

SA River Murray Flow Report

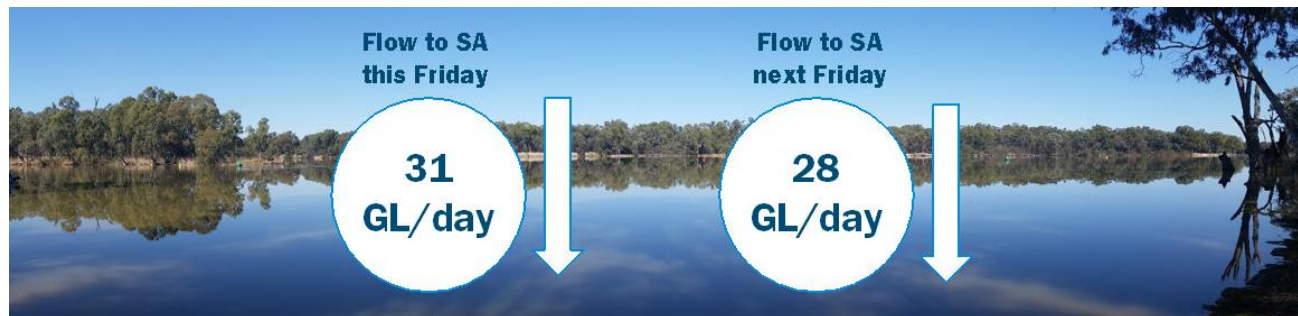


Report #10/2023

Issued 10:00 am 10 March 2023

This supersedes the previous Flow Report issued by the Department for Environment and Water (DEW) on 3 March 2023. The next Flow Report will be provided on Friday 17 March 2023.

Flow outlook



The flow at the South Australian border is approximately 31 GL/day and is forecast to decrease to around 28 GL/day over the coming week. The current flow at the border comprises:

- full March Entitlement Flow (6 GL/day);
- water for the environment (see below *Environmental News*);
- interstate trade adjustments;
- Additional Dilution Flow (ADF); and
- Unregulated flow.

The flow over Lock 1 is approximately 40 GL/day and will decrease to around 35 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.

Current water levels

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>

Lake Bonney & salinity

Increased salinity levels are common during flood recessions. The Department is closely monitoring elevated salinity levels throughout the River Murray in South Australia. In general, salinity levels across the River Murray in SA are approximately 500-600 EC which is still within acceptable limits but elevated compared to when the river is within channel. It is understood that some irrigators have recorded higher salinity readings at isolated locations. These higher readings are more likely to be observed at the bottom of the water column.

The salinity at Lock 3 is continuing to fall and on Wednesday 8 March 2023 the salinity reading was 490 EC. This is now less than the level at Lock 2 (536 EC).

Rises in salinity at Lock 3 are common during flood recessions and is a result of the normally higher salinity water held in Lake Bonney being drawn into the river with falling water levels. There are a number of factors which influence the volume and timing of saltier water entering the main river channel, including the amount of mixing that occurs between fresher and saltier water within Lake Bonney upon re-opening, and the actual rate at which water levels fall in the river.

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

Additional flow from the Great Darling Anabranch, which enters the River Murray downstream of Wentworth, is expected to reach the South Australian border during April. The peak in the anabranch system appears to have reached Bulpunga in NSW where the flow rate is estimated to be around 16 GL/day. Based on these predictions, **the arrival of this water into South Australia is forecast to only result in a “flattening” of the flow recession and remain contained within the river channel.**

In recent weeks pre-releases have been made from Dartmouth Dam in order to create additional airspace should further rain fall in the catchment in the future. These releases have all been captured in Hume Dam and will not result in additional flow to South Australia.

Hume Dam is currently at 94% capacity and is releasing water to meet downstream orders only, no pre-releases have been required at this stage.

Pre-releases from the upper dams to create airspace does not necessarily equate to an increase in flow at the SA border. There are a number of factors which influence how much water will reach the South Australian border, including how wet or dry the catchments are, how much water is used (and how high demands are), and how full other storages are (such as Lake Victoria) between the storage and the border.

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>

Safety on and around the River Murray in SA

Water users are advised to check restrictions for their area prior to accessing the River for any purpose. Water users should be mindful of the following:

- Operating watercraft and swimming in the main River Murray channel can be more hazardous during and after a high flow. Submerged objects, debris and the force of the current can present a risk to public safety.
- People operating watercraft, swimming, canoeing or participating in other activities on the main River Murray channel are advised to be aware of the risk of high flow, and take precautions to protect life and property.
- When operating a boat on the floodplain or near inundated river banks, be aware of submerged obstacles such as trees and fence lines.
- While swimming, do not jump or dive into the river when you do not know what is below the surface.
- If camping ensure that you are on higher ground away from the river bank.

The following precautions still remain:

- Don't drive, ride or walk through flood-affected causeways or roads.
- Be aware that significant debris has been carried downstream and may pose a hazard to water-based activities.
- **The hazards associated with riverbank collapse still exist in some areas so be aware of the signs - such as cracked riverbanks and leaning trees and keep away from fenced or sign-posted affected areas.**
- Always wear a personal floatation device on the river.
- Supervise children at all times and do not allow them to play in or near fast-flowing river water.
- If in doubt, stay out.
- Listen and take action on any instructions from the emergency services - the SASES, SA Police and the CFS.
- Tune to ABC local radio for community safety information.

Requests for assistance for on-water incidents should be directed to the SA State Emergency Service (SASES) on 132 500.

For life threatening emergencies call 000.

Barrage operations and water levels in the Lower Lakes

The water level in Lake Alexandrina is approximately 0.70 m AHD and Lake Albert is approximately 0.75 m AHD.

Barrage gates are now being operated as per normal operations.

Barrage releases are normally calculated using water levels from upstream and downstream of the barrages which are entered into equations to determine the volume of flow through each of the five barrages and the fishways. The existing methodology for calculating barrage releases is not accurate with the very high flow and water levels currently being experienced. Analysis will be undertaken following the flood event to develop a flow record of barrage releases throughout the flood.

It is also possible that wind, tide and wave action may temporarily result in higher levels in some locations. This local weather based variation is consistent with the variation seen on the Lakes outside of the current event.

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

Murray Mouth

Bathymetric survey of the width and depth of the Murray mouth has shown that the mouth is continuing to scour as a result of the high flows, which will assist in increasing the volume of water that is able to be released from the barrages. A wider and deeper Murray Mouth will have positive environmental benefits following the flood through enabling better exchange of water between the ocean and the Murray estuary and Coorong.

River Murray River Vessel Waste Disposal Stations

As water levels recede, DEW is recommissioning each disposal station when it is deemed safe and possible to do so. The process to recommission includes regaining safe access to the site, inspecting the infrastructure for any damage, repairing any damaged infrastructure, reinstating equipment, and the reconnection and testing of services. Since the flood waters have receded, the Berri River Vessel Waste Disposal Station has been recommissioned.

As at 8 March 2023, River Vessel Waste Disposal Stations at Berri and Goolwa are online and operational.

The other stations have been initially assessed for damage and repair works required. Based on initial assessments, indicative timeframes for recommissioning of the remaining stations is as follows:

- | | |
|-----------------------------------|-------------------------|
| • Blanchetown, Waikerie, Renmark, | Mid-March 2023* |
| • Loxton, Morgan, Swan Reach | Late March 2023* |
| • Walker Flat, Mannum | Early April 2023* |
| • Lock 6 | Mid to late April 2023* |
| • Murray Bridge | TBC |

**Note – these times may be subject to change dependent on further damage being identified, reconnection to services etc. Updates will be provided as further information becomes available.*

Final commissioning of the River Vessel Waste Disposal Stations is dependent on a number of factors outside the control of the Department including SA Power Networks, removal of adjacent temporary levee banks (where applicable) and safe road access. Until the river vessel waste disposal stations can be recommissioned, commercial options remain available for businesses to utilise temporarily at houseboat owners and operators' expense while the disposal stations are closed.

The Lock 3 River Vessel Waste Disposal Station has been out of commission since January 2020 due to a significant infrastructure failure.

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

Levee embankments

With the River Murray flood situation now in the recovery phase, the re-establishment of the levee network and dewatering process is the highest priority for producers in the Lower Murray region. Whilst the planning process is already underway, recovery of the Lower Murray Reclaimed Irrigation Areas (LMRIA) will be a complex process to assess and undertake the works required.

The key priority in the initial stages is stabilisation of the levees to allow dewatering to occur, get farmers back on their land and to protect the land against potential flows over the coming winter period. DEW is working with each irrigation area individually to determine any levee works required to enable dewatering to occur. In some areas where damaged sections of levee are no longer below the level of the water, dewatering has now commenced.

LiDAR surveys are currently underway to determine the extent of damage caused by the recent floods and structural integrity testing has now commenced. Work is also being undertaken with Local Councils to determine what access is available via local roads, to enable structural works on the levees to be undertaken.

PIRSA is leading the process of recovery planning for the LMRIA as part of the State Recovery Plan. Should you have any questions in relation to dewatering and recovery of the agricultural areas post-flood, please contact PIRSA on the Recovery Hotline on 1800 931 314.

Engaged levee banks along the Lower Murray from Mannum to Wellington currently remain closed in accordance with [Emergency Services \(Lower Murray Reclaimed Irrigation Areas\) Direction 2023](#) which came into effect on 3 March 2023.

DEW is unable to guarantee the integrity of levees following the flood event. Any Local Irrigation Trust members and contractors still accessing the levees for emergency response or maintenance works are encouraged to take all necessary precautions when working on the levees, particularly during or following wet weather.

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

Environmental news – Rare plant thrives in the flood

In desperate need of water, the rare plant species spiny lignum (*Duma horrida* ssp. *horrida*) has enjoyed a long drink during the flood event. These plants are being monitored on the Pike Floodplain and have responded with a flush of green in stark contrast with their pre-flood yellow/brown appearance. In the following months, this species will be kept under observation to see if they set seed and/or send up new shoots from their rhizomes (root mass) underneath the soil.



Figure 1: Rare plant species spiny lignum before and after the flood event on the Pike floodplain (DEW)

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 hypoxic blackwater present in the South Australian section of the River Murray.

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.

Further information

2022-23 **River Murray Flood event** <http://www.sa.gov.au/topics/emergencies-and-safety/river-murray-flood>.

2022-23 Flood **recovery** <https://www.sa.gov.au/topics/emergencies-and-safety/river-murray-flood/recovery>

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>

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/>

ID	RM-Flow-Report-2023 03 10
Classification	Public I2 A2
Issued	10 March 2023
Authority	DEW
Master Document Location	R:\Water Group\RMO\WRO\04 Communications\Flow Advices\2022-23
Managed and Maintained by	Water Infrastructure and Operations Branch
Author	Water Infrastructure and Operations Branch
Reviewer	Director, Water Infrastructure and Operations