

River Murray Flow Report and Water Resources Update



Report #27/2021

Issued 10:00 am 16 July 2021

This supersedes the previous flow report issued by the Department for Environment and Water (DEW) on 9 July 2021. The next flow report will be provided on Friday 23 July 2021.

In this report, for ease of representation, large volumes of water are expressed in gigalitres (GL), while smaller volumes are expressed in megalitres (ML). One GL is equal to 1 000 ML.

WATER RESOURCES UPDATE

During June 2021, the total River Murray System inflow was approximately 495 GL, which is below the June long-term average of 739 GL. During June 2021, the total Menindee Lakes inflow was approximately 78.8 GL, which is below the June long-term average of 135 GL.

The flow to South Australia during June 2021 was approximately 116 GL, which is about 30 % of the June long-term average of 389 GL. The flow comprised of Entitlement Flow (including environmental water on SA licence), environmental water and trades.

MANAGEMENT OF SOUTH AUSTRALIA'S DEFERRED WATER

The Murray-Darling Basin Authority confirmed that on 1 July 2021 South Australia had 386.6 GL of deferred water held in storage in the Murray-Darling Basin. The following table identifies the storage in which it is held and the purpose. Volumes stored are adjusted for net evaporation losses and spills until delivered to South Australia.

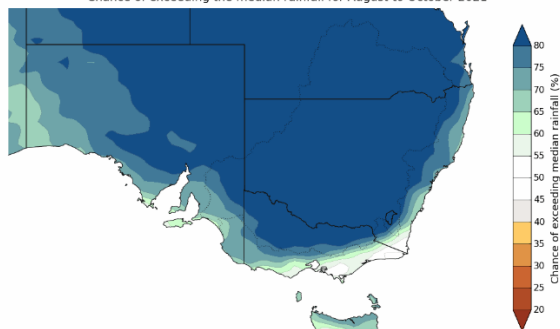
| At 1 July 2021 | | | | |
|-------------------|--------------------|-----------|----------------|------------|
| Purpose | Lake Victoria (GL) | Hume (GL) | Dartmouth (GL) | Total (GL) |
| *CHWN | 9.5 | 40 | 236.3 | 285.8 |
| Private Carryover | 0 | 0 | 100.8 | 100.8 |
| Total | 9.5 | 0.0 | 337.1 | 386.6 |

*Critical Human Water Needs (CHWN)

RAINFALL AND TEMPERATURE OUTLOOK

The latest Bureau of Meteorology weather outlook forecasts that rainfall from August to October is likely to be above median for most of Australia, including the Murray-Darling Basin. Temperatures are likely to be above average in the Upper Murray and around the Lower Lakes with the remainder of the Southern Connected Basin having a 50-55% chance of exceeding median maximum temperatures from August to October.

Chance of exceeding the median rainfall for August to October 2021

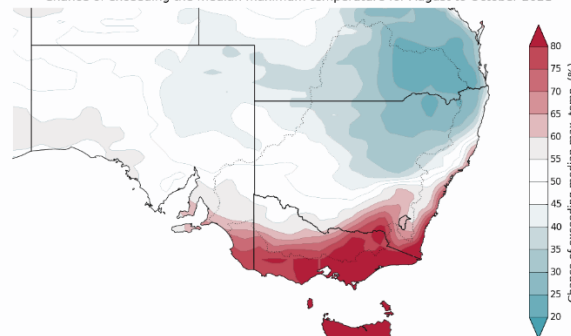


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Model: ACCESS-G1
Base period: 1990-2012

Model run: 05/07/2021
Issued: 08/07/2021

Chance of exceeding the median maximum temperature for August to October 2021



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Model: ACCESS-G1
Base period: 1990-2012

Model run: 05/07/2021
Issued: 08/07/2021

The Bureau is forecasting that a negative Indian Ocean Dipole (IOD) is likely for the second half of the southern hemisphere winter and into spring. A negative IOD increases the chance of above average winter-spring rainfall for much of southern and eastern Australia.

Above average sea surface temperatures to the north of Australia and in the eastern Indian Ocean are also providing more conducive conditions for rainfall across parts of Australia.

The El Niño-Southern Oscillation (ENSO) is currently at neutral levels and it is expected to stay at this level until at least spring.

The latest Bureau of Meteorology outlook information can be accessed [here](#).

STORAGE VOLUMES

Table 1: Murray-Darling Basin Storage volumes

| Storage | Full Supply Volume (GL) | 14/07/2021 (GL) | 14/07/2020 (GL) | Long-term average (end of July) (GL) |
|----------------|----------------------------|--------------------|--------------------|--|
| Dartmouth | 3 856 | 2 575 (67%) | 2 031 (53%) | |
| Hume | 3 007 | 1 921 (64%) | 1 319 (44%) | |
| Lake Victoria | 677 | 423 (62%) | 630 (93%) | |
| Menindee Lakes | *1 731 | 1 099 (63%) | 473 (27%) | |
| TOTAL | 9 271 | 6 018 (65%) | 4 453 (48%) | 6 659 (72%) |

*Menindee Lakes can be surcharged to 2 015 GL

WATER QUALITY - Salinity

A number of targets are identified under the Murray-Darling Basin Plan, which all Basin jurisdictions must have regard to in managing River Murray flows. The targets for real-time salinity are identified below. Salinity should not exceed these values for 95 % of the time:

- 580 EC at Lock 6
- 800 EC at Morgan
- 830 EC at Murray Bridge
- 1 000 EC at Milang.

The following graph shows the salinity at these locations and the flow to South Australia (QSA) from July 2020 to July 2021. The dashed-lines identify the Basin Plan (BP) thresholds for the corresponding colour coded location.

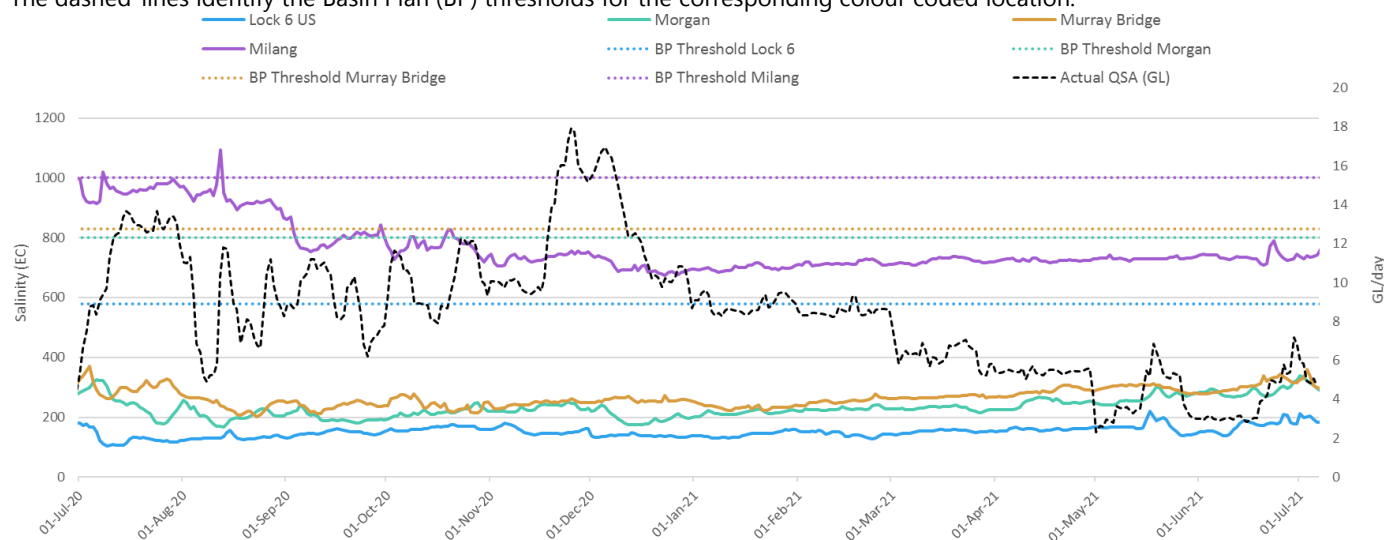


Figure 1: SA River Murray daily average salinity

QUARTER 4 METER READINGS DUE BY 31 JULY 2021

If you hold a water resource works approval that includes a condition that requires you to provide quarterly meter readings to the Department for Environment and Water, please be reminded that meter readings for the Quarter 4 accounting period for 2020-21 (which ended on 30 June 2021) must be recorded within the first fourteen days of July 2021 and submitted to the department by 31 July 2021.

Your meter reading can be submitted via one of the following options:

- The online Meter Reading Form at <https://forms.business.gov.au/smartforms/sa-dfw/meter-reading-form/>;
- By telephone on (08) 8595 2053; or
- By emailing the Department for Environment and Water at DEW.waterlicensingberri@sa.gov.au.

Should you require any assistance in supplying your meter reading, including how to complete the online Meter Reading Form, please call the telephone number directly above and an officer of the department will be happy to assist you.

The department's preferred approach is to encourage and facilitate voluntary compliance. However, failure to voluntarily comply with the conditions of a water resource works approval may result in an expiation notice being issued.

FLOW OUTLOOK

The flow at the South Australian border is approximately 7.5 GL/day and will decrease to around 6.2 GL/day over the coming week. It comprises:

- full July Entitlement Flow (3.5 GL/day);
- plus water for the environment (see below *Environmental News*); and
- interstate trade adjustments.

The flow over Lock 1 is approximately 5.5 GL/day and will increase to around 5.8 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.

ENVIRONMENTAL NEWS

In South Australia, water for the environment is currently helping to:

- provide for barrage releases to the Coorong to support a productive, food-rich environment for fish and birds;
- provide habitat for threatened small-bodied native fish species in the Lower Lakes;
- maintain good connections from the Coorong to the upstream areas of the River Murray, and its tributaries, to enable fish movement and migration;
- maintain healthy water quality, salinity and water levels in the River Murray Channel and the Lower Lakes and Coorong, including through targeted releases at the barrages when weather conditions are best suited to push water down the Coorong;
- remove excess salt from the River Murray.

MURRAY MOUTH

Dredging operations at the Murray Mouth commenced on 9 January 2015 to maintain connectivity (exchange of water) between the Coorong and the Southern Ocean. At 11 July 2021, a total of approximately 7 360 808 cubic metres of sand had been removed by dredging operations.

Both dredges are currently operating between the Goolwa and Tauwitschere channels 24 hours a day, seven days a week.

Barrage releases combined with dredging have helped to maintain flow connectivity of the River Murray Channel to the Murray Mouth and have assisted in exporting salt from the river system.

There are a number of shallow zones in and adjacent to the Murray Mouth. Mariners should use caution when traversing the mouth area, follow all directions, reduce speed and avoid travelling at low tide. Mariners equipped with echo sounders should check depths regularly. Navigation through the Murray Mouth is only permitted during daylight hours. Exclusion Zones established around the dredging operations are in place to ensure public safety. Refer to Notice to Mariners No 42 of 2016 [Notice 42](#).

There is a partial park closure in place for the northern tip of the Coorong National Park. For more information visit [Coorong partial park closure notice](#).

BARRAGE OPERATIONS AND WATER LEVELS IN THE LOWER LAKES

The water level in Lake Alexandrina is approximately 0.74 m AHD and Lake Albert is approximately 0.79 m AHD. The difference is due to wind effects.

As of Tuesday 13 July 2021, the weekly releases were approximately 35 GL. During the week an opportunity arose to open the automatic barrage gates at Mundoo. At the height of the event six gates were opened (all automatic gates) for two hours. Gate openings at the barrages during the week can be seen in Table 1.

Table 2: Number of barrage gates open each day for the week ending Tuesday 13 July 2021

| Barrage (total number of gates) | 7 July 2021 | 8 July 2021 | 9 July 2021 | 10 July 2021 | 11 July 2021 | 12 July 2021 | 13 July 2021 | Objective of releases |
|---------------------------------|--|-------------|-------------|--------------|--------------|--------------|--------------|--|
| Goolwa (120) | 4 | 4 | 4 | 4 | 4 | 4 | 4 | Maintain connectivity between the River Murray channel through to the Murray Mouth to support fish migration. |
| Mundoo (25) | 0 | 1* | 0 | 0 | 0 | 1*→6*→0 | 0 | Provide some localised freshening conditions in the Mundoo channel |
| Boundary Creek (5) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Ewe Island (110) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Tauwitchere (319) | 4* | 4* | 4* | 4* | 4* | 4* | 4* | Releases will help push fresher water down the Coorong to assist lowering salinity levels and provide habitat diversity. |
| Fishways | Fishways at all barrages and at Hunters Creek (11 in total) were open during the entire week | | | | | | | Provide for fish passage between the Coorong and Lower Lakes. |

*Automated gate utilised to maximise delivery to Coorong and avoid reverse 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.

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

RIVER VESSEL WASTE DISPOSAL STATIONS

Lock 3

The Lock 3 River Vessel Waste Disposal Station is currently out of commission due to an infrastructure failure. This means that boat operators who need to empty sewage tanks will need to use the nearest alternative waste facility located at Waikerie. Alternatively boat operators who require an urgent pump-out in the Kingston-on-Murray area can contact Mr Hayden Smith on 0457 820 553 for help or advice. Normal boat waste (domestic or galley waste) can still be deposited at the Lock 3 facility at the present time.

NAVIGATION ISSUES

Sandbars in the vicinity of the Murray Mouth may cause navigation hazards. Mariners are advised to navigate with caution when operating in the area. Sandbars are also present along sections of the River Murray downstream of Locks 7 and 8 and in South Australia. All Mariners should be aware of the risk of submerged navigation hazards and should regularly check river depth.

Lock 3

Minor issues have been encountered with the downstream gates at Lock 3. Mariners are advised that lockage times may be longer than normal.

ENVIRONMENTAL WATER OPERATIONS

Chowilla Floodplain and Weir and Lock 6

A low to mid-level operation of the Chowilla environmental regulator along with raising Weir and Lock 6 is planned from early August, subject to appropriate flow conditions and approvals. The operation plans to raise water levels in Chowilla Creek and through the Anabranche by between approximately 18.9 and 19.6 m AHD though the higher level is dependent on having flows in the River Murray of over 30 000 ML/day.

The water level in Weir and Lock 6 will also be raised in conjunction with the Chowilla Regulator up to a height of 19.67 m AHD depending on flow conditions at the time.

Pike Floodplain and Weir and Lock 5

Operations on the Pike Floodplain along with raising Weir and Lock 5 is planned from late July, subject to appropriate flow conditions and approvals. The operation plans to raise water levels on the Pike Floodplain between 15 m AHD to 15.4 m AHD.

The water level in Weir and Lock 5 will also be raised in conjunction with the Pike Regulator to a height of 16.8 m AHD (+0.5 m AHD) depending on flow conditions.

Should the flow to South Australia increase significantly the Pike Regulator may be operated to raise the water level further to between 15.4 m AHD to 15.8 m AHD. The exact height will depend on the flow and conditions within the river and the Pike anabranche.

Katarapko Floodplain and Weir and Lock 4

Operations on the Katarapko Floodplain along with raising Weir and Lock 4 is planned from late July, subject to appropriate flow conditions and approvals. The operation plans to raise the water levels on the Katarapko Floodplain initially up to 11.5 m AHD. Should the flow to South Australia increase, the water level at Katarapko could be raised further to between 13 m AHD to 13.2 m AHD, depending on the actual flow conditions.

The water level in Weir and Lock 4 will also be raised in conjunction with water levels on the Katarapko Floodplain to a maximum height of 13.5 m AHD (+ 0.3 m AHD).

Weir and Lock 2

The water level in Weir and Lock 2 has begun to be raised and will continue up to a maximum height of 6.65 m AHD. This would increase the water level by up to a maximum of 0.55 m AHD above NPL at a rate of 3 cm / day.

These floodplain operations and associated weir raising will generate floodplain inundation which freshens soils to support the growth and regeneration of floodplain vegetation and provides valuable habitat for a range of wildlife. The operations connect up wetlands and support the movement of carbon and nutrients to the river providing resources to the river foodwebs.

BOOKMARK CREEK AND LOCK 3 MASTER PLANS

The Department for Environment and Water invites you to its Community Open House Sessions to find out about the proposed Master Plans for Bookmark Creek and the Lock 3 reach.

The sessions are designed for the community to come and see information about potential projects in these areas and to give their feedback. There is no requirement to register attendance in advance.

Two sessions are being held and community members are encouraged to drop in at any time during the sessions:

- Wednesday 28 July 2021, 4 – 7 pm, Renmark Hotel Conference Room, Murray Ave, Renmark
- Thursday 29 July 2021, 11 am – 2 pm, Barmera Soldiers Memorial Hall, Barwell Ave, Barmera

RIVER MURRAY WATER LEVELS

Below is a table of River Murray water levels at a number of locations from Lock 10 to Murray Bridge.

River Murray Water Levels

| Location | River km | Normal Pool Level (m AHD) | Current Level 14/07/2021 (m AHD) | 2016 High Water Level (m AHD) |
|--------------------|----------|---------------------------|----------------------------------|-------------------------------|
| Lock 10 | 825.0 | 30.80 | 30.87 | 32.72 |
| Lock 9 Kulnine | 764.8 | 27.40 | 27.68 | 28.85 |
| Lock 8 Wangumma | 725.7 | 24.60 | 24.41 | 26.85 |
| Lock 7 Rufus River | 696.6 | 22.10 | 22.81 | 24.97 |
| Lock 6 Murtho | 619.8 | 19.25 | 19.25 | 20.19 |
| Renmark | 567.4 | - | 16.34 | 17.44 |
| Lock 5 | 562.4 | 16.30 | 16.33 | 17.05 |
| Lyrup | 537.8 | - | 13.29 | 15.80 |
| Berri | 525.9 | - | 13.25 | 15.21 |
| Lock 4 | 516.2 | 13.20 | 13.25 | 14.73 |
| Loxton | 489.9 | - | 10.05 | 13.54 |
| Cobdogla | 446.9 | - | - | 11.59 |
| Lock 3 | 431.4 | 9.80 | 9.86 | 10.98 |
| Overland Corner | 425.9 | - | 6.26 | 10.41 |
| Waikerie | 383.6 | - | 6.26 | 9.20 |
| Lock 2 | 362.1 | 6.10 | 6.16 | 8.32 |
| Cadell | 332.6 | - | 3.30 | 7.01 |
| Morgan | 321.7 | - | 3.24 | 6.38 |
| Lock 1 Blanchetown | 274.2 | 3.20 | 3.22 | 4.46 |
| Swan Reach | 245.0 | 0.75 | 0.66 | 3.11 |
| Mannum PS | 149.8 | 0.75 | 0.70 | 1.33 |
| Murray Bridge | 115.3 | 0.75 | 0.67 | 1.04 |

Note that the above water levels may be affected by local wind conditions

FURTHER INFORMATION

The WaterConnect website is South Australia's comprehensive water information portal. For real-time data (like salinity, water levels) go to the following page: [WaterConnect Real-time water data](#).

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

- [Water allocation and carryover announcements](#)
- [River Murray real-time water data](#)
- [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](#).

The Department for Environment and Water has published a series of inundation maps for the River Murray. They are available at [River Murray Inundation Maps](#).

Information on the management of acid drainage water in the Lower River Murray can be accessed at: [Managing Acid Sulfate Soils Research Project](#)

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](#)

Information provided by the Commonwealth Environmental Water Office can be accessed at [CEWH Environmental Watering](#).

Information on The Living Murray can be accessed at [MDBA TLM](#).

Chowilla Floodplain Icon Site management [Chowilla-floodplain](#).

[Katarapko Floodplain](#) site management

[Pike Floodplain](#) site management

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

Information provided by the Department of Planning, Transport and Infrastructure on boat licences, registering motor boats, owning and operating water craft, and boat and marine safety can be accessed at [Boating and marine](#).

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