



River Murray Weekly Report

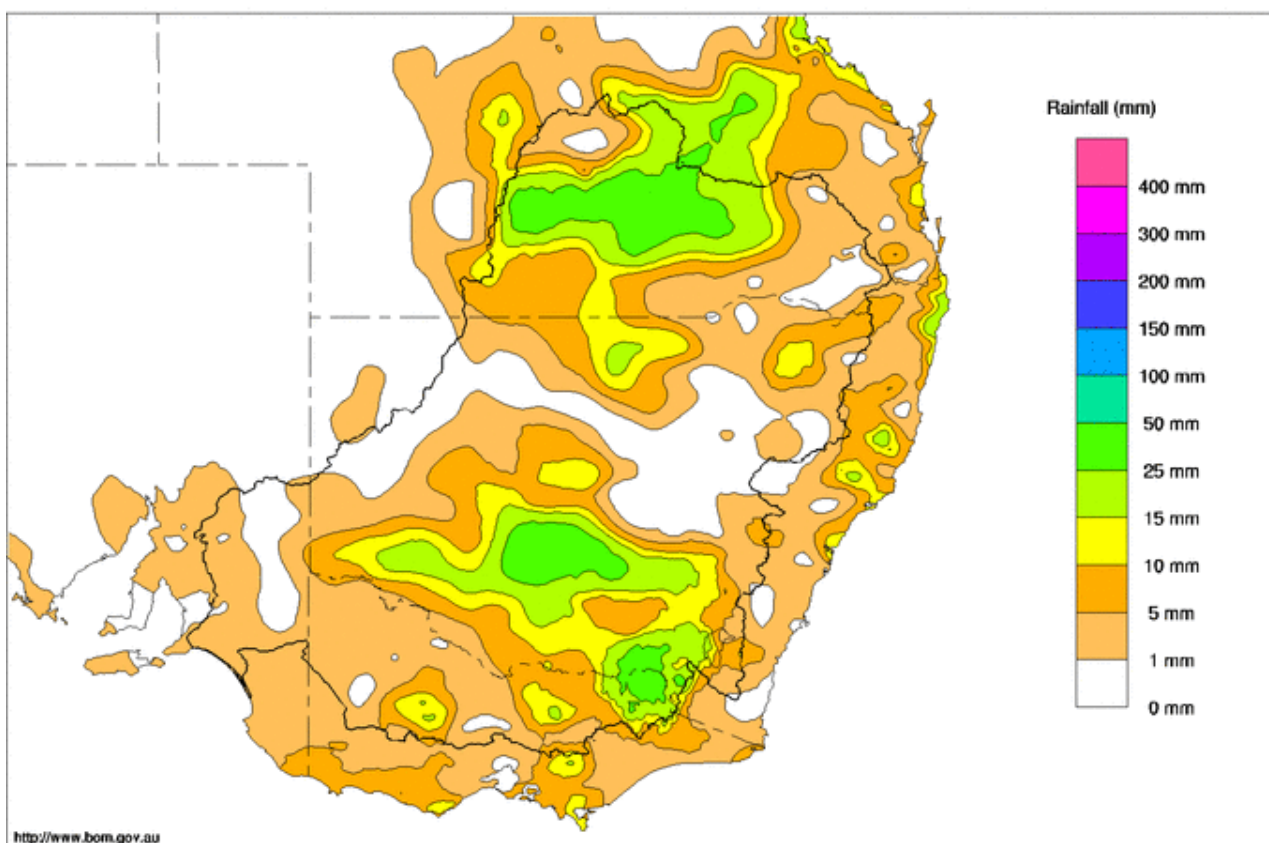
For the week ending Wednesday, 29 September 2021

Trim Ref: D21/39607

Rainfall and inflows

This week conditions were mostly dry across the Murray-Darling Basin until a developing low-pressure system delivered rain late in the week to parts of Queensland, New South Wales and Victoria (Map 1). This system (Map 2) is slowly moving eastwards and is [forecast](#) to produce further widespread rain and thunderstorm activity into the weekend. Heavy falls are possible, particularly along the western slopes of the Great Dividing Range, including Murray catchments.

Murray-Darling Rainfall Totals (mm) Week Ending 29th September 2021
Australian Bureau of Meteorology



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Issued: 29/09/2021

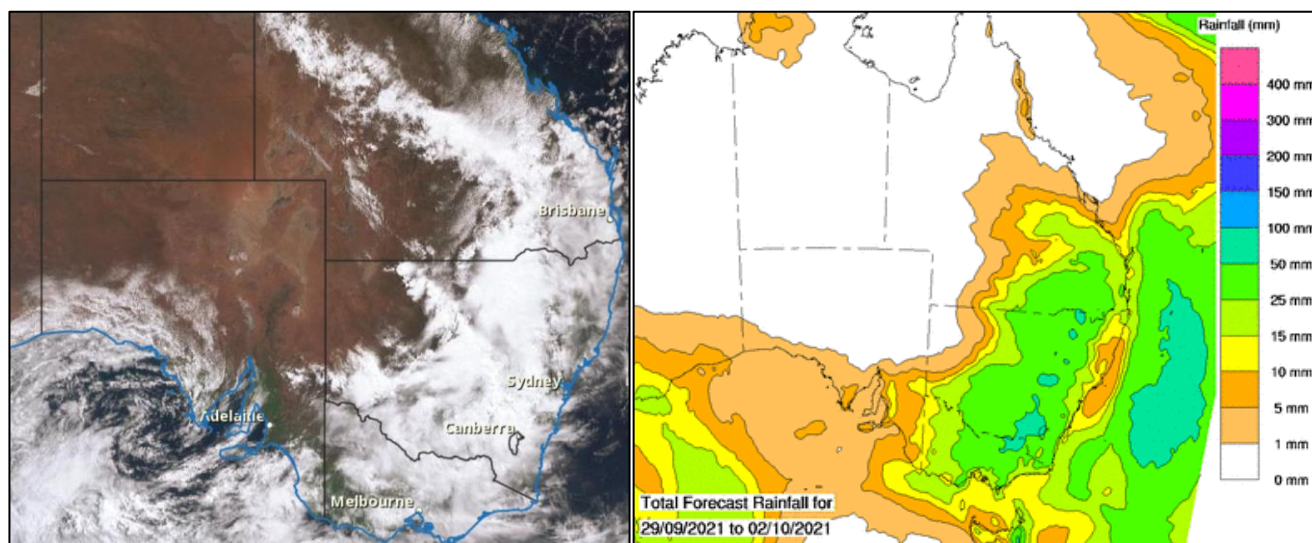
Map 1 – Murray-Darling Basin rainfall for the week ending 29 September 2021. Source: Bureau of Meteorology.

Upper Murray tributaries gradually receded this week until rain and thunderstorms started to produce some streamflow responses. Upstream of Hume, Jingellic flows eased to around 9,900 ML/day before increasing to 14,500 ML/day. Downstream of Hume Dam, the Kiewa River at Bandiana averaged 3,200 ML/day, while on the Ovens River, the flow at Wangaratta gradually receded to 5,800 ML/day.

Specific information about flows at key locations can be found at the MDBA’s [River Murray data](#) webpage. Up-to-date river data for sites in the upper Murray can also be found on BoM’s [website](#), at the WaterNSW real-time data [website](#), and in the Murray River Basin [Daily River Report](#) at the WaterNSW website. See also Victoria’s DELWP water monitoring [website](#), South Australia’s Water Data [website](#) and Queensland’s [Water Monitoring Information Portal](#).



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Map 2 & 3: Left – satellite image of developing low-pressure system producing rain and storms across eastern and southern Australia. Right - BoM 4-day rainfall forecast as of 29 September. Source: Bureau of Meteorology.

River operations

- Flood operations continue at Hume Dam and Yarrawonga Weir
- Elevated inflows to the Murray from the Murrumbidgee River continue
- Airspace management releases commence from Menindee Lakes into Great Darling Anabranch
- Unregulated flow available for reaches downstream of Hume Dam to South Australia

Hume Dam Operations update

With heavy rain forecast from Wednesday (27 September), this week's operations at Hume Dam have focused on generating additional airspace. As such, this week's release from Hume was stepped up to 21,500 ML/day. This action generated additional airspace ahead of forecast rain while maintaining the downstream flow at Doctors Point within channel capacity (25,000 ML/day).

As of Friday 1 October, inflows to Hume have increased to around 30,000 ML/day. Additional run-off from localised heavy rainfall has been captured in the storage. Looking ahead, operations will focus on a daily assessment of future rain and likely flow responses, guided by Bureau of Meteorology advice. For the coming week further moderate rain events are forecast. Releases are therefore likely to increase further to pass the current inflow event and protect airspace ahead of any future rain that increases inflows again.

As further rain occurs, releases will be adjusted to manage airspace and provide some peak flow mitigation where possible, whilst also aiming to fill the storage once rain and inflows dry off and demands increase downstream.

Deciding when to fill the storage is one of the most challenging aspects of dam operations at Hume. Filling targets must be met as downstream demands emerge to ensure as much water as possible can be provided for entitlement holders across the year ahead. With water availability and state allocations increasing in recent weeks, early season demands are likely to be high and a few relatively dry weeks could also see demands increase quickly.

Andrew Reynolds, acting Chief Executive, provides an [overview](#) on how the Murray–Darling Basin Authority is managing the Hume Dam during the current high flows. This video update includes:

- catchment conditions
- water releases
- forecast rainfall and inflows
- planned management for the coming week.

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Hume Dam operations update 29 September 2021

Andrew Reynolds
Acting Chief Executive



Further details about [flood management](#) at Hume Dam are available on the MDBA website.

Approximately 521 GL has been released from Hume Dam for airspace management purposes since early September. Of the spilled volume, South Australian storage right spilled first. A portion of the remaining spill was the Barmah-Millewa Environmental Water Allowance, which is shared equally between NSW and Victorian accounts. A relatively small volume of NSW Murray environmental allocation was also spilled.

Unregulated flows

Continued releases from Hume Dam and inflows from tributaries downstream of Hume have boosted flows in the River Murray. Access to unregulated flows along the River Murray and Edward-Wakool system continues to be available.

General information on River Murray unregulated flows can be accessed on the MDBA [webpage](#). Information on access to Murray supplementary water licences in NSW is available from [WaterNSW Water insights](#).

River operations

Total **active storage** increased by 56 GL over the last week to 7,819 GL (91% capacity).

At **Dartmouth Reservoir**, the [storage](#) increased by 30 GL to 3,039 GL (79% capacity). The release, measured at Colemans gauge, targeted the minimum release rate of 200 ML/day this week and is expected to remain at this rate over the coming weeks.

The release from **Hume Reservoir** was gradually increased from 7,000 ML/day to 21,500 ML/day this week to generate airspace ahead of forecast rain. As a result of this action the Hume Reservoir [storage](#) decreased by 7 GL this week to 2,911 GL (97% capacity). As of Friday 1 October, the release has increased to 23,000 ML/day. There is the potential that further increases to the release may be required to manage higher inflows in coming days.

The **Lake Mulwala** level is currently 124.7 m AHD, within the normal operating range (124.6 to 124.9 m AHD). In response to forecast rain, this week the diversion to Mulwala Canal reduced from 2,000 to 650 ML/day. Similarly, diversion to the Yarrowonga Main Channel decreased from 1,400 to 600 ML/day. The release from Yarrowonga Weir declined to 17,000 ML/day during the week before gradually increasing to the current release near 28,000 ML/day as higher releases from Hume Reservoir arrived. Over the coming week further increases are possible as inflows from the Ovens and Kiewa increase.

Downstream of Yarrowonga Weir, Barmah and Millewa Forest regulators remain open. The flow at Barmah peaked near 17,000 ML/day this week and will slowly recede over coming days but will likely rise again later in the week.



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Flow through the **Kolety** (pronounced Kol-etch)/**Edward River** offtake and the **Gulpa Creek** offtake averaged near 2,200 ML/day and 1,000 ML/day, respectively. Flows are forecast to ease in coming days but may increase again later in the week in response to rising flows in the River Murray. Further downstream on the Kolety/Edward River the flow at Toonalook peaked near 10,000 ML/day, largely driven by flow retuning from the Millewa forest. The flow at Toonalook is expected to slowly recede in coming days.

At **Stevens Weir**, the pool level remains within the normal operating range. Flow downstream of Stevens Weir peaked near 9,700 ML/day during the week and has since receded to 8,600 ML/day and will decrease further in the coming week. Flow through the Wakool River, Yallakool Creek and Colligen Creek offtakes also peaked earlier this week near 740, 950 and 1,300 ML/day respectively, and are also expected to recede this coming week.

On the **Goulburn River**, the flow measured at [McCoy's Bridge](#) averaged about 1,700 ML/day this week. The flow is expected to increase over the coming days in response to rainfall. Under a drier scenario a short spring fresh may be delivered over coming weeks using water for the environment. For more information see the [Goulburn-Murray Water website](#). Information regarding opportunities for allocation trade between the Goulburn and Murray Valleys is available at the Victorian water register [website](#).

In response to forecast rain the [diversion](#) to **National Channel** has reduced over the past week to the current rate of 1,200 ML/day. Releases from **Torrumbarry Weir** have steadily increased to a current release of 18,600 ML/day. In the coming days flows may ease before increasing again if higher flows develop upstream in the Murray or Goulburn system.

Inflow from the **Murrumbidgee River**, measured at [Balranald](#), eased from 10,100 to 9,700 ML/day this week and is expected to gradually increase over the coming week from renewed rises upstream. The [Murrumbidgee IVT](#) balance is open for trade from the Murray to the Murrumbidgee but remains closed to trade from the Murrumbidgee to the Murray. WaterNSW has announced access to **supplementary water** for the [Murrumbidgee River](#).

At **Euston Weir**, the [weir pool level](#) is currently near FSL. This week the [downstream release](#) varied between 26,600 ML/day and the current release of 28,000 ML/day. The release is expected to gradually increase over the coming fortnight as higher upstream flows are passed downstream.



Photo 1: High flows in the River Murray upstream of Euston. Photo: Sascha Healy.



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This week the Menindee Lakes total [storage](#) volume increased by 50 GL to 1,917 GL (111% capacity). Sustained inflows to **Menindee Lakes** have now triggered WaterNSW to commence airspace management releases to prevent the Menindee Lakes exceeding permissible storage levels.

This has resulted in WaterNSW commencing releases from Lake Cawndilla (part of Menindee Lakes) into the Great Darling Anabranch. Releases to the anabranch are currently near 1,000 ML/day and are now expected to increase further over the coming week. This is the first prolonged flow into the anabranch since 2017.

Water for the environment was being released from Menindee Lakes via Weir 32 to benefit native fish in the Barka/lower Darling River during the spring native fish nesting season. While the flow at Weir 32 has remained at 1,200 ML/day this week, this flow rate is now considered spill from Menindee Lakes. This spill is expected to increase in coming days. For more information on upcoming releases from Weir 32 and Lake Cawndilla please refer to WaterNSW [Lower Darling operational updates](#).

Additional Dilution Flow (ADF) to South Australia continues to be triggered. However, the current unregulated flows into South Australia mean that no additional storage releases are needed to meet ADF at the current point in time. For information on ADF and the ADF triggers please refer to [Objectives and Outcomes for River Operations in the River Murray System](#) (pages 79-80).

Over the coming months, the MDBA will continue to revise forecasts and operational plans that identify/outline the volume and timing of water released from Menindee Lakes to support all water users along the River Murray System. This process will be on-going and will follow the practices agreed by the New South Wales, Victorian, South Australian and Commonwealth governments and are outlined in the Murray-Darling Basin Agreement and the [Objectives and Outcomes for River Operations in the River Murray System](#). These practices require State and Commonwealth agencies to provide ongoing advice on actual release decisions, and in particular, provide advice on any implications to water security, delivery efficiency, the community and environmental outcomes.

Further updates are provided in the [Annual Operating Outlook](#). Updates will be provided in future Weekly Reports as updated plans and release decisions are made. More information on the management of Menindee Lakes is also available in a [webinar](#) hosted by the MDBA.

At **Wentworth Weir**, the weir pool level continues to be managed around FSL. The downstream flow averaged 27,300 ML/day this week and is expected to slowly rise over coming weeks. Just upstream of Wentworth Weir at Curlwaa, the Abbotsford Bridge was fully closed in mid-July for 6 weeks. Night closures are expected to take place over the coming weeks. This is to allow essential maintenance work to replace the existing timber deck of the lift span. More information can be found [here](#).

At **Lock 9** the weir pool continues to target a level around 20 cm above FSL. The **Lock 8** weir pool is currently targeting 80 cm above FSL. The current high flows and expected flow increases in coming weeks will result in the temporary removal of the **Lock 7** weir, as per standard high flow management at the weir. At this stage the weir is expected to be out for several weeks until higher flows subside.

The [storage](#) at **Tar-ru/Lake Victoria** decreased by 17 GL to 626 GL (92% capacity). Inflows to Tar-ru/Lake Victoria are being managed to lower the storage level of Lake Victoria prior to refilling the storage by the end of the current unregulated flow event. This action is in accordance with the Lake Victoria Operating Strategy (LVOS) as specified in the [Objectives and Outcomes for River Operations in the River Murray System](#). The LVOS aims to stabilise the lake foreshore and protect cultural heritage sites by encouraging the growth of native vegetation. To help achieve this, operations aim to reduce the length of time the foreshore vegetation is inundated.

During this week the [flow](#) to **South Australia** reached 29,000 ML/day and flows are expected to remain above 20,000 ML/day throughout October, well above the required flow to South Australia. [Unregulated flow](#) is declared on the River Murray downstream of Hume Dam, the Edward River system and also the lower Darling.

The current unregulated flow event has enabled a lake level cycling operation to be undertaken at Lake Albert (Figure 1). This action involved increased barrage release from late August to lower the level of both Lake Alexandrina and Lake Albert, thereby drawing out salty water from Lake Albert. Unregulated flows have then been used to re-fill both lakes.



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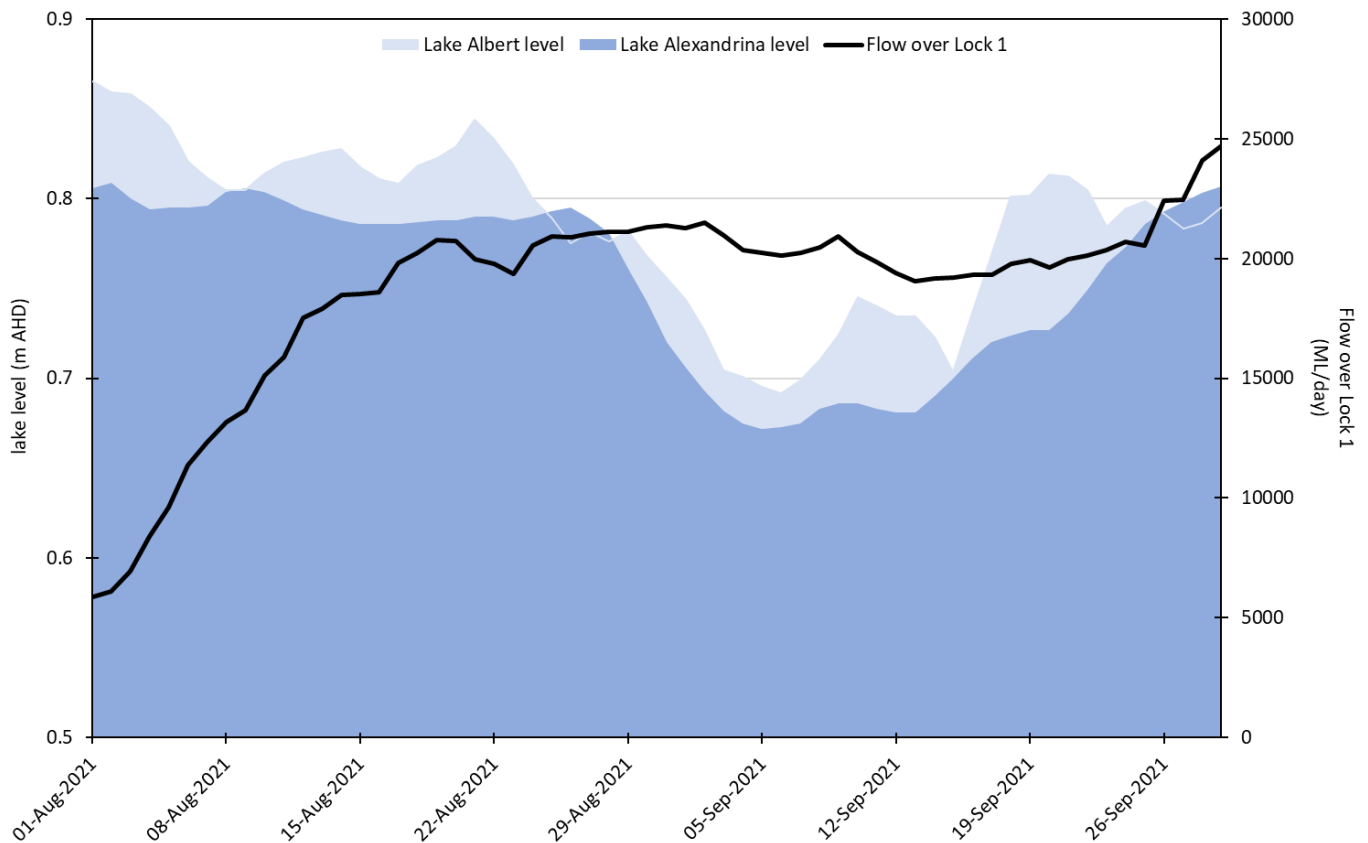


Figure 1: High upstream flows have enabled lake level cycling of Lake Albert.

The **Lower Lakes** 5-day average water level is 0.81 m AHD. Barrage releases will continue to be made, when conditions allow, to push fresh water into the Coorong to support a productive environment for fish and birds. For information on barrage releases and South Australia's Entitlement flow, see the South Australian Department for Environment and Water Weekly [River Murray Flow Report](#).

For media inquiries contact the Media Officer on 02 6279 0141

ANDREW KREMOR
Executive Director, River Management



Australian Government



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Water in Storage

Week ending Wednesday 29 Sep 2021

MDBA Storages	Full Supply Level (m AHD)	Full Supply Volume (GL)	Current Storage Level (m AHD)	Current Storage		Dead Storage (GL)	Active Storage (GL)	Change in Total Storage for the Week (GL)
				(GL)	%			
Dartmouth Reservoir	486.00	3 856	472.63	3 039	79%	71	2 968	+30
Hume Reservoir	192.00	3 005	191.53	2 911	97%	23	2 888	-7
Lake Victoria	27.00	677	26.58	626	92%	100	526	-17
Menindee Lakes		1 731*		1 917	111%	(480 #)	1 437	+50
Total		9 269		8 493	92%	--	7 819	+56
Total Active MDBA Storage							91% ^	

Major State Storages

Burrinjuck Reservoir	1 026	939	92%	3	936	-33
Blowering Reservoir	1 631	1 535	94%	24	1 511	-3
Eildon Reservoir	3 334		0%	100	- 100	-0

* 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

Snowy Mountains Scheme

Snowy diversions for week ending 28 Sep 2021

Storage	Active Storage (GL)	Weekly Change (GL)	Diversions (GL)	This Week	From 1 May 2021
Lake Eucumbene - Total	1 331	+56	Snowy-Murray	+0	345
Snowy-Murray Component	583	+17	Tooma-Tumut	+13	176
Target Storage	1 240		Net Diversion	-12	169
			Murray 1 Release	+18	537

Major Diversions from Murray and Lower Darling (GL) *

New South Wales	This Week	From 1 July 2021	Victoria	This Week	From 1 July 2021
Murray Irrig. Ltd (Net)	10.8	171	Yarrowonga Main Channel (net)	5.4	23
Wakool Sys Allowance	0.0	1	Torrumbarry System + Nyah (net)	12.8	108
Western Murray Irrigation	0.3	2	Sunraysia Pumped Districts	1.7	11
Licensed Pumps	5.4	45	Licensed pumps - GMW (Nyah+u/s)	1.4	7
Lower Darling	2.6	3	Licensed pumps - LMW	7.5	36
TOTAL	19.1	222	TOTAL	28.8	185

* Figures are derived from actual and estimates where data is unavailable. Please note that not all data may have been available at the time of creating this report. ** All data above is rounded to nearest 100 ML for weekly data and nearest GL for cumulative data

Flow to South Australia (GL)

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

Entitlement this month	135.0 *	
Flow this week	195.4	(27 900 ML/day)
Flow so far this month	694.4	
Flow last month	601.8	

Salinity (EC) (microSiemens/cm at 25° C)

	Current	Average over the last week	Average since 1 August 2021
Swan Hill	90	90	90
Euston	-	-	-
Red Cliffs	130	120	120
Merbein	160	150	120
Burtundy (Darling)	280	290	310
Lock 9	130	130	120
Lake Victoria	120	120	130
Berri	130	130	140
Waikerie	150	170	170
Morgan	160	180	190
Mannum	190	180	210
Murray Bridge	190	190	230
Milang (Lake Alex.)	730	680	690
Poltalloch (Lake Alex.)	230	370	480
Meningie (Lake Alb.)	1 590	1 600	1 540
Goolwa Barrages	810	890	1 510



River Levels and Flows

Week ending Wednesday 29 Sep 2021

River Murray	Minor Flood Stage (m)	Gauge Height		Flow (ML/day)	Trend	Average Flow this Week (ML/day)	Average Flow last Week (ML/day)
		local (m)	(m AHD)				
Khancoban	-	-	-	4 620	F	4 240	4 280
Jingellic	4.0	2.67	209.19	14 550	R	11 160	12 180
Tallandoon (Mitta Mitta River)	4.2	1.82	218.71	1 640	R	1 620	1 870
Heywoods	5.5	3.51	157.14	20 240	F	15 620	13 680
Doctors Point	5.5	3.67	152.14	23 510	F	18 260	17 540
Albury	4.3	2.79	150.23	-	-	-	-
Corowa	4.6	4.09	130.11	22 960	R	16 400	23 560
Yarrowonga Weir (d/s)	6.4	3.49	118.53	27 650	R	20 900	34 260
Tocumwal	6.4	3.71	107.55	22 840	R	22 230	36 560
Torrumbarry Weir (d/s)	7.3	5.08	83.63	18 640	R	17 390	15 220
Swan Hill	4.5	2.85	65.77	16 960	R	15 620	15 910
Wakool Junction	8.8	5.76	54.88	23 230	R	21 520	20 600
Euston Weir (d/s)	9.1	4.12	45.96	27 790	R	27 000	25 060
Mildura Weir (d/s)	-	-	-	27 720	F	27 400	23 730
Wentworth Weir (d/s)	7.3	4.41	29.17	27 610	R	27 340	23 840
Rufus Junction	-	5.96	22.89	28 960	R	27 790	22 210
Blanchetown (Lock 1 d/s)	-	1.64	-	24 730	R	22 190	19 730
Tributaries							
Kiewa at Bandiana	2.8	2.45	155.68	2 820	R	3 240	3 350
Ovens at Wangaratta	11.9	9.72	147.40	5 810	F	6 800	7 850
Goulburn at McCoys Bridge	9.0	1.86	93.28	1 620	F	1 730	2 290
Edward at Stevens Weir (d/s)	5.5	4.63	84.40	8 600	F	9 340	8 040
Edward at Liewah	-	3.92	59.30	4 120	R	3 550	2 900
Wakool at Stoney Crossing	-	2.42	55.91	3 740	R	2 830	1 560
Murrumbidgee at Balranald	5.0	5.83	61.79	9 670	S	9 870	10 380
Barwon at Mungindi	6.1	3.51	-	1 440	F	1 580	1 640
Darling at Bourke	9.0	4.74	-	5 330	F	7 970	11 280
Darling at Burtundy Rocks	-	1.02	-	1 000	R	970	950

Natural Inflow to Hume	18 730	21 370
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(i.e. Pre Dartmouth & Snowy Mountains scheme)

Weirs and Locks Pool levels above or below Full Supply Level (FSL)

Murray	FSL (m AHD)	u/s	d/s		FSL (m AHD)	u/s	d/s
Yarrowonga	124.90	-0.20	-	No. 7 Rufus River	22.10	+0.83	+3.65
No. 26 Torrumbarry	86.05	-0.00	-	No. 6 Murtho	19.25	+0.42	+1.74
No. 15 Euston	47.60	-0.07	-	No. 5 Renmark	16.30	+0.50	+1.46
No. 11 Mildura	34.40	+0.01	+1.46	No. 4 Bookpurnong	13.20	+0.34	+2.27
No. 10 Wentworth	30.80	+0.04	+1.77	No. 3 Overland Corner	9.80	+0.04	+1.78
No. 9 Kulnine	27.40	+0.16	+1.54	No. 2 Waikerie	6.10	+0.58	+1.60
No. 8 Wangumma	24.60	+0.79	+1.95	No. 1 Blanchetown	3.20	+0.05	+0.89

Lower Lakes FSL = 0.75 m AHD

Lake Alexandrina average level for the past 5 days (m AHD)	0.81
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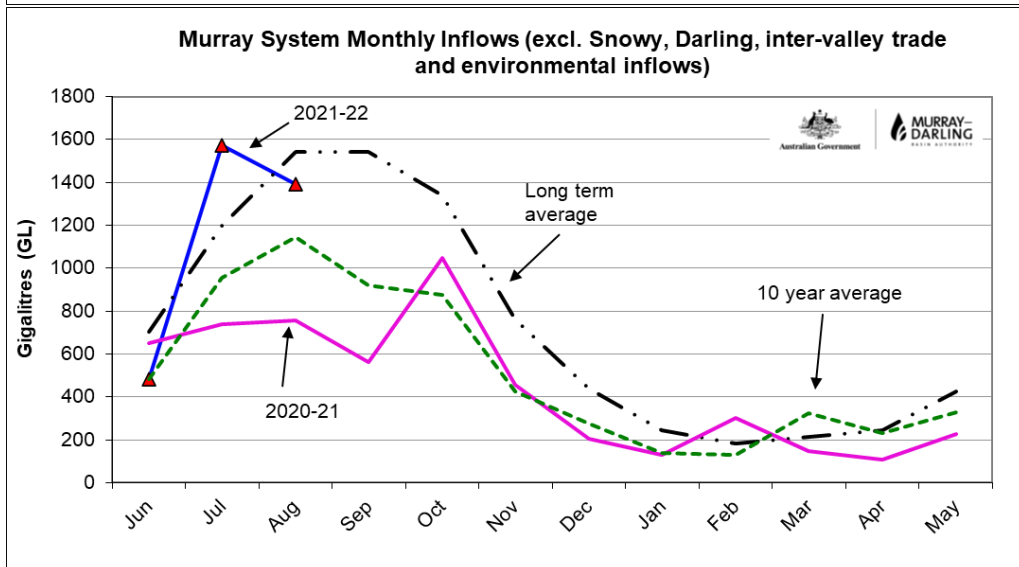
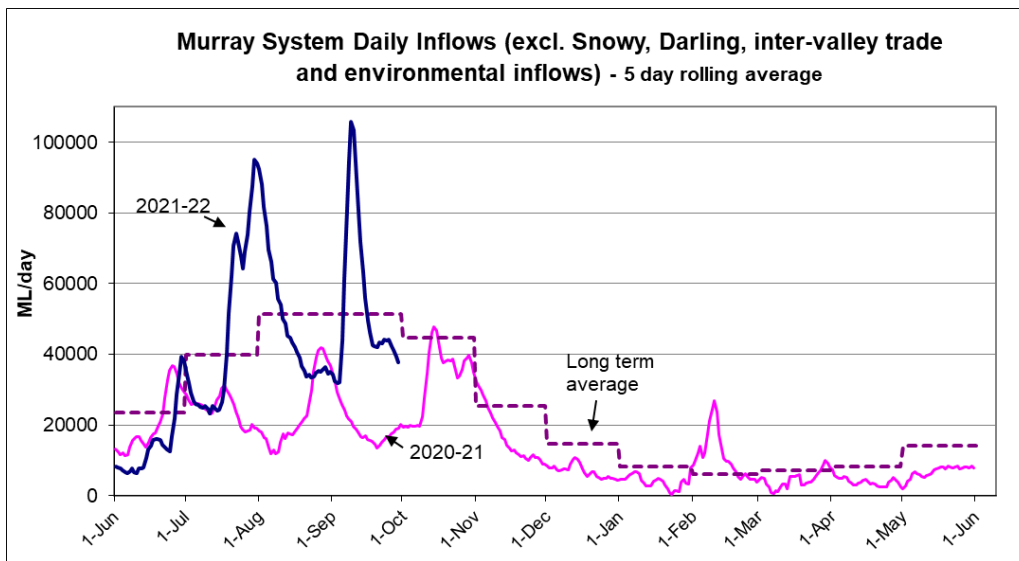
Barrages

Fishways at Barrages

	Openings	Level (m AHD)	No. Open	Rock Ramp	Vertical Slot 1	Vertical Slot 2	Dual Vertical Slots
Goolwa	128 openings	0.87	3	-	Open	Open	-
Mundoo	26 openings	0.78	3	-	-	-	Open
Hunters Creek	-	-	-	-	Open	-	-
Boundary Creek	6 openings	-	1	-	Open	-	-
Ewe Island	111 gates	-	12	-	-	-	Open
Tauwichee	322 gates	0.81	21	Open	Open	Open	-

AHD = Level relative to Australian Height Datum, i.e. height above sea level





State Allocations (as at 1 Oct 2021)

NSW - Murray Valley

High security	97%
General security	55% [^]

[^]average carryover = 43%, effective GS = 98%

Victorian - Murray Valley

High reliability	93%
Low reliability	0%

Entitlement holders on the Victorian Murray carried over ~685 GL from the 2020/21 water year

NSW - Murrumbidgee Valley

High security	95%
General security	52% [§]

[§]average carryover = 22%, effective GS = 74%

Victorian - Goulburn Valley

High reliability	100%
Low reliability	0%

NSW - Lower Darling

High security	100%
General security	100%

South Australia - Murray Valley

High security	100%
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NSW : <https://www.industry.nsw.gov.au/water/allocations-availability/allocations/summary>

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

SA : [Department for Environment and Water | Current allocations](http://www.environment.sa.gov.au/department-for-environment-and-water/current-allocations)

