

RIVER MURRAY FLOW REPORT and WATER RESOURCES UPDATE

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Report #11/2018

Issued 10:00 am 16 March 2018

This supersedes the previous flow report issued by the Department of Environment, Water and Natural Resources (DEWNR) on 9 March 2018. The next report will be provided on Friday 23 March 2018.

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 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.

MANAGEMENT OF SOUTH AUSTRALIA'S DEFERRED WATER

The Murray-Darling Basin Authority confirmed that on 1 March 2018 South Australia had 232 GL of deferred water held in storage. The table below identifies the storage in which it is held and the purpose.

At 1 March 2018				
Purpose	Lake Victoria (GL)	Hume (GL)	Dartmouth (GL)	Total (GL)
*CHWN	22.9	33.2	81.5	137.6
Private Carryover	9.1	26.0	59.3	94.4
Total	32.0	59.2	140.8	232.0

*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 2017-18.

WATER RESOURCES UPDATE

During February 2018 the total River Murray System inflow was approximately 88 GL, which is approximately 47% of the February long-term average of 189 GL. There was no inflow to Menindee Lakes (from the Darling System) during February 2018, compared to the February long-term average of 124 GL.

The flow to South Australia during February 2018 was approximately 220 GL, which is about 76% of the January long-term average of approximately 291 GL. The flow comprised:

- 194 GL of Entitlement Flow (includes environmental water on SA licence); less
- 16.8 GL of deferred water; less
- 8.0 GL trade out of SA; plus
- 50.7 GL of environmental water.

RAINFALL AND TEMPERATURE OUTLOOK

The latest Bureau of Meteorology weather outlook for March to May 2018 indicates drier than average rainfall with warmer than average temperatures across the Murray-Darling Basin. The outlook is influenced by El Niño Southern Oscillation (ENSO) in the Pacific Ocean and Indian Ocean Dipole (IOD). ENSO has changed from La Niña conditions (which have now ceased) to inactive. The IOD is currently neutral.



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STORAGE VOLUMES

Murray-Darling Basin Storage Volumes

Storage	Full Supply Volume (GL)	14/3/2018 (GL)	14/3/2017 (GL)	Long-term average (end of March) (GL)
Dartmouth	3 856	3 425 (89%)	2 991 (78%)	
Hume	3 003	1 399 (47%)	2 118 (71%)	
Lake Victoria	677	335 (49%)	421 (62%)	
Menindee Lakes	*1 731	294 (17%)	992 (57%)	
TOTAL	9 267	5 453 (59%)	6 522 (70%)	5 505 (64%)

*Menindee Lakes can be surcharged to 2 015 GL

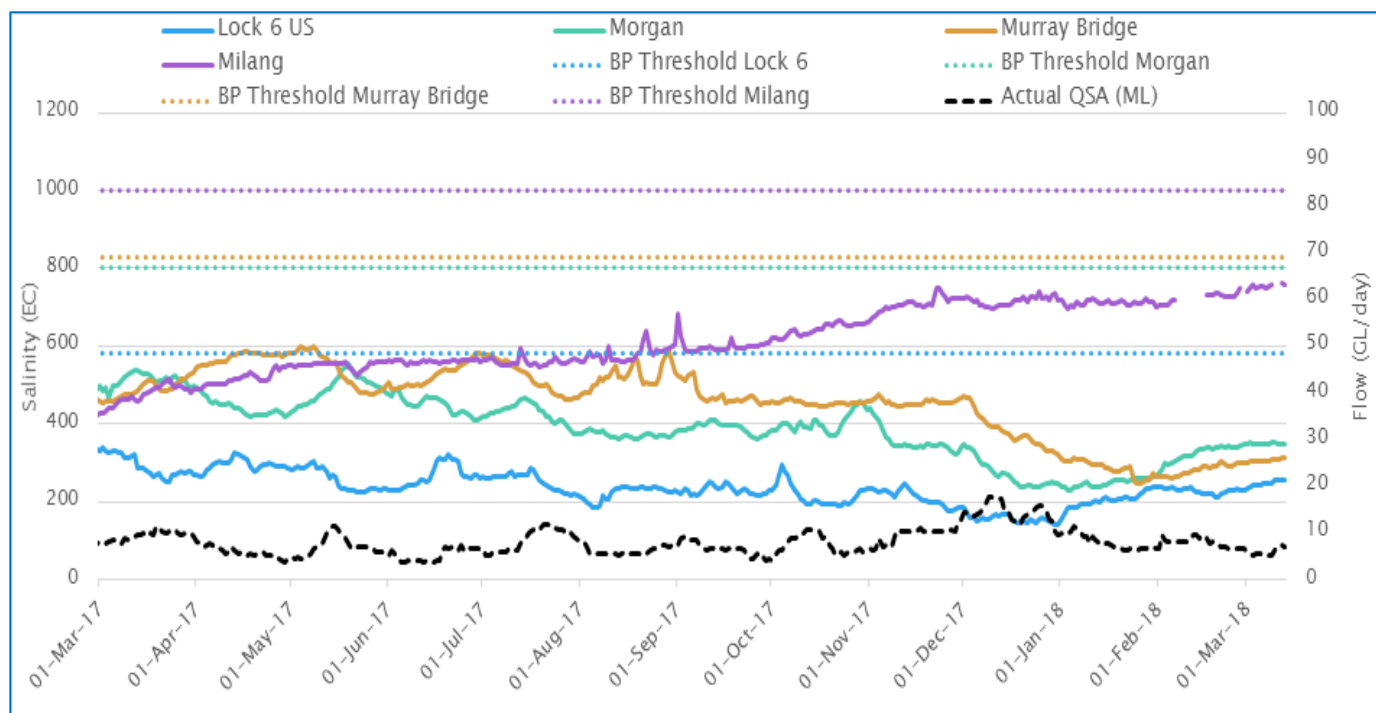
WATER QUALITY - Salinity

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 March 2017 to March 2018. The dashed-lines identify the Basin Plan (BP) thresholds for the corresponding colour coded location.

SA River Murray Daily Average Salinity



Note: Missing Milang salinity readings periodically during February and March 2018 are due to biofouling at the EC sensor

FLOW OUTLOOK

The flow at the South Australian border is approximately 7.2 GL/day and will remain around this rate during the coming week. It comprises:

- normal March Entitlement Flow of 6 GL/day;
- less deferred water;
- plus environmental water; and
- interstate trade adjustments.

The flow over Lock 1 is approximately 4.1 GL/day and will increase to 4.3 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

Environmental water is being provided by the Commonwealth Environmental Water Holder to support continuous barrage releases to protect water quality (salinity) in the Coorong while also enabling a managed partial drawdown of water levels in the Lower Lakes, which will provide benefits for fringing vegetation and improve habitat for threatened frogs and fish by creating more natural wetting and drying conditions. Environmental water is being delivered to the South Australian border at a rate of 2 GL/day to ensure water levels in the Lower Lakes remain within the normal operating range during the partial drawdown and barrage releases continue.

DEWNR is continuing discussions regarding environmental water to be delivered during 2018.

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 24/7 in the Goolwa and Tauwitchere channels. At 11 March 2018, a total of approximately 2 752 358 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 use caution when traversing the mouth area, follow all directions, reduce speed and avoid travelling at low tide. Boats equipped with echo sounders should check depths regularly. 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 [Notice 42](#)

There is a partial park closure in place for the northern tip of the Coorong National Park. For more information visit [Coorong partial park closure notice](#)

BARRAGE OPERATIONS AND WATER LEVELS IN THE LOWER LAKES

The water level in Lake Alexandrina is approximately 0.53 m AHD and Lake Albert is approximately 0.44 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 0.5 m AHD and 0.55 m AHD during March. This water level target aims to improve habitat for threatened frogs and fish.

During the week ending 13 March 2018 total barrage releases were approximately 10.5 GL. 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.

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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.

RIVERINE RECOVERY CONSTRUCTION WORKS

The Riverine Recovery Project will construct environmental regulators to manage a number of wetlands between Mannum and Murtho. The construction contract is with Fulton Hogan and construction is expected to take up to nine months to complete (February to October 2018). Construction works have commenced at Big Bend, Sugar Shack, Pyap and Murtho-Wiela wetlands. During the coming months work will commence at North Caurnamont, Teal Flat, Teal Flat Hut, Silverlea, Goat Island Paringa Paddock and Woolenook Bend wetlands.

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 14/3/2018 (m AHD)	1974 Flood Level (m AHD)	1993 Flood Level (m AHD)	2016 High Water Level (m AHD)
Lock 10	825.0	30.80	30.90	33.81	33.32	32.72
Lock 9 Kulnine	764.8	27.40	27.32	30.03	29.44	28.85
Lock 8 Wangumma	725.7	24.60	24.32	27.60	27.19	26.85
Lock 7 Rufus River	696.6	22.10	22.01	25.70	25.24	24.97
Lock 6 Murtho	619.8	19.25	19.25	21.03	20.50	20.19
Renmark	567.4	-	16.32	18.54	18.04	17.44
Lock 5	562.4	16.30	16.32	18.07	17.50	17.05
Lyrup	537.8	-	13.30	16.85	16.26	15.80
Berri	525.9	-	13.26	15.81	15.74	15.21
Lock 4	516.2	13.20	13.26	15.65	15.08	14.73
Loxton	489.9	-	10.08	15.05	14.12	13.54
Cobdogla	446.9	-	9.89	13.44	12.38	11.59
Lock 3	431.4	9.80	9.85	13.16	12.02	10.98
Overland Corner	425.9	-	6.22	12.73	11.58	10.41
Waikerie	383.6	-	6.22	11.26	10.24	9.20
Lock 2	362.1	6.10	6.10	10.28	9.30	8.32
Cadell	332.6	-	3.20	9.17	8.08	7.01
Morgan	321.7	-	3.16	8.85	7.65	6.38
Lock 1 Blanchetown	274.2	3.20	3.10	6.81	5.38	4.46
Swan Reach	245.0	0.75	0.61	6.06	4.51	3.11
Mannum PS	149.8	0.75	0.56	3.15	1.90	1.33
Murray Bridge	115.3	0.75	0.48	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 [Home page](#)

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

- [Water allocation and carryover announcements](#)
- [River Murray real-time water data](#)
- [SA Water River Murray info - levels, flows etc](#)
- [Murray-Darling Basin real-time water data](#)

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 [River Murray Inundation Maps](#)

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

[Victoria rainfall and river conditions](#)

[NSW rainfall and river conditions](#)

Information provided by the Commonwealth Environmental Water Office can be accessed at [CEWH Environmental Watering](#)

Information on The Living Murray can be accessed at [MDBA TLM](#)

Chowilla Floodplain Icon Site management [Chowilla-floodplain](#)

Department of Environment, Water and Natural Resources [Home page](#)

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

[Boating and marine](#)

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