

SA River Murray Flow Report



Report #29/2023

Issued 2:30 pm 21 July 2023

This supersedes the previous Flow Report issued by the Department for Environment and Water (DEW) on 14 July 2023. The next Flow Report will be provided on Friday 28 July 2023.

Flow outlook



The flow at the South Australian border is approximately 42 GL/day and is forecast to stay around 40 GL/day over the coming week **depending on river operations**. Changes to operations at [Lake Victoria](#) (how much water goes into the Lake from the main river channel and how much is released out of the Lake) can alter the flow to South Australia. Lake Victoria is operated according to the Lake Victoria Operating Strategy.

The current flow at the border comprises:

- full July Entitlement Flow (3.5 GL/day);
- water for the environment;
- interstate trade adjustments; and
- Unregulated flow.

Airspace releases from Hume and Dartmouth dams as well as rainfall over the upper Murray catchment and Victorian tributaries (such as the Goulburn and Ovens catchment) over recent weeks has led to this increase in flow at the South Australian border.

The latest forecast upstream of the South Australian border indicates that the flow to SA will increase to between 45 - 50 GL/day in late August 2023, subject to river operations. This flow outlook is largely based on measurements of flow already in transit to SA and may increase and/or persist for longer if further rainfall on the catchment occurs and/or if pre-releases from storages are increased.

The current expected peak flow is similar to flow observed in July to September 2022 however unlike last year, **the forecast outlook is for a warmer and drier than average August to October** period (see Bureau of Meteorology outlook below).

While this is considered a **High Flow**, this type of flow is most common in winter-spring when the Murray catchment receives the bulk of its rainfall.

The flow over Lock 1 is approximately 39 GL/day and will decrease to around 37 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.

Bureau of Meteorology outlook

Rainfall during June 2023 was above average across most of the Southern Connected Basin. However, over the coming months, the Bureau of Meteorology is continuing to forecast below average rainfall (Figure 2) and warmer temperatures (Figure 1) from August to October 2023.

This is being driven by all international climate models forecasting an El Nino event emerging in 2023 and persisting well into the Southern Hemisphere summer. El Nino typically suppresses winter-spring rainfall over Eastern Australia.

The Indian Ocean Dipole (IOD) is currently neutral, however models suggest that a positive IOD is likely to form in late winter or early spring. A positive IOD typically suppresses winter-spring rainfall across Australia and, when occurring at the same time as an El Nino event (as is forecast over the coming months), it can exacerbate the drying effect.

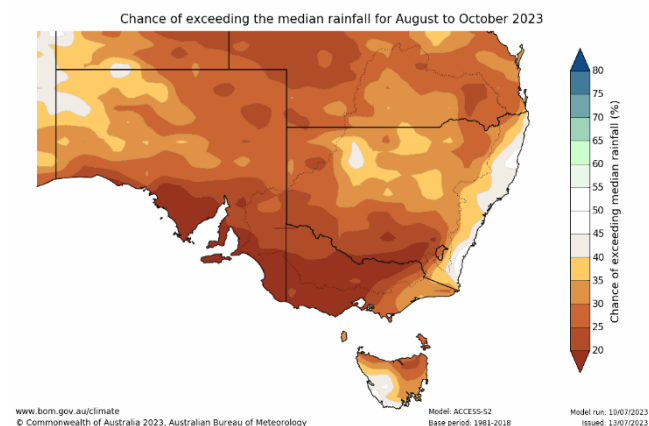


Figure 2: Chance of exceeding median rainfall August to October 2023 (Bureau of Meteorology)

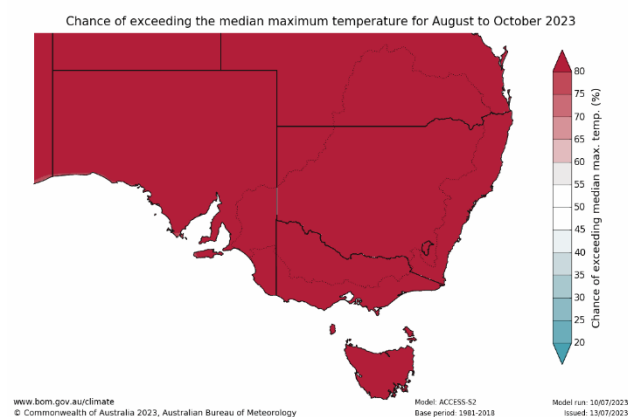


Figure 1: Chance of exceeding median maximum temperature August to October 2023 (Bureau of Meteorology)

Water levels

At these flow rates, water levels immediately upstream of locks and weirs are expected to remain at normal pool level.

Due to natural hydraulic gradients, the further a location is from a lock, the greater the increase in water levels above normal pool level will be. For example, at Lock 2 the water level immediately upstream of the lock will be close to the normal pool level of 6.1 m AHD. At the same time, water levels at Waikerie will be above 6.1 m AHD as it is further away from Lock 2 and closer to Lock 3.

Current water levels are updated daily and can be found at the following link: <https://www.waterconnect.sa.gov.au/River-Murray/SitePages/Daily.aspx>

High Flow Advice

With flow at the South Australian forecast above 40 GL/day, the Department for Environment and Water has issued a *High Flow Advice* with this River Murray Flow Report. The *High Flow Advice* is also available on the DEW website at the following location: <https://www.waterconnect.sa.gov.au/River-Murray/SitePages/River%20Murray%20Flow%20Reports.aspx>

Upstream flows

More information on upstream conditions and forecasts can be found in the Murray-Darling Basin Authority's *Weekly Flow Report* here: <https://www.mdba.gov.au/water-management/regular-reports-murray-data-storages/weekly-reports>

Murray Mouth

Dredging at the Murray Mouth continues to be suspended due to high flows scouring sand out of the mouth. Conditions are continuing to be monitored and fortnightly surveys performed in order to provide accurate information to assist in determining when dredging may recommence.

A wider and deeper Murray Mouth will have positive environmental benefits following the flood through enabling better exchange of water between the ocean, Lake Alexandrina and the Coorong.

Barrage operations and water levels in the Lower Lakes

The water level in Lake Alexandrina is approximately 0.73 m AHD and Lake Albert is approximately 0.74 m AHD. The difference is due to wind effects.

The Lower Lakes are being managed to target a daily average lake level between 0.65 m AHD to 0.75 m AHD during July 2023. 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. As the frequency of storms are greater during winter months it may mean that barrages are often closed. However, every opportunity is being taken to release water when conditions permit. This includes having a large number of gates open when conditions are suitable and utilising automatic gates to open and close at all hours of the day in line with tide conditions.

Gate openings at the barrages can now be viewed on Water Data SA here:

<https://water.data.sa.gov.au/Data/Dashboard/75>

Total daily flow releases from the barrages can also be found on Water Data SA here:

<https://water.data.sa.gov.au/Data/Dashboard/1>

River Murray River Vessel Waste Disposal Stations

As at 20 July 2023 all River Vessel Waste Disposal Stations (excluding Lock 3) are online and operational.

Additional minor repair works will be required across the stations over the next couple of months. This is expected to have a minimal impact on the operational status of the stations.

The Lock 3 River Vessel Waste Disposal Station has been out of commission since January 2020 due to a significant infrastructure failure. The nearest alternative waste facility is located at Waikerie. Normal boat waste (domestic or galley waste) can still be deposited at the Lock 3 facility at the present time.

You can report any River Vessel Waste Disposal Station issues on 1800 799 065.

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

Levee embankments

Field inspections have been undertaken on all Government owned levees. As at 20 July, field inspections have been undertaken on 15 of the private levees with the remaining levee inspections planned for next week.

The reinforcement of levee stabilisation works, where required, is currently underway. In addition, the risk of increased flows on the repaired sections of levees is also being assessed and any identified risks, as well as reinforcement, will be addressed on a priority basis.

LiDAR profiles have been provided to all levee representatives.

Questions related to dewatering and recovery of agricultural areas can be directed to the PIRSA Recovery Hotline on 1800 931 314.

More information on the stabilisation of levee banks in the LMRIA can be found on the DEW website at

<https://www.environment.sa.gov.au/topics/river-murray-floods/lower-murray-levee-banks>

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

River Murray Flood Resilience Code Amendment

New planning rules to assist the rebuilding process and mitigate the impacts of future River Murray flood events are now in place and open for community feedback. Due to the urgency of providing clear rules to support recovery and redevelopment, the Code Amendment has come into effect on an interim basis at the same time as being released for consultation.

Consultation closes on 25 August 2023 and the community can find details on how to provide feedback by visiting <https://yoursay.sa.gov.au/river-murray-flood-resilience>

Potential weir pool lowering in 2023-24

Planning is underway for potential small-scale weir pool manipulations at Locks 1 to 6 in early September 2023, to achieve a range of benefits for floodplain and wetland vegetation and wildlife. Planning and exact timing is dependent on river conditions (flow and water quality), availability of water for the environment and approvals.

The operation will involve minor weir pool lowering, within the normal operating range, at Locks 1 to 5, and a potential weir pool lowering of up to 16 cm below normal pool level at Lock 6.

The weirs will be lowered by 2-3 cm per day over 1-6 days dependent on their target height which will limit any erosion risks and means any water level increases in the downstream weir pools will be minimal.

Lowering the weir pools will assist with drawing elevated groundwater into the river, flushing salt to the sea and supporting drying out of floodplains which have been inundated for an extended period of time. In stream salinity will be closely monitored ahead of, during and after any lowering event.

As planning continues, further details on these operations will be provided in future Flow Reports.

If you would like to receive email updates with further information please send your request to DEW.WIOcommunications@sa.gov.au

Water quality

Algal blooms

A number of alerts for blue-green algae have been issued by upstream authorities in recent weeks. They include:

- River Murray at Fort Courage (**Amber alert**)
- Lake Victoria at the Outlet Regulator (**Amber alert**)

While no algal-blooms are currently present within South Australia, people are advised to avoid contact with any obviously green water or scums if they are encountered as they may cause skin irritations in some people.

South Australian authorities closely monitor the situation upstream and SA Water increases sampling whenever a water quality event is detected to allow for timely action. SA Water, SA Health and DEW monitor the occurrence of blue-green algal blooms in South Australia. SA Water uses the water quality data to continually adjust operations to minimise impacts to water treatment plants and other users located along the River Murray.

Water quality alerts in South Australia can be found on the SA Health website:

<https://www.sahealth.sa.gov.au/wps/wcm/connect/public+content/sa+health+internet/public+health/water+quality/water+quality+alerts>

More information on current alerts upstream can be found on the WaterNSW website here:

<https://www.waternsw.com.au/water-services/water-quality/algae-alerts>

Salinity

Salinity levels throughout the River Murray in South Australia continue to be slightly elevated. While this is common during flood recessions, the Department is closely monitoring the situation. In general, salinity levels across the River Murray in SA for the week were at approximately 230 EC (Lock 6) – 300 EC (Morgan).

It is possible that some irrigators may record higher salinity readings at isolated locations. These higher readings are more likely to be observed at the bottom of the water column.

Irrigators are encouraged to monitor the [daily salinity levels](#) provided by SA Water as part of their business operations.

PIRSA has provided salinity management advice for irrigators on its website:

https://www.pir.sa.gov.au/emergencies_and_recovery/storms_and_floods/river_murray_flood_2022

Further information

River Murray high flows	https://www.environment.sa.gov.au/topics/river-murray-flows
2022-23 River Murray Flood event	https://www.environment.sa.gov.au/topics/river-murray-floods
2022-23 River Murray Flood recovery	https://www.recovery.sa.gov.au/active-recoveries/river-murray-flood
	https://pir.sa.gov.au/emergencies-and-recovery/storms-and-floods/river-murray-flood-2022
Water quality alerts in SA	https://www.sahealth.sa.gov.au/wps/wcm/connect/public+content/sa+health+internet/public+health/water+quality/water+quality+alerts
NSW fish deaths	https://www.dpi.nsw.gov.au/fishing/habitat/threats/fish-kills
NSW algal alerts	https://www.waternsw.com.au/water-services/water-quality/algae-alerts
Real-time water data at sites in SA	https://water.data.sa.gov.au/
Current daily water levels	https://www.waterconnect.sa.gov.au/River-Murray/SitePages/Daily.aspx
Daily flow and level information at key SA Water sites on the River Murray	https://www.sawater.com.au/water-and-the-environment/south-australias-water-sources/river-sources/river-reports-daily-flow
Daily salinity information in SA	https://www.sawater.com.au/water-and-the-environment/south-australias-water-sources/river-sources/river-reports-daily-salinity
Real time information throughout the River Murray system	https://riverdata.mdba.gov.au/system-view
Whole River Murray System updates	https://www.mdba.gov.au/water-management/regular-reports-murray-data-storages/weekly-reports
Marine safety in SA	https://marinesafety.sa.gov.au/
Victorian rainfall and river conditions	http://www.bom.gov.au/vic/flood/index.shtml
NSW rainfall and river conditions	http://www.bom.gov.au/nsw/flood/
Climate outlooks	http://www.bom.gov.au/climate/ahead/outlooks/
Climate drivers	http://www.bom.gov.au/climate/enso/

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