



RIVER MURRAY WEEKLY REPORT

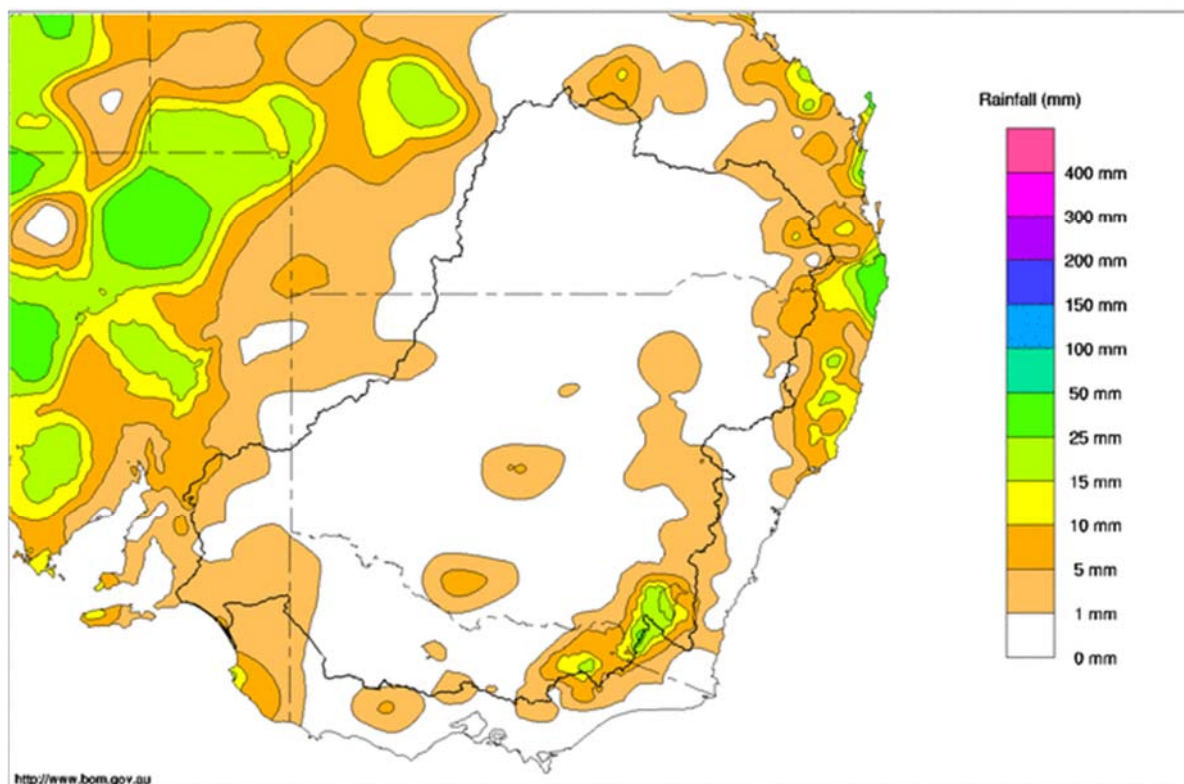
FOR THE WEEK ENDING WEDNESDAY, 15 NOVEMBER 2017

Trim Ref: D17/47818

Rainfall and inflows

Conditions across the Murray-Darling Basin were mostly dry (Map 1) apart from late in the week when an easterly onshore airflow produced light to moderate falls along the eastern Australian coast. Highest totals from this event were in the NSW southern tablelands with Goulburn airport AWS receiving 51mm and 37 mm at Mount Ginini AWS. In Victoria the highest totals included 28 mm at Mongans Bridge and 23 mm at Biggara in the northeast.

Murray-Darling Rainfall Totals (mm) Week Ending 15th November 2017
Australian Bureau of Meteorology



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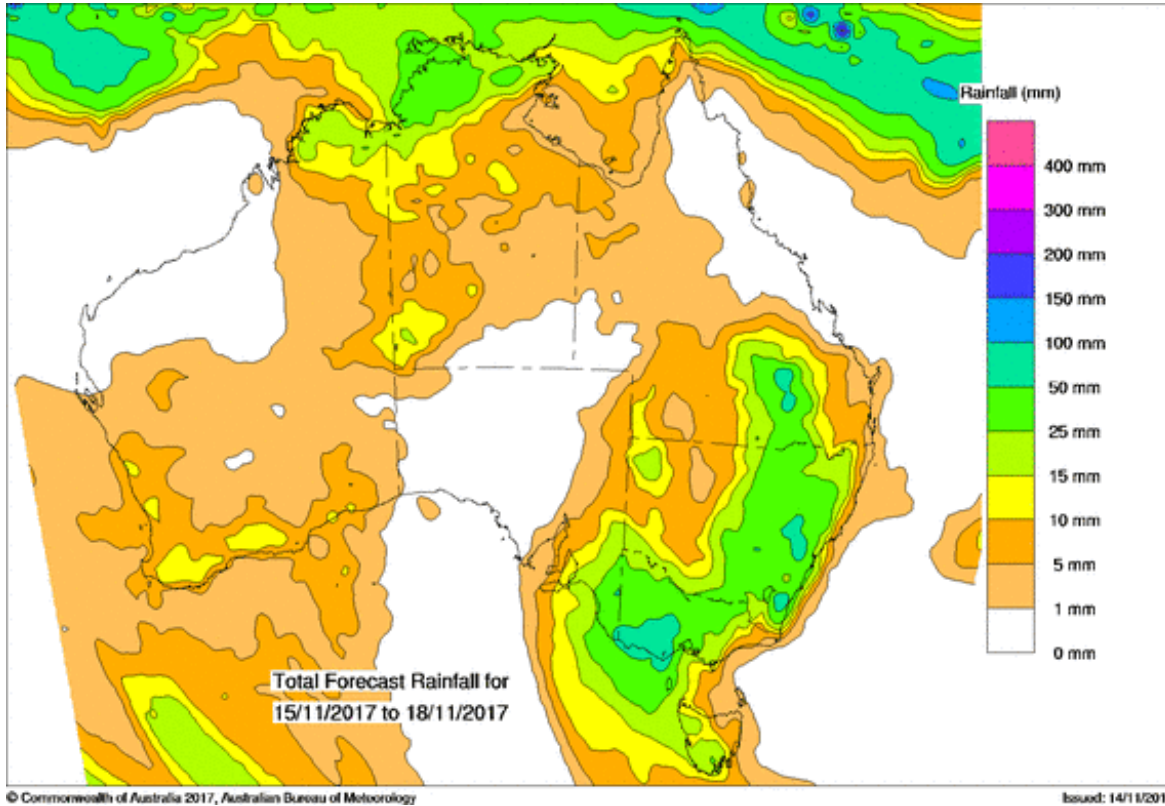
Map 1 - Murray-Darling Basin rainfall map week ending 15 November 2017 (Source: Bureau of Meteorology).

Rainfall over the upper Murray provided only minor streamflow responses this week. On the upper Murray at Biggara the flow increased from 700 ML/day to 1,000 ML/day before receding. On the Mitta Mitta River, the flow at Hinnomunjie increased to 1,200 ML/day before receding back to 700 ML/day. Downstream of Hume, the flow in the Kiewa River at Bandiana averaged around 1,500 ML/day while the Ovens River at Wangaratta has receded back to around 1,100 ML/day.

Bureau of Meteorology (BoM) are forecasting widespread rainfall along the River Murray in the coming days (Map 2). This is likely to have a significant impact on demands and system losses in the coming week. BoM have also issued their [climate outlook for summer](#). This suggests drier than average conditions are more likely over summer in the northern basin and there is no strong signal for wetter or



drier conditions in the southern basin. Summer daytime and overnight temperatures are more likely to be warmer than average for much of the basin.



Map 2 – Total forecast rainfall for 15 to 18 November 2017 (Source: Bureau of Meteorology).

River operations

- Forecast rainfall reduces demand at major irrigation offtakes
- Goulburn environmental flow pulse to reach the Murray in the coming week
- Pool level at Lock 15 gradually reducing toward full supply level

MDBA active storage fell by 103 GL this week to 6,259 GL (71% active storage).

The storage volume at **Dartmouth Reservoir** increased by 6 GL to 3,362 GL (87% capacity). The release from Dartmouth Reservoir, measured at Coleman's, remained at the minimum rate of 200 ML/day.

At **Hume Reservoir**, the storage volume decreased by 98 GL to 2,387 GL (79% capacity). The release from Hume Dam reached 19,100 ML/day earlier in the week before reducing to 13,500 ML/day by the end of the week in anticipation of reduced demand in response to the rain forecast in coming days.

Irrigation diversions to Mulwala Canal and Yarrawonga Main Channel increased earlier in the week in response to very warm and dry conditions, before easing in anticipation of the forecast rain. At Mulwala Canal diversions reached 3,100 ML/day and are currently 2,550 ML/day. At Yarrawonga Main Channel diversions reached 2,100 ML/day and are currently 1,150 ML/day. Further reductions are likely in the coming days if conditions are wet. The level of Lake Mulwala remained at around 124.65 m AHD until the weekend, before slowly rising to the current level of 124.75 AHD.

The release from **Yarrawonga Weir** is currently targeting 14,800 ML/day and remains above the downstream channel capacity (roughly 10,000 ML/day), with the higher releases from Yarrawonga Weir expected to continue until early December. These higher flows are currently being delivered on



behalf of environmental water holders, to benefit the Barmah-Millewa forest and the riverine environment downstream along the River Murray to the sea.

The flow through the Edward River and Gulpa Creek offtakes is currently targeting 1,350 ML/day and 500 ML/day respectively. These flows are combining with return flows from the Millewa forest to give a flow on the **Edward River** at Toonalook of around 4,000 ML/day. Diversions at Wakool Main Canal increased this week, averaging around 760 ML/day, but are expected to reduce in the coming days. Further downstream, the release from **Stevens Weir** has averaged 2,650 ML/day.

On the **Goulburn River** the flow, measured at McCoys Bridge, eased to 550 ML/day. A flow pulse in the Goulburn River commenced from Goulburn Weir on Wednesday this week. This has been coordinated by Goulburn-Broken CMA, environmental water holders and Goulburn-Murray Water to [trigger native fish spawning](#) in the lower Goulburn River. Goulburn-Murray Water expects the peak of the pulse will reach 5,500 ML/day downstream of Goulburn Weir. In response to this flow pulse from the Goulburn River, river levels on the Murray in the Echuca district and downstream are expected to vary from next week and during the remainder of November.

National Channel diversions from the Torrumbarry weir pool averaged around 2,300 ML/day, but are expected to reduce in the coming days. The release from **Torrumbarry Weir** was steady, averaging around 8,000 ML/day. The lock at Torrumbarry Weir will be temporarily closed from 8 November until the end of April next year for maintenance works. More information can be found on the [Goulburn-Murray Water website](#).

This week the flow in the **Murrumbidgee River** at Balranald increased from 1,100 ML/day to 3,200 ML/day. The increase is due to rainfall over the Murrumbidgee irrigation area earlier in the month which reduced irrigation diversions. The flow at Balranald is expected to recede toward the end of system target (568 ML/day in November) over the coming week.

At **Euston**, the weir pool level is 25 cm above Full Supply Level (FSL) and is gradually being lowered towards FSL by the end of the month. The downstream release averaged around 10,300 ML/day this week.

Downstream of Euston at Hattah Lakes, water is being returned from the lakes via the Messengers and Oateys regulators to Chalka Creek (south and north respectively) to provide connectivity between the lakes and the River Murray (photo 1). Flows from Messengers and Oateys regulators are around 750 and 400 ML/day respectively.



Photo 1: Water returning to the River Murray (at right) from Hattah Lakes via Chalka Creek south (Photo courtesy: Mallee CMA)



At **Menindee Lakes**, the storage volume reduced by 9 GL this week to 539 GL (31% capacity). Last weekend the flow at Weir 32 was lowered from 1,000 ML/day to 700 ML/day. This reduction in flows has been made possible as a result of agreement between the States and the Commonwealth Environmental Water Holder and aims to [improve Murray Cod outcomes](#) in the Lower Darling without adverse impact on water availability in the Murray system.

The weir pool level at **Lock 8** is targeting around 30cm above FSL. The pool will remain around this level during the remainder of November in order to maintain a flow in the upper Potterwalkagee Creek system. This reach of the creek only flows under high River Murray flows or when the weir pool at lock 8 is raised more than 20 cm above the full supply level. At **Lock 7**, a pool level of around 50 cm above FSL is being targeted. This is to maintain a higher flow in the upper Lindsay Creek system for the benefit of native fish. The flow rates are also sufficient to allow water to be pumped into Lake Wallawalla at around 90 ML/day.

At **Lake Victoria**, the storage volume is close to full at 645 GL (95% capacity) (photo 2). The storage volume is expected to remain high during November before falling away over summer as water is released to help meet demand in South Australia.



Photo 2: Lake Victoria storage close to the full supply volume (Photo courtesy: Andrew Bishop, MDBA)

The flow into **South Australia** is 10,500 ML/day. These higher flows will persist for the next few weeks as a significant volume of water released from Hume and Eildon reservoirs on behalf of environmental water holders is delivered to South Australia.

Downstream at Lock 5 the flow is currently around 9,300 ML/day.

In recent years there have been significant expansion of permanent plantings such as almonds (photo 3) in the Sunraysia region and in South Australia's Riverland in areas like Paringa near Lock 5 and Loxton near Lock 4. The MDBA continually assesses the impact of these new crops in changing water demand patterns, both in terms of volume and seasonal timing and explores options to efficiently accommodate these changes in river operations.



Photo 3: Young almond trees near Paringa (Lock 5). Note the vegetated buffer providing protection from strong winds as the trees mature (Photo courtesy: Andrew Bishop, MDBA)

At the **Lower Lakes**, the 5-day average water level in Lake Alexandrina is 0.76 m AHD. Releases through the barrages have averaged around 1,500 ML/day and are being prioritised via Goolwa and Tauwichee (photo 4) in an effort to maintain suitable conditions for black bream spawning. All fishways at the barrages remain open.



Photo 4: Release via Tauwitchere to the Coorong (Photo courtesy: Andrew Bishop, MDBA)

For media inquiries contact the Media Officer on 02 6279 0141

ANDREW REYNOLDS
Executive Director, River Management



Water in Storage

Week ending Wednesday 15 Nov 2017

MDBA Storages	Full Supply Level	Full Supply Volume (GL)	Current Storage Level	Current Storage		Dead Storage (GL)	Active Storage (GL)	Change in Total Storage for the Week (GL)
	(m AHD)		(m AHD)	(GL)	%			
Dartmouth Reservoir	486.00	3 856	478.16	3 362	87%	71	3 291	+6
Hume Reservoir	192.00	3 005	188.71	2 387	79%	23	2 364	-98
Lake Victoria	27.00	677	26.74	645	95%	100	545	-2
Menindee Lakes		1 731*		539	31%	(480 #)	59	-9
Total		9 269		6 933	75%	--	6 259	-103
Total Active MDBA Storage							73% ^	

Major State Storages

Burrinjuck Reservoir	1 026	627	61%	3	624	+5
Blowering Reservoir	1 631	982	60%	24	958	-42
Eildon Reservoir	3 334	2 424	73%	100	2 324	-14

* 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 14 Nov 2017

Storage	Active Storage (GL)	Weekly Change (GL)	Diversion (GL)	This Week	From 1 May 2017
Lake Eucumbene - Total	1 697	+8	Snowy-Murray	+0	508
Snowy-Murray Component	746	+9	Tooma-Tumut	+3	152
Target Storage	1 450		Net Diversion	-3	356
			Murray 1 Release	+8	693

Major Diversions from Murray and Lower Darling (GL) *

New South Wales	This Week	From 1 July 2017	Victoria	This Week	From 1 July 2017
Murray Irrig. Ltd (Net)	23.9	312	Yarrowonga Main Channel (net)	9.5	104
Wakool Sys Allowance	0.0	16	Torrumbarry System + Nyah (net)	13.1	179
Western Murray Irrigation	0.9	6	Sunraysia Pumped Districts	4.6	30
Licensed Pumps	5.0	73	Licensed pumps - GMW (Nyah+u/s)	1	13
Lower Darling	0.3	24	Licensed pumps - LMW	4.6	91
TOTAL	30.1	431	TOTAL	32.8	417

* 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	180.0 *	
Flow this week	72.2	(10 300 ML/day)
Flow so far this month	131.7	
Flow last month	235.1	

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

	Current	Average over the last week	Average since 1 August 2017
Swan Hill	80	80	110
Euston	80	90	-
Red Cliffs	130	120	170
Merbein	130	130	160
Burtundy (Darling)	820	840	740
Lock 9	180	180	180
Lake Victoria	200	200	230
Berri	280	300	300
Waikerie	350	340	370
Morgan	340	350	390
Mannum	430	430	430
Murray Bridge	450	450	480
Milang (Lake Alex.)	700	690	610
Poltalloch (Lake Alex.)	540	610	590
Meningie (Lake Alb.)	1 560	1 560	1 530
Goolwa Barrages	940	970	1 360



River Levels and Flows

Week ending Wednesday 15 Nov 2017

	Minor Flood Stage	Gauge Height		Flow	Trend	Average Flow this Week	Average Flow last Week
		local (m)	(m AHD)				
River Murray	(m)			(ML/day)		(ML/day)	(ML/day)
Khancoban	-	-	-	3 460	F	1 680	1 460
Jingellic	4.0	1.73	208.25	4 690	R	3 210	3 660
Tallandoon (Mitta Mitta River)	4.2	1.52	218.41	830	F	850	980
Heywoods	5.5	3.02	156.65	15 500	F	17 500	12 890
Doctors Point	5.5	3.15	151.62	16 460	R	18 310	14 720
Albury	4.3	2.16	149.60	-	-	-	-
Corowa	4.6	3.56	129.58	18 430	F	18 690	14 390
Yarrawonga Weir (d/s)	6.4	2.32	117.36	14 950	R	14 540	14 900
Tocumwal	6.4	2.95	106.79	14 690	R	14 390	14 810
Torrumbarry Weir (d/s)	7.3	2.62	81.17	7 800	F	7 990	8 020
Swan Hill	4.5	1.53	64.45	8 170	S	8 180	8 080
Wakool Junction	8.8	3.77	52.89	11 780	R	11 170	10 720
Euston Weir (d/s)	9.1	2.14	43.98	10 810	R	10 300	11 110
Mildura Weir (d/s)	-	-	-	10 760	F	10 810	10 690
Wentworth Weir (d/s)	7.3	3.13	27.89	10 800	F	11 440	11 420
Rufus Junction	-	3.95	20.88	9 470	R	9 330	6 680
Blanchetown (Lock 1 d/s)	-	0.89	-	7 410	R	7 160	4 680
Tributaries							
Kiewa at Bandiana	2.8	1.71	154.94	1 510	R	1 520	2 160
Ovens at Wangaratta	11.9	8.25	145.93	1 150	R	1 300	2 060
Goulburn at McCoys Bridge	9.0	1.24	92.66	550	S	580	700
Edward at Stevens Weir (d/s)	5.5	2.40	82.17	2 640	S	2 640	2 730
Edward at Liewah	-	3.00	58.38	2 530	F	2 570	2 580
Wakool at Stoney Crossing	-	1.71	55.21	1 240	F	1 160	880
Murrumbidgee at Balranald	5.0	3.11	59.07	3 100	F	2 500	1 970
Barwon at Mungindi	6.1	3.18	-	80	F	120	170
Darling at Bourke	9.0	4.10	-	370	S	330	110
Darling at Burtundy Rocks	-	0.90	-	630	F	730	850

Natural Inflow to Hume	5 790	6 850
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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
Yarrawonga	124.90	-0.15	-	No. 7 Rufus River	22.10	+0.49	+1.63
No. 26 Torrumbarry	86.05	+0.00	-	No. 6 Murtho	19.25	+0.02	+0.26
No. 15 Euston	47.60	+0.25	-	No. 5 Renmark	16.30	-0.01	+0.35
No. 11 Mildura	34.40	-0.02	+0.29	No. 4 Bookpurnong	13.20	+0.06	+1.04
No. 10 Wentworth	30.80	-0.02	+0.49	No. 3 Overland Corner	9.80	+0.02	+0.37
No. 9 Kulnine	27.40	-0.01	+0.39	No. 2 Waikerie	6.10	+0.01	+0.24
No. 8 Wangumma	24.60	+0.29	+0.65	No. 1 Blanchetown	3.20	-0.10	+0.14

Lower Lakes FSL = 0.75 m AHD

Lake Alexandrina average level for the past 5 days (m AHD)	0.76
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Barrages

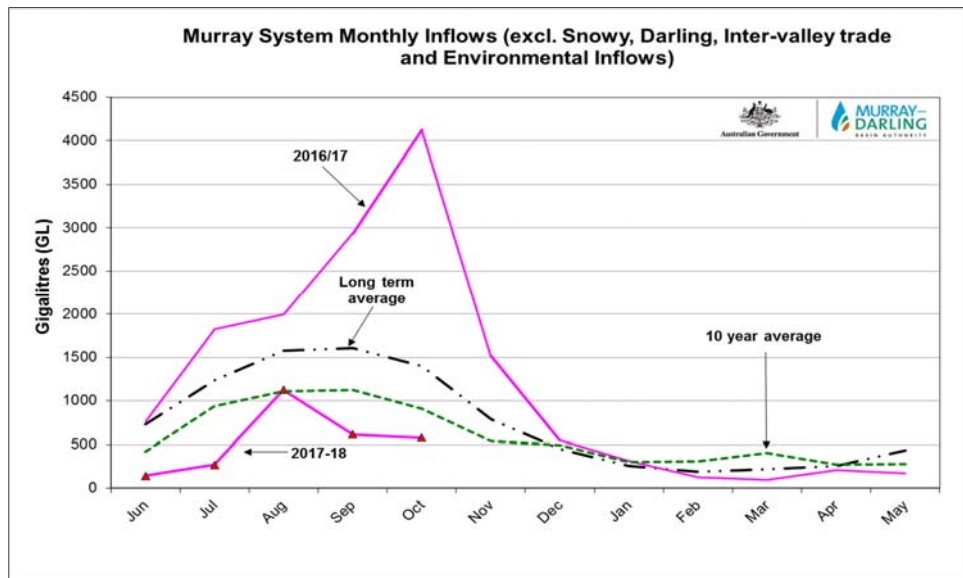
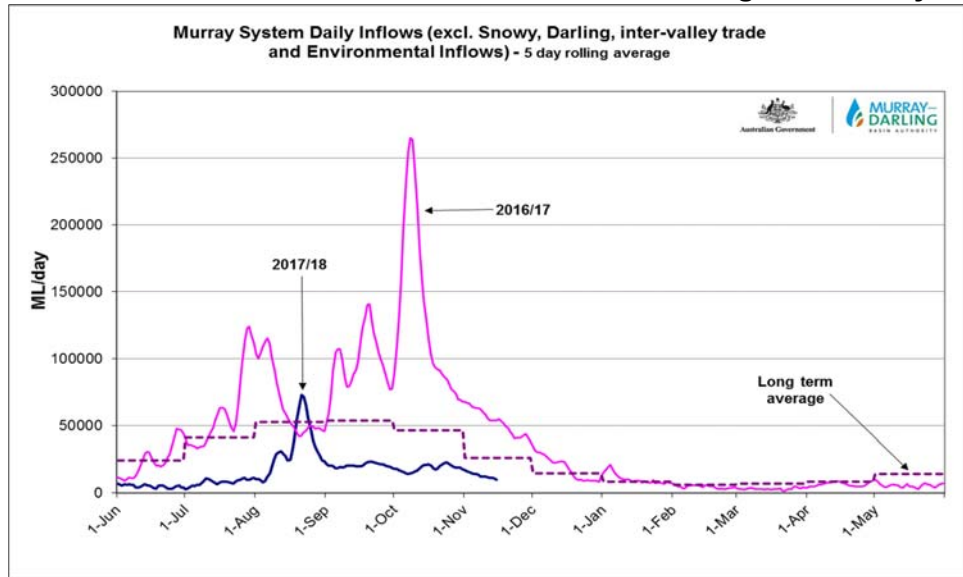
Fishways at Barrages

	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	0.76	All closed	-	-	-	Open
Hunters Creek	-	-	-	-	Open	-	-
Boundary Creek	6 openings	-	1	-	Open	-	-
Ewe Island	111 gates	-	All closed	-	-	-	Open
Tauwichee	322 gates	0.77	3	Open	Open	Open	-

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



Week ending Wednesday 15 Nov 2017



State Allocations (as at 15 Nov 2017)

NSW - Murray Valley

High security	97%
General security	35%

Victorian - Murray Valley

High reliability	100%
Low reliability	0%

NSW - Murrumbidgee Valley

High security	95%
General security	33%

Victorian - Goulburn Valley

High reliability	94%
Low reliability	0%

NSW - Lower Darling

High security	100%
General security	100%

South Australia - Murray Valley

High security	100%
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- NSW : <http://www.water.nsw.gov.au/water-management/water-availability>
- VIC : <http://nvrn.net.au/seasonal-determinations/current>
- SA : <http://www.environment.sa.gov.au/managing-natural-resources/river-murray>