

# RIVER MURRAY FLOW REPORT

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Report #38/2016

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**This supersedes the previous flow report issued by the Department of Environment, Water and Natural Resources (DEWNR) on 30 September 2016. The next flow report will be provided on Friday 14 October 2016.**

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 CARRYOVER

South Australian River Murray water access entitlement holders (Class 3a, 3b, 4, 7 and 8) are being provided with a 100 per cent water allocation in 2016-17.

Eligible water access entitlement holders (Class 3a, 3b, 4 and 7) will also have access to private carryover. They will receive a letter and updated water account with their carryover volume endorsed from 10 October.

If you would like to know more about how private carryover is allocated please watch the short video on the DEWNR website

[www.environment.sa.gov.au/managing-natural-resources/river-murray/water-allocation-and-trade/private-carryover](http://www.environment.sa.gov.au/managing-natural-resources/river-murray/water-allocation-and-trade/private-carryover)

## MANAGEMENT OF SOUTH AUSTRALIA'S DEFERRED WATER

The Murray-Darling Basin Authority confirmed that on 1 October 2016, South Australia had 141.7 GL of deferred water held in storage. The table below identifies the storage in which it is held and the purpose.

At 1 September 2016				
Purpose	Lake Victoria (GL)	Hume (GL)	Dartmouth (GL)	Total (GL)
*CHWN	0.0	0.0	82.0	82.0
Private Carryover	0.0	0.0	59.7	59.7
<b>Total</b>	0.0	0.0	141.7	141.7

\*Critical Human Water Needs (CHWN)

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

South Australia cannot defer water when receiving unregulated flow. However, the State will continue to seek opportunities to defer and store water when conditions allow.

## FLOW OUTLOOK

The flow at the South Australian border is approximately 41 GL/day and will increase to around 45 GL/day during the coming week. Due to recent rainfall events across Victoria and New South Wales the flow to South Australia is expected to increase to around 50 GL/day in mid-October and possibly up to 60 GL/day in late October or early November. The flow to South Australia comprises the normal October Entitlement Flow of 5.5 GL/day and unregulated flow.

At around 60 GL/day, the land beneath some shacks built on the floodplain will start to be inundated. As a comparison, in 1956 the peak flow at the South Australian border was around 350 GL/day, in 1974 it was around 180 GL/day and in 2011 it was around 94 GL/day.

The flow over Lock 1 is approximately 38 GL/day and will increase to around 43 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. They 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

During October 2016, the Commonwealth Environmental Water Holder and the Murray-Darling Basin Authority's *The Living Murray* are expected to provide up to 17 GL of environmental water to South Australia. This water is included in South Australia's Entitlement Flow. The environmental water will provide in-channel, Lower Lakes and Coorong environmental and water quality benefits.

DEWNR is continuing discussions regarding environmental water to be delivered during 2016-17.

### 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. Dredges are operating in the Tauwitchere and Goolwa Channels. At 2 October 2016, approximately 1 627 600 cubic metres of sand had been removed. The dredging operations combined with recent substantial barrage releases have improved conditions at the Murray Mouth.

Mariners should be aware that barrage releases are likely to be varied ie 0 GL/day to approximately 50 GL/day and could cause a hazard for boating in the Coorong and the Murray Mouth. Mariners are advised that there are a number of shallow zones in and adjacent to the Murray Mouth, and should follow all directions in the area and reduce their speed. Boats equipped with echo sounders should regularly check depths and avoid travelling at low tide. Mariners are reminded that navigation through the Murray Mouth is only permitted during daylight hours and that Exclusion Zones established around the dredging operations remain in place to ensure public safety. For more information refer to the Notice to Mariners at <http://dpti.sa.gov.au/news/?a=247918>

There is also a partial park closure in place for the northern tip of the Coorong National Park. For more information refer to the following [http://www.environment.sa.gov.au/parks/Safety/Park\\_closures/141219-coorong-national-park](http://www.environment.sa.gov.au/parks/Safety/Park_closures/141219-coorong-national-park). Signage has been installed at appropriate locations advising of Exclusion Zones.

### BARRAGE OPERATIONS AND WATER LEVELS IN THE LOWER LAKES

The water level in Lake Alexandrina is approximately 1.00 m AHD and Lake Albert approximately 1.17 m AHD. The difference in water levels is due to wind effects. The high water level is a result of poor weather conditions limiting times that the barrages can be opened to release water and local high rainfall. Barrage operations will be actively managed, when conditions allow, to decrease the water level in the Lower Lakes. A water level of 0.8 m AHD is being actively targeted to create airspace to manage future inflows.

Due to the unregulated flow event, when weather conditions are favourable, water is being released from the barrages into the Coorong. Releases are being prioritised at Tauwitchere, Goolwa, Ewe Island and Mundoo barrages. The primary aims of the releases are to reduce salinity levels in the Lower Lakes and scour sand from the Murray Mouth. All fishways are operational to provide fish passage between Lake Alexandrina and the Coorong.

During the week ending 4 October 2016, total barrage releases were approximately 63 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 South Australian Government agencies the Murray-Darling Basin Authority and Commonwealth Environmental Water Office.

## **WEIR POOL OPERATIONS (upstream of SA)**

For safety reasons, as the high flows upstream of the South Australian border continue to travel through the river system, several weirs along the River Murray will be temporarily opened (open river conditions) during October. This is a standard operating procedure during periods of high flow.

The weirs at Locks 7, 8, 11 (Mildura) and 15 have already been opened. The weirs at Locks 9 and 10 (Wentworth) are expected to be opened in mid to late-October.

The weirs will be opened at a time when the upstream and downstream river levels are similar, resulting in minimal impacts to river users. Navigation markers at each weir will guide vessel operators to pass through the weir.

The weirs will be reinstated once the high flows cease.

## **WEIR POOL OPERATIONS**

### **Lock 1**

The Lock 1 weir pool remains approximately 0.1 m below the normal pool level (NPL) of 3.2 m AHD to enable engineering investigations to be undertaken at the weir.

### **Locks 2 and 5**

On 15 August 2016, the Lock 2 and Lock 5 weir pools commenced being raised above their normal operating range as defined in the table below.

<b>Weir</b>	<b>Normal Pool Level (NPL) m AHD</b>	<b>Normal Operating Range m AHD</b>
Lock 6 - Murtho	19.25	19.17 - 19.50
Lock 5 - Renmark	16.30	16.22 - 16.43
Lock 2 - Waikerie	6.10	6.02 - 6.40

The Lock 2 weir pool has been raised by 0.75 m above NPL to reach its target level of 6.85 m AHD. This water level will commence being drawn down in mid-October. The Lock 5 weir pool was recently raised by 0.45 m above NPL to reach its target level of 16.75 m AHD and is currently being drawn down. The weir pool raisings used unregulated flow and Commonwealth environmental water.

Weir pool manipulations aim to reinstate some of the natural variability of water levels in the River Murray system, which has been lost due to river regulation. The manipulations will assist to improve lateral connectivity, health, resilience and biodiversity of the river channel, floodplain and wetlands. It is intended that weir pool manipulations will become a routine part of river operations.

### **Locks 3 and 4**

An opportunity has recently arisen, as a result of the increased flow to South Australia, to flush salt from some sites in the Lock 3 and Lock 4 weir pools. The Lock 3 weir pool includes Lake Bonney and the Lock 4 weir pool includes Gurra Gurra Lakes.

On 4 October 2016, the Lock 3 and 4 weir pools commenced being raised. The purpose of the opportunistic event, which will take place over several weeks, is to flush salt from Lake Bonney and Gurra Gurra Lakes by taking advantage of the steadily increasing flows in the South Australian portion of the River Murray.

### CHOWILLA WATERING

#### Chowilla

Operations to further test the Chowilla Regulator and ancillary structures are proceeding as planned. The operations are anticipated to continue until December 2016. Testing involved progressively placing stop logs between the concrete piers at the Chowilla Regulator to raise the water level behind the structure. The target water level at the Chowilla Regulator of 19.75 m AHD (3.45 m above NPL) was achieved with resulting inundation of more than 5 000 hectares of floodplain. The water level is currently being drawn down.

#### Lock 6

As water levels were raised behind the Chowilla Regulator, the Lock 6 water level was also progressively raised. The Lock 6 water level is currently being drawn down.

### MODERNISATION OF WAIKERIE RIVER VESSEL WASTE DISPOSAL STATION

Modernisation of the Waikerie River Vessel Waste Disposal Station commenced on 25 July 2016 and is progressing well. The facility will be closed until 31 October 2016. Alternative temporary arrangements for pumping waste from vessels have been established. The temporary pump-out service is available 1 kilometre downstream of the Waikerie River Vessel Waste Disposal Station. Users will need to call Mr Mick Kemp on 0428 861 777 to arrange a suitable time between 8 am and 4 pm. Please note that at least 3 hours notice will be essential.

### 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 watercraft users should be aware of the risk of submerged navigation hazards, and should regularly check river depth.

Mariners should be aware that barrage releases are likely to be varied ie 0 GL/day to approximately 50 GL/day and could cause a hazard for boating in the Coorong and the Murray Mouth.

## RIVER MURRAY WATER LEVELS

Below is a table of River Murray water levels at a number of locations from Lock 10 (near Wentworth) to Murray Bridge.

### River Murray Water Levels on 7 October 2016

Location	River km	Normal Pool Level	Current Level (m AHD)	1974 Flood Level (m AHD)	1993 Flood Level (m AHD)	2011 High Water Level (m AHD)
Lock 10	825.0	30.80	30.64	33.81	33.32	32.28
Lock 9 Kulnine	764.8	27.40	27.35	30.03	29.44	28.80
Lock 8 Wangumma	725.7	24.60	24.78	27.60	27.19	26.79
Lock 7 Rufus River	696.6	22.10	23.33	25.70	25.24	24.92
Lock 6 Murtho	619.8	19.25	19.79	21.03	20.50	20.11
Renmark	567.4	-	-	18.54	18.04	17.38
Lock 5	562.4	16.30	16.70	18.07	17.50	17.05
Lyrup	537.8	-	13.71	16.85	16.26	15.68
Berri	525.9	-	13.50	15.81	15.74	15.16
Lock 4	516.2	13.20	13.27	15.65	15.08	14.75
Loxton	489.9	-	11.57	15.05	14.12	13.42
Cobdogla	446.9	-	-	13.44	12.38	11.52
Lock 3	431.4	9.80	9.84	13.16	12.02	10.93
Overland Corner	425.9	-	8.07	12.73	11.58	10.27
Waikerie	383.6	-	7.26	11.26	10.24	9.06
Lock 2	362.1	6.10	6.85	10.28	9.30	8.25
Cadell	332.6	-	4.46	9.17	8.08	6.82
Morgan	321.7	-	4.14	8.85	7.65	6.20
Lock 1 Blanchetown	274.2	3.20	3.19	6.81	5.38	4.42
Swan Reach	245.0	0.75	1.72	6.06	4.51	3.09
Mannum PS	149.8	0.75	1.21	3.15	1.90	1.46
Murray Bridge	115.3	0.75	1.07	2.06	1.26	1.21

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

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## FURTHER INFORMATION

The WaterConnect website is South Australia's comprehensive water information portal and can be accessed at [www.waterconnect.sa.gov.au](http://www.waterconnect.sa.gov.au)

Up-to-date River Murray salinity, flow and water level information can be accessed at the Department of Environment, Water and Natural Resources, SA Water and Murray-Darling Basin Authority websites

- [www.environment.sa.gov.au/managing-natural-resources/river-murray/water-allocation-and-trade/water-allocations-and-announcements](http://www.environment.sa.gov.au/managing-natural-resources/river-murray/water-allocation-and-trade/water-allocations-and-announcements)
- [www.waterconnect.sa.gov.au/Systems/RTWD/Pages/Default.aspx](http://www.waterconnect.sa.gov.au/Systems/RTWD/Pages/Default.aspx)
- [www.sawater.com.au/SAWater/Environment/WaterProofingAdelaide/TheRiverMurray/RMOU/Dailyflow.htm](http://www.sawater.com.au/SAWater/Environment/WaterProofingAdelaide/TheRiverMurray/RMOU/Dailyflow.htm)
- <http://livedata.mdba.gov.au/>

The latest news, information and announcements about the River Murray and Basin Plan are available at [River Murray Update](#).

The Department of Environment, Water and Natural Resources has published a series of inundation maps for the River Murray. They are available at [www.waterconnect.sa.gov.au/Systems/RMIM/SitePages/Home.aspx](http://www.waterconnect.sa.gov.au/Systems/RMIM/SitePages/Home.aspx)

Information on the management of acid drainage water in the Lower River Murray can be accessed at [www.epa.sa.gov.au/environmental\\_info/water\\_quality/programs/acid\\_sulfate\\_soils/lower\\_river\\_murray\\_reclaimed\\_irrigation\\_area\\_lmria](http://www.epa.sa.gov.au/environmental_info/water_quality/programs/acid_sulfate_soils/lower_river_murray_reclaimed_irrigation_area_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 [www.bom.gov.au/vic/flood](http://www.bom.gov.au/vic/flood)

Information provided by the Commonwealth Environmental Water Office can be accessed at [www.environment.gov.au/ewater/southern/murray/lower-murray.html](http://www.environment.gov.au/ewater/southern/murray/lower-murray.html)

Information on The Living Murray can be accessed at [www.mdba.gov.au/managing-water/environmental-water/delivering-environmental-water/living-murray-program](http://www.mdba.gov.au/managing-water/environmental-water/delivering-environmental-water/living-murray-program)

Chowilla Floodplain Icon Site management [www.environment.sa.gov.au/Chowilla-floodplain](http://www.environment.sa.gov.au/Chowilla-floodplain)

Department of Environment, Water and Natural Resources [www.environment.sa.gov.au/Home](http://www.environment.sa.gov.au/Home)

Information provided by the Department of Transport, Energy and Infrastructure on boat licences, registering motor boats, owning and operating water craft, and boat and marine safety can be accessed at [www.sa.gov.au/boatingmarine](http://www.sa.gov.au/boatingmarine)

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