

EL NIÑO/SOUTHERN OSCILLATION (ENSO) DIAGNOSTIC DISCUSSION

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CLIMATE PREDICTION CENTER/NCEP/NWS
and the International Research Institute for Climate and Society
7 June 2012

ENSO Alert System Status: El Niño Watch

Synopsis: There is a 50% chance that El Niño conditions will develop during the second half of 2012.

ENSO-neutral conditions prevailed in May 2012, following the dissipation of La Niña in April. Sea surface temperatures (SSTs) are currently near average across most of the equatorial Pacific Ocean, and above-average in the far eastern Pacific (Fig. 1). The Niño 4 and Niño 3.4 indices were near zero during most of May, while the Niño 3 and Niño 1+2 indices remained positive (Fig. 2). The oceanic heat content (average temperature in the upper 300m of the ocean) anomalies became more strongly positive in May (Fig. 3), as above-average sub-surface temperatures became established across most of the central and eastern equatorial Pacific (Fig. 4). The low-level trade winds and convection over the central equatorial Pacific were near average during May, although convection remained enhanced over portions of the western Pacific (Fig. 5). Collectively, these oceanic and atmospheric patterns indicate ENSO-neutral conditions.

The extensive volume of above-average sub-surface water temperatures indicates that the tropical Pacific SST anomalies will likely warm further in the coming months. A majority of models predict ENSO-neutral to continue through the June-August (JJA) season (Fig. 6). Thereafter, most of the dynamical models predict El Niño to develop during JAS, while the statistical models tend to favor the continuation of ENSO-neutral. Thus, there remains uncertainty as to whether ENSO-neutral or El Niño will prevail during the second half of the year. The evolving conditions, combined with model forecasts (Fig. 6), suggest that ENSO-neutral and El Niño are roughly equally likely during the late northern summer and fall. The CPC/IRI forecast calls for ENSO-neutral conditions through JAS, followed by an approximately 50% likelihood for El Niño during the remainder of the year (see [CPC/IRI consensus forecast](#)).

This discussion is a consolidated effort of the National Oceanic and Atmospheric Administration (NOAA), NOAA's National Weather Service, and their funded institutions. Oceanic and atmospheric conditions are updated weekly on the Climate Prediction Center web site ([El Niño/La Niña Current Conditions and Expert Discussions](#)). Forecasts for the evolution of El Niño/La Niña are updated monthly in the [Forecast Forum](#) section of CPC's Climate Diagnostics Bulletin. The next ENSO Diagnostics Discussion is scheduled for 5 July 2012. To receive an e-mail notification when the monthly ENSO Diagnostic Discussions are released, please send an e-mail message to: ncep.list.enso-update@noaa.gov.

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SST Anomalies (°C)
30 MAY 2012

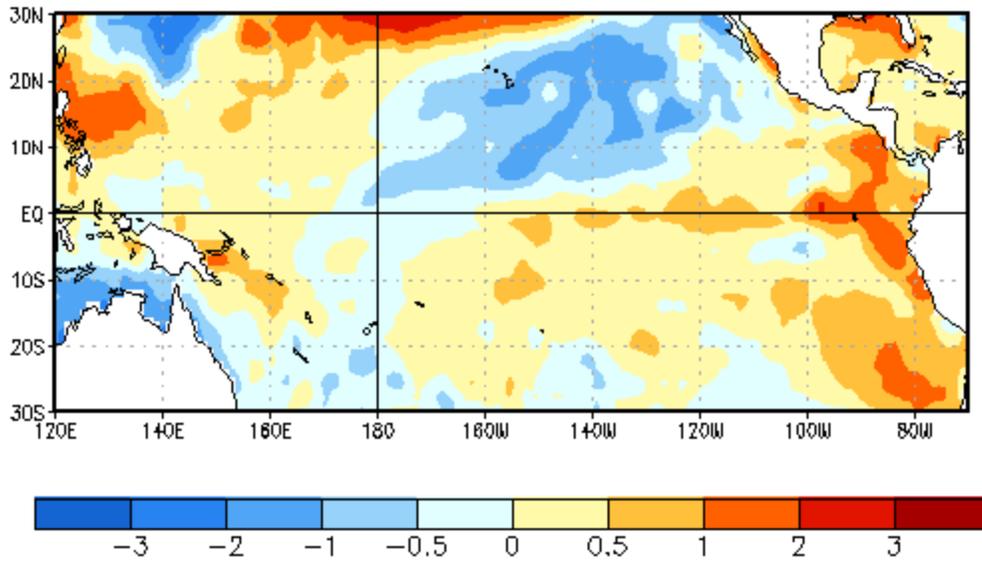


Figure 1. Average sea surface temperature (SST) anomalies (°C) for the week centered on 30 May 2012. Anomalies are computed with respect to the 1981-2010 base period weekly means.

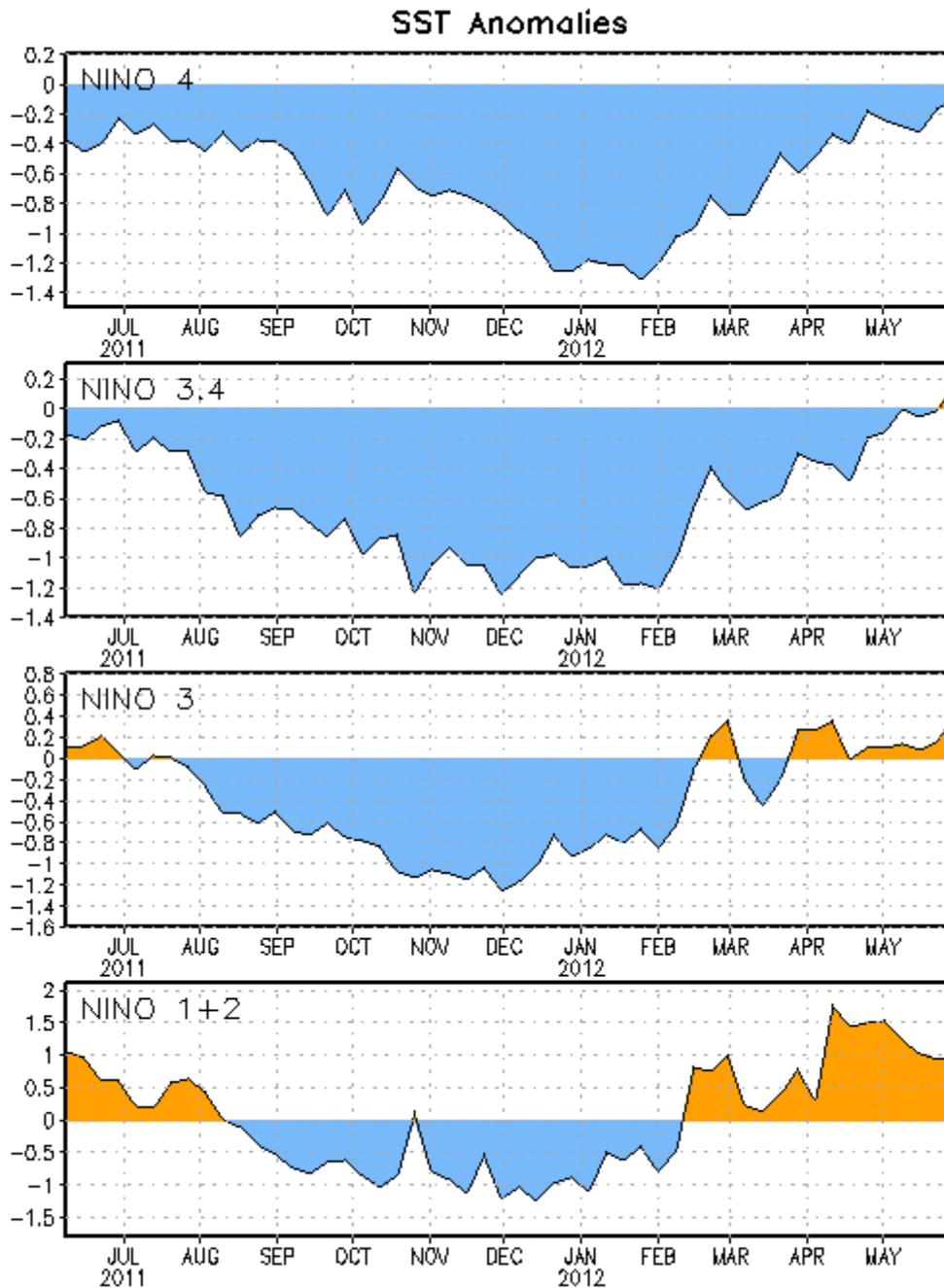


Figure 2. Time series of area-averaged sea surface temperature (SST) anomalies ($^{\circ}\text{C}$) in the Niño regions [Niño-1+2 ($0^{\circ}\text{-}10^{\circ}\text{S}$, 90°W - 80°W), Niño 3 (5°N - 5°S , 150°W - 90°W), Niño-3.4 (5°N - 5°S , 170°W - 120°W), Niño-4 (150°W - 160°E and 5°N - 5°S)]. SST anomalies are departures from the 1981-2010 base period weekly means.

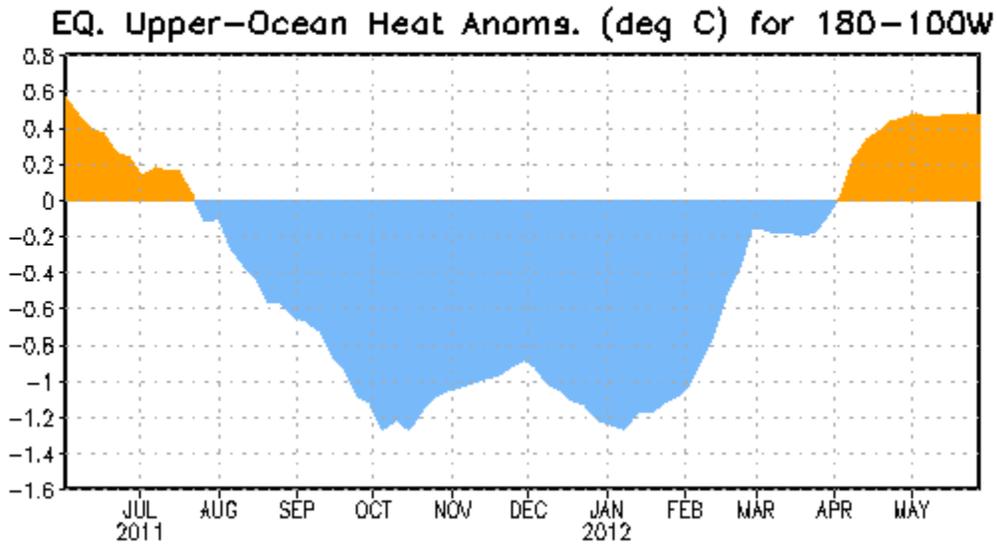


Figure 3. Area-averaged upper-ocean heat content anomaly ($^{\circ}\text{C}$) in the equatorial Pacific (5°N - 5°S , 180° - 100°W). The heat content anomaly is computed as the departure from the 1982-2010 base period pentad means.

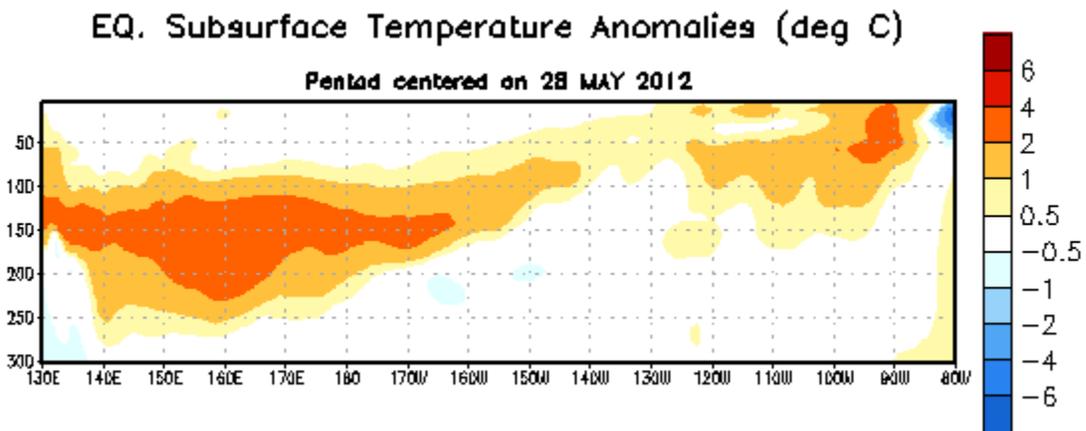


Figure 4. Depth-longitude section of equatorial Pacific upper-ocean (0-300m) temperature anomalies ($^{\circ}\text{C}$) centered on the pentad of 28 May 2012. The anomalies are averaged between 5°N - 5°S . Anomalies are departures from the 1982-2010 base period pentad means.

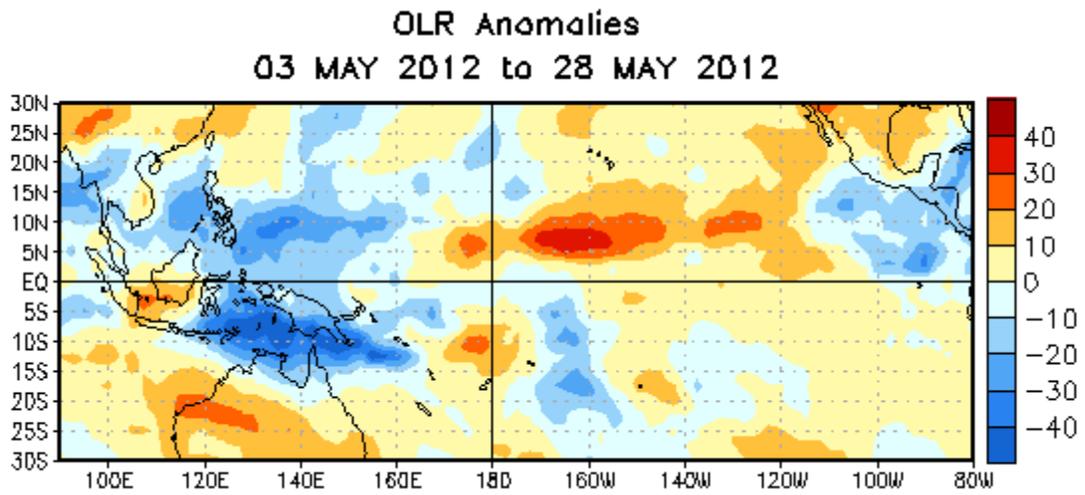


Figure 5. Average outgoing longwave radiation (OLR) anomalies (W/m^2) for the four-week period 3–28 May 2012. OLR anomalies are computed as departures from the 1979-1995 base period pentad means.

Mid-May 2012 Plume of Model ENSO Predictions

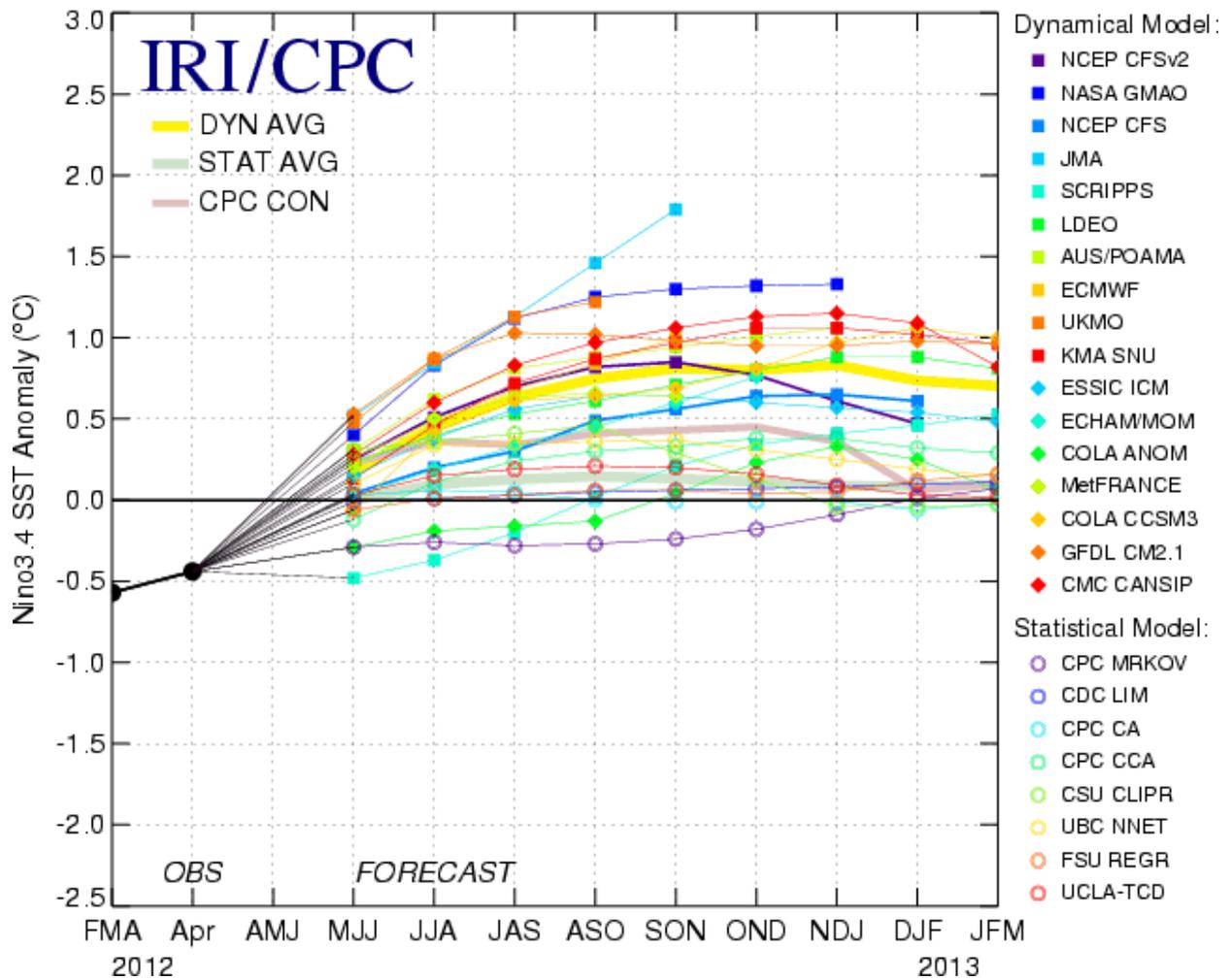


Figure 6. Forecasts of sea surface temperature (SST) anomalies for the Niño 3.4 region (5°N-5°S, 120°W-170°W). Figure courtesy of the International Research Institute (IRI) for Climate and Society. Figure updated 15 May 2012.