

SA River Murray Flow Report



Report #28/2023

Issued 10:00 am 14 July 2023

This supersedes the previous Flow Report issued by the Department for Environment and Water (DEW) on 7 July 2023. The next Flow Report will be provided on Friday 21 July 2023.

Flow outlook



The flow at the South Australian border is approximately 38 GL/day and is forecast to increase to around 45 GL/day over the coming week depending on river operations.

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 around 45 GL/day, depending on river operations, on or around 20 July 2023 and then be relatively stable around 40 GL/day until late August before declining. 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 36 GL/day and will increase to around 39 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 forecasting below average rainfall (Figure 1) and warmer temperatures (Figure 2) 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.

Current rainfall is being driven by a neutral Indian Ocean Dipole (IOD); however, this is forecast to turn positive in the coming months. 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.

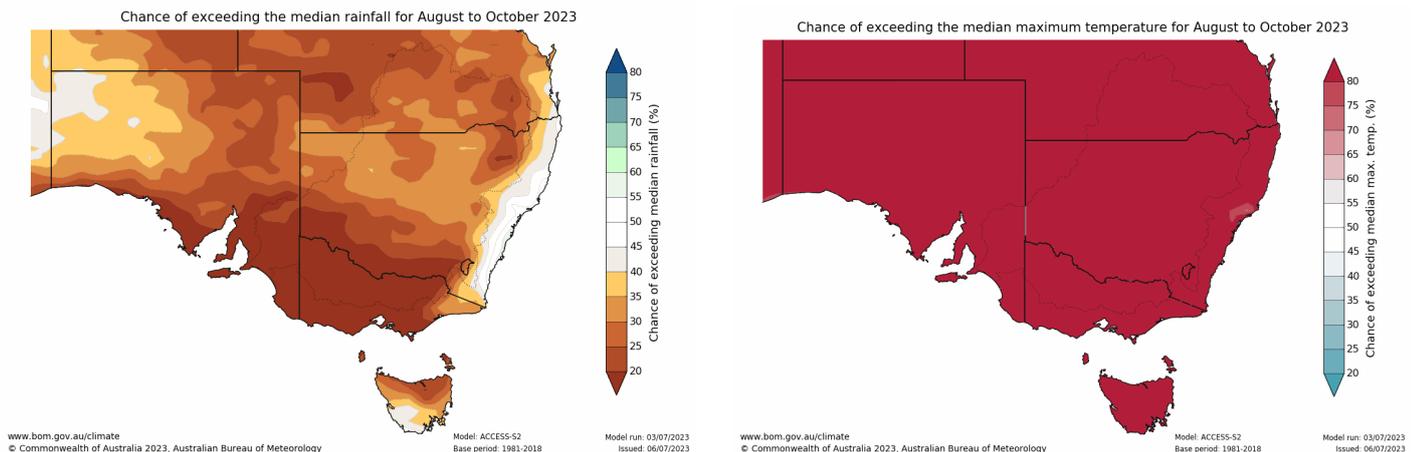


Figure 1: Chance of exceeding median rainfall August to Oct 2023 (Bureau of Meteorology)

Figure 2: Chance of exceeding median maximum temperature August to Oct 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 to go 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>

Salinity

Salinity levels throughout the River Murray in South Australia continued 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 240 EC (Lock 6) – 600 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

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, Tide Ratios analysed, and fortnightly surveys performed in order to provide accurate information to assist in determining when dredging may recommence.

SA Water spent most of May and June commissioning a new larger and more efficient dredge "Sawfish" which will replace the two pre-existing dredges when it is required.

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 0.8 m AHD and Lake Albert is approximately 0.8 m AHD.

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 13 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 13 July, field inspections have been undertaken on 11 of the private levees with field inspections of the remaining levees 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 the majority of levee representatives with the remainder due to be issued by early next week.

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.

The community can find out more about the new planning rules at several information sessions presented by the Department for Trade and Investment's Planning and Land Use Services Staff.

An **online session** has been scheduled for 18 July 2023, 6 pm – 7 pm.

To register and to find out more details on how to provide feedback visit <https://yoursay.sa.gov.au/river-murray-flood-resilience>

Environmental news – Lamprey are on the move

It's winter, and this week marks the start of lamprey monitoring season! Scientists from SARDI Aquatic Sciences will be working with SA Water over the next two months to trap pouched and short-headed lamprey at the barrage fishways near Goolwa. Lampreys will be fitted with tracking devices so we can monitor their upstream migration along the River Murray.

This upstream migration forms a crucial part of the life cycle of these lamprey species and is an example of the importance in keeping our river and ocean connected.

In 2020, one lamprey was tracked swimming all the way to Lock 11, will there be any keen contenders this year?



Figure 3: Oral disc of a pouched lamprey (*Geotria australis*) (SARDI Aquatic Sciences)



Figure 4: Cage trap used to sample lamprey migrating through the barrage fishways (DEW)

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>

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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