

RIVER MURRAY FLOW REPORT and WATER RESOURCES UPDATE

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Report #16/2017

Issued 10:00 am 21 April 2017

This supersedes the previous flow report issued by the Department of Environment, Water and Natural Resources (DEWNR) on 13 April 2017. The next report will be provided on Friday 28 April 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.

2017-18 WATER ALLOCATIONS AND CARRYOVER

South Australian River Murray water access entitlement holders (Class 3a, 3b, 4, 7 and 8) will receive 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.

WATER TRADE

Water New South Wales has advised that interstate trade between New South Wales and South Australia for the 2016-17 season will close on 30 April 2017. The closing date also applies to trades between New South Wales and Victoria.

The final date for South Australian River Murray water access entitlement holders to receive guaranteed processing and determining of River Murray water allocation trade applications for the 2016-17 water year is Friday, 16 June 2017. The final date is always the third Friday in June.

MANAGEMENT OF SOUTH AUSTRALIA'S DEFERRED WATER

The Murray-Darling Basin Authority confirmed that on 1 April 2017 South Australia had 211.4 GL of deferred water held in storage. The table below identifies the storage in which it is held and the purpose.

At 1 April 2017				
Purpose	Lake Victoria (GL)	Hume (GL)	Dartmouth (GL)	Total (GL)
*CHWN	32.0	0.0	81.7	113.7
Private Carryover	38.2	0.0	59.5	97.7
Total	70.2	0.0	141.2	211.4

*Critical Human Water Needs (CHWN)

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 the remainder of 2016-17.

WATER RESOURCES UPDATE

During March 2017 the total River Murray System inflow was approximately 87 GL, which is about a third of the March long-term average of 221 GL. Inflow to Menindee Lakes (from the Darling System) during March 2017 was approximately 0 GL, which is well below the March long-term average of 187 GL.

The flow to South Australia during March 2017 was approximately 290 GL, which is about the March long-term average of approximately 286 GL. The flow comprised:

- 163.6 GL of Entitlement Flow (186 GL less deferred water of 22.4 GL) this includes environmental water on SA licence;
- plus 133.7 GL of environmental water,
- minus 7.4 GL of trade out of South Australia.



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STORAGE VOLUMES

Murray-Darling Basin Storage Volumes

Storage	Full Supply Volume (GL)	19/4/2017 (GL)	19/4/2016 (GL)	Long-term average (end of April) (GL)
Dartmouth	3 856	3 001 (78%)	1 671 (43%)	
Hume	3 003	1 779 (59%)	607 (20%)	
Lake Victoria	677	334 (49%)	236 (35%)	
Menindee Lakes	*1 731	817 (47%)	50 (3%)	
TOTAL	9 267	5 931 (64%)	2 564 (28%)	5 423 (59%)

*Menindee Lakes can be surcharged to 2 015 GL

RAINFALL AND TEMPERATURE OUTLOOK

The latest Bureau of Meteorology weather outlook for April to June 2017 indicates drier than average rainfall with warmer than average temperatures across the Murray-Darling Basin. The outlook is influenced by a neutral El Niño-Southern Oscillation, warming of tropical Pacific Ocean, and cooler eastern Indian Ocean.

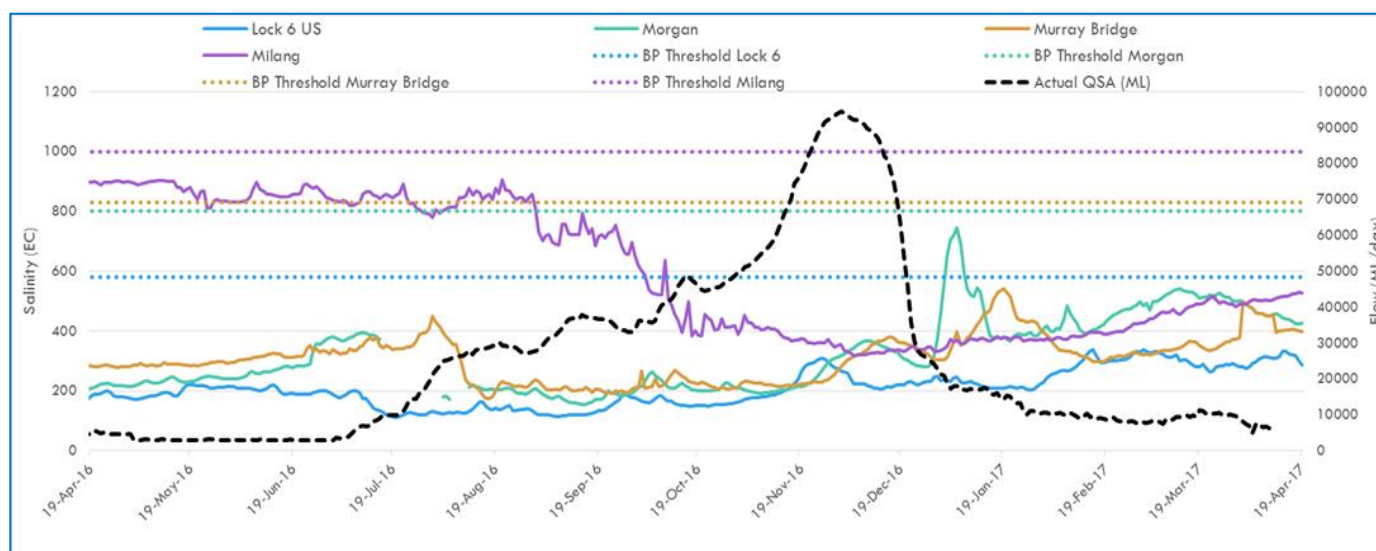
WATER QUALITY - Salinity

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

SA River Murray Daily Average Salinity



Note: Missing Morgan salinity readings from 16-11 August 2016 are due to a faulty EC sensor

FLOW OUTLOOK

The flow at the South Australian border is approximately 5.5 GL/day and will decrease to around 4 GL/day during the coming week. It comprises:

- normal April Entitlement Flow 4.5 GL/day
- plus environmental water
- minus deferred water, and
- interstate trade adjustments.

The flow over Lock 1 is approximately 3.8 GL/day and will decrease to around 3 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 April, approximately 80 GL of environmental water will be delivered 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 the remainder of 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.

The dredging operations combined with recent substantial barrage releases have improved conditions at the Murray Mouth. The dredging program is being reviewed to determine if it should continue. One dredge is operating in the Goolwa and Tauwitchere channels (currently operating in Tauwitchere channel). At 16 April 2017, a total of approximately 1 920 400 cubic metres of sand had been removed by dredging operations since commencement.

Mariners are advised that there are still a number of shallow zones in and adjacent to the Murray Mouth. They should follow all directions in the area and reduce their 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 0.57 m AHD and Lake Albert approximately 0.59 m AHD. The difference in water levels is due to wind effects. Water levels are being managed to achieve a target water of at least 0.5 m AHD by the end of April 2017.

During the week ending 18 April 2017, total barrage releases were approximately 7 GL. Releases are being prioritised at Tauwitchere and Goolwa barrages. All fishways are operational and providing fish passage between Lake Alexandrina and the Coorong.

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.

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.

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 19/4/2017 (m AHD)	1974 Flood Level (m AHD)	1993 Flood Level (m AHD)	2016 High Water Level (m AHD)
Lock 10	825.0	30.80	30.82	33.81	33.32	32.72
Lock 9 Kulnine	764.8	27.40	27.31	30.03	29.44	28.85
Lock 8 Wangumma	725.7	24.60	23.63	27.60	27.19	26.85
Lock 7 Rufus River	696.6	22.10	21.22	25.70	25.24	24.97
Lock 6 Murtho	619.8	19.25	19.24	21.03	20.50	20.19
Renmark	567.4	-	-	18.54	18.04	17.44
Lock 5	562.4	16.30	16.29	18.07	17.50	17.05
Lyrup	537.8	-	-	16.85	16.26	15.80
Berri	525.9	-	13.24	15.81	15.74	15.21
Lock 4	516.2	13.20	13.24	15.65	15.08	14.73
Loxton	489.9	-	10.07	15.05	14.12	13.54
Cobdogla	446.9	-	-	13.44	12.38	11.59
Lock 3	431.4	9.80	9.83	13.16	12.02	10.98
Overland Corner	425.9	-	6.28	12.73	11.58	10.41
Waikerie	383.6	-	6.31	11.26	10.24	9.20
Lock 2	362.1	6.10	6.16	10.28	9.30	8.32
Cadell	332.6	-	3.27	9.17	8.08	7.01
Morgan	321.7	-	3.21	8.85	7.65	6.38
Lock 1 Blanchetown	274.2	3.20	3.17	6.81	5.38	4.46
Swan Reach	245.0	0.75	0.53	6.06	4.51	3.11
Mannum PS	149.8	0.75	0.57	3.15	1.90	1.33
Murray Bridge	115.3	0.75	0.52	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 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

- 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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