



River Murray Weekly Report

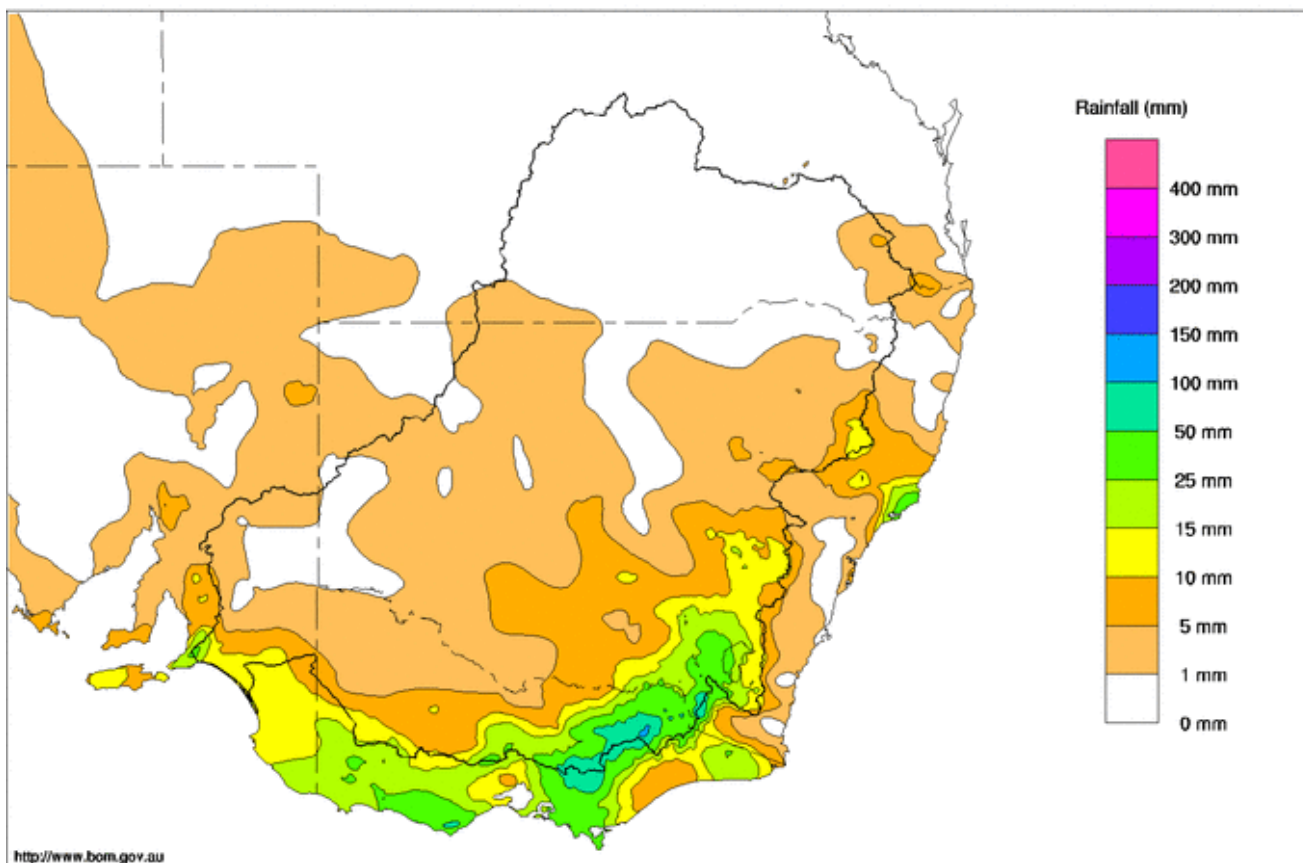
For the week ending Wednesday, 22 September 2021

Trim Ref: D21/38747

Weekly rainfall and inflows

Moderate rainfall totals were recorded across the Murray Darling Basin this week, with the heaviest totals falling across the upper Murray catchments (Map 1). In New South Wales, Cabramurra in the Southwest Slopes recorded 51 mm, while Burrinjuck Dam, on the Upper Murrumbidgee River recorded 32 mm. In Victoria, the heaviest totals were recorded across the Upper Northeast. Mt Buffalo, in the Ovens catchment recorded a total of 101 mm, while further south-east, Falls Creek in the Australian Alps recorded 91 mm.

Murray-Darling Rainfall Totals (mm) Week Ending 22nd September 2021
Australian Bureau of Meteorology



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Issued: 22/09/2021

Map 1 – Murray-Darling Basin rainfall for the week ending 22 September 2021. Source: Bureau of Meteorology

Following this week's rainfall, modest streamflow responses were observed across the upper Murray tributaries. Upstream of Hume, Jingellic flows peaked around 13,300 ML/day. Downstream of Hume Dam, the Kiewa River at Bandiana peaked near 4,200 ML/day, while on the Ovens River, the flow at Rocky Point peaked near 9,500 ML/day.

The Bureau of Meteorology (BoM) is [forecasting](#) moderate rainfall totals across the Murray system in the coming week. 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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River operations

- Flood operations continue at Hume Dam and Yarrawonga Weir
- Elevated inflows to the Murray from the Murrumbidgee River continue
- Unregulated flow available for reaches downstream of Hume Dam to South Australia
- Active management of Lake Victoria storage levels in line with the Lake Victoria Operating Strategy

Hume Dam Operations update

With modest rain falling over the past week, operations at Hume Dam have continued to focus on passing elevated inflows, whilst slowly raising the storage level to ensure the storage is full before downstream demands emerge. This approach has continued to consider opportunities to maintain airspace. This has resulted in releases reducing from around 24,000 ML/day last Wednesday to a target flow of 7,000 ML/day today.

Across the coming week, moderate rainfall has been forecast. At this stage, the Bureau of Meteorology is indicating possible light rain on Friday, with a more substantial event potentially developing mid-next week. However, with around a week before this rain arrives, the forecast remains uncertain. If the forecast for rain strengthens, increased releases to create airspace may be needed to assist with mitigating peak flows of a possible larger inflow event. Communities downstream of Hume Dam are therefore advised to keep a close eye on Bureau of Meteorology flood watches and warnings over the coming days.

Looking ahead, operations will focus on a daily assessment of future rain and likely flow responses, guided by Bureau of Meteorology advice. 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 22 September 2021

Andrew Reynolds
Acting Chief Executive



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

Approximately 421 GL has been released from Hume Dam for airspace management purposes since early September. Of the spilled volume, South Australian storage right spilled first. The majority of the remaining spill was the Barmah-Millewa Environmental Water Allowance, which is shared equally between NSW and Victorian accounts. A small volume of NSW Murray environmental allocation has also spilled since September.

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 130 GL over the last week to 7,765 GL (90% capacity).

At **Dartmouth Reservoir**, the [storage](#) increased by 37 GL to 3,009 GL (78% 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.

Over the past week the **Hume Reservoir** [storage](#) increased by 7 GL to 2,919 GL (97% capacity). In response to drier conditions, the release has gradually been reducing from near 24,000 ML/day last week to the current rate of 7,000 ML/day. Slightly higher releases are possible over the coming days. If significant forecast rain persists, more substantial releases may be required to further increase available airspace for flood peak mitigation.

The **Lake Mulwala** level is currently 124.66 m AHD, within the normal operating range (124.6 to 124.9 m AHD). This week the diversion to Mulwala Canal increased from 1,800 ML/day to the current order of 2,000 ML/day. Diversions to the Yarrawonga Main Channel also increased averaging 1,000 ML/day. The release downstream of Yarrawonga Weir continued to ease over the week from 42,000 ML/day to 26,000 ML/day.

Flows are forecast to continue receding over the next week.

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Downstream of Yarrawonga Weir, Barmah and Millewa Forest regulators will remain open. Flow at Barmah has increased to near 15,800 ML/day this week and is expected to continue rising in response to higher flows returning from the Barmah forest.

Flow remained steady at the **Kolety** (pronounced Kol-etch)/**Edward River** offtake and the **Gulpa Creek** offtake, averaging 2,300 ML/day and 1,000 ML/day respectively. Flows are forecast to remain around this rate over coming days before reducing in response to falling flows in the River Murray. Further downstream on the Kolety/Edward River the flow at Toonalook has increased from around 6,600 ML/day to 9,500 ML/day in response to higher flows returning from the Millewa forest. The flow at Toonalook is expected to continue rising over the coming days before receding.

At **Stevens Weir**, the pool level is within the normal operating range. Flow downstream of Stevens Weir increased over the week from 4,700 ML/day to the current flow near 9,400 ML/day. Over the coming week the flow is expected to peak in response to increasing upstream flow. Flow through the Wakool River, Yallakool Creek and Colligen Creek offtakes also increased to 670 ML/day, 870 ML/day and 1,080 ML/day, respectively.

On the **Goulburn River**, the flow measured at [McCoys Bridge](#) continued to fall to the current rate near 1,550 ML/day. The flow is expected to increase over the coming days in response to elevated flows upstream. 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](#).

[Diversion](#) to **National Channel** has reduced over the past week to the current rate near 2,000 ML/day. Releases from **Torrumbarry Weir** reduced to a minimum of around 14,300 ML/day as inflows from the Goulburn reduced, but have risen over the last few days to the current rate of around 15,700 ML/day. The release is forecast to continue rising over the coming week in response to elevated flows in the River Murray.

Inflow from the **Murrumbidgee River**, measured at [Balranald](#), remained steady over the week, averaging around 10,400 ML/day and is expected to remain at a similar rate in the coming week. 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. The [downstream release](#) averaged around 25,000 ML/day and is expected to gradually increase over the coming week in response to higher upstream flows.

Inflows to **Menindee Lakes** continued, with the flow upstream at Wilcannia continuing to recede from the current rate near 13,450 ML/day. WaterNSW is forecasting that Menindee Lakes will continue to fill and possibly spill over the months ahead. Further updates will be provided as forecasts are reviewed and if there are further inflow events in the northern Basin during the coming weeks.

This week the Menindee Lakes total [storage](#) volume increased by 96 GL to 1,867 GL (108% capacity) and will continue to increase over coming weeks. The storage volume is above full supply level (100 % = 1,730 GL) as Menindee Lakes has a surcharge capacity up to about 2,050 GL. 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).

Water for the environment is being released from Menindee Lakes to benefit native fish in the Barka/lower Darling River during the spring native fish nesting season. The flow at Weir 32 is 1,200 ML/day and expected to continue to remain at this rate over the coming months.



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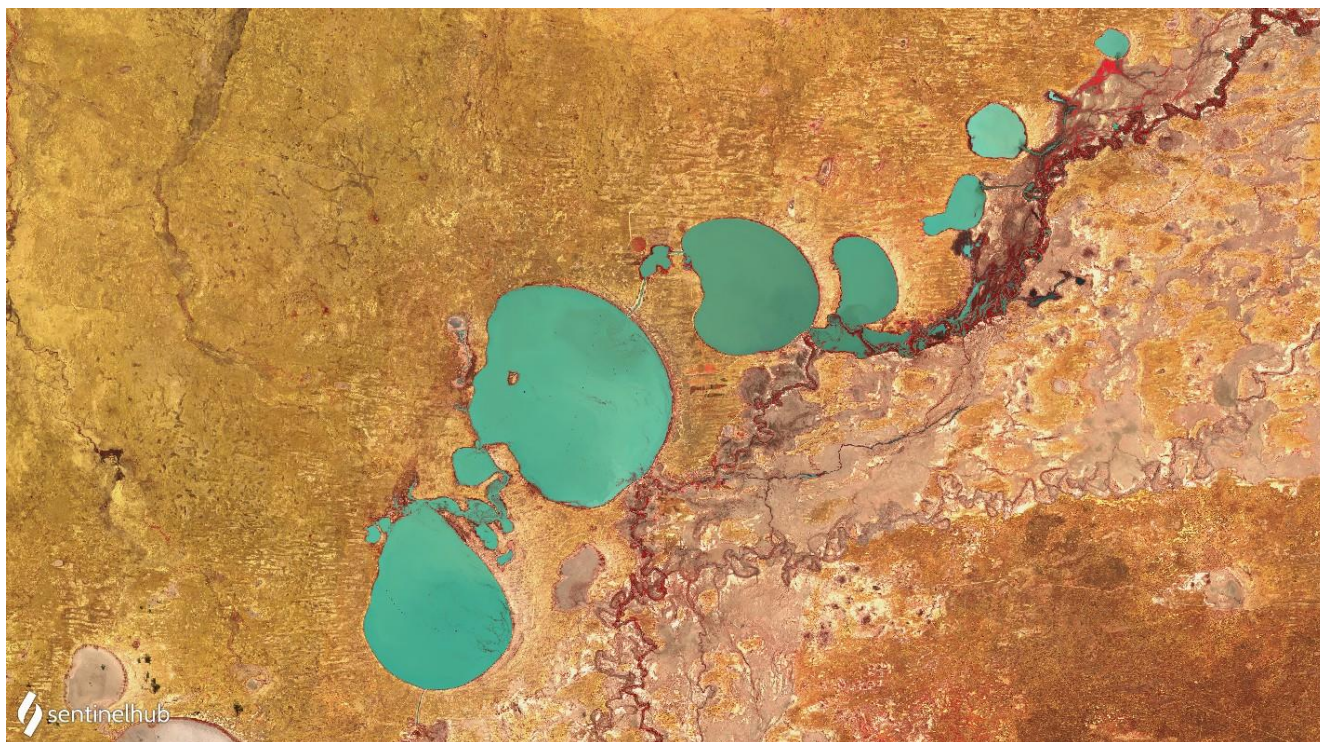


Photo 1: Sentinel satellite image of surcharged Menindee lakes from 22nd September 2021 (Sentinel Hub; <https://apps.sentinel-hub.com/sentinel-playground/>)

Over the coming months, the MDBA will continue to revise forecasts and operational plans to determine the volume and timing of water released from Menindee Lakes to support the River Murray System. This process will be on-going and will take account of the operating rules of the Murray-Darling Basin Agreement, the [Objectives and Outcomes for River Operations in the River Murray System](#) as well as the more specific opportunities and risks driven by system conditions, water security, delivery efficiency, and environmental and community considerations.

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 has increased over the past week, currently near 26,400 ML/day. The flow rate is expected to gradually increase over the coming week in response to higher upstream flows. 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 weir will remain near this level during September to inundate the Mulcra floodplain and other wetlands adjacent to the weir pool. **Lock 7** is targeting around 60 cm above FSL to increase flow into the Lindsay River to facilitate pumping of water for the environment into Lake Wallawalla.

The [storage](#) at **Tar-ru/Lake Victoria** decreased by 10 GL to 644 GL (95% capacity). Inflows to Tar-ru/Lake Victoria are actively being managed to control the filling of Lake Victoria by the end of the unregulated flow event 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.

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This week, the release rate from the outlet regulator was increased to actively drawdown the Lake level. The LVOS allows the lake level to be opportunistically drawn down when unregulated flows in the River Murray are high enough to assure the lake can be refilled by the end of the unregulated flow event.

During this week the [flow](#) to **South Australia** averaged around 23,100 ML/day and is expected to increase over the coming days before gradually receding. The required flow to South Australia continues to be exceeded, with [unregulated flow](#) declared on the River Murray downstream of Hume Dam.



Photo 2: Flows being released from Chowilla environmental regulator to inundate the Chowilla floodplain, photo courtesy Jamie Walker MDBA.

The **Lower Lakes** 5-day average water level is 0.74 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
A/g Executive Director, River Management



Australian Government



**Water in Storage****Week ending Wednesday 22 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	472.09	3 009	78%	71	2 938	+37
Hume Reservoir	192.00	3 005	191.57	2 919	97%	23	2 896	+7
Lake Victoria	27.00	677	26.73	644	95%	100	544	-10
Menindee Lakes		1 731*		1 867	108%	(480 #)	1 387	+96
Total		9 269		8 439	91%	--	7 765	+130
Total Active MDBA Storage							90% ^	

Major State Storages

Burrinjuck Reservoir	1 026	972	95%	3	969	-9
Blowering Reservoir	1 631	1 538	94%	24	1 514	-6
Eildon Reservoir	3 334	2 616	78%	100	2 516	+38

* 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 21 Sep 2021

Storage	Active Storage (GL)	Weekly Change (GL)	Diversions (GL)	This Week	From 1 May 2021
Lake Eucumbene - Total	1 275	+75	Snowy-Murray	+1	345
Snowy-Murray Component	566	+36	Tooma-Tumut	+16	164
Target Storage	1 240		Net Diversion	-15	182
			Murray 1 Release	+17	519

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)	13.2	160	Yarrowonga Main Channel (net)	7	18
Wakool Sys Allowance	0.0	1	Torrumbarry System + Nyah (net)	0	29
Western Murray Irrigation	0.3	2	Sunraysia Pumped Districts	1.6	9
Licensed Pumps	5.5	38	Licensed pumps - GMW (Nyah+u/s)	0.9	6
Lower Darling	0.0	0	Licensed pumps - LMW	6.2	30
TOTAL	19.0	201	TOTAL	15.7	92

* 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	161.7	(23 100 ML/day)
Flow so far this month	499.6	
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	100	90	80
Euston	-	-	-
Red Cliffs	120	130	120
Merbein	130	130	110
Burtundy (Darling)	290	320	320
Lock 9	130	130	120
Lake Victoria	130	140	130
Berri	140	160	140
Waikerie	190	180	170
Morgan	180	180	200
Mannum	180	170	210
Murray Bridge	180	180	240
Milang (Lake Alex.)	680	680	700
Poltalloch (Lake Alex.)	550	360	490
Meningie (Lake Alb.)	1 580	1 580	1 530
Goolwa Barrages	1 140	1 020	1 600

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River Levels and Flows

Week ending Wednesday 22 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	-	-	-	5 610	R	4 280	4 770
Jingellic	4.0	2.64	209.16	13 260	R	12 180	16 340
Tallandoon (Mitta Mitta River)	4.2	1.87	218.76	1 810	F	1 870	2 130
Heywoods	5.5	2.44	156.07	7 440	F	13 680	29 560
Doctors Point	5.5	2.71	151.18	11 380	F	17 540	34 650
Albury	4.3	1.77	149.21	-	-	-	-
Corowa	4.6	3.16	129.18	15 860	F	23 560	32 160
Yarrowonga Weir (d/s)	6.4	3.35	118.39	25 870	F	34 260	43 790
Tocumwal	6.4	4.41	108.25	30 140	F	36 560	35 900
Torrumbarry Weir (d/s)	7.3	4.51	83.06	15 730	R	15 220	15 450
Swan Hill	4.5	2.50	65.42	14 500	F	15 910	11 300
Wakool Junction	8.8	5.37	54.49	20 760	F	20 600	16 250
Euston Weir (d/s)	9.1	4.03	45.87	26 960	S	25 060	22 220
Mildura Weir (d/s)	-	-	-	26 460	F	23 730	23 470
Wentworth Weir (d/s)	7.3	4.33	29.09	26 370	R	23 840	23 510
Rufus Junction	-	5.68	22.61	24 910	R	22 210	21 920
Blanchetown (Lock 1 d/s)	-	1.51	-	20 120	R	19 730	19 700
Tributaries							
Kiewa at Bandiana	2.8	2.82	156.05	3 920	S	3 350	3 920
Ovens at Wangaratta	11.9	10.37	148.05	8 330	R	7 850	11 360
Goulburn at McCoys Bridge	9.0	1.83	93.25	1 560	F	2 290	10 670
Edward at Stevens Weir (d/s)	5.5	4.85	84.63	9 400	F	8 040	2 430
Edward at Liewah	-	3.17	58.55	2 790	R	2 900	3 360
Wakool at Stoney Crossing	-	1.82	55.31	1 650	R	1 560	1 640
Murrumbidgee at Balranald	5.0	5.90	61.86	10 190	F	10 380	10 240
Barwon at Mungindi	6.1	3.59	-	1 690	F	1 640	2 580
Darling at Bourke	9.0	5.58	-	11 240	F	11 280	13 560
Darling at Burtundy Rocks	-	1.02	-	970	R	950	710

Natural Inflow to Hume	21 370	27 840
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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	-0.23	-	No. 7 Rufus River	22.10	+0.56	+3.37
No. 26 Torrumbarry	86.05	+0.00	-	No. 6 Murtho	19.25	+0.38	+1.40
No. 15 Euston	47.60	-0.03	-	No. 5 Renmark	16.30	+0.42	+1.15
No. 11 Mildura	34.40	-0.02	+1.39	No. 4 Bookpurnong	13.20	+0.28	+1.93
No. 10 Wentworth	30.80	+0.04	+1.69	No. 3 Overland Corner	9.80	+0.01	+1.47
No. 9 Kulnine	27.40	+0.15	+1.48	No. 2 Waikerie	6.10	+0.54	+1.24
No. 8 Wangumma	24.60	+0.84	+1.66	No. 1 Blanchetown	3.20	+0.01	+0.76

Lower Lakes FSL = 0.75 m AHD

Lake Alexandrina average level for the past 5 days (m AHD)	0.74
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Barrages

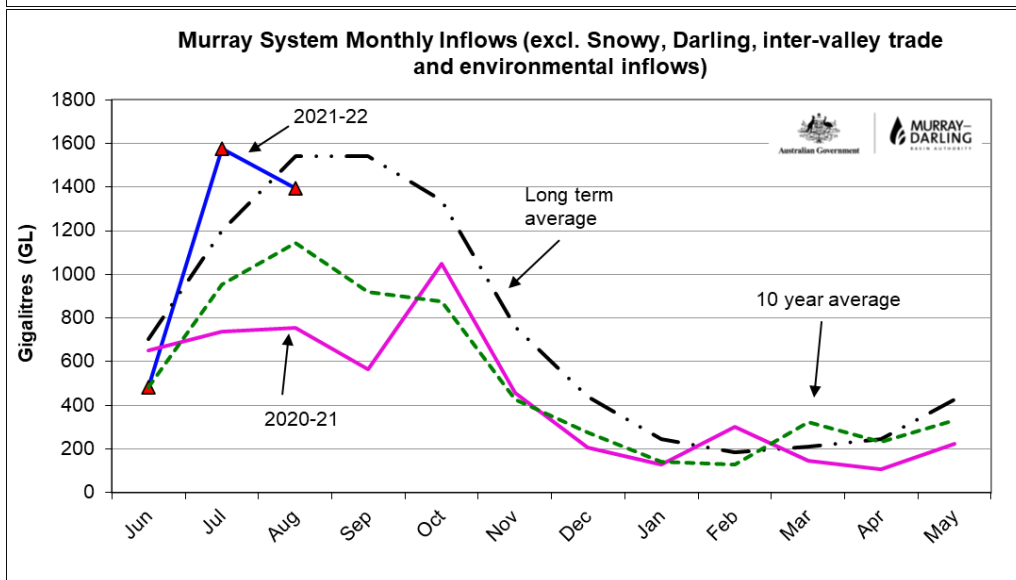
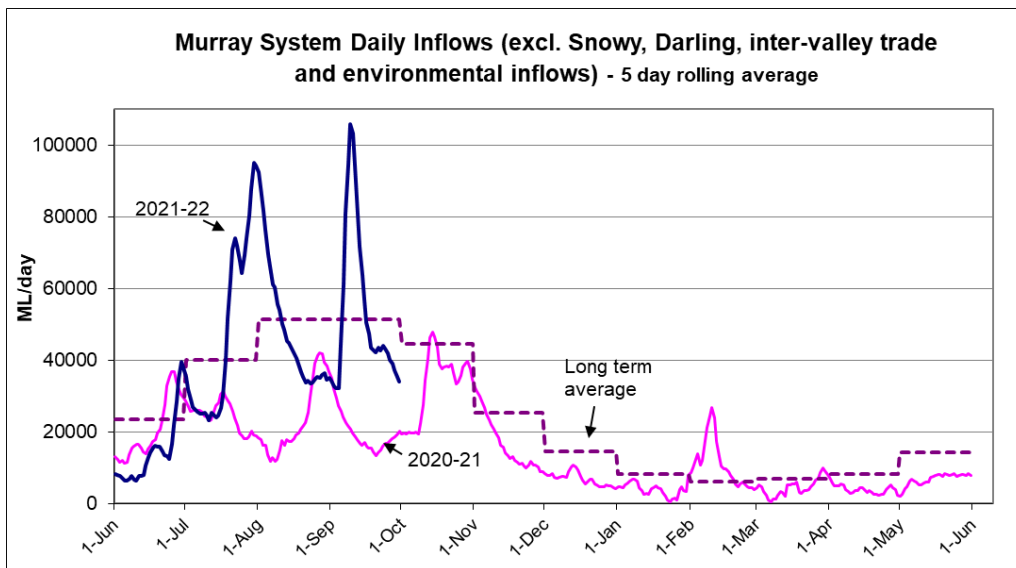
Fishways at Barrages

	Openings	Level (m AHD)	No. Open	Rock Ramp	Vertical Slot 1	Vertical Slot 2	Dual Vertical Slots
Goolwa	128 openings	0.75	3	-	Open	Open	-
Mundoo	26 openings	0.70	3	-	-	-	Open
Hunters Creek	-	-	-	-	Open	-	-
Boundary Creek	6 openings	-	1	-	Open	-	-
Ewe Island	111 gates	-	12	-	-	-	Open
Tauwichee	322 gates	0.76	21	Open	Open	Open	-

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

River Murray Weekly Report

Week ending Wednesday 22 Sep 2021



State Allocations (as at 22 Sep 2021)

NSW - Murray Valley

High security	97%
General security	44% [^]

[^]average carryover = 43%, effective GS = 87%

Victorian - Murray Valley

High reliability	77%
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	85%
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)