



ENSO neutral for early 2013

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El Niño-Southern Oscillation (ENSO) indicators in the tropical Pacific remain at neutral levels. Current observations and model predictions indicate this neutral pattern is likely to continue into the southern hemisphere autumn.

Atmospheric indicators, such as the Southern Oscillation Index (SOI), trade winds, and tropical cloud patterns, have persisted at neutral levels over recent months. While the last several weeks have seen a cooling of the waters in the tropical Pacific, climate models surveyed by the Bureau suggest this trend will reverse over the coming months, and hence an ENSO-neutral state is expected to persist well into the southern hemisphere autumn. Mid-summer is typically too early for ENSO events to become established, rather autumn is the time of year when events typically start or end. A clearer indication of Pacific Ocean conditions for 2013 will emerge over the next few months.

The Indian Ocean Dipole (IOD) has little influence upon Australia's climate at this time of year.

Next update expected on 12 February 2013 | [print version](#)

Further Details

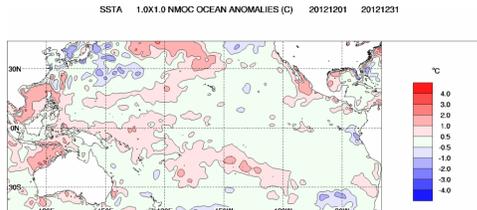
Sea Surface Temperatures

Monthly sea surface temperatures:

When compared to that for the previous month, the sea-surface temperature (SST) anomaly map for December shows warm anomalies have continued to decay in the western tropical Pacific Ocean. Very weak warm anomalies remain west of about 170°W in the tropical Pacific; east of the Date Line anomalies have all but disappeared. Warm SST anomalies also remain around Australia's northwest coast where surface waters are more than 1 °C warmer than average.

Index	November	December	Temperature change
NINO3	+0.2	+0.1	0.1 °C cooler
NINO3.4	+0.3	+0.1	0.2 °C cooler
NINO4	+0.8	+0.5	0.3 °C cooler

Baseline period 1961–1990.

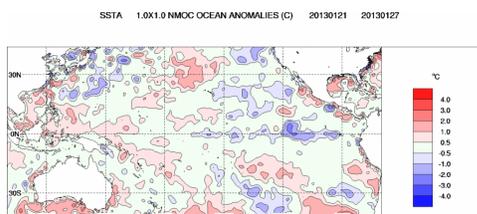


Weekly sea surface temperatures:

The surface of the tropical eastern Pacific continued to cool during the past fortnight. Cool anomalies have been evident along the equator in the eastern half of the Pacific for a number of weeks (see the SST anomaly map for the week ending 13 January below). Weak warm anomalies remain in the far western tropical Pacific over the north of the Maritime Continent. Following the passage of severe tropical cyclone *Narelle*, warm anomalies along the Western Australian coastline have declined significantly, although warm anomalies remain along the southern coastline and south of around Fraser Island in the east. Anomalies surrounding the southern half of Australia broadly exceed 1 °C warmer than average.

Index	Previous	Current	Temperature change (2 weeks)
NINO3	-0.5	-0.5	no change
NINO3.4	-0.3	-0.3	no change
NINO4	+0.2	+0.1	0.1 °C cooler

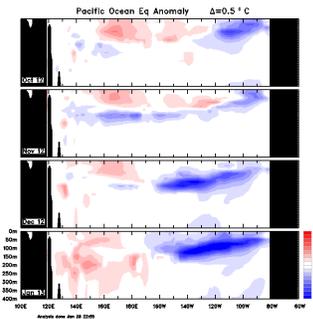
Baseline period 1961–1990.



Pacific ocean sub-surface temperatures

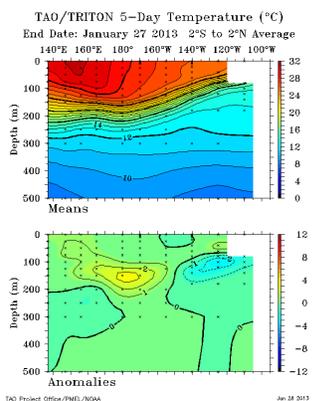
Monthly sub-surface:

The four-month sequence of sub-surface temperature anomalies (to 28 January) shows a dramatic cooling of the sub-surface in the eastern equatorial Pacific since October. A significant volume of cooler-than-average water was present below the surface of the eastern equatorial Pacific Ocean during December, and has continued to cool during January. A large volume of water more than 4 °C cooler than average is present over the eastern half of the Pacific.



Weekly sub-surface:

The map for the 5 days ending 28 January shows sub-surface waters across the equatorial Pacific are generally warmer than average in the west and cooler than average in the east. Anomalies in both regions exceeded more than 2 °C above e/below average.



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

Southern Oscillation Index:

The Southern Oscillation Index (SOI) continued to rise before dropping slightly over the past two weeks, but remained well within neutral values. The latest (27 January) 30-day SOI value is +1.7.

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.

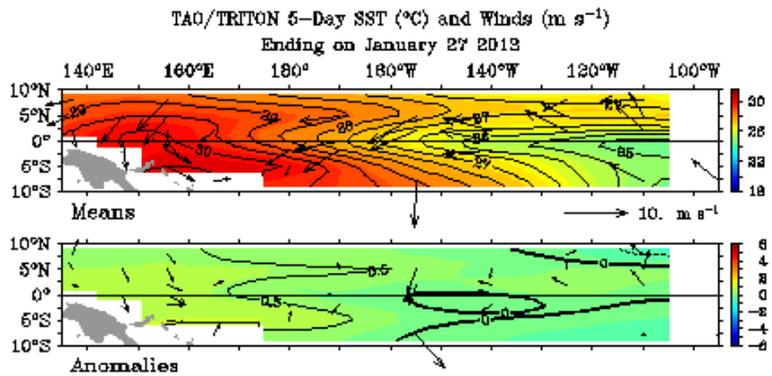


[Monthly graph](#) | [SOI table](#) | [SOI text](#)

Trade winds:

The anomaly map for the 5 days ending 27 January shows trade winds are generally near average across the tropical Pacific.

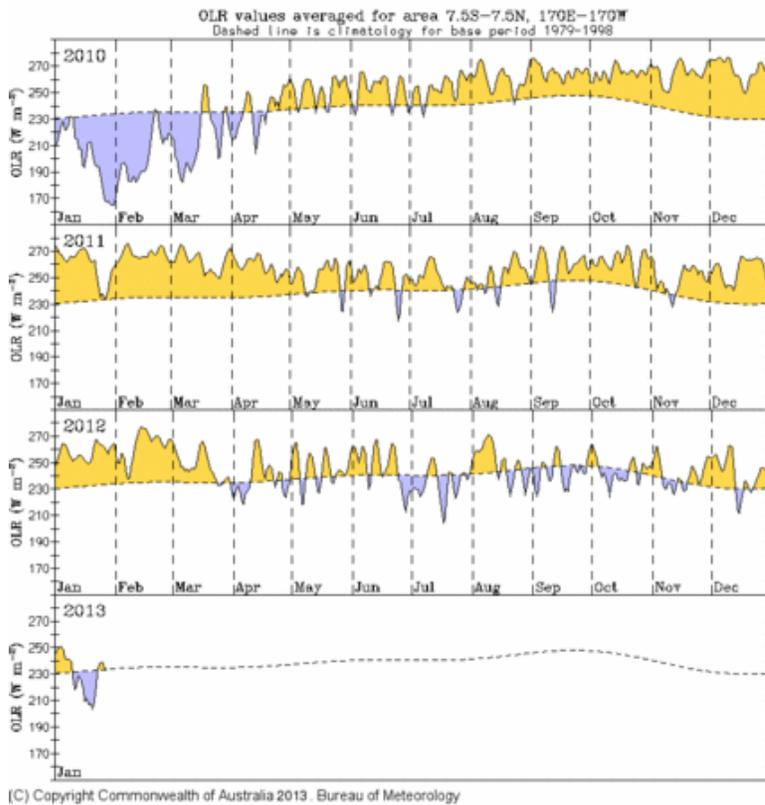
During La Niña events, there is a sustained strengthening of the trade winds across much of the tropical Pacific, while during El Niño events there is a sustained weakening of the trade winds.



Cloudiness near the Date Line:

Cloudiness near the Date Line has fluctuated around average over the past two weeks.

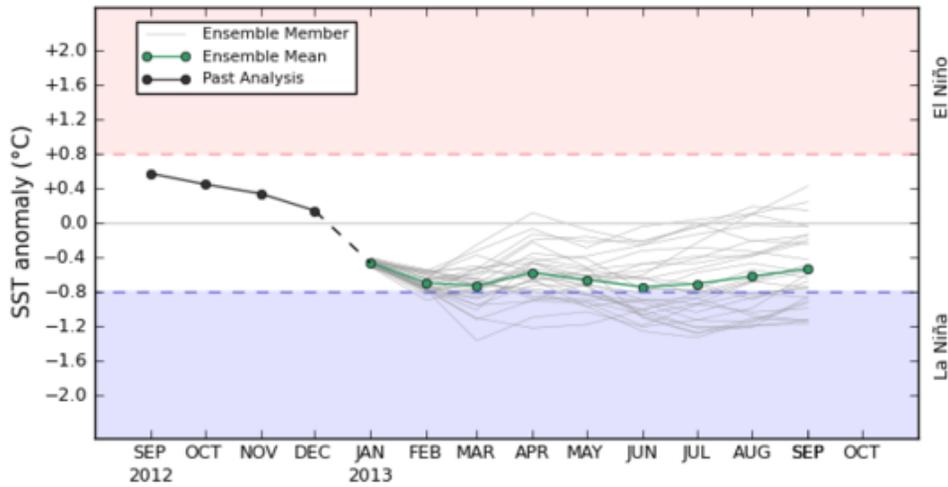
Cloudiness along the equator, near the Date Line, is an important indicator of ENSO conditions, as it typically increases (negative OLR anomalies) near and to the east of the Date Line during an El Niño event and decreases (positive OLR anomalies) during a La Niña event.



Climate Models:

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

POAMA monthly mean NINO34 - Forecast Start: 1 JAN 2013

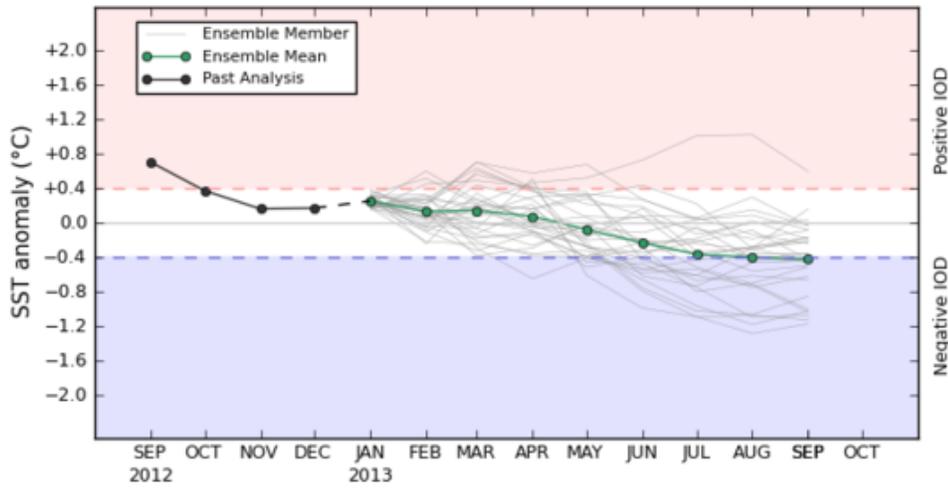


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Indian Ocean Dipole:

The Indian Ocean Dipole (IOD) is currently neutral, with the latest IOD index value at -0.1°C for the week ending 27 January. The IOD typically has limited influence on Australia during the summer.

POAMA monthly mean IOD - Forecast Start: 1 JAN 2013



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

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