



RIVER MURRAY WEEKLY REPORT

FOR THE WEEK ENDING WEDNESDAY, 16 AUGUST 2017

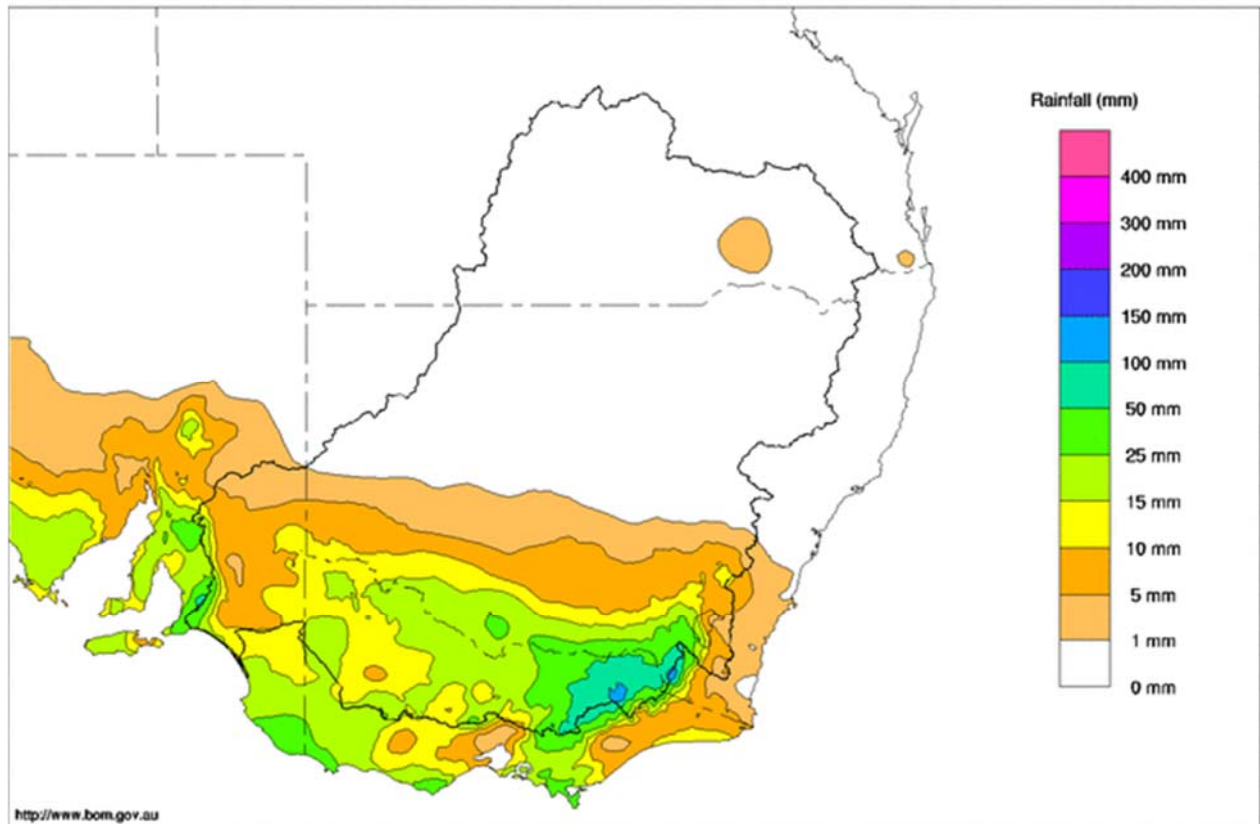
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Rainfall and inflows

Widespread rainfall was observed across the southern Basin late this week (Map 1) as a north westerly flow with a front tracked across southern Australia. Rainfall totals exceeding 100 mm were recorded in the Victorian Alps and the Snowy Mountains with the warmer precipitation enhancing snow melt and tributary streamflow responses.

In Victoria, the highest weekly totals included 116 mm at Mount Buffalo, 112 mm at Mount Buller AWS and 106 mm at Harris Lane in the upper northeast. In NSW, the highest totals included 174 mm at Perisher Valley AWS, 132 mm at Thredbo (both stations just outside of the Basin) and 63 mm at Cabramurra AWS. In South Australia, the highest totals included 64 mm at Macclesfield and 57 mm at Meadows in the Mount Lofty ranges. Little or no rainfall was recorded in southern Queensland and northern NSW this week.

Murray-Darling Rainfall Totals (mm) Week Ending 16th August 2017
Australian Bureau of Meteorology



<http://www.bom.gov.au>

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Issued: 16/08/2017

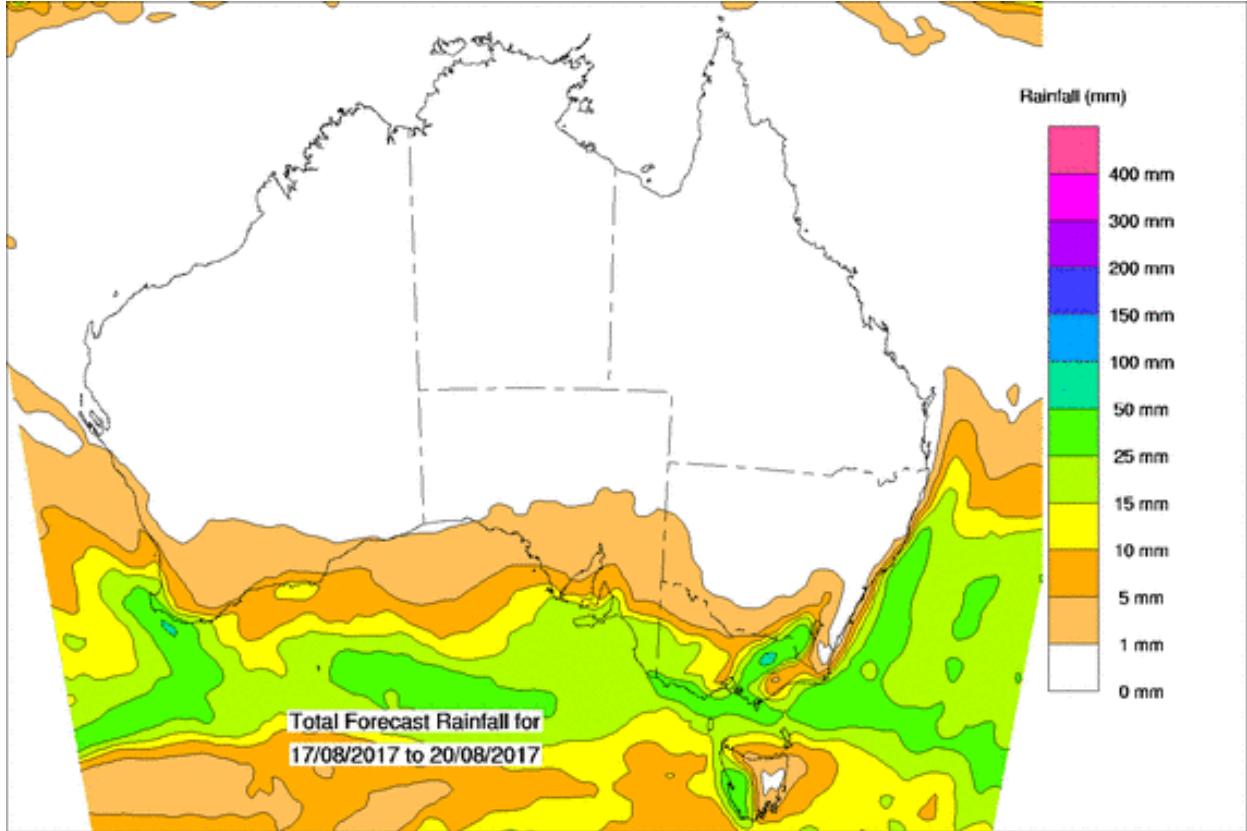
Map 1 - Murray-Darling Basin rainfall map week ending 16 August 2017. Source: Bureau of Meteorology

Rain at the end of the week resulted in significant streamflow responses in the upper Murray tributaries. The upper Mitta Mitta River at Hinnomunjie was around 1,000 ML/day throughout much of the week before rising to a peak of close to 15,000 ML/day. The upper Murray at Biggara also rose from a base flow of around 1,000 ML/day, to a peak of around 5,500 ML/day.



Downstream of the Hume Reservoir, significant stream flow responses were also observed on the Ovens and Kiewa rivers. In the Kiewa valley, the Kiewa River at Mongans Bridge reached over 9,000 ML/day and Yackandandah Creek at Osbornes Flat peaked at 5,000 ML/day. In the Ovens valley, the Ovens River at Rocky Point reached around 18,000 ML/day, and with further rainfall forecast, is likely to rise above 20,000 ML/day in coming days.

Bureau of Meteorology (BoM) are forecasting another 25 to 100 mm of rainfall over the coming days (Map 2) in the upper Murray catchments and this is expected to generate further tributary inflows.

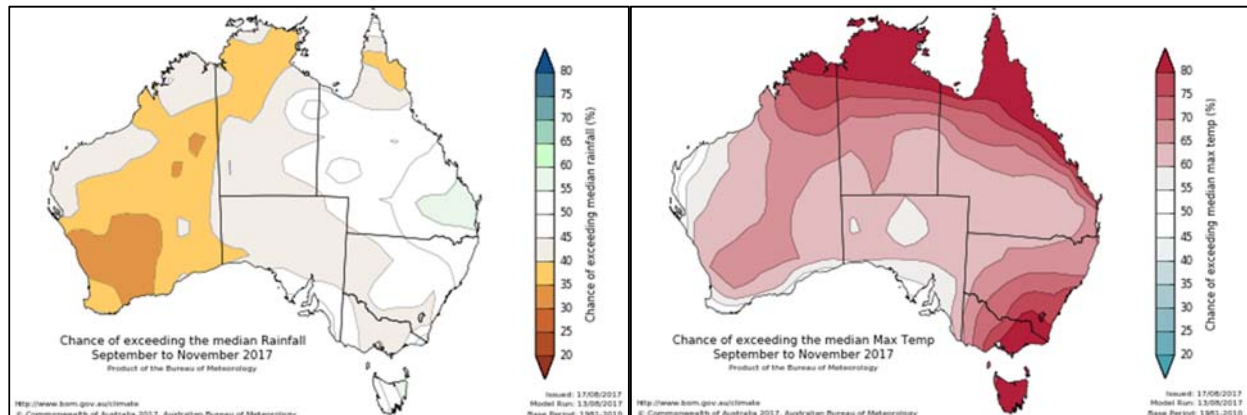


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Map 2 – Total forecast rainfall for 17/8/2017 to 20/8/2017. Source: Bureau of Meteorology

BoM have also updated their [climate outlook for spring](#). For the 3 month period from September to November, there is no strong signal towards either wetter or drier conditions in the Basin (Map 3 – left), however temperatures are likely to be warmer than average (Map 3 – right).



Map 3 – Chance of exceeding median rainfall (left) and median maximum temperature (right) during spring. Source: Bureau of Meteorology



River operations

- Rain improves inflows to Dartmouth and Hume storages
- Flows downstream of Yarrowonga expected to exceed 15,000 ML/day as inflows from Kiewa and Ovens rise

MDBA total storage rose by 89 GL this week, with the active storage now 6,020 GL or 70%.

At **Dartmouth Reservoir**, the storage volume increased by 18 GL and is currently 3,068 GL (80% capacity). The release from Dartmouth, measured at Colemans gauge, is continuing at the minimum rate of 200 ML/day.

At **Hume Reservoir** the storage increased by 68 GL to 2,430 GL (81% capacity). Rainfall in the Hume catchment this week increased daily inflows to the storage to around 22,000 ML/day (on Thursday 17 August). Increases to Hume storage are also continuing to be boosted by releases from the Snowy Hydro Scheme, with around 13 GL released this week and over 500 GL since 1 May 2017. This is a similar volume to the same period in 2016 (Figure 1). The release from Hume is currently 600 ML/day.

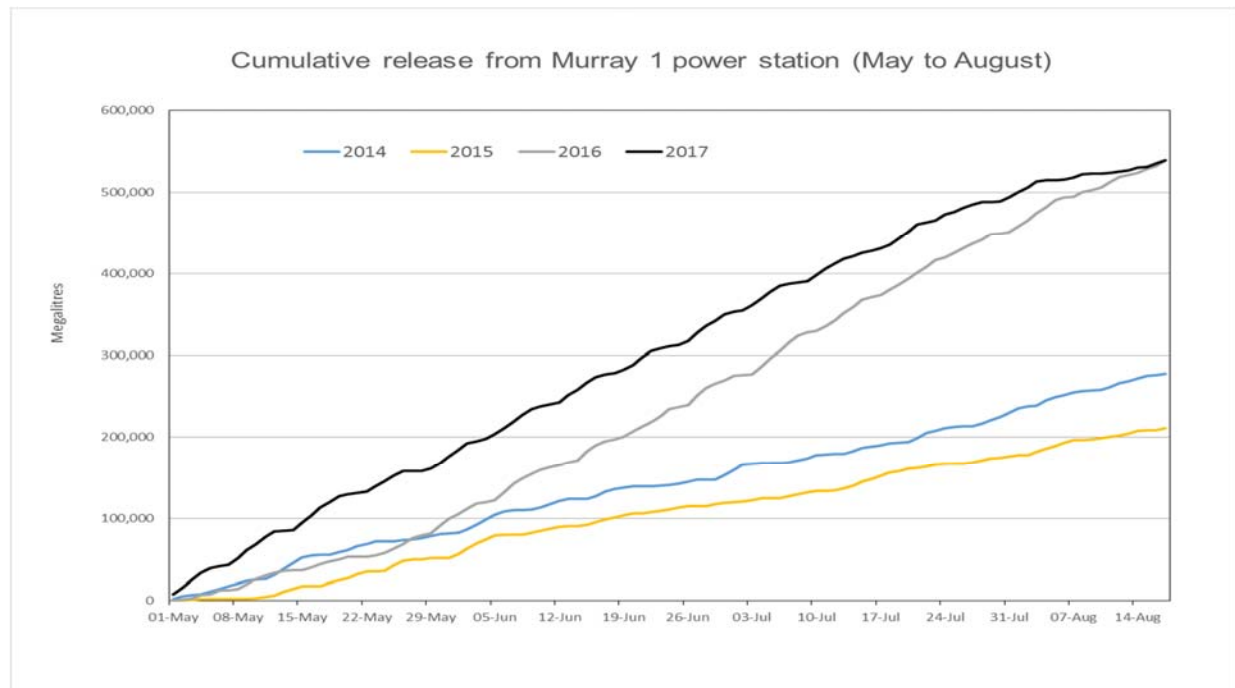


Figure 1 – Cumulative release from Murray 1 power station from May to August

At **Yarrowonga Weir**, the release reached a peak of 10,500 ML/day over the weekend as higher inflows from the Kiewa and Ovens Rivers travel downstream. The flow is currently 10,000 ML/day. Over the coming week, the release downstream is expected to exceed 15,000 ML/day in response to further tributary inflows following rainfall late this week. In response to the wetter conditions, diversions to Yarrowonga Main Channel and Mulwala Canal have reduced to 100 ML/day and 600 ML/day respectively.

On the **Edward River** system, the gates at Edward offtake remain clear of the water. The flow through the Edward offtake has increased to around 1,500 ML/day in response to the rising level in the Murray at Picnic Point. The gates at the Gulpa Offtake are currently regulating flows at 350 ML/day but are likely to be lifted clear of the water in the coming week as River Murray flows increase further. On the Edward River upstream of Toonalook, small flows are continuing to return from the Millewa forest after forest regulators on the Murray were opened in early July to provide connectivity between the river and the flood plain during winter and early spring.



At **Stevens Weir**, irrigation diversions to Wakool Main Canal reduced from 200 ML/day to zero. Over the last two weeks the weir pool level has been raised to around 4.4 m (local gauge) allowing water to commence flowing into the upper reach of the Wakool River - currently around 30 ML/day (Photo 1). The pool level is expected to continue rising over coming weeks in preparation for delivering water during the irrigation season. The release downstream of the weir has averaged around 1,400 ML/day.



Photo 1 Light rain falling on the upper Wakool River (Photo courtesy Damian McRae, CEWO)

On the **Goulburn River** the flow at McCoy's bridge peaked above 4,500 ML/day and has now receded to around 2,400 ML/day. The flow is expected to rise again this week following further rainfall.

The **Torrumbarry** weir pool level is 86.0 m AHD (0.05 cm below FSL). The release is currently around 8,000 ML/day, and is expected to increase further over the coming week. Diversions into National Channel were steady at 1,800 ML/day, but reduced to 600 ML/day on Thursday 17 August. National Channel is continuing to divert water on behalf of environmental water holders to maintain winter base flows along **Gunbower Creek** for the benefit of native fish.

Flow in the **Murrumbidgee River** at Balranald has increased to 6,800 ML/day. Higher flows, reaching around 7,000 ML/day, are expected to continue at Balranald over the coming week before receding later in August. These higher flows are being delivered along the Murrumbidgee River with the aim of improving the health of wetlands along the mid-Murrumbidgee River as well as deliver instream benefits throughout the mid and lower Murrumbidgee River system. Further environmental benefits will accrue as the flows are passed down the Murray to South Australia. Further information is available on the [NSW Office of Environment & Heritage](#) website.



Photo 2 Almond trees in flower at Boundary Bend (Photo courtesy Peter Ebner, LMW)

At **Euston** weir, the pool level is 47.38 m AHD (22 cm below FSL). The pool level is expected to return to around FSL later in August as part of the weir pool variability program. The downstream release increased to 11,800 ML/day and is expected to reach around 15,000 ML/day over the coming week.

On the **Darling River**, the total storage volume in the **Menindee Lakes** decreased by 7 GL to 745 GL (43% capacity). Inflows to the lakes continue at low rates, with the upstream flow at Wilcannia around 400 ML/day. Releases from Menindee Lakes to the Lower Darling River at Weir 32 continue to target 400 ML/day. This is above the normal minimum of 200 ML/day at this time of year. The additional water is being released on behalf of environmental water holders to benefit native fish in the lower Darling River.

At the junction of the Darling with the Murray, releases from **Wentworth** weir are currently 8,200 ML/day and rising. Small flows less than 40 ML/day continue to enter the Murray from the Great Darling Anabranch.

Lock 7 and **8** are currently 23 cm and 97 cm below FSL (respectively). The pool levels at these weirs are expected to return to around FSL later in August 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.

At **Lake Victoria**, the storage volume increased by 10 GL to 451 GL (67% capacity). Over the coming months MDBA will manage the filling of Lake Victoria in line with the Lake Victoria Operating Strategy. The strategy aims to maximise water security whilst minimising the impact on vegetation and aboriginal cultural heritage sites around the lake.

The flow to **South Australia** is 5,500 ML/day and is expected to increase to around 6,500 ML/day in the coming week.

At the **Lower Lakes**, the 5-day average water level in Lake Alexandrina increased by 2 cm to 0.76 m AHD. Releases through the barrages totalled around 31 GL and were managed to avoid intrusion of seawater during high swells and tides.

For media inquiries contact the Media Officer on 02 6279 0141

DAVID DREVERMAN
Executive Director, River Management



Water in Storage

Week ending Wednesday 16 Aug 2017

MDBA Storages	Full Supply Level	Full Supply Volume	Current Storage Level	Current Storage		Dead Storage	Active Storage	Change in Total Storage for the Week
	(m AHD)	(GL)	(m AHD)	(GL)	%	(GL)	(GL)	(GL)
Dartmouth Reservoir	486.00	3 856	473.14	3 068	80%	71	2 997	+18
Hume Reservoir	192.00	3 005	188.96	2 430	81%	23	2 407	+68
Lake Victoria	27.00	677	25.03	451	67%	100	351	+10
Menindee Lakes		1 731*		745	43%	(480 #)	265	-7
Total		9 269		6 694	72%	--	6 020	+89
Total Active MDBA Storage							70% ^	

Major State Storages

Burrinjuck Reservoir	1 026	573	56%	3	570	+11
Blowering Reservoir	1 631	1 300	80%	24	1 276	+28
Eildon Reservoir	3 334	2 132	64%	100	2 032	+42

* 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 15 Aug 2017

Storage	Active Storage (GL)	Weekly Change (GL)	Diversions (GL)	This Week	From 1 May 2017
Lake Eucumbene - Total	1 204	+17	Snowy-Murray	+0	480
Snowy-Murray Component	508	+7	Tooma-Tumut	+14	47
Target Storage	1 190		Net Diversion	-14	434
			Murray 1 Release	+9	531

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)	10.0	23	Yarrowonga Main Channel (net)	1.8	4
Wakool Sys Allowance	0.3	5	Torrumbarry System + Nyah (net)	0	12
Western Murray Irrigation	0.1	1	Sunraysia Pumped Districts	0.3	3
Licensed Pumps	0.5	5	Licensed pumps - GMW (Nyah+u/s)	1	1
Lower Darling	0.3	2	Licensed pumps - LMW	4.6	8
TOTAL	11.2	36	TOTAL	7.7	28

* 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	38.5	(5 500 ML/day)
Flow so far this month	92.0	
Flow last month	268.2	

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

	Current	Average over the last week	Average since 1 August 2017
Swan Hill	140	170	130
Euston	180	150	160
Red Cliffs	200	240	230
Merbein	190	180	170
Burtundy (Darling)	660	660	660
Lock 9	180	180	180
Lake Victoria	270	260	260
Berri	320	310	300
Waikerie	350	350	350
Morgan	370	370	370
Mannum	450	460	460
Murray Bridge	540	530	510
Milang (Lake Alex.)	550	560	560
Poltalloch (Lake Alex.)	530	540	540
Meningie (Lake Alb.)	1 520	1 470	1 500
Goolwa Barrages	1 330	1 660	1 800



River Levels and Flows

Week ending Wednesday 16 Aug 2017

	Minor Flood Stage	Gauge Height		Flow (ML/day)	Trend	Average Flow this Week (ML/day)	Average Flow last Week (ML/day)
		local (m)	(m AHD)				
River Murray	(m)						
Khancoban	-	-	-	3 350	F	3 280	3 580
Jingellic	4.0	2.00	208.52	7 070	F	6 840	8 350
Tallandoon (Mitta Mitta River)	4.2	2.12	219.01	2 830	R	1 310	1 510
Heywoods	5.5	1.28	154.91	620	F	900	1 440
Doctors Point	5.5	1.95	150.42	3 640	R	2 750	3 420
Albury	4.3	0.98	148.42	-	-	-	-
Corowa	4.6	1.12	127.14	3 470	R	3 140	3 930
Yarrowonga Weir (d/s)	6.4	1.61	116.65	8 910	F	9 490	6 810
Tocumwal	6.4	2.40	106.24	9 590	F	8 310	6 350
Torrumbarry Weir (d/s)	7.3	2.68	81.23	8 040	R	6 220	4 680
Swan Hill	4.5	1.24	64.16	5 840	R	4 990	4 740
Wakool Junction	8.8	3.02	52.14	7 390	R	6 820	6 440
Euston Weir (d/s)	9.1	2.28	44.12	11 750	R	8 960	7 290
Mildura Weir (d/s)	-	-	-	8 640	F	7 350	7 260
Wentworth Weir (d/s)	7.3	3.02	27.78	8 150	R	7 060	7 060
Rufus Junction	-	3.28	20.21	5 220	R	5 240	5 230
Blanchetown (Lock 1 d/s)	-	0.80	-	3 900	F	4 470	4 860
Tributaries							
Kiewa at Bandiana	2.8	2.35	155.58	2 650	R	1 840	1 980
Ovens at Wangaratta	11.9	9.85	147.53	6 160	R	7 350	5 810
Goulburn at McCoys Bridge	9.0	2.27	93.69	2 380	F	3 580	1 450
Edward at Stevens Weir (d/s)	5.5	1.82	81.60	1 710	F	1 440	1 190
Edward at Liewah	-	2.02	57.40	1 300	R	1 190	1 050
Wakool at Stoney Crossing	-	1.55	55.04	730	R	670	660
Murrumbidgee at Balranald	5.0	5.04	61.00	6 810	R	5 690	1 170
Barwon at Mungindi	6.1	3.26	-	190	F	240	540
Darling at Bourke	9.0	4.12	-	410	S	410	430
Darling at Burtundy Rocks	-	0.79	-	270	F	290	300

Natural Inflow to Hume	10 570	11 980
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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	-0.23	+0.97
No. 26 Torrumbarry	86.05	-0.05	-	No. 6 Murtho	19.25	+0.01	+0.18
No. 15 Euston	47.60	-0.22	-	No. 5 Renmark	16.30	+0.18	+0.13
No. 11 Mildura	34.40	+0.05	+0.24	No. 4 Bookpurnong	13.20	+0.02	+0.52
No. 10 Wentworth	30.80	+0.01	+0.38	No. 3 Overland Corner	9.80	+0.01	+0.33
No. 9 Kulnine	27.40	+0.02	-0.86	No. 2 Waikerie	6.10	+0.14	+0.07
No. 8 Wangumma	24.60	-0.97	-0.09	No. 1 Blanchetown	3.20	-0.09	+0.05

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

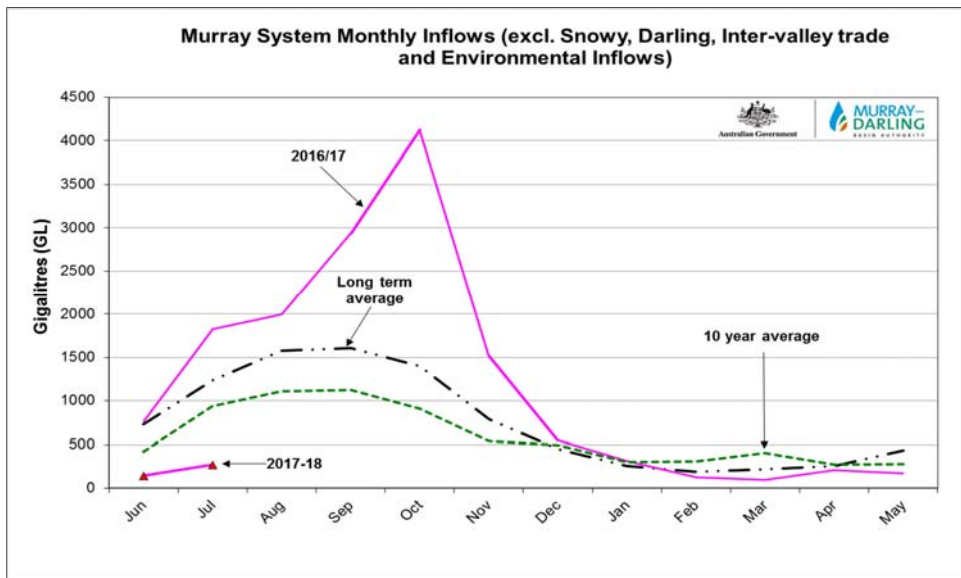
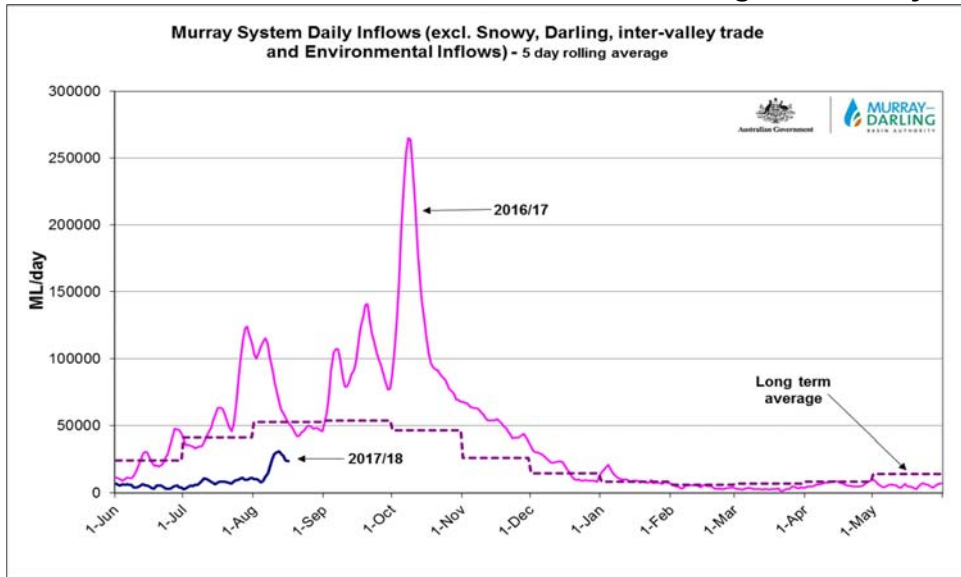
Fishways at Barrages

	Openings	Level (m AHD)	No. Open	Rock Ramp	Vertical Slot 1	Vertical Slot 2	Dual Vertical Slots
Goolwa	128 openings	0.60	All closed	-	Open	Open	-
Mundoo	26 openings	0.66	All closed	-	-	-	Open
Hunters Creek	-	-	-	-	Open	-	-
Boundary Creek	6 openings	-	All closed	-	Open	-	-
Ewe Island	111 gates	-	All closed	-	-	-	Open
Tauwitchere	322 gates	0.71	All closed	Open	Open	Open	-

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



Week ending Wednesday 16 Aug 2017



State Allocations (as at 16 Aug 2017)

NSW - Murray Valley

High security	97%
General security	13%

Victorian - Murray Valley

High reliability	70%
Low reliability	0%

NSW - Murrumbidgee Valley

High security	95%
General security	23%

Victorian - Goulburn Valley

High reliability	45%
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>