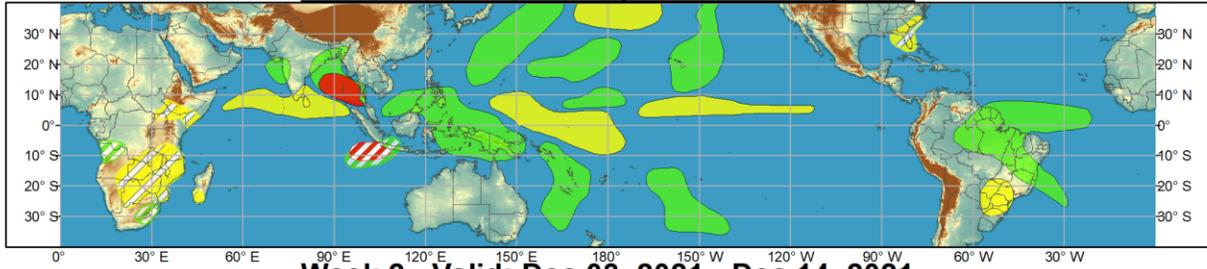




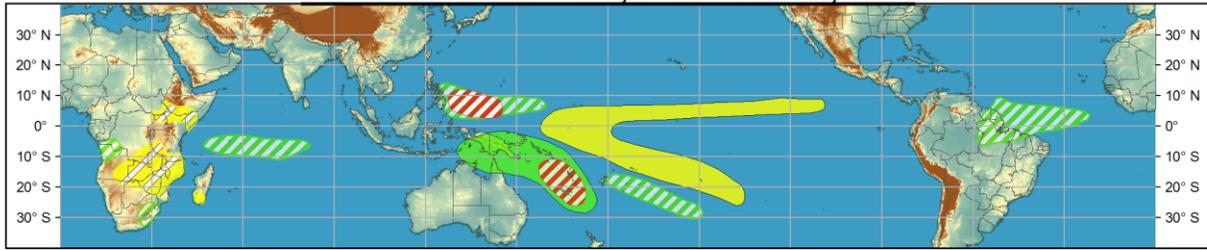
# Global Tropics Hazards and Benefits Outlook - Climate Prediction Center



## Week 1 - Valid: Dec 01, 2021 - Dec 07, 2021



## Week 2 - Valid: Dec 08, 2021 - Dec 14, 2021



**Produced: 11/30/2021**  
**Forecaster: Novella**

Confidence		
High	Moderate	
		<b>Tropical Cyclone Formation</b> Development of a tropical cyclone (tropical depression - TD, or greater strength).
		<b>Above-average rainfall</b> Weekly total rainfall in the upper third of the historical range.
		<b>Below-average rainfall</b> Weekly total rainfall in the lower third of the historical range.
		<b>Above-normal temperatures</b> 7-day mean temperatures in the upper third of the historical range.
		<b>Below-normal temperatures</b> 7-day mean temperatures in the lower third of the historical range.

**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.**



Both the velocity potential based MJO and RMM indices continue to indicate that the MJO remains weak with enhanced convection anchored over the Maritime Continent consistent with the low frequency La Nina base state. However, recent combined infrared satellite and velocity potential spatial anomalies reveal the development of enhanced upper-level divergence and convection over the western Pacific, with more suppressed conditions emerging over Africa and the western Indian Ocean. Looking ahead, there is good agreement in the dynamical models continuing to favor renewed MJO activity, with most RMM forecasts showing the intraseasonal signal becoming more amplified and propagating eastward across the western Pacific during the next two weeks. Of note, there is a substantial increase in RMM2 values forecast over phase 6 during week-1, which is likely tied to development of anomalous lower-level westerlies which are favored to shift eastward from the Maritime Continent and supplant the enhanced trades that have persisted over the equatorial Pacific west of the Date Line.

Even with increased model support for this realization, there still remains uncertainty as to whether the MJO will maintain an organized structure given the likelihood of destructive interference with the base state, which is also evidenced by large ensemble spread in the forecasts through mid-December. Any

coherence of the intraseasonal signal is more likely to manifest itself over the southern Hemisphere in the SPCZ region, which is reflected in the precipitation and upper-level velocity potential forecasts during the next two weeks. As such, tropical cyclone (TC) formation remains predominantly favored in the eastern Hemisphere, with more favorable conditions for TC development expected over the tropical southern Hemisphere during the outlook period. Downstream impacts over North America associated with Pacific MJO events during late boreal autumn historically favor more anomalous upper-level troughing (ridging) over the lower (higher) latitudes of the continent. However, this is at odds with the latest extended range guidance which depict more of a positive Arctic Oscillation (AO) pattern during the next two weeks. In light of this, and the aforementioned destructive interference with La Nina where MJO related convective anomalies are likely to be more focused in the southern Hemisphere, there remains high uncertainty regarding extratropical impacts over North America with the reemergence of the intraseasonal signal.

During the last week, one TC developed in the global tropics. Tropical Storm Nyatoh formed on 11/29 to the east of Mariana Islands and is forecast to rapidly intensify and curve under the influence of an approaching mid-latitude trough during the next few days. Beyond this time, unfavorable shear conditions are expected to quickly weaken the system, where it is forecast to eventually dissipate over open waters later this week. For week-1, there is good model agreement for TC formation in the Bay of Bengal associated with an area of low pressure shifting westward from the Gulf of Thailand, supportive of a high confidence area in the outlook. In the southern Indian Ocean, a moderate confidence area is issued to the south of Indonesia associated with another area of low pressure that is favored to strengthen in the deterministic solutions early in week-1. Despite less support from the ECMWF based guidance, there has been good run-to-run continuity from GEFS and GFS depicting an area of deepening low pressure in the Philippine Sea prompting a moderate confidence area in the region for week-2. In the South Pacific, several ECMWF and GEFS ensemble members show potential TC formation near the Coral Sea late in week-1 and into week-2. With Rossby wave activity, enhanced upper-level divergence, and reduced shearing conditions favored by the dynamical models over the region during the later period, a moderate confidence area is issued for week-2.

The precipitation outlook during the next two weeks is based on a consensus of GEFS, CFS, and ECMWF guidance, anticipated TC tracks, with some consideration given to composite precipitation anomalies of historic La Nina and Pacific MJO events. For hazardous weather concerns during the next two weeks across the U.S., please refer to your local NWS Forecast Office, the Weather Prediction Center's Medium Range Hazards Forecast, and CPC's Week-2 Hazards Outlook. 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.