

NSW Climate Summary - October 2017

Summary

Seasonal Outlook	Current outlook
Rainfall (quarter)	Near-neutral (most of NSW) Wetter (areas of the northern central west and central coast)
Max Temperature (quarter)	Near-neutral (most of NSW) Warmer (areas of the south east, south coast, central coast and Murray valley)
Min Temperature (quarter)	Near-neutral (most of NSW) Warmer (areas of the south, south east, south to mid-north coast, Sydney basin, Riverina and southern tablelands)
ENSO	Current outlook
ENSO (overall)	Neutral (La Niña possible)
ENSO Outlook Status	Inactive
SOI	Slightly positive
Pacific Ocean (NINO3.4)	Neutral
Indian Ocean (IOD)	Neutral
Southern Annular Mode (SAM/AAO)	Near-neutral (trending near-neutral)

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

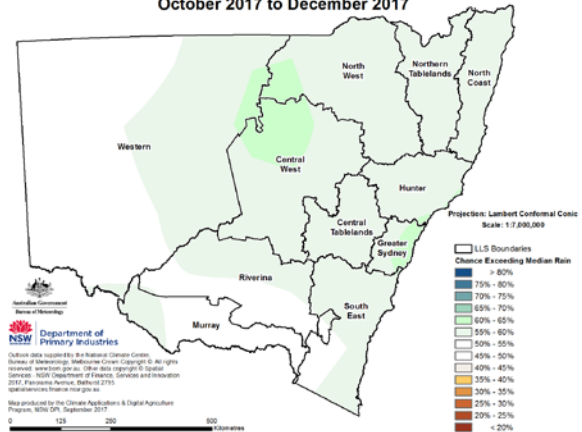
Seasonal outlook

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

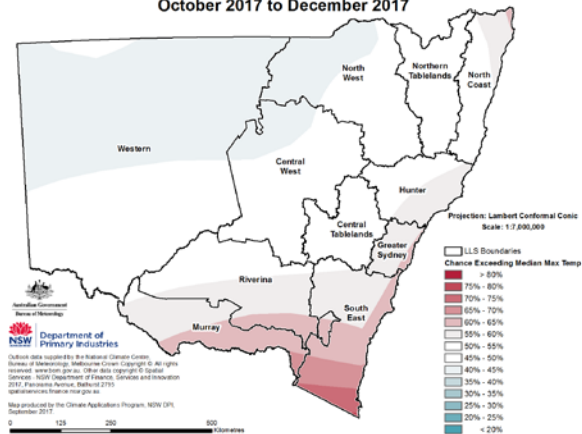
Between October and December there is a near-equal chance of drier or wetter than normal conditions across most of NSW. Wetter than normal conditions are likely for areas of the northern central west, the Sydney basin and the central coast.

There is a near-equal chance of cooler or warmer than normal daytime and overnight temperatures across most of NSW. Daytime and overnight temperatures are likely to be warmer than normal for areas of southern and south eastern NSW. Overnight temperatures are also likely to be warmer than normal across the Riverina and the south to central coast, and an area of the far north coast.

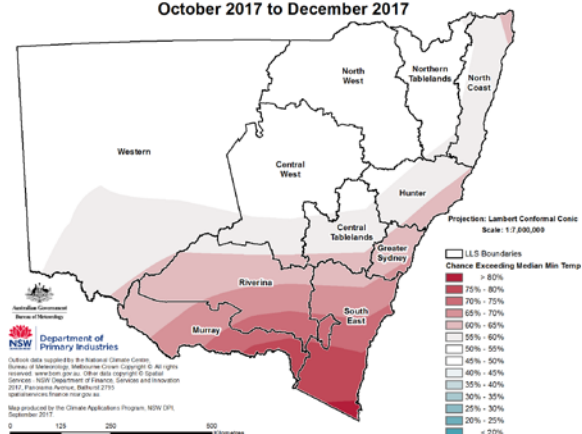
Chance of Exceeding Median Rainfall
October 2017 to December 2017



Chance of Exceeding the Median Maximum Temperature
October 2017 to December 2017



Chance of Exceeding the Median Minimum Temperature
October 2017 to December 2017

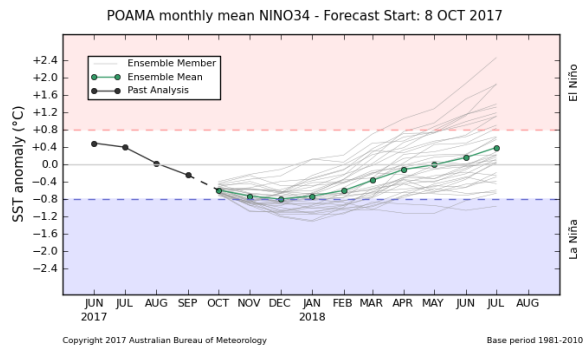


The seasonal outlooks presented in this report are obtained from the Australian Bureau of Meteorology & other sources. These outlooks are general statements about the likelihood (chance) of (for example) exceeding the median rainfall or minimum or maximum temperatures. Such probability outlooks should 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 10 October 2017.

ENSO

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

The Pacific Ocean remains in an ENSO-neutral state, with the outlook from most global climate models suggesting that either a weak, possibly short duration La Niña event or ENSO neutral conditions are possible during spring. The Bureau of Meteorology's ENSO outlook status is currently 'Inactive'. Sea-surface temperatures across the western equatorial Pacific are slightly warmer than average. Temperatures in the central and eastern Pacific have warmed to near-average to slightly below average as a result of temporary weakening of trade winds in this area of the Pacific during late September. Trade winds have subsequently returned to normal. In the sub surface, conditions remain La Niña-like. A large cool anomaly extends from the western through the central to the eastern Pacific. Cloud conditions in the central Pacific were below average during September. The SOI is currently slightly positive.



The Bureau of Meteorology's POAMA outlook (as at 8 October) suggests that the sea surface temperature anomalies in the central equatorial Pacific NINO3.4 region will reach borderline La Niña levels through spring and into early summer. The CPC/IRI ENSO status is at La Niña watch and their forecast indicates while ENSO neutral conditions are currently present there is an increased chance of a La Niña event developing during spring and summer. Note that CPC/IRI uses different thresholds for El Niño and La Niña events than does the Bureau of Meteorology. Of the eight climate models surveyed by the Bureau of Meteorology (as at 18 September) two indicate NINO3.4 sea surface temperatures are likely to reach La Niña or borderline La Niña levels during October and five by December. Three models suggest temperatures continuing at La Niña levels into February.

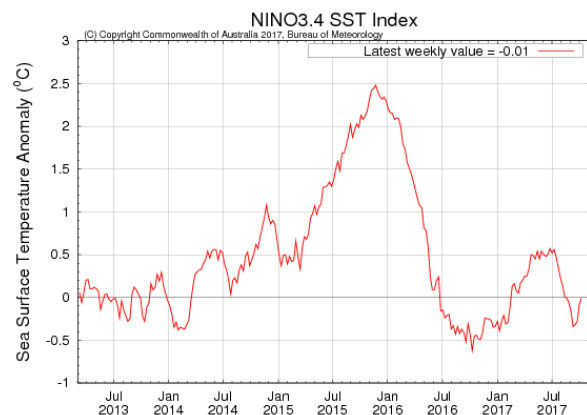
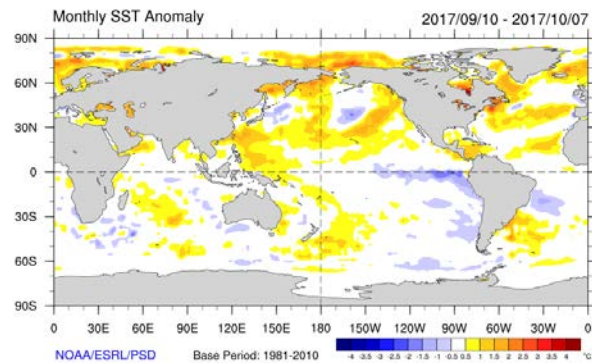
Sea Surface Temperatures

(Source: NOAA & Bureau of Meteorology)

Sea-surface temperatures across the eastern and central equatorial Pacific are near-average, having increased slightly in early October due to some weakening in the trade winds during late September. Most climate models suggest that this warming may only be temporary. Temperatures are slightly warmer than

average in the west. In the Indian Ocean, sea surface temperatures in the western and eastern IOD regions were near-average.

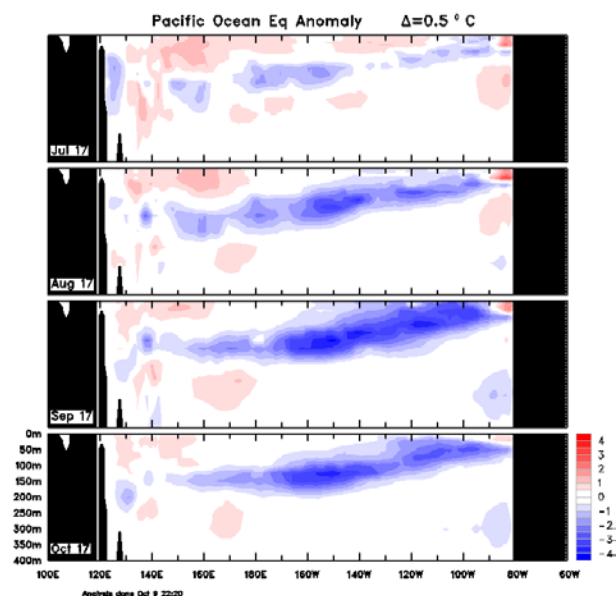
The weekly temperature anomaly in the key NINO3.4 region to 8 October was -0.01°C.



Monthly Sub-surface Temperatures

(Source: Bureau of Meteorology)

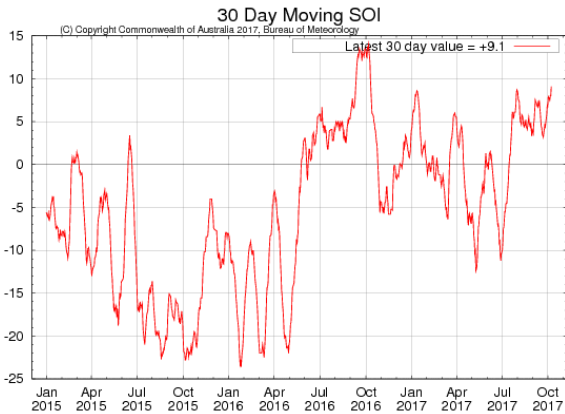
The sub-surface sea temperatures in the equatorial Pacific Ocean remain La Niña-like. Shallow areas of weak warm anomalies are present in the western equatorial Pacific. A large cool anomaly extends from the western equatorial Pacific through the central areas to the surface in the east.



Southern Oscillation Index (SOI)

(Source: Bureau of Meteorology & Queensland DSITI)

The Southern Oscillation Index (SOI) is currently slightly positive. The SOI has been quite variable over the last few months, but has been close to positive since August. On 8 October, the 30-day SOI value was +9.1 (Bureau of Meteorology) and the 90-day SOI was +6.8 (QDSITI).



Values between -7 and +7 indicate neutral conditions, sustained values above +7 may indicate a La Niña event, and sustained values below -7 may indicate an El Niño event.

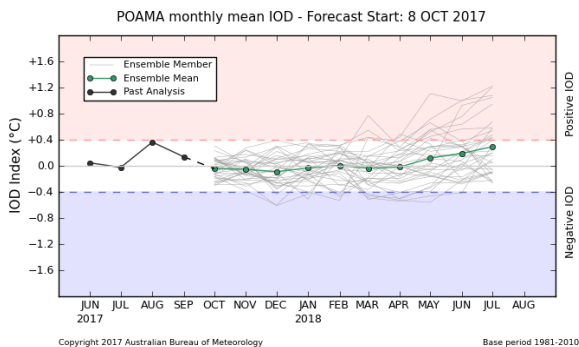
Indian Ocean Dipole (IOD)

(Source: Bureau of Meteorology)

The Indian Ocean Dipole (IOD) is currently neutral. The Dipole Mode Index (DMI) value was +0.05 for the week to 8 October.

Three of the six climate models surveyed by the Bureau of Meteorology (on 18 September) suggest positive IOD temperatures developing during October, but decaying in early summer. However, the IOD has little influence on the climate between December and April.

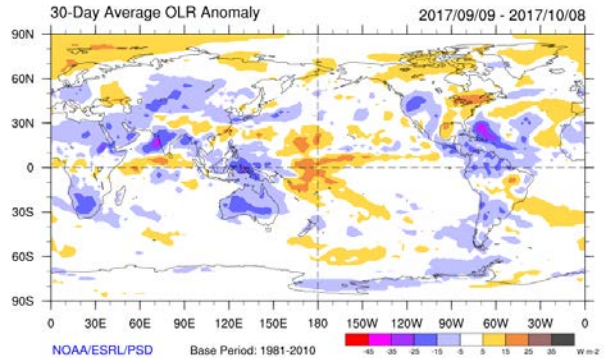
A positive IOD increases the chances of below normal rainfall and may exacerbate the effect of an El Niño event over south eastern Australia. A negative IOD increases the chances of above normal winter and spring rainfall across southern and much of western and central NSW. Borderline levels may still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



Cloudiness and trade winds

(Source: Bureau of Meteorology & NOAA)

Levels of cloud at the junction of the International Date Line (IDL) were below normal (La Niña-like) during September. Cloud was high across areas of Indonesia, Papua New Guinea, the Philippines and Australia.



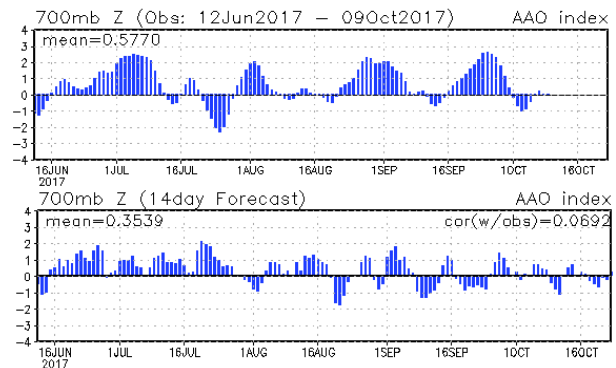
Trade winds were near-normal during most of September across the central equatorial Pacific, but weakened late in the month and returned to normal in October. There was some strengthening in the far west.

Southern Annular Mode (SAM)

(Source: NOAA)

The experimental Southern Annular Mode or Antarctic Oscillation (AAO) index is currently near neutral. The outlook is for it to be mostly near-neutral into late October.

AAO: Observed & GFS forecasts



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 during autumn and winter. During spring and summer, a negative SAM can result in reduced rainfall across south eastern Australia.

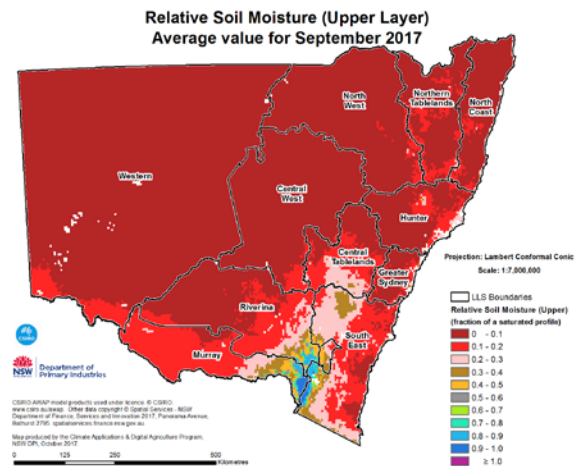
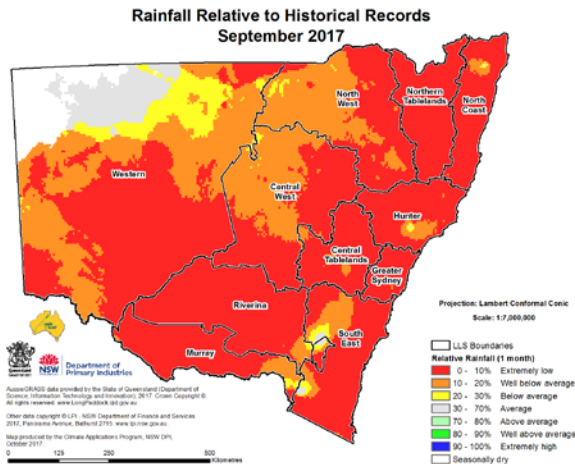
A positive SAM indicates the contraction of the westerly winds towards Antarctica and higher pressures over southern Australia, and can result in stable, drier conditions in autumn and winter. A strongly positive SAM in spring-summer can mean southern Australia is influenced by the northern half of high pressure systems, leading to a slightly higher likelihood of increased rainfall over south eastern and central NSW.

Conditions during September

Rainfall

(Source: Queensland DSITI)

September was the driest on record for NSW. Rainfall across the state ranged from 0-158 mm with most of NSW receiving 0-10 mm. Relative to historical records, rainfall was below average across 92 per cent of NSW, with most of the state receiving rainfall in the lowest 10 per cent of years.

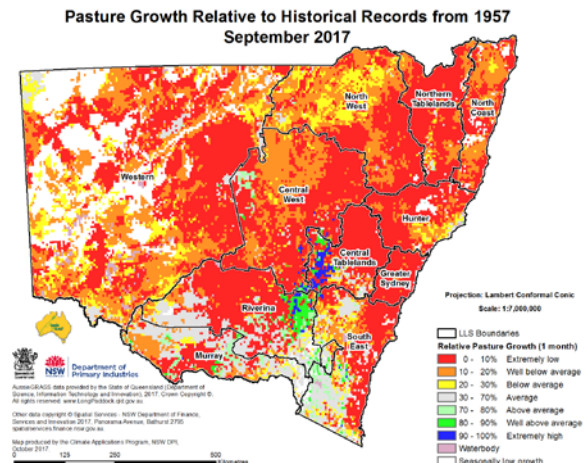


Pasture growth

(Source: Queensland DSITI)

During September, pasture growth was well below average to extremely low across the majority of NSW. Growth was near-average across limited areas of southern and far western NSW.

Other pasture growth models also indicated extremely low growth across the majority of NSW, apart from some areas of near-average to below average growth in the far north west, the south west slopes and the alpine areas.



Soil moisture

(Source: CSIRO)

During September, topsoil moisture declined across most of NSW to levels of generally less than 10 per cent of a saturated profile.

Levels were slightly higher in the far south of the state and areas of the south west slopes, southern and central tablelands and the Monaro.

Relative to historical records, topsoil moisture was extremely low across most of NSW.

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/climate-and-emergencies/droughthub/information-and-resources/regional-seasonal-conditions-reports>.

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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