RIVER MURRAY WEEKLY REPORT

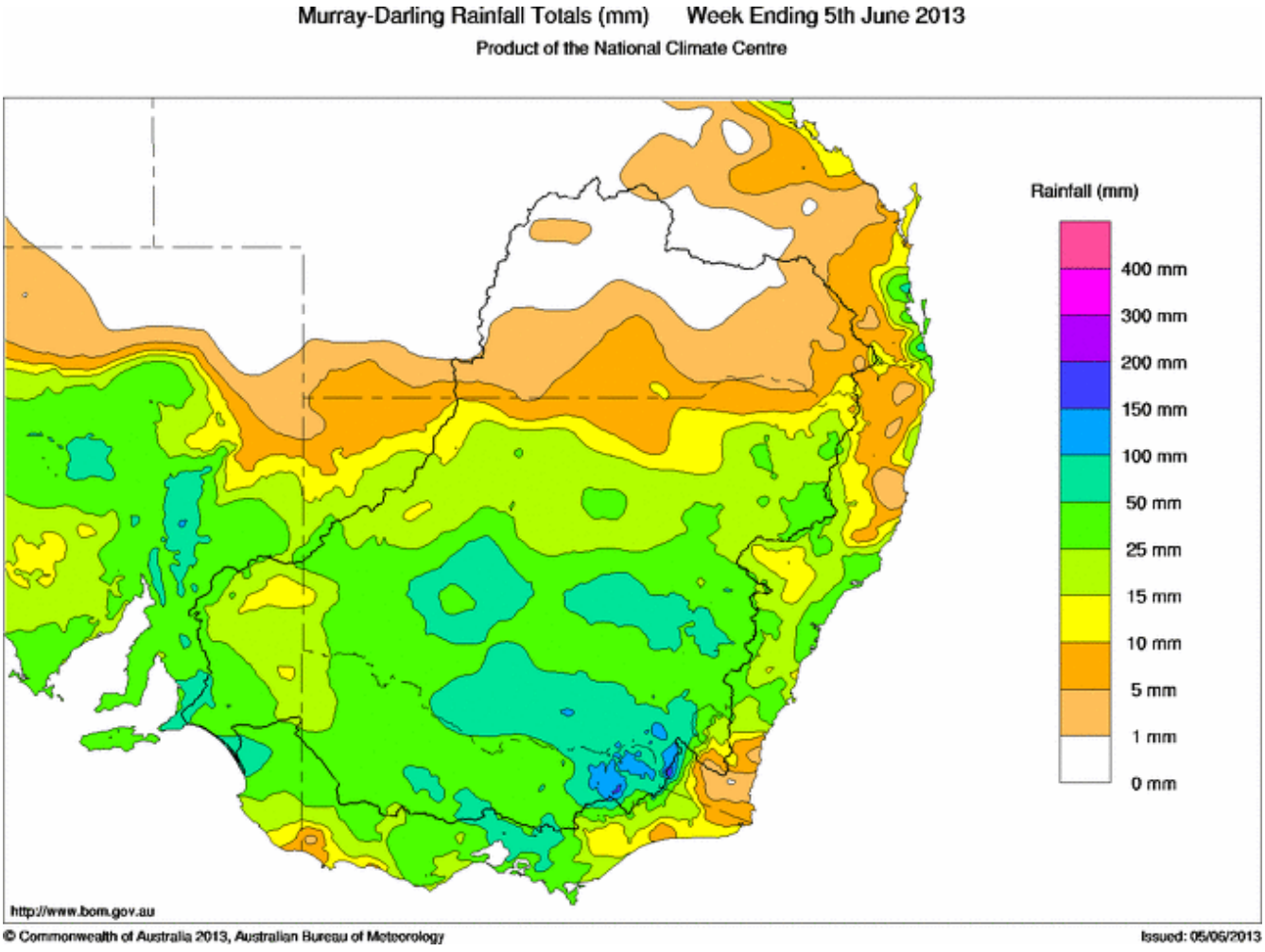
FOR THE WEEK ENDING WEDNESDAY, 05 JUNE 2013

Trim Ref: D13/20148

Rainfall and Inflows

The first few days of the 2013 winter were characterised by wet weather for many areas of the Murray-Darling Basin, with only the far northern Basin experiencing a completely dry week. The wet conditions were associated with a trough system that moved in from the north-west, bringing persistent and widespread rainfall across the southern Basin. Most of southern NSW and Victoria recorded more than 25 mm, with more than 50 mm for large parts of the NSW Riverina and for a number of locations in Victoria and South Australia (Map 1).

The highest rainfall was recorded over the south-eastern ranges. There were totals in excess of 100 mm for both north-eastern Victoria and the NSW Snowy Mountains, where 178 mm fell at Thredbo and 175 mm at Charlotte Pass - two indicative gauges just beyond the catchment boundary. Other totals in the south-east included 176 mm at Rocky Valley, 163 mm at Harris Lane, 149 mm at Mt Buffalo, 143 mm at Mt Hotham, 133 mm at Hunters Hill, 120 mm at Eurobin, 104 mm at Granite Flat, 103 mm at Batlow and 90 mm at Hume Dam. Other rain totals across the southern Basin included 90 mm at Cairn Curran, 78 mm at Kyneton, 68 mm at Wagga Wagga and Murray Bridge, 67 mm at Rochester and Corowa, 66 mm at Hay, 64 mm at Ouyen and 60 mm at Mt Barker.



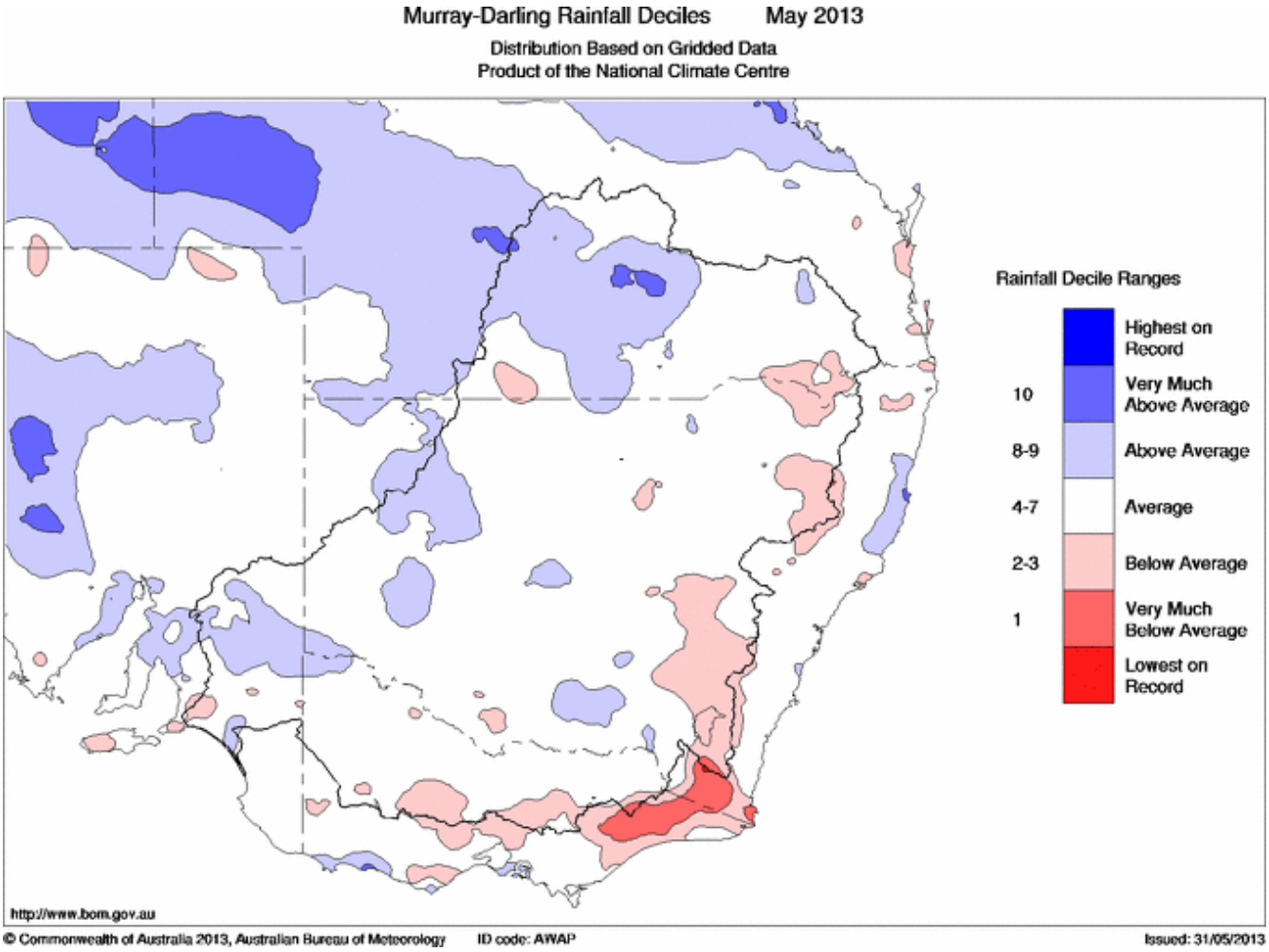
Map 1 - Murray-Darling Basin rainfall for the week ending 5 June 2013 (Source: Bureau of Meteorology).

Stream flows increased steadily across the upper River Murray system tributaries as rain continued to fall over several days. Most gauges reached their highest levels for the year thus far, with minor flooding developing along the upper Murray at Bringenbrong where the flow peaked at 21,000 ML/day. There was also minor flooding on the Kiewa River at Mongans Bridge, where the flow increased from 500 to 5,000 ML/day before receding to 1,500 ML/day. On the Tooma River the flow at Pinegrove peaked at around 3,700 ML/day and on the Ovens River, the flow at Rocky Point peaked at around 6,500 ML/day and has now receded to 3,300 ML/day. For information regarding flood warnings, see the Bureau of Meteorology website at www.bom.gov.au.

May 2013 Summary

Rainfall for May 2013 was a little below normal across the Basin, with the Bureau of Meteorology reporting the month as the 55th driest in 114 years of records with a total of 29.7 mm (30% below the mean). Most regions were not far off their monthly rainfall average, although there were patches along the southern and eastern ranges that were somewhat drier, with small areas of 'very much below average' rainfall in the far south-east over the upper Mitta Mitta and Murrumbidgee River catchments. In the far north and west of the Basin there were areas of above to 'very much above' average rainfall, although these regions are typically some of the Basin's driest, with actual totals generally not exceeding 50 mm for the month (Map 2).

May was also another month of relatively warm daytime temperatures with almost the entire Basin recording temperatures that were between 0 and 2 degrees Celsius above the long-term average. However, the comparatively cloud-free skies meant that overnight temperatures were relatively cool. Most night time minimums were generally slightly under the long-term mean.



Map 2 - Murray-Darling Basin rainfall deciles for May 2013 (Source: Bureau of Meteorology).

River Murray system inflows for May 2013 (excluding Snowy and Darling inflows) totalled around 170 GL. This total also excludes around 20 GL of additional environmental water that flowed into the system from the Goulburn River and Broken Creek systems. The monthly total is less than half the long-term average for May of about 380 GL and well below the unusually high figure for May 2012, of just under 900 GL, which followed record rainfall in February and March 2012.

2012-13 MDBA Water Year Summary

The beginning of June marks the transition to a new 'water year' for the River Murray system as the commencement of the winter-spring period is typically when tributary inflows increase and headwater storages begin to be replenished. The water year is used by the MDBA to manage and report on system inflows, demands and storage levels across a 12 month period in a way that best matches the system's hydrological and demand cycle.

The 2012-13 water was characterised by a return to more typical patterns of inflows and demands following two very wet years in which substantial 'unseasonal' inflow took place during the summer period. Winter 2012 began with relatively high inflows and total water storage close to capacity. Sustained inflows since 2010 to Dartmouth Reservoir – the largest capacity storage in the system – brought that storage to full capacity during spring 2012 - the first time since 1996.

By August, rainfall began to decrease across many parts of the Basin relative to the long-term average and system inflows entered a period of decline. There were hot periods during the summer, with extreme temperatures in January, contributing to high system demands and evaporation. Storage in Hume Reservoir was drawn to below 50% during the summer-autumn period; however total system storage benefitted from a moderate-sized inflow event on the Darling River that returned storage in Menindee Lakes to above 70%.

Despite the high demand conditions, total combined storage in the four major reservoirs of the River Murray system remains relatively high. The total volume at the end of May is about 1,500 GL below the very high volume in storage one year ago but is still 1,000 GL above the 'modelled' long term average for this time of year. Since 1980 there have been only five years where the end of May system storage was higher than in 2013 (Figure 1).

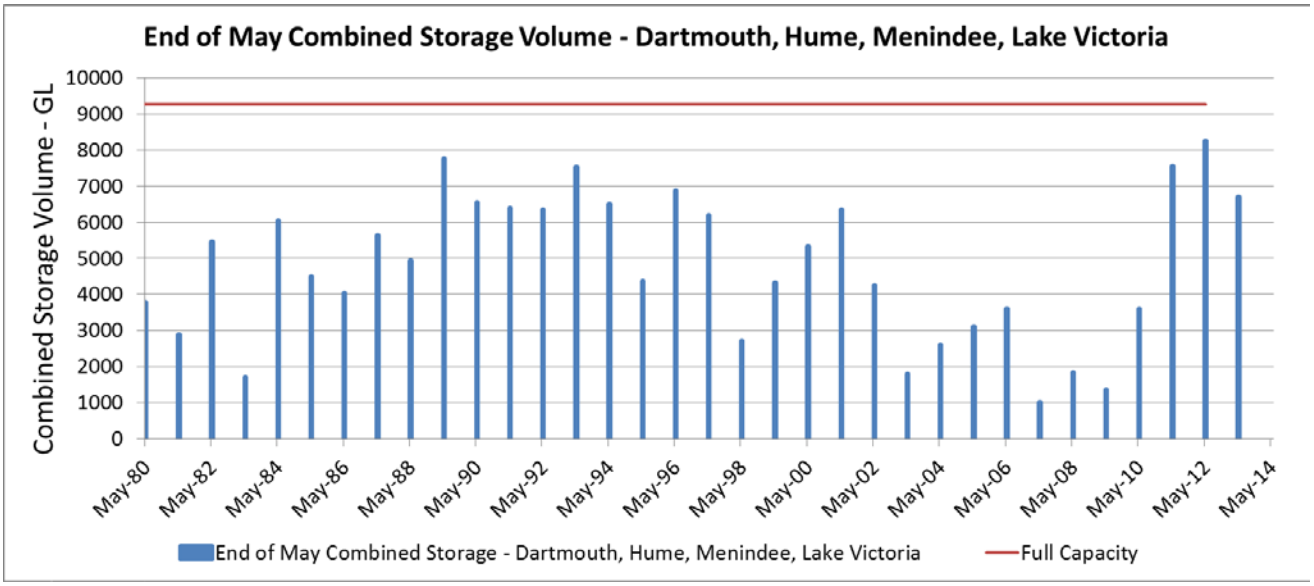


Figure 1 – Total combined storage volume for Dartmouth Reservoir, Hume Reservoir, Menindee Lakes and Lake Victoria as of 31 May for the period 1980 - 2013.

River Operations

MDBA active storage increased by 206 GL during the week to 6,204 GL (72% capacity).

At Dartmouth Reservoir, inflows following the weekend's rain peaked at around 8,000 ML/day. The storage volume increased by 26 GL to 3,608 GL (94% capacity). The release, measured at the Colemans gauge, remained at around 340 ML/day throughout the week.

At Hume Reservoir, inflows peaked at around 26,000 ML/day. The storage volume increased by 126 GL to 1,602 GL (53% capacity). The release was steady at 600 ML/day. Downstream of the Dam, inflows from the Kiewa and Ovens Rivers peaked at around 4,000 ML/day and 5,000 ML/day respectively.

At Yarrawonga Weir, the pool level in Lake Mulwala fell briefly earlier in the week before rising again, as inflows increased, to the current level of 124.64 m AHD. A release of 6,000 ML/day has been targeted in order to manage the pool level and protect downstream works at Euston Weir. In response, the pool level is expected to remain below 124.9 m AHD in the coming week before falling again. Higher releases will be maintained in the coming weeks to assist in managing salinity levels at Mildura Weir whilst it is removed for essential maintenance. However the level to which Lake Mulwala falls during this period will depend on future rain and tributary inflows.

On the Edward-Wakool system, flow through the Edward River and Gulpa Creek offtakes increased to around 1,000 ML/day. Inflow through these offtakes will vary with the height of the River Murray at Picnic Point over the next few weeks as the gates have been lifted clear of the water to provide unimpeded passage for fish. At Stevens Weir the pool level continued to fall away and is currently 2.16 m on the local gauge. The gates are likely to be clear of the water in around a week's time. The release downstream of Stevens Weir increased to around 1,150 ML/day. Downstream on the Wakool River, the flow at Stoney Crossing peaked around 1,000 ML/day during the week and is now gradually receding.

On the Goulburn River, the flow at McCoys Bridge has been relatively steady averaging around 730 ML/day. At Torrumbarry Weir the flow increased to around 4,700 ML/day and is expected to rise above 5,000 ML/day in the coming week. Further downstream, inflow from the Murrumbidgee River peaked around 1,000 ML/day due to the drawdown of Redbank Weir. Downstream at Euston, the flow is forecast to reach around 7,000 ML/day during the coming week.

At Mildura Weir, the drop boards and trestles have been removed allowing free flow of the River. The coffer dam has been installed and essential maintenance works have commenced (Figure 2). The flow at the Weir is currently around 7,900 ML/day and is expected to be above 6,000 ML/day for the coming week. Salinity levels in the River increased to around 300 EC as the weir was drawn down and are currently holding around this level. For the most recent forecasts of flow and salinity, please refer to the Flow and Salinity Report at: http://www.mdba.gov.au/river-data/current-information-forecasts/flow-salinity-report .

On the Darling River, total storage in Menindee Lakes increased by 9 GL to 1,238 GL (72% capacity). The release, measured at Weir 32, has decreased to the winter minimum flow target of around 200 ML/day.

At Wentworth Weir, higher flows have been experienced due to the increased releases at Mildura Weir resulting from the drawdown. Earlier in the week the flow was around 13,000 ML/day but has since reduced to 8,600 ML/day.

Figure 2 – Works underway at Mildura Weir. Photo supplied by Mathew Fitzgerald, Goulburn-Murray Water.

Storage in Lake Victoria increased by 45 GL this week, as additional water from Mildura Weir continued to be captured. The storage is currently at 430 GL (64% capacity). The flow into South Australia is around 3,700 ML/day, which includes 3,000 ML/day of base entitlement with the balance made up of environmental water.

At the Lower Lakes, the five-day average water level for Lake Alexandrina has increased by 2 cm to around 0.64 m AHD. Gates at Goolwa and Mundoo Barrages have been operated during the week to manage reverse flows due to high tides. Currently 24 gates are open across the five barrages.

For media inquiries contact the Media Officer on 02 6279 0141

DAVID DREVERMAN
Executive Director, River Management

Water in Storage

Week ending Wednesday 05 Jun 2013

MDBA Storages	Full Supply Level (m AHD)	Full Supply Volume (GL)	Current Storage Level (m AHD)	Current Storage (GL)	Current Storage %	Dead Storage (GL)	Active Storage (GL)	Change in Total Storage for the Week (GL)
Dartmouth Reservoir	486.00	3 856	482.15	3 608	94%	71	3 537	+26
Hume Reservoir	192.00	3 005	183.71	1 602	53%	23	1 579	+126
Lake Victoria	27.00	677	24.83	430	64%	100	330	+45
Menindee Lakes		1 731*		1 238	72%	(480 #)	758	+9
Total		**9 269**		**6 878**	**74%**	**- -**	**6 204**	**+206**
Total Active MDBA Storage							72% ^	

Major State Storages

Burrinjuck Reservoir	1 026		397	39%	3	394	+6
Blowering Reservoir	1 631		1 053	65%	24	1 029	+5
Eildon Reservoir	3 334		2 306	69%	100	2 206	+15

* 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 04 Jun 2013

Storage	Active Storage (GL)	Weekly Change (GL)	Diversion (GL)	This Week	From 1 May 2013
Lake Eucumbene - Total	1 663	+14	Snowy-Murray	+31	164
Snowy-Murray Component	890	+184	Tooma-Tumut	+15	27
Target Storage	1 240		Net Diversion	16	136
			Murray 1 Release	+42	186

Major Diversions from Murray and Lower Darling (GL) *

New South Wales	This Week	From 1 July 2012	Victoria	This Week	From 1 July 2012
Murray Irrig. Ltd (Net)	-0.4	1511	Yarrawonga Main Channel (net)	0	392
Wakool Sys Allowance	-0.4	79	Torrumbarry System + Nyah (net)	0	719
Western Murray Irrigation	0.0	29	Sunraysia Pumped Districts	0.2	125
Licensed Pumps	0.8	269	Licensed pumps - GMW (Nyah+u/s)	0.5	80
Lower Darling	0.4	103	Licensed pumps - LMW	1.5	302
TOTAL	**0.4**	**1991**	**TOTAL**	**2.2**	**1618**

* 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 be greater than normal entitlement for this month due to traded environmental water.

Entitlement this month	90.0 *
Flow this week	29.1
Flow so far this month	18.9
Flow last month	164.0

(4 200 ML/day)

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

	Current	Average over the last week	Average since 1 August 2012
Swan Hill	140	120	110
Euston	150	150	130
Red Cliffs	290	240	140
Merbein	300	220	160
Burtundy (Darling)	540	530	470
Lock 9	180	210	260
Lake Victoria	390	380	270
Berri	450	460	330
Waikerie	500	490	340
Morgan	530	490	350
Mannum	450	450	360
Murray Bridge	490	320	350
Milang (Lake Alex.)	560	570	460
Poltalloch (Lake Alex.)	520	530	380
Meningie (Lake Alb.)	2 990	3 030	3 480
Goolwa Barrages	1 140	1 240	1 630

River Levels and Flows

Week ending Wednesday 05 Jun 2013

River Murray	Minor Flood Stage (m)	Gauge Height local (m)	Gauge Height (m AHD)	Flow (ML/day)	Trend	Average Flow this Week (ML/day)	Average Flow last Week (ML/day)
Khancoban	-	-	-	8 950	F	9 490	6 990
Jingellic	4.0	2.76	209.28	14 390	F	14 610	8 400
Tallandoon (Mitta Mitta River)	4.2	1.64	218.53	1 020	F	1 300	560
Heywoods	5.5	1.27	154.90	600	S	600	600
Doctors Point	5.5	1.90	150.37	3 550	F	2 870	1 410
Albury	4.3	0.97	148.41	-	-	-	-
Corowa	3.8	1.31	127.33	4 610	F	2 930	2 000
Yarrawonga Weir (d/s)	6.4	1.04	116.08	5 520	R	4 730	3 880
Tocumwal	6.4	1.52	105.36	4 960	R	4 770	4 180
Torrumbarry Weir (d/s)	7.3	1.73	80.27	4 720	R	4 380	3 900
Swan Hill	4.5	1.05	63.97	4 680	R	4 400	4 360
Wakool Junction	8.8	2.69	51.81	5 920	F	5 800	5 290
Euston Weir (d/s)	8.8	1.24	43.08	5 310	F	5 920	5 390
Mildura Weir (d/s)		-	-	7 890	F	7 540	5 650
Wentworth Weir (d/s)	7.3	3.11	27.87	8 610	F	10 340	9 470
Rufus Junction	-	2.85	19.78	3 050	F	3 410	4 700
Blanchetown (Lock 1 d/s)	-	0.57	-	3 320	F	4 320	4 680
Tributaries							
Kiewa at Bandiana	2.7	2.37	155.60	2 780	F	2 230	1 020
Ovens at Wangaratta	11.9	9.40	147.08	4 640	F	3 230	1 230
Goulburn at McCoys Bridge	9.0	1.41	92.83	770	R	730	730
Edward at Stevens Weir (d/s)	-	1.38	81.16	1 170	F	970	690
Edward at Liewah	-	1.84	57.22	1 170	S	1 160	870
Wakool at Stoney Crossing	-	1.60	55.09	840	F	870	440
Murrumbidgee at Balranald	5.0	1.42	57.38	1 020	R	670	340
Barwon at Mungindi	-	3.25	-	220	R	210	270
Darling at Bourke	-	4.18	-	740	S	760	910
Darling at Burtundy Rocks	-	1.21	-	1 510	F	2 220	3 610

Natural Inflow to Hume	4 270	740

(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	-0.26	-	No. 7 Rufus River	22.10	+0.05	+0.58
No. 26 Torrumbarry	86.05	-0.01	-	No. 6 Murtho	19.25	+0.01	-0.02
No. 15 Euston	47.60	-0.01	-	No. 5 Renmark	16.30	-0.01	+0.10
No. 11 Mildura	34.40	-	+0.11	No. 4 Bookpurnong	13.20	-0.10	+0.36
No. 10 Wentworth	30.80	+0.00	+0.47	No. 3 Overland Corner	9.80	-0.02	+0.10
No. 9 Kulnine	27.40	+0.14	+0.20	No. 2 Waikerie	6.10	-0.01	+0.11
No. 8 Wangumma	24.60	+0.22	+0.08	No. 1 Blanchetown	3.20	+0.02	-0.18

Lower Lakes FSL = 0.75 m AHD

Lake Alexandrina average level for the past 5 days (m AHD)	0.64

Barrages

Fishways at Barrages

	Openings	Level (m AHD)	No. Open	Rock Ramp	Vertical Slot
Goolwa	128 openings	0.71	5	-	Open
Mundoo	26 openings	0.69	2	-	-
Boundary Creek	6 openings	-	0.1	-	-
Ewe Island	111 gates	-	All closed	-	-
Tauwitchere	322 gates	0.73	17	Open	Open

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

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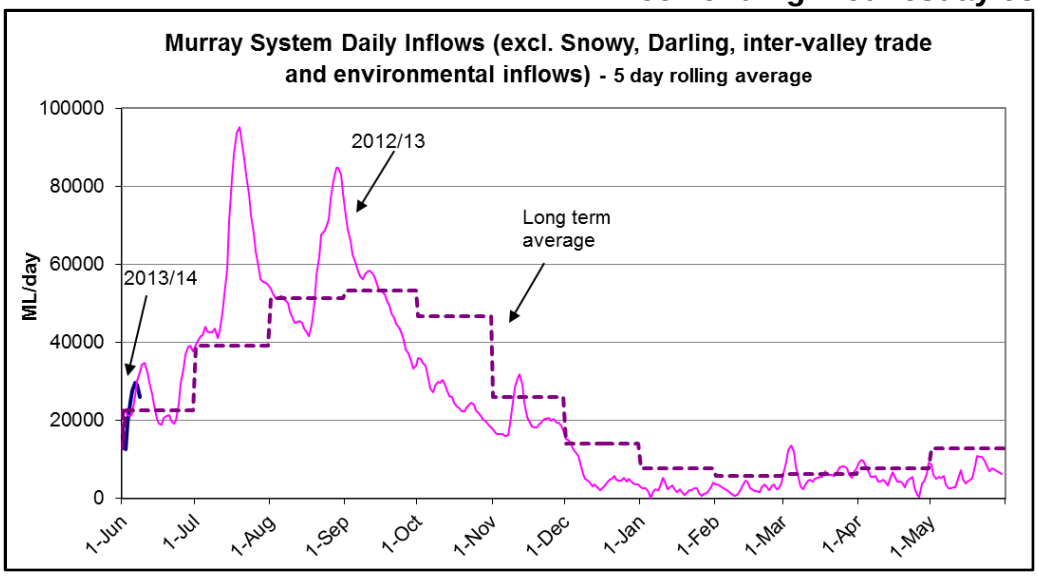

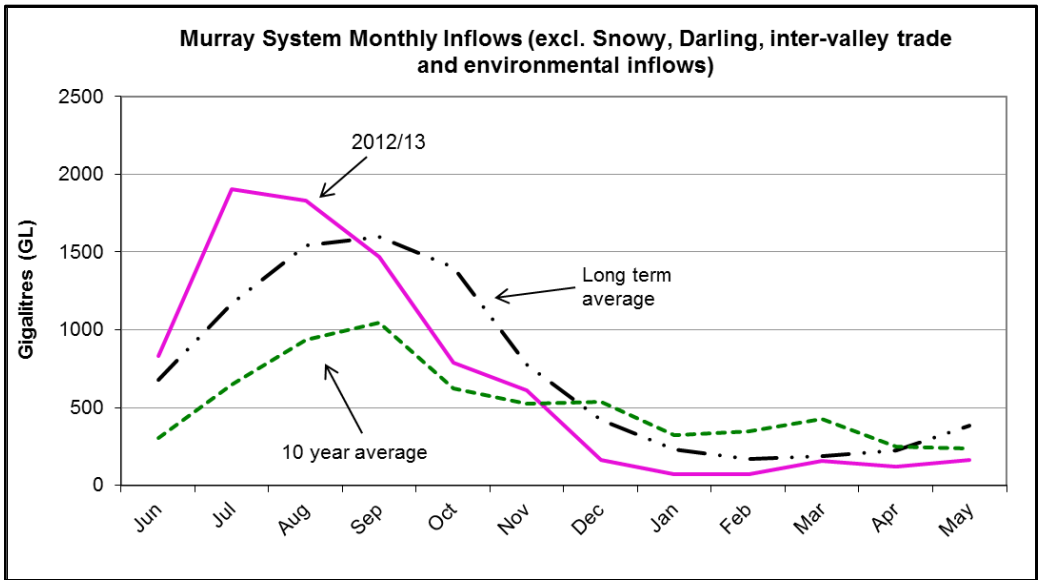

State Allocations (as at 05 Jun 2013)

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%

NSW : http://www.water.nsw.gov.au/About-us/Media-releases/media/default.aspx
VIC : http://www.g-mwater.com.au/water-resources/allocations/current.asp
SA : http://www.waterforgood.sa.gov.au/category/news/