



RIVER MURRAY WEEKLY REPORT

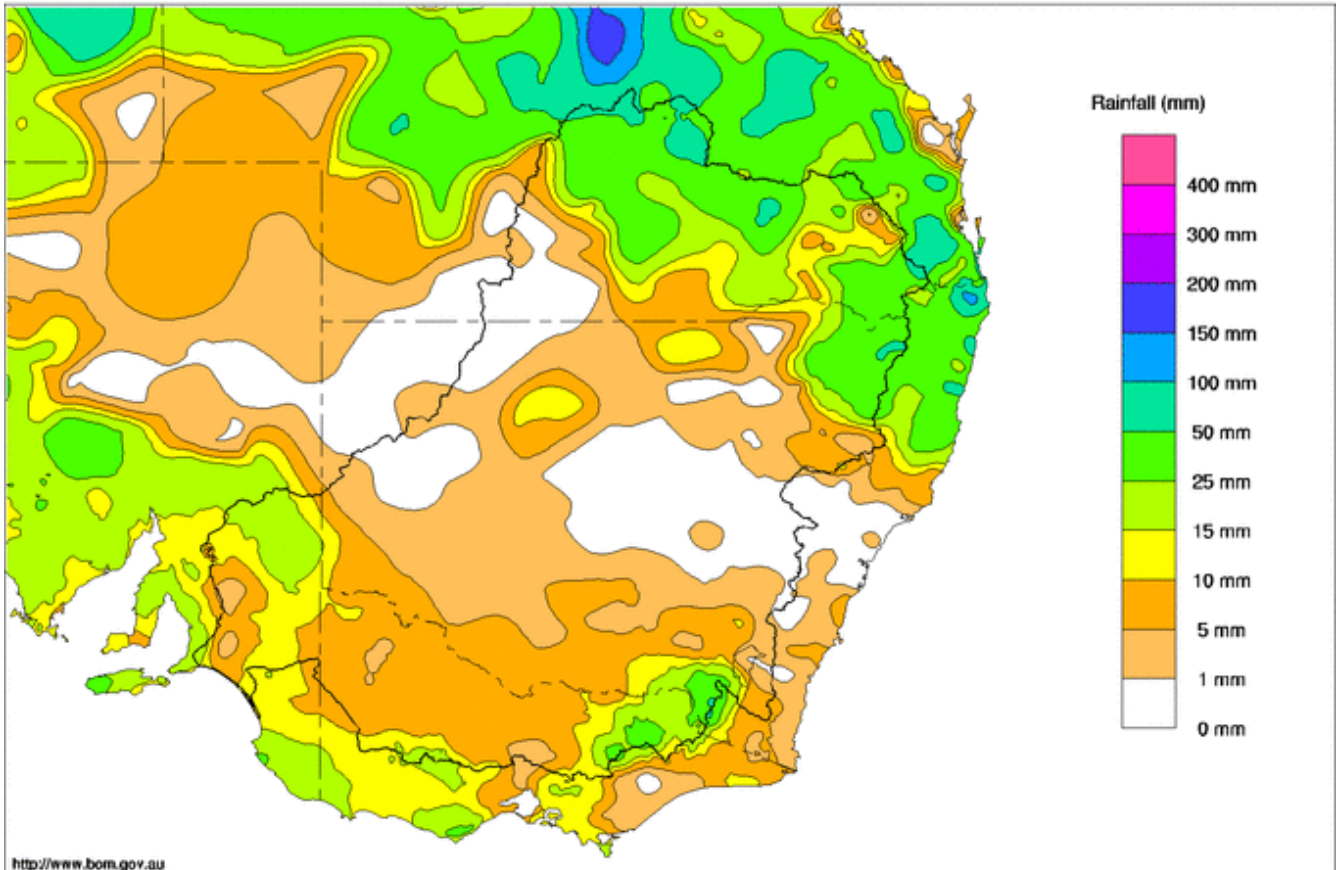
FOR THE WEEK ENDING WEDNESDAY, 18TH JANUARY 2017

Trim Ref: D17/3390

Rainfall and inflows

Rainfall over the last week was heaviest over the far northern and north-eastern Murray-Darling Basin and in the south-east over the NSW Snowy Mountains and the Victorian Alps. Weekly totals in these regions ranged mostly between 25 and 50 mm with rain associated with a combined trough and frontal system that also triggered storms in some areas. Rainfall elsewhere was generally relatively light (Map 1). Temperatures before and after the rain were once again very high, with daily maximums reaching the low to mid 40s at several locations in the far west.

Murray-Darling Rainfall Totals (mm) Week Ending 18th January 2017
Australian Bureau of Meteorology



<http://www.bom.gov.au>

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Map 1 - Murray-Darling Basin rainfall week ending 18 January 2017 (Source: Bureau of Meteorology)

The rain over the south-east triggered modest increases to stream flows along the upper tributaries before rates receded. For example, on the Mitta Mitta River, the flow at Hinnomunjie bridge increased from 600 to 1,800 ML/day and has now returned to 600 ML/day. On the Ovens River at Rocky Point, the flow increased from 1,200 to 1,700 ML/day over the weekend before decreasing to rates below 1,000 ML/day during the last couple of days.



River operations

- Menindee Lakes releases continue
- Euston lock remains closed due to repairs
- Lake Albert at salinity levels not seen for 15 years

River Operation objectives

With warm dry weather forecast and state allocations at 100% (high reliability and high security) demands along the Murray are expected to be high over summer and autumn.

State allocations are a product of water in storage and the rules that require water to be managed in the most efficient manner.

The general objectives and outcomes for the River Murray System (agreed by the states) sets the following objectives:

- To operate the River Murray System efficiently and effectively in order to deliver State water entitlements
- To maximise the water available to the Southern Basin States (NSW, Vic and SA), after providing for operating commitments in the River Murray System.

The outcomes of the above objectives are:

- The conservation of water and minimisation of losses.
- The delivery of southern basin state orders.

We meet the above rules agreed by NSW, Victoria, South Australia and the Commonwealth by

- storing water in the most efficient storages like Hume and Dartmouth
- using water from the least efficient storage first, i.e Menindee Lakes where we are able.

If we operated inefficiently, for example by not drawing on Menindee Lakes first to meet demands in the Murray system, then not only would we be breaching rules that have been agreed by governments, but allocations to entitlement holders in the Murray would inevitably be less. Any changes to the historic practice of drawing on Menindee Lakes first would also impact the communities and industries on the Murray that have developed with this resource available.

Releases from Menindee Lakes are managed in conjunction with WaterNSW to help safeguard regional interests, such as Broken Hill's water supply. The rules also help safeguard Broken Hills Water supply and Lower Darling entitlements as water available to the Murray ceases when Menindee Lakes fall below 480 GL.

River Operations

MDBA total storage decreased by 154 GL this week, with the active storage currently 6,918 GL (80% capacity).

Dartmouth Reservoir's storage volume increased 3 GL this week to 2,946 GL (78% capacity). The release, measured at Colemans gauge, remained at 300 ML/day this week but is scheduled to be increased for three days starting on Friday 20 January 2017. This pulse of water is provided for by MDBA's minimum release provisions for Dartmouth and is designed to mimic a small natural pulse that will provide water quality and ecosystem function benefits in the Mitta Mitta River downstream of Dartmouth Dam.

Storage volume at **Hume Reservoir** fell by 48 GL this week to 2,621 GL (88% capacity). The release combined with inflows from the Kiewa River, measured at Doctors Point, have averaged close to 13,000 ML/day throughout the week.



The pool level at **Lake Mulwala** has averaged 124.85 m AHD and is currently at 124.88 m AHD. Diversions to Mulwala Canal have averaged 5,900 ML/day, with 1,200 ML/day being delivered via Mulwala Canal to the Edward River upstream of Deniliquin to supply customers on the Wakool Main Canal, where demand increased to around 1,700 ML/day. There is rainfall forecast over the irrigation districts for this Friday so diversions at Lake Mulwala could reduce if this forecast eventuates. This could result in reductions to Hume releases over the coming week.

Releases from **Yarrowonga Weir** were increased from 8,000 ML/day this week to 8,500 ML/day to provide variation downstream of Yarrowonga. These releases are lower than experienced over the last few years at this time of year due to downstream demands being supplemented by water from the Goulburn, Campaspe, Murrumbidgee and Menindee Lakes. This allows more water to be conserved in the major storages of Hume and Dartmouth than would otherwise have been the case.

On the **Edward River** system, the flow through the Edward and Gulpa offtakes has averaged 1,550 ML/day and 480 ML/day, respectively. Downstream at Stevens Weir the flow has averaged 1,000 ML/day and is expected to recede to around 600 ML/day over the coming week.

Flows in the **Broken Creek** at Rice's Weir have been steady around 300 ML/day, while the **Goulburn River** at McCoys Bridge has receded from over 3,000 ML/day to under 2,000 ML/day. The flow at McCoys is expected to remain well above the end of system target of 350 ML/day with an inter valley trade order resulting in a target flow at McCoys of 1,500 ML/day over the next few weeks.

Inter Valley Trade (IVT) deliveries from the Broken, Goulburn and Campaspe systems to the Murray have all begun. These deliveries are expected to persist for the next few months under dry conditions and will help meet downstream demands in the Murray system. Once sufficient volumes have been delivered to the Murray, trade out of the Goulburn, Campaspe, Broken and Loddon system may be made available by GMW.

At **Torrumbarry Weir**, diversions to National Channel remain close to 2,300 ML/day with a portion of this water provided to support Murray Cod in Gunbower Creek. Flow downstream of Torrumbarry Weir has decreased towards 6,000 ML/day and is expected to fall to around 5,000 ML/day this week due to the recession of Goulburn flows.

On the lower **Murrumbidgee River**, the flow at Balranald averaged 240 ML/day this week. IVT deliveries from the Murrumbidgee system are forecast to begin in about a fortnight's time and may persist beyond February. This will result in the flow at Balranald increasing to around 2,000 ML/day. Once a sufficient volume of IVT has been delivered from the Murrumbidgee to the Murray, trade out of the Murrumbidgee may become available. Further information on IVT in the Murrumbidgee system is available from [WaterNSW](#).

Downstream on the Murray at **Euston**, the flow receded from 11,000 ML/day to 7,700 ML/day. The flow is expected to recede further over the coming week to around 6,000 ML/day. The lock at Euston remains closed due to repair works being undertaken on one of the upstream lock gates. It is anticipated the lock will be closed for the entirety of next week but will open the week starting 30th January if the maintenance works go to plan. A further update will be provided in next week's weekly report. In the coming weeks the Euston weir pool may be lowered below the Full Supply Level (FSL) but will be returned to near FSL during important recreational times.

On the **Darling River**, total storage at **Menindee Lakes** fell by 68 GL to a storage volume of 1,386 GL (80% capacity). This time last year Menindee Lakes was only 65 GL (4% capacity). More operational releases, measured at Weir 32, were made this week peaking at 6,500 ML/day to mimic a more natural pulse to benefit native fish in the lower Darling. Releases have since reduced to 5,000 ML/day and are expected to target this flow rate over the coming week (**see attached media release**). Part of the release volume is from Lake Wetherell to reduce water on the flood plain to protect the health of the ecosystem and meet downstream demands. Releases will continue as needed until the end of the irrigation season. Even without further flows past Wilcannia, MDBA is not expecting the total volume in the Lakes to fall below about 600 GL by the end of May.

At **Wentworth**, at the confluence of the Murray and Darling Rivers, the flow receded only 2,000 ML/day as the recession of Murray flows was countered by the increase in flows from the Darling.



On the Murray, the weir pools at **Locks 9 and 8** are currently close to Full Supply Level (FSL). **Lock 8** will begin being gradually lowered over the coming week until it reaches 50 cm below FSL. The lowering of Lock 7 weir pool by up to 50 cm is already underway and is currently around 20 cm below FSL. Weir pool variability helps to restore a more natural wetting and drying cycle to riverbanks along weir pool affected reaches. More information on possible weir pool levels in the coming weeks is available on the [MDBA website](#).



Photo 1 – lifting out the upstream lock gate to repair the hinge bolts (source: Phillip Cocks)

The storage volume at **Lake Victoria** fell this week by 41 GL to 545 GL (81% capacity) with the releases from Lake Victoria averaging 5,500 ML/day. The average flow to **South Australia** was 15,900 ML/day this week which was largely made up of entitlement and additional dilution flow to South Australia. A smaller proportion was environmental water delivered to South Australia, including water from upstream sites that has been protected to South Australia.

During the Millennium Drought, salinity levels in Lake Albert increased to over 19,000 EC due to the reduced flows into the Lower Lakes. There has been continual improvement in salinity levels since 2010 and Lake Albert salinity has now reached levels of around 1,650 EC (measured at Meningie). This level of salinity has not been seen for 15 years.

As the flooding subsides in South Australia, barrage releases have remained below 10,000 ML/day averaging around 4,000 ML/day this week.

For media inquiries contact the Media Officer on 02 6279 0141

DAVID DREVERMAN
Executive Director, River Management



Water in Storage

Week ending Wednesday 18 Jan 2017

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	472.24	3 017	78%	71	2 946	+3
Hume Reservoir	192.00	3 005	190.13	2 644	88%	23	2 621	-48
Lake Victoria	27.00	677	25.89	545	81%	100	445	-41
Menindee Lakes		1 731*		1 386	80%	(480 #)	906	-68
Total		9 269		7 592	82%	--	6 918	-154
Total Active MDBA Storage							80% ^	

Major State Storages

Burrinjuck Reservoir	1 026	906	88%	3	903	-44
Blowering Reservoir	1 631	1 458	89%	24	1 434	-27
Eildon Reservoir	3 334	2 564	77%	100	2 464	-22

* 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 17 Jan 2017

Storage	Active Storage (GL)	Weekly Change (GL)	Diversion (GL)	This Week	From 1 May 2016
Lake Eucumbene - Total	1 926	n/a	Snowy-Murray	+14	895
Snowy-Murray Component	879	n/a	Tooma-Tumut	+0	320
Target Storage	1 520		Net Diversion	14	575
			Murray 1 Release	+19	1 291

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)	43.5	453	Yarrowonga Main Channel (net)	6.8	97
Wakool Sys Allowance	1.5	2	Torrumbarry System + Nyah (net)	12.2	207
Western Murray Irrigation	1.2	12	Sunraysia Pumped Districts	4.3	53
Licensed Pumps	5.7	102	Licensed pumps - GMW (Nyah+u/s)	0.5	11
Lower Darling	0.1	3	Licensed pumps - LMW	20	187
TOTAL	52.0	572	TOTAL	43.8	555

* 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 environmental water delivery.

Entitlement this month	217.0 *
Flow this week	111.5
Flow so far this month	303.4
Flow last month	1,915.3

(15 900 ML/day)

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

	Current	Average over the last week	Average since 1 August 2016
Swan Hill	120	120	130
Euston	-	-	-
Red Cliffs	170	170	160
Merbein	160	160	160
Burtundy (Darling)	430	420	640
Lock 9	200	200	170
Lake Victoria	190	190	180
Berri	290	300	210
Waikerie	370	380	260
Morgan	380	410	260
Mannum	540	610	270
Murray Bridge	540	490	270
Milang (Lake Alex.)	380	380	530
Poltalloch (Lake Alex.)	390	400	320
Meningie (Lake Alb.)	1 660	1 640	1 760
Goolwa Barrages	460	520	1 200



River Levels and Flows

Week ending Wednesday 18 Jan 2017

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	-	-	-	7 050	F	3 520	2 570
Jingellic	4.0	2.08	208.60	7 600	R	4 280	3 870
Tallandoon (Mitta Mitta River)	4.2	1.52	218.41	830	F	920	970
Heywoods	5.5	2.62	156.25	9 600	F	10 870	12 090
Doctors Point	5.5	2.77	151.24	12 110	S	13 090	14 110
Albury	4.3	1.75	149.19	-	-	-	-
Corowa	4.6	2.72	128.74	12 350	F	13 570	12 930
Yarrowonga Weir (d/s)	6.4	1.42	116.46	8 360	S	8 060	8 030
Tocumwal	6.4	2.17	106.01	9 650	R	9 410	9 940
Torrumbarry Weir (d/s)	7.3	2.05	80.60	6 120	S	6 460	8 110
Swan Hill	4.5	1.29	64.21	6 640	F	7 050	7 930
Wakool Junction	8.8	3.42	52.54	9 990	S	10 140	6 990
Euston Weir (d/s)	9.1	1.53	43.37	7 760	F	9 760	13 820
Mildura Weir (d/s)	-	-	-	9 910	F	10 820	15 210
Wentworth Weir (d/s)	7.3	3.11	27.87	9 030	F	10 310	14 710
Rufus Junction	-	4.50	21.43	13 490	F	15 080	16 190
Blanchetown (Lock 1 d/s)	-	1.32	-	14 050	F	15 800	18 610
Tributaries							
Kiewa at Bandiana	2.8	1.96	155.19	1 950	R	1 630	1 270
Ovens at Wangaratta	11.9	8.30	145.98	1 350	F	1 730	1 570
Goulburn at McCoys Bridge	9.0	2.07	93.49	1 990	F	2 620	2 510
Edward at Stevens Weir (d/s)	5.5	1.13	80.90	930	F	1 040	610
Edward at Liewah	-	1.29	56.67	690	F	840	1 200
Wakool at Stoney Crossing	-	1.57	55.06	790	F	1 010	1 670
Murrumbidgee at Balranald	5.0	0.75	56.71	390	R	240	1 790
Barwon at Mungindi	6.1	3.16	-	40	F	380	10
Darling at Bourke	9.0	4.11	-	370	R	250	290
Darling at Burtundy Rocks	-	2.20	-	3 300	R	1 950	1 390

Natural Inflow to Hume	2 990	5 050
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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	-0.02	-	No. 7 Rufus River	22.10	-0.19	+2.16
No. 26 Torrumbarry	86.05	+0.00	-	No. 6 Murtho	19.25	+0.03	+0.65
No. 15 Euston	47.60	+0.00	-	No. 5 Renmark	16.30	+0.06	+0.65
No. 11 Mildura	34.40	-0.01	+0.18	No. 4 Bookpurnong	13.20	+0.04	+1.41
No. 10 Wentworth	30.80	+0.03	+0.47	No. 3 Overland Corner	9.80	+0.08	+0.84
No. 9 Kulnine	27.40	+0.02	+0.10	No. 2 Waikerie	6.10	+0.16	+0.79
No. 8 Wangumma	24.60	-0.05	+0.29	No. 1 Blanchetown	3.20	-0.10	+0.57

Lower Lakes FSL = 0.75 m AHD

Lake Alexandrina average level for the past 5 days (m AHD)	0.80
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Barrages

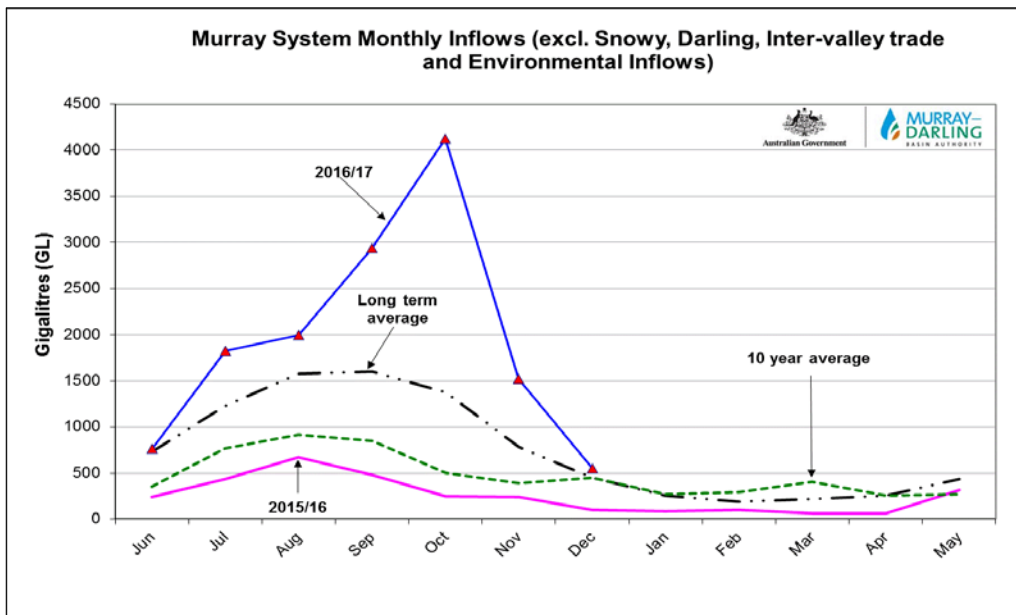
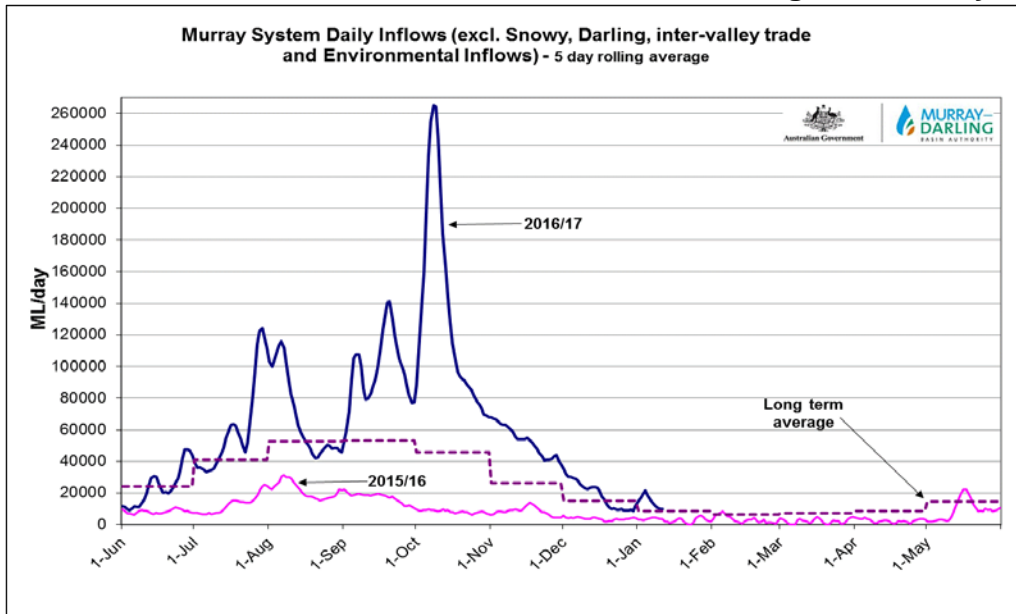
Fishways at Barrages

	Openings	Level (m AHD)	No. Open	Rock Ramp	Vertical Slot 1	Vertical Slot 2	Dual Vertical Slots
Goolwa	128 openings	0.81	3	-	Open	Open	-
Mundoo	26 openings	0.64	1	-	-	-	Open
Hunters Creek	-	-	-	-	Open	-	-
Boundary Creek	6 openings	-	1	-	Open	-	-
Ewe Island	111 gates	-	All closed	-	-	-	Open
Tauwichee	322 gates	0.69	17	Open	Open	Open	-

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



Week ending Wednesday 18 Jan 2017



State Allocations (as at 18 Jan 2017)

NSW - Murray Valley

High security	100%
General security	100%

Victorian - Murray Valley

High reliability	100%
Low reliability	0%

NSW - Murrumbidgee Valley

High security	100%
General security	100%

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%
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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>

20 January 2017

Update on releases from Menindee Lakes

As planned, the Murray–Darling Basin Authority (MDBA) has called on reduced water releases from the Menindee Lakes into the Darling River for the coming few days. Releases have dropped from 6500 to 5000 megalitres per day in accordance with planned operations, and are expected to remain around this rate until at least 27 January.

The MDBA is working closely with WaterNSW to ensure its release pattern allows WaterNSW to store as much water as possible in the top two lakes, in order to meet demand in the River Murray as required by the water sharing arrangements of the New South Wales, Victorian, South Australian and Commonwealth governments.

The MDBA head of River Management, David Dreverman, said ensuring the water sharing arrangements were followed was an important part of maximising water security and hence the economic production of the Basin.

“Communities, farmers and the environment in the southern basin, from the Riverina to Sunraysia and the Lower Lakes, rely on the water stored in Menindee Lakes to contribute to their water security. The less water is drawn from Menindee Lakes, the lower their water allocations would be,” Mr Dreverman said.

“Given the very low storage levels in the lakes from 2014 to 2016, it is also understandable that people in the Broken Hill and Menindee area and those along the Lower Darling are concerned that water is retained in the lakes.

“That’s why water that’s left in Menindee Lakes is stored as efficiently as possible to provide for Broken Hill’s water supply and the needs of the Lower Darling as a drought contingency. Once the volume of water in the lakes reaches 480 gegalitres, releases for the Murray system stop. This is a key component of the Murray–Darling Basin Agreement, which lays down the rules.”

Releases from Menindee Lakes increased on 9 January from 1800 megalitres per day (ML/day) to 6500 ML/day on Friday 13 January. They reduced this week to 5000 ML/day and will remain at this rate until at least 27 January. WaterNSW and the MDBA continue to work together to analyse demands, lake levels and release rates into the future.

The lakes are not expected to fall below about 600 gegalitres by the end of May, which would leave more than the volume of Sydney Harbour.

Release rates are subject to change and will depend on operational conditions.

ENDS

For more information, contact the MDBA Media office at media@mdba.gov.au or 02 6279 0141

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