

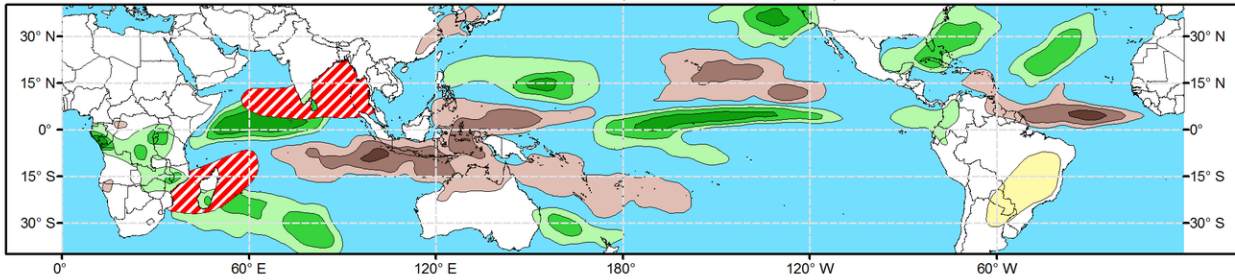


Global Tropics Hazards Outlook

Climate Prediction Center

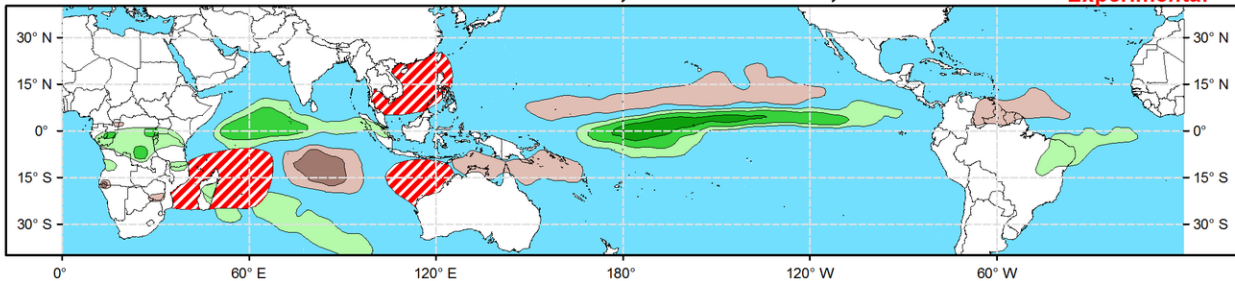


Week 2 - Valid: Dec 27, 2023 - Jan 02, 2024



Week 3 - Valid: Jan 03, 2024 - Jan 09, 2024

**** Experimental ****



Tropical Cyclone (TC) Formation Probability

 >20% >40% >60%
 Tropical Depression (TD) or greater strength

Above-Average Rainfall Probability

 >50% >65% >80%
 Weekly total rainfall in the Upper third of the historical range

Below-Average Rainfall Probability

 >50% >65% >80%
 Weekly total rainfall in the Lower third of the historical range

Above-Average Temperatures Probability

 >50% >65% >80%
 7-day max temperatures in the Upper third of the historical range

Below-Average Temperatures Probability

 >50% >65% >80%
 7-day min temperatures in the Lower third of the historical range

Issued: 12/19/2023
Forecaster: Allgood

This product is updated once per week and targets broad scale conditions integrated over a 7-day period for US interests only. Consult your local responsible forecast agency.

The Madden-Julian Oscillation (MJO) remains active, with the CPC upper-level velocity potential index depicting a robust signal crossing the Pacific. Recent zonal wind and outgoing longwave radiation (OLR) observations are broadly consistent with MJO activity, though easterly anomalies aloft across the equatorial Pacific are more consistent with the ongoing El Nino response. The MJO is currently constructively interfering with the ENSO signal, which is resulting in the development of a new strong westerly wind burst (WWB) centered across the equator near the Date Line. The WWB should help reinforce the ongoing El Nino conditions by attenuating the upwelling phase of the oceanic Kelvin wave generated by the previous strong WWB in November. Robust MJO activity persisting through a fairly strong ENSO pattern is somewhat unusual, and may be due in part to continued above-normal sea-surface temperatures (SSTs) in the West Pacific Warm Pool region despite a decrease in subsurface oceanic heat, which is allowing a strong convective response to the intraseasonal signal over the far western Pacific. Additionally, the MJO has begun to weaken the atmospheric response to the positive Indian Ocean Dipole (+IOD) regime, weakening the low-level easterlies across the central Indian Ocean and shifting the overall pattern eastward.

Dynamical model MJO index forecasts generally depict a continuation of the MJO signal over the next four weeks, with the enhanced convective phase crossing the Western Hemisphere during Week-1, the Indian Ocean during Week-2, and the Maritime Continent during Week-3. Some models bring the signal back to the West Pacific by Week-4. Based on the previously observed ability of the intraseasonal signal to remain active despite the ENSO signal and the weakening +IOD response, the MJO is favored to remain a substantial influencer of the overall tropical convective pattern in addition to the ongoing El Nino. In particular, the MJO is favored to contribute to widespread enhanced convection

across the central Indian Ocean during the outlook period, with an increased potential for tropical cyclogenesis over various Indian Ocean basins.

During the past week, Tropical Storm Jelawat formed just east of the Philippines on 17 December. The remnants of this system are currently over the South China Sea north of Borneo, and are not favored to substantially redevelop. During the Week-2 period, with the MJO favored to return to the Indian Ocean, tropical cyclone development is possible over the Indian Ocean in both hemispheres. Dynamical model forecasts show a formation potential in the vicinity of Madagascar and Le Reunion Island southwestward across the Mozambique Channel, with the potential extending into early Week-3. Tropical cyclone development is also possible across the northern Indian Ocean, most likely over the Bay of Bengal, though model forecasts also depict a low-latitude formation potential in the Arabian Sea. As the MJO progresses to the Maritime Continent during Week-3, the favorable regions for tropical cyclone development also shift eastward. Despite the ENSO-driven suppression over the Maritime Continent, dynamical model forecasts indicate that the MJO enhanced phase may promote tropical cyclone development north of Australia's Kimberley Coast. Development is also possible across the South China Sea.

Forecasts for above- and below-normal precipitation are based on anticipated impacts from ENSO and MJO, which are consistent with a skill-weighted blend of the GEFs, ECMWF, and CFS forecasts. Enhanced convection across the Indian Ocean reflects the MJO evolution as the response to the +IOD wanes. The El Nino is favored to promote an active Pacific jet across the southern tier of the CONUS, resulting in enhanced moisture across both coasts. During Week-2, periods of excessive heat may pose hazardous conditions for portions of Brazil and Argentina. For hazardous weather conditions in your area during the coming two-week period, please refer to your local NWS office, the Medium Range Hazards Forecast produced by the Weather Prediction Center, and the CPC Week-2 Hazards Outlook. Forecasts issued over Africa are made in coordination with the International Desk at CPC.