



RIVER MURRAY WEEKLY REPORT

FOR THE WEEK ENDING WEDNESDAY, 23RD DECEMBER 2015

Trim Ref: D15/89646



The Murray-Darling Basin Authority and staff at the storages, weirs and barrages of the River Murray System wish all our readers a safe and happy festive season.

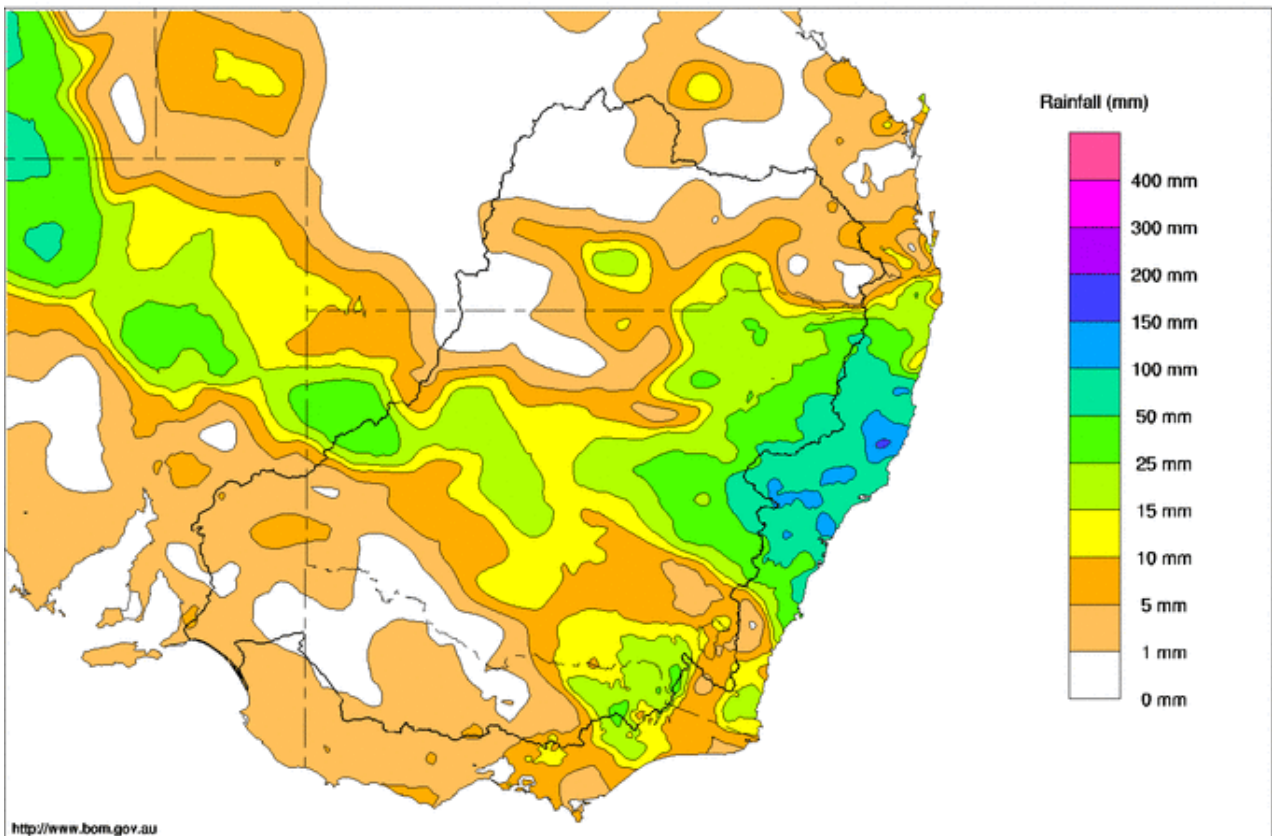
A great egret near Barmah Forest is anticipating a wonderful holiday break (Photo courtesy Keith Ward, Goulburn Broken CMA; Santa hat courtesy Chevelle Grey, MDBA)

Rainfall and Inflows

Conditions were very hot across the Murray-Darling Basin for much of the past week, although there was some relief toward the end of the week as a cold front and trough system brought cooler temperatures to the region. Rain associated with this system fell over parts of the southern, western and central Basin; and added to rainfall totals in north-eastern NSW following storm activity at the beginning of the week (Map 1).

The highest weekly rain totals were recorded across the NSW New England and Liverpool Plains regions. Notable totals included 90 mm at Mudgee, 89 mm at Woolbrook, 75 mm at Gulgong, 53 mm at Glen Innes, 47 mm at Bathurst and 46 mm at Tamworth and Wellington.

Murray-Darling Rainfall Totals (mm) Week Ending 23rd December 2015
Australian Bureau of Meteorology



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Map 1 - Murray-Darling Basin rainfall week ending 23rd December 2015 (Source: Bureau of Meteorology)



There was limited change to stream flows along the upper Murray tributaries with low level base flows continuing. On the Mitta Mitta River at Hinnomunjie bridge, the flow averaged about 250 ML/day. On the upper Murray at Biggara, the flow averaged about 400 ML/day. Downstream on the Ovens River, flows at gauges downstream of Rocky Point ranged from 200 and 350 ML/day throughout the week.

River Operations

- 4-hour halt to Hume release on 21 December briefly drops the level at Albury gauge with negligible changes further downstream at Corowa.
- Yarrawonga releases are expected to remain close to 10,000 ML/day for the coming weeks while the level in Lake Mulwala is planned to remain above 124.7 m AHD.

MDBA total storage decreased by 103 GL this week, with the active storage currently 3,621 GL (43% capacity).

Dartmouth Reservoir's storage volume decreased by 49 GL during the week to 2,042 GL (53% capacity). The release, measured at Colemans gauge, was increased today (23 December) to 7,900 GL. The release is planned to gradually reduce to 6,500 ML/day by early January. If dry conditions persist, releases are expected to remain above 5,000 ML/day over summer.

At **Hume Reservoir**, the volume in storage fell by 32 GL to 1,240 GL (41% capacity). The volume in storage has reduced by around 278 GL since peaking in mid-September, despite transfers from Dartmouth Reservoir during this period totalling 692 GL. The target flow at Doctors Point this week has varied between 14,500 and 18,000 ML/day. However, on Monday 21 December, when the release from Hume was stopped for about 4 hours at the request of Victoria Police (see MDBA website for [media release](#) of 16th December), the flow at Doctors Point briefly fell to 4,000 ML/day and the level at the Albury gauge dropped from about 2.1 to 1.2 m. Further downstream at Corowa, the level dropped by only 25 cm on Wednesday 23 December in response to the short cut to the Hume release. The flow at Doctors Point in the coming week is expected to reduce from 18,000 ML/day back towards 14,000 ML/day.

With the hot weather during the week, the total diversion at the irrigation offtakes at **Yarrawonga Weir** has averaged 4,300 ML/day. A large proportion of the diversion through Mulwala Canal is destined for the Edward River escape, which is used by river operations to bypass the Barmah Choke.

The release from Yarrawonga Weir this week has varied from 10,300 ML/day to 9,800 ML/day. The release is expected to remain in the range 9,000–10,000 ML/day for at least the next two weeks. The pool level in **Lake Mulwala** is currently 124.74 m AHD. River operations aim to maintain the pool level above 124.7 m AHD through the summer holiday period to facilitate recreational activities. However, should irrigation use exceed the volumes ordered, the lake level may fall below this target for short periods. For more information on [river operations and recreation](#), please see the MDBA website.

On the **Edward River** system, the flow through the Edward and Gulpa offtakes is about 1,600 ML/day and 500 ML/day, respectively. Environmental water is being used to maintain a higher flow through Gulpa Creek to assist with the maintenance of a bird breeding event in the Reed Beds area of Millewa Forest. The flow downstream of Stevens Weir is forecast to remain at around 2,500 ML/day, although it may dip below this value if there is an unexpected spike in demand.

With New South Wales Murray and Murrumbidgee general security allocations relatively low this year (currently 19 and 32 % respectively), only small areas of rice have been planted in the Riverina this season. In an effort to improve yields, growers are trialling new methods of growing rice. In the photo below, rice growers are attending a trial being conducted in co-operation with Murray Local Lands Services near Deniliquin. In this trial, ground water was used during planting and early establishment of the rice when the higher salinity content of the ground water is less critical. The water has now been drained off to aerate the soil and reduce the incidence of sterility. When the soil surface is completely



dry, the rice bay will be refilled with low salinity surface water during the critical stages of flowering and grain development.



Photo 1 – Rice establishment trial near Deniliquin (Photo courtesy: Ericka McAllister)

On the **Goulburn** River at McCoys Bridge, the flow has been steady at 500–550 ML/day and is expected to remain close to this rate for the remainder of December and into early January. The delivery of Inter-Valley Trade (IVT) water to the Murray system is contributing to flows above the minimum targets in the Goulburn River, as well as Broken Creek and the Campaspe River.

At **Torrumbarry** Weir, the diversion to National Channel has been steady at about 2,400 ML/day. The release from the weir is currently 5,950 ML/day and this release is expected to remain relatively steady into early January.

On the lower **Murrumbidgee** River, the flow at Balranald averaged 1,640 ML/day during the past week. This flow at Balranald includes the end-of-system target for December of 254 ML/day plus IVT water. Flows of at least 1,200 ML/day are expected to continue past Balranald into early January.

Total storage in the **Menindee Lakes** has reduced to 73 GL (4% capacity) with release (measured at Weir 32) effectively ceasing on 15 December. There has been no flow at Burtundy on the lower Darling since April 2015. The weir pool at Wentworth—at the confluence of the Murray and Darling Rivers—continues to be maintained at about 10 cm above Full Supply Level (FSL) to assist water users on the lower Darling arm of the weir pool.



At **Lock 9**, the weir pool is currently targeting about 10 cm below FSL, and at **Locks 7 and 8**, the weir pools are close to 50 cm below FSL. In early January, the weir pool at Lock 8 will be further lowered to 80 cm below FSL while, later in January, the weir pool level at Lock 7 will be increased to around 25 cm below FSL. These changes are part of an on-going weir pool variability trial—[more information](#) on weir pool level changes can be found on MDBA's website.

At **Lake Victoria**, the storage volume reduced by 21 GL to 533 GL (79% capacity) and this declining trend is forecast to continue over coming months if conditions remain dry. The flow to South Australia is currently averaging 6,600 ML/day and this flow rate is expected to increase slightly over the next 2 weeks.

At the **Lower Lakes**, the 5-day average level in Lake Alexandrina is 0.72 m AHD. Only the fishways remain open at the barrages to slow the rate of decline in the lake level.

There will be no Weekly Report issued for the week ending Wednesday, 30th December 2015. The next report will cover the two week period ending Wednesday, 6th January 2016 and will be available from Friday, 8th January 2016.

[Flow and salinity forecasts](#) will be updated and available on the MDBA website on Wednesday, 23 December 2015 and Wednesday, 6th January 2016.

For media inquiries contact the Media Officer on 02 6279 0141

DAVID DREVERMAN
Executive Director, River Management



Water in Storage

Week ending Wednesday 23 Dec 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	452.90	2 042	53%	71	1 971	-49
Hume Reservoir	192.00	3 005	180.91	1 240	41%	23	1 217	-32
Lake Victoria	27.00	677	25.78	533	79%	100	433	-21
Menindee Lakes		1 731*		73	4%	(-) #	0	-2
Total		9 269		3 888	42%	--	3 621	-103
Total Active MDBA Storage							43% ^	

Major State Storages

Burrinjuck Reservoir	1 026	629	61%	3	626	-31
Blowering Reservoir	1 631	529	32%	24	505	-35
Eildon Reservoir	3 334	1 608	48%	100	1 508	-39

* Menindee surcharge capacity – 2050 GL

** All Data is rounded to nearest GL **

NSW takes control of Menindee Lakes when storage falls below 480 GL, and control reverts to MDBA when storage next reaches 640 GL

^ % of total active MDBA storage

Snowy Mountains Scheme

Snowy diversions for week ending 22 Dec 2015

Storage	Active Storage (GL)	Weekly Change (GL)	Diversions (GL)	This Week	From 1 May 2015
Lake Eucumbene - Total	2 264	n/a	Snowy-Murray	+18	297
Snowy-Murray Component	1 108	n/a	Tooma-Tumut	+0	138
Target Storage	1 510		Net Diversion	18	158
			Murray 1 Release	+21	478

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)	9.2	227	Yarrowonga Main Channel (net)	7.4	131
Wakool Sys Allowance	1.5	34	Torrumbarry System + Nyah (net)	12.7	252
Western Murray Irrigation	1.3	7	Sunraysia Pumped Districts	4.7	53
Licensed Pumps	6.3	91	Licensed pumps - GMW (Nyah+u/s)	1.7	19
Lower Darling	0.4	6	Licensed pumps - LMW	6	120
TOTAL	18.7	365	TOTAL	32.5	575

* 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 vary from normal entitlement for this month due to SA entitlement deferral and trade adjustments.

Entitlement this month	217.0 *	
Flow this week	46.2	(6 600 ML/day)
Flow so far this month	149.9	
Flow last month	210.5	

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

	Current	Average over the last week	Average since 1 August 2015
Swan Hill	90	80	80
Euston	-	-	-
Red Cliffs	120	120	130
Merbein	120	120	130
Burtundy (Darling)	1 320	1 300	1 020
Lock 9	130	130	140
Lake Victoria	170	170	220
Berri	200	200	220
Waikerie	280	280	280
Morgan	240	240	280
Mannum	330	320	310
Murray Bridge	310	300	330
Milang (Lake Alex.)	780	770	750
Poltalloch (Lake Alex.)	700	680	590
Meningie (Lake Alb.)	1 970	1 980	2 030
Goolwa Barrages	1 160	1 160	1 050



River Levels and Flows

Week ending Wednesday 23 Dec 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	-	-	-	1 860	F	3 010	1 910
Jingellic	4.0	1.51	208.03	2 800	R	3 380	2 170
Tallandoon (Mitta Mitta River)	4.2	3.00	219.89	7 130	S	7 380	6 810
Heywoods	5.5	3.43	157.06	17 390	R	14 630	13 110
Doctors Point	5.5	3.25	151.72	18 060	R	15 870	13 640
Albury	4.3	2.31	149.75	-	-	-	-
Corowa	4.6	2.86	128.88	13 250	F	14 090	13 280
Yarrowonga Weir (d/s)	6.4	1.60	116.64	9 790	F	10 150	9 990
Tocumwal	6.4	2.25	106.09	10 210	F	10 370	10 120
Torrumbarry Weir (d/s)	7.3	2.00	80.55	5 950	R	5 910	5 900
Swan Hill	4.5	1.18	64.10	5 840	S	5 850	5 840
Wakool Junction	8.8	3.07	52.19	8 160	R	8 140	8 200
Euston Weir (d/s)	9.1	1.64	43.48	8 320	R	8 090	7 630
Mildura Weir (d/s)	-	-	-	6 910	F	6 650	6 180
Wentworth Weir (d/s)	7.3	2.80	27.56	5 530	S	5 050	4 700
Rufus Junction	-	3.48	20.41	6 400	R	6 330	6 310
Blanchetown (Lock 1 d/s)	-	0.77	-	2 980	F	3 420	3 200
Tributaries							
Kiewa at Bandiana	2.8	1.03	154.26	580	R	560	490
Ovens at Wangaratta	11.9	7.84	145.52	310	R	280	860
Goulburn at McCoys Bridge	9.0	1.25	92.67	530	S	540	540
Edward at Stevens Weir (d/s)	5.5	2.34	82.12	2 530	S	2 550	2 450
Edward at Liewah	-	2.85	58.23	2 350	F	2 390	2 450
Wakool at Stoney Crossing	-	1.54	55.03	680	F	710	710
Murrumbidgee at Balranald	5.0	2.03	57.99	1 650	F	1 630	1 410
Barwon at Mungindi	6.1	3.18	-	50	F	80	60
Darling at Bourke	9.0	3.90	-	0	F	10	20
Darling at Burtundy Rocks	-	0.61	-	0	F	0	0

Natural Inflow to Hume (i.e. Pre Dartmouth & Snowy Mountains scheme)	1 600	1 800
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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	-0.16	-	No. 7 Rufus River	22.10	-0.56	+1.16
No. 26 Torrumbarry	86.05	+0.00	-	No. 6 Murtho	19.25	+0.02	+0.01
No. 15 Euston	47.60	+0.02	-	No. 5 Renmark	16.30	+0.04	+0.19
No. 11 Mildura	34.40	+0.03	+0.19	No. 4 Bookpurnong	13.20	+0.02	+0.60
No. 10 Wentworth	30.80	+0.10	+0.16	No. 3 Overland Corner	9.80	+0.02	+0.14
No. 9 Kulnine	27.40	-0.06	-0.61	No. 2 Waikerie	6.10	+0.01	+0.04
No. 8 Wangumma	24.60	-0.48	-0.42	No. 1 Blanchetown	3.20	-0.09	+0.02

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

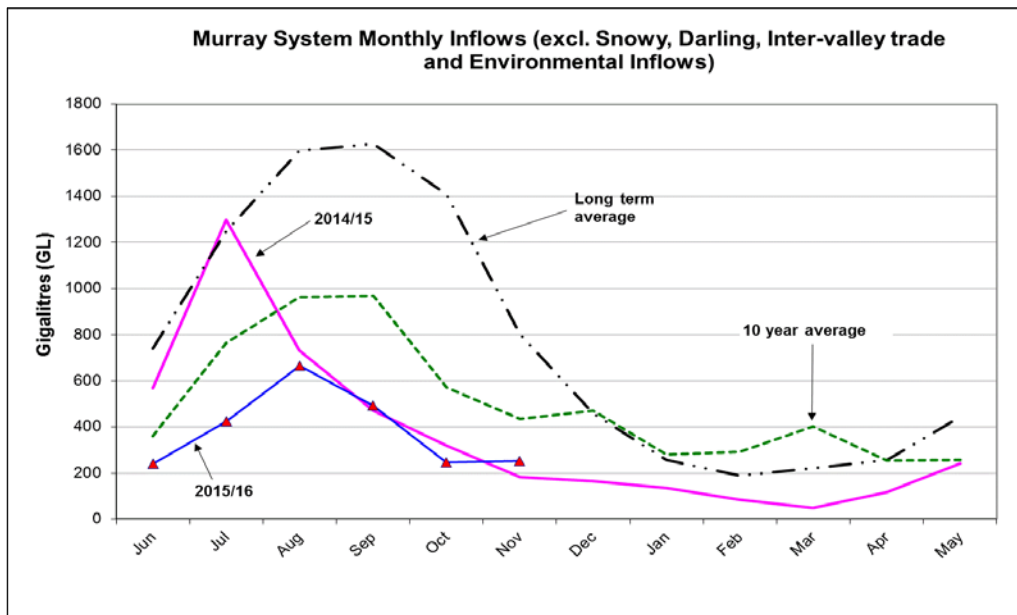
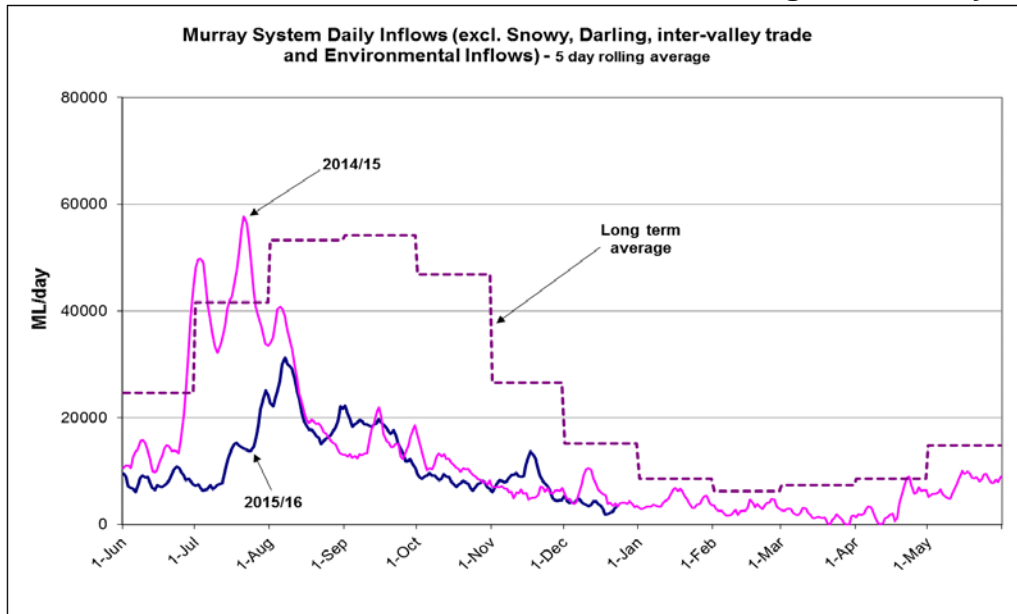
Fishways at Barrages

	Openings	Level (m AHD)	No. Open	Rock Ramp	Vertical Slot
Goolwa	128 openings	0.71	All closed	-	Open
Mundoo	26 openings	0.76	All closed	-	-
Boundary Creek	6 openings	-	All closed	-	-
Ewe Island	111 gates	-	All closed	-	-
Tauwitchere	322 gates	0.70	All closed	Open	Open

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



Week ending Wednesday 23 Dec 2015



State Allocations (as at 23 Dec 2015)

NSW - Murray Valley

High security	97%
General security	19%

Victorian - Murray Valley

High reliability	94%
Low reliability	0%

NSW - Murrumbidgee Valley

High security	95%
General security	32%

Victorian - Goulburn Valley

High reliability	82%
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.nvrm.net.au/allocations/current.aspx>
 SA : <http://www.environment.sa.gov.au/managing-natural-resources/river-murray>