

River Murray Flow Report and Water Resources Update



Report #42/2020

Issued 10:00 am 16 October 2020

This supersedes the previous flow report issued by the Department for Environment and Water (DEW) on 9 October 2020. The next flow report will be provided on Friday 23 October 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.

CONSULTATION ON THE DRAFT WATER ALLOCATION PLAN FOR THE RIVER MURRAY PRESCRIBED WATERCOURSE

The Murraylands and Riverland Landscape Board is making changes to the River Murray Prescribed Watercourse Water Allocation Plan. The draft plan proposes changes to the way Environmental Land Management Allocations (ELMA) are distributed in the Lower Murray Reclaimed Irrigation Area (LMRIA) and a number of other minor changes including rules related to drilling new wells along the length of the River Murray to minimise potential impacts associated with connected water resources.

The proposed changes will only affect holders of an ELMA (Class 8) licence.

Copies of the draft plan and supplementary material can be viewed on the Boards website at:

<https://landscape.sa.gov.au/mr/water/water-allocation-plans/river-murray-wap>

The landscape board are seeking to consult with the community on the draft plan. Consultation opened on 28 September and will close on 2 December 2020.

Written submissions can be sent to:

Ms R Freshwater, Murraylands & Riverland Landscape Board, Upper Level, Cnr Mann & Walker St, Mount Barker SA 5251

Email: rmwap.feedback@sa.gov.au

Online survey: <https://landscape.sa.gov.au/mr/water/water-allocation-plans/river-murray-wap>

Submissions will be made publically available. If you prefer that your submission remains anonymous then please make sure you that indicate this in your submission.

Submissions close at 5:00 pm on Wednesday, 2 December 2020.

WATER RESOURCES UPDATE

During September 2020, the total River Murray System inflow was approximately 554 GL, which is about 34 % of the September long-term average of 1 628 GL. During September 2020, the total Menindee Lakes inflow was approximately 37 GL, which is approximately 18 % of the September long-term average of 198 GL.

The flow to South Australia during September 2020 was approximately 336 GL, which is about 33 % of the September long-term average of 1 001 GL. The flow comprised of Entitlement Flow (including environmental water on SA licence), environmental water and trades.

MANAGEMENT OF SOUTH AUSTRALIA'S DEFERRED WATER

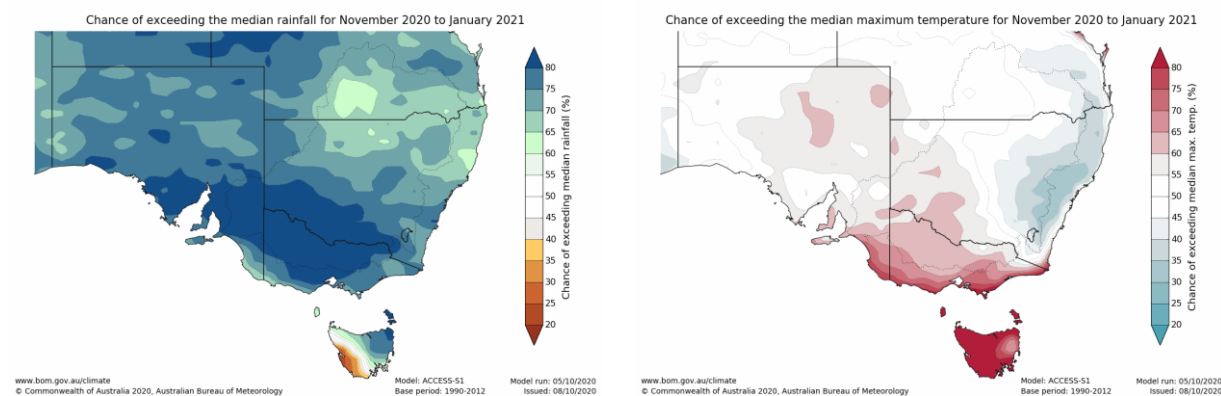
The Murray-Darling Basin Authority confirmed that on 1 October 2020 South Australia had 339.3 GL of deferred water held in storage in the Murray-Darling Basin. The following table identifies the storage in which it is held and the purpose. Volumes stored are adjusted for net evaporation losses and spills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

At 1 October 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 November 2020 to January 2021 indicates that the region is expected to receive above average rainfall and above average temperatures in the Southern Connected Basin. In the Northern Basin, temperatures are expected to be below average to average for the same time period.



The El Niño-Southern Oscillation (ENSO) is currently negative meaning that a La Niña is currently underway. La Niña is typically associated with an increased likelihood of above average winter-spring rainfall across southern and eastern Australia.

Model outlooks have now reduced the likelihood of a negative Indian Ocean Dipole (IOD) event forming in 2020. A negative IOD is associated with increased likelihood of above average winter-spring rainfall across southern and eastern Australia.

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

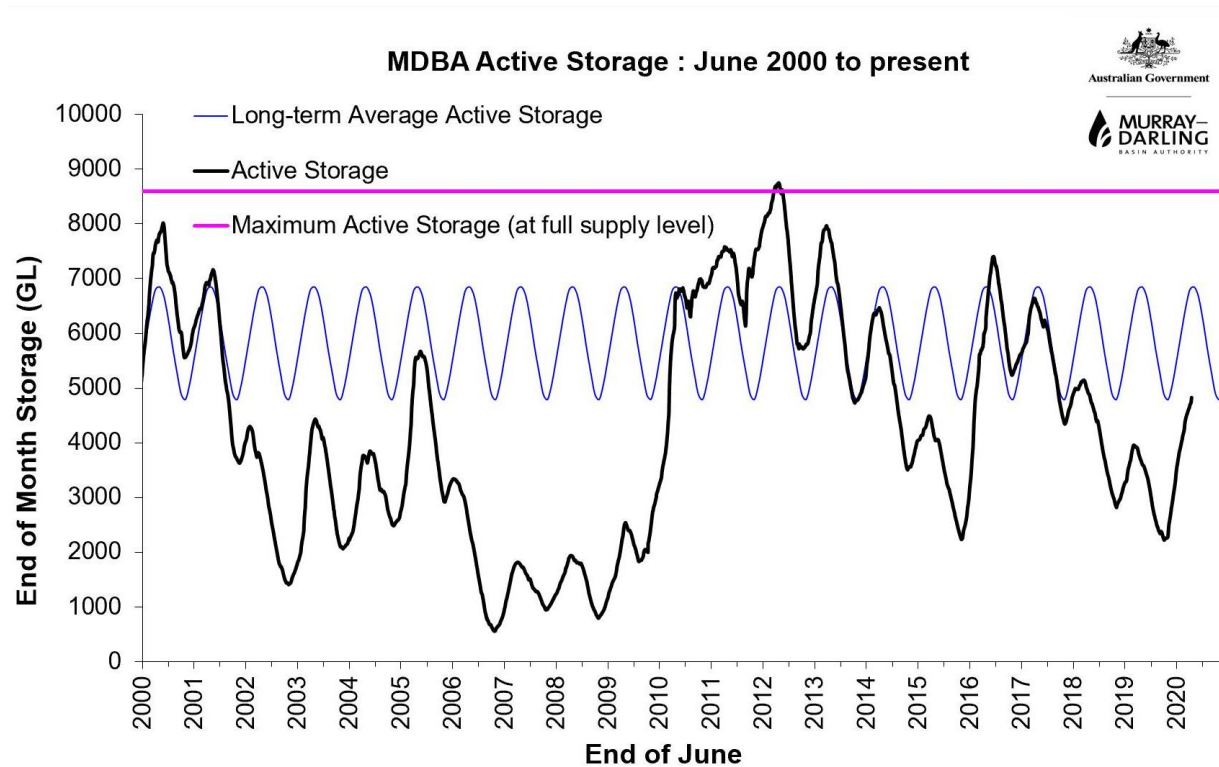
STORAGE VOLUMES

Table 1: Murray-Darling Basin Storage volumes

Storage	Full Supply Volume (GL)	14/10/2020 (GL)	14/10/2019 (GL)	Long-term average (end of Oct) (GL)
Dartmouth	3 856	2 241 (58%)	2 181 (56%)	
Hume	3 007	2 182 (72%)	1 211 (40%)	
Lake Victoria	677	636 (94%)	520 (76%)	
Menindee Lakes	*1 731	468 (27%)	12 (<1%)	
TOTAL	9 271	5 527 (60%)	3 924 (42%)	7 498 (81%)

*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 October 2019 to October 2020. The dashed-lines identify the Basin Plan (BP) thresholds for the corresponding colour coded location.

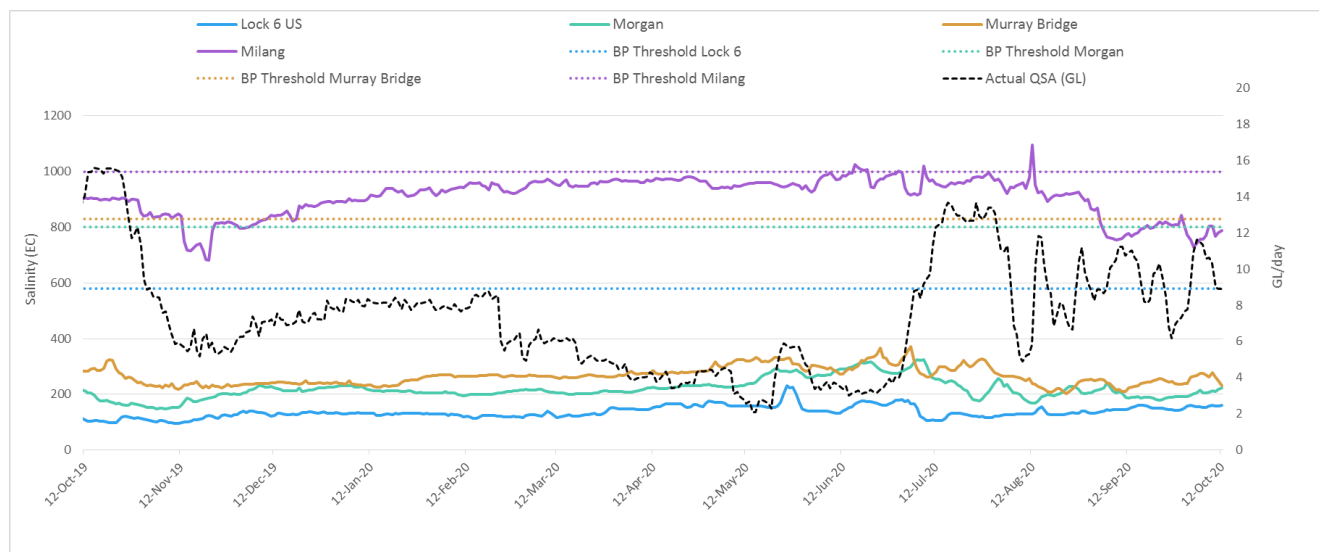


Figure 1: SA River Murray daily average salinity

FLOW OUTLOOK

The flow at the South Australian border is approximately 8 GL/day and will increase to around 11 GL/day over the coming week. It comprises:

- full October Entitlement Flow (5.5 GL/day);
- plus water for the environment (see below *Environmental News*); and
- interstate trade adjustments.

The flow over Lock 1 is approximately 6.8 GL/day and will increase to around 7.5 GL/day over the coming week.

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.

ENVIRONMENTAL NEWS

Water for the environment is currently being delivered to increase base flows in the River Murray, for watering actions at various wetlands along the River and as part of a spring pulse along the entire length of the River Murray referred to as the Southern Spring Flow 2020.

The Southern Spring Flow 2020 will see water released from Hume Dam between September and December 2020 to benefit key wetlands from the mid-Murray to the lower Murray and all the way to the Lower Lakes and Coorong.

The objective of these flows is to provide food and shelter for native fish and other aquatic animals along the River Murray, from Hume Dam to the Coorong.

Further information on the Southern Spring Flow 2020 and updates can be found [here](#).

As well as the Southern Spring Flow 2020 water for the environment is also helping to:

- provide a productive, food-rich environment for fish and birds;
- remove excess salt from the River Murray (see more information [here](#))
- deliver a range of outcomes to wetlands in the Riverland via arrangements with the Murraylands and Riverland Landscape Board and Renmark Irrigation Trust.
- maintain water quality, salinity and water levels below critical thresholds in the River Murray channel, Lower Lakes and Coorong, including through targeted releases at the barrages when weather conditions are best suited to push water down the Coorong (see more information [here](#)); and
- maintain good connection from the Coorong to the upstream areas of the River Murray and its tributaries to enable fish migration and movement, including for diadromous lamprey which will be migrating into the river from the Southern Ocean for spawning over the next few months;

Monitoring is underway to investigate the migration of pouched and short-headed lamprey travelling from the Southern Ocean upstream to the River Murray Channel to spawn. During late July to early September a total of 97 pouched and 3 short-headed lamprey have been caught moving through the fishways at the barrages; and the majority have been tagged with Passive Integrated Transponders (PIT tags) so their passage can be detected via receivers along the River Murray. You can track upstream lamprey migration [here](#).

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 11 October 2020, a total of approximately 6 421 627 cubic metres of sand had been removed by dredging operations.

Two dredges are 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 0.886 m AHD and Lake Albert is approximately 0.905 m AHD. The difference in water level is due to wind effects.

Water for the environment has enabled continuous fishway releases and barrage releases to be undertaken during winter and into spring.

During the past week:

- fishways at all the barrages have provided connectivity between the Coorong and the Lower Lakes;
- Tauwitschere had numerous gates open to push fresher water down the Coorong;
- Goolwa, Mundoo and Boundary Creek Barrages had gates open to provide releases to support diadromous fish migration.

As of Tuesday 13 October 2020, the weekly releases were approximately 64 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.

RIVER VESSEL WASTE DISPOSAL STATIONS

Loxton

The Loxton River Vessel Waste Disposal Station is currently being upgraded and will be closed until 30 October 2020. A temporary pump-out service is available for river vessel users in this area. To use this service, please call Mr David Thiselton on 0412 839 392 to arrange a suitable time to pump-out waste. This service is available from Monday to Saturday, 8am to 5pm (please note: 4 hours notice is required for this service).

If you need any other help or advice with regard to this station, please call Mr Hayden Smith on 0457 820 553.

Lock 3

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 facility located at Waikerie. 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.

FLOODPLAIN OPERATIONS

The following table identifies the normal pool level (NPL) and normal operating range (NOR) for locks and weirs in South Australia. Potential operations could raise the water level above the NPL or NOR at some locks and weirs.

Weir	Normal Pool Level (NPL) (m AHD)	Normal Operating Range (m AHD)
Lock 6 - Murtho	19.25	19.17 - 19.50
Lock 5 - Renmark	16.30	16.13 - 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	5.90 - 6.40
Lock 1 - Blanchetown	3.20	3.10 - 3.40

First Operation of New Floodplain Infrastructure

The operations of the new Pike and Katarapko floodplain infrastructure and associated weir pool raisings are underway with water levels rising and areas of floodplain receiving welcome inundation. The operations aim to provide a range of environmental benefits to the plants and wildlife on the floodplain.

Updates on operations such as below will continue to be provided in the *River Murray Flow Report*. If you would like to be sent further communications about Pike and Katarapko floodplain operations via email, please provide your details to the Engagement Officer, Ellee Eleftheriadis, at ellee.eleftheriadis2@sa.gov.au.

Katarapko Floodplain with Raising Lock 4 Weir Pool

A medium level first operation of the new environmental watering infrastructure on the Katarapko floodplain is underway. The water level at The Splash regulator, as at 14 October 2020 is approximately 12.20 m AHD and is continuing to rise. The maximum water level expected to be reached is 12.8 m AHD. The water level in the Lock 4 weir pool is also raised in conjunction with the Katarapko operation up to 0.3 m above NPL (up to 13.5 m AHD). The Katarapko operations and Lock 4 raising will be completed in December 2020.

The event is progressing along well with water extending out onto areas of the floodplain providing the lower lying vegetation and trees with water. Waterbirds and frogs are responding to the conditions.

The Katarapko floodplain is part of the Murray River National Park which is currently still open to the general public for visiting. We ask that all visitors when accessing the park to keep an eye out for appropriate signage to guide you on your visit as you may notice water on tracks and at campsites. Conditions within the creeks will vary with water speed, depth and size where the water is on the floodplain. Care should be taken when driving, boating or canoeing.

Please visit the National Parks SA website for more information relating to access and visiting of Katarapko - https://www.parks.sa.gov.au/find-a-park/Browse_by_region/Murray_River/murray-river-national-park



Figure 2: A Whistling Kite hunts over The Splash at Katarapko (Source: Richard Walsh, DEW)

Pike Floodplain with Raising Lock 5 Weir Pool

A low level first operation of the new environmental watering infrastructure on the Pike floodplain is progressing well with water levels at the Pike regulator at 14.88 mAHD as of October 14. This operation also involves further raising of the water level in the Lock 5 weir pool which is currently raised by 0.14m (within the NOR). Near the end of October further raising at Lock 5 will occur with water levels to increase by approximately 2-3 cm per day up to a target height of 0.5 m above NPL (up to 16.8 m AHD). The continued weir pool raising and Pike Floodplain operations are planned to be completed in mid to late December 2020. The Pike Floodplain is closed to the general public during this time and ask that care should be taken when boating or canoeing around the area.

The first operation event at the Pike Floodplain is tracking well with water levels slowly rising within the Pike anabranch system and spilling into low lying floodplain and wetlands providing benefits for the vegetation including areas of river red gums and black box and understorey plants. The watering is already attracting a response by frogs including the threatened Southern bell frogs which have been recorded at six sites as well as providing habitat for a range of waterbirds.

The new environmental infrastructure at both Pike and Katarapko is being conservatively managed to maintain flows within the anabranch systems. During operation there will be some increases in salinity and reductions in levels of dissolved oxygen levels but the sites are being cautiously managed. Water quality at the sites and in the river is closely monitored and the operations may be amended if conditions change more than expected. Water quality monitoring at the sites and within the river can be accessed via Water Connect

[www.waterconnect.sa.gov.au/Systems/SiteInfo/Pages/Default.aspx?site=A4261053&period=HRLY#Parameter Summary](http://www.waterconnect.sa.gov.au/Systems/SiteInfo/Pages/Default.aspx?site=A4261053&period=HRLY#Parameter%20Summary)



Figure 3: Looking out over the Pike Floodplain (Samantha Walters, DEW)

QUARTERLY COMPLIANCE – QUARTER 2 ENDS ON 31 DECEMBER 2020

All South Australian River Murray water users are reminded that the Quarter 2 accounting period for 2020-21 ends on 31 December 2020. Compliance action will be taken if any water is taken in excess of the allocation available on a water account at the end of the quarter. For a water trade to be considered for Quarter 2, all paperwork must be lodged with the Department for Environment and Water before 5:00 pm on 31 December 2020.

In order to comply with the *Landscape South Australia Act 2019* by remaining 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; or
- Investigate whether water efficiency measures could be implemented for your property to decrease your demand for water.

To assist you to monitor your water use and remain within the water allocation available on your water account, you can submit an online meter reading at any time and elect to receive a water usage advice (similar to a bank statement) by email or SMS: <https://forms.business.gov.au/smartforms/sa-dfw/meter-reading-form/>.

For more information please read the fact sheet: [SA River Murray quarterly compliance factsheet](#), or [visit DEW's website](#), or contact the Berri water licensing office via telephone: (08) 8595 2053 or email: DEW.waterlicensingberri@sa.gov.au.

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.

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 14/10/2020 (m AHD)	1974 Flood Level (m AHD)	1993 Flood Level (m AHD)	2016 High Water Level (m AHD)
Lock 10	825.0	30.80	30.80	33.81	33.32	32.72
Lock 9 Kulnine	764.8	27.40	27.40	30.03	29.44	28.85
Lock 8 Wangumma	725.7	24.60	24.60	27.60	27.19	26.85
Lock 7 Rufus River	696.6	22.10	22.19	25.70	25.24	24.97
Lock 6 Murtho	619.8	19.25	19.36	21.03	20.50	20.19
Renmark	567.4	-	16.44	18.54	18.04	17.44
Lock 5	562.4	16.30	16.44	18.07	17.50	17.05
Lyrup	537.8	-	13.53	16.85	16.26	15.80
Berri	525.9	-	13.52	15.81	15.74	15.21
Lock 4	516.2	13.20	13.50	15.65	15.08	14.73
Loxton	489.9	-	10.08	15.05	14.12	13.54
Cobdogla	446.9	-	9.85	13.44	12.38	11.59
Lock 3	431.4	9.80	9.81	13.16	12.02	10.98
Overland Corner	425.9	-	6.46	12.73	11.58	10.41
Waikerie	383.6	-	6.42	11.26	10.24	9.20
Lock 2	362.1	6.10	6.30	10.28	9.30	8.32
Cadell	332.6	-	3.54	9.17	8.08	7.01
Morgan	321.7	-	3.46	8.85	7.65	6.38
Lock 1 Blanchetown	274.2	3.20	3.38	6.81	5.38	4.46
Swan Reach	245.0	0.75	0.90	6.06	4.51	3.11
Mannum PS	149.8	0.75	0.93	3.15	1.90	1.33
Murray Bridge	115.3	0.75	0.84	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: [Managing Acid Sulfate Soils Research Project](#)

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](#).

ID	RM-Flow-Report 20201016
Classification	Public I2 A2
Issued	16 October 2020
Authority	DEW
Master Document Location	R:\Water Group\RMO\WRO\04 Communications\Flow Advices\2020-21
Managed and Maintained by	Water Infrastructure and Operations Branch
Author	Water Infrastructure and Operations Branch
Reviewer	Director, Water Infrastructure and Operations