

## Negative Indian Ocean Dipole; ENSO remains neutral

Issued on Tuesday 30 July 2013 | Product Code IDCKGEW00

The El Niño-Southern Oscillation (ENSO) status remains neutral (neither El Niño nor La Niña), though areas of cooler than normal water have persisted in the eastern tropical Pacific. However, these areas of cooler than normal water are weak and fragmented, and models surveyed by the Bureau do not expect these to strengthen into a La Niña event during the austral winter or spring. This means ENSO is likely to remain neutral over the coming months.

In the tropical Indian Ocean, the Indian Ocean Dipole (IOD) index has remained below  $-0.4$  °C since mid-May, indicating a negative IOD event is currently underway. The majority of climate models continue this negative IOD event through the austral winter and spring. A negative IOD during winter-spring increases the chances of above-average rainfall over southern Australia, while over parts of northern Australia it increases the chance of higher humidity.

Next update expected on 13 August 2013 | [print version](#)

### Further Details

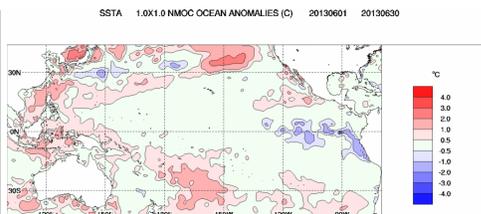
#### Sea Surface Temperatures

##### Monthly sea surface temperatures:

The sea surface temperature (SST) anomaly map for June shows cool SST anomalies across the eastern tropical Pacific and along part of the Peruvian coast. This pattern is generally similar to that of the previous month. Warm anomalies continue across the Maritime Continent and South Pacific Convergence Zone (SPCZ), with anomalies having strengthened somewhat over the region east of Papua New Guinea. SST anomalies are near-average across the majority of the remaining tropical Pacific.

Index	May	June	Temperature change
NINO3	-0.4	-0.4	no change
NINO3.4	-0.1	0.0	0.1 °C warmer
NINO4	+0.1	+0.2	0.1 °C warmer

Baseline period 1961–1990.

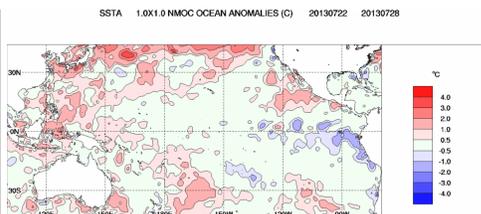


##### Weekly sea surface temperatures:

The anomaly map for the week ending 28 July indicates near-average SSTs across the central tropical Pacific. Patchy cool anomalies remain in the eastern tropical Pacific; these have strengthened slightly along the Peruvian coast during the past two weeks. In contrast, anomalies have weakened slightly around  $120^{\circ}\text{W}$ . Warm anomalies around the Maritime Continent, northwest of Australia and near the South Pacific Convergence Zone (SPCZ) have weakened slightly.

Index	Previous	Current	Temperature change (2 weeks)
<a href="#">NINO3</a>	-0.4	-0.4	no change
<a href="#">NINO3.4</a>	-0.1	0.0	0.1 °C warmer
<a href="#">NINO4</a>	+0.3	+0.2	0.1 °C cooler

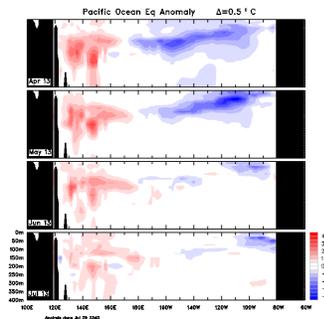
Baseline period 1961–1990.



## Pacific ocean sub-surface temperatures

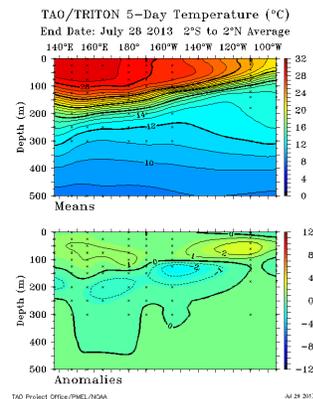
### Monthly sub-surface:

The four-month sequence of sub-surface temperature anomalies (to 29 July) shows small areas of cool anomalies remain in the far eastern equatorial Pacific between the surface and around 150 m depth. In the western equatorial sub-surface weak warm anomalies are present in much of the water column west of the Date Line. Small areas of both the cool and warm anomalies reach a magnitude of more than 1.5 °C. Sub-surface temperatures have been trending towards average during recent months, as shown by the decreased magnitude of both cool and warm anomalies.



### Weekly sub-surface:

The sub-surface of the equatorial Pacific has warmed in the east and cooled in the central region during the past two weeks. The sub-surface map for the 5 days ending 28 July shows water more than 2 °C cooler than average in the central equatorial Pacific, around 150°W and 150 m depth, while water in the eastern equatorial Pacific between around 50 and 100 m depth is more than 2 °C warmer than average.

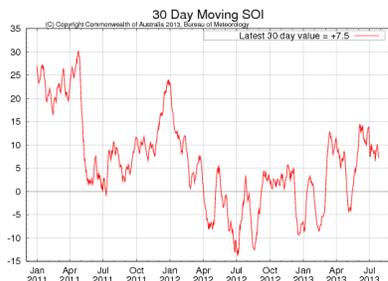


[Animation of recent sub-surface changes](#) | [Archive of sub-surface temperature charts](#)

### Southern Oscillation Index:

The Southern Oscillation Index (SOI) has shown little change over the last two weeks. The latest approximate 30-day SOI value to 28 July is +7.5.

Sustained positive values of the SOI above +8 may indicate a La Niña event, while sustained negative values below -8 may indicate an El Niño event. Values of between about +8 and -8 generally indicate neutral conditions.

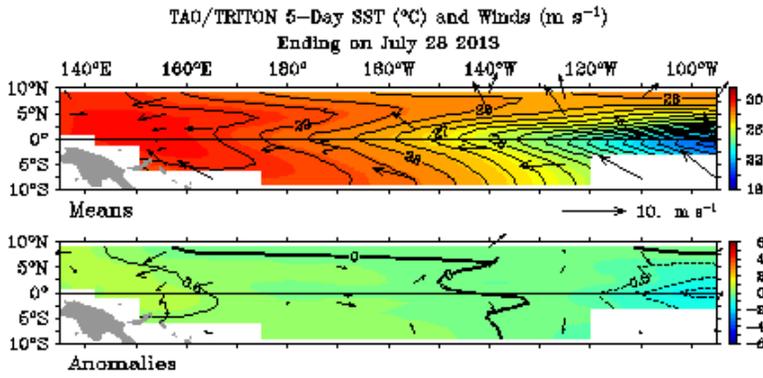


[Monthly graph](#) | [SOI table](#) | [SOI text](#)

### Trade winds:

Trade wind strength over the tropical Pacific remains similar to the pattern of two weeks ago. Trade wind are near average over the majority of the tropical Pacific (see anomaly map for the 5 days ending 28 July).

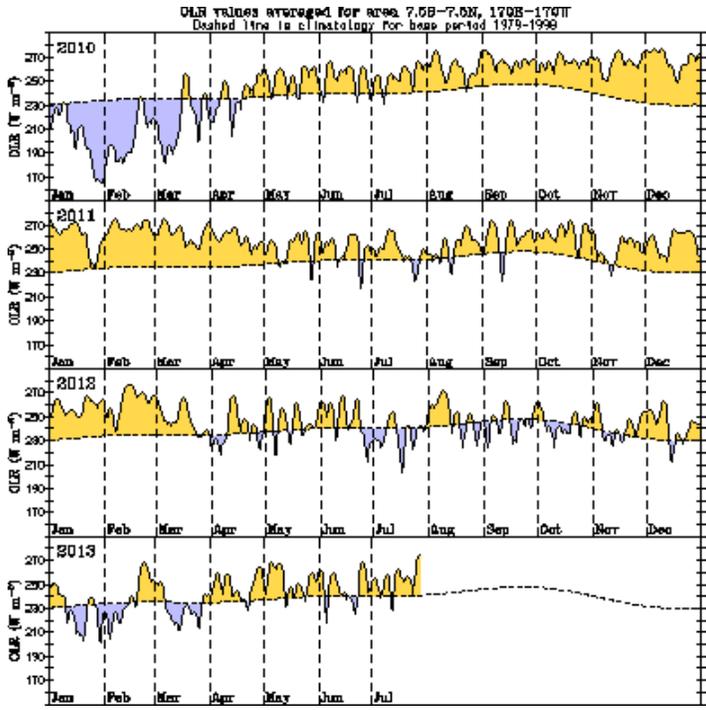
During La Niña events, there is a sustained strengthening of the trade winds across much of the tropical Pacific, while during El Niño events there is a sustained weakening of the trade winds.



**Cloudiness near the Date Line:**

Continuing the trend which began in April, cloudiness near the Date Line has been somewhat below average over the past two weeks.

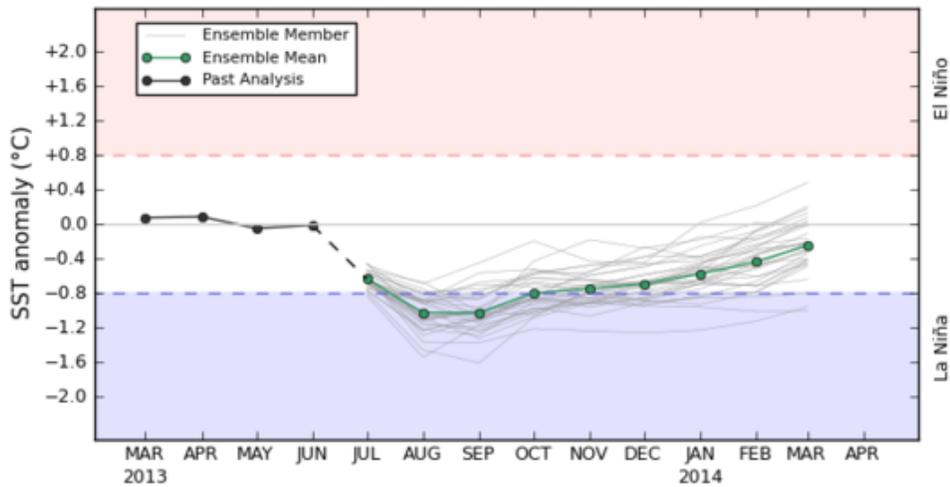
Cloudiness along the equator, near the Date Line, is an important indicator of ENSO conditions, as it typically increases (negative OLR anomalies) near and to the east of the Date Line during an El Niño event and decreases (positive OLR anomalies) during a La Niña event.



**Climate Models:**

Most international [climate models](#) surveyed by the Bureau indicate that SSTs in the equatorial Pacific Ocean are likely to remain ENSO neutral through the austral winter and spring. Two of the surveyed models suggest there is a small chance of NINO3.4 (the SST index for the central tropical Pacific) briefly passing La Niña thresholds during late austral winter or early spring, while the other five models indicate neutral conditions throughout the coming seasons.

POAMA monthly mean NINO34 - Forecast Start: 1 JUL 2013



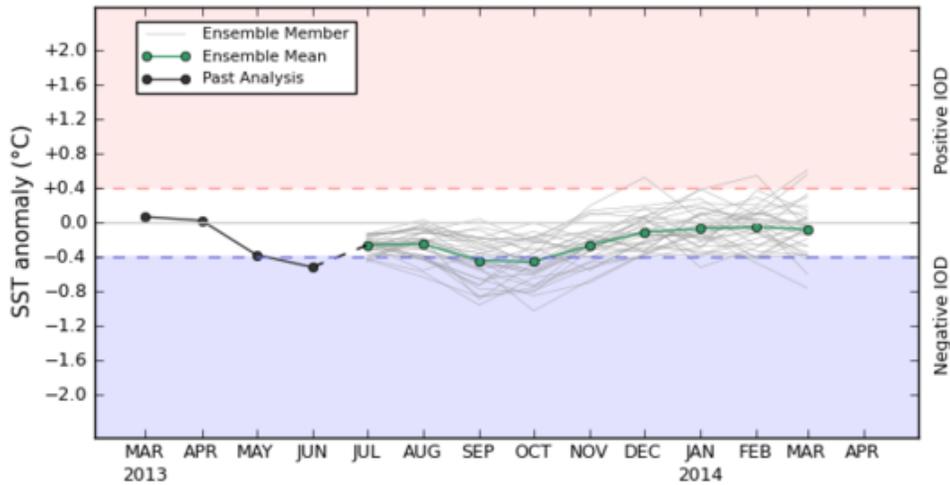
Copyright 2013 Australian Bureau of Meteorology

**Indian Ocean Dipole:**

A negative Indian Ocean Dipole (IOD) event is underway in the tropical Indian Ocean. The latest weekly value (28 July) of the IOD index is  $-0.6\text{ }^{\circ}\text{C}$ . Values of the index have been below  $-0.4\text{ }^{\circ}\text{C}$  (considered the negative IOD threshold value) since mid-May.

Climate models surveyed in the [model outlooks](#) indicate a negative IOD event is likely to persist well into spring but will decay by December, typical of the seasonal cycle of the IOD. A negative IOD during winter-spring increases the chances of above-average rainfall over southern Australia while over parts of northern Australia it increases the chance of higher humidity.

POAMA monthly mean IOD - Forecast Start: 1 JUL 2013



Copyright 2013 Australian Bureau of Meteorology

[IOD time series](#) [IOD map](#) [IOD forecasts](#) [DMI values](#)

This page was created at on