

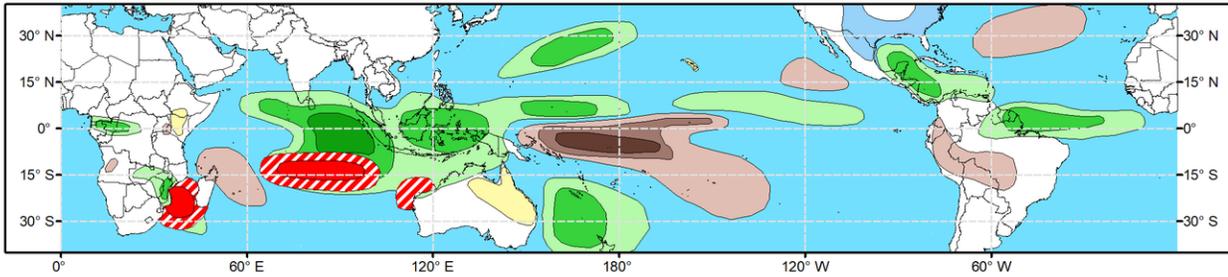


# Global Tropics Hazards Outlook

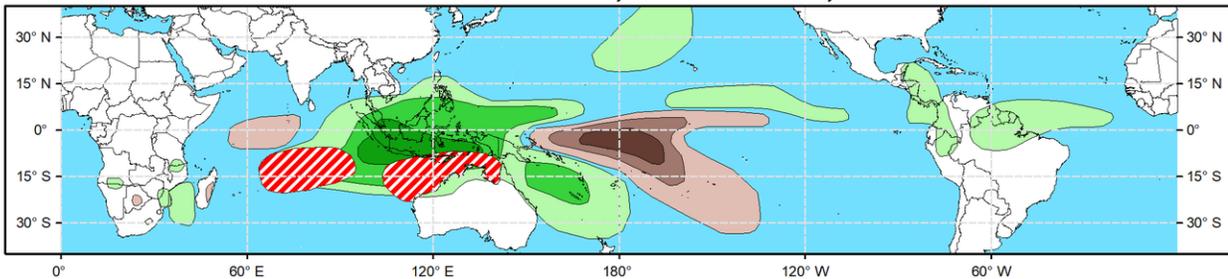
## Climate Prediction Center



**Week 2 - Valid: Jan 22, 2025 - Jan 28, 2025**



**Week 3 - Valid: Jan 29, 2025 - Feb 04, 2025**



**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: 01/14/2025**  
**Forecaster: Novella**

**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.**

After becoming incoherent by the start of 2025, RMM observations show the Madden-Julian Oscillation (MJO) sharply regaining amplitude while beginning to resume its eastward propagation during the past week. Analysis of upper-level velocity potential anomaly fields show the competing tropical modes, which had weakened the MJO earlier this month, still appear to be at play. However, the recent reorganization of subseasonal activity is evidenced by the return of a more spatially continuous area of enhanced divergence aloft from the eastern Pacific to the Prime Meridian, and based on the CFS, GEFS and ECWMF ensembles, a more canonical wave-1 pattern is favored to redevelop throughout the global tropics. RMM forecasts have been consistent in depicting this MJO reemergence, and in fact, models are now unanimous in favoring a high amplitude event that propagates from the Western Hemisphere and reaches the Maritime Continent in the coming weeks. Perhaps of greater note is the accelerated phase speed depicted in RMM space, which points to Convectively Coupled Kelvin Wave (CCKW) activity constructively interfering with the main MJO convective envelope. With the MJO propagating across the Indian Ocean and Maritime Continent later during weeks 2 and 3, any constructive interference also looks to be reinforced by the low frequency convective footprints associated with an emerging La Nina, where both the enhanced and suppressed envelopes become more in-phase with one another. Consequently, this may trigger a Westerly Wind Burst (WWB) event in the Indian Ocean, as well as initiate another trade wind surge event over the equatorial Pacific which could possibly bring stronger La Nina conditions later this winter.

Given the favored constructive interference of these tropical modes, the large-scale environment is likely to be favorable for Tropical Cyclone (TC) development in the Indian Ocean, with decreased chances for genesis in the South Pacific. While the MJO is favored to lose some amplitude as it reaches

the Maritime Continent during the week-3 timeframe, conditions may become more favorable for TC development in the western Pacific, despite a less active climatology. For the extratropics, an eastward propagating Indian Ocean and Maritime Continent MJO also historically favors a warmer response over much of the central and eastern CONUS, though this continues to be somewhat at odds with the dynamical model guidance, which instead maintain a full latitude ridge over western North America to promote the advection of Arctic air downstream through the middle of week-2. While novel, there are indications in the latest ensemble guidance of the longwave trough retrograding over North America, allowing more ridging and warming temperatures over the eastern CONUS closer towards the end of January.

Two TCs formed during the past week. After forming in the South Pacific on 1/11 near 12S/167W, TC Pita peaked at 40kts before quickly dissipating over open waters on 1/12. In the southwestern Indian Ocean, TC Dikeledi formed on 1/9 to the east of Madagascar and has tracked westward and made landfall over the Nampula province of northern Mozambique bringing locally heavy precipitation amounts during the past 24hrs. While still at Tropical Storm strength, this system has exited back into the Mozambique Channel where the Joint Typhoon Warning Center (JTWC) expects Dikeledi to gain some intensity and track southward under the steering subtropical ridge. The latest official forecast track keeps this system over open waters before eventually being absorbed by the westerlies, however parts of southern Madagascar may experience heavy precipitation and periods of high winds during the next several days.

In the wake of TC Dikeledi during week-1, models continue to favor another area of low pressure deepening in the Mozambique Channel. The ECMWF is slower with this development, compared to the GEFs, however consensus between the models and the encroaching Indian Ocean MJO supports the addition of 40% chances of TC development being posted. While probabilistic tools are not clear on individual formation areas in the south-central Indian Ocean during week-2, the westerly phase of the MJO and equatorial Kelvin activity are expected to reinforce the low frequency lower-level westerlies from 65E to 100E conducive for TC genesis. Therefore, this supports a broad area of 40% chances posted in part of the basin. Over the southeastern Indian Ocean, there is good model agreement favoring tropical low formations offshore of northwestern Australia later this week. While genesis appears most likely during late week-1, 20% chances for development are still posted to capture any delay in formation due to increased shearing favored in the model guidance. Given a lack of support in the tools and the suppressed phase of the MJO moving overhead, no TC shapes are issued over the South Pacific.

The aforementioned anomalous lower-level westerlies are favored to remain established across the equatorial Indian Ocean, supporting additional TC development during week-3. Based on extended range probabilistic tools, the greatest chances for formation exist across the south-central and south-eastern Indian Ocean where 20% chances are issued. Increased chances for genesis also exist over the Mozambique Channel, however it is unclear whether these signals are related to residual signals stemming from week-2. 20% chances for development were also considered for the western Pacific based on the development of lower-level westerlies tied to the MJO, however tool signals remain too marginal to include any TC related shapes in the region.

The above and below normal precipitation outlooks for weeks 2 and 3 are based on the anticipated continuation of the La Nina base state, anticipated TC tracks, phase 2-4 MJO composites for Dec-Feb, as well as a historical skill weighted blend of GEFs, CFS, and ECMWF ensemble forecast systems. For the CONUS, below-normal temperatures are favored for much of the eastern two thirds of the country associated with the aforementioned full latitude ridge favored over Western North America. Conversely, above-normal temperatures and excessive

heat conditions are possible over parts of equatorial Africa, as well as over portions of Australia where daytime maximum temperature may exceed 105 degrees F (40 degrees C) during week-2. For hazardous weather concerns in your area during the next two weeks, please refer to your local NWS office, the Medium Range Hazards Forecast produced by the Weather Prediction Center, and the Week-2 Hazards Outlook from CPC. Forecasts issued over Africa are made in coordination with the International Desk at CPC.