RIVER MURRAY FLOW REPORT and WATER RESOURCES UPDATE

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Report #33/2018
Issued 10:00 am 17 August 2018

This supersedes the previous flow report issued by the Department for Environment and Water (DEW) on 10 August 2018. The next report will be provided on Friday 24 August 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 August 2018 South Australia had 260.6 GL of deferred water held in storage. The table below identifies the storage in which it is held and the purpose.

At 1 August 2018				
Purpose	**Lake Victoria (GL)**	**Hume (GL)**	**Dartmouth (GL)**	**Total (GL)**
***CHWN**	0	76.5	81.4	157.9
Private Carryover	0	43.5	59.2	102.7
Total	0	120.0	140.6	260.6

*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 July 2018, the total River Murray System inflow was approximately 254 GL, which is approximately 21% of the July long-term average of 1 238 GL. There was no inflow to Menindee Lakes (from the Darling System) during July 2018, compared to the July long-term average of 153 GL.

The flow to South Australia during July 2018 was approximately 240 GL, which is about 38% of the July long-term average of approximately 625 GL. The flow comprised:

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

RAINFALL AND TEMPERATURE OUTLOOK

The latest Bureau of Meteorology weather outlook for August to October 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.

STORAGE VOLUMES

Murray-Darling Basin Storage Volumes

Storage	Full Supply Volume (GL)	15/8/2018 (GL)	15/8/2017 (GL)	Long-term average (end of August) (GL)
Dartmouth	**3 856**	**3 462 (90%)**	**3 060 (79%)**	
Hume	**3 003**	**1 431 (48%)**	**2 413 (80%)**	
Lake Victoria	**677**	**349 (51%)**	**447 (66%)**	
Menindee Lakes	***1 731**	**190 (11%)**	**745 (43%)**	
TOTAL	**9 267**	**5 432 (59%)**	**6 665 (72%)**	**7 127 (77%)**

*Menindee Lakes can be surcharged to 2 015 GL

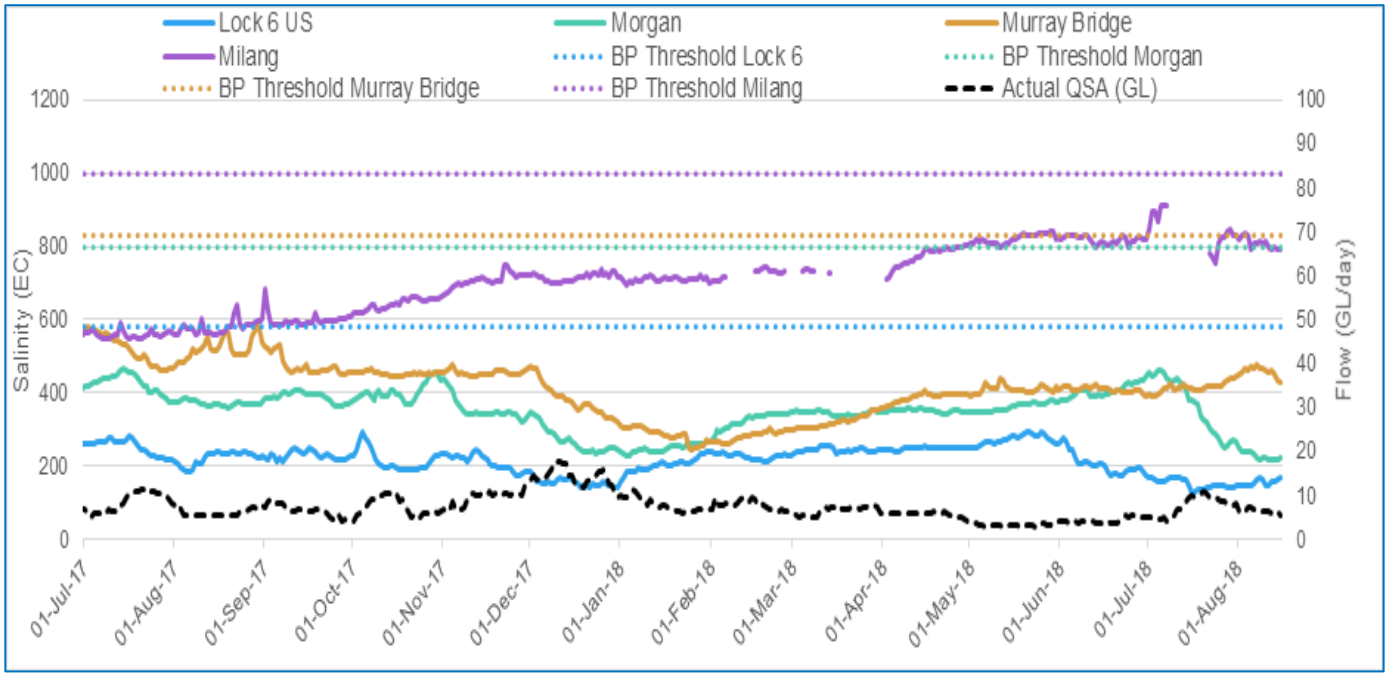
WATER QUALITY - Salinity

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% 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 August 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, April and July 2018 are due to biofouling at the EC sensor

FLOW OUTLOOK

The flow at the South Australian border is approximately 5 GL/day and will decrease to around 4.3 GL/day during the coming week. It comprises:

- normal August Entitlement Flow of 4 GL/day;
- plus environmental water; and
- interstate trade adjustments.

The flow over Lock 1 is approximately 4.5 GL/day and will decrease to around 3.5 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

Releases of environmental water through the barrages to the Coorong (using a 'pulse' of environmental water that flowed into South Australia from the Goulburn River) are expected to provide a range of benefits to the Coorong. This includes facilitating the upstream spawning migration of pouched lamprey, which is a rare and primitive eel-like fish that enters the Murray system via the Coorong estuary.

Some lamprey have already been detected at the barrages. Scientists from the South Australian Research and Development Institute (SARDI) have been trapping and tagging the lamprey as they move through the barrages. The tags enable us to find where the lamprey go to spawn, after they come into the Murray River system from the sea. Some lamprey have already moved up to Lock 1 (near Blanchetown), moving up to 30 km/day, predominantly under the cover of darkness.

Following the Goulburn 'pulse', smaller volumes of environmental water are now being delivered to South Australia from events aiming to support base flows in the Mid-Murray and Goulburn Rivers. Environmental water sourced from the South Australian Entitlement Flow will contribute to the weir pool raising events at Locks 2, 5 and potentially 6 as well as providing benefits for the Lower Lakes and Coorong.

Pouched lamprey (photo by Department for Environment and Water) and fish trap being checked at Tauwitchere barrage (photo by Commonwealth Environmental Water Office).

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 12 August 2018, a total of approximately 3 314 835 cubic metres of sand had been removed by dredging operations. Recent barrage releases combined with dredging have helped to maintain connectivity of the Murray Mouth.

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 0.78 m AHD and Lake Albert is approximately 0.92 m AHD. The difference in water level is due to wind effects. When possible, water levels are being managed to achieve a target water level of around 0.75 m AHD by the end of August. A series of release events are underway at the barrages to target fish migration (in particular lamprey) upstream into the River Murray.

During the week ending 14 August 2018 total barrage releases were approximately 17 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

Chowilla Regulator and Weir and Lock 6

An 'in-channel rise' operation of the Chowilla Environmental Regulator is planned to commence on 20 August 2018. Raising the water level in the Lock 6 weir pool will be undertaken in conjunction with the Chowilla Regulator operation and is scheduled to commence approximately two weeks later. The in-channel rise will involve a low level operation of the Chowilla Regulator to raise water levels in Chowilla Creek and through the anabranch by between approximately 1.6 m to 2.0 m above NPL (to 18 m AHD to 18.4 m AHD). Inundation will remain mostly within creek banks with some water entering low lying flow paths and wetlands. The water level in the Lock 6 weir pool will also be progressively raised by about 0.20 m above NPL to 19.45 m AHD. *If River Murray flow conditions improve to at least 15 GL/day by late winter or early spring, then a decision could be made to increase the scale of the Chowilla Regulator operation and Lock 6 weir pool raising to generate broad-scale floodplain inundation, however at this point in time this is looking quite unlikely.*

Boat access in Chowilla Creek through the Chowilla regulator will be closed from 20 August and for the period of the regulator operation. Access is still available upstream and downstream of the regulator – for more information see Chowilla Operations then scroll down to *related links* – Chowilla Operations 2018.

Weir and Lock 5

Raising the water level in the Lock 5 weir pool commenced on 15 August 2018. It is proposed to raise the water level by a maximum of 0.35 m above NPL (to 16.65 m AHD) at a rate of 0.02 to 0.05 m/day and then return the water level to NPL by around mid-November.

Weir and Lock 2

Raising the water level in the Lock 2 weir pool commenced on 15 August 2018. It is proposed to raise the water level by a maximum of 0.50 m above NPL (to 6.60 m AHD) at a rate of 0.02 to 0.05 m/day and then return the water level to NPL by around mid-November.

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.

BERRI RIVER VESSEL WASTE DISPOSAL STATION

The Berri River Vessel Waste Disposal Station is closed temporarily for upgrade works to be undertaken. The works are expected to be completed around 15 November 2018.

A free temporary pump-out service is available 330 metres upstream of the existing facility, adjacent to the Berri Rowing Club. The location is sign-posted. River vessel users must call Dennis Kuhn of Kuhn Plumbing Service on 0400 480 203 or 8588 2678 to arrange a suitable time to pump-out waste (please note **4 hours notice is essential**). Pump-outs can be arranged between 8:00 am and 4:00 pm daily.

If you have any enquiries about the upgrade please call Mr Hayden Smith, Infrastructure Project Officer, on 0457 820 553.

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 February 2019. Construction works have commenced at Big Bend, Sugar Shack, Pyap, Murtho-Wiela, North Caurnamont, Silverlea, Teal Flat Hut and Woolenook Bend Wetlands. During the coming months work will commence at Teal Flat and Goat Island Paringa Paddock Wetlands

SOUTH AUSTRALIAN RIVERLAND FLOODPLAINS INTEGRATED INFRASTRUCTURE PROGRAM (SARFIIP) CONSTRUCTION WORKS

The construction of regulating structures and a blocking bank on the Pike Floodplain has commenced. The works are expected to be completed by December 2019. The works will enable:

- a portion of the floodplain to be inundated more regularly to improve ecological health; and
- fish to move freely between the River Murray and the floodplain.

During the construction period, for safety reasons, vessels and persons other than those participating in the works are prohibited from entering the Pike River near the Rumpagunyah Creek and Tanyaca Creek junction, downstream of the Mundic Creek junction.

IMPROVED WATER ALLOCATION ANNOUNCEMENTS FOR RIVER MURRAY IRRIGATORS

The South Australian Government is committed to giving greater support to River Murray irrigators to help them in their forward planning.

River Murray irrigators are being consulted from August to September 2018 in an effort to understand the type and frequency of water outlook information needed to improve business planning and the best way of delivering that information.

The government has heard that the approach to allocation announcements can be improved to better inform irrigators' business planning. A proposed new approach is set out in this fact sheet. We would like feedback on this approach and any other suggestions to improve the allocation announcement process.

To provide comment during the consultation period, please visit https://yoursay.sa.gov.au/decisions/more-timely-information-for-river-murray-irrigators.

Consultation closes 5pm Friday 14 September 2018

DRAFT WATER ALLOCATION PLAN FOR THE RIVER MURRAY PRESCRIBED WATERCOURSE

The Water Allocation Plan for the River Murray Prescribed Watercourse (the Plan) has been updated to incorporate requirements of the Basin Plan and to improve a number of existing policies.

The Plan sets out the rules for taking and using water from the River Murray in South Australia and makes sure it is managed sustainably for all water users, including primary producers, industry, communities in the region and the environment.

The Plan is now out for consultation and the SA Murray-Darling Basin Natural Resources Management Board (the Board) would like to hear your views on the changes proposed within the Plan. Copies of the draft Plan, and supplementary material, are available from Natural Resource Centres and the Boards website at: http://www.naturalresources.sa.gov.au/samurraydarlingbasin

Closing date for written submissions is 5 pm Friday, 14 September 2018.

Written submissions can be sent to:

Peta Brettig, Senior Project Officer, River Murray Water Allocation Plan

Natural Resources, South Australian Murray-Darling Basin

GPO Box 1047, ADELAIDE SA 5001

Phone: (08) 8463 6877 Email: rmwap.feedback@sa.gov.au

Online: https://yoursay.sa.gov.au/decisions/murray-water-allocation-plan-2018/

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 15/8/2018 (m AHD)	1974 Flood Level (m AHD)	1993 Flood Level (m AHD)	2016 High Water Level (m AHD)
Lock 10	825.0	30.80	30.91	33.81	33.32	32.72
Lock 9 Kulnine	764.8	27.40	27.34	30.03	29.44	28.85
Lock 8 Wangumma	725.7	24.60	24.29	27.60	27.19	26.85
Lock 7 Rufus River	696.6	22.10	22.02	25.70	25.24	24.97
Lock 6 Murtho	619.8	19.25	19.25	21.03	20.50	20.19
Renmark	567.4	-	16.41	18.54	18.04	17.44
Lock 5	562.4	16.30	16.40	18.07	17.50	17.05
Lyrup	537.8	-	13.26	16.85	16.26	15.80
Berri	525.9	-	13.22	15.81	15.74	15.21
Lock 4	516.2	13.20	13.22	15.65	15.08	14.73
Loxton	489.9	-	10.06	15.05	14.12	13.54
Cobdogla	446.9	-	9.84	13.44	12.38	11.59
Lock 3	431.4	9.80	9.81	13.16	12.02	10.98
Overland Corner	425.9	-	6.50	12.73	11.58	10.41
Waikerie	383.6	-	6.42	11.26	10.24	9.20
Lock 2	362.1	6.10	6.37	10.28	9.30	8.32
Cadell	332.6	-	3.32	9.17	8.08	7.01
Morgan	321.7	-	3.30	8.85	7.65	6.38
Lock 1 Blanchetown	274.2	3.20	3.25	6.81	5.38	4.46
Swan Reach	245.0	0.75	0.75	6.06	4.51	3.11
Mannum PS	149.8	0.75	0.88	3.15	1.90	1.33
Murray Bridge	115.3	0.75	0.76	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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