Australian Government
Bureau of Meteorology

Neutral ENSO conditions likely to persist

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Neutral ENSO conditions are firmly established across the tropical Pacific Ocean, with most atmospheric and oceanic indicators at near normal levels. The majority of international climate model forecasts of ENSO show that neutral conditions are likely to continue through the southern spring, with forecast temperatures being lower than were being forecast a few months ago.

The influence of the Indian Ocean Dipole (IOD) on Australian rainfall is currently neutral. Our climate model, POAMA, has forecast a positive IOD event to develop during winter, although there's no evidence of an event at this stage. In the past, positive IOD events have been associated with drier conditions over parts of Australia, particularly in the southeast, during winter and spring.

Next update expected by 20 July 2011 | print version

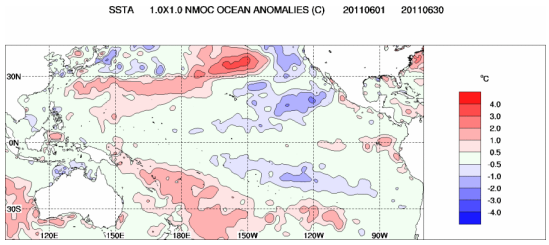
Further Details

Sea Surface Temperatures

Monthly sea surface temperatures:

When compared with the previous month, sea surface temperature (SST) anomalies for June have continued to warm across the surface of the tropical Pacific Ocean. The sea surface temperature (SST) anomaly map for June shows that anomalies along most of the equator were near normal for that month.

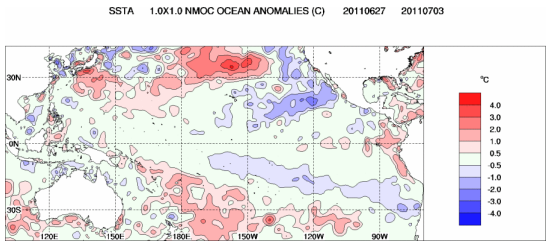
Index	May	June	Temperature change
NINO3	–0.1	0.2	0.1 ℃ warmer
NINO3.4	–0.2	0.0	0.2 ℃ warmer
NINO4	–0.3	–0.1	0.2 ℃ warmer



Weekly sea surface temperatures:

Weekly sea surface temperature anomalies in the central equatorial Pacific Ocean have remained relatively similar, when compared with two weeks ago. The SST anomaly map for the week ending 3 July shows near normal temperatures along nearly all of the equator, with small areas of SST anomalies more than 1 ℃ warmer than normal for this time of the year in the far eastern equatorial Pacific.

Index	Previous	Current	Temperature change (2 weeks)
NINO3	+0.3	+0.2	0.1 ℃ cooler
NINO3.4	0.1	0.0	0.1 ℃ cooler
NINO4	–0.2	–0.1	0.1 ℃ warmer



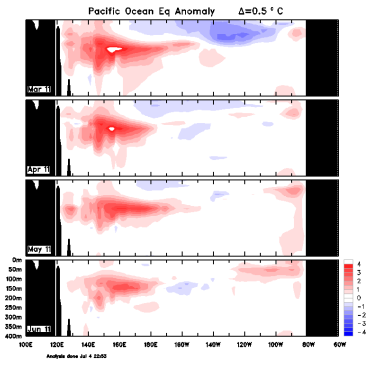
An animation of recent SST changes | Weekly data graph

Pacific ocean sub-surface temperatures

Monthly sub-surface:

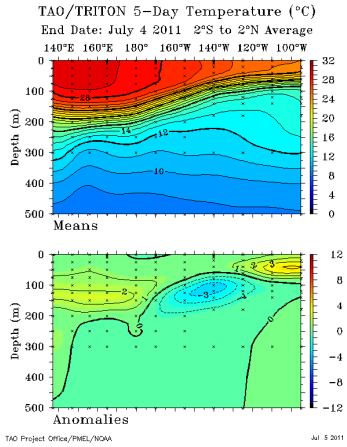
The four-month sequence of sub-surface Pacific Ocean equatorial temperature anomalies, to the end of June, shows near neutral temperature anomalies in much of the central Pacific sub-surface. Positive anomalies in the western Pacific have cooled slightly during

the past month, but remain in excess of 2 ℃.



Weekly sub-surface:

When compared with two weeks ago, the temperature in the sub-surface of the tropical Pacific Ocean has cooled (see the map for the 5 days ending 4 July). Anomalies in the central region are now more than –3 ℃ cooler than usual, for this time of the year. The volume of water more than 2 ℃ warmer than usual, for this time of the year, in the western tropical Pacific has increased in extent, and the shallow warm anomalies in the far eastern Pacific also warmed slightly, when compared with the preceding fortnight.

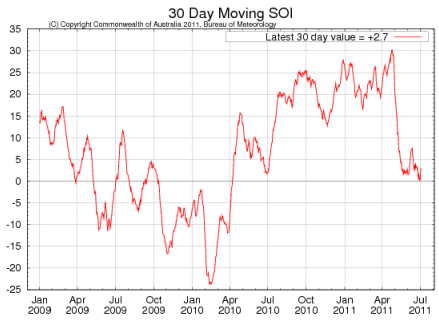


Animation of recent sub-surface changes | Archive of sub-surface temperature charts

Southern Oscillation Index:

The Southern Oscillation Index (SOI) has fluctuated slightly over the last two weeks, and remains neutral. The latest (4 July) 30-day SOI value is +2.7.

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.

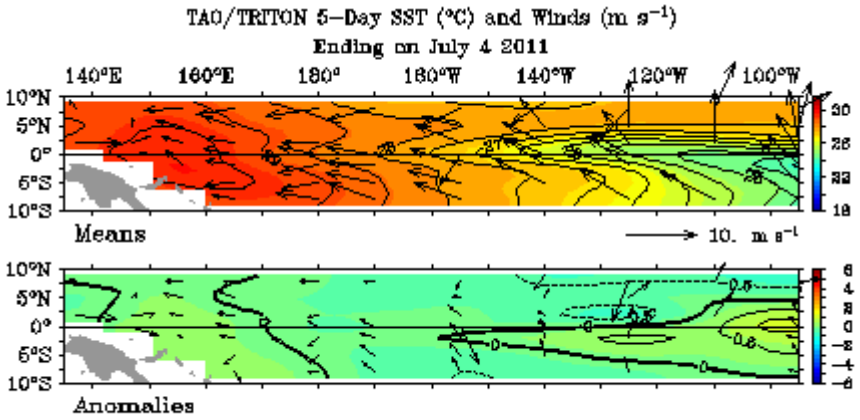


Monthly_graph | SOI table | SOI text

Trade winds:

The latest wind anomaly map, for the 5 days ending 4 July, shows trade winds are slightly stronger than average across the central and western equatorial Pacific.

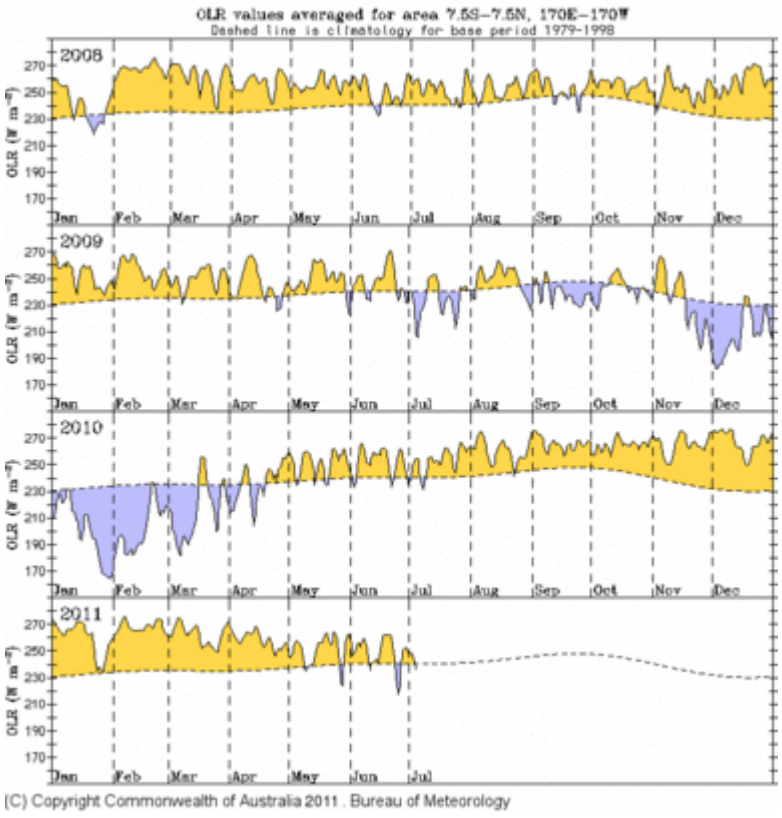
During La Niña events, there is a sustained strengthening of the trade winds across much of the tropical Pacific, while during El Niño events there is a sustained weakening of the trade winds.



Cloudiness near the date-line:

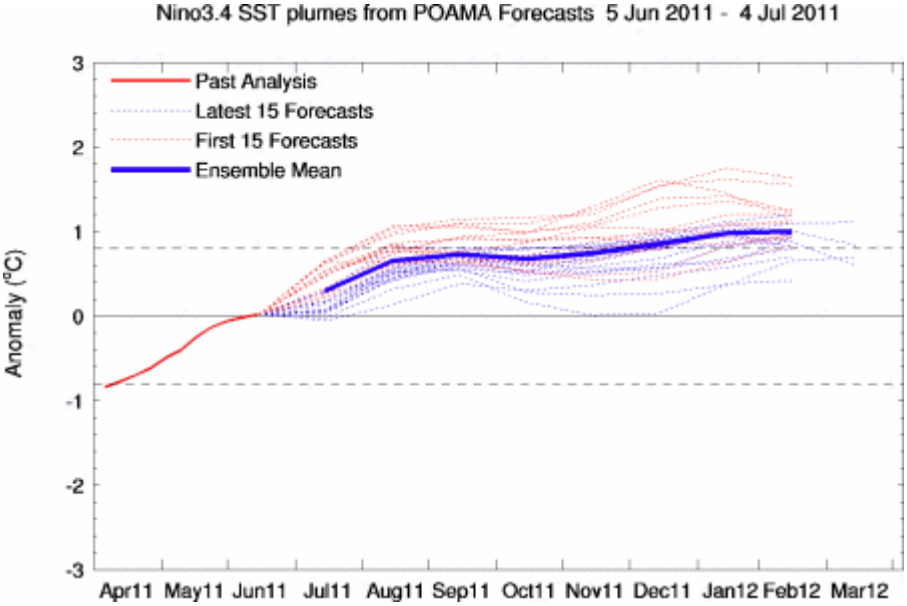
Cloudiness near the date-line has fluctuated around neutral values over the last two weeks.

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 dateline during an El Niño event and decreases (positive OLR anomalies) during a La Niña event.



Computer Models:

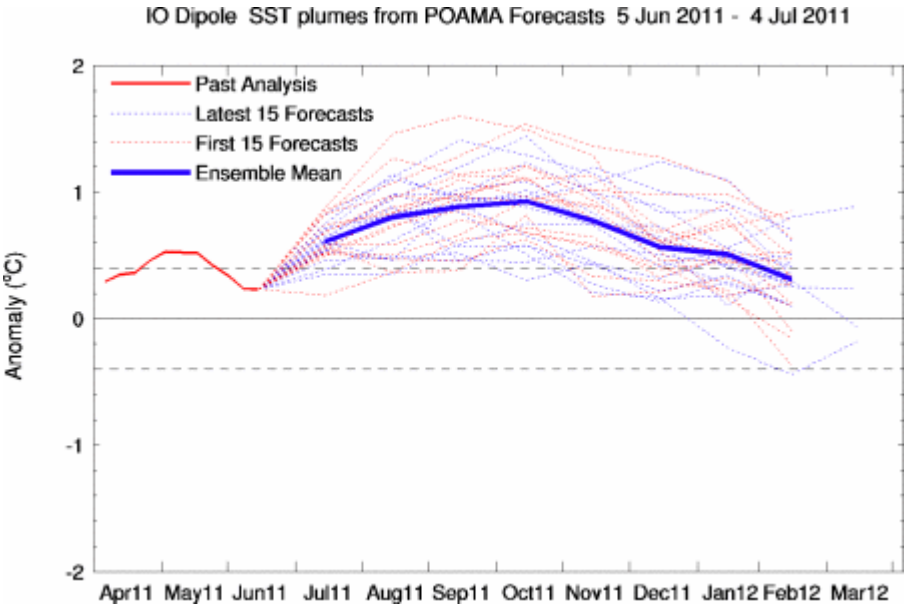
The majority of leading international climate models surveyed by the Bureau predict neutral ENSO conditions will persist through the southern hemisphere winter. A number of models indicate that oceanic conditions may become weakly warm during the southern hemisphere spring.



Indian Ocean Dipole:

The Indian Ocean Dipole (IOD) has remained neutral over the past two weeks, which is typical for this time of year; the IOD index value for the week ending 3 July was +0.4.

Recent forecasts from the POAMA model predict that a positive IOD event will develop during the southern hemisphere winter, with values of the index remaining weakly positive throughout spring. Positive IOD events have been associated with drier conditions over parts of Australia, particularly in the south east, during winter and spring.



IOD time series IOD map IOD forecasts DMI values