



## ENSO Wrap-Up

### Current state of the Pacific and Indian Ocean

## El Niño indicators ease

Issued on Tuesday 29 July 2014 | Product Code IDCKGEWW00

Despite the tropical Pacific Ocean being primed for an El Niño during much of the first half of 2014, the atmosphere above has largely failed to respond, and hence the ocean and atmosphere have not reinforced each other. As a result, some cooling has now taken place in the central and eastern tropical Pacific Ocean, with most of the key NINO regions returning to neutral values.

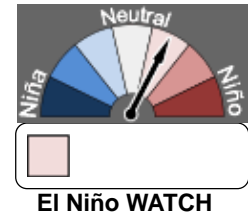
While the chance of an El Niño in 2014 has clearly eased, warmer-than-average waters persist in parts of the tropical Pacific, and the (slight) majority of climate models suggest El Niño remains likely for spring. Hence the establishment of El Niño before year's end cannot be ruled out. If an El Niño were to occur, it is increasingly unlikely to be a strong event.

Given the current observations and the climate model outlooks, the Bureau's ENSO Tracker has shifted to El Niño WATCH status. This means the chance of El Niño developing in 2014 is approximately 50%, which remains significant at double the normal likelihood of an event.

El Niño is often associated with wide scale below-average rainfall over southern and eastern inland areas of Australia and above-average daytime temperatures over southern Australia. Similar impacts prior to the event becoming fully established regularly occur.

The Indian Ocean Dipole (IOD) index has been below  $-0.4$  °C (the negative IOD threshold) since mid-June, but needs to remain negative into August to be considered an event. Model outlooks suggest this negative IOD is likely to be short lived, and return to neutral by spring. A negative IOD pattern typically brings wetter winter and spring conditions to inland and southern Australia.

Next update expected on 12 August 2014 | [print version](#)



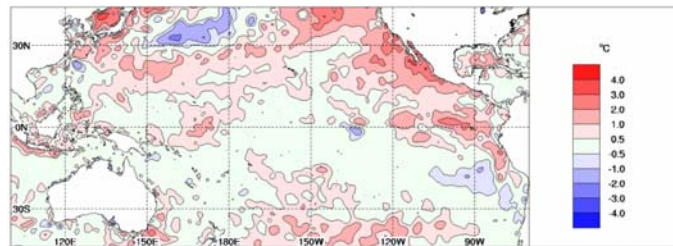
### ENSO Tracker

(or click graphic)

[Currents of change:  
Tracking the El  
Niño/La Niña cycle  
\(Bureau blog article\)](#)

### Weekly sea surface temperatures

Warm SST anomalies remain in the western and eastern tropical Pacific Ocean. Cooling has continued over the past fortnight, with the temperature of surface waters in the central Pacific now near-average (see SST anomaly map for the week ending 27 July). Positive anomalies also remain in areas of the Indian Ocean and the northern Pacific Basin, particularly along the western US coastline. The warmer than average temperatures in the eastern Indian Ocean and western Pacific are atypical for a developing El Niño event, and the temperature gradient between these areas and the central Pacific may be playing a role in reducing atmospheric feedbacks.

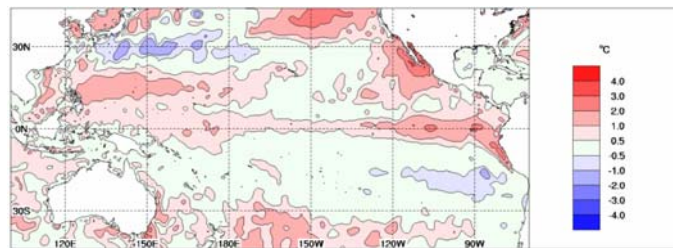


Index	Previous	Current	Temperature change (2 weeks)
NINO3	+0.7	+0.6	0.1 °C cooler
NINO3.4	+0.3	0.0	0.3 °C cooler
NINO4	+0.4	+0.3	0.1 °C cooler

Baseline period 1961–1990.

### Monthly sea surface temperatures

The equatorial Pacific continued to warm in the east during June. The sea surface temperature (SST) anomaly map for June shows warm anomalies along the entire equator, with further warm anomalies to Australia’s northwest, around much of the Maritime Continent and east of the Philippines, as well as along the coastline of North America.



Index	May	June	Temperature change
NINO3	+0.7	+0.9	0.2 °C warmer
NINO3.4	+0.5	+0.5	no change
NINO4	+0.7	+0.6	0.1 °C cooler

Baseline period 1961–1990.

See also:

[Animation of recent SST changes](#)

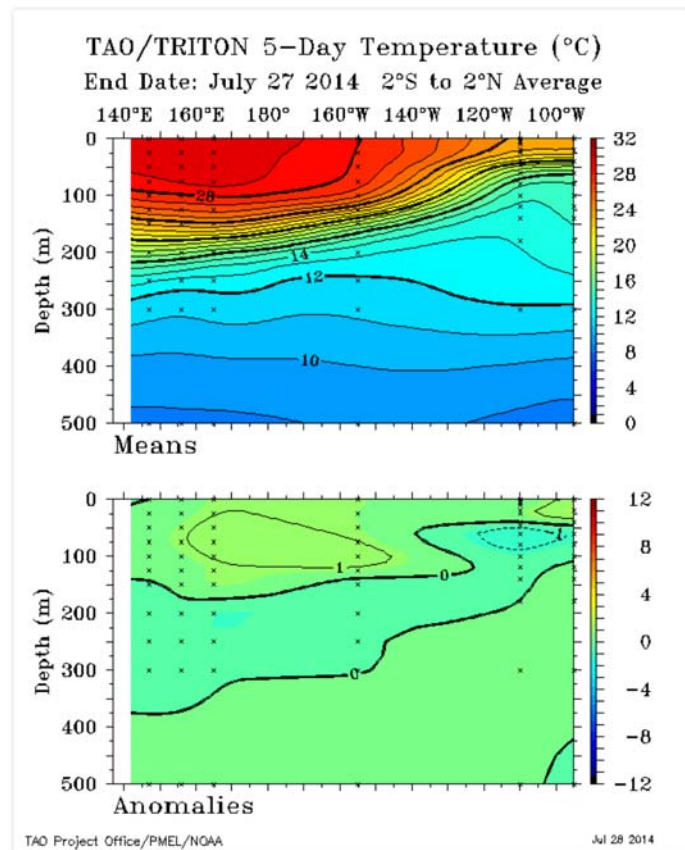
[Weekly index values](#)

[Sea temperature analyses](#)

[Map of NINO regions](#)

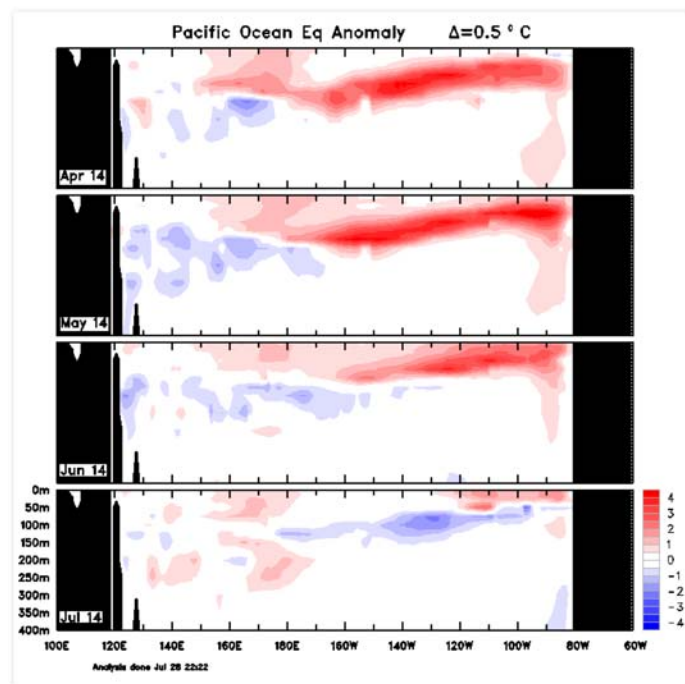
## 5-day sub-surface temperatures

The sub-surface temperature map for the 5 days ending 27 July shows waters across the equatorial Pacific are generally near average, to slightly below average. However, it is worth noting that a substantial area of the central to eastern Pacific has low data coverage (cross markings on image indicate point observations). Other sources of sub-surface data have been considered.



## Monthly sub-surface temperatures

The four-month sequence of sub-surface temperature anomalies (to July) shows a significant break down of warm anomalies in the top 100 m over the past month. The July sub-surface plot doesn't show a consistent warm signal, with a mixture of weaker warm and cool anomalies across the sub-surface.

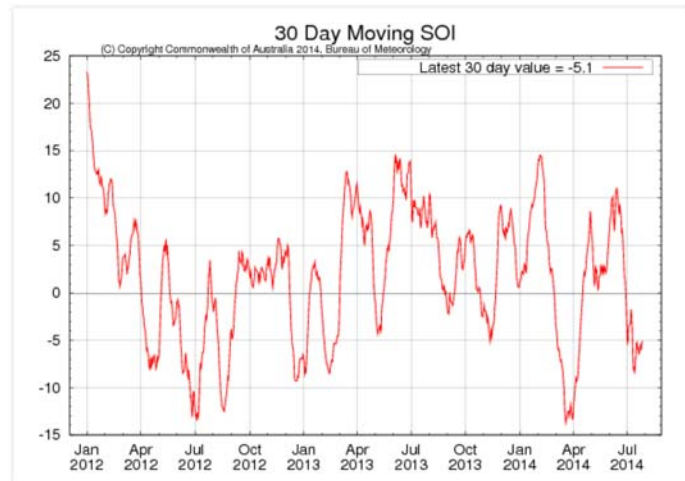


See also: [Animation of recent sub-surface temperature changes](#)

[Archive of sub-surface temperature charts](#)

## Southern Oscillation Index

The Southern Oscillation Index (SOI) has remained around  $-5$  to  $-6$  over the past two weeks. The latest approximate 30-day SOI value to 27 July is  $-5.2$ .



See also:

[Monthly SOI graph](#)

[Table of monthly SOI values](#)

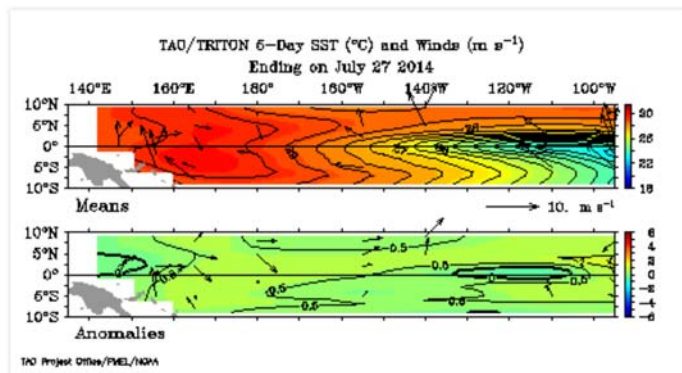
[30-day SOI values](#)

## Trade winds

Weak westerly wind anomalies are present over part of the western tropical Pacific, on and to the north of the equator, while there are near-average across the remainder of the tropical Pacific (see anomaly map for the 5 days ending 27 July). These westerly anomalies have been present over the past fortnight and, if continued, could drive further warming of surface waters in the central and eastern Pacific. Sustained westerly wind anomalies would be a sign that the atmosphere could be falling into alignment with the signs of a developing El Niño in the ocean.

The [Madden–Julian Oscillation \(MJO\)](#) is currently in phase 7 (western Pacific), a situation which favours westerly wind anomalies over the tropical Pacific.

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.



**Data Source:**

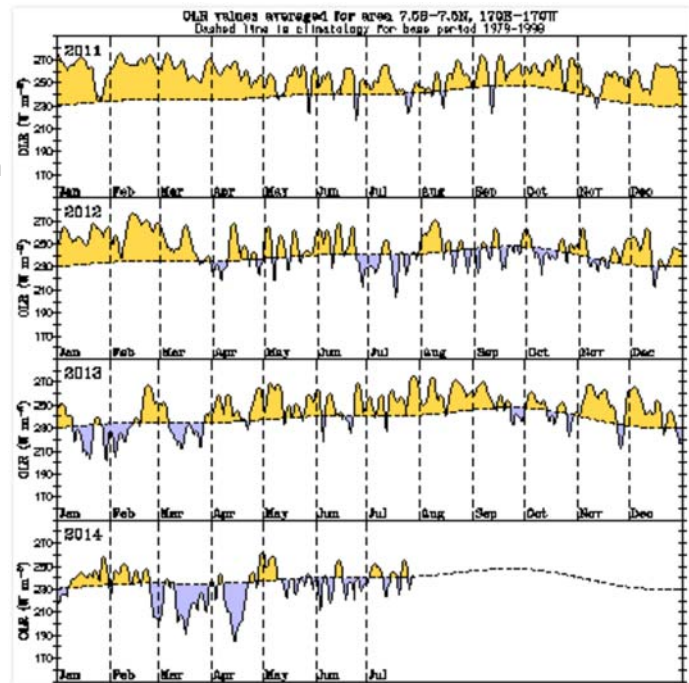
[TAO/TRITON data](#)

[Time-longitude wind anomalies](#)

### Cloudiness near the Date Line

Cloudiness near the Date Line has continued to fluctuate around the long-term average during 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 El Niño and decreases (positive OLR anomalies) during La Niña.

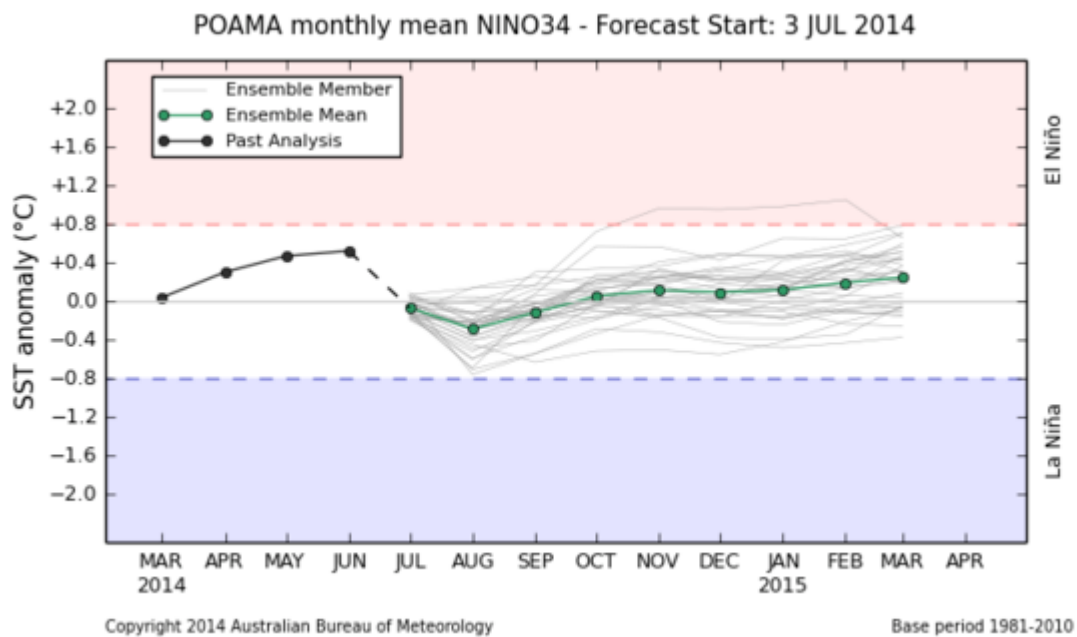


- Spatial cloudiness
- Regional cloudiness
- Out-going longwave radiation maps



## Model outlooks

Five of the eight surveyed international [climate models](#) indicate that El Niño remains likely to develop by the end of spring. Most of these models forecast the event will persist into summer 2014/15. Models have eased the strength of any potential event over the last couple of months.



See also:

[Climate model summary](#)

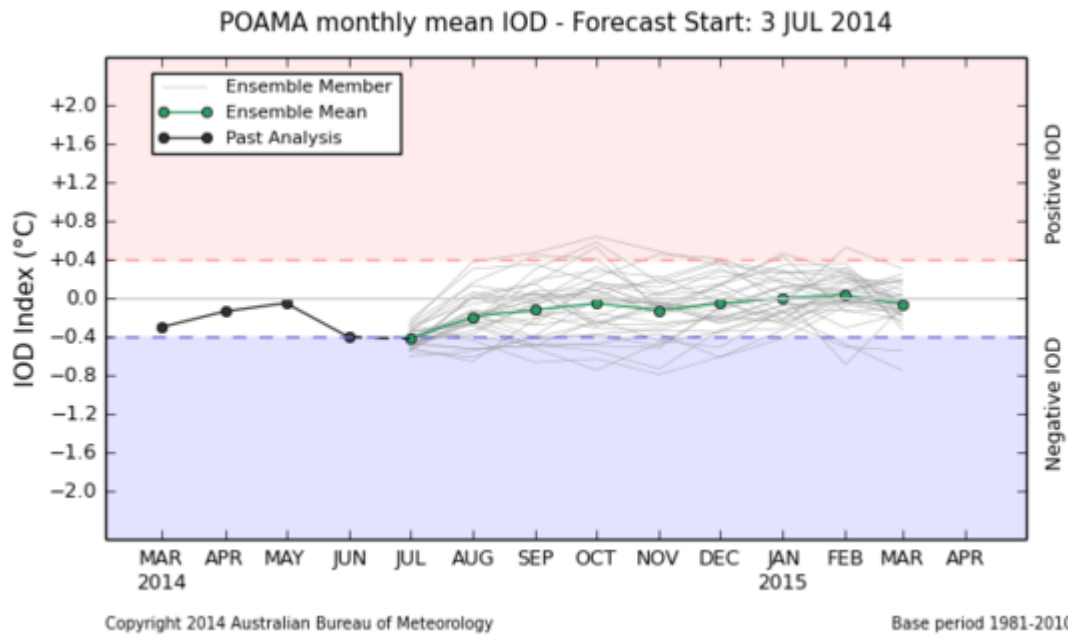
[POAMA model](#)

[Map of NINO regions](#)

## Indian Ocean Dipole

Values of the Indian Ocean Dipole (IOD) have remained in negative territory since mid-June. The latest weekly index value to 27 July is  $-0.7$  °C. Waters to the south of Indonesia are warmer than average while sea surface temperatures in parts of the Arabian Sea are cooler than average. If values of the IOD index below  $-0.4$  °C persist until early-to-mid August, 2014 will be considered a negative IOD year.

Climate models surveyed in the [model outlooks](#) favour a return to neutral IOD values over the coming months.



See also:

[POAMA model](#)

[IOD time series](#)

[Map of IOD regions](#)

[IOD forecasts](#)

[Weekly IOD values](#)



## Archive

- [Previous ENSO Wrap-Ups](#)

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