



RIVER MURRAY WEEKLY REPORT

FOR THE WEEK ENDING WEDNESDAY, 1 MARCH 2017

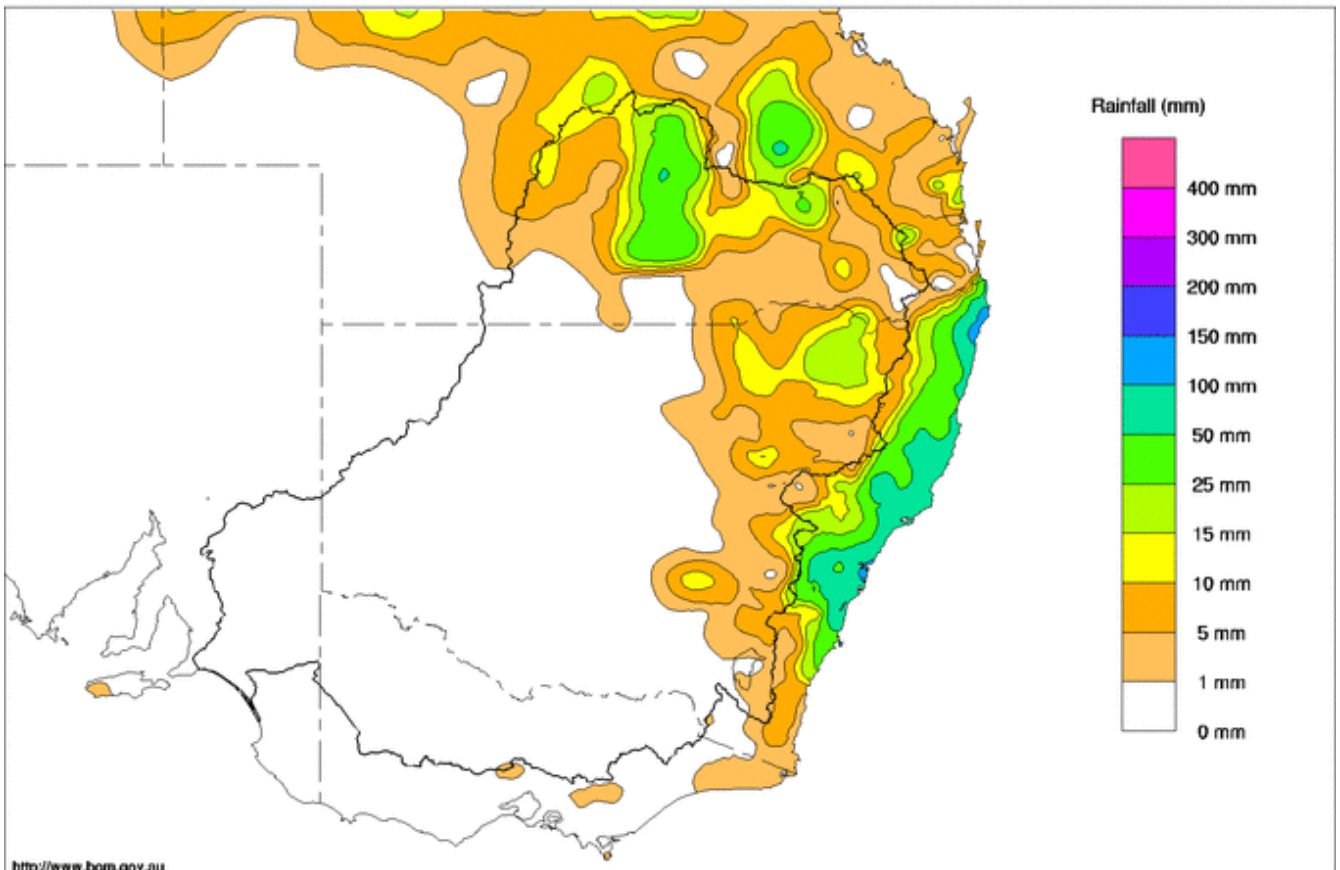
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Rainfall and inflows

A ridge of high pressure over southern Australia maintained dry conditions across the southern Murray-Darling Basin. No rainfall was recorded in South Australia, Victoria and the majority of New South Wales (Map 1). Light to moderate falls were recorded along the New South Wales ranges, with 26 mm recorded at Guyra in the Northern Tablelands. This week's highest total of 64 mm fell at Mungallala in Queensland's Warrego catchment.

The Bureau of Meteorology is forecasting dry conditions to persist over the southern Basin for at least the next week.

Murray-Darling Rainfall Totals (mm) Week Ending 1st March 2017
Australian Bureau of Meteorology



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Issued: 01/03/2017

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

The dry conditions resulted in steady recessions in the upper Murray tributaries. On the Mitta Mitta River, the flow at Hinnomunjie Bridge eased from 280 ML/day to 210 ML/day, while the upper Murray at Biggara receded from near 250 ML/day to 150 ML/day. On the Ovens River, the flow at Wangaratta continued to recede, falling from 1,050 ML/day to 550 ML/day.

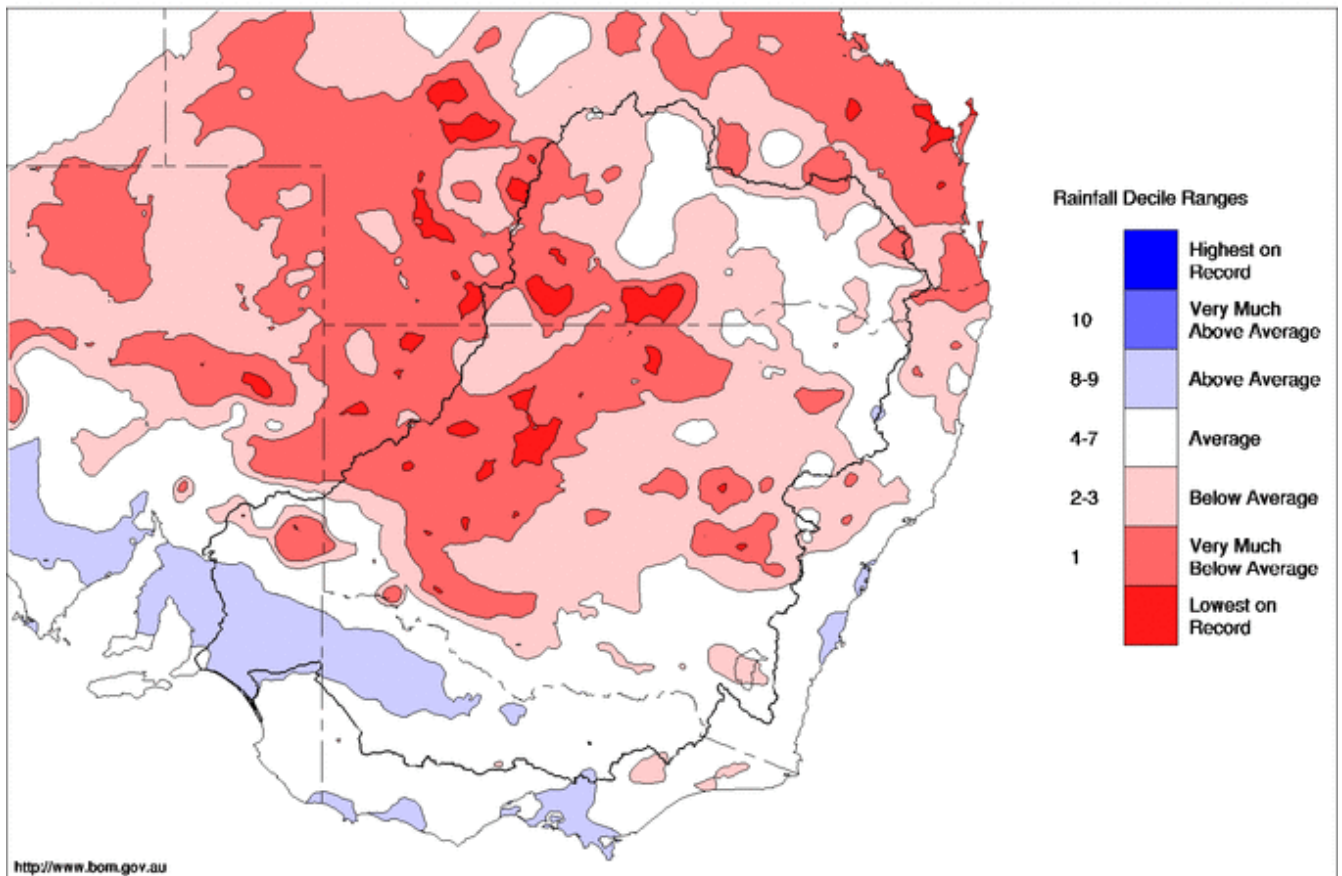


February 2017 Summary

In general, February 2017 delivered below average rainfall (Map 2) and another month of well above average temperatures (Map 3) across Queensland and New South Wales. The upper Murray catchments had near average rainfall, while parts of western Victoria and the South Australian Riverland had above average falls. The above average falls in South Australia follow on from above average rain in January, December 2016 and a wet spring in 2016. Overall, the Bureau of Meteorology reports that area-averaged rainfall across the Murray-Darling Basin in February was 16.9 mm, well below the mean for this time of year (equal 15th lowest out of 118 records).

Murray-Darling Rainfall Deciles February 2017

Distribution Based on Gridded Data
Australian Bureau of Meteorology



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

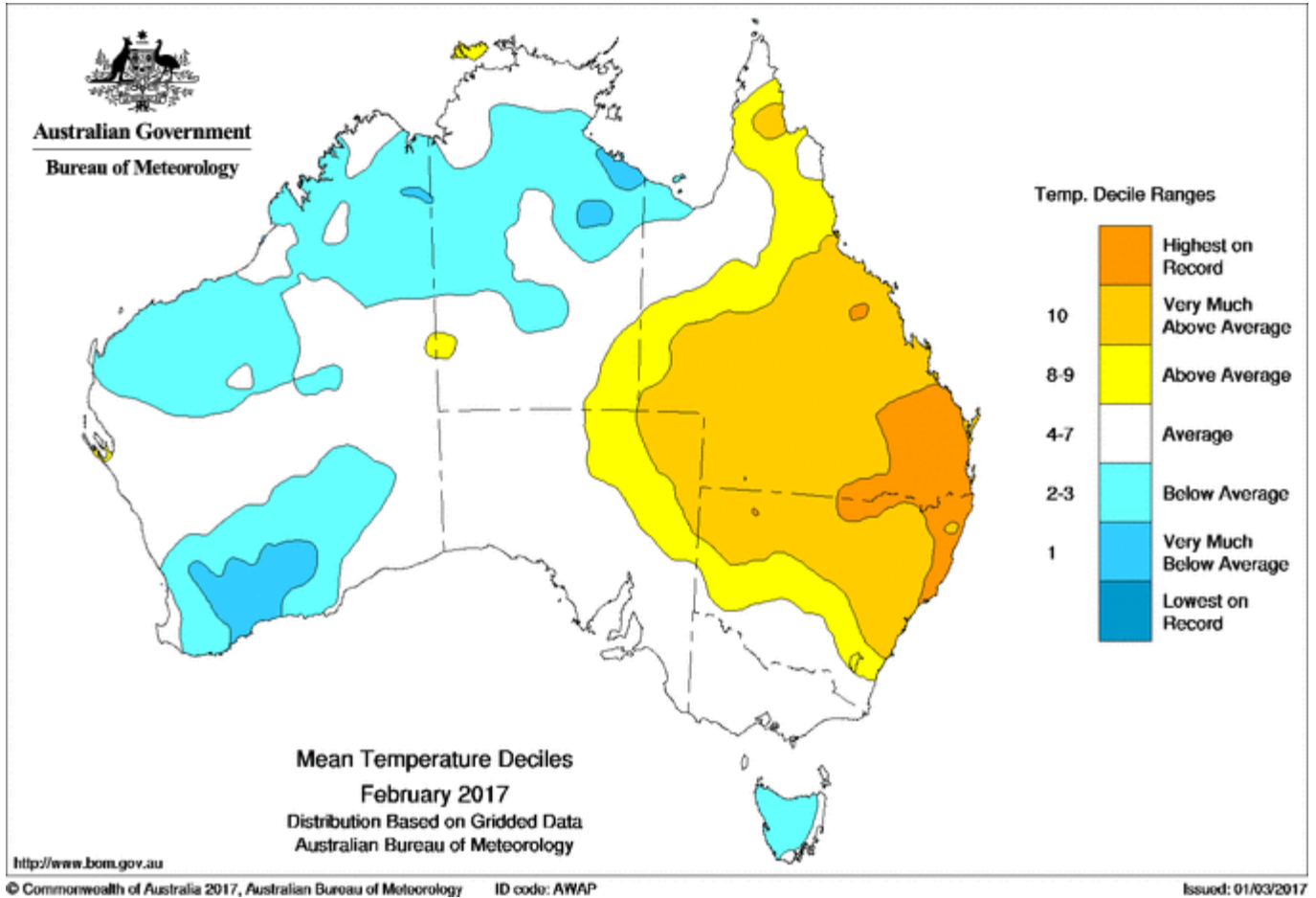
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Issued: 28/02/2017

Map 2 - Murray-Darling Basin rainfall deciles for February 2017 (Source: Bureau of Meteorology)

River Murray System inflows during February (excluding Snowy Scheme, Darling River and managed environmental flows) totalled around 130 GL, which is below the month's long-term average of about 190 GL (see graph on page 9).

As previously mentioned, temperatures were well above average across much of the northern Basin in February 2017 (Map 3). The entire Queensland section of the Basin had 'Very Much Above Average' or 'Highest on Record' mean temperatures, continuing on from the heatwave conditions experienced in January. Mungindi, on the Barwon River, experienced 15 consecutive days of 40°C or above during January, eclipsing the previous record of 8 consecutive days. The bulk of the southern-Basin experienced near average temperatures in February.



Map 3 - Mean temperature deciles for February 2017 (Source: Bureau of Meteorology)

Estimated evaporation losses from MDBA storages for February 2017 are reported in Table 1. Evaporation is estimated by multiplying the surface area of the storage by the net evaporation. Net evaporation is derived by subtracting the rainfall recorded at the storage from the calculated evaporation.

Table 1: Monthly evaporation figures for MDBA storages

Storage	*Approximate (net) evaporative loss in February 2017 (GL)	Average storage volume in February 2017 (GL)	Percentage net evaporative loss in February 2017
Dartmouth	4.8	3009.2	0.2
Hume	25.6	2433.1	1.1
Lake Victoria	15.8	468.4	3.4
Menindee Lakes	92.1	1191.0	7.7

* Evaporative loss from storage = surface area of the storage x net evaporation. Net evaporation = measured evaporation (using a 'pan' instrument) - rainfall.



River operations

- Irrigation demands increasing
- Yarrawonga release being eased back
- Goulburn River flow pulse begins
- Releases from Menindee gradually reduced

System Operations

In January and February, demands and losses along the Murray system have been lower than planned for, meaning that more water has been arriving at Lake Victoria than expected. In order to reduce the volume of water at risk of being spilled from Lake Victoria over the coming winter/spring, deliveries, including from tributary inter valley transfer (IVT) and from Menindee lakes, continue to be reduced. However, the Bureau of Meteorology's latest [outlook for autumn](#) suggests rainfall is likely to be below average and temperatures are likely to be warmer than average. This means demands and losses may be high during autumn, so that deliveries may need to be increased before the end of the irrigation season. Updates will be provided in coming weeks as flow rates across the system are adjusted in response to the observed and forecast weather and demands.

River Operations

Total MDBA storage decreased 123 GL this week, with the active storage now 6,152 GL (72% capacity).

At **Dartmouth Reservoir**, the storage volume increased by 1 GL to 3,000 GL (78% capacity). The release from Dartmouth, measured at Colemans, remains at 300 ML/day. Releases are planned to increase next week to mimic a small natural pulse that will provide water quality and ecosystem function benefits in the Mitta Mitta River downstream of Dartmouth Dam (see attached flow advice). The water is provided for by MDBA's minimum release provisions for Dartmouth Dam.

The **Hume Reservoir** storage volume decreased 71 GL this week to 2,296 GL (76% capacity). Releases averaged around 13,000 ML/day before being increased to 14,700 ML/day to supply increasing downstream irrigation demands. Further increases are likely in the coming days.

Diversions from **Lake Mulwala** increased during the week. Diversion to Mulwala Canal was hovering around 3,800 ML/day before increasing to near 4,700 ML/day, while diversion to Yarrawonga Main Channel has averaged near 1,500 ML/day. Demands from both irrigation channels are expected to increase further in the coming days. The Lake Mulwala pool level has averaged near 124.76 m AHD this week and may lower over the coming days before additional water arrives from Hume Dam. Releases downstream of **Yarrawonga Weir** had been targeting 9,500 ML/day but are now being gradually reduced back to 8,000 ML/day over the next few days as environmental orders reduce.

Inflows to the **Edward-Wakool** system have remained relatively steady this week. The Edward River and Gulpa Creek off-takes are currently targeting around 1,550 ML/day and 350 ML/day respectively, resulting in a flow downstream at Toonalook near 1,800 ML/day. At **Stevens Weir**, the flow target continues at the normal summer minimum of 600 ML/day, while on the Wakool River, the flow at Stoney Crossing has remained near 700 ML/day.

Back on the Murray downstream of the Edward River Offtake, the river height at Picnic Point has fallen after peaking near channel capacity on Thursday (Photo 1). The river height is expected to fall further over the coming week.



Photo 1 – The Murray at Picnic Point has fallen after peaking near channel capacity this week. Source: Ben Berry, NSW DPI.

The **Goulburn River** at McCoys Bridge has risen from near 1,100 ML/day to 1,900 ML/day, and is forecast to increase towards 4,500 ML/day by next week. This flow pulse is being provided by environmental water from the Commonwealth Environmental Water Holder and will combine with a flow pulse in the Murray (originating from higher Yarrowonga releases over the past fortnight) to promote movement and dispersal of native fish from downstream of Torrumbarry to upstream reaches, primarily into the Goulburn River. Delivery of inter valley transfer (IVT) water from the Goulburn to the Murray continues, albeit at slightly lower rates than in February.

Diversions from the Torrumbarry weir pool to National Channel have increased from 2,200 ML/day to about 2,600 ML/day, and are expected to increase to around 3,800 ML/day in the coming week to meet autumn irrigation needs. The release downstream of **Torrumbarry Weir** has averaged around 6,100 ML/day and is expected to rise in the coming days as higher Goulburn flows arrive.

On the **Murrumbidgee River** at Balranald, flows continue at rates above the normal end of system target due to the on-going delivery of IVT to the Murray. The flow is currently around 1,750 ML/day, and is expected to recede throughout this coming week.

At **Euston**, the weir pool level is currently 16 cm below the full supply level (FSL). As part of the [on-going program of weir pool variation](#) along the mid Murray weirs, the pool level will be varied over the coming months to restore a more natural wetting and drying cycle to benefit the riverine environment. During known recreational events such as the up-coming Robinvale Classic water ski race in March, operations will target a level close to FSL to help with local community requirements as much as possible. The release downstream of the weir has averaged around 6,900 ML/day.



On the **Darling River** system, total storage in the **Menindee Lakes** fell by 52 GL to a storage volume of 1,077 GL (62% capacity). The release from Menindee Lakes, measured at Weir 32 is currently 2,900 ML/day and is being gradually lowered to 2,250 ML/day in response to reduced River Murray system demands. At the **Lake Cawndilla** outlet, WaterNSW continues to release near 1,200 ML/day to deliver environmental water to the Great Darling Anabranch using water allocations made available by the Commonwealth Environmental Water Holder.

Downstream at the confluence of the Darling and Murray, the flow at Wentworth has slowly fallen to 7,900 ML/day and is likely to remain near this flow rate for the coming week. At Lock 7, the weir pool level has been lowered back to around 50 cm below FSL (21.7 m AHD) after being temporarily raised.

The **Lake Victoria** storage volume remained steady at 453 GL (67% capacity) this week but will begin to fall again over the coming weeks. The flow to **South Australia** averaged around 8,000 ML/day during the week and is likely to remain near this rate until next week. Further downstream at Lock 1, the flow has eased to 5,300 ML/day.

At the **Lower Lakes**, the 5-day average water level in Lake Alexandrina fell 2 cm to 0.73 m AHD. All fishways remain open and are providing fish passage between Lake Alexandrina and the Coorong. The average total barrage release was around 3,000 ML/day.

For media inquiries contact the Media Officer on 02 6279 0141

DAVID DREVERMAN
Executive Director, River Management



Water in Storage

Week ending Wednesday 01 Mar 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	471.93	3 000	78%	71	2 929	+1
Hume Reservoir	192.00	3 005	188.19	2 296	76%	23	2 273	-71
Lake Victoria	27.00	677	25.04	453	67%	100	353	-0
Menindee Lakes		1 731*		1 077	62%	(480 #)	597	-52
Total		9 269		6 826	74%	--	6 152	-123
Total Active MDBA Storage							72% ^	

Major State Storages

Burrinjuck Reservoir	1 026	754	73%	3	751	-17
Blowering Reservoir	1 631	1 225	75%	24	1 201	-62
Eildon Reservoir	3 334	2 407	72%	100	2 307	-37

* 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 28 Feb 2017

Storage	Active Storage (GL)	Weekly Change (GL)	Diversion (GL)	This Week	From 1 May 2016
Lake Eucumbene - Total	1 818	-15	Snowy-Murray	+19	958
Snowy-Murray Component	826	-17	Tooma-Tumut	+0	335
Target Storage	1 410		Net Diversion	19	623
			Murray 1 Release	+20	1 365

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)	31.2	654	Yarrawonga Main Channel (net)	9.7	149
Wakool Sys Allowance	1.9	16	Torrumbarry System + Nyah (net)	13.9	281
Western Murray Irrigation	1.0	18	Sunraysia Pumped Districts	3.5	77
Licensed Pumps	n/a	152	Licensed pumps - GMW (Nyah+u/s)	0.8	17
Lower Darling	7.5	22	Licensed pumps - LMW	3.4	255
TOTAL	41.6	862	TOTAL	31.3	779

* 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 unregulated flows.

Entitlement this month	186.0 *
Flow this week	56.2
Flow so far this month	7.9
Flow last month	258.1

(8 000 ML/day)

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

	Current	Average over the last week	Average since 1 August 2016
Swan Hill	80	80	130
Euston	-	-	-
Red Cliffs	200	200	170
Merbein	190	190	170
Burtundy (Darling)	490	470	600
Lock 9	310	310	200
Lake Victoria	240	230	190
Berri	430	440	240
Waikerie	490	490	300
Morgan	480	480	300
Mannum	480	460	300
Murray Bridge	320	320	290
Milang (Lake Alex.)	430	420	510
Poltalloch (Lake Alex.)	550	540	360
Meningie (Lake Alb.)	1 720	1 740	1 750
Goolwa Barrages	510	710	1 060



River Levels and Flows

Week ending Wednesday 01 Mar 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	-	-	-	3 450	F	2 990	1 800
Jingellic	4.0	1.58	208.10	3 300	S	3 280	1 830
Tallandoon (Mitta Mitta River)	4.2	1.39	218.28	560	F	610	1 210
Heywoods	5.5	3.07	156.70	13 390	R	13 000	12 830
Doctors Point	5.5	3.00	151.47	15 270	R	14 330	14 170
Albury	4.3	1.97	149.41	-	-	-	-
Corowa	4.6	2.88	128.90	13 400	F	13 620	13 480
Yarrawonga Weir (d/s)	6.4	1.55	116.59	9 480	S	9 420	9 910
Tocumwal	6.4	2.30	106.14	8 580	F	8 680	8 820
Torrumbarry Weir (d/s)	7.3	1.93	80.48	5 700	F	6 080	5 860
Swan Hill	4.5	1.15	64.07	5 640	F	5 770	4 930
Wakool Junction	8.8	2.75	51.87	7 020	R	6 730	6 250
Euston Weir (d/s)	9.1	1.41	43.25	7 000	R	6 960	7 570
Mildura Weir (d/s)	-	-	-	6 270	F	6 710	6 710
Wentworth Weir (d/s)	7.3	2.92	27.68	7 900	R	8 670	8 320
Rufus Junction	-	3.64	20.57	7 400	F	7 380	7 990
Blanchetown (Lock 1 d/s)	-	0.73	-	5 360	S	5 290	5 830
Tributaries							
Kiewa at Bandiana	2.8	1.00	154.23	540	R	460	630
Ovens at Wangaratta	11.9	7.97	145.65	550	F	700	1 010
Goulburn at McCoys Bridge	9.0	2.04	93.46	1 910	R	1 290	1 460
Edward at Stevens Weir (d/s)	5.5	0.96	80.74	630	F	630	620
Edward at Liewah	-	1.20	56.58	620	F	660	770
Wakool at Stoney Crossing	-	1.53	55.02	670	S	670	730
Murrumbidgee at Balranald	5.0	2.09	58.05	1 760	R	1 430	2 380
Barwon at Mungindi	6.1	3.35	-	370	R	260	180
Darling at Bourke	9.0	4.01	-	90	S	130	200
Darling at Burtundy Rocks	-	2.26	-	3 390	F	3 420	3 440

Natural Inflow to Hume	1 570	1 110
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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
Yarrawonga	124.90	-0.14	-	No. 7 Rufus River	22.10	-0.39	+1.31
No. 26 Torrumbarry	86.05	+0.00	-	No. 6 Murtho	19.25	+0.02	+0.07
No. 15 Euston	47.60	-0.16	-	No. 5 Renmark	16.30	+0.00	+0.23
No. 11 Mildura	34.40	+0.01	+0.05	No. 4 Bookpurnong	13.20	+0.01	+0.86
No. 10 Wentworth	30.80	+0.02	+0.28	No. 3 Overland Corner	9.80	+0.01	+0.26
No. 9 Kulnine	27.40	-0.11	-0.33	No. 2 Waikerie	6.10	+0.00	+0.15
No. 8 Wangumma	24.60	-0.48	-0.03	No. 1 Blanchetown	3.20	-0.09	-0.02

Lower Lakes FSL = 0.75 m AHD

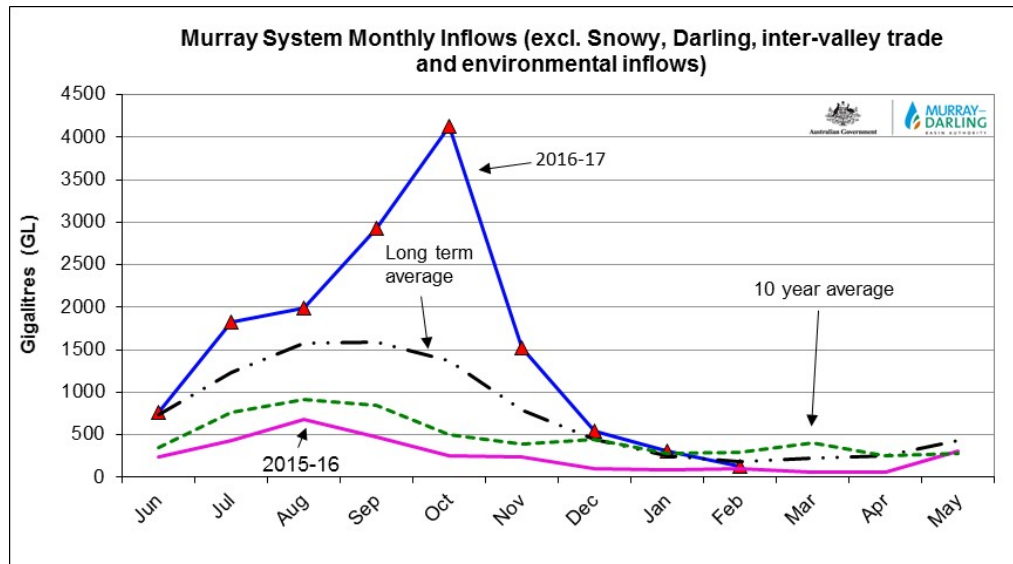
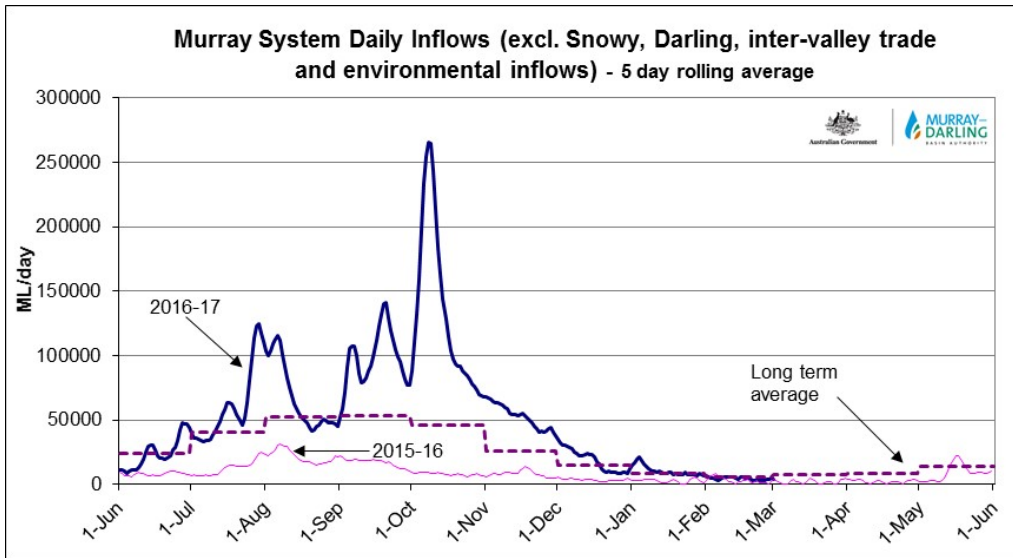
Lake Alexandrina average level for the past 5 days (m AHD)	0.73
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Barrages

Fishways at Barrages

	Openings	Level (m AHD)	No. Open	Rock Ramp	Vertical Slot 1	Vertical Slot 2	Dual Vertical Slots
Goolwa	128 openings	0.73	10	-	Open	Open	-
Mundoo	26 openings	0.62	1	-	-	-	Open
Hunters Creek	-	-	-	-	Open	-	-
Boundary Creek	6 openings	-	1	-	Open	-	-
Ewe Island	111 gates	-	All closed	-	-	-	Open
Tauwichee	322 gates	0.76	4	Open	Open	Open	-

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



State Allocations (as at 01 Mar 2017)

NSW - Murray Valley

High security	100%
General security	100%

Victorian - Murray Valley

High reliability	100%
Low reliability	5%

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>

Flow advice



3 March 2017

Flow pulse planned for the Mitta Mitta

Landholders and river users, including pumpers, on the Mitta Mitta River are advised to take into account forecast changes in the release of water from Dartmouth Dam and make any necessary adjustment to their river activities.

On Friday 10 March, releases will be increased from 300 megalitres per day (ML/day) to 1,860 ML/day.

Releases will start being reduced on Sunday 12 March, and will return to 300 ML/day by Monday 13 March.

This pulse in the Mitta Mitta River will be of benefit to the local environment.

The releases from Dartmouth Dam may vary from those forecast and flows on the Mitta Mitta may increase at any time if rain falls in the catchment downstream of the dam.

Forecast Mitta Mitta flows

Time and Date	Releases from Dartmouth Dam	Colemans Gauge		Tallandoon Gauge	
		Flow (ML/day)	Height (m)	Flow (ML/day)	Height (m)
0800 hrs Friday 10 March	Flows increasing	300	1.00	550	1.37
1500 hrs Friday 10 March	Flow steady	1,860	1.65	550	1.37
1400 hrs Sunday 12 March	Flows decreasing	1,860	1.65	2,190	1.95
2200 hrs Monday 13 March	Flows steady	300	1.00	740	1.46
0700 hrs Tuesday 14 March	Flows steady	300	1.00	550	1.37

A further flow advice will be issued when there is a significant change to releases.

Landholders and river users on the Mitta Mitta are advised to regularly check the information on releases from Dartmouth Dam and current flows and forecasts on the MDBA website: www.mdba.gov.au/river-information/storage-volumes-releases

River data for Dartmouth Dam, the Mitta Mitta and other sites on the Murray system can be seen at: <http://livedata.mdba.gov.au>.

Further details are available in the latest River Murray [Weekly Report](#).

ENDS

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