Australian Government
Australian Bureau of Agricultural and Resource Economics and Sciences

# Australian climate and agricultural monthly update

March 2011

www.abares.gov.au

Australian climate and agricultural monthly update – March 2011 information accurate at date of publishing.

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# Key issues

Rainfall during February 2011 provided generally favourable conditions for summer crops and pasture production across Australia. In early February 2011, Tropical Cyclone Yasi caused significant damage to banana and sugar cane production in Far North Queensland. High irrigation water availability led to a substantial increase in plantings of cotton, rice and other crops. Climate models indicate weakening of the La Niña event in the Pacific Ocean, but the seasonal outlook still favours at least average rainfall over most of the country for the March to May 2011 period.

# Summary

February 2011 was a wet month across large parts of Australia with highest on record February rainfall in central Western Australia and parts of south-east New South Wales. Tropical cyclones brought heavy rainfall to Far North Queensland, the north-west coast of Western Australia and Darwin. February 2011 inflows to the Murray–Darling Basin were above average.

The mean maximum temperature during February 2011 was below the long term February average in most parts of Australia while the mean minimum temperature was warmer than the long-term February average.

Severe tropical Cyclone Yasi caused significant damage to banana and sugar cane production in Far North Queensland, an area that accounts for around 90 percent of Australia's banana production.

February 2011 rainfall provided generally favourable conditions for summer crops and pasture production in the northern and eastern parts of the country. The area planted to grain sorghum is likely to increase by 23 per cent in 2010–11 compared to the previous year. Availability of irrigation water in most cotton growing regions is estimated to result in a 117 per cent increase in cotton production in 2010–11 compared to the previous year. Abundant supplies of irrigation water are also likely to lead to a fourfold increase in rice plantings in 2010–11 compared to the previous year.

Cattle and lamb supply were good during the month across the country as a result of generally improved seasonal conditions in recent months. Cattle numbers delivered to market increased during February 2011 in Queensland as transport in areas affected by flooding becomes available.

Current observations of key climate indicators in the Pacific Ocean are consistent with the breakdown phase of La Niña events. Wetter conditions are favoured across much of eastern Australia over the March to May 2011 period, which would favour summer crops and contribute to a favourable outlook for the winter cropping season in many areas.

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# 1. Climate

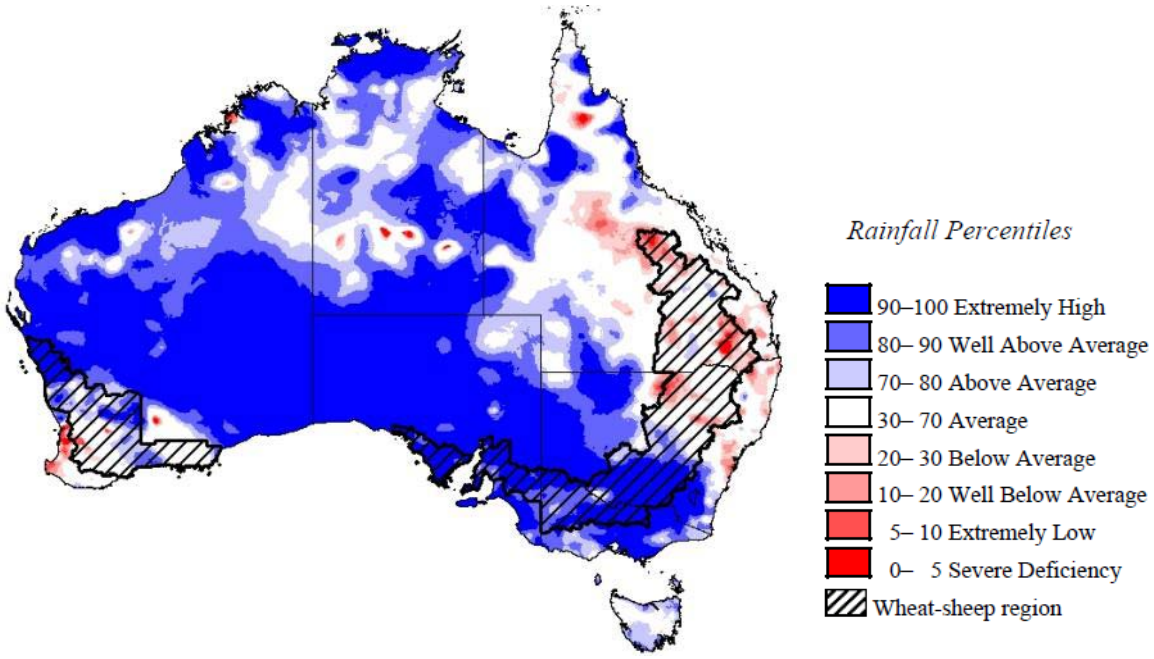
## 1.1 Rainfall

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

Above average rainfall was recorded across large parts of Australia during February 2011. Extremely high rainfall occurred across large parts of southern, central and western Australia. There were some rainfall deficiencies in parts of Queensland, north-east New South Wales and the south-west of Western Australia.

In early February 2011 severe tropical cyclone Yasi brought heavy rainfall to Far North Queensland south of Cairns. In mid February 2011, tropical cyclones Dianne and Carlos also brought heavy rainfall to the north-west coast of Western Australia and Darwin.

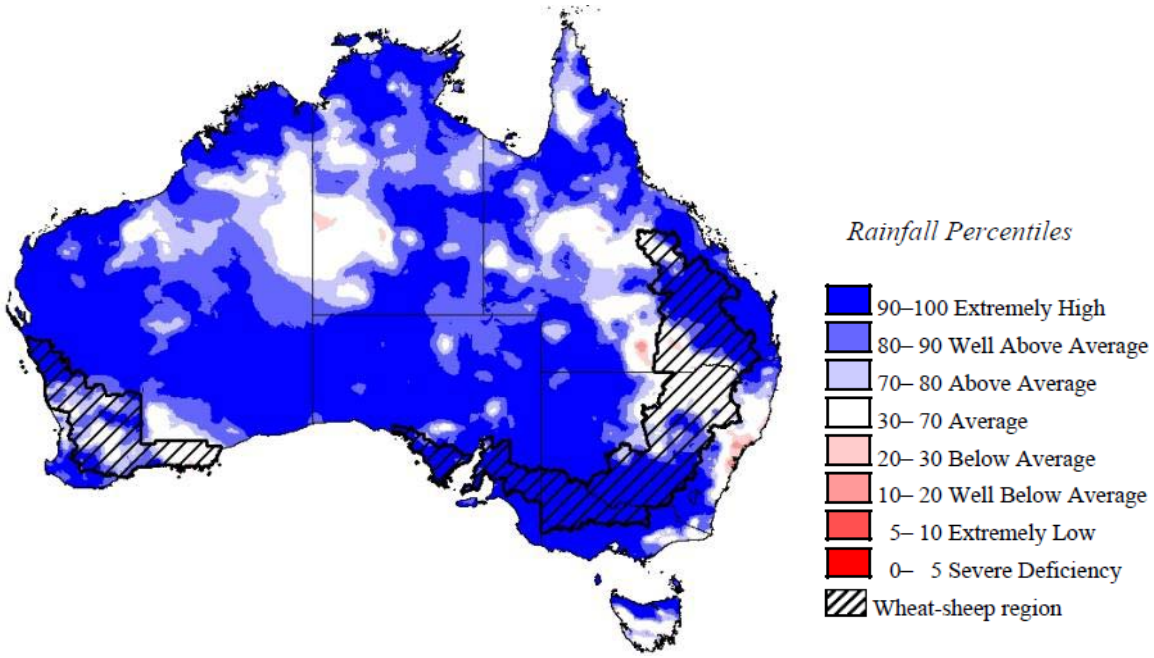
February 2011 rainfall provided favourable conditions for pasture production in the north, northern-west and south-east part of the country, and should provide favourable conditions for summer crops.




**Rainfall percentiles (February 2011)**

## Rainfall over the last three months (December 2010 to February 2011)

The December 2010 to February 2011 period was wet across most of Australia. Extremely high rainfall was recorded in parts of all states and territories.



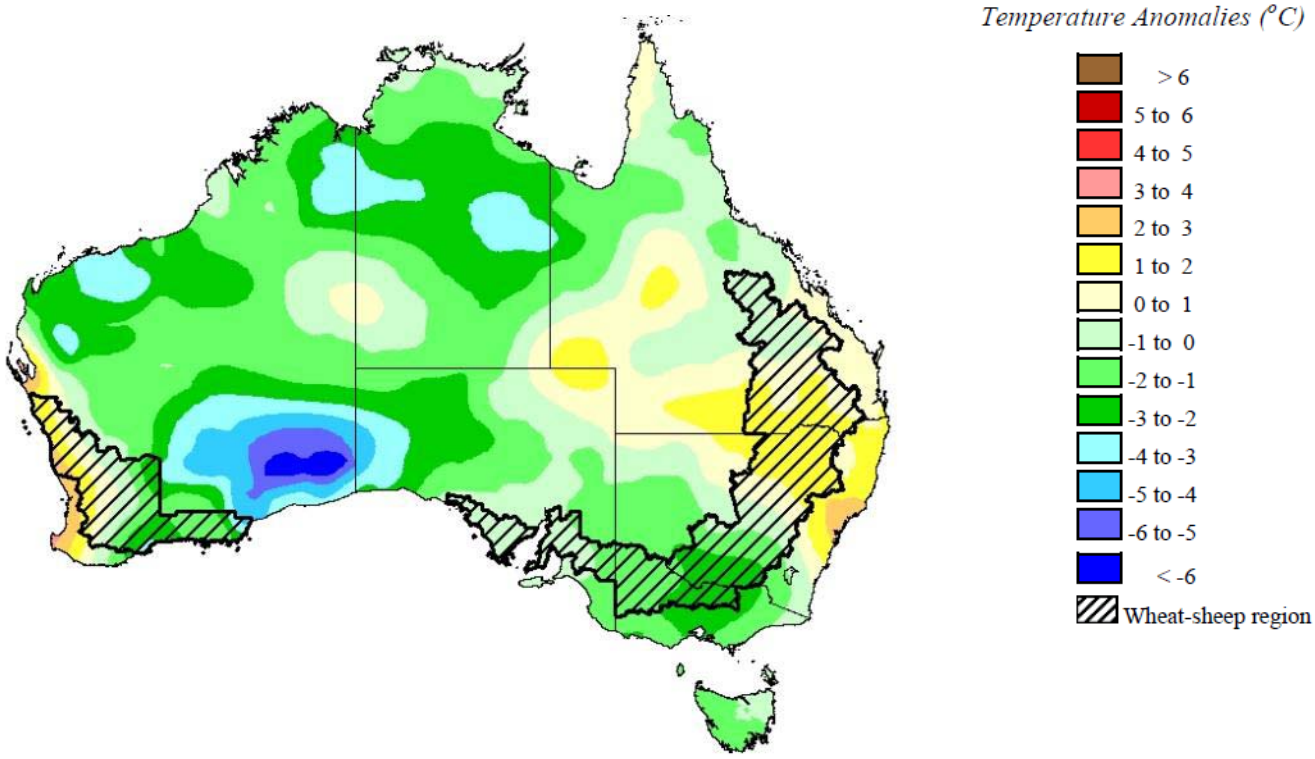

**Rainfall percentiles (December 2010 to February 2011)**

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.

## 1.2 Temperature

### Mean maximum temperature

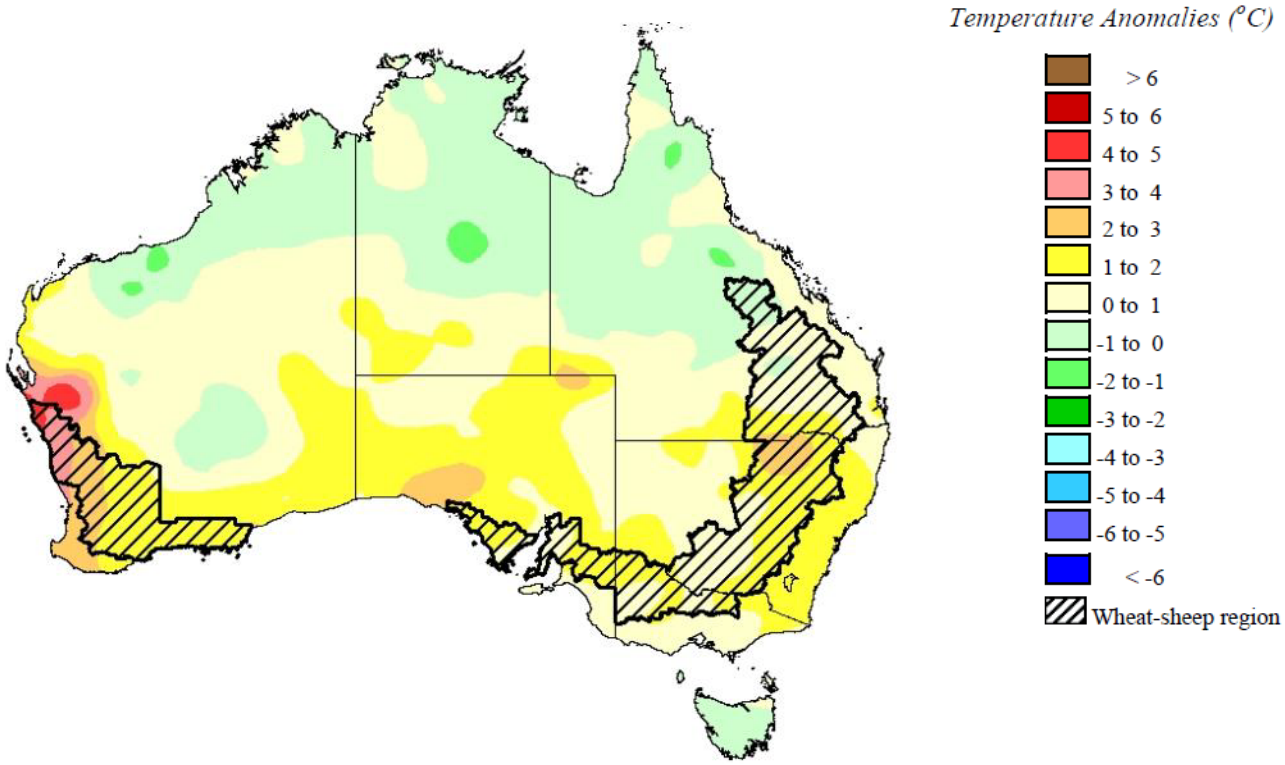
The mean maximum temperature during February 2011 was 1 to 6° Celsius below the long-term February average for much of the western and southern half of Australia. In coastal areas of Western Australia, north-east New South Wales and central to south-east Queensland temperatures were 1 to 3° Celsius above the long-term February average.




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

## Mean minimum temperature

Mean minimum temperatures for most parts of Australia during February 2011 were between 1 to 5° Celsius warmer than the long-term February average. Minimum temperatures in parts of northern Australia were 1 to 2 ° Celsius cooler than the long-term February average.



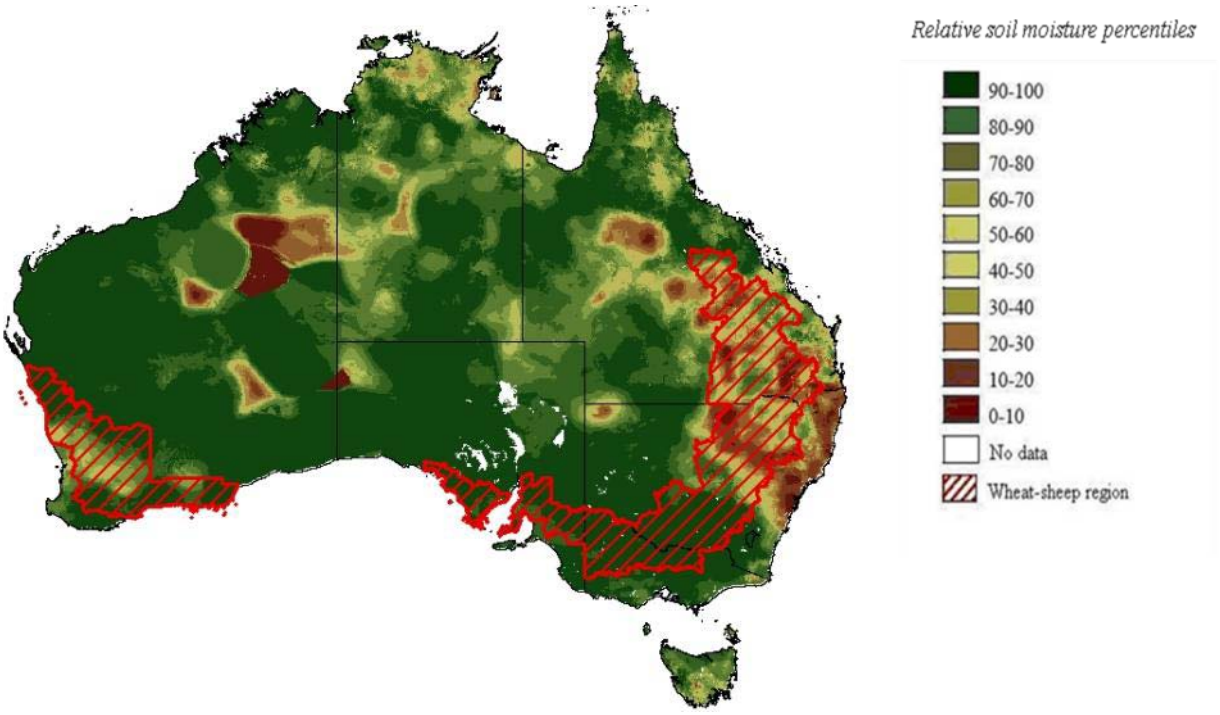

**Monthly mean minimum temperature anomalies (February 2011)**

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 go to www.bom.gov.au/climate/austmaps/.

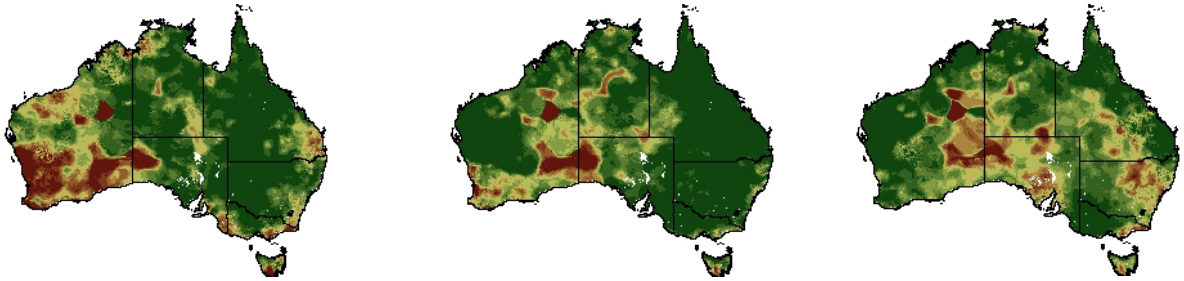
## 1.3 Relative soil moisture

### Upper layer soil moisture

Relative soil moisture in the upper layer of the soil profile was above average across most of Australia as a result of the generally wet conditions across Australia during February 2011. Upper layer soil moisture has improved since January 2011 in central parts of Australia, eastern Victoria and southern Tasmania. Soil moisture is below average in the south-west of Western Australia and in parts of Queensland and New South Wales, reflecting February rainfall deficiencies in these areas.




**Upper layer soil moisture percentiles (February 2011)**

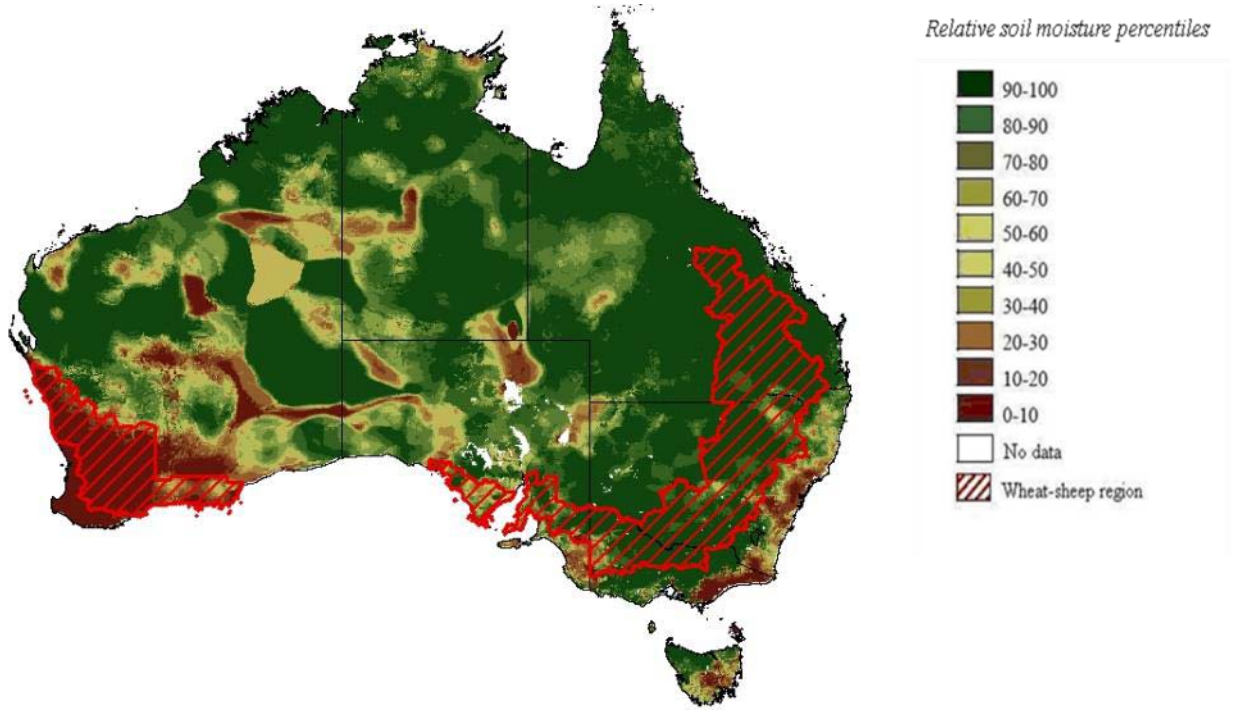


**November 2010** **December 2010** **January 2011**

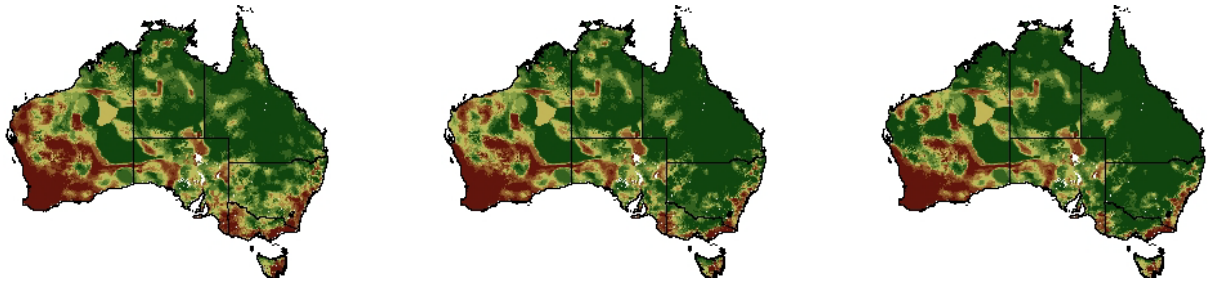
The bulk of plant roots occur in the top 0.3 metres of the soil profile and soil moisture in the upper layer of the soil profile (0.2 metres) is the most appropriate indication of the availability of water, particularly for germinating plants.

## Lower layer soil moisture

Relative soil moisture levels in the lower layer of the soil profile were above average during February 2011 in most parts of the continent, notably in eastern and central Australia. In south-west Western Australia and parts of central and east coast Australia, lower level soil moisture deficiencies reflect long-term rainfall deficiencies. 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 (February 2011)**



**November 2010** **December 2010** **January 2011**

The maps in section 1.3 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 February 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 go to [www.daff.gov.au/brs/climate-impact/awap](www.daff.gov.au/brs/climate-impact/awap)

## 1.4 Climate outlook

### El Niño Southern Oscillation (ENSO)

Climate models indicate a weakening of the La Niña event in the Pacific Ocean following a peak in intensity in early January 2011. The La Niña event is likely to continue weakening further through the Southern hemisphere autumn with a return to neutral conditions by winter.

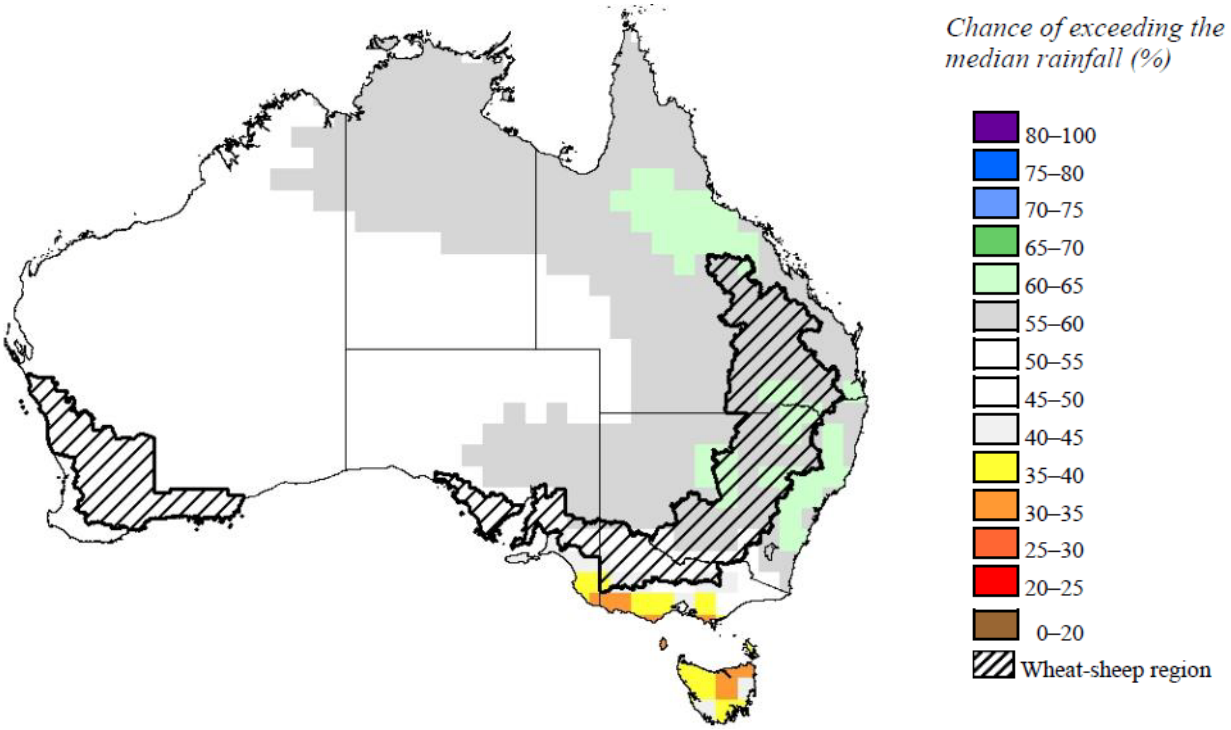
Equatorial Pacific Ocean temperatures have warmed over the past months and observations are consistent with a breakdown phase of the La Niña. The influence of La Niña on rainfall and temperature typically weakens during autumn. During La Niña events, higher than normal tropical cyclone numbers are typical during the November to April period.

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

The cool conditions in the central tropical Pacific Ocean and warm conditions in the Indian Ocean are influencing the March to May 2011 rainfall and temperature outlook.

### Rainfall outlook

Wetter conditions are favoured across most of eastern Australia for the March to May 2011 period, which would generally benefit summer and winter crops if it eventuated. Drier conditions are favoured across southern Victoria and most of Tasmania. Across the rest of the continent, the chances of exceeding or not exceeding the median rainfall are about the same.

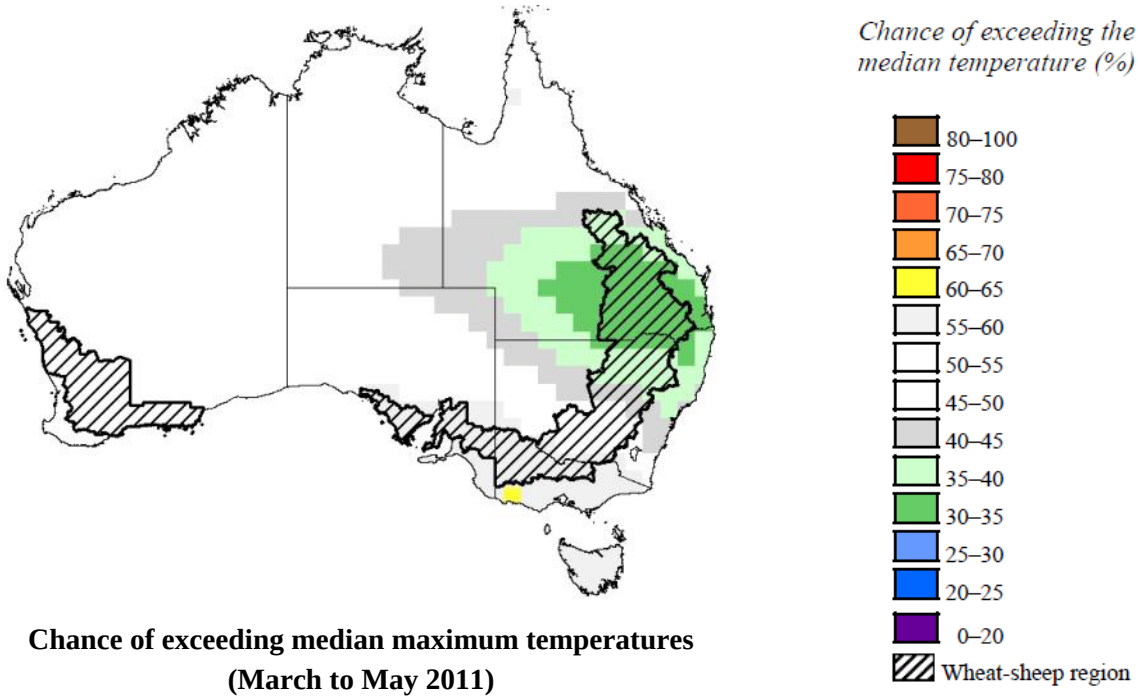



**Chance of exceeding the median rainfall (March to May 2011)**

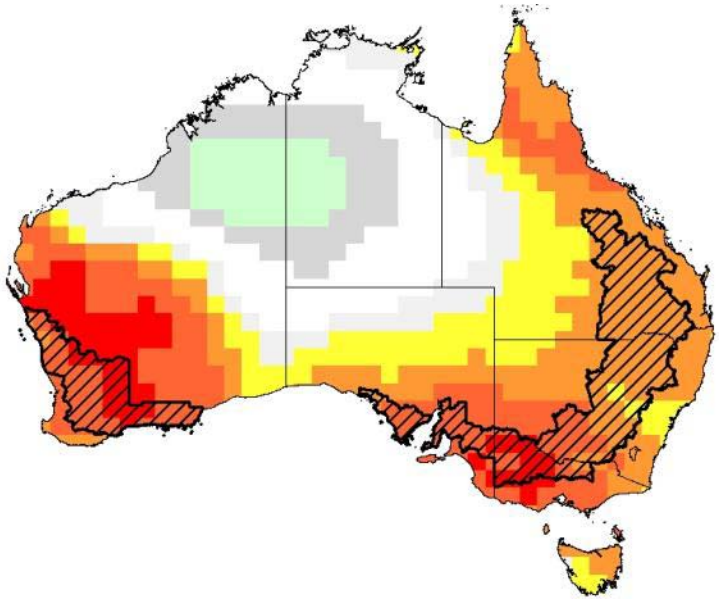
## Temperature outlook

The temperature outlook for maximum and minimum temperatures for the March to May 2011 period favours warmer night-time temperatures across eastern, south-western and southern Australia and cooler daytime temperatures across southern Queensland and northern New South Wales.

The chance of exceeding the long-term median maximum temperatures for March to May is between 30 and 40 per cent across southern Queensland and north-eastern New South Wales. The chance of exceeding the long-term median minimum temperatures across eastern, southern and south-western Australia is between 60 and to 80 per cent.




**Chance of exceeding median maximum temperatures (March to May 2011)**



**Chance of exceeding median minimum temperatures (March to May 2011)**

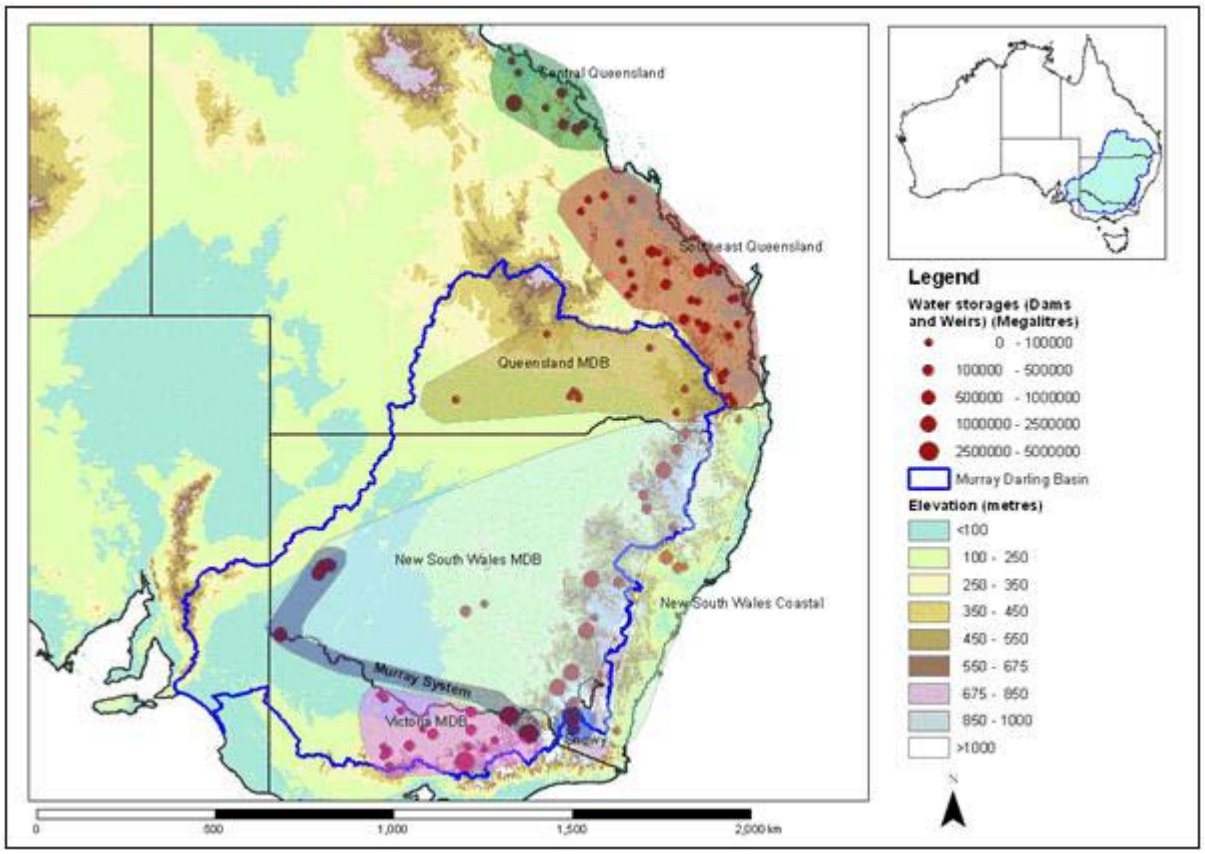
These outlooks are based on the statistics of chance (the odds) and are not categorical predictions. For further information on these seasonal outlooks and their interpretation go to www.bom.gov.au/climate/ahead/.

# 2. Water

## 2.1 Water storages

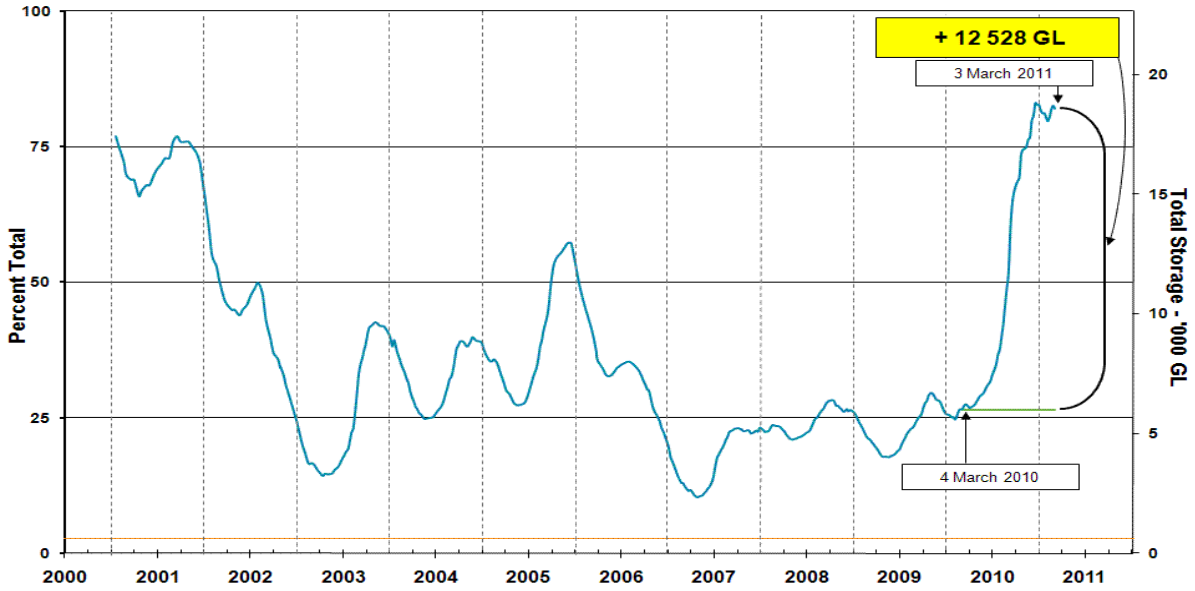
Changes in regional water storage for February 2011 and the previous 12 months are summarised in the table and graphs below (current at 3 March 2011).

| Region | Total capacity (GL) | Current volume (GL) | Current volume (%) | Monthly change (GL) | Monthly change (%) | Annual change (GL) |
|---|---|---|---|---|---|---|
| **Murray-Darling Basin (MDB)** | 22560 | 18510 | 82 | +524 | +2 | +12528 |
| **Snowy Scheme** | 5744 | 2225 | 39 | +181 | +3 | +540 |
| **Murray-Darling Basin Authority (MDBA)** | 9352 | 7125 | 74 | +407 | +4 | +5220 |
| **Queensland MDB** | 185 | 180 | 97 | -4 | -2 | +62 |
| **Central Queensland** | 3154 | 3148 | 100 | -1 | 0 | +169 |
| **South-east Queensland** | 3517 | 3493 | 99 | -11 | 0 | +963 |
| **New South Wales MDB** | 13918 | 11988 | 86 | +278 | +2 | +8673 |
| **Coastal New South Wales** | 1074 | 898 | 84 | -6 | -1 | +118 |
| **Victoria MDB** | 8488 | 6344 | 75 | +247 | +3 | +3792 |

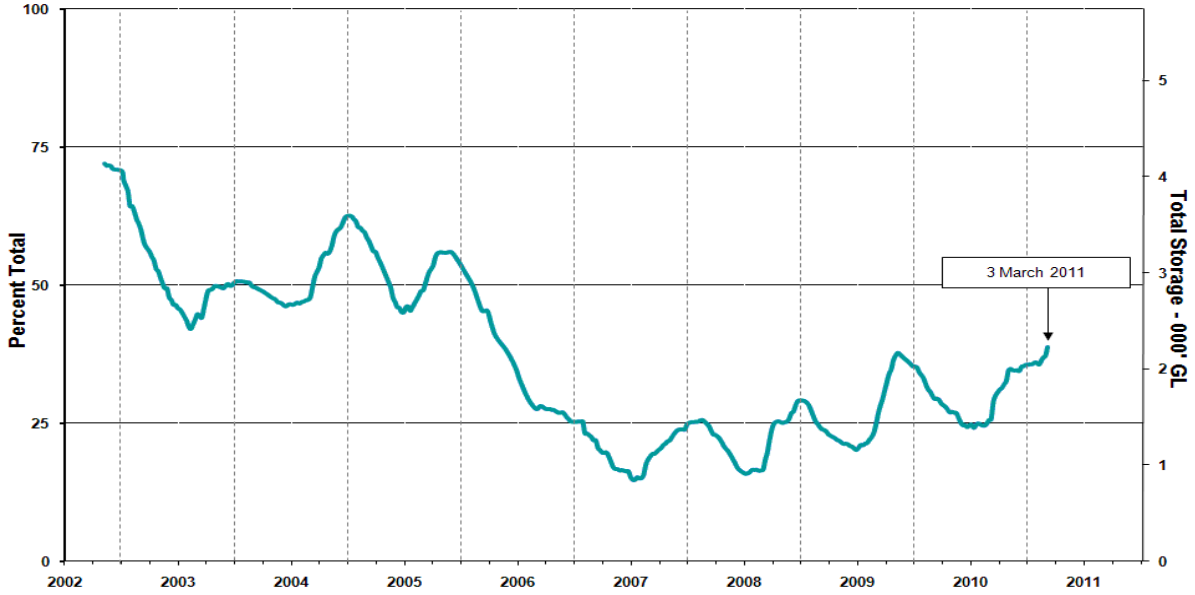



**Water storages in Queensland, New South Wales and Victoria:** The blue line indicates the extent of the Murray–Darling Basin and the shaded areas denote the coverage of the individual reporting regions.

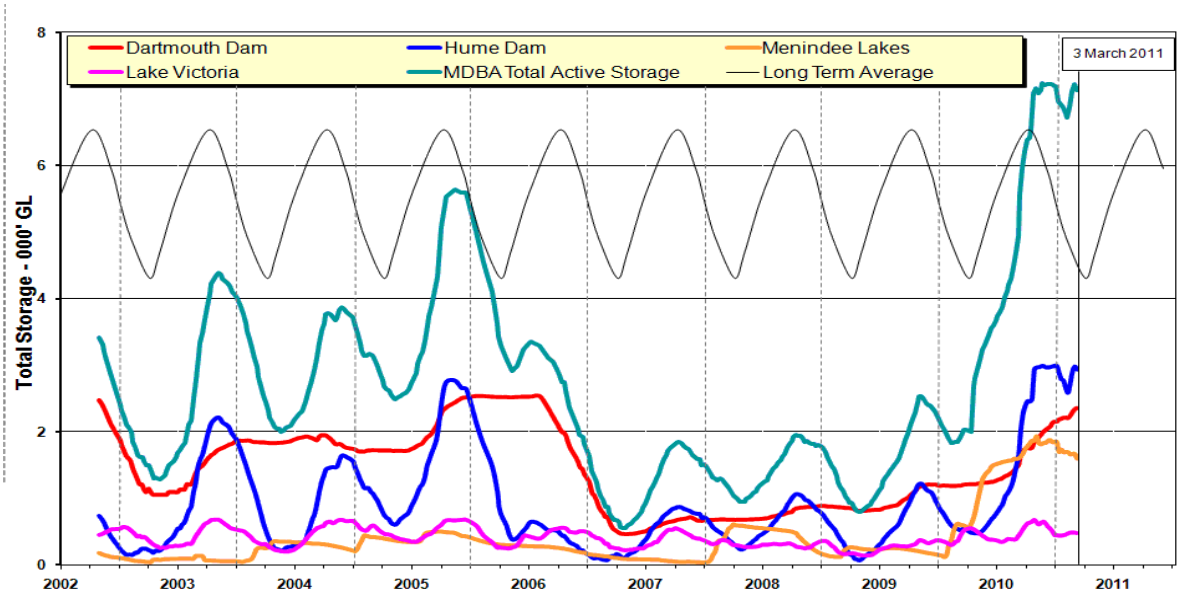
**MDB (New South Wales, Victoria and Queensland)**



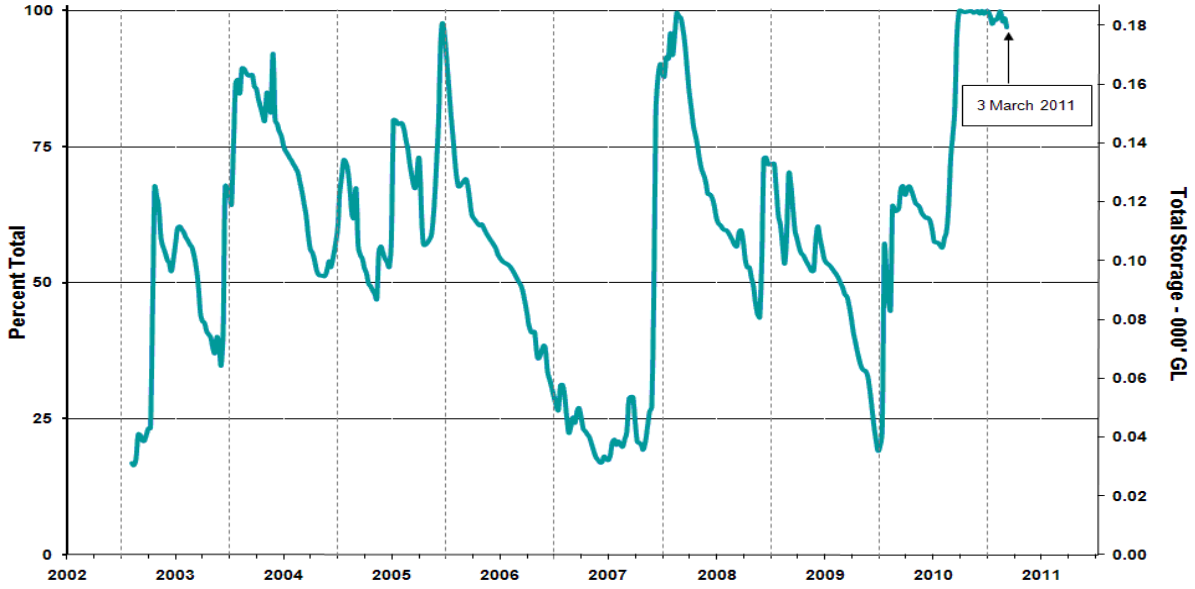

**Snowy Scheme**



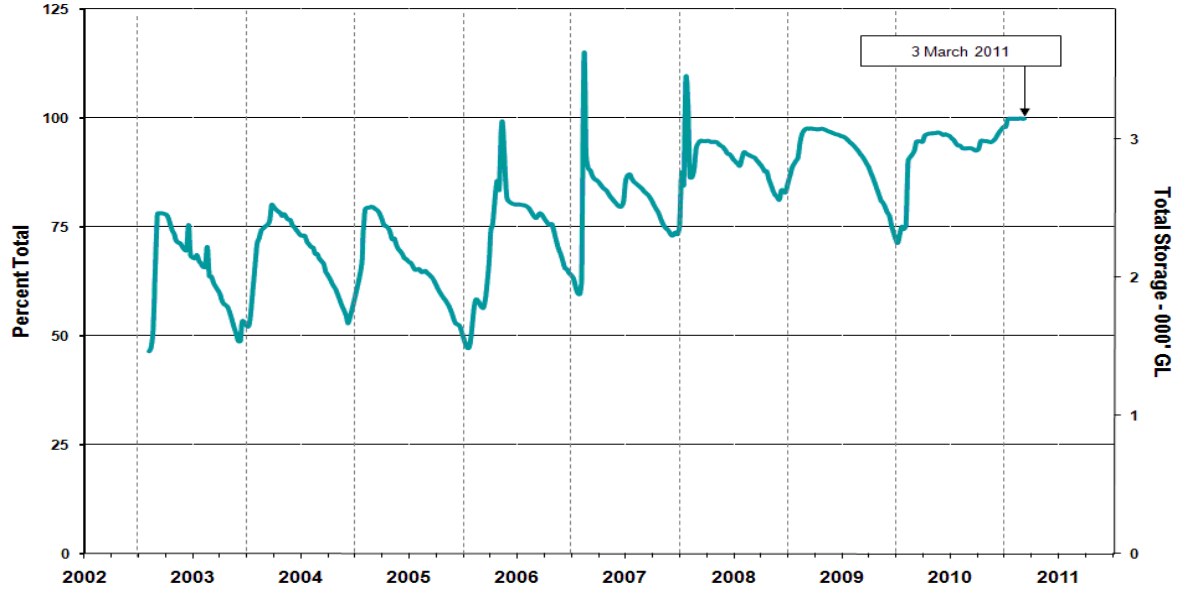

**MDBA – Active storage under the control of the Murray-Darling Basin Authority**



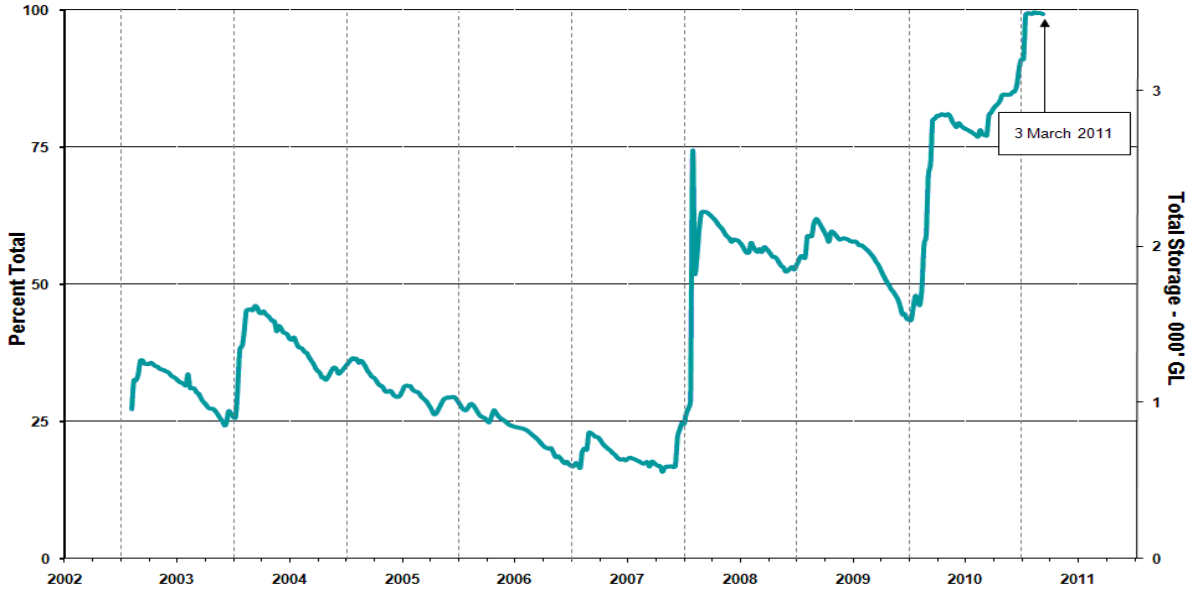
## Queensland MDB



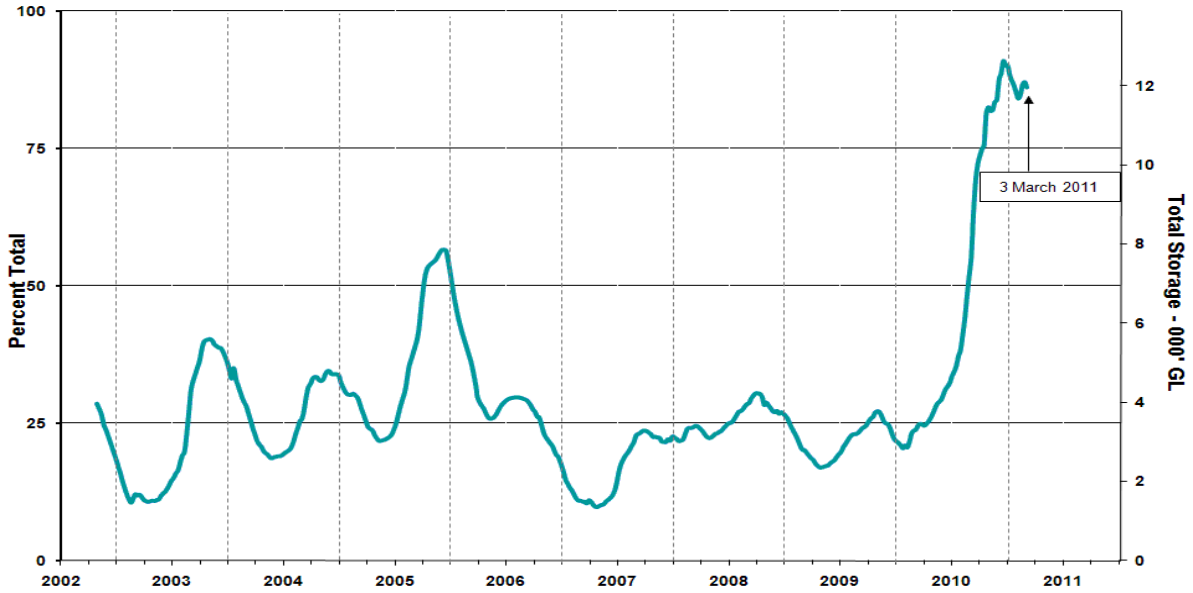

## Central Queensland



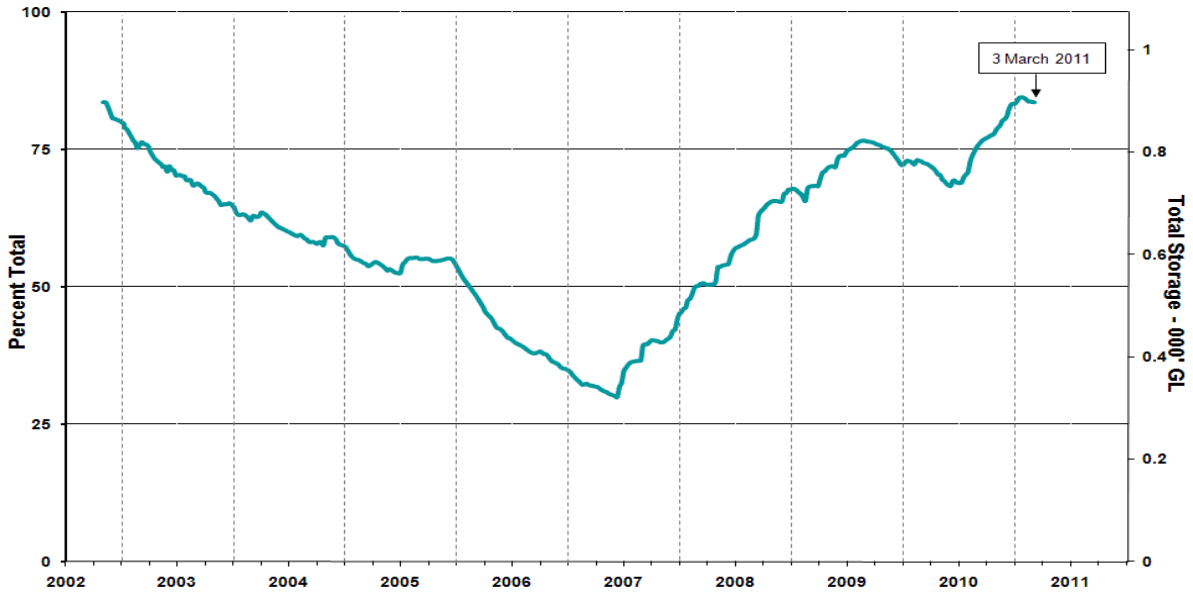

## South-east Queensland



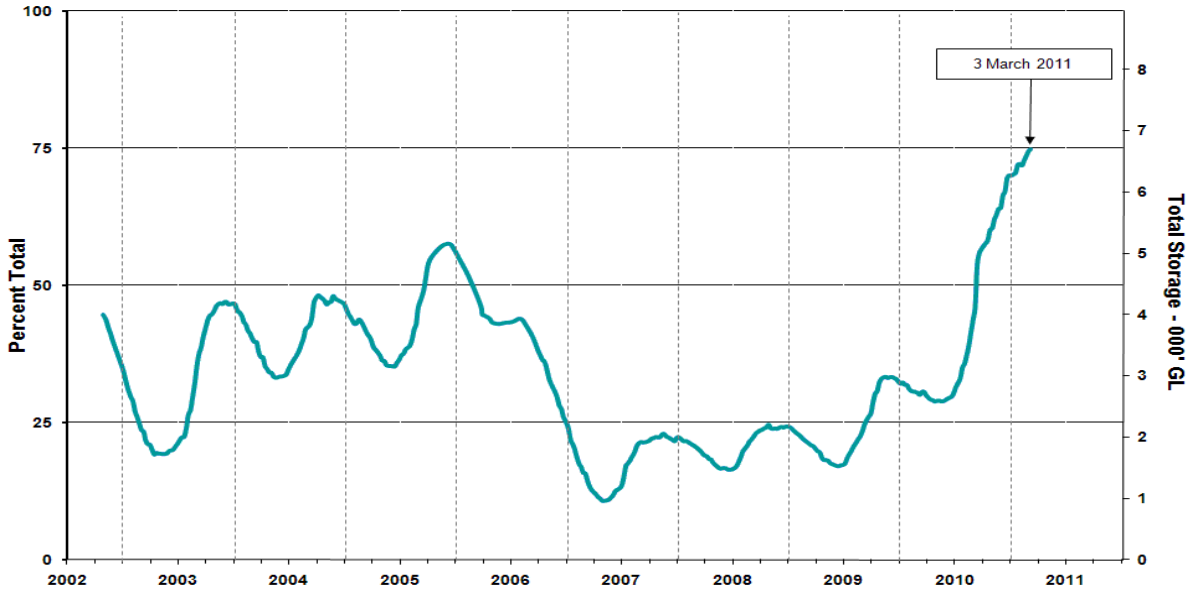
## New South Wales MDB




## 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
- Sun Water Queensland:
  www.sunwater.com.au/pdf/water/CurrentStorageSummary.pdf
- New South Wales Water Information:
  www.waterinfo.nsw.gov.au/
- Goulburn-Murray Water (Northern Victoria):
  www.g-mwater.com.au/water-resources/storage-levels/
- Murray-Darling Basin Authority:
  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 February 2011 (%) | Allocations at 1 March 2011 (%) |
|---|---|---|---|
| **NSW Murray Valley** | | | |
| High security | 97 | 0 | 100 |
| General security | 27 | 0 | 100 |
| **NSW Murrumbidgee Valley** | | | |
| High security | 95 | 0 | 100 |
| General security | 27 | 0 | 100 |
| **NSW Lower Darling** | | | |
| High security | 100 | 0 | 100 |
| General security | 100 | 0 | 100 |
| **NSW Macquarie Valley** | | | |
| High security | 100 | 0 | 100 |
| General security | 0 | 0 | 100 |
| **NSW Hunter Valley** | | | |
| High security | 100 | 0 | 100 |
| General security | 100 | 0 | 100 |
| **NSW Lachlan Valley** | | | |
| High security | 10 | 0 | 100 |
| General security | 0 | 0 | 108 |
| **NSW Border Rivers** | | | |
| High security | 100 | 0 | 100 |
| General security | 4.4 | 0 | 100 |
| **NSW Peel Valley** | | | |
| High security | 100 | 0 | 100 |
| General security | 100 | 0 | 100 |
| **Victoria Murray Valley** | | | |
| High reliability | 100 | 0 | 100 |
| **Victoria Goulburn** | | | |
| High reliability | 71 | 0 | 100 |
| **Victoria Campaspe** | | | |
| High reliability | 0 | 0 | 100 |
| **Victoria Loddon** | | | |
| High reliability | 3 | 0 | 100 |
| **Victoria Bullarook** | | | |
| High reliability | 19 | 0 | 100 |
| **Victoria Broken** | | | |
| High reliability | 17 | 0 | 100 |
| **South Australia Murray Valley** | | | |
| High security | 62 | 0 | 67 |

For further information on water announcements, go to:

- New South Wales Office of Water, Department of Environment, Climate Change and Water: http://www.water.nsw.gov.au/Home/default.aspx
  - Media releases: http://www.water.nsw.gov.au/About-Us/Media-Releases/default.aspx,
  - Water allocations: 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: http://www.wix.nsw.gov.au/wma/DeterminationSearch.jsp?selectedRegister=Determination
- Goulburn-Murray Water: http://www.g-mwater.com.au/
  - Media releases: http://www.g-mwater.com.au/news/media-releases/default.asp
- South Australian Department of Water: http://www.waterforgood.sa.gov.au/
  - Latest allocation announcement:

    http://www.waterforgood.sa.gov.au/rivers-reservoirs-aquifers/river-murray/
- Murray-Darling Basin Authority: http://www.mdba.gov.au/

# 3. Production

## 3.1 Summer crops

### New South Wales and Queensland

Despite rainfall deficiencies in some areas during February 2011, growing conditions in New South Wales and Queensland's summer cropping regions have been favourable due to adequate soil moisture. The lack of rain in some areas has also resulted in less disease risk to crops such as sorghum. The seasonal outlook for March to May 2011 favours wetter conditions for much of eastern Australia, which could increase the risk of pests and disease later in the season.

The area planted to grain sorghum is forecast to increase by 23 per cent to 637 000 hectares in 2010–11. Although plantings were restricted because of continual rain in central Queensland, the rain has been beneficial to planted crops and it is expected that yields will be above average in both northern New South Wales and in Queensland. Production is forecast to reach 2.2 million tonnes, around 39 per cent higher than last year.

High cotton prices and abundant supplies of irrigation water in most cotton growing regions are forecast to result in a 117 per cent increase in Australian cotton production in 2010–11, to 839 000 tonnes, with reductions from floods in Queensland more than offset by higher production in New South Wales. If realised, this would be the largest Australian cotton harvest on record, exceeding the previous high of 818 000 tonnes produced in 2000–01.

Abundant supplies of irrigation water are also forecast to lead to a substantial increase in rice plantings, which are estimated to have risen fourfold to 89 000 hectares. Rice production is forecast to reach 802 000 tonnes in 2010–11, with yields forecast to average 10 tonnes per hectare.

## 3.2 Winter crops

### Australia

Extremely heavy rainfall from November to January 2011 significantly lowered the quality of the harvested winter crop and resulted in the loss of some crops because of flooding and fungal disease. Nevertheless, with the winter crop harvest all but complete, reports are that yields are at or near records in the eastern states. In contrast to the eastern states, cropping regions in Western Australia recorded their driest year on record.

Total winter crop production for 2010–11 is estimated to be around 42.1 million tonnes, 19 per cent higher than last year. This estimate is 1.1 million tonnes ($275 million) lower than the previous ABARES forecast in December 2010.

Wheat production is estimated to be 26.3 million tonnes in 2011, which is 20 per cent higher than last season.

Barley production, at 9.3 million tonnes in 2011, is estimated to have increased by 18 per cent more than last season, to 9.3 million tonnes. Canola production is estimated to have increased by 11 per cent to 2.1 million tonnes in 2010–11.

For more information on production estimates and greater detail on yields and quality, see ABARES *Australian Crop Report*, released on 15 February 2011 (www.abares.gov.au).

## 3.3 Livestock

### Cattle

Competition for cattle remains strong across the country as a result of generally improved seasonal conditions in recent months. Cattle numbers delivered to market have increased during February 2011 in Queensland as transport links in areas affected by flooding were reopened. Demand remains strong from all buying sectors with improved seasonal conditions providing incentives for restockers to acquire suitable young cattle and breeders for herd expansion.

As a result of strong restocker demand, the Eastern Young Cattle Indicator (EYCI) closed at 395.75 cents per kilogram (¢/kg) carcass weight (cwt) on 24 February—the highest EYCI February price on record.

The indicator is a seven-day rolling average produced daily by Meat and Livestock Australia's (MLA) National Livestock Reporting Service (NLRS). The EYCI includes vealer and yearling heifers and steers (grade scores C2 or C3 of greater than 200 kilograms live weight) from saleyards in New South Wales, Queensland and Victoria.

### Sheep

Lamb quality remains good at most yardings in the eastern states in response to improved seasonal conditions. Competition remains strong with the MLA's Eastern States Trade Lamb Indicator (ESTLI) ending the month at 668 ¢/kg cwt. This indicator is a seven-day rolling average which includes trade lambs from saleyards in New South Wales, Queensland and Victoria. In Western Australia, lambs yarded were of mixed quality, with most of the lambs offered being lightweights or feeders. This reflects the poorer seasonal conditions in southern Western Australia.

There has been a shortage of ewes and wethers at market so far this year. Mutton numbers recorded nationally at MLA's NLRS markets declined by 28 per cent for the 2011 year to 25 February compared with the same period of 2010. This trend is consistent across the states and this supply is 40 per cent below the five-year-average. Supply has dropped as producers retain stock to rebuild their flocks in response to improved seasonal conditions. Demand for replacement breeding ewes has increased sharply in 2011 with prices at store and physical markets reaching new records. The national mutton indicator reached a new record in late February of 458¢/kg cwt.

http://www.mla.com.au/Prices-and-markets/Trends-and-analysis

http://www.mla.com.au/Prices-and-markets/Latest-prices-and-indicators

http://www.mla.com.au/Prices-and-markets/Market-news/Mutton-throughput-drops-in-2011

http://www.mla.com.au/Prices-and-markets/Market-news/WA-weekly-sheep-summary250211

http://www.mla.com.au/Prices-and-markets/Latest-prices-and-indicators/Eastern-Young-Cattle-Indicator