

SA River Murray Flow Report

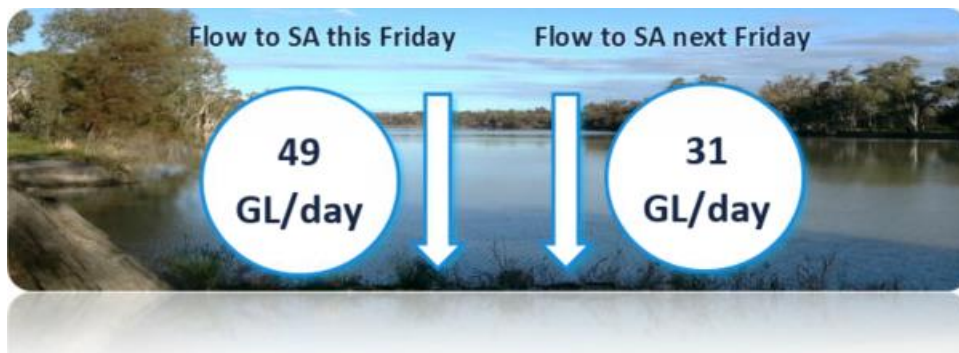


Report #36/2023

Issued 17:30 pm 8 September 2023

This supersedes the previous Flow Report issued by the Department for Environment and Water (DEW) on 1 September 2023. The next Flow Report will be provided on Friday 15 September 2023.

Flow outlook



The flow at the South Australian border is approximately 49 GL/day and is forecast to decrease to approximately 31 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 the full September Entitlement Flow (4.5 GL/day) plus, small volumes of water for the environment and interstate trade adjustments while the majority of the flow is 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.

Most recent data has reported that the **flow to SA reached around 53 GL/day on 4 September**. The flow forecast for the week ahead has indicated that it will begin to flatten out and then fall quickly over the coming weeks. The flow outlook over recent months has been largely based on measurements of flow already in transit to SA.

As flow begins to fall at the SA border this weeks' forecast is still 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 48 GL/day and will decrease to around 38 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.

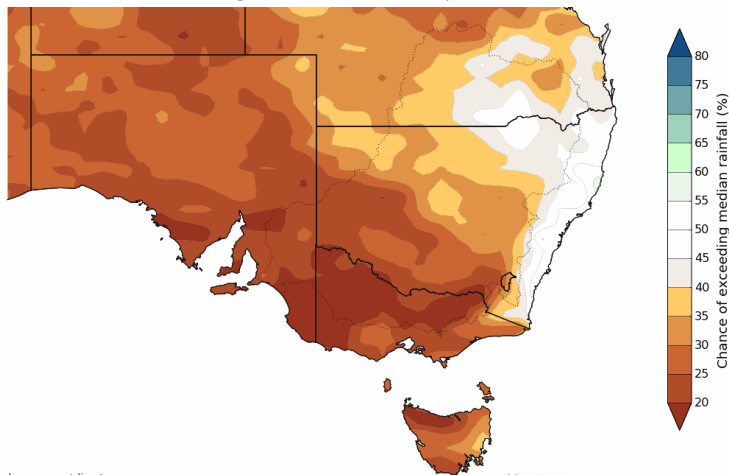
Bureau of Meteorology outlook

Over the coming months, the Bureau of Meteorology is continuing to forecast below average rainfall (Figure 1) and warmer temperatures (Figure 2) from September to November 2023.

This is being driven by all international climate models forecasting an El Nino event emerging in spring 2023. El Nino typically suppresses winter-spring rainfall over Eastern Australia.

The Indian Ocean Dipole (IOD) has been positive for several weeks, however, an IOD event is yet to be declared. It is likely this will occur during spring. A positive IOD typically suppresses winter-spring rainfall across Australia and, when occurring at the same time as an El Niño event (as is forecast over the coming months), it can exacerbate the drying effect.

Chance of exceeding the median rainfall for September to November 2023



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Model: ACCESS-S2
Base period: 1981-2018

Model run: 21/08/2023
Issued: 24/08/2023

Chance of exceeding the median maximum temperature for September to November 2023



www.bom.gov.au/climate
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Model: ACCESS-S2
Base period: 1981-2018

Model run: 21/08/2023
Issued: 24/08/2023

Figure 1: Chance of exceeding median rainfall for September to November 2023 (Bureau of Meteorology).

Figure 2: Chance of exceeding the median maximum temperature for September to November 2023 (Bureau of Meteorology).

Water levels

At these flow rates, water levels immediately upstream of locks and weirs are expected to remain at, or around, 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.

Although water levels in some locations may be higher, they are expected to stay within the range of normal variation (including when water levels are raised for environmental benefit – which is not the current reason why water levels are higher) and not reach levels seen under flood classifications.

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 0.81 m AHD and Lake Albert is approximately 0.83 m AHD.

The Lower Lakes are being managed to target a daily average lake level between 0.7 m AHD to 0.8 m AHD during September 2023. It is not currently feasible to target a lower water level in the Lower Lakes (than the range stated above) due to the current and forecast tide heights. Targeting a lower level in the lakes would result in extended periods of gate closures when the tide level is higher than the water level upstream of the barrage, which in turn will increase water levels in the lakes. While the water level in the Lower Lakes can have an influence on water levels further upstream along the River Murray channel (for example, at Wellington and Jerois), this influence is reduced during higher flows.

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 31 August 2023 all River Vessel Waste Disposal Stations (excluding Lock 3) are online and operational.

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.

Goolwa porta loo disposal unit is currently out of service, but repairs have been scheduled for the 15th of September 2023. Updates will be provided as further information becomes available.

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

Lower Murray Reclaimed Irrigation Area Levee embankments

Strong southerly winds of up to 72km/h have resulted in overtopping of 7 levees in the Lower Murray Reclaimed Irrigation Area since Thursday.

The Department for Environment and Water is continuing to work closely with the State Emergency Service, Department of Primary Industries and Regions (PIRSA), SA Water Engineering Functional Support Group, landholders and contractors to assess and stabilise the levees as soon as possible.

Two government-owned levees at Long Flat and Pompoota, and 4 privately-owned levees at Kilsby, Westbrook, Toora and Glen Lossie have overtopped, while a privately-owned levee at Placid was breached.

This was caused by wind seiche from strong southerly winds raising water levels by almost 400mm in under 24 hours.

Work to stop overtopping is now complete at Westbrook, Toora, Glen Lossie and Kilsby.

Emergency stabilisation works at Pompoota and Long Flat are scheduled to finish Friday night. SES swift water teams remain at Pompoota and Long Flat to provide support until works are complete.

PIRSA will start to dewater both levees once they are disconnected from the river and it is safe to do so.

Repairs at Placid, where the levee breached after overtopping, are not possible at this stage but DEW and PIRSA will continue to work with landholders to assess damage and required works.

Forecasts indicate wind strength should ease later Friday evening and swing to a westerly direction by the end of the weekend, therefore reducing pressure on the levees.

Depending on weather conditions, drone surveillance is planned to be undertaken on Saturday to assess the extent of damage to affected levees and sites will be monitored closely in coming days.

The River Murray is currently classed as high flow with flows at the South Australian border registering about 49 GL/day. This is forecast to decrease to about 31 GL/day over the coming week.

DEW and PIRSA have worked closely with Lower Murray Reclaimed Irrigation Area landholders to undertake assessments and short-term stabilisation of levees to allow dewatering of inundated areas since the River Murray flood.

Requests for assistance for on-water incidents or inundation of property should be directed to the State Emergency Service on 132 500. For life-threatening emergencies call 000.

Levee access

All government-owned levee banks along the Lower Murray from Mannum to Wellington remain closed to public access until further notice. While flood recovery works are being undertaken and until full condition assessments have been completed, recreational activities along the levee banks, such as walking, cycling and fishing are not allowed.

The government-owned levee banks are:

- Cowirra
- Neeta
- Wall Flat
- Pompoota
- Mypolonga
- Mobilong
- Burdett
- Long Flat
- Monteith
- Jervois



Photo: Restricted access to levee banks.

Privately-owned levees along the Lower Murray are managed and maintained by private landowners and access to their levee banks is at their discretion. However, access to private levee banks where the department is undertaking flood recovery work is not permitted.

If you have queries about levee stabilisation works or would like to discuss your particular circumstances, please contact the Department for Environment and Water through the following channels:

Birgitte Sorensen, Manager Levee Recovery on (08) 8463 6942 or Birgitte.Sorensen@sa.gov.au

Lisa van der Linde, Communications and Engagement Officer on 0437 313 087 or Lisa.vanderlinde@sa.gov.au

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 LMRIA levee stabilisation works can be found on the DEW website at <https://www.environment.sa.gov.au/topics/river-murray-floods/lower-murray-levee-banks>.

Potential weir pool lowering in 2023-24

Planning is underway for potential small-scale weir pool manipulations at Locks 1 to 6 to commence in late September/early October 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 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 1-8 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

Environmental news – Lake Albert salinity

The recent River Murray flood reduced the salinity of Lake Albert to its lowest level since records began in 1968! Average salinity was less than 800 EC in December 2022, which was a staggering 1000 EC reduction over the previous 18-month period. Average salinity levels have increased slightly and are currently 1033 EC, which is still well below the long-term average.

Physical properties of the lake, including the narrow inlet connecting to Lake Alexandrina, in combination with river regulation decreasing intermediate and high flow years, has meant that up until recently there have been few opportunities for the lake to be flushed and for salt to be exported.



Photo: View from a flight over Lake Albert, 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**)
- Darling River at Tapio (**Red alert**)
- Darling River at Ellersie (**Red alert**)
- Darling River at Burtundy (**Red alert**)
- Darling River at Pooncarie (**Red alert**)
- Darling River at Tolarno (**Red alert**)
- Talyawalka at Menindee – Pooncarie Road (**Red 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 have returned to their typical range following elevated levels experienced during the flood recession.

Nonetheless, 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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