



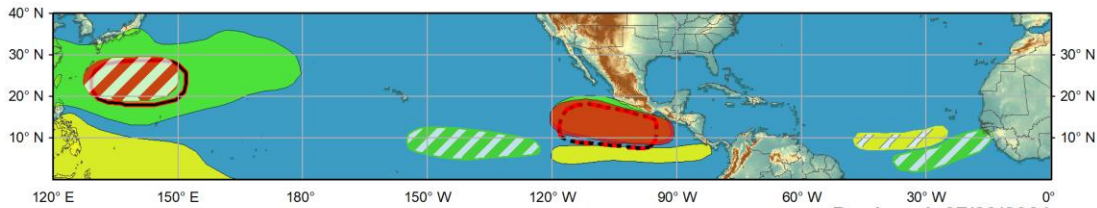
# Global Tropics Hazards and Benefits Outlook - Climate Prediction Center



## Week 1 - Valid: Jul 24 2021 - Jul 27 2021



## Week 2 - Valid: Jul 28 2021 - Aug 03 2021



Confidence  
High Moderate

Produced: 07/23/2021  
Forecaster: Novella

- 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.



» The previous tropical perspective largely remains on track, as the Madden Julian Oscillation (MJO) continues to propagate eastward through the West Pacific at a higher amplitude in RMM space (currently in phase 6). The upper-level pattern has become increasingly organized where there is a well defined wave-1 pattern in the velocity potential anomaly field, and strengthening anomalous easterlies aloft extending throughout the Maritime Continent. There is general agreement in the dynamical models featuring continued eastward propagation of the intraseasonal signal through the West Pacific through the end of July. Although the MJO remains forecast to decrease in amplitude, the large-scale environment remains favorable for tropical cyclone (TC) activity in the West Pacific, with an increased potential for TC development in the eastern Pacific in the updated outlook.

In the West Pacific, the Joint Typhoon Warning Center (JTWC) is monitoring three TCs, In-fa, Cempaka, and Nepartek. Currently a category 1 strength Typhoon, In-fa is located near 25N/125E and is forecast to track northwestward into the East China Sea and experience a brief period of intensification before weakening as it approaches the Zhejiang province of China. Despite this weakening, heavy precipitation amounts and high winds are likely across portions of the Yangtze Delta with an elevated potential for localized flooding in the region early next week. In the South China Sea, TC Cempaka made landfall as a

category 1 strength Typhoon near Yangjiang on 7/22 and brought enhanced rains and high winds to portions of southern China. Now at Tropical Depression strength, the JTWC expects Cempaka to continue weakening and dissipate within the next day or so. During the last 24 hours, Tropical Depression Nepartak formed near 24N/149E north of the Mariana Islands. The JTWC forecasts Nepartak to track north and gain more tropical characteristics (max sustained winds peaking at 50kts over the weekend) before turning northwest while weakening as it approaches Honshu, Japan. Regardless of its strength, enhanced rainfall and elevated winds are likely over the region which may adversely impact the Summer Olympic Games in Tokyo by early next week. For days 5-11, there is continued model support for additional TC development in the West Pacific in the wake of Tropical Depression Nepartak. A broad TC formation area remains posted, though it is downgraded to a moderate confidence region due to lesser support in the latest model ensembles and decreasing probabilities in the TC tool guidance relative to earlier this week.

While no TCs formed in the East Pacific during the last several days, the National Hurricane Center (NHC) is eying a tropical disturbance (98E) located near 13N/123W tied to the passage of a convectively coupled Kelvin wave in the region. While this potential system is expected to encounter unfavorably cooler waters early next week, there is a 40% (50%) chance of formation over the next 2 (5) days, and a moderate confidence area is posted in the outlook. For days 5-11, there is continued model support for additional TC development to the south of Mexico by the end of July. Given increased chances in the latest probabilistic TC tools, this region is upgraded to a high confidence in the updated outlook. Across the Atlantic, the NHC is monitoring an area of low pressure located offshore of the southeastern CONUS with at least a 40% chance for formation over the next 5 days. Environmental conditions have become slightly more conducive for development since yesterday and a moderate confidence area for TC formation is issued for the days 1-4 period. Deterministic and ensemble guidance favor some strengthening of this low as it drifts across Florida and the Gulf of Mexico where it is likely to promote potentially heavy rainfall across the region early next week. Elsewhere in the Atlantic, there are some signals in the TC tools for low pressure development in the subtropics, however there is insufficient confidence that these disturbances will gain tropical characteristics and no corresponding TC areas are issued in the update.

Forecasts for enhanced and suppressed precipitation are updated to reflect the latest dynamical model guidance and anticipated TC tracks.

----- Previous discussion from Jul 20, 2021 is below -----

The convectively enhanced phase of the Madden-Julian Oscillation (MJO) propagated eastward from the Indian Ocean into the Maritime Continent during the last week. The RMM index indicates the intraseasonal signal is currently in phase 5, where the upper-level velocity potential anomalies (OLR) depict a well-defined area of divergence (convective envelope) extending from the western Indian Ocean to the West Pacific, and stronger convergent (suppressed convective) conditions prevailing throughout much of the western Hemisphere compared to last week. The more coherent signal is also reflected in the latest zonal wind fields, with anomalous lower-level westerlies advancing eastward into the Maritime Continent where anomalous easterlies have also developed aloft to provide a favorable exhaust mechanism for Tropical Cyclone (TC) activity in the West Pacific during the outlook period. While there is agreement in the dynamical models favoring continued eastward propagation of the MJO into the West Pacific at a moderate amplitude during week-1, ensemble mean solutions diverge among the models by week-2, adding to some uncertainty in the outlook. Both the GEFS and ECMWF favor the MJO to decrease in amplitude, however the ECMWF remains more progressive with the intraseasonal signal, favoring the MJO to propagate through the West Pacific and into the Western Hemisphere by early August. The GEFS features a slower evolution of the signal with the ensemble mean remaining in phase 6, and some members retreating westward into the Maritime Continent through the end of July. Regardless of these differences, the enhanced phase of the MJO is likely to aid in additional TC development across the West Pacific during the next two weeks, with increasing chances for TC formation over the eastern Pacific by late July. Conversely, the large-scale circulation is anticipated to remain unfavorable for TC activity across the tropical Atlantic in the outlook.

In the eastern Hemisphere, Typhoon In-fa formed about midway between Guam and the Philippines on 7/16. Currently located near 25N/130E, the Joint Typhoon Warning Center (JTWC) forecasts this system to track westward and gradually strengthen to a category 3 strength storm as it passes south of Okinawa and enters the East China later this week. Although In-fa is expected to weaken as it approaches Taiwan, there are elevated chances for heavy precipitation with the potential for localized flooding across the islands south of Okinawa, as well as portions of Taiwan and eastern China. In the South China Sea, Typhoon Cempaka formed on 7/18 to the south of Hong Kong and is currently moving inland near Yangjiang, China. The JTWC forecasts Cempaka to weaken to a Tropical Depression and continue tracking westward across southern China before recurving south towards Hainan. Some brief restrengthening of this system is possible as it reenters the South China Sea, however Cempaka will likely struggle to intensify due to land interaction with Hainan and unfavorable vertical wind shear forecast in the region later this week.

Looking ahead, a monsoon gyre event is likely to promote increased TC activity in the West Pacific through the end of July. A high confidence region for TC formation is posted for week-1 near the Mariana Islands due to good model agreement depicting another area of deepening low pressure in the wake of In-fa. While both the GEFS and ECMWF ensemble guidance show this potential low-pressure area to initially track northward later this week, there remains a good deal of uncertainty in the

guidance regarding its eventual track. For week-2, dynamical models maintain a broad area of low pressure throughout the basin where there is continued support in ensembles and probabilistic TC tools for additional TC formation near the Mariana Islands towards the end of July, and a high confidence region is posted. Farther east in the Indian Ocean, there is some support in the guidance for TC development in the northern Bay of Bengal, however; there is not enough confidence as to whether the potential low deepens over warm waters before moving inland over northeastern India, and no corresponding TC formation area is included in the outlook.

Two TCs formed in the East Pacific, Felicia (7/14) and Guillermo (7/18). As a notably compact system, Felicia intensified to a major Hurricane (category 4) over this past weekend, and has since weakened to a Tropical Storm in open waters near 16N/135W. The National Hurricane Center (NHC) forecasts Felicia to continue weakening under unfavorable environmental conditions and dissipate the southeast of Hawaii over the next several days. Farther east, Guillermo peaked as a Tropical Storm to the south of Cabo this past weekend and has gradually weakened to a Tropical Depression near 19N/123W. Now devoid of deep convection, the NHC expects Guillermo to become remnant low in the next day or so.

Although TC activity looks to be quiet in the eastern Pacific tied to the suppressed phase of the MJO during week-1, the large-scale environment is expected to become more favorable for TC development during the later period. The enhanced phase of MJO encroaching the basin as well as possible Kelvin wave activity elevates chances for TC development where there continues to growing support from the model ensembles and probabilistic tools towards the end of July. Thus, a broad moderate confidence area is issued to the south of Mexico from approximately 95W to 120W for week-2. Across the Atlantic, there continues to be little to no signals in the guidance for TC development through the next two weeks and no TC areas are posted. However, should the MJO continue propagating eastward into the Western Hemisphere beyond week-2, this would elevate chances for TC development in the tropical Atlantic coinciding with the climatological increase in TC activity throughout the basin during early August.

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.