

EL NIÑO/SOUTHERN OSCILLATION (ENSO) DIAGNOSTIC DISCUSSION

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CLIMATE PREDICTION CENTER/NCEP/NWS

14 November 2024

ENSO Alert System Status: **La Niña Watch**

Synopsis: La Niña is most likely to emerge in October-December 2024 (57% chance) and is expected to persist through January-March 2025.

Over the past month, ENSO-neutral continued, as evidenced by overall near-average sea surface temperatures (SSTs) observed across the central and eastern equatorial Pacific Ocean (Fig. 1). Similar to last month, the latest weekly Niño indices ranged from $+0.2^{\circ}\text{C}$ (Niño-4) to -0.3°C (Niño-3.4; Fig. 2). Below-average subsurface temperatures persisted (Fig. 3) across the east-central and eastern equatorial Pacific Ocean (Fig. 4). For the monthly average, low-level wind anomalies were easterly over a small region of the east-central equatorial Pacific, and upper-level wind anomalies were near average. Convection was suppressed over the Date Line and was weakly enhanced over eastern Indonesia (Fig. 5). The traditional and equatorial Southern Oscillation indices were positive. Collectively, the coupled ocean-atmosphere system reflected ENSO-neutral.

The IRI plume predicts a weak and a short duration La Niña, as indicated by the Niño-3.4 index values less than -0.5°C (Fig. 6). The latest North American Multi-Model Ensemble (NMME) forecasts are cooler than the IRI plume and predict a weak La Niña. Due to this guidance and La Niña-like atmospheric circulation anomalies over the tropics, the team still favors onset of La Niña, but it is likely to remain weak and have shorter duration than other historical episodes. A weak La Niña would be less likely to result in conventional winter impacts, though predictable signals could still influence the forecast guidance (e.g., [CPC's seasonal outlooks](#)). In summary, La Niña is most likely to emerge in October-December 2024 (57% chance) and is expected to persist through January-March 2025 (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 December 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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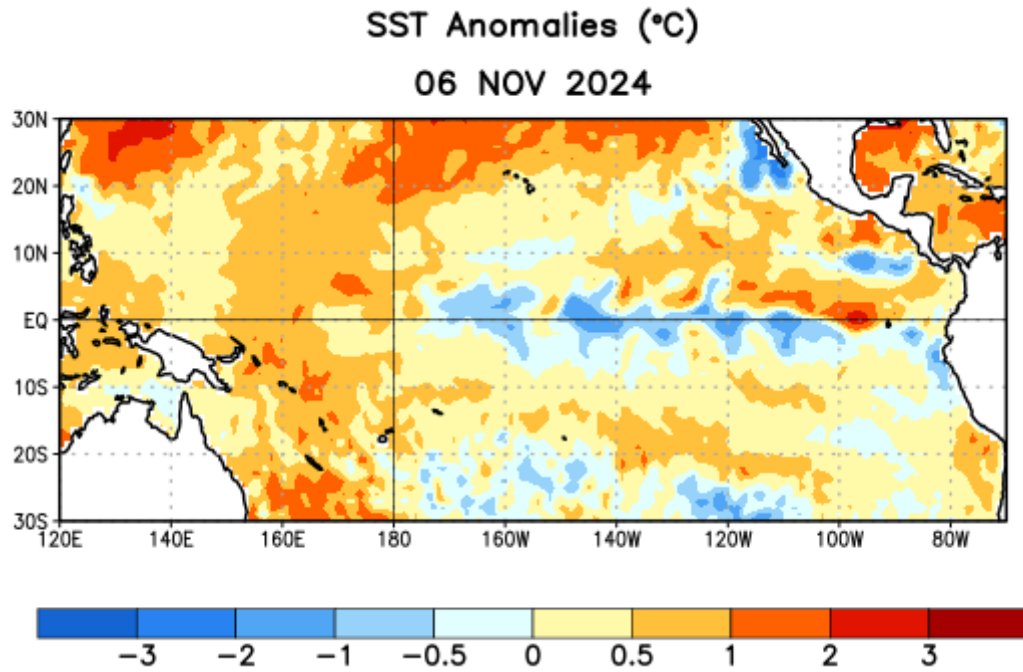


Figure 1. Average sea surface temperature (SST) anomalies (°C) for the week centered on 6 November 2024. Anomalies are computed with respect to the 1991-2020 base period weekly means.

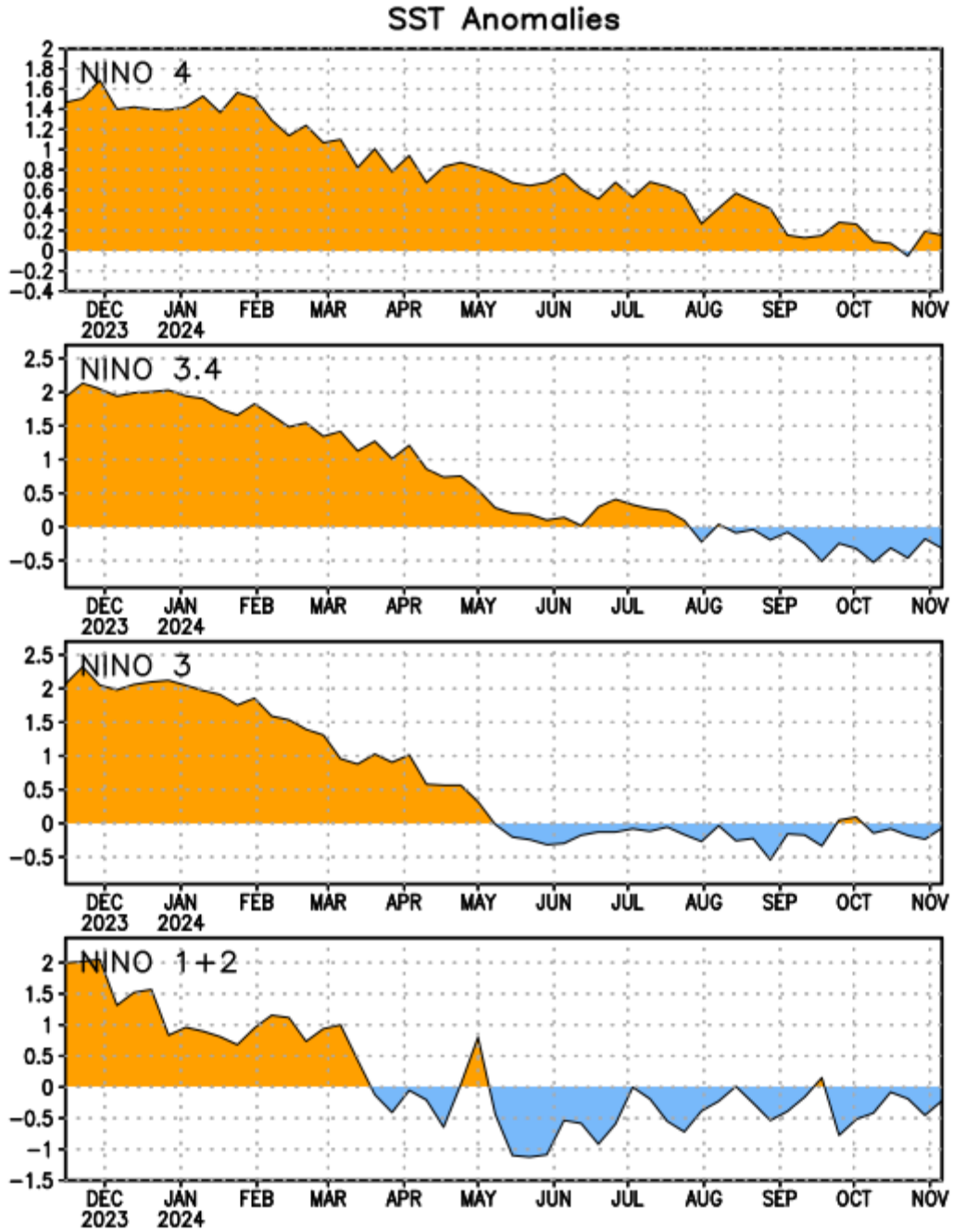


Figure 2. Time series of area-averaged sea surface temperature (SST) anomalies ($^{\circ}\text{C}$) in the Niño regions [Niño-1+2 (0° - 10°S , 90°W - 80°W), Niño-3 (5°N - 5°S , 150°W - 90°W), Niño-3.4 (5°N - 5°S , 170°W - 120°W), Niño-4 (5°N - 5°S , 150°W - 160°E)]. SST anomalies are departures from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

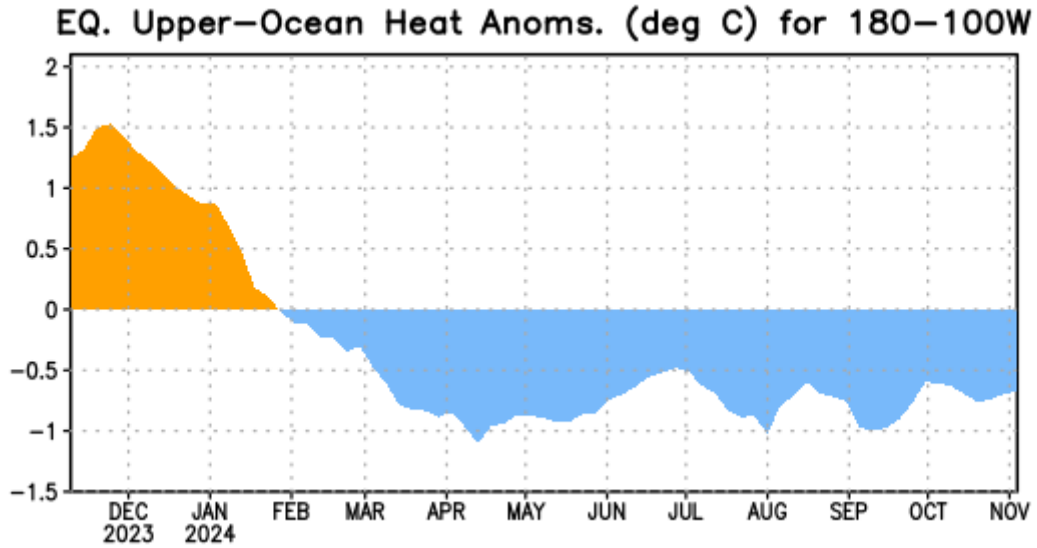


Figure 3. Area-averaged upper-ocean heat content anomaly ($^{\circ}\text{C}$) in the equatorial Pacific (5°N - 5°S , 180° - 100°W). The heat content anomaly is computed as the departure from the 1991-2020 base period pentad means.

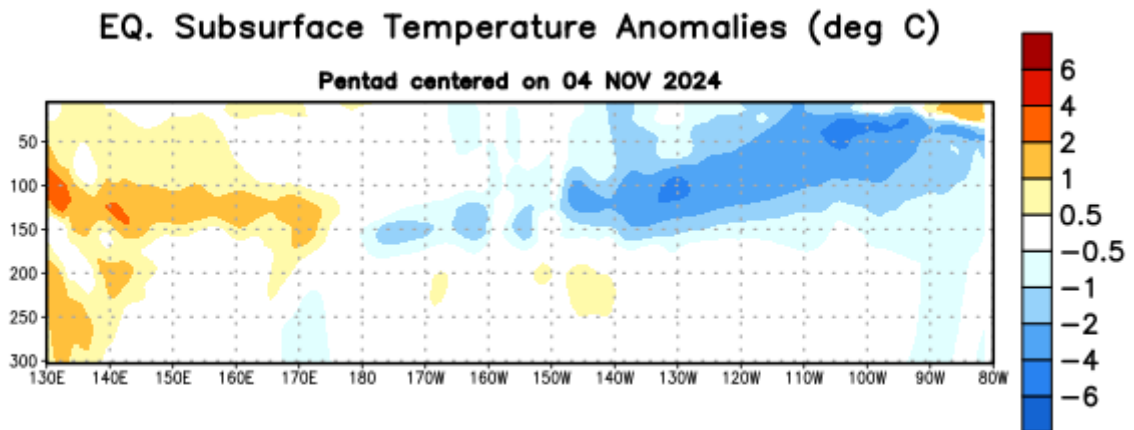


Figure 4. Depth-longitude section of equatorial Pacific upper-ocean (0-300m) temperature anomalies ($^{\circ}\text{C}$) centered on the pentad of 4 November 2024. Anomalies are departures from the 1991-2020 base period pentad means.

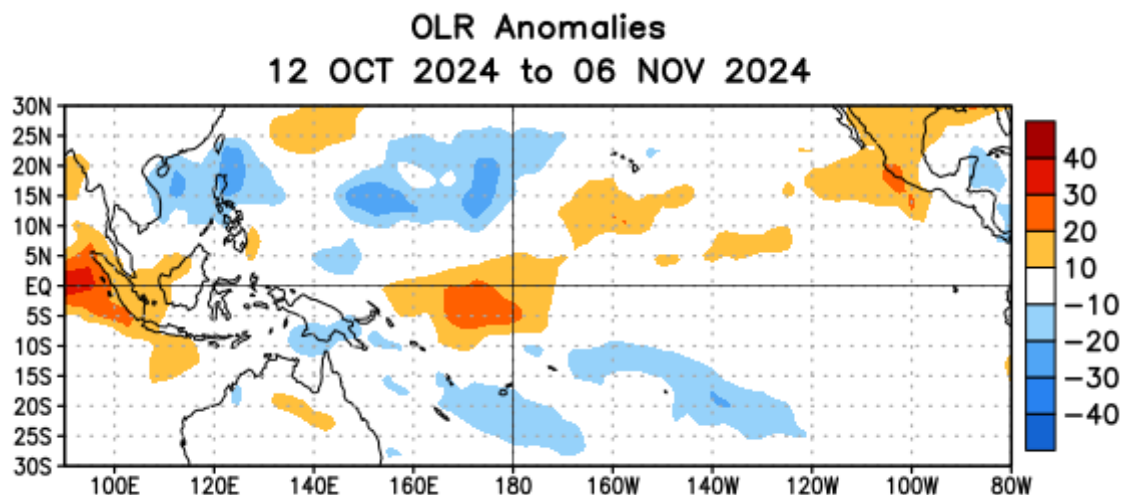


Figure 5. Average outgoing longwave radiation (OLR) anomalies (W/m^2) for the period 12 October – 6 November 2024. OLR anomalies are computed as departures from the 1991–2020 base period pentad means.

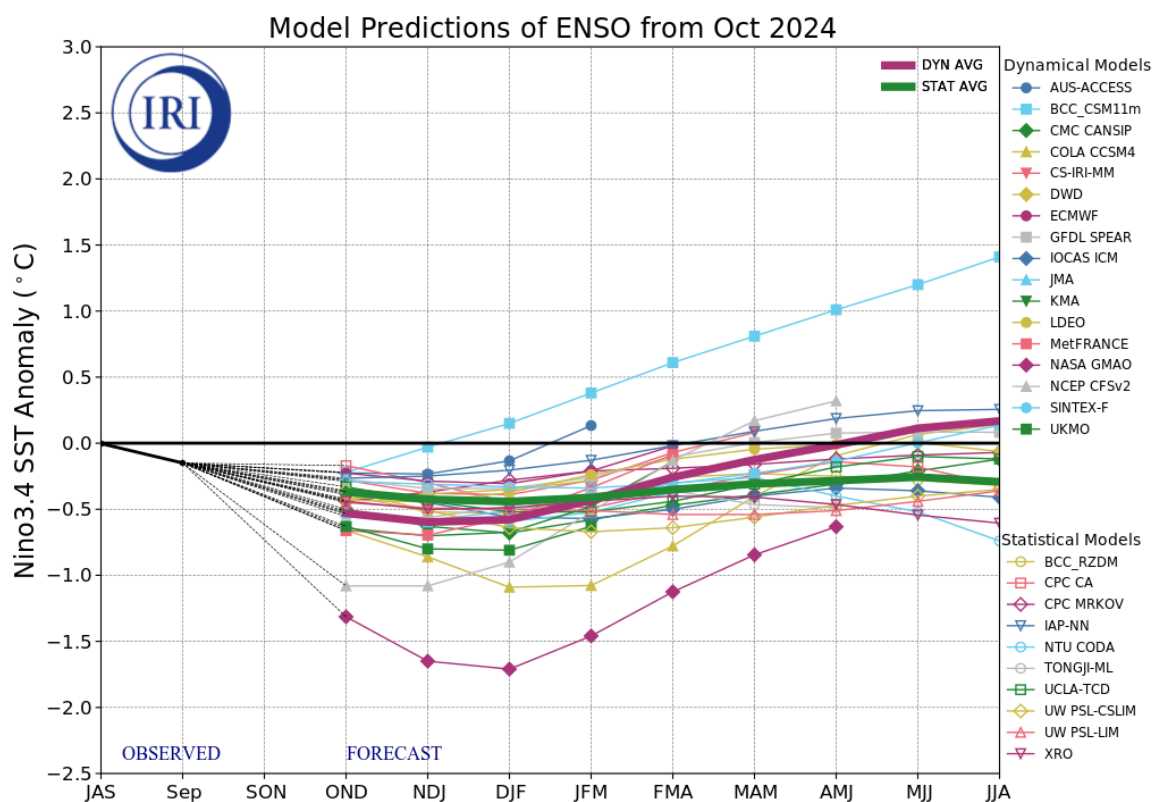


Figure 6. Forecasts of sea surface temperature (SST) anomalies for the Niño 3.4 region (5°N – 5°S , 120°W – 170°W). Figure updated 18 October 2024 by the International Research Institute (IRI) for Climate and Society.

Official NOAA CPC ENSO Probabilities (issued November 2024)

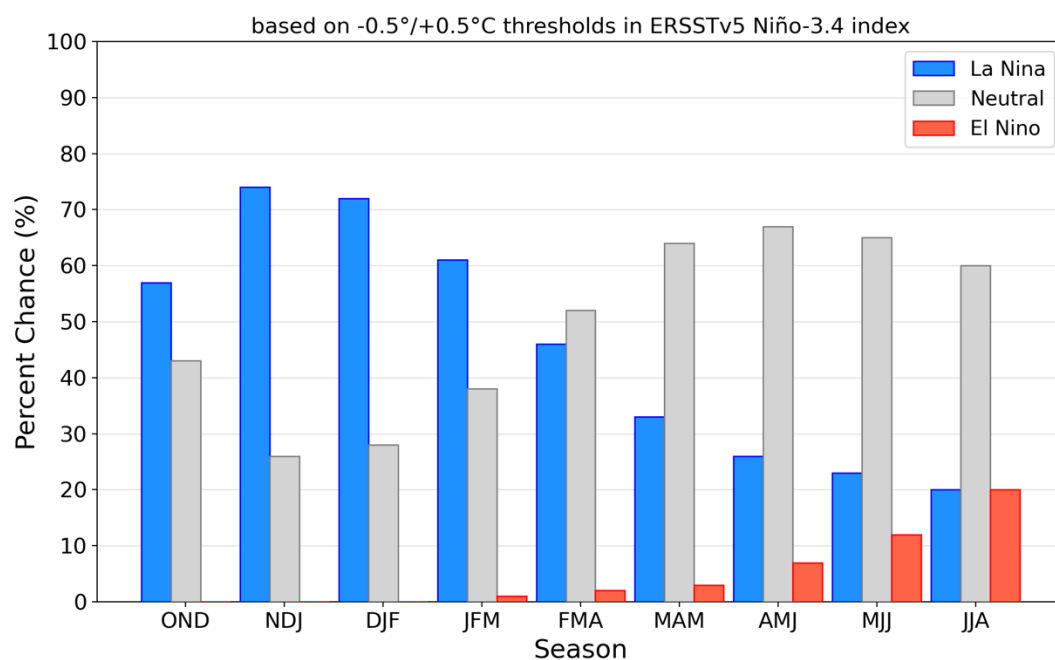


Figure 7. Official ENSO probabilities for the Niño 3.4 sea surface temperature index (5°N - 5°S , 120°W - 170°W). Figure updated 14 November 2024.