

## La Niña continues across the Pacific Basin

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La Niña conditions strengthened across the tropical Pacific Basin during November. Climate models surveyed by the Bureau suggest the La Niña is likely to peak during the next month and last at least until the end of summer.

Atmospheric indicators of ENSO, including the Southern Oscillation Index (SOI), trade winds and cloudiness, all displayed some strengthening over the past fortnight, with the current SOI value of +15 being the highest since the breakdown of the 2010-11 event in May 2011. Similarly, the classic La Niña ocean patterns in the tropical Pacific have become more clearly defined over the past month. Despite this strengthening, the La Niña remains weaker than at the same time in 2010. Australia's climate has responded to these recent changes, with above average rainfall across large parts of the north and west of the country since October.

La Niña periods are usually, but not always, associated with above normal rainfall during the second half of the year and summer across large parts of Australia, particularly the eastern and northern regions. Daytime temperatures are typically cooler than average and tropical cyclone risk for northern Australia increases during the cyclone season (November to April). During La Niña years, the first tropical cyclone to cross the Australian coast typically occurs in the first half of December. For detailed rainfall and temperature outlooks, please see: [www.bom.gov.au/climate/ahead](http://www.bom.gov.au/climate/ahead).

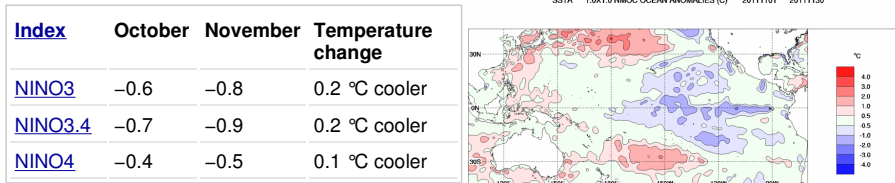
Next update expected by 21 December 2011 | [print version](#)

### Further Details

#### Sea Surface Temperatures

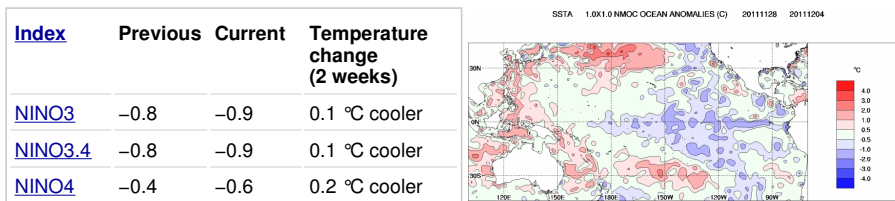
##### Monthly sea surface temperatures:

Sea surface temperature (SST) anomalies continued to cool across the tropical Pacific Ocean during November. The sea surface temperature (SST) anomaly map for November shows cool anomalies have increased in the eastern Pacific when compared to October; sea surface temperatures more than 1 °C cooler than normal cover most of the equatorial Pacific east 160 °W.



##### Weekly sea surface temperatures:

Weekly sea surface temperature anomalies have cooled slightly, when compared to the map from two weeks ago. The SST anomaly map for the week ending 4 December shows cool anomalies extend across the equatorial Pacific east of the dateline, with most areas east of 150 °W more than 1 °C cooler than normal for this time of the year.

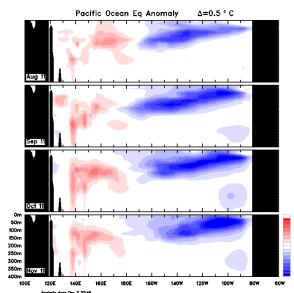


[An animation of recent SST changes](#) | [Weekly data graph](#)

#### Pacific ocean sub-surface temperatures

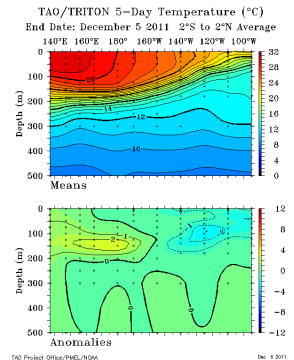
##### Monthly sub-surface:

The four-month sequence of sub-surface Pacific Ocean equatorial temperature anomalies shows cool anomalies in the sub-surface of the eastern Pacific have contracted slightly eastward during November although the region where water is more than 4 °C cooler than average has increased. Cool sub-surface anomalies extend across the entire Pacific east of the dateline.



**Weekly sub-surface:**

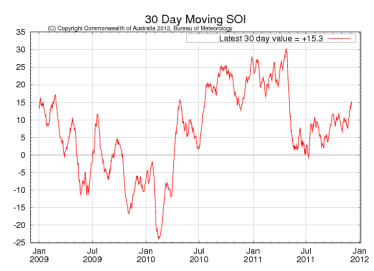
Temperatures in the sub-surface of the eastern tropical Pacific have warmed over the past two weeks. The map for the 5 days ending 6 December shows cool anomalies in the sub-surface of the eastern tropical Pacific are more than 2 °C cooler than usual, for this time of the year, compared to 3 °C cooler than usual two weeks ago. Anomalies in the sub-surface of the western tropical Pacific remain generally unchanged.



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

**Southern Oscillation Index:**

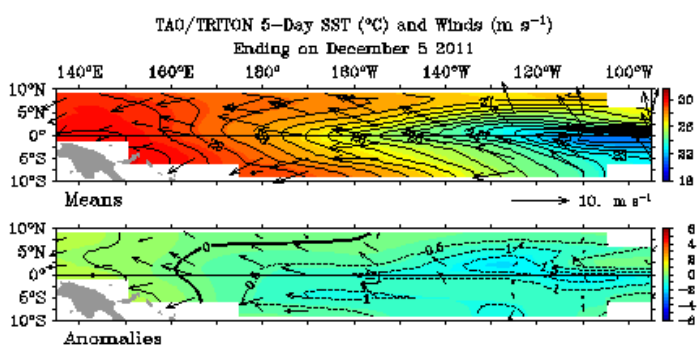
The Southern Oscillation Index (SOI) has strengthened over the past fortnight, and is now at the highest value since May 2011. The latest (4 December) 30-day SOI value is +15.3. Sustained positive values of the SOI above +8 may indicate a La Niña event, while sustained negative values below -8 may indicate an El Niño event. Values of between about +8 and -8 generally indicate neutral conditions.



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

**Trade winds:**

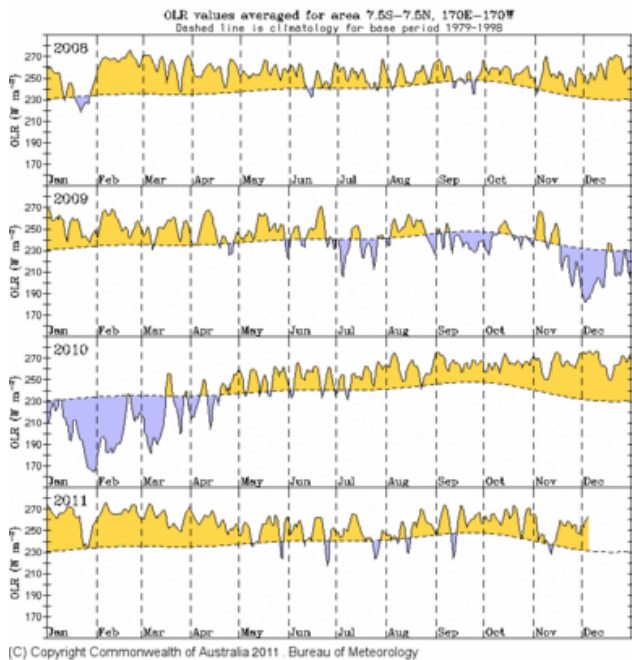
Trade winds across the central and western Pacific have strengthened over the past two weeks. The latest wind anomaly map, for the 5 days ending 5 December, shows trade winds are stronger than average across most of the equatorial Pacific, but near-neutral in the far eastern Pacific. During La Niña events, 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 dateline:**

Cloudiness near the dateline has been suppressed over the past two weeks. Cloudiness along the equator, near the dateline, is an important indicator of ENSO conditions, as it

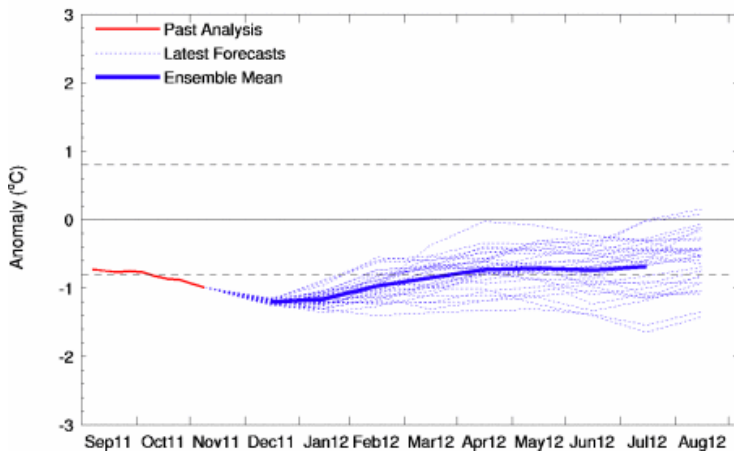
typically increases (negative OLR anomalies) near and to the east of the Date Line during an El Niño event and decreases (positive OLR anomalies) during a La Niña event.



**Climate Models:**

The majority of outlooks from leading international [climate models](#) surveyed by the Bureau indicate that the current La Niña may be nearing its peak. Cool Pacific Ocean temperatures are forecast to persist throughout the southern summer before returning to neutral values during autumn.

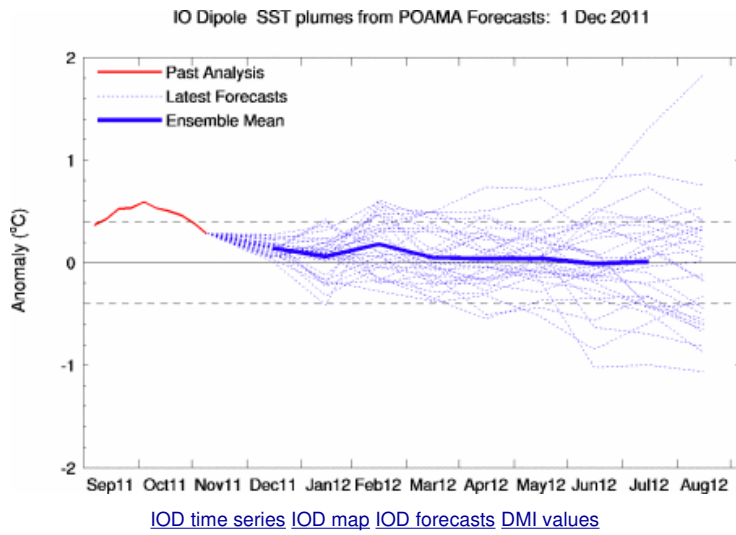
Nino3.4 SST plumes from POAMA Forecasts: 1 Dec 2011



**Indian Ocean Dipole:**

The Indian Ocean Dipole (IOD) index has returned to neutral values. The IOD index value for the week ending 4 December was +0.3.

Recent forecasts from the [POAMA model](#) predict neutral IOD conditions for the summer and following autumn.



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