



RIVER MURRAY WEEKLY REPORT

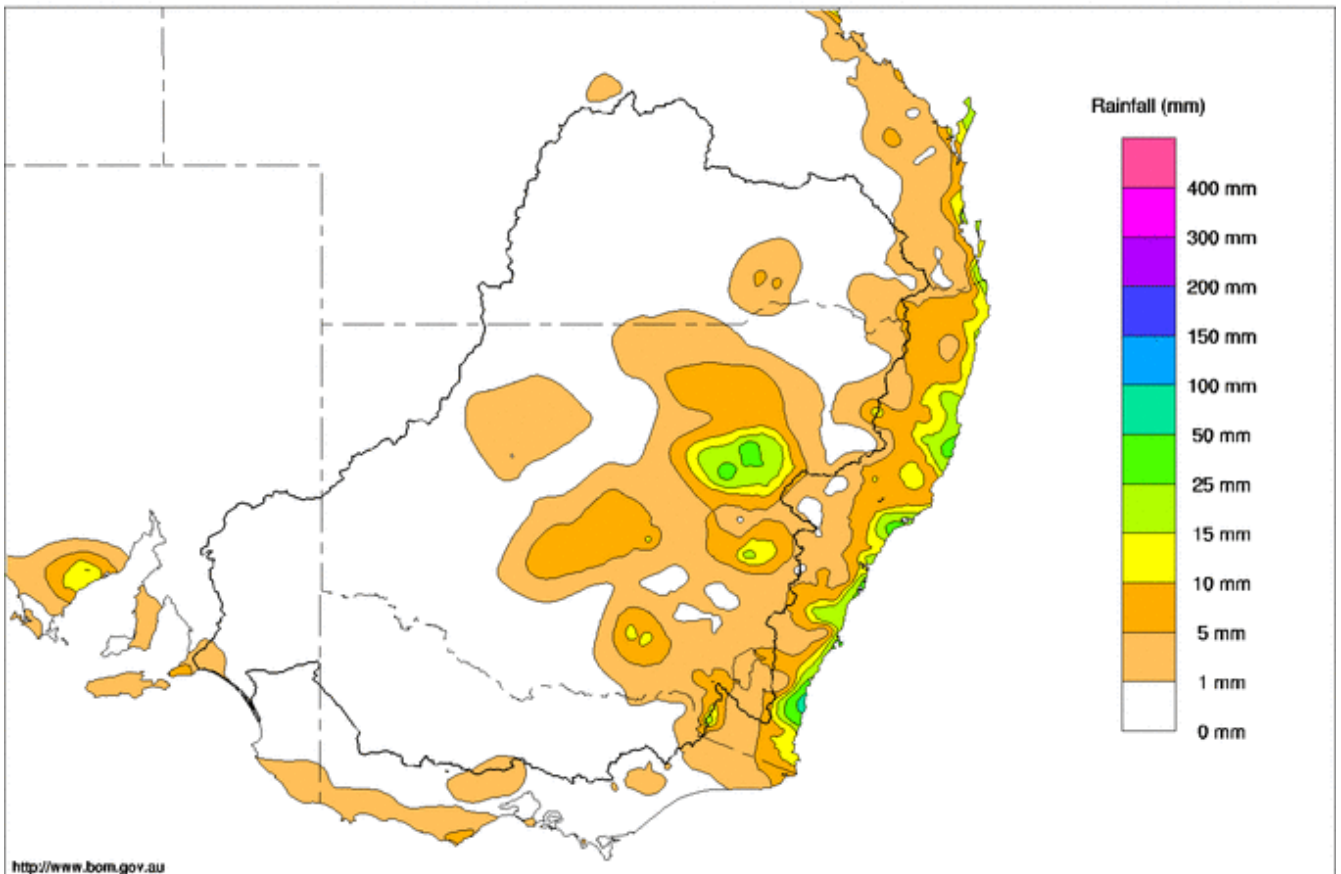
FOR THE WEEK ENDING WEDNESDAY, 20TH APRIL 2016

Trim Ref: D16/15010

Rainfall and inflows

Dry conditions persisted across the Basin this week with only small pockets of NSW receiving rainfall over 15 mm, see Map 1. A surface trough that extended from Queensland's Gulf Country to central NSW brought thunderstorms resulting in 27 mm of rain at Coonabarabran and 22mm at Orange. There was a lack of significant rainfall in Victoria, South Australia and Queensland.

Murray-Darling Rainfall Totals (mm) Week Ending 20th April 2016
Australian Bureau of Meteorology



© Commonwealth of Australia 2016, Australian Bureau of Meteorology Issued: 20/04/2016

Map 1 - Murray-Darling Basin rainfall week ending 20th April 2016 (Source: Bureau of Meteorology)

The lack of rainfall, combined with already dry catchment conditions, has resulted in flows along the upper Murray, upper Mitta Mitta and Ovens River remaining at base flow levels. On the upper Murray, the gauge at Biggara is currently measuring 200 ML/day, while Hinnomunjie Bridge, on the upper Mitta Mitta River, is near 120 ML/day. The Ovens River at Wangaratta has receded to 120 ML/day.



River operations

- Menindee Lakes experiencing lowest inflows on record
- Lower Lakes rise 2 cm

Red alert warnings for blue-green algae have been extended to now include Boundary Bend and the reach between Red Cliffs and the Lock 9 weir pool. Red alerts remain in place 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 [Goulburn Murray Water](#) and [NSW DPI](#) as well as the [MDBA website](#).

Whilst water temperatures have declined to below 20 °C at most affected locations, 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 67 GL this week, with the active storage now 2,322 GL (28% capacity). This is approximately 1,200 GL less than this time last year. With storages low and catchments very dry, it will require prolonged above-average rainfall in coming months to refill storages.

Storage at **Dartmouth** Reservoir decreased by 4 GL to 1,671 GL (43% capacity) this week. The release, measured at the Colemans gauge, is currently 580 ML/day. Releases are above the minimum target flow of 200 ML/day for the current storage volume to assist with irrigation access along the Mitta Mitta River. Releases will be reduced over the coming weeks as irrigation demands decrease.

The storage at **Hume Reservoir** decreased by 53 GL this week to 612 GL (20% capacity). Releases from Hume averaged around 11,000 ML/day during the week. Releases are expected to reduce towards minimum target flows in the next three weeks due to the end of the irrigation season.

Diversions from **Lake Mulwala** to Mulwala Canal averaged about 2,500 ML/day this week, while diversions to Yarrowonga Main Channel averaged 1,300 ML/day. Releases from **Yarrowonga Weir** are currently 7,500 ML/day and will be decreased to around 7,000 ML/day over the coming week.

On the **Edward** River system, the total flow through the Edward River and Gulpa Creek offtakes is steady at around 1,400 ML/day. At **Stevens Weir**, the flow downstream has averaged 600 ML/day. On the **Wakool** River at Wakool-Barham road the flow is currently 250 ML/day while the flow on the Edward at **Kyalite** is around 1,000 ML/day.

On the **Broken** Creek at Rices Weir the flow averaged around 250 ML/day which largely comprised environmental flow.

On the **Goulburn** River, the flow at McCoys Bridge has been steady at around 850 ML/day. The flow is forecast to recede to around 650 ML/day by the end of next week as the environmental flow component is reduced.

Downstream at **Torrumbarry** Weir, diversions at National Channel are expected to reduce from 2,900 to 2,500 ML/day on 22 April. The flow downstream of Torrumbarry is currently around 4,200 ML/day (1.48 m local gauge height) but will increase when National Channel orders are cut. The lock is not operable at these levels as it generally needs to be above 1.66 m. Torrumbarry Weir was lowered 4cm over the weekend to 86.01 m AHD and will be lowered a further 6 cm over the coming weeks to 10 cm below FSL to 85.95 m AHD. This lowering is primarily to align with weir pool manipulation trials further downstream on the Murray to introduce more variability into the river system. The lowering will contribute only slight and temporary rises in downstream river levels when changes are made at the weir.

Further downstream, inflows to the Murray from the **Murrumbidgee** are around 400 ML/day. Inter Valley Trade water ceased from the Murrumbidgee on 29 March.



At **Euston Weir** the flow receded to around 4,200 ML/day this week. As part of the on-going [weir pool variability trial](#), the weir pool level has been lowered to around 47.40 m AHD, which is 20 cm below the full supply level (FSL).

A small river rise along the **Darling** River from rainfall earlier this year has now reached Menindee Lakes. NSW DPI Water reports that approximately 5 GL has entered Lake Wetherell, compared to the 26 GL that flowed past Bourke since late-January. The large losses are attributed to an extremely dry riverbed, see the latest [Lower Darling and Menindee Lakes update](#). The total storage volume at **Menindee Lakes** fell by 1 GL this week to a total volume of 50 GL (3% capacity). The Menindee Lakes system is currently experiencing the lowest inflows on record – exceeding the previous lows experienced during the millennium drought. Substantial inflows have not been received for three full years in a row,

Downstream at the confluence of the Darling and the Murray, the **Wentworth** weir pool remains 10 cm above FSL to assist water users in the Darling arm of the pool. Both **Lock 8** and **Lock 7** are currently targeting around 25 cm below FSL as part of the continuing weir pool variability trials.

At **Lake Victoria**, the storage volume decreased by 10 GL to 233 GL (34% capacity). The flow into **South Australia** has averaged near 5,000 ML/day this week and will reduce over the coming week.

At the **Lower Lakes**, the 5-day average water level in Lake Alexandrina has increased 2 cm to 0.58 m AHD. Part of the lake level increase is due to the arrival of environmental water from the Goulburn pulse released in March. Small releases are continuing through the Tauwitchere barrage and via the fishways.

For media inquiries contact the Media Officer on 02 6279 0141

DAVID DREVERMAN
Executive Director, River Management



Water in Storage

Week ending Wednesday 20 Apr 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	444.10	1 671	43%	71	1 600	-4
Hume Reservoir	192.00	3 005	174.84	612	20%	23	589	-53
Lake Victoria	27.00	677	22.85	233	34%	100	133	-10
Menindee Lakes		1 731*		50	3%	(- -) #	0	-1
Total		9 269		2 566	28%	--	2 322	-67
Total Active MDBA Storage							28% ^	

Major State Storages

Burrinjuck Reservoir	1 026	345	34%	3	342	-12
Blowering Reservoir	1 631	705	43%	24	681	+18
Eildon Reservoir	3 334	1 054	32%	100	954	-26

* 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 19 Apr 2016

Storage	Active Storage (GL)	Weekly Change (GL)	Diversions (GL)	This Week	From 1 May 2015
Lake Eucumbene - Total	1 471	n/a	Snowy-Murray	+23	698
Snowy-Murray Component	773	n/a	Tooma-Tumut	+0	167
Target Storage	1 340		Net Diversion	23	530
			Murray 1 Release	+24	896

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)	20.0	430	Yarrowonga Main Channel (net)	7.7	241
Wakool Sys Allowance	2.4	79	Torrumbarry System + Nyah (net)	0.1	470
Western Murray Irrigation	0.3	19	Sunraysia Pumped Districts	1.2	103
Licensed Pumps	4.1	190	Licensed pumps - GMW (Nyah+u/s)	0.2	40
Lower Darling	0.1	10	Licensed pumps - LMW	2.4	272
TOTAL	26.9	728	TOTAL	11.6	1126

* 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	135.0 *
Flow this week	35.9
Flow so far this month	116.8
Flow last month	219.0

(5 100 ML/day)

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

	Current	Average over the last week	Average since 1 August 2015
Swan Hill	100	90	70
Euston	-	-	-
Red Cliffs	120	110	120
Merbein	110	110	120
Burtundy (Darling)	1 730	1 710	1 260
Lock 9	110	110	120
Lake Victoria	180	190	210
Berri	190	200	210
Waikerie	250	250	270
Morgan	220	210	270
Mannum	250	260	310
Murray Bridge	280	290	330
Milang (Lake Alex.)	880	880	810
Poltalloch (Lake Alex.)	590	730	680
Meningie (Lake Alb.)	2 210	2 200	2 100
Goolwa Barrages	1 410	1 430	1 230



River Levels and Flows

Week ending Wednesday 20 Apr 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	-	-	-	5 420	F	4 150	2 890
Jingellic	4.0	1.85	208.37	5 370	R	3 880	2 970
Tallandoon (Mitta Mitta River)	4.2	1.46	218.35	670	S	680	680
Heywoods	5.5	2.95	156.58	10 500	S	11 140	11 280
Doctors Point	5.5	2.68	151.15	11 100	R	11 710	11 840
Albury	4.3	1.70	149.14	-	-	-	-
Corowa	4.6	2.43	128.45	10 380	F	11 320	10 940
Yarrowonga Weir (d/s)	6.4	1.31	116.35	7 340	F	7 450	6 980
Tocumwal	6.4	1.92	105.76	7 860	S	7 690	7 380
Torrumbarry Weir (d/s)	7.3	1.48	80.03	4 150	R	3 960	3 690
Swan Hill	4.5	0.87	63.79	3 790	R	3 550	3 870
Wakool Junction	8.8	2.13	51.25	4 430	R	4 460	5 190
Euston Weir (d/s)	9.1	0.95	42.80	4 150	F	4 580	5 950
Mildura Weir (d/s)	-	-	-	4 540	F	5 070	6 390
Wentworth Weir (d/s)	7.3	2.79	27.55	3 780	F	4 240	5 810
Rufus Junction	-	3.21	20.14	4 830	F	4 780	5 090
Blanchetown (Lock 1 d/s)	-	0.54	-	3 560	F	3 580	5 510
Tributaries							
Kiewa at Bandiana	2.8	0.72	153.95	170	R	160	190
Ovens at Wangaratta	11.9	7.67	145.35	120	S	130	170
Goulburn at McCoys Bridge	9.0	1.45	92.87	870	R	870	890
Edward at Stevens Weir (d/s)	5.5	0.82	80.59	590	F	580	630
Edward at Liewah	-	1.18	56.56	610	F	710	870
Wakool at Stoney Crossing	-	1.36	54.86	320	S	320	370
Murrumbidgee at Balranald	5.0	0.80	56.76	440	R	380	580
Barwon at Mungindi	6.1	3.14	-	10	F	20	40
Darling at Bourke	9.0	3.87	-	0	F	0	10
Darling at Burtundy Rocks	-	0.54	-	0	F	0	0

Natural Inflow to Hume	390	430
------------------------	-----	-----

(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	-0.11	-	No. 7 Rufus River	22.10	-0.22	+0.93
No. 26 Torrumbarry	86.05	-0.04	-	No. 6 Murtho	19.25	+0.03	+0.01
No. 15 Euston	47.60	-0.21	-	No. 5 Renmark	16.30	+0.01	+0.14
No. 11 Mildura	34.40	+0.00	+0.12	No. 4 Bookpurnong	13.20	+0.02	+0.48
No. 10 Wentworth	30.80	+0.10	+0.15	No. 3 Overland Corner	9.80	+0.05	+0.14
No. 9 Kulnine	27.40	-0.02	-0.25	No. 2 Waikerie	6.10	+0.02	+0.05
No. 8 Wangumma	24.60	-0.24	-0.17	No. 1 Blanchetown	3.20	-0.10	-0.21

Lower Lakes FSL = 0.75 m AHD

Lake Alexandrina average level for the past 5 days (m AHD)	0.58
--	------

Barrages

Fishways at Barrages

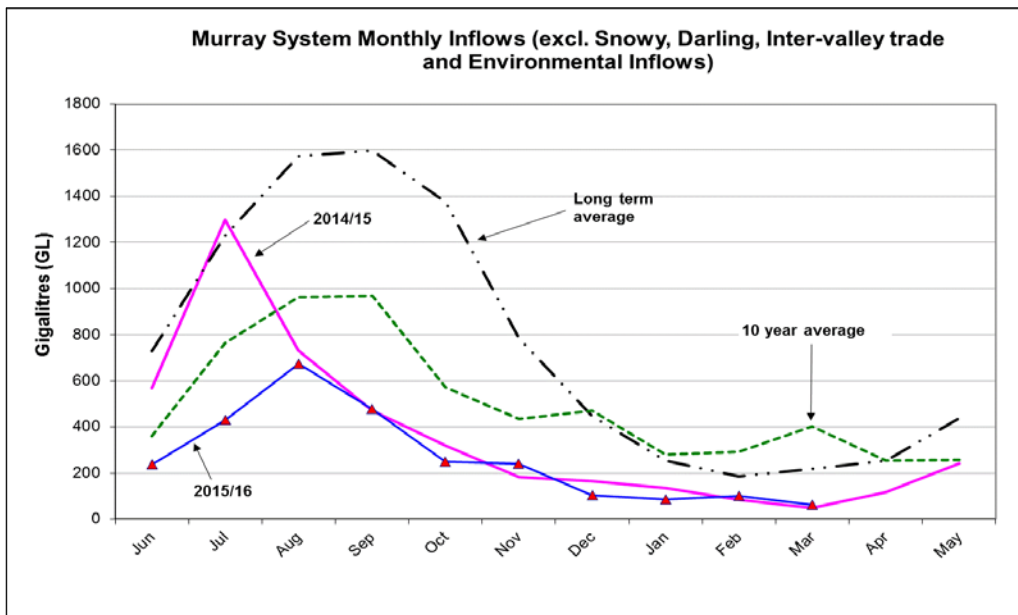
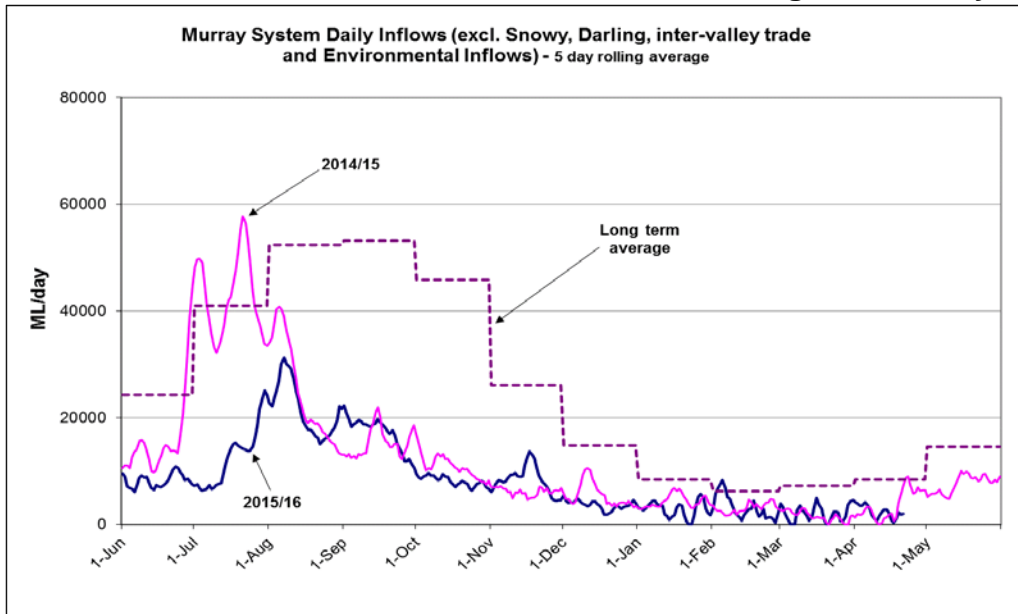
	Openings	Level (m AHD)	No. Open	Rock Ramp	Vertical Slot 1	Vertical Slot 2	Dual Vertical Slots
Goolwa	128 openings	0.61	All closed	-	Open	Open	-
Mundoo	26 openings	0.60	All closed	-	-	-	Open
Hunters Creek	-	-	-	-	Open	-	-
Boundary Creek	6 openings	-	All closed	-	Open	-	-
Ewe Island	111 gates	-	All closed	-	-	-	Open
Tauwichee	322 gates	0.60	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



Week ending Wednesday 20 Apr 2016



State Allocations (as at 20 Apr 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	80%
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>