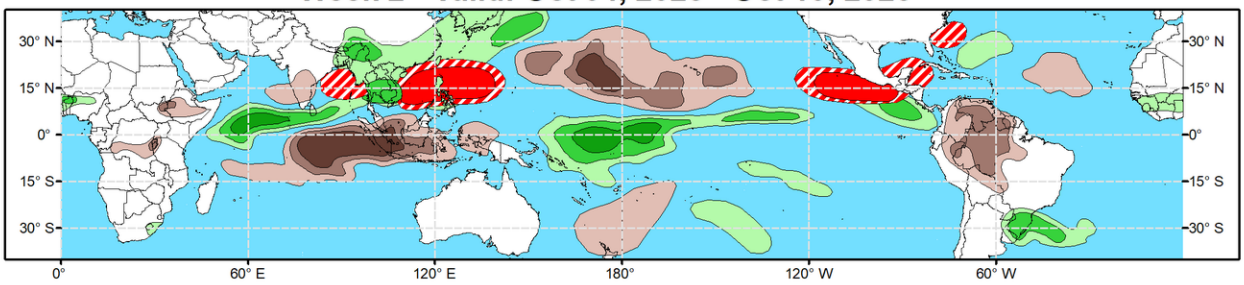
Global Tropics Hazards Outlook

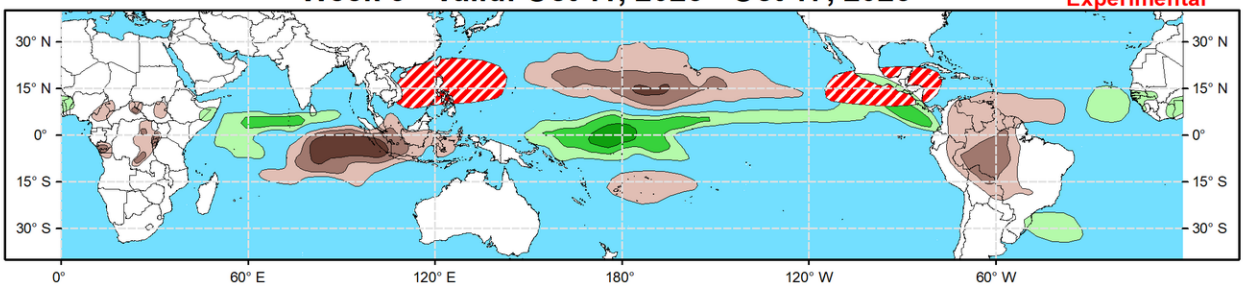
Climate Prediction Center

Week 2 - Valid: Oct 04, 2023 - Oct 10, 2023



Week 3 - Valid: Oct 11, 2023 - Oct 17, 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: 09/26/2023
Forecaster: Collow

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 RMM-based Madden Julian Oscillation (MJO) index has returned to the unit circle during the past week, with dynamical model forecasts being largely incoherent regarding any significant amplification or eastward propagation of the intraseasonal signal. However, the upper-level velocity potential field indicates a more organized wave-1 asymmetry structure in its spatial pattern. Enhanced upper-level divergence is noted across the Indian Ocean, Asia, and the Western Pacific, and enhanced upper-level convergence is depicted across the Eastern Pacific, Americas, and the Atlantic. Both the GEFS and ECMWF ensembles show an eastward expansion of the enhanced convective envelope into the Eastern Pacific and Western Atlantic by weeks 2 and 3 consistent with an MJO propagation, while the low frequency enhanced convective signal remains across the Central Pacific. Suppressed convection is forecast over the Indian Ocean, with some possible expansion into the Western Pacific by week-3.

The Atlantic basin has been active over the past week with two tropical cyclone (TC) formations. Tropical storm Ophelia developed on 9/22 and impacted the eastern U.S. Tropical Storm Phillipe formed on 9/23 over the Main Development Region (MDR), with the National Hurricane Center indicating a high chance of an additional TC forming over this area during the next week. In contrast, the Eastern Pacific has been quiet despite the ongoing El Nino, with no new TC formations since Tropical Storm Kenneth on 9/19. The Western Pacific has also been generally quiet, with only Tropical Depression 13W developing on 9/24 over the South China Sea and tracking west into Vietnam and remaining weak.

Given the favorable upper-level conditions forecast during the next week, a ramp-up in TC activity is predicted across the Western Pacific, with the Joint Typhoon Warning Center monitoring several areas of disturbed weather for potential development. This is forecast to persist into week-2, with todayâ€™s

Global Tropics Hazards Outlook highlighting a 40 percent chance of TC development during week-2 across the Western Pacific and South China Sea and a 20 percent chance of TC development over the Bay of Bengal. By week-3, more suppressed convection may begin to build over the Western Pacific, leading to diminishing TC formation probabilities, although a 20 percent chance of TC development remains indicated for the period. Todayâ€™s guidance is fairly robust with increasing activity over the Eastern Pacific during weeks 2 and 3 as the main convective envelope expands eastward and is also consistent with the El Nino climatology. A 40 percent chance of TC development is indicated across the basin for week-2, with a 20 percent chance during week-3. The 20 percent chance regions also extend into the western Caribbean during weeks 2 and 3 consistent with the increasing climatology in this area during October.

Across the rest of the Atlantic, the MDR is forecast to quiet down by week-2, although additional TC development cannot be ruled out given the anomalously warm sea surface temperatures and the convective envelope moving overhead by mid-October. However, TC climatology begins to wane this time of year, and the dynamical models are not particularly robust in depicting any formations, so no TC formation areas are depicted in the MDR during weeks 2 and 3. Closer to the U.S. East Coast, both the GEFS and ECMWF ensembles depict surface low pressure underneath the surface high over the Northeast during week-2, similar to Tropical Storm Ophelia. Given the persistence of this pattern, and the elevated potential for such a system to acquire tropical or subtropical characteristics along the Gulf Stream, a 20 percent chance for TC formation is depicted along the southeastern coast of the U.S. for week-2.

Forecasts for enhanced and suppressed rainfall based on a historical skill weighted blend of GEFS, ECMWF, CFS and Canadian ensemble forecasts, and seasonal composites of El Nino, as well as composites of MJO events from the Western and Eastern Pacific 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.