



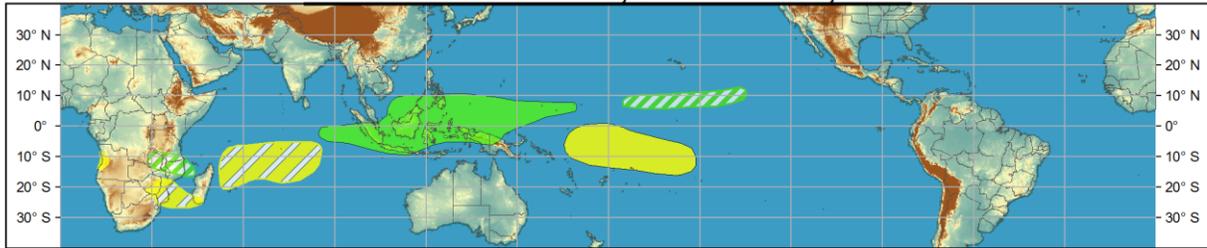
# Global Tropics Hazards and Benefits Outlook - Climate Prediction Center



**Week 1 - Valid: Jan 25, 2017 - Jan 31, 2017**



**Week 2 - Valid: Feb 01, 2017 - Feb 07, 2017**



**Confidence**  
High Moderate

- Tropical Cyclone Formation** ■ ■ Development of a tropical cyclone (tropical depression - TD, or greater strength).
- 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.

Produced: 01/24/2017

Forecaster: Allgood

Product is updated once per week, except from 6/1 - 11/30 for the region from 120E to 0, 0 to 40N. The product targets broad scale conditions integrated over a 7-day period for US interests only. Consult your local responsible forecast agency.



The MJO was active during the past week, with both the CPC velocity potential and RMM-based indices depicting an eastward propagating intraseasonal signal. While the RMM-based index shows the enhanced phase currently emerging over the western Indian Ocean (Phase-2), there is not much of a convective response in the central Indian Ocean. This is likely due to destructive interference between the MJO and the negative Indian Ocean Dipole (IOD) event and waning La Nina conditions. The spatial pattern of upper-level velocity potential anomalies generally reflects the intraseasonal signal, with the destructive interference from other modes, e.g., large-scale enhanced divergence (convergence) aloft over the Maritime Continent (central Indian Ocean) that is out of phase with the MJO, readily apparent. An equatorial Rossby wave (ERW) is also observed in the OLR and lower-level wind fields, and this feature is also contributing to the enhanced convection over the Maritime Continent.

Dynamical model MJO index forecasts generally support continued eastward propagation of the intraseasonal signal from the Indian Ocean to the Maritime Continent over the next two weeks. The GEFS is a notable outlier, and depicts rapid weakening of the signal after several days. Note that the RMM-index accounts for the low frequency state by removing the 120-day period mean; therefore, the GEFS forecast may be exhibiting a bias against a Maritime Continent signal given the weakening ENSO

state. Statistical tools, including the Constructed Analog, strongly support robust evolution of the MJO during the outlook period. Additionally, as the MJO enhanced convective envelope approaches the Maritime Continent, it will begin constructively interfering with both the base state and the observed Rossby wave. Therefore, the MJO is anticipated to remain active over the next two weeks, with the convective response becoming more consistent with historical composites during Week-2 as destructive interference with the other modes lessens. Tropical to northern hemisphere extratropical teleconnections are generally robust this time of year with an Indian Ocean and Maritime Continent MJO event, with a retraction of the East Asian Jet favoring an evolution toward troughing over western North America and ridging over eastern North America. An anticipated blocking pattern over the Gulf of Alaska during Week-2, however, may complicate the evolution of any extratropical response. The tropics may continue to influence the extratropical pattern beyond Week-2 if the MJO signal is able to emerge over the West Pacific.

No tropical cyclones developed during the past week. During the GTH outlook period, a relatively quiet pattern is anticipated to continue. An area of low pressure is currently inland over northern Australia. As this region re-enters open waters near the Kimberley Coast, there is a moderate potential for tropical cyclone formation. Elsewhere, enhanced convection is ongoing east of the Philippines, partly in association with the ERW, and some GFS ensemble members depict tropical cyclone development arising from this convection. The formation potential is too low at this time to depict a hazard shape on this outlook. The GFS has consistently initialized a tropical cyclone over the southwestern Indian Ocean over the past several days; however, satellite imagery reveals little organized convection in this region, and the negative IOD phase is not supportive for tropical cyclone formation.

The Week-1 outlook favors dynamical model guidance from the CFS and ECMWF more than MJO composites due to destructive interference among the competing tropical signals. Suppressed convection is favored across the southwestern Indian Ocean, while enhanced convection associated with the MJO is primarily limited to the north-central and northeastern Indian Ocean. Enhanced convection is also favored across the western Maritime Continent and northwestern Indian Ocean, partly due to ERW activity and the base state. Suppressed convection is forecast for northeastern Australia, the eastern Coral Sea eastward to Fiji, and the equatorial central Pacific. Across the Western Hemisphere, enhanced rainfall is favored to extend from the upper Amazon basin through much of the equatorial Atlantic, which is consistent with the MJO.

During Week-2, the forecasted areas of enhanced and suppressed precipitation are more consistent with canonical MJO impacts. Suppressed (enhanced) rainfall is anticipated across the southwestern and south-central Indian Ocean and the SPCZ region (eastern Indian Ocean, Maritime Continent, and northwestern Pacific, as well as a meridionally narrow region across the north-central Pacific near 10N).

Forecasts over Africa are made in consultation with the CPC international desk, and can represent local-scale conditions in addition to global-scale variability.