

## NSW Climate Summary - April 2017

### Summary

#### Seasonal Outlook      Current outlook

**Rainfall (quarter)**      Drier (most of NSW)  
  
Near neutral (areas of the coast and eastern NSW)

**Max Temperature (quarter)**      Warmer (western NSW)  
  
Near neutral (most of the eastern half of NSW)

**Min Temperature (quarter)**      Warmer (western and areas of coastal and far south eastern NSW)  
  
Near neutral (most of the north west, tablelands, central west, Riverina and areas of the south)

#### ENSO      Current outlook

ENSO (overall)      Neutral

ENSO Outlook Status      El Niño watch

SOI      Neutral (slowly falling)

Pacific Ocean (NINO3.4)      Neutral (slowly warming)

Indian Ocean (IOD)      Neutral

Southern Annular Mode (SAM/AO)      Weakly positive (tending to remain weakly to moderately positive)

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

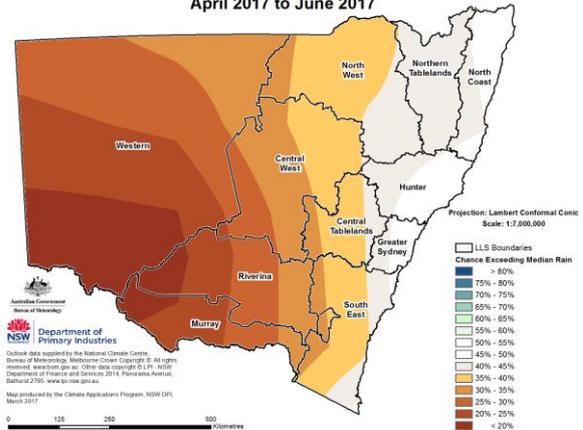
### Seasonal outlook

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

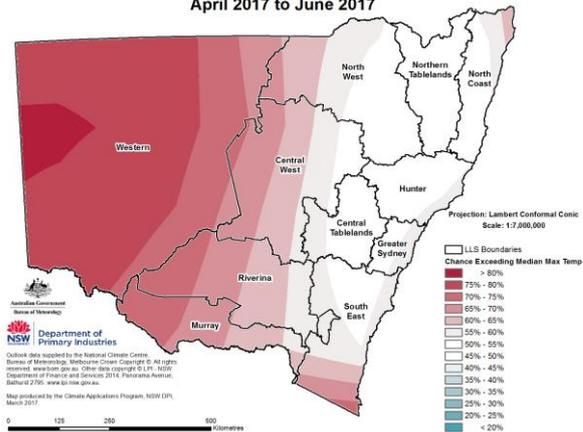
Between April and June drier than normal conditions are likely across most of NSW. There is a near-equal chance of drier or wetter than normal conditions across areas of the coast, northern tablelands, northern slopes and the Hunter valley.

Daytime temperatures are likely to be warmer than normal across the western half of NSW, as well as areas of the far south east and far north east. Overnight temperatures are likely to be warmer than normal across western NSW, as well as areas of the coast and the south east. There is a near-equal chance of cooler or warmer than normal conditions elsewhere.

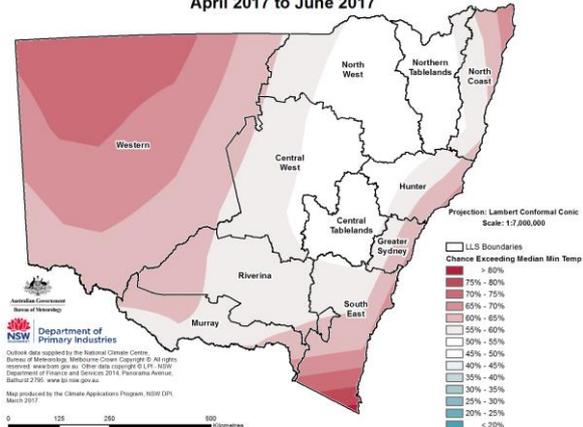
Chance of Exceeding Median Rainfall  
April 2017 to June 2017



Chance of Exceeding the Median Maximum Temperature  
April 2017 to June 2017



Chance of Exceeding the Median Minimum Temperature  
April 2017 to June 2017

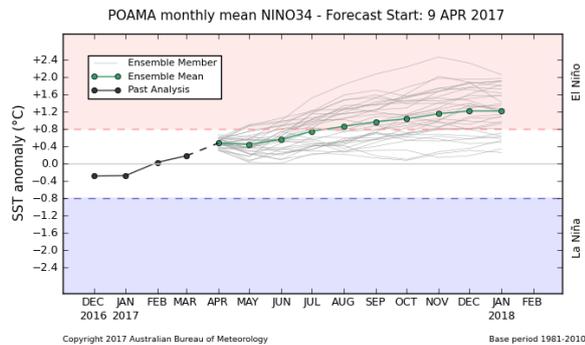


The seasonal outlooks presented in this report are obtained from the Australian Bureau of Meteorology & other sources. These outlooks are general statements about the likelihood (chance) of (for example) exceeding the median rainfall or minimum or maximum temperatures. Such probability outlooks should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

## ENSO

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

The Pacific Ocean remains in an ENSO-neutral state. Most models suggest a neutral outlook throughout autumn. A number of models suggest warming to El Niño levels during winter or spring, although model skill is currently low. The Bureau of Meteorology's ENSO outlook status remains 'El Niño watch', indicating an increased chance of an El Niño event occurring during the year. During March, sea surface temperatures were near-average to slightly below average across the central and eastern-central equatorial Pacific. Temperatures were above average across the eastern equatorial Pacific and were near-average to above average in the west. A cool sub-surface anomaly remains in the central and eastern Pacific. Weak warm anomalies are present in areas of the west and the east. Trade winds were near-average in the central equatorial Pacific, but stronger in the west and reversed in the east. Cloud conditions in the central Pacific remained at La Niña-like levels. The SOI remains neutral.



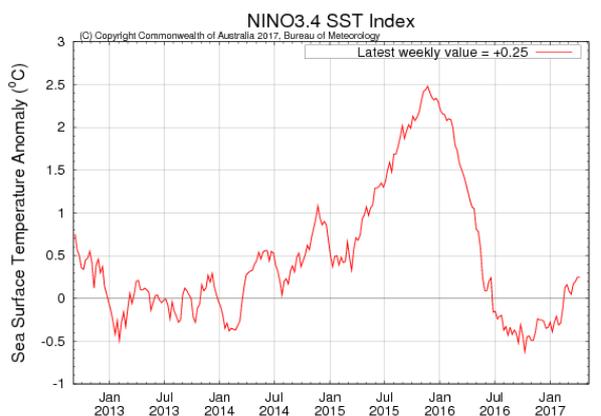
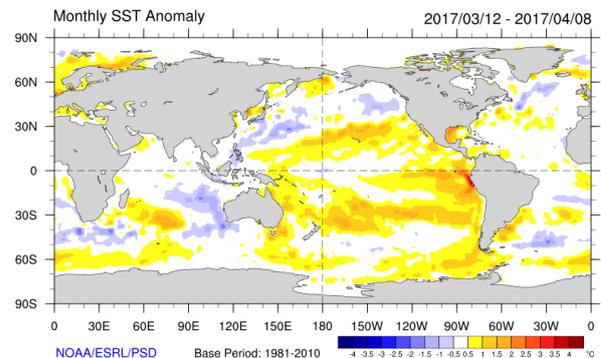
The Bureau of Meteorology's POAMA outlook (as at 9 April) suggests that the sea surface temperature anomalies in the NINO3.4 region will remain neutral throughout autumn and early winter, but indicates the possibility of reaching El Niño levels during mid-late winter. The CPC/IRI ENSO forecast indicates ENSO neutral conditions are present and likely to continue throughout autumn and into winter. However, they suggest there is an increasing chance for El Niño development into spring. Note that CPC/IRI uses different thresholds for El Niño and La Niña events than does the Bureau of Meteorology. The eight climate models surveyed by the Bureau (as at 16 March), indicate NINO3.4 sea surface temperatures are likely to remain neutral into April. Four models indicated temperatures possibly reaching El Niño levels during June. Seven indicated temperatures at El Niño levels are possible during August.

## Sea Surface Temperatures

(Source: NOAA & Bureau of Meteorology)

Sea surface temperatures during March were near-average to slightly below average across the central and eastern-central equatorial Pacific. Temperatures have been warming and were above average across the

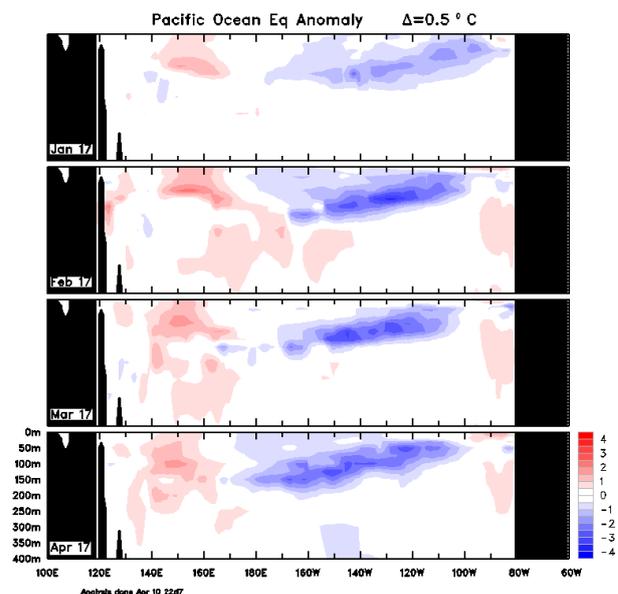
eastern equatorial Pacific. Temperatures were also near-average to above average in the western equatorial Pacific. The most recent weekly temperature anomaly value in the key NINO3.4 region was +0.25°C in the week to 9 April.



## Monthly Sub-surface Temperatures

(Source: Bureau of Meteorology)

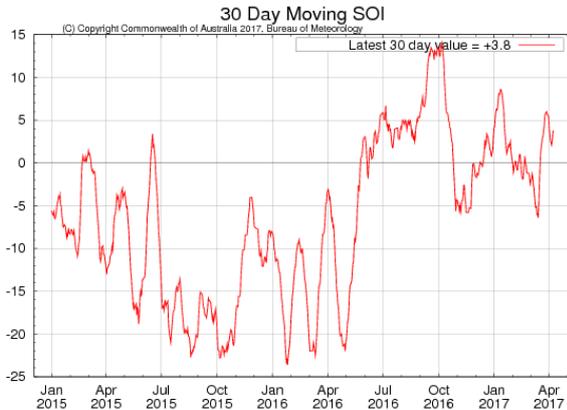
The sub-surface sea temperatures show the cool subsurface temperature anomaly remains across the central and eastern equatorial Pacific. Weak warm anomalies are present in areas of the west, and both at depth and near the surface in the east.



### Southern Oscillation Index (SOI)

(Source: Bureau of Meteorology & Queensland DSITI)

The Southern Oscillation Index (SOI) is currently neutral, although it had a sharp rise in March. On 9 April, the 30-day SOI value was +3.8 (Bureau of Meteorology) and the 90-day SOI was -1.33 (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.

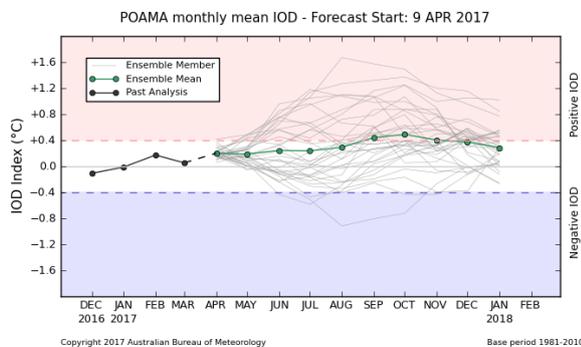
### Indian Ocean Dipole (IOD)

(Source: Bureau of Meteorology)

The Indian Ocean Dipole (IOD) is neutral. The Dipole Mode Index (DMI) value was at +0.32 for the week to 9 April.

The six climate models surveyed by the Bureau of Meteorology on 16 March suggest the likelihood of IOD neutral conditions during April and July. Three models suggest a positive IOD by August, with a further two suggesting a borderline positive IOD.

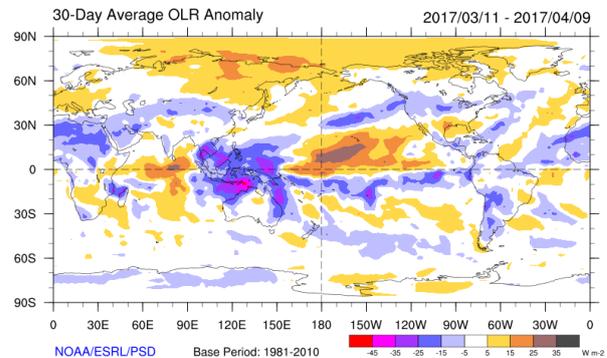
A positive IOD increases the chances of below normal rainfall and may exacerbate the effect of an El Niño event over south eastern Australia. A negative IOD increases the chances of above normal winter and spring rainfall across southern and much of western and central NSW.



### Cloudiness and trade winds

(Source: Bureau of Meteorology & NOAA)

Levels of cloud at the junction of the International Date Line (IDL) were below normal during March, in a continued La Niña-like pattern. Cloud levels were high over South East Asia and Papua-New Guinea as well as north western, western and most of eastern Australia.

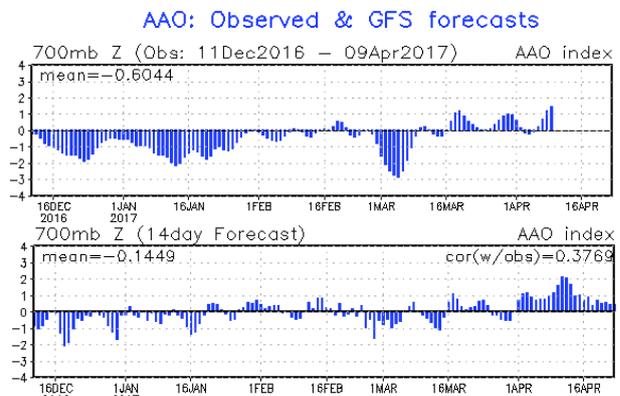


Trade winds were near-normal across the central equatorial Pacific during February, with a reversal in the eastern Pacific and some strengthening in the west.

### Southern Annular Mode (SAM)

(Source: NOAA)

The experimental Southern Annular Mode or Antarctic Oscillation (AAO) index was strongly negative in early March but is currently weakly positive. The outlook is for it to remain weakly-moderately positive into mid-late April.



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. 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.

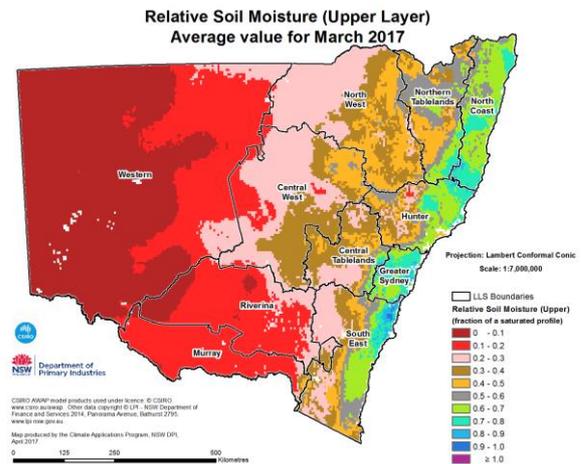
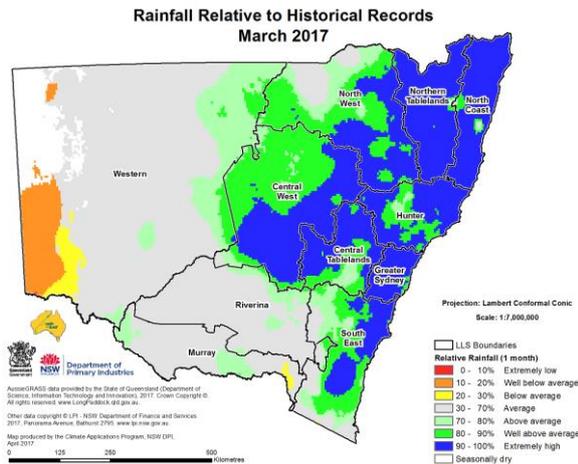
## Conditions during March

### Rainfall

(Source: Queensland DSITI)

Rainfall across NSW ranged from 0-1170 mm during March, with the east of the state receiving more than 50-100 mm. Heavy falls occurred across the coast.

Relative to historical records, most of the coast, tablelands, Monaro, Hunter valley, north west and central west received above average rainfall. The Riverina, south and most of the far west received near-average rainfall. Below average rainfall occurred in areas of the far west.



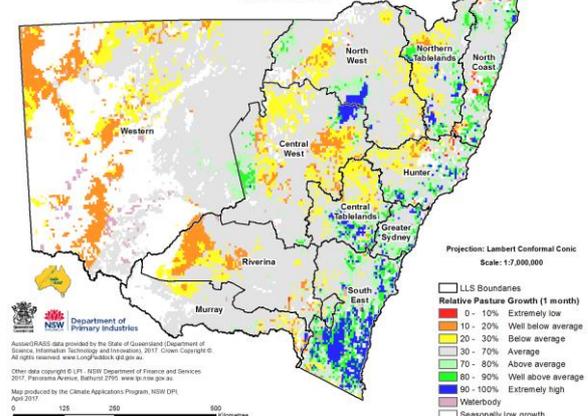
### Pasture growth

(Source: Queensland DSITI)

During March pasture growth was near-average across much of inland NSW, but below average across areas of the far west, central west and western Riverina. Most of the coast and eastern areas of the tablelands had average to above average growth.

Other pasture growth models indicated well below average growth in the west, but well above average growth across areas of the tablelands, Monaro, upper Hunter valley, central west and north west.

Pasture Growth Relative to Historical Records from 1957 March 2017



### Soil moisture

(Source: CSIRO)

Topsoil moisture improved across eastern NSW and areas of north western and central NSW during March. Relative to historical records, levels were well above average to extremely high across most of eastern, northern, north eastern and central NSW. Levels were generally near-average elsewhere, but below average in the far west.

Subsoil moisture levels were relatively stable, but improved across coastal areas. Relative to historical records, levels remained extremely high across much of inland 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/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.

### Warning

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