

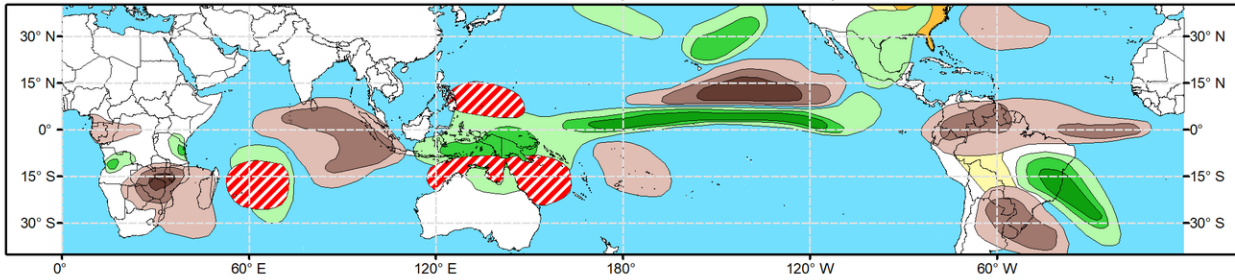


Global Tropics Hazards Outlook

Climate Prediction Center

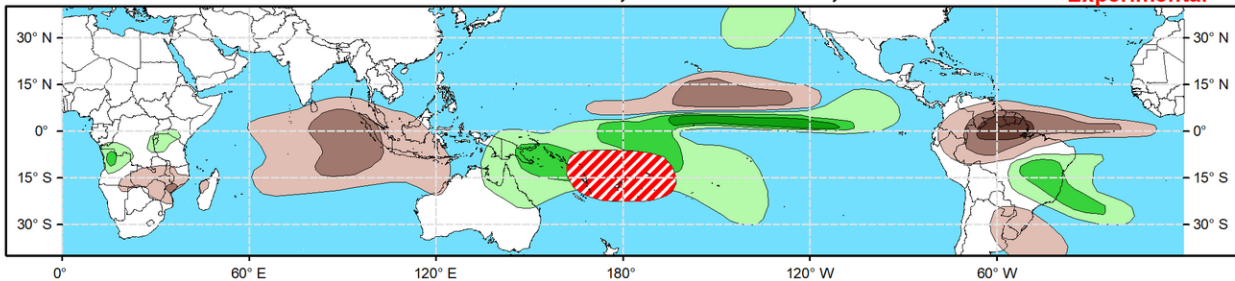


Week 2 - Valid: Jan 24, 2024 - Jan 30, 2024



Week 3 - Valid: Jan 31, 2024 - Feb 06, 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: 01/16/2024
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.

Following a period of weakening over the Indian Ocean earlier this month, the MJO became much more organized during the past week. Latest RMM observations show the MJO signal propagating eastward into the Maritime Continent (phase 4), and steadily gaining amplitude, which is well reflected by a reemerging wave-1 pattern in the 200-hPa velocity potential anomaly fields. A large uptick in MJO amplitude is heavily favored in the dynamical models during the next week, which appears to be tied to constructive interference with a convectively coupled Kelvin Wave propagating out of the Indian Ocean. This wave phasing is likely to promote widespread enhanced convection over the Maritime Continent, which has been otherwise persistently dominated by a suppressed convective El Nino response.

Even with the MJO continuing to destructively interfere with the low frequency El Nino conditions, intraseasonal activity is largely favored to remain coherent during the next several weeks. Very good agreement exists in the RMM forecasts depicting a high amplitude event propagating eastward into the Western Pacific during the next two weeks, where the MJO looks to eventually constructively interfere again with base state over the Equatorial Pacific. Ensemble spread increases in the extended range, however many solutions (especially the GEFS) continue to maintain a high amplitude event, taking the MJO signal back into the Western Hemisphere by the first or second week of February. A healthy, eastward propagating MJO is expected to provide increasingly favorable conditions for Tropical Cyclone (TC) development over parts of the southern Indian Ocean, as well as the Western Pacific on both sides of the Equator. And in light of aforementioned convective pattern reversal favored over the Maritime Continent in the near term, this could induce a stronger MJO teleconnection in the extratropics downstream. Wintertime Indian Ocean and Maritime Continent MJO events typically lead to the

development of anomalous mid-level ridging with warmer than normal temperatures over the central and eastern U.S. This is consistent with the latest week-2 guidance, however there is also both model and historical support for the associated anomalous mid-level ridging to retrograde over western North America with time, potentially allowing for the return of colder than normal temperatures over parts of the U.S. heading into February.

Two TCs developed in the Southern Indian Ocean during the past week. To the east of Madagascar, TC Belal formed on 1/12 and gradually intensified to a category 2 strength system. Belal recurved and made landfall over Reunion during the past 24 hours, bringing torrential precipitation, flooding and damages to infrastructure in the Island nation. The Joint Typhoon Warning Center (JTWC) expects Belal to continue eastward before gradually weakening and slowing down over open waters during the next week. To the northwest of the Cocos Islands, TC Anggrek formed near 94E/9S on 1/15. Currently at Tropical Storm Intensity, the JTWC forecasts Anggrek to generally drift southeastward and then meander over open waters before potentially dissipating later this week.

Late in week-1, the GEFs and ECMWF ensembles feature a secondary area of low pressure to the east of Madagascar that deepens and shifts westward. Deterministic solutions point to a new area of potential TC development, though it is possible that this mean surface feature may be Belal restrengthening or reforming. Regardless, the persistence of strongly anomalous low-level westerlies forecast is expected to maintain an elevated TC formation potential, and a broad 20% area is posted for week-2. Based on TC composites by MJO phase and increased signals in the probabilistic tools over the southeastern Indian Ocean, 20% chances for development are posted from the Timor Sea to the Coral Sea. Higher chances for development were considered, however probabilistic tools suggest any formation is more likely to occur late in week-1. North of the Equator, 20% chances are also posted to the east of the Philippines where lower-level wind anomalies are favored to flip and create a decreased shear environment conducive for development during week-2.

As the enhanced phase of the MJO propagates eastward, much of the Indian Ocean looks to become more unfavorable for additional TC development, as anomalous lower-level westerlies and decreased shear are favored to shift into the Western Pacific by early February. While formation is possible north of the Equator, there is less support for this realization in the probabilistic tools. However, 20% chances are issued in the South Pacific, where composites and probabilistic guidance indicate the greatest chances for development to the east and west of the Date Line.

The precipitation outlook for weeks 2 and 3 are based on a historical skill weighted blend of the GEFs, CFSv2, ECCO and ECMWF models, MJO precipitation composites (phases 5-7), and influences from El Nino. Based on multi-model raw and calibrated temperature tools, there is greater than a 65% chance for above-normal temperatures for many areas east of the Mississippi, marking a drastic flip from the much below normal temperatures favored throughout the central and eastern U.S. during week-1. For hazardous weather conditions in your area during the next two weeks, please refer to your local NWS office, the Medium Range Hazards Forecast from the Weather Prediction Center (WPC), and the CPC Week-2 Hazards Outlook. Forecasts made over Africa are made in coordination with the International Desk at CPC.