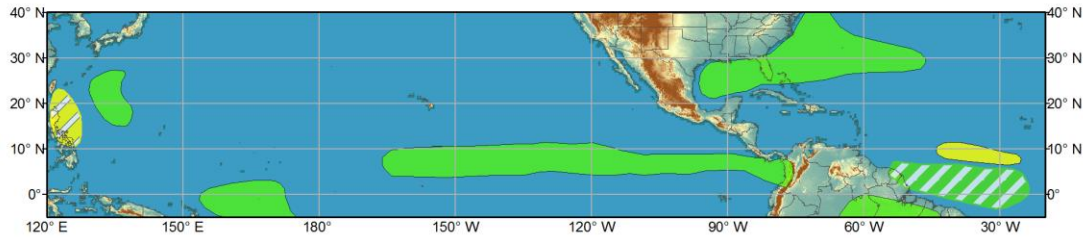




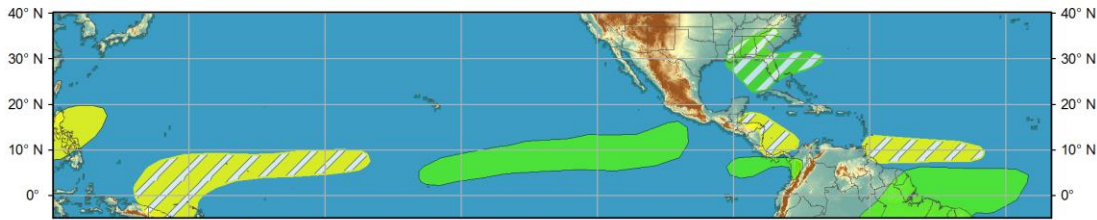
Global Tropics Hazards and Benefits Outlook - Climate Prediction Center



Week 1 - Valid: Nov 24 2018 - Nov 27 2018



Week 2 - Valid: Nov 28 2018 - Dec 04 2018



Confidence
High Moderate

Produced: 11/23/2018
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.



The MJO signal remains low-amplitude on the RMM-based index, but propagation to the Pacific has commenced. Dynamical model MJO index forecasts are less bullish about a robust Pacific MJO event than they were earlier in the week, but both the GEFS and ECMWF maintain that a coherent MJO signal will propagate across the Western Hemisphere. With the lower amplitude Pacific MJO event, the GEFS is a bit faster, and like the ECMWF, brings the signal to the Indian Ocean by Week-2. Given the anticipated weaker MJO signal, the extratropical teleconnections are a bit less certain.

No new moderate or high risk areas for tropical cyclone formation were added to this outlook. Typhoon Man-Yi passed to the south of Guam, and the latest forecasts from the Joint Typhoon Warning Center indicate weakening over the next few days, along with a turn to the north and northeast well east of the Philippines. Although some dynamical model ensemble members continue to develop a tropical cyclone south of Mexico, the chances for such a late season formation remain unlikely. Over the Atlantic, the National Hurricane Center is monitoring the potential for a subtropical cyclone to form near or southwest of Bermuda in a few days. The potential for development is currently too low to warrant the inclusion of a moderate risk area on the updated outlook.

The original forecast discussion that was released on 20 November 2018 follows.

Analyses of recent observations across the global tropics and the RMM-based and CPC velocity potential based MJO indices show a continued active

intraseasonal signal with the enhanced phase over the Maritime Continent. The MJO propagation slowed during the past week, however, and the amplitude of the RMM index diminished. This is likely due to interactions between the MJO and an unusually strong equatorial Rossby wave (ERW) over the West Pacific. Destructive interference with the low frequency state that continues to transition towards El Nino conditions, favoring suppressed convection over the Maritime Continent also played a role. Dynamical model MJO index forecasts do not show this interruption of the signal lasting for very long. The bias corrected GEFS depicts a re-enhancement of the MJO over the West Pacific during Week-1, with eastward propagation to the Western Hemisphere during Week-2. The ECMWF is similar, albeit with reduced amplitude and increased propagation speed. Many ECMWF ensemble members show the MJO enhanced convective signal returning to the western Indian Ocean by the end of Week-2, which is on the fast end of the spectrum, but similar to the previous MJO event. Statistical guidance similarly depicts robust MJO activity, with a more canonical phase speed. Based on a general consensus of these forecasts, the MJO is anticipated to be active during the next two weeks, with a Pacific event during Week-1 transitioning to a Western Hemisphere event during Week-2. As the MJO emerges over the Pacific, it will begin constructively interfering with the low frequency signal, which may result in widespread convection along the Pacific ITCZ.

A pair of tropical depressions are currently bringing impacts to parts of Asia. Tropical Depression 32W (Toraji) is currently over the Gulf of Thailand, and is forecast to gradually weaken as it emerges over the Bay of Bengal, where conditions will become increasingly unfavorable as the suppressed phase of the MJO overspreads the Indian Ocean. Further east, Tropical Depression 33W is currently approaching the central Philippines, and is forecast to move into the South China Sea over the next few days and affect Vietnam during the middle or latter part of Week-1. The Joint Typhoon Warning Center does not anticipate substantial intensification, making heavy rainfall and flooding the primary hazards associated with this system. Tropical Depression Bouchra dissipated over the south-central Indian Ocean, and a disturbance near Sri Lanka is expected to move slowly towards the Arabian Sea over the next week, with a low chance for tropical cyclogenesis. In association with the strong ERW over the West Pacific, a low-latitude tropical depression (34W - Man-Yi) recently formed near 5N/155E. This tropical cyclone is forecast to move generally northwestward while intensifying, and may bring substantial impacts to

Guam before recurving well east of the Philippines. No additional tropical cyclogenesis is anticipated during the outlook period, although some dynamical model forecasts indicate a potential for late season development over the far East Pacific.

Precipitation forecasts are based on a consensus between the CFS and ECMWF ensembles, MJO composites for Pacific and Western Hemisphere events, forecasted TC tracks, and the impacts from other modes of coherent tropical variability including the low frequency state and the West Pacific ERW. During Week-1, enhanced convection associated with tropical cyclone activity is favored over Vietnam and the adjacent South China Sea, as well as the West Pacific near Guam, with a region of suppressed convection due to subsidence in between these regions near the Philippines. Continued enhanced convection associated with the ERW is favored east of New Guinea, while suppressed convection associated with the MJO is forecast across the eastern Indian Ocean and western Maritime Continent. Constructive interference between the base state and the MJO favors widespread enhanced convection across the tropical North Pacific, reaching all the way to western South America. Additionally, enhanced convection is favored across much of western and central Brazil. A developing midlatitude storm along the east coast of the CONUS is forecast to draw in substantial tropical moisture, resulting in heavy precipitation along the Atlantic seaboard.

During Week-2, suppressed (enhanced) convection is favored over parts of the Maritime Continent (east-central Pacific, central and northeastern Brazil, and the tropical Atlantic) in association with the MJO and the low frequency state. The potential for continued westward propagation of the ERW introduces some uncertainty across the central Maritime Continent, where the MJO and low frequency state would both favor suppressed convection.