EL NIÑO/SOUTHERN OSCILLATION (ENSO) DIAGNOSTIC DISCUSSION

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ENSO Alert System Status: El Niño Watch

Synopsis: There is a 50-55% chance of El Niño onset during the Northern Hemisphere fall 2018 (September-November), increasing to 65-70% during winter 2018-19.

ENSO-neutral continued during August, as indicated by a blend of slightly above- and below-average sea surface temperatures (SSTs) across the equatorial Pacific Ocean (Fig. 1). Over the last month, the westernmost Niño-4 region was the warmest (latest weekly value was +0.5°C), while the Niño-3 and Niño-3.4 regions were weakly positive, with Niño1+2 remaining negative (Fig. 2). Subsurface temperature anomalies (averaged across 180°-100°W) were positive (Fig. 3), with an increase in above-average subsurface temperatures in the central Pacific and slight expansion of negative anomalies in the eastern Pacific (Fig. 4). Convection returned to near average over the Date Line, and was slightly enhanced over Indonesia (Fig. 5). Low-level westerly wind anomalies re-developed across the east-central and western Pacific, although they were only slightly evident in the monthly average. Upper-level wind anomalies were westerly over the eastern Pacific. Overall, the oceanic and atmospheric conditions reflected ENSO-neutral.

The majority of models in the IRI/CPC plume continue to predict the onset of El Niño sometime during the Northern Hemisphere fall and continuing through the winter (Fig. 6). The forecasters also favor El Niño formation during the fall, and are leaning toward the more conservative model guidance that indicates a weak El Niño event. The persistence of above-average subsurface temperatures and continuing flare-ups of westerly wind anomalies also support the eventual development of El Niño. In summary, there is a 50-55% chance of El Niño onset during the Northern Hemisphere fall 2018 (September-November), increasing to 65-70% during winter 2018-19 (click CPC/IRI consensus forecast for the chance of each outcome for each 3-month period).

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 are also updated monthly in the Forecast Forum of CPC's Climate Diagnostics Bulletin. Additional perspectives and analysis are also available in an ENSO blog. The next ENSO Diagnostics Discussion is scheduled for 11 October 2018. 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.

Climate Prediction Center
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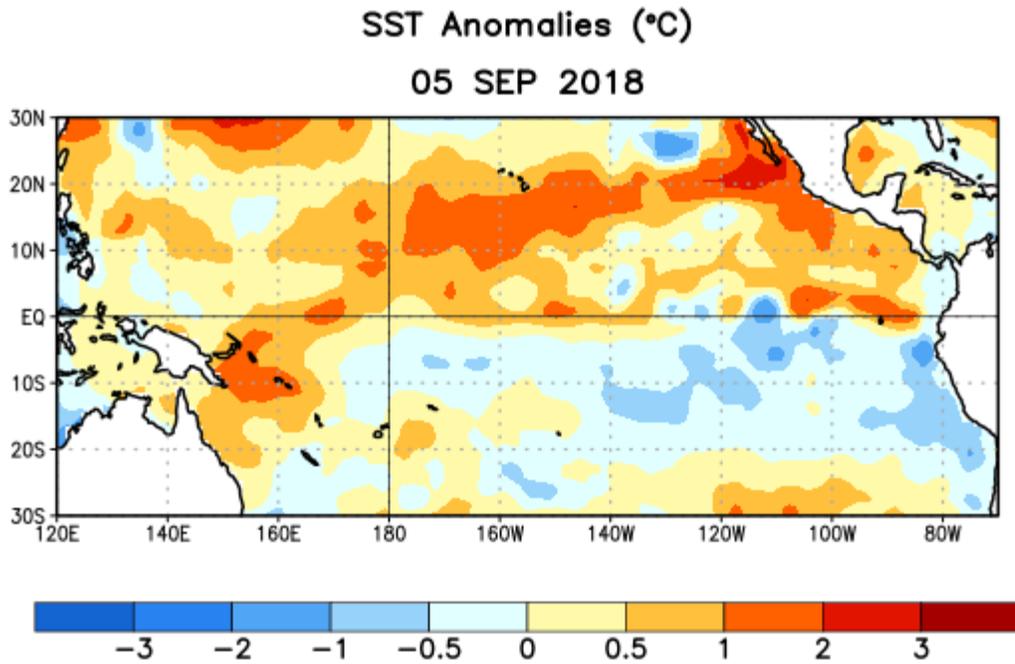College Park, MD 20740

Figure 1. Average sea surface temperature (SST) anomalies (°C) for the week centered on 5 September 2018. Anomalies are computed with respect to the 1981-2010 base period weekly means.
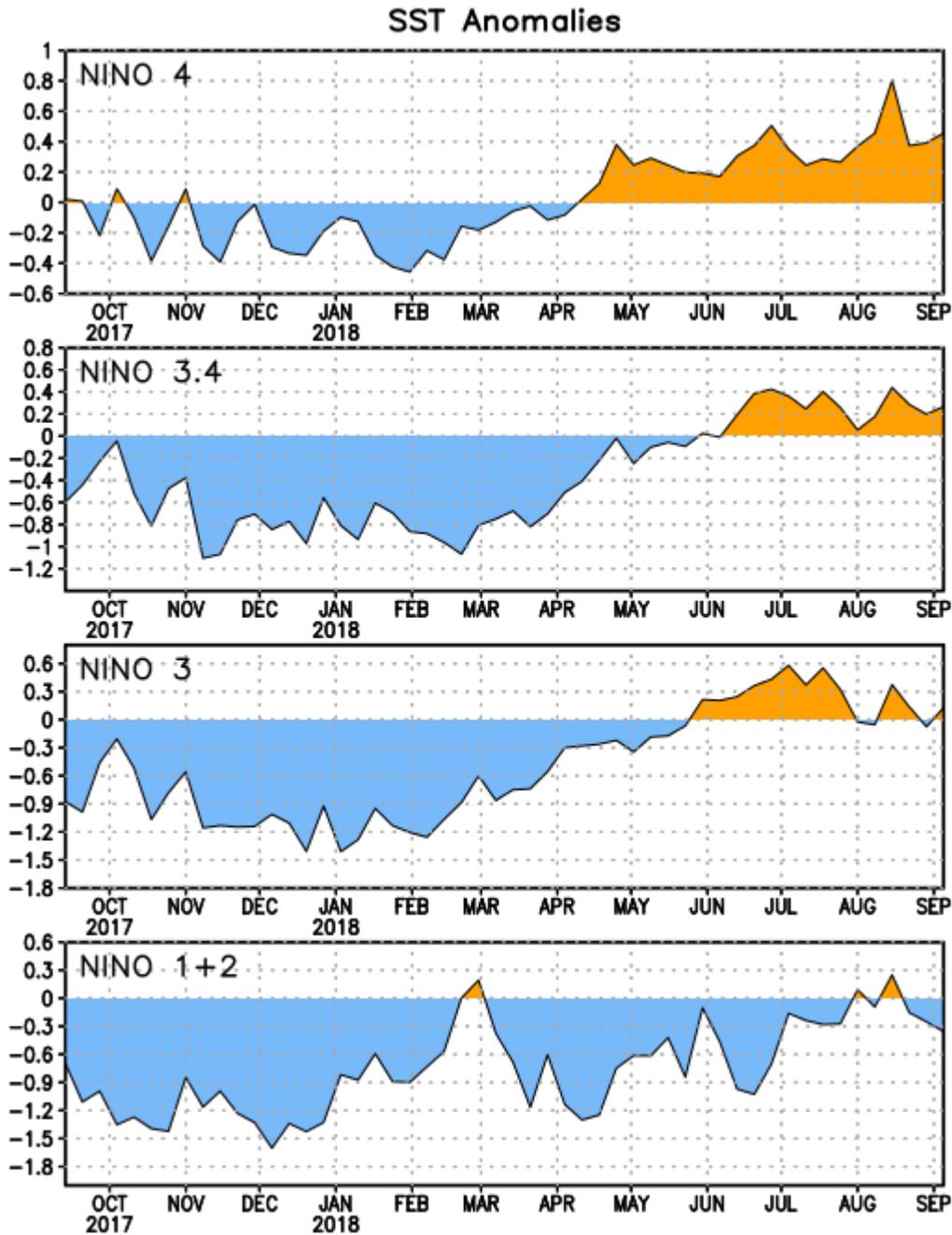
Figure 2. Time series of area-averaged sea surface temperature (SST) anomalies (°C) in the Niño regions [Niño-1+2 (0°-10°S, 90°W-80°W), Niño-3 (5°N-5°S, 150°W-90°W), Niño-3.4 (5°N-5°S, 170°W-120°W), Niño-4 (5ºN-5ºS , 150°W-160ºE)]. SST anomalies are departures from the 1981-2010 base period weekly means.

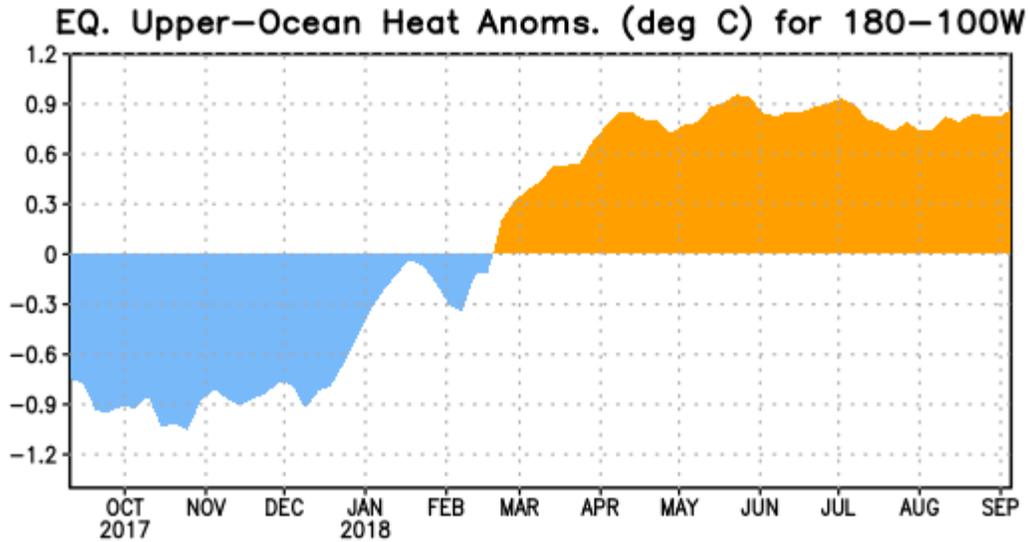Figure 3. Area-averaged upper-ocean heat content anomaly (°C) in the equatorial Pacific (5°N-5°S, 180°-100°W). The heat content anomaly is computed as the departure from the 1981-2010 base period pentad means.
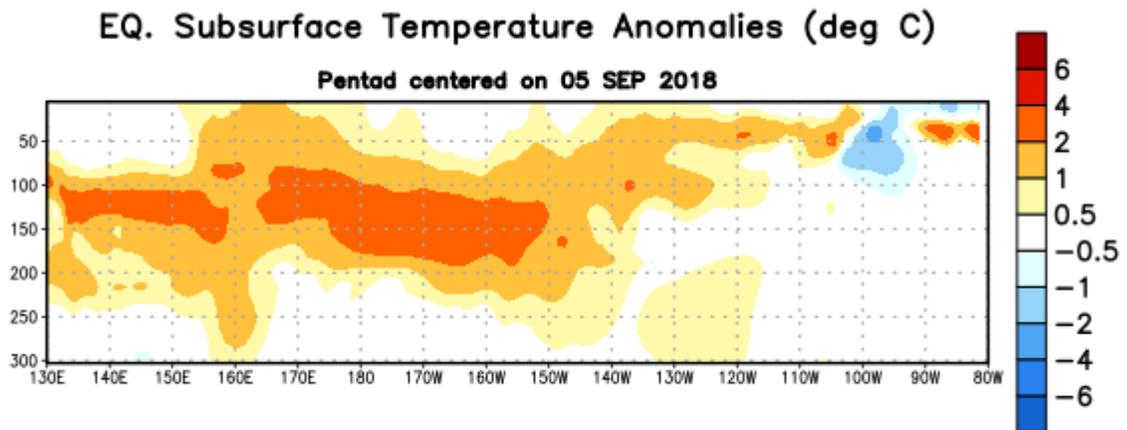

Figure 4. Depth-longitude section of equatorial Pacific upper-ocean (0-300m) temperature anomalies (°C) centered on the pentad of 5 September 2018. Anomalies are departures from the 1981-2010 base period pentad means.
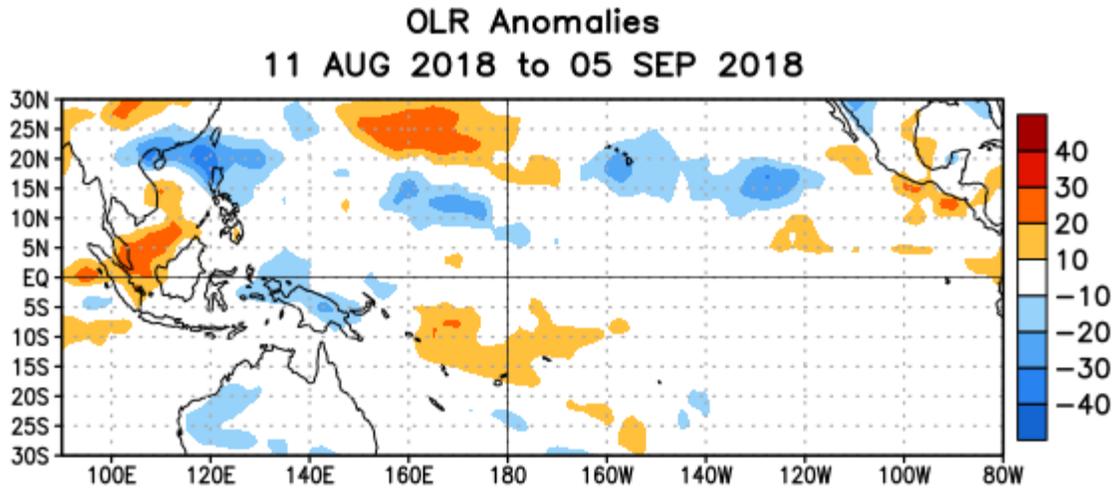
Figure 5. Average outgoing longwave radiation (OLR) anomalies (W/m^2) for the period 11 August – 5 September 2018. OLR anomalies are computed as departures from the 1981-2010 base period pentad means.
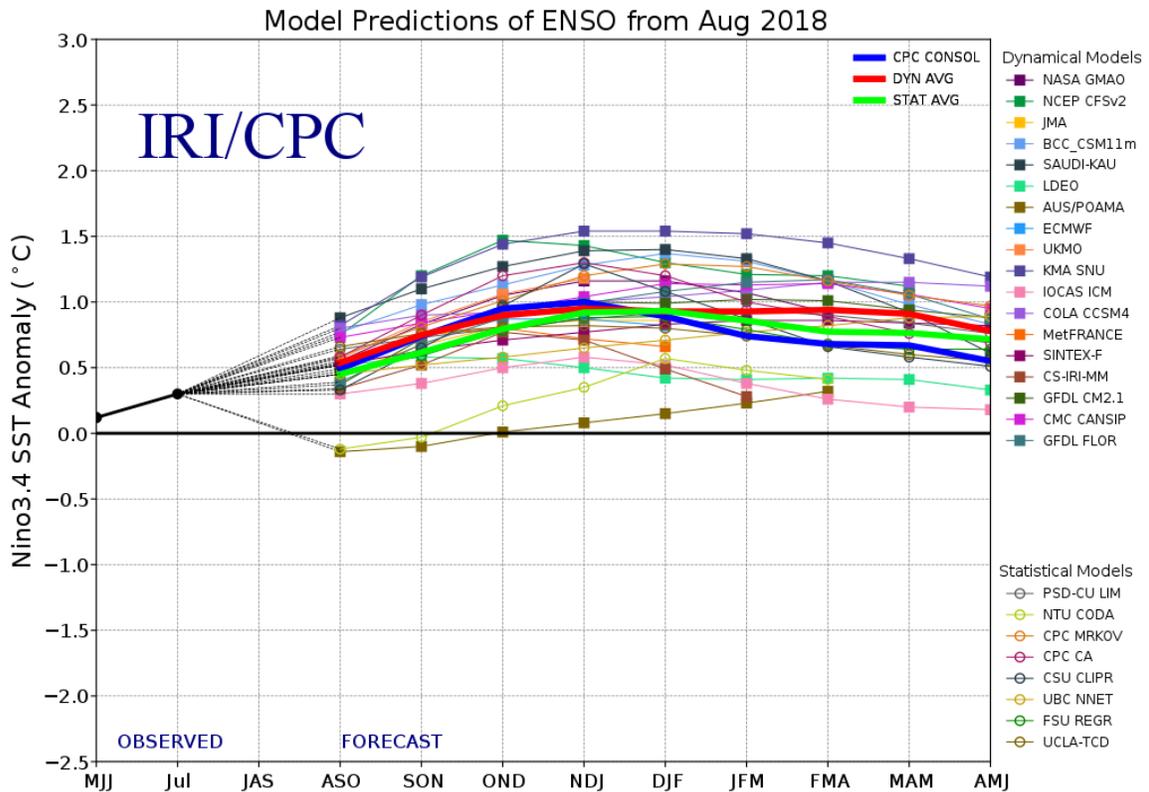

Figure 6. Forecasts of sea surface temperature (SST) anomalies for the Niño 3.4 region (5°N-5°S, 120°W-170°W). Figure updated 20 August 2018.