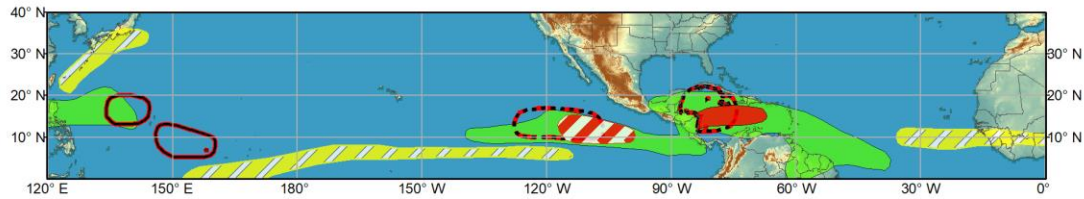




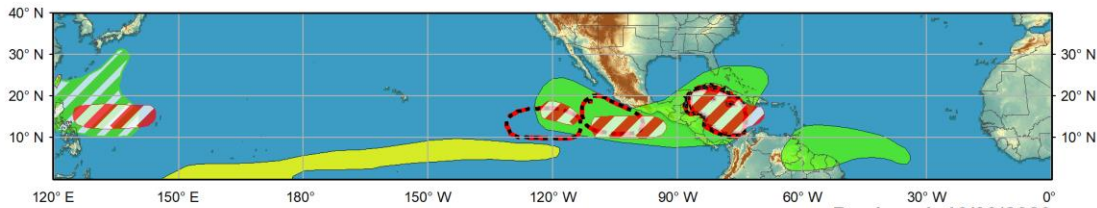
Global Tropics Hazards and Benefits Outlook - Climate Prediction Center



Week 1 - Valid: Oct 31 2020 - Nov 03 2020



Week 2 - Valid: Nov 04 2020 - Nov 10 2020



Confidence
High Moderate

Produced: 10/30/2020
Forecaster: Pugh

- 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 Madden-Julian Oscillation (MJO) propagated eastward from the Maritime Continent to the West and Central Pacific during the latter half of October. However, destructive interference with the ongoing La Nina resulted in a less coherent spatial pattern, as observed in the 200-hPa Velocity Potential anomalies. Also, the amplitude of the RMM index decreased during late October. The GFS and ECMWF ensemble means depict a continued eastward propagation of the MJO over the Western Hemisphere during early November but large ensemble spread exists on its strength.

Modifications to the favored areas of above- and below-average rainfall from the previous outlook (released Oct 27) are based on: GFS, CFS, and ECMWF precipitation output, typical influences from La Nina, and MJO precipitation composites for phases 7 and 8. Also, the above-average rainfall areas are consistent with the latest model guidance on the most likely tropical cyclone tracks.

Hurricane Zeta strengthened to a Category-2 (maximum sustained winds of 110mph) on Oct 28 and made landfall in southeastern Louisiana. As it accelerated rapidly northeastward, strong winds caused widespread downed trees and power outages well inland to the southern Appalachians. A tropical wave

is currently located over the eastern Caribbean Sea and conditions are favorable for tropical cyclone (TC) development (70% for 48 hours, 80% for 5 days as of 2pm EDT on Oct 30) as this system enters the central and western Caribbean Sea. The GFS and ECMWF models are consistent and indicate that this predicted TC approaches Nicaragua or Honduras by Nov 2 or 3. Heavy to flooding rainfall is likely along and near the track of this system, including Aruba, Bonaire, Curacao, Jamaica, and parts of Central America. Persistent broad cyclonic surface flow, the low-frequency base state and MJO, and climatology support at least a moderate chance of TC development across the Caribbean Sea from Nov 4 to 10. Model solutions generally favor a north to northeast track of this TC if it develops, resulting in additional heavy rainfall to Jamaica and expanding north to Cuba, Haiti, and the Bahamas.

A broad trough of low pressure is expected to develop south of southern Mexico and environmental conditions are favorable for moderate confidence of TC development (60% for the next 5 days as of 11am PDT on Oct 30) across the East Pacific from Oct 31 to Nov 3. A relatively small TC shape, centered at 15N/115-120W, for the Nov 4-10 period is posted if this TC is more slow to develop. Based on the MJO and some model support, another moderate confidence area for TC development is posted across the East Pacific during this same period. Please refer to the National Hurricane Center for the latest updates and forecasts across the Atlantic and East Pacific basins.

Super Typhoon Goni recently developed over the West Pacific and is forecast to track west across the northern Philippines at the beginning of November and is likely to bring additional heavy rainfall to Vietnam during the first week of November. Tropical Depression Atsani also developed across the West Pacific during late October. Atsani is forecast to strengthen to a typhoon but uncertainty is high on its track. The potential exists for this tropical cyclone to recurve northeast over the North Pacific and needs to be closely monitored as it could influence the mid-latitude flow pattern downstream over North America. Based on the deterministic Canadian model and many GFS ensemble members, a moderate confidence for TC development was introduced to the West Pacific from Nov 4 to 10. Please refer to the Joint Typhoon Warning for the latest forecasts on TCs over the West Pacific.

The original discussion released October 27 follows.

Recent observations continue to show a coherent intraseasonal signal, with upper-level velocity potential anomalies exhibiting a characteristic Wave-1 asymmetry featuring large scale enhanced (suppressed) divergence over the Maritime Continent (Western Hemisphere). Zonal wind observations

are also consistent with MJO activity, and the RMM index continues to depict a robust signal. There has been little eastward propagation of these features during the past week, however, as Rossby wave activity over the West Pacific and the La Nina base state destructively interfered with the MJO. There is some evidence of weakening in the atmospheric response to the La Nina conditions, indicating that Kelvin wave activity ahead of the main MJO envelope is progressing across the Pacific. Ongoing tropical cyclone activity, including Hurricane Zeta over the Yucatan Peninsula and Typhoon Molave over the South China Sea, is also influencing the overall pattern. Dynamical model MJO index forecasts continue to depict fast eastward propagation of the signal across the Pacific, with re-emergence over the Western Hemisphere by Week-2 despite the strong and competing La Nina base state. Extratropical wavebreaking into the tropics may be enhancing the MJO over the Western Hemisphere. Given the high degree of consistency among the various dynamical model ensembles, the MJO is favored to emerge over the Western Hemisphere by Week-2, which may influence tropical cyclone formation potential in both the Caribbean and the East Pacific.

There are two ongoing tropical cyclones that developed during the past week. Typhoon Molave is currently moving westward across the South China Sea, and forecasts from the Joint Typhoon Warning Center indicate the potential for landfall over central Vietnam at the beginning of the Week-1 outlook period. There is a potential for significant wind, surge, and rainfall impacts from this tropical cyclone, especially considering how active the South China Sea basin has been during the past several weeks. Additionally, Hurricane Zeta formed over the western Caribbean and made landfall over Mexico's Yucatan Peninsula, weakening to tropical storm intensity as it moved over land. Forecasts from the National Hurricane Center show the tropical cyclone regaining hurricane intensity before making a second landfall along the northern U.S. Gulf Coast, possibly in the vicinity of New Orleans. Widespread wind, surge, and rainfall impacts are also likely in association with this system in a region that has already experienced multiple landfalling hurricanes this season. During the upcoming two weeks, there is a moderate potential for new tropical cyclone formations over both the East Pacific and the western Caribbean, either at the end of the Week-1 period or the beginning of the Week-2 period. The potential tropical cyclone over the East Pacific is anticipated to form far west of Mexico and therefore would not be a threat to land. Dynamical models generally favor a northward track for any potential tropical cyclone forming over the western Caribbean, given the strong midlatitude high over the east-central CONUS. This track would bring potential impacts to parts of Cuba, the Bahamas, and possibly the Florida Peninsula, depending on the eventual track. There is also potential for the disturbance to move over land in the vicinity of Honduras before forming; therefore, confidence in this formation remains moderate. Elsewhere, a disturbance northwest of Guam (99W) has a high potential for formation during the next 24 hours. The GFS favors a generally westward track, with potential impacts to the Philippines and the South China Sea region. A second tropical cyclone formation is possible to the east of 99W later in the Week-1 period, with a potential recurving track and impacts to Guam.

Forecasts for enhanced and suppressed precipitation are based on a consensus of the CFS and ECMWF ensemble systems, relying on MJO progression to the Northern Hemisphere as the favored outcome. In addition to areas of heavy rainfall in association with tropical cyclone activity, suppressed (enhanced) rainfall is favored for the eastern Indian Ocean basin and the western Maritime Continent (East Pacific, Caribbean, the tropical Atlantic, and eastern Brazil), consistent with MJO activity. Suppressed rainfall along the climatological North Pacific ITCZ is favored to continue given the ongoing La Nina conditions. Additionally, midlatitude troughing in the vicinity of Hawaii favors enhanced rainfall. During Week-2, suppressed precipitation is favored to overspread parts of the South China Sea region, bringing a break in tropical cyclone activity and torrential rainfall to Southeast Asia, while enhanced rainfall across parts of the Caribbean Basin and northern South America are favored to continue based on model forecasts and potential MJO activity.

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.