



**Australian Government**  
**Bureau of Rural Sciences**

# Climate and Agricultural Update

## National Report

Issued October 2009



**SCIENCE** *for* **DECISION MAKERS**

DEPARTMENT OF AGRICULTURE, FISHERIES AND FORESTRY

The information contained in this report is regularly sourced from the following organisations:

## ORGANISATION

<p>Bureau of Meteorology</p> 	<p><a href="http://www.bom.gov.au/">http://www.bom.gov.au/</a></p>
<p>Bureau of Rural Sciences</p> 	<p><a href="http://www.brs.gov.au/">http://www.brs.gov.au/</a></p>
<p>Department of Primary Industries, New South Wales</p> 	<p><a href="http://www.dpi.nsw.gov.au/">http://www.dpi.nsw.gov.au/</a></p>
<p>Snowy Hydro Limited</p> 	<p><a href="http://www.snowyhydro.com.au/">http://www.snowyhydro.com.au/</a></p>
<p>Australian Bureau of Agricultural and Resource Economics (ABARE)</p> 	<p><a href="http://www.abare.gov.au/">http://www.abare.gov.au/</a></p>
<p>Department of Agriculture and Food, Western Australia</p> 	<p><a href="http://www.agric.wa.gov.au/">http://www.agric.wa.gov.au/</a></p>
<p>Goulburn-Murray Water</p> 	<p><a href="http://www.g-mwater.com.au/">http://www.g-mwater.com.au/</a></p>
<p>Queensland Department of Employment, Economic Development and Innovation: Primary Industries and Fisheries</p> 	<p><a href="http://www.dpi.qld.gov.au/">http://www.dpi.qld.gov.au/</a></p>
<p>New South Wales Office of Water Department of Environment, Climate Change and Water</p> 	<p><a href="http://www.water.nsw.gov.au/">http://www.water.nsw.gov.au/</a></p>

<p>Meat and Livestock Australia</p> 	<p><a href="http://www.mla.com.au/">http://www.mla.com.au/</a></p>
<p>Department of Primary Industries and Resources SA</p> 	<p><a href="http://www.pir.sa.gov.au/">http://www.pir.sa.gov.au/</a></p>
<p>Department of Primary Industries, Victoria, Australia</p> 	<p><a href="http://www.dpi.vic.gov.au/">http://www.dpi.vic.gov.au/</a></p>
<p>Murray-Darling Basin Authority</p> 	<p><a href="http://www.mdba.gov.au/">http://www.mdba.gov.au/</a></p>

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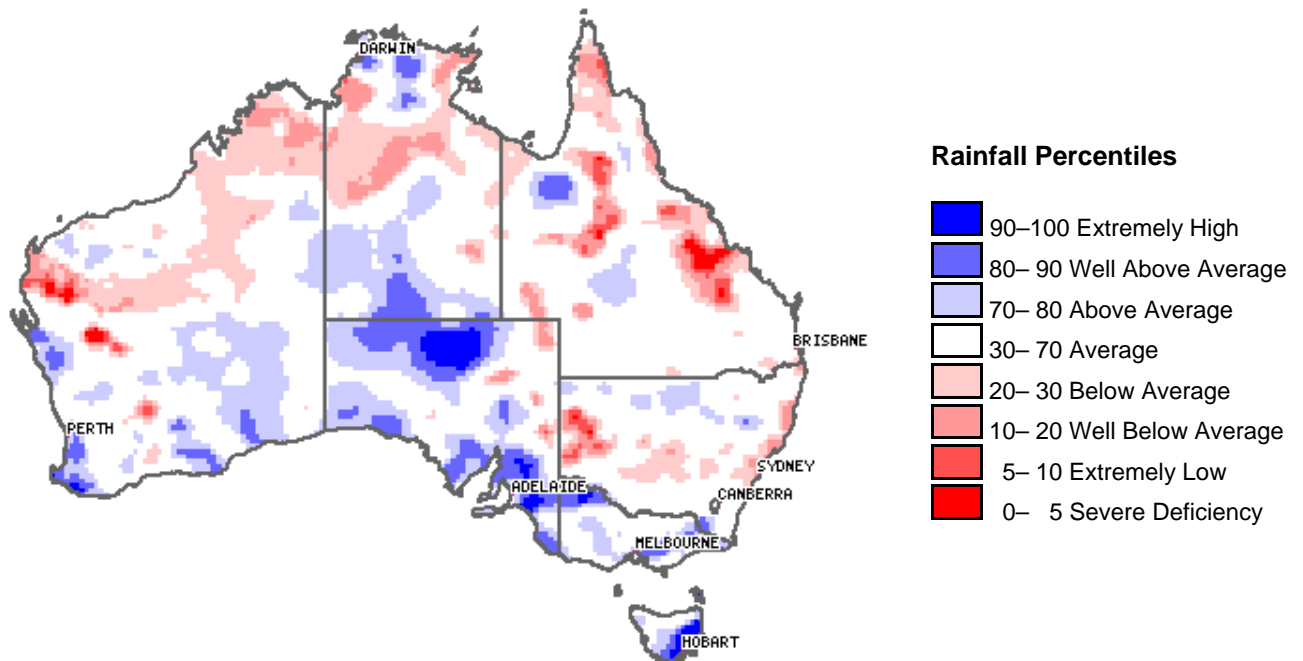
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# 1.0 Rainfall and temperature

## 1.1 Rainfall

Spatial rainfall analyses are based on historical monthly rainfall data provided by the Bureau of Meteorology. For further information on rainfall data and the interpretation of percentile analyses go to <http://www.bom.gov.au/climate/austmaps/>.

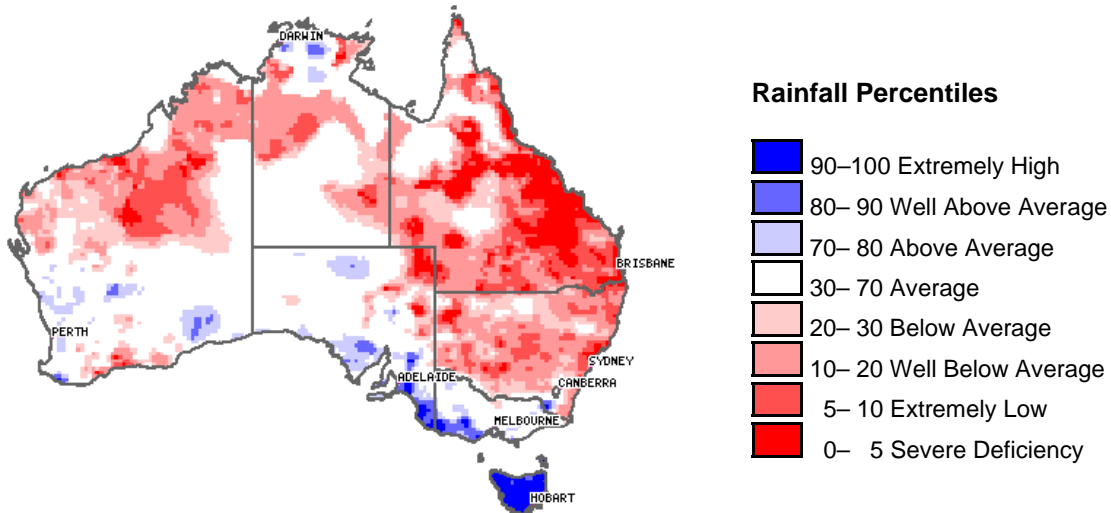
### *Rainfall over the last month (September 2009)*



**Rainfall percentiles for September 2009**

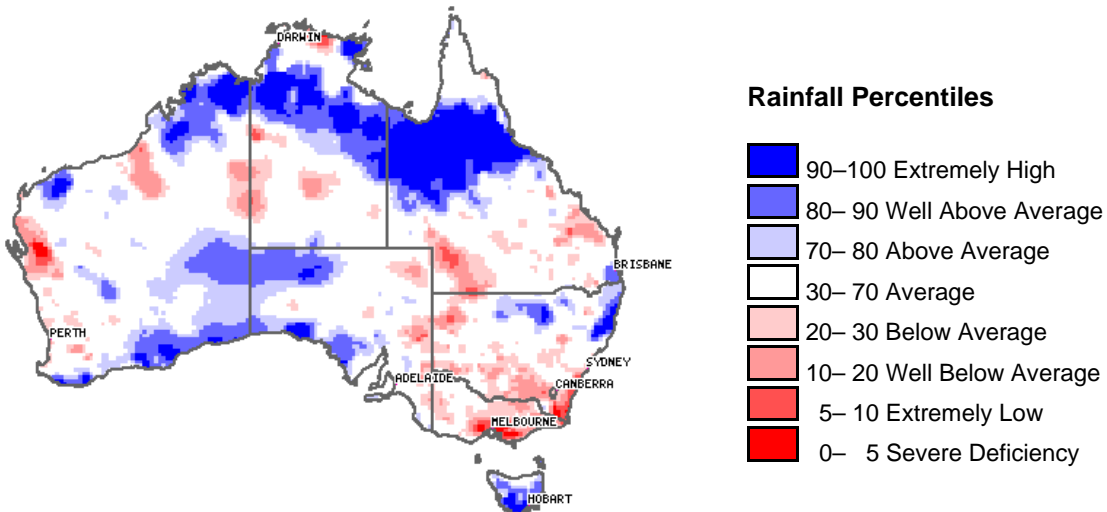
Rainfall for Australia during September 2009 was just below the long-term average. Rainfall was above average across much of southern Australia, with below average rainfall generally occurring across northern Australia and parts of central New South Wales. Rainfall in Queensland and New South Wales was ranked as the thirty-first and thirty-seventh lowest on record, respectively. Rainfall was below average in the Northern Territory and across the Murray-Darling Basin. In contrast, September rainfall was above average in Victoria, Tasmania and South Australia.

## Ongoing or emerging rainfall situations



**Rainfall percentiles for the last three months  
July 2009–September 2009**

During the past three months, large areas of Australia have experienced below average rainfall. Rainfall deficiencies have increased in the last month across Queensland, New South Wales and northern Western Australia. In contrast, deficiencies have eased over South Australia and Victoria. Most of Tasmania recorded extremely high rainfall during the last three months.



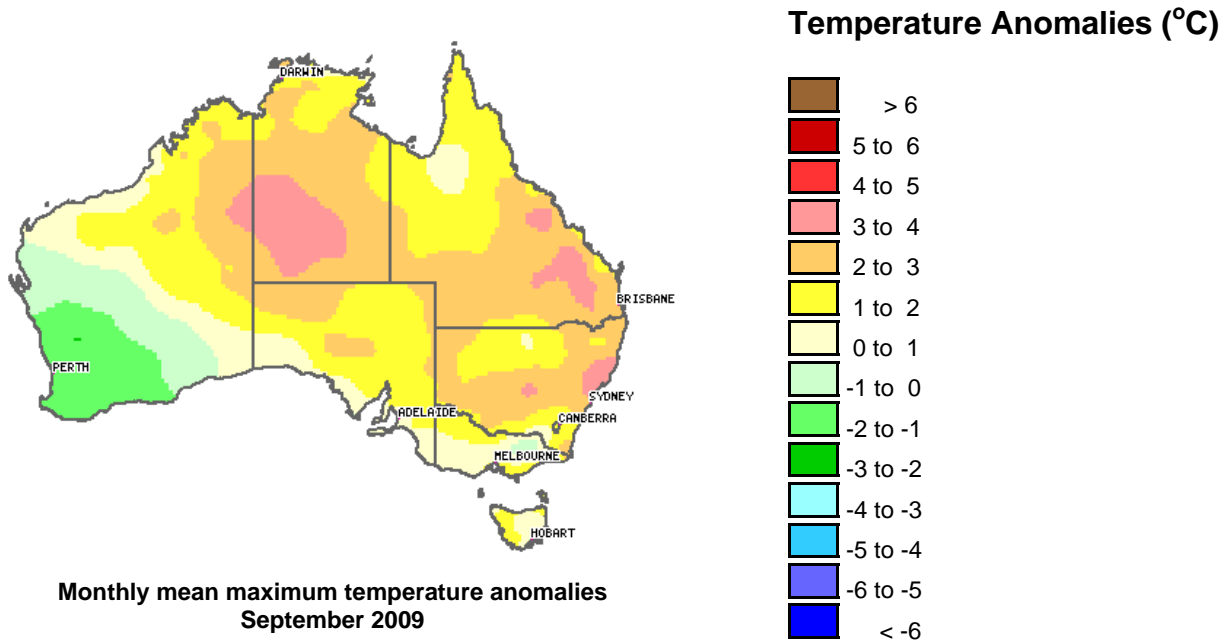
**Rainfall percentiles for the last 12 months  
October 2008–September 2009**

For the 12 month period from October 2008 to September 2009, above average to extremely high rainfall was recorded in a broad band across northern Australia, in parts of Western Australia, western South Australia, northern New South Wales and Tasmania. The 12 month rainfall deficiencies have eased slightly across Victoria and South Australia, with deficiencies persisting across southern New South Wales, southern Queensland and parts of Western Australia.

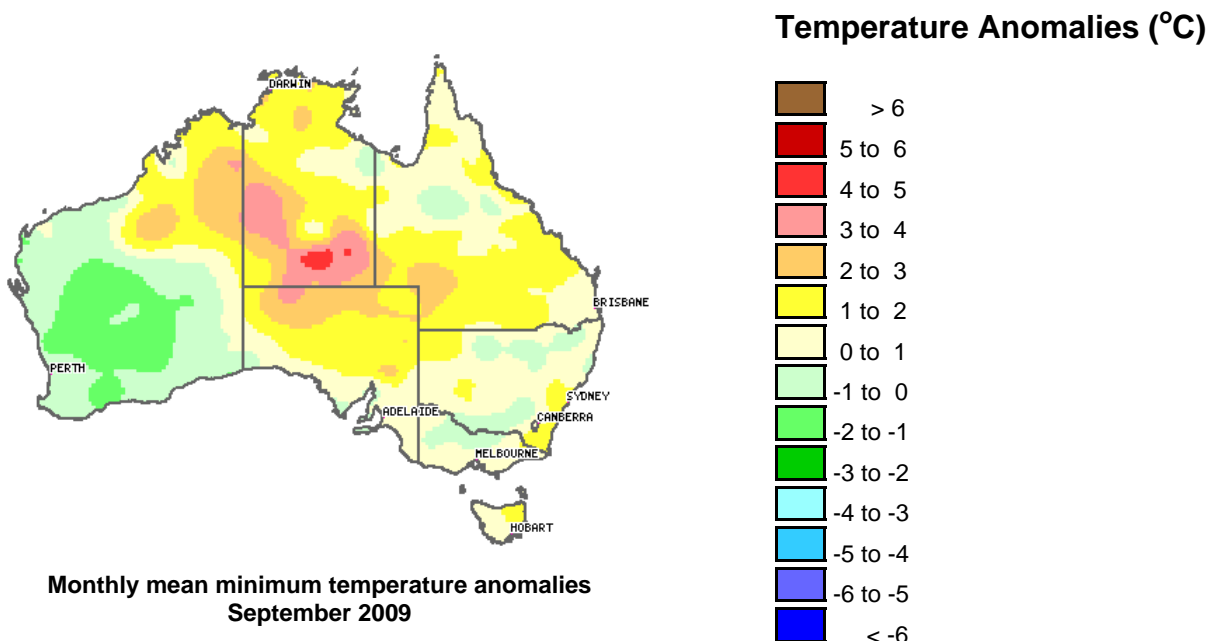
## 1.2 Maximum and minimum temperature anomalies

Spatial temperature analyses are based on historical monthly temperature data provided by the Bureau of Meteorology. These temperature anomaly maps show the departure of the maximum and the minimum temperature from the long-term average. Temperature anomalies are calculated with respect to the reference period 1961–1990. For further information on temperature anomalies go to:

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

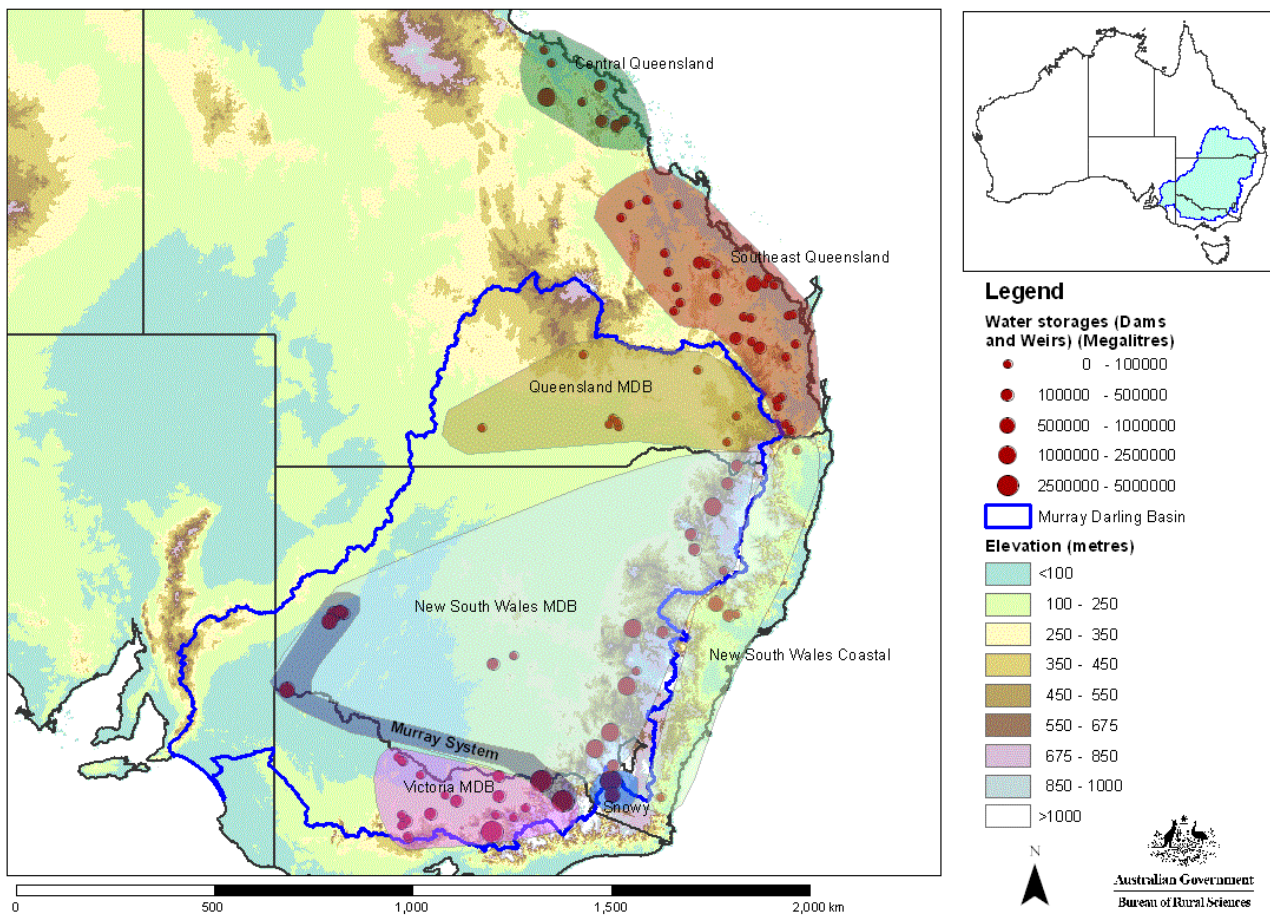


Day-time temperatures in Australia for September 2009 were 1.48 °C above the long-term average, the eighth highest on record. Northern Territory and Queensland recorded their fifth and sixth warmest September day-time temperatures on record, respectively, with New South Wales, Victoria and Tasmania also ranking in the top ten. Mean maximum temperatures ranged from 3–4 °C above average over parts of northern and eastern Australia to 1–2 °C below average in the south-west of Western Australia.



Night-time temperatures in Australia for September 2009 were 0.95 °C above the long-term average, the fourteenth highest on record. Northern Territory and South Australia recorded their fifth and sixth warmest September night-time temperatures on record, respectively. Mean minimum temperatures were generally 2–5 °C above average across central Australia. In contrast, night-time temperatures were 0–2 °C below average in the south-west of Western Australia.

## 2.0 Water storages and announcements

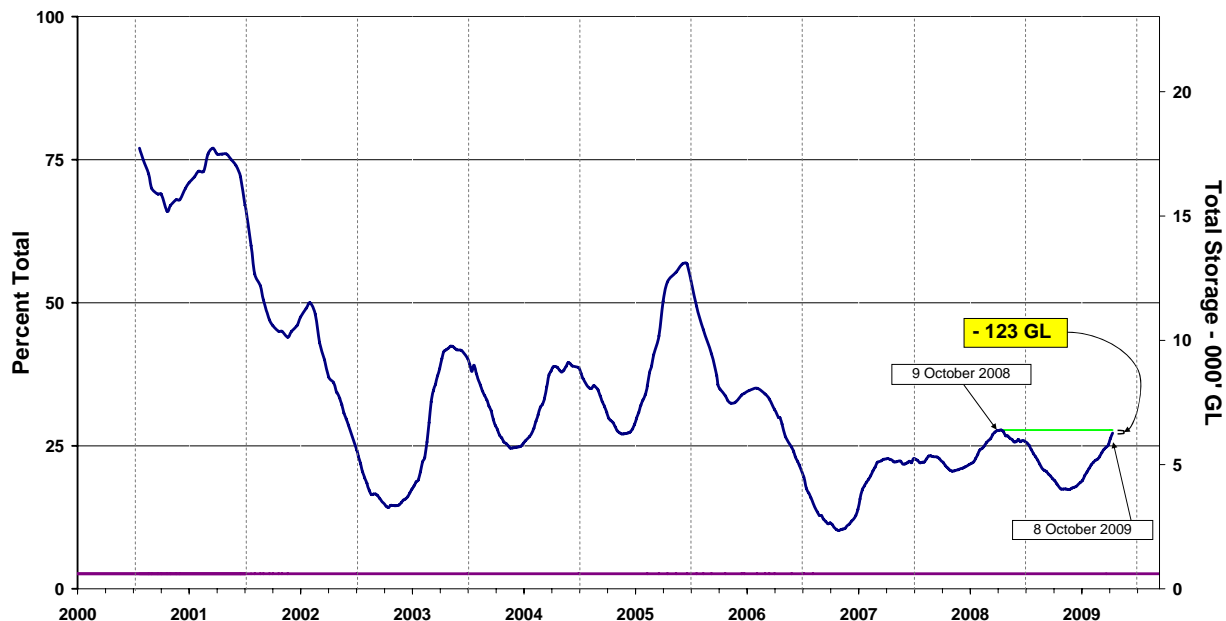


Water storages in Queensland, New South Wales and Victoria. The blue line indicates the extent of the Murray-Darling Basin. The shaded areas denote the coverage of the individual reporting regions.  
Source: Bureau of Rural Sciences



## 2.1 Water storages (current at 8 October 2009)

### Water storage in the MDB (New South Wales, Victoria and Queensland)

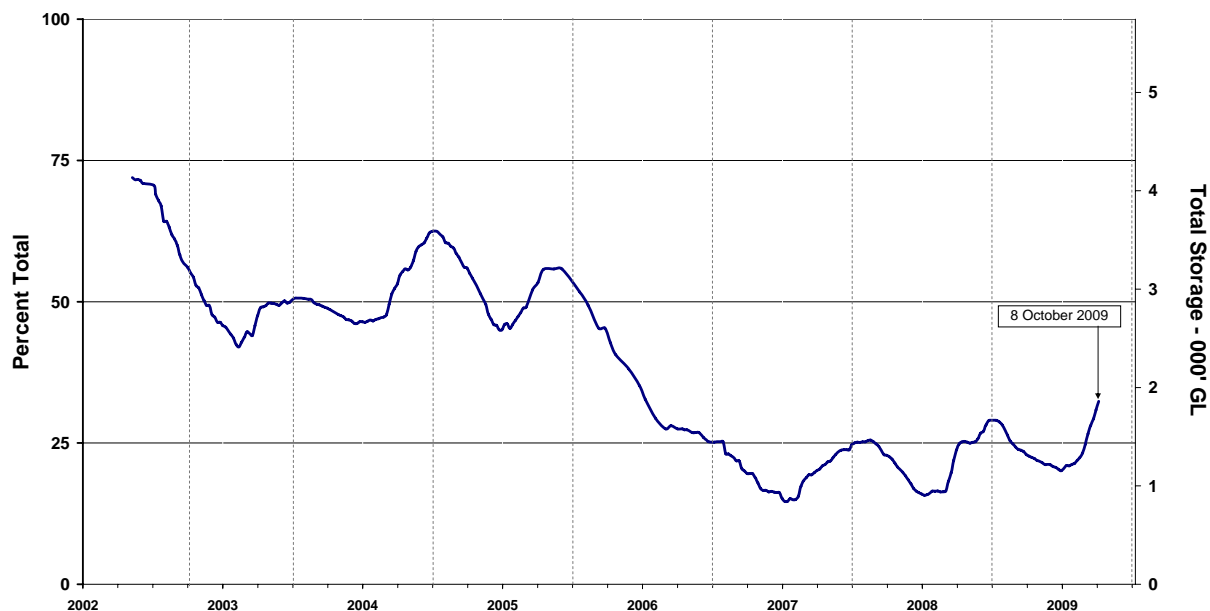


**Water storage levels in the Murray-Darling Basin from 1 January 2001 to 8 October 2009. The green line shows the storage level at the same time last year and the purple line shows the dead storage (not calculated).**

Source: Bureau of Rural Sciences

Over the past month, storage levels within the Murray-Darling Basin (MDB) have increased. Storage levels on 8 October 2009 were at 6267 gigalitres (GL) (27 per cent of a total capacity of 23 020 GL), an increase of 655 GL (3 per cent of total capacity) over the month. Current storage levels are approximately 123 GL (0.5 per cent) less than the same time last year.

### Water storage in the Snowy Scheme

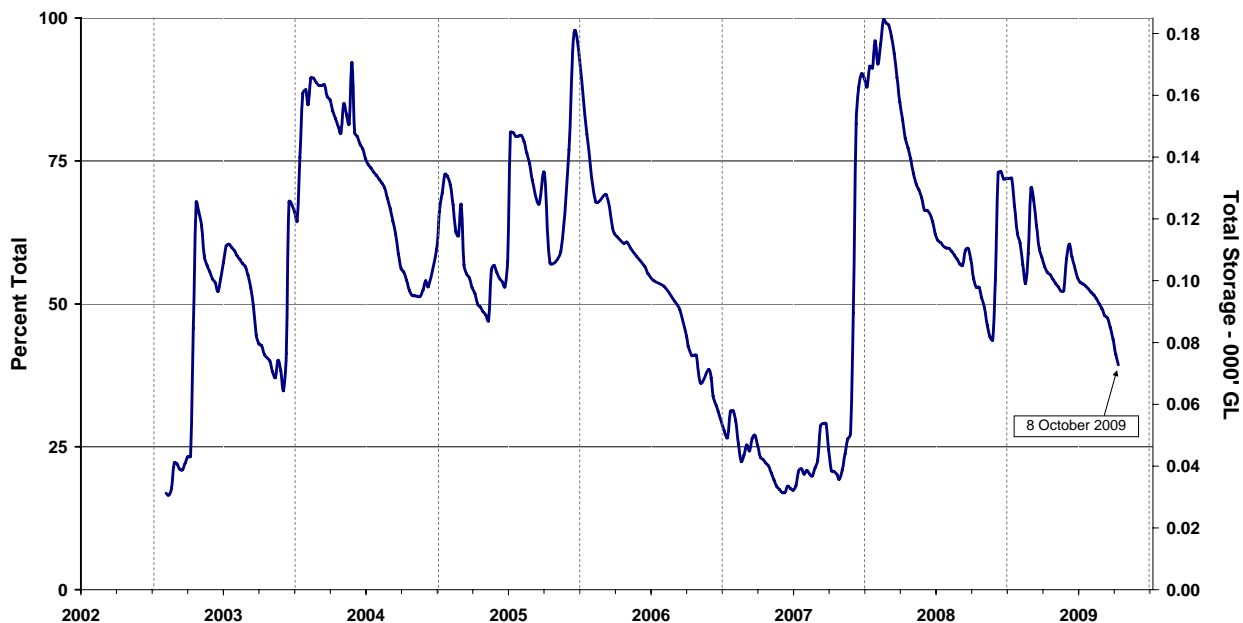


**Water storage levels in the Snowy Scheme from 6 November 2002 to 8 October 2009.**

Source: Bureau of Rural Sciences

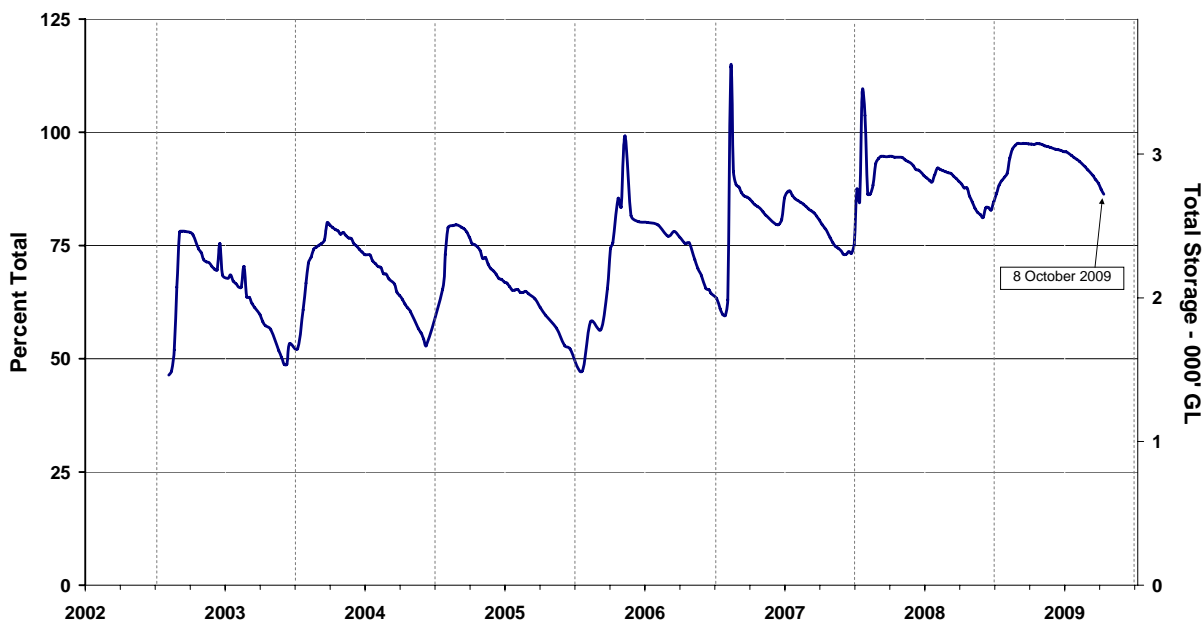
The figure 'Water storage in the MDB' (above top) does not include the capacities of Lake Eucumbene, Tantangara Reservoir and Lake Jindabyne (collectively the Snowy Scheme) which are reserved for hydro-electricity generation and irrigation purposes. The current storage level in the Snowy Scheme is 1860 GL (32 per cent of a total capacity of 5744 GL), 414 GL (7 per cent) higher than the same time last year. This is an increase of 330 GL (6 per cent) on the previous month.

## Water storage in Queensland



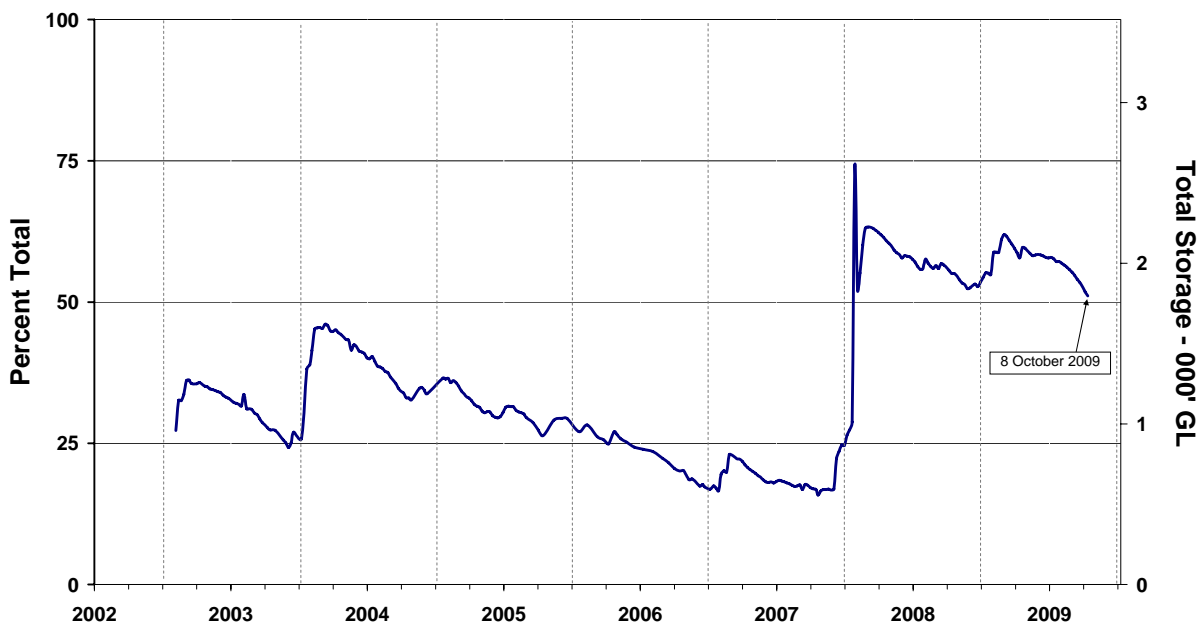
**Water storage levels in Queensland MDB from 3 February 2003 to 8 October 2009.**  
**Source: Bureau of Rural Sciences**

Storage levels in Queensland MDB decreased by 15.1 GL to 72.9 GL (39 per cent of a total capacity of 185 GL) over the last month. The current storage level is approximately 25.1 GL (14 per cent) lower than the same time last year.



**Water storage levels in central Queensland from 3 February 2003 to 8 October 2009.**  
**Source: Bureau of Rural Sciences**

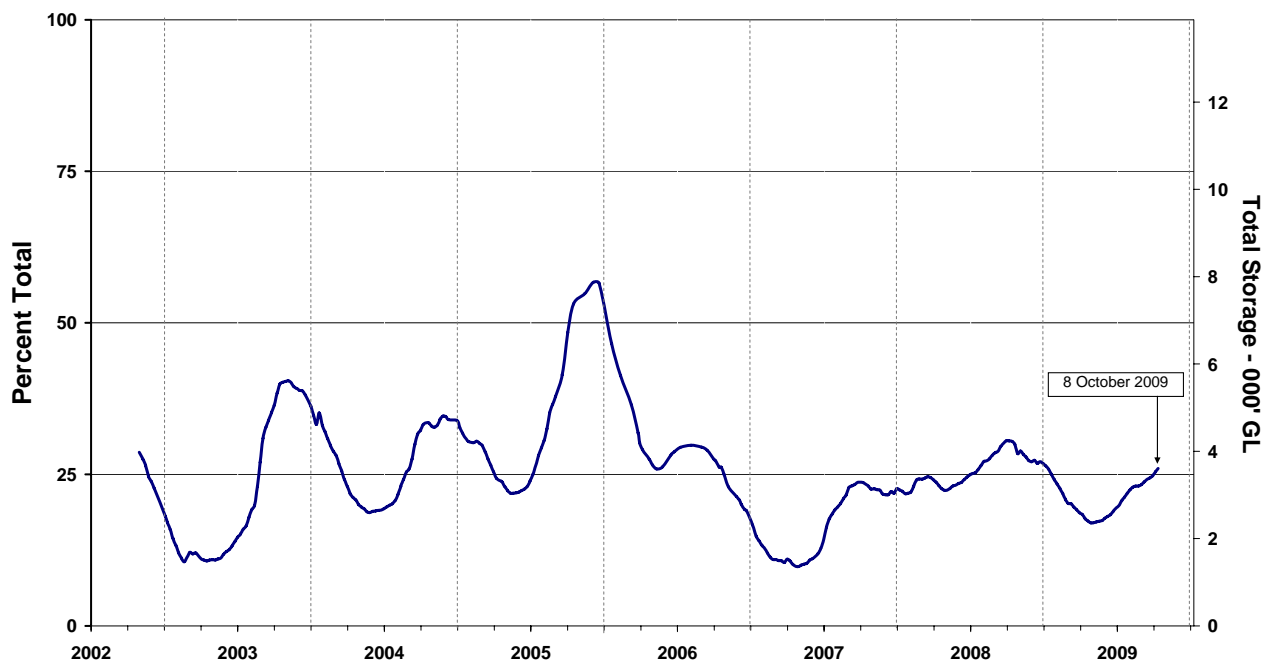
In central Queensland, storage levels decreased over the last month by 129 GL to 2723 GL, which is 86 per cent of a total capacity of 3155 GL. The current storage level is approximately 44 GL (1 per cent) lower than the same time last year.



**Water storage levels in south-east Queensland from 3 February 2003 to 8 October 2009.**  
**Source: Bureau of Rural Sciences**

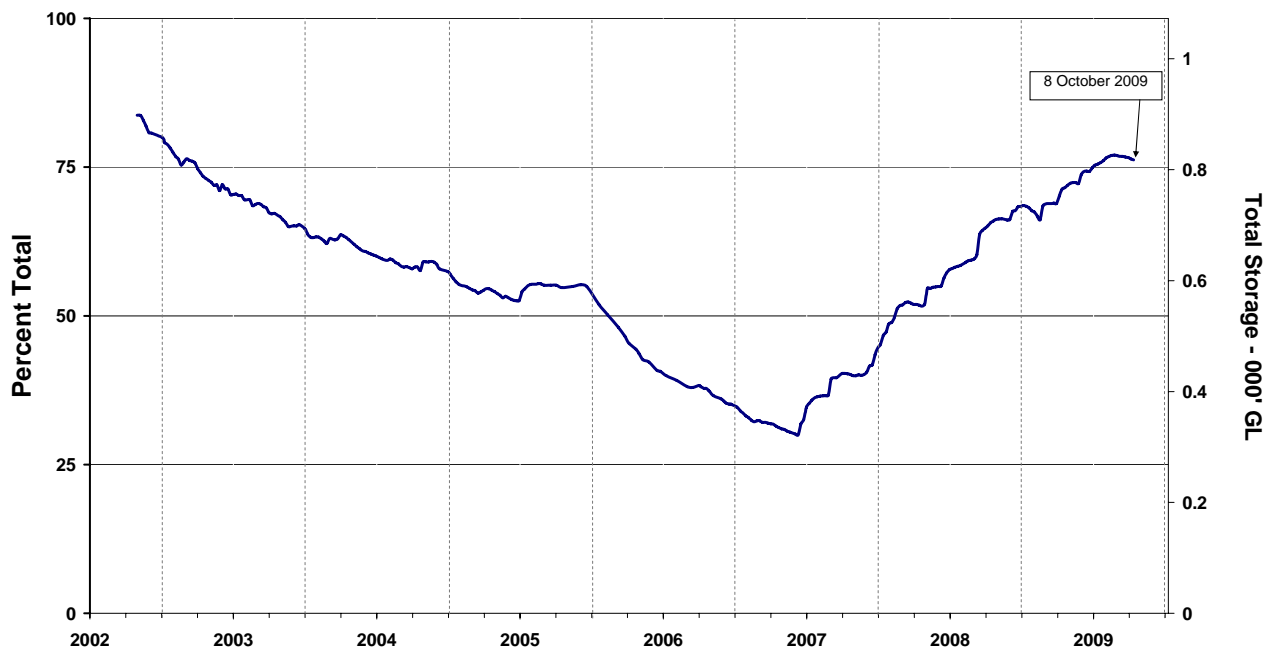
In south-east Queensland, storage levels decreased over the last month by 105 GL to 1796 GL (51 per cent of a total capacity of 3517 GL). The current storage is approximately 141 GL (4 per cent) lower than the same time last year.

***Water storage in New South Wales***



**Water storage levels in New South Wales MDB from 28 October 2002 to 8 October 2009.**  
**Source: Bureau of Rural Sciences**

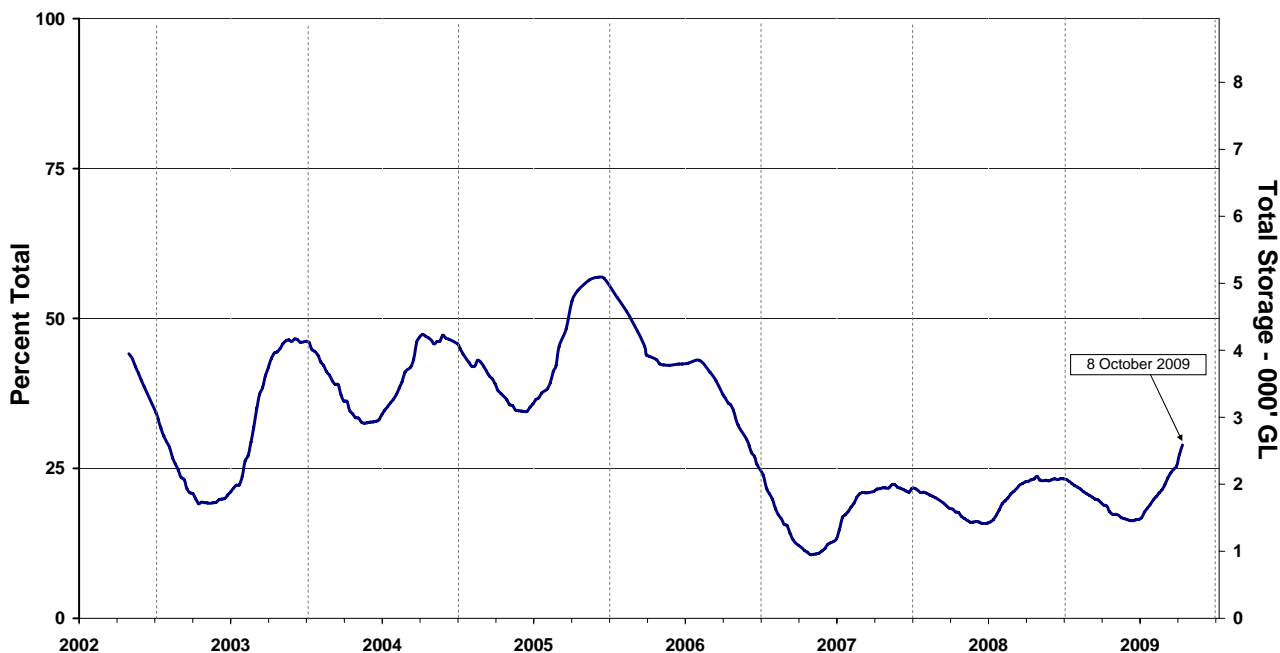
Storage levels in the New South Wales MDB increased over the last month by 252 GL to 3608 GL (26 per cent of a total capacity of 13 884 GL). The current storage level is approximately 620 GL (4 per cent) lower than the same time last year.



**Water storage levels in coastal New South Wales from 28 October 2002 to 8 October 2009.**  
**Source: Bureau of Rural Sciences**

In coastal New South Wales, storage levels decreased over the last month by 6 GL to 818 GL (76 per cent of a total capacity of 1073 GL). The current storage level is approximately 113 GL (10 per cent) higher than the same time last year.

***Water storage in Victoria***



**Water storage levels in Victoria MDB from 28 October 2002 to 8 October 2009.**  
**Source: Bureau of Rural Sciences**

Storage levels in Victoria MDB increased over the last month by 414 GL to 2574 GL (29 per cent of a total capacity of 8903 GL). The current storage level is approximately 517 GL (6 per cent) higher than the same time last year.

## Murray-Darling Basin Authority water storages

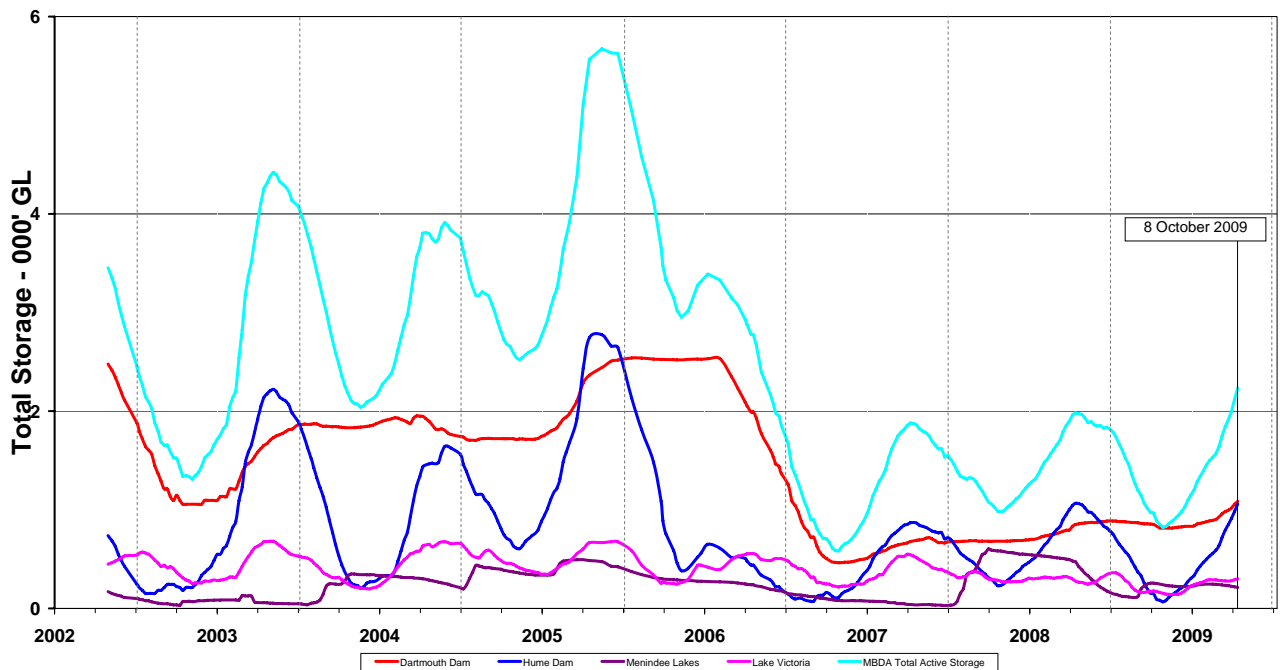
September rainfall was average, or above average, across all catchments of the River Murray system. In response, Murray System inflows for September were about 640 GL (subject to confirmation), which is the highest monthly inflow since November 2005. However, it is still well below the September long-term average of 1590 ML/day. The northern Basin remains dry and the flows along the entire length of the Darling River are close to zero.

Murray-Darling Basin Authority (MDBA) active storages at the end of September had increased by 393 GL over the last month to 2236 GL (26.58 per cent capacity). This storage level is approximately 254 GL higher than this time last year (1981 GL), and the highest storage volume since November 2006, but remains well below the long-term average of 6530GL. MDBA active storage has now been below average since early 2002.

The total volume of water in all Basin storages managed by the MDBA, or by State governments, increased over the last month. At the start of October 2009, Basin storages held about 6267 GL (27.23 per cent capacity). Storage in the Snowy Mountains reservoirs (managed by Snowy Hydro) remains low, with Lake Eucumbene at only 31.5 per cent capacity, having increased 330 GL over September. Storage in Menindee Lakes, under New South Wales control, is at 12.66 per cent capacity (about 212 GL) as flows from upstream continue to decline after months without significant rain in the northern Basin. This compares to 28.09 per cent capacity at this time last year. Storage in Hume Dam increased during September by 267 GL to 1060 GL (34.73 per cent capacity). The Hume release is currently at the normal minimum of 600 ML/day but will be increased over the coming week as inflows from the Kiewa and Ovens Rivers recede. Storage in Dartmouth Dam increased during September by 104 GL to 1085 GL (27.76 per cent capacity). The release remains at the normal minimum of 200 ML/day. Storage in Lake Victoria increased during September by 21 GL to 300 GL (44.17 per cent capacity). This is slightly lower than this time last year (275 GL).

The average flow to South Australia was about 2500 ML/day and the flow past Lock 1 averaged around 1250 ML/day. The weir pool levels at Locks 1 to 5 are all above Full Supply Level and Lock 6 remains slightly below. At Lake Bonney (near Lock 3) a total of 26 GL is being delivered for a partial rewetting of the lake and the current inflow is around 300 ML/day.

The trend of MDBA water storages at 8 October 2009 is shown in the figure below.



**Water volumes in the Murray-Darling Basin Authority Storages  
from 28 October 2002 to 8 October 2009.  
Source: Murray-Darling Basin Authority**

For further information on water storages, go to:

Snowy Scheme

<http://www.snowyhydro.com.au/lakeLevels.asp?pageID=360&parentID=6>

Queensland

<http://www.sunwater.com.au/pdf/water/CurrentStorageSummary.pdf>

New South Wales

<http://www.statewater.com.au/indexes/index.asp>

Northern Victoria

<http://www.g-mwater.com.au/water-resources/storage-levels/>

Murray–Darling Basin Authority

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

## 2.2 Water allocation announcements

### *Announcements for New South Wales (current at 9 October 2009)*

On 1 October 2009, acting NSW Water Commissioner, Bruce Cooper, announced an increase in water allocations for high security users and an initial allocation for general security water users in the both the Murrumbidgee and Murray Valleys. The water allocations for all licence holders are summarised in the table below. The units of water allocation changed at the start of the 2009–10 water year from per cent allocations to share units of the available water determination (AWD\*).

<b>Water system</b>	<b>High Security Licences (Megalitres per share unit or %)</b>	<b>Change (Megalitres per share unit or %)</b>	<b>General Security Licences (Megalitres per share unit or %)</b>	<b>Change (Megalitres per share unit or %)</b>
NSW Murray Valley	97%	77%	1%	1%
Murrumbidgee Valley	95%	40%	3%	3%
Lower Darling	100%	0	25%	25%
Macquarie Valley	1	0	0	0
Hunter Valley	1	0	1	0
Lachlan Valley	0.1	0	0	0
Border Rivers	1	0	0	0
Peel Valley	100%	0	80%	0

\* AWD's are expressed as a percentage of the share component where share is expressed as a volume on the licence or as a volume per unit share where the licence share is expressed in unit shares.

Rainfall in the upper catchments and in the Snowy Mountains has increased inflows during August and early September and, while inflows are still well below average, they have been greater than in previous months. In the Murrumbidgee Valley, high security allocation increased to 95 per cent of entitlement and general security licence holders would receive an initial allocation of 3 per cent of entitlement.

Improved water availability in the Murray Valley allowed NSW to increase its high security allocation to 97 per cent of entitlement and to make an initial allocation to general security users of 1 per cent. While these allocations to general security users are very small, they do signal a slight improvement in resources and may assist some users in deciding whether to plant a crop or enter the trade market.

On 15 September 2009, David Harris of the NSW Department of Land and Water Conservation, announced an initial general security allocation for water users in the Lower Darling River Valley below the Menindee Lakes. Continuing low flows in the Darling River, combined with less than forecast evaporative losses from the Menindee Lakes, have enabled an allocation of 25 per cent to be made for general security entitlement holders in the Lower Darling Valley downstream of the Menindee Lakes.

### *Announcements for Victoria (current at 9 October 2009)*

On 1 October 2009, Goulburn-Murray Water (G-MW) announced improvements in the seasonal allocations for the Murray and Goulburn systems. The allocations in the Broken, Campaspe, Loddon and Bullarook systems remained at zero.

Seasonal allocations in the Murray system are at 29 per cent of high-reliability water shares (HRWS), which is an increase of 16 per cent. The seasonal allocation in the Goulburn system is 30 per cent HRWS, which is an increase of 23 per cent. At the same time last year, the allocations in the Murray and Goulburn systems were 13 per cent HRWS and 9 per cent HRWS, respectively.

The improvements in allocations are largely due to a large rainfall event during September 2009 that generated high inflows into storages in the catchments of the Murray and Goulburn systems. The inflows are also expected to provide benefits to customers in the other northern Victorian systems. Although allocations cannot be announced because of system shortfalls, it is likely that most of these systems will now operate continuously for delivery of domestic and stock water, and possibly some carryover, throughout the year.

## ***Announcements for South Australia (current at 9 October 2009)***

On 1 October 2009, the acting South Australian Minister for the River Murray, Patrick Conlon, announced that River Murray licence holders will be able to access 25 per cent of their entitlement, an increase of 9 per cent. River Murray system inflows for September 2009 are now expected to exceed 640 GL, which is still well below the long-term September average of 1590 GL.

For further information on water announcements, go to:

Murray-Darling Basin Authority

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

Goulburn-Murray Water

<http://www.g-mwater.com.au/news/media-releases/>

New South Wales Department of Water and Energy

<http://www.naturalresources.nsw.gov.au/>

South Australian Department of Water, Land and Biodiversity Conservation

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

New South Wales Department of Water and Energy

<http://www.dwe.nsw.gov.au/>



## 3.0 Crop and livestock production

### 3.1 Crops

#### *Winter Crops*

##### **New South Wales**

Crops in New South Wales are at varying stages of development depending on sowing time. Development ranges from head emergence to grain fill in early sown crops, to late tillering and stem elongation for June and July sown crops. Yield prospects in most areas have fallen in response to above average temperatures during July and August and little to no rainfall during August. Some northern areas received rainfall in early September assisting crops that were beginning to show signs of moisture stress. Total crop production for 2009 is estimated at 8 million tonnes. Production estimates are 5.5 million tonnes (Mt) for wheat, 1.1 Mt for barley and 325 000 t for canola.

[http://www.dpi.nsw.gov.au/\\_data/assets/pdf\\_file/0018/300069/grains-report-sept-2009.pdf](http://www.dpi.nsw.gov.au/_data/assets/pdf_file/0018/300069/grains-report-sept-2009.pdf)

##### **South Australia**

No update is available on winter crops in South Australia until the release of the next Crop and Pasture Report.

##### **Victoria**

Most Victorian cropping areas recorded average to above average rainfall during September. Prior to the rain, the majority of crops in the Mallee were showing signs of moisture stress and expectations were for low yields. The rainfall halted the decline in crop yield potential across region and may have doubled the yield that was anticipated prior to the rain. In the Wimmera, timely soaking rains fell across the majority of cropping areas, and most cereal crops are very close to flowering. September rain will help with grain fill and quality. Across the north-central and north-east, crops have responded well to September rainfall.

[http://www.dpi.vic.gov.au/dpi/nrenfa.nsf/LinkView/D0A3DC35623547BECA25764800065321987715D08D0205F9CA2573E100030E40/\\$file/\\_DSC%20%2393%20Oct%205%202009.pdf](http://www.dpi.vic.gov.au/dpi/nrenfa.nsf/LinkView/D0A3DC35623547BECA25764800065321987715D08D0205F9CA2573E100030E40/$file/_DSC%20%2393%20Oct%205%202009.pdf)

##### **Western Australia**

Crops in Western Australia are generally growing well, with wheat, canola and lupins currently at the grain filling stage of development. Average to slightly above average rainfall over much of the wheatbelt in September generally increased the crop yield estimates for most shires. Total crop production in 2009 is forecast between 12.5 and 14 Mt, with August and September rain contributing to an increase in the harvest forecast. Production estimates are 9 to 10.5 Mt for wheat, 2.2 Mt for barley and 900 000 t for canola.

[http://www.agric.wa.gov.au/objtwr/imported\\_assets/content/lwe/cli/seasonalupdateoct09.pdf](http://www.agric.wa.gov.au/objtwr/imported_assets/content/lwe/cli/seasonalupdateoct09.pdf)

##### **Queensland**

Drier and warmer than normal conditions prevailed across the state's cropping regions during September. The wheat forecast at the end of September 2009 was 1.06 tonnes per hectare (t/ha), 26 per cent below the long-term median of 1.40 t/ha. With the wheat-growing season nearing completion, any rainfall beyond the end of September is likely to have little effect on the final yield.

[http://www.dpi.qld.gov.au/documents/PlantIndustries\\_FieldCropsAndPasture/Wheat-Report-October-09.pdf](http://www.dpi.qld.gov.au/documents/PlantIndustries_FieldCropsAndPasture/Wheat-Report-October-09.pdf)

### 3.2 Livestock

#### *Beef cattle*

Australian beef and veal exports during September 2009 were 75 778 tonnes shipped weight, a decline of 9 per cent year-on-year. This decline was influenced by continued sluggish demand and a rising Australian dollar, while processors scaled back kill days and constrained supplies. Exports for the first nine months of 2009 were 701,000 tonnes shipped weight, slightly higher than corresponding values in 2008.

<http://www.mla.com.au/TopicHierarchy/News/MarketNews/2009/September+beef+exports+decline.htm>

Australian beef and veal exports to the US were 20 241 tonnes shipped weight, an 8 per cent drop on September last year, and the lowest September volume exported since 1997.

<http://www.mla.com.au/TopicHierarchy/News/MarketNews/2009/September+beef+exports+decline.htm>

Exports of Australian beef and veal to Korea continue to increase during September to 10 114 tonnes shipped weight, an increase of 8 per cent year-on-year. Total exports for the first nine months of the year were 82 000 tonnes shipped weight, 9 per cent below 2008 levels.

<http://www.mla.com.au/TopicHierarchy/News/MarketNews/2009/September+beef+exports+decline.htm>

Australian beef and veal exports to Japan were 27 734 tonnes shipped weight in September, an 8 per cent fall year-on-year. Trading was influenced by several factors, including Japan's recessive economy and sluggish consumer demand, the rising Australian dollar, and subsequent reduction in meat packing operations in Australia as exporter returns were squeezed.

<http://www.mla.com.au/TopicHierarchy/News/MarketNews/2009/Beef+exports+to+Japan+fall+8+in+September.htm>

Australian cattle market activity is depressed at present, leading to weak processor demand, especially on export grade steers, and a general dropping of shifts. This lack of activity comes as a result of lack of widespread spring rains, a rising Australian dollar, and lower demand from Japan, Korea, the US and Russia. Restocker activity is cautious as Queensland and northern NSW have dried off, and lot feeder interest is low as is often the case at this time of year for those aiming to produce export grade cattle. Producers have responded to the weak demand by lowering turnoff, with yardings declining by 20 per cent on last years numbers.

<http://www.mla.com.au/TopicHierarchy/News/MarketNews/2009/Markets+waiting+for+a+break.htm>

At the close of September markets, the Eastern Young Cattle Indicator (EYCI) settled at 317.5¢/kg carcass weight. The trade steer indicator settled at 176¢, while feeder steer prices ended at 172¢/kg carcass weight. Japanese ox settled at 164¢ and US cow finished the month at 121¢/kg carcass weight.

<http://www.mla.com.au/TopicHierarchy/News/MarketNews/2009/Friday+daily+livestock+summary.htm>

The quality and condition of cattle entering Meat and Livestock Australia's reported saleyards declined towards the end of September, while overall the supply remains mixed with cattle still coming off crops or supplementary feed.

<http://www.mla.com.au/TopicHierarchy/News/MarketNews/2009/Cattle+market+alert.htm>

## ***Sheep and lambs***

Australian lamb production is predicted to rise one per cent to 428 000 tonnes in 2009–10, according to ABARE's Australian Commodities (September quarter). Higher production levels will contribute to a forecast three per cent reduction in average saleyard prices for lamb and a forecast four per cent rise in lamb exports.

Australian sheep slaughter is forecast to rise one per cent in 2009–10 to 11.4 million head, with average prices for sheep forecast to rise 11 per cent in 2009–10. Mutton exports are forecast to rise to 147 000 tonnes shipped weight in 2009–10, with higher production moderated by lessened demand due to the higher prices and a strengthening Australian dollar.

<http://www.mla.com.au/TopicHierarchy/News/MarketNews/2009/Lamb+prices+to+ease+in+2009-10+ABARE.htm>

Sheep and lamb yardings for the 2008–09 financial year at the top three saleyards in New South Wales totalled 4.86 million.

<http://www.mla.com.au/TopicHierarchy/News/MarketNews/2009/General+livestock+wrap.htm>

The national heavy lamb indicator averaged 422c/kg carcass weight in the week ending 2 October 2009, 50 cents above the same time last year.

<http://www.mla.com.au/TopicHierarchy/News/MarketNews/2009/Lamb+and+sheep+market+wrap.htm>

Heavy Lamb supplies at Meat and Livestock Australia's (MLA) reported saleyards during September increased 69 per cent year-on-year, as firm prices encouraged lambs onto the market. The increase in numbers was also a result of warmer temperatures during winter and an improvement in feed availability in key lamb producing areas.

Recent rains and a low flock base in South Australia led to a 29 per cent fall in numbers of heavy lambs marketed during September. Similarly, lamb yardings in Western Australia fell 9 per cent year-on-year, as some producers focus on cropping rather than lamb production.

<http://www.mla.com.au/TopicHierarchy/News/MarketNews/2009/Lamb+and+sheep+market+wrap.htm>

For further information on crops and livestock, go to:

Australian Bureau of Statistics

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

Australian Bureau of Agricultural and Resource Economics

<http://abareconomics.com/>

Meat and Livestock Australia

<http://www.mla.com.au/>

Department of Agriculture and Food Western Australia

<http://www.agric.wa.gov.au/>

New South Wales Department of Primary Industries

<http://www.dpi.nsw.gov.au/aboutus/news/>

Primary Industries and Resources South Australia

<http://www.pir.sa.gov.au/grains/cpr/>

Queensland Department of Primary Industries and Fisheries

<http://www.dpi.qld.gov.au/fieldcrops/>

The Land Farmonline

<http://theland.farmonline.com.au/>

Victorian Department of Primary Industries

<http://www.dpi.vic.gov.au>

## 4.0 Climate Outlook

### 4.1 El Niño Southern Oscillation (ENSO)

On 30 September 2009, the Australian Bureau of Meteorology announced that despite a slight cooling over the second half of September, Pacific Ocean temperatures remain at levels typical of an El Niño event. These warm conditions are forecast to persist until at least the end of the year by most leading climate models.

While temperatures in the central Pacific have remained at El Niño levels for the past three months, the Southern Oscillation Index has remained neutral over the same period, and is currently +3. Neither Pacific cloud nor Trade Wind patterns have shown a consistent El Niño signature.

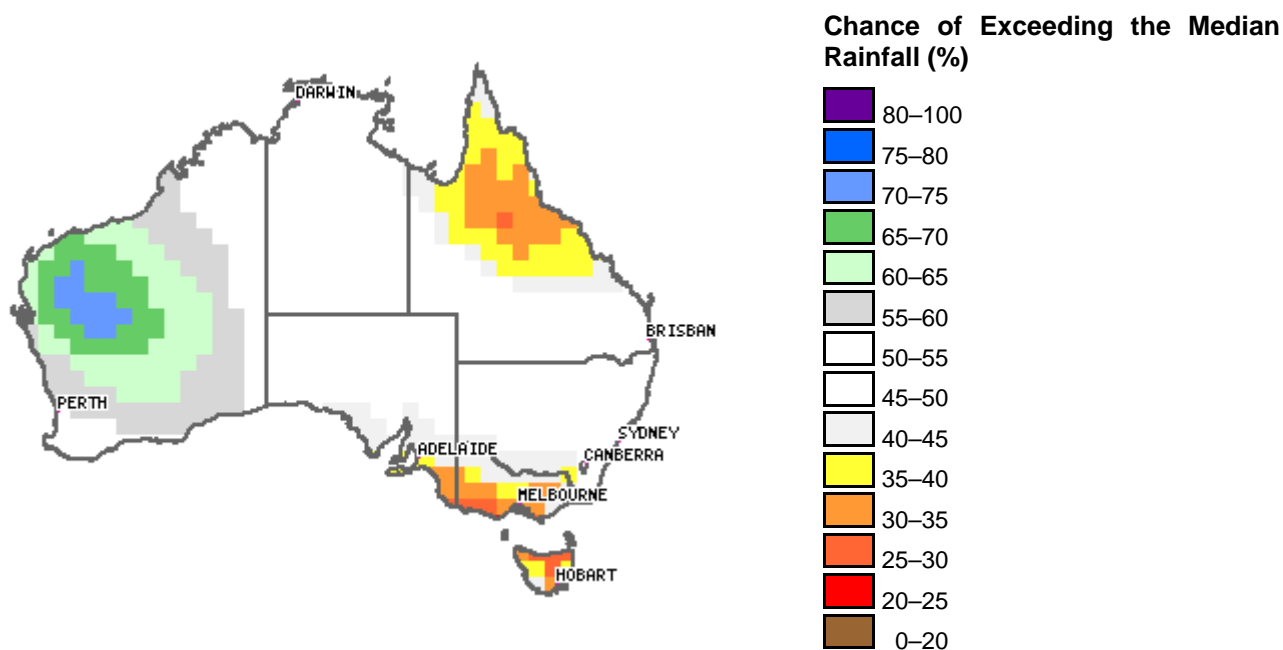
The apparent lack of reinforcement between the atmosphere and the ocean may be related to the unusual pattern of Pacific Ocean warming, with the far western Pacific, the Coral Sea and waters off Australia's northern coasts being warmer than would be expected during an El Niño event.

The most recent values of the Indian Ocean Dipole (IOD), as measured by the Dipole Mode Index (DMI), are neutral. The Bureau's POAMA model suggests neutral IOD conditions will persist over the coming months.

For further information on the Bureau of Meteorology interpretation of the El Niño–Southern Oscillation go to <http://www.bom.gov.au/climate/enso/>.

### 4.2 Rainfall Outlook

The Bureau of Meteorology provides seasonal outlooks that are statements about the probability of wetter or drier than average weather over a three month period. The outlooks are based on the statistics of chance (the odds) taken from Australian rainfall, temperature and sea surface temperature records for the tropical Pacific and Indian Oceans. They are not categorical predictions about future rainfall and they do not indicate the expected rainfall amount for the three month outlook period.



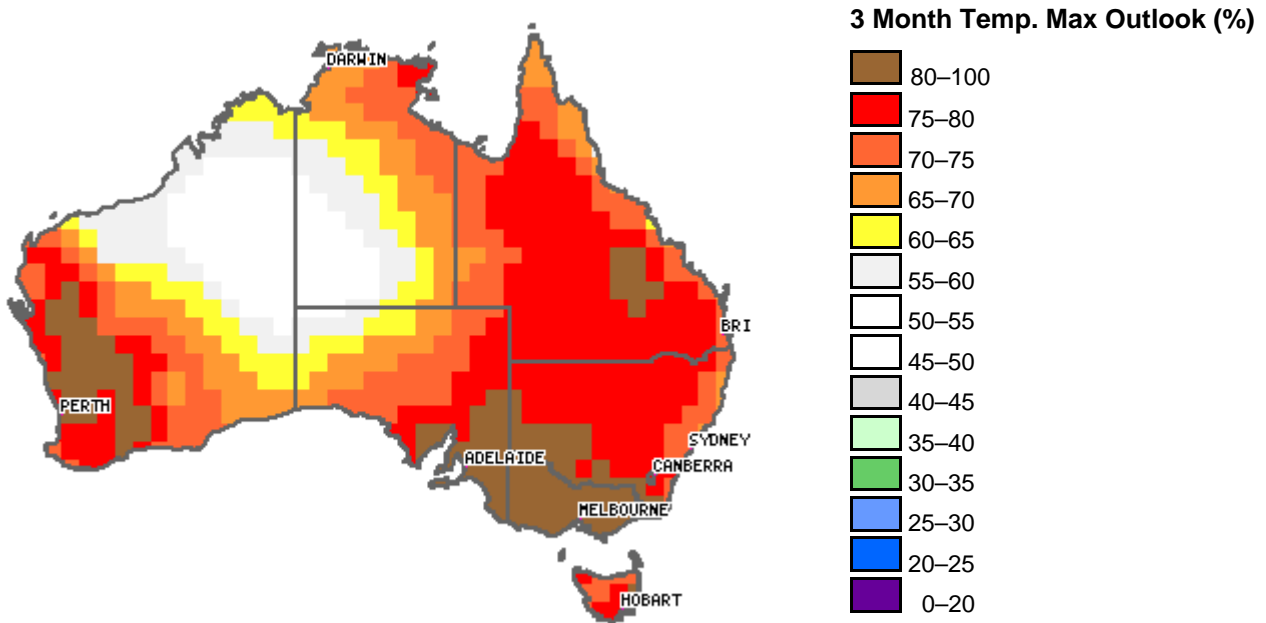
**The chance of exceeding median rainfall**

**October–December 2009**

The December quarter (October to December 2009) seasonal outlook indicates an increased likelihood of drier than average conditions across parts of north-eastern and south-eastern Australia, while there is an increased likelihood of wetter than average conditions across much of Western Australia.

The pattern of seasonal rainfall odds across Australia is a result of recent warm conditions in the Indian Ocean and warming in the Pacific. The Pacific influence dominates the outlook in eastern Australia, while the Indian Ocean has had a greater influence on the probabilities in Western Australia.

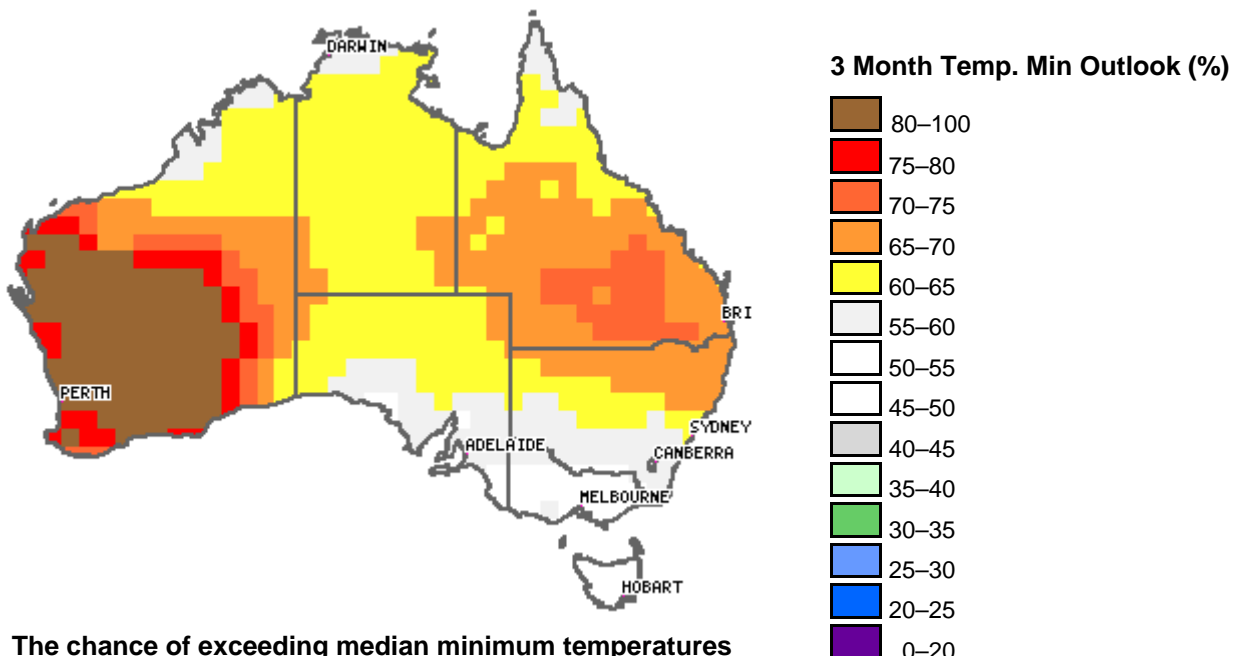
### 4.3 Temperature Outlook



**The chance of exceeding median maximum temperatures  
October-December 2009**

The maximum temperature for October to December 2009 is likely to be above average across most of Australia. There is an 80 per cent chance of exceeding the median maximum temperature for some parts of south-eastern Australia, south-western Western Australia and central Queensland.

The pattern of seasonal temperature odds across Australia is a result of recent warm conditions in the Indian Ocean and a warming Pacific.



**The chance of exceeding median minimum temperatures  
October-December 2009**

The average minimum temperature for October to December 2009 is likely to be above average across most of Australia. There is an 80 per cent chance of exceeding the median minimum temperature for much of Western Australia.

History shows the oceans' effect on minimum temperatures during October to December to be moderately consistent over most of Queensland, New South Wales, South Australia and southern Western Australia, weakly consistent in much of Victoria and Tasmania, and only very weakly consistent across much of the Northern Territory and far northern Western Australia. This outlook should be used with caution in weakly consistent areas.

For further information on the Bureau of Meteorology seasonal outlooks go to <http://www.bom.gov.au/climate/ahead/>.