



River Murray Weekly Report

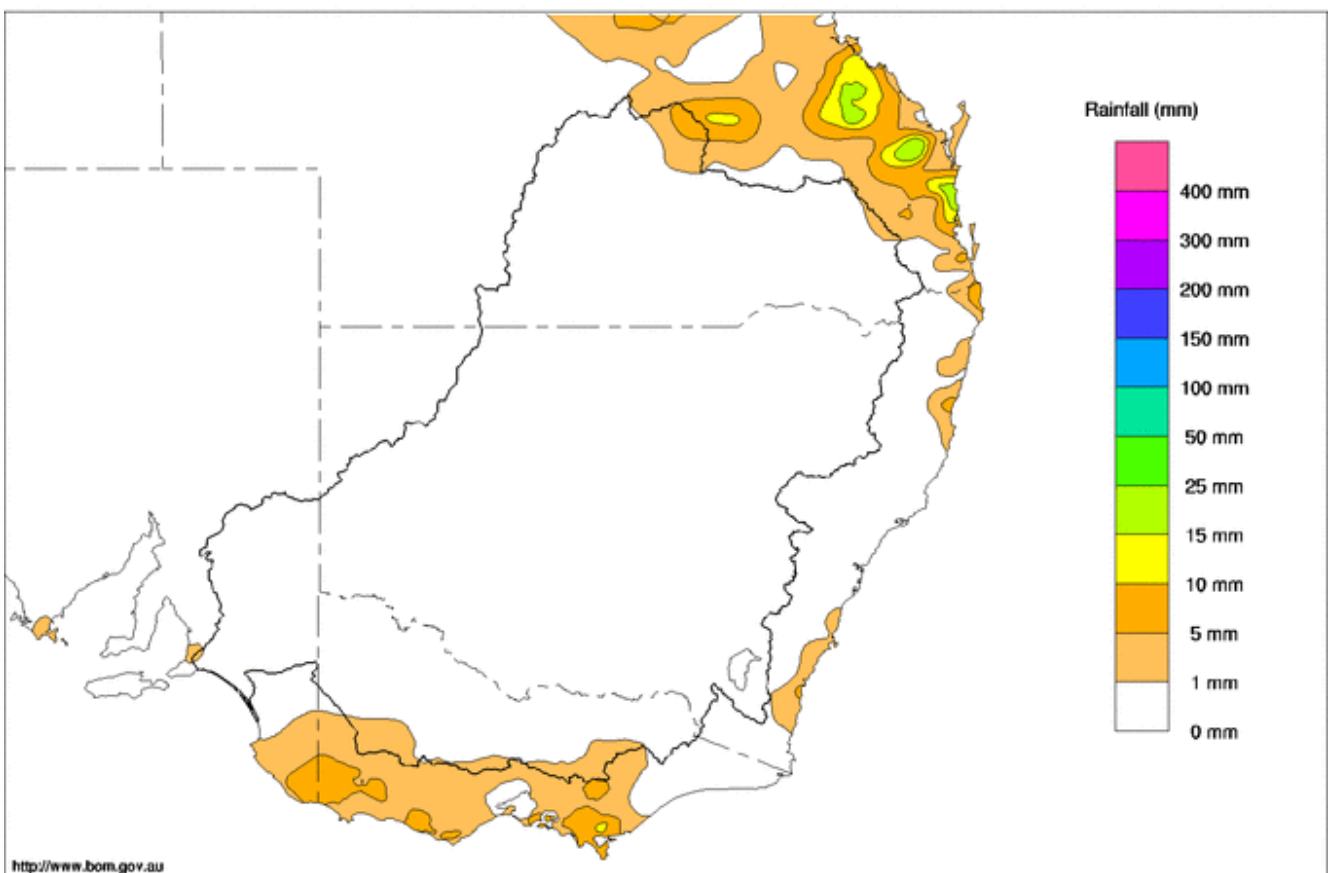
For the week ending Wednesday, 20 November 2019

Trim Ref: D19/51420

Rainfall and inflows

Negligible rainfall was recorded over the Murray-Darling Basin this week (Map 1). Only light rainfall is currently forecast along the River Murray for the [coming 8 days](#).

Murray-Darling Rainfall Totals (mm) Week Ending 20th November 2019
Australian Bureau of Meteorology



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Map 1: Rainfall totals for week ending 20 November 2019 (Source: Bureau of Meteorology)

As catchments remained dry this week, the upper Murray tributaries continued to recede slowly, with the exception of the Kiewa River which varied as small releases were made for hydro power generation. 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

- Catchments remain dry this week.
- IVT deliveries continue from the Goulburn and Murrumbidgee valleys.
- Euston, Lock 8 & Lock 7 weir pool levels to be gradually lowered toward Full Supply Level (FSL).

River operations

In the past week MDBA total active storage reduced by 54 GL to 3,503 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 12 GL to 2,103 GL (55% capacity). Over the last week the [release](#) from Dartmouth, measured at Colemans, has increased from 2,000 ML/day to the current release of approximately 3,600 ML/day. The release will gradually reduce again over the remainder of November. A transfer volume of around 80 GL is expected to be delivered during November. Releases will continue from Dartmouth at rates that aim to transfer water to Hume to support expected demands further downstream in the months ahead.



Photo 1: Outlet at Mount Beauty pondage with Mount Bogong in the background (photo courtesy of Hugo Bowman, MDBA).

At **Hume Reservoir**, the [storage](#) decreased by 42 GL to 1,081 GL (36% capacity). The release from Hume Dam is currently targeting 10,000 ML/day and may gradually increase in the coming days due to hot weather and low tributary inflows.

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At **Lake Mulwala**, the pool [level](#) is currently 124.72 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 615 ML/day this week, a proportion of this diversion is being released into the lower Broken Creek to bypass water around the Barmah Choke. On the New South Wales side, water continues to be transferred around the Barmah Choke via Murray Irrigation Limited's (MIL) irrigation channel network. Diversion to Mulwala Canal averaged 1,320 ML/day with approximately 1,050 ML/day released back into the Billabong Creek (250 ML/day through Finley Escape), Edward River (750 ML/day through Edward Escape) and back into the Murray downstream of the Barmah Choke (100 ML/day through Pericoota Escape). The release from **Yarrawonga Weir** continues to target 9,000 ML/day and is likely to remain around this flow rate over the coming weeks to meet expected downstream demands.

A small number of regulators remain open into Millewa Forest to maintain connectivity between the river and the flood plain. This is to provide habitat for native fish, in particular Murray Cod during the breeding season, and to continue the transfer of valuable nutrients from the lower floodplain to the river. These nutrients are the base of a food web that supports the entire river ecosystem including algae, aquatic plants, macroinvertebrates, turtles, fish, platypus and birds. The water used in the forest while these regulators are open is being debited from environmental water accounts. The regulators into Millewa Forest are expected to be closed in the coming weeks. More information regarding delivering environmental water to the Barmah-Millewa forest during spring 2019 is available from the Commonwealth Environmental Water Office [website](#).



Photo 2: Fainter Creek, (Falls Creek) Victorian Alpine region (photo courtesy of Hugo Bowman, MDBA).



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Flows through the **Edward** and **Gulpa** offtakes are around the maximum regulated flow rates and are expected to continue at these rates over the coming weeks. Further downstream on the Edward River, approximately 670 ML/day of return flow from the Millewa Forest has maintained the flow at Toonalook near 2,500 ML/day. In the coming weeks, as the regulators into the forest are closed, these return flows will subside. The flow downstream of Stevens Weir is currently targeting around 2,500 ML/day.

Inflow from the **Goulburn River**, measured at McCoy's Bridge, averaged around 900 ML/day and is expected to gradually increase toward 1,300 ML/day in the coming week. 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](#). As 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 248 GL. More information regarding opportunities for allocation trade between the Goulburn and Murray Valleys is available at the Victorian water register [website](#).

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 1,460 ML/day this week. Downstream of Torrumbarry Weir, the release eased to approximately 5,900 ML/day.

Inflow from the **Murrumbidgee River**, measured at [Balranald](#), averaged near 1,400 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 this week as the IVT account balance reduced below 85 GL. Trade has since closed with the resulting [Murrumbidgee IVT balance](#) currently around 98.8 GL. The trade will remain closed until the account reduces again to below 85 GL. This can occur if 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 around the end of November.

At **Euston**, the [weir pool level](#) is currently 49 cm above FSL but being lowered. The weir pool is expected to return 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](#) is near 9,800 ML/day and is expected to generally decrease in the coming weeks, although downstream flow may increase at times as additional water is released to lower the weir pool.

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.

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](#). 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 is currently near 6,800 ML/day and is expected to remain steady 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 Lock 8 pool continued to be gradually decreased from 85 cm above FSL to a target of FSL by end November. Similarly, the Lock 7 weir pool continued to reduce from 60 cm above FSL to a target of FSL by the end of the month. Whilst the



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pool levels are surcharged above FSL, regulators have been opened to allow water to flow through the upper reaches of Potterwalkagee Creek (around Lock 8) and Lindsay River (around Lock 7) and reconnect with the River Murray for the benefit of native fish. Any additional loss associated with the weir pool variability program is being debited from entitlements held by environmental water holders.

Over summer and autumn, Lock 8 & 7 weir pools are planned to be lowered below FSL as part of the weir pool variability program. At Lock 8 the pool level is planned to be lowered to 100 cm below FSL, and at Lock 7 to 60 cm below FSL.

At **Lake Victoria**, the storage remained steady at 513 GL (76% capacity).

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** continued to target 5,900 ML/day, which is the delivery of a reduced monthly Entitlement with the addition of small volumes of environmental water. Similar flow rates are expected for the remainder of November.

The **Lower Lakes** 5-day average water level is 0.82 m AHD. Combined barrage releases totalled around 8 GL this week via Goolwa, Mundoo, Boundary Creek, Ewe Island and Tauwitchere barrages. These releases have been supported by the delivery of return flows of environmental water to the lower Murray from upstream actions during spring. Environmental water released from Hume Reservoir has provided flows along the River Murray boosted by inflows from the Goulburn River. These actions have resulted in a flow pulse that has provided environmental cues and connection to support the movement of several migratory fish species during its arrival at the Lower Lakes and Coorong in recent weeks. Species benefiting include the short-headed lamprey which travels large distances from the Southern Ocean to spawning grounds in upstream reaches of the River Murray. The spring flow pulse is also providing food and improved water conditions for other native fish and aquatic animals along the length of the Murray and improving salinity conditions in the lower system.

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 20 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	454.27	2 103	55%	71	2 032	-12
Hume Reservoir	192.00	3 005	179.55	1 081	36%	23	1 058	-42
Lake Victoria	27.00	677	25.60	513	76%	100	413	+0
Menindee Lakes		1 731*		10	1%	(- -) #	0	-0
Total		9 269		3 707	40%	- -	3 503	-54
Total Active MDBA Storage							42% ^	

Major State Storages

Burrinjuck Reservoir	1 026	342	33%	3	339	-2
Blowering Reservoir	1 631	838	51%	24	814	-45
Eildon Reservoir	3 334	1 549	46%	100	1 449	+2

* 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 19 Nov 2019

Storage	Active Storage (GL)	Weekly Change (GL)	Diversions (GL)	This Week	From 1 May 2019
Lake Eucumbene - Total	1 015	n/a	Snowy-Murray	+0	232
Snowy-Murray Component	587	n/a	Tooma-Tumut	+4	171
Target Storage	1 450		Net Diversions	-4	60
			Murray 1 Release	+5	372

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	90	Yarrowonga Main Channel (net)	4.3	50
Wakool Sys Allowance	1.1	16	Torrumbarry System + Nyah (net)	6.9	118
Western Murray Irrigation	0.7	6	Sunraysia Pumped Districts	3.7	29
Licensed Pumps	3.2	38	Licensed pumps - GMW (Nyah+u/s)	1	6
Lower Darling	0.0	0	Licensed pumps - LMW	4.6	106
TOTAL	6.6	150	TOTAL	20.5	309

* 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	41.2	(5 900 ML/day)
Flow so far this month	132.8	
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	70	70	70
Euston	-	-	-
Red Cliffs	50	70	60
Merbein	90	90	90
Burtundy (Darling)	-	-	1 220
Lock 9	90	90	90
Lake Victoria	130	120	110
Berri	130	130	140
Waikerie	180	180	220
Morgan	180	180	220
Mannum	200	200	280
Murray Bridge	220	240	320
Milang (Lake Alex.)	110	720	870
Poltalloch (Lake Alex.)	830	820	770
Meningie (Lake Alb.)	1 720	1 670	1 660
Goolwa Barrages	1 270	1 320	2 030



River Levels and Flows

Week ending Wednesday 20 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	-	-	-	2 490	F	1 410	1 110
Jingellic	4.0	1.51	208.03	3 150	R	2 300	2 330
Tallandoon (Mitta Mitta River)	4.2	2.36	219.25	3 920	S	2 960	2 600
Heywoods	5.5	2.71	156.34	9 480	S	10 320	8 880
Doctors Point	5.5	2.67	151.14	11 150	R	11 480	10 280
Albury	4.3	1.66	149.10	-	-	-	-
Corowa	4.6	2.42	128.44	10 620	F	10 850	10 060
Yarrowonga Weir (d/s)	6.4	1.54	116.58	9 050	R	9 010	9 020
Tocumwal	6.4	2.10	105.94	9 120	S	9 160	9 190
Torrumbarry Weir (d/s)	7.3	2.09	80.64	5 870	F	5 950	6 310
Swan Hill	4.5	1.29	64.21	6 570	S	6 610	6 810
Wakool Junction	8.8	-	-	9 690	F	9 690	-
Euston Weir (d/s)	9.1	1.74	43.58	9 780	F	9 810	9 670
Mildura Weir (d/s)	-	-	-	9 020	F	8 660	9 530
Wentworth Weir (d/s)	7.3	2.97	27.73	6 800	R	6 770	7 760
Rufus Junction	-	3.22	20.15	5 060	F	5 350	5 140
Blanchetown (Lock 1 d/s)	-	0.77	-	2 530	R	2 620	4 090
Tributaries							
Kiewa at Bandiana	2.8	1.36	154.59	970	F	1 020	1 280
Ovens at Wangaratta	11.9	8.06	145.74	730	F	900	1 190
Goulburn at McCoys Bridge	9.0	1.44	92.86	900	S	910	940
Edward at Stevens Weir (d/s)	5.5	2.36	82.13	2 570	S	2 520	2 510
Edward at Liewah	-	2.96	58.34	2 460	S	2 450	2 270
Wakool at Stoney Crossing	-	1.52	55.01	700	F	760	1 030
Murrumbidgee at Balranald	5.0	1.82	57.78	1 400	F	1 420	1 360
Barwon at Mungindi	6.1	2.12	-	0	F	0	0
Darling at Bourke	9.0	3.93	-	0	F	20	630
Darling at Burtundy Rocks	-	0.50	-	0	F	0	0

Natural Inflow to Hume	4 100	4 840
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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	+0.21	+0.91
No. 26 Torrumbarry	86.05	-0.00	-	No. 6 Murtho	19.25	+0.01	+0.07
No. 15 Euston	47.60	+0.49	-	No. 5 Renmark	16.30	+0.03	+0.15
No. 11 Mildura	34.40	+0.03	+0.26	No. 4 Bookpurnong	13.20	+0.04	+0.51
No. 10 Wentworth	30.80	+0.11	+0.33	No. 3 Overland Corner	9.80	+0.02	+0.16
No. 9 Kulnine	27.40	+0.05	+0.50	No. 2 Waikerie	6.10	+0.03	+0.09
No. 8 Wangumma	24.60	+0.51	+0.29	No. 1 Blanchetown	3.20	+0.02	+0.02

Lower Lakes FSL = 0.75 m AHD

Lake Alexandrina average level for the past 5 days (m AHD)	0.82
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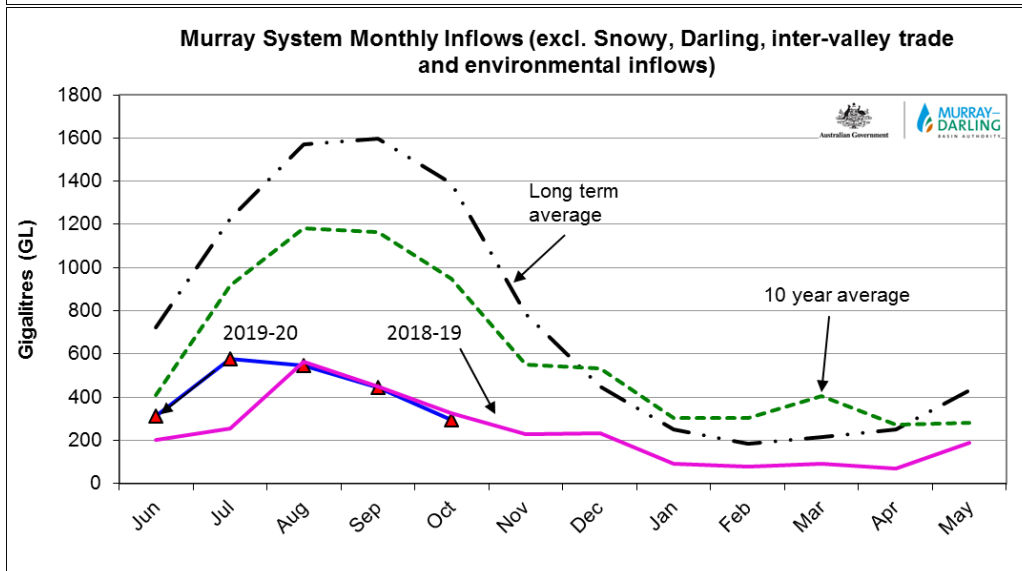
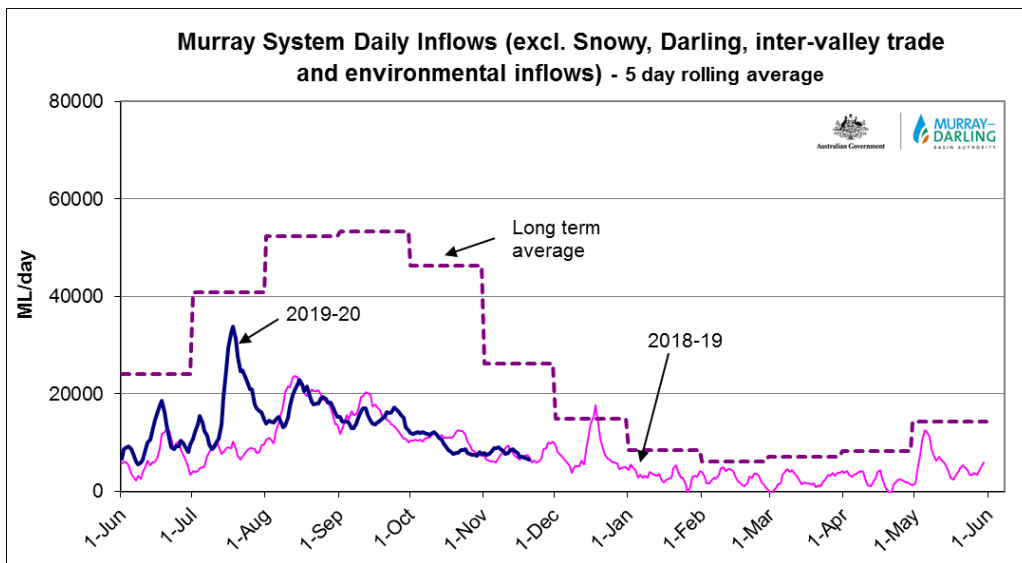
Barrages

Fishways at Barrages

	Openings	Level (m AHD)	No. Open	Rock Ramp	Vertical Slot 1	Vertical Slot 2	Dual Vertical Slots
Goolwa	128 openings	0.88	All closed	-	Open	Open	-
Mundoo	26 openings	0.89	All closed	-	-	-	Open
Hunters Creek	-	-	-	-	Open	-	-
Boundary Creek	6 openings	-	1	-	Open	-	-
Ewe Island	111 gates	-	All closed	-	-	-	Open
Tauwichee	322 gates	1.03	1	Open	Open	Open	-

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





State Allocations (as at 20 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>

