



Australian Government



## RIVER MURRAY SYSTEM

# Drought Update

ISSUE 21: NOVEMBER 2009

### In Brief

**The recent rain has provided a welcome boost to water availability in the southern Basin, but overall the situation for both irrigators and the riverine environment remains poor.**

During the last 3 months (August to October) the upper tributaries of the Murray received average, or slightly above average, rainfall and this provided a temporary boost to inflows for the River Murray System. In contrast, the northern Basin has been relatively dry and the Darling River has ceased to flow.

As a result of the recent rain, Murray System inflows for the first 5 months of the 2009-10 water year were 2,200 GL which is significantly better than for the same period during each of the last 3 years, but remains well below the June to October long term average of 6,390 GL. The current water year is tracking as the 17th driest in 118 years of records.

The recent boost to inflows has allowed the States to announce increases to water allocations, and these are now tracking significantly higher than at this time in 2007 and 2008, but are still well below long term averages.

Despite the improvement in inflows, water storages remain low for this time of year. MDBA active storage at the end of October was 2,570 GL or 30 % of capacity which is well below the October long term average of 6,530 GL. Total public storage across the entire Basin also remains low, at only 28 % of capacity (6,450 GL compared to a capacity of 22,600 GL).

The situation remains very serious for the environment. Floodplain and wetland ecosystems along the Murray have once again not received any watering from overbank flooding during winter or spring. The health of these ecosystems continues to decline.

The South Australian Government has announced that extra environmental water will be delivered to the Lower Lakes during summer and autumn. The extra water should partially offset higher evaporative losses

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Murray-Darling Basin Authority

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during the summer months, with the aim of keeping the water level close to, or slightly above, the record low of -1.05 m recorded last April.

The Bureau of Meteorology has reported that the 3 month outlook for rainfall predicts drier than normal conditions for the northern Basin and fairly average conditions for the southern Basin. The drier conditions in the northern Basin are associated with an El Niño event which is persisting across the Pacific Ocean.

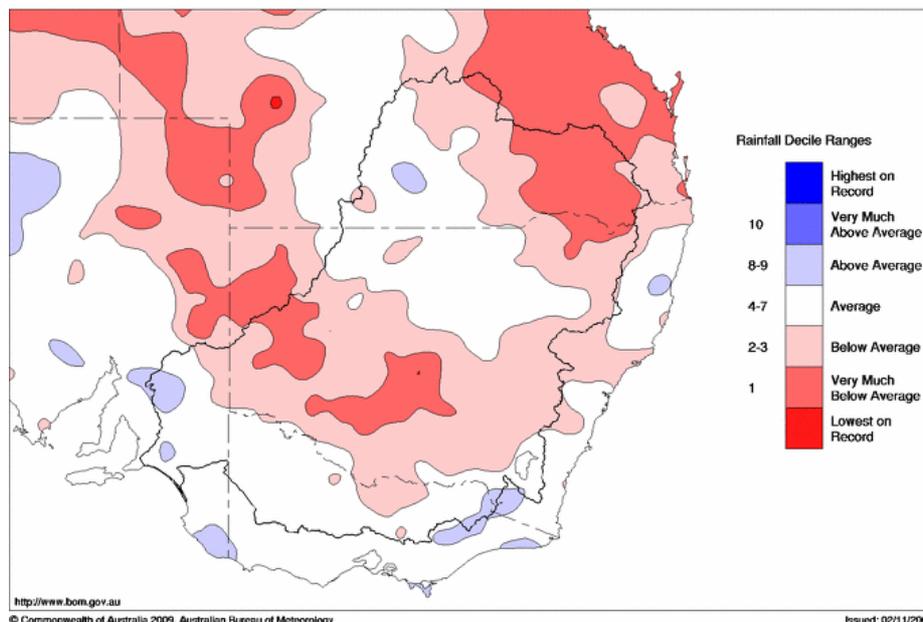
Although water availability for the Murray system is currently better than in the previous two years, the overall outlook for the remainder of the 2009-10 water year (and also for the following water year), remains poor. Unless there is a very significant improvement in inflows during autumn, water storages are once again expected to fall to very low levels by the start of the next water year in June 2010.

## Rainfall and System Inflows

During the last 3 months (August to October) the upper tributaries of the Murray, particularly in the alpine regions, received average or slightly above average rainfall and this provided a temporary boost to inflows for the River Murray System (see Figure 1). Good falls of rain were also recorded along the lower reaches of the Murray in South Australia. Elsewhere in the Murray-Darling Basin, the last 3 months have been relatively dry, and the Darling River has ceased to flow.

Murray system inflows for September were 640 GL and for October were about 695 GL and these are the two highest monthly totals since November 2005. However, they are still well below the long term averages (see Table 1 and Figure 3). Murray System inflows for the first 5 months of the 2009-10 water year were about 2,200 GL which is significantly better than for the same period during each of the last 3 years, but remains well below the June to October long term average of 6,390 GL. Despite recent improvements, the current water year is tracking as the 17th driest in 118 years of records. The longer term rainfall deficits are also persisting across the southern half of the Basin (Figure 2).

The recent boost to Murray system inflows has allowed the States to announce increases to water allocations, and these are now tracking significantly higher than at this time in 2007 and 2008, but are still well below long term averages.



**Figure 1. Rainfall deciles for the Murray-Darling Basin, for the last 3 months (Aug - Oct 2009).  
(source: Bureau of Meteorology)**

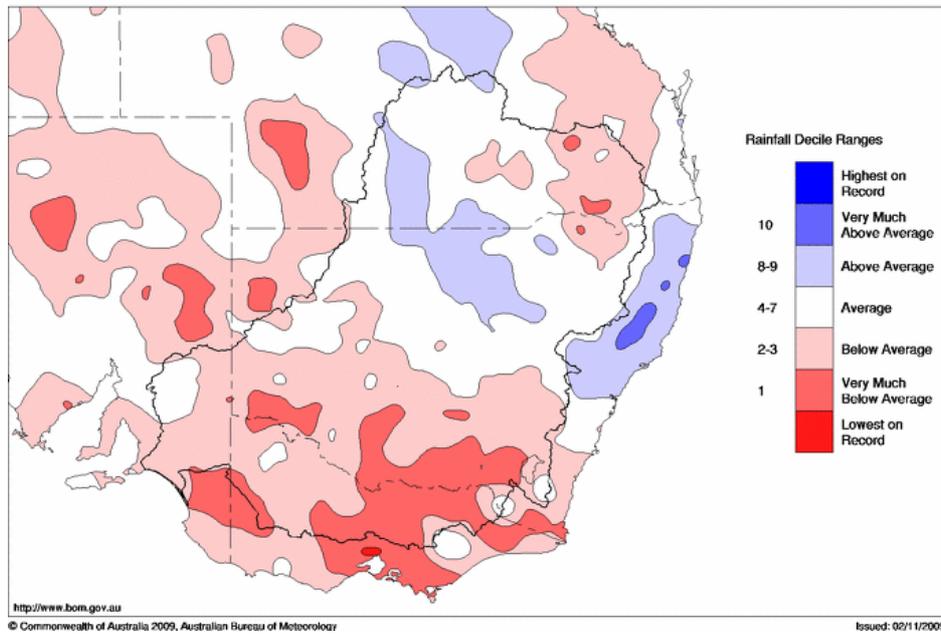


Figure 2. Rainfall deciles for the Murray-Darling Basin, for the last 3 years (Nov 2006 - Oct 2009). (source: Bureau of Meteorology)

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

	2009-10	2008-09	Historic Minimum	Long term average
August	420 GL	275 GL	100 GL (2006)	1,540 GL
September	640 GL	400 GL	120 GL (2006)	1,590 GL
October	695 GL	205 GL	80 GL (2006)	1,400 GL
Water year to date (June –October)	2,200 GL	1,280 GL	540 GL (2006)	6,390 GL

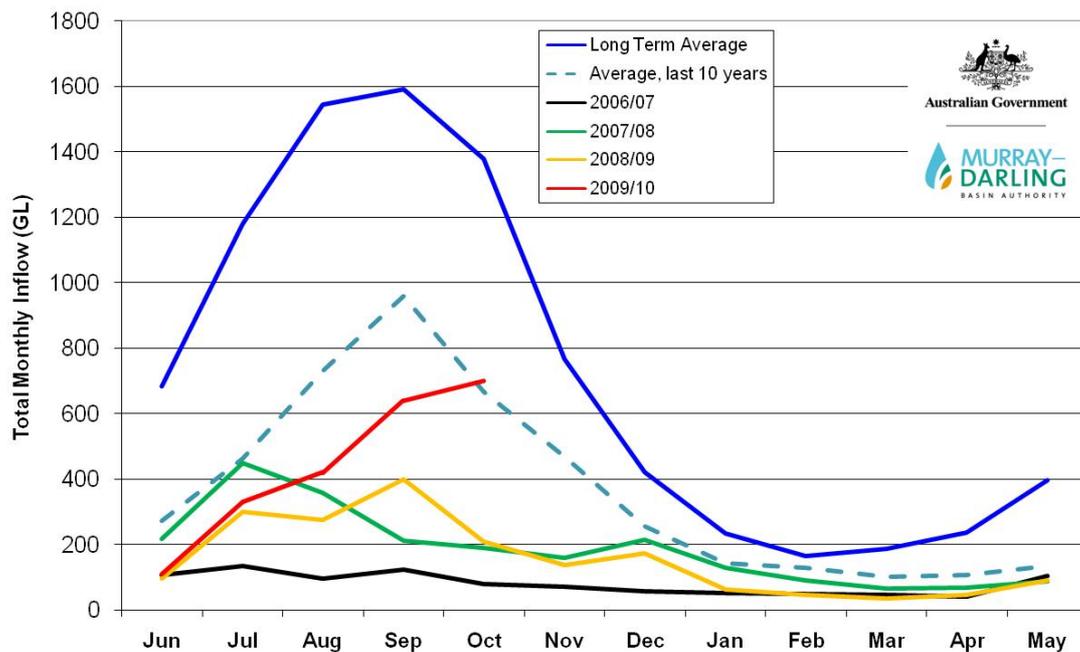


Figure 3. Murray System inflows (excluding Snowy and Menindee inflows)

## Murray System Storage

MDBA active storage at the end of October was 2,570 GL or 30 % of capacity (Figure 4). This is higher than this time last year (1,940 GL) but still well below the October long term average of 6,530 GL. MDBA active storage has been below average since early 2002. There was also about 190 GL in Menindee Lakes, which remain under NSW control.

Elsewhere in the Basin, storage levels also remain low for this time of year. The total volume of water in all Basin storages managed by the MDBA or by State governments, has increased from 3,900 GL (17% capacity) in early June 2009 to only 6,450 GL (28% capacity) by the end of October 2009.

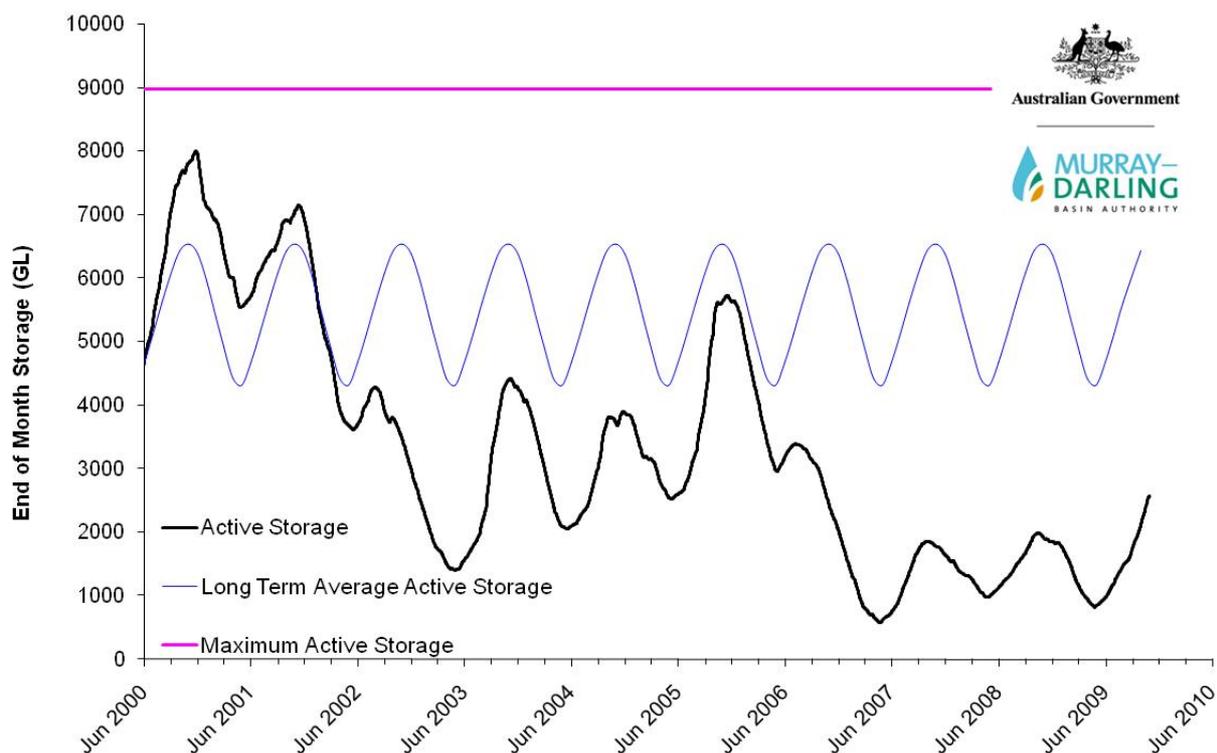


Figure 4. MDBA active storage, June 2000 to October 2009.

## Murray Operations Update

The focus over winter and early spring was to maximise water held in the headwater storages of Hume and Dartmouth Reservoirs by minimising releases and utilising tributary inflows, particularly from the Kiewa and Ovens Rivers. As warmer weather has arrived, the demand for water has increased, and the tributary inflows have receded. As a result, the release from Hume Reservoir has been steadily increased to ensure sufficient water is available along the full length of the Murray.

Over the next few months, the overall goal of operations will be to continue using water stored in Hume Reservoir to meet downstream demand, and conserve the water stored in Dartmouth Reservoir for as long as possible. This strategy helps to reduce evaporative losses and also maximises the ability of the system to capture potential inflows next autumn/winter.

Hume Reservoir will be steadily drawn down, and by next autumn levels could be similar to earlier this year, if conditions remain dry. If necessary, small volumes of water will be released from Dartmouth Reservoir to supplement the storage in Hume Reservoir and to sustain the Mitta Mitta River. With relatively small volumes likely to be released from Dartmouth, there should not be any channel capacity constraints in the Mitta Mitta like those experienced in the summer of 2006-07.

Another important focus for river operations will be to transfer sufficient water to Lake Victoria to help meet water demands downstream of the Barmah Choke during the summer months. There is very little water in the Menindee Lakes (which remain under NSW control), so it is very likely that water requirements along the full length of the Murray will need to be supplied from the upper Murray storages (Dartmouth and Hume Reservoirs) and tributaries. This will result in higher flows than last year along both the Murray and Edward Rivers. Between Hume Reservoir and Yarrowonga Weir the flow rate is likely to fluctuate between 10,000 and 17,000 ML/day, which is less than the 20,000 to 25,000 ML/day expected in a high-allocation year, but significantly higher than last summer (7,500 to 12,500 ML/day). Immediately downstream of Yarrowonga Weir, flows are likely to fluctuate between 9,000 and 10,500 ML/day, which is slightly higher than last year, and further downstream at the Barmah Choke the river is likely to be flowing close to channel capacity.

The Edward River (which bypasses the Barmah Choke on the Murray) will be used to transfer additional water to Lake Victoria and as a result, flows of up to 2,900 ML/day can be expected along this river. The NSW Government has also announced that a continuous flow can now be delivered into the Wakool River system. This will provide environmental benefits and also enable current restrictions on irrigation in these tributaries to be removed.

In recent weeks, Goulburn-Murray Water has stored additional water in Kow Swamp and other mid-river storages in the Torrumbarry Irrigation Area, to help supply water over the summer months.

Between Torrumbarry Weir and Lake Victoria, flows are also expected to be higher than last summer. Commencing in October, the Murrumbidgee inter-valley trade account is being used to supplement the flow in the Murray through the Sunraysia district and also help maintain the storage in Lake Victoria. The flow to South Australia will be significantly higher than in the past two years and, in some months, may be close to normal entitlement flow.

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](http://www.mdba.gov.au).

## Recreational Opportunities along the Murray

The higher flows forecast along the Murray should improve opportunities for recreational activities during the summer months, compared with the last two years.

Lake Mulwala should also be operating within its normal summer range of 124.6 to 124.9 m AHD (or 0 to 30 cm below full supply level) and the winter drawdown has significantly reduced the problems with excessive weed growth. This should provide excellent opportunities for holiday makers. Most other weir pools along the Murray are likely to be close to full supply level over the summer months. Also, at the Barrages on the Lower Lakes, the Goolwa lock has been re-opened and this has allowed boat operators to travel from Goolwa through to the Coorong.

The MDBA will continue to issue weekly reports and media releases about any changes to river operations or water levels at specific sites. However, it is always imperative that river users check for hazards before entering the water and make any necessary adjustments to their activities.

## Environment and Water Quality

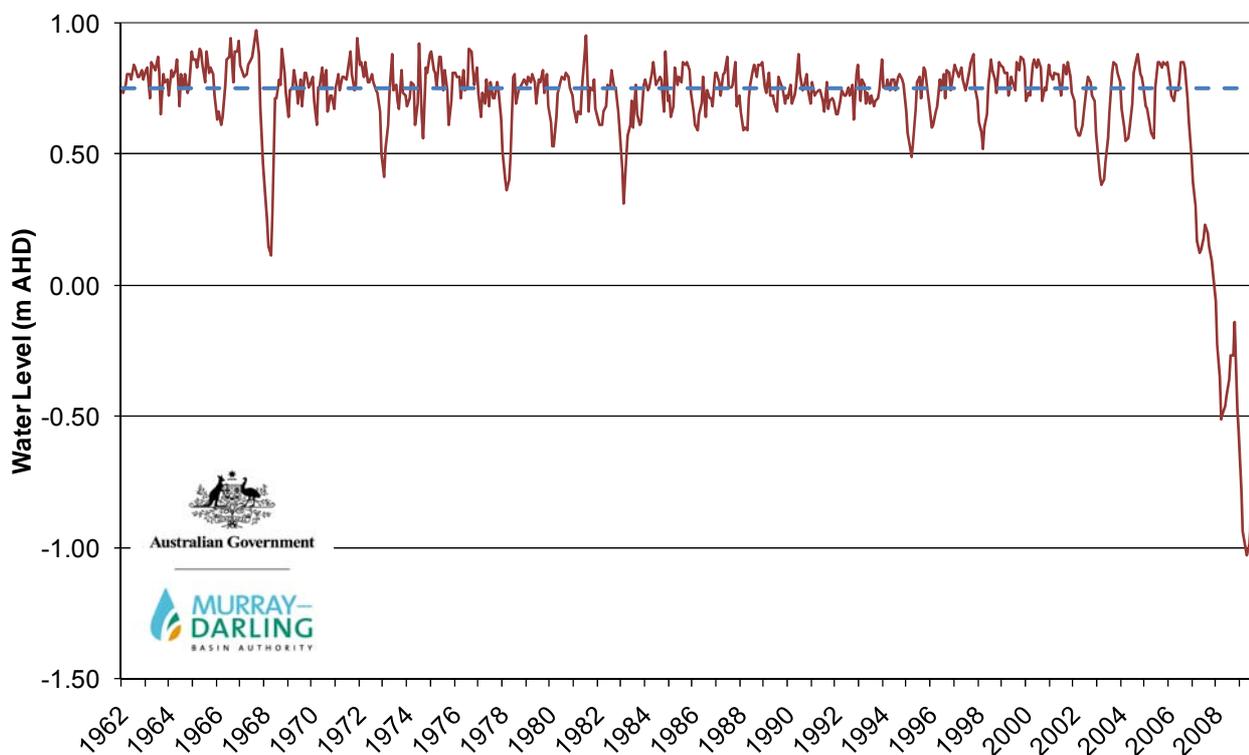
### Environmental flows

The situation remains very serious for the environment. Floodplain and wetland ecosystems along the Murray have once again not received any watering from overbank flooding during winter or spring. The last significant flooding downstream of Euston was 13 years ago. The health of these ecosystems continues to decline. To help reduce impacts on the riverine environment, small amounts of environmental water will once again be available from the Living Murray Initiative, and also from the Commonwealth and State

Governments. This water will help avoid critical loss of threatened species, and reduce the risks of irretrievable damage at high priority drought refuges. However, the overall situation will not improve until there is a very significant and sustained improvement in rainfall, system inflows and water storage levels.

### Lower Lakes

The Lower Lakes remain at record low levels for this time of year (Figure 5). At the end of October 2009, the water level in Lake Alexandrina was -0.77 m AHD (or 1.52 m below Full Supply Level), compared with -0.3 m AHD in October 2008. The South Australian Government has recently announced that, due to increased inflows to the River Murray over the past few months, extra environmental water will be delivered to the Lower Lakes during summer and autumn (see <http://www.dwlbc.sa.gov.au/media.html> ). The extra water should partially offset higher evaporative losses during the summer months, with the aim of keeping the water level close to, or slightly above, the record low of -1.05 m recorded last April. The water level in the Goolwa Channel (which is now separated from Lake Alexandrina by an earth embankment) has increased to +0.70 m AHD, as a result of local inflows from Currency Creek and the Finniss River, and pumping from Lake Alexandrina (which ceased on 9<sup>th</sup> November). Over summer the water level is expected to fall towards 0.0 m AHD. The Goolwa Channel Water Level Project, which is being managed by the South Australian Government, is aimed at protecting the Goolwa Channel, Finniss River and Currency Creek from acidification caused by falling water levels in Lake Alexandrina.



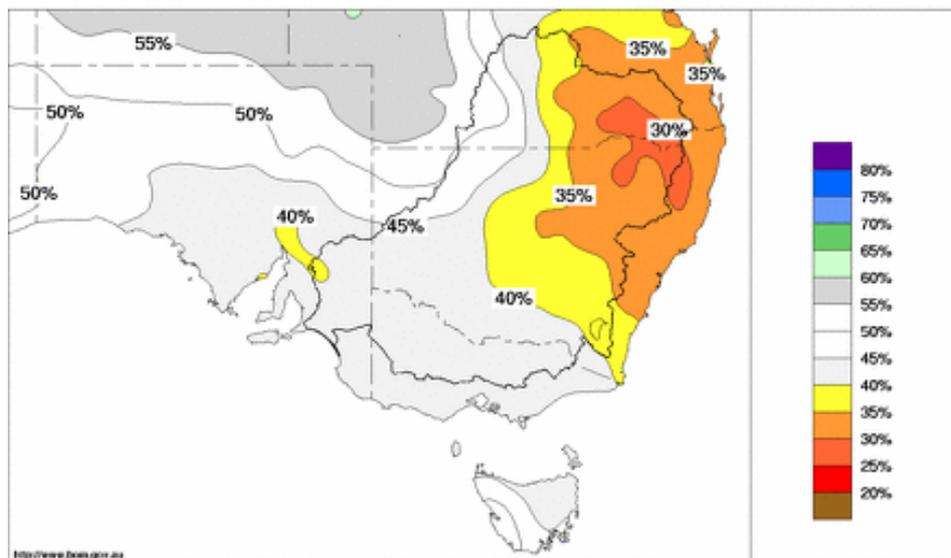
**Figure 5. Lake Alexandrina water level, 1962 to October 2009. (Full Supply Level is +0.75 m AHD)**

### Algal blooms

Water quality across the Murray system generally remains good. However, algal growth is historically most prevalent in the summer and autumn months when water temperatures are high and storage levels are low. Therefore, similar to previous years, the risk of algal blooms, and associated water quality issues, will increase during the coming months. Algal updates will be provided in the MDBA's Weekly Report and are also available from the Regional Algal Coordinating Committee's hotline on 1800 999 457.

## Outlook

The Bureau of Meteorology has reported that the 3 month (November 2009 to January 2010) outlook for rainfall predicts drier than normal conditions in the northern Basin and close to average conditions for the southern Basin (Figure 6). The drier conditions in the northern Basin are associated with an El Niño event which is persisting across the Pacific Ocean. The Southern Oscillation Index has dropped rapidly in recent weeks and, as a result, climatologists are forecasting that the El Niño event will continue until at least early 2010. El Niño events are usually associated with below normal rainfall in the second half of the year across large parts of southern and inland eastern Australia.



**Figure 6. Chance of exceeding the median rainfall: November 2009 to January 2010  
(source: Bureau of Meteorology)**

Although water availability for the Murray system is currently better than in the previous two years, the overall outlook for the remainder of the 2009-10 water year (and also for the following water year), remains poor. Murray System inflows over summer are typically low and do not contribute significantly to annual water resources. Therefore, unless there is a very significant improvement in inflows during autumn, water storages are once again expected to fall to very low levels by the start of the next water year in June 2010.

## Additional Information

Additional information is available at [www.mdba.gov.au](http://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: Edward River at Deniliquin. Photo courtesy of Anthony Scott, MDBA.