

EL NIÑO/SOUTHERN OSCILLATION (ENSO) DIAGNOSTIC DISCUSSION

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11 July 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 August-October (70% chance) and persist into the Northern Hemisphere winter 2024-25 (79% chance during November-January).

ENSO-neutral continued this past month, indicated in the mostly near average sea surface temperatures (SSTs) across the east-central and eastern equatorial Pacific Ocean (Fig. 1). The most recent weekly Niño-3.4 index was $+0.3^{\circ}\text{C}$, while SST anomalies remained cooler in the eastern Niño-3 region (-0.1°C) and warmer in the western Niño-4 region ($+0.5^{\circ}\text{C}$; Fig. 2). Below-average subsurface temperatures weakened during the past month (area-averaged index in Fig. 3), but negative anomalies still dominated the eastern half of the Pacific (Fig. 4). Low-level wind anomalies were easterly over the western equatorial 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.

Compared to the previous month, the most recent IRI plume delayed the emergence of La Niña to September-November 2024, with La Niña then persisting through the Northern Hemisphere winter (Fig. 6). The forecast team is also favoring a delayed development of La Niña this month, but is anticipating the transition to occur earlier (August-October). This is, in part, supported by the continuation of below-average subsurface ocean temperatures and near-term forecasts suggesting a resurgence of easterly wind anomalies in July. In summary, ENSO-neutral is expected to continue for the next several months, with La Niña favored to emerge during August-October (70% chance) and persist into the Northern Hemisphere winter 2024-25 (79% 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 8 August 2024. 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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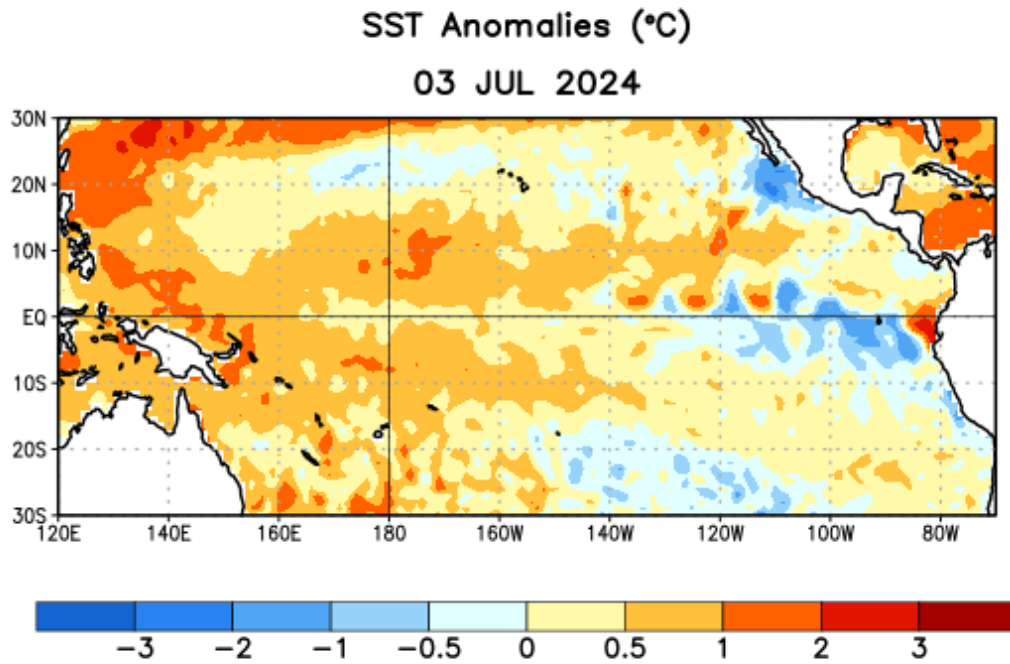


Figure 1. Average sea surface temperature (SST) anomalies (°C) for the week centered on 3 July 2024. Anomalies are computed with respect to the 1991-2020 base period weekly means.

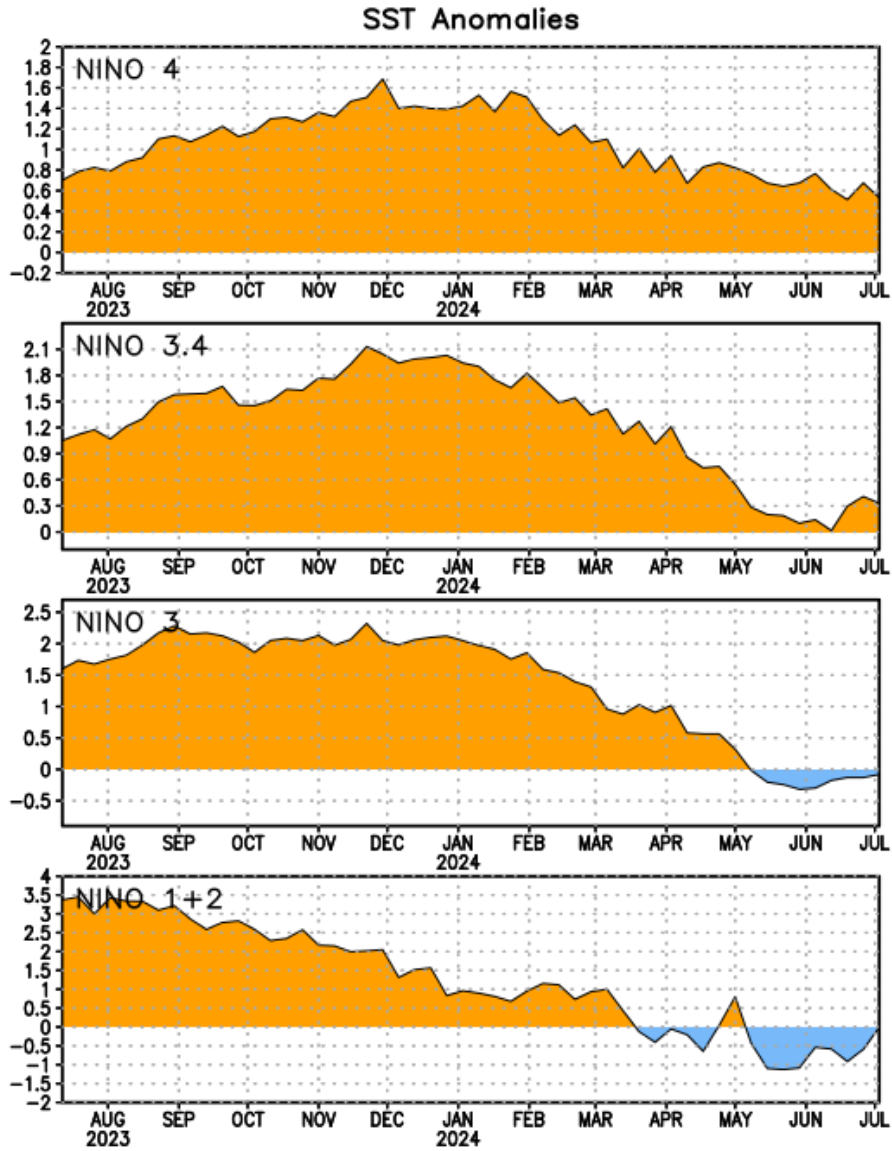


Figure 2. Time series of area-averaged sea surface temperature (SST) anomalies ($^{\circ}\text{C}$) in the Niño regions [Niño-1+2 (0°N - 10°S , 90°W - 80°W), Niño-3 (5°N - 5°S , 150°W - 90°W), Niño-3.4 (5°N - 5°S , 170°W - 120°W), Niño-4 (5°N - 5°S , 150°W - 160°E)]. SST anomalies are departures from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

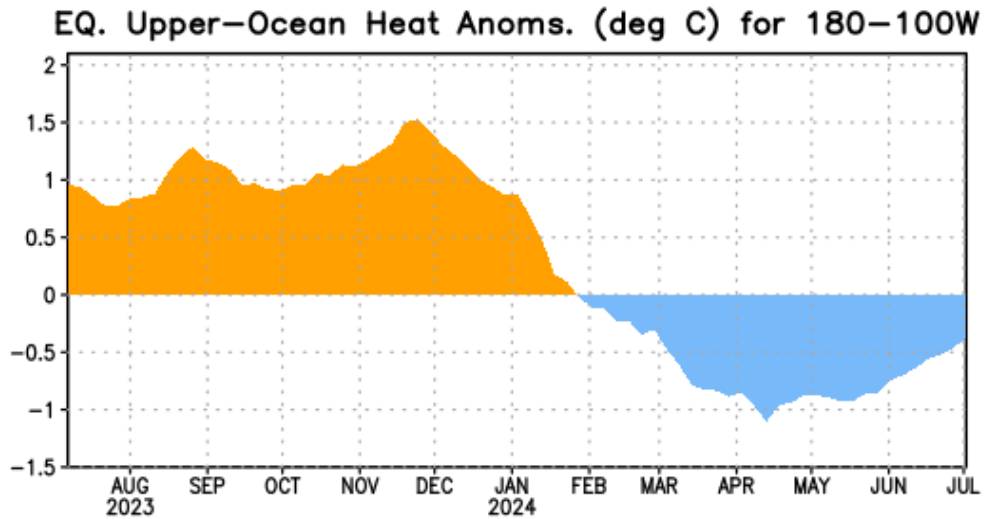


Figure 3. Area-averaged upper-ocean heat content anomaly ($^{\circ}\text{C}$) in the equatorial Pacific (5°N - 5°S , 180° - 100°W). The heat content anomaly is computed as the departure from the 1991-2020 base period pentad means.

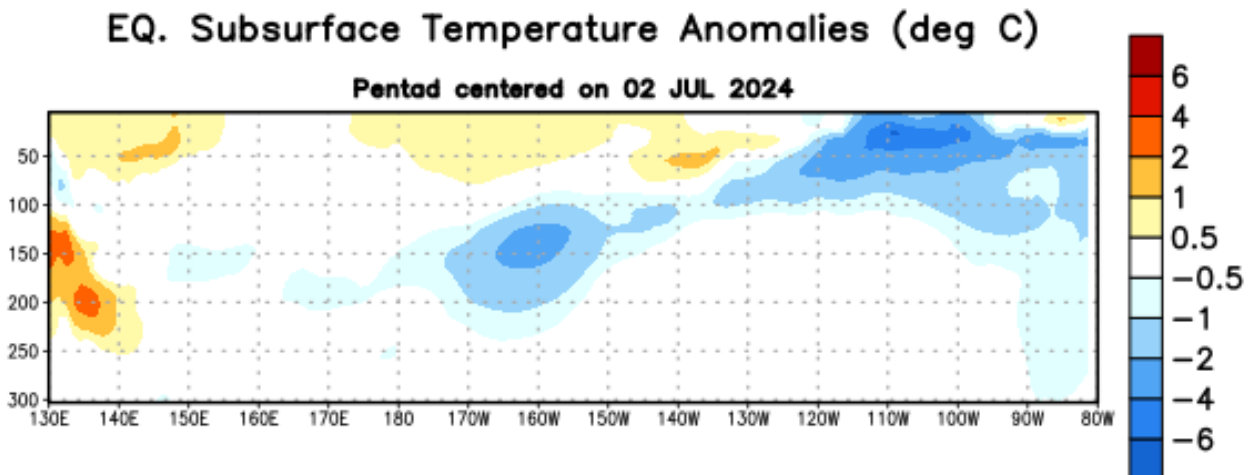


Figure 4. Depth-longitude section of equatorial Pacific upper-ocean (0-300m) temperature anomalies ($^{\circ}\text{C}$) centered on the pentad of 2 July 2024. Anomalies are departures from the 1991-2020 base period pentad means.

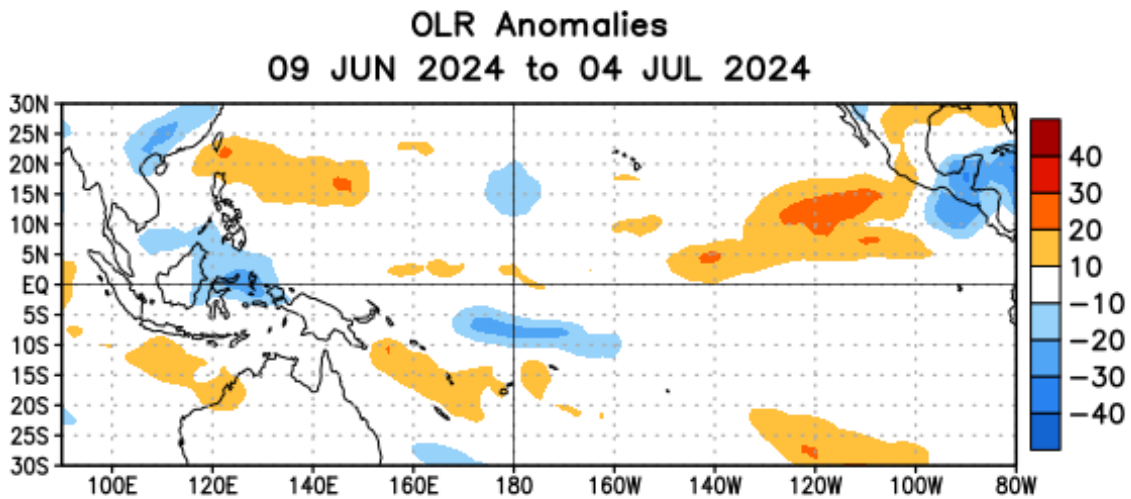


Figure 5. Average outgoing longwave radiation (OLR) anomalies (W/m^2) for the period 9 June–4 July 2024. OLR anomalies are computed as departures from the 1991–2020 base period pentad means.

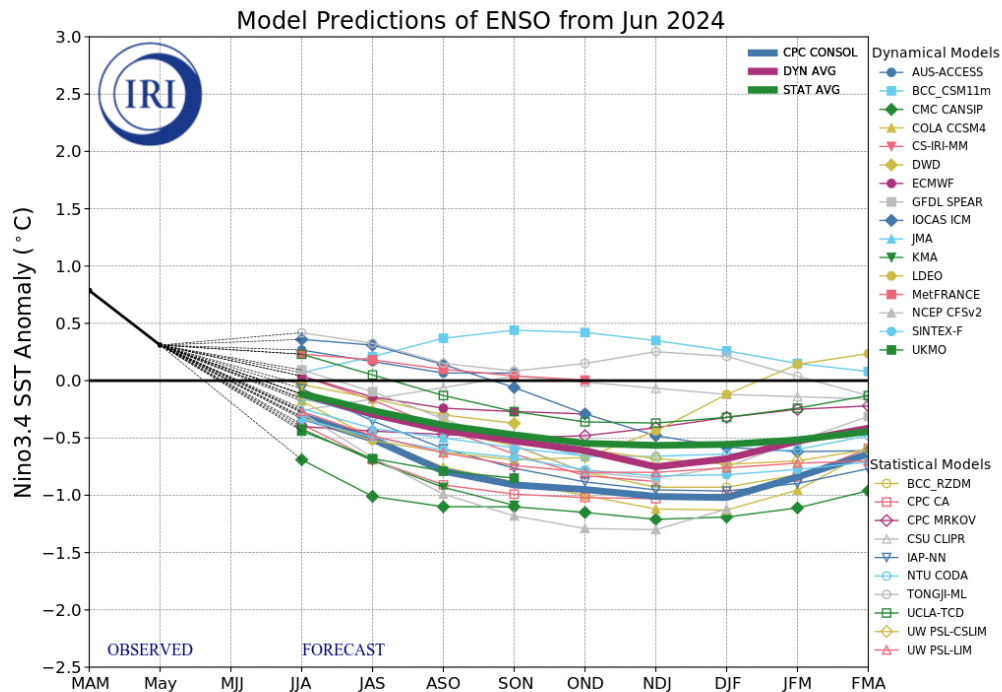


Figure 6. Forecasts of sea surface temperature (SST) anomalies for the Niño 3.4 region (5°N – 5°S , 120°W – 170°W). Figure updated 20 June 2024 by the International Research Institute (IRI) for Climate and Society.

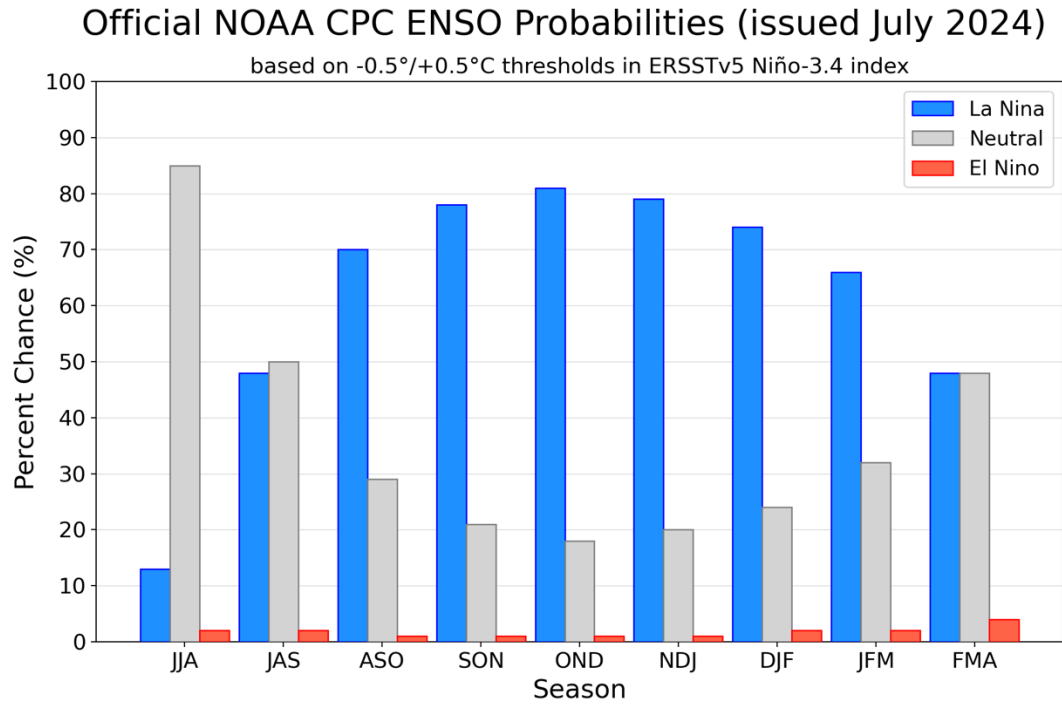


Figure 7. Official ENSO probabilities for the Niño 3.4 sea surface temperature index (5°N - 5°S , 120°W - 170°W). Figure updated 11 July 2024.