



RIVER MURRAY WEEKLY REPORT

FOR THE WEEK ENDING WEDNESDAY, 26 OCTOBER 2016

Trim Ref: D16/35708

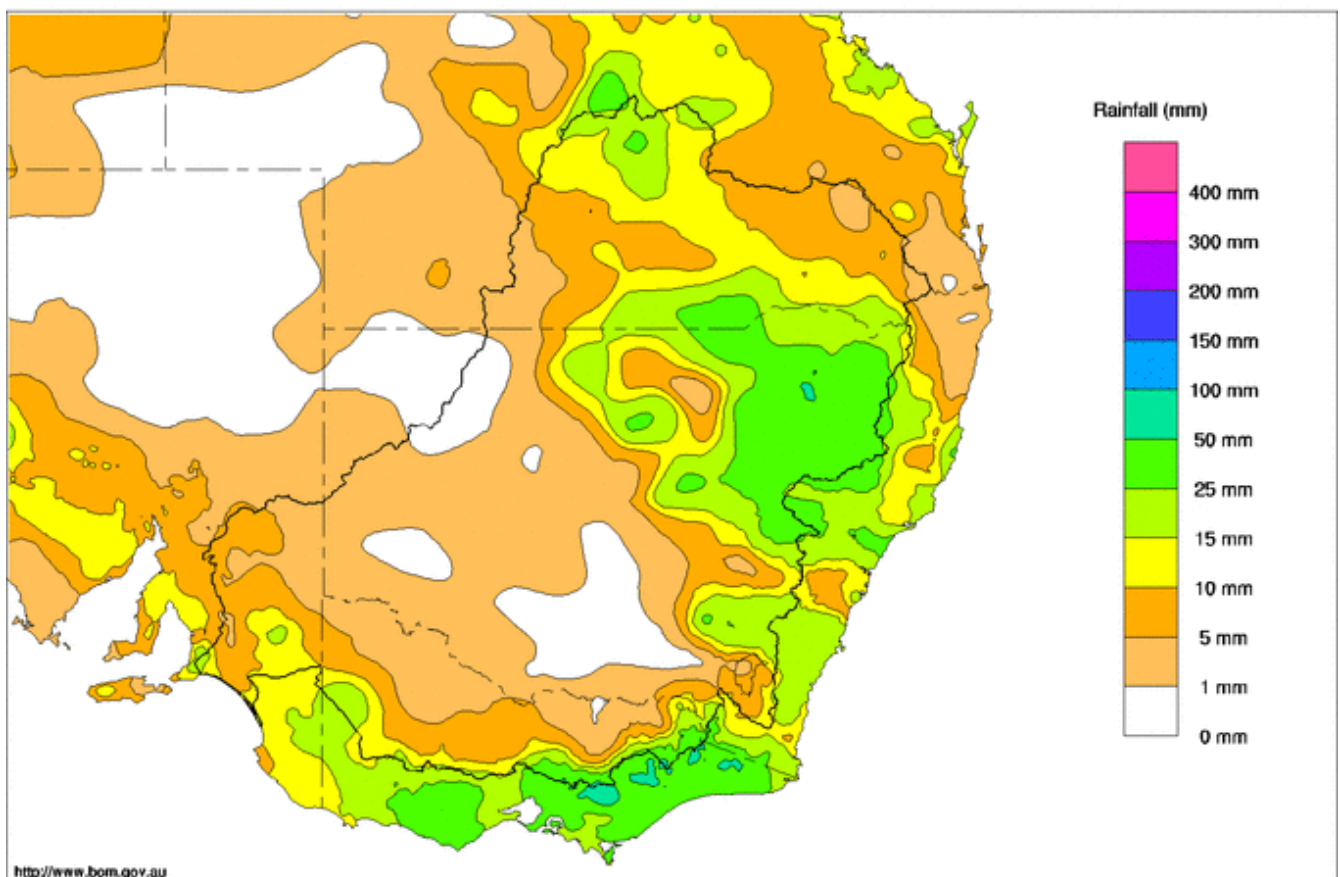
Rainfall and inflows

A cold front and associated trough delivered the bulk of this week's rainfall in the Murray–Darling Basin. Falls were relatively widespread in the northern Basin with the week's highest total of 49 mm recorded at Lochinvar in Queensland's upper Warrego catchment. In New South Wales 43 mm fell at Glenn Innes while further south Gunning received 42 mm.

The heaviest falls in Victoria were confined to the upper ranges, with 40 mm falling at Wallaby Creek in the upper Goulburn catchment. In South Australia, Macclesfield in the Mount Lofty Ranges, received 16 mm.

Further rainfall is forecast from Sunday across the upper Murray catchments, although at this stage heavy rainfall is not expected.

Murray-Darling Rainfall Totals (mm) Week Ending 26th October 2016
Australian Bureau of Meteorology



<http://www.bom.gov.au>
© Commonwealth of Australia 2016, Australian Bureau of Meteorology Issued: 26/10/2016

Map 1 - Murray-Darling Basin rainfall week ending 26th October 2016 (Source: Bureau of Meteorology)

Rainfall combined with snow melt in the upper catchments slowed the recession of many upper Murray tributaries (see Photo 1). Over the coming weeks snow melt will continue to provide low level flows in the upper catchments.



Photo 2 – The snow laden upper Swampy Plains River. Photo: Hugo Bowman, MDBA.

On the upper Murray the flow at Biggara has receded from last week's peak near 7,500 ML/day to a current flow of 3,600 ML/day. Further downstream at Jingellic, the flow decreased from 25,100 ML/day to 18,400 ML/day. Upstream of Dartmouth Reservoir, flows in the upper Mitta Mitta River at Hinnomunjie slowly receded to 2,800 ML/day.

River operations

- Hume Dam effectively full
- Widespread 'blackwater' event
- MDBA now able to direct releases from Menindee Lakes

Reaches of the River Murray system between Barmah-Millewa Forest and Wakool Junction are experiencing "[blackwater](#)". Blackwater occurs naturally when there is rapid breakdown of leaf litter from inundated areas. Breakdown of leaf litter is an important ecological process which provides nutrients for the growth of aquatic organisms. However, as is currently occurring now, particularly in the Edward-Wakool system, this process can result in very low levels of dissolved oxygen resulting in fish deaths. The MDBA, together with New South Wales and Victorian agencies, will continue to monitor dissolved oxygen levels.

Total active MDBA storage has increased this week by 215 GL to 6,436 GL (75% capacity).

At **Dartmouth Reservoir**, the storage volume increased by 59 GL to 2,854 GL (74% capacity). The release, measured at Colemans, remains at the minimum flow rate of 200 ML/day.

At **Hume Reservoir** the storage volume increased by 13 GL during the week to the effective full supply level of 2,975 GL (99% capacity). The release was reduced during the week from 30,000 ML/day to 19,500 ML/day, but as at 27 October was 21,000 ML/day to maintain sufficient airspace in light of some rain forecast for Sunday. Releases will be managed over the coming weeks to ensure that the reservoir is effectively full (more than 99% capacity) when downstream demand exceeds inflows to the storage. Whilst longer range forecasts currently favour warmer and drier conditions, the risk of renewed flooding remains. MDBA continues to carefully watch Bureau of Meteorology forecasts for any potential future flooding and communities and landholders should also keep up with the latest [Flood Watches and](#)



Warnings. Further information on MDBA's approach to [flood management](#) at Hume Dam is available on the MDBA website.

At **Yarrowonga Weir**, the release has been gradually lowered this week to 43,000 ML/day and will continue to reduce throughout this coming week. Without further substantial rainfall, the release could be back to 15,000 ML/day in early-mid November. The pool level at Yarrowonga Weir is close to 124.7 m AHD and is expected to remain around this level over the coming week.

Diversions to the major irrigation offtakes have increased over the last week. Currently around 600 ML/day is flowing into Yarrowonga Main Canal and 3,700 ML/day into Mulwala Canal, with a portion of this flow environmental water to be escaped into the Edward River. The addition of this oxygenated water into the Edward River is aimed at [providing refuge flows](#) to minimise fish deaths caused by hypoxic blackwater.

Flows are gradually receding at the Edward River and Gulpa Creek offtakes, with the combined flow now around 4,200 ML/day. High volumes of water continue to pass through the Millewa forest and into the **Edward River**, with the downstream flow at Toonalook now 31,400 ML/day after peaking on 17 October at around 51,000 ML/day. The current peak in the Edward River is now around Moulamein, while on the **Wakool River** the peak is approaching Gee Gee Bridge. For forecast flood peaks on the Edward-Wakool system, see the latest [Flood Warnings](#) issued by the Bureau of Meteorology.

The Murray at **Barmah** is slowly receding from the broad peak where river levels reached 6.9 m, and is now near 6.5 m. Inflows from the **Goulburn River** have receded to 8,000 ML/day and from the **Campaspe River** to around 870 ML/day.

At **Torrumbarry Weir**, the flow has decreased to 50,900 ML/day after a peak near 58,000 ML/day last week. Over the next couple of weeks the flow will continue to decrease. As the gates are out of the water, the river level is varying with the flow and is now about 15 cm above the normal full supply level. The level is expected to gradually fall below the full supply level over coming weeks as flows recede, before the weir gates are returned to operation.

At these high flows, large volumes of water continue to naturally enter Gunbower Forest and the Koondrook-Perricoota Forest from both upstream and downstream of Torrumbarry Weir. Much of the water flowing into the Koondrook-Perricoota forest is eventually entering the Wakool River through Thule Creek and Barbers Creek.

Downstream at **Swan Hill**, the flow peaked at 27,400 ML/day (4.3 m local gauge height) on Tuesday 25 October. Further downstream at Wakool junction, the Murray continues to rise with inflows from the **Wakool River** contributing to a flow near 86,000 ML/day (10.4 m local gauge height). For more information, see the latest [Flood Warning](#) from the Bureau of Meteorology.

Similarly, the flow in the **Murrumbidgee River** at Balranald continues to steadily rise and is now 14,700 ML/day. Further rises are expected over the next fortnight due to water already in transit in the Murrumbidgee River. For more information, see the latest [Flood Warning](#) from the Bureau of Meteorology.

Downstream at **Euston Weir**, the flow has increased to around 69,000 ML/day. With the weir at Euston removed, as is usual practice during high flows, the river level will continue to vary with the flow rate. The flow at Euston is expected to continue rising for the next fortnight. For more information, see the latest [Flood Warning](#) from the Bureau of Meteorology.

High flows in the Darling system resulted in the **Menindee Lakes** storage volume increasing by 115 GL this week to 727 GL (42% capacity). As the storage volume has reached 640 GL, and until the total volume next falls below 480 GL, MDBA is able to direct releases from the Menindee Lakes to supplement water use in the Murray Valley. DPI Water can also continue to call on water for use locally for town water supplies, irrigation and the environment. The flow at Weir 32 remains at 700 ML/day.

At **Wentworth Weir**, just below the junction of the Murray and Darling Rivers, the flow has been steadily climbing and has now reached 54,500 ML/day. The weir was removed on Thursday 20 October as is normal practice during high flows (see Photo 2). This flow is expected to keep rising over the next few weeks—see the latest [Flood Warning](#) from the Bureau of Meteorology.



Photo 3 – High flows have resulted in the Wentworth Weir being temporarily removed. Photo: Danny Bourke, WaterNSW.

The weir at Lock 9 has now also been removed, resulting in a free flowing river from downstream of Yarrowonga Weir down to Lock 6 in South Australia, a distance of just over 1,350 km. At **Lake Victoria**, the storage volume increased by 28 GL during the week to 554 GL (82% capacity). It is expected that Lake Victoria will continue to be filled over the coming weeks.

The flow to **South Australia** averaged around 45,600 ML/day this week with the peak to South Australia forecast to arrive around early December, see [DEWNR's latest high flow advice](#).

At the **Lower Lakes**, barrage releases have averaged near 48,000 ML/day over the last week with the current lake level 0.81 m AHD. Recent barrage releases have scoured a modest amount of sand, but sufficient to improve connectivity of the Murray Mouth in the short term. Larger flows through November and into December are expected to scour larger volumes of sand.

For media inquiries contact the Media Officer on 02 6279 0141

DAVID DREVERMAN
Executive Director, River Management



Water in Storage

Week ending Wednesday 26 Oct 2016

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	469.30	2 854	74%	71	2 783	+59
Hume Reservoir	192.00	3 005	191.85	2 975	99%	23	2 952	+13
Lake Victoria	27.00	677	25.97	554	82%	100	454	+28
Menindee Lakes		1 731*		727	42%	(480 #)	247	+115
Total		9 269		7 110	77%	--	6 436	+215
Total Active MDBA Storage							75% ^	

Major State Storages

Burrinjuck Reservoir	1 026	1 017	99%	3	1 014	+41
Blowering Reservoir	1 631	1 552	95%	24	1 528	-22
Eildon Reservoir	3 334	2 584	78%	100	2 484	+56

* 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 Oct 2016

Storage	Active Storage (GL)	Weekly Change (GL)	Diversion (GL)	This Week	From 1 May 2016
Lake Eucumbene - Total	2 292	+33	Snowy-Murray	+27	623
Snowy-Murray Component	988	+5	Tooma-Tumut	+17	279
Target Storage	1 400		Net Diversion	9	345
			Murray 1 Release	+42	947

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)	18.6	93	Yarrowonga Main Channel (net)	1.9	5
Wakool Sys Allowance	0.0	0	Torrumbarry System + Nyah (net)	0.1	62
Western Murray Irrigation	0.4	1	Sunraysia Pumped Districts	1.5	7
Licensed Pumps	3.6	22	Licensed pumps - GMW (Nyah+u/s)	0	3
Lower Darling	0.0	2	Licensed pumps - LMW	6.3	54
TOTAL	22.6	118	TOTAL	9.8	131

* 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	170.0 *
Flow this week	318.9
Flow so far this month	1,121.9
Flow last month	1,045.1

(45 600 ML/day)

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

	Current	Average over the last week	Average since 1 August 2016
Swan Hill	-	250	150
Euston	-	-	-
Red Cliffs	160	150	140
Merbein	160	150	130
Burtundy (Darling)	310	330	930
Lock 9	160	150	140
Lake Victoria	170	170	160
Berri	170	170	170
Waikerie	230	210	200
Morgan	220	200	200
Mannum	210	210	210
Murray Bridge	210	220	230
Milang (Lake Alex.)	410	420	690
Poltalloch (Lake Alex.)	290	300	330
Meningie (Lake Alb.)	1 660	1 660	1 770
Goolwa Barrages	410	400	1 170



River Levels and Flows

Week ending Wednesday 26 Oct 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	-	-	-	9 500	R	9 210	9 250
Jingellic	4.0	3.12	209.64	18 410	F	20 470	21 640
Tallandoon (Mitta Mitta River)	4.2	2.15	219.04	2 960	F	3 400	4 380
Heywoods	5.5	3.51	157.14	20 920	R	25 590	28 690
Doctors Point	5.5	3.98	152.45	27 190	R	32 890	36 950
Albury	4.3	3.05	150.49	-	-	-	-
Corowa	4.6	5.24	131.26	35 050	F	37 150	50 010
Yarrowonga Weir (d/s)	6.4	5.06	120.10	47 720	S	49 360	77 400
Tocumwal	6.4	5.73	109.57	50 880	S	56 560	92 610
Torrumbarry Weir (d/s)	7.3	7.62	86.17	50 890	F	54 220	57 320
Swan Hill	4.5	4.31	67.23	27 280	S	27 040	25 950
Wakool Junction	8.8	-	-	84 540	R	76 120	59 860
Euston Weir (d/s)	9.1	7.12	48.96	68 940	R	63 950	54 100
Mildura Weir (d/s)	-	-	-	55 130	F	52 370	47 280
Wentworth Weir (d/s)	7.3	5.94	30.70	54 530	R	52 210	46 440
Rufus Junction	-	6.82	23.75	46 890	R	45 550	47 050
Blanchetown (Lock 1 d/s)	-	2.92	-	44 100	S	41 890	37 250
Tributaries							
Kiewa at Bandiana	2.8	2.87	156.10	4 860	F	5 240	6 020
Ovens at Wangaratta	11.9	10.49	148.17	8 850	F	11 210	14 780
Goulburn at McCoys Bridge	9.0	4.77	96.19	7 960	F	9 150	20 140
Edward at Stevens Weir (d/s)	5.5	6.34	86.12	26 240	S	32 100	37 970
Edward at Liewah	-	6.77	62.15	14 410	R	13 230	11 490
Wakool at Stoney Crossing	-	8.42	61.92	50 670	R	43 530	31 460
Murrumbidgee at Balranald	5.0	6.32	62.28	14 680	R	12 970	10 810
Barwon at Mungindi	6.1	3.94	-	2 560	F	4 990	5 390
Darling at Bourke	9.0	10.26	-	38 550	S	37 950	35 550
Darling at Burtundy Rocks	-	0.98	-	910	S	910	1 010

Natural Inflow to Hume	32 720	39 840
------------------------	--------	--------

(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	-0.12	-	No. 7 Rufus River	22.10	+1.91	-28.25
No. 26 Torrumbarry	86.05	+0.15	-	No. 6 Murtho	19.25	+0.07	+2.58
No. 15 Euston	47.60	+1.53	-	No. 5 Renmark	16.30	+0.01	+2.32
No. 11 Mildura	34.40	-43.40	+3.20	No. 4 Bookpurnong	13.20	+0.20	+3.54
No. 10 Wentworth	30.80	+0.07	+3.30	No. 3 Overland Corner	9.80	+0.03	+2.90
No. 9 Kulnine	27.40	-0.13	+2.59	No. 2 Waikerie	6.10	+0.44	+3.11
No. 8 Wangumma	24.60	+0.84	+3.28	No. 1 Blanchetown	3.20	-0.15	+2.17

Lower Lakes FSL = 0.75 m AHD

Lake Alexandrina average level for the past 5 days (m AHD)	0.81
--	------

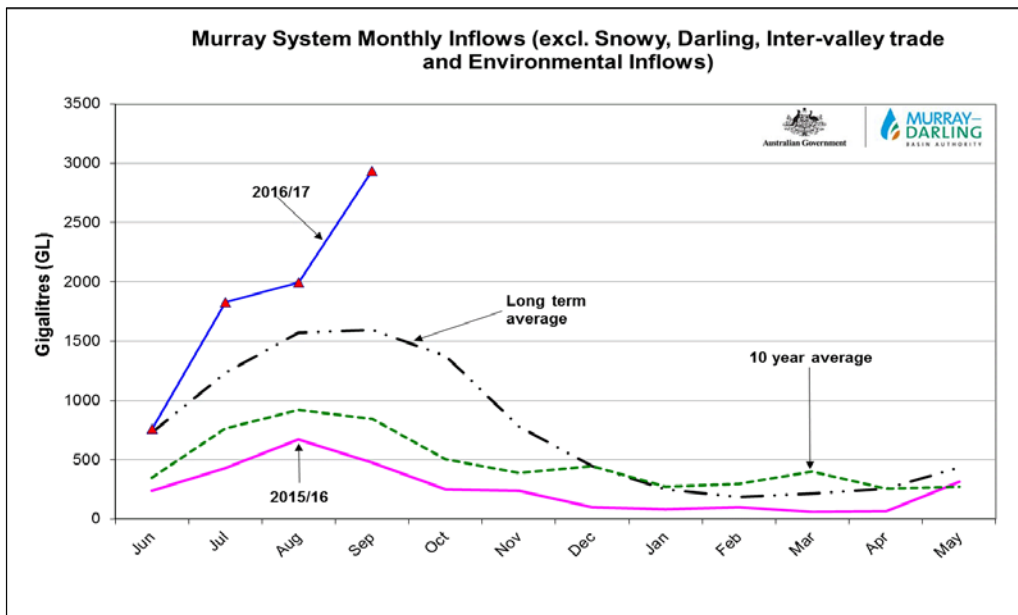
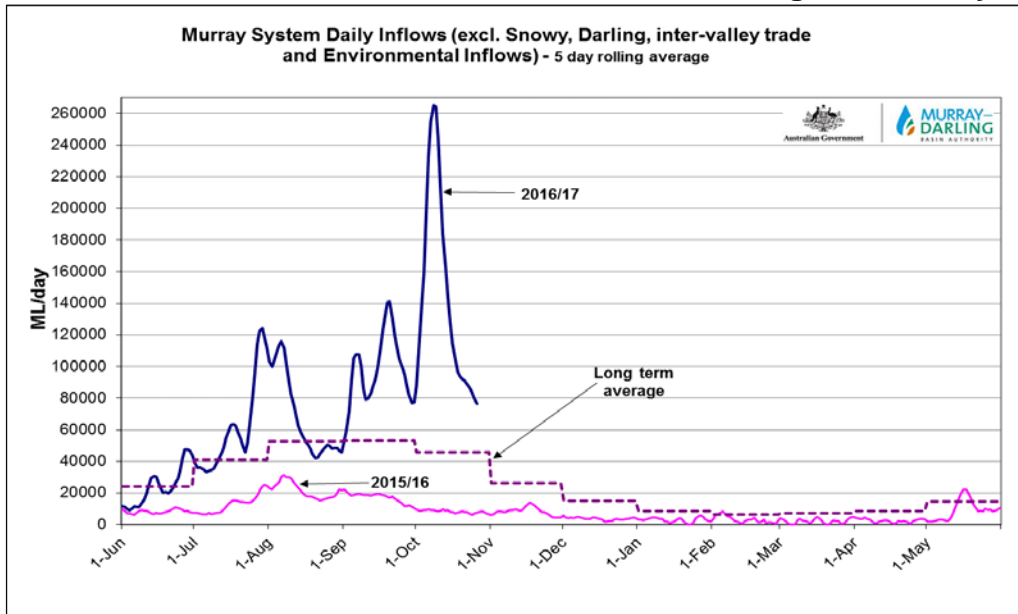
Barrages

Fishways at Barrages

	Openings	Level (m AHD)	No. Open	Rock Ramp	Vertical Slot 1	Vertical Slot 2	Dual Vertical Slots
Goolwa	128 openings	0.72	20	-	Open	Open	-
Mundoo	26 openings	0.63	6	-	-	-	Open
Hunters Creek	-	-	-	-	Open	-	-
Boundary Creek	6 openings	-	1	-	Open	-	-
Ewe Island	111 gates	-	30	-	-	-	Open
Tauwichee	322 gates	0.72	182	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



State Allocations (as at 26 Oct 2016)

NSW - Murray Valley

High security	97%
General security	63%

Victorian - Murray Valley

High reliability	100%
Low reliability	0%

NSW - Murrumbidgee Valley

High security	95%
General security	71%

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%
---------------	------

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>