



# ENSO Wrap-Up: Neutral conditions returning to the Pacific

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Apart from some lingering warmth in the western Pacific, the majority of ENSO indicators have now dropped below El Niño thresholds. The cooling of the tropical Pacific Ocean, which began in late December, has resulted in trade winds and tropical cloudiness returning to normal. Similarly, the Southern Oscillation Index has risen steadily, remaining positive since early in the second week of April.

The decline in the 2009/10 El Niño event is consistent with climate model predictions which suggest Pacific Ocean temperatures will continue to cool over the coming months. The majority of model predictions point towards cooler than normal Pacific Ocean conditions emerging during the southern winter. As autumn is a typical transitional period for ENSO, model predictions through and beyond autumn are generally less reliable than at other times of the year.

Next update expected by 12 May 2010 | [print version](#)

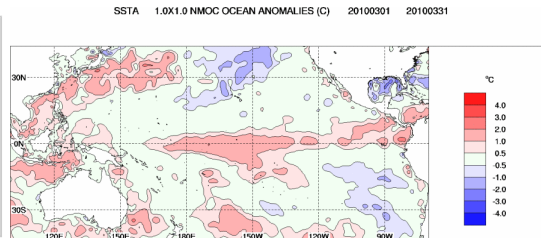
## Further Details

### Sea Surface Temperatures

#### Monthly sea surface temperatures:

The Pacific Ocean sea surface remained warmer than the long-term mean across most of the equatorial Pacific during March. The sea surface temperature (SST) anomaly map for March shows warm anomalies in excess of +1°C covering most of the central equatorial Pacific and parts of the eastern Pacific.

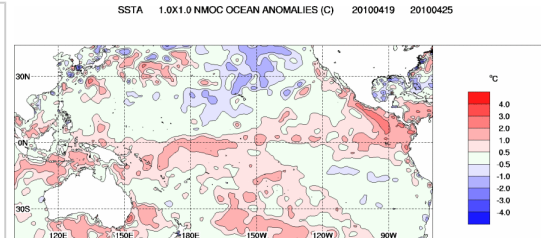
Regions	Feb	Mar	Temperature change
<a href="#">Nino 3</a>	+0.8	+0.8	no change
<a href="#">Nino 3.4</a>	+1.2	+1.2	no change
<a href="#">Nino 4</a>	+1.0	+1.1	0.1°C warmer



#### Weekly sea surface temperatures:

The central Pacific Ocean SST has cooled during April, with NINO indices returning to neutral levels. The SST anomaly map shows warm anomalies covering most of the equatorial Pacific, with anomalies in excess of +1°C in the far eastern Pacific and in a few scattered areas across the remainder of the tropical Pacific.

Regions	Previous	Current	Temperature change (2 weeks)
<a href="#">Nino 3</a>	+1.0	+0.7	0.3°C cooler
<a href="#">Nino 3.4</a>	+0.8	+0.7	0.1°C cooler
<a href="#">Nino 4</a>	+0.9	+0.8	0.1°C cooler

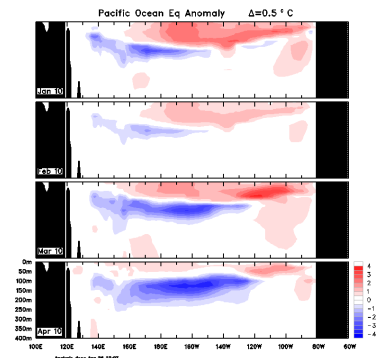


[An animation of recent SST changes](#) | [Weekly data graph](#)

### Pacific ocean sub-surface temperatures

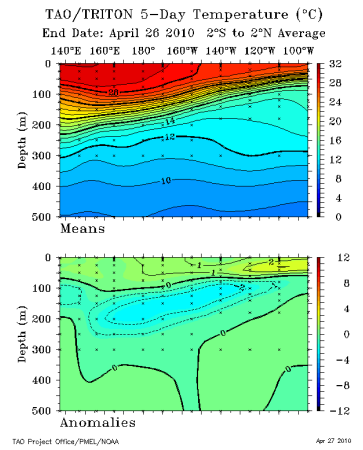
#### Monthly sub-surface:

The four-month sequence of sub-surface Pacific Ocean equatorial temperature anomaly shows that the sub-surface water continued to cool during April. As a result a large volume of cooler than normal water is now evident at depth, with anomalies more than 3°C cooler than normal for this time of the year in the central Pacific



#### Weekly sub-surface:

The weekly map shows a large volume of cooler than normal water sitting below the surface of the tropical Pacific, with anomalies more than 2°C cooler than normal for this time of the year on a weekly scale.

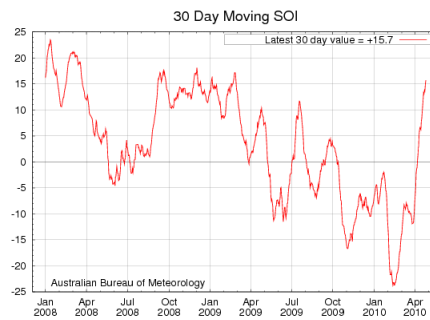


[Animation of recent sub-surface changes](#) | [Archive of sub-surface temperature charts](#)

### Southern Oscillation Index:

The SOI has been rising steadily since late February 2010. The current (25 April) 30-day value is +16, a large increase from the monthly value for March of -11.

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

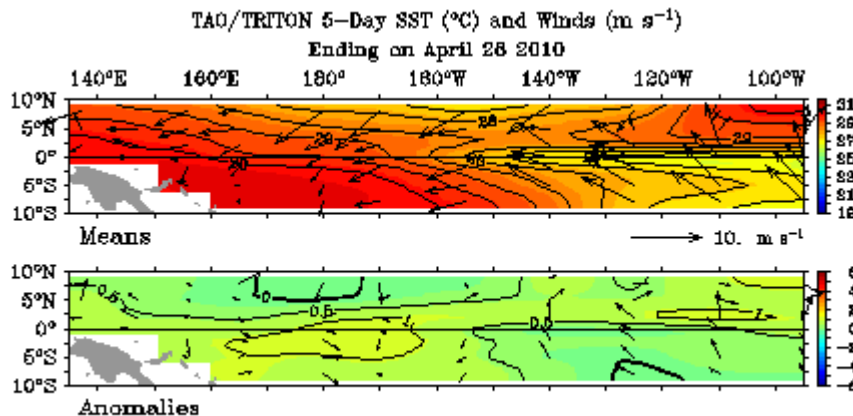


[monthly\\_graph](#) | [SOI table](#) | [SOI text](#)

### Trade winds:

Trade winds have strengthened in the eastern equatorial Pacific during the last two weeks, with trade flow now stronger than normal for this time of the year in the eastern tropical Pacific. Trade winds remain close to average over the central to western Pacific. Wind anomalies are shown below for the five days ending 28 April.

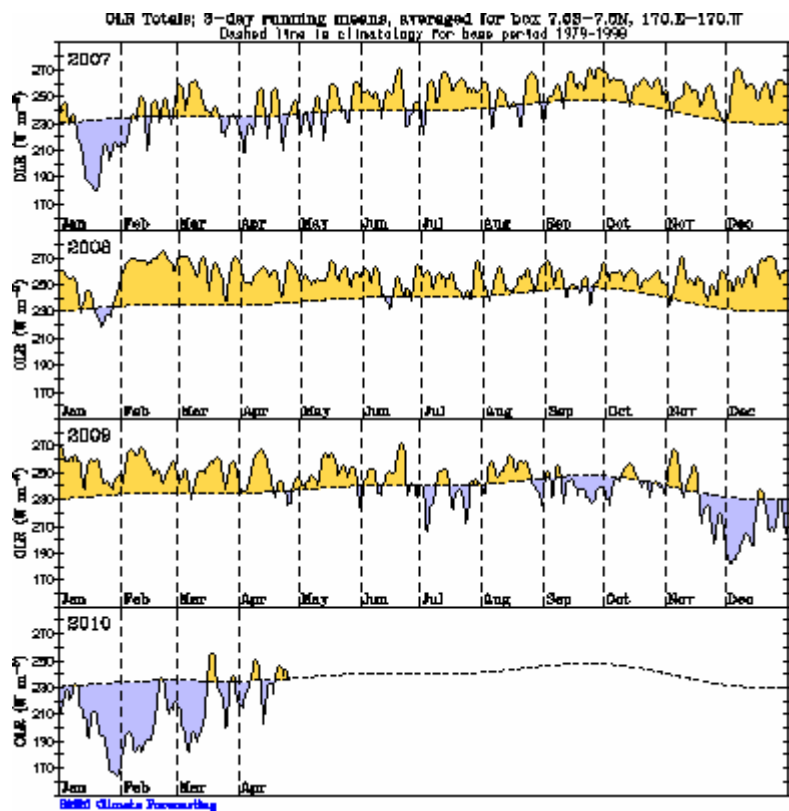
During La Niña episodes, there is a sustained strengthening of the trade winds across much of the tropical Pacific, while during El Niño events there is a sustained weakening of the trade winds.



### Cloudiness near the date-line:

Recently cloudiness has returned to near normal levels for this time of the year, after a sustained period of above average cloudiness between late November 2009 and mid March 2010.

Cloudiness along the equator, near the date-line, is an important indicator of ENSO conditions, as it typically increases near and to the east of the dateline during an El Niño event and decreases during a La Niña event.

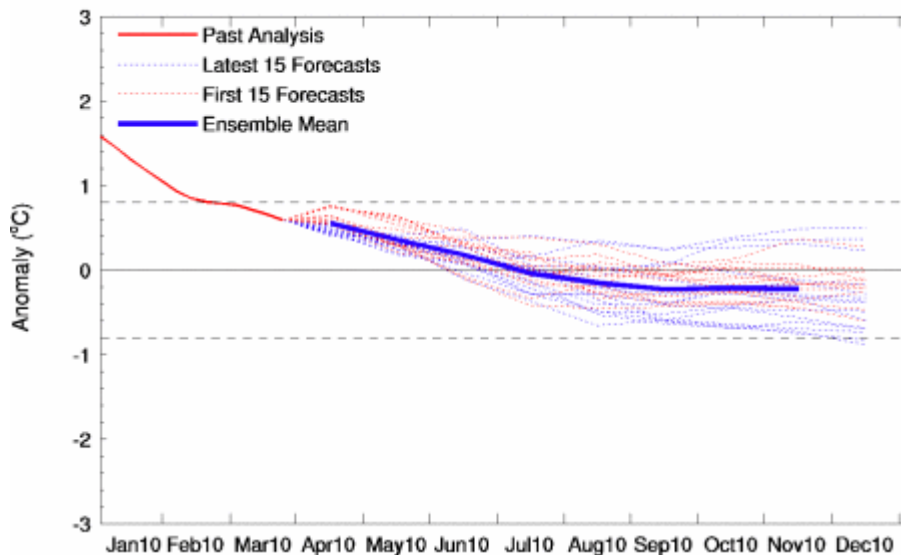


### Computer Models:

International [computer models](#) are predicting Pacific Ocean temperatures will continue to cool steadily over the coming months, with the majority of models pointing towards cooler than normal Pacific Ocean conditions emerging during the southern hemisphere winter. Typically, autumn is a transitional period for the El Niño - Southern Oscillation (ENSO), hence model predictions of El Niño that forecast through this period tend to be less reliable than at other times of the year.

Recent forecasts from the [POAMA model](#), run daily at the Bureau of Meteorology, show a steady cooling of the central Pacific with SSTs falling below normal, but remaining in the neutral range during the southern hemisphere winter.

Nino3.4 SST plumes from POAMA Forecasts 28 Mar 2010 - 26 Apr 2010

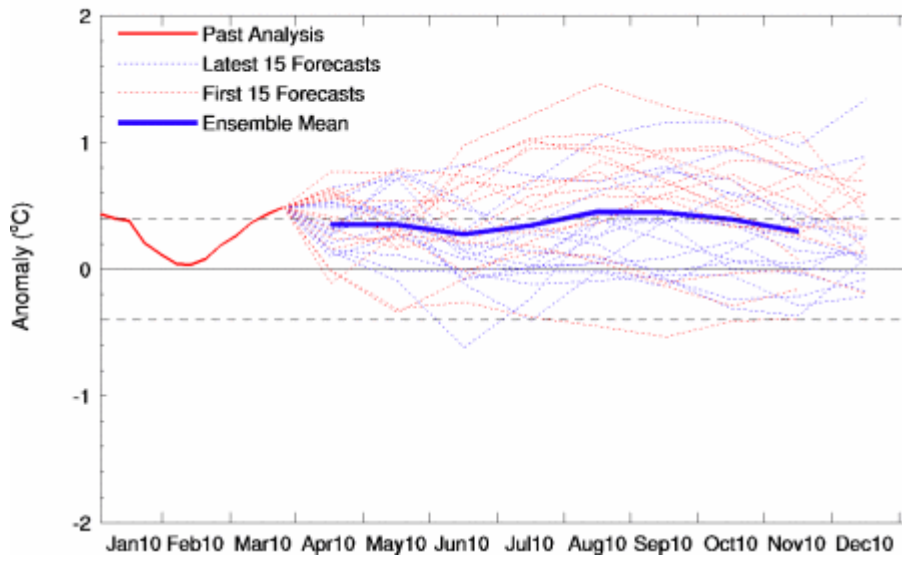


### Indian Ocean Dipole:

The Indian Ocean Dipole (IOD) index is currently above zero. The weekly index has been positive, yet neutral, for the past five weeks. The positive values of the index are a result of particularly warm ocean temperatures in the western tropical Indian Ocean and do not indicate a positive IOD event is in progress.

Recent forecasts from the POAMA model, run daily at the Bureau of Meteorology, suggests that the IOD index may remain near the neutral/positive threshold during the remainder of the southern hemisphere autumn and through winter. However, model predictions of the IOD at this time of year tend to be less reliable than at other times.

IO Dipole SST plumes from POAMA Forecasts 28 Mar 2010 - 26 Apr 2010



[IOD forecasts](#) | [DMI values](#)