



River Murray Weekly Report

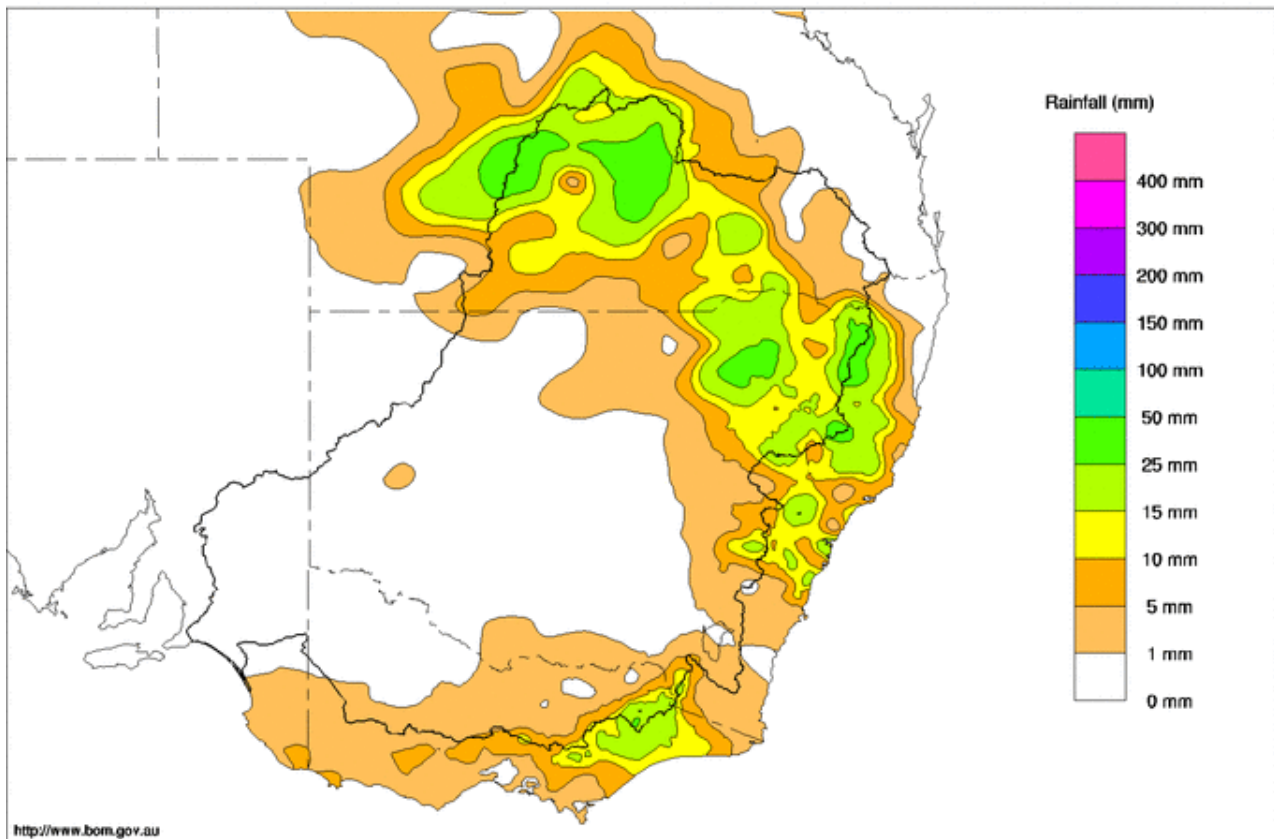
For the week ending Wednesday, 27 November 2019

Trim Ref: D19/52421

Rainfall and inflows

Welcome rainfall was recorded in the far north and north-east of the Murray-Darling Basin this week (Map 1). In Queensland, highest totals included 36 mm at Mungallala and 27 mm at Boothulla in the Warrego catchment and 33 mm at Havelock and 31 mm at Munnaweena in the Maranoa catchment. In New South Wales, 46 mm was recorded at Glen Innes airport in the northern tablelands and 34 mm at Narrabri airport in the northwest plains. In the southern Basin, the highest falls were limited to the southern ranges with little or no rainfall recorded elsewhere. The Bureau of Meteorology is currently forecasting around 25 to 50 mm of rainfall in the upper Murray catchment for the [coming 8 days](#).

Murray-Darling Rainfall Totals (mm) Week Ending 27th November 2019
Australian Bureau of Meteorology



Map 1: Rainfall totals for week ending 27 November 2019 (Source: Bureau of Meteorology)

The upper Murray tributaries mostly receded this week with only small responses to the rainfall late in the week. 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](#).

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River operations

- Delivery of environmental water to Millewa Forest to cease at end of November.
- IVT deliveries continue from the Goulburn and Murrumbidgee valleys.
- Lock 8 & Lock 7 weir pool levels to be lowered below full supply in December.

River operations

In the past week MDBA total active storage reduced by 64 GL to 3,440 GL (42% capacity). Murray System inflows (excl. Snowy, Darling, inter-valley trade and environmental tributary inflows) continue to track well below the long term average (see plot on last page of this report).

At **Dartmouth Reservoir**, the [storage](#) decreased by 18 GL to 2,085 GL (54% capacity). Over the last week the [release](#) from Dartmouth, measured at Colemans, gradually reduced to 2,200 ML/day. The release will increase again in early December with a pulse reaching around 4,700 ML/day. A transfer volume of around 100 GL is expected to be delivered during December. Releases will continue from Dartmouth at rates that aim to transfer water to Hume to support expected demands further downstream in the months ahead.

At **Hume Reservoir**, the [storage](#) decreased by 47 GL to 1,034 GL (34% capacity). The release from Hume Dam averaged around 11,000 ML/day.

At **Lake Mulwala**, the pool [level](#) is currently 124.77 m AHD and is expected to remain within the normal operating range of 124.6 to 124.9 m AHD over the coming week. Diversions to the Yarrawonga Main Channel averaged 520 ML/day this week with a proportion of this diversion being delivered to the lower Broken Creek to bypass water around the Barmah Choke. On the New South Wales side, the diversion to Mulwala Canal averaged 1,320 ML/day. The majority of this diversion is Murray operational water being transferred around the Barmah Choke via Edward Escape to the Edward River (800 ML/day), Finley Escape to the Billabong Creek (250 ML/day) and Perricoota Escape back into the Murray at Torrumbarry weir pool (100 ML/day). The release from **Yarrawonga Weir** eased to target 8,800 ML/day and is likely to remain around this flow rate over the coming weeks to meet expected downstream demands.

During November, a small number of regulators have remained open into Millewa Forest to maintain connectivity between the river and the flood plain to provide habitat for native fish, in particular Murray Cod during the breeding season. The water used in the forest while these regulators are open is being debited from environmental water accounts. These regulators are expected to be closed in the coming week. More information regarding delivering environmental water to the Barmah-Millewa forest during spring 2019 is available from the Commonwealth Environmental Water Office [website](#).

Flows through the **Edward** and **Gulpa** offtakes are around the maximum regulated flow rates. Further downstream on the Edward River, approximately 650 ML/day of return flow from the Millewa Forest has maintained the flow at Toonalook near 2,500 ML/day. In the coming week, as the regulators into the forest are closed, these return flows will cease. Around 800 ML/day is currently being delivered via Edward Escape to manage the flow downstream of Stevens Weir at around 2,500 ML/day. Next week, the release from Edward Escape will be ceased for around a week to reduce the water level downstream of Stevens Weir. This will allow WaterNSW to undertake maintenance works at Tummudgergy regulator.

Inflow from the **Goulburn River**, measured at McCoy's Bridge, increased to 1,260 ML/day. This flow is above the normal minimum rate during November of 350 ML/day due to the delivery of inter-valley trade (IVT) water. IVT is also being delivered in the Broken Creek and Campaspe River. In November, around 30 GL has been called from the Goulburn Valley as specified on the [GMW website](#). An additional 50 GL is being called to the end of December. If conditions remain dry, the call of IVT is anticipated to continue over summer, possibly at higher rates. The current Goulburn Valley IVT balance is near 253 GL. More information regarding opportunities for allocation trade between the Goulburn and Murray Valleys is available at the Victorian water register [website](#).

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The **Torrumbarry Weir pool** is currently at Full Supply Level (FSL), 86.05 m AHD. The **diversion** to National Channel from the Torrumbarry weir pool averaged around 1,470 ML/day. Downstream of Torrumbarry Weir, the release averaged 5,800 ML/day.

Inflow from the **Murrumbidgee River**, measured at **Balranald**, averaged 1,460 ML/day this week as delivery of IVT continued. **Deliveries of IVT from the Murrumbidgee** to the Murray commenced in mid-October and the MDBA has requested WaterNSW to deliver up to 60 GL from mid-October to the end of December 2019.

Trade from the Murrumbidgee to the Murray briefly opened last week as the IVT account balance reduced below 85 GL. Trade is currently closed with the **Murrumbidgee IVT balance** around 99 GL. The trade will remain closed until the account reduces again to below 85 GL. This can occur if enough water is traded from the Murray back to the Murrumbidgee, or if sufficient IVT is delivered from the Murrumbidgee to the Murray.

MDBA regularly reviews its operations planning to account for changes in catchment and climatic conditions as well as water availability. The increased water available to be delivered from the Murrumbidgee IVT account has been incorporated into this planning. Further information is available through WaterNSW and will also be provided as part of the update to the Annual Operating Outlook, scheduled to be published on the MDBA website in early December.

At **Euston**, the **weir pool level** is being gradually lowered to FSL by the end of November. Varying pool levels is part of the weir pool variability program which aims to help restore a more natural wetting and drying cycle to riverbanks and adjacent wetlands within the influence of the weir pool. Any additional loss associated with the weir pool variability program is debited from entitlements held by environmental water holders. The **downstream release** averaged 9,700 ML/day and is expected to remain around this rate over the coming week.



Photo 1: Orange glow during another dust storm at Mildura (photo courtesy of Peter Ebner, LMW).



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Photo 2: What a difference a day makes - relaxing on the River Murray at Mildura (photo courtesy of Tyson Milne, LMW).

The [Menindee Lakes storage](#) is approximately 10 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.



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As a result of the widespread drought conditions in NSW, extensive [water restrictions](#) remain in place. More information on drought management activities in NSW can be found on the NSW Government website - [Drought Hub](#). Links to other drought services and assistance can be also accessed via the MDBA [drought webpage](#).

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 averaged 7,000 ML/day and is expected to be around 6,400 ML/day over the coming week.

At **Locks 8 and 7**, the pool levels are being varied as part of the weir pool variability program. This week the pool levels continued to be gradually lowered to a target of FSL by the end of November. In December the pool levels will be further lowered to target a level of around 100 cm below FSL at Lock 8 and 60 cm below FSL at Lock 7. Lowering the weir pools below FSL is also expected to result in small water savings due to reduced seepage and evaporation as the area inundated by the weir pools reduce.

At **Lake Victoria**, the storage remained steady at 515 GL (76% capacity). Compared to recent years (Figure 1), this is a relatively low volume for this time of year. Without further significant rainfall, it is anticipated that the storage will remain around this volume until early December before falling away over summer as stored water is released to supplement flows required to meet demands. As occurred last year (green line in Figure 1), the storage is expected to fall away quickly over summer and reach relatively low levels by autumn 2020.

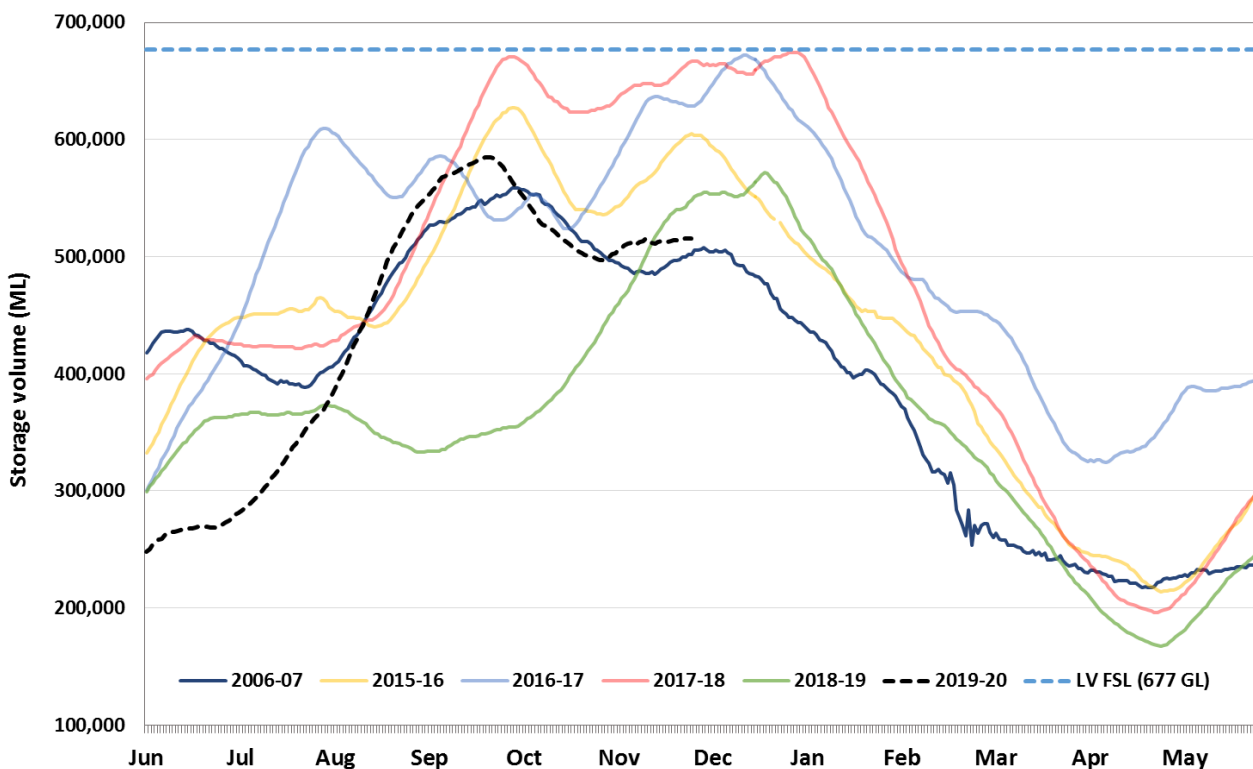


Figure 1: Lake Victoria storage volume to-date and in recent years

Due to low water resource availability in the River Murray System, South Australia is currently receiving a reduced monthly base Entitlement flow. For November, the reduced monthly Entitlement is 165 GL compared with the normal 180 GL. For more information on South Australia's Entitlement flow, see the South Australian Department for Environment and Water's latest [River Murray flow report](#).

This week, the [flow](#) to **South Australia** targeted around 5,500 ML/day, which is the delivery of a reduced monthly Entitlement with the addition of small volumes of environmental water and trade to South Australia. Flow rates are expected to increase in December to around 7,400 ML/day due to a higher monthly Entitlement flow and delivery of around 20 GL of environmental water on behalf of the Commonwealth Environmental Water Holder (CEWH).



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The **Lower Lakes** 5-day average water level reduced to 0.78 m AHD. Combined barrage releases totalled around 6 GL this week, predominantly via Goolwa and Tauwitchere barrages. These releases have been supported by the delivery of return flows of environmental water to the lower Murray from upstream watering actions during spring.

For media inquiries contact the Media Officer on 02 6279 0141

ANDREW REYNOLDS
Executive Director, River Management



Australian Government



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Water in Storage

Week ending Wednesday 27 Nov 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	453.87	2 085	54%	71	2 014	-18
Hume Reservoir	192.00	3 005	179.13	1 034	34%	23	1 011	-47
Lake Victoria	27.00	677	25.62	515	76%	100	415	+2
Menindee Lakes		1 731*		10	1%	(- -) #	0	-0
Total		9 269		3 644	39%	- -	3 440	-64
Total Active MDBA Storage							41% ^	

Major State Storages

Burrinjuck Reservoir	1 026	341	33%	3	338	-1
Blowering Reservoir	1 631	803	49%	24	779	-35
Eildon Reservoir	3 334	1 536	46%	100	1 436	-13

* 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 26 Nov 2019

Storage	Active Storage (GL)	Weekly Change (GL)	Diversions (GL)	This Week	From 1 May 2019
Lake Eucumbene - Total	1 016	+1	Snowy-Murray	+0	232
Snowy-Murray Component	596	+9	Tooma-Tumut	+2	174
Target Storage	1 450		Net Diversions	-2	58
			Murray 1 Release	+5	376

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)	1.6	92	Yarrowonga Main Channel (net)	3.5	53
Wakool Sys Allowance	1.7	17	Torrumbarry System + Nyah (net)	5.9	124
Western Murray Irrigation	0.8	7	Sunraysia Pumped Districts	3.9	33
Licensed Pumps	n/a	39	Licensed pumps - GMW (Nyah+u/s)	1	9
Lower Darling	0.0	0	Licensed pumps - LMW	4.6	123
TOTAL	4.1	155	TOTAL	18.9	342

* 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)

* South Australia is receiving a reduced base Entitlement this month due to low water availability. However, total flow to SA is greater than Entitlement due to environmental water delivery.

Entitlement this month	165.0 *	
Flow this week	38.8	(5 500 ML/day)
Flow so far this month	171.6	
Flow last month	422.0	

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

	Current	Average over the last week	Average since 1 August 2019
Swan Hill	100	80	70
Euston	80	80	80
Red Cliffs	40	50	60
Merbein	90	90	90
Burtundy (Darling)	-	-	-
Lock 9	90	90	90
Lake Victoria	120	120	110
Berri	150	140	140
Waikerie	200	190	220
Morgan	200	200	220
Mannum	210	210	280
Murray Bridge	230	230	310
Milang (Lake Alex.)	820	830	860
Poltalloch (Lake Alex.)	780	810	770
Meningie (Lake Alb.)	1 670	1 680	1 660
Goolwa Barrages	1 260	1 260	1 980



River Levels and Flows

Week ending Wednesday 27 Nov 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	-	-	-	580	F	1 000	1 550
Jingellic	4.0	1.14	207.66	1 180	F	1 890	2 300
Tallandoon (Mitta Mitta River)	4.2	2.06	218.95	2 530	F	3 090	2 960
Heywoods	5.5	2.71	156.34	9 800	F	11 130	10 320
Doctors Point	5.5	2.64	151.11	10 830	F	12 050	11 480
Albury	4.3	1.64	149.08	-	-	-	-
Corowa	4.6	2.55	128.57	11 440	F	11 480	10 850
Yarrowonga Weir (d/s)	6.4	1.48	116.52	8 660	F	8 980	9 010
Tocumwal	6.4	2.10	105.94	9 100	F	9 160	9 160
Torrumbarry Weir (d/s)	7.3	2.09	80.63	5 860	R	5 790	5 950
Swan Hill	4.5	1.28	64.20	6 500	S	6 550	6 610
Wakool Junction	8.8	-	-	9 340	S	9 360	-
Euston Weir (d/s)	9.1	1.72	43.56	9 640	R	9 730	9 810
Mildura Weir (d/s)	-	-	-	7 870	F	8 940	8 540
Wentworth Weir (d/s)	7.3	2.94	27.70	6 650	F	7 010	6 770
Rufus Junction	-	3.22	20.15	5 100	F	5 190	5 350
Blanchetown (Lock 1 d/s)	-	0.75	-	2 580	R	2 540	2 620
Tributaries							
Kiewa at Bandiana	2.8	1.19	154.42	730	R	710	1 020
Ovens at Wangaratta	11.9	7.91	145.59	430	F	540	900
Goulburn at McCoys Bridge	9.0	1.65	93.07	1 260	R	1 030	910
Edward at Stevens Weir (d/s)	5.5	2.34	82.11	2 530	S	2 560	2 520
Edward at Liewah	-	2.92	58.30	2 410	S	2 430	2 450
Wakool at Stoney Crossing	-	1.48	54.97	610	F	650	760
Murrumbidgee at Balranald	5.0	1.90	57.86	1 490	R	1 460	1 420
Barwon at Mungindi	6.1	2.12	-	0	F	0	0
Darling at Bourke	9.0	3.85	-	0	F	0	20
Darling at Burtundy Rocks	-	0.49	-	0	F	0	0

Natural Inflow to Hume	2 120	4 300
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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	-0.13	-	No. 7 Rufus River	22.10	+0.05	+0.90
No. 26 Torrumbarry	86.05	+0.00	-	No. 6 Murtho	19.25	-0.03	+0.03
No. 15 Euston	47.60	+0.26	-	No. 5 Renmark	16.30	+0.00	+0.12
No. 11 Mildura	34.40	+0.02	+0.24	No. 4 Bookpurnong	13.20	+0.01	+0.46
No. 10 Wentworth	30.80	+0.10	+0.30	No. 3 Overland Corner	9.80	-0.01	+0.13
No. 9 Kulnine	27.40	+0.03	+0.23	No. 2 Waikerie	6.10	+0.00	+0.10
No. 8 Wangumma	24.60	+0.23	+0.12	No. 1 Blanchetown	3.20	+0.03	+0.00

Lower Lakes FSL = 0.75 m AHD

Lake Alexandrina average level for the past 5 days (m AHD)	0.78
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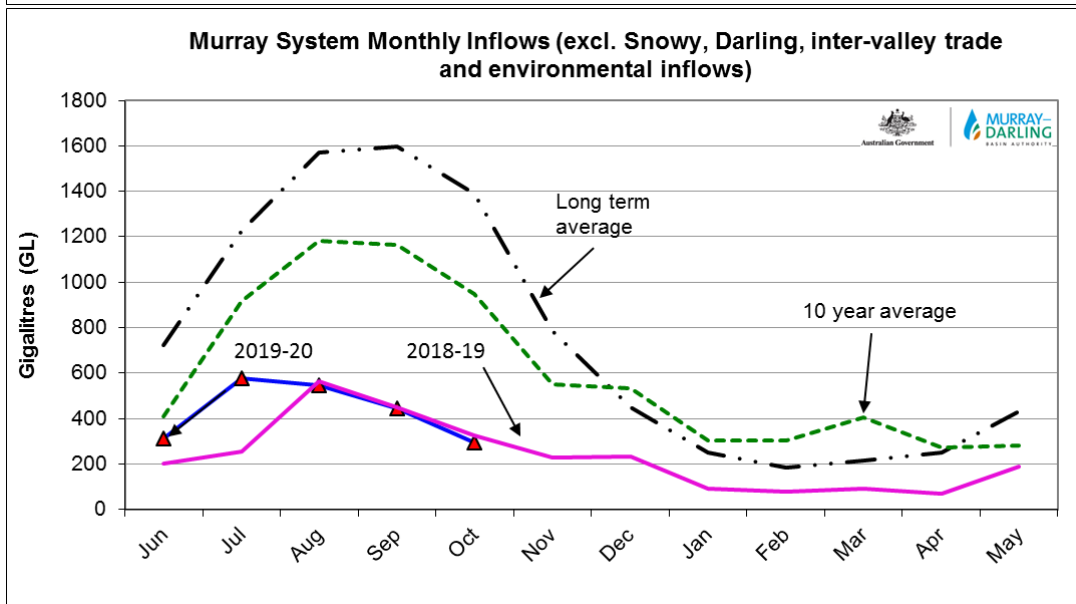
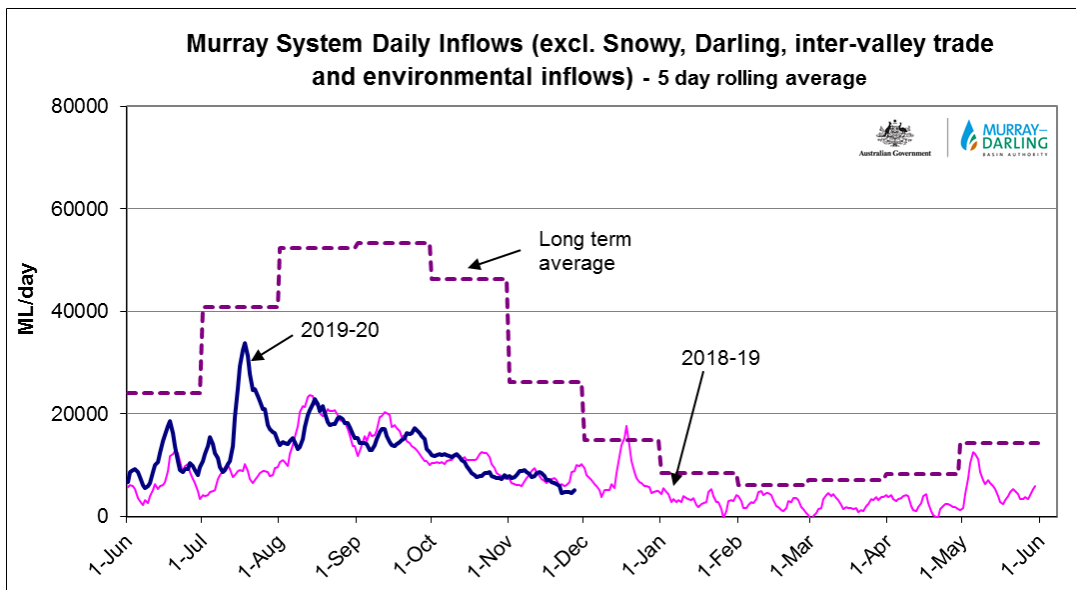
Barrages

Fishways at Barrages

	Openings	Level (m AHD)	No. Open	Rock Ramp	Vertical Slot 1	Vertical Slot 2	Dual Vertical Slots
Goolwa	128 openings	0.76	1	-	Open	Open	-
Mundoo	26 openings	0.75	All closed	-	-	-	Open
Hunters Creek	-	-	-	-	Open	-	-
Boundary Creek	6 openings	-	1	-	Open	-	-
Ewe Island	111 gates	-	All closed	-	-	-	Open
Tauwichee	322 gates	0.89	1	Open	Open	Open	-

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





State Allocations (as at 27 Nov 2019)

NSW - Murray Valley

High security	97%
General security	0%

Victorian - Murray Valley

High reliability	48%
Low reliability	0%

NSW - Murrumbidgee Valley

High security	95%
General security	6%

Victorian - Goulburn Valley

High reliability	61%
Low reliability	0%

NSW - Lower Darling

High security	30%
General security	0%

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

