



RIVER MURRAY WEEKLY REPORT

FOR THE WEEK ENDING WEDNESDAY, 11TH NOVEMBER 2015

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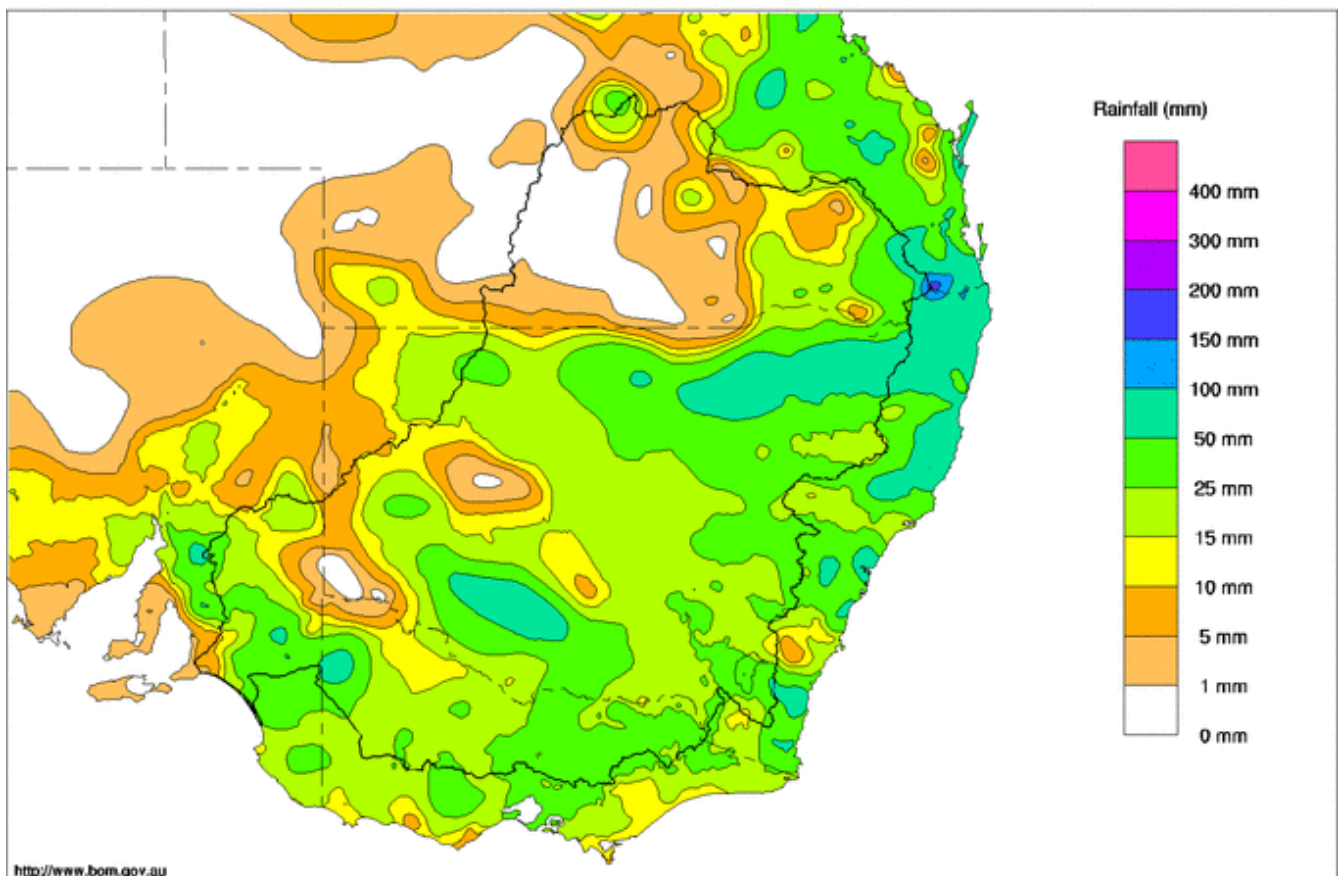
Rainfall and inflows

Rainfall was widespread across much of the Murray–Darling Basin this week. The highest totals were recorded in parts of southeast Queensland, northeast and southwest New South Wales (NSW), western Victoria, and southeast South Australia (Map 1). However, much of southwest Queensland and small parts of western NSW failed to record any rainfall.

In Queensland, highest totals included 123 mm at Killarney, 71 mm at Clifton and 67 mm at Maryvale in the Darling Downs. In New South Wales, highest totals included 100 mm at Inverell, 86 mm at Rowena and 80 mm at Pilliga in the north, and 89 mm at Hay airport in the western Riverina. In Victoria, highest totals included 86 mm at Murrayville in the northern Mallee and 56 mm at Mount Buller in the northeast. Whilst in South Australia, highest totals were recorded in the Murray Mallee and included 56 mm at Mindarie and 55 mm at Copeville.

Murray-Darling Rainfall Totals (mm) Week Ending 11th November 2015

Australian Bureau of Meteorology



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Map 1 - Murray-Darling Basin rainfall week ending 11th November 2015 (Source: Bureau of Meteorology)

Stream flow responses along the upper Murray tributaries were modest again this week, however the continuing wet weather is generally resulting in slower recessions and improved base flows. On the Mitta Mitta River the flow at Hinnomunjie bridge peaked at 1,200 ML/day before slowly receding to 620 ML/day. On the upper Murray, the flow at Biggara peaked at 900 ML/day and is currently flowing at 550 ML/day. On the Ovens River, the flow at Wangaratta peaked at 2,400 ML/day and is currently 1,300 ML/day.



River Operations

- Rain in the Murrumbidgee to boost flows at Balranald
- Lower Lakes rise to 0.87 m AHD

MDBA total storage increased by 7 GL this week, with the active storage now 4,049 GL (48% capacity). This is roughly 1,900 GL or 22% less than this time last year or similar to the same time in 2003.

At **Dartmouth Reservoir**, the storage volume decreased by 40 GL to 2,302 GL (60% capacity) this week as bulk transfers to Hume, measured at Colemans on the Mitta Mitta, were increased over the week to almost 8,000 ML/day. The rainfall over Dartmouth catchment provided only about 9 GL of inflow this week.

At **Hume Reservoir**, the storage volume rose 30 GL to 1,377 GL (46% capacity) this week because Hume inflows from Snowy releases, Dartmouth transfers and tributaries exceeded the average daily release of 6,800 ML/day. Hume releases are low as rain has suppressed downstream irrigation demands.

At **Yarrowonga Weir**, the total daily diversions through Mulwala Canal averaged 260 ML/day while Yarrowonga Main Channel averaged 110 ML/day. The release downstream of Yarrowonga Weir has been reduced to channel capacity of 10,000 ML/day this week as transfers to Lake Victoria above channel capacity and additional environmental releases have finished. Over the coming week releases will be reduced to 9,600 ML/day and increased to 10,000 ML/day again. This variability is aimed at creating cues for fish to spawn in this reach of the Murray as water temperatures rise.

On the **Edward River** system, the combined flow through the Edward and Gulpa offtakes is around 2,400 ML/day. After a temporary reduction, diversions to the Edward River via Mulwala Canal and Edward escape (see photo 1) are expected to increase over the coming weeks to assist in meeting downstream demands and transfers to Lake Victoria. Delivery of environmental water to Wakool River and Colligen Creek continues. Diversions at Wakool River regulator, Yallakool Creek regulator and Colligen Creek regulator are respectively 60 ML/day, 460 ML/day and 410 ML/day. The flow downstream of **Stevens Weir** has dropped this week from near channel capacity (2,700 ML/day) to 2,200 ML/day.

On the Murray at **Barmah**, the flow is receding with the reduction in Yarrowonga releases.

On the **Goulburn**, delivery of Inter-Valley transfer (IVT) water is targeting a flow of 550 ML/day at McCoys, 200 ML/day above the normal monthly entitlement for November, but the flow is currently around 700 ML/day due to local rainfall.

At **Torrumbarry Weir**, diversions to the National Channel have remained steady at 1,200 ML/day this week. Part of the National Channel diversion is environmental water for Gunbower forest and Gunbower Creek. Releases into Gunbower forest are targeting 100 ML/day through Hipwell offtake regulator while the target flow for Gunbower creek is 700 ML/day at Cohuna during the Murray Cod spawning season. The flow downstream of Torrumbarry is around 8,500 ML/day and is forecast to recede this week to below 8,000 ML/day.

Downstream at **Swan Hill**, the flow is being boosted by around 500 ML/day with returns from Gunbower Creek via Koondrook spillway.

On the **Murrumbidgee** at Balranald, the delivery of IVT water continues above the November end of system target minimum of 568 ML/day. The rain over the lower Murrumbidgee has added to flow at Balranald and may rise to around 2,500 ML/day next week.

Downstream at **Euston Weir**, the weir pool is currently 53cm above full supply level and will continue to be lowered this week to the November target of 40 cm above full supply level (47.6m AHD) as part of a trial to reinstate a more natural wetting and drying cycle.



Photo 1 – Edward River escape (source Matt Brown). In the irrigation season, Murray Irrigation Limited (MIL) can divert water from the Mulwala Canal, via the Edward Escape, to meet demands in the Edward River system. The MDBA also uses the Edward Escape to bypass the Barmah Choke to meet downstream demands in the Murray.

At **Hattah Lakes** a flow of 100-150 ML/day will return to the Murray via Messengers regulator over the next week. This flow is aimed at allowing fish passage between the lakes and the Murray.

At **Menindee Lakes** the storage volume remains steady at 85 GL (5% capacity).

At **Wentworth** weir on the Murray, the weir pool target level is 10 cm above FSL to assist pumpers on the Darling River within the influence of the Wentworth weir pool.

At **Lock 8**, the weir pool level has been reduced to around full supply level (24.6 m AHD) and will continue to be drawn down until it is 50 cm below FSL for November.

At **Lake Victoria**, the storage volume increased by 18 GL to 564 GL (83% capacity). The storage volume increase is mainly due to the large transfers (particularly from Hume but also a small IVT contribution from the Murrumbidgee River) and the low diversions from the Murray brought on by this week's rainfall.

At the **Lower Lakes**, the 5-day average level for Lake Alexandrina has risen from 0.83 to 0.87 m AHD. Flows into the Coorong through the Barrages averaged 1,400 ML/day this week.

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Week ending Wednesday 11 Nov 2015



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	458.53	2 302	60%	71	2 231	-40
Hume Reservoir	192.00	3 005	182.01	1 377	46%	23	1 354	+30
Lake Victoria	27.00	677	26.05	564	83%	100	464	+18
Menindee Lakes		1 731*		85	5%	(- -) #	0	-0
Total		9 269		4 328	47%	--	4 049	+7
Total Active MDBA Storage							48% ^	

Major State Storages

Burrinjuck Reservoir	1 026	721	70%	3	718	-10
Blowering Reservoir	1 631	701	43%	24	677	+8
Eildon Reservoir	3 334	1 779	53%	100	1 679	-1

* Menindee surcharge capacity – 2050 GL

** All Data is rounded to nearest GL **

NSW has sole access when storage in Menindee Lakes falls below 480 GL. MDBA gains access when storage next reaches 640 GL.

^ % of total active MDBA storage

Snowy Mountains Scheme

Snowy diversions for week ending 10 Nov 2015

Storage	Active Storage (GL)	Weekly Change (GL)	Diversion (GL)	This Week	From 1 May 2015
Lake Eucumbene - Total	2 345	n/a	Snowy-Murray	+3	251
Snowy-Murray Component	1 138	n/a	Tooma-Tumut	+1	130
Target Storage	1 450		Net Diversion	3	121
			Murray 1 Release	+15	415

Major Diversions from Murray and Lower Darling (GL) *

New South Wales	This Week	From 1 July 2015	Victoria	This Week	From 1 July 2015
Murray Irrig. Ltd (Net)	1.4	181	Yarrawonga Main Channel (net)	0.7	91
Wakool Sys Allowance	0.6	22	Torrumbarry System + Nyah (net)	2.8	186
Western Murray Irrigation	0.6	0	Sunraysia Pumped Districts	2.8	27
Licensed Pumps	2.7	55	Licensed pumps - GMW (Nyah+u/s)	2.4	13
Lower Darling	0.3	3	Licensed pumps - LMW	10.5	75
TOTAL	5.6	261	TOTAL	19.2	392

* Figures derived from estimates and monthly data. 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	180.0 *
Flow this week	53.5
Flow so far this month	91.6
Flow last month	329.6

(7 600 ML/day)

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

	Current	Average over the last week	Average since 1 August 2015
Swan Hill	90	70	80
Euston	-	-	-
Red Cliffs	110	100	130
Merbein	100	100	140
Burtundy (Darling)	1 090	1 090	950
Lock 9	110	120	150
Lake Victoria	240	250	220
Berri	220	220	230
Waikerie	270	260	270
Morgan	280	270	280
Mannum	260	270	320
Murray Bridge	270	280	350
Milang (Lake Alex.)	780	770	760
Poltalloch (Lake Alex.)	480	530	570
Meningie (Lake Alb.)	2 010	1 970	2 040
Goolwa Barrages	1 020	980	1 010

River Levels and Flows

Week ending Wednesday 11 Nov 2015



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	-	-	-	2 410	F	2 610	1 400
Jingellic	4.0	1.63	208.15	3 680	F	3 760	2 860
Tallandoon (Mitta Mitta River)	4.2	3.13	220.02	8 010	R	7 180	6 490
Heywoods	5.5	2.65	156.28	8 820	R	6 820	9 420
Doctors Point	5.5	2.58	151.05	9 930	R	7 980	10 010
Albury	4.3	1.61	149.05	-	-	-	-
Corowa	4.6	2.02	128.04	7 950	F	8 010	12 110
Yarrowonga Weir (d/s)	6.4	1.63	116.67	10 010	R	10 240	11 660
Tocumwal	6.4	2.24	106.08	10 080	F	10 670	12 020
Torrumbarry Weir (d/s)	7.3	2.75	81.30	8 580	F	9 030	8 600
Swan Hill	4.5	1.70	64.62	9 440	F	9 360	8 670
Wakool Junction	8.8	3.97	53.09	12 440	S	12 070	12 130
Euston Weir (d/s)	9.1	2.39	44.23	13 520	R	12 380	13 330
Mildura Weir (d/s)	-	-	-	11 440	F	11 750	13 160
Wentworth Weir (d/s)	7.3	3.07	27.83	10 010	R	10 700	11 800
Rufus Junction	-	3.55	20.48	6 830	F	7 360	9 600
Blanchetown (Lock 1 d/s)	-	0.95	-	5 980	F	8 420	7 790
Tributaries							
Kiewa at Bandiana	2.8	1.14	154.37	720	F	1 220	830
Ovens at Wangaratta	11.9	8.29	145.97	1 300	F	1 590	970
Goulburn at McCoys Bridge	9.0	1.35	92.77	700	F	760	790
Edward at Stevens Weir (d/s)	5.5	2.15	81.92	2 210	F	2 480	2 640
Edward at Liewah	-	3.10	58.48	2 720	R	2 720	2 570
Wakool at Stoney Crossing	-	1.63	55.12	930	S	960	910
Murrumbidgee at Balranald	5.0	2.35	58.31	1 970	R	1 760	1 530
Barwon at Mungindi	6.1	3.21	-	100	R	40	20
Darling at Bourke	9.0	4.17	-	640	F	690	110
Darling at Burtundy Rocks	-	0.68	-	0	F	0	0

Natural Inflow to Hume	4 980	4 770
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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	-0.18	-	No. 7 Rufus River	22.10	+0.34	+1.40
No. 26 Torrumbarry	86.05	+0.00	-	No. 6 Murtho	19.25	+0.03	+0.32
No. 15 Euston	47.60	+0.53	-	No. 5 Renmark	16.30	+0.28	+0.20
No. 11 Mildura	34.40	+0.05	+0.37	No. 4 Bookpurnong	13.20	-0.02	+0.55
No. 10 Wentworth	30.80	+0.07	+0.43	No. 3 Overland Corner	9.80	-0.01	+0.48
No. 9 Kulnine	27.40	-0.11	+0.07	No. 2 Waikerie	6.10	+0.38	+0.13
No. 8 Wangumma	24.60	+0.03	+0.49	No. 1 Blanchetown	3.20	-0.09	+0.20

Lower Lakes FSL = 0.75 m AHD

Lake Alexandrina average level for the past 5 days (m AHD)	0.87
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Barrages

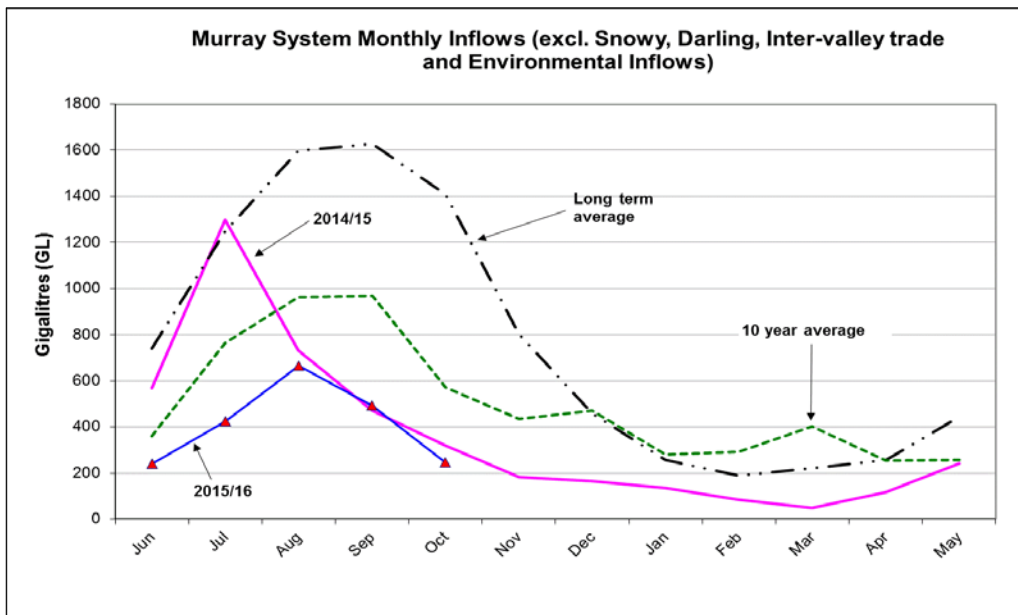
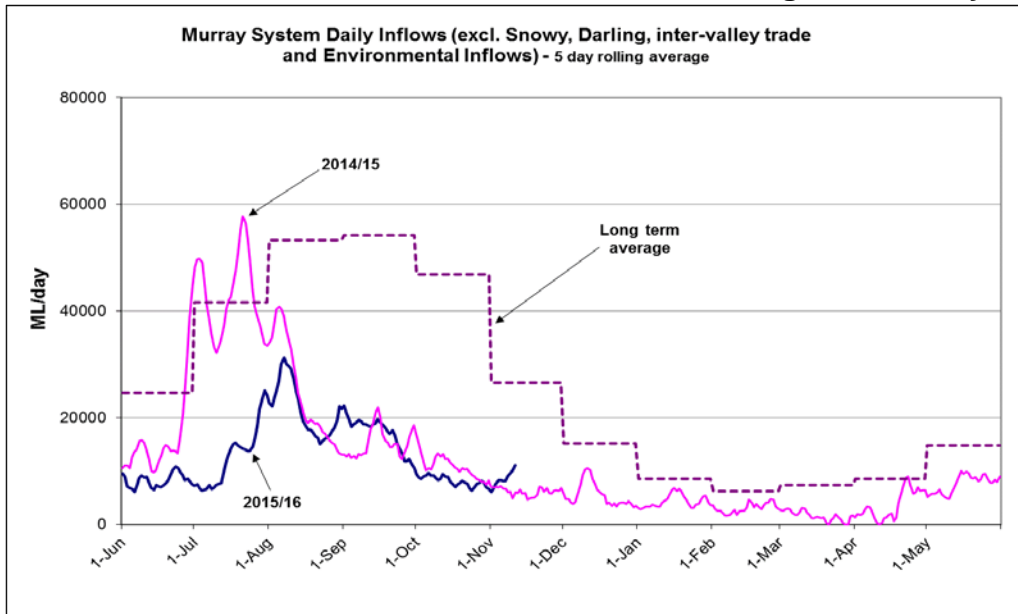
Fishways at Barrages

	Openings	Level (m AHD)	No. Open	Rock Ramp	Vertical Slot
Goolwa	128 openings	0.98	1	-	Open
Mundoo	26 openings	0.91	All closed	-	-
Boundary Creek	6 openings	-	0.1	-	-
Ewe Island	111 gates	-	All closed	-	-
Tauwichee	322 gates	0.89	4	Open	Open

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



Week ending Wednesday 11 Nov 2015



State Allocations (as at 11 Nov 2015)

NSW - Murray Valley

High security	97%
General security	13%

Victorian - Murray Valley

High reliability	85%
Low reliability	0%

NSW - Murrumbidgee Valley

High security	95%
General security	29%

Victorian - Goulburn Valley

High reliability	75%
Low reliability	0%

NSW - Lower Darling

High security	50%
General security	0%

South Australia - Murray Valley

High security	100%
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NSW : <http://www.water.nsw.gov.au/Water-management/Water-availability/Water-allocations/Water-allocations-summary/water-allocations-summary/default.aspx>

VIC : <http://www.nvrn.net.au/allocations/current.aspx>

SA : <http://www.environment.sa.gov.au/managing-natural-resources/river-murray>