

Murrav-Darling Basin Authority

For the week ending Wednesday, 08 Jan 2025

Trim Ref: D25/372

Annual summary of 2024

The Bureau of Meteorology (the Bureau) reported that 2024 was warmer than average for Australia with above average rainfall. The national mean temperature was 1.46°C above average making 2024 the second warmest year since records began in 1910. Mean annual temperatures were very much above average or greater across most of Australia. Most parts of New South Wales and Victoria, including the Murray–Darling Basin, had mean annual temperatures that were very much above average (see Map 1). The national mean maximum temperature was 1.48°C above average and the fourth warmest since recording began in 1910 (Map 2). The national mean minimum temperature was 1.43°C above average, the highest national minimum temperature on record. Minimum temperatures were highest on record along the west coast, southeast coast, and across the mid regions of Australia (Map 3).







Map 2 & 3: Maximum and minimum temperature deciles for 2024 (Source: Bureau of Meteorology).







The <u>main climate drivers</u> were largely neutral throughout 2024. The El Niño event at the start of the year eased by April with a return to neutral El Niño -Southern Oscillation (ENSO) conditions. The ENSO conditions remained neutral for most of the remainder of the year. The Indian Ocean Dipole (IOD) was also neutral throughout 2024, though it dropped below the negative IOD threshold for a brief period during October and November. Additionally, the Southern Annular Mode (SAM) was in an active positive phase during January, April to June, September and November. The SAM was in a prolonged negative phase throughout July and August.

The northern catchment of the Murray–Darling Basin generally saw average to above average rainfall. The southern Basin experienced average to below average rainfall. Overall, the nationally-averaged rainfall across the year was 594.0 mm. Map 4 provides more information on rainfall deciles across Australia for 2024.









Dartmouth Dam began the 2024 calendar year at 3,770 GL (98% capacity). The dam reached a minimum level of 3,386 GL (88% capacity) in late November and increased slightly to 3,420 GL (89% capacity) at the end of the year. Inflows to Dartmouth in 2024 totalled 530 GL, which is below the long-term median inflow of 816 GL.

Peak releases from the storage, measured at Colemans gauge, reached 8,000 ML/day during November as part of bulk transfers to Hume Reservoir to help meet demands in the River Murray.



Figure 2: Dartmouth Dam (K. Williamson)



Figure 3: Snowy Creek, a tributary of the Mitta Mitta River (MDBA)

Hume Dam began the 2024 calendar year at 2,585 GL (86% capacity) and reached its peak in mid-January with a storage volume of 2,604 GL (87% capacity). The storage gradually decreased to 1,770 GL at the end of May, after which it progressively filled to 2,226 GL in early September as a result of rainfall and inflows. Releases from the







storage to meet demands then resulted in the level gradually decreasing until the end of the calendar year when it reached a minimum of 1,640 GL (55% capacity).

A total of 2,652 GL of inflows were received by Hume Dam throughout the year. Releases from Hume Dam peaked at around 23,000 ML/day in October to meet downstream demands, including the River Murray multi-site environmental watering event.



Figure 4: Hume Dam with power station and cone valves operating in October (MDBA)



Figure 5: Ryans Lagoon, downstream of Hume Dam in October after a top up with environmental water (A. Bishop)









Figure 6: Yarrawonga Weir in October, with a flow rate around 14,500 ML/day for the River Murray multi-site event (K. Williamson)

The Menindee Lakes storage started 2024 at 1,097 GL (63% capacity) following two relatively wet years in the system. The storage peaked in July at 1,116 GL (64% capacity) and was at its lowest towards the end of December at 654 GL (38% capacity) before rising to 694 GL (40% capacity) by the end of the year.

MDBA's call for water from Menindee Lakes, via Weir 32, began on 20 August 2024 as part of transfers to help supply Murray system demands, which peaked at 4,000 ML/day during October. A trial to deliver operational flows through the Great Darling Anabranch also began on 14 November 2024.

Operational transfers from the Menindee Lakes ceased on 12 December 2024 as a result of significant rain in the Upper Murray and its tributaries, and then subsequently resumed at 750 ML/day at Weir 32 on 23 December 2024.

MDBA worked closely with NSW and other state partners as the Menindee Lakes were approaching the 480 GL trigger at which the Menindee Lakes are no longer a shared resource, however rainfall in the Northern Basin resulted in significant inflows into the Menindee Lakes in late December 2024 which are expected to continue into mid-February 2025.

Lake Victoria reached a low of 369 GL in late-April and gradually increased over the remainder of the year. The storage in Lake Victoria was 658 GL (97 % capacity) at the end of the year, after peaking just above 98% on 28 December.









Figure 7: Storage Percentage across dams throughout 2024

At the South Australian border, a peak flow of 22,000 ML/day occurred in late January 2024 due to significant rainfall in the Goulburn. This rainfall resulted in a flow of 31,500 ML/day at McCoy's Bridge, and an unregulated flow event in the River Murray. Additionally, flows peaked at around 19,000 ML/day at the SA border in October during delivery of environmental water as part of the River Murray multi-site environmental watering event.

River Murray system inflows (excluding Snowy, Darling, IVT and Environmental inflows) for 2024 totalled 3,935 GL, falling in the lowest 13% of years on record.



Figure 8: MDBA active storage as of December 2024





December 2024 summary

According to the Bureau, rainfall for the month of December was average across most of the Basin. Large parts of New South Wales recorded above average monthly rainfall, and in South Australia and north-east New South Wales below average rainfall was recorded (Figure 9).

The Bureau reports a monthly area-average rainfall total for the Murray-Darling Basin of 47.6 mm. This is 5% above the long-term average for December.



Rainfall decile ranges Highest on record Very much 10 above average 8-9 Above average 4-7 Average 2-3 Below average Very much 1 below average Lowest on record Base period: 1900-Dec 2024 Dataset: AGCD v2

Australian Gridded Climate Data

River Murray System inflows for December (excluding Snowy, Darling, IVT and environmental inflows) were approximately 482 GL, which is above the long-term average for December of 457 GL. In comparison with the historical record since 1896, 30% of previous monthly December totals have been higher than the inflows observed in December 2024.

The Bureau reports that Australia's national area-average mean temperature for December was 1.88°C above the long-term (1961–1990) average – the third warmest December on record for Australia since 1910. It should be noted, however, that the high national area-average is influenced by significantly above average temperatures outside of the Basin. Across much of the Murray-Darling Basin, minimum and maximum monthly average temperatures were largely above average to very much above average (Figure 10 and Figure 11).



Commonwealth of Australia 2024, Bureau of Meteorology





Issued: 31/12/2024

Figure 9: Murray-Darling Basin rainfall deciles for December 2024 (Source: Bureau of Meteorology).





Figure 10: minimum temperature decile for December 2024 (Source: <u>Bureau of Meteorology</u>).

Figure 11: maximum temperature decile for December 2024 (Source: <u>Bureau of Meteorology</u>).

The Bureau reports that for January to March rainfall is likely (60 to 80% chance) to be above average for Queensland and eastern New South Wales. Rainfall is likely to be within typical range for the season for most remaining areas. (Figure 12 and Figure 13).



Figure 12: climate outlook issued 2 January 2025 for the
chance of above median rainfall for January 2025Figure 13: climate outlook issued 2 January 2025 for
the chance of above median rainfall for February 2025(Source: Bureau of Meteorlogy).Source: Bureau of Meteorlogy

Weekly rainfall and inflows

Parts of the Basin received some rainfall over the last week, however the total amount falling varied greatly with location. Some locations received up to 50 mm however with past dry conditions there was limited streamflow response.

In Victoria, notable weekly totals included 31 mm at Falls Creek and 22 mm at Cheshunt in the alpine areas. In New South Wales, Wagga Wagga recorded 45 mm, with 31 mm recorded at Dubbo and 20 mm at Forbes. In South Australia totals were between 1-10 mm with Renmark recording 8 mm.









Murray-Darling Rainfall Totals (mm) Week Ending 8th January 2025 Australian Bureau of Meteorology

Commonwealth of Australia 2025, Bureau of Meteorology

Issued: 08/01/2025

Figure 14: Rainfall totals across the Murray-Darling Basin for the week ending 8 January 2025 (Source: <u>Bureau of</u> <u>Meteorology</u>)

River operations

- MDBA are calling from Menindee Lakes and the Goulburn IVT to ensure summer demands are met
- Small flow pulse released from Dartmouth along the Mitta Mitta River
- Risk of delivery shortfall remains low for the coming week

River Murray System update

Releases from Hume Dam remained between 14,000 – 15,000 ML/day this week as hot and dry weather conditions continued, and irrigation demands remained high. In late December, the MDBA resumed calling water at Weir 32, as well as in the Goulburn to help meet demands in the Murray and reduce the risk of shortfall. The call on the Goulburn IVT is expected to continue throughout January if the weather remains hot and dry.

The Murray–Darling Basin Authority (MDBA) reminds river users that River Murray levels downstream of Hume Dam to South Australia may vary. Stakeholders are encouraged to review our <u>River Data</u> page and the weekly report to keep up to date with current flows and river levels over the coming weeks.

The MDBA has released its end of October update to the <u>Annual Operating Outlook</u>. This outlook outlines how the MDBA expects to operate the River Murray System for the rest of the water year under a range of inflow scenarios.





Water demand

The MDBA continues to actively monitor shortfall risks. A shortfall occurs when water cannot be delivered to users when and where it is needed. A *delivery shortfall* occurs when actual water use downstream is higher than it was forecast to be when river water was released from storages, weeks earlier, to meet the forecast needs for irrigation and environmental water. A *system shortfall* occurs when the combined capacity of the system is unable to supply all downstream requirements over the full season. More information about shortfalls can be found at <u>Water</u> <u>demand and shortfalls</u> | <u>Murray–Darling Basin Authority (mdba.gov.au</u>).

The risk of a *delivery shortfall* in the River Murray between Wakool Junction and the SA border over the coming week is low. The MDBA is continuing to monitor weather conditions and forecast demands and will continue to actively manage the risk of delivery shortfall across the high demand summer-autumn period as conditions evolve.

The risk of a *system shortfall* is currently negligible. With the Menindee Lakes available as a shared resource, transfers from Hume to meet lower system demands are unlikely to be required until March.

The MDBA, Basin state governments and their agencies have different roles and responsibilities in managing delivery shortfalls. Read more information on <u>delivery shortfall risks for Victorian water licence holders</u>.

Water Quality

Inflows from the Northern Basin are currently bringing poor quality water with low levels of dissolved oxygen into the Menindee Lakes. While management options are limited, agencies are working together to best manage these flows to maintain water quality. Further information is available <u>here</u>.

<u>WaterNSW</u> advises red alerts for blue-green algae (BGA) along the Darling River at Wilcannia. Most sites in the Menindee Lakes are under various amber/green alerts with a red alert at the Lake Menindee outlet and in Lake Wetherell (Site 2). Red alerts are in place at Tolarno, Pooncarie and Ellerslie, with all other sites in the lower Darling at amber alert levels. The Great Darling Anabranch is under red alert at Silver City Highway.

In the River Murray, there are numerous BGA amber or green alerts from Lake Hume to the SA border, with most sites in the Edward-Wakool at amber or green alert levels.

Victoria's <u>Goulburn-Murray Water</u> has issued BGA warnings at Lake Eildon, Torgannah Lagoon, and Murray Valley Irrigation Area 3-5 Channel/spurs. There are no current BGA alerts in SA (<u>SA Health)</u>.

Parts of the Menindee Lakes and lower Darling-Baaka are also experiencing elevated salinity.

Further information is available at <u>Water quality threats | Murray–Darling Basin Authority (mdba.gov.au)</u>.

River operations

Over the last week MDBA active storage volume reduced by 10 GL to 5,723 GL, or 67% capacity.

At **Dartmouth Reservoir**, the <u>storage</u> reduced by 11 GL to 3,407 GL (88% capacity) over the week. The release, measured at the Colemans gauge, was around 1,600 ML/day for the first half of the week before increasing to around 2,600 ML/day and will gradually fall to around 830 ML/day over the coming week. This is the recession from a small managed pulse down the Mitta Mitta River. Higher flow rates improve water quality in the river, while also increasing the volume transferred to Hume Dam.

Hume Reservoir storage reduced by 68 GL to 1,557 GL (52% capacity). The release from Hume Dam is currently 14,000 ML/day. Dam releases have varied throughout the week in response to irrigation demands. The release from Hume Dam may increase over the coming weeks if conditions remain hot and dry.







Flows in the Ovens River are beginning to recede again after rainfall earlier this week. Flow at **Peechelba**, the last gauging station before flowing into the River Murray upstream of Lake Mulwala, is around 742 ML/day and is expected to increase slightly over the coming days due to inflows from rain higher in the catchment. **Lake Mulwala** is sitting within the normal operating range (124.6 to 124.9 m AHD) and is currently 124.83 m AHD. The water level is expected to remain within the normal operating range over the coming week.

At **Yarrawonga Weir**, irrigation demands remained steady over most of the week in response to continued hot and dry conditions, easing slightly due to cooler conditions and some rain in recent days. Demands at Murray Irrigation Limited decreased from 6,200 ML/day to 5,100 ML/day and Yarrawonga Main Channel decreased from 1,500 ML/day to around 1,000 ML/day. Releases from Yarrawonga Weir increased during the week to approximately 8,800 ML/day to assist in meeting demands downstream over the summer period.

Downstream on the River Murray, the regulators through the **Barmah-Millewa Forest** are now all closed. Flow remained relatively steady over the week through the **Kolety** (pronounced Kol-etch)/**Edward River offtake**, which averaged around 1,500 ML/day, and flow through the **Gulpa Creek** offtake remain around 400 ML/day.

Downstream at **Steven's Weir**, flows increased from 1,900 ML/day to around 2,100 ML/day. The flow is likely to vary over the coming week depending on weather conditions and irrigation demand.

Inflow to the Murray from the **Goulburn River**, measured at McCoy's Bridge, is currently 2,600 ML/day and is expected to peak around 3,000 ML/day this week. This rise is part of an Inter-Valley Trade (IVT) pulse that forms part of the Murray-Darling Basin Authority's call of water from the Goulburn IVT. Information regarding opportunities for allocation trade between the Goulburn and Murray systems is available at the Victorian Water Register <u>website</u> and the <u>Goulburn-Murray Water website</u>.

The flow downstream of **Torrumbarry Weir** increased to around 6,000 ML/day over the week and is expected to increase slightly in the coming week as inflows from the Goulburn arrive. The <u>diversion</u> to **National Channel** remained around 1,700 ML/day over the past week. Further down the river, **Swan Hill** flow reduced from 5,400 ML/day to around 5,200 ML/day throughout the week. Flows at Swan Hill are forecast to increase over the coming week.

On the **Murrumbidgee River**, the flow at <u>Balranald</u> reduced from 900 ML/day to around 650 ML/day. Trade to the Murrumbidgee is closed, with the <u>Murrumbidgee IVT</u> account balance currently 2.1 GL. Trade to the Murray from the Murrumbidgee is open.

The flow downstream of **Euston Weir** remained between 5,000 – 5,700 ML/day during the week and is forecast to increase over the coming week as water from the Goulburn arrives.

Storage in the **Menindee Lakes** increased to 817 GL (47% capacity). Inflows from rainfall in the northern Basin continue to arrive at Lake Wetherell. Approximately 190 GL has arrived since to 7 January 2025, as part of this event. <u>WaterNSW are forecasting</u> an additional 110-210 GL of inflows to arrive by mid-February 2025.

The release from the Menindee Lakes, measured at **Weir 32**, is currently 1,500 ML/day. With hot and dry weather continuing in the southern basin, MDBA resumed its call on water at Weir 32 to help meet demands and reduce shortfall risk in the Murray. It is possible that if hot and dry conditions persist MDBA will increase its call on Menindee.

The MDBA continues to work with WaterNSW, the NSW Department of Climate Change, Energy, the Environment and Water (DCCEEW) and NSW DPI Fisheries to support active management of the lakes until they reach the 480 GL storage trigger. At the current time it is anticipated this could occur in autumn 2025, depending on demands and inflows. More information can be found in this <u>WaterNSW Community Update</u>.

The <u>storage</u> at **Lake Victoria** decreased by 39 GL over the last week to around 616 GL (91 % capacity). Storage volume and operations at Lake Victoria are being managed in accordance with the Lake Victoria Operating Strategy (LVOS) as specified in the <u>Objectives and Outcomes for River Operations in the River Murray System</u>.

The **flow to South Australia** averaged around 8,900 ML/day over the last two weeks. Flow is expected to remain around this volume over the coming week.







The **Lower Lakes** 5-day average water level is approximately 0.71 m AHD. For further information about water levels, flow rates and barrage operations along the River Murray in South Australia see the South Australian Department for Environment and Water weekly <u>River Murray Flow Report</u> and the <u>Water Data SA</u> website.

For media inquiries contact the Media Officer on 02 6279 0141

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Australian Government









Water in Storage

Week ending Wednesday 08 Jan 2025

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MDBA Storages	Full Supply Level	Full Supply Volume	Current Storage Level	Current	Storage	Dead Storage	Active Storage	Change in Total Storage for the Week
	(m AHD)	(GL)	(m AHD)	(GL)	%	(GL)	(GL)	(GL)
Dartmouth Reservoir	486.00	3 856	479	3407	88%	71	3336	-11
Hume Reservoir	192.00	3 005	183	1557	52%	23	1534	-68
Lake Victoria	27.00	677	27	616	91%	100	516	-39
Menindee Lakes		1 731*		817	47%	(480) #	337	108
Total		9 269		6397	69%		5723	-33
Total Active MDBA Storage							67%^	

* Menindee surcharge capacity – 2050 GL ** All Data is rounded to nearest GL **

NSW has sole access to water when the storage falls below 480 GL. MDBA regains access to water when the storage next reaches 640 GL.

^ % of total active MDBA storage

Major State Storages

NSW: https://www.waternsw.com.au/supply/regional-nsw/dam-levels VIC: https://www.g-mwater.com.au/water-resources/catchments/storages

Major Diversions from Murray and Lower Darling.

NSW: WaterInsights - WaterNSW

VIC: Water Measurement Information System

Snowy Mountains Scheme

Snowy diversions for week ending 07 Jan 2025

Storage	Active Storage (GL)	Weekly Change (GL)	Diversion (GL)	This Week	From 1 May 2024
Lake Eucumbene - Total	1855	-2	Snowy-Murray	7	597
Snowy-Murray Component	694	-12	Tooma-Tumut	2	127
Target Storage	1520		Net Diversion	5	470
			Murray 1 Release	11	721

Flow to South Australia (GL)

* Flow to SA will be greater than normal entitlement for this month due to environmental flows.

Entitlement this month	217.0*	
Flow this week	63	(8,900 ML/day)
Flow so far this month	70	
Flow last month	336.3	

Salinity (EC)

List view | River Murray data (mdba.gov.au)

River Levels and Flows

List view | River Murray data (mdba.gov.au)

SA Water - River Murray reports

https://www.sawater.com.au/water-and-the-environment/south-australias-water-sources/river-sources/river-reports-daily-flow

Water Data SA – Barrage flow summary

https://water.data.sa.gov.au/Data/Dashboard/41

State Allocations (as at 08 Jan 2025)

Location	High Security	General Security
Murray Valley	97	53
Murrumbidgee Valley	95	34
Lower Darling	100	100

VIC State Allocations (%)			
Location	High Reliability	Low Reliability	
Murray Valley	100	0	
Goulburn Valley	100	0	

SA State Allocations (%)

ocation	High Security
Murray Valley	

NSW: https://www.industry.nsw.gov.au/water/allocations-availability/allocations/summary

VIC: <u>http://nvrm.net.au/seasonal-determinations/current</u>

SA: https://www.environment.sa.gov.au/topics/river-murray/water-allocation





100

Week ending Wednesday 08 Jan 2025



Murray System Monthly Inflows (excl. Snowy, Darling, inter-valley trade and environmental inflows)





