100 per cent.

For example, under the dry conditions that prevailed at the start of the 2016-17 water year, this ADP-driven policy change would have boosted irrigators' opening water allocations from 36 per cent to 44 per cent.

Read more about this in the fact sheet (attached in email).

RIVER MURRAY SALINITY ZONING POLICY

Irrigators and river communities are invited to have their say on proposed changes to the River Murray Salinity Zoning Policy, which would provide irrigators with greater flexibility around site use approvals. The changes aim to support sustainable irrigation development along the River Murray while still meeting South Australia's commitment to manage salinity under the Murray-Darling Basin Agreement.

Earlier this year the community provided feedback on issues with the current Salinity Zoning Policy. As a result of this feedback, changes are now being proposed to the Policy. To provide feedback on the proposed changes, please visit the State Government's [YourSAy website](#)

WATER ALLOCATIONS AND CARRYOVER

South Australian River Murray water access entitlement holders (Class 3a, 3b, 4, 7 and 8) have been granted a 100% water allocation in 2017-18. Private carryover will not be made available in 2017-18 due to the positive water resource availability outlook and the risk of spill from the Murray-Darling Basin controlled storages.



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MANAGEMENT OF SOUTH AUSTRALIA'S DEFERRED WATER

The Murray-Darling Basin Authority is yet to confirm the volume of water that was deferred during September and held in Lake Victoria. The total volume of deferred water held in storage is approximately 189.1 GL. The table below identifies the storage in which it is held and the purpose.

At 1 October 2017				
Purpose	Lake Victoria (GL)	Hume (GL)	Dartmouth (GL)	Total (GL)
*CHWN	Estimate 3.8#	22.7	81.7	108.2
Private Carryover	Estimate 4.4#	17.0	59.5	80.9
Total	Estimate 8.2#	39.7	141.2	189.1

*Critical Human Water Needs (CHWN)

to be confirmed by the Murray-Darling Basin Authority

Volumes stored are adjusted for net evaporation losses and spills until delivered to South Australia.

South Australia is seeking opportunities to defer and store water during 2017-18.

WATER RESOURCES UPDATE

During September 2017 the total River Murray System inflow was approximately 642 GL, which is about 39% of the September long-term average of 1 628 GL. There was no inflow to Menindee Lakes (from the Darling System) during September 2017, compared to the September long-term average of 198 GL.

The flow to South Australia during September 2017 was approximately 191 GL, which is about 19% of the September long-term average of approximately 1 001 GL. The flow comprised:

- 135 GL of Entitlement Flow (includes environmental water on SA licence); less
- 8.2 GL (subject to confirmation from the MDBA) of deferred water; plus
- 64 GL of environmental water.

RAINFALL AND TEMPERATURE OUTLOOK

The latest Bureau of Meteorology weather outlook for October to December 2017 indicates an equal chance of receiving above or below average rainfall with warmer than average temperatures across the Murray-Darling Basin. The outlook is influenced by a neutral El Niño-Southern Oscillation in the Pacific Ocean and a neutral Indian Ocean Dipole.

STORAGE VOLUMES

Murray-Darling Basin Storage Volumes

Storage	Full Supply Volume (GL)	11/10/2017 (GL)	11/10/2016 (GL)	Long-term average (end of October) (GL)
Dartmouth	3 856	3 284 (85%)	2 724 (71%)	
Hume	3 003	2 671 (89%)	2 940 (98%)	
Lake Victoria	677	635 (94%)	543 (80%)	
Menindee Lakes	*1 731	630 (36%)	506 (29%)	
TOTAL	9 267	7 220 (78%)	6 713 (72%)	7 498 (81%)

*Menindee Lakes can be surcharged to 2 015 GL

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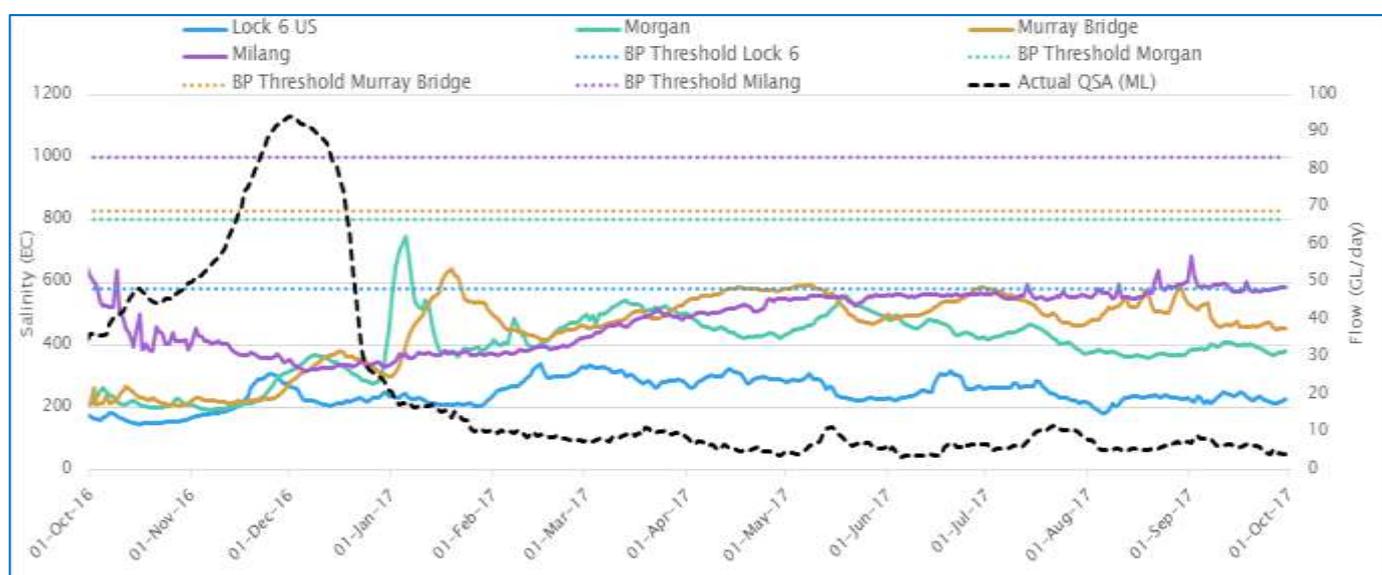
WATER QUALITY - Salinity

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 (QSA) from October 2016 to October 2017. The dashed-lines identify the Basin Plan (BP) thresholds for the corresponding colour coded location.

SA River Murray Daily Average Salinity



FLOW OUTLOOK

The flow at the South Australian border is approximately 10.5 GL/day and will decrease to around 7 GL/day during the coming week. It comprises:

- normal October Entitlement Flow of 5.5 GL/day,
- less deferred water;
- plus environmental water, and
- interstate trade adjustments.

The flow over Lock 1 is approximately 9.7 GL/day and will decrease to around 8.5 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. Advice 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 October, approximately 106 GL of environmental water is expected to be delivered to South Australia. The environmental water will provide in-channel, Lower Lakes and Coorong environmental and water quality benefits. Environmental water is being provided from a number of locations including Hume Reservoir on the

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River Murray, Goulburn System, and the Menindee Lakes. The release of this environmental water from upstream storages is contributing towards a range of outcomes in these river systems before flowing across the South Australian border.

DEWNR is continuing discussions regarding environmental water to be delivered during 2017-18.

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.

Two dredges are operating in the Goolwa and Tauwitchere channels. At 8 October 2017, a total of approximately 2 279 617 cubic metres of sand had been removed by dredging operations.

There are a number of shallow zones in and adjacent to the Murray Mouth. Mariners should follow all directions in the area and reduce speed. Boats equipped with echo sounders should 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 are in place to ensure public safety. Refer to Notice to Mariners No 42 of 2016 www.dpti.sa.gov.au/news?a=287322

There is a partial park closure in place for the northern tip of the Coorong National Park. For more information visit www.environment.sa.gov.au/parks/Safety/Park_closures/141219-coorong-national-park.

BARRAGE OPERATIONS AND WATER LEVELS IN THE LOWER LAKES

The water level in Lake Alexandrina is approximately 0.78 m AHD and Lake Albert is approximately 0.79 m AHD. The difference in water levels is due to wind effects. When possible, water levels are being managed to achieve a target water level of between 0.75 m AHD and 0.85 m AHD during October 2017.

During the week ending 10 October 2017 total barrage releases were approximately 12 GL, with releases prioritised at Tauwitchere, Goolwa, Mundoo and Boundary Creek. During adverse weather conditions SA Water will operate the barrages to minimise the risk of seawater entering Lake Alexandrina, therefore minimising any negative salinity impacts from reverse flow events.

All fishways are operational and providing fish passage between Lake Alexandrina and the Coorong.

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

WEIR POOL OPERATIONS

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

The Normal Pool Level (NPL) and Normal Operating Range for the South Australian locks and weirs are identified in the table below.

Weir	Normal Pool Level m AHD	Normal Operating Range m AHD
Lock 6 - Murtho	19.25	19.17 - 19.50
Lock 5 - Renmark	16.30	16.22 - 16.43
Lock 4 - Bookpurnong	13.20	13.16 - 13.50
Lock 3 - Overland Corner	9.80	9.77 - 10.02
Lock 2 - Waikerie	6.10	6.02 - 6.40
Lock 1 - Blanchetown	3.20	3.10 - 3.50



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A weir pool manipulation trial has been underway since mid-July 2017 which involved lowering and raising water levels at Locks 2 and 5. Lock 5 was gradually raised by 0.45 m to its target water level of 16.75 m AHD. Lock 2 was gradually raised by 0.5 m to its target water level of 6.60 m AHD. The raising process was completed on 4 October when the water levels commenced being slowly returned to normal pool levels at a rate of 0.02-0.05 m per day.

A small scale raising at Lock 6, within the normal operating range, is currently being considered.

Raising Lock 4 weir pool is also being considered during spring if high flows are experienced.

A collaborative partnership between DEWNR, SA Water, Commonwealth Environmental Water Office and the Murray-Darling Basin Authority has enabled weir pool manipulation events to be undertaken.

Weir pool manipulations aim to reinstate some of the natural variability of water levels in the River Murray system, which has been lost due to river regulation. The manipulations will assist to improve the health, resilience and biodiversity of the river channel, floodplain and wetlands. Combining weir pool lowering with weir pool raising increases the benefits of varying water levels. Weir pool manipulations are becoming a routine part of river operations.

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 Mariners should be aware of the risk of submerged navigation hazards, and should regularly check river depth.



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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

Location	River km	Normal Pool Level (m AHD)	Current Level 11/10/2017 (m AHD)	1974 Flood Level (m AHD)	1993 Flood Level (m AHD)	2016 High Water Level (m AHD)
Lock 10	825.0	30.80	30.83	33.81	33.32	32.72
Lock 9 Kulnine	764.8	27.40	27.45	30.03	29.44	28.85
Lock 8 Wangumma	725.7	24.60	24.94	27.60	27.19	26.85
Lock 7 Rufus River	696.6	22.10	22.60	25.70	25.24	24.97
Lock 6 Murtho	619.8	19.25	19.28	21.03	20.50	20.19
Renmark	567.4	-	16.63	18.54	18.04	17.44
Lock 5	562.4	16.30	16.63	18.07	17.50	17.05
Lyrup	537.8	-	13.30	16.85	16.26	15.80
Berri	525.9	-	13.23	15.81	15.74	15.21
Lock 4	516.2	13.20	13.25	15.65	15.08	14.73
Loxton	489.9	-	10.26	15.05	14.12	13.54
Cobdogla	446.9	-	-	13.44	12.38	11.59
Lock 3	431.4	9.80	9.87	13.16	12.02	10.98
Overland Corner	425.9	-	6.75	12.73	11.58	10.41
Waikerie	383.6	-	6.62	11.26	10.24	9.20
Lock 2	362.1	6.10	6.44	10.28	9.30	8.32
Cadell	332.6	-	3.22	9.17	8.08	7.01
Morgan	321.7	-	3.16	8.85	7.65	6.38
Lock 1 Blanchetown	274.2	3.20	3.09	6.81	5.38	4.46
Swan Reach	245.0	0.75	0.74	6.06	4.51	3.11
Mannum PS	149.8	0.75	0.75	3.15	1.90	1.33
Murray Bridge	115.3	0.75	0.69	2.06	1.26	1.04

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 <https://www.waterconnect.sa.gov.au/Pages/Home.aspx>

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

- www.environment.sa.gov.au/managing-natural-resources/river-murray/water-allocation-and-trade/water-allocations-and-announcements
- www.waterconnect.sa.gov.au/Systems/RTWD/Pages/Default.aspx
- 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 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 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 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 www.mdba.gov.au/managing-water/environmental-water/delivering-environmental-water/living-murray-program

Chowilla Floodplain Icon Site management www.environment.sa.gov.au/Chowilla-floodplain

Department of Environment, Water and Natural Resources www.environment.sa.gov.au

Information provided by the Department of Planning, Transport 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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