Australian Government
Bureau of Meteorology

The 2011–12 La Niña reaches its end

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The 2011–12 La Niña event has ended, with key indicators returning to neutral (neither El Niño nor La Niña) levels. Climate models surveyed by the Bureau of Meteorology suggest that neutral conditions will persist until at least early winter.

Key Pacific Ocean indicators are now at neutral levels, with values similar to those last seen in August 2011. Likewise, atmospheric indicators such as cloudiness, trade winds and the Southern Oscillation Index (SOI) have also returned to near-normal values for this time of year. Despite the 2011–12 La Niña not commencing until far later than normal (spring), the decline has been fairly typical of past events, with a peak in January and a return to neutral conditions during autumn.

The demise of the La Niña does not mean the risk of wet conditions (or tropical cyclones) over Australia has ended. While sea surface temperatures around the continent remain warmer than normal and the tropical wet season is active, there remains a risk of above average rainfall over Australia.

The Indian Ocean Dipole (IOD) has limited influence on Australian rainfall from December through to April. Neutral IOD conditions are forecast for the southern hemisphere winter.

Next update expected by 10 April 2012 | print version

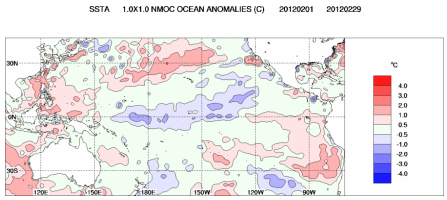
Further Details

Sea Surface Temperatures

Monthly sea surface temperatures:

Sea surface temperature (SST) anomalies in the central and eastern equatorial Pacific Ocean warmed during February. However, the sea surface temperature (SST) anomaly map for February shows small areas of cool anomalies more than 1 ℃ cooler than normal still remain in the central Pacific.

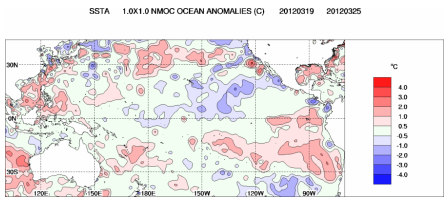
Index	January	February	Temperature change
NINO3	−0.4	+0.1	0.5 ℃ warmer
NINO3.4	−0.9	−0.5	0.4 ℃ warmer
NINO4	−1.0	−0.7	0.3 ℃ warmer



Weekly sea surface temperatures:

Sea surface temperatures across the equatorial Pacific Ocean have generally warmed (though only slightly) compared to those of two weeks ago. All three NINO indices monitored have warmed in the past fortnight; both warm anomalies (in the far western Pacific) and cool anomalies (in the central Pacific) are broadly becoming less pronounced with the return of neutral conditions. The SST anomaly map for the week ending 25 March shows mostly near-normal sea-surface temperatures in the equatorial Pacific, with some residual cool anomalies across the central equatorial Pacific.

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

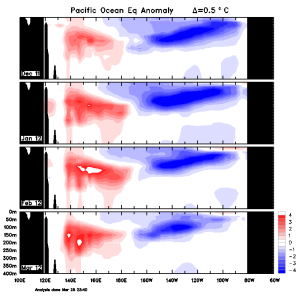


An animation of recent SST changes | Weekly data graph

Pacific ocean sub-surface temperatures

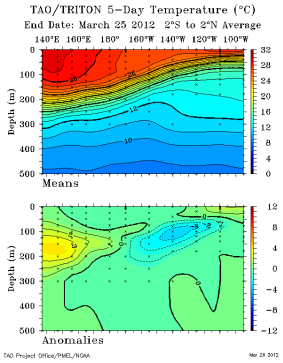
Monthly sub-surface:

The four-month sequence of sub-surface Pacific Ocean equatorial temperature anomalies to 26 March shows cool anomalies remain in the sub-surface of the eastern Pacific, although they have continued to contract during March. Cool anomalies in the sub-surface of the eastern Pacific have been declining since late January, with a steady decrease in the volume of water more than 4 ℃ cooler than average. Sub-surface warm anomalies in the western equatorial Pacific have also contracted compared to last month; a small volume of water here remains more than 4 ℃ warmer than average.



Weekly sub-surface:

The volume of cooler than average water in the sub-surface of the eastern tropical Pacific has increased, on a 5-day scale, when compared to two weeks ago. The map for the 5 days ending 25 March shows an increase in the volume of water more than 3 ℃ cooler than usual for this time of year, while there has been a general, though small, warming of waters closer to the surface. Shallow warm anomalies in the far eastern tropical Pacific and warm sub-surface anomalies in the western Pacific remain relatively unchanged compared with two weeks ago.

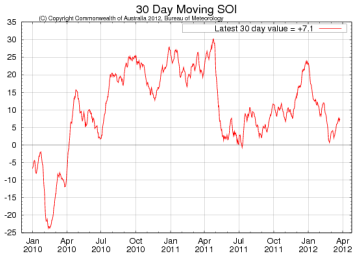


Animation of recent sub-surface changes | Archive of sub-surface temperature charts

Southern Oscillation Index:

The Southern Oscillation Index (SOI) rose early in the last fortnight before holding around +7 for the past week, remaining within values indicative of neutral ENSO conditions. The SOI has remained within neutral values since mid to late February. The latest (25 March) 30-day SOI value is +7.1.

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.

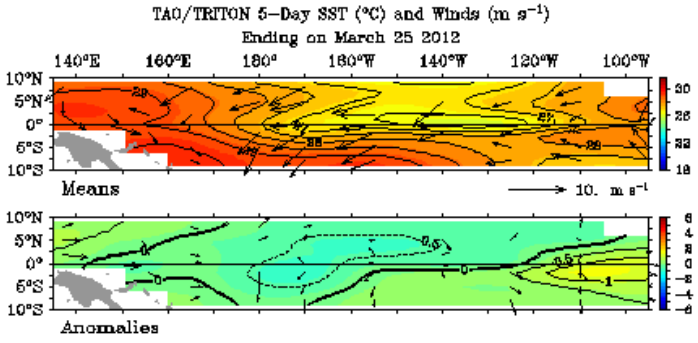


Monthly graph | SOI table | SOI text

Trade winds:

Trade winds have weakened over the past two weeks. Across most of the equatorial Pacific wind anomalies are near normal, except for westerly anomalies in the far western equatorial Pacific, associated with the passage of the Madden-Julian Oscillation (see wind anomaly map for the 5 days ending 25 March).

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.

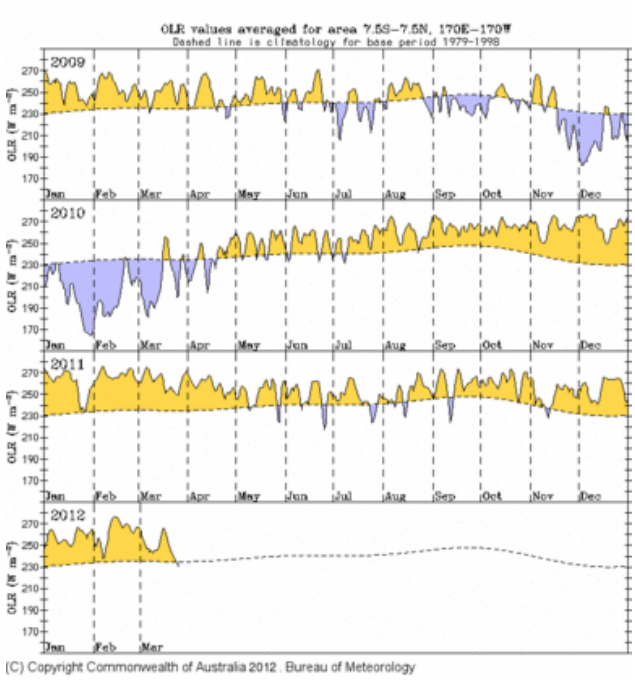


Cloudiness near the Date Line:

Cloudiness near the dateline has remained suppressed over the past two weeks, but is returning to values

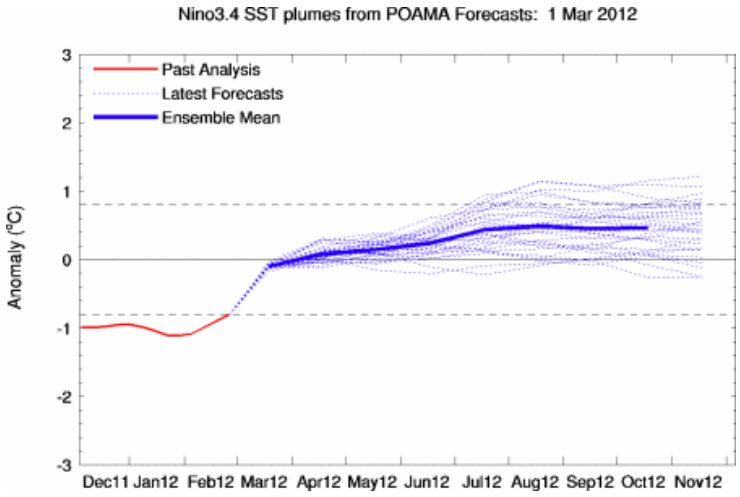
typical for this time of year.

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:

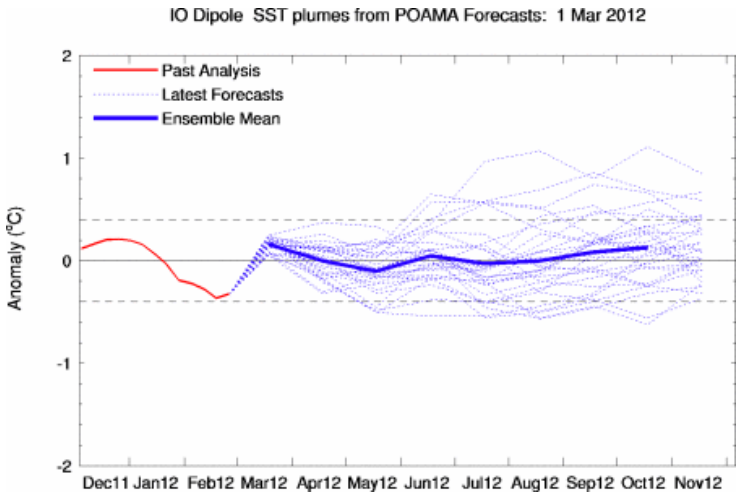
All outlooks from leading international climate models surveyed by the Bureau forecast neutral ENSO conditions for the remainder of autumn and early winter.



Indian Ocean Dipole:

The Indian Ocean Dipole (IOD) typically has little influence in Australia between December and April. The IOD index is currently neutral.

Recent forecasts from the POAMA model predict neutral IOD conditions for autumn and winter.



IOD time series IOD map IOD forecasts DMI values

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