

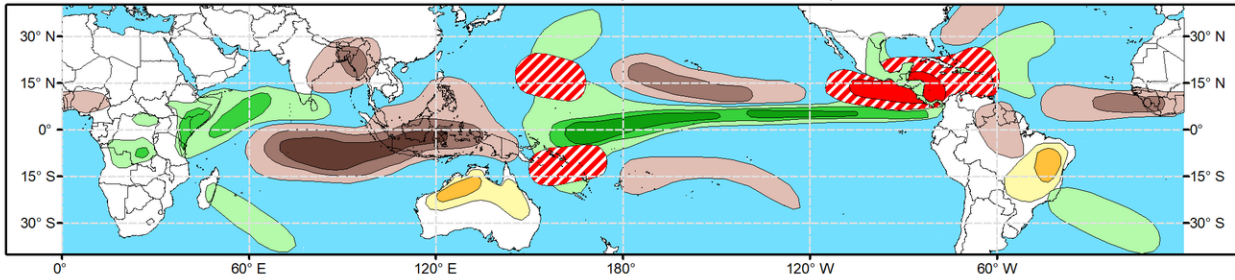


Global Tropics Hazards Outlook

Climate Prediction Center

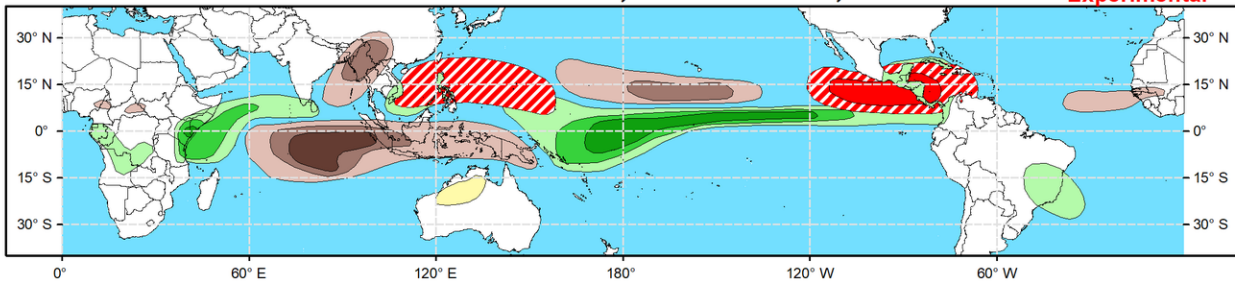


Week 2 - Valid: Oct 25, 2023 - Oct 31, 2023



Week 3 - Valid: Nov 01, 2023 - Nov 07, 2023

**** 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: 10/17/2023
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.

The Madden Julian Oscillation (MJO) showed signs of renewed activity since early October, however the intraseasonal signal has since become less coherent during the past week. This is supported in the RMM observations depicting a westward retreating signal over the western Hemisphere and the breakdown of a wave-1 structure in the upper-level velocity potential anomaly fields during the past several days. The disorganization of the MJO is likely due to large-scale competing influences from ongoing El Nino conditions as well as an emerging positive Indian Ocean Dipole (+IOD) event, as destructive interference with these low frequency modes are likely to curtail any coherent MJO signal moving forward.

An incoherent MJO is generally favored in the RMM forecasts, which show much of the intraseasonal activity remaining in the western Hemisphere that eventually retreats and regains some amplitude over the western Pacific. The thinking is that this westward shifting behavior in RMM space is tied in part to the strengthening lower-level wind response of the +IOD, as well as another equatorial Westerly Wind Burst (WWB) event that is forecast mainly west of the Date Line in the next week or so. This WWB event looks to increase chances for Tropical Cyclone (TC) formation in the western Pacific, but it also implicates further reinforcement of the El Nino response in the coming weeks or months via additional downwelling oceanic Kelvin wave activity. A more progressive intraseasonal outlook perspective is found in the objectively filtered OLR and upper-level velocity potential anomaly forecasts. While these forecasts also favor weakened MJO activity during the next few weeks, the ECMWF and CFS mean solutions favor a reduction of the suppressed low frequency footprint over the Indian Ocean (+IOD) coincident with the passage of an eastward propagating convective feature. As a result, the continued eastward propagation of the MJO over the Indian Ocean and Maritime Continent cannot be ruled out, though there

is still a good deal of uncertainty in regards to the strength and evolution of intraseasonal activity, and the outlook therefore relies more on the +IOD and El Nino signals driving the global tropical convective pattern.

During the last week, two TCs formed in the global tropics. TC Sean formed in the Main Development Region (MDR) of the Atlantic on 10/11, and underwent fluctuations in strength while tracking northwest over open waters before becoming post-tropical on 10/15. In the western Pacific, TC 16W formed in the South China Sea on 10/17. The Joint Typhoon Warning Center (JTWC) expects 16W to briefly track northwestward and peak at Tropical Storm intensity, then curve southward under the influence of subtropical ridging and weaken later this week. Regardless of landfall, the system is expected to bring locally heavy precipitation to parts of southern China and Vietnam based on deterministic guidance. Though not officially formed at the time of this writing (2pm EDT), the NHC expects invest 90E to form in the eastern Pacific later today.

In the wake of TC Sean, the National Hurricane Center (NHC) is monitoring another area in the MDR (invest 94L) with 80% chances for formation during the next week. Following this potential system, TC activity looks to quiet down throughout the MDR as TC potential looks to shift westward during week-2. Extended range guidance favors the development of anomalous lower-level westerlies extending from the eastern Pacific to the Caribbean, with anomalous easterlies emerging over the Gulf of Mexico and western Atlantic consistent with the formation of a Central American Gyre (CAG). Given climatology, and a decreasing shear environment also favored by the GEFs and ECMWF possibly tied to the departing enhanced MJO envelope, 40% chances for TC formation are highlighted, with a broad area of 20% chances posted from the south of Mexico to the western Atlantic. By week-3, much of the broad scale lower-level cyclonic circulation over the tropical Americas looks to remain established based on extended range wind guidance, and 40% chances for TC development are likewise highlighted which is also supported by probabilistic TC genesis tools.

With the aforementioned WWB favored in the western Pacific, probabilistic TC genesis tools indicate elevated chances for TC formation to the west of the Date Line on both sides of the equator. Although these tools and raw model guidance suggest formation is more likely to occur late in week-1, 20% chances for TC genesis are posted to the east of the Marianas and near the Solomon Islands for week-2 should there be any delay in formation. Based on climatology, any TC development in the South Pacific in late October would be considered quite early, but not unprecedented. For week-3, 20% chances for TC formation are issued over the western Pacific, with its coverage extending further west into the South China and Philippine Seas, where conditions appear more favorable for development compared to week-2.

Forecasts for enhanced and suppressed rainfall are based on a historical skill weight blend of GEFs, ECMWF, CFS and Canadian ensemble forecasts, potential TC tracks, and the anticipated dominance of the stationary +IOD and El Nino signals. For temperatures, above-normal conditions remain favored throughout portions of South America which may continue to adversely impact agriculture. Consistent with the strengthening +IOD, unusually hot conditions are also favored for many parts of Australia. For hazardous weather conditions in your area in the coming weeks, 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 made over Africa are made in coordination with the International Desk at CPC.