

NSW Climate Summary - April 2016

Summary

Seasonal Outlook	Current outlook
Rainfall (quarter)	Wetter (far west, western Riverina, central west, west of the central tablelands) Near neutral (north west, northern tablelands, south, south east & coast)
Max Temperature (quarter)	Warmer (eastern & northern NSW, north west, eastern Riverina, east of central west) Near neutral (far west, south west, western Riverina, west of the central west)
Min Temperature (quarter)	Warmer
ENSO	Current outlook
ENSO (overall)	El Niño (rapidly declining), trending to neutral and possible La Niña
ENSO Outlook Status	La Niña watch
SOI	Variable, currently slightly negative
Pacific Ocean (NINO3.4)	Slightly warm-warm, trending to neutral (possibly cool in winter/spring)
Indian Ocean (IOD)	Neutral (variable, negative IOD possible in winter/spring)
Southern Annular Mode (SAM/AO)	Weakly positive, trending to neutral

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

Seasonal outlook

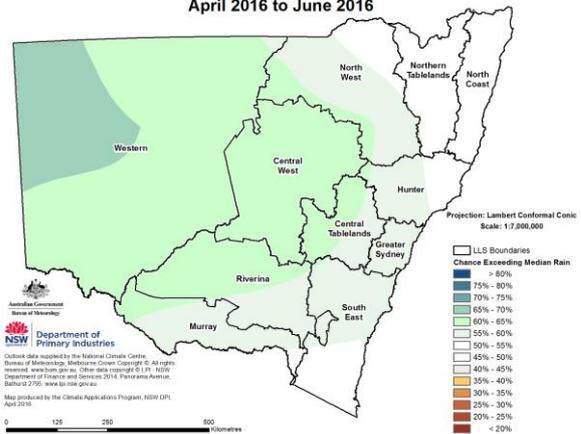
(Source: [Bureau of Meteorology](#))

Between April and June wetter than normal conditions are likely for the western half of NSW. There is a near-neutral rainfall outlook for the east, south east and areas of northern and southern NSW. This means there is a near-equal chance of drier or wetter than normal conditions in these areas.

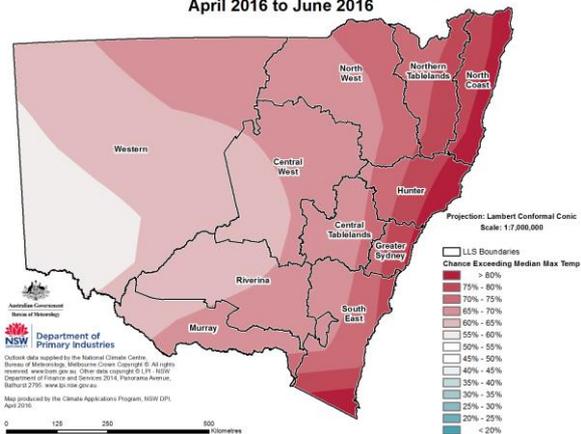
Warmer than normal daytime temperatures are likely across most of eastern, northern, southern and central NSW for the period. There a near-neutral outlook for daytime temperatures across areas of the far west, south west, western Riverina and areas of the central west.

Overnight temperatures are likely to be warmer than normal across NSW.

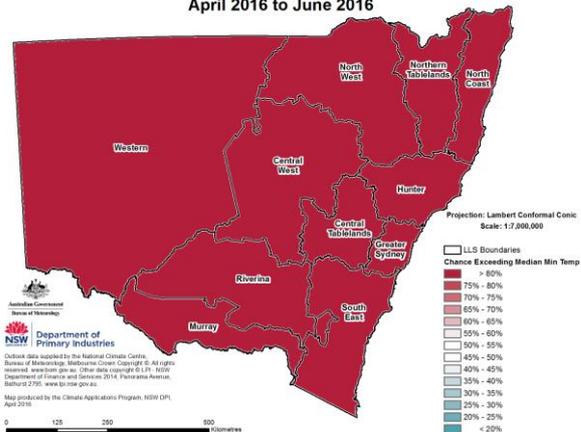
Chance of Exceeding Median Rainfall
April 2016 to June 2016



Chance of Exceeding the Median Maximum Temperature
April 2016 to June 2016



Chance of Exceeding the Median Minimum Temperature
April 2016 to June 2016

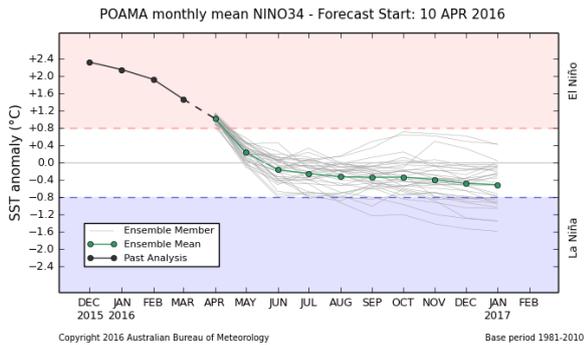


The seasonal outlooks presented in this report are obtained from the Australian Bureau of Meteorology & other sources. These outlooks are general statements about the likelihood (chance) of (for example) exceeding the median rainfall or minimum or maximum temperatures. Such probability outlooks should 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 12 April 2016.

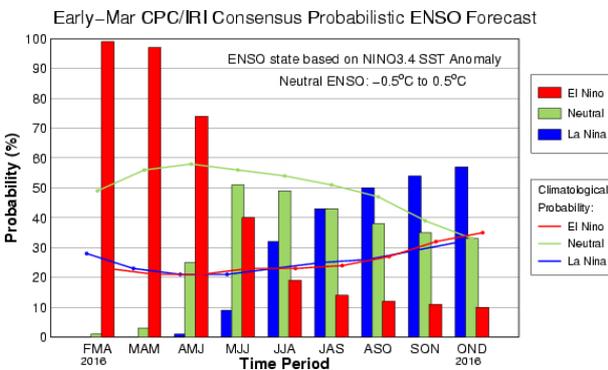
ENSO

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

The El Niño event has declined to a weak-moderate level. The NINO 3.4 sea surface temperature is now over than one degree less than the peak. The event is likely to persist into autumn/early winter 2016 and is most likely to be followed by neutral conditions. A La Niña event is also possible, with the odds strengthening to 50%. The Bureau of Meteorology's ENSO outlook status has shifted from 'El Niño' to 'La Niña watch'.



The Bureau of Meteorology's latest POAMA outlook (as at 10 April) suggests that the sea surface temperatures in the NINO3.4 region will reach neutral levels shortly. The current CPC/IRI ENSO forecast probabilities suggest between May-July but had not been updated for April at the time this report was prepared.



Eight climate models surveyed by the Bureau (as at 16 March) indicate NINO3.4 sea surface temperatures are likely to remain above the Bureau's El Niño threshold during April. Most suggest a return to neutral conditions by June. One of the eight suggests a decline to below the La Niña threshold level during June and five by August, with another just above the threshold.

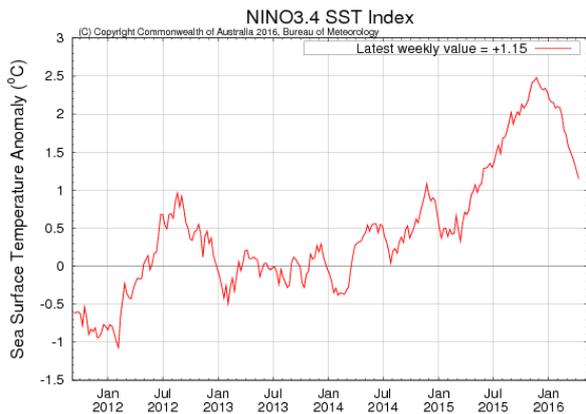
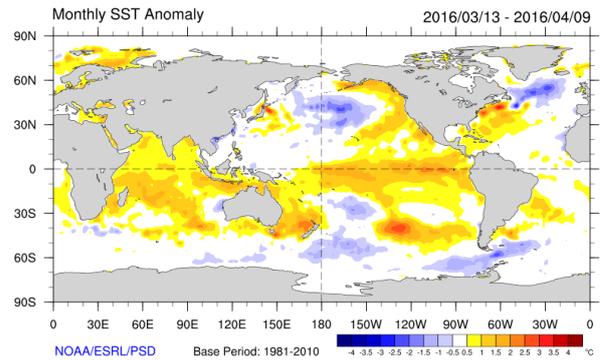
Sea Surface Temperatures

(Source: NOAA & Bureau of Meteorology)

Warm sea surface temperature anomalies extend across most of the equatorial Pacific and have continued to weaken across the central and eastern-central areas. Temperatures remain near-normal to slightly warmer than normal north of Papua New Guinea.

The most recent weekly temperature anomaly value in the key NINO3.4 region was +1.15°C to 10 April, down

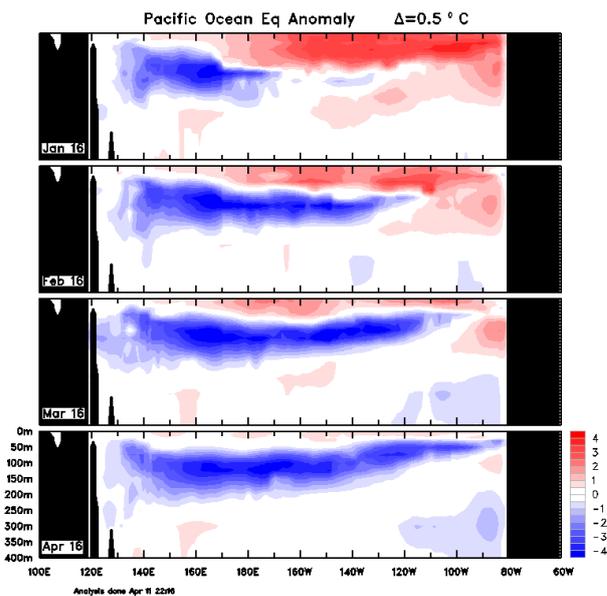
from +1.25°C in the week to 3 April and from a peak of +2.48°C in the week to 22 November.



Monthly Sub-surface Temperatures

(Source: Bureau of Meteorology)

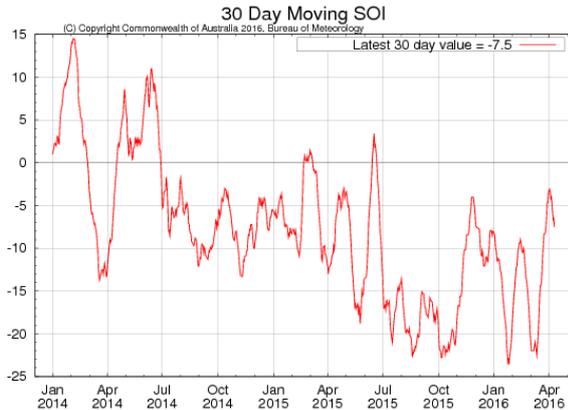
The sub-surface sea temperatures show the warm anomaly in the central and eastern equatorial Pacific has almost dissipated and is now very shallow. A cool anomaly below this has continued to strengthen and now extends across the equatorial Pacific. This (with other indicators) indicates the El Niño event has almost ended, and the possibility of a La Niña event developing.



Southern Oscillation Index (SOI)

(Source: Bureau of Meteorology & Queensland DSITI)

The Southern Oscillation Index (SOI) has been variable and is currently just below neutral. On 10 April, the 30-day SOI value was -7.5 (Bureau of Meteorology) and the 90-day SOI was -13.54 (QDSITI). Fluctuations in the SOI are common at this time of year due to the influence of the monsoon season, and the 90-day SOI is a more reliable indicator.



Values 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.

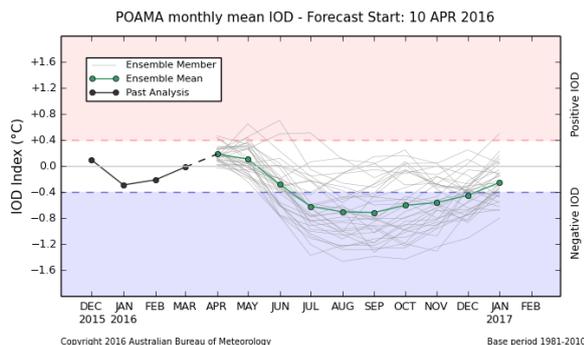
Indian Ocean Dipole (IOD)

(Source: Bureau of Meteorology)

The Indian Ocean Dipole (IOD) is neutral. The current value is -0.16 for the week to 10 April. The IOD has little influence on the climate between December and May.

The warm sea surface temperatures across the Indian Ocean are likely to provide sources of moisture for eastern Australia. A number of climate models indicate the possibility of a negative IOD event occurring in winter or early spring. However, model skill is low at this time of year.

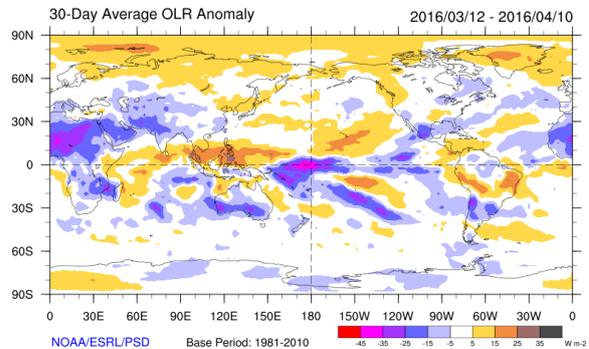
A positive IOD increases the chances of below normal rainfall and may exacerbate the effect of an El Niño event over south eastern Australia. A negative IOD increases the chances of above normal winter and spring rainfall across southern and much of western and central NSW.



Cloudiness and trade winds

(Source: Bureau of Meteorology & NOAA)

Levels of cloud at the junction of the International Date Line (IDL) and equator remained high during most of March, but remained low across areas of Indonesia, Malaysia and the Philippines. Recently, cloud levels at the junction declined and are slightly higher than normal.

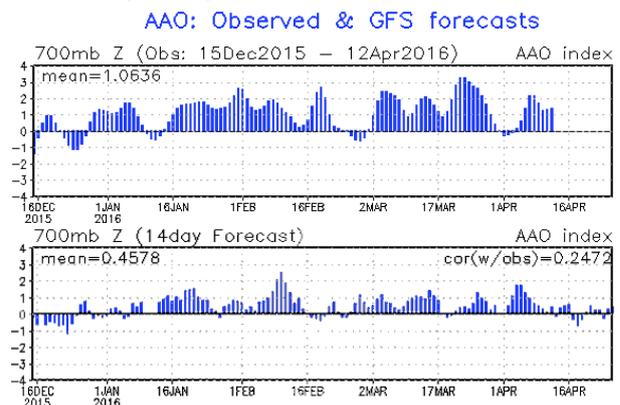


Trade winds were near-normal across the equatorial Pacific during March, signalling the decay of the El Niño event. Between early 2015 and January 2016, the trade winds had been weaker than average or reversed, consistent with an El Niño event.

Southern Annular Mode (SAM)

(Source: NOAA)

The experimental Southern Annular Mode or Antarctic Oscillation (AAO) index is currently moderately positive as at 12 April. The outlook is for a mostly neutral SAM during mid-late April. The positive SAM affected frontal activity across NSW during March, together with the sub-tropical ridge being further south than normal.



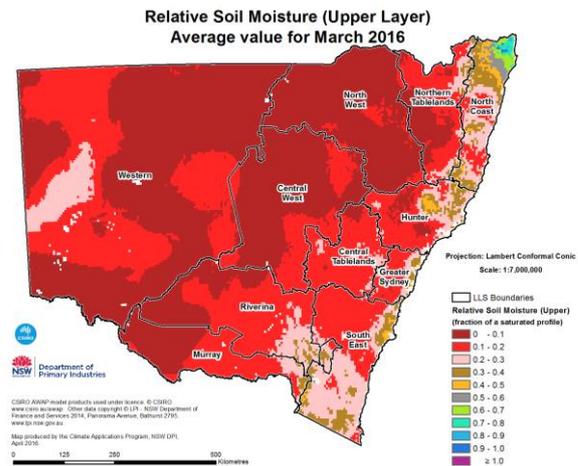
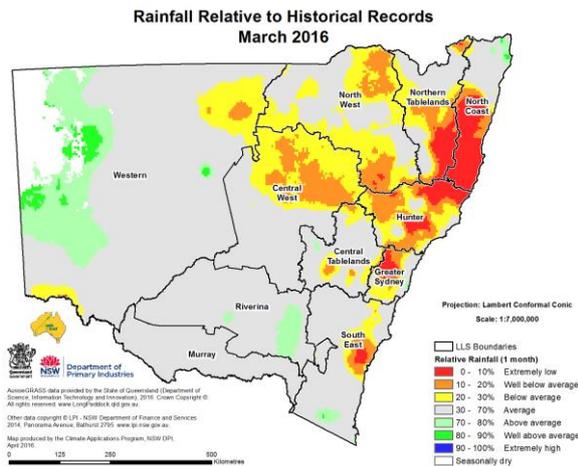
A negative SAM indicates expansion of the belt of strong westerly winds towards the equator, resulting in more or stronger low pressure systems across southern Australia and potentially increased rainfall. A positive SAM indicates the contraction of the belt of westerly winds towards Antarctica and higher pressures over southern Australia, and can result in stable, drier conditions. A strongly positive SAM in spring-summer can mean southern Australia is influenced by the northern half of high pressure systems, leading to a slightly higher likelihood of increased rainfall over south eastern and central NSW.

Conditions during March

Rainfall

(Source: Queensland DSITI)

Rainfall across NSW ranged from 1-475 mm during March, with falls in many areas being light, variable and patchy. Relative to historical records, most of the state received slightly below average to near-average rainfall. Below average rainfall occurred across areas of the south to the mid north coast, Hunter valley and areas of the central west, northern tablelands and north west. Above average rainfall was limited to areas of far west, eastern Riverina and far north east.



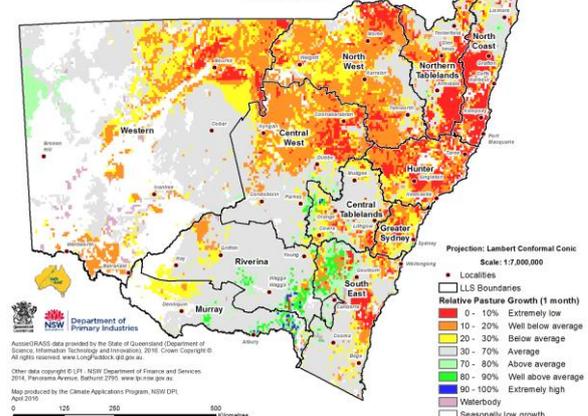
Pasture growth

(Source: Queensland DSITI)

During March growth declined to below average levels across much of the far north west, north west, central west, northern tablelands, Hunter valley, Sydney basin mid-north to north coast, and areas of the central tablelands, western Riverina and south coast.

Other pasture growth models suggested average growth across areas of the far west and south, with below average growth for the remainder of NSW.

Pasture Growth Relative to Historical Records from 1957 March 2016



Soil moisture

(Source: CSIRO)

Modelled topsoil moisture levels declined across NSW during March. Relative to historical records, topsoil moisture was below average across most of northern, north western and central NSW, as well as across the tablelands and much of the coast. Levels in the south were slightly below average, but better in areas of the eastern Riverina and far west. By the end of the month, levels had improved in some areas. Modelled subsoil moisture levels declined slightly, particularly across the coast, but were generally average. Levels were below average across areas of the north west, northern tablelands, north coast, central tablelands and far south.

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 Summary and Report, available at <http://www.dpi.nsw.gov.au/agriculture/emergency/seasonal-conditions/regional-seasonal-conditions-reports>, and the LLS On-ground Seasonal Conditions Reports available at <http://www.lls.nsw.gov.au/agriculture/seasonal-conditions>.

Acknowledgements

Information used in this report was sourced from the Australian Bureau of Meteorology, CSIRO, Queensland Department of Science, Information Technology and Innovation, 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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