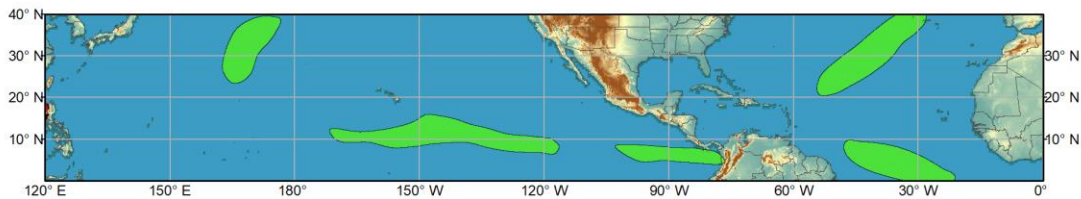




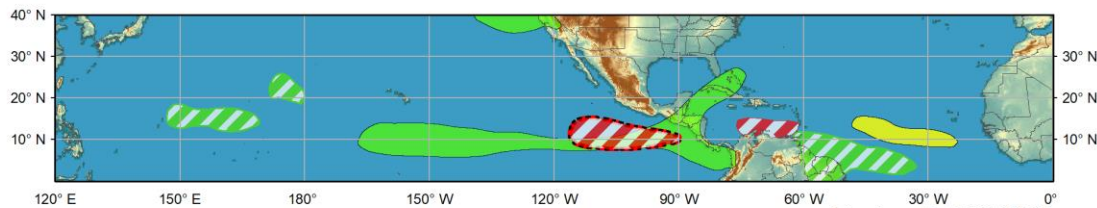
Global Tropics Hazards and Benefits Outlook - Climate Prediction Center



Week 1 - Valid: Oct 16 2021 - Oct 19 2021



Week 2 - Valid: Oct 20 2021 - Oct 26 2021



Confidence
High Moderate

Produced: 10/15/2021
Forecaster: Harnos

- 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.



Since the original outlook, a La Nina Advisory was issued, with a forecast 87% chance of La Nina conditions during boreal winter. The intraseasonal perspective from the original forecast remains on track, with the Madden-Julian Oscillation (MJO) likely being further east of where the RMM places it (barely over the West Pacific). This disparity is likely due to the RMM index being biased towards RMM phases 4 and 5 (and away from the Western Hemisphere phases 8 and 1) due to the persistent convective dipole over the Maritime Continent and West Pacific from the building La Nina. Looking at the velocity potential-based MJO index, there is obvious eastward progression of the enhanced convection over the Maritime Continent in recent days, while objective wavenumber-frequency filtering of 200-hPa velocity potential places the enhanced MJO envelope near 150W.

No tropical cyclones (TCs) have formed since the initial outlook, and both the Joint Typhoon Warning Center and the National Hurricane Center are not monitoring any disturbances for possible genesis at present. The MJO state favors increasing TC formation potential over the East Pacific in the near-term, and Caribbean Sea later in the forecast period. The ECMWF model forecasts a pair of atmospheric Kelvin waves to have their suppressed phase cross the East Pacific and Atlantic during Week-2 though, which through destructive interference with the favorable MJO environment may limit TC genesis potential to

brief windows. For the East Pacific, that genesis window appears to be late in the week of the 17th, with the moderate confidence for TC formation area along 10N during Week-2 maintained from the initial outlook. In the Atlantic, genesis is possible across the southern Caribbean very late in Week-2 tied to equatorial Rossby wave activity. Moderate confidence for TC formation is added here during Week-2 based on the GEFS perspective, although the ECMWF is further south and instead brings the prospective disturbance into South America. Areas forecast to experience above- or below-normal rainfall over the next two weeks are updated to reflect the latest ensemble guidance from the CFS, GEFS, and ECMWF models.

----- The original forecast discussion from Tuesday, October 12th follows below. -----

The transition toward La Nina conditions continues for the equatorial Pacific, with a possible transition from a La Nina Watch to La Nina Advisory during the upcoming release of the El Nino/Southern Oscillation Diagnostic Discussion on Thursday the 14th of October. Anomalously cool near-surface ocean water and enhanced trades are in place across much of the Pacific, while suppressed convection has been building westward from near the Date Line during late boreal summer toward New Guinea at present. Amidst the backdrop of the low frequency state, the Madden-Julian Oscillation (MJO) has been analyzed to have stalled over the Eastern Maritime Continent during early October, presumably due to the background state. Dynamical model forecasts of the MJO in RMM space generally support the MJO progressing across the Pacific during the next two weeks and reaching the Western Hemisphere. The main outlier is a handful of GEFS members, which instead emphasize the low frequency signal and revert the RMM index to Phases 3/4 by late October. The forecasts propagating the MJO eastward lack substantial projection in Phases 6/7, presumably due to the building La Nina conditions and their removal from the long-term mean component of the RMM index.

Hurricane Pamela first developed over the East Pacific on the 10th near 14N/102W. Pamela gradually strengthened to hurricane intensity (70 kt, as of 12 UTC on the 12th) while tracking northeast toward the Sinaloa coast. Pamela is forecast to bring heavy rainfall stretching from Sinaloa and Durango northeastward through the Southern Great Plains and Lower Mississippi Valley in the coming days. A trio of storms formed over the West Pacific during the past week. Tropical Storm Lionrock developed near 17N/111E on the 7th and remained a weak system while drifting northward over the South China Sea before dissipating on the 10th. Tropical Storm Namtheun formed near 17N/160E on the 10th. The Joint Typhoon Warning Center (JTWC) forecasts Namtheun's intensity to peak today at 40 kts with dissipation likely over the next few days as the storm recurves to the north and east. Tropical Storm Kompasu formed near 18N/128E on the 10th and thereafter tracked westward to its current position over the South China Sea. The JTWC forecasts a 60 knot peak intensity for Kompasu to occur later today, with gradual weakening to follow as the system approaches Hainan and Northern Vietnam through the conclusion of the week.

The National Hurricane Center (NHC) is monitoring a disturbance presently near Cuba in the Atlantic Basin. The NHC gives this disturbance a 10% chance of undergoing tropical cyclogenesis over the next 48 hours (and/or 5 days) before merging with a mid-latitude cold front. The JTWC is monitoring disturbance 96W near 11N/147E as of 6 UTC on the 12th, giving the system a low chance of becoming a TC over the next 24 hours, and marginal environmental conditions for development thereafter. The MJO presence over the Maritime Continent does favor possible TC formation over many of the Eastern Hemisphere basins, with dynamical models supporting moderate confidence for TC formation over the southeastern Arabian Sea, northern Bay of Bengal, and South China Sea during the next week. The former systems would be likely to form over the next two to three days, while the South China Sea system appears unlikely to develop until the weekend. With the MJO possibly reaching the Western Hemisphere by Week-2, tropical cyclogenesis chances are likely to increase across the East Pacific, with a moderate confidence for TC formation posted between roughly 90-115W along 10N. Beyond Week-2, the large-scale environment would favor increased chances for tropical cyclogenesis to persist over the East Pacific (although cooling sea surface temperatures typically hinder genesis by November) and also build across the Gulf of Mexico and Caribbean Sea during late October and early November.

The precipitation outlook accounts primarily for the currently active and forecast tropical cyclone activity, the convective footprint of La Nina, and the MJOs transition from the Maritime Continent to Western Hemisphere. Also of note across the U.S. is the potential for below-normal temperatures during Week-1 across the Western interior tied to mid-level troughing, with this pattern retrograding over the Pacific by Week-2 and yielding atmospheric river potential for Northern California.

For hazardous weather concerns across the U.S., please refer to regular tropical updates from the NHC, as well as 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.