



RIVER MURRAY WEEKLY REPORT

FOR THE WEEK ENDING WEDNESDAY, 23 MARCH 2016

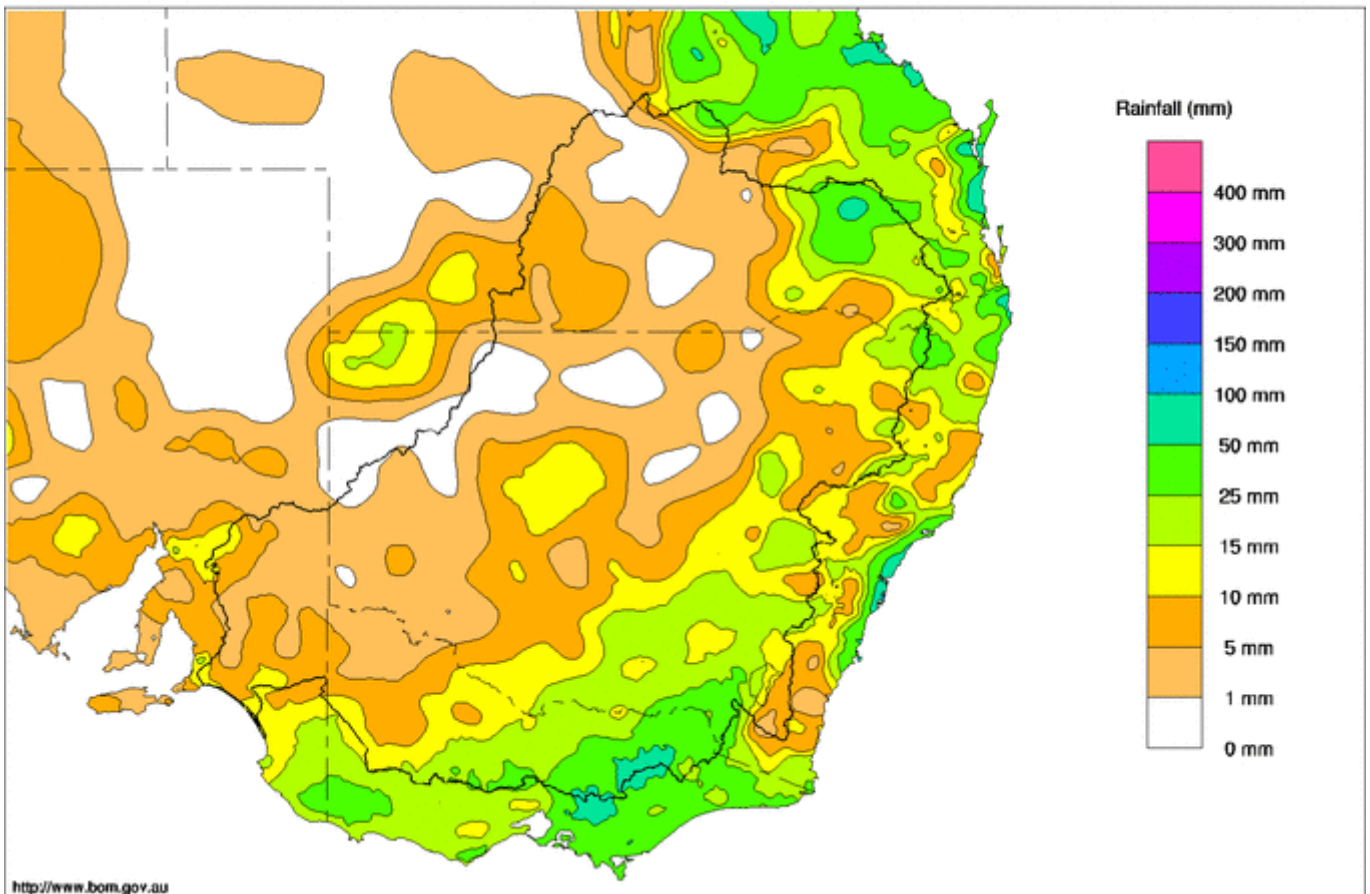
Trim Ref: D16/12530

Rainfall and inflows

There was a noticeable drop in temperatures this week following the passage of a strong cold front that brought an end to the run of relatively hot conditions that persisted during the first half of March. As well as more autumnal temperatures, the system also brought welcome rainfall to much of Victoria. Rain also fell over eastern and north-eastern parts of the Murray-Darling Basin; while only light and patchy rain was recorded in western and north-western areas (Map 1).

The heaviest rainfall was focussed over Victoria's north-east ranges where weekly totals included 97 mm at Mt Buffalo, 87 mm at Mt Buller and 79 mm at Archerton. Totals were a little lower in NSW, with up to 50 mm recorded at locations across the Snowy Mountains and south-west slopes. Rain in Queensland was patchier, although isolated higher totals over the upper Balonne River catchment included 104 mm at Chinchilla and 51 mm at Possum Park.

Murray-Darling Rainfall Totals (mm) Week Ending 23rd March 2016
Australian Bureau of Meteorology



Map 1 - Murray-Darling Basin rainfall for the week ending 23 March 2016 (Source: Bureau of Meteorology).

There was a fairly modest response to rainfall along upper Murray tributaries, although the rain will have provided benefit in beginning the process of wetting up catchments. On the upper Murray at Biggara, the flow increased from 200 ML/day to a peak of 800 ML/day. On the Ovens River, the flow at Wangaratta reached a peak over 500 ML/day for only the second time since the start of 2016.



River operations

- Blue-green algae alerts continue at several locations
- Higher flows downstream of Dartmouth in the Mitta Mitta River due to power generation
- Weir pool level reduction planned in April at Euston Weir.

Red alerts for blue-green algae continue along reaches from Hume Reservoir downstream to Murrabit and for the entire Edward-Wakool system. The alerts apply to the main channel of the river as well as many anabranches and connected lakes and wetlands. More information is available from [NSW DPI](#) and [Goulburn Murray Water](#).

MDBA continues to do what it can to reduce the impact of this event. Whilst water temperatures have begun to decline, it is possible that a significant break down in the algae will not occur until a change to weather conditions over the Murray valley brings increased wind, cloud and rainfall.

MDBA total storage decreased by 84 GL this week, with the active storage now 2,599 GL (31% capacity).

At **Dartmouth Reservoir**, the storage volume decreased by 11 GL to 1,690 GL (44% capacity). The release from Dartmouth, increased during the week for the purpose of electricity generation. The release, measured at Colemans, is currently 4,000 ML/day and will reduce to 600 ML/day early in the coming week.

At **Hume Reservoir**, the storage volume decreased by 52 GL to 825 GL (27% capacity). The storage is currently forecast to continue decreasing during the coming weeks if conditions remain dry and may be below 600 GL by the end of the irrigation season in May. The release from Hume Reservoir this week averaged around 12,500 ML/day.

At **Lake Mulwala**, the diversion through Mulwala Canal was relatively steady, averaging around 2,600 ML/day. The diversion through Yarrawonga Main Channel reduced to 1,200 ML/day early in the week following rain, however by the end of the week had returned to 2,100 ML/day. The downstream release from **Yarrawonga Weir** is currently 8,000 ML/day.

On the **Edward-Wakool** system, inflows from the Murray via the Edward River and Gulpa Creek offtakes have remained steady averaging around 1,575 ML/day and 300 ML/day respectively. Downstream at **Stevens Weir** the release averaged around 960 ML/day, but will ease to around 800 ML/day in the coming week in accordance with downstream demand requirements. Diversions through the Wakool Main Canal have increased from around 600 to 720 ML/day.

On the **Goulburn River**, the flow at McCoys Bridge reached around 4,000 ML/day due to a pulse of environmental water. The flow is currently 3,200 ML/day and will continue to gradually recede to around 1,000 ML/day in early April.

On the **Campaspe River** at Rochester, the flow rate peaked around 170 ML/day and is now receding. This increase is the result of a small pulse released from upstream targeting in-stream environmental benefits.

At **Torrumbarry Weir**, diversions to National Channel increased briefly to around 3,400 ML/day but have since reduced and are currently 2,400 ML/day. The flow downstream of the weir increased from 5,000 ML/day to the current rate of 7,800 ML/day. The flow is expected to fall away below 6,000 ML/day during the coming week.

Further downstream, inflows into the Murray from the lower **Murrumbidgee River** at Balranald have increased to around 1,400 ML/day. This flow is above the usual end of system target due to the delivery of inter-valley trade (IVT) water to the Murray. The flow is expected to reduce back to around 200 ML/day in early April.

At **Euston Weir**, flows have remained fairly steady averaging 6,000 ML/day. The weir pool level is currently at 47.61 m AHD, which is 1 cm above full supply and is expected to remain close to this level during the coming week. However, a reduction to the pool level is planned to commence in the first week of April, when the level will be gradually reduced towards a target of 20 cm below full supply (47.40 m AHD) as part of the on-going weir pool level variability trial. The pool level is expected to remain below



FSL during April, May and June. More information is available at the [MDBA website](http://www.mdba.gov.au). **Lock 15** at Euston is currently closed to enable refurbishment of the lock chamber. The lock will be closed to boat traffic throughout the duration of these works. Further information can be found on the Water NSW website <http://www.watarnsw.com.au/about/newsroom/2016/work-at-euston-lock-to-start-late-january>.



Figure 2 – Lock 15 dewatered to enable refurbishment (Photo: Phil Cocks, Water NSW)

On the Darling River system, flow resulting from rainfall in the northern Basin during January has started arriving at **Menindee Lakes**, increasing the storage volume this week by 1 GL to 52 GL (3% capacity). These relatively modest flows have been moving down the Darling River at an even slower pace than usual due to the channel's dry condition following protracted low rainfall over much of the northern Basin during recent years. Only a small volume of water is expected to reach the Menindee Lakes from these flows.

At the confluence of the Darling and Murray Rivers at **Wentworth**, the flow increased slightly to around 4,600 ML/day and is expected to remain around this rate during the coming week. The weir pool remains around 10 cm above full supply level to assist water users on the Lower Darling arm of the weir pool.

At **Lake Victoria**, the storage volume decreased by 22 GL to 278 GL (41% capacity). The flow into **South Australia** averaged 6,500 ML/day. Flow rates are expected to rise over the coming week to around 8,000 ML/day due to the delivery of environmental water.

At the **Lower Lakes**, the 5-day average water level in Lake Alexandrina reduced 3 cm to 0.55 m AHD. Releases through the barrages have continued to be made mainly through the Tauwichee barrage to maximise flow into the Coorong's North Lagoon. However forecast higher tides and larger swells are likely to limit the opportunities for barrage releases and see lake levels rise over the coming months.

For media inquiries contact the Media Officer on 02 6279 0141

DAVID DREVERMAN
Executive Director, River Management



Water in Storage

Week ending Wednesday 23 Mar 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	444.59	1 690	44%	71	1 619	-11
Hume Reservoir	192.00	3 005	177.13	825	27%	23	802	-52
Lake Victoria	27.00	677	23.33	278	41%	100	178	-22
Menindee Lakes		1 731*		52	3%	(- -) #	0	+1
Total		9 269		2 845	31%	- -	2 599	-84
Total Active MDBA Storage							31% ^	

Major State Storages

Burrinjuck Reservoir	1 026	394	38%	3	391	-11
Blowering Reservoir	1 631	608	37%	24	584	+25
Eildon Reservoir	3 334	1 196	36%	100	1 096	-47

* 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 22 Mar 2016

Storage	Active Storage (GL)	Weekly Change (GL)	Diversion (GL)	This Week	From 1 May 2015
Lake Eucumbene - Total	1 658	-56	Snowy-Murray	+31	619
Snowy-Murray Component	850	-26	Tooma-Tumut	+0	164
Target Storage	1 410		Net Diversion	30	454
			Murray 1 Release	+39	820

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)	20.4	347	Yarrowonga Main Channel (net)	10	203
Wakool Sys Allowance	2.3	60	Torrumbarry System + Nyah (net)	0.1	404
Western Murray Irrigation	0.6	18	Sunraysia Pumped Districts	1.8	97
Licensed Pumps	6.4	166	Licensed pumps - GMW (Nyah+u/s)	1.2	37
Lower Darling	0.2	9	Licensed pumps - LMW	3.1	262
TOTAL	29.9	600	TOTAL	16.2	1003

* 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 the delivery of additional environmental water.

Entitlement this month	186.0 *
Flow this week	45.8
Flow so far this month	160.1
Flow last month	266.4

(6 500 ML/day)

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

	Current	Average over the last week	Average since 1 August 2015
Swan Hill	60	70	70
Euston	80	80	-
Red Cliffs	110	110	120
Merbein	110	110	120
Burtundy (Darling)	1 850	1 800	1 210
Lock 9	110	110	130
Lake Victoria	210	210	210
Berri	200	190	210
Waikerie	200	210	270
Morgan	240	230	270
Mannum	290	290	320
Murray Bridge	320	330	340
Milang (Lake Alex.)	900	890	800
Poltalloch (Lake Alex.)	830	800	670
Meningie (Lake Alb.)	2 170	2 140	2 090
Goolwa Barrages	1 520	1 480	1 200



River Levels and Flows

Week ending Wednesday 23 Mar 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	-	-	-	7 140	F	5 460	3 990
Jingellic	4.0	2.03	208.55	7 000	R	5 500	4 510
Tallandoon (Mitta Mitta River)	4.2	2.39	219.28	3 850	R	1 570	680
Heywoods	5.5	3.05	156.68	11 600	F	12 450	12 900
Doctors Point	5.5	2.77	151.24	12 070	F	13 150	13 570
Albury	4.3	1.79	149.23	-	-	-	-
Corowa	4.6	2.65	128.67	11 810	F	12 920	12 530
Yarrowonga Weir (d/s)	6.4	1.39	116.43	8 040	F	8 180	8 060
Tocumwal	6.4	2.03	105.87	8 610	S	8 440	8 310
Torrumbarry Weir (d/s)	7.3	2.54	81.09	7 820	R	6 410	4 910
Swan Hill	4.5	1.10	64.02	5 380	R	4 650	4 610
Wakool Junction	8.8	2.59	51.71	6 200	R	5 980	6 040
Euston Weir (d/s)	9.1	1.27	43.11	5 890	S	6 040	5 720
Mildura Weir (d/s)	-	-	-	5 540	F	5 340	5 130
Wentworth Weir (d/s)	7.3	2.84	27.60	4 580	S	4 370	4 010
Rufus Junction	-	3.44	20.37	6 160	F	6 220	6 140
Blanchetown (Lock 1 d/s)	-	0.53	-	4 300	S	4 330	4 530
Tributaries							
Kiewa at Bandiana	2.8	0.98	154.21	510	R	440	400
Ovens at Wangaratta	11.9	7.86	145.54	340	F	360	220
Goulburn at McCoys Bridge	9.0	2.65	94.07	3 160	F	3 660	1 300
Edward at Stevens Weir (d/s)	5.5	1.07	80.84	870	F	960	1 400
Edward at Liewah	-	2.03	57.41	1 310	F	1 410	1 460
Wakool at Stoney Crossing	-	1.42	54.92	430	S	410	340
Murrumbidgee at Balranald	5.0	1.81	57.77	1 410	R	1 240	1 140
Barwon at Mungindi	6.1	3.19	-	60	R	60	20
Darling at Bourke	9.0	4.00	-	70	S	80	190
Darling at Burtundy Rocks	-	0.53	-	0	F	0	0

Natural Inflow to Hume	350	680
------------------------	-----	-----

(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	-0.08	-	No. 7 Rufus River	22.10	-0.21	+1.16
No. 26 Torrumbarry	86.05	+0.00	-	No. 6 Murtho	19.25	-0.01	+0.06
No. 15 Euston	47.60	+0.01	-	No. 5 Renmark	16.30	+0.02	+0.18
No. 11 Mildura	34.40	+0.06	+0.18	No. 4 Bookpurnong	13.20	+0.02	+0.67
No. 10 Wentworth	30.80	+0.13	+0.20	No. 3 Overland Corner	9.80	+0.02	+0.18
No. 9 Kulnine	27.40	+0.02	-0.55	No. 2 Waikerie	6.10	+0.03	+0.06
No. 8 Wangumma	24.60	-0.59	-0.13	No. 1 Blanchetown	3.20	-0.09	-0.22

Lower Lakes FSL = 0.75 m AHD

Lake Alexandrina average level for the past 5 days (m AHD)	0.55
------------------------------------------------------------	------

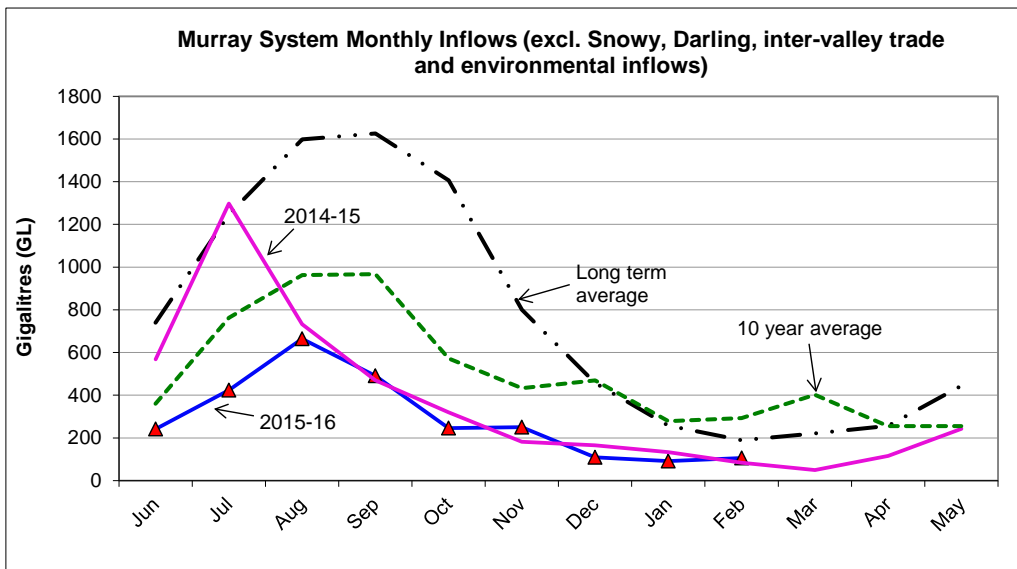
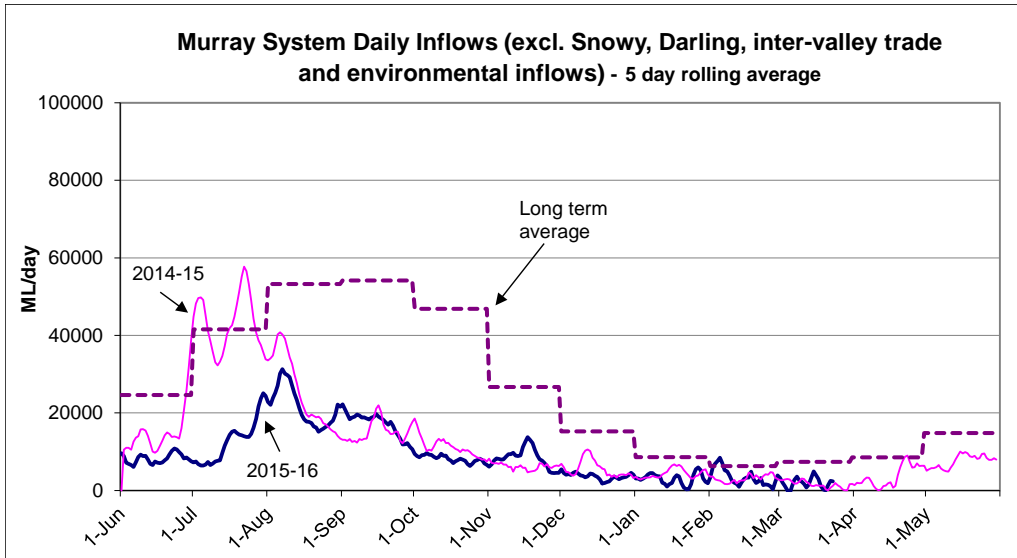
Barrages

Fishways at Barrages

	Openings	Level (m AHD)	No. Open	Rock Ramp	Vertical Slot 1	Vertical Slot 2	Dual Vertical Slots
Goolwa	128 openings	0.55	All closed	-	Open	Open	-
Mundoo	26 openings	0.53	All closed	-	-	-	Open
Hunters Creek	-	-	-	-	Open	-	-
Boundary Creek	6 openings	-	All closed	-	Open	-	-
Ewe Island	111 gates	-	All closed	-	-	-	Open
Tauwichee	322 gates	0.50	2	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 23 Mar 2016)

NSW - Murray Valley

High security	97%
General security	23%

Victorian - Murray Valley

High reliability	100%
Low reliability	0%

NSW - Murrumbidgee Valley

High security	95%
General security	37%

Victorian - Goulburn Valley

High reliability	90%
Low reliability	0%

NSW - Lower Darling

High security	75%
General security	0%

South Australia - Murray Valley

High security	100%
---------------	------

- 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>