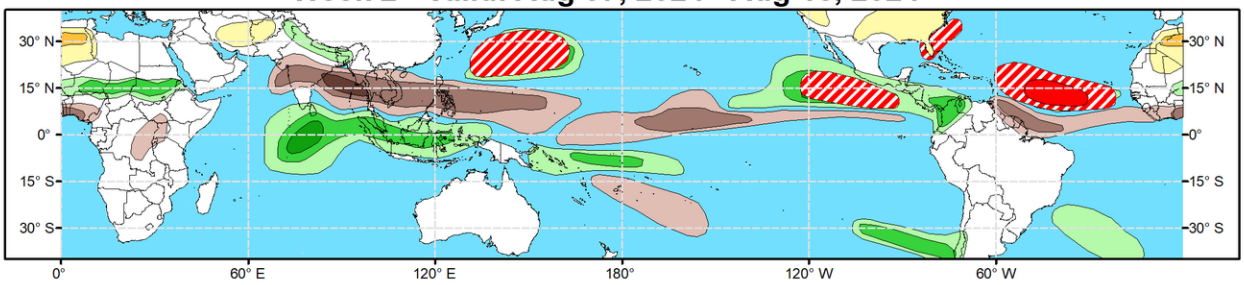
Global Tropics Hazards Outlook

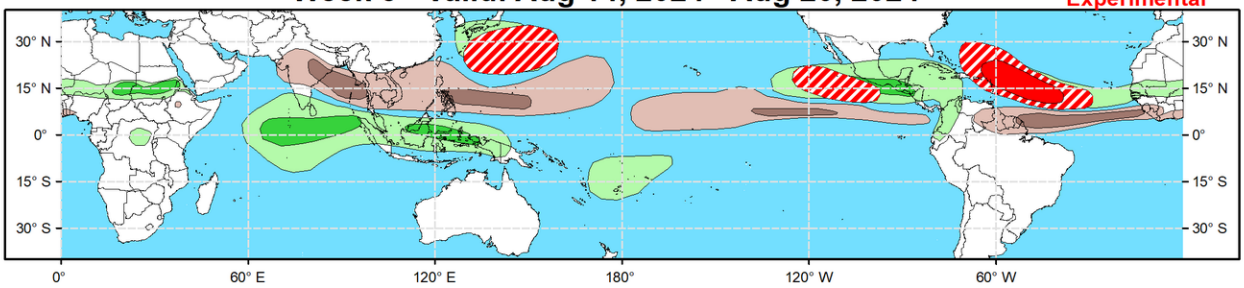
Climate Prediction Center

Week 2 - Valid: Aug 07, 2024 - Aug 13, 2024



Week 3 - Valid: Aug 14, 2024 - Aug 20, 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: 07/30/2024
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.

For most of July, RMM observations have depicted a poorly organized MJO, with the signal struggling to fully propagate eastward from the Maritime Continent and into the Western Pacific. The meandering signal has varied in amplitude, and has been likely tied to other modes of tropical variability playing more dominant roles than the MJO in the tropics. The presence of these other modes is also supported in the upper-level velocity potential anomaly fields which feature multiple envelopes of enhanced/suppressed divergence aloft, with convective anomalies asymmetric from the equator.

Recently, RMM observations show the signal darting across phases 6 and 7, where dynamical models are nearly unanimous in the continued, quick eastward propagation while gaining some amplitude in the Western Hemisphere heading into August. The rapid decrease in RMM1 is likely due to zonal wind anomaly reversals that are underway and are favored to continue throughout the equatorial Pacific, supporting the return of intraseasonal activity heading into August. While RMM forecasts diverge in regards to the coherence of the MJO beyond week-1, upper-level velocity potential anomaly forecasts and its objective filtering show a wave-2 Kelvin wave structure gradually evolving into a canonical wave-1 MJO pattern towards the middle of August. The thinking is that wave-2 mode will remain the primary tropical driver in the next week or so before a more coherent MJO could eventually take over, but this is not being projected well in the RMM foreasts, especially at the longer leads as ensemble spread inherently increases. Regardless of how and when these modes transition, an envelope of enhanced divergence aloft is nonetheless favored to shift across the tropical Americas and into the Indian Ocean during the outlook period. As a result, the large-scale environment is anticipated to become increasingly favorable for Tropical Cyclone (TC) development in the eastern Pacific and Atlantic Basins, in-line with a more active August climatology, with decreased

chances for additional tropical cyclogenesis in the western Pacific.

One short-lived TC developed during the past seven days. After forming in the eastern Pacific on 7/24, TC Bud peaked at Tropical Storm strength, before steadily weakening and becoming post-tropical on 7/26 over open waters to the southwest of Baja California. TC Bud appears to be a precursor to a more active eastern Pacific, as the National Hurricane Center (NHC) is monitoring three areas for potential development during week-1. Of the three, there are two areas of low pressure to the south of Mexico, both having high (at least 70%) chances of formation in the next seven days. As these potential TCs track northwestward in the model guidance, any proximity to the Gulf of California could trigger gulf surge activity, and bring increased amounts of precipitation over the Desert Southwest and other parts of the western CONUS early in August. Across the Atlantic, the NHC is also eyeing a tropical wave to the east of the Lesser Antilles with a 60% chance of development during the next seven days. Since late last week, there remains substantial disagreement in the deterministic and ensemble mean solutions in regards to its track and eventual development, however this potential system could bring locally heavy precipitation and high winds to parts of the southeastern U.S late in week-1 and early week-2.

For the TC outlook, 20% chances for TC development are posted in the eastern Pacific for week-2. Based on model guidance, the aforementioned pair of lows to the south of Mexico appear most likely to form during week-1, however probabilistic TC genesis tools show some signal remerging to the south of Mexico. Similarly, 20% chances are again posted for week-3 as anomalous lower-level westerlies are favored to persist, with reduced shearing across the basin through the middle of August. In the Atlantic, several solutions from the ECMWF have trended more slowly with the development of the tropical wave in the Atlantic during week-1. To capture any further delay in formation heading into the start of week-2, 20% chances for genesis are issued over the eastern Gulf of Mexico and offshore of the lower Eastern Seaboard. Further west, the Main Development Region (MDR) looks to become increasingly favorable for TC development given the aforementioned large-scale environment, climatology, and continued easterly wave activity over western Africa. 40% chances are posted from 30W-50W where shearing is favored to be minimal, and signals are highest in the probabilistic TC genesis tools. Based on the potential for MJO activity entering the Indian Ocean by week-3, 40% chances for TC development are likewise posted for the MDR for week-3, with this coverage shifted westward relative to the week-2 outlook, where MJO composites show the highest odds of development relative to climatology, with some support in the extended range probabilistic tools. Despite the suppressed phase of the MJO making conditions less favorable for development in the western Pacific, 20% chances are still issued for weeks 2 and 3 in the basin based on climatology, and the favored persistence of lower-level westerlies north of 20N later in August.

The precipitation outlooks for weeks 2 and 3 is based on potential TC activity, background conditions, summertime Western Hemisphere MJO composites, with input from a consolidated historical skill weighted blend of GEFS, ECMWF and CFSv2 ensemble mean solutions. Above-normal temperatures along with possible excessive heat conditions are favored for many parts of the CONUS, as well as through northern Saharan Africa and the Middle East. For hazardous weather conditions in your area during the next two weeks, please refer to your local NWS office, the Medium Range Hazards Forecasts from the Weather Prediction Center (WPC), and the CPC Week-2 Hazards Outlook. Forecasts issued over Africa are made in coordination with the International Desk at CPC.