

RIVER MURRAY FLOW REPORT and WATER RESOURCES UPDATE

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Report #28/2018

Issued 10:00 am 13 July 2018

This supersedes the previous flow report issued by the Department for Environment and Water (DEW) on 6 July 2018. The next report will be provided on Friday 20 July 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.

MANAGEMENT OF SOUTH AUSTRALIA'S DEFERRED WATER

The Murray-Darling Basin Authority confirmed that on 1 July 2018 South Australia had 260.7 GL of deferred water held in storage. The table below identifies the storage in which it is held and the purpose.

| At 1 July 2018 | | | | |
|-------------------|--------------------|-----------|----------------|------------|
| Purpose | Lake Victoria (GL) | Hume (GL) | Dartmouth (GL) | Total (GL) |
| *CHWN | 0 | 76.6 | 81.4 | 158.0 |
| Private Carryover | 0 | 43.5 | 59.2 | 102.7 |
| Total | 0 | 120.1 | 140.6 | 260.7 |

*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 2018-19.

WATER RESOURCES UPDATE

During June 2018, the total River Murray System inflow was approximately 212 GL, which is approximately 29% of the June long-term average of 739 GL. There was no inflow to Menindee Lakes (from the Darling System) during June 2018, compared to the June long-term average of 135 GL.

The flow to South Australia during June 2018 was approximately 132.5 GL, which is about 34% of the June long-term average of approximately 389 GL. The flow comprised:

- 90 GL of Entitlement Flow (includes environmental water on SA licence); plus
- 42.5 GL of environmental water.

RAINFALL AND TEMPERATURE OUTLOOK

The latest Bureau of Meteorology weather outlook for July to September 2018 indicates below average rainfall with warmer than average temperatures across the Murray-Darling Basin. The outlook is influenced by El Niño Watch, which means the chance of El Niño forming in 2018 is double the normal chance. El Niño conditions usually bring drier than normal conditions across the Murray-Darling Basin.

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STORAGE VOLUMES

Murray-Darling Basin Storage Volumes

| Storage | Full Supply Volume (GL) | 11/7/2018 (GL) | 11/7/2017 (GL) | Long-term average (end of July) (GL) |
|----------------|----------------------------|--------------------|--------------------|--|
| Dartmouth | 3 856 | 3 433 (89%) | 3 024 (78%) | |
| Hume | 3 003 | 1 364 (45%) | 2 185 (68%) | |
| Lake Victoria | 677 | 364 (54%) | 424 (63%) | |
| Menindee Lakes | *1 731 | 201 (12%) | 767 (45%) | |
| TOTAL | 9 267 | 5 362 (58%) | 6 400 (69%) | 6 659 (72%) |

*Menindee Lakes can be surcharged to 2 015 GL

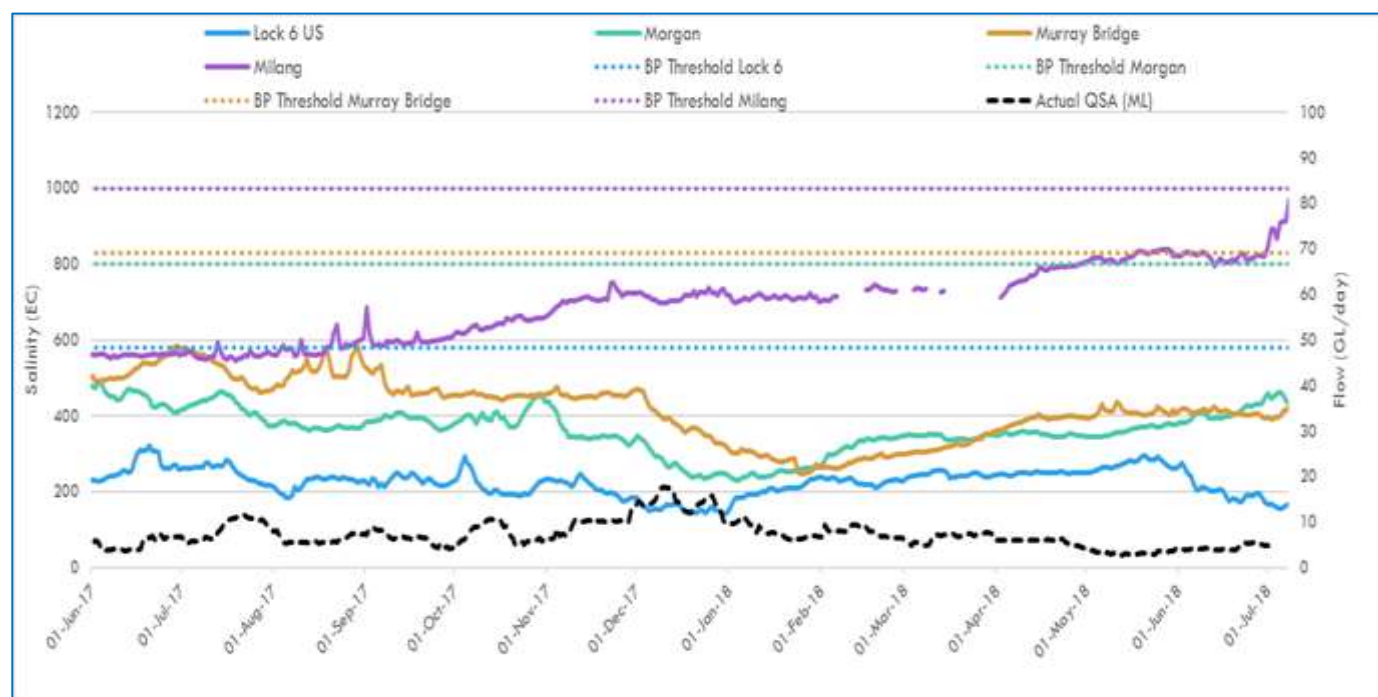
WATER QUALITY - Salinity

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 July 2017 to July 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, March and April 2018 are due to biofouling at the EC sensor

FLOW OUTLOOK

The flow at the South Australian border is approximately 9 GL/day and will remain around this rate during the coming week. It comprises:

- normal July Entitlement Flow of 3.5 GL/day;
- plus environmental water; and
- interstate trade adjustments.

The flow over Lock 1 is approximately 7 GL/day and will increase to around 9.2 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

A 'pulse' of environmental water was delivered to the Goulburn River to support river bank vegetation, water bugs and fish. The environmental water that remains in the river after supporting this action is now flowing into South Australia, which will peak late next week. This water will contribute to releases of water through the barrages to the Coorong. It is hoped that this water will trigger upstream migration and spawning of pouched lamprey, which is a rare and primitive eel-like fish that enters the Murray system via the Coorong estuary. More information about this event is available here: [Environmental water event](#).

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 currently operating 24/7 in the Goolwa and Tauwitchere channels. At 8 July 2018, a total of approximately 3 178 041 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 0.68 m AHD and Lake Albert is approximately 0.71 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 0.65 m AHD and 0.7 m AHD during July.

During the week ending 10 July 2018 total barrage releases were approximately 2 GL. All fishways remain open. 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, Murray-Darling Basin Authority and Commonwealth Environmental Water Office.

WEIR POOL OPERATIONS

The Normal Pool Level (NPL) and Normal Operating Range (NOR) for the South Australian locks and weirs are identified in the table below.

| Weir | Normal Pool Level (NPL) m AHD | Normal Operating Range (NOR) 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 |

Weir and Lock 6 and Chowilla regulator

Raising the water level in the Lock 6 weir pool is being considered and may commence in late July or August 2018 in conjunction with a potential operation of the Chowilla regulator, depending on flow conditions. This event would increase the Lock 6 water level by a maximum of 0.20 m above NPL to 19.45 m AHD, at a rate of approximately 0.02 m/day.

Weir and Lock 5

Raising the water level in the Lock 5 weir pool is being considered and may commence in August 2018 depending on flow conditions and potential construction activities. This event would increase the water level by a maximum of 0.35 m above NPL to 16.65 m AHD, at a rate of 0.02 m/day.

Weir and Lock 2

Raising the water level in the Lock 2 weir pool is being considered and may commence in August depending on flow conditions. This event would increase the water level by a maximum of 0.50 m above NPL to 6.60 m AHD, at a rate of 0.02 m/day.

To receive real-time SMS updates on weir pool manipulation actions please text or call DEW River Murray Operations on 0438 539 271 and indicate what weir pool reach you are interested in receiving updates for. If you have questions relating to river operations generally, please also use this mobile number.

NAVIGATION ISSUES

SA Water is undertaking maintenance work on the Lock 3 chamber. This work is expected to be completed by mid-September 2018. Lock 3 will be closed to river vessel traffic during this period.

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.

RIVERINE RECOVERY CONSTRUCTION WORKS

The Riverine Recovery Project is in the process of constructing environmental regulators to manage a number of wetlands between Mannum and Murtho. Construction is expected to be completed by the end of October 2018. Construction works have commenced at Big Bend, Sugar Shack, Pyap, Murtho-Wiela, North Caurnamont, Silverlea and Woolenook Bend wetlands. During the coming months work will commence at Teal Flat, Teal Flat Hut and Goat Island Paringa Paddock wetlands.

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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 to Murray Bridge.

River Murray Water Levels

| Location | River km | Normal Pool Level (m AHD) | Current Level 11/7/2018 (m AHD) | 1974 Flood Level (m AHD) | 1993 Flood Level (m AHD) | 2016 High Water Level (m AHD) |
|--------------------|----------|---------------------------|---------------------------------|--------------------------|--------------------------|-------------------------------|
| Lock 10 | 825.0 | 30.80 | 30.80 | 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 | 24.41 | 27.60 | 27.19 | 26.85 |
| Lock 7 Rufus River | 696.6 | 22.10 | 22.14 | 25.70 | 25.24 | 24.97 |
| Lock 6 Murtho | 619.8 | 19.25 | 19.30 | 21.03 | 20.50 | 20.19 |
| Renmark | 567.4 | - | 16.42 | 18.54 | 18.04 | 17.44 |
| Lock 5 | 562.4 | 16.30 | 16.42 | 18.07 | 17.50 | 17.05 |
| Lyrup | 537.8 | - | 13.27 | 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 | - | 9.83 | 13.44 | 12.38 | 11.59 |
| Lock 3 | 431.4 | 9.80 | 9.80 | 13.16 | 12.02 | 10.98 |
| Overland Corner | 425.9 | - | 6.27 | 12.73 | 11.58 | 10.41 |
| Waikerie | 383.6 | - | 6.28 | 11.26 | 10.24 | 9.20 |
| Lock 2 | 362.1 | 6.10 | 6.14 | 10.28 | 9.30 | 8.32 |
| Cadell | 332.6 | - | 3.29 | 9.17 | 8.08 | 7.01 |
| Morgan | 321.7 | - | 3.25 | 8.85 | 7.65 | 6.38 |
| Lock 1 Blanchetown | 274.2 | 3.20 | 3.21 | 6.81 | 5.38 | 4.46 |
| Swan Reach | 245.0 | 0.75 | 0.54 | 6.06 | 4.51 | 3.11 |
| Mannum PS | 149.8 | 0.75 | 0.55 | 3.15 | 1.90 | 1.33 |
| Murray Bridge | 115.3 | 0.75 | 0.54 | 2.06 | 1.26 | 1.04 |

Note that the above water levels may be affected by local wind conditions

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 for Environment and Water, 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 for Environment and Water 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 for Environment and Water [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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