



River Murray Weekly Report

For the week ending Wednesday, 21 August 2019

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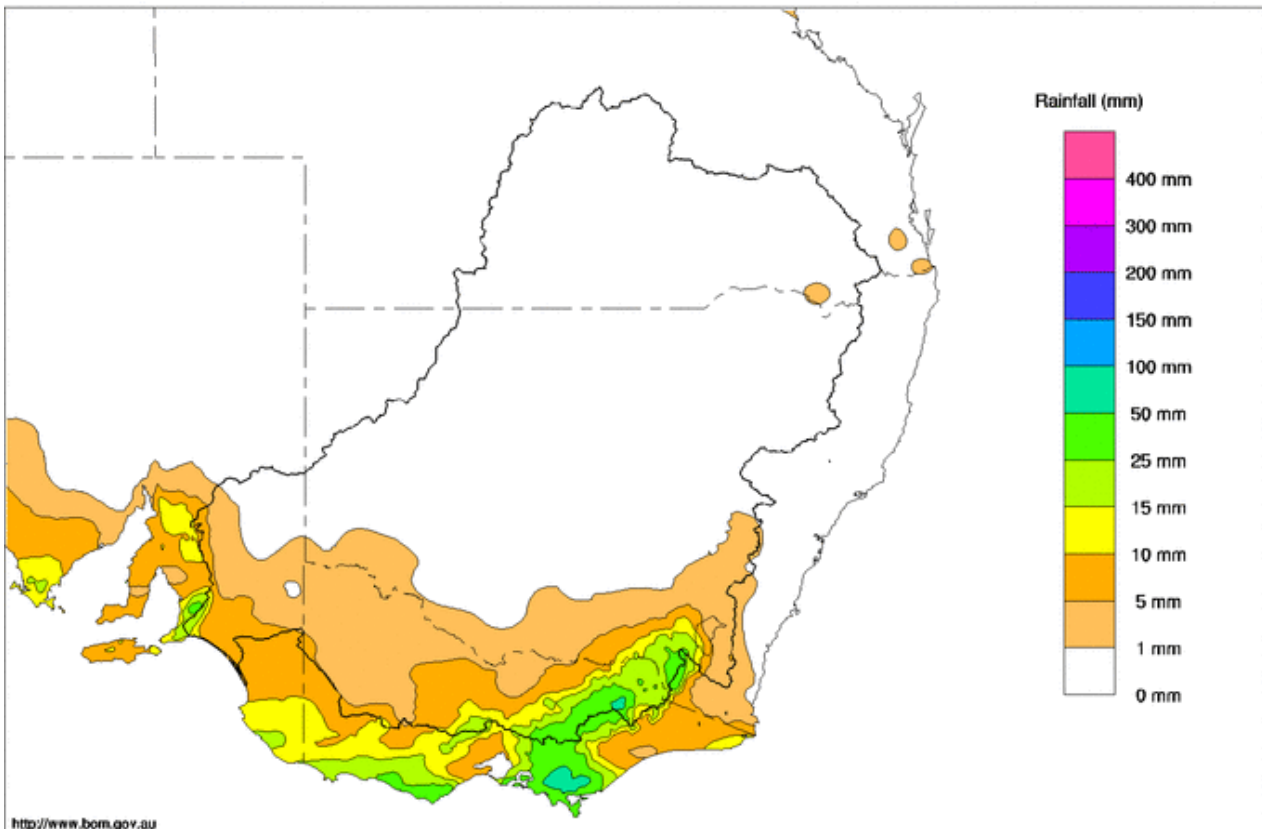
Rainfall and inflows

This week brought further rainfall to the southern fringe of the Murray-Darling Basin, although totals were generally lighter than forecasted (Map 1). Across the Victorian Alps and the Snowy Mountains, much of the precipitation fell as snow. As a result, snow depths across alpine areas are substantive and expected to provide an ongoing contribution to base flows in the tributaries. Precipitation totals of 50 mm or more were reported from alpine sites such as Victoria’s Mt Buller and in the NSW Snowy Mountains. Elsewhere, totals ranged from 1mm to 25mm.

Conversely, much of NSW and Queensland received little to no rainfall. The Bureau of Meteorology is currently [forecasting](#) dry conditions across the southern Basin for the next week.

In response to the lower than forecast rainfall, flows in the upper tributaries of the River Murray System remained fairly steady for much of the week but are now receding slowly. For specific information about flows at key locations in the upper Murray catchment including [Hinnomunjie Bridge](#) on the upper Mitta Mitta River, [Biggara](#) on the upper Murray, [Bandiana](#) on the Kiewa River as well as [Peechelba](#) on the Ovens River 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 at Bureau of Meteorology’s (BoM) [website](#) and in the Murray River Basin daily river report at the WaterNSW [website](#).

Murray-Darling Rainfall Totals (mm) Week Ending 21st August 2019
Australian Bureau of Meteorology



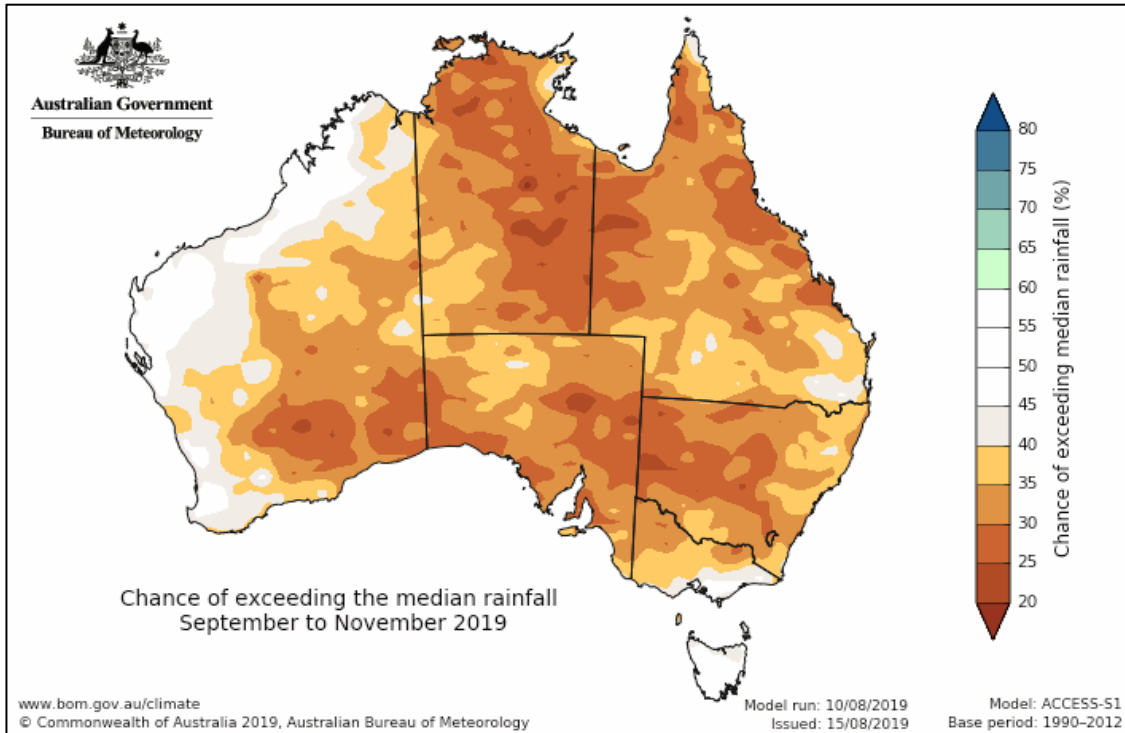
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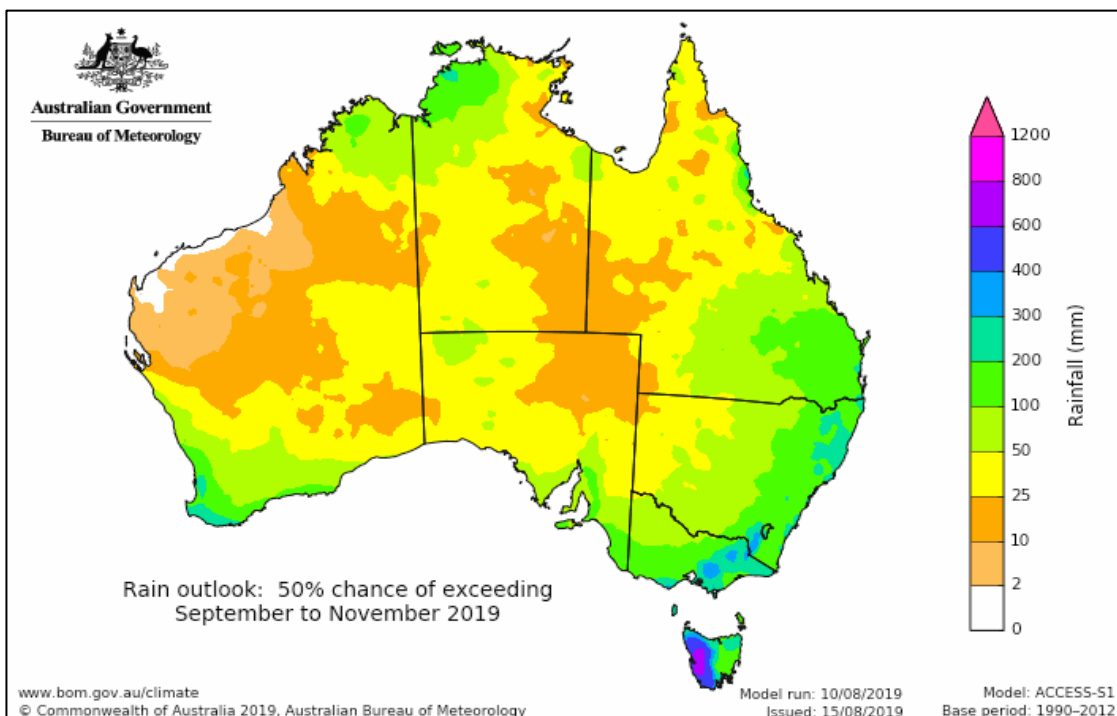
Map 1 - Rainfall totals for week ending 21 August (Source: Bureau of Meteorology)

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The Bureau of Meteorology has also issued a [climate and water outlook for September to November 2019](#) that indicates a drier than average season is likely for most of mainland Australia. This is being driven by positive Indian Ocean Dipole (IOD) conditions, which often result in below average rainfall for much of central and southern Australia during winter-spring. The positive IOD is likely to be the dominant climate driver for Australia during the next three months (Map 2 & 3).



Map 2 – Chance of exceeding median rainfall from September to November 2019 (Source: Bureau of Meteorology)



Map 3 – Total Forecast of rainfall totals from September to November 2019 (Source: Bureau of Meteorology)

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River operations

- Transfers from Dartmouth to Hume continue.
- Weir pool levels to rise at Euston, Lock 9, 8 & 7.
- Planned water for the environment activities underway at Hume and Yarrawonga.

River operations

The MDBA total active storage increased this week by 103 GL to 3,876 GL (46% capacity).

At **Dartmouth Reservoir**, the [storage](#) decreased by 22 GL to 2,313 GL (60% capacity). Releases are continuing from Dartmouth to transfer the water required to support expected system demands in the months ahead.

The [release](#) from Dartmouth, measured at Colemans, is currently 4,300 ML/day. Releases for the remainder of the week will increase briefly before gradually reducing to around 2,800ML/day by the end of August. Over the coming months, releases will continue to be varied in a manner that will transfer the required volume to Hume, whilst seeking to minimise erosion along the Mitta Mitta River and provide for power generation.

At **Hume Reservoir**, the [storage](#) increased by 79 GL to 1,250 GL (42% capacity). The release from Hume Dam was reduced to the minimum allowable for this time of year of 600 ML/day over the past week, and is now being increased to target environmental orders during August and into September. Releases between 4,000 and 6,000 ML/day are likely in the coming days.

Downstream at **Lake Mulwala** the pool [level](#) is currently 124.76 m AHD and is expected to remain within the normal operating range of 124.6-124.9 m AHD in the coming week. Diversions to the Mulwala Canal and Yarrawonga Main Channel (YMC) have respectively averaged 900 ML/day and 200 ML/day for the week. The release downstream of Yarrawonga Weir was reduced to around 8,000 ML/day for a few days, but will now be increased to meet an environmental flow target of 10,500 ML/day during the remainder of August.

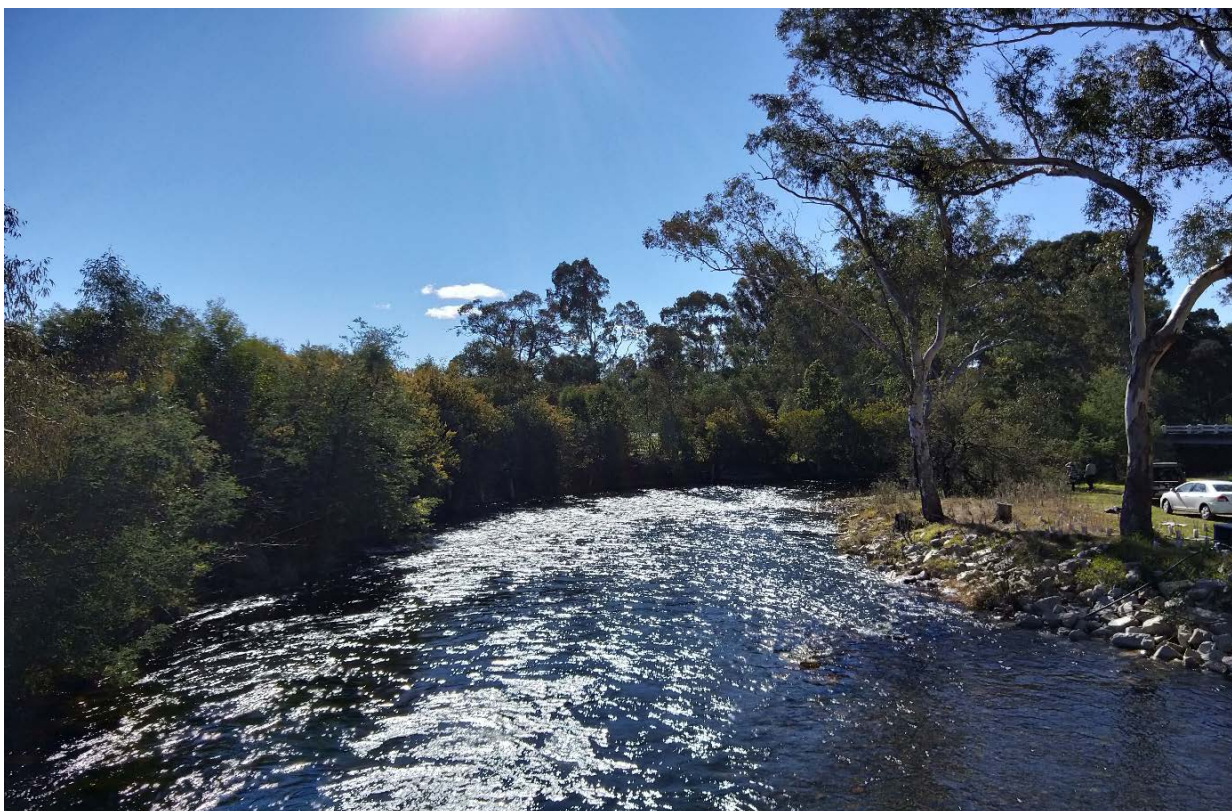


Photo 1: A roadside picnic spot at Kings River near Cheshunt (Photo courtesy of MDBA). This clear little mountain stream flows from the Victorian mountains down to the Ovens River, eventually reaching the River Murray just below Peechelba.

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The downstream Yarrowonga release target was modified during the week in anticipation of increased tributary inflows from forecast rain. The adaptive management of releases is a collaborative effort between environmental water holders, state water resource managers and river operators across a number of agencies.

Looking ahead, planning is under way to deliver flows up to 15,000 ML/day downstream of Yarrowonga Weir commencing in early September. These flows will be delivered on behalf of environmental water holders who have identified inundation of the Barmah-Millewa Forest as a key watering action for this year. The aim of these flows will be to build on the benefits achieved from delivering environmental water during August, which inundated parts of the Barmah-Millewa Forest, improving access to food and habitat for native fish. Return flows from this event will be coordinated with a planned environmental flow from the Goulburn River providing ecological benefits along the River Murray to the Coorong in South Australia. Updates on environmental watering actions during winter and spring 2019 are available from Commonwealth Environmental Water Office [website](#). For more information on how environmental water is helping to improve the health of rivers in the Basin see the NSW Department of Planning, Industry and Environment [website](#) and the latest [fact sheet](#) and [update](#) from the Commonwealth Environmental Water Office.

Diversions at the **Edward** and **Gulpa** offtakes are [currently](#) near 1,550 and 250 ML/day respectively. Further downstream on the Edward River at Toonalook, the flow is being boosted by water returning from the Millewa Forest. Yallakool and Colligen Creeks are currently receiving environmental water that provides winter base flows for native fish. At Stevens Weir the release has averaged near 2,200 ML/day for the week.

On the **Goulburn River** flows increased for a few days at McCoys Bridge with a peak around 2,300 ML/day. A small volume of environmental water was used to boost local inflows to deliver this small instream rise in the lower Goulburn River. Flows are expected to recede slowly during the coming days. Planning is currently underway to deliver a spring flow pulse through the Goulburn system, most likely from mid-September. Further updates will be provided in the coming weeks.

The current Goulburn IVT balance is around 224 GL. More information regarding current opportunities for allocation trade between the Goulburn and Murray valleys is available at the Victorian water register [website](#). On Wednesday the [Victorian Minister for Water](#) announced changes to the Goulburn system trade rules and flagged revisions to the summer operating regime for the Goulburn River. More information on these changes will be provided in coming months.



Photo 2: The River Murray near Torrumbarry Weir (Photo courtesy of MDBA).



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Downstream on the Murray, the [diversion](#) to National Channel increased to 1,100 ML/day to refill the Torrumbarry irrigation network in preparation for the 2019-20 irrigation season as well as deliver water from Victorian held environmental entitlements through Gunbower Creek to benefit native fish.

The **Torrumbarry Weir** [pool](#) is currently at Full Supply Level (FSL) (86.05 m AHD). Downstream of Torrumbarry Weir, the release is currently close to 8,000 ML/day and likely to reduce to around 6,000 ML/day over the coming week. During September, planned environmental actions from both the Murray and the Goulburn will see these flow rates increase again.

[Inflows](#) from the **Murrumbidgee River**, measured at Balranald, averaged around 1,200 ML/day this week. The [Murrumbidgee IVT balance](#) has reached 100 GL, which is the upper limit, meaning trade from the Murrumbidgee to the Murray has been closed. Trade will remain closed until the account reduces below 85 GL (not 100 GL as was incorrectly stated in last week's Weekly Report). This could occur from trade from the Murray back to the Murrumbidgee, and/or from IVT deliveries from the Murrumbidgee to the Murray in coming months.

In response to this change, MDBA is revising its operations planning to account for the increased water available to be delivered from the Murrumbidgee IVT account.

At **Euston**, the [weir pool level](#) is currently above FSL. The pool level is expected to gradually rise to around 20 cm above FSL over the coming week as part of the weir pool variability program. Varying pool levels helps restore a more natural wetting and drying cycle to riverbanks and adjacent wetlands within the influence of the weir pool. Over the coming weeks the pool level is planned to rise further to around 50 to 60 cm above FSL. Currently the [downstream release](#) is around 10,000 ML/day and is expected to increase slightly over the coming week.

The **Menindee Lakes** [storage](#) is approximately 14 GL (less than 1% capacity). WaterNSW continues to manage the Menindee Lakes in accordance with the [Lower Darling Annual Operations Plan](#). WaterNSW has advised that releases at Weir 32 are only planned to recommence when significant inflows are received into the Menindee Lakes. Inflows are currently zero and no significant inflows are expected in the near future.

As a result of the widespread drought conditions in NSW extensive [water restrictions](#) are likely to remain in place. More information on drought management activities in NSW can be found on the NSW Government website - [Drought Hub](#).

On the Murray at **Wentworth Weir**, the [pool level](#) is currently targeting 10 cm above FSL to assist pumpers in the upper reaches of the Darling River arm of the weir pool whilst there is no inflow from the Darling River. The downstream release is around 8,900 ML/day and is expected to continue over the coming week.

The **Lock 9** pool level is currently surcharged 15 cm above FSL to increase inflow into Lake Victoria. Downstream at **Locks 7 and 8**, the pool levels are targeting around 10 cm above FSL during August as part of the weir pool variability program.

At **Lake Victoria**, water storage increased by 47 GL to 507 GL (74% capacity). The level is [expected to continue to increase](#) during the weeks ahead.

The [flow](#) to **South Australia** was maintained around 3,500 ML/day and is likely to remain around this rate over coming days.

The **Lower Lakes** 5-day average water level remained near 0.79 m AHD. Approximately 25 GL was released from Goolwa, Mundoo, Boundary Creek, Ewe Island and Tauwitchere barrages over the week. Winter barrage releases provide environmental cues and connection to support the movement of several migratory fish species, including the short-headed lamprey which can travel large distances from the Southern Ocean to their spawning grounds in upstream reaches of the River Murray System. For more information see the South Australian Department for Environment and Water's latest [River Murray flow report](#).

For media inquiries contact the Media Officer on 02 6279 0141



River Murray Weekly Report

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Australian Government



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Water in Storage

Week ending Wednesday 21 Aug 2019

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	458.75	2 313	60%	71	2 242	-22
Hume Reservoir	192.00	3 005	180.99	1 250	42%	23	1 227	+79
Lake Victoria	27.00	677	25.55	507	75%	100	407	+47
Menindee Lakes		1 731*		14	1%	(- -) #	0	-0
Total		9 269		4 084	44%	- -	3 876	+103
Total Active MDBA Storage							46% ^	

Major State Storages

Burrinjuck Reservoir	1 026	332	32%	3	329	+3
Blowering Reservoir	1 631	817	50%	24	793	-3
Eildon Reservoir	3 334	1 438	43%	100	1 338	+46

* 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 20 Aug 2019

Storage	Active Storage (GL)	Weekly Change (GL)	Diversions (GL)	This Week	From 1 May 2019
Lake Eucumbene - Total	756	+10	Snowy-Murray	+5	218
Snowy-Murray Component	303	+2	Tooma-Tumut	+4	98
Target Storage	1 190		Net Diversion	0	120
			Murray 1 Release	+6	297

Major Diversions from Murray and Lower Darling (GL) *

New South Wales	This Week	From 1 July 2019	Victoria	This Week	From 1 July 2019
Murray Irrig. Ltd (Net)	6.7	30	Yarrowonga Main Channel (net)	1.5	4
Wakool Sys Allowance	n/a	9	Torrumbarry System + Nyah (net)	0	8
Western Murray Irrigation	0.2	1	Sunraysia Pumped Districts	0.9	2
Licensed Pumps	n/a	3	Licensed pumps - GMW (Nyah+u/s)	1	2
Lower Darling	0.0	0	Licensed pumps - LMW	4.6	7
TOTAL	6.9	43	TOTAL	8	23

* 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 environmental flows.

Entitlement this month	124.0 *	
Flow this week	24.2	(3 500 ML/day)
Flow so far this month	129.7	
Flow last month	185.9	

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

	Current	Average over the last week	Average since 1 August 2019
Swan Hill	90	90	90
Euston	100	100	100
Red Cliffs	60	50	70
Merbein	100	100	90
Burtundy (Darling)	-	-	1 180
Lock 9	90	90	90
Lake Victoria	120	120	120
Berri	150	150	160
Waikerie	230	230	240
Morgan	250	240	250
Mannum	340	330	330
Murray Bridge	400	390	360
Milang (Lake Alex.)	880	870	840
Poltalloch (Lake Alex.)	820	790	810
Meningie (Lake Alb.)	1 700	1 690	1 690
Goolwa Barrages	3 990	3 740	3 860



River Levels and Flows

Week ending Wednesday 21 Aug 2019

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	-	-	-	1 350	F	1 770	3 330
Jingellic	4.0	1.78	208.30	5 130	F	5 400	6 620
Tallandoon (Mitta Mitta River)	4.2	2.69	219.58	5 370	F	6 500	6 750
Heywoods	5.5	2.07	155.70	3 990	R	2 010	3 200
Doctors Point	5.5	2.18	150.65	5 930	R	4 060	5 900
Albury	4.3	1.21	148.65	-	-	-	-
Corowa	4.6	1.40	127.42	4 900	R	3 460	7 220
Yarrowonga Weir (d/s)	6.4	1.39	116.43	8 070	R	8 950	11 180
Tocumwal	6.4	2.04	105.88	8 600	F	9 450	11 580
Torrumbarry Weir (d/s)	7.3	2.69	81.23	8 040	R	7 480	6 310
Swan Hill	4.5	1.47	64.39	7 840	R	7 120	7 350
Wakool Junction	8.8	3.34	52.46	9 680	R	9 470	11 230
Euston Weir (d/s)	9.1	1.78	43.62	10 000	R	10 600	13 120
Mildura Weir (d/s)	-	-	-	10 530	F	11 520	14 570
Wentworth Weir (d/s)	7.3	3.21	27.97	8 810	F	10 240	13 340
Rufus Junction	-	2.78	19.71	2 760	R	2 720	5 770
Blanchetown (Lock 1 d/s)	-	0.81	-	3 430	S	2 670	4 830
Tributaries							
Kiewa at Bandiana	2.8	1.81	155.04	1 660	F	1 790	2 440
Ovens at Wangaratta	11.9	9.69	147.37	5 510	F	5 600	6 410
Goulburn at McCoys Bridge	9.0	2.13	93.55	2 160	F	1 980	1 130
Edward at Stevens Weir (d/s)	5.5	2.03	81.80	2 040	F	2 220	1 750
Edward at Liewah	-	2.47	57.85	1 830	S	1 900	2 240
Wakool at Stoney Crossing	-	1.42	54.92	490	S	500	530
Murrumbidgee at Balranald	5.0	1.48	57.44	1 060	F	1 150	1 450
Barwon at Mungindi	6.1	2.72	-	0	F	0	0
Darling at Bourke	9.0	2.95	-	0	F	0	0
Darling at Burtundy Rocks	-	0.50	-	0	F	0	0

Natural Inflow to Hume	8 760	10 840
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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	-0.18	-	No. 7 Rufus River	22.10	+0.14	+0.46
No. 26 Torrumbarry	86.05	+0.00	-	No. 6 Murtho	19.25	-0.04	-0.02
No. 15 Euston	47.60	+0.16	-	No. 5 Renmark	16.30	+0.00	+0.11
No. 11 Mildura	34.40	+0.04	+0.35	No. 4 Bookpurnong	13.20	+0.05	+0.40
No. 10 Wentworth	30.80	+0.08	+0.57	No. 3 Overland Corner	9.80	+0.04	+0.59
No. 9 Kulnine	27.40	+0.18	+0.11	No. 2 Waikerie	6.10	+0.49	+0.13
No. 8 Wangumma	24.60	+0.11	+0.18	No. 1 Blanchetown	3.20	+0.04	+0.06

Lower Lakes FSL = 0.75 m AHD

Lake Alexandrina average level for the past 5 days (m AHD)	0.79
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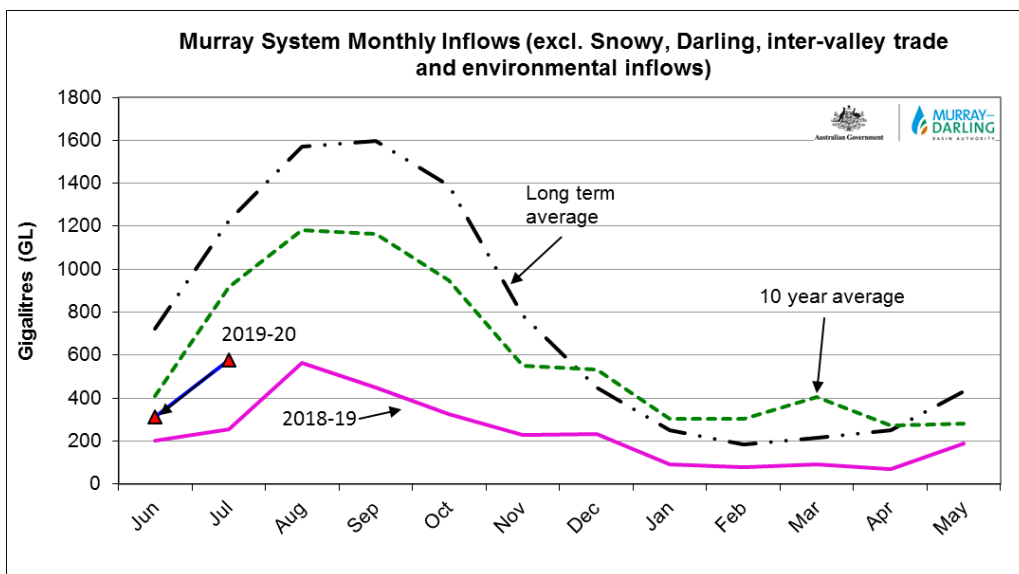
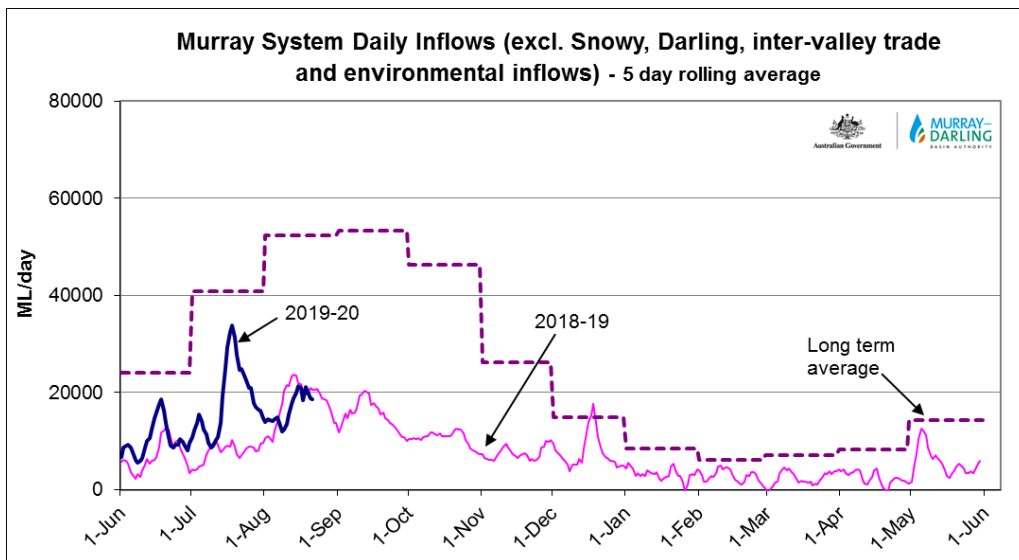
Barrages

Fishways at Barrages

	Openings	Level (m AHD)	No. Open	Rock Ramp	Vertical Slot 1	Vertical Slot 2	Dual Vertical Slots
Goolwa	128 openings	0.72	1	-	Open	Open	-
Mundoo	26 openings	0.72	1	-	-	-	Open
Hunters Creek	-	-	-	-	Open	-	-
Boundary Creek	6 openings	-	All closed	-	Open	-	-
Ewe Island	111 gates	-	All closed	-	-	-	Open
Tauwichee	322 gates	0.72	2	Open	Open	Open	-

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





State Allocations (as at 21 Aug 2019)

NSW - Murray Valley

High security	97%
General security	0%

Victorian - Murray Valley

High reliability	26%
Low reliability	0%

NSW - Murrumbidgee Valley

High security	95%
General security	3%

Victorian - Goulburn Valley

High reliability	32%
Low reliability	0%

NSW - Lower Darling

High security	30%
General security	0%

South Australia - Murray Valley

High security	68%
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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 : <http://www.environment.sa.gov.au/managing-natural-resources/river-murray>

