

ENSO-neutral conditions persist in the tropical Pacific

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Neutral conditions (neither El Niño nor La Niña) persist in the tropical Pacific Ocean. Climate models surveyed by the Bureau of Meteorology indicate that the tropical Pacific is likely to remain neutral through the remainder of the southern hemisphere summer.

Climate indicators of the El Niño-Southern Oscillation (ENSO) remain within neutral values. Sea surface temperatures in the tropical Pacific are generally close to the long-term average. Atmospheric indicators, such as the Southern Oscillation Index (SOI), trade winds and cloudiness near the Date Line have fluctuated in recent weeks, but generally remained within the neutral range. The SOI is expected to ease further towards zero over the coming fortnight as the influence of the tropical weather system which spawned TC *Evan* is removed from the 30-day average. Large fluctuations in the SOI over summer due to tropical weather systems are not uncommon.

The influence of the Indian Ocean Dipole (IOD) on Australian rainfall is limited during the southern summer.

Next update expected on 15 January 2013 | [print version](#)

Further Details

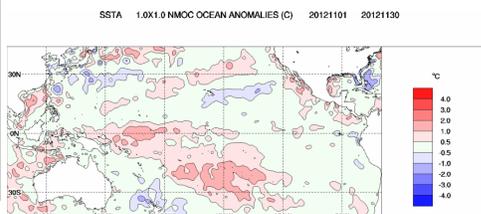
Sea Surface Temperatures

Monthly sea surface temperatures:

When compared to that for the previous month, the sea-surface temperature (SST) anomaly map for November shows the focus of warm SST anomalies in the tropical Pacific Ocean has shifted westward. SSTs are slightly above average in the western half of the equatorial Pacific, while in the east anomalies have all but disappeared. The warmest anomalies remain west of the Date Line, where an area of water is more than 1 °C warmer than usual. Warm SST anomalies also remain around Australia's northwest and western coast.

Index	October	November	Temperature change
NINO3	+0.3	+0.2	0.1 °C cooler
NINO3.4	+0.4	+0.2	0.1 °C cooler
NINO4	+0.8	+0.8	no change

Baseline period 1961–1990.

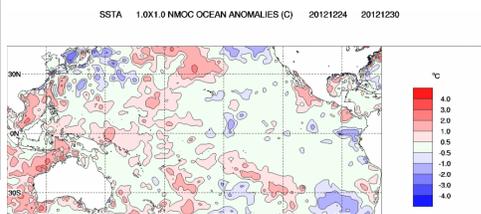


Weekly sea surface temperatures:

The surface of the tropical Pacific has cooled during the past fortnight, although anomalies in the very far west of the tropical Pacific have remained similar to those of two weeks ago. Very weak warm anomalies remain along the equator west of about 170°W (see the SST anomaly map for the week ending 30 December below). Warmer anomalies surround the western half of Australia, with substantial warming of this water off the southwest coast having occurred over the past fortnight. SSTs in the central and eastern tropical Pacific are generally close to average, although some small areas of cool water are present off the South American coast.

Index	Previous	Current	Temperature change (2 weeks)
NINO3	+0.0	-0.2	0.2 °C cooler
NINO3.4	+0.1	-0.1	0.2 °C cooler

Baseline period 1961–1990.



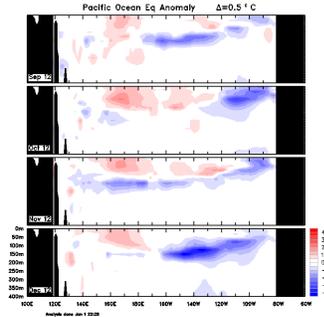
Index	Previous	Current	Temperature change (2 weeks)
NINO4	+0.6	+0.3	0.3 °C cooler

[An animation of recent SST changes](#) | [Weekly data graph](#) | [Map of NINO regions](#)

Pacific ocean sub-surface temperatures

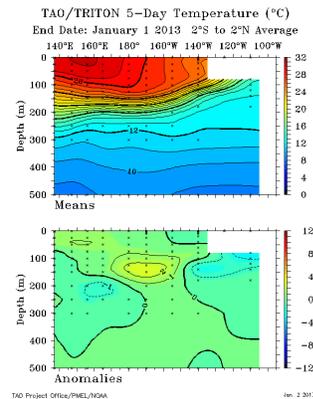
Monthly sub-surface:

The four-month sequence of sub-surface temperature anomalies (to December) shows a significant volume of cooler-than-average water present below the surface of the eastern equatorial Pacific Ocean during December. The anomalies reached more than 3 °C at a depth of around 150 m. Very weak shallow warm anomalies remain west of the Date Line.



Weekly sub-surface:

Compared to two weeks ago, sub-surface temperature anomalies in the eastern equatorial Pacific have cooled slightly. The map for the 5 days ending 1 January shows warm anomalies 100 to 150 m beneath the surface of the central equatorial Pacific, while cool anomalies are present between the surface and 150 m in the eastern equatorial Pacific. Weaker cool anomalies are also present in the western equatorial Pacific at greater depth.

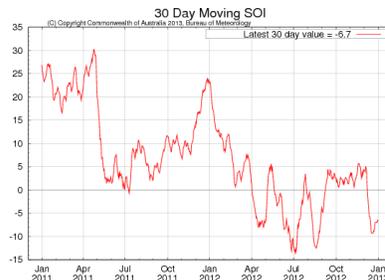


[Animation of recent sub-surface changes](#) | [Archive of sub-surface temperature charts](#)

Southern Oscillation Index:

The Southern Oscillation Index (SOI) has risen slightly over the past week, following the recent sharp decline, returning to neutral values. The latest (1 January) 30-day SOI value is -6.7. The SOI is expected to ease further towards zero over the coming fortnight as the influence of the tropical weather system which spawned TC *Evan* is removed from the 30-day average. Large fluctuations in the SOI over summer due to tropical weather systems are not uncommon.

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.



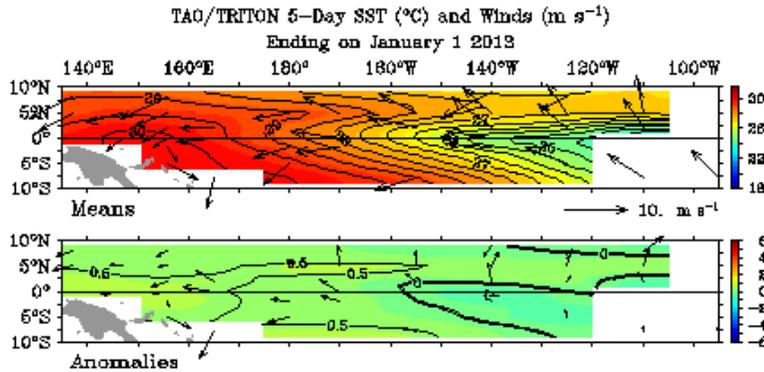
[Monthly graph](#) | [SOI table](#) | [SOI text](#)

Trade winds:

The anomaly map for the 5 days ending 1 January shows trade winds are near average across the

eastern half of the tropical Pacific and stronger than average across the western half.

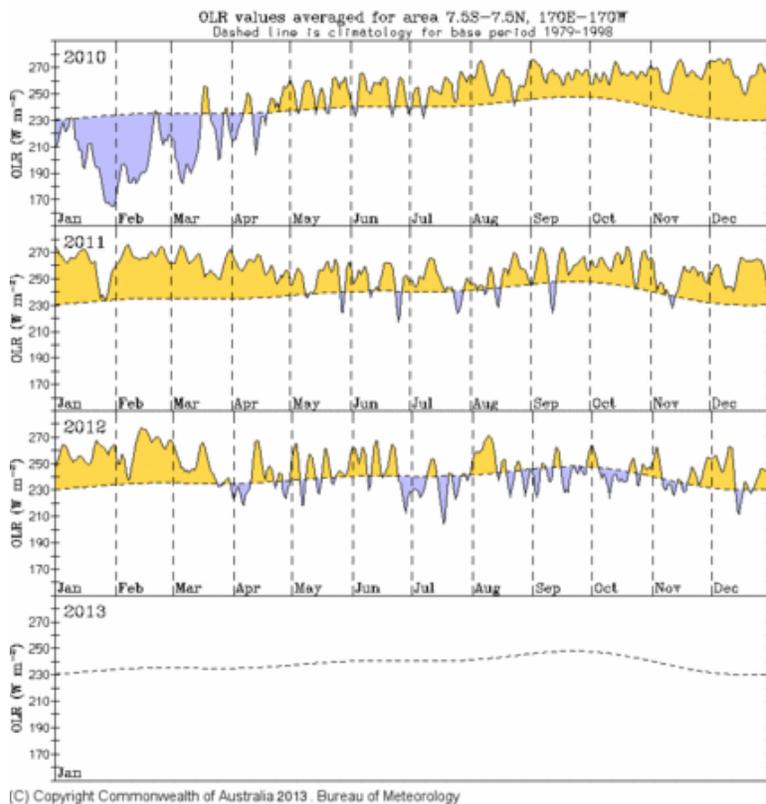
During La Niña events, there is a sustained strengthening of the trade winds across much of the tropical Pacific, while during El Niño events there is a sustained weakening of the trade winds.



Cloudiness near the Date Line:

Cloudiness near the Date Line has been slightly below average over the past two weeks.

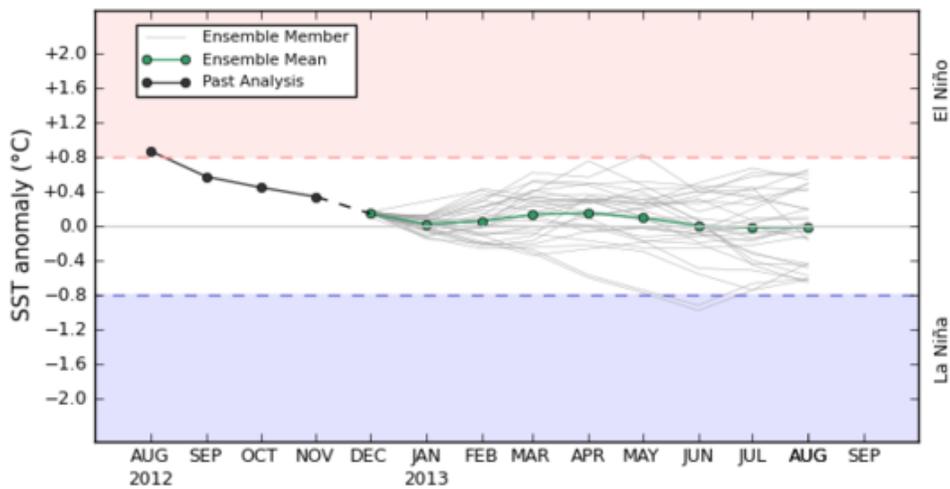
Cloudiness along the equator, near the Date Line, is an important indicator of ENSO conditions, as it typically increases (negative OLR anomalies) near and to the east of the Date Line during an El Niño event and decreases (positive OLR anomalies) during a La Niña event.



Climate Models:

International [climate models](#) surveyed by the Bureau indicate that SSTs in the equatorial Pacific Ocean are expected to remain in the neutral at least until the southern hemisphere autumn.

POAMA monthly mean NINO34 - Forecast Start: 1 DEC 2012

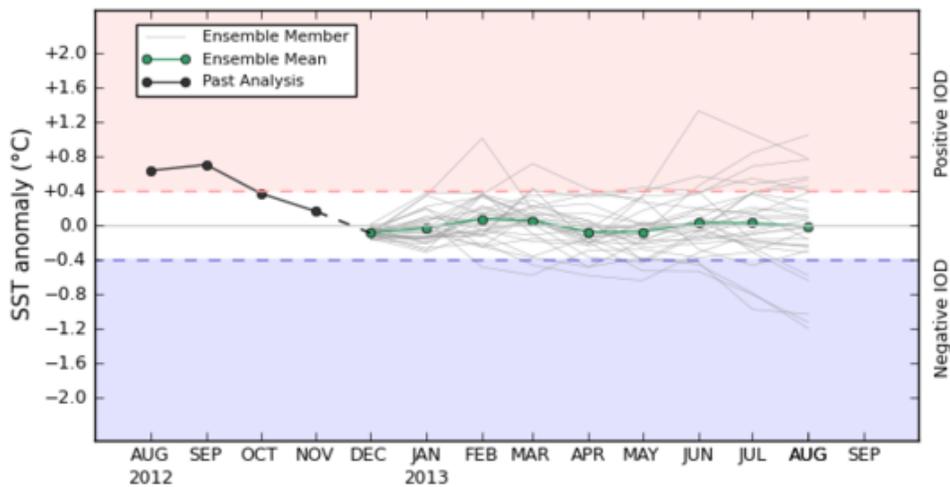


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Indian Ocean Dipole:

The Indian Ocean Dipole (IOD) is currently neutral, with the latest IOD index value at 0.0°C for the week ending 30 December. The IOD typically has limited influence on Australia during the summer.

POAMA monthly mean IOD - Forecast Start: 1 DEC 2012



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

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