

# EL NIÑO/SOUTHERN OSCILLATION (ENSO) DIAGNOSTIC DISCUSSION

issued by

**CLIMATE PREDICTION CENTER/NCEP**

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**Synopsis: A transition from ENSO-neutral to La Niña conditions is possible within the next 2-3 months.**

The pattern of anomalous sea surface temperatures (SSTs) during April 2007 was consistent with ENSO-neutral conditions in the tropical Pacific, with average to slightly below-average SSTs extending from the date line to the west coast of South America (Fig. 1). The latest weekly SST departures in the Niño regions are  $-1.2^{\circ}\text{C}$  in Niño 1+2,  $-0.3^{\circ}\text{C}$  in the Niño 3, zero in Niño 3.4, and  $+0.1^{\circ}\text{C}$  in Niño 4 (Fig. 2).

The upper-ocean heat content (average temperature departures in the upper 300 m of the ocean) remained below average across the central and east-central equatorial Pacific (Fig. 3), with temperatures at thermocline depth generally  $2^{\circ}\text{--}5^{\circ}\text{C}$  below average (Fig. 4). Consistent with the surface and sub-surface ocean temperature patterns, stronger than-average low-level easterly winds persisted over the central equatorial Pacific. Also, convection was enhanced over the western equatorial Pacific and suppressed east of the date line. Collectively, these atmospheric and oceanic conditions continue to indicate the possibility that La Niña conditions will develop over the next 2-3 months.

Most of the statistical and coupled model forecasts, including those from the NCEP Climate Forecast System (CFS) (Fig. 5), indicate below-average SSTs during the next several months. Some forecast models, especially the CFS, predict a rapid transition to La Niña during May-July 2007. However, for the past few months the CFS forecasts have been predicting a stronger and more rapid cooling than has actually occurred. Historically, the next couple of months are a critical time period for the possible emergence of La Niña.

This discussion is a consolidated effort of NOAA and its 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 7 June 2007. 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](mailto:ncep.list.enso-update@noaa.gov).

Climate Prediction Center  
National Centers for Environmental Prediction  
NOAA/National Weather Service  
Camp Springs, MD 20746-4304

Average SST Anomalies  
8 APR 2007 – 5 MAY 2007

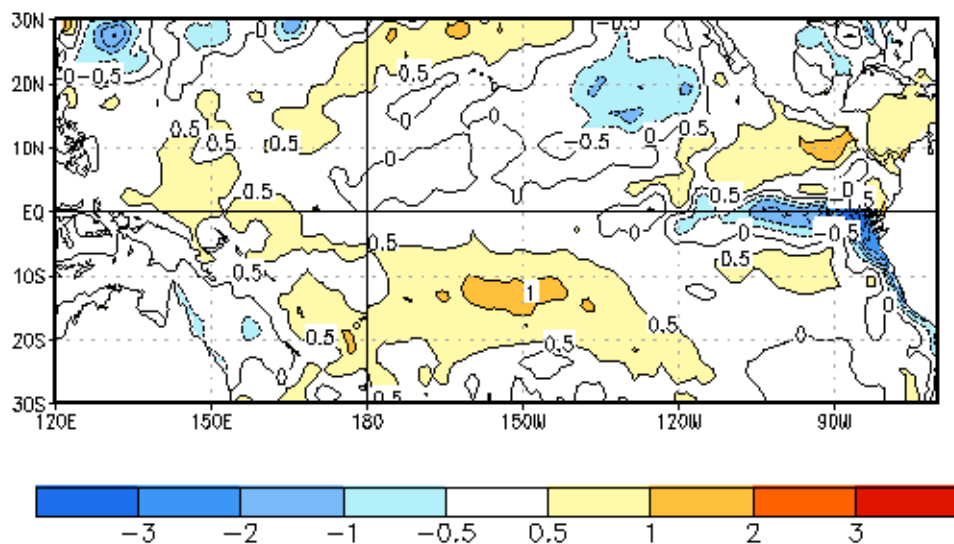


Figure 1. Average SST anomalies (°C) for the four-week period 8 April-5 May 2007. The SST anomalies are computed with respect to the 1971-2000 base period means (Xue et al. 2003, *J. Climate*, **16**, 1601-1612).

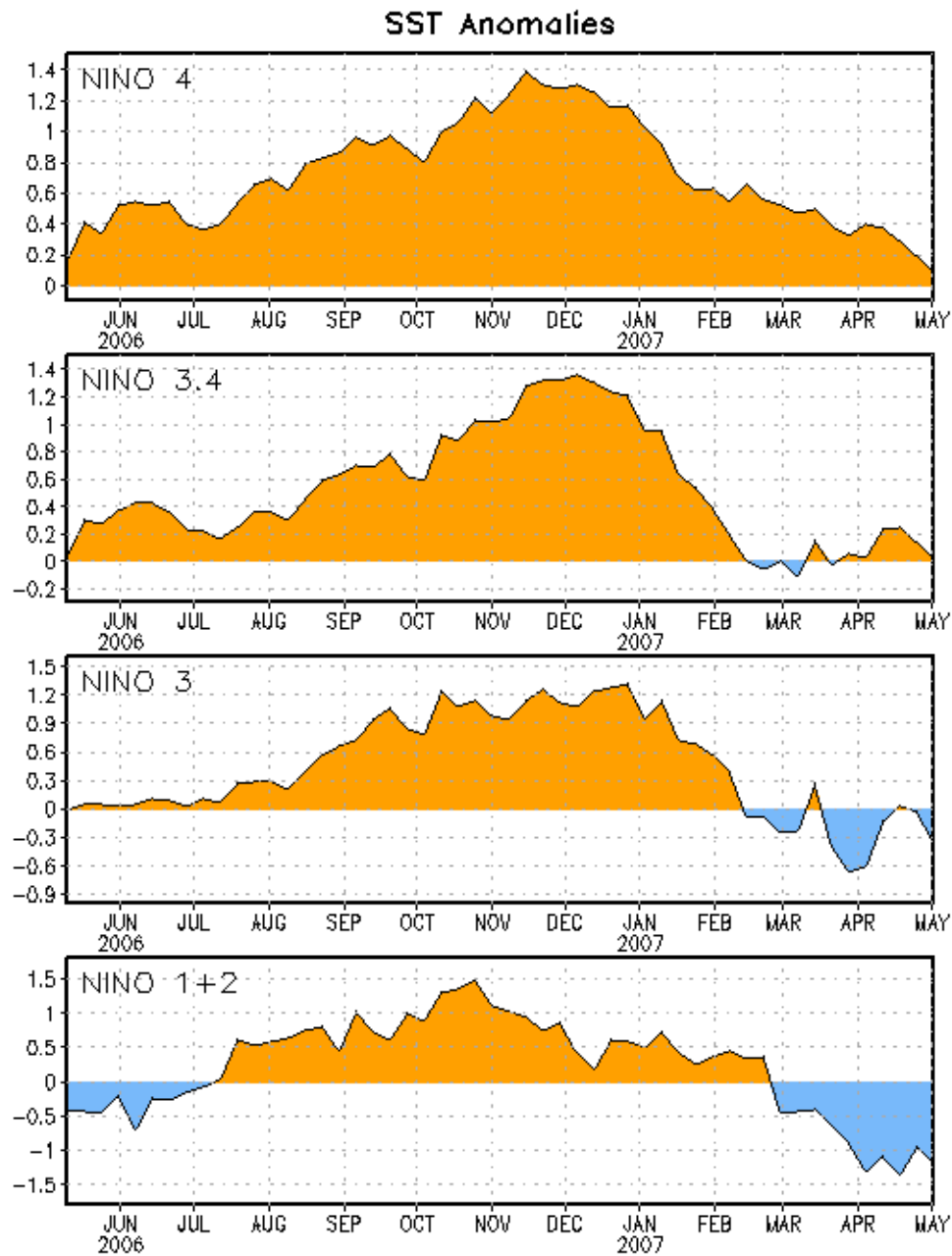


Figure 2. Time series of SST departures ( $^{\circ}\text{C}$ ) for the Niño regions. The SST departures are computed with respect to the 1971-2000 base period means (Xue et al. 2003, *J. Climate*, **16**, 1601-1612).

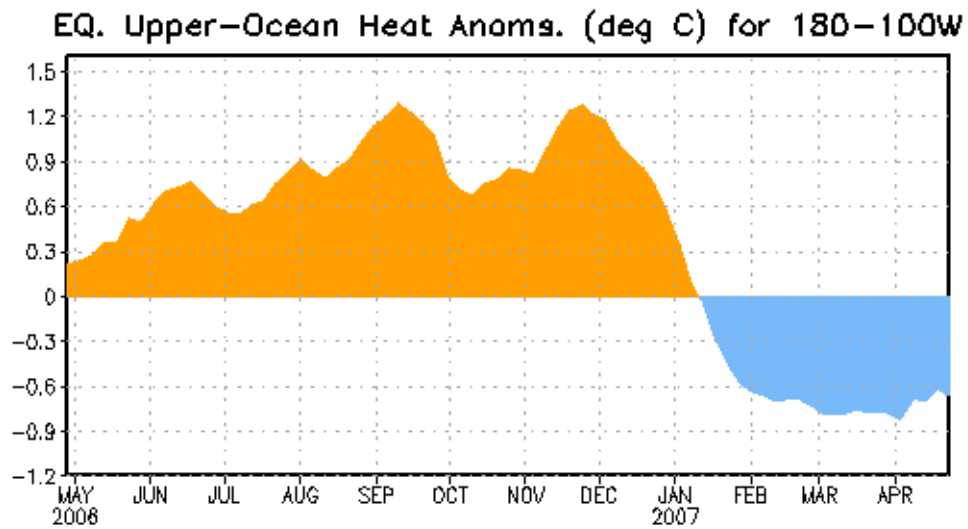


Figure 3. Anomalous equatorial upper-ocean heat content averaged over the longitude band 180°-100°W. Heat content anomalies are computed as departures from the 1982-2004 base period means.

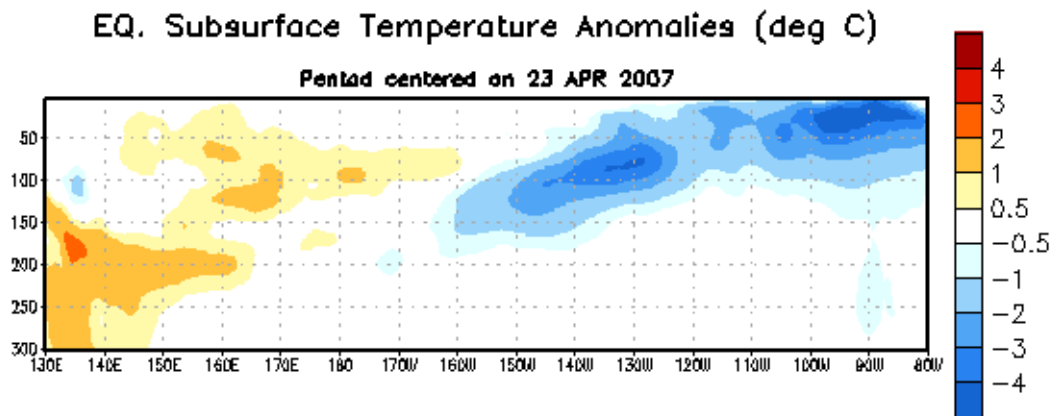


Figure 4. Depth-longitude section of upper-ocean (0-300m) temperatures for the equatorial Pacific. Anomalies are departures from the 1982-2004 base period means.

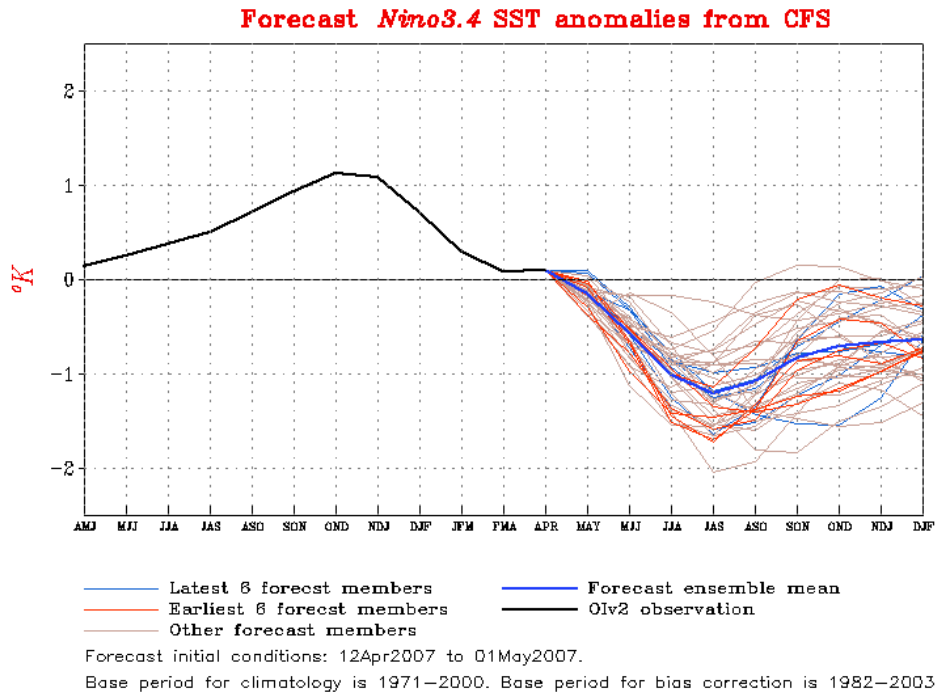


Figure 5. Forecasts of the SST anomalies for the Niño 3.4 region, derived from the NCEP/Climate Forecast System (CFS).