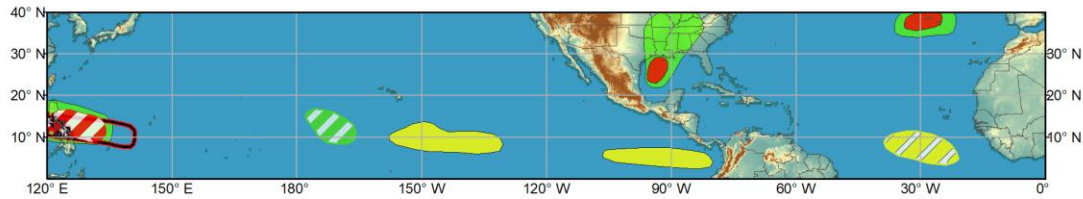




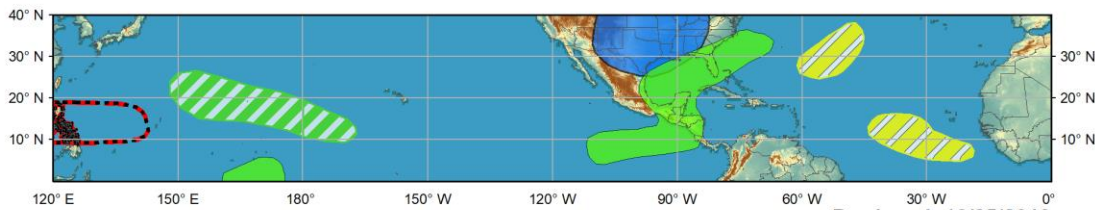
Global Tropics Hazards and Benefits Outlook - Climate Prediction Center



Week 1 - Valid: Oct 26 2019 - Oct 29 2019



Week 2 - Valid: Oct 30 2019 - Nov 05 2019



Confidence
High Moderate

Produced: 10/25/2019
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 latest analysis of zonal winds, upper-level velocity potential and OLR anomalies suggest that the MJO event which has become more organized since mid-October continues to interact with the low frequency positive phase of the Indian Ocean Dipole (IOD), which has disrupted the eastward propagation. The enhanced phase of the MJO still appears to be anchored over much of Africa and the northern Indian Ocean associated with the low frequency footprint, with the suppressed phase prevailing across much of the Western Pacific and western hemisphere. Dynamical models are in good agreement with a weakening MJO signal during Week-1, however the RMM forecasts show renewed eastward propagation as many ensemble members suggest the MJO reaches phases 5 and 6 during Week-2. If realized, the MJO is expected to destructively interfere with a significantly positive phase of the IOD which has continued to be the major contributor to the anomalous tropical convection pattern.

Similar to last Friday, the National Hurricane Center (NHC) has been monitoring another low pressure system (Tropical Depression Seventeen) located in the Gulf of Mexico. Latest satellite imagery indicates that the circulation and shower activity associated with this low has become better organized, and it is likely that a short-lived tropical storm will form before merging with a cold front and immediately begin extratropical transition. Regardless of tropical formation, high winds and enhanced amounts of

precipitation, possibly exceeding 3 inches, are forecast over many parts of the Louisiana, Alabama, Mississippi and Arkansas during the next 24 hours. Elsewhere in the tropical Atlantic, NHC is monitoring another area of low pressure situated to the southwest of the Azores. This low pressure area has been showing signs of increased shower activity and there is high chance (80%) of development during the next 5 days. Throughout the Caribbean and Atlantic, the latest deterministic and ensemble model guidance suggests the potential for tropical cyclogenesis to remain low due to high environmental shear conditions into early November.

In the eastern Pacific, no tropical storms have formed since earlier this week and NHC reports that no new tropical cyclones are expected to form during the next 5 days, consistent with model guidance. For days 5-11, this morning's GFS and GEFS depict the formation of two weak closed lows over the eastern Pacific. However, forecast confidence in the development of a tropical cyclone(s) is too low due to run to run inconsistency in the models. With the passage of a large, southward stretching cold front forecast across the CONUS towards the end of October, above-average rainfall is likely across the Gulf of Mexico and extending into the eastern Pacific into early November.

In the western Pacific, Typhoon Bualoi is currently located approximately 400nm east of Yokosuka, Japan and is undergoing extratropical transition while tracking to the northwest. Further south in the basin, the high confidence region for tropical cyclone formation east of the Philippines has been reduced to a moderate confidence over the next 5 days in this updated outlook. Specifically, there is more disagreement between the GFS/GEFS and the ECMWF solutions, while upper-level conditions have become less favorable for development. For days 5-11, both GFS and GEFS show an area of low pressure developing east of the Mariana Islands. However, forecast tools indicate a low probability (30%) of tropical cyclone formation and is omitted from this outlook.

Precipitation and temperature forecasts are updated to reflect the latest tracks associated with disturbances, as well as information from the Weather Prediction Center, National Hurricane Center, Joint Typhoon Warning Center, and the most recent CFS/ECMWF model guidance.

----- Original Discussion from Tuesday, October 22, 2019 follows: -----

The Madden-Julian Oscillation (MJO) became more coherent during mid-October with its enhanced phase shifting east from Africa to the Indian Ocean. The strong positive phase of the Indian Ocean Dipole (IOD) continues to be a major factor in anomalous tropical convection across the Indian Ocean and Maritime Continent. Recently, the enhanced phase of the MJO is constructively interfering with the

positive IOD, resulting in enhanced convection across the northern Indian Ocean. Dynamical models continue to have difficulty in how much the MJO weakens as it begins to destructively interfere with the positive IOD during Week-2. Many of the ECMWF ensemble members maintain eastward propagation to the West Pacific (phase 6 in the RMM space) late in Week-2, while the GFS model indicates a rapid weakening of the MJO by the end of October. Although uncertainty is high, the outlook is based on the expectation that a remnant enhanced phase of the MJO emerges over the West Pacific during the first week of November with the positive IOD also remaining a major contributor to anomalous tropical convection.

On October 18, Tropical Storm Nestor developed in the Gulf of Mexico and tracked rapidly northeast. Nestor brought much-needed rainfall to short-term drought areas of the southeastern United States. A couple of short-lived tropical cyclones (Octave and Priscilla) developed in the East Pacific from October 18 to 20. There are no signs of tropical cyclone development in the East Pacific or Atlantic basins with the suppressed phase of the MJO over the Western Hemisphere.

A couple of tropical cyclones developed over the Northwest Pacific during the past week. Typhoon Neoguri weakened to a Tropical Storm but brought heavy rainfall to Tokyo, Japan. Typhoon Bualoi (maximum sustained winds of 120 knots) is forecast to track north and eventually turn northeast as it moves closer to Japan. Model solutions remain consistent and in excellent agreement that a tropical cyclone develops either just east of the Philippines or in the South China Sea during Week-1 with a likely track west to Vietnam during Week-2. Another tropical cyclone, albeit with moderate confidence, is forecast to form over the West Pacific during Week-2. The Central Pacific Hurricane Center is monitoring an elongated area of low pressure south of the Hawaiian Island. As of 8am HST, there is a 30 percent chance of development within the next five days.

A broad area of low pressure is located over the Arabian Sea. The GFS and ECMWF models are in excellent agreement that this low pressure system develops into a tropical cyclone and rapidly intensifies as it tracks west across the Arabian Sea during Week-1. There are increasing chances that this tropical cyclone approaches Oman or Yemen early in Week-2. Based on the predicted evolution of the MJO, model guidance, and climatology, moderate confidence exists that another tropical cyclone forms in either the southwest Bay of Bengal or Arabian Sea during late Week-1 or Week-2.

The precipitation outlook during the next two weeks is based on predicted tracks of tropical cyclones, the low frequency positive IOD, MJO precipitation composites for phases 2 through 5, and the model consensus among the CFS, ECMWF, and GFS models. If a coherent MJO advances east of the Maritime Continent during early November, chances for above (below) average rainfall increase across parts of

the West Pacific (South America). Forecasts over Africa are made in consultation with CPCs international desk, and can represent local-scale conditions in addition to global-scale variability.

The above average rainfall area forecast across the south-central U.S. and parts of the Gulf of Mexico during Week-1 is related to the increasing chance that a 500-hPa low becomes separated from the northern stream flow and closes off over the southern Great Plains. High confidence exists for below normal temperatures to spread south to the Rio Grande River by Week-2 due to an amplified upper-level trough. At this time, freezing temperatures are expected to remain north of the Rio Grande.