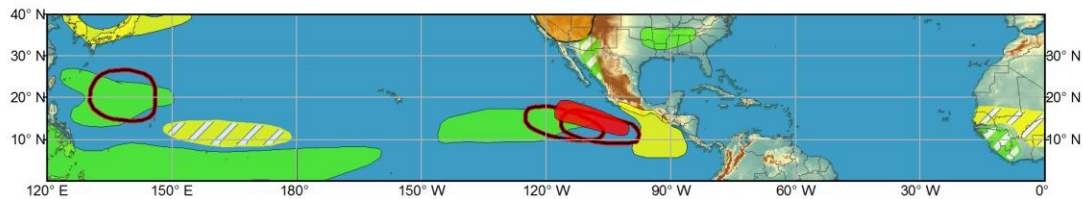




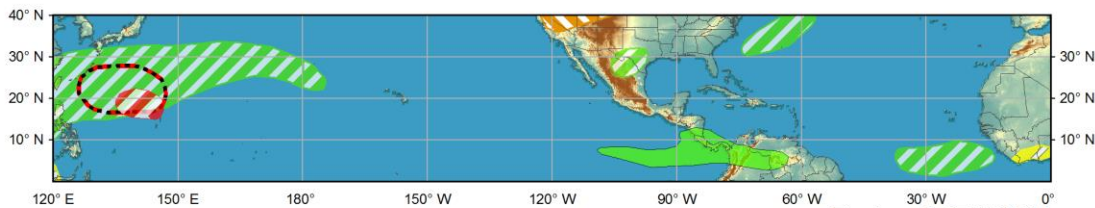
Global Tropics Hazards and Benefits Outlook - Climate Prediction Center



Week 1 - Valid: Jul 17 2021 - Jul 20 2021



Week 2 - Valid: Jul 21 2021 - Jul 27 2021



Confidence
High Moderate

Produced: 07/16/2021
Forecaster: Allgood

- Tropical Cyclone Formation** Development of a tropical cyclone (tropical depression - TD, or greater strength).
- Prior TC Formation Outlook** Tropical cyclone outlook from previous release.
- Above-average rainfall** Weekly total rainfall in the upper third of the historical range.
- Below-average rainfall** Weekly total rainfall in the lower third of the historical range.
- Above-normal temperatures** 7-day mean temperatures in the upper third of the historical range.
- Below-normal temperatures** 7-day mean temperatures in the lower third of the historical range.

Product is updated once per week. The product targets broad scale conditions integrated over a 7-day period for US interests only. Consult your local responsible forecast agency.



There is little change to the overall pattern and forecast reasoning in this update. The MJO remains fairly incoherent as other modes interfere with the intraseasonal signal, and the upper-level pattern has become increasingly disorganized as depicted on the CPC velocity potential based MJO index. Dynamical models continue to favor renewed MJO activity depicting the enhanced phase propagating across the Maritime Continent to the West Pacific over the next two weeks, with differences among the ensemble members with respect to amplitude. Tropical cyclogenesis occurred over the East Pacific well south of the Baja California peninsula, with the system rapidly intensifying into Hurricane Felicia. Now at high end Category-3 intensity with a compact circulation, Hurricane Felicia is forecast to move generally westward over the next 5 days near 15N, remaining over open waters. The NHC intensity forecast shows gradual weakening as the system begins to encounter colder waters. Another tropical cyclone, Tropical Depression 9W, developed about midway between Guam and the Philippines. Forecasts from the Joint Typhoon Warning Center indicate rapid strengthening of this system to typhoon intensity over the next few days as it tracks slowly north-northwestward and then northwestward.

There is a high potential for additional tropical cyclone development over the East Pacific south of Mexico, to the east of the current location of Hurricane Felicia, with NHC showing an 90-percent chance

of formation in the next 48 hours, and a 90-percent chance of formation over the next five days. Over the West Pacific, the operational GFS shows a second low forming in the vicinity of or just northwest of Guam during early Week-2. Following these systems, there is little support in the dynamical model guidance for additional tropical cyclone development over the Pacific and the Atlantic basins. Given the active Monsoon trough over the West Pacific, there remains a low potential for new development during the period.

Forecasts for above- and below-average precipitation were updated to reflect the latest dynamical model guidance and forecast tropical cyclone tracks.

The original discussion released on 13 July 2021 follows.

Following a period where the Madden-Julian Oscillation (MJO) showed better signs of organization as it shifted eastward into the Indian Ocean during early July, the intraseasonal signal has since stalled where it has likely interfered with westward moving Rossby wave activity during the last week. The latest upper-level velocity potential fields continue to show enhanced (suppressed) convection overspreading portions of Africa and the Indian Ocean (Western Hemisphere), as anomalous lower-level westerlies over the equatorial Indian Ocean have shown little eastward advance since early July. Dynamical models favor the MJO to resume propagating eastward across the Indian Ocean and Maritime Continent during week-1, with increasing uncertainty in the outlook due to model differences in RMM space later in July. The GEFS suggests a progressive, strengthening signal approaching the West Pacific, while the ECMWF favors a weakening event over the Maritime Continent, falling within the RMM unit circle during week-2. Regardless of these differences, the enhanced phase of the MJO is expected to promote above-normal precipitation across parts of India, Southeast Asia, and the Maritime Continent. Although Tropical Cyclone (TC) development is favored in the eastern Pacific during week-1 tied to recent Kelvin wave activity, the large-scale environment is anticipated to be unfavorable for TC formation over the western Hemisphere through late July.

While one short-lived TC formed (Tropical Depression 08W) and made landfall in northern Vietnam on 7/7, no other TCs developed throughout the global tropics during the last week. For week-1, the National Hurricane Center (NHC) is currently monitoring two areas of low pressure in the eastern Pacific, one located south of the Gulf of Tehuantepec, and the other located several hundred miles south of Puerto Vallarta, Mexico. The NHC gives these two areas at least a 70% chance of TC formation during the

next five days and corresponding high confidence areas are posted for week-1. Environmental conditions appear conducive for further development later this week, where the former disturbance may contribute to the initiation of a Gulf of California moisture surge event and aid an active North America monsoon circulation forecast across Mexico and the Desert Southwest of the CONUS. For week-2, the ECMWF favors the passage of another Kelvin wave to traverse the basin which may incite the formation of another TC later in July, however there is less support of this realization in other model guidance which precludes additional TC areas being issued in the outlook for the period. Across the Atlantic, there continues to be good continuity in the ensemble guidance and probabilistic TC tools favoring quiet conditions during both week-1 and week-2, particularly throughout the Main Development Region, where climatologically, TC activity becomes increasingly favored by this time of year.

In the western Pacific, a high confidence area for TC development is posted for week-1 in the Philippine Sea due to good agreement in the ensemble guidance depicting deepening low formation and Rossby wave activity forecast late in the period. The last several runs of the GEFS shows secondary low forming to the south of Japan by the start of week-2, and given the persistence of elevated signals in ECMWF probabilistic tool over the region, a moderate confidence for TC formation is added here for week-2. With the enhanced phase of the MJO over the Indian Ocean, the ECMWF favors a deepening area of low pressure over the Arabian Sea and northwestern India later this week. However, there is uncertainty as to whether the low moves offshore into anomalous warm waters before dissipating, and no TC area is posted. South of the equator, both the GEFS and ECMWF ensembles show a strengthening area of low pressure to the east of Cocos (Keeling) Islands early in week-1, though there is insufficient confidence that a TC will form under an unfavorable high shear environment.

The precipitation outlook during the next two weeks is based on a consensus among the CFS, GEFS, and ECMWF ensemble means, anticipated TC tracks, tropical waves, and MJO precipitation composites. For hazardous weather concerns during the next two weeks across the U.S., please refer to your local NWS Forecast Office, the Weather Prediction Center's Medium Range Hazards Forecast, and CPC's Week-2 Hazards Outlook. Forecasts over Africa are made in consultation with the International Desk at CPC and can represent local-scale conditions in addition to global scale variability.