Australian Government
Bureau of Meteorology

La Niña continues with little change

Issued on Wednesday 1 February | Product Code IDCKGEWWOO

La Niña showed only small changes over the past fortnight and are expected to maintain an influence upon Australian climate over the coming months.

Over the past fortnight, sea surface temperatures in the central tropical Pacific cooled slightly, reversing the recent warming trend. However other indicators of La Niña, such as the Southern Oscillation Index (SOI), trade winds, and cloudiness over the equatorial Pacific Ocean have generally remained steady, below their December peak but clearly exceeding La Niña thresholds.

Climate models surveyed by the Bureau indicate a gradual decline in the strength of the La Niña over the coming months, with most models suggesting a return to neutral conditions during the southern autumn.

La Niña periods are usually, but not always, associated with above normal rainfall and below normal daytime temperatures from winter through summer across eastern and northern Australia. Tropical cyclone risk is increased for northern Australia during the cyclone season (November to April), peaking in February and March. For detailed rainfall, temperature and tropical cyclone outlooks, please see: www.bom.gov.au/climate/ahead.

Please Note: The ENSO Wrap Up will now be issued on Tuesdays. Hence the next issue will be on Tuesday 14 February.

Next update expected by 14 February 2012 | print version

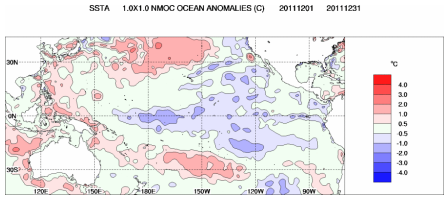
Further Details

Sea Surface Temperatures

Monthly sea surface temperatures:

Sea surface temperature (SST) anomalies continued to cool across the tropical Pacific Ocean during December. The sea surface temperature (SST) anomaly map for December shows cool anomalies have increased in the central Pacific near the dateline when compared to November; sea surface temperatures more than 1 ℃ cooler than normal cover areas of the central and eastern equatorial Pacific.

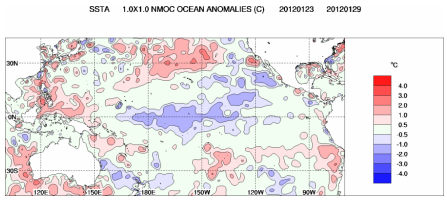
Index	November	December	Temperature change
NINO3	−0.8	−0.6	0.2 ℃ warmer
NINO3.4	−0.9	−0.8	0.1 ℃ warmer
NINO4	−0.5	−0.8	0.3 ℃ cooler



Weekly sea surface temperatures:

During the past two weeks, sea surface temperature anomalies have in the central equatorial Pacific have cooled, reversing the recent warming trend. The SST anomaly map for the week ending 29 January shows cool anomalies present across most of the central equatorial Pacific, with a large part of this area more than 1 ℃ cooler than normal for this time of the year.

Index	Previous	Current	Temperature change (2 weeks)
NINO3	−0.4	−0.5	0.1 ℃ cooler
NINO3.4	−0.8	−1.0	0.2 ℃ cooler
NINO4	−0.9	−1.0	0.1 ℃ cooler



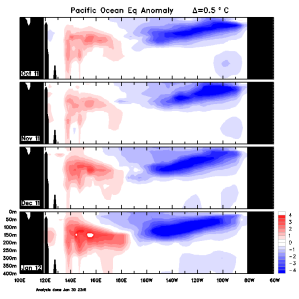
An animation of recent SST changes | Weekly data graph

Pacific ocean sub-surface temperatures

Monthly sub-surface:

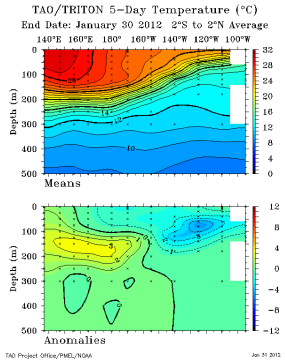
The four-month sequence of sub-surface Pacific Ocean equatorial temperature anomalies shows that the cool anomalies in the sub-surface of the central and eastern Pacific continued to expand during January. A large volume of water in the sub-surface of the Pacific between about 160°W and 100° W is more than 4 ℃ cooler than average. West of the dateline, warm anomalies have strengthened, with the warmest water here now reaching more than 4 ℃ warmer than average for

January.



Weekly sub-surface:

The volume of cooler than average water in the sub-surface of the eastern tropical Pacific has shrunk over the past two weeks. The map for the 5 days ending 30 January shows a volume of water more than 4 ℃ cooler than usual for this time of the year remains in the sub-surface. Warm anomalies in the sub-surface of the western tropical Pacific have also shown a significant increase, with a much larger volume of water more than 3 ℃ warmer than usual, for this time of the year as compared to two weeks ago.

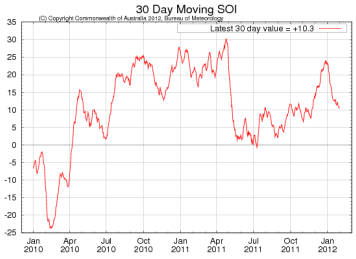


Animation of recent sub-surface changes | Archive of sub-surface temperature charts

Southern Oscillation Index:

The Southern Oscillation Index (SOI) continued to drop over the past fortnight, but remains above La Niña thresholds. The latest (30 January) 30-day SOI value is +10.3.

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.

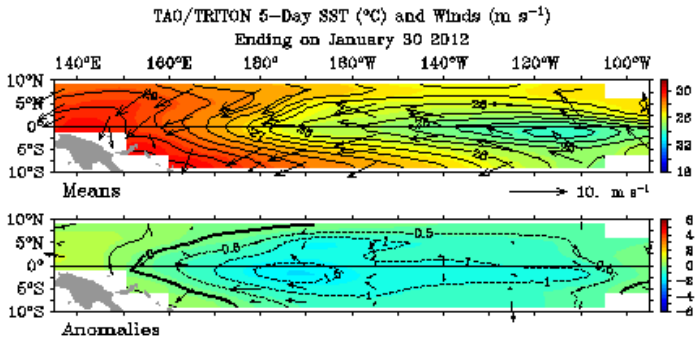


Monthly graph | SOI table | SOI text

Trade winds:

Trade winds have in the central and western tropical Pacific strengthened marginally, when compared with two weeks ago. The latest wind anomaly map, for the 5 days ending 30 January, shows trade winds continue to be stronger than average across most of the equatorial Pacific, but near-neutral in the eastern Pacific.

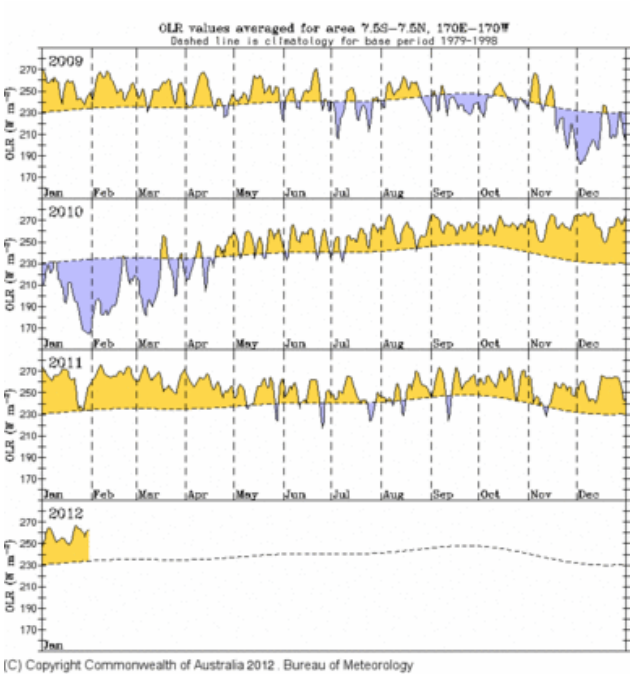
During La Niña events, there is a sustained strengthening of the trade winds across much of the tropical Pacific, while during El Niño events there is a sustained weakening of the trade winds.



Cloudiness near the dateline:

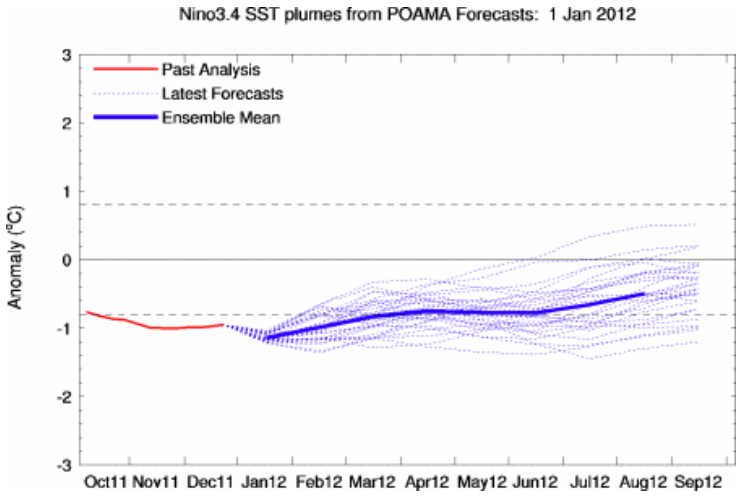
Cloudiness near the dateline has remained suppressed over the past two weeks.

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:

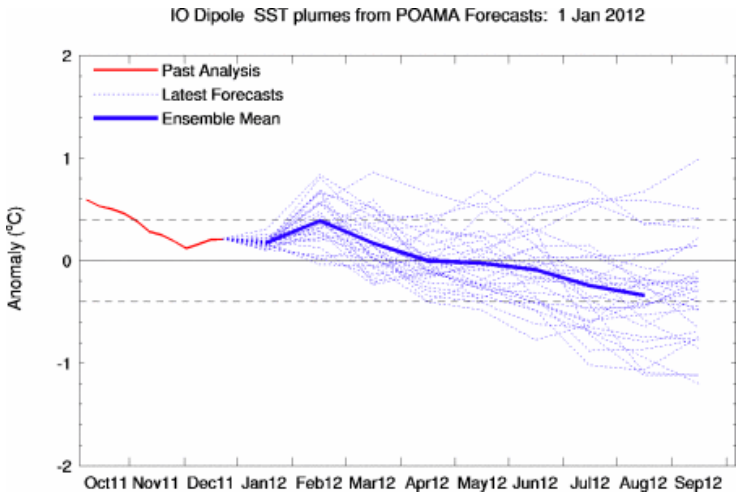
The majority of outlooks from leading international climate models surveyed by the Bureau indicate that the current La Niña will decline over the coming weeks. The current event is expected to persist through the remainder of summer, but neutral values are forecast for the coming autumn.



Indian Ocean Dipole:

The Indian Ocean Dipole (IOD) typically has little influence in Australia over summer. The IOD index is currently neutral; the index value for the week ending 29 January was 0.0.

Recent forecasts from the POAMA model predict neutral IOD conditions for the remainder of summer and the following autumn.



IOD time series IOD map IOD forecasts DMI values