



RIVER MURRAY WEEKLY REPORT

FOR THE WEEK ENDING WEDNESDAY, 10 JUNE 2009

Trim Ref: D09/8629

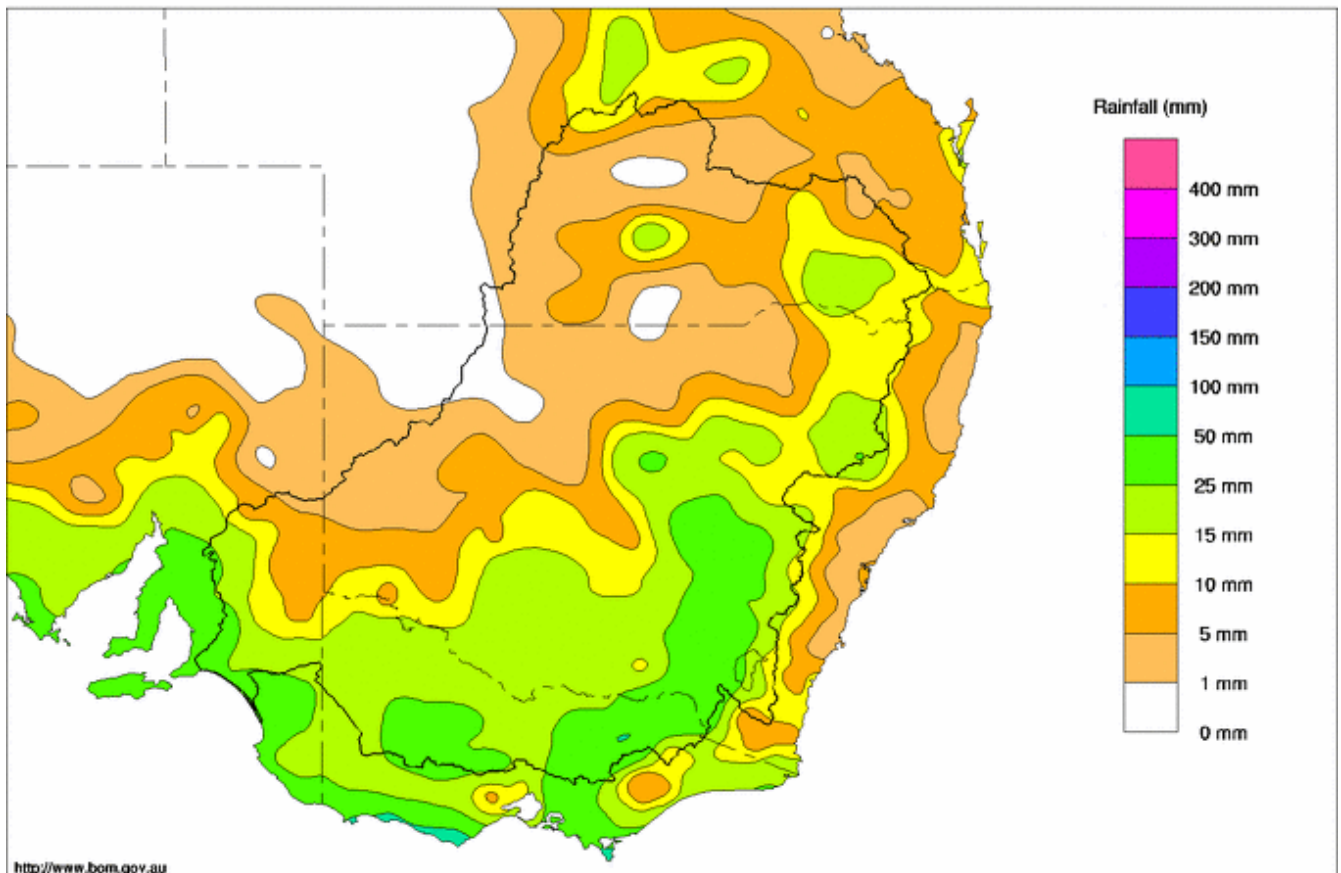
Rainfall and Inflows

There have been good falls of rain across the southern Basin and also along the eastern highlands from Victoria to Queensland during the past week. Victoria and southern NSW received between 15 to 50 mm of rain while the northern Basin received between 10 to 25 mm of rain. The heaviest rain (25 to 50 mm) fell over the Eastern Highlands from Victoria through to Dubbo in central NSW. In the Ovens catchment, Mt Buffalo recorded falls of 76 mm. Stream flow responses in the Murray tributaries were small due, in part, to the dry state of the catchments caused by below average Autumn rainfall and prolonged drought.

A summary of Autumn rainfall and inflows (including those for May) is provided in the drought update attached.

Murray Darling Rainfall Analysis (mm) Week Ending 10th June 2009

Product of the National Climate Centre



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

© Commonwealth of Australia 2009, Australian Bureau of Meteorology

Issued: 10/06/2009



River Operations

Storage in Dartmouth Reservoir increased by 4 GL to 831 GL (or 21.3 % capacity) and the release remains at the minimum of 200 ML/day. Storage in Hume Reservoir increased by 23 GL to 229 GL (or 8.4 % capacity). Higher flow down the Kiewa River, caused by the recent rain, has resulted in the flow at Doctors Point temporarily rising from the normal winter minimum of 1 200 to 1 600 ML/day.

The release from Yarrawonga Weir has been reduced from 5 500 to 3 500 ML/day in order to moderate Lake Mulwala's rate of fall. During the past week the level of Lake Mulwala fell by 2.2 m to 119.7 m AHD (or 5.2 m below FSL). If conditions remain dry, the flow downstream of Yarrawonga is expected to continue reducing as the level of Lake Mulwala approaches its minimum operating level. Lake Mulwala is expected to be fully drawn down within the next week.

The flow downstream of Torrumbarry Weir remained steady at around 5 200 ML/day over the past week but is expected to decline next week. Flows in Sunraysia have continued to rise with the flow downstream of Euston Weir rising from 5 400 to 6 000 ML/day and the flow downstream of Wentworth Weir rising from 4 500 to 5 000 ML/day. Flows along Sunraysia are expected to continue to rise over the next week.

The flow to South Australia averaged around 1 700 ML/day and Lake Victoria storage has increased by 20 GL to 175 GL (26% of capacity). The pool levels of Locks 6 to 3 fell slightly over the past week and currently range from 3 to 11 cm below their FSLs. In contrast, the pool levels of Locks 2 and 1 increased and are both 7 cm above their FSLs.

For media inquiries contact: Sam Leone on 02 6279 0141

DAVID DREVERMAN
Executive Director, River Murray

Week ending Wednesday 10 Jun 2009

Water in Storage

MDBA Storages	Full Supply Level (m AHD)	Full Supply Volume (GL)	Current Storage Level (m AHD)	Current Storage		Dead Storage (GL)	MDBA Active Storage (GL)	Change in Total Storage for the week (GL)
				(GL)	%			
Dartmouth Reservoir	486.00	3 906	417.24	831	21%	80	751	+4
Hume Reservoir	192.00	3 038	169.13	229	8%	30	199	+23
Lake Victoria	27.00	677	22.20	175	26%	100	75	+20
Menindee Lakes		1 731 *		221	13%	(- -) #	0	+1
Total		9 352		1 456	16%	--	1 025	+49

* Menindee surcharge capacity 2050 GL

% of Total Active MDBA Storage = 12%

NSW takes control of Menindee Lakes when storage falls below 480 GL, and control reverts to MDBA when storage next reaches 640 GL

Major State Storages

Burrinjuck Reservoir	1 026	387	38%	3	384	-1
Blowering Reservoir	1 631	513	31%	24	489	+1
Eildon Reservoir	3 390	413	12%	100	313	+5

Snowy Mountains Scheme

Snowy diversions for week ending 09-Jun-2009

Storage	Active storage (GL)	Weekly change (GL)	Diversion (GL)	This week	From 1 May 2009
Lake Eucumbene - Total	429	n/a	Snowy-Murray	+16	103
Snowy-Murray Component	333	-	Tooma-Tumut	+3	19
Target Storage	1 240		Nett Diversion	13.0	84
			Murray 1 Release	+19	121

Major Diversions from Murray and Lower Darling (GL) *

New South Wales	This week	From 1 July 2008	Victoria	This week	From 1 July 2008
Murray Irrig. Ltd (Net)	-0.1	158.9	Yarrowonga Main Channel (net)	0.0	136
Wakool System loss	0.0	55.2	Torrumbarry System + Nyah (net)	0.0	268
Western Murray Irrig.	0.0	25.0	Sunraysia Pumped Districts	0.1	101
Licensed Pumps	0.4	117.9	Licensed pumps - GMW (Nyah+u/s)	0.9	31
Lower Darling	0.0	10.9	Licensed pumps - LMW	1.8	159
TOTAL	0.4	367.9	TOTAL	2.8	694

* Figures derived from Estimates and Monthly Data. Please note that not all data may have been available at the time of creating this report.

Flow to South Australia (GL)

Entitlement this month	90 *	
Flow this week	11.1	(1 600 ML/day)
Flow so far this month	16	
Flow last month	58	

* Reduced to approx. 51 GL during May drought contingency operations

Salinity (EC)

(microsiemens/cm @ 25° C)

	Current	Average over the last week	Average since 1 August 2008
Swan Hill	30	30	60
Euston	120	100	90
Red Cliffs	130	150	120
Merbein	140	110	120
Burtundy (Darling)	350	360	460
Lock 9	140	140	190
Lake Victoria	240	210	260
Berri	320	320	350
Waikerie	-	-	470
Morgan	450	460	510
Mannum	610	600	620
Murray Bridge	700	700	650
Milang (Lake Alex.)	5 660	5 840	4 460
Poitalloch (Lake Alex.)	4 080	4 080	4 240
Meningie (Lake Alb.)	9 500	10 180	7 800
Goolwa Barrages	28 540	27 030	23 690

Week ending Wednesday 10 Jun 2009

River Levels and Flows

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	-	-	-	4 820	F	2 760	3 690
Jingellic	4.0	1.75	208.27	5 130	R	3 400	3 250
Tallandoon (Mitta Mitta River)	4.2	1.42	218.31	500	R	360	300
Heywoods	5.5	1.38	155.01	1 000	S	840	740
Doctors Point	5.5	1.60	150.07	1 640	R	1 320	1 170
Albury	4.3	0.73	148.17	-	-	-	-
Corowa	7.0	0.51	126.53	1 330	R	1 250	1 200
Yarrawonga Weir (d/s)	6.4	0.71	115.75	3 500	F	4 790	5 510
Tocumwal	6.4	1.33	105.17	4 660	F	5 370	5 590
Torrumbarry Weir (d/s)	7.3	1.77	80.32	5 140	F	5 250	5 070
Swan Hill	4.5	1.05	63.97	4 880	S	4 850	4 400
Wakool Junction	8.8	2.45	51.57	5 980	F	5 970	5 130
Euston Weir (d/s)	8.8	1.35	43.19	5 990	R	5 740	4 900
Mildura Weir (d/s)	-	-	-	-	F	-	3 590
Wentworth Weir (d/s)	7.3	2.96	27.72	5 070	R	4 860	3 590
Rufus Junction	-	2.48	19.41	1 080	F	1 090	1 360
Blanchetown (Lock 1 d/s)	-	-0.65	-	0	F	1 020	1 230
Tributaries							
Kiewa at Bandiana	2.7	1.15	154.38	770	R	650	600
Ovens at Wangaratta	11.9	7.95	145.63	740	R	420	360
Goulburn at McCoys Bridge	9.0	1.12	92.54	370	R	340	350
Edward at Stevens Weir (d/s)	-	1.21	80.98	970	S	990	1 050
Edward at Liewah	-	1.80	57.18	1 110	F	1 100	950
Wakool at Stoney Crossing	-	1.20	54.69	90	F	110	120
Murrumbidgee at Balranald	5.0	0.32	56.28	120	F	130	140
Barwon at Mungindi	-	3.63	-	1 200	F	1 090	160
Darling at Bourke	-	4.27	-	1 270	R	560	240
Darling at Burtundy Rocks	-	0.68	-	50	R	50	40

Natural Inflow to Hume (ie pre Dartmouth & Snowy Mountains scheme)	2 480	2 090
---	-------	-------

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	-5.19	-	No. 7 Rufus River	22.10	-0.05	+0.17
No 26 Torrumbarry	86.05	+0.01	-	No. 6 Murtho	19.25	-0.11	-0.14
No. 15 Euston	47.60	+0.00	-	No. 5 Renmark	16.30	-0.07	-0.03
No. 11 Mildura	34.40	+0.04	+0.15	No. 4 Bookpurnong	13.20	-0.06	+0.14
No. 10 Wentworth	30.80	+0.03	+0.32	No.3 Overland Corner	9.80	-0.03	+0.14
No. 9 Kulnine	27.40	+0.03	+0.00	No. 2 Waikerie	6.10	+0.07	+0.10
No. 8 Wangumma	24.60	+0.03	+0.11	No 1. Blanchetown	3.20	+0.07	-1.40

Murrumbidgee	FSL (m AHD)	relation to FSL	d/s gauge ht.		Flow (ML/day)
			local (m)	(m AHD)	
No. 7 Maude	75.40	-0.12	1.005	70.355	772
No. 5 Redbank	66.90	-0.43	-0.042	61.258	128

Lower Lakes

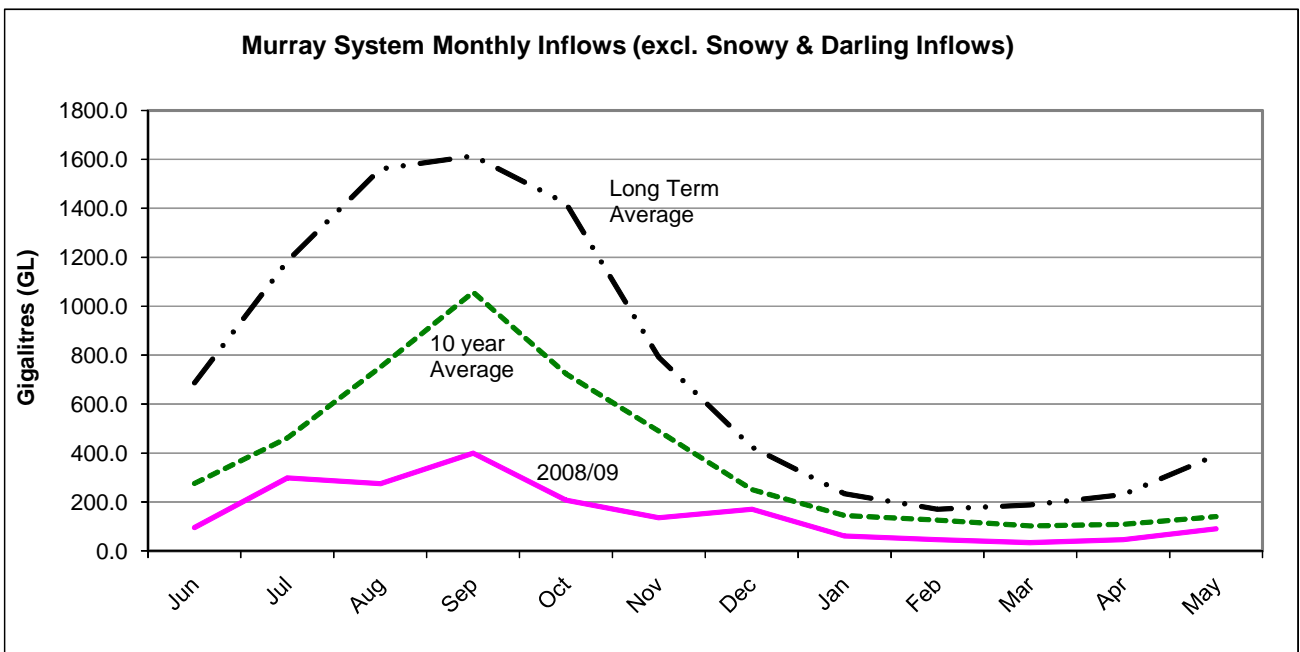
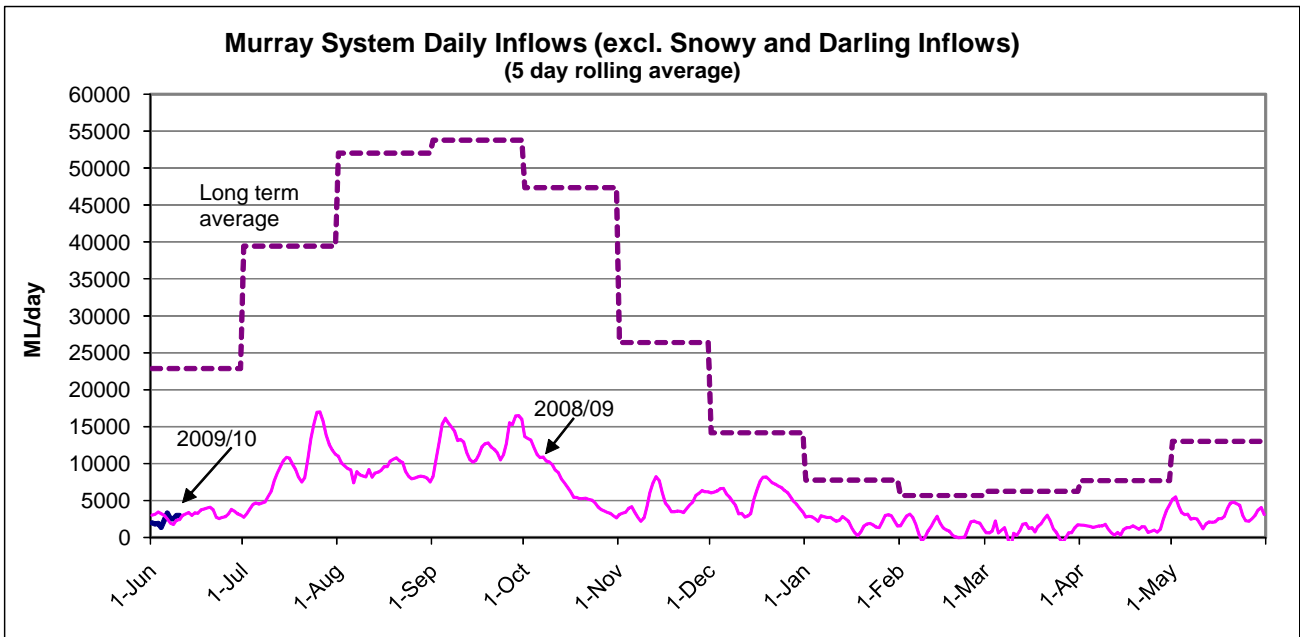
FSL = 0.75 m AHD

	(m AHD)
Lake Alexandrina average level for the past 5 days	N/A

Barrages

Fishways @ Barrages

	Openings	Level (m AHD)	Status	Rock Ramp	Vertical Slot
Goolwa	128 openings	-0.94	All closed	-	Closed
Mundoo	26 openings	-	All closed	-	-
Boundary Creek	6 openings	-	All closed	-	-
Ewe Island	111 gates	-	All closed	-	-
Tauwitchere	322 gates	-	All closed	Closed	Closed



State Allocations (as at 10th June 2009)

NSW - Murray Valley

High security	95%
General security	9%

Victoria - Murray Valley

high reliability	35%
------------------	-----

NSW - Murrumbidgee Valley

High security	95%
General security	21%

Victoria - Goulburn Valley

high reliability	33%
------------------	-----

NSW - Lower Darling

High security	100%
General security	50%

South Australia - Murray Valley

High security	18%
---------------	-----

NSW : http://www.naturalresources.nsw.gov.au/mediarelnr/mr_toc_currnr.html

VIC : <http://www.g-mwater.com.au/water-resources/allocations/current.asp>

SA : <http://www.dwlbc.sa.gov.au/media.html>



Australian Government



RIVER MURRAY SYSTEM

Drought Update

ISSUE 19: JUNE 2009

In Brief

Autumn is a critical time for wetting of the catchment prior to winter rainfall and, similar to last year, this has not eventuated. For the Murray-Darling Basin this was the 9th consecutive autumn with below average rainfall.

Murray system inflows for May were only 90 GL which is slightly above the record low of 75 GL (in 1902) but well below the long term average of 390 GL.

In the northern Basin, there was only a small streamflow response from the rain in May, and very little water is expected to reach Menindee Lakes, unless there is significant follow-up rain.

For the 2008-09 water year (June 2008 to May 2009) Murray system inflows were the 3rd driest in 118 years of records. This follows the 7th driest year in 2007-08 and the driest on record in 2006-07. Murray system inflows have been below average for nine out of the last ten years.

MDBA active storage for the Murray system at the end of May 2009 was 980 GL (11 % of capacity), which is well below the May long term average of 4,670 GL. The total volume of water in all Basin storages managed by the MDBA or by State governments, is about 3,940 GL, or 17 % of capacity.

The prospects for irrigation allocations in 2009-10 will be highly dependent on future rainfall and system inflows. Overall, the outlook for the 2009-10 water year remains grim, and is similar to the previous two years.

In response to cooler water temperatures along the Murray, algal levels have been steadily decreasing and all red alerts have now been lifted.

Murray-Darling Basin Authority

GPO Box 1801 Canberra ACT 2601 • Phone: 02 6279 0100 • Fax: 02 6248 8053 • Web: www.mdba.gov.au

Page 6 of 12

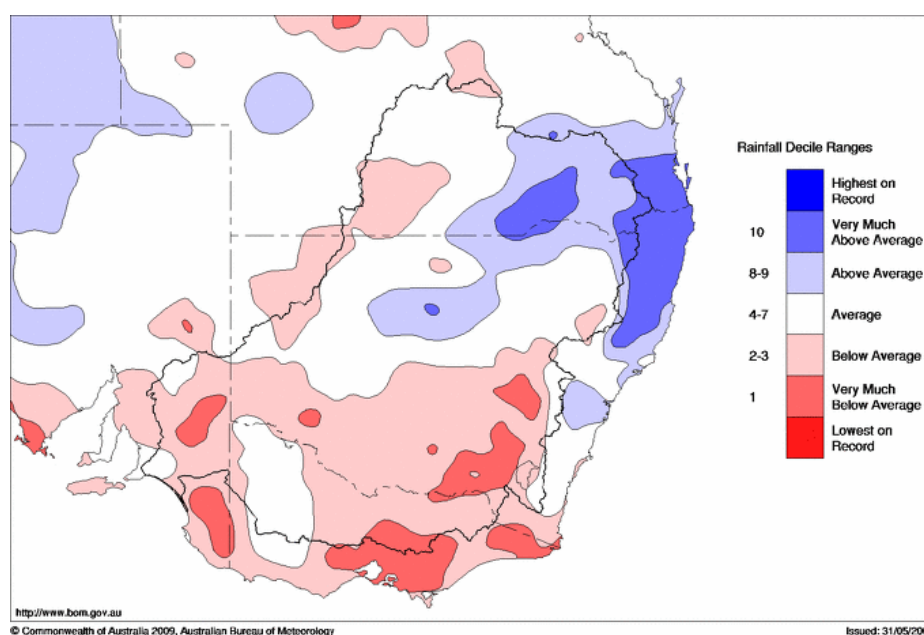
Rainfall and System Inflows

After good falls of rain across the southern Murray-Darling Basin in late April, there was very little follow-up rain in May (Figure 1). The Bureau of Meteorology has reported that for the Murray-Darling Basin this was the 9th consecutive autumn with below average rainfall. As a result, Murray system inflows have remained close to record lows (see Table 1 and Figure 2). For the 2008-09 water year (June 2008 to May 2009) Murray system inflows were the 3rd driest in 118 years of records. This follows the 7th driest year in 2007-08 and the driest on record in 2006-07 (see Figure 3). The three yearly total for 2006-09 was 5,040 GL which is less than half the previous historic minimum of 11,180 GL in 1943-46. Murray system inflows have been below average for nine out of the last ten years. The severity of the current drought is unprecedented in the historic record. Severe rainfall deficits exist in the high yielding catchments of the Victorian Alps and Snowy Mountains, and it will take a sustained period of above average rainfall for Murray System inflows to recover towards the long term average.

In May, there was very heavy rainfall (up to 400 mm) along the coast of south-east Queensland and northern NSW. This caused major flooding in coastal rivers. Further inland the rainfall was less intense, but some areas in the northern Murray-Darling Basin received over 100 mm. The only significant streamflow responses were in the Moonie River in southern QLD and the upper tributaries of the Borders Rivers, and the total volume of water was small. River transmission losses are also expected to be high as water dissipates along complex anabranch systems, and very little is expected to reach Menindee Lakes, up to 1,500 km further downstream.

	2008-09	Historic Minimum	Long term average
April	50 GL	40 GL (2007)	230 GL
May	90 GL	75 GL (1902)	390 GL
January - May	280 GL	Previously 295 GL (2007)	1,200 GL
Water year (June - May)	1,860 GL	970 GL (2006-07)	8,840 GL
3 year total	5,040 GL	Previously 11,180 GL (1943-46)	26,700 GL

Table 1. Murray System Inflows (excluding Snowy and Menindee inflows)



**Figure 1. Rainfall deciles for the Murray-Darling Basin, May 2009
 (source: Bureau of Meteorology)**

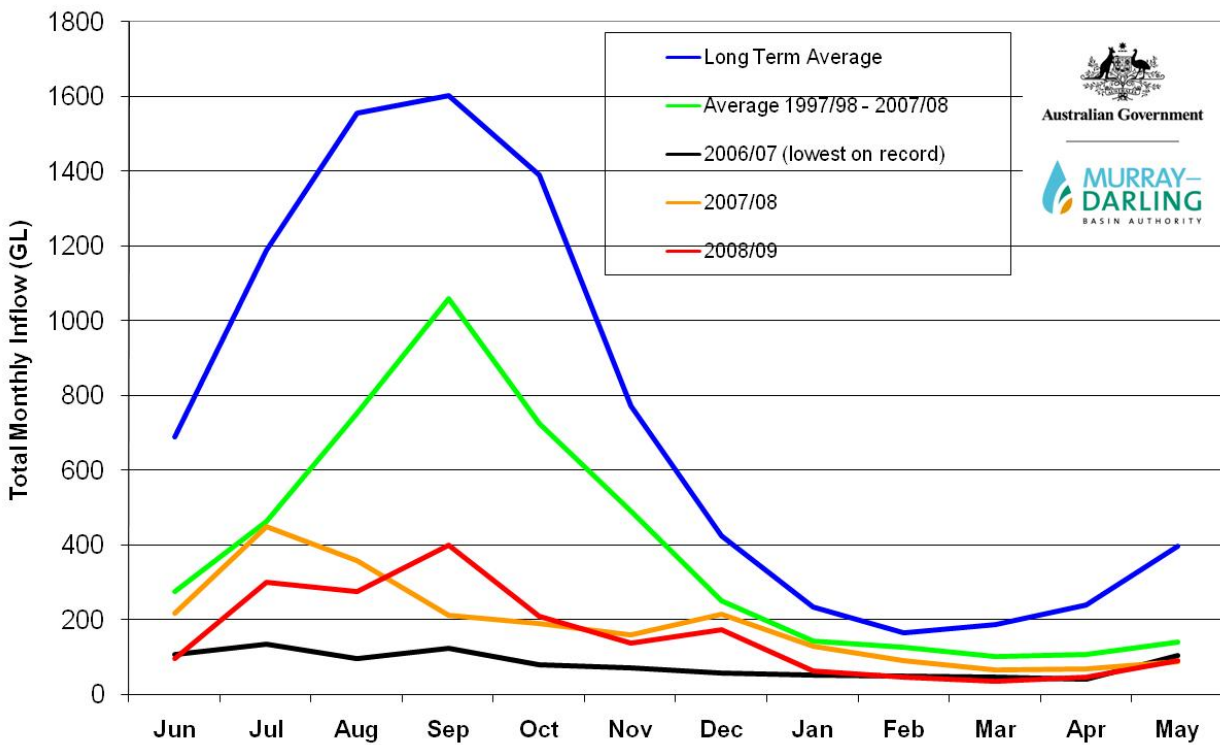


Figure 2. Murray System inflows (excluding Snowy and Menindee inflows)

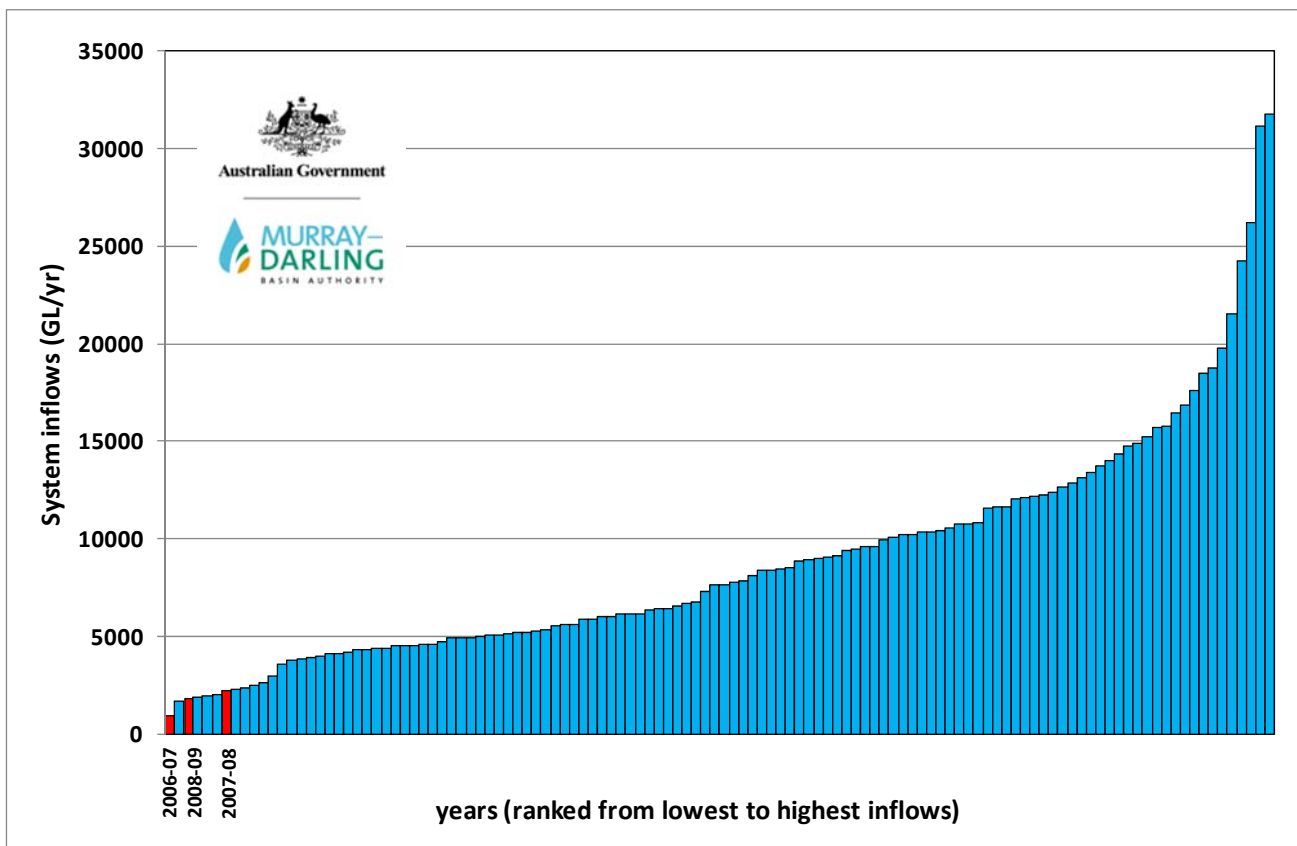


Figure 3. Murray System inflows sorted in ascending order for all years 1892-93 to 2008-09 (excluding Snowy and Menindee inflows)

Murray System Storage

MDBA active storage at the end of May was 980 GL or 11 % of capacity (Figure 4). This is higher than the historic minimum (post Dartmouth) for the end of May (730 GL in 2007) but well below the May long term average of 4,670 GL. There was also about 220 GL in Menindee Lakes, which remains under NSW control.

Elsewhere in the Basin, storage levels also remain low. The total volume of water in all Basin storages managed by the MDBA or by State governments, was 3,904 GL, or 17 % of capacity. Total storage in the Snowy Mountains reservoirs (which are managed by Snowy Hydro) also remains low, with Lake Eucumbene at 18 % capacity.

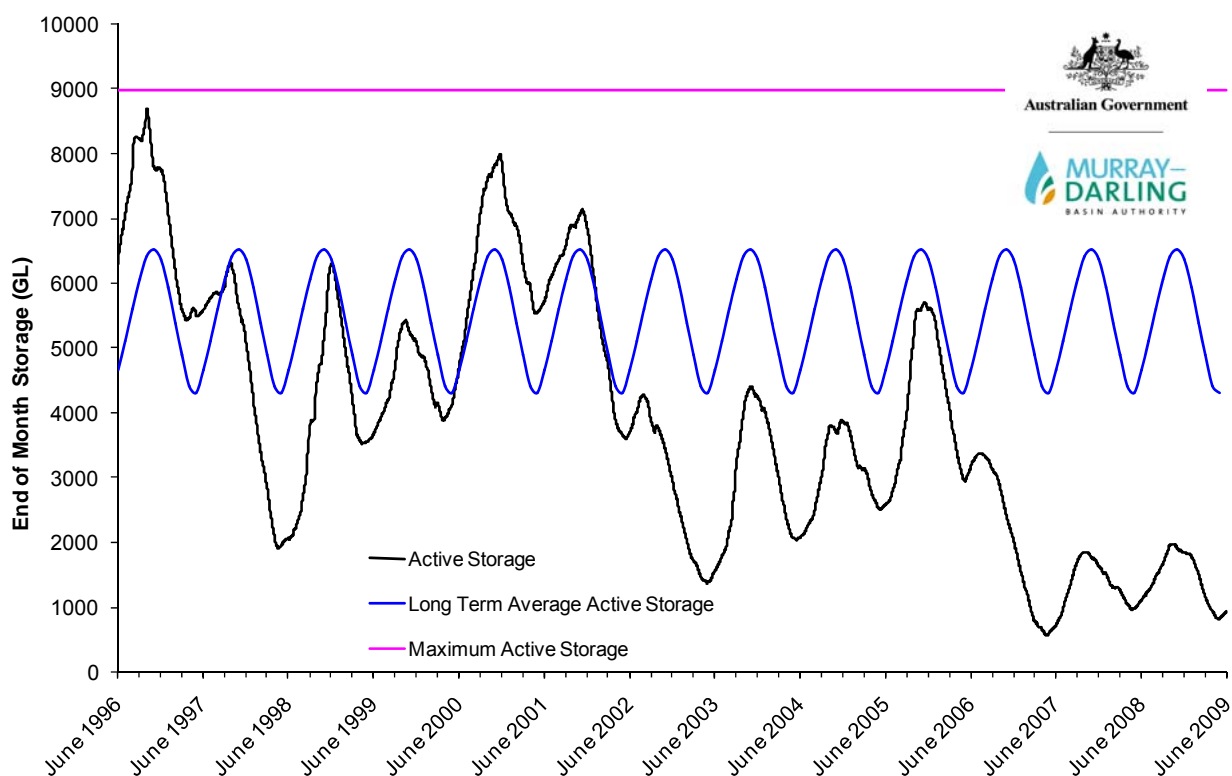


Figure 4. MDBA active storage, June 1996 to May 2009

Murray Operations update

During summer and autumn, the overall goal of operations was to preferentially draw upon downstream storages and conserve water in upstream reservoirs, particularly in Dartmouth Reservoir, for as long as possible. This operation maximises water availability by minimising evaporative losses and increasing the potential to capture inflows during the winter months. As part of this operation, Hume Reservoir was steadily drawn down, and reached a minimum of 64 GL (2.1 % capacity) in late April. At the end of the irrigation season (mid May) the release from Hume Dam was reduced to its minimum and this, combined with inflows from the Snowy Scheme, allowed the storage level to slowly increase to about 200 GL (or 6.6 % capacity) by the end of May 2009. Storage in Dartmouth Reservoir has remained fairly steady since October 2008, and at the end of May was 825 GL (21 % capacity)

Typically, the filling phase for Hume and Dartmouth Reservoirs runs from the end of the irrigation season in mid May to late winter or spring, depending on seasonal conditions and downstream irrigation demands. During the filling phase, releases are reduced to maximise the capture of inflows, while maintaining sufficient flow downstream for riparian and instream environmental needs. The minimum release from Dartmouth Reservoir is 200 ML/day. Similar to the last two years, the release from Hume Reservoir might be reduced to 400 ML/day (compared to the normal minimum of 600 ML/day) and the target flow at Doctors Point (near

Albury) to 800 ML/day (compared to the normal minimum of 1,200 ML/day) depending on inflows from the Kiewa River. Further downstream, normal minimum flows downstream of Yarrawonga Weir (1,800 ML/day) and at Swan Hill (0.6 m local gauge height) might also not apply for short periods of time, depending on inflows from tributaries.

Lake Mulwala drawdown

Lake Mulwala (at Yarrawonga Weir) is currently being fully lowered to the original river channel, to control the spread of *Egeria densa*, an invasive aquatic weed. Excessive growth of the weed was affecting recreational and tourism activities, and also interrupting normal operation of the power station and fishway at the Weir. It is planned to hold the lake level down until mid-July when refilling will commence. Winter drawdowns have occurred periodically ever since Yarrawonga Weir was completed in 1939, the most recent being in 1984, 1989, 1993, 2002 and a partial drawdown in 2008. The lowering of the lake level is the only method that provides viable weed control over the whole of the lake, and aims to provide recreational and tourism benefits for a number of years into the future.

Menindee Lakes

A small volume of water originating from the Moonie and Macintyre Rivers in the northern Basin is slowly making its way towards Menindee Lakes, up to 1,500 km further downstream. It will take a number of weeks before any of this water reaches the Lakes and river transmission losses are expected to be high. Storage in Menindee Lakes is currently 220 GL (or 13 % capacity) and, if there is no follow up rain, is expected to only increase by a few percent. The Lakes will remain under NSW control until the storage level reaches 640 GL, and there will need to be further significant rainfall events in the north before the MDBA regains control.

Flow to South Australia

During May, the flow to South Australia averaged 1,900 ML/day compared with a normal entitlement rate of 3,000 ML/day. Under the drought water sharing arrangements, the flow to South Australia has been below normal entitlement rates for more than 2 ½ years, This will continue until there is a significant improvement in water resource availability. Monthly flow patterns are provided by South Australia and are continually adjusted to account for any changes in diversions or losses within South Australia, and also to manage river salinity.

The Murray-Darling Basin Authority will continue to review its operational plans over the coming months and more details will be provided via media releases and weekly reports which can be found at www.mdba.gov.au

Environment

Algal blooms

In early March, high levels of blue-green algae were first reported in Hume Reservoir and by mid April had extended as far downstream as Euston Weir (a distance of over 1,000 km by river). The Murray was not the only river to suffer from algal blooms, with red alerts issued for other sites across the Basin, including on the lower Darling, Murrumbidgee and Lachlan Rivers, and also for Copeton, Keepit, Pindari, Split Rock and Chaffey Dams. Historically, algal growth is most prevalent in the summer and autumn months when water temperatures are higher, and both storage levels and river flows are relatively low. This year was no exception, and as water temperatures decreased with the onset of cooler weather, the algal levels started to decline. By mid May all red alerts along the Murray had been lifted.

Environmental flows

The prolonged and severe dry period continues to severely impact on wetlands and floodplain ecosystems across the southern half of the Basin. The situation is not expected to improve until there is a very significant and sustained improvement in rainfall, system inflows and water storage levels.

Small amounts of environmental water have been made available during autumn to avoid critical loss of threatened species, reduce the risks of irretrievable damage and provide drought refuges. Sites that have

received Living Murray Environmental water include Koondrook Forest, Hattah Lakes, Lindsay-Wallpolla Islands, Chowilla Floodplain and the Lower Lakes. Several of these waterings have been supplemented with water provided by the Commonwealth Environmental Water Holder and also by the States.

Salinity

Salinity along the Murray, upstream of Lock 1, remains relatively low. This is due to the successful operation of salt interception schemes, a gradual reduction in saline groundwater levels during the prolonged drought, and a predominance of river flows originating from the fresher headwater storages in the Murray. At Swan Hill for instance, the average salinity in May 2009 was only 40 EC, which is well below the twenty year average of 210 EC (Figure 5). At Morgan, upstream of Lock 1 in South Australia, the May 2009 average was 480 EC which was slightly below the 20 year average of 515 EC. Downstream of Lock 1, however, salinities have been steadily rising over the past 3 years due to the lower flows past Lock 1. At Murray Bridge the May 2009 average of 780 EC was higher than 20 year average of 560 EC and significantly higher than the May 2006 average of 320 EC.

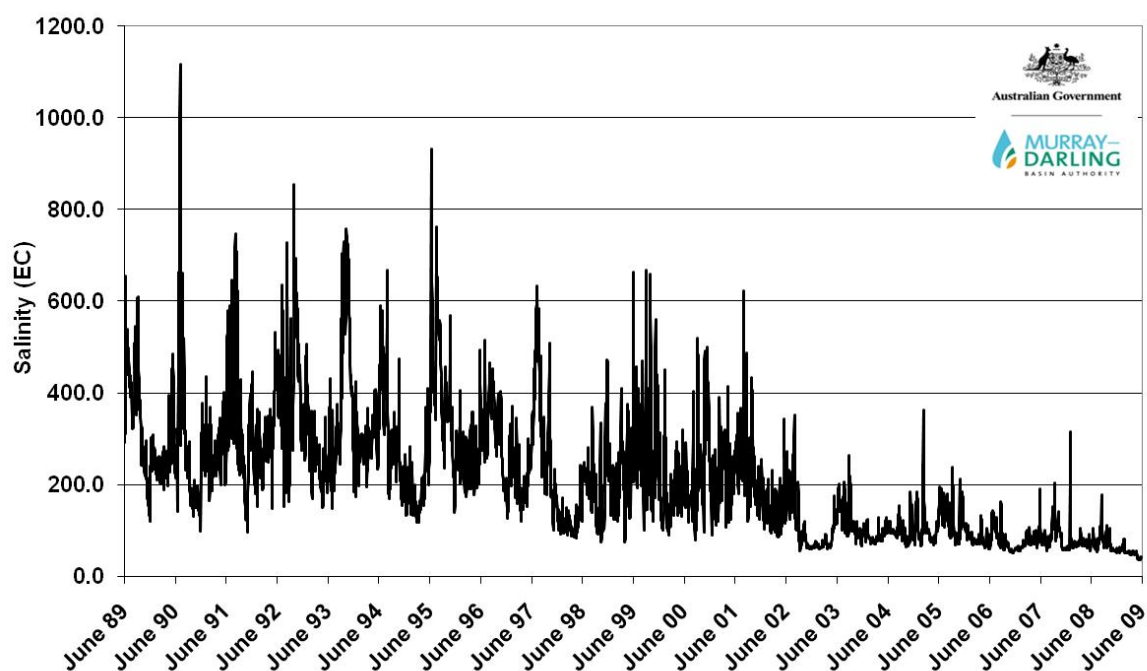


Figure 5. Salinity at Swan Hill, June 1989 to May 2009

Lower Lakes

The water level in Lake Alexandrina reached a new record low of -1.04 m AHD in April 2009. (see Figure 6). During May, reduced evaporative losses and local rainfall have allowed the water level to rise very slightly to about -0.95 m AHD. This is about 0.5 metres lower than in May 2008 when it was -0.46 m AHD, and 1.7 m below Full Supply Level (+0.75 m AHD). Under a dry scenario, the lake level is likely to remain fairly constant or rise slightly during the cooler winter months.

The salinity in Lake Alexandrina is currently 5,800 EC at Milang and about 27,000 EC upstream of Goolwa Barrage (compared with seawater salinity of about 50,000 EC). Local rainfall and the pumping of water from Lake Alexandrina has increased the water level in Lake Albert from about -0.5 m AHD in March 2009 to about -0.3 m AHD at the end of May. The salinity in Lake Albert is steady at about 10,500 EC compared with a long term average of 1,800 EC.

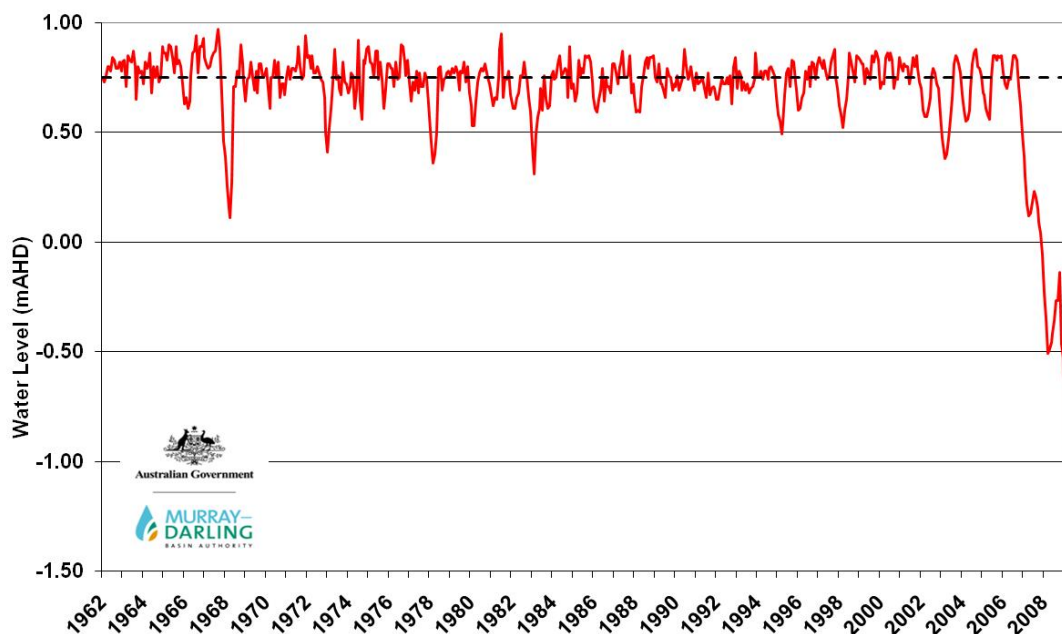


Figure 6. Water level of Lake Alexandrina, 1962 to 2009 (Full Supply Level = +0.75 m AHD)

Outlook

Autumn is a critical time for wetting of the catchment prior to winter rainfall and, similar to last year, this has not eventuated. The catchments remain relatively dry, and Murray system inflows are tracking close to record lows. Inflows are only likely to improve if there is a sustained period of above average rainfall during winter.

For south-eastern Australia, the Bureau of Meteorology's latest rainfall outlook (for June to August), indicates that the chance of above average rainfall is about the same as the chance of below average. However, recent trends in Pacific climate patterns, and the latest outputs from computer models, indicate an increased risk of an El Niño developing during winter and spring. Further information can be obtained from the Bureau of Meteorology's website at; www.bom.gov.au/climate/ahead/rain.seaus.shtml.

The prospects for irrigation allocations in 2009-10 will be highly dependent on future rainfall and system inflows. Overall, the outlook for the 2009-10 water year remains grim, and is similar to the previous two years.

Additional Information

Additional information is available at www.mdba.gov.au and also from the relevant Australian and State Government Agencies. For media interviews with MDBA personnel, please contact Sam Leone, MDBA Media Liaison, telephone 0407 006 332.

Acknowledgements

Front cover photo: River Murray near Waikerie in South Australia. Photo courtesy of Lex Cogle, MDBA.