River Murray Flow Report and Water Resources Update

Government of South Australia
Department for Environment and Water

Report #44/2019

Issued 10:00 am 15 November 2019

This supersedes the previous flow report issued by the Department for Environment and Water (DEW) on 8 November 2019. The next report will be provided on Friday 22 November 2019.

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

Water allocations for South Australian River Murray Class 3 water access entitlement holders are 100%.

For more information on South Australia's water allocations visit the DEW website.

For information on Victoria's water allocations visit Victorian water allocations.

For information on NSW water allocations visit NSW Water Allocation Statements or NSW water allocations.

ACCC MURRAY-DARLING BASIN WATER MARKET INQUIRY

The Australian Competition and Consumer Commission (ACCC) is conducting an inquiry into markets for tradeable water rights in the Murray-Darling Basin and South Australians are encouraged to share their views on key issues affecting the water market. The ACCC will use this information to make recommendations to improve the Murray-Darling Basin water market, including options to enhance operations, transparency, regulation, competitiveness and efficiency.

There are two options to provide your feedback on the ACCC Issues Paper. You may provide a written submission, or provide your feedback at one of the public forums.

Public forums, where you can find out more and share your views, are being held across the basin. The next forum to be held in South Australia will be at Murray Bridge on 29 November at 12 pm.

Register to attend the forum on the ACCC website.

Submissions close **29 November 2019.** For more information visit the ACCC website.

MANAGEMENT OF SOUTH AUSTRALIA'S DEFERRED WATER

The Murray-Darling Basin Authority confirmed that on 1 November 2019 South Australia had 341.5 GL of deferred water held in storage. The table below identifies the storage in which it is held and the purpose.

At 1 November 2019				
Purpose	**Lake Victoria (GL)**	**Hume (GL)**	**Dartmouth (GL)**	**Total (GL)**
***CHWN**	0.0	0.0	239.4	239.4
Private Carryover	0.0	0.0	102.1	102.1
Total	0.0	0.0	341.5	341.5

*Critical Human Water Needs (CHWN)

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

WATER RESOURCES UPDATE

During October 2019, the total River Murray System inflow was approximately 282 GL, which is approximately 20% of the October long-term average of 1 414 GL. There was no inflow to Menindee Lakes (from the Darling System) during October 2019, compared to the October long-term average of 169 GL.

The flow to South Australia during October 2019 was approximately 422 GL, which is about 42% of the October long-term average of approximately 994 GL. The flow comprised of:

- Entitlement Flow 136.4 GL (includes environmental water on SA licence);
- environmental water 278 GL; plus
- trade to South Australia 7.4 GL.

RAINFALL AND TEMPERATURE OUTLOOK

The latest Bureau of Meteorology weather outlook for December 2019 to February 2020 indicates below average rainfall, with warmer than average temperatures across most of the Murray-Darling Basin. Rainfall is likely to be below average in November (end of spring), with a chance that some parts of the Basin could receive average rainfall by January (mid-summer). The outlook is being influenced by a strong positive Indian Ocean Dipole (IOD) and a negative Southern Annual Mode (SAM).

A positive IOD usually brings below average spring rainfall, with above average temperatures to Southern Australia. The IOD is likely to have little influence on the climate from December to April.

A negative SAM is expected to persist during November. A negative SAM in spring tends to bring drier conditions to parts of eastern Australia. It also increases the chance of spring heatwaves occurring across southern and eastern Australia.

The El Niño-Southern Oscillation (ENSO) is currently neutral, which means the Australian climate is not being influenced by El Niño nor La Niña.

STORAGE VOLUMES

Murray-Darling Basin Storage Volumes

Storage	Full Supply Volume (GL)	13/11/2019 (GL)	13/11/2018 (GL)	Long-term average (end of November) (GL)
Dartmouth	3 856	**2 116 (55%)**	3 007 (78%)	
Hume	3 003	**1 121 (37%)**	1 359 (45%)	
Lake Victoria	677	**513 (76%)**	506 (75%)	
Menindee Lakes	*1 731	**11 (1%)**	120 (7%)	
TOTAL	9 267	**3 761 (41%)**	4 992 (54%)	7 308 (79%)

*Menindee Lakes can be surcharged to 2 015 GL

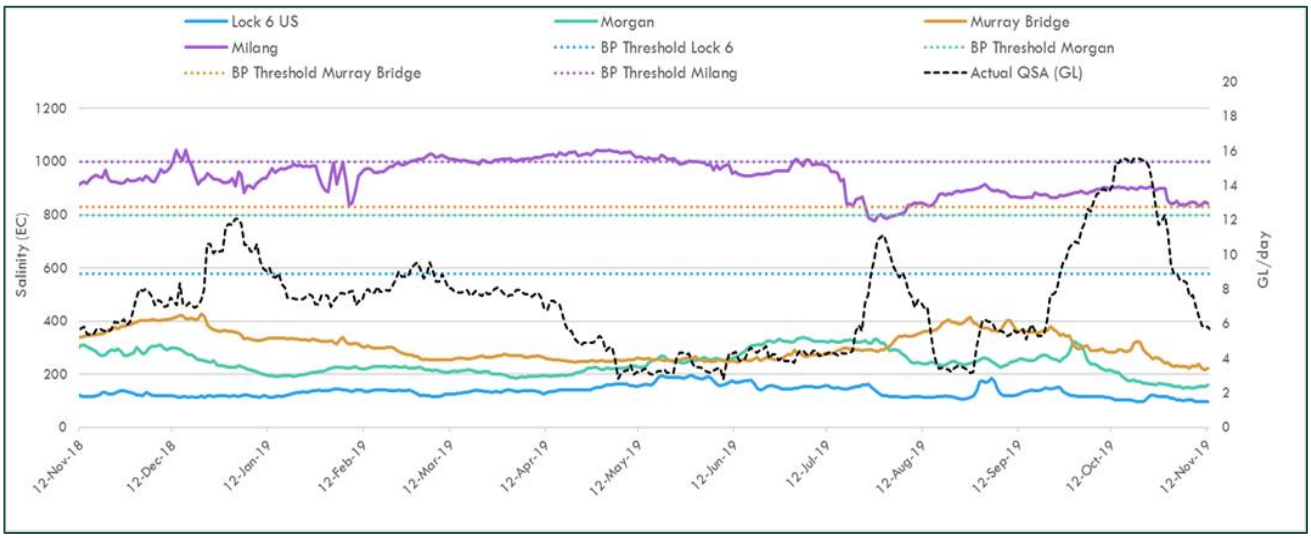
WATER QUALITY - Salinity

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 should 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 November 2018 to November 2019. 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 5.9 GL/day and will remain around this rate during the coming week. It comprises:

- reduced November Entitlement Flow of 5.5 GL/day;
- water for the environment (see below *Water for the Environment*); and
- interstate trade adjustments.

Due to the dry water resource conditions across the Murray-Darling Basin, South Australia is currently receiving reduced monthly Entitlement Flow. During November 2019, South Australia will receive a reduced Entitlement Flow of 163.7 GL, compared to the full November Entitlement Flow of 180 GL. It is likely that reduced Entitlement Flow will continue during 2019-20 unless the water resource conditions improve enough to provide South Australia with close to its full Entitlement Flow. In addition to the reduced Entitlement Flow, South Australia will receive water for the environment.

The flow over Lock 1 is approximately 3.5 GL/day and will remain around this rate 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.

WATER FOR THE ENVIRONMENT

Water for the environment is being used multiple times along the River Murray to promote conditions that favour native plants and animals. In South Australia, this water is being used to:

- increase habitat to benefit native fish, animals and plants in the River Murray channel that have adapted to a riverine environment;
- boost productivity and deliver food resources from upstream and wetlands to support native fish in the River Murray channel, including golden perch and Murray cod;
- provide for spring barrage releases to the Coorong to support a productive, food-rich environment for fish and birds;
- maintain good connections from the Coorong to the upstream areas of the River Murray, and its tributaries, to enable fish movement and migration;
- improve salinity and water quality in the River Murray channel, Lower Lakes and Coorong; and
- deliver a range of outcomes to wetlands in the Riverland via arrangements with South Australian Murray-Darling Basin Natural Resource Management Board, Renmark Irrigation Trust and Nature Foundation South Australia.

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.

One dredge is operating between the Goolwa and Tauwitchere channels 24 hours a day, 7 days a week. At 10 November 2019, a total of approximately 5 061 247 cubic metres of sand had been removed by dredging operations. 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. Mariners equipped with echo sounders should check depths regularly. Navigation through the Murray Mouth is only permitted during daylight hours. 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 0.83 m AHD and Lake Albert is approximately 0.81 m AHD. The difference in water level is due to wind effects. The increased water level in the Lower Lakes is due to water for the environment being provided. This water is, and will be, managed through the Lower Lakes to the Coorong via barrage releases. Water for the environment will enable barrage releases to be undertaken for a longer period.

As of Tuesday 12 November 2019, the weekly barrage releases were approximately 15 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.

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.

SA RIVERLAND FLOODPLAINS INTEGRATED INFRASTRUCTURE PROGRAM CONSTRUCTION WORKS

Katarapko

Construction works on the Katarapko Floodplain are expected to be completed by mid-2020. As a result, some parts of the Murray River National Park will be temporarily closed for camping and other recreational activities. See the link for temporary park closure map Caring for Katarapko

For safety reasons, the following water access restrictions apply to river vessels and people (other than authorised personnel) until late March 2020:

1. Sawmill Creek, the entire length between Katarapko Creek and Eckert's Creek; and
2. Eckert's Creek, for 1.3 kilometres upstream of the confluence point with Katarapko Creek (ie *The Splash*).

The construction works will enable over 1120 hectares of floodplain to be inundated more regularly to improve ecological health and resilience. For more information, or to receive regular updates, about the Katarapko Floodplain Project please contact the Department for Environment and Water's Engagement Officer, Ms Ellee Eleftheriadis on 8595 2148 or email ellee.eleftheriadis2@sa.gov.au

Pike

Although work on the regulating structures and blocking bank on the Pike Floodplain is now complete, other works continue in this area. Vessels and persons other than those participating in the works are still prohibited from entering the Pike River near the Rumpagunyah Creek and Tanyaca Creek junction, downstream of the Mundic Creek junction.

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 13/11/2019 (m AHD)	1974 Flood Level (m AHD)	1993 Flood Level (m AHD)	2016 High Water Level (m AHD)
Lock 10	825.0	30.80	30.92	33.81	33.32	32.72
Lock 9 Kulnine	764.8	27.40	27.39	30.03	29.44	28.85
Lock 8 Wangumma	725.7	24.60	25.38	27.60	27.19	26.85
Lock 7 Rufus River	696.6	22.10	22.62	25.70	25.24	24.97
Lock 6 Murtho	619.8	19.25	19.23	21.03	20.50	20.19
Renmark	567.4	-	16.30	18.54	18.04	17.44
Lock 5	562.4	16.30	16.29	18.07	17.50	17.05
Lyrup	537.8	-	13.25	16.85	16.26	15.80
Berri	525.9	-	13.21	15.81	15.74	15.21
Lock 4	516.2	13.20	13.21	15.65	15.08	14.73
Loxton	489.9	-	10.00	15.05	14.12	13.54
Cobdogla	446.9	-	9.82	13.44	12.38	11.59
Lock 3	431.4	9.80	9.78	13.16	12.02	10.98
Overland Corner	425.9	-	6.23	12.73	11.58	10.41
Waikerie	383.6	-	6.24	11.26	10.24	9.20
Lock 2	362.1	6.10	6.12	10.28	9.30	8.32
Cadell	332.6	-	3.34	9.17	8.08	7.01
Morgan	321.7	-	3.28	8.85	7.65	6.38
Lock 1 Blanchetown	274.2	3.20	3.22	6.81	5.38	4.46
Swan Reach	245.0	0.75	0.98	6.06	4.51	3.11
Mannum PS	149.8	0.75	0.95	3.15	1.90	1.33
Murray Bridge	115.3	0.75	0.87	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. For real-time data (like salinity, water levels) go to the following page:
WaterConnect Real-time water data

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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