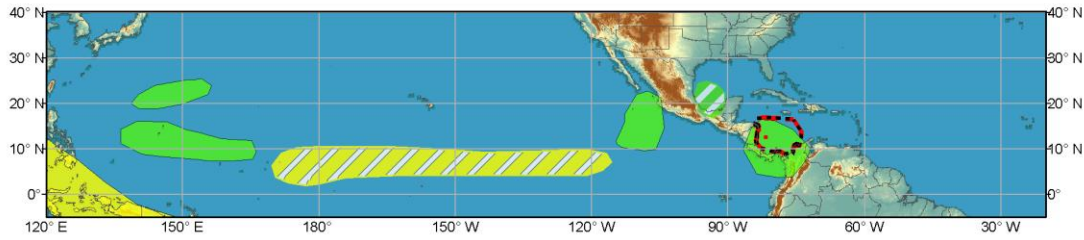




# Global Tropics Hazards and Benefits Outlook - Climate Prediction Center



**Week 1 - Valid: Nov 12 2016 - Nov 15 2016**



**Week 2 - Valid: Nov 16 2016 - Nov 22 2016**



**Confidence**  
High Moderate

**Produced: 11/11/2016**  
**Forecaster: Baxter**

- 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 remains active as monitored by both the RMM index and CPC velocity potential index. The enhanced phase is currently over the Pacific and the Americas after a rapid eastward propagation over the past few days. This was expected, and due in part to an atmospheric Kelvin wave. Dynamical and statistical models continue to forecast eastward propagation of a coherent wave-1 signal over the next 7-10 days or so. Thereafter, uncertainty increases as the dynamical guidance weakens the signal over Africa, while the GEFS ensemble mean continues to show a transition to a wave-2 velocity potential pattern by the end of the period.

Tropical Storm Ma-on developed over the West Pacific on November 10, and is forecast to weaken over the next one or two days. Tropical Depression 28W developed early on November 11. This system developed out of the tropical wave that was being targeted for potential development east of the Philippines during the Week-2 period. It developed earlier than expected, but is currently forecast to strengthen into a strong tropical storm while tracking westward toward the Philippines over the next several days.

Unsettled weather continues to be forecast over the southwestern Caribbean Sea, though any tropical development now looks more likely early in the Week-2 period. A cold front interacting with tropical moisture is likely to lead to above-average rainfall northeastward from this region regardless of tropical cyclogenesis. Some ensemble members suggest that the tropical cyclone, once formed, might not track northeastward, but rather remain stationary or drift westward over central America. This will be monitored closely for the next full update issued on Tuesday.

The tropical disturbance in the East Pacific is now less likely to develop into a tropical cyclone. The National Hurricane Center now prescribes only a 10% chance of formation over the next five days.

Existing shapes favoring above- or below-average rainfall were adjusted based on the latest model consensus, and account for expected tropical cyclone tracks.

The previous discussion, issued on Tuesday, November 8, follows:

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The MJO showed signs of organization during the past week, with the anomalous upper-level velocity potential pattern beginning to take on a more amplified wave-1 structure. Large scale upper-level divergence (convergence) is now centered over the Pacific basin (Africa and the Indian Ocean). The RMM index currently indicates strengthening and rapid eastward propagation of the convective signal across the Pacific. This could be due in part to weak Kelvin wave activity, as well as the effect of the extratropics influencing the tropics over the Western Hemisphere. Dynamical and statistical models show eastward propagation of a coherent signal over the next 7-10 days. Beyond that, the forecast RMM signal weakens over Africa in both the GEFS and ECMWF forecasts. Closer inspection of the 06Z GEFS ensemble mean velocity potential anomalies reveals that the pattern evolves toward a wave-2 structure later in Week-2, with enhanced upper-level divergence (convergence) from South America to Africa and over the far western Pacific (the Indian Ocean and the central and eastern Pacific). The MJO is expected to play some role in the global tropical convective pattern, especially over the Western Hemisphere. From the Maritime Continent to the West Pacific there is uncertainty due to the destructive interference between the base state and MJO-related variability.

Typhoon Meari developed west of Guam on 2 November before tracking northeastward southeast of Japan. The National Hurricane Center is not currently monitoring any disturbances in the Atlantic basins for development over the next 5 days, but there is a low threat of tropical cyclogenesis over the Eastern

Pacific during Week-1. There are two disturbances over the South Indian Ocean that dynamical models suggest could become tropical cyclones; however, environmental conditions do not appear overly conducive during the forecast period. There is also a low risk of tropical cyclogenesis over the West Pacific in Week-1, though chances are better in Week-2, when dynamical models are in better agreement on possible cyclogenesis east of the Philippines. Over the far western Caribbean, MJO activity and dynamical guidance support a moderate risk of late-season tropical cyclogenesis. The most likely period for formation straddles the Week-1/Week-2 interface.

During Week-1, the MJO supports suppressed convection over parts of the Indian Ocean and Maritime Continent, while the low-frequency state supports below-average rainfall over the central and eastern Pacific. Enhanced upward motion is favored over the Americas during this period, consistent with observed and forecast MJO evolution. Dynamical model consensus from the CFS and ECMWF ensemble means is used to inform forecast shapes across the domain.

During Week-2, uncertainty increases, with the exception of expected above-average precipitation over eastern Brazil, where the dynamical model consensus includes a robust signal and is generally consistent with MJO evolution. Suppressed convection remains favored over parts of the Indian subcontinent, Bay of Bengal, and Maritime Continent, though at reduced coverage compared to Week-1. Enhanced convection is favored at moderate confidence over the West Pacific. A key uncertainty is whether an MJO-related convective event can develop over the western and central Indian Ocean late in the period, a solution not currently favored by model guidance.

Forecast shapes over Africa are made in consultation with the Africa Desk at CPC, and often reflect more regional scale variability in addition to large-scale climate factors.