



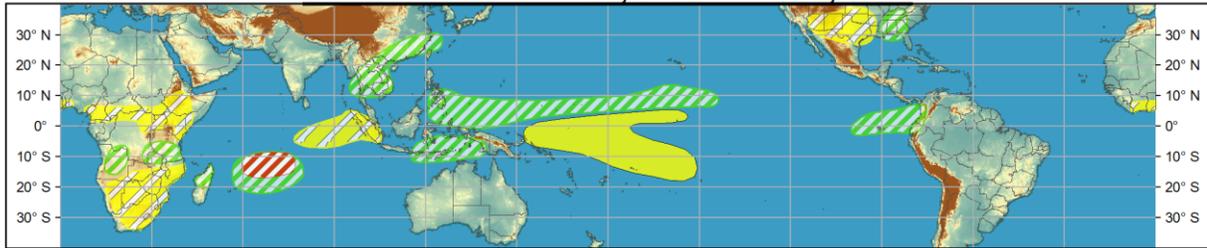
# Global Tropics Hazards and Benefits Outlook - Climate Prediction Center



## Week 1 - Valid: Mar 16, 2022 - Mar 22, 2022



## Week 2 - Valid: Mar 23, 2022 - Mar 29, 2022



**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: 03/15/2022

Forecaster: Novella

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 Madden Julian Oscillation (MJO) has become better organized, which is reflected in the RMM index showing an increase in amplitude and an eastward propagating signal over phase 2 during the past week. Upper-level velocity potential anomaly fields also depict more of a coherent wave-1 pattern, with the leading edge of the main convective envelope having shifted eastward over Africa and the western Indian Ocean more recently. These observational analyses suggest much of the renewed intraseasonal activity appears to be tied to a convectively coupled Kelvin wave that propagated eastward from the Western Hemisphere since early March. There is good agreement among the dynamical models favoring continued eastward propagation of the MJO across the Indian Ocean (Maritime Continent) during week-1 (week-2), with several ensemble members suggesting the possible development of a high amplitude event. The enhanced phase of the MJO, as well as predicted Kelvin and Rossby wave activity, is expected to increase chances for tropical cyclone (TC) formation mainly over the Indian Ocean during the next two weeks. In addition, given the potential for the MJO to again constructively interfere with the low frequency footprint over the Maritime Continent, an extratropical response typical of La Nina is anticipated, yielding increased chances of warmer than normal temperatures across portions of eastern North America later in March.

Since early February, much of the observed TC activity has been focused over the southern Indian Ocean, as another TC (Billy) developed near 14S/103E during the last week. The Joint Typhoon Warning Center (JTWC) expects Billy to continue tracking westward to the south of the Cocos Islands and gradually weaken under an increasingly unfavorable shear environment later this week. Looking ahead, the JTWC is currently monitoring two disturbances in the southwestern Indian Ocean, one tied to the remnants TC Gombe over the Mozambique Channel, and the other associated with an organizing area of convection (91S) located to the north of Madagascar. While dynamical models favor both of these disturbances to track over land and weaken in the near-term, there is a greater potential for the former disturbance to strengthen and reform due to more favorable upper-level conditions in the region, prompting a corresponding moderate confidence area for TC development for week-1. Later in the period, the intersection of a predicted Kelvin and Rossby wave over the northern Indian Ocean increases chances for TC formation in the Bay of Bengal by this weekend. A high confidence area was considered due to good run-to-run continuity in both the deterministic and ensemble GEFS guidance for closed low formation, however, the ECMWF remains less supportive of this realization, and given the climatological low frequency of TC formation in the basin during March, a moderate confidence is therefore issued for week-1. The enhanced phase of the MJO is also expected to contribute to additional TC genesis across the south-central Indian Ocean during the next two weeks. However, guidance remains variable in regards to the location and timing of development, and a pair of moderate confidence areas for TC development are posted for weeks 1 and 2 throughout the region.

The precipitation outlook during the next two weeks is based on a consensus of GEFS, CFS, and ECMWF ensemble mean solutions, anticipated TC tracks, and contributions from historical MJO and La Nina conditions. Over the U.S, there are elevated chances for enhanced precipitation over the Southeast early in week-1, as well as over portions of the Plains, Mississippi, Tennessee and Ohio Valleys late in week-1 associated with low pressure systems tracking in these regions. For this latter low pressure system, guidance shows some of the heavy precipitation potential extending into early week-2 over the southeastern CONUS and is reflected in the outlook. Upstream, ensembles favor the development of mid-level ridging centered over the southwestern CONUS, resulting in increased chances for below-normal precipitation from the Southwest to the Central Plains during week-2. The favored anomalous dryness is consistent with La Nina heading into early spring, and is also likely to exacerbate widespread drought conditions (ranging from D0 to D4) that are registered for many areas west of the Mississippi River. Farther south, the development of anomalous low-level westerlies over the eastern equatorial Pacific favors increased chances for above-normal precipitation extending into northern South America during week-2. With antecedent above-normal rainfall triggering localized flooding and river inundation over parts of western Columbia and Ecuador during the last week, any additional heavy rainfall may worsen already saturated ground conditions over the region.

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.