



**Western Region Technical Attachment
No. 95-05
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**EL NIÑO/SOUTHERN OSCILLATION (ENSO)
DIAGNOSTIC ADVISORY 95/2**

**CLIMATE ANALYSIS CENTER/NMC
Issued February 10, 1995**

[Editor's Note: This following Technical Attachment is a Diagnostic Advisory on the El Niño/Southern Oscillation (ENSO) situation, issued by the Climatic Analysis Center of NMC.]

During January sea surface temperature (SST) anomalies decreased slightly throughout the region from the date line eastward to the South American coast (Fig. 1). However, all three Niño indices remained near $+1^{\circ}\text{C}$ and SST anomalies greater than $+2^{\circ}\text{C}$ continued along the equator near 170°W , where enhanced convection was also observed.

The Southern Oscillation index (SOI) became less negative during December (-0.6), and the low-level equatorial easterlies increased to near-normal intensity over the central and western Pacific. The pattern of subsurface temperature anomalies changed substantially from that observed during December. During January the thermocline depth decreased in the eastern equatorial Pacific and increased in the central equatorial Pacific. These changes, associated with oceanic Kelvin wave activity, resulted in an increase in positive subsurface temperature anomalies in the central Pacific and a decrease in positive anomalies in the eastern Pacific.

Since November 1994, there has been considerable month-to-month variability in 1) the intensity of convection over the central equatorial Pacific, 2) the value of the SOI, and 3) the intensity of the low-level equatorial zonal winds. This variability has been associated with fairly active intraseasonal (30-60 day) oscillations. From mid-November to mid-December enhanced convection shifted from the central Indian Ocean eastward to the central Pacific near the date line (Fig. 2). This was followed by a period of suppressed convection over Indonesia from mid-December through early January. Beginning in early January and continuing until the end of January enhanced convection again shifted from the central Indian Ocean eastward to the western Pacific. The period of this intraseasonal oscillation was approximately 45 days.

In spite of the intraseasonal variability, enhanced convection has persisted along the equator near the date line. Also, the overall pattern of sea level pressure anomalies that has dominated the tropics since 1990 (positive anomalies over Indonesia, northern Australia, the western Pacific, and the tropical Atlantic, and negative anomalies over the eastern tropical Pacific) continued during January (Fig. 3).

The statistical and numerical model predictions of tropical Pacific SST have not done well during the last two years. For the most part, the predictions have indicated cooler conditions than those that actually verified, especially for lead times greater than six months. The recent statistical predictions indicate that SST anomalies are at their peak and that anomalies will decrease to near zero by late 1995 and early 1996. In contrast, the numerical model predictions indicate a continuation of the pattern of positive SST anomalies in the tropical Pacific that has dominated the region for most of the last four years. All techniques have large error bars for the longer lead forecasts initiated at this time of year, so caution is urged when considering predictions for periods greater than six months.

OI SST ANOMS 5N-5S

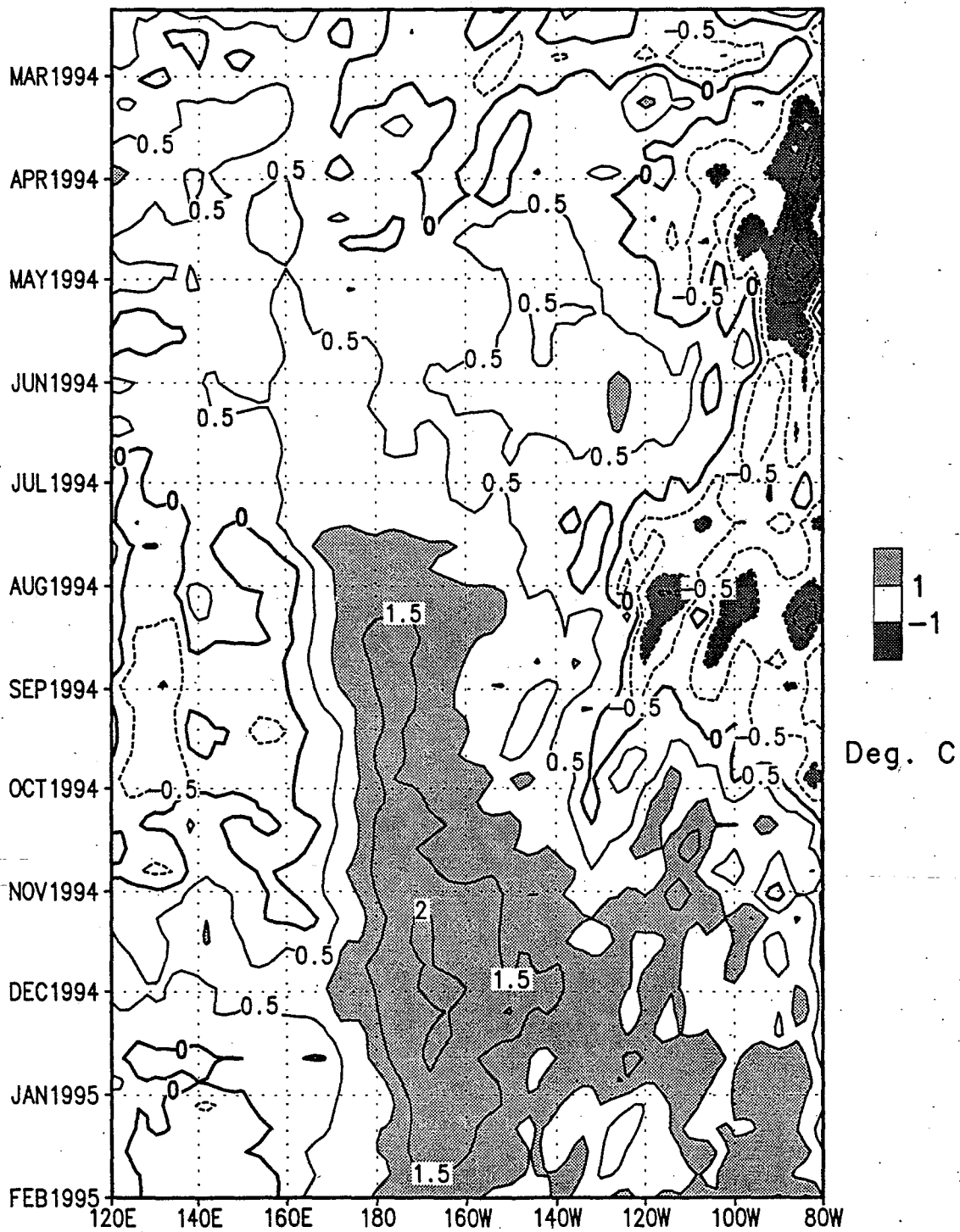


FIGURE 1. Time-longitude section of anomalous equatorial sea surface temperature. Contour interval is 0.5°C. Anomalies are departures from the adjusted OI climatology (Reynolds and Smith, submitted to *J. Climate*).

negative anomalies

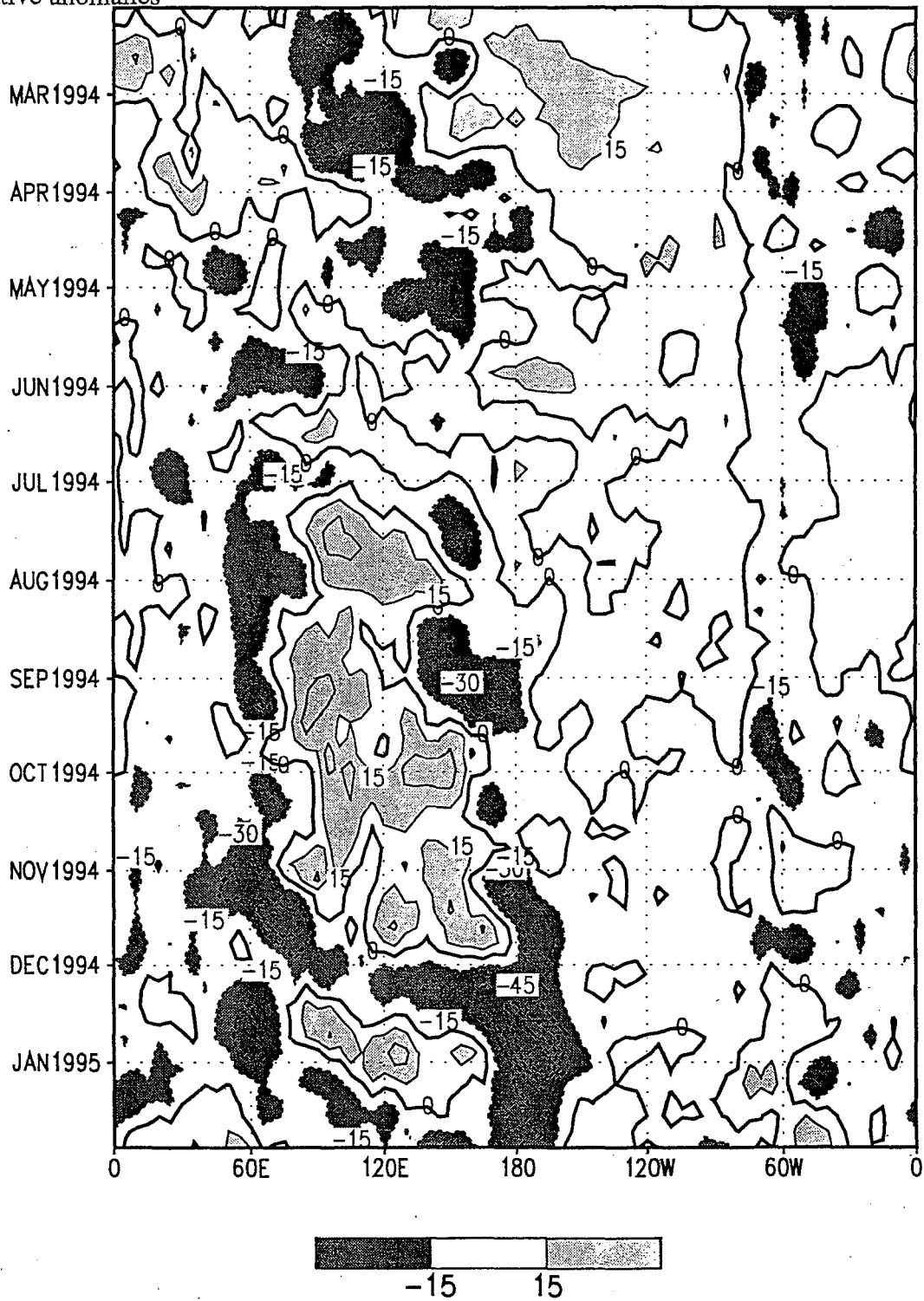


FIGURE 2. Time-longitude section pentad OLR anomalies for 5°N-5°S. Contour interval is 15 Wm^{-2} . Negative anomalies are indicated by dashed contours.

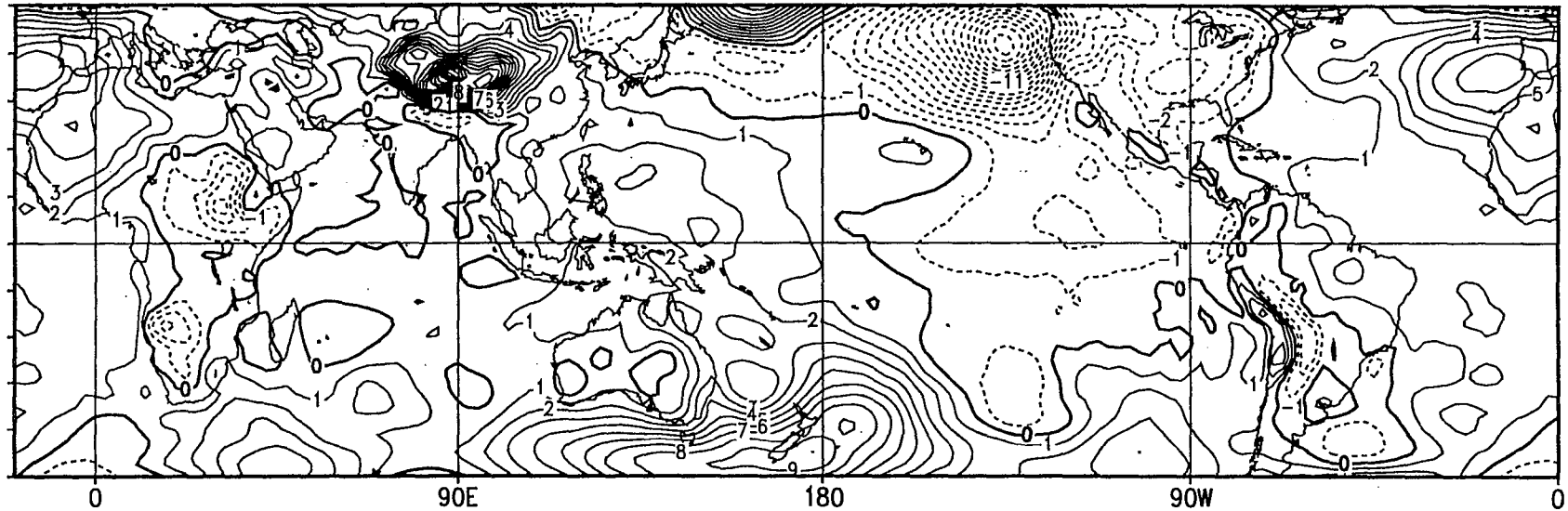


FIGURE 3. Anomalous sea level pressure (SLP) for JAN 1995. Contour interval is 1 mb and negative anomalies are indicated by dashed contours. The analysis should be treated with caution in regions of elevated terrain. Anomalies are departures from the 1979-1988 base period monthly means.