

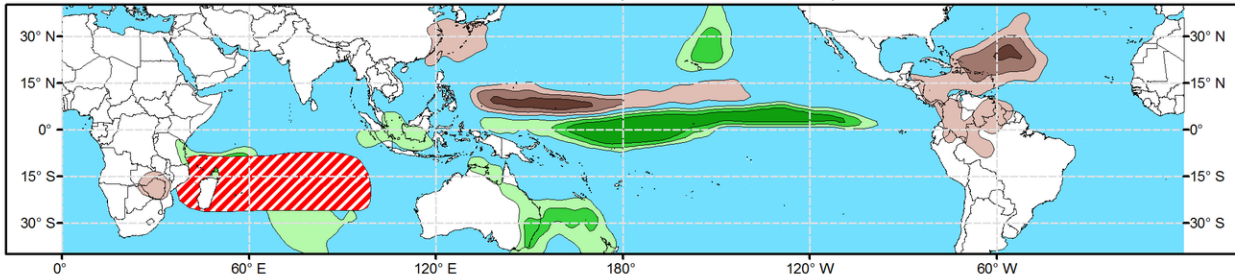


Global Tropics Hazards Outlook

Climate Prediction Center

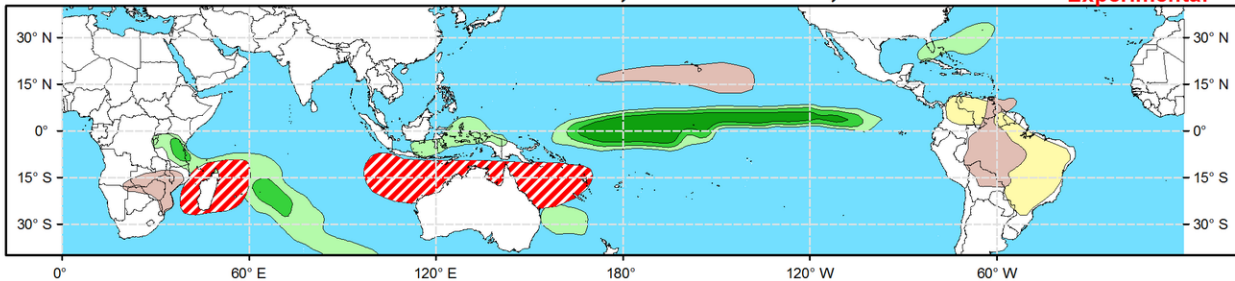


Week 2 - Valid: Jan 10, 2024 - Jan 16, 2024



Week 3 - Valid: Jan 17, 2024 - Jan 23, 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

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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 enhanced convective phase now propagating over the Indian Ocean, completing a circumnavigation of the world in approximately 40 days. The RMM-based and CPC upper-level velocity potential based indices reflect both a fairly high amplitude MJO signal and a fast eastward propagation. The 200-hPa velocity potential anomaly field continues to exhibit a coherent wave-1 pattern consistent with MJO activity, and widespread convective activity has been observed across the tropical Indian Ocean, despite the persistence of low-level easterly anomalies that are more consistent with the response to the ongoing positive phase of the Indian Ocean Dipole (+IOD). Dynamical model MJO index forecasts show a slowdown of the intraseasonal signal during Week-1, with interference consistent with Rossby wave activity promoting a sharp left turn of the RMM index towards the unit circle. It is possible that this slowdown is related to model forecasted tropical cyclone activity over the Indian Ocean basin, as well as destructive interference with the weakening +IOD and strong El Nino base states. Following this period of increased incoherence, dynamical model forecasts depict a resumption of eastward propagation, with the MJO entering the Maritime Continent during Week-2, crossing the Maritime Continent during Week-3, and reaching the West Pacific during Week-4. The GEFS solutions are much more amplified in general than the ECMWF, showing a strong MJO event reaching the West Pacific by Week-4.

One tropical cyclone formed during the past week. Tropical Storm Alvaro formed over the Mozambique Channel, making landfall over southwestern Madagascar on January 1st with maximum sustained winds of 60kt. Forecasts from the Joint Typhoon Warning Center show TS Alvaro tracking over the southwestern Indian Ocean and tracking southeastward, well south of Reunion and Mauritius. During Week-2, MJO activity over the Indian Ocean is expected to weaken the +IOD

response and produce broadly favorable conditions for tropical cyclone development across the southern Indian Ocean. A broad hazard is included in the outlook, spanning a region from the Mozambique Channel to almost 100E. Several tropical cyclones may form within this region, though there is insufficient model consistency to pinpoint higher probability regions within this envelope. As the MJO progresses eastward to the Maritime Continent during Week-3, favorability for tropical cyclogenesis drops across the south-central Indian Ocean, but increases in the vicinity of Australia. Dynamical model forecasts do not show specific regions where formation is more probable, but a broadly enhanced signal is forecast to become established. Additional tropical cyclogenesis is possible during Week-3 in the vicinity of Madagascar. Although dynamical model forecasts continue to highlight the Bay of Bengal for tropical cyclone formations, there is less consistency in recent runs, and climatology does not favor formations in that region.

Forecasts for above- and below-normal precipitation are based on an anticipated continuation of a robust El Nino response, with enhanced precipitation extending across much of the equatorial Pacific. The MJO is favored to destructively interfere with the +IOD and El Nino supported suppressed signal over the Maritime Continent, generating a period of enhanced convection. Given the continued above-normal sea surface temperatures (SSTs) across the West Pacific Warm Pool region in addition to the MJO activity, enhanced convection may extend further west than is typical during El Nino events. The Week-2 outlook depicts enhanced convection as far west as the region north of New Guinea. Elsewhere, Kona low activity may bring a period of enhanced precipitation to Hawaii during Week-2, with a return to El Nino generated drier conditions during Week-3. Areas of dryness and excessive heat are favored to persist across much of northern South America, while a highly active southern stream pattern favors enhanced precipitation for the southeastern CONUS and eastern seaboard. 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.