

SA River Murray Flow Report



Report #49/2022

Issued 12:15 pm 16 December 2022

This supersedes the previous Flow Report issued by the Department for Environment and Water (DEW) on 9 December 2022. The next Flow Report will be provided on Friday 23 December 2022.

Current and forecast water levels

The table below shows estimated high water levels at key points along the river system.

The table below also details the date it is estimated the river will reach its peak at these locations.

Location	Normal Pool Level (m AHD)	Current level at 16/12/22 (m AHD)	Water level is currently	Estimated water level at peak (m AHD)	Estimated timing of peak	1974 flood water level ~182 GL/day (m AHD)	1931 flood water level ~210 GL/day
Lock 6	19.25	21.20	Rising	-	24 – 31 Dec	21.01	21.17
Renmark Pump Station	16.30	-	-	18.9 - 19.2		18.54	18.65
Lock 5		18.32	Rising	18.5 - 18.8		18.07	18.40
Lyrup	13.20	-	Rising	17.5 - 17.8		-	-
Berri		16.24	Rising	16.4 - 16.7	25 Dec – 5 Jan	16.27	16.56
Lock 4		15.58	Rising	15.9 - 16.2		15.66	15.94
Loxton	9.80	14.90	Rising	15.3 - 15.6	26 Dec – 6 Jan	15.04	-
Cobdogla		-	N/A	14.4 - 14.7	13.43	14.04	
Lock 3		13.32	Rising	14.0 - 14.3	28 Dec – 8 Jan	13.17	13.74
Overland Comer	6.10	12.85	Rising	13.5 - 13.8	1 – 12 Jan	12.73	-
Waikerie		-	Rising	11.9 - 12.2		11.24	11.67
Lock 2		10.45	Rising	10.7 - 11.0	2 – 13 Jan	10.29	10.75
Cadell	3.20	-	Rising	9.5 - 9.8	4 – 15 Jan	9.16	9.75
Morgan		8.72	Rising	9.1 - 9.4		8.57	9.03
Lock 1		6.46	Rising	7.3 - 7.6	5 – 16 Jan	6.81	7.32
Swan Reach*	-	-	6.6 – 6.9	6.04		-	
Mannum PS	2.26	Rising	3.3 - 3.6	3.14		3.50	
Murray Bridge	1.60	Rising	2.2 - 2.5	2.02		2.42	
Wellington	0.75	1.09	-	1.1 - 1.4	6 – 17 Jan	-	2.03
Lake Alexandrina		0.97	Varying	< 1.0	< 1.0	-	

* Water levels at Swan Reach levels are currently under investigation due to anomalies in measured data.

Notes

Giga Litre (GL) = 1,000,000,000 litres

mAHD = elevation in metres above Australian Height Datum (approximately equivalent to sea level)

Some things to consider –

- These updated flow and height tables should be used in conjunction with other information sources available at sa.gov.au/floods and ses.gov.au
- Maps which model potential inundation at various flood levels are available [here](#).
- The locations included in the table have been chosen because they are monitored sites (either current or historical).
- It is estimated that the peak flow will reduce as the flood peak moves down the river from the SA border towards the Lower Lakes. However, the degree to which the peak reduces is different for every flood.
- This is the first time in nearly 50 years that River Murray flows have reached many areas of the landscape and it is almost certain that changes to the river channel and floodplain in that time will lead to unforeseen and unexpected difference in flood behaviour. For example, it is possible that the flood this year will look different to pictures you have from the past – even with water flows at similar levels to past events.
- Some of the things that can impact flood behaviour include:
 - Floodplains – Changes on the floodplain will impact how far floodwaters spread, how they soak in and how water returns to the river
 - Bathymetry – Changes to the depth of the river channel due to increased sedimentation or scouring
 - Vegetation – Changes in vegetation density as a result of changes in grazing pressure
 - Infrastructure – New infrastructure like roads, buildings, levees
 - Wind – Wind can cause changes in flood behaviour, especially in the Lower Murray
 - Weather conditions – Rainfall across the border

New observations

At the South Australian border, after a brief period of flattening, the river continues to rise as we move towards the anticipated flood peak around Christmas 2022. The River Murray flood peak is currently located between Euston and Mildura.

The latest modelling developed in consultation with the MDBA and other upstream agencies still forecasts a peak in the range of 190 to 220 GL/day at the SA border.

The Bureau of Meteorology (BoM) has reported that rainfall in November 2022 was in the highest 10 per cent of historical observations over large areas of the Murray-Darling Basin and system inflows were almost twice the previous November inflow high since records have been kept (1892). However, minimal rainfall has occurred over the majority of the Basin this past week and this rainfall will not have any impact on the peak flow that we are expecting later this month.

The MDBA has advised that a levee/road embankment near Lake Victoria has been breached. Numerous options to repair this levee are currently being considered.

In preparation for the arrival of the flood peak, our focus will now move to reporting on water levels. A table listing current and forecast water levels, as well as the anticipated timing of the peak water level, for various river locations will be published and updated daily. The daily water levels information can be located [here](#).

The MDBA reports that most upper Murray and Victorian tributary flows are receding and releases from Hume Dam are now back in the order of 10 - 11 GL/day.

Flood inundation mapping

To help people know if they are at a greater risk of being affected by flooding, communities can view inundation maps prepared by DEW for a range of river flows.

Inundation mapping for the River Murray from north of Renmark to Wellington for flows ranging from 60 GL/day to the highest flood on record (341 GL – the 1956 flood) is available via the [Flood Awareness Map](#).

To use the Flood Awareness Map to see if your property is impacted at various flows, follow the steps below (also shown on the image):

1. Open the [Flood Awareness Map](#) and agree to the terms and conditions.
2. Search to your property via the search box at the top of the map or via council area or suburb drop down lists.
3. In the box titled 'Flood Studies' select 'Flood Mapping of the River Murray 2014';

4. Then select, the flow band you wish to view e.g. '200,000 ML per dayflow'.
5. (optional) Change Map Type to Aerial Photograph and use the Transparency Slider to improve the presentation.

Barrage operations and water levels in the Lower Lakes

The water level in Lake Alexandrina is approximately 0.97 m AHD and Lake Albert is approximately 0.89 m AHD.

As of Friday 2 December 2022, all operational gates across all 5 barrages were opened and will remain constantly open for the next few months to pass the floodwaters, even during storm events. Fishways at all barrages and at Hunters Creek (11 in total) were also open during the entire week to provide fish passage between the Coorong and Lower Lakes.

Barrage (total number of gates)	Goolwa (120)	Mundoo (25)	Boundary Creek (5)	Ewe Island (110)	Tauwitchere (319)
7 Dec 2022	120	25	5	110	317
8 Dec 2022	120	25	5	110	317
9 Dec 2022	120	25	5	110	317
10 Dec 2022	120	25	5	110	317
11 Dec 2022	120	25	5	110	317
12 Dec 2022	120	25	5	110	317
13 Dec 2022	120	25	5	110	317
Objective of releases	Passing flood flows through the lakes while maintaining average lake levels below 1.0 m AHD				

Number of barrage gates open each day for the week ending Tuesday 13 December 2022

Total daily release volumes from the barrages can now be accessed via [Water Data SA](#) by searching for the gauge [A4261002](#). Gate openings at the barrages can now also be accessed via Water Data SA and viewing the '[Barrage Gate Change History](#)' dashboard.

As of Tuesday 13 December 2022, the weekly releases were approximately 327 GL.

Lake holders and communities in the Lake Alexandrina region, particularly between Loveday Bay and Narrung Peninsula and in the vicinity of Goolwa, Hindmarsh Island and Mundoo Islands, are advised that short-term salinity increases are possible over the next few months due to flood-related barrage operations.

While the high volume of fresh water entering the Coorong estuary from the River Murray means the water downstream of the barrages is much fresher than usual, there is a small chance that saltier water will enter Lake Alexandrina for short periods from high tides or storms. Residents pumping water from the Lower Lakes are advised to check real-time salinity data here: <https://water.data.sa.gov.au/>

During December to February 2022, it is expected that barrage operations will be able to safely pass the forecast flood peak and maintain average lake levels below 1.0 m AHD. As flooding is not expected to occur at the Lower Lakes, flood warnings for the River Murray and flood inundation maps only extend as far downstream as Wellington.

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

Murray Mouth

High flows are achieving good scouring of sand at the Murray Mouth, now that average tide levels are becoming lower (typical for this time of year). In addition to the obvious environmental benefits, the current deepening and widening of the Mouth will also further improve capacity of barrages to pass flood waters out to sea.

River Murray River Vessel Waste Disposal Stations

As flow to South Australia has risen all river vessel waste disposal stations are offline with the exception of Goolwa which remains

These proactive and preventative measures are required to minimise risks to public safety and water quality and ensure infrastructure is protected. The temporary closure of this infrastructure is to ensure that when the flows do recede, the systems can go back online in a timely manner.

In the interim, commercial options are available for businesses to utilise temporarily at houseboat owners and operators' expense while the disposal stations are closed.

If you have any questions, please contact the DEW Engagement Team on DEW.WIOCommunications@sa.gov.au

Government owned levee banks

The Department for Environment and Water has closed all Government owned levee banks along the Lower Murray from Mannum to Wellington including Burdett, Cowirra, Jervois, Long Flat, Mobilong, Monteith, Mypolonga, Neeta, Pompoota and Wall Flat. Recreational activity along the levee banks will not be allowed during this time.

Local Irrigation Trust members and contractors will have continued access and are encouraged to take all necessary precautions when working on the levees, particularly during or following wet weather.

The Department is taking these preventative measures to minimise risks to public safety. We are being proactive in closing the levee banks temporarily so when the flows do recede, we can reopen in a timely manner once water levels have fallen sufficiently.

We acknowledge that there are privately owned levee banks along the Lower Murray. As they are managed and maintained by private landholders, access to these levee banks may also be closed at the discretion of the landholder.

If you have any questions, contact the DEW Engagement Team on DEW.WIOCommunications@sa.gov.au

Environmental news

Unregulated flows have been continuous to SA since July 2021 due to wetter than average conditions across much of the Murray-Darling Basin and flows are increasing due to significant flooding in NSW and Victoria. Apart from small volumes that are delivered as part of SA's entitlement flow, deliveries of water for the environment are generally on hold until flooding recedes. High flows provide a range of benefits for the environment in SA, including:

- connecting the river with floodplains and wetlands, inundating areas that have been dry for many years;
- allowing fish dispersal and movement into new habitats and throughout the Murray-Darling Basin;
- providing 'flowing water habitat' to benefit native fish, animals and plants in the River Murray channel that have adapted to a riverine environment, including supporting spawning and recruitment of large native fish. Golden perch have been detected spawning in the South Australian Murray in recent weeks;
- improving water quality and productivity in the Coorong, providing a food-rich environment for fish and birds including healthy populations of keystone native plant *Ruppia tuberosa*;
- providing habitat for birds, frogs and threatened small-bodied native fish species in the Lower Lakes;
- removing excess salt from the River Murray.

Blackwater

Blackwater occurs naturally when floods wash leaves, grass and cropping material off riverbanks and floodplains into waterways. High levels of organic matter in waterways, combined with warm weather, can cause oxygen levels in the water to drop. This is known as hypoxic (low oxygen) blackwater, which can have a blackish colour and a strong, unpleasant smell.

There is currently no blackwater present in the South Australian section of the River Murray. There have however been recent reports of low dissolved oxygen levels and blackwater in upstream sections of the river and its tributaries as a result of recent flooding.

PIRSA, with support from DEW, SA Water and the Murray-Darling Basin Authority and other relevant government agencies, continues to closely monitor blackwater events upstream and plan mitigation measures should it reach South Australia.

When dissolved oxygen levels in water drop below critical levels, it can cause fish and crustaceans to die. To report sightings of large numbers of dead or distressed fish, please contact the 24-hour Fishwatch hotline on 1800 065 522.

Marine Safety

The Department for Infrastructure and Transport has established a dedicated marine safety page regarding the current flood situation. As well as general safety information, this website lists identified current marine hazards. For more information please visit: <https://www.marinesafety.sa.gov.au/river-murray-high-flows-2022-marine-safety-advice>.

Further information

All information regarding the 2022 River Murray flood event (including that of partner agencies) can be accessed via the following link: <http://www.sa.gov.au/topics/emergencies-and-safety/river-murray-flood>

The Water Data SA website is South Australia's comprehensive water information portal. For real-time data (like salinity, water levels) go to the following page: [Water Data SA](#). Please note that some surface water monitoring stations may be removed as river flow increases and that data will be unavailable for those stations until they are reinstated.

Up-to-date River Murray salinity, flow and water level information can also be accessed at the SA Water and Murray-Darling Basin Authority websites:

- [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](#).

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](#)

Department for Environment and Water [Home page](#).

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