

Tropical Pacific and Indian oceans both neutral

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The El Niño-Southern Oscillation (ENSO) remains neutral, with virtually all indicators at near-normal levels. Only cloudiness near the Date Line shows a weak La Niña-like signal. International climate models surveyed by the Bureau of Meteorology indicate that the tropical Pacific will remain ENSO-neutral for the remainder of 2013. Only one of the seven models surveyed suggests a brief period of La Niña-like cooling of the tropical Pacific.

The negative Indian Ocean Dipole (IOD) event has weakened considerably over the past month and a half, with IOD-neutral values prevailing since early August. The consensus of climate models is for the IOD to remain neutral for the remainder of the year, suggesting that the 2013 negative IOD is most likely at an end.

Next update expected on 24 September 2013 | [print version](#)

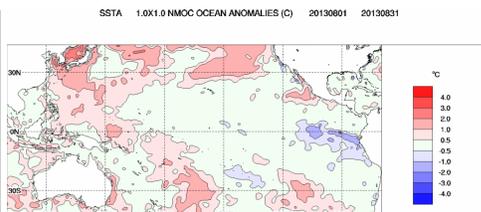
Further Details

Sea Surface Temperatures

Monthly sea surface temperatures:

The sea surface temperature (SST) anomaly map for August 2013 shows cool SST anomalies across the eastern tropical Pacific and along the Peruvian coast. This pattern is generally similar to that of the previous month, although cool anomalies have become stronger along the equator and those along the South American coast have become weaker. Warm anomalies persist across the Maritime Continent, South Pacific Convergence Zone (SPCZ) and along Australia's southern coastline, although those around the Maritime Continent have weakened. SST anomalies are near-average across the central tropical Pacific.

Index	July	August	Temperature change
NINO3	-0.3	-0.4	0.1 °C cooler
NINO3.4	-0.1	-0.2	0.1 °C cooler
NINO4	+0.2	+0.3	0.1 °C warmer

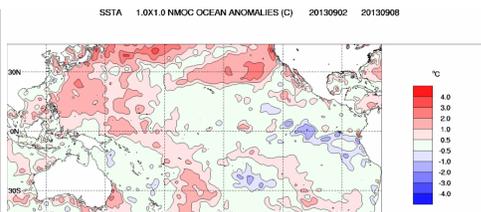


Baseline period 1961–1990.

Weekly sea surface temperatures:

The anomaly map for the week ending 8 September 2013 shows areas of cool anomalies in the eastern tropical Pacific and along the South American coast (in Ecuador and Peru); there have weakened when compared to two weeks ago. Small areas of the ocean surface east of 120°W are more than 1 °C cooler than average. Warm anomalies in the western Pacific and around the SPCZ remain similar to two weeks ago, while those across the Maritime Continent and northwest of Australia have weakened and are now near-average.

Index	Previous	Current	Temperature change (2 weeks)
NINO3	-0.5	-0.2	0.3 °C warmer
NINO3.4	-0.3	+0.1	0.4 °C warmer
NINO4	+0.3	+0.5	0.2 °C warmer

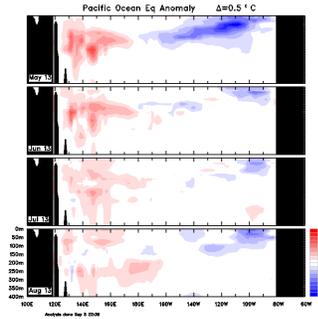


Baseline period 1961–1990.

Pacific ocean sub-surface temperatures

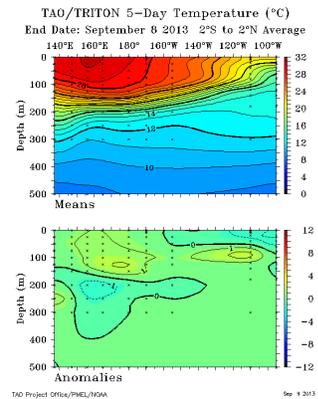
Monthly sub-surface:

The four-month sequence of sub-surface temperature anomalies (to the end of August) shows waters are slightly cooler than average in the east and weakly warmer than average in much of the water column west of the Date Line. Small areas of moderately cool anomalies remain in the eastern equatorial Pacific between the surface and around 150 m depth. Sub-surface temperatures have broadly been close to the long-term average during the last two months.



Weekly sub-surface:

The sub-surface of the equatorial Pacific remains generally similar to two weeks ago, with slight cooling near the surface in the east. Sub-surface temperatures are generally near-average (see map for the 5 days ending 8 September).

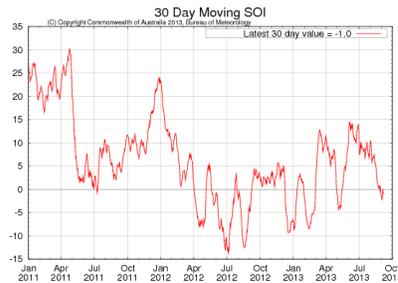


[Animation of recent sub-surface changes](#) | [Archive of sub-surface temperature charts](#)

Southern Oscillation Index:

The Southern Oscillation Index (SOI) has remained near zero over the last two weeks. The latest approximate 30-day SOI value to 8 September is -1.0 .

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.

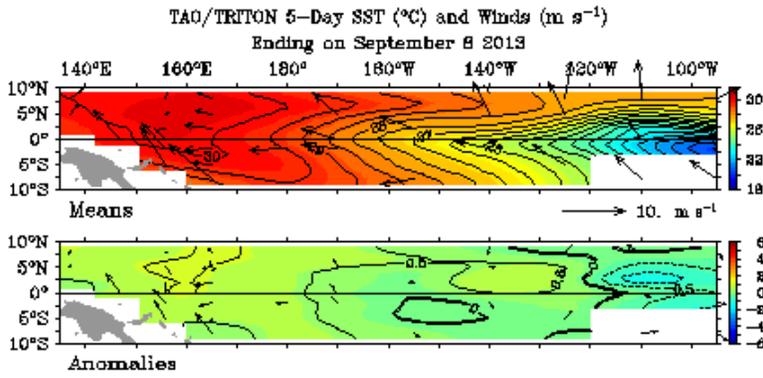


[Monthly graph](#) | [SOI table](#) | [SOI text](#)

Trade winds:

Trade winds are near-average across the tropical Pacific (see anomaly map for the 5 days ending 8 September), similar to two weeks ago.

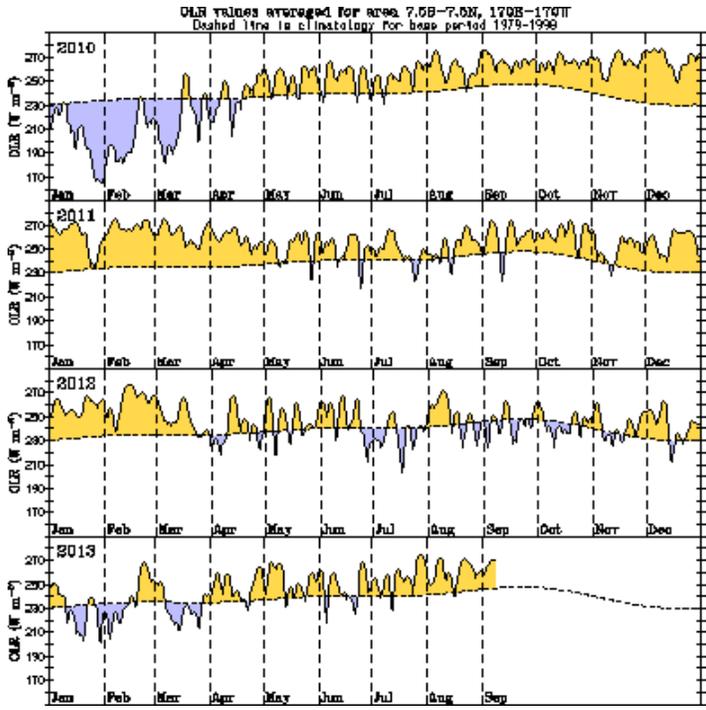
During La Niña events, there is a sustained strengthening of the trade winds across much of the tropical Pacific, while during El Niño events there is a sustained weakening of the trade winds.



Cloudiness near the Date Line:

Cloudiness near the Date Line has continued to be below average over the past two weeks. It has generally been below average since April, but has been more consistently so since mid-July.

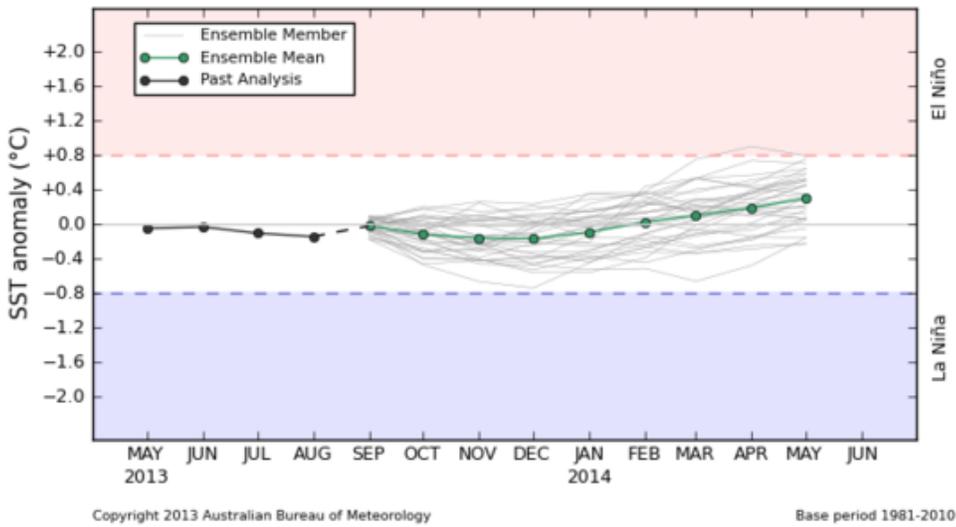
Cloudiness along the equator, near the Date Line, is an important indicator of ENSO conditions, as it typically increases (negative OLR anomalies) near and to the east of the Date Line during an El Niño event and decreases (positive OLR anomalies) during a La Niña event.



Climate Models:

All but one of the international [climate models](#) surveyed by the Bureau indicate that SSTs in the equatorial Pacific Ocean are likely to remain ENSO neutral during the southern hemisphere spring and into summer. The remaining model shows a small chance of NINO3.4 (the SST index for the central tropical Pacific) briefly passing La Niña thresholds during spring.

POAMA monthly mean NINO34 - Forecast Start: 2 SEP 2013

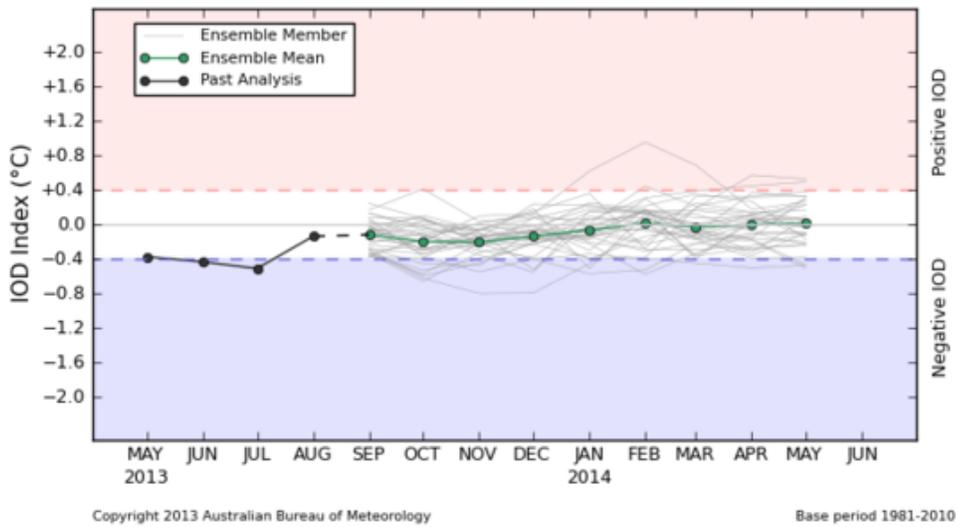


Indian Ocean Dipole:

The Indian Ocean Dipole (IOD) index has remained within the neutral range for the past five weeks, with the latest weekly value (8 September) -0.1 °C.

Climate models surveyed in the [model outlooks](#) favour neutral IOD values over the coming months, and hence it is likely that the 2013 negative IOD event has reached its conclusion.

POAMA monthly mean IOD - Forecast Start: 2 SEP 2013



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

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