

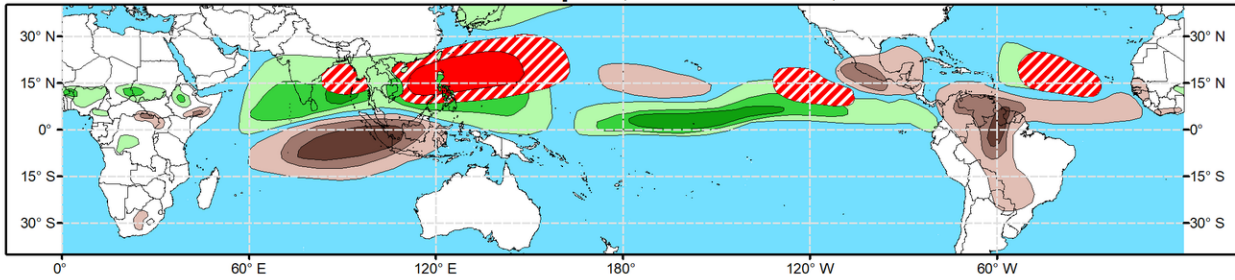


Global Tropics Hazards Outlook

Climate Prediction Center

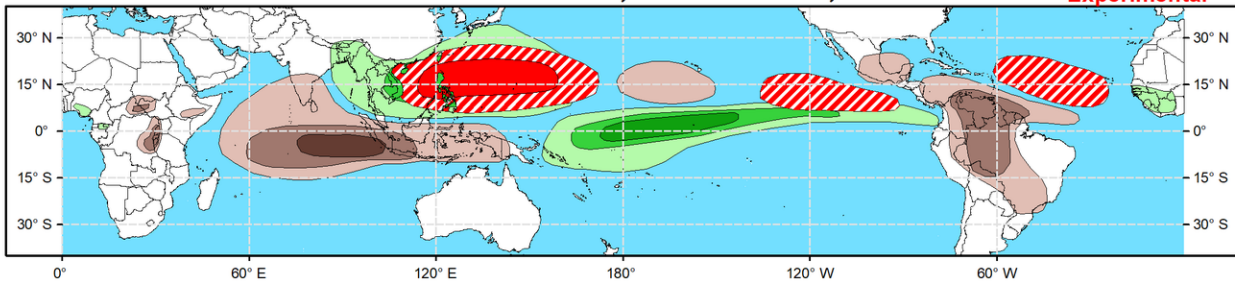


Week 2 - Valid: Sep 27, 2023 - Oct 03, 2023



Week 3 - Valid: Oct 04, 2023 - Oct 10, 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: 09/19/2023
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.

Following a brief uptick of the intraseasonal activity earlier this month, the Madden-Julian Oscillation (MJO) became largely disorganized, likely due to destructive interference with the ongoing El Niño, as well as other competing modes of variability in the tropics. This is reflected in the observed upper-level velocity potential anomaly fields, and the RMM index, which shows the MJO signal retreating westward across the Indian Ocean at a low amplitude during the past week. Looking ahead, however, there is a growing consensus in the forecast tools for a more coherent MJO reemerging across the global tropics. RMM forecasts generally favor the resumption of an continuous, eastward propagating signal, and although many ensemble means remain at fairly low amplitude in the dynamical models, there are several ensemble members that depict a potentially robust MJO event in the western Pacific during the outlook period. In addition, a healthier presentation of the MJO is revealed in the upper-level velocity potential anomaly forecasts. These favor the reemergence of a canonical wave-1 pattern, with the enhanced envelope shifting eastward across the Maritime Continent and into the western Pacific through early October. As a result, the MJO is likely to provide an increasing influence in the global tropics, where eventual constructive interference with the prevailing El Niño could help reinforce the low frequency response across the equatorial Pacific. A reorganizing MJO would also favor increasing chances for tropical cyclone (TC) development in the western Pacific, while lowering chances mainly throughout the western Hemisphere. However, the reduced TC genesis potential driven by the MJO over the eastern Pacific and Atlantic basins looks to be offset by their active TC climatologies, as well as forecast Kelvin wave activity which may help to incite formation.

During the last week, two TCs formed in the global tropics. In the Main Development Region (MDR), TC Nigel formed on 9/15 and has since strengthened to

category 1 Hurricane over open waters of the central Atlantic. According to the National Hurricane Center (NHC), Nigel is expected to gradually intensify within a warm SST and light shear environment, but is forecast to recurve to the northeast and undergo extratropical transition, quickly becoming absorbed by an approaching mid-latitude trough later this week. In the eastern Pacific, TD13 formed on 9/19 near 15S/119W. This system is forecast to track to the northwest and reach Tropical Storm intensity in the next day or so, before becoming a remnant low over cooler waters to the north later this week.

For week-2, there is good agreement in the GEFS and ECMWF ensembles favoring an area of deepening low pressure over the South China and Philippine Seas likely tied to the enhanced phase of the MJO. Given the development of broad cyclonic flow favored in these models which may lead to one or more TCs forming, there is some uncertainty in regards to the details of timing and location of genesis, and a broad area of 40% chances is posted for the period. To the west, probabilistic TC tools have been consistent in depicting elevated probabilities for development over the Bay of Bengal. Though, confidence is tempered due to monsoonal shearing and a modestly active climatology heading into October, resulting in only 20% chances posted for the basin. While the suppressed phase of the MJO looks to inhibit TC development and bring drier than normal conditions over the tropical Americas, there are continued signals in the probabilistic TC tools to support 20% chances for TC development in the eastern Pacific. Similarly, 20% chances for TC development are also posted in the MDR associated with another tropical wave that is forecast to move off the coast of West Africa, and a predicted Kelvin wave passage in the basin.

By early October, extended range guidance favors strongly anomalous lower-level westerlies remaining entrenched across the South China and Philippine Seas (with anomalous easterlies to the north) to support the continuation of elevated chances (40%) for TC development. With the continued eastward propagation of the MJO forecast, the leading edge of the enhanced envelope could reach the eastern Pacific, which may lead to a more favorable environment for TC genesis over parts of the basin, and a broad area of 20% chances are issued. Across the Atlantic, climatology indicates a considerable shift of TC formations from the MDR to the Gulf of Mexico and Caribbean during early to mid October. However, there is little support for TC genesis here in the probabilistic tools, and the thinking is that any development potential will remain in the MDR where less shearing and near to above-normal precipitation is favored in the extended range guidance. Therefore, 20% chances are posted in the MDR from approximately 60W to 25W.

Forecasts for enhanced and suppressed rainfall based on a historical skill weighted blend of GEFS, ECMWF, CFS and Canadian ensemble forecasts, seasonal composites of El Nino, as well as composites of Maritime Continent and Western Pacific MJO events for weeks 2 and 3, respectively. For hazardous weather concerns in your area of the U.S. during the next two weeks, please refer to your local NWS office, the Medium Range Hazards Forecast produced by 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.