

EL NIÑO/SOUTHERN OSCILLATION (ENSO) DIAGNOSTIC DISCUSSION

issued by

CLIMATE PREDICTION CENTER/NCEP/NWS

8 August 2024

ENSO Alert System Status: [La Niña Watch](#)

Synopsis: ENSO-neutral is expected to continue for the next several months, with La Niña favored to emerge during September-November (66% chance) and persist through the Northern Hemisphere winter 2024-25 (74% chance during November-January).

ENSO-neutral continued during July 2024, with near-average sea surface temperatures (SSTs) observed across most of the equatorial Pacific Ocean (Fig. 1). In the past week, except for the Niño-4 index (+0.3°C), the other Niño region indices were slightly negative (Fig. 2). Below-average subsurface temperatures strengthened during the past month (area-averaged index in Fig. 3) associated with the expansion of negative anomalies along the thermocline (Fig. 4). Low-level wind anomalies were easterly over the east-central and eastern Pacific, and upper-level winds were westerly over the eastern Pacific. Convection was near average around Indonesia and the Date Line (Fig. 5). Collectively, the coupled ocean-atmosphere system reflected ENSO-neutral.

The IRI plume indicates that Niño-3.4 is most likely to be below La Niña thresholds for four overlapping seasons, from September-November 2024 through December 2024 - February 2025 (Fig. 6). Based on updated guidance and recent observations, the forecast team predicts nearly equal chances for ENSO-neutral and La Niña in August-October 2024, with higher odds for La Niña in September-November. Although the rate of SST cooling has been slower than previously anticipated, below-average subsurface temperatures and low-level easterly wind anomalies remain conducive to La Niña development in the coming months. In summary, ENSO-neutral is expected to continue for the next several months, with La Niña favored to emerge during September-November (66% chance) and persist through the Northern Hemisphere winter 2024-25 (74% chance during November-January; Fig. 7).

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 website ([El Niño/La Niña Current Conditions and Expert Discussions](#)). Additional perspectives and analyses are also available in an [ENSO blog](#). A probabilistic strength forecast is [available here](#). The next ENSO Diagnostics Discussion is scheduled for 12 September 2024. To receive an e-mail notification when the monthly ENSO Diagnostic Discussions are released, please send an e-mail message to: ncep.list.ens0-update@noaa.gov.

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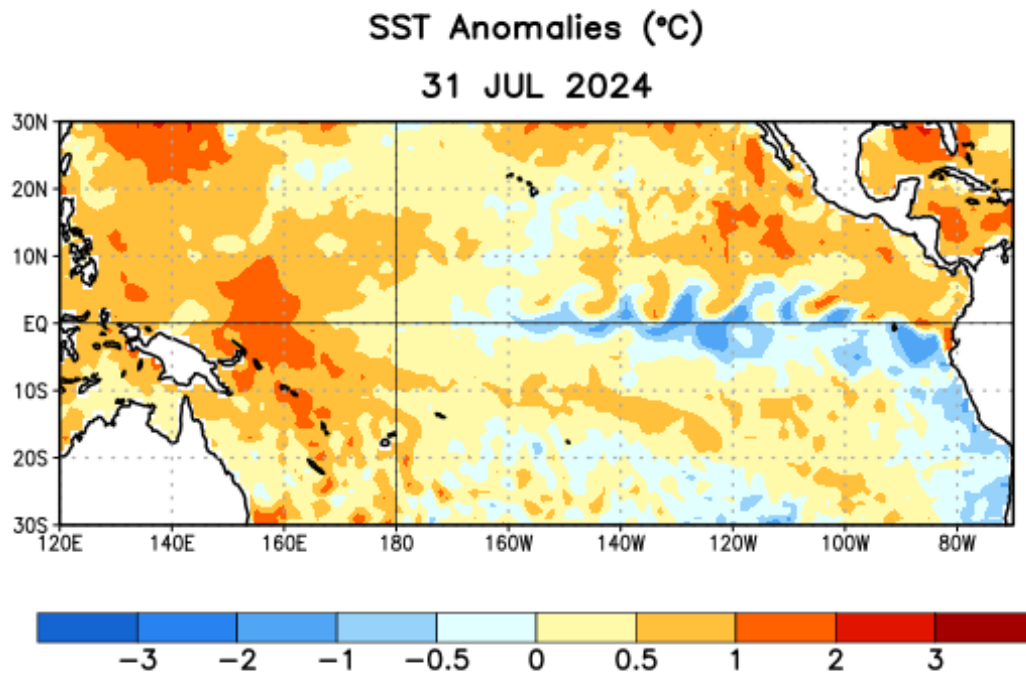


Figure 1. Average sea surface temperature (SST) anomalies (°C) for the week centered on 31 July 2024. Anomalies are computed with respect to the 1991-2020 base period weekly means.

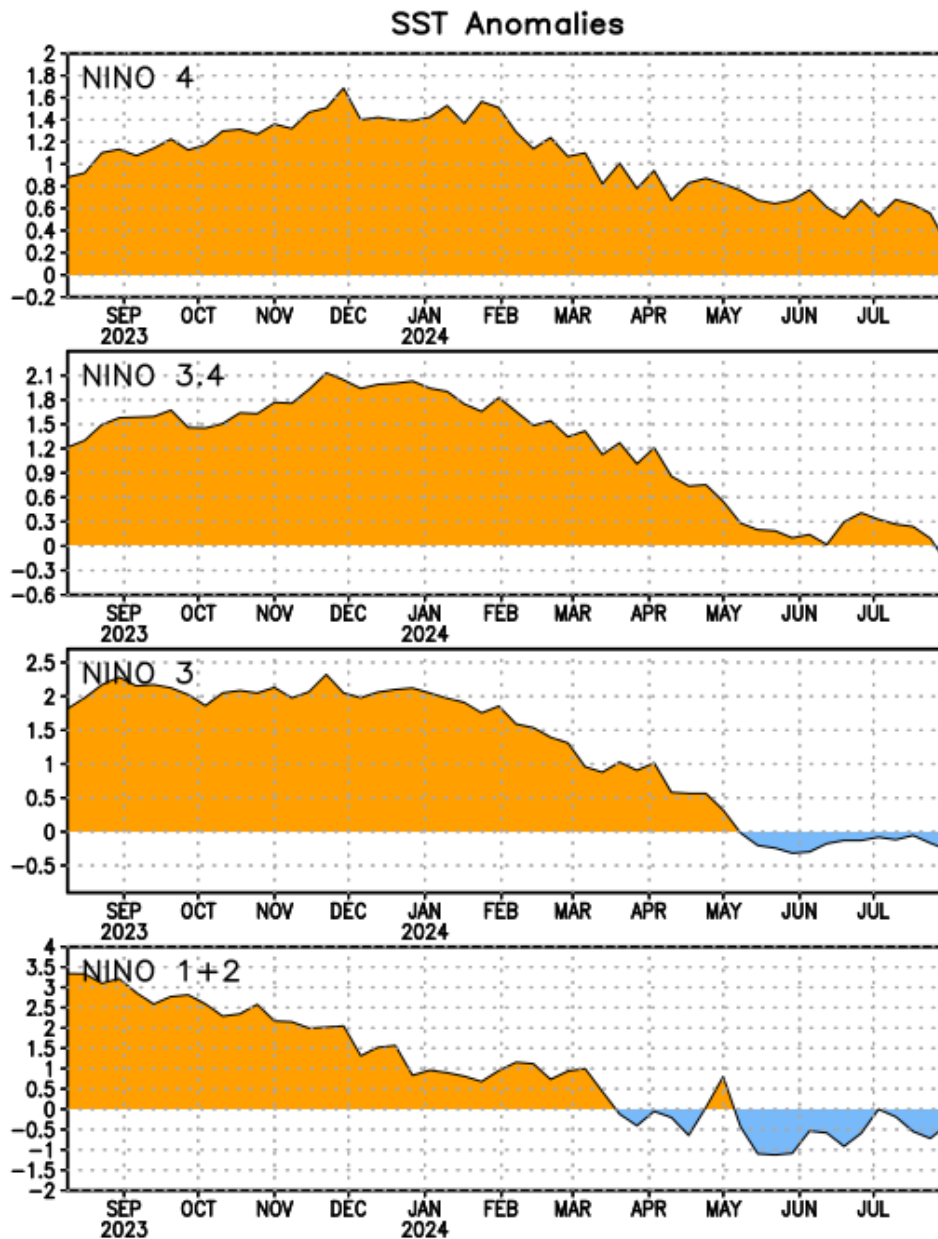


Figure 2. Time series of area-averaged sea surface temperature (SST) anomalies ($^{\circ}\text{C}$) in the Niño regions [Niño-1+2 (0° - 10°S , 90°W - 80°W), Niño-3 (5°N - 5°S , 150°W - 90°W), Niño-3.4 (5°N - 5°S , 170°W - 120°W), Niño-4 (5°N - 5°S , 150°W - 160°E)]. SST anomalies are departures from the 1991-2020 base period weekly means.

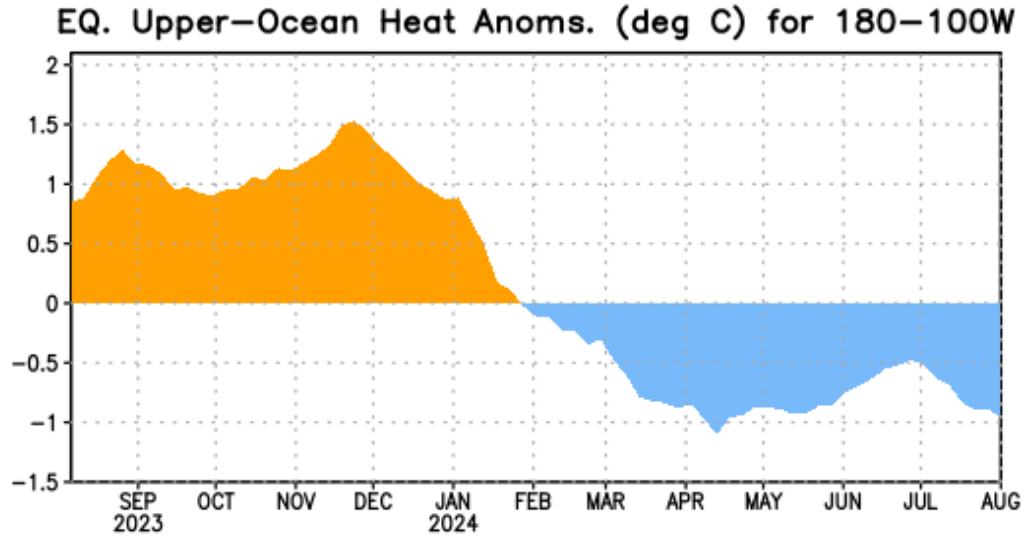


Figure 3. Area-averaged upper-ocean (0-300m) heat content anomaly ($^{\circ}\text{C}$) in the equatorial Pacific (5°N - 5°S , 180° - 100°W). The heat content anomaly is computed as the departure from the 1991-2020 base period pentad means.

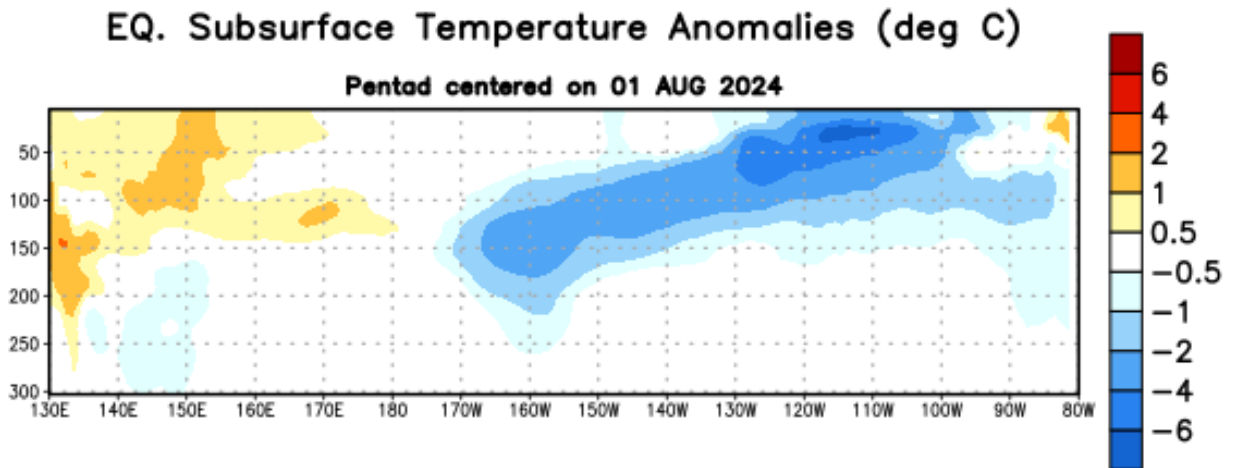


Figure 4. Depth-longitude section of equatorial Pacific upper-ocean (0-300m) temperature anomalies ($^{\circ}\text{C}$) centered on the pentad of 1 August 2024. Anomalies are departures from the 1991-2020 base period pentad means.

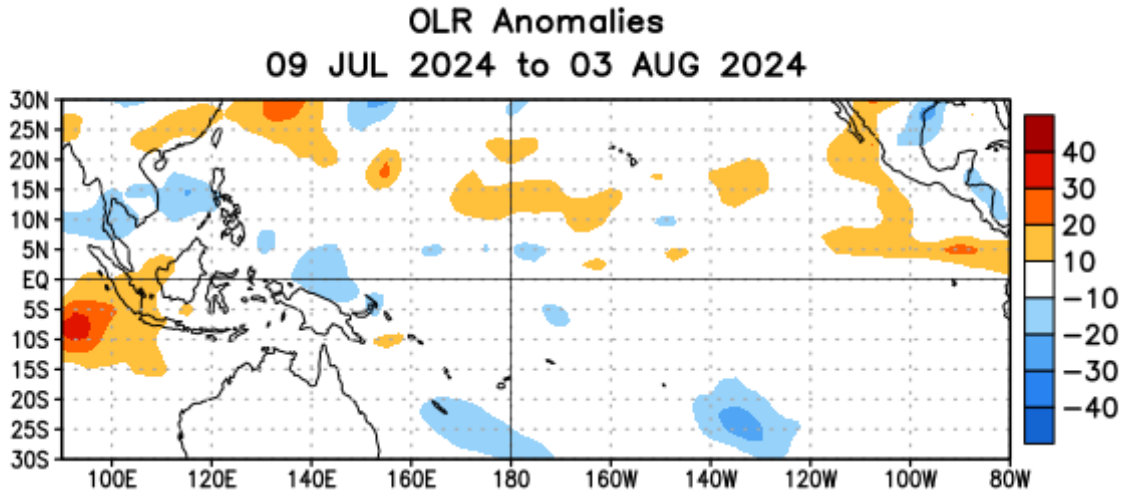


Figure 5. Average outgoing longwave radiation (OLR) anomalies (W/m^2) for the period 9 July – 3 August 2024. OLR anomalies are computed as departures from the 1991-2020 base period pentad means.

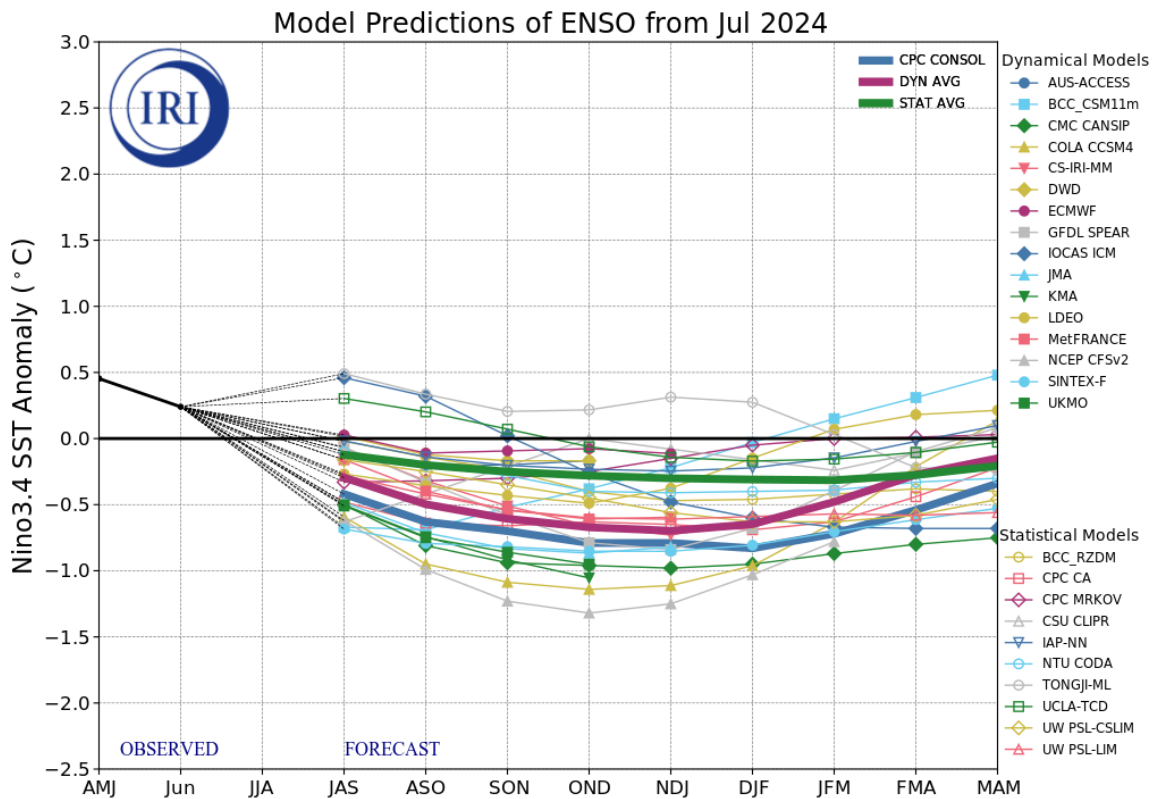


Figure 6. Forecasts of sea surface temperature (SST) anomalies for the Niño 3.4 region (5°N - 5°S , 120°W - 170°W). Figure updated 19 July 2024 by the International Research Institute (IRI) for Climate and Society.

Official NOAA CPC ENSO Probabilities (issued August 2024)

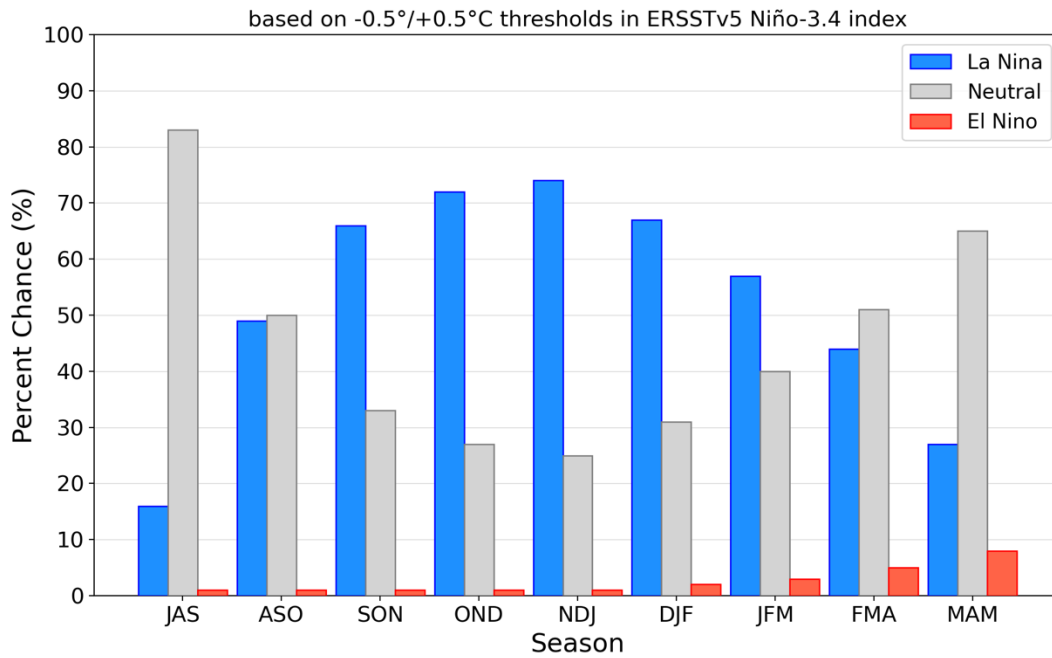


Figure 7. Official ENSO probabilities for the Niño 3.4 sea surface temperature index (5°N - 5°S , 120°W - 170°W). Figure updated 8 August 2024.