

ENSO Wrap-Up

A regular commentary on the El Niño-Southern Oscillation

Product Code: IDCKGEWW00

CURRENT STATUS as at 3rd March 2010

Next update expected by 17th March 2010 (two weeks after this update)

Summary: El Niño decay temporarily stalls.

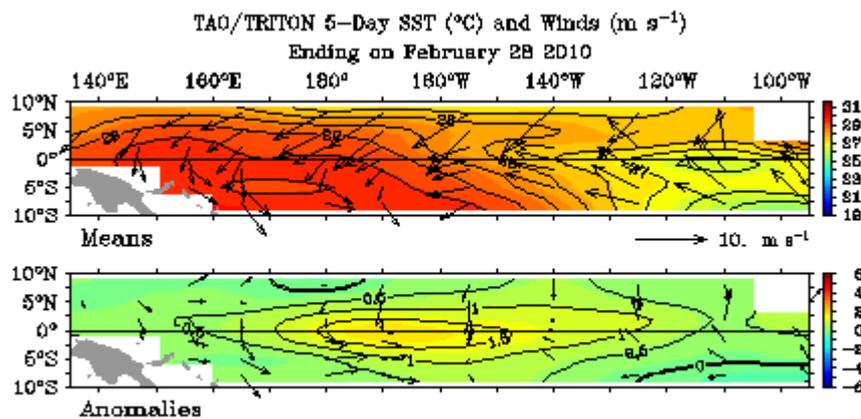
Central Pacific Ocean temperatures have warmed slightly during the last fortnight, slowing the decay of the current El Niño event. A weakening of the trade winds over the western and central Pacific during February triggered not only the recent small warming of the Pacific, but was also related to an increase in cloudiness and tropical cyclone activity in the central Pacific. In recent days, trade winds near the equator have started to return towards near-normal strength and the SOI has rebounded by increasing in value after falling in February.

Computer models are predicting that Pacific Ocean temperatures will continue to cool, returning to neutral levels by the southern hemisphere winter. Typically, autumn is a transitional period for the El Niño-Southern Oscillation (ENSO), and the model forecasts suggest that the decay of the El Niño event is likely to follow the usual pattern.

Recent heavy rainfall over Australia appears fairly typical of past El Niño breakdowns. January 2007, February 2003, April 1998, January 1995, March 1983 and February 1973 all produced good rainfalls over parts of northern and eastern Australia on the back of an El Niño event.

The Indian Ocean Dipole (IOD) is currently neutral and is forecast to remain so through autumn.

See [IOD forecasts](#), [DMI values](#).

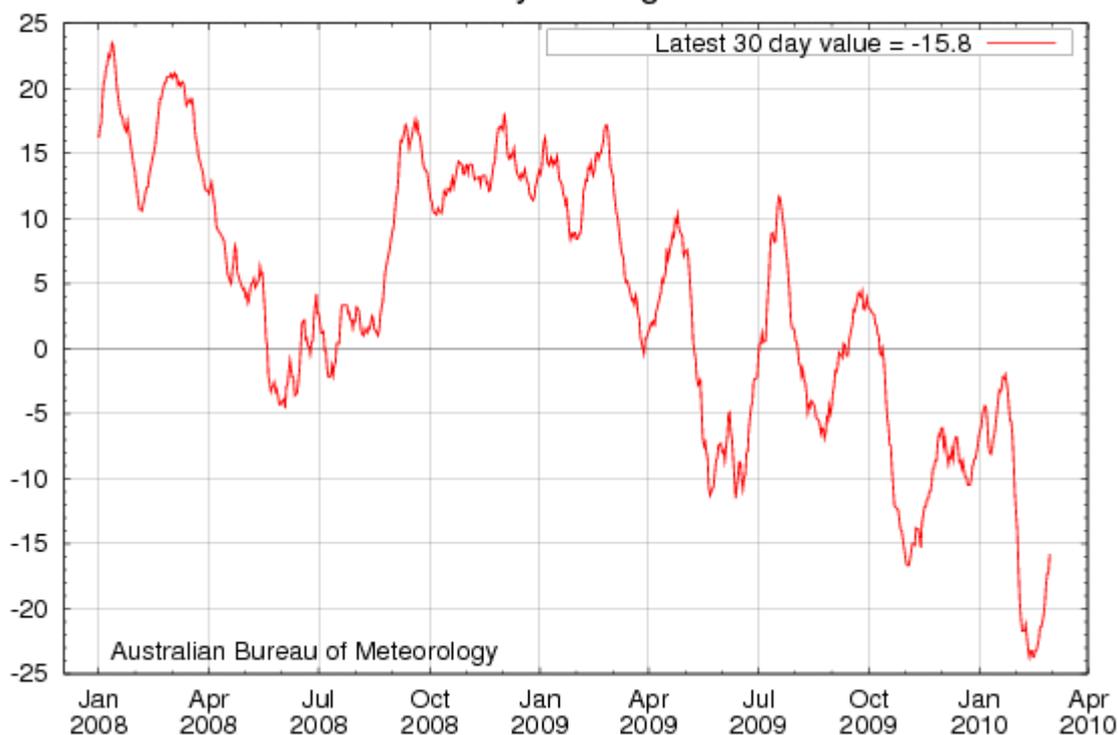


From the [NOAA/PMEL/TAO website](#).

In Brief

- Central Pacific sea surface temperatures have warmed slightly during the last fortnight, slowing the decay of the current El Niño event.
- The sub-surface water of the tropical Pacific remains warmer than the long-term average.
- The SOI has increased during the last week after falling rapidly during February. The latest approximate 30-day value of the SOI is -16.
- Trade winds are close to normal across most of the Pacific.
- Cloudiness near the date-line remains above average.
- Most international computer models are predicting a return to neutral conditions by the end of the southern hemisphere autumn.

30 Day Moving SOI



This graph is updated automatically each day. [Download data.](#)

Details

The Pacific Ocean sea surface temperature (SST) remains warmer than the long-term average across the central and eastern tropical Pacific. The [SST anomaly map](#) for February shows warm anomalies in excess of +1 °C covering most of the central equatorial Pacific and parts of the eastern tropical Pacific. The monthly NINO indices for February were +0.9 °C, +1.2 °C and +1.0 °C for NINO3, NINO3.4 and NINO4 respectively. When compared with January values, both NINO3 and NINO4 have cooled by 0.2 °C and NINO3.4 by 0.3 °C.

In terms of [weekly data](#), the most recent NINO indices are +0.9 °C, +1.2 °C and +1.0 °C for NINO3, NINO3.4 and NINO4 respectively. When compared with two weeks ago, both NINO3 and NINO4 have warmed slightly by approximately 0.1 °C, while NINO3.4 has remained the same in magnitude. The [7-day SST anomaly map](#) shows warm anomalies covering most of the tropical Pacific east of 170°E. When compared with anomalies observed a fortnight ago, there has been little change in the distribution of heat at the sea surface along the equator. An animation of [recent SST changes](#) is available.

A [four-month sequence](#) of sub-surface Pacific Ocean equatorial temperature anomaly shows a cooling of the sub-surface since the peak in warmth during November. During December and January, weak cool anomalies in the western Pacific propagated eastwards, cooling the sub-surface of the central and eastern Pacific. The western and eastern Pacific continued to cool through February; however the central Pacific has shown some renewed warming. A recent map for the [5 days ending 28 February](#) shows that a large volume of warmer than normal water persists below the surface of the central to eastern tropical Pacific, with anomalies exceeding +4 °C in small regions. When compared with two weeks ago, the sub-surface of the equatorial Pacific has cooled slightly in western and central regions and warmed slightly in the eastern Pacific. This recent warming is likely to be a response to a weakening of the trade winds over the western and central Pacific during late January and early February. An animation of [recent sub-surface changes](#) is available.

An [archive of sub-surface temperature charts](#) is available.

Trade winds have strengthened in the central and eastern Pacific during the last fortnight and are now close to average strength over most of the tropical Pacific. However, some westerly wind anomalies are still evident in the central and western Pacific to the south of the equator. The latest weekly wind anomalies are shown in the [TAO/TRITON map](#) (small image above) for the five days ending 28 February.

The [SOI](#) has increased in value over the last week after a rapid fall during February. This fall in value was attributed to a sharp decline in mean sea level pressure over Tahiti; in part due to several tropical depressions and Severe Tropical Cyclone *Oli* passing over the region. During this time the SOI reached a 30-day value of -24 on the 12th of February; the lowest value of the SOI recorded during this El Niño event. The current (1 March) 30-day value of the SOI is -16, while the monthly value for February was -14. ([SOI graph](#), [SOI table](#)).

[Cloudiness near the date-line](#) across the equatorial Pacific is another important indicator of El Niño conditions, as it typically increases near and to the east of the dateline during these episodes. Cloudiness near the date-line has decreased over the past fortnight, but still remains above average. Cloudiness near the date-line was particularly enhanced during late January and early February, coinciding with a weakening of the trade flow in the region and a big drop in the SOI.

Most international [computer models](#) are predicting a return to neutral conditions by late autumn in the southern hemisphere. 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 returning to neutral conditions during the southern hemisphere autumn.

THE NEXT UPDATE OF THE DETAILED SECTION ABOVE IS EXPECTED BY 17 MARCH 2010

[Archive of previous ENSO Wrap-Ups](#)

Other Useful Links

The links below can be used to keep track of important developments across the Pacific Basin.

The [Weekly Tropical Climate Note](#) issued by the Darwin office of the Bureau of Meteorology discusses the main features of the tropical atmosphere and ocean, including the **intra-seasonal oscillation or 30-60 day wave** which is thought to sometimes impact on the development of El Niño events.

The [Bureau of Meteorology Research Centre](#) (BMRC) has recently developed maps of **Out-going Longwave Radiation (OLR)**, a useful El Niño monitoring tool. Negative anomalies show areas which, in general, have been cloudier (and potentially wetter) than normal.

The [TAO / TRITON](#) data display page is excellent for creating your own plots of numerous variables that are relevant to El Niño.

Note however that information coming from other countries is likely to describe timing and impacts relevant to those countries, which will not be the same as those in Australia.



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