



# RIVER MURRAY WEEKLY REPORT

FOR THE WEEK ENDING WEDNESDAY, 21 SEPTEMBER 2016

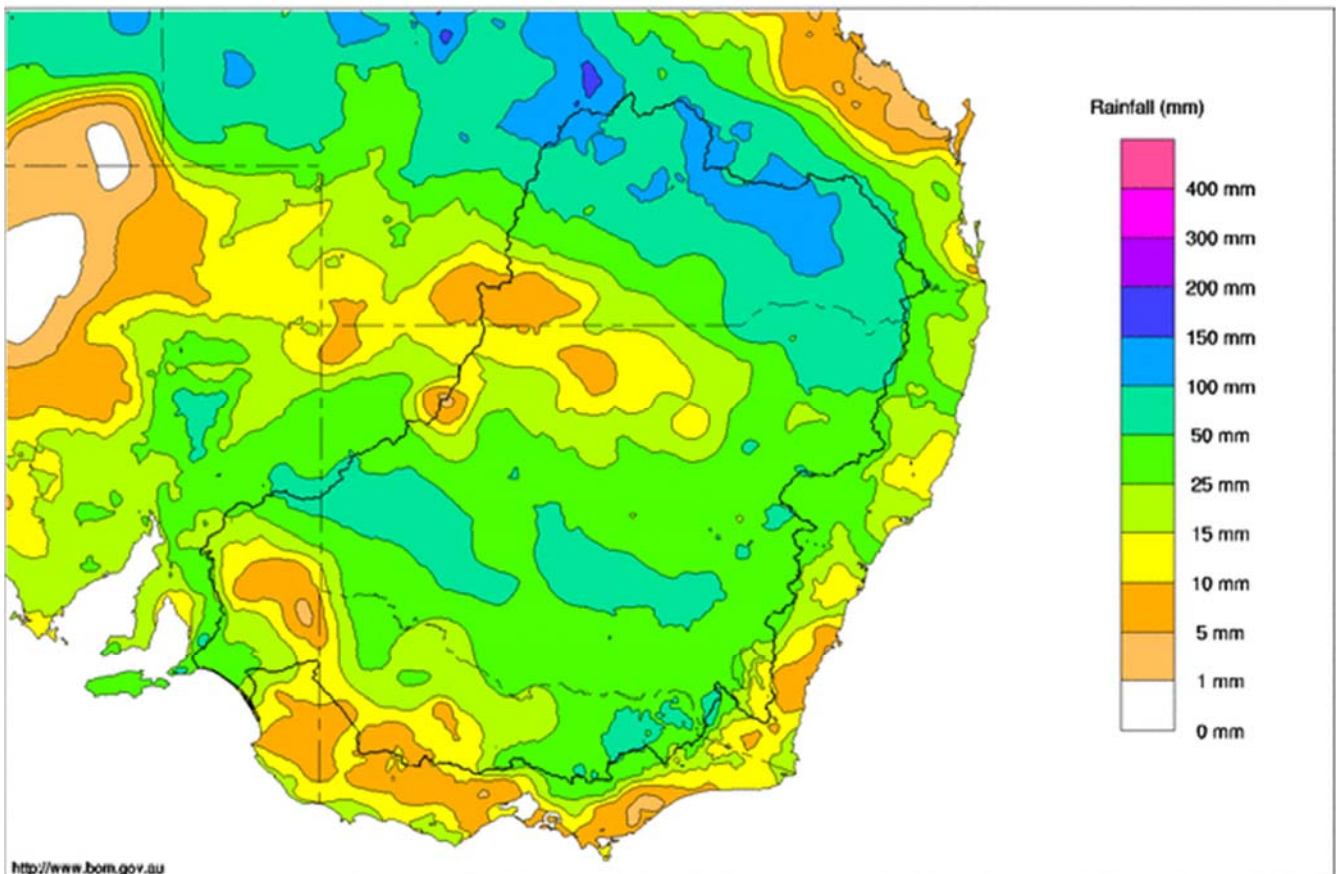
Trim Ref: D16/31701

## Rainfall and inflows

Wet conditions continued across the Murray–Darling Basin this week, with significant rainfall and runoff across many of the upper catchments. There were periods of moderate to heavy rainfall across southern Queensland and northeast New South Wales with weekly totals above 100 mm recorded across the upper Warrego and Condamine-Balonne catchments (Map 1). There was also widespread rainfall across much of southern Basin with weekly totals of 25 to 100 mm recorded throughout the lower Darling, Murrumbidgee and Lachlan catchments in NSW, with similar totals across north-east Victoria. Heavy rainfall was also experienced on the Mount Lofty ranges in South Australia with weekly totals close to 100 mm at several locations.

Murray-Darling Rainfall Totals (mm) Week Ending 21st September 2016

Australian Bureau of Meteorology



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

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Map 1 - Murray-Darling Basin rainfall week ending 21<sup>st</sup> September 2016 (Source: Bureau of Meteorology (BoM))

Tributaries in the upper Murray catchments peaked early in the week following heavy rain, then stayed elevated with further shower activity persisting through the remainder of the week. The upper Murray at Biggara rose to 7,000 ML/day before receding to 4,000 ML/day, whilst the Tooma River at Pinegrove peaked at 12,000 ML/day and is now 4,000 ML/day. These flows combined with other tributaries and releases from the Snowy Hydro Scheme to deliver a peak flow at Jingellic on the upper Murray of almost 40,000 ML/day on Friday. The flow at Jingellic is currently steady at around 24,000 ML/day.



In the Dartmouth catchment, the upper Mitta Mitta at Hinnomunjie has averaged around 4,000 ML/day this week. Downstream of Dartmouth Dam, inflows from Snowy Creek contributed to a peak flow on the Mitta Mitta River at Tallandoon of 6,500 ML/day. The flow at Tallandoon is currently steady at 4,000 ML/day.

## River operations

- Hume dam continues to spill
- Mildura Weir to be removed due to high flows.
- Further small drop for Wentworth weir pool before rising next week.

MDBA total storage increased by 64 GL this week, with the active storage now 5,689 GL (67% capacity). Although inflows were large, total storage only rose 64 GL as Hume reservoir is spilling and Lake Victoria is being temporarily lowered, offsetting gains in Dartmouth and Menindee Lakes.

At **Dartmouth Reservoir**, the storage volume increased by 71 GL to 2,438 GL (63% capacity) and the release, measured at Colemans, continues to target the minimum flow rate of 200 ML/day.

The total storage volume at **Hume Reservoir** decreased by 2 GL to 2,911 GL (97% capacity) as releases for the week were similar to inflows. MDBA began airspace management releases on 29 August at which time the storage was 90% capacity. System inflows, particularly inflows to Hume Reservoir, had receded considerably after much of August was dry (see graph on page 8). However continuing rain events in the last three weeks resulted in the Bureau of Meteorology (BoM) issuing multiple flood warnings in the catchment upstream with a substantial increase in reservoir inflows.

The frequency of rain events, not just the total amount of precipitation, over the past few weeks has resulted in almost 1,000 GL of inflow into the reservoir since the start of September. This is equivalent to around one third of Hume reservoir's storage capacity in just three weeks. This large inflow resulted in a quick transition to flood operations at Hume Dam. Inflows to Hume peaked during the week at about 64,000 ML/day while the release was limited to 52,000 ML/day. Inflows to Hume are gradually receding, which has allowed the release from Hume to be lowered to 40,000 ML/day on Tuesday 20 September then again to 35,000 ML/day on Thursday 22 September.

However with further rainfall forecast and catchments saturated, renewed inflows into Hume Dam are possible and increases to the release could again occur in coming weeks. Further details about [flood management](#) at Hume Dam are available on the MDBA website.

Downstream communities and landholders are reminded to keep up with the latest [Flood Watches and Warnings](#) issued by the BoM. In addition, community members living close to the river downstream of Hume Dam are reminded that they can [register](#) to the WaterNSW Early Warning Network (EWN) service. This service provides alerts when the River Murray increases to relatively high levels in the stretch downstream of Hume Dam to Albury via SMS, email or voice message notifications.

Downstream of Hume, the **Kiewa River** at Bandiana contributed an average flow of 6,700 ML/day to the Murray over the week. Following rain on Wednesday and Thursday, the **Ovens River** at Wangaratta peaked at 39,500 ML/day on Friday night and has since receded to 21,000 ML/day.

At **Yarrowonga Weir**, the release has been steadily climbing due to the combined inflows from the River Murray downstream of Hume, and the Kiewa and Ovens Rivers. The release was increased steadily from 68,500 ML/day a week ago to 87,000 ML/day as at Thursday 22 September. With upstream inflows reducing, the release from Yarrowonga is expected to gradually reduce over coming days. Downstream communities and landholders are reminded to keep up with the latest [Flood Watches and Warnings](#) issued by the BoM.





**Photo 1- Yarrawonga releases at 84,000 ML/day on 20 September 2016 (Source: Pat Doyle, G-MW)**

On the **Edward River**, the flow through the Edward Offtake is 2,500 ML/day while the Gulpa Offtake is 1,000 ML/day. Return flows continue to enter the Edward River from the Millewa forest, with the downstream flow at Toonalook now 15,800 ML/day and forecast to continue rising to around 19,000 ML/day by the end of next week. The flow is rising through Bullatale and Tuppal Creeks at 5,500 and 4,800 ML/day respectively, contributing to the flow at **Stevens Weir** of 14,400 ML/day. At Stevens Weir the gates have been removed and the flow is forecast to rise over the coming week.

Downstream of Stevens Weir water is still entering Werai Forest and inundation is likely to increase as flows rise. Further down the Edward, the **Billabong Creek** is rising as is the flow at Moulamein which is currently 6,100 ML/day. On the **Wakool** the flow at Kyalite is 9,500 ML/day and forecast to rise over the coming weeks with return flows arriving from Millewa and Koondrook forests.

Rainfall across Victoria last week led to streamflow rises and significant inflows from northern Victorian tributaries into the Murray. The **Goulburn River** at McCoys Bridge increased steadily through the week and is currently close to a peak, at 22,400 ML/day. The **Campaspe River** at Rochester rapidly rose from 400 ML/day to 13,000 ML/day in just 30 hours across Wednesday and Thursday, before quickly falling back to 500 ML/day.

These tributaries added to the flows on the Murray at **Barmah** which are currently around 22,000 ML/day and rising. The flow at **Torrumbarry** increased to 40,000 ML/day on Saturday, at which time the gates of the weir were lifted clear of the water enabling free flow of water through the structure (Photo 2). The flow at Torrumbarry is currently steady around 40,000 ML/day. These flow rates will provide ongoing inundation of the downstream **Gunbower** and **Koondrook-Perricoota Forests**.





**Photo 2- The gates of Torrumbidgee Weir have been lifted clear of the water enabling passage of high flows through the structure (Source: Alana Wilkes, CEWO)**

On the **Murrumbidgee** River the flow at Gundagai is responding following recent rain and as at Thursday 22 September was 64,500 ML/day and rising. At Balranald at the bottom end of the Murrumbidgee River, the flow has risen to 9,080 ML/day and is likely to remain at similar rates for weeks to come. Downstream on the Murray at **Euston**, the flow is currently 36,600 ML/day and forecast to rise slowly this week. Euston weir pool is currently targeting a level of around 25 cm below Full Supply Level (FSL).

Preparations for high flows are being made at **Mildura**, with work to temporarily remove Mildura Weir expected to start on Monday 26 September (see attached media release). The process of taking out the weir is planned to finish by Sunday 2 October. Passage upstream and downstream of the weir and through Lock 11 will not be possible between Friday 30 September and Sunday 2 October. After this time river craft can bypass Lock 11, which will be closed until the weir is reinstated.

On the Darling River at **Menindee Lakes** the storage increased 24 GL to 294 GL (17% capacity). Inflows from the Darling continue with the flow upstream at **Bourke** currently 16,200 ML/day and rising. Releases from Lake Wetherell into the lower Darling River are steady at 550 ML/day. The flow downstream at Burtundy is currently 1,340 ML/day and the salinity has reduced from 820 to 560 EC units. Only a minor and short-lived rise in salinity is expected downstream of Wentworth, given the high flows in the Murray.

**Wentworth** weir pool is currently 43 cm below FSL, but may fall as low as 50 cm below FSL in coming days before returning to more normal levels next week. This temporary lowering of the level aims to assist with reducing the high salinities in the Darling arm of the weir pool (see attached media release). The release from Wentworth Weir is currently 32,800 ML/day and is expected continue rising for the next three to four weeks.



At **Lake Victoria**, the total storage decreased by 30 GL to 534 GL (79% capacity). In the coming week it is expected that inflows to the lake will be gradually increased as releases are concurrently reduced, with the aim of filling the storage before unregulated flows cease.

The flow to **South Australia** averaged 36,700 ML/day this week and is expected to reach higher levels when upstream flows arrive at South Australia. Further details will be provided in coming weeks.

At **Lock 5** the current target weir pool level is 45 cm above FSL, while the **Lock 2** weir pool is being raised by up to 75 cm above the normal pool height. This will raise Lock 2 to 6.85 m AHD.

Downstream at the **Lower Lakes**, flows through the barrages continue at high flow rates when conditions allow. Releases are being made to help improve water quality in Lake Albert and the Coorong, and to assist in scouring sand from the Murray Mouth. The 5-day average water level in **Lake Alexandrina** is to 0.72 m AHD.

**For media inquiries contact the Media Officer on 02 6279 0141**

ANDREW REYNOLDS  
Acting Executive Director, River Management



**Water in Storage**

**Week ending Wednesday 21 Sep 2016**

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	461.30	2 438	63%	71	2 367	+71
Hume Reservoir	192.00	3 005	191.53	2 911	97%	23	2 888	-2
Lake Victoria	27.00	677	25.79	534	79%	100	434	-30
Menindee Lakes		1 731*		294	17%	(- ) #	0	+24
<b>Total</b>		<b>9 269</b>		<b>6 177</b>	<b>67%</b>	<b>--</b>	<b>5 689</b>	<b>+64</b>
Total Active MDBA Storage							67% ^	

**Major State Storages**

Burrinjuck Reservoir	1 026	965	94%	3	962	-36
Blowering Reservoir	1 631	1 459	89%	24	1 435	+61
Eildon Reservoir	3 334	2 100	63%	100	2 000	+94

\* 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 20 Sep 2016

Storage	Active Storage (GL)	Weekly Change (GL)	Diversion (GL)	This Week	From 1 May 2016
Lake Eucumbene - Total	1 961	n/a	Snowy-Murray	+31	523
Snowy-Murray Component	889	n/a	Tooma-Tumut	+17	201
Target Storage	1 240		Net Diversion	15	322
			Murray 1 Release	+46	760

**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)	0.2	65	Yarrawonga Main Channel (net)	0	3
Wakool Sys Allowance	0.0	0	Torrumbarry System + Nyah (net)	5.7	51
Western Murray Irrigation	0.1	1	Sunraysia Pumped Districts	0.2	3
Licensed Pumps	0.8	14	Licensed pumps - GMW (Nyah+u/s)	0	2
Lower Darling	0.1	1	Licensed pumps - LMW	5	24
<b>TOTAL</b>	<b>1.2</b>	<b>81</b>	<b>TOTAL</b>	<b>10.9</b>	<b>83</b>

\* 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 unregulated flows.

Entitlement this month	135.0 *
Flow this week	257.2
Flow so far this month	737.0
Flow last month	848.5

(36 700 ML/day)

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

	Current	Average over the last week	Average since 1 August 2016
Swan Hill	250	180	120
Euston	-	-	-
Red Cliffs	140	140	130
Merbein	140	130	130
Burtundy (Darling)	560	730	1 260
Lock 9	170	150	130
Lake Victoria	160	150	160
Berri	150	150	160
Waikerie	200	170	180
Morgan	190	170	190
Mannum	170	170	210
Murray Bridge	190	200	230
Milang (Lake Alex.)	710	720	800
Poltalloch (Lake Alex.)	260	240	350
Meningie (Lake Alb.)	1 840	1 820	1 800
Goolwa Barrages	670	720	1 390





**River Levels and Flows**

**Week ending Wednesday 21 Sep 2016**

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	-	-	-	9 460	F	9 520	8 880
Jingellic	4.0	3.56	210.08	24 140	F	29 810	26 780
Tallandoon ( Mitta Mitta River )	4.2	2.40	219.29	4 040	F	4 700	4 060
Heywoods	5.5	4.65	158.28	40 630	F	46 940	43 140
Doctors Point	5.5	5.30	153.77	45 900	F	53 660	47 300
Albury	4.3	4.48	151.92	-	-	-	-
Corowa	4.6	6.56	132.58	60 320	R	51 090	39 310
Yarrowonga Weir (d/s)	6.4	6.48	121.52	84 720	R	73 560	52 300
Tocumwal	6.4	6.48	110.32	81 810	R	69 680	49 490
Torrumbarry Weir (d/s)	7.3	7.23	85.77	39 870	R	35 950	21 040
Swan Hill	4.5	3.65	66.57	22 420	R	21 450	18 910
Wakool Junction	8.8	6.83	55.95	30 620	R	29 010	26 730
Euston Weir (d/s)	9.1	4.83	46.67	36 590	R	34 730	33 610
Mildura Weir (d/s)	-	-	-	33 740	F	33 040	34 010
Wentworth Weir (d/s)	7.3	4.78	29.54	32 810	R	31 700	33 170
Rufus Junction	-	6.37	23.30	36 370	F	36 740	36 850
Blanchetown (Lock 1 d/s)	-	2.34	-	32 650	F	33 280	31 700
<b>Tributaries</b>							
Kiewa at Bandiana	2.8	2.94	156.17	6 120	S	6 720	6 120
Ovens at Wangaratta	11.9	12.00	149.68	21 270	F	25 750	15 070
Goulburn at McCoys Bridge	9.0	8.46	99.88	22 390	R	16 890	7 330
Edward at Stevens Weir (d/s)	5.5	5.83	85.60	14 420	F	12 150	7 030
Edward at Liewah	-	4.38	59.76	5 160	R	4 480	4 020
Wakool at Stoney Crossing	-	3.41	56.90	5 050	R	4 380	3 390
Murrumbidgee at Balranald	5.0	5.62	61.58	9 080	S	8 930	8 080
Barwon at Mungindi	6.1	3.59	-	1 170	F	1 260	790
Darling at Bourke	9.0	6.48	-	16 180	R	12 480	6 400
Darling at Burtundy Rocks	-	1.13	-	1 340	R	1 340	690

Natural Inflow to Hume	53 540	50 280
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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	-0.09	-	No. 7 Rufus River	22.10	+1.25	+4.05
No. 26 Torrumbarry	86.05	-0.25	-	No. 6 Murtho	19.25	+0.58	+2.06
No. 15 Euston	47.60	-0.29	-	No. 5 Renmark	16.30	+0.46	+1.75
No. 11 Mildura	34.40	+0.02	+1.78	No. 4 Bookpurnong	13.20	+0.05	+2.81
No. 10 Wentworth	30.80	-0.43	+2.14	No. 3 Overland Corner	9.80	+0.03	+2.33
No. 9 Kulnine	27.40	+0.01	+1.65	No. 2 Waikerie	6.10	+0.65	+2.36
No. 8 Wangumma	24.60	+0.47	+2.40	No. 1 Blanchetown	3.20	-0.05	+1.59

**Lower Lakes** FSL = 0.75 m AHD

Lake Alexandrina average level for the past 5 days (m AHD)	0.72
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**Barrages**

**Fishways at Barrages**

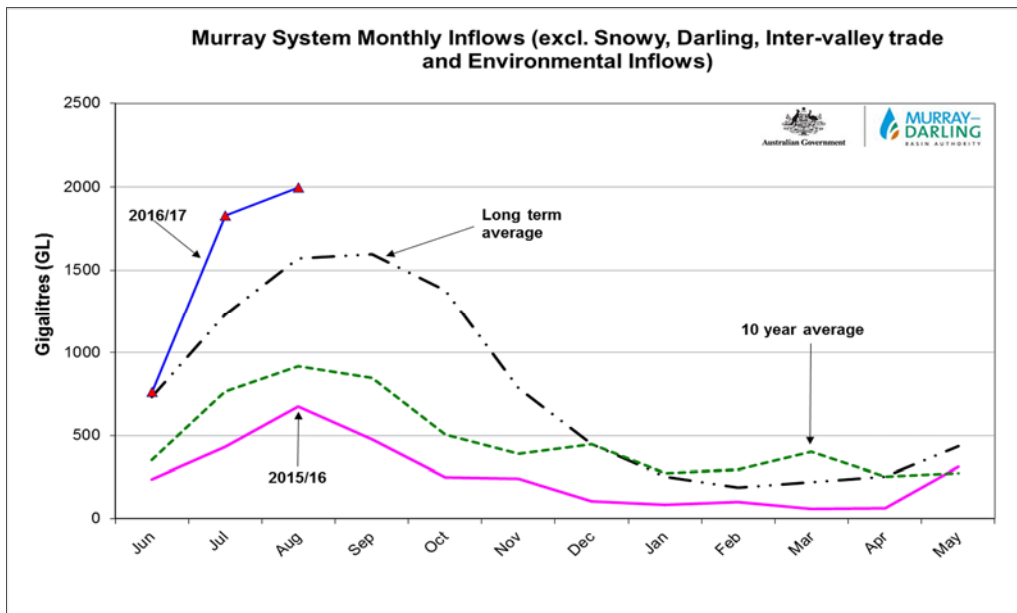
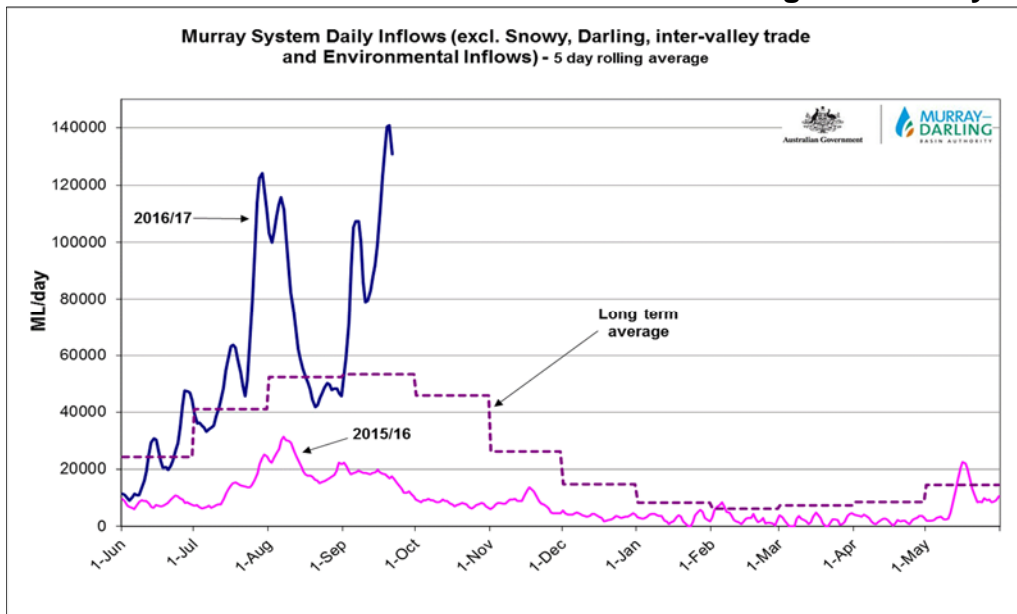
	Openings	Level (m AHD)	No. Open	Rock Ramp	Vertical Slot 1	Vertical Slot 2	Dual Vertical Slots
Goolwa	128 openings	0.74	All closed	-	Open	Open	-
Mundoo	26 openings	0.76	All closed	-	-	-	Open
Hunters Creek	-	-	-	-	Open	-	-
Boundary Creek	6 openings	-	All closed	-	Open	-	-
Ewe Island	111 gates	-	All closed	-	-	-	Open
Tauwichee	322 gates	0.74	141	Open	Open	Open	-

\* Mundoo Barrage Dual vertical slots are currently under construction.

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



Week ending Wednesday 21 Sep 2016



State Allocations (as at 21 Sep 2016)

NSW - Murray Valley

High security	97%
General security	42%

Victorian - Murray Valley

High reliability	83%
Low reliability	0%

NSW - Murrumbidgee Valley

High security	95%
General security	61%

Victorian - Goulburn Valley

High reliability	73%
Low reliability	0%

NSW - Lower Darling

High security	100%
General security	50%

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>



# MEDIA RELEASE



22 September 2016

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## Mildura weir to make way for high flows

Work to temporarily remove the Mildura Weir are expected to start on Monday 26 September as a result of increased flows in the River Murray.

The acting Executive Director of River Management, Andrew Reynolds advised river users to take into account changing water levels.

“This is important preparation for higher flows down the Murray, which are expected to start affecting the river at Mildura next week. It is likely river levels will then remain high through October,” Mr Reynolds said.

“The process of taking out the weir is planned to finish by Sunday 2 October.

“It will also mean passage upstream and downstream of the weir and through lock 11 will not be possible between Friday 30 September and Sunday 2 October. After this time river craft can bypass Lock 11, which will be closed until the weir is reinstated.

“The weir is removed if flows are forecast to reach about 43,000 megalitres per day. The last time this occurred was in 2012.

“Thanks to the ongoing maintenance program at the weir, which included new trestles being installed in 2014 and 2015, removal of the weir by Goulburn-Murray Water will be a safe and relatively straight forward exercise.”

Mr Reynolds said for a short time after the weir is removed, the water level immediately upstream will be approximately 1.0 metre lower. As the higher flows approach Mildura, the river will begin to rise again.

“The weir will be reinstated once the high flows pass, with the date dependent on future rainfall and inflows.”

The MDBA will issue further advice as needed. Information is also available in the River Murray Weekly Report at [www.mdba.gov.au/river-information/weekly-reports](http://www.mdba.gov.au/river-information/weekly-reports)

END

For more information, contact the MDBA Media office at [media@mdba.gov.au](mailto:media@mdba.gov.au) or 02 6279 0141

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# MEDIA RELEASE



21 September 2016

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## Further small drop for Wentworth weir pool before rising next week

People along the Murray and Darling rivers near Wentworth are advised that the Lock 10 weir pool will drop a little further in the coming days before returning to normal levels early next week.

Boat operators, holiday makers, river pumpers, stock owners and others along the River Murray and Darling River upstream of Wentworth are reminded to take changing water levels into account for the next few days and adjust their activities accordingly.

The acting Executive Director of River Management, Andrew Reynolds, said this action to try to reduce the high salinity levels of irrigation water in the Darling River was timed to take advantage of higher flows moving down the Darling and before the Murray's expected rise.

"We've seen the salinity peak move steadily downstream and it is likely to have reached the River Murray by early next week," Mr Reynolds said.

"The weir pool is at 30.39 metres (0.41 of a metre below full supply level) and fell as low as 30.36 metres over the weekend. It is likely to reach 30.30 metres (0.50 below full supply level) this week before returning to more normal levels next week.

"We're continuing to monitor water quality and the effects of a lower weir pool on the local community. We appreciate the patience of local people and business operators during this time."

The MDBA is conducting this work in cooperation with WaterNSW, DPI Water, Goulburn-Murray Water and other Victorian agencies.

Mr Reynolds said the lowering is most noticeable close to the weir and in the Darling arm. The flows currently passing Mildura Weir are helping to limit the fall of water levels near Mildura. Lock 10 continues to remain open to traffic.

Forecasts of River Murray flows and salinity are available on the MDBA website at <http://www.mdba.gov.au/river-data/current-information-forecasts>

ENDS

For more information, contact the MDBA Media office at [media@mdba.gov.au](mailto:media@mdba.gov.au) or 02 6279 0141

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