

CENTRAL REGION TECHNICAL ATTACHMENT 87-6

SPECIAL CLIMATE SUMMARY

Climate Analysis Center, NMC
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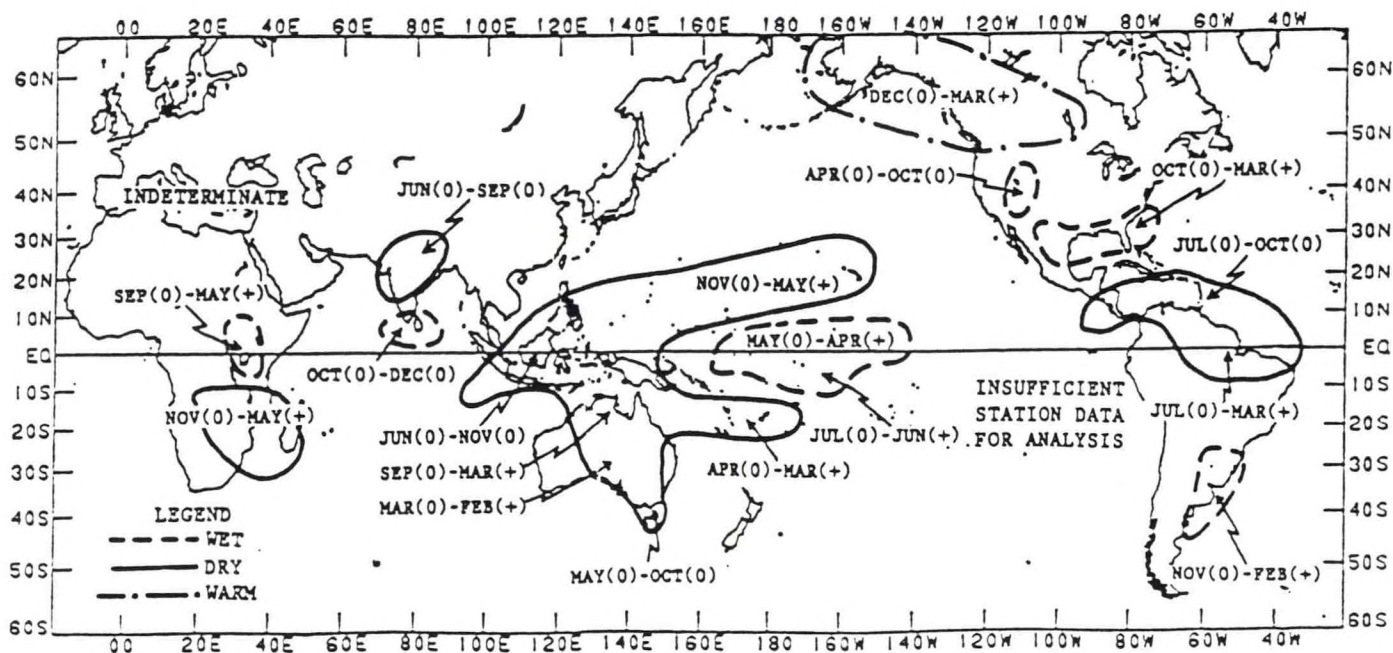
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EL NINO IN TROPICAL PACIFIC MAY AFFECT CLIMATIC CONDITIONS WORLDWIDE

The "ENSO" (El Nino-Southern Oscillation) conditions that currently prevail in the Pacific Ocean basin are likely to be associated with climatic anomalies in several regions, as have previous ENSO events. Hence, there is considerable interest in identifying the onset of ENSO conditions and in monitoring their progress.

Studies by Climate Analysis Center scientists C. Ropelewski and M. Halpert have identified those regions where significant climatic responses to an El Nino are most likely. Their results were obtained by statistical analysis of anomalous climatic conditions that occurred at the time of previous El Nino events. The map below shows the regions, the nature of the anomaly, and the most likely months of occurrence.

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REGIONS THAT ARE LIKELY TO EXPERIENCE ANOMALOUS CLIMATIC CONDITIONS DURING AN ENSO EVENT

Note: A "0" in parentheses after the month indicates the month of the same year as the ENSO event began; a "+" indicates the following year. For the event currently in progress, "0" is 1986 and "+" is 1987. (For example, above normal temperatures in Alaska and western Canada are shown as likely between December 1986 and March 1987.)

(ENSO: Continued)

Not every indicated anomaly occurs with every ENSO event. The very strong event of 1982-83 triggered a response in nearly all of the indicated regions. The weaker event currently underway has likely played a role in the occurrence of some recent climatic anomalies. The persistently above normal temperatures in western Canada and the heavier than normal precipitation in the southeastern United States during recent months agree with results of the study (See cover figure).

Scientists believe that an El Nino brings about large-scale climatic aberrations by adding extra heat from the warmer-than-normal ocean waters to the overlying atmosphere, thereby changing atmospheric circulation patterns to some extent. Since no two ENSO events are identical in every detail, it is not possible to predict the resulting disturbance of climatic conditions exactly. Research continues on the causes of ENSO events and the way they affect climatic conditions worldwide.

References:

- C. F. Ropelewski and M. S. Halpert: North American Precipitation and Temperature Patterns Associated with the El Nino/Southern Oscillation, (ENSO). Monthly Weather Review, 114, 2352-2362. (Dec. 1986).
- C. F. Ropelewski and M. S. Halpert: Global and Regional Scale Precipitation Patterns Associated with the El Nino/Southern Oscillation. Monthly Weather Review, in press.

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