



RIVER MURRAY WEEKLY REPORT

FOR THE WEEK ENDING WEDNESDAY, 26 APRIL 2017

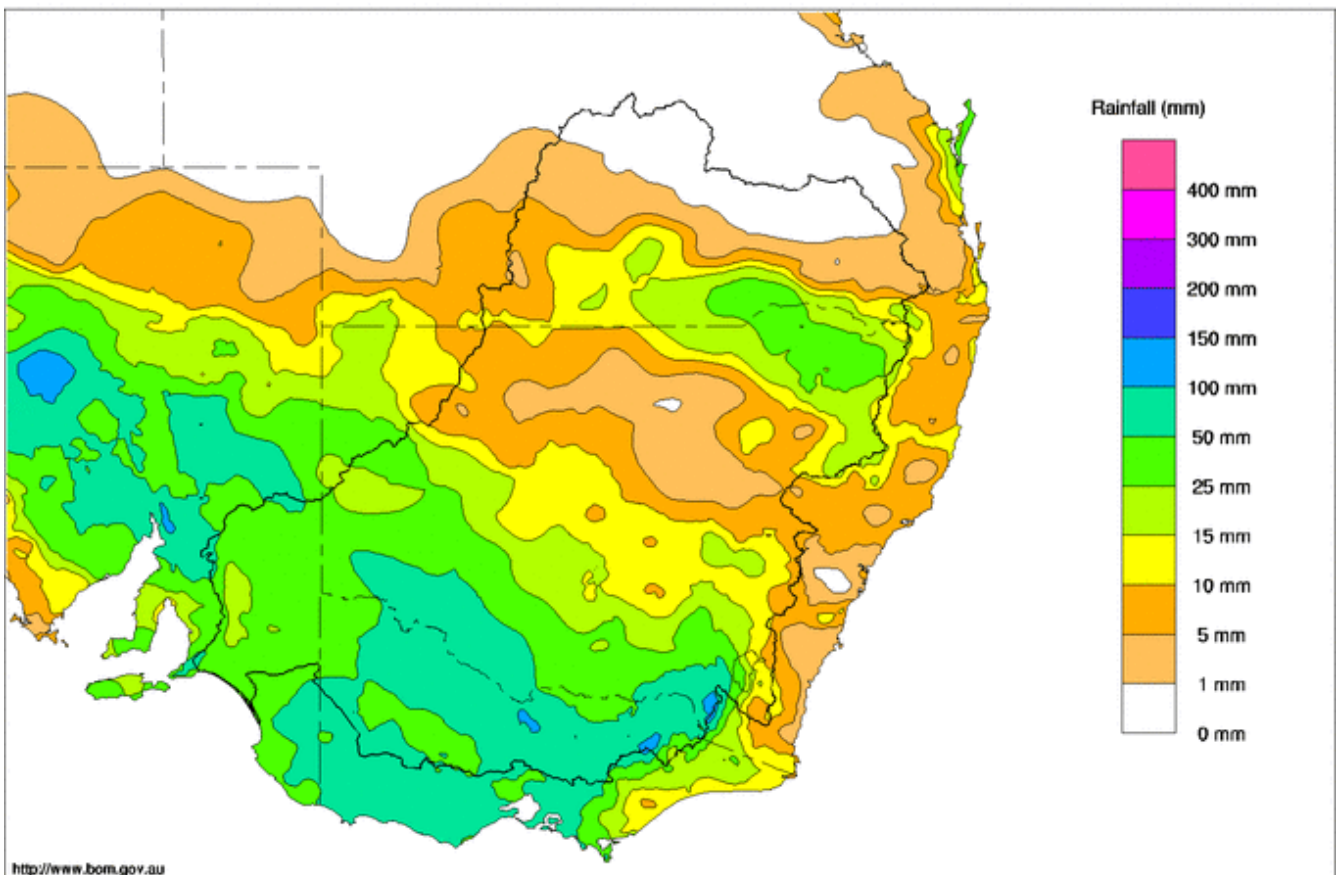
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Rainfall and inflows

It was one of the wettest weeks across the southern Murray–Darling Basin this year with widespread totals between 25 and 100 mm accumulating from two major rain events that crossed the region. Rain was lighter and patchier further north in the Basin with conditions in the far north staying dry (Map 1). The rain was associated with consecutive cloud bands that moved across from the north-west before a strong cold front generated further showers and dropped temperatures late in the week.

The highest weekly totals fell over the Victorian Alps and the NSW Snowy Mountains with several locations recording more than 100 mm. For example 156 mm fell at Mt Buffalo, and 117 mm at Mt Hotham. There were similarly large totals across central, northern and north-western Victoria including 120 mm at Echuca, 108 mm at Woomelang, 102 mm at Kyabram and 98 mm at Violet Town. Totals in southern and western NSW were also substantial and included 77 mm at Burtundy, 71 mm at Mathoura and 62 mm at Moulamein. Totals across the South Australian lower Murray region included 51 mm at Milang and 41 mm at Meningie.

Murray-Darling Rainfall Totals (mm) Week Ending 26th April 2017
Australian Bureau of Meteorology



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Map 1 - Murray-Darling Basin rainfall map week ending 26 April 2017 (Source: Bureau of Meteorology)



Stream flows along upper Murray tributaries have risen following the rain with many gauges at their highest levels for around 2 to 3 months. On the Mitta Mitta River, the flow at Hinnomunjie bridge increased from around 300 to 1,200 ML/day. On the upper Murray at Biggara, flows have increased from 350 to 1,300 ML/day. On the Ovens River, flow at Rocky Point was averaging around 400-500 ML/day prior to the rain, but has since increased to almost 2,000 ML/day – a rate not observed at this gauge since early January. Similar flows are expected along the lower Ovens for a few days.

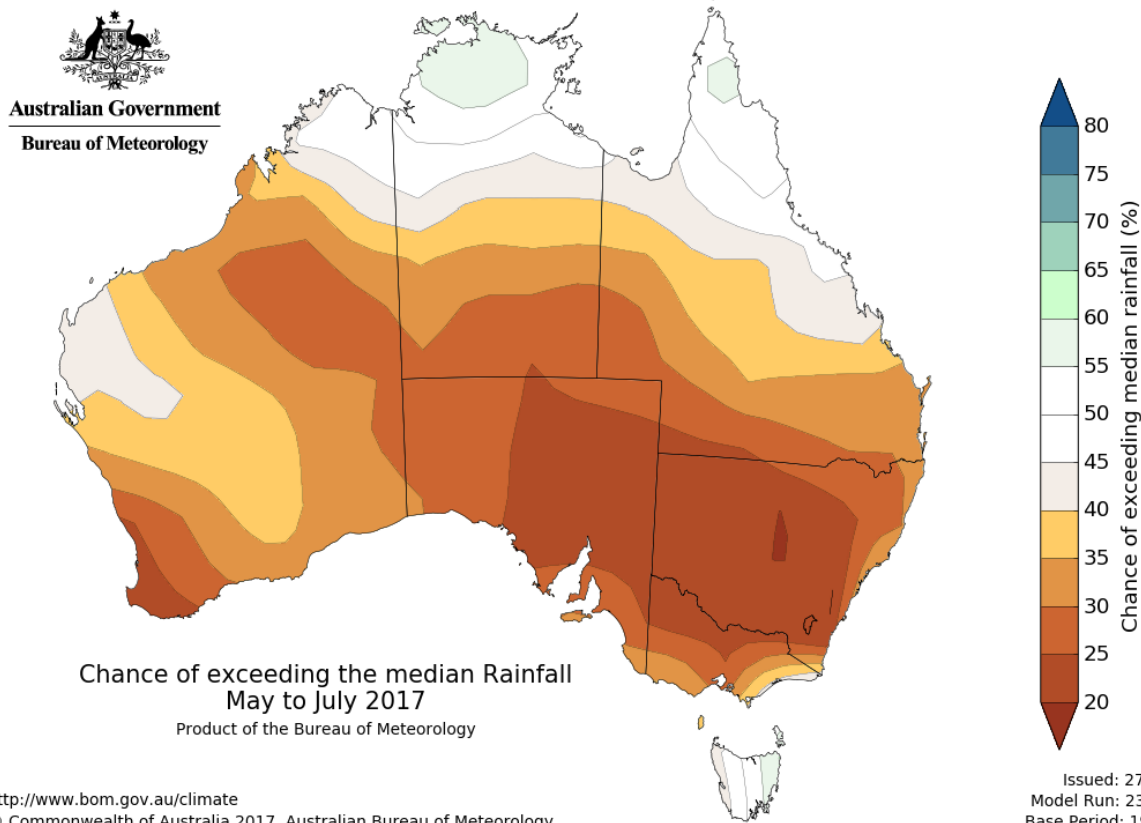
River operations

- Widespread rain reduces system demands and boosts mid-river flows
- Hume Dam releases wound back
- Flow rates downstream of Yarrawonga Weir set to decrease
- Bureau of Meteorology advises high likelihood of drier conditions for May-July

System operations

The impact of significant widespread rainfall on River Murray system operations during autumn has been clearly demonstrated this week. Many autumns are characterised by persistent dry weather across irrigation districts. This helps maintain water demands through until the end of the irrigation season. However in some years, such as this one, autumn rainfall along the Murray valley and neighbouring irrigation areas can suppress water usage and significantly decrease transmission losses across the system. This is one reason why patterns of demand can often be difficult to predict from year to year.

With downstream requirements now greatly reduced following the rain, and the irrigation season now effectively finishing early, operations over the coming weeks will be focusing on reducing storage releases, reviewing operating plans and analysing possible scenarios and requirements for the winter-spring period that lies ahead. One element of this activity will be on-going reviews of Bureau of Meteorology rainfall outlooks. The [latest outlook](#) suggests a high likelihood of warmer and drier conditions across the Murray-Darling Basin during the coming 3 month period (Map 2).



Map 2 - May- July rainfall outlook. (Source: Bureau of Meteorology).



River operations

Total MDBA storage decreased 3 GL this week, with the active storage now 5,255 GL (61% capacity).

At **Dartmouth Reservoir**, the storage volume increased by 2 GL to 3,003 GL (78% capacity). The release from Dartmouth, measured at Colemans, was held at 200 ML/day throughout the week.

The **Hume Reservoir** storage volume decreased 15 GL this week and is currently 1,766 GL (59% capacity). Releases began the week at just under 10,000 ML/day but were subsequently decreased throughout the week ahead of and following the rain. The current release is just 1,600 ML/day and similarly low release rates are expected for the next few days.

At **Lake Mulwala** total diversions to the Mulwala Canal and Yarrowonga Main Channel decreased from around 5,400 ML/day to just under 1,000 ML/day. At this stage, diversions are not expected to increase to any great extent between now and the end of the irrigation season in mid-May. The pool level at Lake Mulwala is currently 124.88 m AHD and is likely to remain at similar levels in the coming days. The release downstream of **Yarrowonga Weir** was reduced to 6,500 ML/day at the beginning of the week. With falling demands downstream, releases are now expected to be gradually reduced over the coming week with a release of around 4,000 ML/day expected by early May.

Inflows to the **Edward-Wakool** system have remained fairly steady through the week, with around 1,200 ML/day flowing through the Edward River Offtake and 300 ML/day through the Gulpa Creek Offtake. At **Stevens Weir**, diversions to the Wakool Main Canal were also affected by the rain and have fallen from around 700 ML/day to less than 200 ML/day. This reduction and a decrease in overall losses resulted in a temporary boost to inflows into Stevens Weir. Some water was stored in the weir pool and releases downstream were increased to around 1,500 ML/day before decreasing to 900 ML/day. Downstream on the Wakool River, the flow at Kyalite has risen to an estimated 1,900 ML/day and is expected to increase above 2,000 ML/day during the coming week.

On the **Goulburn River**, flows at McCoys Bridge are now planned to be reduced with the cessation of the inter-valley transfer (IVT) order early in the week. However, rainfall has boosted flows along the Goulburn and flows at McCoys remain at around 1,600 ML/day and are expected to continue close to 1,500 ML/day during the coming days.

At **Torrumbarry Weir**, the pool remains at the full supply level (FSL) of 86.05 m AHD. Beginning around mid-May, as part of the weir pool variability program, the weir pool is expected to be varied to a maximum planned lowering of around 50 cm below the FSL (for more information, visit the [MDBA website](#)). Demands in the Torrumbarry irrigation district have been significantly affected by the rain and diversions to National Channel have been decreased from around 3,000 ML/day to only 600 ML/day. This reduction has combined with local inflows to boost flows downstream in excess of previous expectations. The flow is currently at around 7,400 ML/day and is likely to remain above 7,000 ML/day for a few more days before receding.

Environmental flows in the **Murrumbidgee River** have continued to decrease. The flow at Balranald receded from around 1,200 ML/day at the beginning of the week to the current rate of around 500 ML/day. This flow is expected to recede to around 300 ML/day in the coming week.

At **Euston Weir**, the pool level is currently 47.41 m AHD (19 cm below FSL). As part of the weir pool variability program it is expected that the pool level will remain around 20 cm below FSL into May. Later in May, it is expected that the pool level will be varied further to a maximum planned lowering of around 40 cm below FSL. The flow rate downstream of the weir has increased to around 6,500 ML/day (Image 1, 2). The flow is expected to continue rising over the coming week to around 9,000 ML/day.

On the Darling River, the total storage volume in the **Menindee Lakes** remained steady and is currently 816 GL (47% capacity). Releases from Menindee Lakes to the lower Darling River are currently around 400 ML/day. This release includes some environmental water aimed at maintaining cod habitat in the Lower Darling River. Releases from Lake Cawndilla have remained steady at around 1,100 ML/day as environmental flows continue to be delivered to the **Great Darling Anabranch**. Releases, which commenced in mid-February, finally connected with the River Murray (downstream of Wentworth Weir) this week.



Image 1, 2 – A recent view of Euston Weir and the river downstream, where flow rates are set to increase in coming days. (Photo courtesy Andrew Bishop, MDBA)

At the junction of the Darling and Murray rivers at **Wentworth**, flows have increased to around 7,300 ML/day. Flows are expected to remain around this rate for much of the coming week before increasing.

Weir pool variability continues at **Lock 7** and **Lock 8**. Lock 7 is currently 78 cm below FSL which is close to the maximum planned lowering of 90 cm below FSL. Lock 8 is currently 90 cm below FSL which is also close to the planned one metre below FSL.

Lake Victoria's storage increased by 10 GL this week to a volume of 344 GL (51% capacity). The flow to **South Australia** is currently targeting around 4,500 ML/day and is expected to decrease further over the coming weeks. Downstream of **Lock 1** flows are around 4,100 ML/day.

At the **Lower Lakes**, the 5-day average water level in Lake Alexandrina has increased slightly to 0.59 m AHD. Barrage releases are continuing at low rates with releases currently prioritised at Goolwa and Tauwitchere barrages when conditions permit.

For media inquiries contact the Media Officer on 02 6279 0141

DAVID DREVERMAN
Executive Director, River Management



Water in Storage

Week ending Wednesday 26 Apr 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	471.99	3 003	78%	71	2 932	+2
Hume Reservoir	192.00	3 005	184.86	1 766	59%	23	1 743	-15
Lake Victoria	27.00	677	23.99	344	51%	100	244	+10
Menindee Lakes		1 731*		816	47%	(480 #)	336	+1
Total		9 269		5 929	64%	- -	5 255	-3
Total Active MDBA Storage							61% ^	

Major State Storages

Burrinjuck Reservoir	1 026	656	64%	3	653	-7
Blowering Reservoir	1 631	1 056	65%	24	1 032	-11
Eildon Reservoir	3 334	2 190	66%	100	2 090	-3

* 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 25 Apr 2017

Storage	Active Storage (GL)	Weekly Change (GL)	Diversion (GL)	This Week	From 1 May 2016
Lake Eucumbene - Total	1 805	+9	Snowy-Murray	+0	1 014
Snowy-Murray Component	803	+11	Tooma-Tumut	+1	344
Target Storage	1 340		Net Diversion	-1	670
			Murray 1 Release	+2	1 429

Major Diversions from Murray and Lower Darling (GL) *

New South Wales	This Week	From 1 July 2016	Victoria	This Week	From 1 July 2016
Murray Irrig. Ltd (Net)	10.3	892	Yarrowonga Main Channel (net)	1.9	233
Wakool Sys Allowance	0.8	32	Torrumbarry System + Nyah (net)	7.7	424
Western Murray Irrigation	0.1	24	Sunraysia Pumped Districts	0.4	95
Licensed Pumps	6.2	243	Licensed pumps - GMW (Nyah+u/s)	0.5	32
Lower Darling	8.5	89	Licensed pumps - LMW	2.5	279
TOTAL	25.9	1280	TOTAL	13	1063

* 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 the delivery of additional environmental water.

Entitlement this month	135.0 *
Flow this week	36.2
Flow so far this month	155.6
Flow last month	289.2

(5 200 ML/day)

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

	Current	Average over the last week	Average since 1 August 2016
Swan Hill	90	80	110
Euston	-	-	-
Red Cliffs	170	170	170
Merbein	180	170	170
Burtundy (Darling)	550	570	590
Lock 9	230	240	220
Lake Victoria	210	220	200
Berri	490	470	270
Waikerie	430	430	340
Morgan	440	430	330
Mannum	550	550	350
Murray Bridge	390	390	300
Milang (Lake Alex.)	540	520	500
Poltalloch (Lake Alex.)	560	540	380
Meningie (Lake Alb.)	1 730	1 760	1 760
Goolwa Barrages	1 280	1 050	1 080



River Levels and Flows

Week ending Wednesday 26 Apr 2017

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	-	-	-	2 600	R	1 150	440
Jingellic	4.0	1.53	208.05	2 970	R	1 520	1 460
Tallandoon (Mitta Mitta River)	4.2	1.63	218.52	1 100	R	620	550
Heywoods	5.5	1.85	155.48	2 530	F	5 140	10 190
Doctors Point	5.5	1.94	150.41	3 740	S	6 130	11 080
Albury	4.3	1.05	148.49	-	-	-	-
Corowa	4.6	1.52	127.54	5 370	F	8 090	11 530
Yarrowonga Weir (d/s)	6.4	1.14	116.18	6 470	S	6 460	7 790
Tocumwal	6.4	1.85	105.69	5 900	R	5 960	6 920
Torrumbarry Weir (d/s)	7.3	2.51	81.06	7 390	R	6 190	3 190
Swan Hill	4.5	1.34	64.26	6 980	R	5 100	2 960
Wakool Junction	8.8	2.93	52.05	6 890	R	5 530	3 850
Euston Weir (d/s)	9.1	1.46	43.30	6 530	R	5 870	5 070
Mildura Weir (d/s)	-	-	-	6 980	F	5 860	6 460
Wentworth Weir (d/s)	7.3	2.93	27.69	7 230	F	6 300	6 640
Rufus Junction	-	3.08	20.01	4 070	F	4 950	5 280
Blanchetown (Lock 1 d/s)	-	0.73	-	4 110	F	4 030	4 250
Tributaries							
Kiewa at Bandiana	2.8	1.06	154.29	600	R	480	610
Ovens at Wangaratta	11.9	8.16	145.84	1 000	R	650	650
Goulburn at McCoys Bridge	9.0	1.85	93.27	1 580	F	1 700	1 330
Edward at Stevens Weir (d/s)	5.5	1.18	80.96	860	F	980	810
Edward at Liewah	-	1.98	57.36	1 270	R	1 180	1 110
Wakool at Stoney Crossing	-	1.53	55.03	690	R	620	490
Murrumbidgee at Balranald	5.0	0.87	56.83	490	F	800	1 700
Barwon at Mungindi	6.1	3.55	-	960	R	910	2 680
Darling at Bourke	9.0	4.55	-	3 620	R	1 710	470
Darling at Burtundy Rocks	-	0.99	-	910	F	920	960

Natural Inflow to Hume	3 260	2 710
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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	-0.02	-	No. 7 Rufus River	22.10	-0.78	+0.77
No. 26 Torrumbarry	86.05	+0.00	-	No. 6 Murtho	19.25	-0.01	+0.03
No. 15 Euston	47.60	-0.19	-	No. 5 Renmark	16.30	+0.01	+0.20
No. 11 Mildura	34.40	+0.04	+0.16	No. 4 Bookpurnong	13.20	+0.06	+0.62
No. 10 Wentworth	30.80	+0.03	+0.29	No. 3 Overland Corner	9.80	+0.09	+0.36
No. 9 Kulnine	27.40	-0.06	-0.84	No. 2 Waikerie	6.10	+0.15	+0.19
No. 8 Wangumma	24.60	-0.90	-0.57	No. 1 Blanchetown	3.20	-0.00	-0.02

Lower Lakes FSL = 0.75 m AHD

Lake Alexandrina average level for the past 5 days (m AHD)	0.59
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Barrages

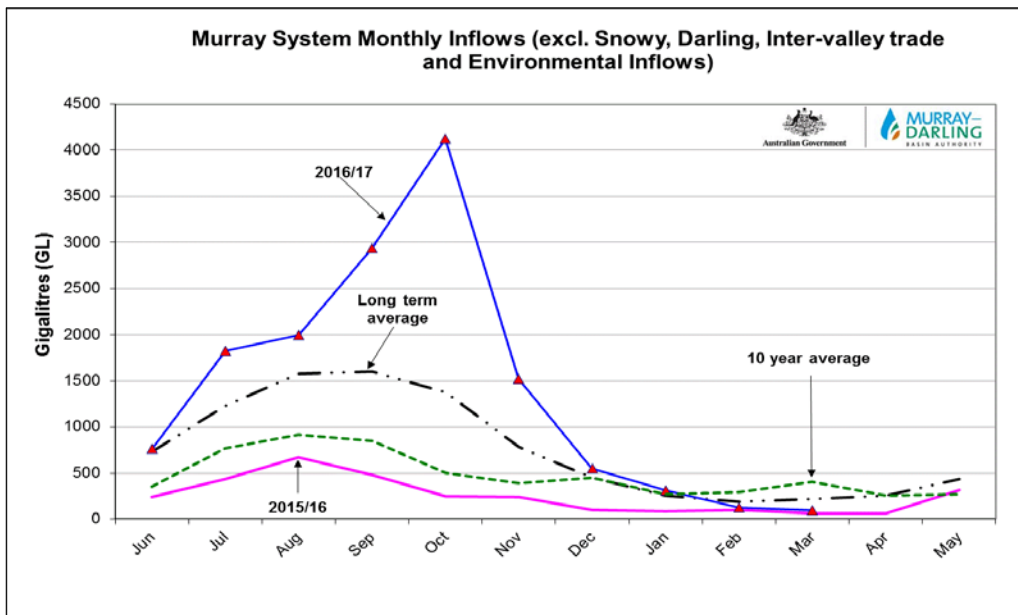
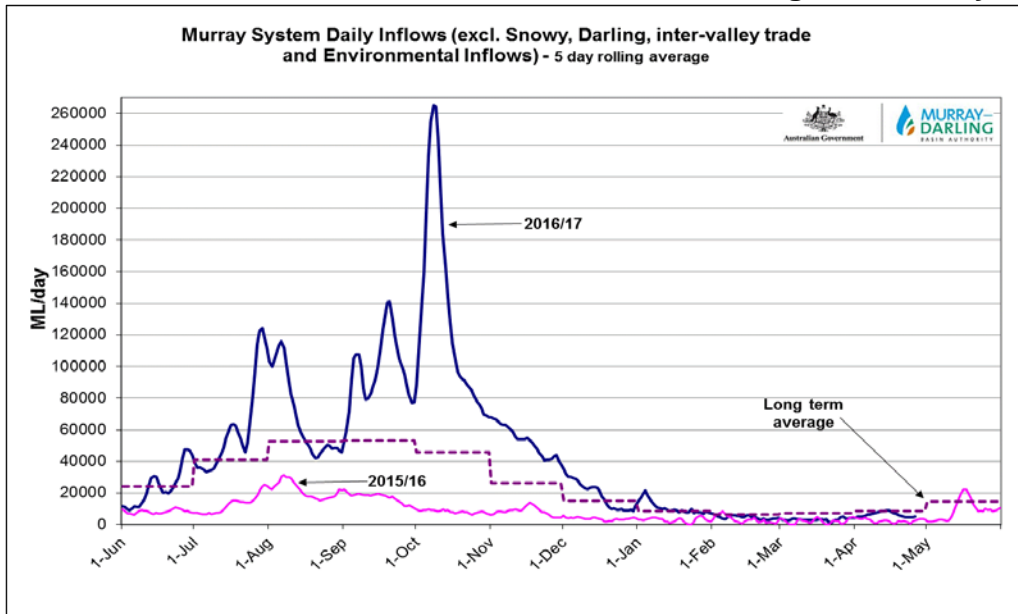
Fishways at Barrages

	Openings	Level (m AHD)	No. Open	Rock Ramp	Vertical Slot 1	Vertical Slot 2	Dual Vertical Slots
Goolwa	128 openings	0.23	All closed	-	Open	Open	-
Mundoo	26 openings	0.19	All closed	-	-	-	Open
Hunters Creek	-	-	-	-	Open	-	-
Boundary Creek	6 openings	-	All closed	-	Open	-	-
Ewe Island	111 gates	-	All closed	-	-	-	Open
Tauwichee	322 gates	0.22	3	Open	Open	Open	-

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



Week ending Wednesday 26 Apr 2017



State Allocations (as at 26 Apr 2017)

NSW - Murray Valley

High security	100%
General security	100%

Victorian - Murray Valley

High reliability	100%
Low reliability	5%

NSW - Murrumbidgee Valley

High security	100%
General security	100%

Victorian - Goulburn Valley

High reliability	100%
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>