

# EL NIÑO/SOUTHERN OSCILLATION (ENSO) DIAGNOSTIC DISCUSSION

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**Synopsis: La Niña is expected to continue through the Northern Hemisphere spring 2008.**

Current atmospheric and oceanic conditions indicate that La Niña has continued to strengthen in the tropical Pacific. By the end of January 2008, equatorial SST anomalies were more than 2.0°C below average across parts of the central and east-central equatorial Pacific (Fig. 1). Other than the far eastern Niño-1+2 region, the magnitude of the cold anomalies in the Niño region indices increased during the past month with the latest weekly values near -1.5°C (Fig. 2). The upper-ocean heat content (average temperatures in the upper 300m of the oceans) also decreased further during January (Fig. 3), and negative subsurface anomalies between -2°C to -5°C expanded westward towards the Date Line (Fig. 4). Consistent with these oceanic conditions, stronger-than-average low-level easterly and upper-level westerly winds persisted across the central equatorial Pacific, convection remained suppressed throughout the central equatorial Pacific, and enhanced convection covered the far western Pacific. Collectively, these oceanic and atmospheric conditions are similar to those accompanying the last strong La Niña episode in 1998-2000.

The recent dynamical and statistical SST forecasts for the Niño 3.4 region indicate a moderate-to-strong La Niña through the rest of the Northern Hemisphere winter, with the likely continuation of a weaker La Niña through April-May-June (Fig. 5). Thereafter, there is considerable spread in the models, with approximately one-half indicating La Niña could continue well into the Northern Hemisphere summer. Current atmospheric and oceanic conditions and recent trends are consistent with the likely continuation of La Niña through the Northern Hemisphere spring 2008.

Expected La Niña impacts during February-April include a continuation of above-average precipitation over Indonesia and below-average precipitation over the central equatorial Pacific. For the contiguous United States, potential impacts include above-average precipitation in the Northern Rockies, the Pacific Northwest, and the Ohio and Tennessee Valleys. Below-average precipitation is expected across the South, particularly in the southeastern states.

This discussion is a consolidated effort of the National Atmospheric and Oceanic 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 6 March 2008. 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).

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### SST Anomalies (°C)

30 JAN 2008

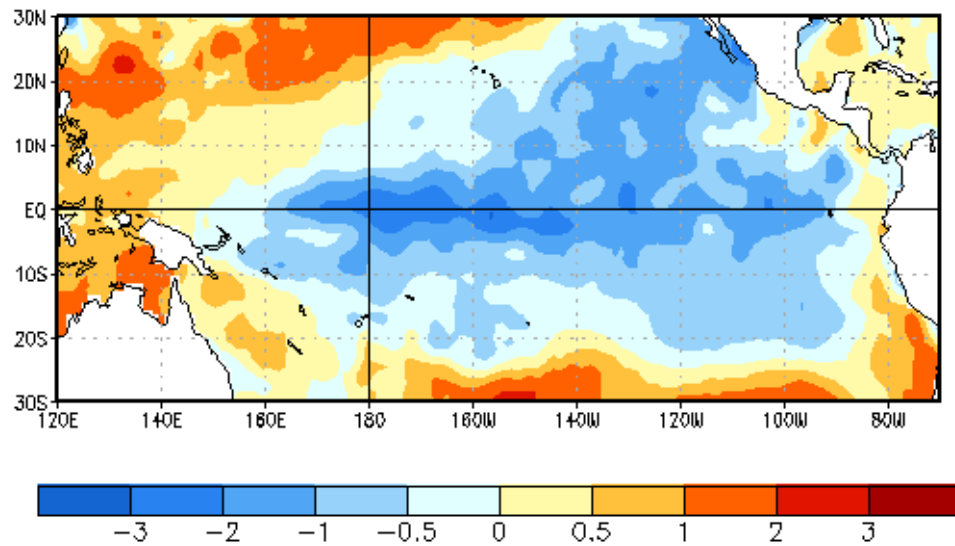


Figure 1. Weekly sea surface temperature (SST) anomalies (°C) centered on 30 January 2008. SST anomalies are computed with respect to the 1971-2000 base period weekly means (Xue et al. 2003, *J. Climate*, **16**, 1601-1612).

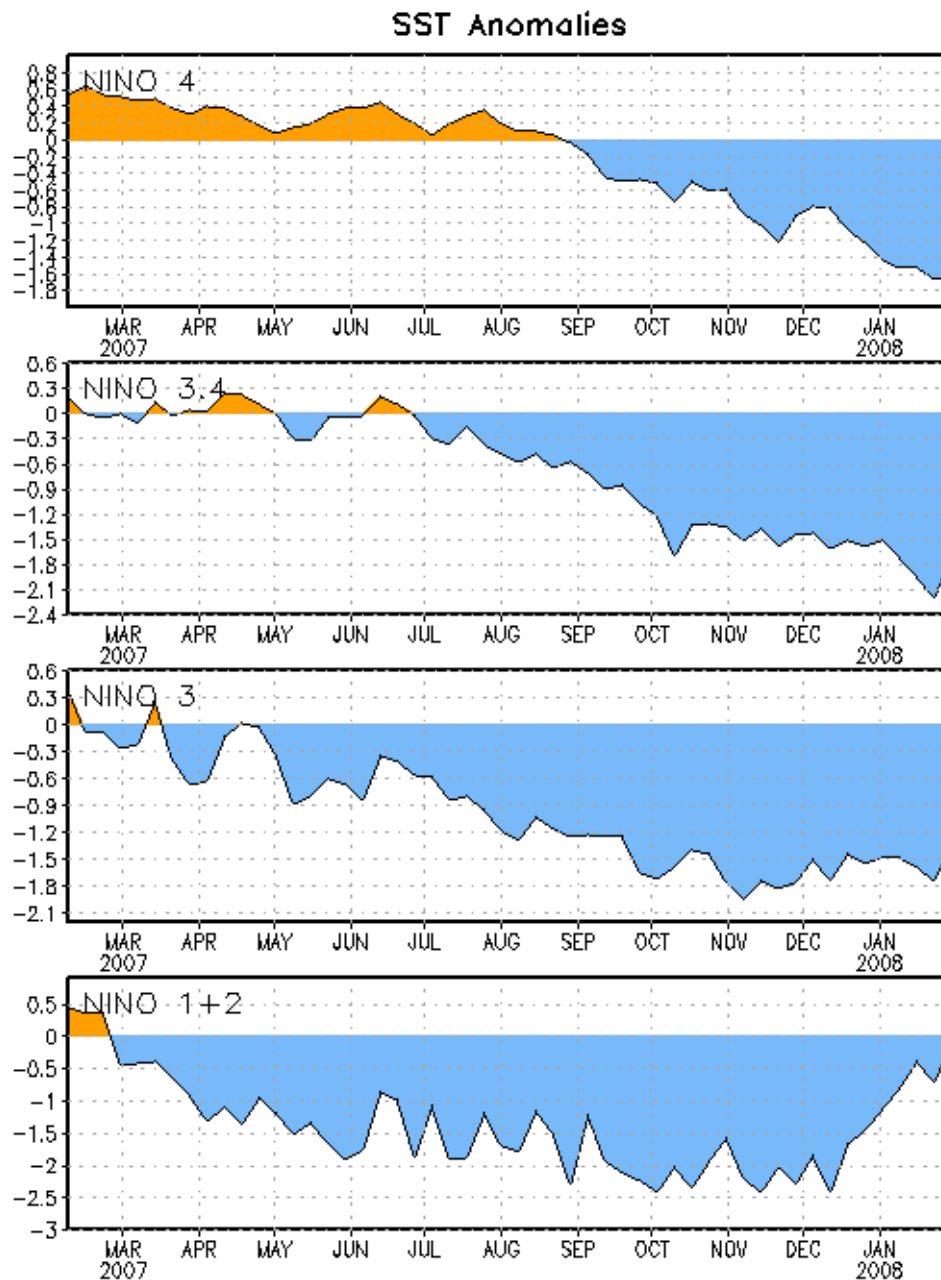


Figure 2. Time series of area-averaged sea surface temperature (SST) anomalies ( $^{\circ}\text{C}$ ) in the Niño regions [Niño-1+2 ( $0^{\circ}$ - $10^{\circ}\text{S}$ ,  $90^{\circ}$ - $80^{\circ}\text{W}$ ), Niño 3 ( $5^{\circ}\text{N}$ - $5^{\circ}\text{S}$ ,  $150^{\circ}\text{W}$ - $90^{\circ}\text{W}$ ), Niño-3.4 ( $5^{\circ}\text{N}$ - $5^{\circ}\text{S}$ ,  $170^{\circ}\text{W}$ - $120^{\circ}\text{W}$ ), Niño-4 ( $150^{\circ}\text{W}$ - $160^{\circ}\text{E}$  and  $5^{\circ}\text{N}$ - $5^{\circ}\text{S}$ )]. SST anomalies are departures are from the 1971-2000 base period weekly means (Xue et al. 2003, *J. Climate*, **16**, 1601-1612).

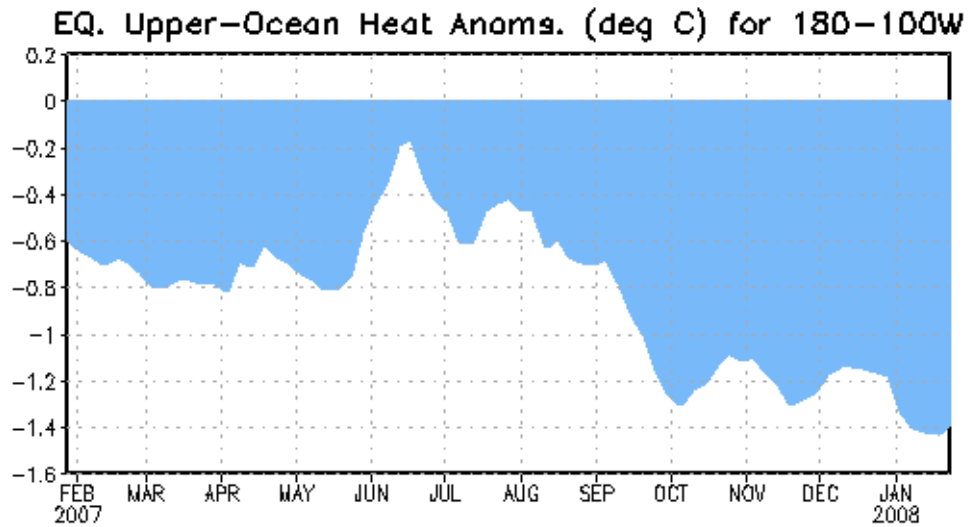


Figure 3. Area-averaged upper-ocean heat content anomalies ( $^{\circ}\text{C}$ ) in the equatorial Pacific ( $5^{\circ}\text{N}$ - $5^{\circ}\text{S}$ ,  $180^{\circ}$ - $100^{\circ}\text{W}$ ). Heat content anomalies are computed as departures from the 1982-2004 base period weekly means.

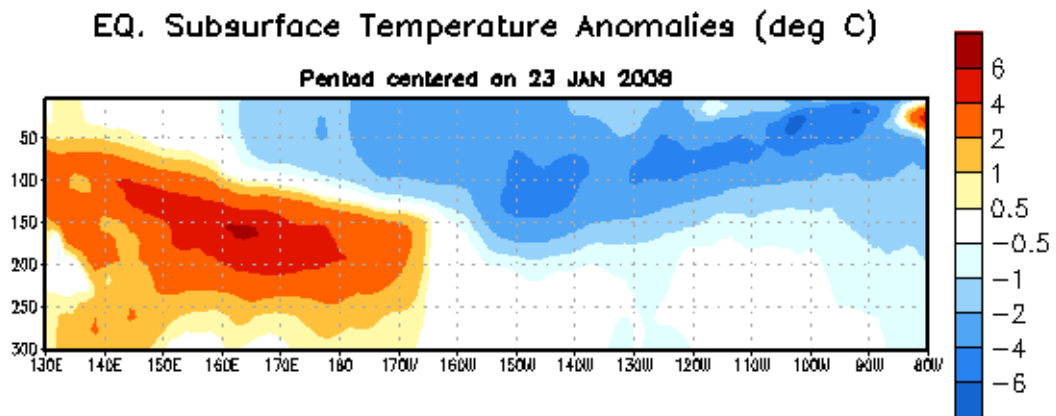


Figure 4. Depth-longitude section of equatorial Pacific upper-ocean (0-300m) temperature anomalies ( $^{\circ}\text{C}$ ) centered on the week of 23 January 2008. The anomalies are averaged between  $5^{\circ}\text{N}$ - $5^{\circ}\text{S}$ . Anomalies are departures from the 1982-2004 base period weekly means.

### Model Forecasts of ENSO from Jan 2008

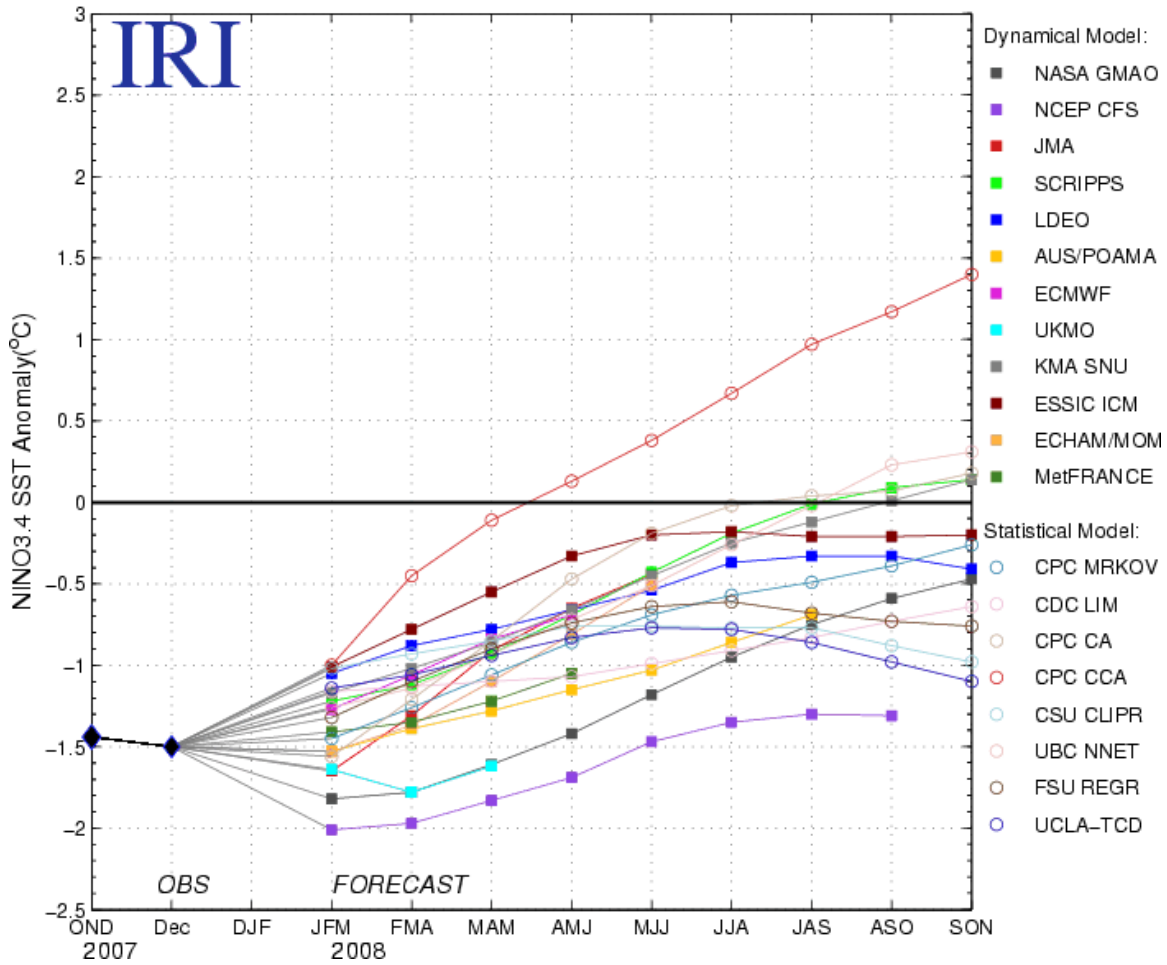


Figure 5. Forecasts of sea surface temperature (SST) anomalies for the Niño 3.4 region (5°N-5°S, 120°W-170°W). Figure courtesy of the International Research Institute (IRI) for Climate and Society. Figure updated 17 January 2008.