



# Climate and Agricultural Update

## National Report

Issued June 2008



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### ORGANISATION

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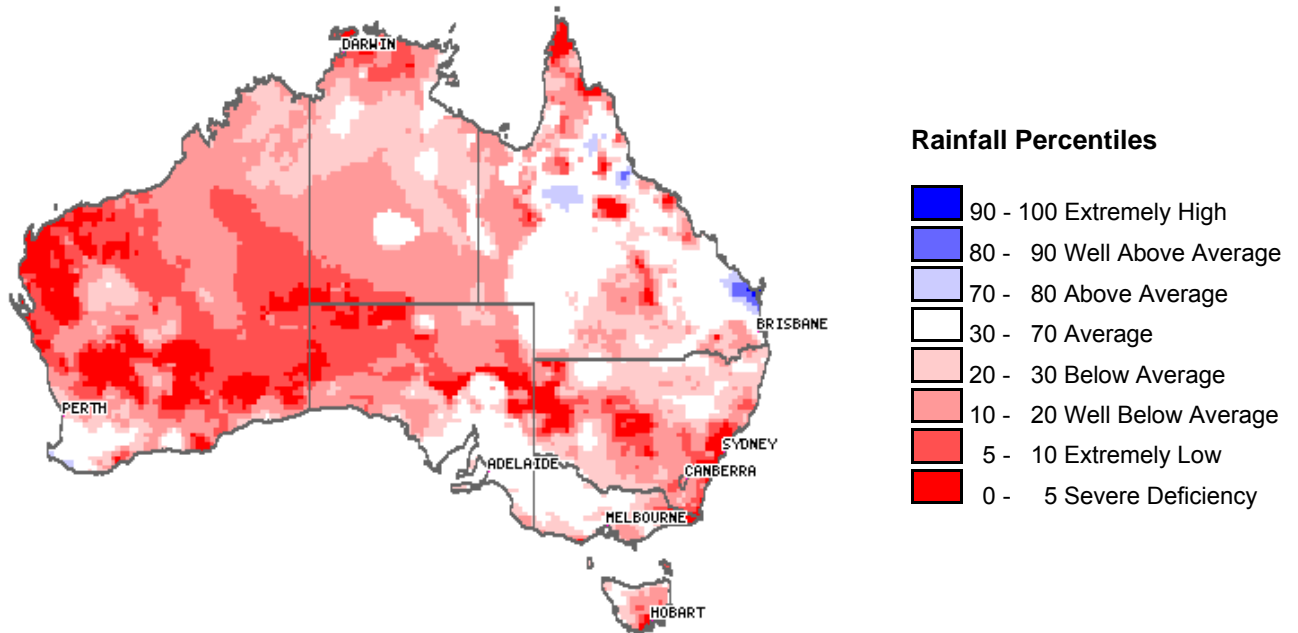
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# 1.0 Rainfall and temperature

## 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 (May 2008)*

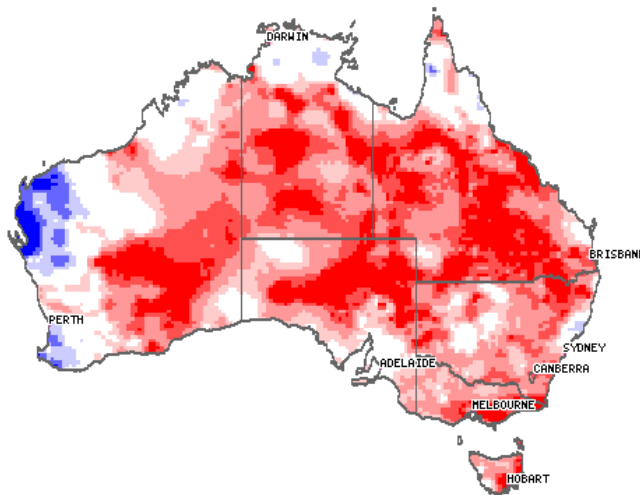


**Rainfall percentiles for May 2008.**

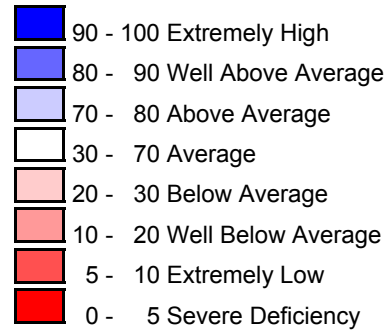
May 2008 was the driest on record and 73 per cent of the continent recorded below average rainfall (national area average of 7.86 mm).

Only a handful of areas reached their average May rainfall including the south-western tip of WA, the southeast and mid-north of SA and most of Queensland. Above-average rainfall was recorded in the coastal area north of Brisbane.

## Ongoing or emerging rainfall situations

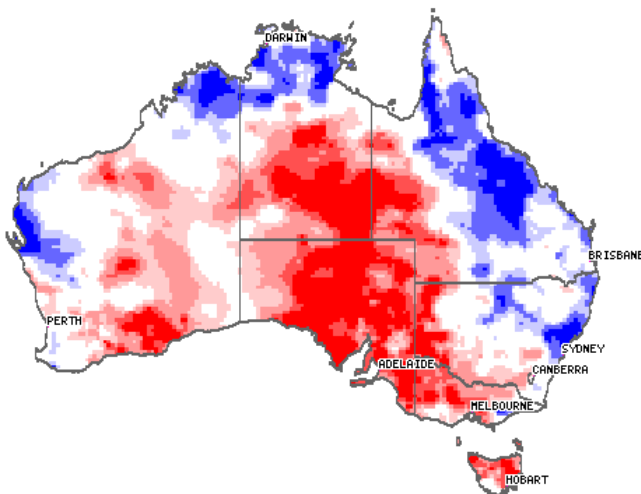


### Rainfall Percentiles

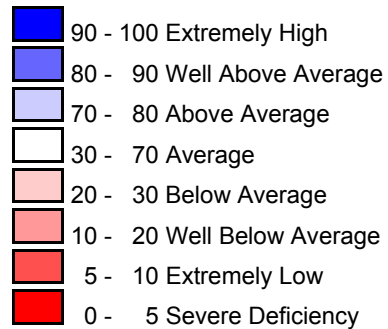


**Rainfall percentiles for the last three months  
March 2008–May 2008 (Autumn).**

Three months totals were below average across the country and in every state and territory. It was the eighth driest autumn on record across the continent and the fourth driest for the Murray-Darling Basin. Most states and territories had substantial areas in the lowest 10<sup>th</sup> percentile range. Only limited areas had above-average rainfall for the season, most notably the south-western corner of WA and the Gascoyne and West Pilbara regions.



### Rainfall Percentiles

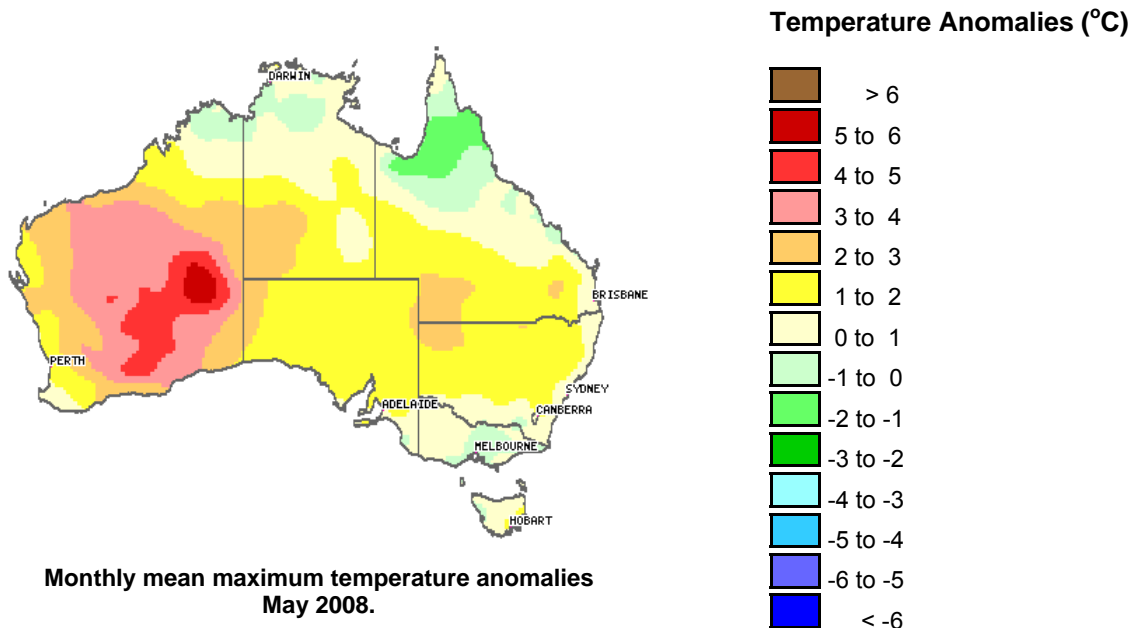


**Rainfall percentiles for the last 12 months  
June 2007–May 2008.**

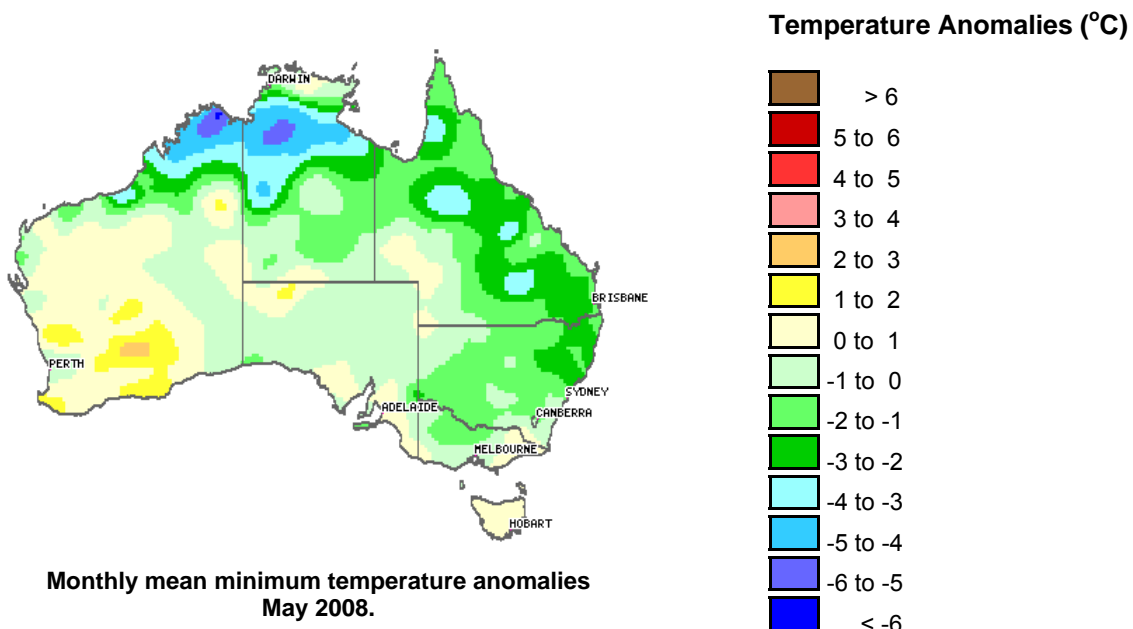
Long-term dry conditions exist across Tasmania, Victoria, far western NSW, SA and large parts of the continent's interior. In contrast, much of the tropical north and extensive areas down the east and west coasts have recorded above average rainfall over the last 12 months

## 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 maxima and minima 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/>.

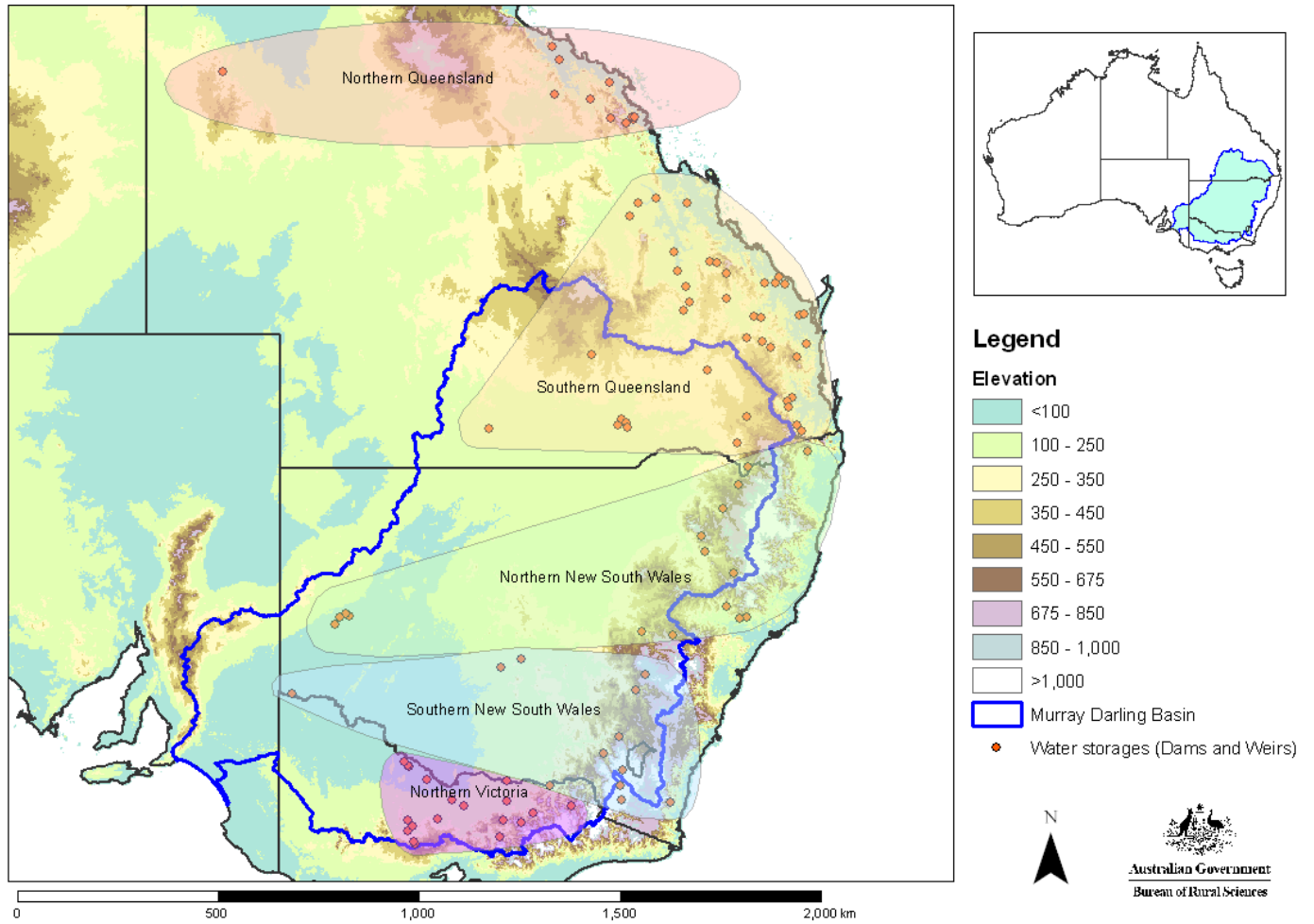


Maximum temperatures for May were above average over most of the country, with the national average anomaly being 1.48°C above the long-term average (1961–90). This is the seventh-highest record for May. Only relatively small areas experienced below-average maxima, the largest being northern Queensland, the northern Kimberley (WA), the north-western NT, and the eastern half of Victoria. Conversely, much of the remainder of the continent was 1°C or more above average, increasing to 3–5°C in central WA.



In contrast to maximum temperatures, minimum temperatures in May were generally below-average. The mean monthly minimum temperature was 0.81°C below the long-term average for May, ranking 14<sup>th</sup> lowest of 59 years. Minima were above average in southern WA and in a small area within the interior of the continent. Minima were at least 2°C below average in a broad belt extending from north-eastern NSW through much of eastern Queensland into the NT and northern WA. The cool conditions were notably consistent; few site records were set, but at many tropical locations almost every night during the month was cooler than average.

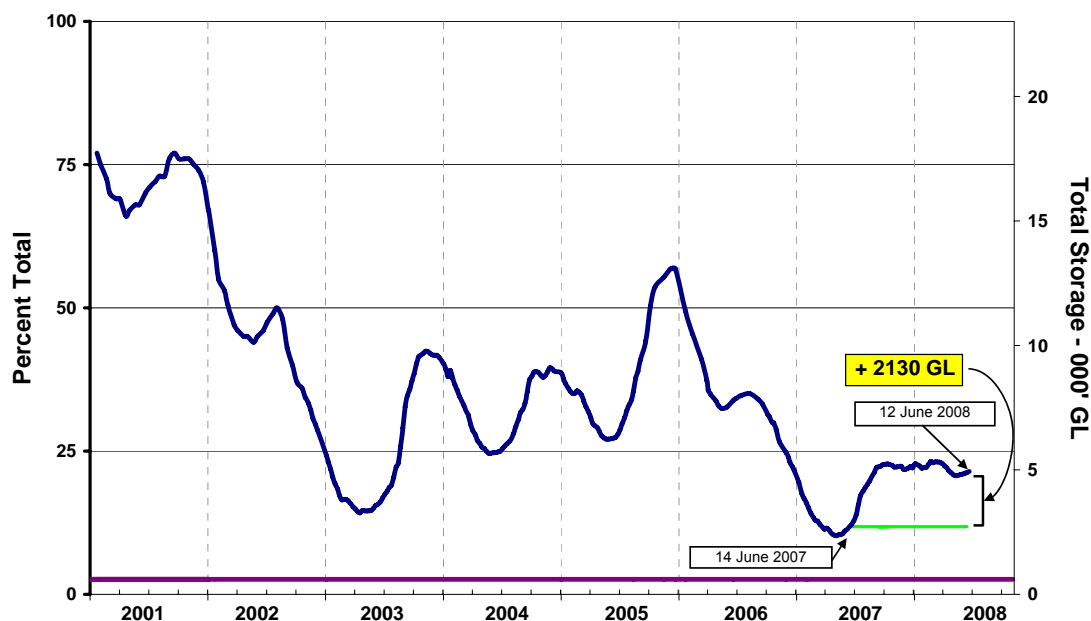
## 2.0 Water storages and announcements



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

## 2.1 Water storages (current to 12 June 2008)

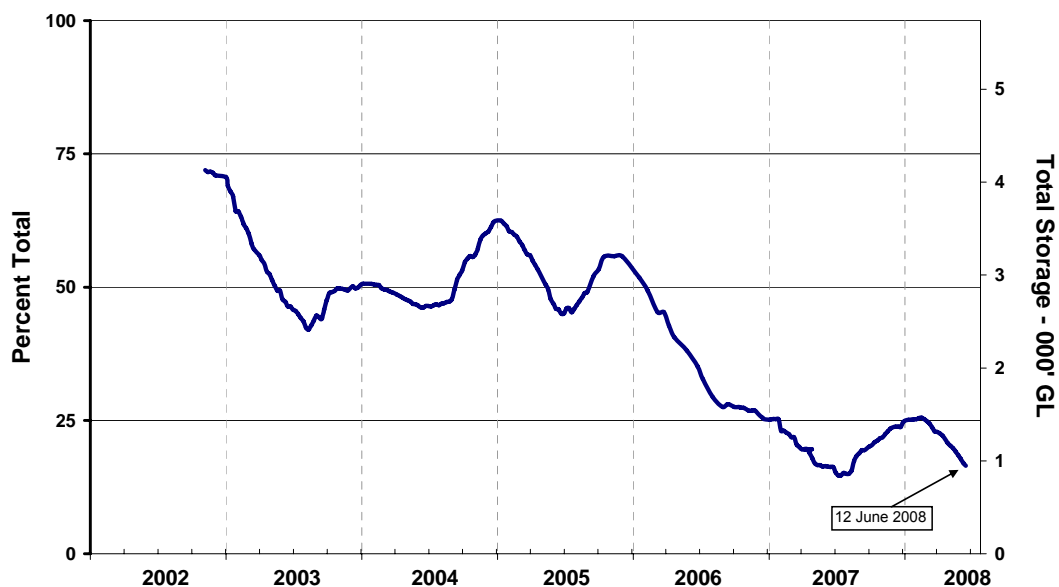
### Water storage in the MDB (New South Wales, Victoria and Queensland)



Water storage levels in the Murray-Darling Basin from 1 January 2001 to 12 June 2008. The green line indicates the storage level at the same time last year. Source: Bureau of Rural Sciences.

Over the past month storage levels within the Murray-Darling Basin (MDB) have increased, with inflows exceeding releases. At 12 June 2008 storage levels for irrigated agriculture were at 4940 GL (21.5 per cent of a total capacity of 23020 GL), an increase of 133 GL (0.6 per cent of total capacity) over the month. Current storage levels are approximately 2130 GL greater than at the same time last year.

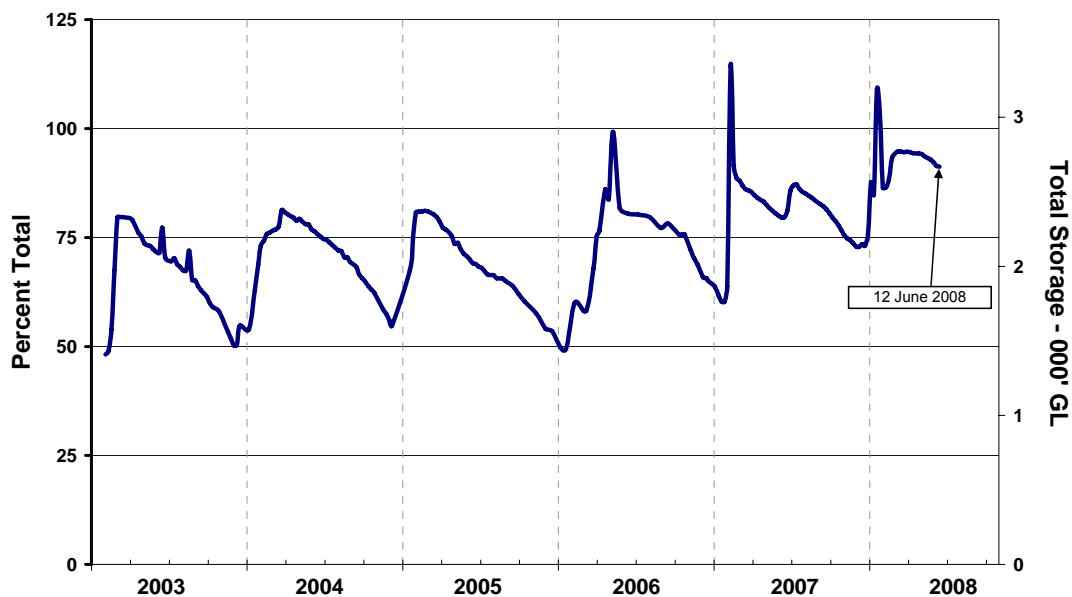
### Water storage in the Snowy Scheme



Water storage levels in the Snowy Scheme from 6 November 2002 to 12 June 2008. 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 which are reserved for hydro-electricity generation and irrigation purposes, collectively The Snowy Scheme. Current levels in The Snowy Scheme storages (see figure above) are 948 GL (16.5 per cent of a total capacity of 5744 GL).

## Water storage in Queensland



**Water storage levels in northern Queensland from 3 February 2003 to 12 June 2008.**  
**Source: Bureau of Rural Sciences.**

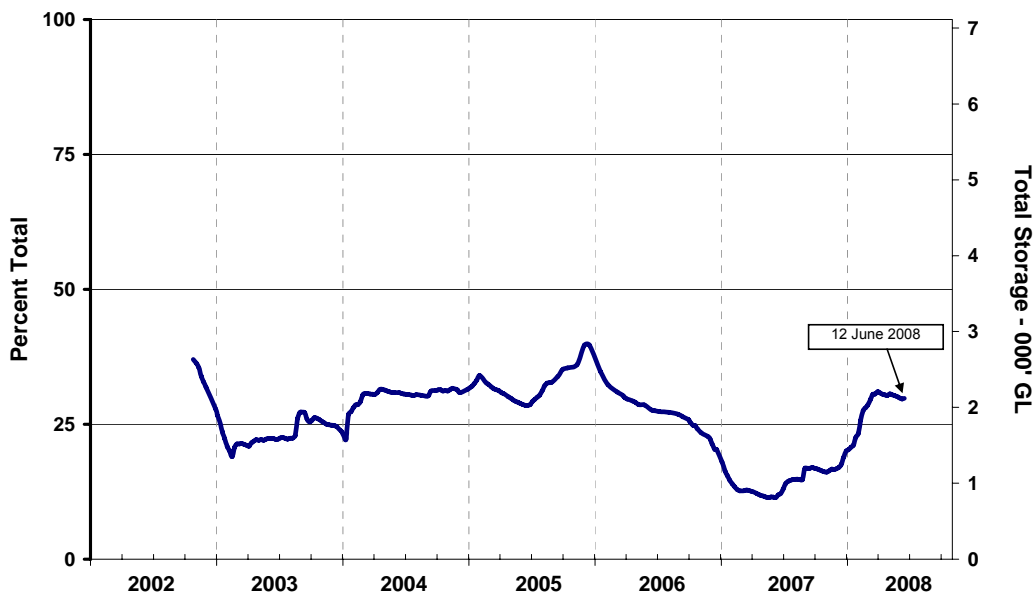
Storage levels in northern Queensland decreased by 64 GL to 2920 GL (91.2 per cent of a total capacity of 3199 GL) over the last month (see figure above). This storage level is approximately 371 GL higher than at the same time last year.



**Water storage levels in southern Queensland from 3 February 2003 to 12 June 2008.**  
**Source: Bureau of Rural Sciences.**

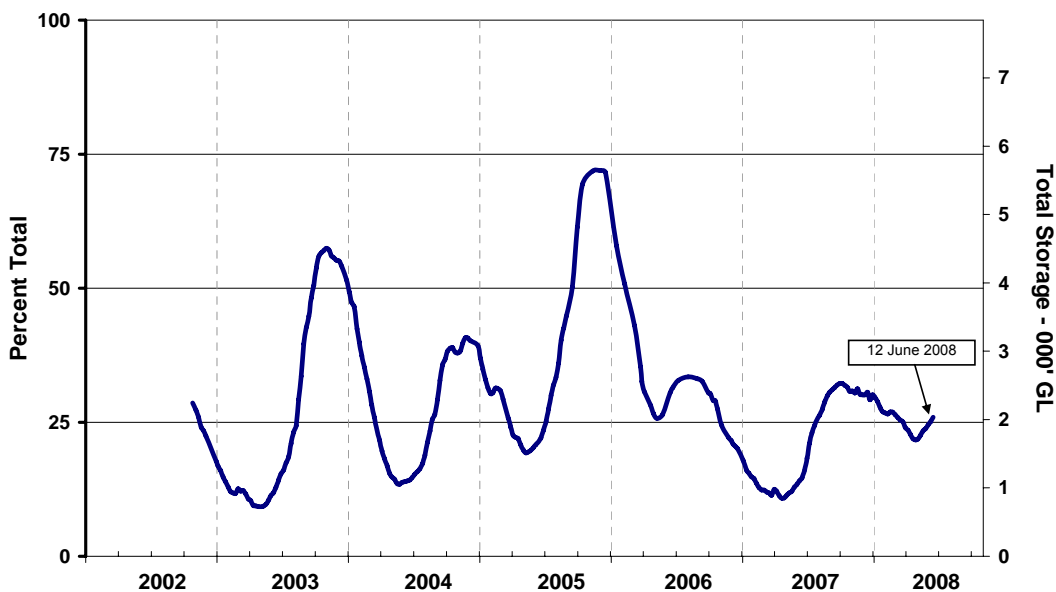
In southern Queensland storage levels decreased by 56 GL to 2642 GL (62.9 per cent of a total capacity of 4203 GL) over the last month (see figure above). This storage level is approximately 1521 GL higher than at the same time last year.

## Water storage in New South Wales



Water storage levels in northern New South Wales from 28 October 2002 to 12 June 2008.  
Source: Bureau of Rural Sciences.

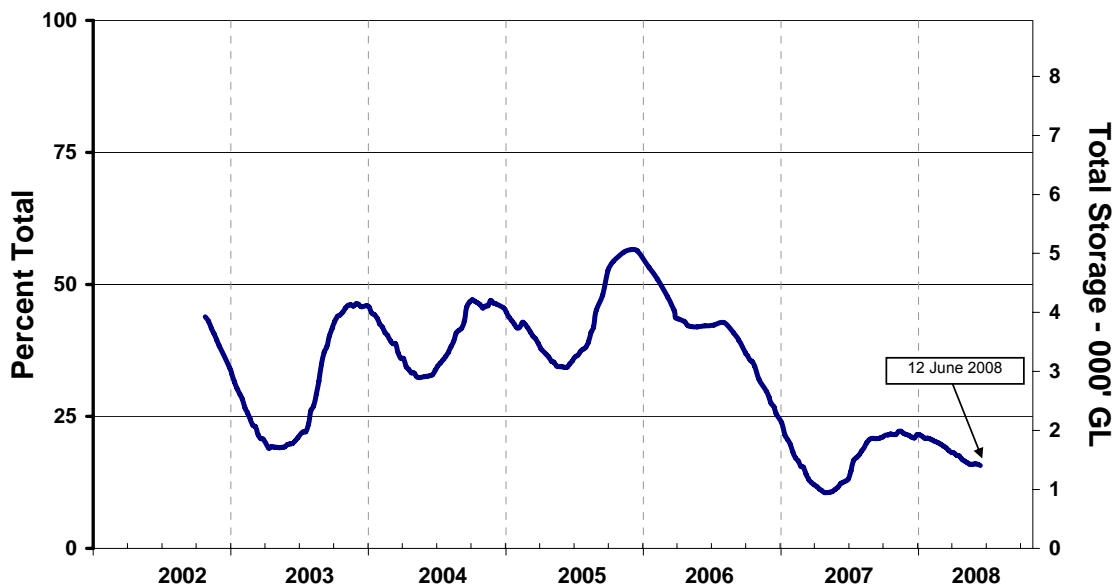
Storage levels in northern NSW decreased by 38 GL to 2118 GL (29.8 per cent of a total capacity of 7114 GL) over the last month (see figure above). This storage level is approximately 1263 GL higher than at the same time last year.



Water storage levels in southern New South Wales from 28 October 2002 to 12 June 2008.  
Source: Bureau of Rural Sciences.

In southern NSW storage levels increased by 199 GL to 1035 GL (25.9 per cent of a total capacity of 7844 GL) over the last month (see figure above). This storage level is approximately 887 GL higher than at the same time last year.

## Water storage in Victoria



Water storage levels in northern Victoria from 28 October 2002 to 12 June 2008.  
Source: Bureau of Rural Sciences.

Storage levels in northern Victoria decreased by 19 GL to 1409 GL (15.7 per cent of a total capacity of 8950 GL) over the last month (see figure above). This storage level is approximately 288 GL higher than at the same time last year.

### Murray-Darling Basin update

- Below average rainfall was observed across much of NSW and Queensland during May with central NSW receiving very much below average rainfall. Eastern Victoria also had below average rainfall while south-eastern SA and western Victoria had average rainfall. The Bureau of Meteorology advises that across the Murray-Darling Basin the 3-month period from March to May 2008 was the fourth driest on record.
- Below average rainfall resulted in May inflows (excluding Darling inflows) of around 80 GL, significantly lower than the long term average of 390 GL and only marginally higher than the minimum of 75 GL that occurred in 2006–07. With catchments now in an extremely dry state, sustained heavy rainfall is needed over the coming months to significantly improve the outlook for this season.
- Murray-Darling Basin Commission active storage is currently 1110 GL, or 13 per cent of capacity, which is slightly higher than this time last year (740 GL), but well below the long-term average. There is an additional 550 GL in Menindee Lakes, but this water remains under NSW control. Without additional Darling inflows it is not expected that there will be any further significant transfers of water from Menindee Lakes to the Murray. However, in extremely dry circumstances some of the water stored in Menindee Lakes could be available to assist delivery of water to meet critical needs in the Murray in 2008–09.
- The protracted nature of the current drought and temperatures consistently above average have dried out catchments and reduced base flows from groundwater systems to rivers. It can be expected, therefore, that even with average rainfall in 2008–09, inflows could remain well below average. Full recovery of the system would take several years of above average rainfall.
- While critical urban, stock and domestic requirements for 2008–09 are reasonably assured, although they are not yet guaranteed. Opening water allocations for Murray irrigators in 2008–09 are again expected to be very low or zero, although some carryover water is likely to be available. Critical human needs for 2008–09 can be met for urban water users taking water supplies from the main stream of the Murray provided inflows are no worse than the record lows in 2006–07. Allocation improvements during the season will be dependent on rainfall and inflows over coming winter and spring, which is the critical period for runoff in the high yielding catchments of the upper Murray, Mitta Mitta, Kiewa and Ovens Rivers. The very low system storage also presents very serious challenges for the environment in 2008–09.

## 2.2 Water announcements

### *Announcements for New South Wales (current at 12 June 2008)*

- As a result of low rainfall across New South Wales during the last two months, catchments are extremely dry with virtually no runoff. Flows in rivers and streams throughout the Murray-Darling Basin are now extremely low or have stopped. Inflows into the Snowy River system storages also remain extremely low and are similar to the record low levels observed at this time last year.
- Final allocation announcements for the major water systems in NSW for the 2007–08 season are summarised in the table below.

Water system	High Security Licences (%)	General Security Licences (%)
NSW Murray Valley	75*	0
Murrumbidgee Valley	95*	13
Lower Darling	100	50
Macquarie Valley	100	5
Hunter Valley	100	100
Lachlan Valley	30	0

\* Including re-crediting of water that was suspended in 2006–07

#### **Murrumbidgee Valley**

- There has been virtually no rainfall in parts of the Murrumbidgee Valley in the last month. From 13 May to 12 June, Wagga Wagga received 22.6 mm of rain, Gundagai 36.2 mm, Cooma 21.6 mm, Hay 18.6 mm and Griffith 20.8 mm.
- Murrumbidgee Valley storage levels as at 12 June 2008 are summarised in the table below.

Storage @ 12 June 2008	Volume GL	Percent of capacity	Change in Volume 13 May 2008 to 12 June 2008 GL
Burrinjuck Dam	423	41	+1
Blowering Dam	553	33	+55*

\* Nearly all of the inflow into Blowering Dam is a result of a Snowy Hydro release of 2008–09 water.

- Recent inflows into Blowering Dam have been as a result of Snowy Hydro release of 2008–09 water.
- While there is more water in storage now than at this time last year, much of this is held in individual accounts as carryover, undelivered inter-valley transfers or is a pre-release of Snowy Hydro 2008–09 commitments. In the Murrumbidgee Valley, provided that conditions do not deteriorate further in the next few months, there will be sufficient water for restricted basic human needs, domestic and stock supply, though supply in some tributaries may be intermittent and carryover of unused water from 2007–08.
- A water availability outlook for the 2008–09 irrigation season for the Murrumbidgee Valley was provided by the NSW Department of Water and Energy on the 15 May 2008. Estimates of probabilities of improvements can be seen in the table below.

Probability	August 1 2008	October 1 2008
9 chances in 10	Small High Security allocation and improved flow in Yanco Creek	50% High Security
3 chances in 4	20% High Security	95% High Security Small General Security allocation
1 chance in 2	70% High Security	30% General Security

## Murray Valley

- There has been little to no rainfall in the last month across the Murray Valley. From 13 May to 12 June, Corryong had 30.5 mm of rain, Albury 30.2 mm, Deniliquin 29.6 mm and Mildura 23.4 mm.
- Murray Valley storage levels as at 12 June 2008 are summarised in the table below.

Storage @ 12 June 2008	Volume GL	Percent of capacity	Change in Volume 13 May 2008 to 12 June 2008 GL
Hume Dam	427	14	+129*
Dartmouth Dam	688	17	+6
Lake Victoria	278	41	+8
Menindee Lakes Storage	566	32	-16

\* Nearly all of the inflow into Hume Dam is a result of a Snowy Hydro release of 2008–09 water.

- While there is now a significant volume of water in storage compared to last year, much of this is held as carryover in individual accounts or is pre-release of Snowy Hydro's 2008–09 release commitments. There is also a large volume held in Murrumbidgee and Goulburn storages as undelivered inter-valley transfers.
- New South Wales is in a better position than it was at this time last year. At this stage it is not intended to implement the Department of Water and Energy's Critical Water Program as there is a significant volume of carryover in the Murray Valley. Similarly, there are substantial carryover volumes in the Murrumbidgee Valley and in Victoria and South Australia to underpin trade.
- New South Wales has reserved water both within its Murray Valley resources and in the Menindee Lakes to support the delivery of water for critical human needs and carryover in 2008–09. Any improvements in resource availability will be used to secure domestic and stock requirements and to provide sufficient high security water to ensure permanent planting survival.

## Announcements for Victoria (current at 12 June 2008)

- Goulburn-Murray Water announced final season allocations on 1 April 2008 (see below).

Water system	High-reliability share (%)
Murray	43
Broken	71
Goulburn	57
Campaspe	18
Loddon	5
Bullarook Creek	0

- This was the final allocation announcement for the 2007–08 season. The water resources improvements that are received from now until the end of June 2008 will be used for system operations and allocations during the 2008–09 season.
- On 15 May 2008 Goulburn-Murray Water released an outlook for seasonal allocations in the 2008–09 season. The availability of irrigation allocations across northern Victoria in 2008–09 will rely entirely on inflows from winter and spring rainfalls. Continuing drought conditions have again seen reservoirs fall to low levels. Although a number of reservoirs hold more water than at the same time last year, the remaining reserves are largely assigned to meeting customers' carryover allocations, and will not be used to supply system operating water or allocations. Without substantial winter inflow, there will be little water to allocate for irrigation at the start of the 2008–09 season.
- Carryover of unused entitlements from the 2007–08 season is now available for all customers in northern Victoria. Access to carryover commitments in the channel network will become available when enough water is available to operate the delivery system. Goulburn-Murray Water is currently planning to open the irrigation season on 15 August if reserves are available and there is demand from customers. If demand is

minimal, the season opening will be delayed to save water. The length of the 2008–09 season will depend on the water available to assign to system operating needs. Full system operation to the target close date of 15 May 2009 will rely on the inflows received during upcoming winter and spring.

- Average inflow conditions will not provide enough water to allocate water for irrigation on 1 July 2008. All systems will begin the 2008–09 season with zero seasonal allocations. By 15 August 2008, average inflows are expected to allow non-zero allocations in all systems. Goulburn-Murray Water will announce the opening seasonal allocations for all water systems on Tuesday 1 July 2008.
- A summary of 2008–09 season allocations can be seen in the tables below. The terms in these tables are defined as: *wet* (inflow volumes that are higher in 1 year out of every 10 years), *average* (inflow volumes that are higher in 5 years out of every 10 years) and *dry* (inflow volumes that are higher in 9 years out of every 10 years)

#### Outlook for 1 July 2008 Seasonal Allocations (% of high-reliability water share)

Inflow Conditions	Murray	Broken	Goulburn	Campaspe	Loddon
<i>wet</i>	0	0	0	0	11
<i>average</i>	0	0	0	0	0
<i>dry</i>	0	0	0	0	0

#### Outlook for 15 August 2008 Seasonal Allocations (% of high-reliability water share)

Inflow Conditions	Murray	Broken	Goulburn	Campaspe	Loddon
<i>wet</i>	89	100*	58	100	100*
<i>average</i>	4	7	2	2	7
<i>dry</i>	0	0	0	0	0

#### Outlook for 15 October 2008 Seasonal Allocations (% of high-reliability water share)

Inflow Conditions	Murray	Broken	Goulburn	Campaspe	Loddon
<i>wet</i>	100	100*	100	100	100
<i>average</i>	61	65	67	65	100
<i>dry</i>	11	0	0	0	0

#### Outlook for 15 December 2008 Seasonal Allocations (% of high-reliability water share)

Inflow Conditions	Murray	Broken	Goulburn	Campaspe	Loddon
<i>wet</i>	100	100*	100	100	100
<i>average</i>	82	100*	92	78	100
<i>dry</i>	17	0	7	0	0

#### Outlook for 15 February 2009 Seasonal Allocations (% of high-reliability water share)

Inflow Conditions	Murray	Broken	Goulburn	Campaspe	Loddon
<i>wet</i>	100	100*	100	100	100
<i>average</i>	93	86	100	86	100
<i>dry</i>	24	0	13	0	0

\* Low-reliability water shares allocated

## **Announcements for South Australia (current at 12 June 2008)**

- Minister for the River Murray, Karlene Maywald, announced on 22 May 2008 that water resource conditions have continued to worsen across the southern Murray-Darling Basin. Based on the current water resource outlook for 2008–09 from the Murray-Darling Basin Commission, the most likely initial allocation when the water year begins on July 1 would be zero.
- The Minister for the River Murray also announced that the State Government fully understands the adverse impacts this would have and is investigating all possible options to make a small initial allocation and further advice will be available on Monday June 16.
- Information received from the Murray-Darling Basin Commission shows that over the past three months, rainfall in the upper River Murray catchment was below average and inflows are receding towards previous historical minimum inflows.
- A total of 737 applications have been received to carry-over water for delivery in 2008–09. The total amount of water eligible for carry-over will be calculated following end-of-year meter readings. It is expected that at least 50 per cent of eligible carry-over will be allocated from July 1 2008 with the remainder to be allocated as the season progresses. Water has also been put into reserve to guarantee supply for critical human needs in South Australia during 2008–09.
- In addition, SA has been guaranteed the delivery of 696 gigalitres of dilution flow to cover system losses and to ensure salinity at Murray Bridge does not exceed 1400 EC during 2008–09. SA irrigation allocations for the rest of this water year (2007–08) will remain unchanged at 32 per cent.
- Licence holders are reminded that the provision of carry-over depends on climate conditions and the ability to deliver it from interstate storages to South Australia. While the government is confident that carry-over can be supplied, an absolute guarantee cannot be given.

For further information on water announcements, go to:

Murray-Darling Basin Commission

<http://www.mdbc.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/>

SA Water

<http://www.sawater.com.au/SAWater/WhatsNew/NewsRoom/>

## 3.0 Crop and livestock production

### 3.1 Crops

#### *Winter Crops*

- With grain prices remaining high the area sown to winter crops in 2008–09 could increase markedly if seasonal conditions permit. Many livestock producers reduced animal numbers during 2007 as drought continued in many parts of Australia. As prices of replacement livestock are likely to be high during 2008, where seasonal conditions permit, producers are likely to place more emphasis on cropping in 2008–09 to secure a quicker recovery in incomes (ABARE Australian Grains 08.1).
- Current soil moisture and the seasonal rainfall outlook indicate that chances of an above median wheat yield during the 2008 wheat-growing season are average across most of Queensland. Almost all shires in Queensland show average chances (40–60 per cent) of exceeding the long-term median shire wheat yield. The exceptions are some areas in the Far South West which have an above average chance (70–80 per cent) and the Western Downs which show a below average chance (30–40 per cent) of exceeding the long-term expectation for that region.
- The current Queensland wheat outlook shows a forecast median yield at the end of April this year at 1.37 tonnes/hectare (t/ha), which is very close to the long-term median of 1.39 t/ha. There is, however, a 10 per cent chance that the state yield could be as low as 1.0 t/ha or as high as 1.96 t/ha.
- Welcome rain has fallen across much of Central Queensland's grain cropping country and although falls have been widely variable, wheat and chickpea crops already in the ground will benefit greatly. In addition, it is likely that late rains in May will trigger further wheat planting (Queensland Department of Primary Industries and Fisheries).
- Throughout NSW about 63 per cent of the estimated 24 3970 hectares of canola has been sown, with the remaining area in doubt, unless rain falls in the next week. Additionally, an estimated 26 per cent of the 3.31 million hectare wheat crop has been sown.
- Conditions have deteriorated over the past six weeks for Victoria and southern and central NSW. Many growers in these areas are reverting to dry-sowing in anticipation of a seasonal break.
- The plant available soil moisture is very good for much of the WA wheat belt. Recent rainfall has enabled an early start to seeding operations. The forecast is for total grain deliveries of between 10 and 12 million tonnes from a planted area of just over 6 million hectares. Farmers have responded to the strong grain price signals and look like planting a near record crop but dry conditions during May in many parts of the State were unfavourable to beating the record of 14.5 million tonnes produced on 6.5 million hectares in 2004. Escalating input costs, especially fuel and fertiliser, also caused growers to be a little more circumspect in their plans. Nevertheless, wheat plantings are expected to be about one million hectares greater than last year, mainly due to the northern agricultural areas experiencing far more favourable seeding conditions than during the drought of 2007. Other districts also are up by around 10 per cent (Department of Agriculture and Food Western Australia, June 2008 Seasonal Update).
- There has been a marked improvement in conditions in the drought affected northern wheat belt, with an excellent start to the season and most farmers beginning their seeding programs. However, widespread rain is needed in agricultural districts to enable farmers to get sowing programs well underway.
- In SA, paddock preparation and seeding progressed throughout the month, however light, patchy rainfall in some districts slowed seeding operations with crops going in under marginal moisture conditions; good follow-up rains are needed to keep the season on track. It is estimated that seeding is now about 60 per cent completed across the state, with quite a few farmers finished. Crops have been emerging rapidly in response to the relatively mild temperatures, however many crops sown dry or in variable soil moisture have patchy emergence and need good follow-up rains. Current yield potential of the crop at this early stage is estimated to be near average. Total crop area is estimated to be 4.10 million hectares, effectively the same as last year and slightly above the five year average. Crop production is currently estimated to be 5.94 million tonnes, which is well above last year and slightly above the five year average (PIRSA Crop and Pasture Report May 2008).

## 3.2 Livestock

### ***Beef cattle***

- Improved seasonal conditions are projected to result in northern beef producers of all herd sizes realising a strong recovery in farm incomes and profits. Improved seasonal conditions are projected to result in producers of all scales increasing calf production, enabling most producers to increase cattle numbers and, in the case of large producers, the number of cattle sold (ABARE Australian Beef 08.1).
- In April, the trend estimate for beef production increased for the third consecutive month, to 178 000 tonnes, with little change compared to same time last year (ABS 7218.0.55.001 Apr 2008).
- National cattle yardings during May declined 8 per cent for young cattle and 14 per cent for grown cattle, when compared to the previous month. Grown cattle yardings during May fell 17 per cent in comparison to May 2007, while young cattle offerings remained steady. The largest year-on-year decrease was calves, which fell 59 per cent, while the supply of grown heifers tightened 24 per cent and cows 21 per cent (The Land Farmonline 30/05/2008).

### ***Sheep and lambs***

- The slaughter lamb industry is in a strong position to expand agricultural production, including prime lambs. A return to average seasonal conditions and rising ewe numbers are expected to result in further recovery of lambing rates and expansion in lamb production. This will enable producers to retain lambs and boost sheep numbers on the new land as well as increase sales of prime lambs. Increased sheep numbers will also be associated with an expansion in wool production and higher wool receipts in coming years (ABARE Australian Lamb 08.1).
- In April, the trend estimate for sheep slaughterings increased for the tenth consecutive month to 1.1 million, and was 7.0 per cent higher than the same time last year (ABS 7218.0.55.001 Apr 2008).
- In April, the trend estimate for lamb slaughterings fell for the sixth consecutive month, to 1.7 million, and was 3.1 per cent lower than the same time last year (ABS 7218.0.55.001 Apr 2008).
- In April, the trend estimate for mutton production was little changed from the previous month, at 23000 tonnes and up 15 per cent on the same time last year (ABS 7218.0.55.001 Apr 2008).
- In SA, pasture growth has started well in some areas, however where rainfall was light and patchy pasture growth has been much slower. In many paddocks feed levels remain low despite the green tinge and farmers are continuing to provide supplementary feed. Sheep are being sold off in a number of districts as farmers seek to minimise the risk of soil erosion and deteriorating stock condition. Early, dry sown feed has established well in many districts and has already been grazed (PIRSA Crop and Pasture Report May 2008).

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/>

## 4.0 Climate Outlook

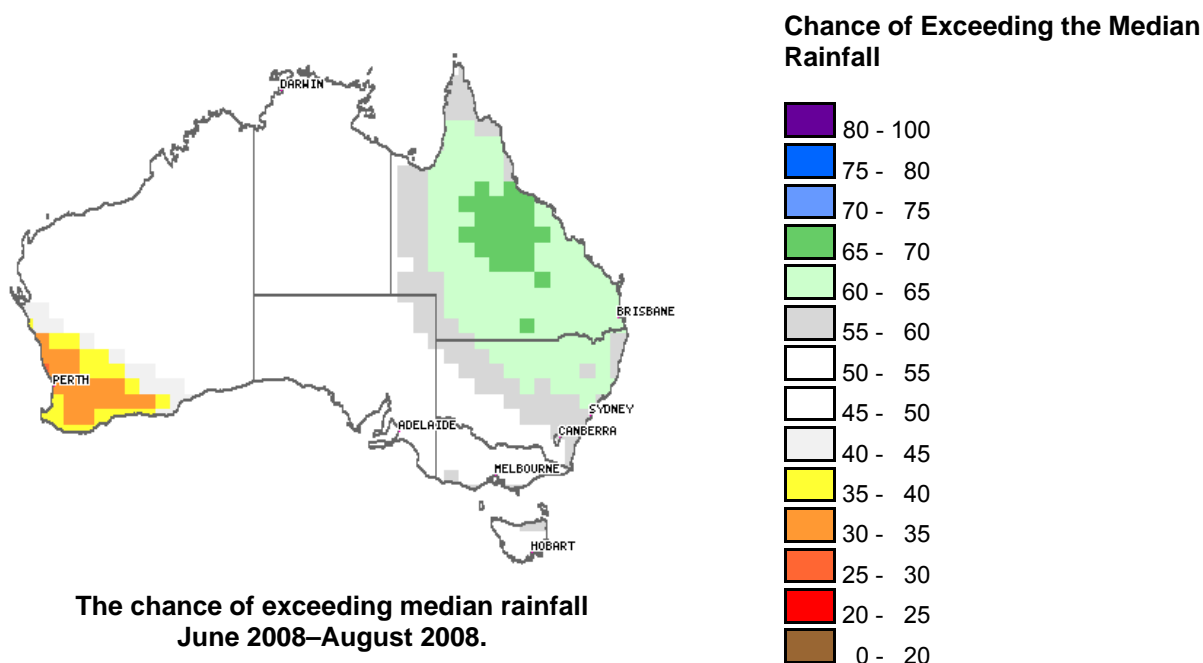
### 4.1 El Niño & Southern Oscillation Index

On 4 June 2008 the Bureau of Meteorology reported that Pacific climate patterns remain neutral. The tropical Pacific has been warming gradually, with central Pacific temperatures now near-average and eastern Pacific temperatures about 0.5 to 1°C warmer than average due to weakening Trade Winds in the region. Stronger Trade Winds, lower than average temperatures, and a fall in Southern Oscillation Index (SOI) during May indicate that La Niña continues to weaken. There was a decreasing trend in SOI from +21 in February 2008 to -4 in May 2008. Since 31 May 2008, it has been increasing towards neutral and is currently just below zero (-0.9 at 9 June 2008).

Computer model predictions suggest that over the next two seasons the likelihood of either a La Niña or El Niño is very small; however, the chance of El Niño cannot be ruled out. Most models are predicting neutral temperatures in the central to eastern Pacific for the remainder of 2008. Two models predict a slight rise to approximately 0.8°C above average. Higher than average temperatures in the Western Indian Ocean may hinder the development of northwest cloud bands over Australia during the coming winter and spring.

### 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/temperatures 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. For further information on this rainfall outlook, go to [http://www.bom.gov.au/climate/ahead/rain\\_ahead.shtml](http://www.bom.gov.au/climate/ahead/rain_ahead.shtml).

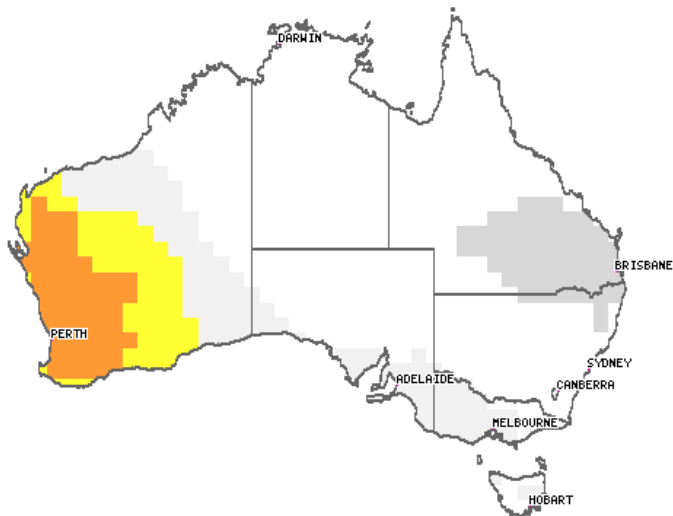


The national outlook for total rainfall over winter (June to August) is for wetter conditions over much of Queensland and northeast NSW. In contrast, drier conditions are predicted for southwest WA. The chance of exceeding median rainfall over winter is between 60 and 70 per cent over much of Queensland, and north-eastern NSW. It should be noted, that this is a seasonally drier time of year in some northern parts of the country.

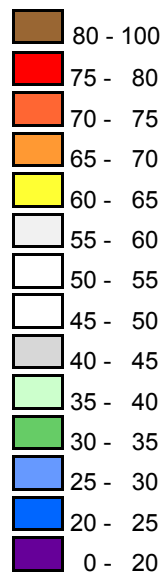
The southwest corner of WA has a high probability of drier than average conditions with only a 30 to 40 per cent chance of exceeding median rainfall for the season. However, caution should be taken in applying these probabilities because confidence in the outlook is generally low in southwest WA for winter. For the remainder of the country approximately average rainfall is likely. These variations in rainfall across Australia are the result of

warmer than average temperatures in the Indian Ocean, and cooler than average waters in the central to western equatorial Pacific in association with the decaying La Niña pattern.

### 4.3 Temperature Outlook

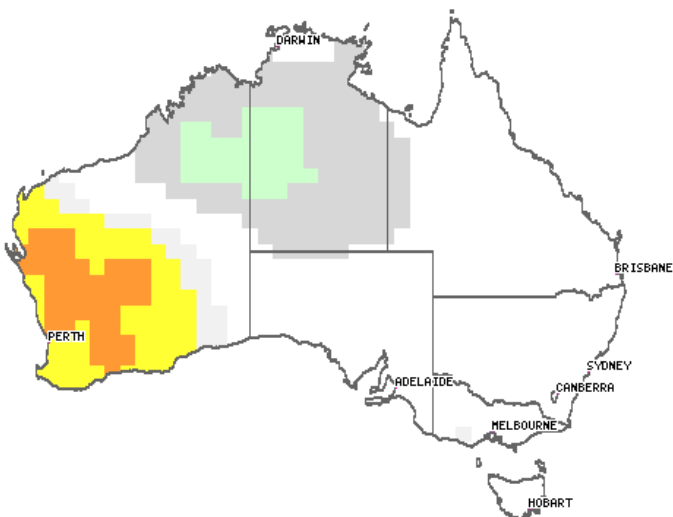


**3 Month Temp. Max Outlook (%)**

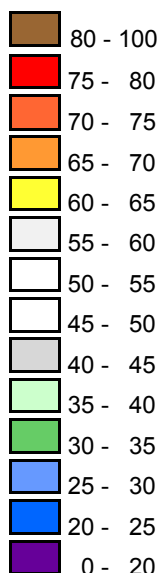


**The chance of exceeding median maximum temperatures June 2008–August 2008 (Winter).**

The national outlook for average winter temperatures shows warmer days and nights are favoured for the south-western corner of Australia. Maximum temperature odds across Australia are based on the combined effects of above average temperatures in the Indian Ocean immediately to the west of Australia and cooler than average waters in the central to western equatorial Pacific in association with the decaying La Niña pattern. Averaged over winter (June to August), the chances are between 60 and 70 per cent for above-average maximum temperatures in southern WA.



**3 Month Temp. Min Outlook (%)**



**The chance of exceeding median minimum temperatures June 2008–August 2008 (Winter).**

Similar to the maximum temperature outlook, the chances of above median minimum temperatures over the winter period are between 60 and 70 per cent in south-western Australia. In contrast a region in northwest Australia has an increased chance of cooler conditions, with only a 35 to 40 per cent chance of exceeding the winter median minimum temperature. For the remainder of the country temperatures are favoured to be close to average.

History shows the effect of oceans on minimum temperatures in winter to be moderately consistent over large parts of the country, except over Victoria, Tasmania and parts of southeast SA where the influence is only weakly or very weakly consistent.

For further information on the Bureau of Meteorology seasonal outlooks, go to:

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