

River Murray Flow Report and Water Resources Update



Report #16/2020

Issued 10:00 am 17 April 2020

This supersedes the previous flow report issued by the Department for Environment and Water (DEW) on 9 April 2020. The next flow report will be provided on Friday 24 April 2020.

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 PRIVATE CARRYOVER

Water allocations for the remainder of the current 2019-20 water year for South Australian River Murray Class 3 (High Security) and Class 8 water access entitlement holders are 100 percent.

On 15 April 2020, it was announced that the projected minimum, or worst case, opening water allocation for South Australian River Murray Class 3 (High Security) and Class 8 entitlement holders in the 2020-21 water year is 2 percent.

Class 1 (stock and domestic) and Class 5 (industrial and dairy) allocations will be 100 percent.

The volume of River Murray water that South Australia receives and how much of this water can then be allocated is based on the latest advice from the Murray-Darling Basin Authority. The projected minimum amount of water that will be delivered to South Australia as part of its Entitlement in 2020-21 is 696 GL, which is significantly below full Entitlement of 1850 GL.

This is a conservative estimate that assumes:

- the remainder of the current 2019-20 water year will be very dry; and
- that inflows into the River Murray System in the 2020-21 water year will be consistent with those experienced in exceptionally dry years.

Improvements across the water year are likely, with most inflows to the River Murray system historically occurring between July and November. Current water availability projections indicate there is a 75 percent likelihood that allocations will increase to at least 42 percent during 2020-21 and there is currently just over a 45 percent likelihood that allocations will increase to 100 percent.

As the projected minimum opening allocation is below 50 percent, [private carryover](#) will be available for eligible water users, allowing unused water from 2019-20 to be carried over for use in 2020-21 (up to 20 percent of the volume held on entitlement).

Private carryover rules have recently been updated following community consultation, to allow carryover volumes to be 'rolled over' from one year to the next in a sequence of dry years. The existing 100 percent limit on the combined allocation and carryover volumes granted under Class 3 (High Security) entitlements will continue to apply in 2020-21. From 1 July 2020, allocation volumes that would otherwise be granted above this 100 percent limit in 2020-21 will be 'rolled over' into 2021-22 if carryover is triggered for that year (ie if the minimum opening allocation announced in April 2021 is 50 percent or less). More information on these recent changes to carryover can be found [here](#).

It is important to note that once a minimum opening allocation announced in April is greater than 50 percent, carryover will no longer apply and any volumes rolled over from a previous year will no longer be available.

[South Australia's River Murray Water Allocation Statement](#) for 15 April 2020 provides information on South Australia's Entitlement, projected minimum opening allocations, private carryover, water held in storage, climate outlook and projections for irrigation water allocations under a range of scenarios.

The next minimum opening allocations update will be provided on 15 May 2020.

For more information on South Australia's water allocations visit the [DEW website](#) or email DEW:RiverMurrayOps@sa.gov.au

For information on Victoria's water allocations visit [Victorian Water Allocations](#)

For information on NSW water allocations visit [NSW Water Allocation Statements](#).

NORTHERN BASIN

Heavy rainfall events in early 2020, have generated inflows in most river systems across the Northern Basin (Barwon-Darling system). On 10 March 2020, the Darling River started to flow into Menindee Lakes. On 14 April 2020, Water NSW advised that the total forecast volume expected to reach Menindee Lakes is around 400 to 440 GL. The projected volume will be updated as changes are observed.

Water NSW is releasing a small volume of water from Menindee Lakes to flush and freshen the Lower Darling. This flow has now reconnected the Darling with the River Murray.

The Menindee Lakes are currently under the control of Water NSW. If the volume of water in Menindee Lakes increases to 640 GL the Murray-Darling Basin Authority can direct releases to supplement the River Murray system, which is unlikely based on the current estimates of inflow.

WATER RESOURCES UPDATE

During March 2020, the total River Murray System inflow was approximately 111 GL, which is about 43% of the March long-term average of 258 GL. During March 2020, the total Menindee Lakes inflow was approximately 188 GL, which is about 83% of the March long-term average of 226 GL.

The flow to South Australia during March 2020 was approximately 171 GL, which is about 59% of the March long-term average of 286 GL. The flow comprised of Entitlement Flow (including environmental water on SA licence), environmental water and trades.

MANAGEMENT OF SOUTH AUSTRALIA'S DEFERRED WATER

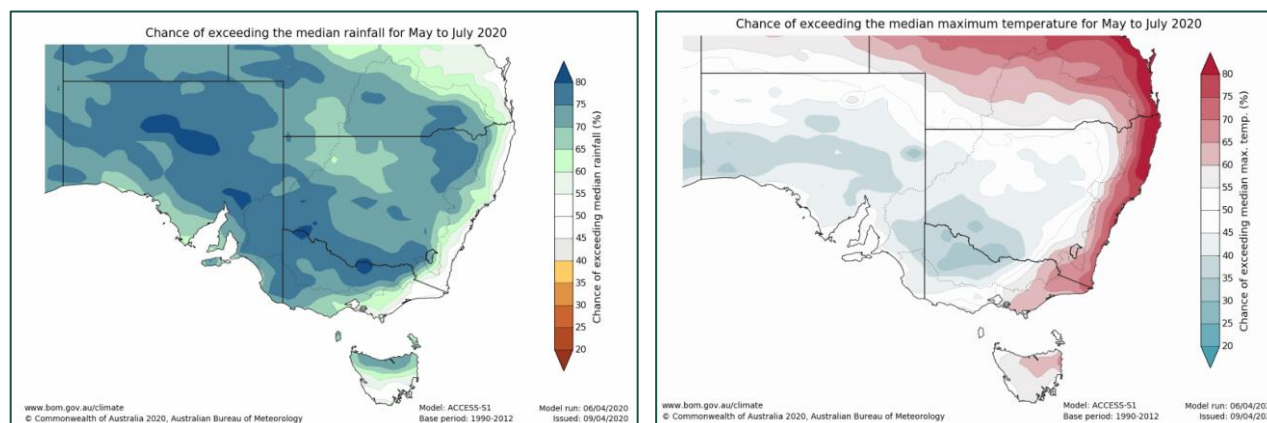
The Murray-Darling Basin Authority confirmed that on 1 April 2020 South Australia had 339.3 GL of deferred water held in storage in the Murray-Darling Basin. The following table identifies the storage in which it is held and the purpose. Volumes stored are adjusted for net evaporation losses and spills until delivered to South Australia.

At 1 April 2020				
Purpose	Lake Victoria (GL)	Hume (GL)	Dartmouth (GL)	Total (GL)
*CHWN	0.0	0.0	237.9	237.9
Private Carryover	0.0	0.0	101.4	101.4
Total	0.0	0.0	339.3	339.3

*Critical Human Water Needs (CHWN)

RAINFALL AND TEMPERATURE OUTLOOK

The latest Bureau of Meteorology weather outlook for the Murray-Darling Basin from May to July 2020 indicates that the region is expected to receive above average rainfall and below average temperatures.



The El Niño–Southern Oscillation (ENSO) and Indian Ocean Dipole (IOD) both remain neutral and are likely to remain neutral in the coming months. However, some models suggest ocean temperature patterns in the tropical Pacific may

become La Niña-like during winter or spring. A warmer than usual eastern Indian Ocean is currently the main influence on Australia's climate, which is increasing moisture feeding into weather systems as they sweep across the country. All climate drivers will be tracked closely over the coming season.

The latest Bureau of Meteorology outlook information can be accessed [here](#).

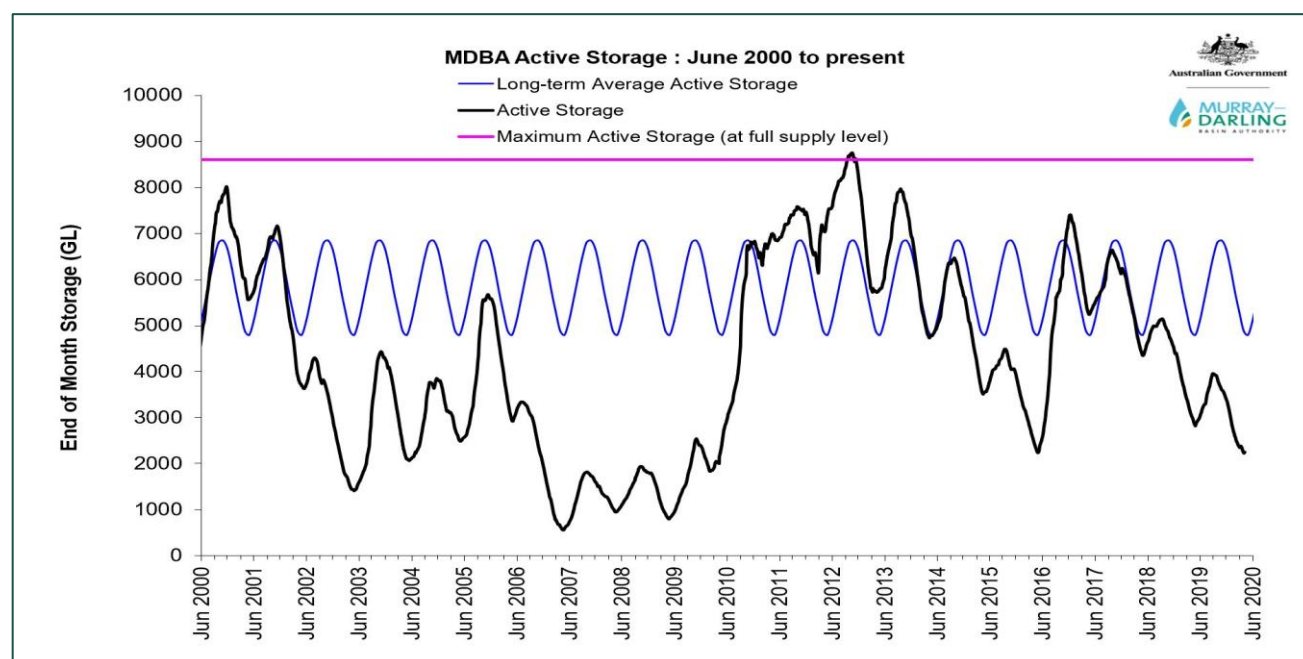
STORAGE VOLUMES

Murray-Darling Basin Storage Volumes

Storage	Full Supply Volume (GL)	15/4/2020 (GL)	15/4/2019 (GL)	Long-term average (end of April) (GL)
Dartmouth	3 856	1 812 (47%)	2 444 (63%)	
Hume	3 007	405 (13%)	515 (23%)	
Lake Victoria	677	232 (34%)	189 (41%)	
Menindee Lakes	*1 731	282 (16%)	18 (1%)	
TOTAL	9 271	2 731 (29%)	3 166 (37%)	

*Menindee Lakes can be surcharged to 2 015 GL

The following graph has been provided by the Murray-Darling Basin Authority. The graph shows the volume of water held in the Murray-Darling Basin storages from June 2000 to now and the long-term average storage for the same period.



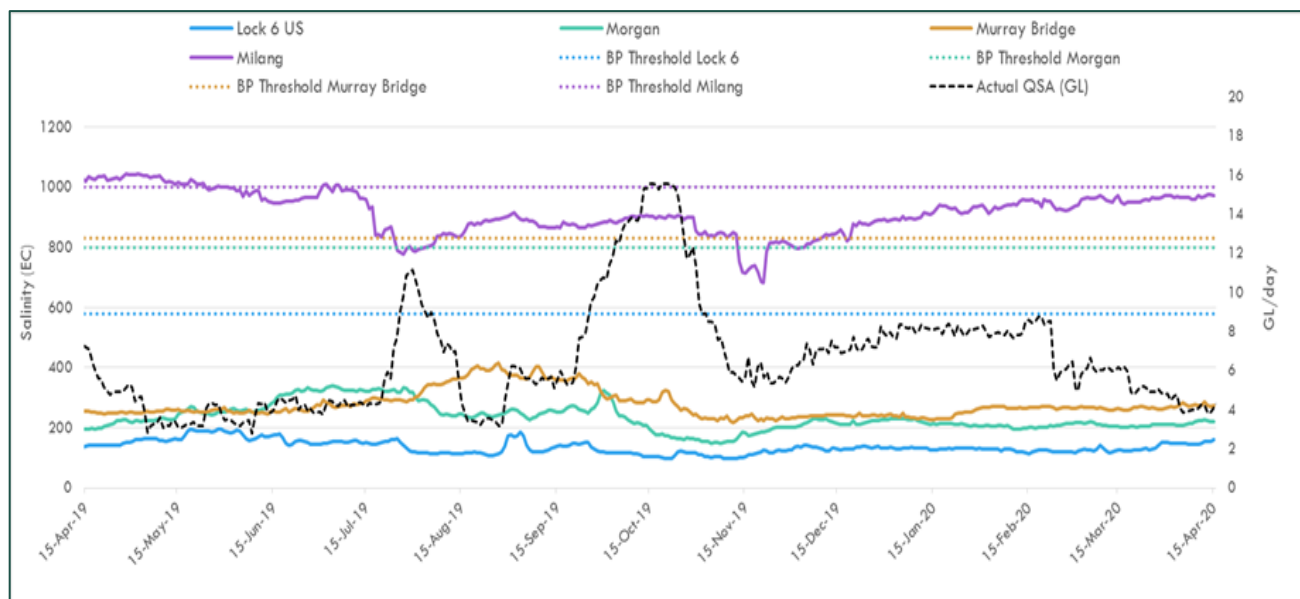
WATER QUALITY - Salinity

A number of targets are identified under the Murray-Darling Basin Plan, which all Basin jurisdictions 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 April 2019 to April 2020. The dashed-lines identify the Basin Plan (BP) thresholds for the corresponding colour coded location.

SA River Murray Daily Average Salinity



FLOW OUTLOOK

Reduced Entitlement Flow will continue during the 2019-20 water year. In addition to reduced Entitlement Flow, South Australia will receive water for the environment.

The flow at the South Australian border is approximately 3.6 GL/day and will remain around this rate during the coming week. It comprises:

- reduced April Entitlement Flow (3.3 GL/day);
- water for the environment (see below *Water for the Environment*); and
- interstate trade adjustments.

The flow over Lock 1 is approximately 2.2 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 currently being used to:

- provide for 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;
- maintain water quality, salinity and water levels below critical thresholds in the River Murray channel, Lower Lakes and Coorong;
- deliver a range of outcomes to wetlands in the Riverland via arrangements with the South Australian Murray-Darling Basin Natural Resources Management Board, Renmark Irrigation Trust, Banrock Station, Calperum Station and Nature Foundation South Australia; and
- deliver a range of outcomes to wetlands on the Chowilla floodplain via The Living Murray.

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. At 12 April 2020, a total of approximately 5 628 982 cubic metres of sand had been removed by dredging operations.

Dredging operations were shut-down over the Easter period. Dredging resumed on Tuesday 14 April 2020, with two dredges operating between the Goolwa and Tauwichee channels 24 hours a day, 7 days a week. 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 0.52 m AHD and Lake Albert is approximately 0.55 m AHD. The difference in water level is due to wind effects.

Water for the environment has enabled continuous fishway releases and small barrage releases to be undertaken in autumn. During the past week, fishways at all barrages have provided connectivity between the Coorong and the Lower Lakes. In addition, Tauwichee Barrage has one gate open plus the fishway. As of Tuesday 14 April 2020, the weekly releases were approximately 1.9 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.

Water levels and barrage operations are monitored closely by the South Australian Government, Murray-Darling Basin Authority and Commonwealth Environmental Water Office.

LOCK 3 RIVER VESSEL WASTE DISPOSAL STATION

The Lock 3 River Vessel Waste Disposal Station is currently out of commission due to an infrastructure failure. This means that boat operators who need to empty sewage tanks will need to use the nearest alternative waste facilities located at Waikerie and Loxton. Alternatively boat operators who require an urgent pump-out in the Kingston-on-Murray area can contact Mr Hayden Smith on 0457 820 553 for help or advice. Normal boat waste (domestic or galley waste) can still be deposited at the Lock 3 facility at the present time.

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.

SOUTH AUSTRALIAN RIVERLAND FLOODPLAINS INTEGRATED INFRASTRUCTURE PROGRAM CONSTRUCTION WORKS

Katarapko

Construction works on the Katarapko Floodplain are nearing completion. All of the major concrete works and track surfacing is complete, with some minor works remaining around the structures and within the Murray River National Park. The installation of guard rails on the structures is in progress and commissioning of all the structures to ensure correct operation is well underway. It is expected that the construction of all infrastructure will be completed by the end of May 2020.

As a result of restrictions due to Covid-19, the Department for Environment and Water has closed campgrounds and facilities in all South Australian National Parks until further notice. However, local community members can still visit parks (including the Murray River National Park) for walking, cycling or fishing activities. More information can be found on the following website <https://www.environment.sa.gov.au/news-hub/news/articles/2020/03/sa-parks-are-open>

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

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

Pike

Although work on the regulating structures and blocking bank on the Pike Floodplain is now complete, other works continue in this area. Access to the floodplain is still restricted to construction personnel and authorised visitors. Access to the Pike River anabranch complex is possible by boat however there are restrictions in place at the Tanyaca regulator and Pike River regulator sites.

QUARTERLY METER REPORTING

All River Murray water users are reminded of their requirement to ensure that they have not used more water than is available on their account by the end of each quarter. This is to help ensure that water can be reliably delivered to all River Murray water users (including the environment) in South Australia. The end of Quarter 4 of the 2019-20 water use year is 30 June 2020. A penalty will be applied in all instances where the volume of water taken is in excess of the available allocation on a water account **at 5:00 pm on 30 June 2020**.

In order to remain within your available water allocation, you can:

- Stop taking water when you reach your allocation limit;
- Before you reach your allocation limit, trade water allocation onto your water account to cover your additional water needs. To comply with the *Natural Resources Management Act 2004*, to ensure that you do not exceed your available allocation and to avoid receiving a penalty charge, you need to trade water allocation onto your account before you take water above your current allocation limit; or
- Investigate whether water efficiency measures could be implemented for your property to decrease your demand for water.

Water users are encouraged to closely monitor their water use throughout the year and remain within their water allocation. You can submit an online meter reading at any time and elect to receive a water usage advice statement (similar to a bank statement) by email or SMS. This helps ensure you are monitoring water use and remaining within your available water allocation.

For more information, please see the [DEW website](#) or contact the Berri water licencing office via telephone: (08) 8595 2053 or email: DEW.waterlicensingberri@sa.gov.au

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 15/4/2020 (m AHD)	1974 Flood Level (m AHD)	1993 Flood Level (m AHD)	2016 High Water Level (m AHD)
Lock 10	825.0	30.80	30.76	33.81	33.32	32.72
Lock 9 Kulnine	764.8	27.40	27.36	30.03	29.44	28.85
Lock 8 Wangumma	725.7	24.60	23.67	27.60	27.19	26.85
Lock 7 Rufus River	696.6	22.10	22.03	25.70	25.24	24.97
Lock 6 Murtho	619.8	19.25	19.26	21.03	20.50	20.19
Renmark	567.4	-	16.31	18.54	18.04	17.44
Lock 5	562.4	16.30	16.30	18.07	17.50	17.05
Lyrup	537.8	-	13.32	16.85	16.26	15.80
Berri	525.9	-	13.29	15.81	15.74	15.21
Lock 4	516.2	13.20	13.29	15.65	15.08	14.73
Loxton	489.9	-	10.04	15.05	14.12	13.54
Cobdogla	446.9	-	9.92	13.44	12.38	11.59
Lock 3	431.4	9.80	9.88	13.16	12.02	10.98
Overland Corner	425.9	-	6.27	12.73	11.58	10.41
Waikerie	383.6	-	6.29	11.26	10.24	9.20
Lock 2	362.1	6.10	6.19	10.28	9.30	8.32
Cadell	332.6	-	3.38	9.17	8.08	7.01
Morgan	321.7	-	3.34	8.85	7.65	6.38
Lock 1 Blanchetown	274.2	3.20	3.29	6.81	5.38	4.46
Swan Reach	245.0	0.75	0.44	6.06	4.51	3.11
Mannum PS	149.8	0.75	0.47	3.15	1.90	1.33
Murray Bridge	115.3	0.75	0.46	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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