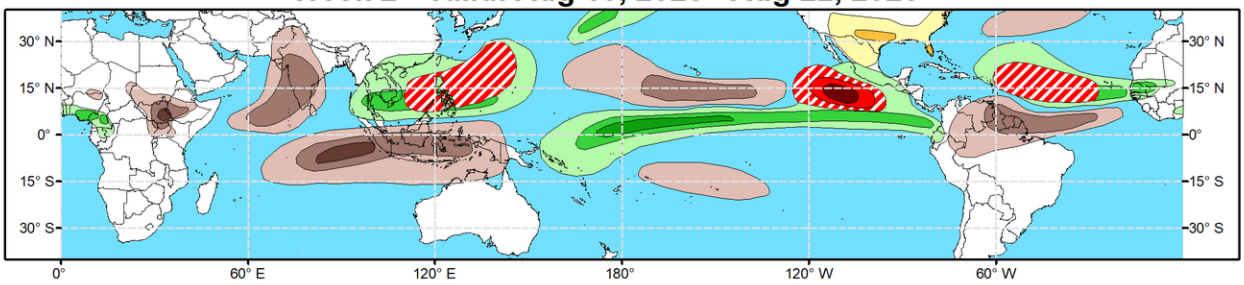
Global Tropics Hazards Outlook

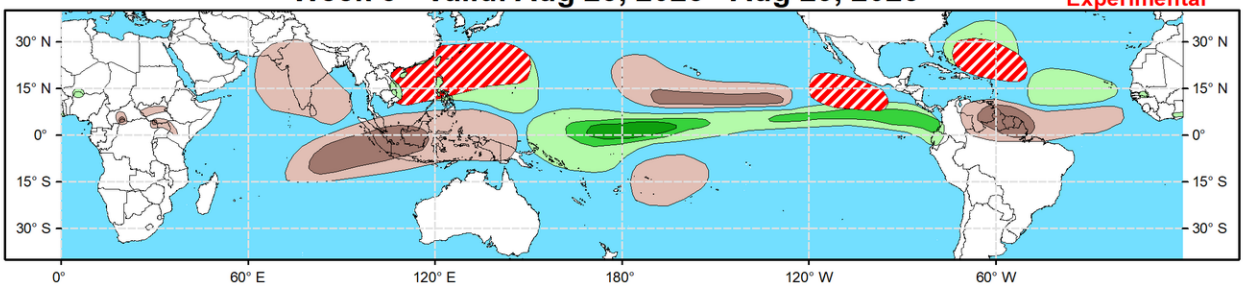
Climate Prediction Center

Week 2 - Valid: Aug 16, 2023 - Aug 22, 2023



Week 3 - Valid: Aug 23, 2023 - Aug 29, 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: 08/08/2023
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 RMM index showed a renewed MJO signal over the Western Hemisphere during the past week, having exited the unit circle for the first time in nearly a month. However, this signal has since weakened, as the recent uptick in amplitude is likely tied to the passage of Tropical Cyclone (TC) Dora in the central Pacific. The associated emergence of anomalous lower-level westerlies along and north of the equator looks to reinforce the low frequency atmospheric response across the equatorial Pacific. The observed upper-level velocity potential anomaly fields also appear to be at odds with any renewed MJO activity, which generally reflect a pattern that is more consistent with the ongoing El Nino base state, modulated by other modes of tropical variability. Looking ahead, dynamical model RMM forecasts largely favor a weakened and disorganized MJO through late August. Some extended range solutions point to possible reemergence of the MJO over the western Pacific, but there remains a good deal of uncertainty in this realization given the high degree of spread in the ensemble guidance. In the absence of a coherent, eastward propagating MJO, the ongoing El Nino base state is expected to remain the dominant driver on convective anomalies and TC genesis potential. The upper-level environment forecast, combined with predicted equatorial Kelvin and/or Rossby wave activity and a more active climatology during late August, looks to be conducive for TC development in the eastern Pacific and Atlantic. In the western Pacific, there are lowered chances for tropical cyclogenesis following a fairly active period in the basin during July.

Since forming on 7/28, TC Khanun remains active in the western Pacific and is currently located to the south of Honshu, Japan at Tropical Storm strength. The Joint Typhoon Warning Center (JTWC) forecasts Khanun to begin tracking northward into the East China Sea and make landfall to the west of Busan, Korea in the next day or so. Locally heavy rainfall and elevated wind speeds are

likely in the near-term for portions of southern Japan and the Korean Peninsula before the system is expected to dissipate over northeastern China. Since forming on 8/2 in the eastern Pacific, TC Dora has steadily tracked westward into the central Pacific where it has maintained Major Hurricane (category 4) intensity since this past weekend. Its current position to the south of Hawaiian islands is favored to bring periods of high winds and high surf to many parts of the state. Despite being a compact system, the Central Pacific Hurricane Center (CPHC) expects Dora to maintain Major Hurricane intensity through late this week while continuing to track westward towards the Date Line. Both deterministic and ensemble guidance suggest Dora will become a transpacific system, reaching the western Pacific basin as it gradually weakens near Wake Island late in week-1.

During the past seven days, two TCs developed in the global tropics. To the southeast of Khanun, TC Lan formed near 24N/149E on 8/8. The JTWC expects Lan to initially track to the west then turn and accelerate northwestward under the influence of an approaching mid-level trough during the next several days. Both the GEFS and ECMWF ensembles are in good agreement favoring an eventual track towards Honshu, Japan, and possibly bring locally heavy precipitation and high winds later in week-1. In the eastern Pacific, TC Eugene formed on 8/5 to the south of Mexico. Eugene peaked at Tropical Storm strength before encountering cold waters to the west of Baja California and becoming a post-tropical cyclone on 8/7. Its remnant circulation is soon expected to become absorbed in the westerlies where enhanced mid-tropospheric moisture is favored to bring increased precipitation amounts to parts of California and the Great Basin during the next few days.

For week-2, probabilistic TC tools are fairly muted in regards to new areas for formation over the western Pacific. Although weaker, anomalous lower-level cyclonic flow remains favored in the extended range tools over the South China and Philippine Sea, and slight (20%) chances are posted. In the wake of a potential TC forming in the eastern pacific during week-1 (currently 50% formation chances based on the National Hurricane Center's 7-day TWO), ensembles and probabilistic tools have been consistent in favoring another area of TC development to south of Mexico early in week-2. Given additional support from the upper-level velocity potential forecasts depicting equatorial Kelvin and Rossby wave activity over the tropical Americas, high (60%) chances of formation are issued in week-2. Ensembles also point to a northwestward track of the mean low which could trigger a Gulf of California moisture surge and bring enhanced precipitation amounts to parts of the Desert Southwest during week-2. In the Atlantic, both the GEFS and ECMWF ensembles favor the passage of a tropical wave in the Main Development Region (MDR) with increased chances of formation in the probabilistic tools. Although the ECMWF has been fairly bullish with the signals, only slight (20%) chances are posted given less support from the GEFS, as this potential may also be tempered by the El Nino background state.

Given continued, albeit weak support in the extended range ECMWF, slight (20%) chances for additional TC formation are posted in the western Pacific during week-3. The favored persistence of anomalous lower-level westerlies in the extended range tools during week-3 over the eastern Pacific supports slight (20%) chances for the TC development to the south of Mexico. In the Atlantic, a broad area of slight (20%) chances is issued over parts of the Caribbean and western Atlantic, should there be any delay in formation associated with a tropical disturbance favored in the MDR during week-2.

The precipitation outlook for weeks 2 and 3 are based on a historical skill weighted blend of GEFS, CFS, ECCC and ECMWF ensemble guidance, influences from anticipated TC tracks, and strong consideration of historical precipitation patterns associated with summer season El Nino events. For temperatures, there

are elevated chances for above-normal temperatures throughout much of the western and southern CONUS tied to the persistence of amplified mid-level ridging over North America. Above-normal temperatures are also favored over parts of western Europe, as well as over the Indian subcontinent due to below-normal monsoonal rain forecast. For hazardous weather concerns 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 issued over Africa are made in coordination with the International Desk at CPC.