



Australian Government  
Australian Bureau of Agricultural and  
Resource Economics and Sciences

# Australian climate and agricultural monthly update

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February 2011



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Postal address:

ABARES

GPO Box 1563

Canberra, ACT 2601

Phone: +61 2 6272 2010

Fax: +61 2 6272 2001

Email: [info@abares.gov.au](mailto:info@abares.gov.au)

Web: [www.abares.gov.au](http://www.abares.gov.au)

## Key issues

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Heavy January 2011 rainfall across many regions in Australia resulted in extensive flooding in central and southern Queensland, western and central Victoria and north-west Tasmania. The recent flooding in eastern Australia is estimated to have reduced agricultural production by at least \$500–600 million in 2010–11, with significant impacts on fruit and vegetables, cotton, grain sorghum and some winter crops. The seasonal outlook for February to April 2011 favours wetter conditions over most of the tropics and Western Australia and drier conditions for parts of southern Australia. The rainfall outlook is heavily influenced by the current La Niña conditions that continue to dominate in the tropical Pacific Ocean.

## Summary

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January 2011 was a wet month for most of Australia, with Victoria and the Murray–Darling Basin recording their highest January rainfall on record. Below average rainfall was experienced in parts of eastern New South Wales, inland Queensland and large parts of South Australia. During January 2011, tropical cyclones Anthony and Bianca brought heavy rain to coastal areas in Queensland and Western Australia. January 2011 inflows to the Murray–Darling Basin (MDB) were above average.

Both day time and night time temperatures during January 2011 were well above average across most of Australia. Western Australia had the highest minimum temperatures on record this month, whilst South Australia recorded its third highest minimum.

Extremely heavy rainfall during late 2010 and early January 2011 resulted in major flooding over extensive areas in Queensland and across western and central parts of Victoria. There were significant impacts on fruit and vegetables, cotton, grain sorghum and some winter crops.

The heavy rainfall and flooding also delayed planting of and caused damage to some summer crops already sown.

In the eastern states, winter crop yields have been high despite the delays and downgrades to grain quality caused by the recent wet conditions. The majority of the harvest in the eastern states has been completed.

Finished cattle and lamb supply were good during the month, reflecting favourable seasonal conditions for pasture production. The national light lamb indicator hit a new record at the end of January 2011.

The current La Niña event is one of the strongest on record but there are clear signs that the event has passed its peak. During La Niña events, tropical cyclone numbers are typically higher than normal during the November to April period. The current La Niña event is influencing the February to April 2011 rainfall and temperature outlook.

# Contents

<b>Key issues</b>	<b>iii</b>
<b>Summary</b>	<b>iii</b>
<b>1. Climate</b>	<b>1</b>
1.1 Rainfall	1
1.2 Temperature	3
1.3 Relative soil moisture	5
1.4 Climate outlook	7
<b>2. Water</b>	<b>10</b>
2.1 Water storages	10
2.2 Water allocations	15
<b>3. Production</b>	<b>17</b>
3.1 Summer crops	17
3.2 Winter crops	17
3.3 Livestock	18

# 1. Climate

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## 1.1 Rainfall

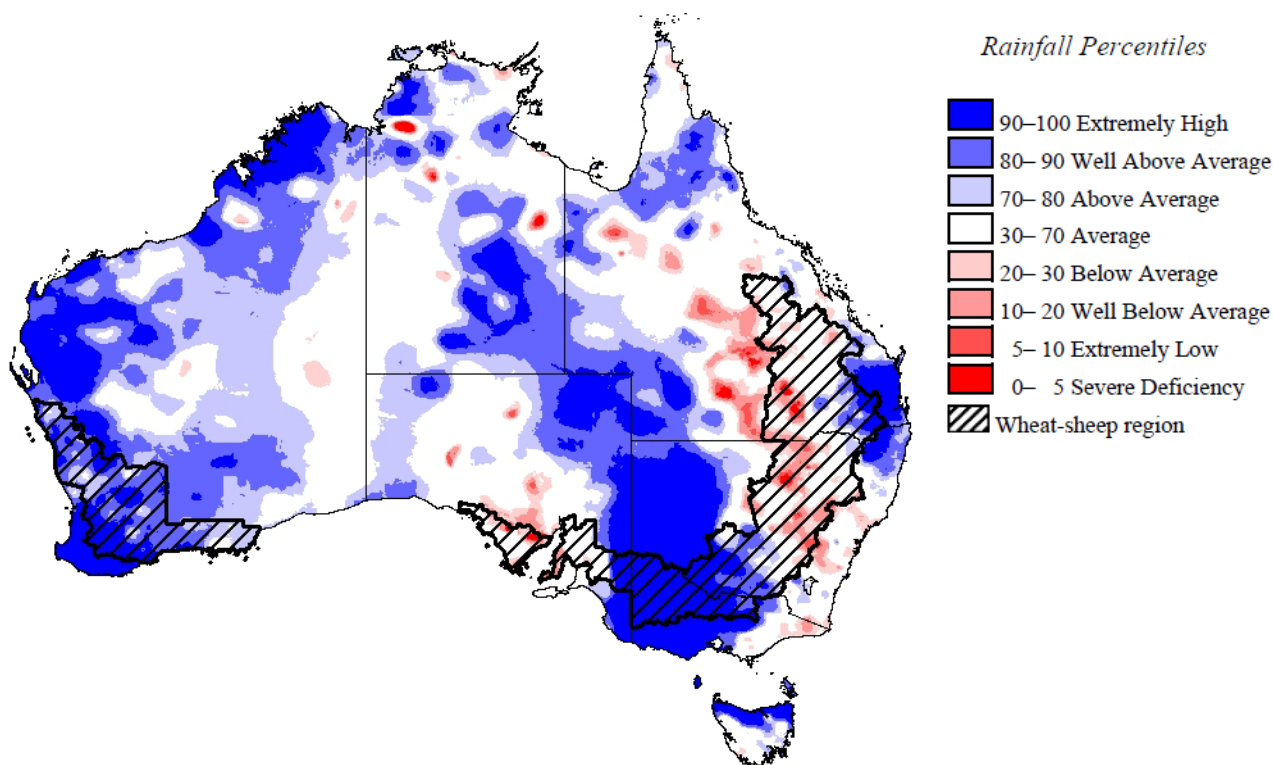
### Rainfall over the last month (January 2011)

January 2011 was wet across large parts of Australia. Highest rainfall on record occurred in south-eastern areas of Queensland and South Australia, western parts of Victoria and New South Wales, coastal parts of Western Australia, and northern parts of the Northern Territory and Tasmania.

Some areas in eastern New South Wales, southern South Australia, central Northern Territory and inland Queensland recorded below average rainfall with small areas ranking in the lowest decile.

January rainfall provided favourable conditions for pasture production in the north of the country where summer pastures predominate, and will provide generally favourable conditions for summer cropping in many areas of Queensland and northern New South Wales. Excess moisture in western areas of Victoria and New South Wales is likely to have resulted in some downgrades to winter crops yet to be harvested. In south-western Australia where soil profiles have been dry recently, January 2011 rainfall will improve soil moisture.

During the last week of January 2011, tropical cyclone Anthony brought heavy rainfall to the coast of Queensland near Bowen while tropical cyclone Bianca brought in rainfall across the Western Australian coast.

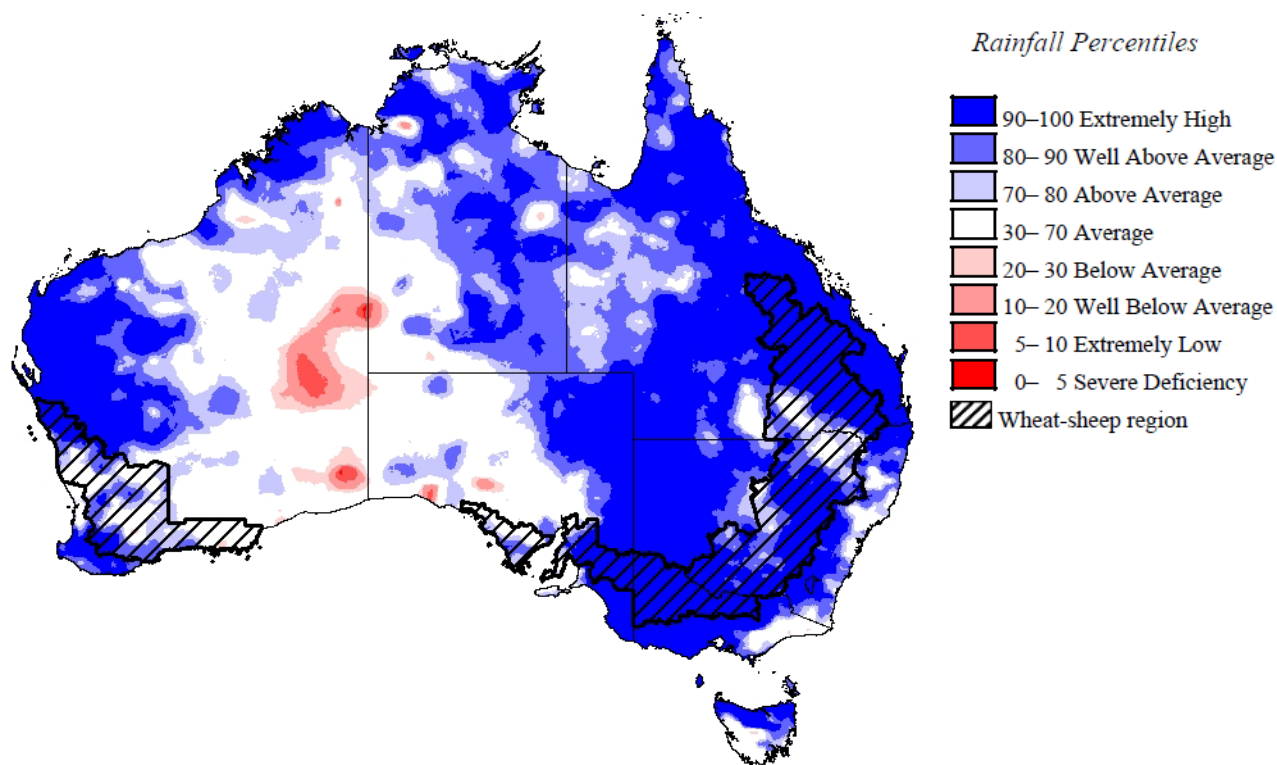


**Rainfall percentiles (January 2011)**

## Rainfall over the last three months

The November 2010 to January 2011 period was very wet across most of Australia. Extremely high rainfall was recorded across much of Queensland, New South Wales and Victoria. Extremely high rainfall was also received in parts of all other states and territories.

Short-term rainfall deficiencies in the south-west of Western Australia have decreased following recent rainfall, although 12-month and longer-term deficiencies remain.



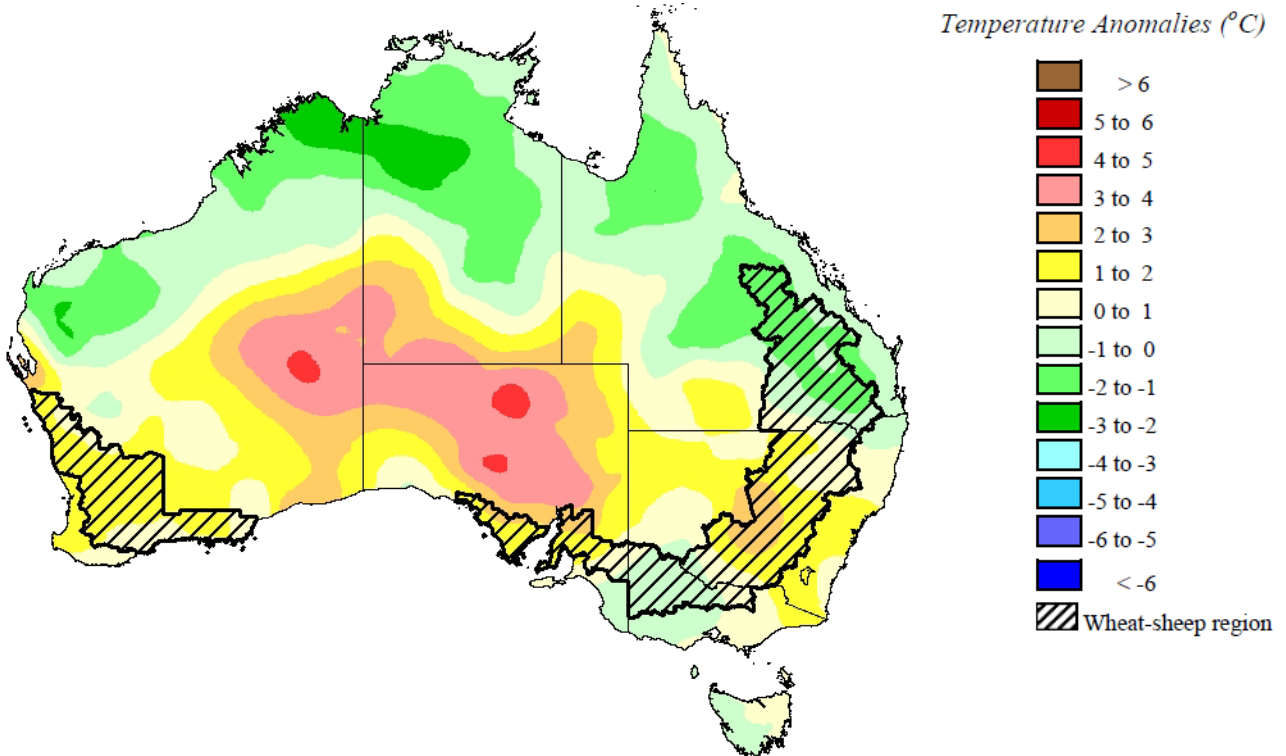
### Rainfall percentiles (November 2010 to January 2011)

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 [www.bom.gov.au/climate/austmaps/about-rain-maps.shtml](http://www.bom.gov.au/climate/austmaps/about-rain-maps.shtml).

## 1.2 Temperature

### Mean maximum temperature

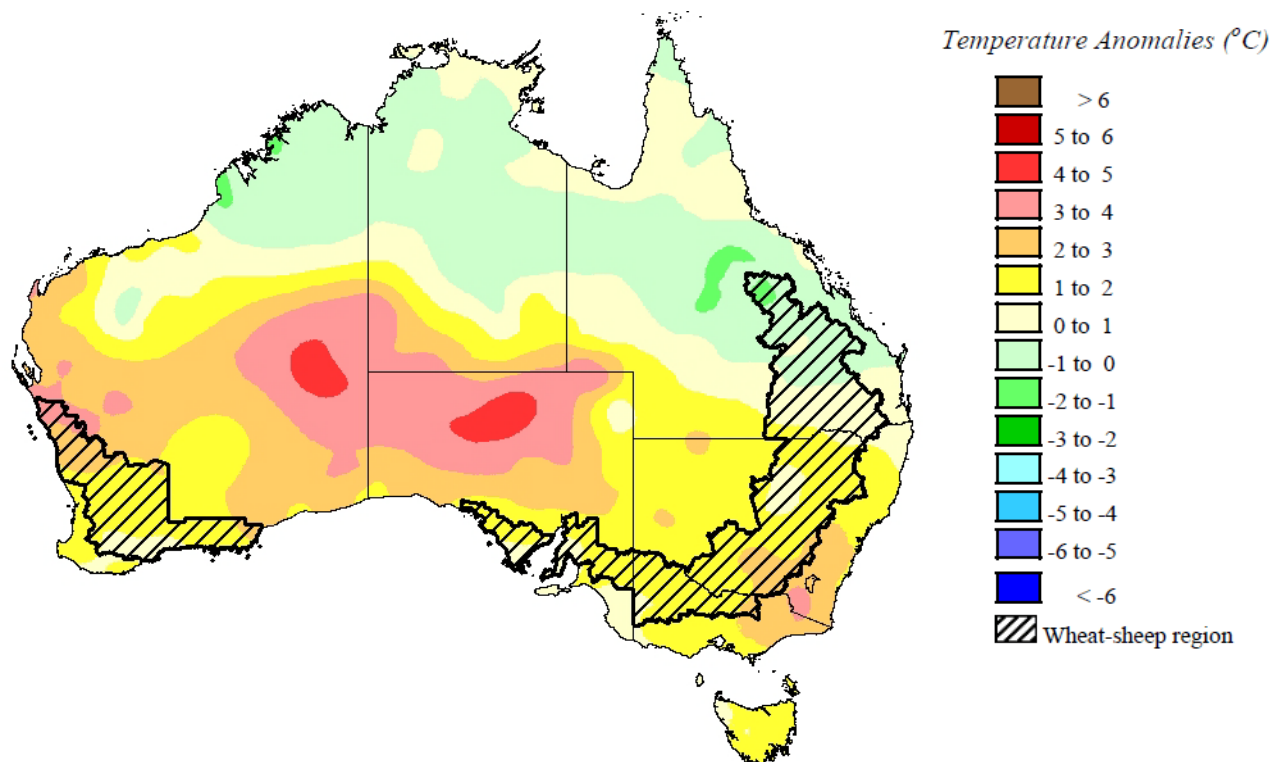
The mean maximum temperature during January 2011 was above the long-term January average across most of southern and central Australia but up to 3° C cooler than the long-term January average across northern Australia. Cooler temperature anomalies were also recorded in western Victoria and western Tasmania.



**Monthly mean maximum temperature anomalies  
(January 2011)**

## Mean minimum temperature

Mean minimum temperatures for much of Australia during January 2011 were between 2 and 5 °C warmer than the long-term average. Minimum temperatures in parts of northern Australia were cooler than the long-term average.



### Monthly mean minimum temperature anomalies (January 2011)

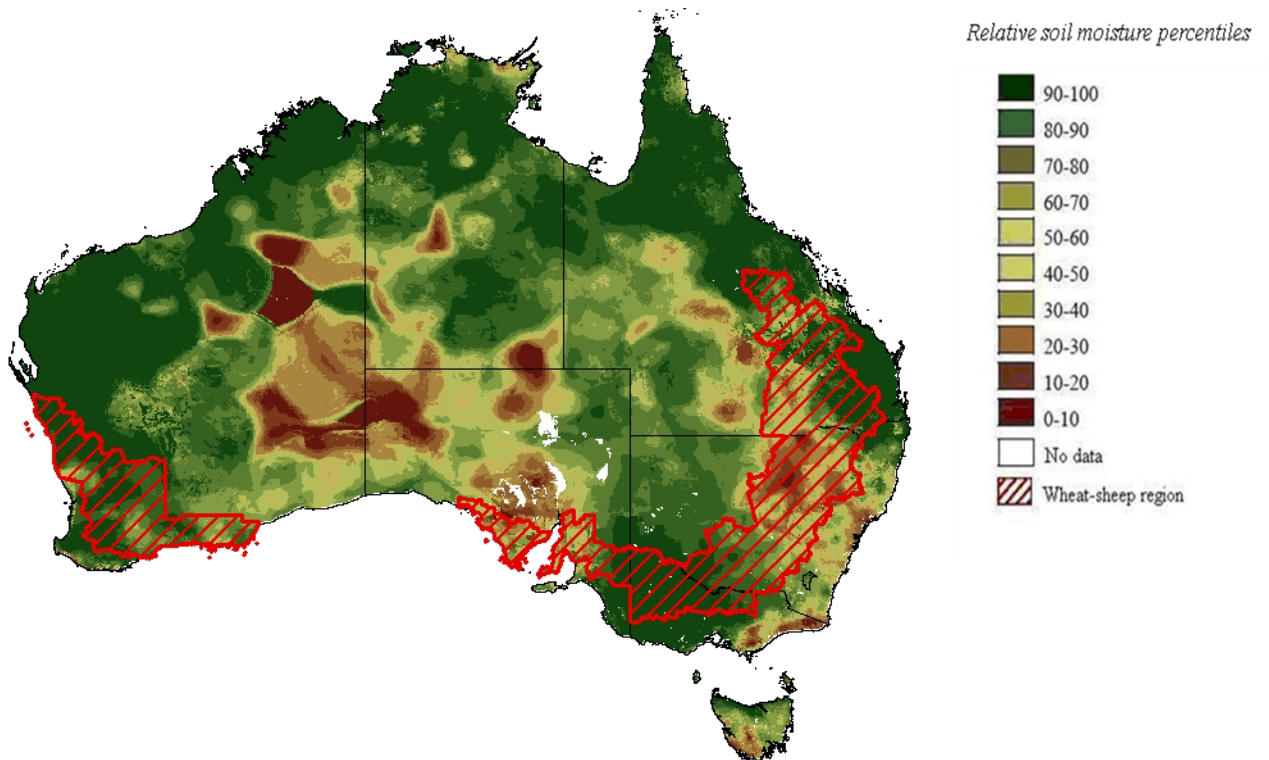
Spatial temperature analyses are based on historical monthly temperature data provided by the Bureau of Meteorology. These temperature anomaly maps show the departure of the maximum and the minimum temperature from the long-term average with respect to the reference period 1961 to 1990. For further [information on temperature anomalies](http://www.bom.gov.au/climate/austmaps/) go to [www.bom.gov.au/climate/austmaps/](http://www.bom.gov.au/climate/austmaps/).



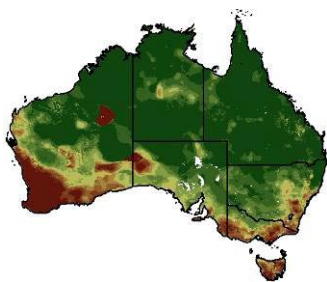
## 1.3 Relative soil moisture

### Upper layer soil moisture

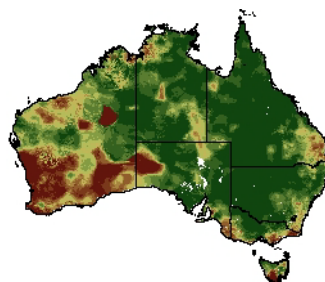
Relative soil moisture in the upper layer of the soil profile was above average across most of Australia reflecting the generally wet conditions during January 2011. Deficiencies in relative soil moisture decreased in some areas, most notably in south-west Western Australia where conditions were dry during much of 2010. In eastern states, deficiencies in relative upper layer soil moisture have appeared which largely reflect the pattern of rainfall received.



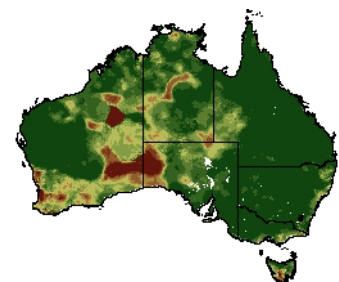
Upper layer soil moisture percentiles  
(January 2011)



October 2010



November 2010

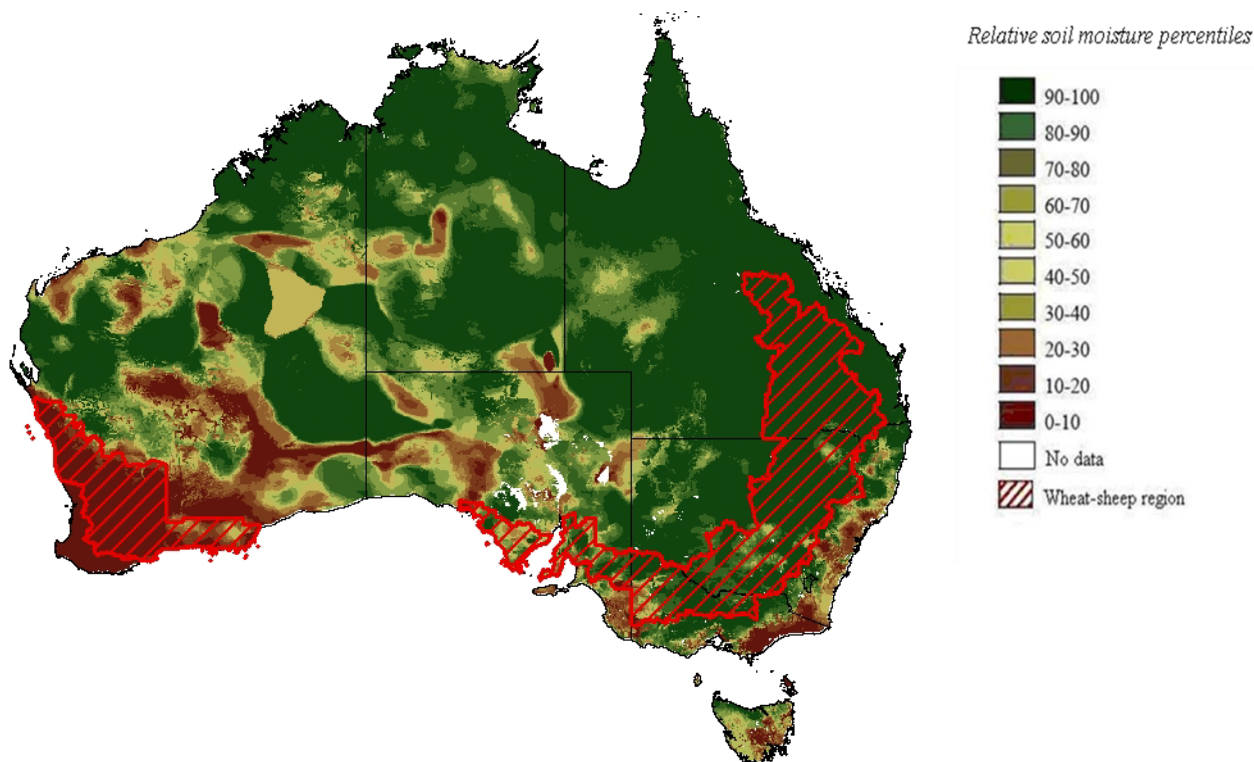


December 2010

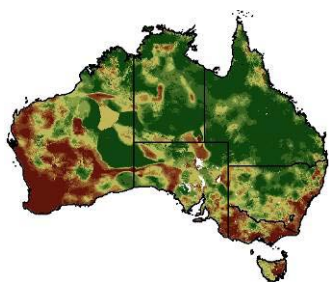
The bulk of plant roots occur in the top 0.3 metres of the soil profile and soil moisture in the upper layer of the soil profile (0.2 metres) is the most appropriate indication of the availability of water, particularly for germinating plants.

## Lower layer soil moisture

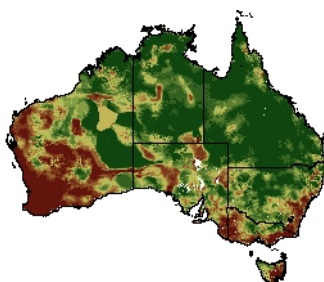
Relative soil moisture levels in the lower layer of the soil profile increased slightly during January 2011 across the continent, notably in the central west of Western Australia. However, lower layer soil moisture levels remain below average in areas of most states and territories. Lower layer soil moisture is a larger, deeper store that is slower to respond to rainfall and tends to reflect accumulated events over seasonal and longer time scales.



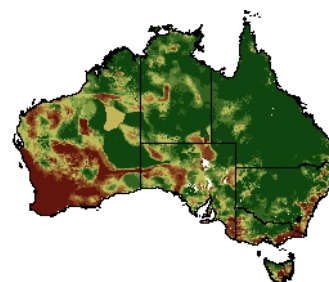
Lower layer soil moisture percentiles  
(January 2011)



October 2010



November 2010



December 2010

The above maps show the relative levels of modelled upper (0 to ~0.2 metres) soil moisture and lower (~0.2 to ~1.5 metres) soil moisture at the end of January 2011 and the three preceding months. This data comes from a collaborative project between the Bureau of Meteorology, CSIRO and the former Bureau of Rural Sciences to develop estimates of soil moisture and other components of the water balance at high resolution across Australia. These maps show soil moisture estimates relative to the long-term average with respect to the reference period 1961 to 1990.

For further [information on relative soil moisture](http://www.daff.gov.au/brs/climate-impact/awap) go to [www.daff.gov.au/brs/climate-impact/awap](http://www.daff.gov.au/brs/climate-impact/awap).

## 1.4 Climate outlook

### El Niño Southern Oscillation (ENSO)

One of the strongest La Niña events on record continues in the tropical Pacific Ocean. Climate models continue to indicate a strong, mature La Niña, despite signs that the event has passed its peak.

During La Niña events, tropical cyclone numbers are typically higher than normal during the November to April period, while summer daytime temperatures are often below average, particularly in areas experiencing excess rainfall. All climate indicators of ENSO remain above La Niña thresholds. The influence of the Indian Ocean Dipole (IOD) on Australian rainfall is limited during the months from December 2010 through to April 2011.

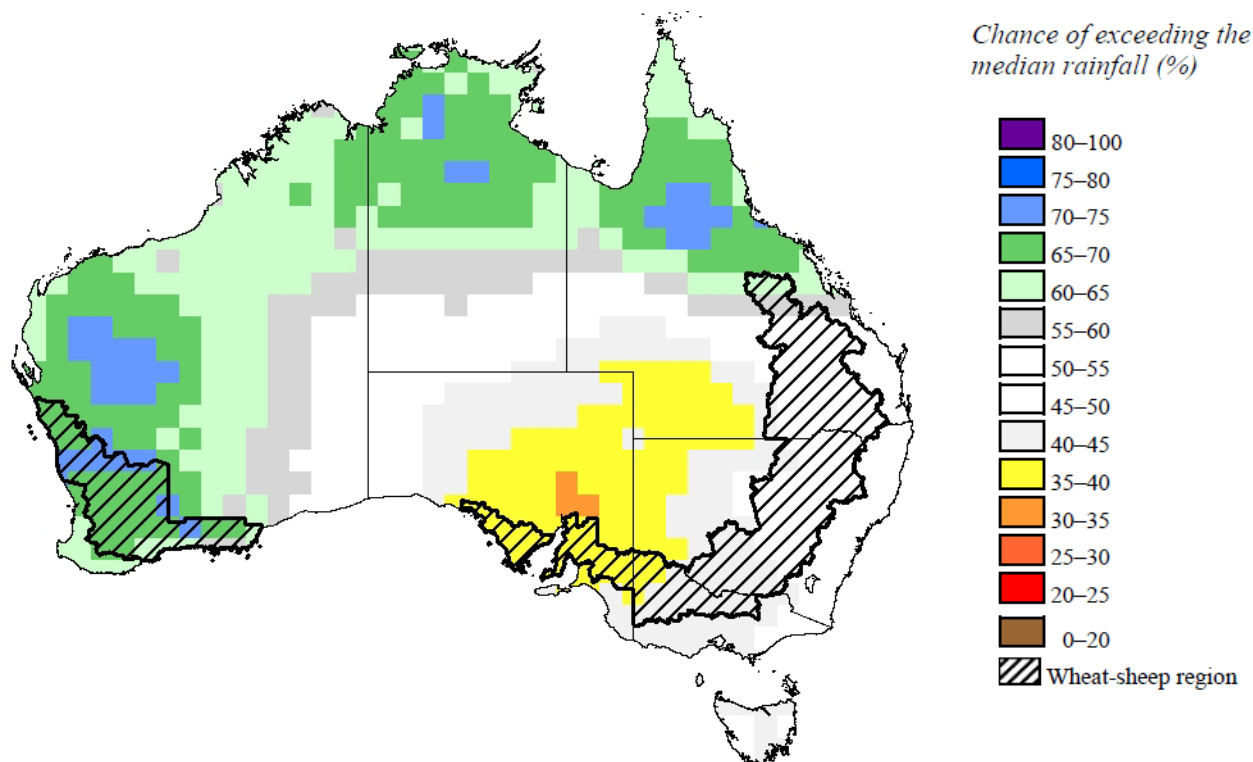
For further information on the Bureau of Meteorology interpretation of the El Niño–Southern Oscillation, go to [www.bom.gov.au/climate/enso/](http://www.bom.gov.au/climate/enso/).

The cooler temperature in the tropical Pacific Ocean associated with the current La Niña and warm conditions in the Indian Ocean are influencing the February to April 2011 rainfall and temperature outlook.

### Rainfall outlook

The seasonal outlook for February to April 2011 favours wetter conditions over most of northern and Western Australia and drier conditions in parts of southern Australia

The chances of exceeding the median rainfall during the February to April 2011 period are between 60 and 75 per cent across the northern halves of the Northern Territory, Queensland and most of Western Australia. In contrast, the chances of exceeding the median rainfall from south-east South Australia to south-west Queensland are between 30 and 40 per cent.

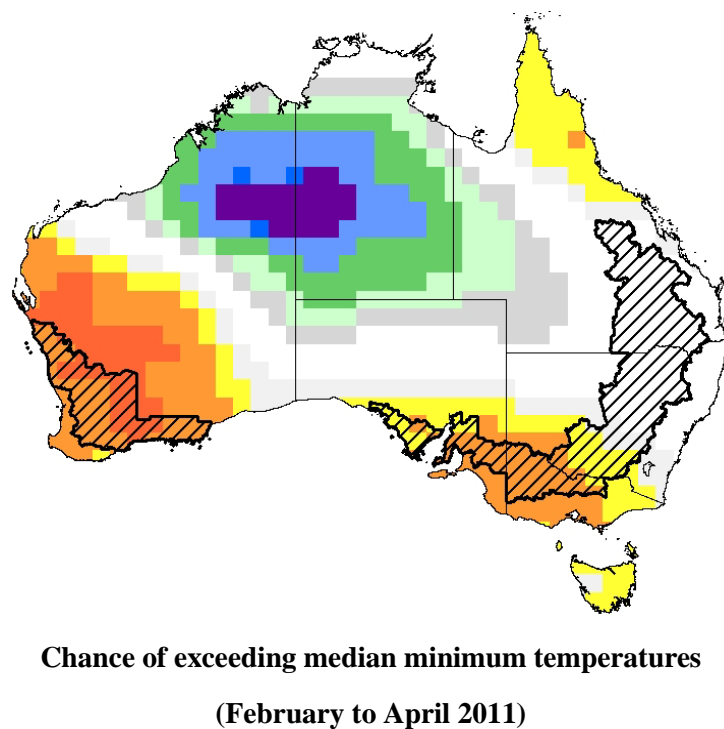
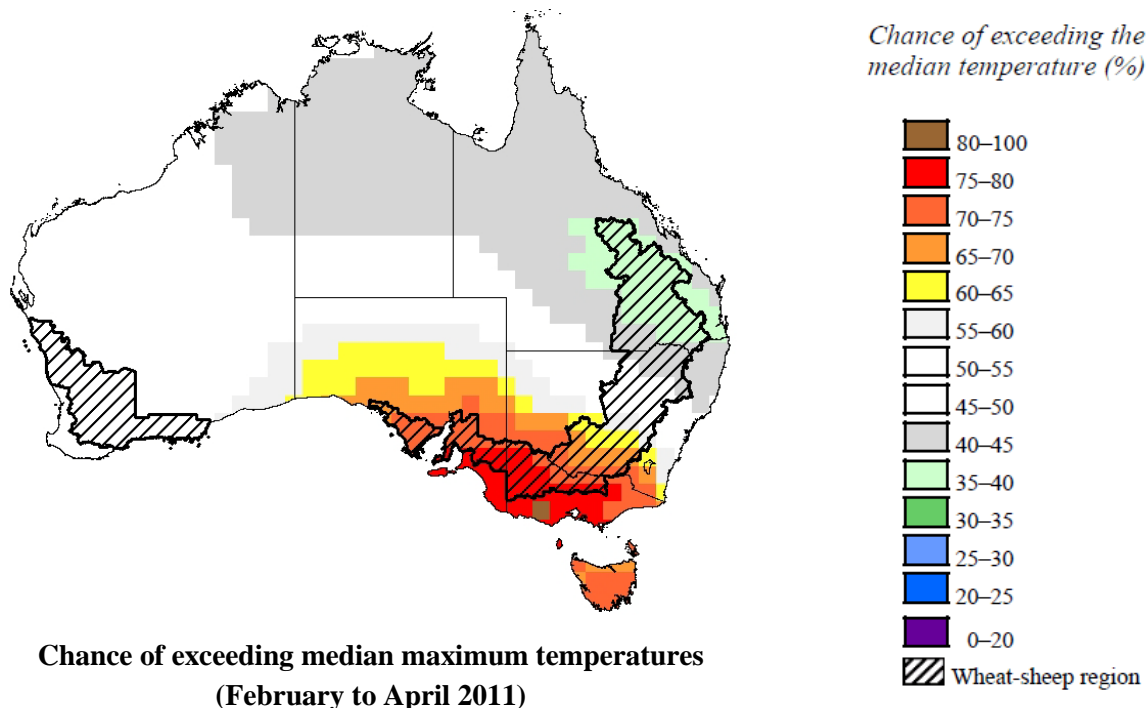


**Chance of exceeding the median rainfall  
(February to April 2011)**

## Temperature outlook

The temperature outlook for maximum and minimum temperatures averaged over the February to April 2011 period favours warmer day and night-time temperatures across south-east Australia and warmer night-time temperatures across parts of Western Australia and the tropical north. Cooler daytime temperatures are favoured for eastern Queensland.

The chance of exceeding the long-term median maximum temperatures for February to April is between 60 and 80 per cent across Tasmania, Victoria, southern New South Wales and southern South Australia. In contrast, the chance of exceeding the median maximum temperature in eastern and southern parts of Queensland is between 35 and 40 per cent.



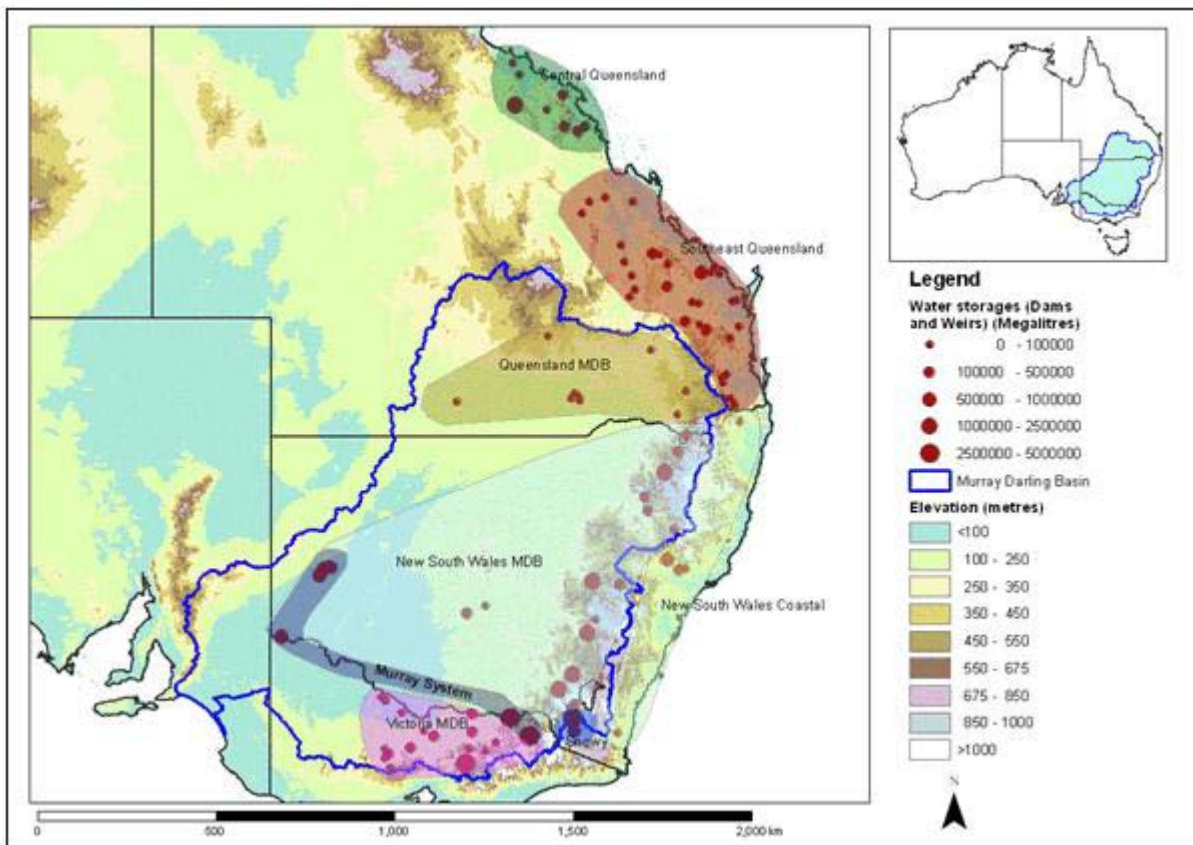
These outlooks are based on the statistics of chance (the odds) and are not categorical predictions. For further [information on these seasonal outlooks and their interpretation](#) go to [www.bom.gov.au/climate/ahead/](http://www.bom.gov.au/climate/ahead/).

## 2. Water

### 2.1 Water storages

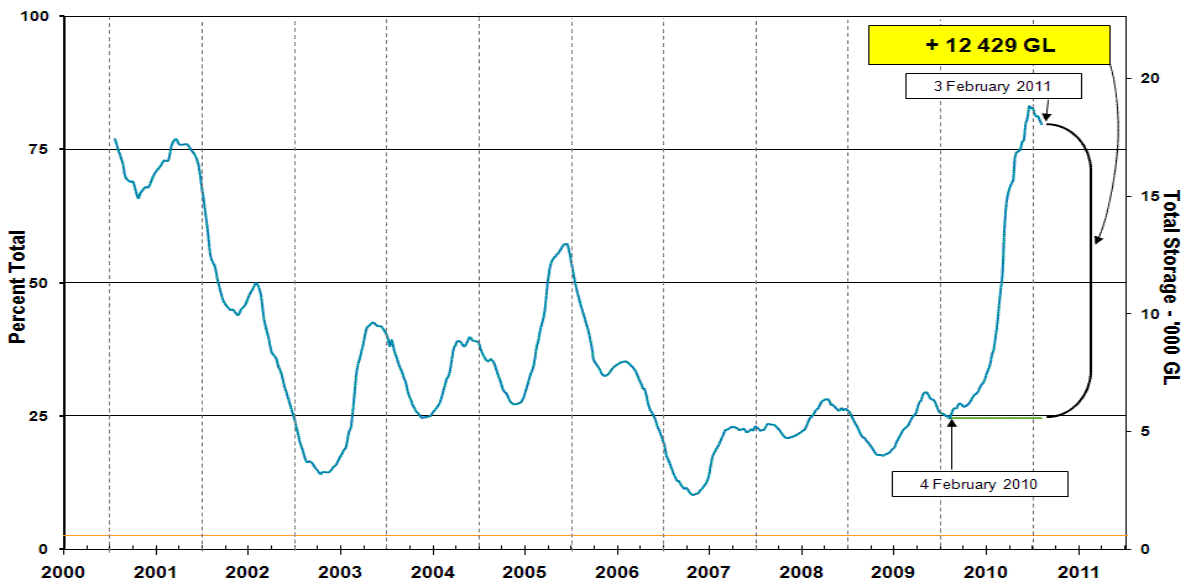
Changes in regional water storage for January 2011 and the previous 12 months are summarised in the table and graphs below (current at 3 February 2011).

Region	Total capacity (GL)	Current volume (GL)	Current volume (%)	Monthly change (GL)	Monthly change (%)	Annual change (GL)
<b>Murray-Darling Basin (MDB)</b>	22560	17987	80	-454	-2	+12429
<b>Snowy Scheme</b>	5744	2043	36	-2	0	+212
<b>Murray-Darling Basin Authority (MDBA)</b>	9352	6718	69	-248	-3	+4866
<b>Queensland MDB</b>	185	184	99	0	0	+100
<b>Central Queensland</b>	3154	3144	100	+5	0	+308
<b>South-east Queensland</b>	3517	3504	100	+15	+1	+1772
<b>New South Wales MDB</b>	13918	11710	84	-593	-4	+8845
<b>Coastal New South Wales</b>	1074	905	84	+4	0	+128
<b>Victoria MDB</b>	8488	6097	72	+139	+2	+3486

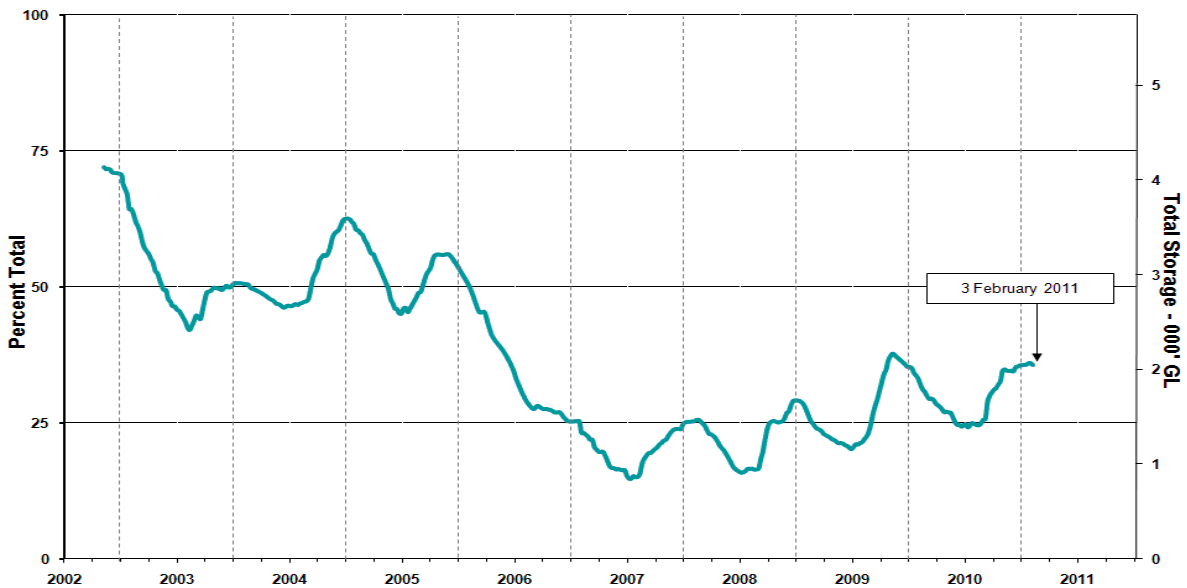


**Water storages in Queensland, New South Wales and Victoria:** The blue line indicates the extent of the Murray–Darling Basin and the shaded areas denote the coverage of the individual reporting regions.

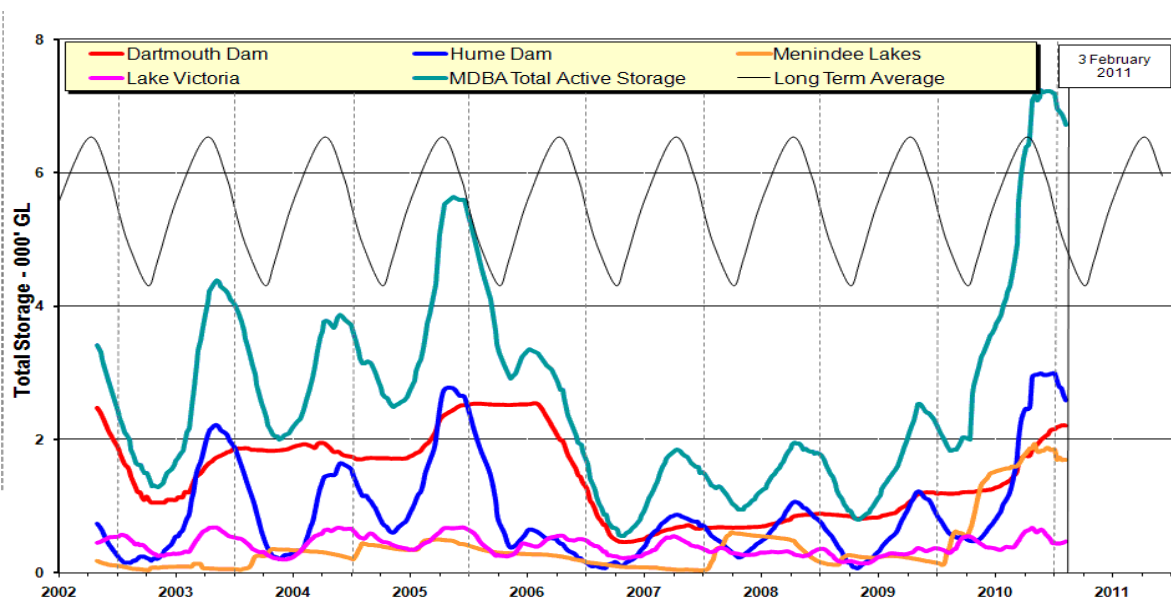
### MDB (New South Wales, Victoria and Queensland)



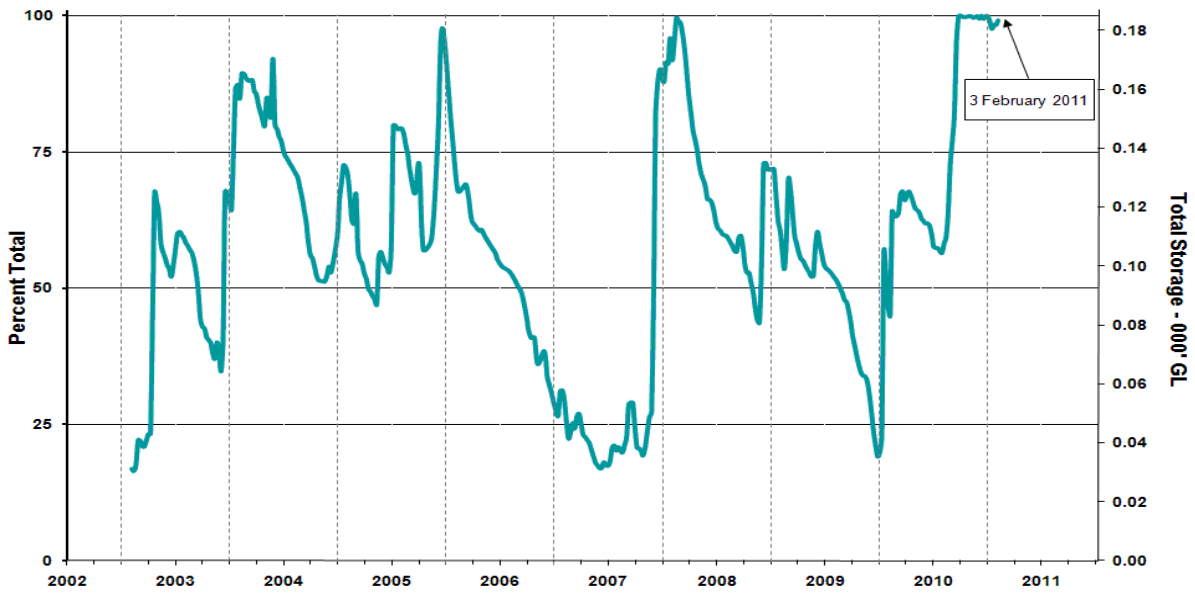
### Snowy Scheme



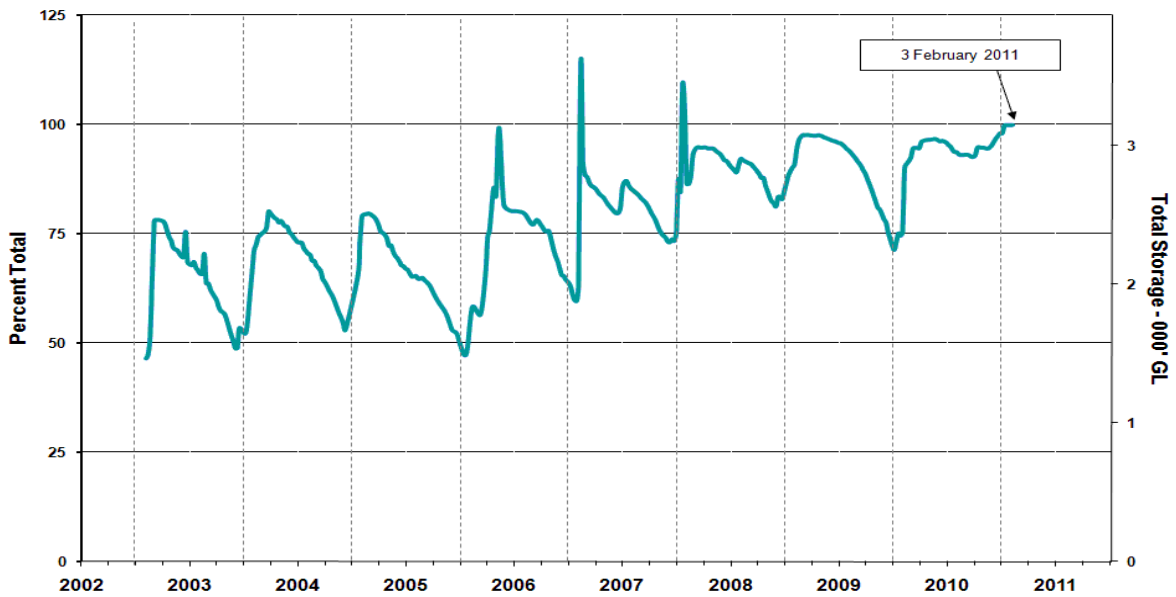
### MDBA – Active storage under the control of the Murray-Darling Basin Authority



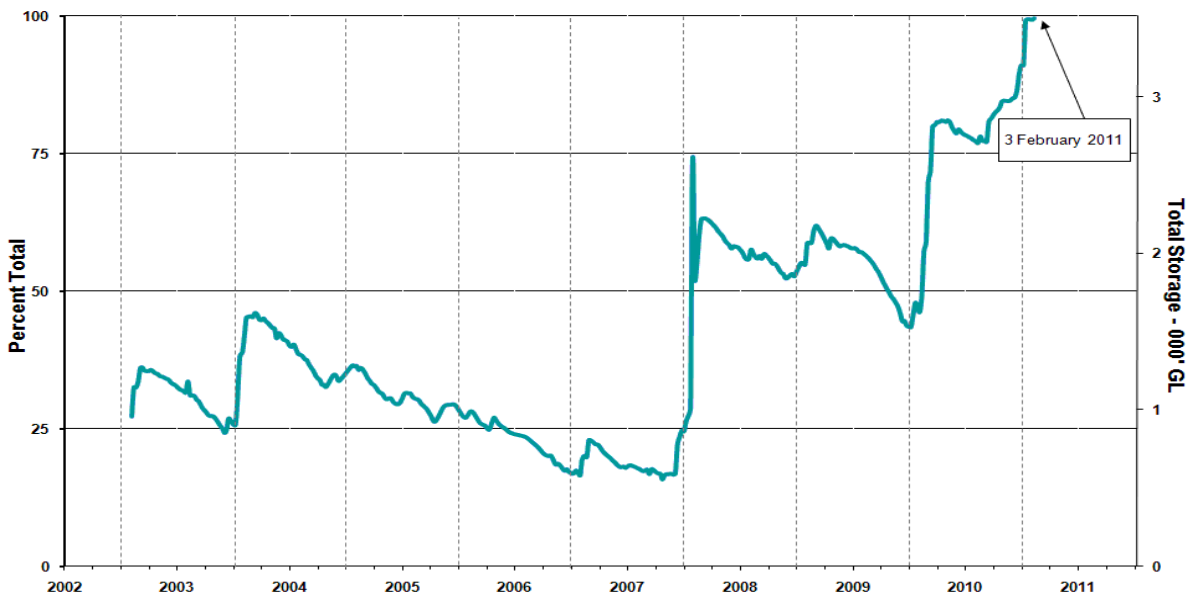
### Queensland MDB



### Central Queensland

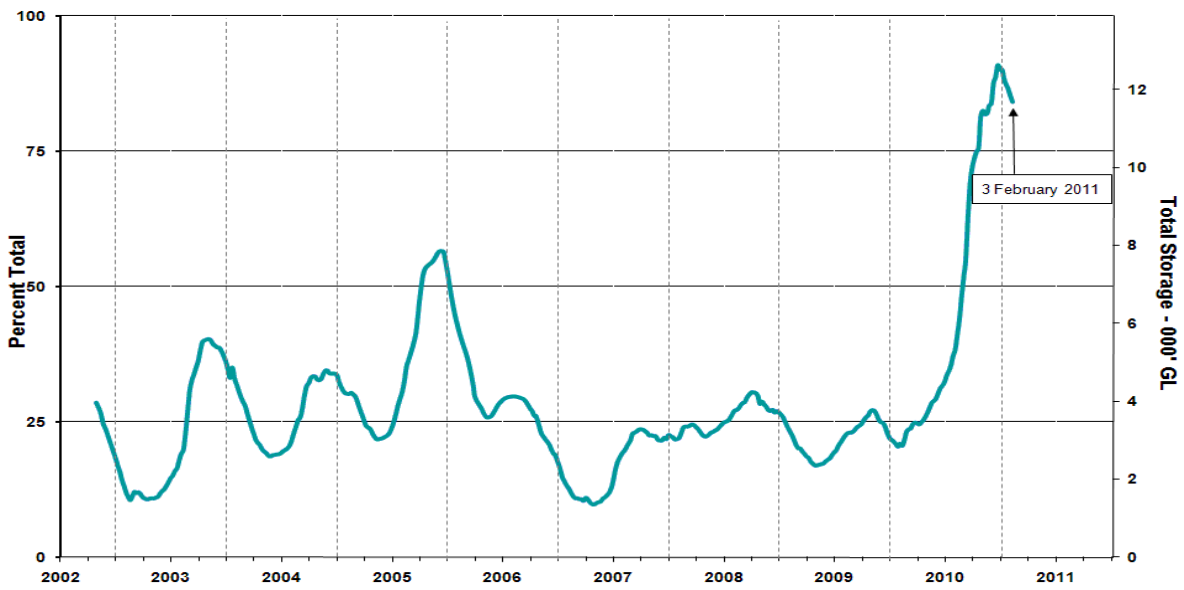


### South-east Queensland

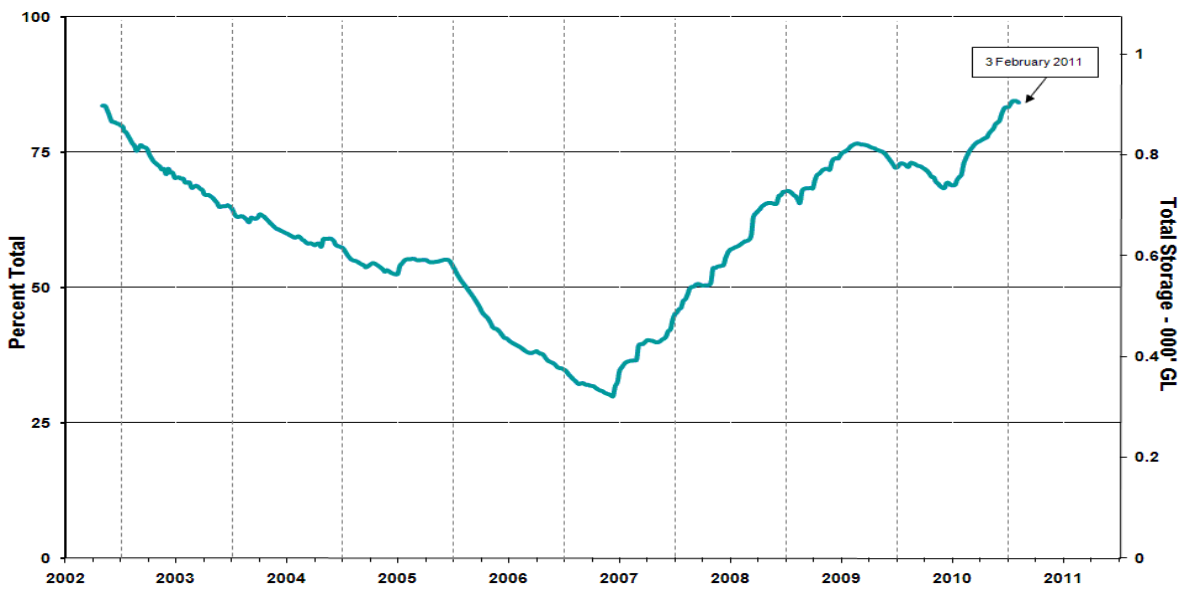




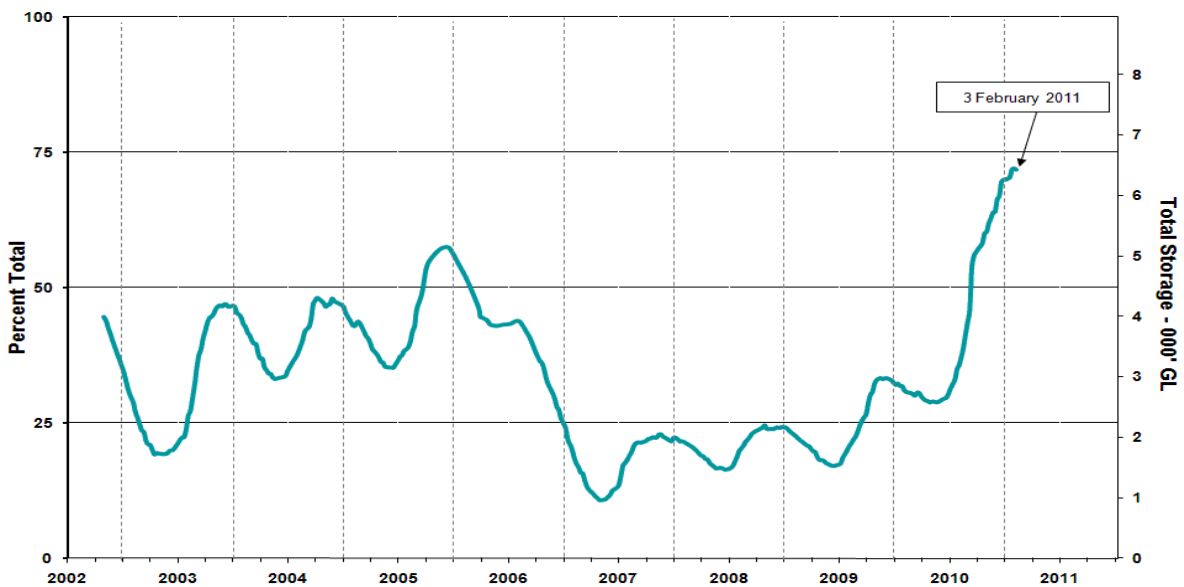
### New South Wales MDB



### Coastal New South Wales



### Victoria MDB



For further information on water storages, go to:

- Snowy Hydro Water Resources:  
[www.snowyhydro.com.au/lakeLevels.asp?pageID=360&parentID=6](http://www.snowyhydro.com.au/lakeLevels.asp?pageID=360&parentID=6)
- Sun Water Queensland:  
[www.sunwater.com.au/pdf/water/CurrentStorageSummary.pdf](http://www.sunwater.com.au/pdf/water/CurrentStorageSummary.pdf)
- New South Wales Water Information:  
[www.waterinfo.nsw.gov.au/](http://www.waterinfo.nsw.gov.au/)
- Goulburn-Murray Water (Northern Victoria):  
[www.g-mwater.com.au/water-resources/storage-levels/](http://www.g-mwater.com.au/water-resources/storage-levels/)
- Murray-Darling Basin Authority:  
[www.mdba.gov.au/](http://www.mdba.gov.au/)

## 2.2 Water allocations

The water allocations and changes over the past month for all licence holders in New South Wales, Victoria and South Australia water systems are summarised in the following table.

	Closing allocations 2009–10 (%)	Increases from 1 January 2011 (%)	Allocations at 1 February 2011 (%)
<b>NSW Murray Valley</b>			
High security	97		100
General security	27		100
<b>NSW Murrumbidgee Valley</b>			
High security	95		100
General security	27		100
<b>NSW Lower Darling</b>			
High security	100		100
General security	100		100
<b>NSW Macquarie Valley</b>			
High security	100		100
General security	0		100
<b>NSW Hunter Valley</b>			
High security	100		100
General security	100		100
<b>NSW Lachlan Valley</b>			
High security	10		100
General security	0	13	108
<b>NSW Border Rivers</b>			
High security	100		100
General security	4.4		100
<b>NSW Peel Valley</b>			
High security	100		100
General security	100		100
<b>Victoria Murray Valley</b>			
High reliability	100		100
<b>Victoria Goulburn</b>			
High reliability	71		100
<b>Victoria Campaspe</b>			
High reliability	0		100
<b>Victoria Loddon</b>			
High reliability	3		100
<b>Victoria Bullarook</b>			
High reliability	19		100
<b>Victoria Broken</b>			
High reliability	17		100
<b>South Australia Murray Valley</b>			
High security	62		67

For further information on water announcements, go to:

- New South Wales Office of Water, Department of Environment, Climate Change and Water:  
[www.water.nsw.gov.au/Home/default.aspx](http://www.water.nsw.gov.au/Home/default.aspx)
- Media releases:  
[www.water.nsw.gov.au/About-Us/Media-Releases/default.aspx](http://www.water.nsw.gov.au/About-Us/Media-Releases/default.aspx),
- Water allocations:  
[www.water.nsw.gov.au/Water-Management/Water-availability/Available-water-determinations/default.aspx](http://www.water.nsw.gov.au/Water-Management/Water-availability/Available-water-determinations/default.aspx) and <http://www.water.nsw.gov.au/Water-management/Water-availability/Water-allocations/water-allocations-summary/default.aspx>
- Available water determinations register:  
[www.wix.nsw.gov.au/wma/DeterminationSearch.jsp?selectedRegister=Determination](http://www.wix.nsw.gov.au/wma/DeterminationSearch.jsp?selectedRegister=Determination)
- Goulburn-Murray Water:  
[www.g-mwater.com.au/](http://www.g-mwater.com.au/)
- Media releases:  
[www.g-mwater.com.au/news/media-releases/default.asp](http://www.g-mwater.com.au/news/media-releases/default.asp)
- South Australian Department of Water:  
[www.waterforgood.sa.gov.au/](http://www.waterforgood.sa.gov.au/)
- Latest allocation announcement:  
[www.waterforgood.sa.gov.au/rivers-reservoirs-aquifers/river-murray/](http://www.waterforgood.sa.gov.au/rivers-reservoirs-aquifers/river-murray/)
- Murray-Darling Basin Authority:  
[www.mdba.gov.au/](http://www.mdba.gov.au/)

## 3. Production

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### 3.1 Summer crops

#### Queensland and New South Wales

Heavy rainfall and flooding during December 2010 and early January 2011 delayed planting of and caused some damage to summer crops already sown in some areas.

It is estimated that around 7 per cent of total Australian cotton plantings (valued at around \$150 million) in 2010–11 have been destroyed and further areas could be at risk as flood peaks move downstream to northern New South Wales producing regions. Plantings of grain sorghum in southern Queensland reached around 80 per cent of the intended area (around 350 000 hectares) in late December 2010. The floods are estimated to have damaged between 15 and 20 per cent of these plantings. This implies a loss in the value of grain sorghum production of around \$30 million.

Disease problems are being reported in some areas as the wet conditions favour fungal disease development.

### 3.2 Winter crops

#### Australia

The majority of the winter 2010 harvest has been completed. Heavy rainfall in the eastern states during recent months caused some downgrades to grain quality and delays to the harvest. However, high yields and good grain prices are expected to offset some of the losses.

Despite low harvest volumes in the Western Australia, grain quality is reportedly high in many areas.

#### New South Wales

The majority of the winter harvest is complete in New South Wales after delays caused by heavy rainfall from November 2010 to early January 2011. Despite the delays and downgrades to grain quality caused by the recent wet conditions, Industry & Investment New South Wales reports that yields have been high. Losses to flooding are reportedly less than at first thought and high grain prices have resulted in some producers deciding to harvest previously abandoned crops.

[www.dpi.nsw.gov.au/\\_data/assets/pdf\\_file/0006/373911/NSW-January-Grains-Report-2011.pdf](http://www.dpi.nsw.gov.au/_data/assets/pdf_file/0006/373911/NSW-January-Grains-Report-2011.pdf)

#### Queensland

No new information since last month's report.

#### South Australia

The recent wet conditions caused delays to the winter harvest in some areas in South Australia. Harvest is nearing completion and yields of most crops have been above average and quality is generally high.

[www.pir.sa.gov.au/\\_data/assets/pdf\\_file/0016/150055/Crop\\_and\\_Pasture\\_Report-](http://www.pir.sa.gov.au/_data/assets/pdf_file/0016/150055/Crop_and_Pasture_Report-)

#### Victoria

The majority of the winter harvest has been completed in Victoria. High yields have been reported, although there have been significant downgrades to quality in some areas.

#### Western Australia

No new information since last month's report.

For more information on the impact of flooding on commodities, see the ABARES *Special Report on the Impact of Recent Flood Events on Commodities*, 21 January 2011, available at [www.abares.gov.au](http://www.abares.gov.au).

ABARES will release updates of production estimates and greater detail on yields and quality in its *Australian Crop Report* on 15 February 2011.

### **3.3 Livestock**

#### **Beef Cattle**

The Eastern Young Cattle Indicator (EYCI) has finished at 387.5 cents per kilogram (¢/kg) carcass weight (cwt). The trade steer indicator finished at 203 ¢/kg live weight (lwt), while feeder steers were 209 ¢/kg lwt. Japanese ox settled at 188 ¢/kg while medium cow settled at 145 ¢/kg lwt.

Good supplies of finished cattle have been offered during the month, reflecting favourable seasonal conditions in 2010 and January 2011 for pasture production. There has been an increase in the number of plainer young cattle offered. Slight declines in condition have been reported which may be due to the warm summer temperatures and drying off of pastures in some areas which is typical at this time of year particularly in southern areas. Restocker competition remains strong which has assisted prices to remain firm.

#### **Sheep and Lambs**

Lambs at physical markets are reflecting the good seasonal conditions during 2010 and abundant pasture growth available in many areas. The condition of many prime lambs is high, with Meat and Livestock Australia (MLA) reporting many prime lambs to be score 4.

Lamb prices remain strong, reflecting favourable conditions for pasture production and high demand. The national light lamb indicator hit a new record for the week ending January 28 2011, at 583¢/kg cwt. Trade and heavy lamb indicators settled at 624 and 603 ¢/kg cwt, respectively. Mutton finished at 426 ¢/kg cwt in January 2011.

Meat & Livestock Australia – Market News

[www.mla.com.au/Prices-and-markets/Market-news/Sheep-market-alert020211](http://www.mla.com.au/Prices-and-markets/Market-news/Sheep-market-alert020211)

[www.mla.com.au/Prices-and-markets/Market-news/Cattle-market-alert020211](http://www.mla.com.au/Prices-and-markets/Market-news/Cattle-market-alert020211)

[www.mla.com.au/Prices-and-markets/Market-news/Tuesday-daily-livestock-summary010211](http://www.mla.com.au/Prices-and-markets/Market-news/Tuesday-daily-livestock-summary010211)