

NSW Climate Summary - July 2014

Summary

Seasonal outlook	Current Outlook	Previous Outlook
Rainfall (quarter)	Drier	Drier
Max Temperature (quarter)	Warmer	Warmer
Min Temperature (quarter)	Warmer	Warmer
ENSO		
ENSO (overall)	Neutral – El Niño likely	Neutral – El Niño likely
BoM ENSO Tracker Status	El Niño Alert	El Niño Alert
SOI	Neutral	Neutral (positive trend)
Pacific Ocean (NINO3.4)	Slightly warm/warm (Neutral – some models)	Neutral – slightly warm (warming trend)
Indian Ocean (IOD)	Neutral (currently slightly negative)	Neutral
Southern Annular Mode (SAM/AO)	Weakly – moderately positive	Weakly - moderately positive

Source: Derived from information provided by the Australian Bureau of Meteorology and the US National Oceanic & Atmospheric Administration.

Seasonal outlook

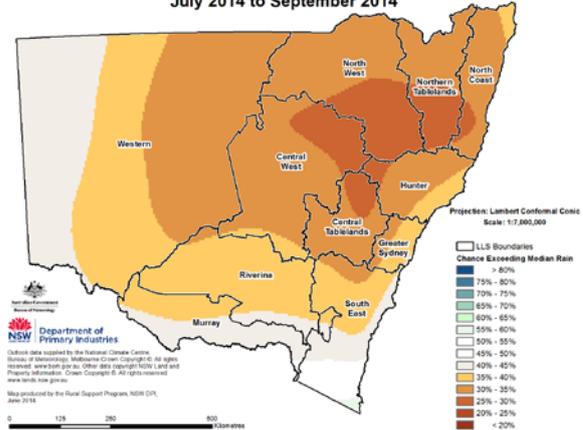
(Source: Bureau of Meteorology)

For the three month period from July to September, drier than normal conditions are likely across most of the State, with the chances of exceeding median rainfall at between 25-40%. That is, the chances of receiving below median rainfall are 60-75%.

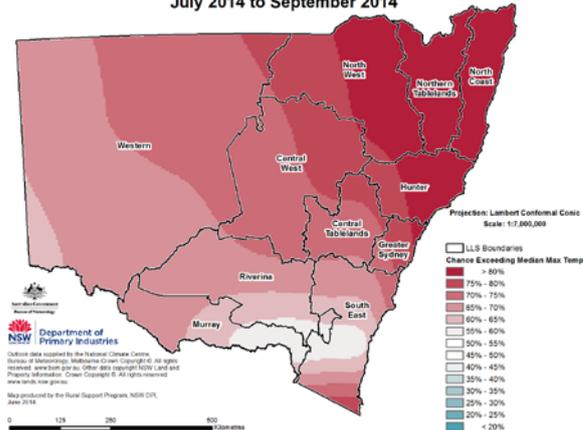
These probabilities indicate that for every ten years with similar climate patterns to those at present, across most of NSW about three to four July to September periods would be expected to be wetter than normal and six to seven drier than normal.

Warmer than normal daytime temperatures are likely across NSW, with the chances of exceeding the median maximum temperature ranging from 65% to over 80%. Warmer overnight temperatures are likely across most of NSW, with the chance of exceeding the median minimum temperature ranging from 60% to over 80%.

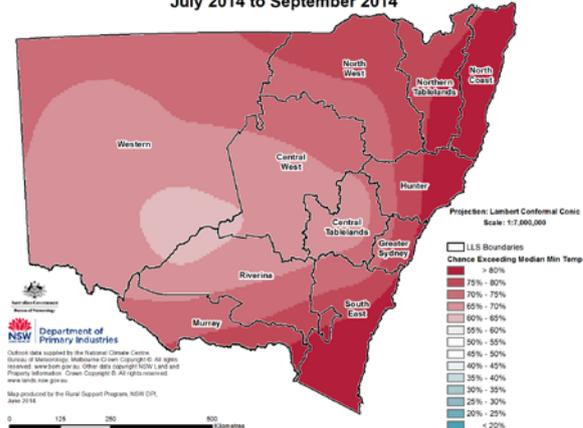
Chance of Exceeding Median Rainfall July 2014 to September 2014



Chance of Exceeding the Median Maximum Temperature July 2014 to September 2014



Chance of Exceeding the Median Minimum Temperature July 2014 to September 2014



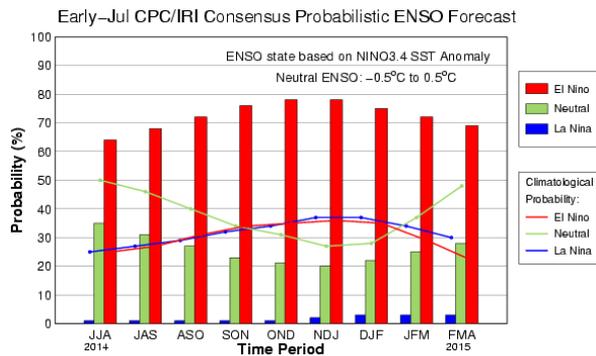
The seasonal outlooks presented in this report are obtained from the Australian Bureau of Meteorology & other sources. These outlooks are general statements about the likelihood (chance) of (for example) exceeding the median rainfall or minimum or maximum temperatures. Such probability outlooks should not be used as categorical or definitive forecasts, but should be regarded as tools to assist in risk management & decision making. Changes in seasonal outlooks may have occurred since this report was released. Outlook information was up to date as at 9 July 2014.

ENSO

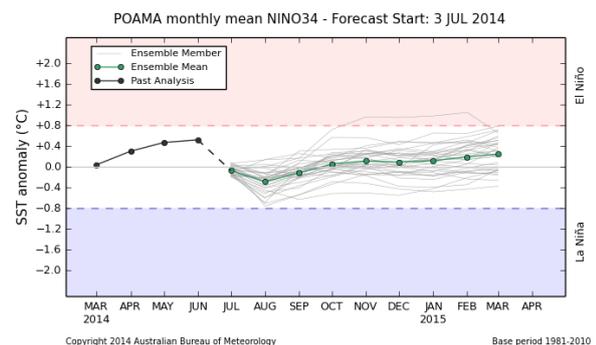
(Source: Bureau of Meteorology & International Research Institute for Climate and Society)

ENSO is still neutral, with about a 70% chance of El Niño event developing in spring. A weak to moderate event is considered likely. The Bureau of Meteorology's El Niño alert is still active.

The Pacific Ocean remains primed for an El Niño event to occur, with warmer than normal sea surface temperatures across the equator, but an atmospheric response is necessary. The recent fall in the SOI and reappearance of weak westerly trade winds may indicate this is commencing, but it will need to persist to demonstrate atmospheric coupling.



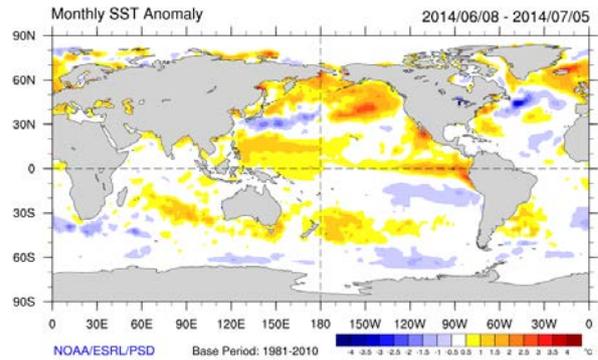
Currently, the CPC/IRI consensus ENSO forecast probabilities indicate that 68% of global climate models consider El Niño conditions are likely to develop between July and September, increasing to 78% between October and December. However, the Bureau of Meteorology's latest long range POAMA outlook indicates that the sea surface temperature anomalies in the NINO3.4 Pacific Ocean region may decline to neutral levels. There has been a recent slight decline in the NINO3.4 temperature anomaly back to neutral levels, although short term fluctuations have occurred previously.



Monthly Sea Surface Temperatures

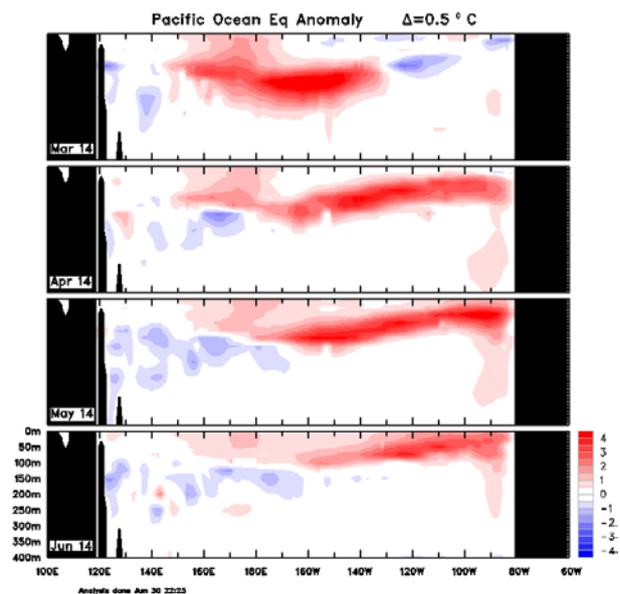
(Source: NOAA & Bureau of Meteorology)

The majority of the equatorial Pacific is now warmer than normal, although there has been a recent weakening in temperatures in the central equatorial Pacific. The most recent monthly temperature index value in the NINO3.4 region is +0.46°C for May. The weekly index value is +0.39°C, a slight fall from last month.



Monthly Sub Surface Temperatures

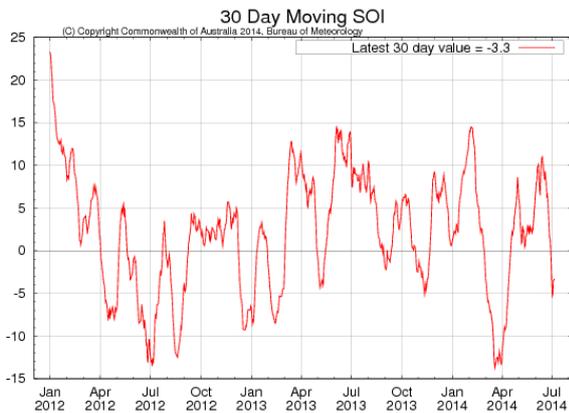
Sub surface temperatures in the equatorial Pacific show the eastwards movement of a strong warm anomaly. This is typical of a developing El Niño event. The temperatures in the eastern equatorial Pacific are more than 3°C warmer than normal, but have cooled in the eastern and central equatorial Pacific, particularly at depth.



Southern Oscillation Index (SOI)

(Source: Bureau of Meteorology & Queensland Department of Science, Information Technology, Innovation & the Arts)

The Southern Oscillation Index (SOI) is currently neutral. From mid-June, the SOI declined rapidly from +11.0 to a level of -5.2, but has since increased to a level of -3.2. The rapid decline was an indication that atmospheric-oceanic El Niño coupling might be commencing, but the SOI has since recovered and remains neutral.



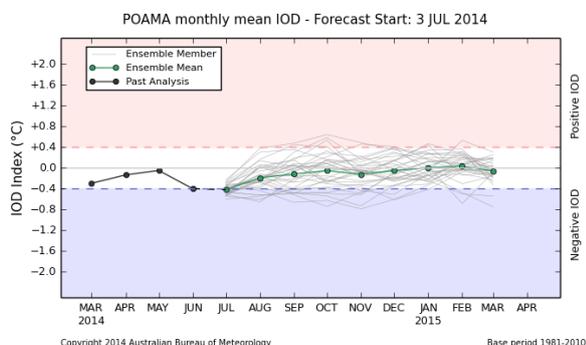
Values of between -8 and +8 indicate neutral conditions, sustained values above +8 may indicate a La Niña event, and sustained values below -8 may indicate an El Niño event.

Indian Ocean Dipole (IOD)

(Source: Bureau of Meteorology)

The Indian Ocean Dipole (IOD) is currently negative. The latest IOD index value is -0.60°C for the week ending 6 July. This is due to a cooling in the tropical western Indian Ocean. This is not considered a negative IOD event. The Bureau of Meteorology's POAMA model and all but one other climate model surveyed by them favour a neutral IOD in coming months.

The IOD has little effect on Australian climate until autumn or winter. A negative IOD increases the chances of above normal rainfall during winter and spring across southern and much of western and central NSW and a positive IOD increases the chances of below normal rainfall.

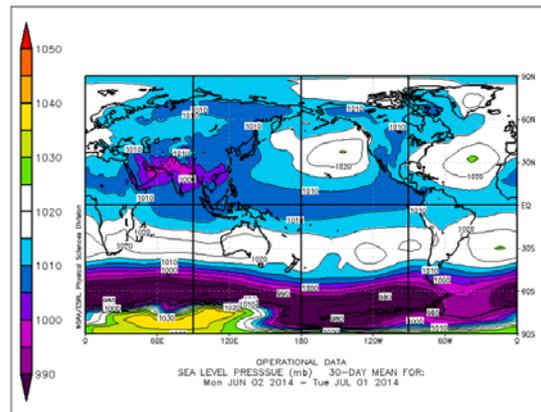


Sub-Tropical Ridge (STR)

(Source: NOAA & Bureau of Meteorology)

The sub-tropical ridge (STR) remained near its normal winter position, as indicated on NOAA and Bureau of Meteorology mean sea level pressure charts. The current position near 30°S has allowed cold fronts through into southern Australia over the last month.

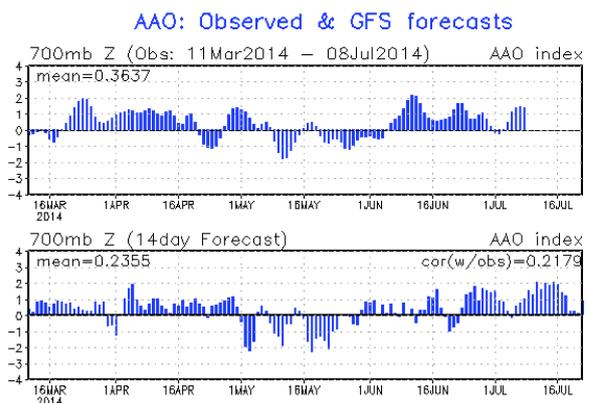
The sub-tropical ridge is a zone of high pressure which between November to April is normally located south of Australia, and tends to suppress cold front activity. During winter, it generally moves northwards allowing cold fronts to extend further into southern Australia.



Southern Annular Mode (SAM)

(Source: Bureau of Meteorology [experimental] & NOAA)

The experimental Southern Annular Mode or Antarctic Oscillation (AAO) index is currently weakly to moderately positive at around +1.5 from POAMA and US National Oceanic and Atmospheric Administration, as at the 9 July. The outlook indicates the SAM index will remain weakly-moderately or moderately positive until mid-July, before falling to be neutral to weakly negative.



A negative SAM indicates an expansion of the belt of strong westerly winds towards the equator, resulting in more or stronger low pressure systems across southern Australia and potentially increased rainfall. A positive SAM indicates the contraction of the belt of strong westerly winds towards Antarctica and higher pressures over southern Australia, and can result in stable, drier conditions.

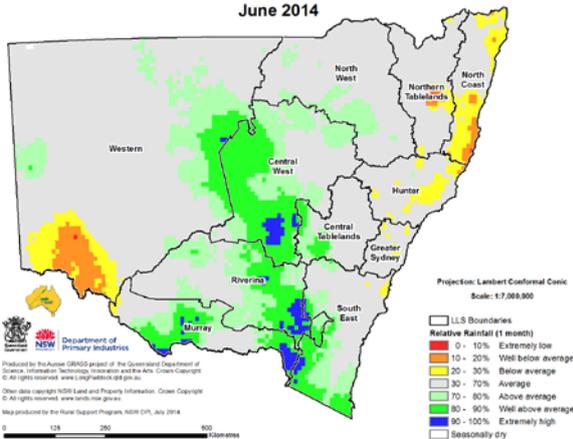
Conditions during June

Rainfall

(Source: Queensland DSITIA)

Rainfall over most of NSW ranged from 25-100 mm, was higher over areas of the south east, but was lower over the far west, north west, and some coastal areas. Relative to historical records, rainfall was average over 64% of NSW. Above average occurred over 29% of NSW, primarily in the central and southern areas. Below average rainfall (3rd decile or below) occurred over 7% of NSW and extended across areas of the north coast, mid north coast and far south west.

Rainfall Relative to Historical Records
June 2014



Soil moisture

(Source: CSIRO)

Modelled topsoil moisture improved during June across most of central, southern and south eastern NSW. Levels remained moderate over much of the south, the southern tablelands and areas of the coast. Modelled soil moisture declined over much of the north coast. Subsoil moisture levels improved slightly, particularly in the south and central west, but decreased slightly over areas of the north coast.

More information

For more information, contact the NSW Department of Primary Industries on 02 6391 3100 or Local Land Services on 1300 795 299. Additional and more detailed information on seasonal conditions can be found in the NSW Seasonal Conditions Reports, available at www.dpi.nsw.gov.au/agriculture/emergency/seasonal-conditions/regional-seasonal-conditions-reports.

Acknowledgments

Information used in this report was sourced from the Australian Bureau of Meteorology, CSIRO, Queensland Department of Science, Information Technology, Innovation and the Arts, the US National Oceanic and Atmospheric Administration, the International Research Institute for Climate and Society (Columbia University) and NSW Department of Primary Industries.

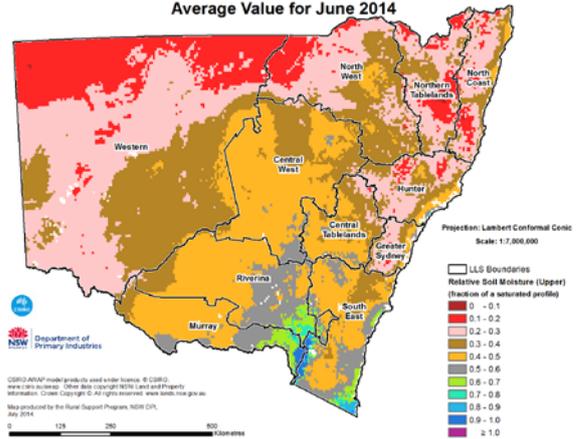
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Relative Soil Moisture (Upper Layer)
Average Value for June 2014



Pasture growth

(Source: Queensland DSITIA)

Relative pasture growth was average or better across 82% of NSW. The area of above average growth increased over May to nearly 60% and extended across most of central, southern and western NSW. Growth in the north west improved to near average, and growth along the coast was near average for the time of year.

Pasture Growth Relative to Historical Records from 1957
June 2014

