



Climate and Agricultural Update

National Report

Issued September 2009



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Contacts

For further information visit <http://www.nams.gov.au>, or for enquiries/feedback relating to this report contact the NAMS helpdesk at NAMS@nams.gov.au.

Contributors

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

ORGANISATION

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

<p>Meat and Livestock Australia</p> 	<p>http://www.mla.com.au/</p>
<p>Department of Primary Industries and Resources SA</p>  <p>Government of South Australia Primary Industries and Resources SA</p>	<p>http://www.pir.sa.gov.au/</p>
<p>Department of Primary Industries, Victoria, Australia</p>  <p>Victoria The Place To Be</p>	<p>http://www.dpi.vic.gov.au/</p>
<p>Murray-Darling Basin Authority</p> 	<p>http://www.mdba.gov.au/</p>

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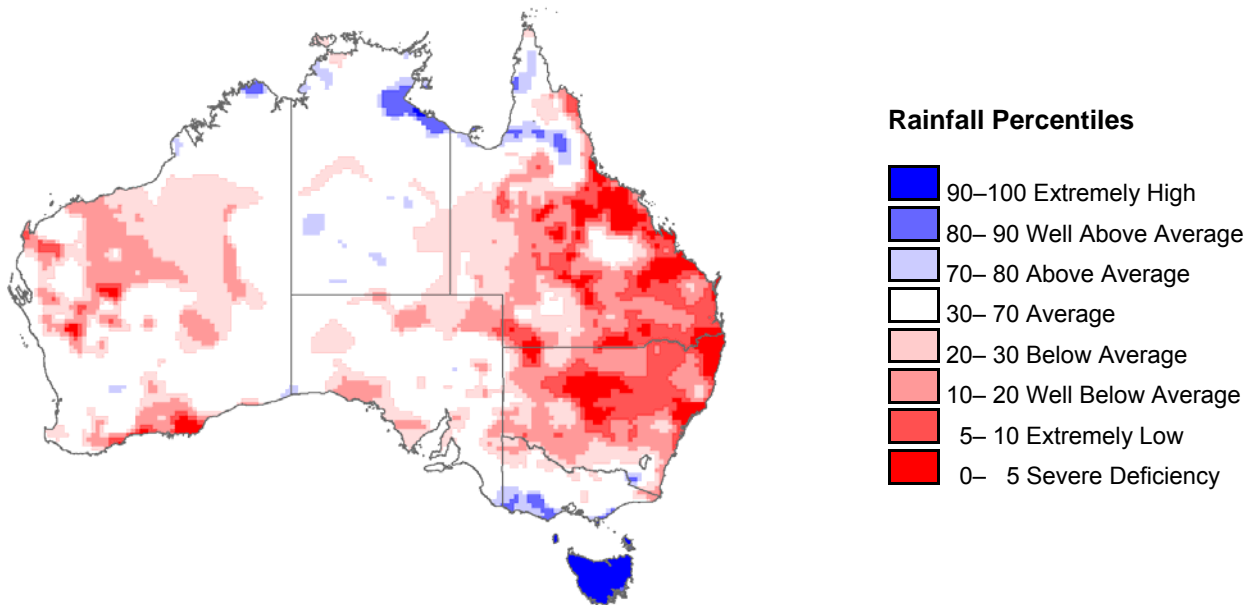
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1.0 Rainfall and temperature

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/>.

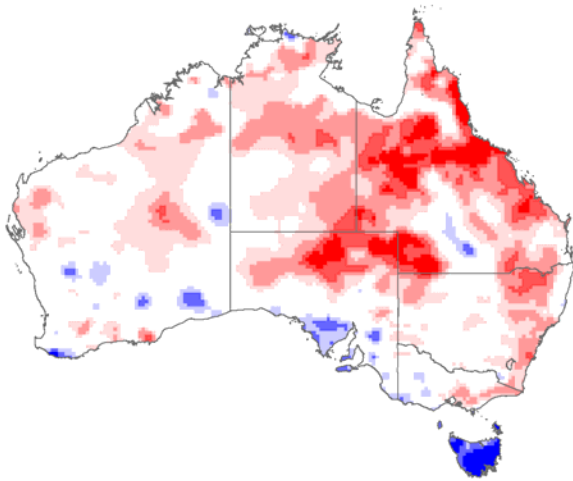
Rainfall over the last month (August 2009)



Rainfall percentiles for August 2009

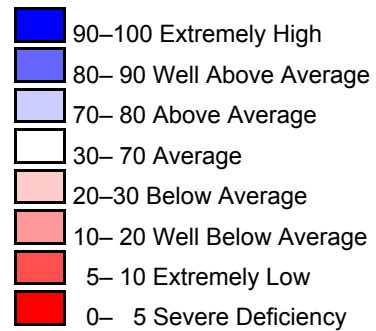
Rainfall for Australia during August 2009 was twelfth lowest on record and well below the long term average (by 44 per cent). Rainfall in Queensland (93 per cent below average) and New South Wales (74 per cent below average) was ranked 4th and 8th lowest on record, respectively. Rainfall was below average in the Northern Territory (by 77 per cent), South Australia (by 38 per cent) and Western Australia (by 33 per cent). In contrast, August rainfall in Tasmania was the third highest on record (99 per cent above average). It is important to note that rainfall is normally low over northern Australia at this time of the year.

Ongoing or emerging rainfall situations

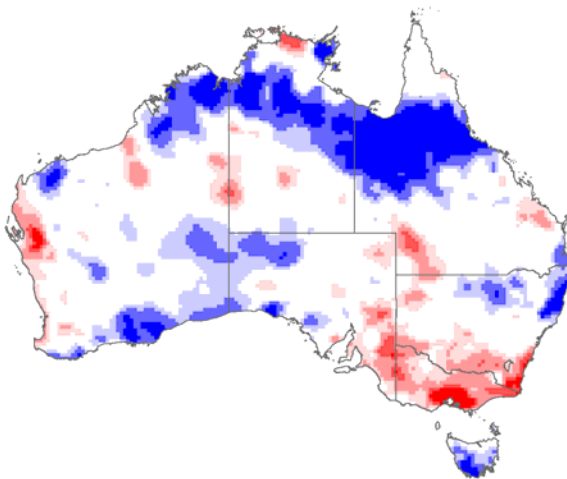


**Rainfall percentiles for the last three months
June 2009–August 2009**

Rainfall Percentiles

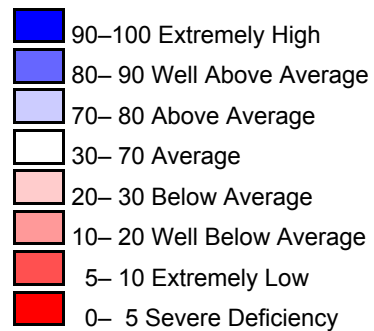


During the past three months, most of Australia has experienced below average to average rainfall. Compared to the May 2009–July 2009 conditions update, rainfall deficiencies have increased in all state and territories with the exception of Tasmania and Victoria where deficiencies have eased.



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

Rainfall Percentiles

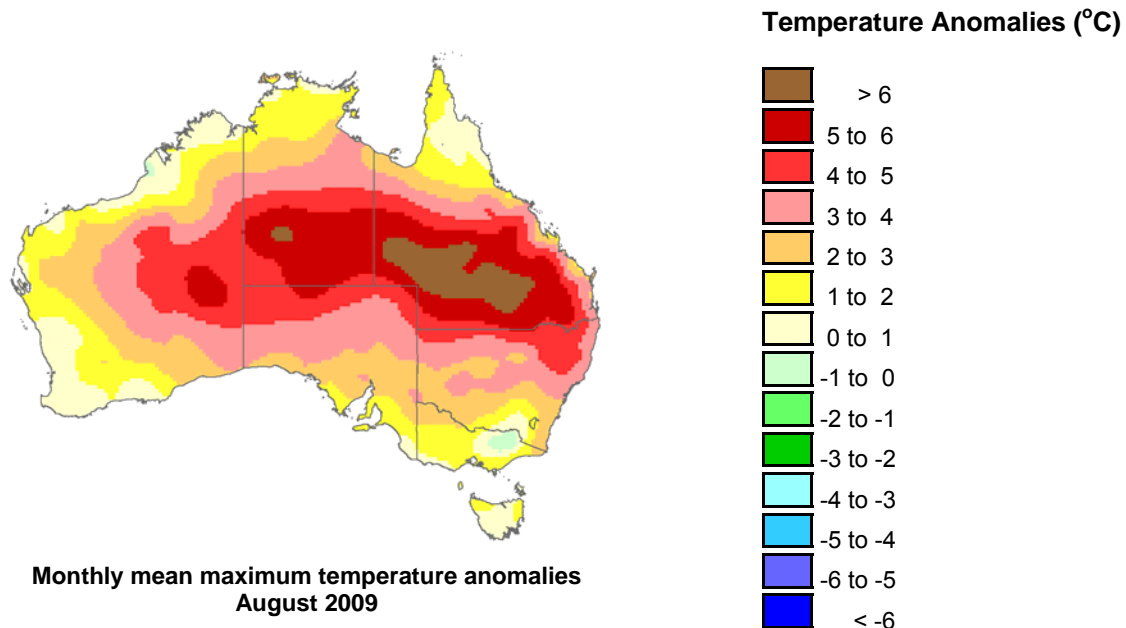


For the 12 month period from September 2008 to August 2009, above average rainfall was recorded across northern Australia, in parts of Western Australia, western South Australia and in northern New South Wales. The 12 month rainfall deficiencies persisted across the south-east and west of the continent, most notably in Victoria, south-eastern New South Wales and the west coast of Western Australia.

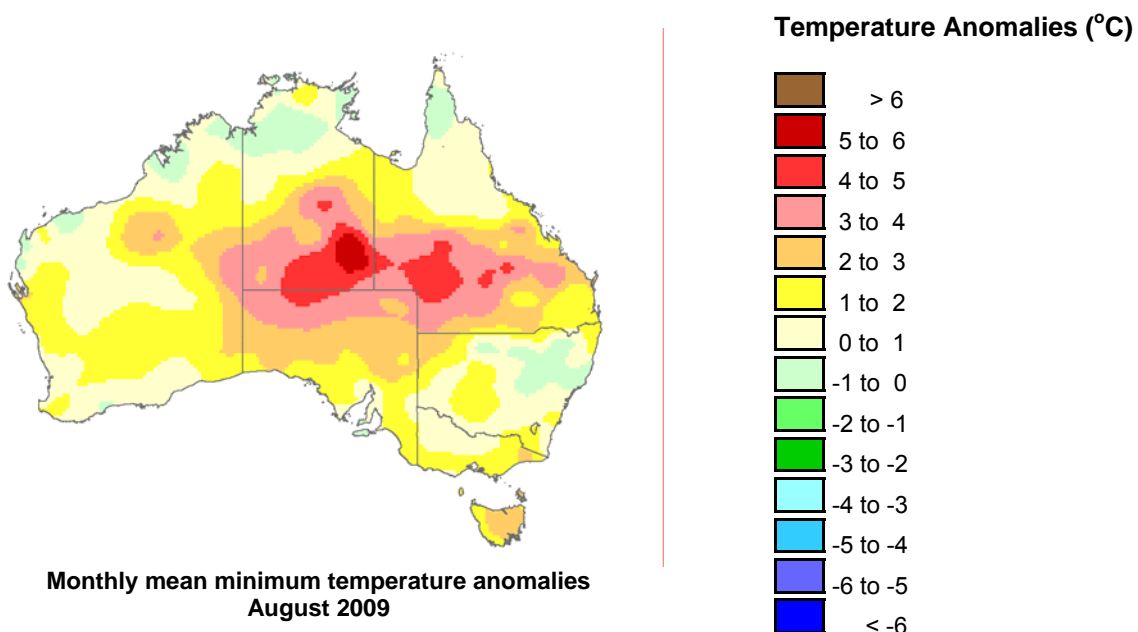
1.2 Maximum and minimum temperature anomalies

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/>.

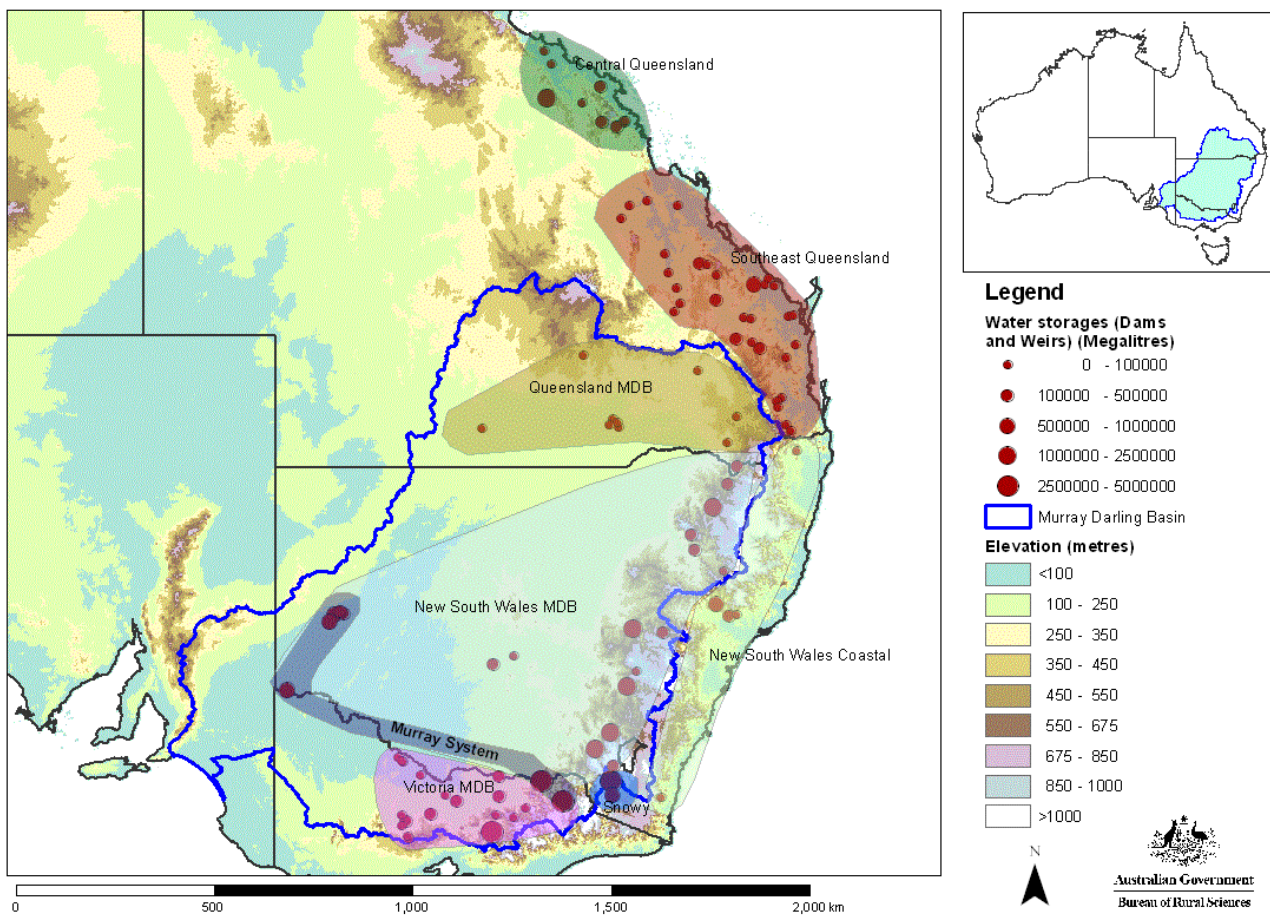


Australia had its warmest August day-time temperatures on record in 2009 (3.2 °C above the long term average). Maximum temperatures were above average across almost all of Australia, with minor exceptions in Western Australia and Victoria. Record high maximum temperatures were set for Queensland (4.24 °C above average) and the Northern Territory (3.97 °C above average). Maximum temperatures were more than 6 °C above the long term average in southern Queensland and central Northern Territory.



August minimum temperatures across Australia were the 2nd highest on record and 1.75 °C above the long term average. Record high minimum temperatures were recorded in South Australia (2.57 °C above average) and Tasmania (2.21 °C above average). Below average minimum temperature anomalies were recorded in all states and territories, with the exception of Victoria and Tasmania.

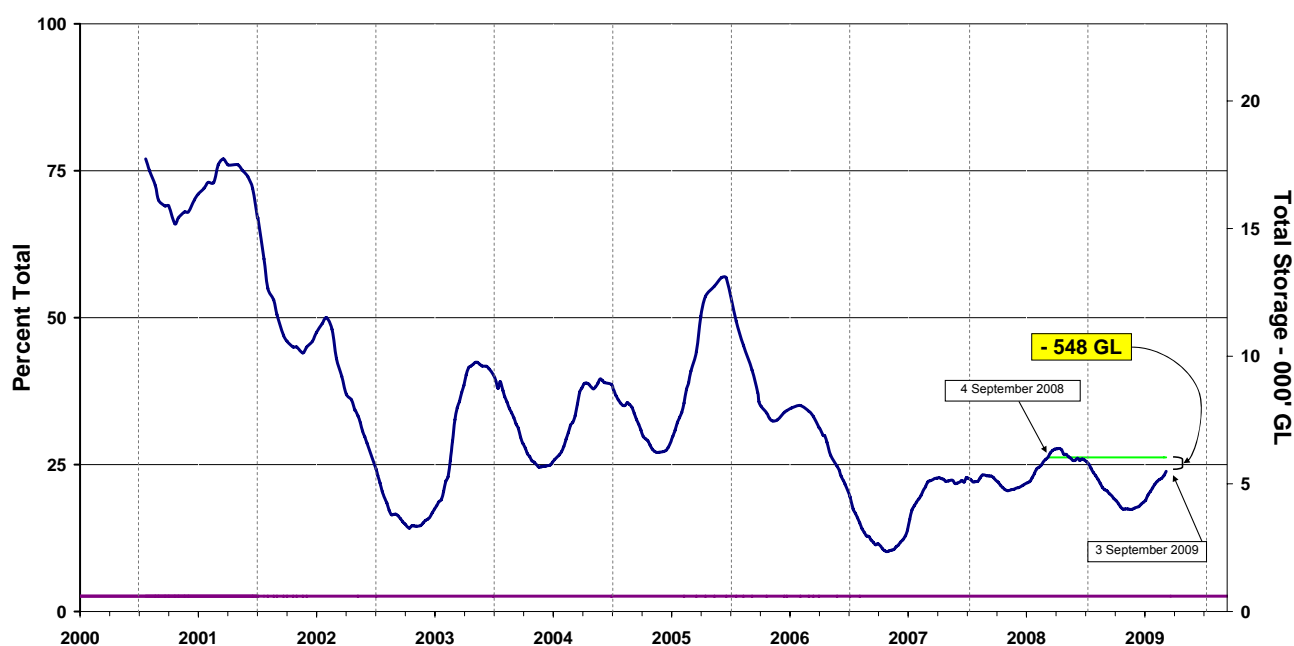
2.0 Water storages and announcements



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 3 September 2009)

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

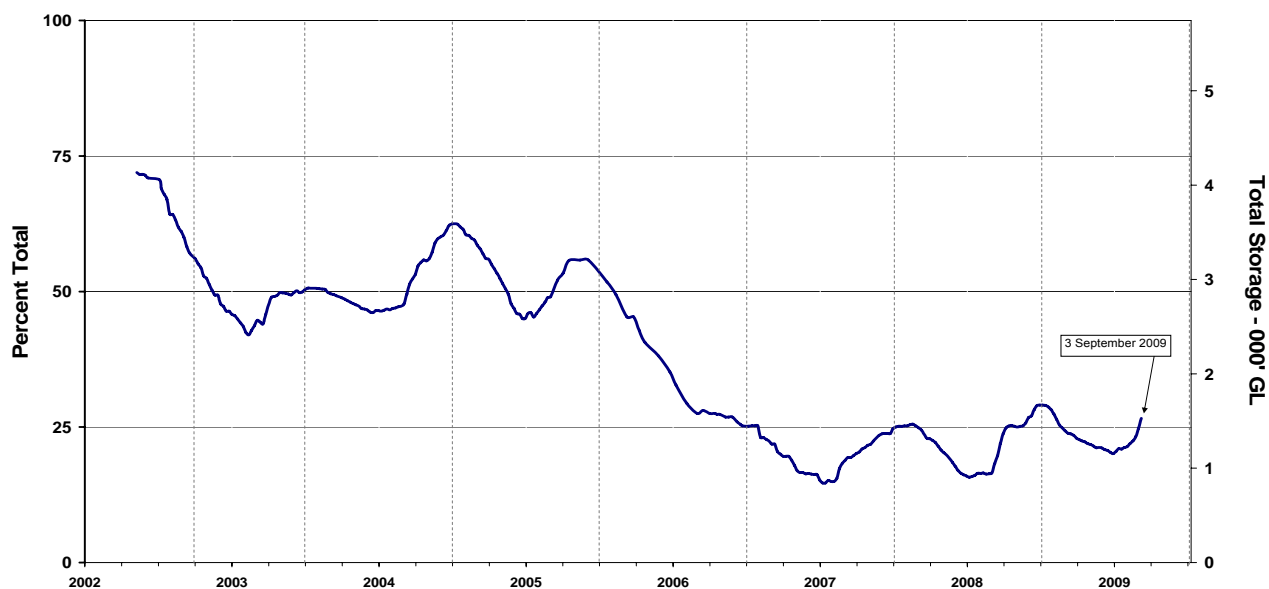


Water storage levels in the Murray-Darling Basin from 1 January 2001 to 3 September 2009. The green line shows the storage level at the same time last year and the purple line shows the dead storage (not calculated).

Source: Bureau of Rural Sciences

Over the past month, storage levels within the Murray-Darling Basin (MDB) have increased. Storage levels for irrigated agriculture on 3 September 2009 were at 5493 gigalitres (GL) (23.86 per cent of a total capacity of 23 020 GL), an increase of 403 GL (1.75 per cent of total capacity) over the month. Current storage levels are approximately 548 GL (2.38 per cent) less than the same time last year.

Water storage in the Snowy Scheme

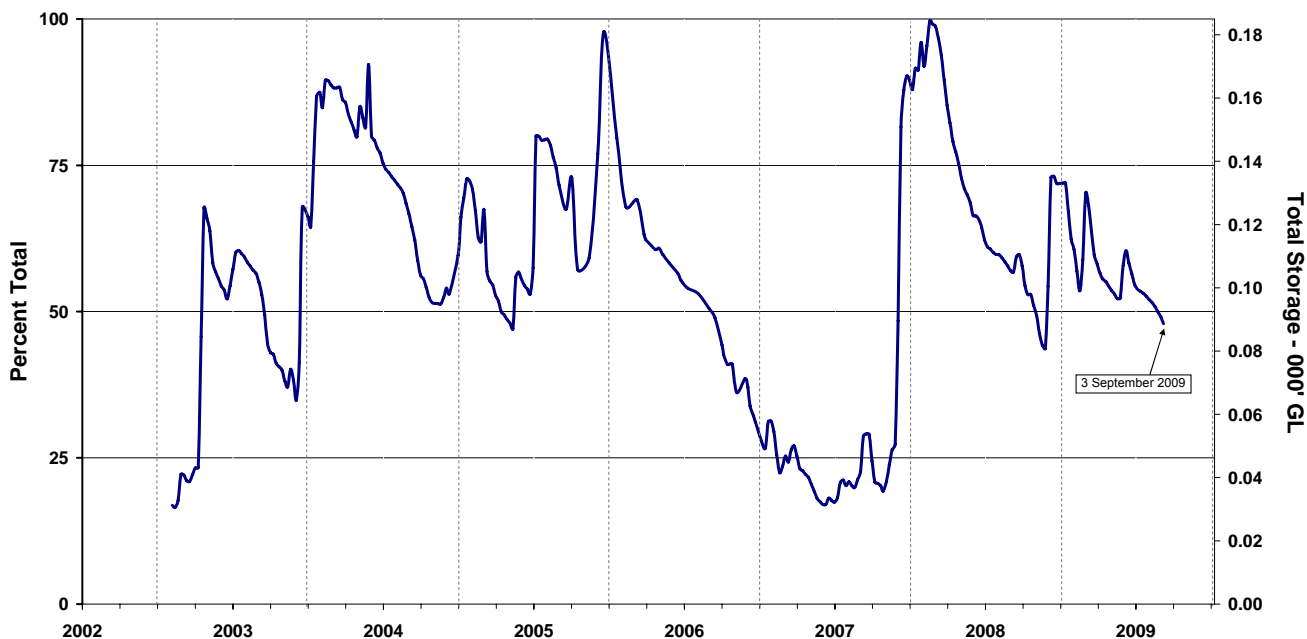


Water storage levels in the Snowy Scheme from 6 November 2002 to 3 September 2009.

Source: Bureau of Rural Sciences

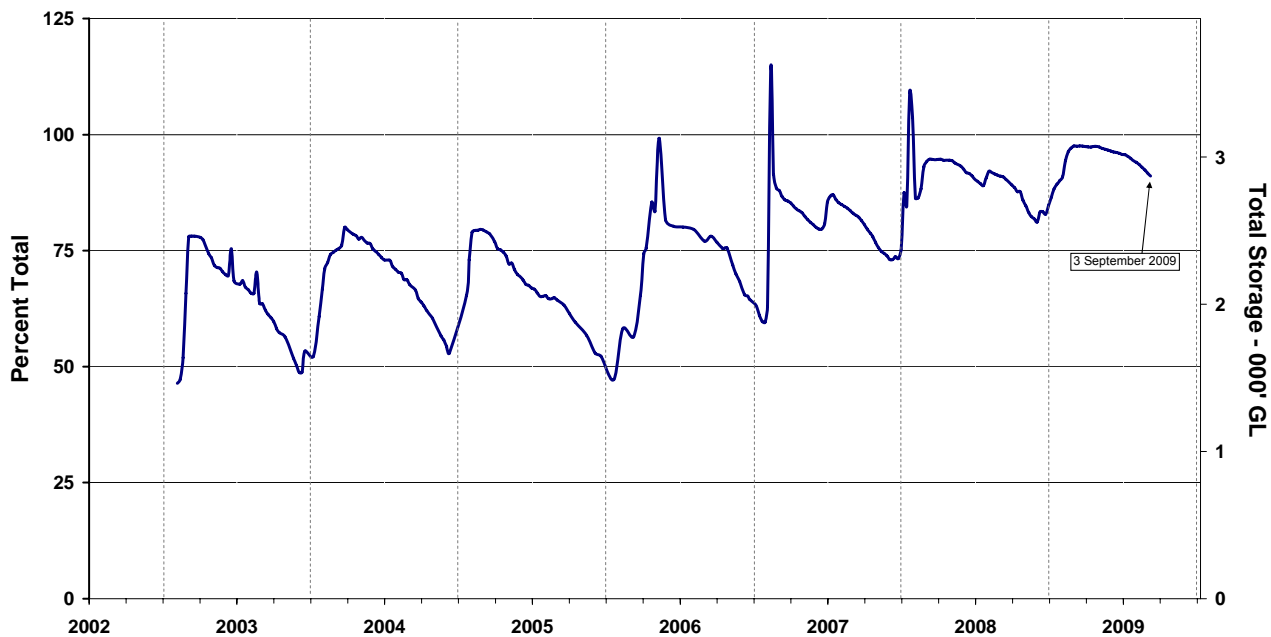
The figure 'Water storage in the MDB' (above top) does not include the capacities of Lake Eucumbene, Tantangara Reservoir and Lake Jindabyne (collectively the Snowy Scheme) which are reserved for hydro-electricity generation and irrigation purposes. The current storage level in the Snowy Scheme is 1529 GL (26.61 per cent of a total capacity of 5744 GL) (see figure above). The current storage level is 479 GL (8.35 per cent) higher than the same time last year.

Water storage in Queensland



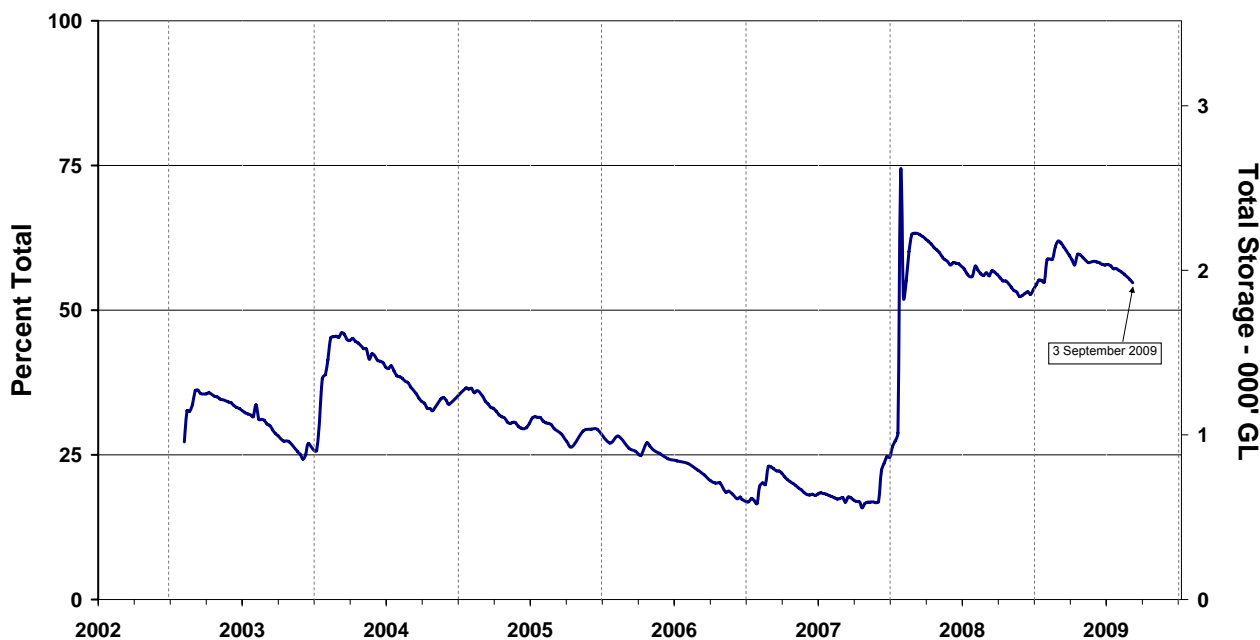
Water storage levels in Queensland MDB from 3 February 2003 to 3 September 2009.
Source: Bureau of Rural Sciences

Storage levels in Queensland MDB decreased by 6.7 GL to 88.8 GL (47.93 per cent of a total capacity of 185 GL) over the last month (see figure above). The current storage level is approximately 16.3 GL (8.82 per cent) lower than the same time last year.



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

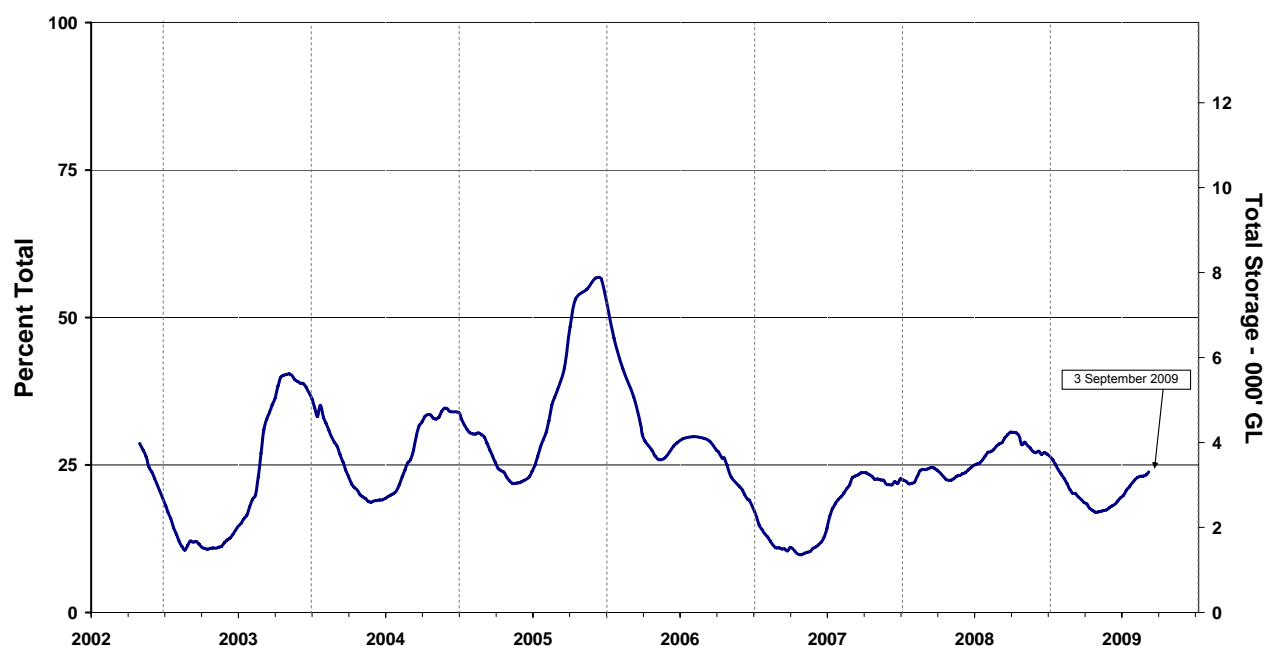
In central Queensland, storage levels decreased over the last month by 77 GL to 2873 GL, which is 31.09 per cent of a total capacity of 3155 GL (see figure above). The current storage level is approximately 6 GL (0.18 per cent) higher than the same time last year.



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

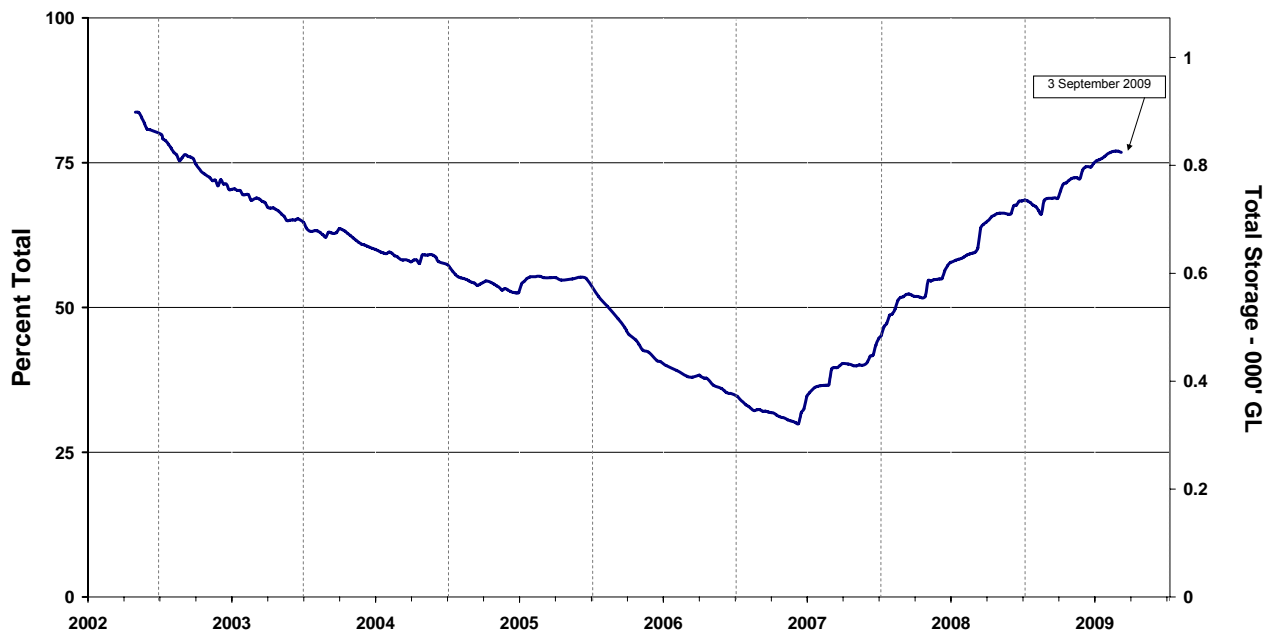
In south-east Queensland, storage levels decreased over the last month by 65 GL to 1925 GL (54.72 per cent of a total capacity of 3517 GL) (see figure above). The current storage is approximately 42 GL (1.20 per cent) lower than the same time last year.

Water storage in New South Wales



Water storage levels in New South Wales MDB from 28 October 2002 to 3 September 2009.
Source: Bureau of Rural Sciences

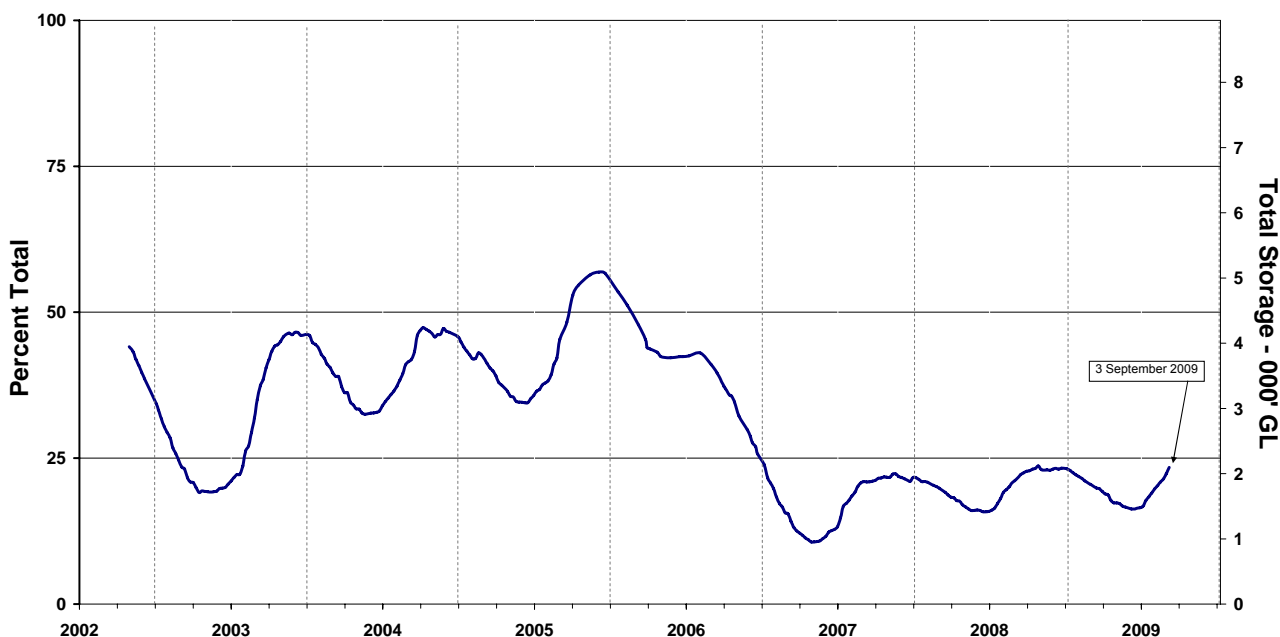
Storage levels in the New South Wales MDB increased over the last month by 127 GL to 3306 GL (23.81 per cent of a total capacity of 13 884 GL) (see figure above). The current storage level is approximately 695 GL (5.00 per cent) lower than the same time last year.



Water storage levels in coastal New South Wales from 28 October 2002 to 3 September 2009.
Source: Bureau of Rural Sciences

In coastal New South Wales, storage levels remained unchanged over the last month at 824 GL (76.79 per cent of a total capacity of 1073 GL) (see figure above). The current storage level is approximately 177 GL (16.51 per cent) higher than the same time last year.

Water storage in Victoria



Water storage levels in Victoria MDB from 28 October 2002 to 3 September 2009.
Source: Bureau of Rural Sciences

Storage levels in Victoria MDB increased over the last month by 280 GL to 2085 GL (23.41 per cent of a total capacity of 8903 GL) (see figure above). The current storage level is approximately 159 GL (01.79 per cent) higher than the same time last year.

Murray-Darling Basin Authority water storages

August rainfall was close to average across most of north-eastern Victoria and above average in the Snowy Mountains of NSW. As a result, Murray system inflows for August were about 420 GL, which is the highest monthly total since July 2007 (450 GL). However, it is still well below the long-term average for August of 1540 GL. The three month total for winter 2009 was the eleventh lowest in 118 years of records. Monthly inflows are only likely to approach long-term averages after a sustained period of above average rainfall.

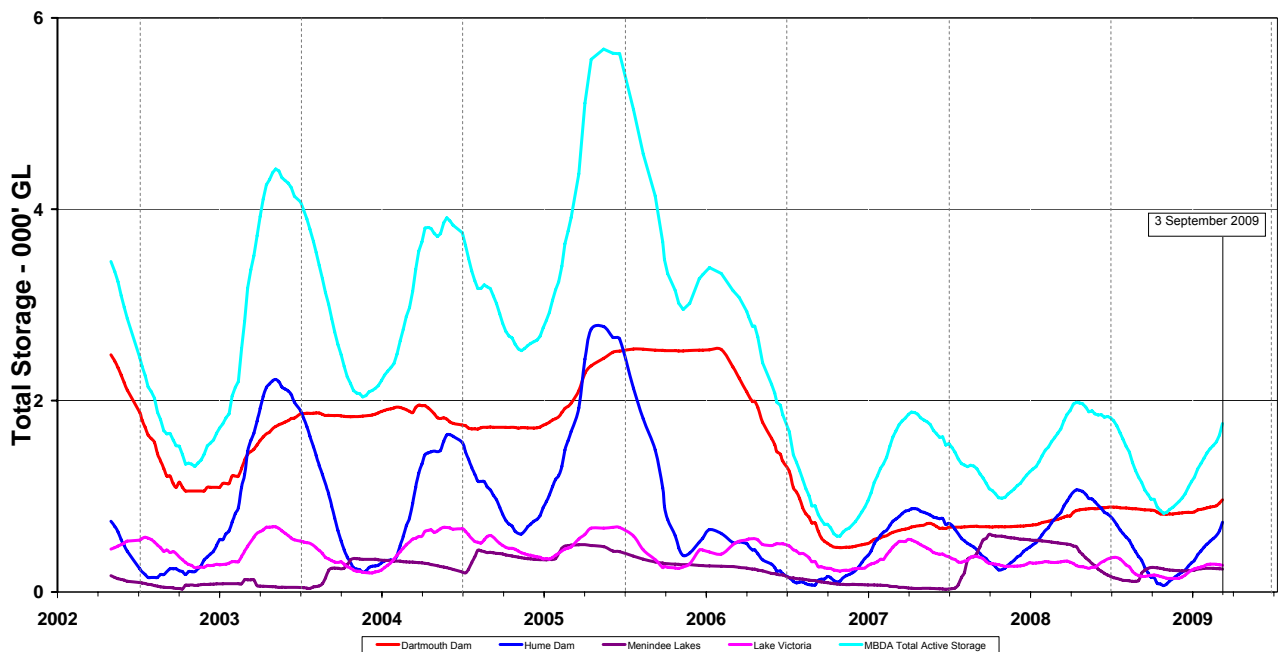
Murray-Darling Basin Authority (MDBA) active storages at the end of August had increased by 262 GL over the last month to 1761 GL (20.35 per cent capacity). This storage level is approximately 57 GL higher than this time last year (1704 GL) and well below the long-term average of 6080 GL. MDBA active 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 September 2009, Basin storages held about 5493 GL (23.86 per cent capacity). Storage in the Snowy Mountains reservoirs (managed by Snowy Hydro) remains low, with Lake Eucumbene at only 24.1 per cent capacity. Storage in Menindee Lakes, under New South Wales control, is at 14.18 per cent capacity (about 237 GL) compared to 30.34 per cent at this time last year.

Storage in Hume Dam increased during August by 197 GL to 728 GL (23.85 per cent capacity). Storage in Dartmouth Dam increased during August by 76 GL to 963 GL (24.63 per cent capacity). Storage in Lake Victoria decreased during August by 11 GL to 280 GL (41.16 per cent capacity). This is slightly lower than this time last year (280 GL) and significantly lower than the long-term August average of 643 GL.

The target flow to South Australia for August was 1800 ML/day compared with a normal entitlement rate of 3500 ML/day. Flow to South Australia has been below normal entitlement rates for more than two and a half years now, and is expected to remain so until there is a significant improvement in water resource availability.

The trend of MDBA water storages at 3 September 2009 is shown in the figure below.



Water volumes in the Murray-Darling Basin Authority Storages from 28 October 2002 to 3 September 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 7 September 2009)

On 17 August 2009, the New South Wales Department of Water and Energy (NSW DWE) announced an increase in high security water allocations in the Murrumbidgee Valley (20 per cent). 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*).

Water system	High Security Licences (Megalitres per share unit or %)	Change (Megalitres per share unit or %)	General Security Licences (Megalitres per share unit or %)	Change (Megalitres per share unit or %)
NSW Murray Valley	20	12	not stated	0
Murrumbidgee Valley	45	40	not stated	0
Lower Darling	1	0	insufficient	0
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.

On 21 August, NSW DWE announced a relaxation of the temporary embargo on the annual trade of water from the Murrumbidgee Valley into the Murray Valley which was in place from 1 July 2009. It was also announced that an additional 70 000 megalitres can be traded out of the Murrumbidgee Valley this season. A ballot system will be introduced where users may trade up to 15 per cent of their entitlement and prospective purchasers will have an equal opportunity to participate.

On 1 September, NSW DWE announced an increase in high security allocations in the Murray (20 per cent) and Murrumbidgee (45 per cent) Valleys. Furthermore, it was announced that any future improvement in water availability for NSW in the Murray Valley will be committed entirely to meet stock and domestic needs in the Wakool system, conveyance requirements in channels systems and to increase allocations for consumptive users.

On 4 September, NSW DWE announced that critical water planning was necessary for the Lachlan Valley with river flow downstream of Condobolin restricted to irregular flows of water to refill Lake Cargelligo Weir. The Lachlan Critical Water Advisory Group has now recommended that the Lachlan River system can run the full length until the end of October.

Announcements for Victoria (current at 7 September 2009)

On 14 August 2009, Goulburn-Murray Water (G-MW) announced initial annual groundwater allocations for 2009/10 for the Campaspe Water Supply Protection Area (WSPA). The 2009/10 allocation has been set at 50 per cent of groundwater licence entitlement across all management zones within the Campaspe WSPA.

On 1 September 2009, G-MW announced the first Murray system allocations for the 2009/10 season of 2 per cent of high-reliability water shares. The Murray system's allocation was the result of recent inflows into the upper catchments and there is now enough water to operate the delivery systems throughout the irrigation season. It was also confirmed that improvements in the Goulburn system will allow full-season operation for delivery of carried over allocation and stock and domestic water requirements. In the Broken, Campaspe, Loddon and Bullarook systems, there were only minor improvements in water availability in late August and it was noted that it will be difficult to maintain continuous river flows through the entire year unless further inflows are received. All other systems remain at 0 per cent allocations for the 2009/10 season.

On 4 September 2009, it was announced that G-MW expects to be able to make an allocation to the Goulburn system at its next announcement. Resource improvements mean that the Goulburn system now has sufficient water to operate the system to deliver essential needs and carryover for the remainder of the 2009/10 season.

Announcements for South Australia (current at 7 September 2009)

On 1 September 2009, the South Australian Minister for the River Murray, Karlene Maywald, announced that River Murray licence holders will be able to access 10 per cent of their entitlement, an increase of 5 per cent. River Murray system inflows for August 2009 are now expected to exceed 390 GL, which is still well below the long-term August average of 1550 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

No update is available on winter crops in New South Wales grains until the release of the NSW Grains Report on 18 September 2009.

South Australia

At the beginning of September 2009, crops in most districts have continued to grow rapidly with the exception of parts of the Eastern Eyre Peninsula, the Upper North and Murray Mallee where rainfall has been below average. Current yield potential of the crop on a state-wide basis is estimated to be above the long-term average.

http://www.pir.sa.gov.au/data/assets/pdf_file/0010/116884/Sep09cpr.pdf

Victoria

No update is available on winter crops in Victoria until the release of the next Dry Seasonal Conditions in Rural Victoria Report.

Western Australia

Crops in Western Australia are generally growing well. Total crop production in 2009 is forecast between 11 and 13 million tonnes, assuming that average rainfall is received during September and October. Production estimates are 7.5 to 9 Mt for wheat, 2 to 2.5 Mt for barley and 800 000 t for canola. The majority of the grain belt received average winter rainfall in August and most areas anticipate average to above average yields.

http://www.agric.wa.gov.au/objtwr/imported_assets/content/fm/seasonalupdatesep09.pdf

Queensland

Record high August temperatures and below average rainfall in recent weeks could adversely affect crop production and pasture growth, particularly where soil moisture reserves are low. Current crop conditions and the seasonal rainfall outlook indicate a high chance of a low-yielding crop for the 2009 season for most of Queensland. Below average yields are forecast across central and south-western Queensland although average yields are forecast for the south-east.

(Seasonal Crop Outlook – Wheat September 2009. Queensland Department of Primary Industries and Fisheries. Not available online at the time of release).

3.2 Livestock

Beef cattle

Strong increases in demand for Australian beef from Korea, the USA and Indonesia saw beef exports rise 12 per cent compared to the same time last year, on par with the five year average for August exports.

<http://www.mla.com.au/TopicHierarchy/News/MarketNews/2009/August+beef+exports+similar+to+five-year+average.htm>

Record high temperatures during August combined with low rainfall across New South Wales and Queensland reduced available pastures and increased pressure on feed supplies. This prompted a surge in the number of young cattle going to market and vealer steer numbers increased by 18 per cent on the same period last year. As the dry conditions persisted, the quality of cattle declined due to reduced feed availability.

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

Re-stockers have dominated the market for young cattle purchasing 29 per cent more vealer steers compared to the same time last year while the feedlot sector sourced 13 per cent more cattle.

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

Cattle slaughter numbers declined 13 per cent to 133,473 head compared to the same time last year. Tough trading in the export market, a higher Australian dollar, deteriorating seasonal conditions and the closure of one processing plant for maintenance contributed to the decline.

<http://www.mla.com.au/TopicHierarchy/News/MarketNews/2009/National+cattle+supplies+fall+in+August.htm>

Compared to this time last year there has been a 29 per cent reduction in yearling steers to slaughter coupled with a 16 per cent year-on-year fall in grown steers to slaughter.

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

In the dairy industry, there was a 2.2 per cent decrease in cows to slaughter compared with the same time last year.

<http://www.mla.com.au/TopicHierarchy/News/MarketNews/2009/Premium+for+Australian+90CL+in+weak+US+market.htm>

Sheep and lambs

The number of lambs at Meat and Livestock Australia's (MLA) reported saleyards during August increased by 7 per cent year-on-year, influenced by higher prices. Milder winter conditions, producers providing supplementary feed and lambs grazing on crops has driven the number of heavy lambs up 45 per cent from this time last year.

<http://www.mla.com.au/TopicHierarchy/News/MarketNews/2009/Heavy+lamb+supplies+increase.htm>

The WA trade lamb indicator closed August at 539¢/kg carcass weight, 159¢ up on the same time in 2008. The WA heavy lamb indicator closed August at 508¢/kg carcass weight, 150¢ higher than the same time last year. Conversely the Eastern States trade lamb indicator closed August down 28¢ to 427¢/kg carcass weight compared to the same time last year as buyers held out for new season lambs to reach the market.

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

The number of sheep slaughtered declined by 10 per cent in August compared to the same time last year. Larger declines occurred across South Australia (21 per cent), Victoria (23 per cent) and New South Wales (38 per cent). The decline is attributed to producers holding onto breeding numbers and decreased demand from processors to buy while prices remain high.

<http://www.mla.com.au/TopicHierarchy/News/MarketNews/2009/Sheep+slaughter+falls.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 2 September 2009, the Australian Bureau of Meteorology announced that there have been mixed El Niño indicators, but the Pacific Ocean has continued to warm. Leading climate models continue to predict further development of an El Niño (i.e. warming of the Pacific), although not as emphatically as in recent months. The odds remain strongly in favour of 2009 being considered as an El Niño year.

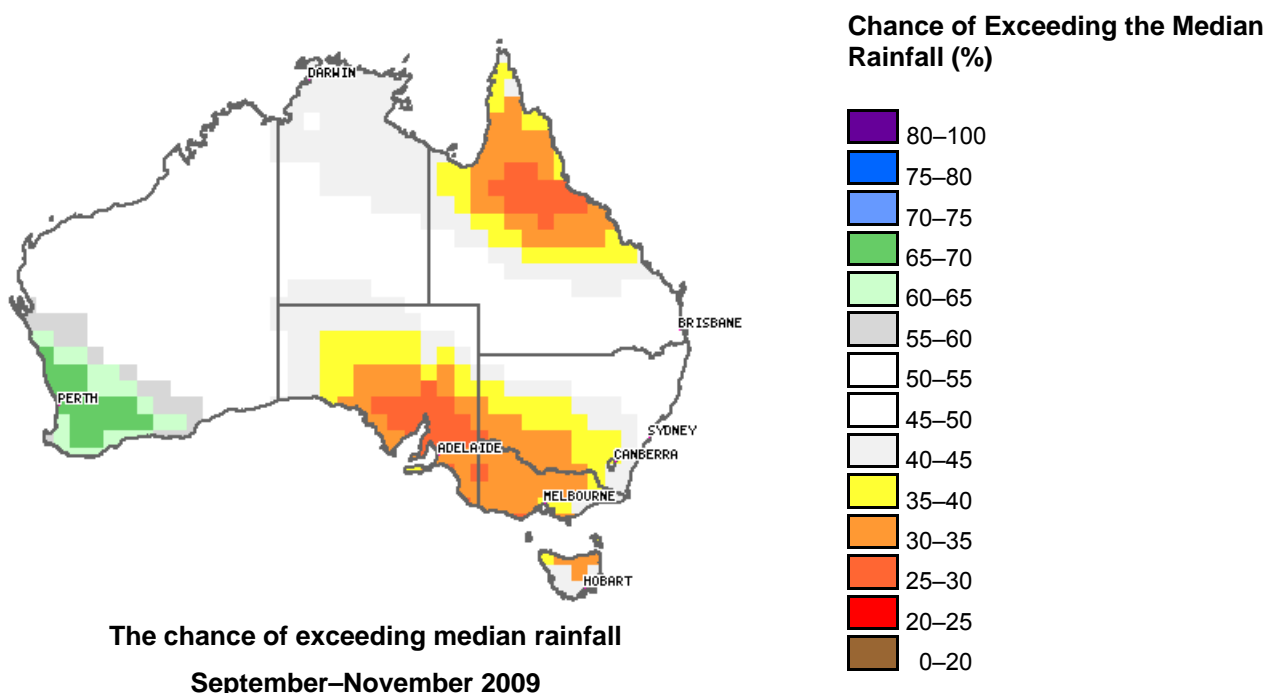
Sea surface temperatures remain significantly warmer than the long-term average across most of the tropical Pacific Ocean, exceeding El Niño thresholds from west of the date-line to the South American coast. Although cloudiness near the date-line has recently increased, it is yet to show a strong El Niño trend and there was less cloud than usual near the date-line during the first half of August. The Southern Oscillation Index (SOI) value for August was -5.0 , near neutral and does not show an El Niño trend. Persistent negative values are a feature of El Niño events. The most recent value of the Indian Ocean Dipole Mode Index (DMI) is near zero. The Bureau's POAMA model suggests the DMI should remain neutral over the coming months.

Six of the seven leading international climate models surveyed by the Bureau predict the tropical Pacific to continue to warm and to remain above El Niño thresholds for the remainder of 2009. Pacific conditions and model predictions will continue to be monitored closely.

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

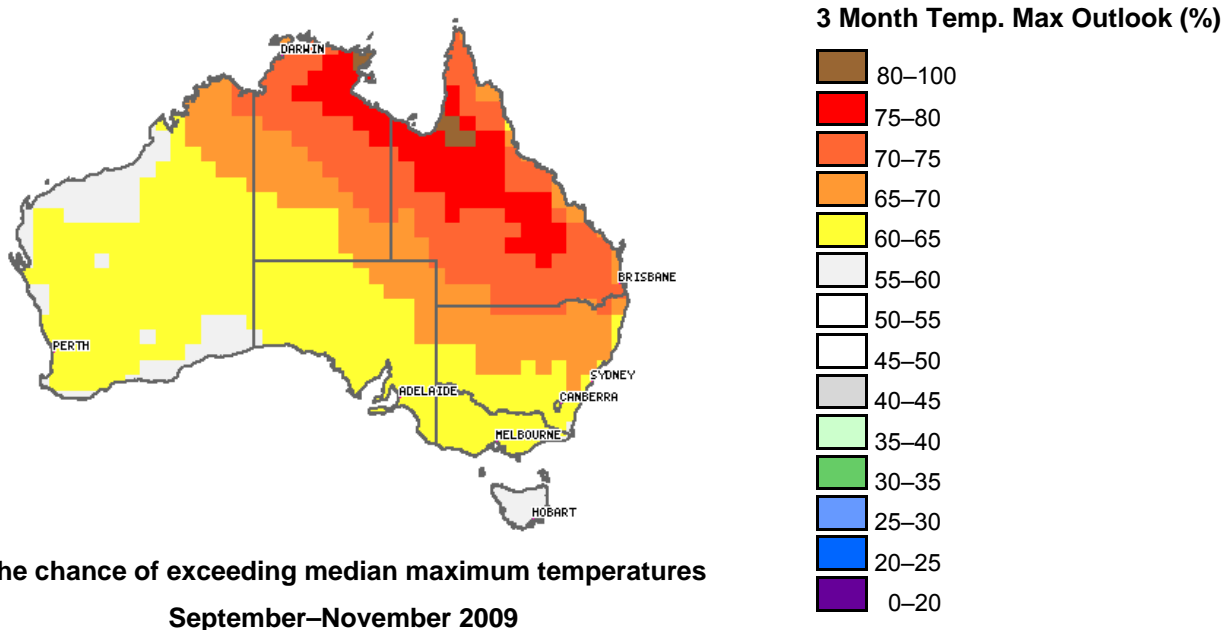
The Bureau of Meteorology provides seasonal outlooks that are statements about the probability of wetter or drier than average weather over a three-month period. The outlooks are based on the statistics of chance (the odds) taken from Australian rainfall, temperature and sea surface temperature records 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 national rainfall outlook for spring 2009 shows a moderate shift towards a drier than normal season across north-east Queensland and south-east Australia. Conversely, a wetter than normal season is more likely in the south-west of Western Australia. Over the remainder of the country, the chances of above average rainfall are about the same as the chances of below average rainfall.

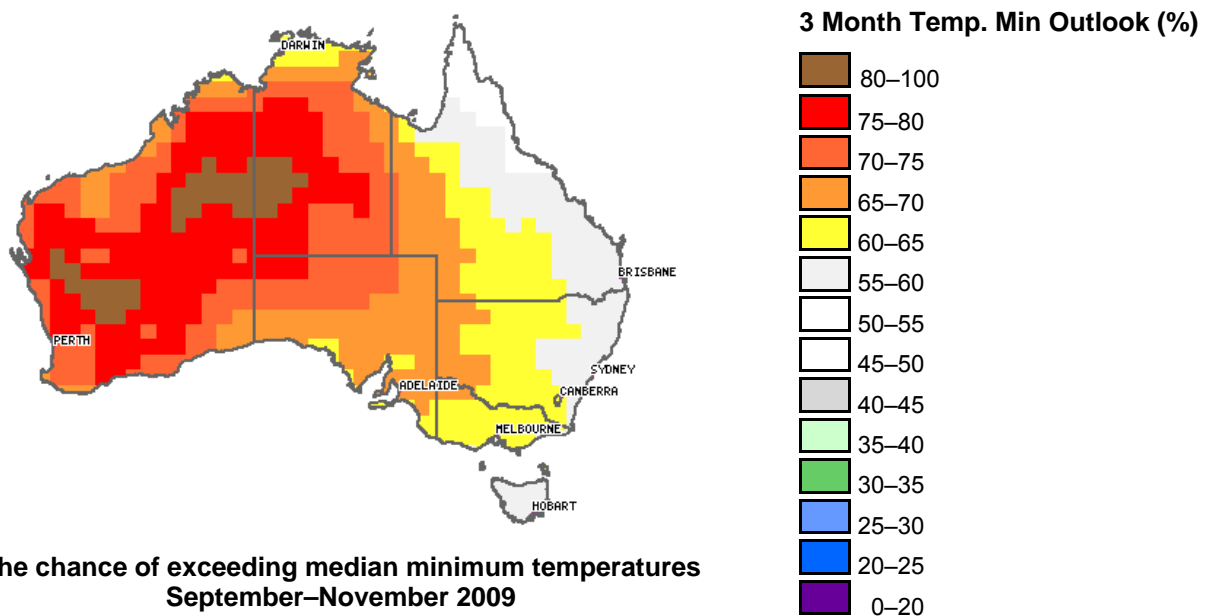
The pattern of seasonal rainfall odds across Australia is a result of recent warm conditions in the Indian Ocean and warming in the Pacific. The Pacific influence dominates the outlook in eastern Australia, while the Indian Ocean has had a greater influence on the probabilities in Western Australia.

4.3 Temperature Outlook



The chance of exceeding the median maximum temperature this spring is between 60 and 80 per cent across most of Australia. The likelihood for warmer than average days is somewhat higher in the north-east and somewhat lower in the south-west.

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



The minimum temperatures across most of Australia this spring are likely to be above average. Cape York is the only exception. Apart from Tasmania and along the east coast of Australia including Cape York, where the chances of above average minimum temperatures are about the same as the chances of below average minimum temperatures.

History shows the oceans' effect on minimum temperatures during spring to be moderately to highly consistent over most of the country, the exceptions being parts of south-east and eastern Australia. In these locations the effect is generally weakly consistent, so this outlook should be used with caution in those areas.

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