EL NIÑO/SOUTHERN OSCILLATION (ENSO) DIAGNOSTIC DISCUSSION

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ENSO Alert System Status: Not Active

Synopsis: ENSO-neutral is favored into the Northern Hemisphere summer 2013.

During February 2013, ENSO-neutral continued although SSTs remained below average across the eastern half of the equatorial Pacific Ocean (Fig. 1). The Niño 3.4 index remained near -0.5°C, while the Niño 3 index became less negative as the month progressed (Fig. 2). The oceanic heat content (average temperature in the upper 300m of the ocean) similarly increased during the month (Fig. 3), largely due to the eastward push of above-average temperatures at depth (Fig. 4). The Madden-Julian Oscillation (MJO) again contributed to increased atmospheric variability over the tropical Pacific during February. Anomalous low-level winds were primarily easterly over the west-central equatorial Pacific, while upper-level winds remained near average, but with some intra-monthly variability. Over Indonesia, anomalous convection remained enhanced north of the equator and suppressed south of the equator (Fig. 5). Due to the lack of persistent atmosphere-ocean coupling, the tropical Pacific continues to reflect ENSO-neutral.

Most models forecast Niño-3.4 SSTs to remain between 0°C and -0.5°C through Northern Hemisphere spring and to remain ENSO-neutral (between -0.5°C and +0.5°C) into the fall (Fig. 6). However, there is increasing model spread and overall less confidence in the forecast during the last half of the year, partly because of the so-called "spring barrier," which historically leads to lower model skill beginning in late spring. Thus, ENSO-neutral is favored into the Northern Hemisphere summer 2013 (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 4 April 2013. 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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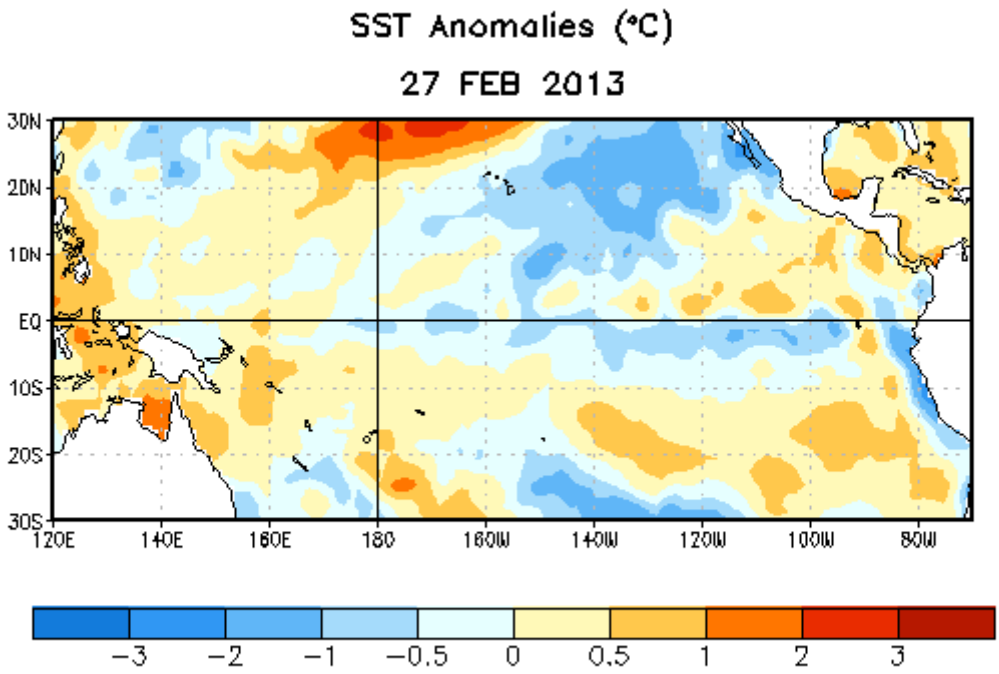

Figure 1. Average sea surface temperature (SST) anomalies (°C) for the week centered on 27 February 2013. Anomalies are computed with respect to the 1981-2010 base period weekly means.

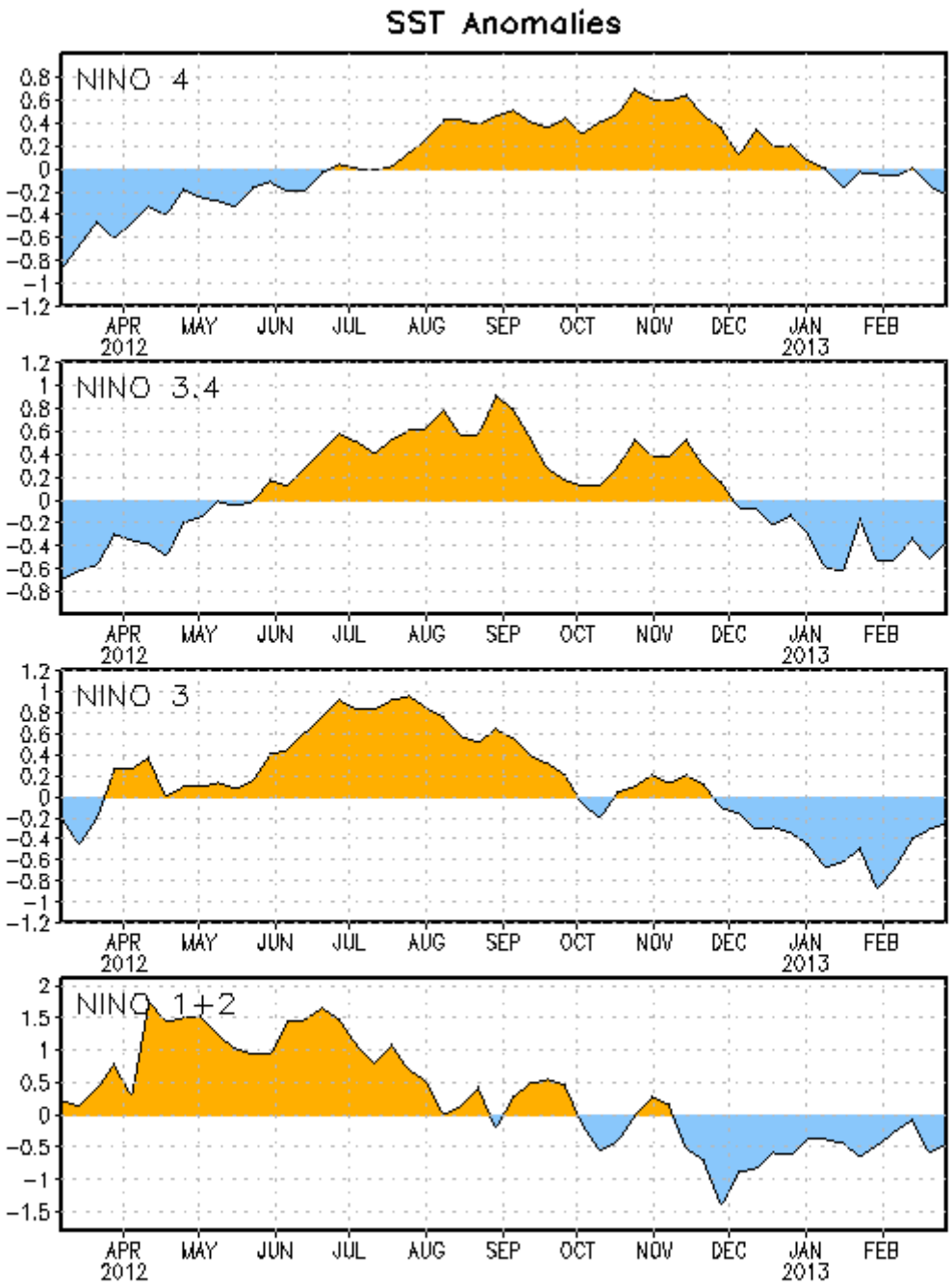

Figure 2. Time series of area-averaged sea surface temperature (SST) anomalies (°C) in the Niño regions [Niño-1+2 (0°-10°S, 90°W-80°W), Niño 3 (5°N-5°S, 150°W-90°W), Niño-3.4 (5°N-5°S, 170°W-120°W), Niño-4 (150ºW-160ºE and 5ºN-5ºS)]. SST anomalies are departures from the 1981-2010 base period weekly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

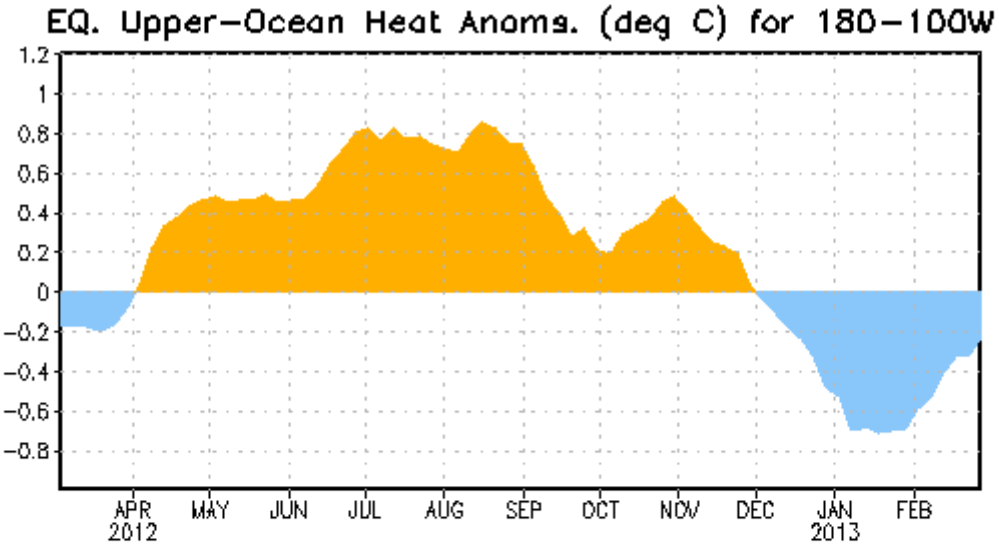

Figure 3. Area-averaged upper-ocean heat content anomaly (°C) in the equatorial Pacific (5°N-5°S, 180º-100ºW). The heat content anomaly is computed as the departure from the 1981-2010 base period pentad means.

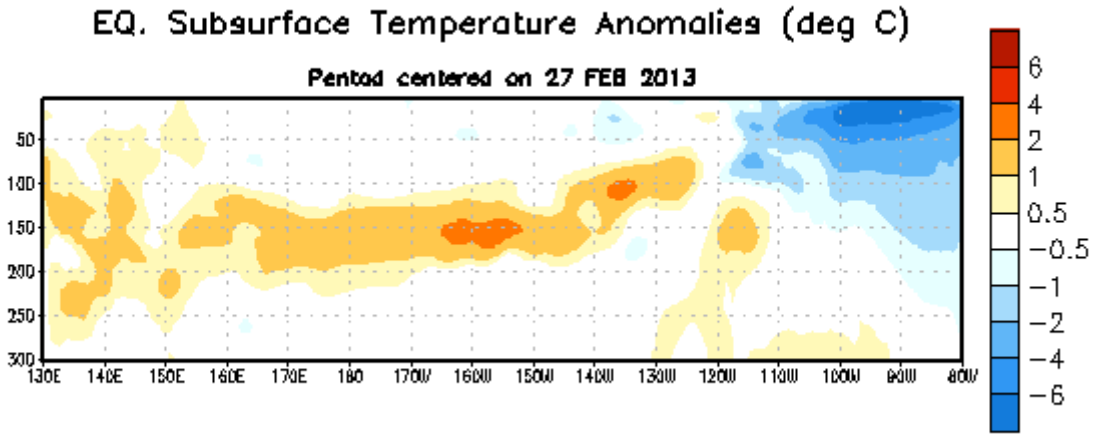

Figure 4. Depth-longitude section of equatorial Pacific upper-ocean (0-300m) temperature anomalies (°C) centered on the pentad of 27 February 2013. The anomalies are averaged between 5°N-5°S. Anomalies are departures from the 1981-2010 base period pentad means.

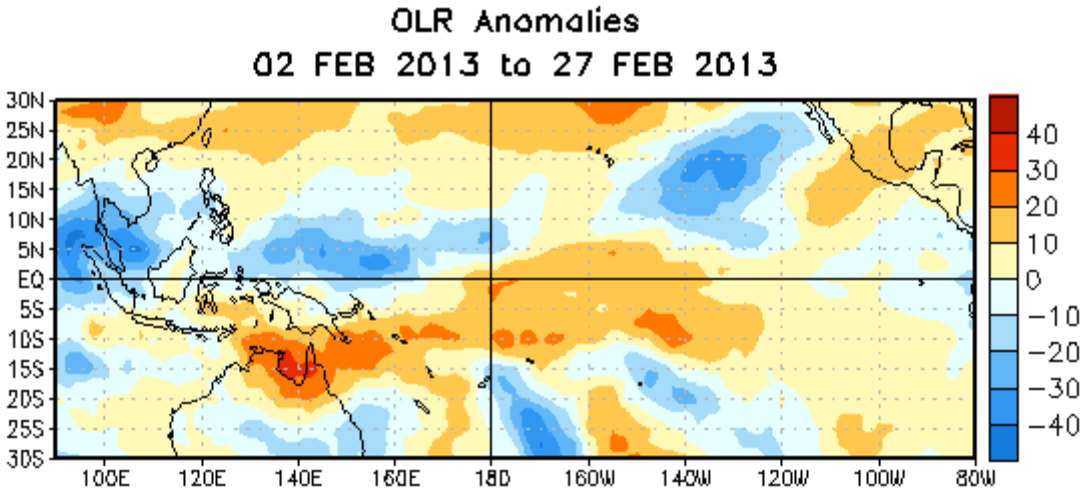

Figure 5. Average outgoing longwave radiation (OLR) anomalies (W/m^2) for the four-week period 2 – 27 February 2013. OLR anomalies are computed as departures from the 1979-1995 base period pentad means.

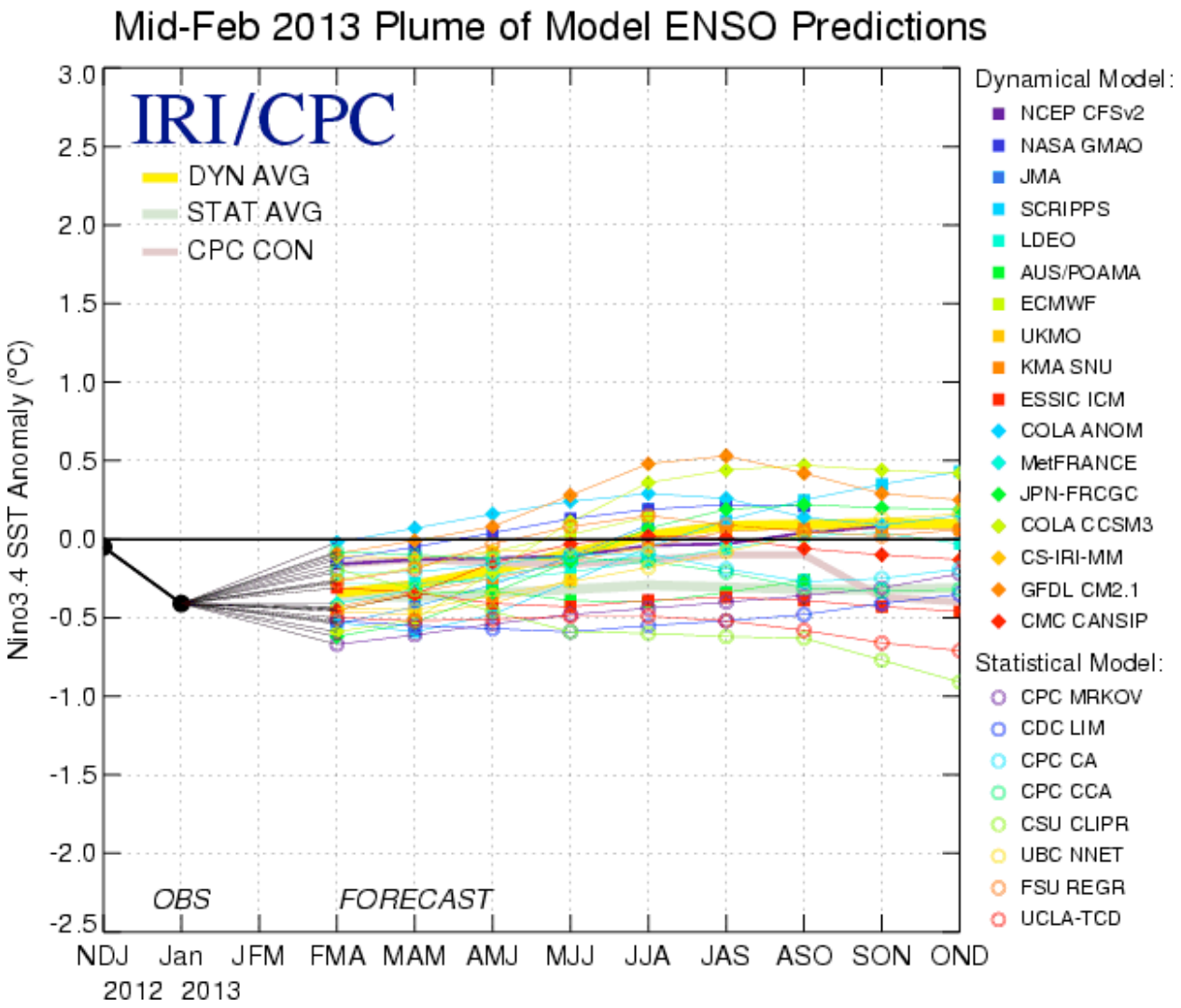

Figure 6. Forecasts of sea surface temperature (SST) anomalies for the Niño 3.4 region (5°N-5°S, 120°W-170°W). Figure courtesy of the International Research Institute (IRI) for Climate and Society. Figure updated 18 February 2013.