NSW Climate Summary - August 2014

Summary

Seasonal outlook	Current Outlook	Previous Outlook
Rainfall (quarter)	Drier (south/central) Near neutral-neutral (remainder)	Drier
Max Temperature (quarter)	Warmer Near neutral (far north west)	Warmer
Min Temperature (qtr)	Warmer	Warmer
ENSO		
ENSO (overall)	Neutral – El Niño possible/likely	Neutral – El Niño likely
BoM ENSO Tracker Status	El Niño Watch	El Niño Alert
SOI	Neutral	Neutral
Pacific Ocean (NINO3.4)	Slightly warm/warm (Neutral – some models)	Slightly warm/warm (Neutral – some models)
Indian Ocean (IOD)	Neutral (currently slightly negative)	Neutral (currently slightly negative)
Southern Annular Mode (SAM/AAO)	Neutral	Weakly – moderately positive

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

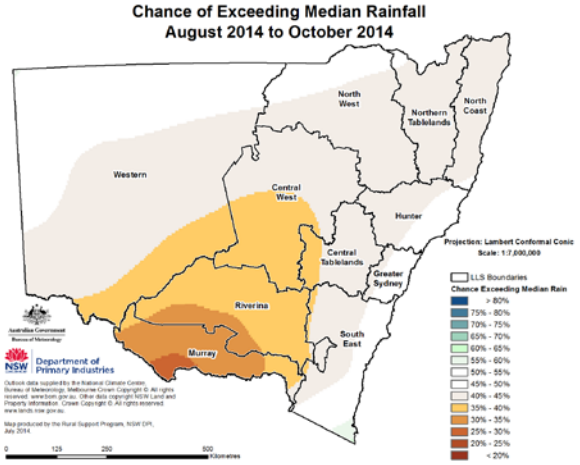
Seasonal outlook

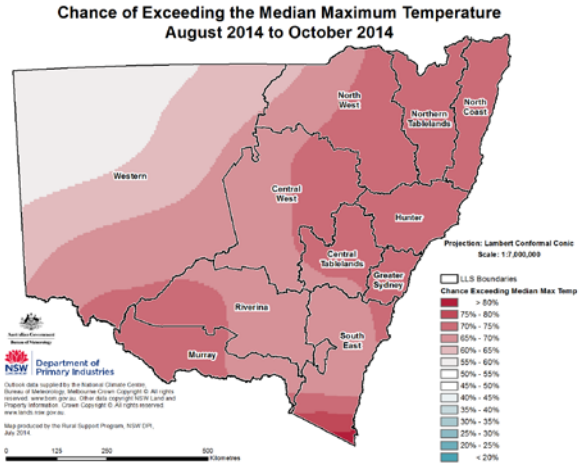
(Source: Bureau of Meteorology)

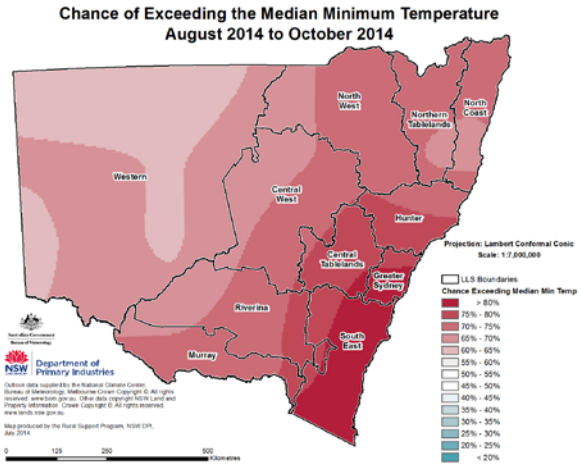
For the three month period from August to October, drier than normal conditions are likely across the southern and central NSW, with the chances of exceeding median rainfall at between 25-40%. That is, the chances of receiving below median rainfall are 60-75%.

These probabilities indicate that for every ten years with similar climate patterns to those at present, across much of southern and central NSW about three to four August to October 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 55% to 75% over most of NSW. Warmer overnight temperatures are likely across most of NSW, with the chance of exceeding the median minimum temperature from 60% to over 80%.







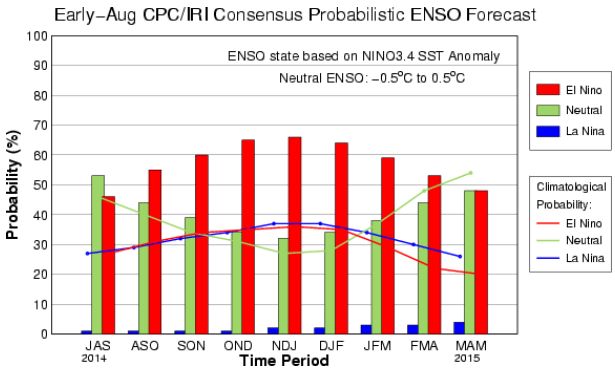
The seasonal outlooks presented in this report are obtained from the Australian Bureau of Meteorology & other sources. These outlooks are general statements about the likelihood (chance) of (for example) exceeding the median rainfall or minimum or maximum temperatures. Such probability outlooks should 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 7 August 2014.

ENSO

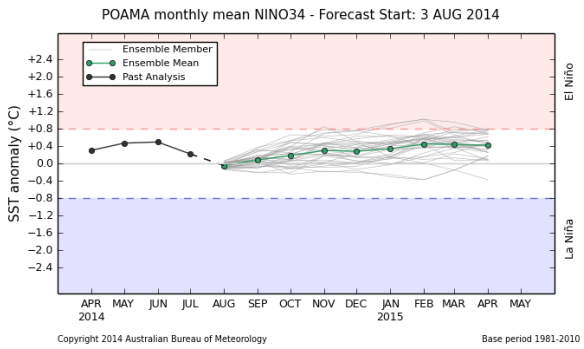
(Source: Bureau of Meteorology & International Research Institute for Climate and Society)

ENSO is still neutral, with about a 50-65% chance of El Niño event developing in spring. A weak event is considered likely. The Bureau of Meteorology's El Niño tracker has moved from 'Alert' to 'Watch' status.

Sea surface temperatures have declined in the central and eastern-central Pacific, as a result of the lack of coupling between the ocean and atmosphere, but above average sea surface temperatures remain in the eastern and western Pacific. Sub surface temperatures have declined in the central and western Pacific, but increased in the east. Sea surface temperatures will need to increase again if an El Niño event is to occur.



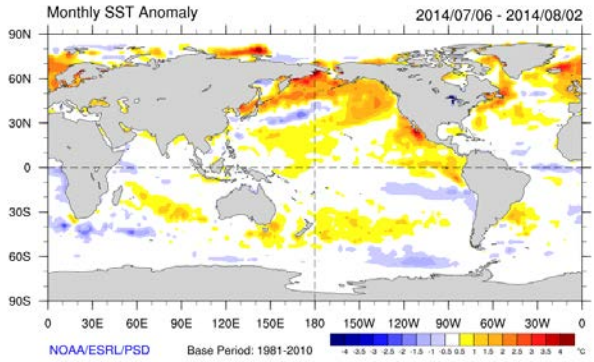
Currently, the CPC/IRI consensus ENSO forecast probabilities indicate that 55% of global climate models consider El Niño conditions are likely to develop between August to October, increasing to 66% between November and January. The Bureau of Meteorology's long range POAMA outlook indicates that the sea surface temperature anomalies in the NINO3.4 Pacific Ocean region may decline to neutral levels. While such a decline occurred recently, it is important to consider the assessment of all global climate models.

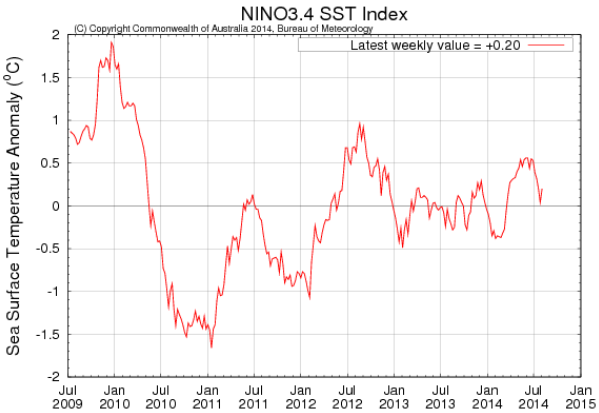


Monthly Sea Surface Temperatures

(Source: NOAA & Bureau of Meteorology)

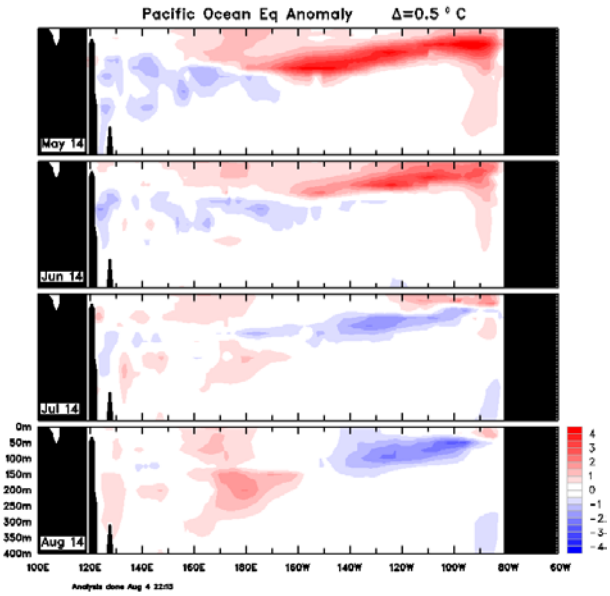
The eastern and western equatorial Pacific remain warmer than normal, with temperatures near average in the central equatorial Pacific near the International Date Line. The most recent monthly temperature anomaly value in the key NINO3.4 region is +0.18°C for July, a decrease from a value of +0.46°C for May and June. The weekly index value is +0.20°C, a slight increase from the previous weekly level of +0.04°C.





Monthly Sub Surface Temperatures

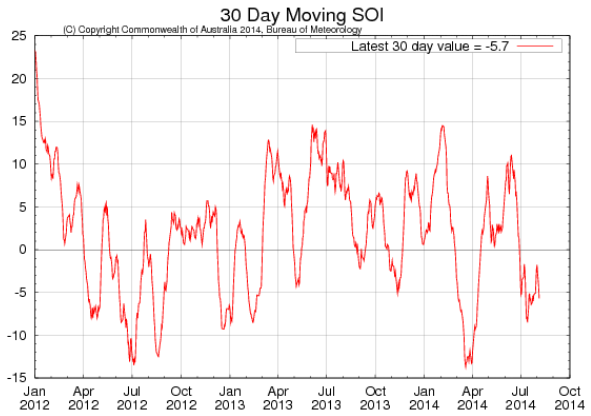
Sub surface temperatures in the eastern equatorial Pacific have cooled, and the warm anomaly has decayed greatly and is now less than 50 m in depth. Cool anomalies are present to a depth of 150 m in the central-eastern Pacific. A warm anomaly has developed in the western equatorial Pacific at and west of the International Date Line, to a depth of 300 m.



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 a level of +11.0 in mid-June, the SOI underwent a rapid decline to -5.3 in early July. After fluctuating between -1.7 to -8.5 in early to mid-July, it has since returned to a level of -5.7.



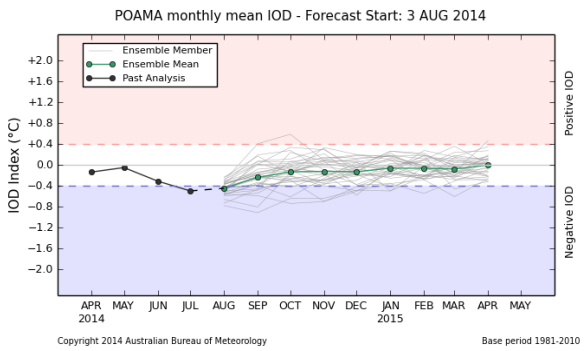
Values of between -8 and +8 indicate neutral conditions, sustained values above +8 may indicate a La Niña event, and sustained values below -8 may indicate an El Niño event.

Indian Ocean Dipole (IOD)

(Source: Bureau of Meteorology)

The Indian Ocean Dipole (IOD) is currently negative. The latest IOD index value is -0.69°C for the week ending 3 August. This is due to a cooling in the tropical western Indian Ocean. This is not yet considered a negative IOD event. The Bureau of Meteorology's POAMA model and all other climate models 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.

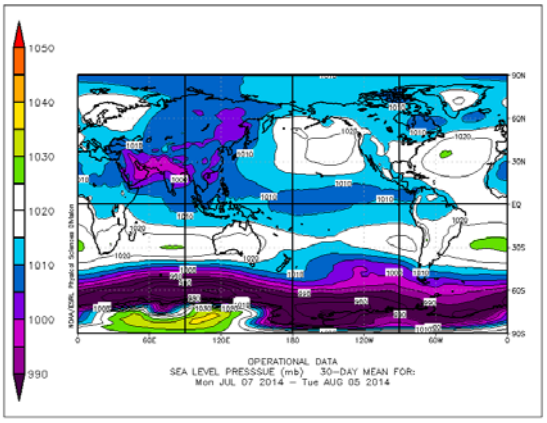


Sub-Tropical Ridge (STR)

(Source: NOAA & Bureau of Meteorology)

The sub-tropical ridge (STR) is close to its normal winter position, as indicated on NOAA and Bureau of Meteorology mean sea level pressure charts. During June, cold fronts were allowed through into NSW. During July, atmospheric pressure was above normal across the State, particularly in the north and northern-central areas of NSW. The higher than normal pressure further south tended to push frontal activity to the south as well.

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.

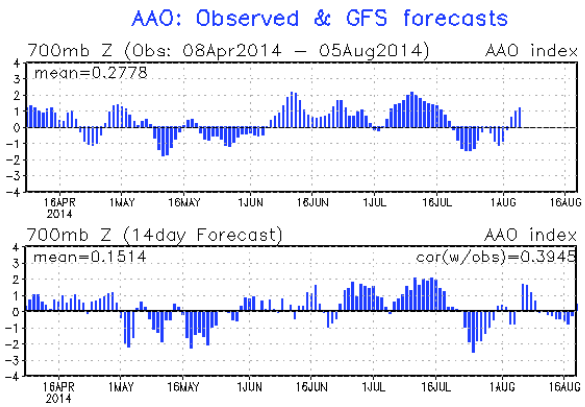


Southern Annular Mode (SAM)

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

The experimental Southern Annular Mode or Antarctic Oscillation (AAO) index is currently near neutral (+0.5) from POAMA as at 3 August and weakly positive (+1) from the US National Oceanic and Atmospheric Administration, as at 4 August.

The outlook indicates the SAM index will increase to weakly-moderately positive and then return to near neutral by mid-August.



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.

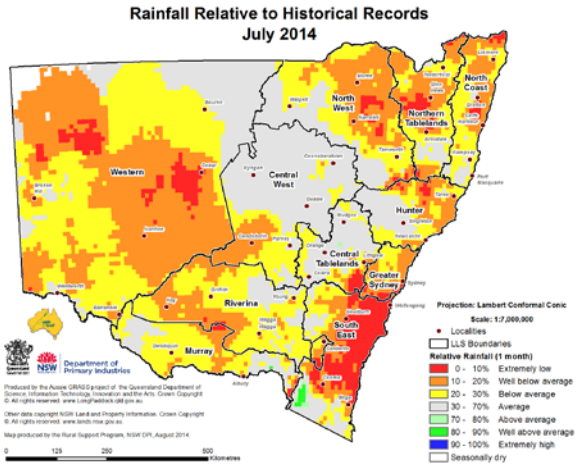
Conditions during July

Rainfall

(Source: Queensland DSITIA)

Rainfall over most of NSW during July ranged from 1-25 mm. Rainfall was higher over the southern and central tablelands, areas of the central west and south-west slopes.

Relative to historical records, rainfall was below average over 75% of NSW. Only the central west, central tablelands and limited areas of the far south east, north west and upper Hunter received near normal rainfall.

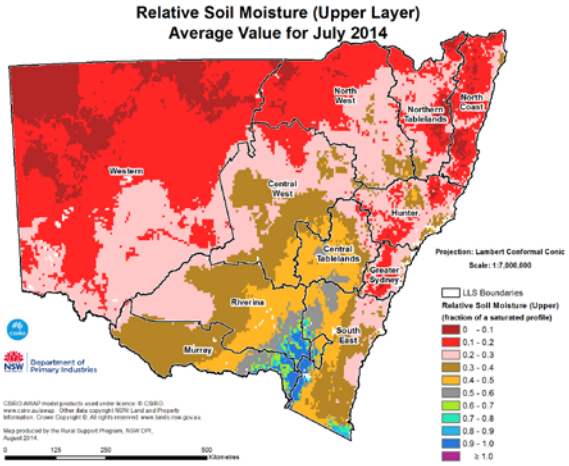


Soil moisture

(Source: CSIRO)

Modelled topsoil moisture declined markedly during July, particularly in the north and west and over the Hunter valley, and from the central to north coast. Levels across southern NSW, areas of central NSW and areas the south east remained moderate to high.

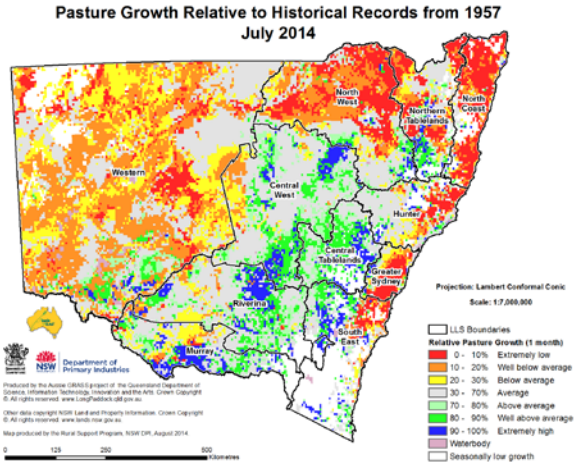
Subsoil moisture levels remained mostly stable.



Pasture growth

(Source: Queensland DSITIA)

Pasture growth deteriorated across much of northern and western NSW during July, and declined or remained low across areas of the coast. Growth across areas of the tablelands and slopes was low, but good across much of central and southern NSW. Approximately 43% of NSW had below average relative growth during July.



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 Report, available at http://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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