

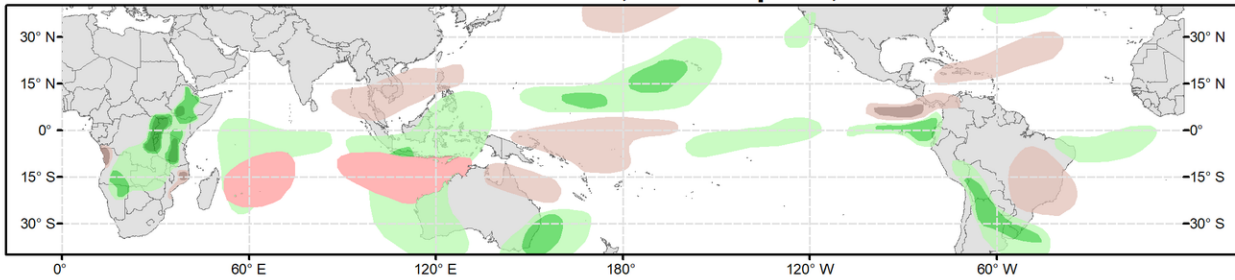


Global Tropics Hazards Outlook

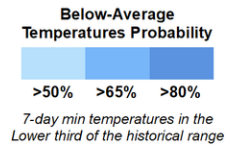
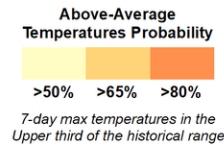
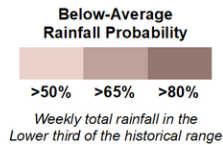
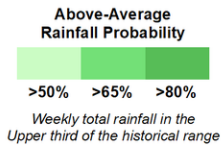
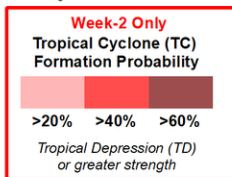
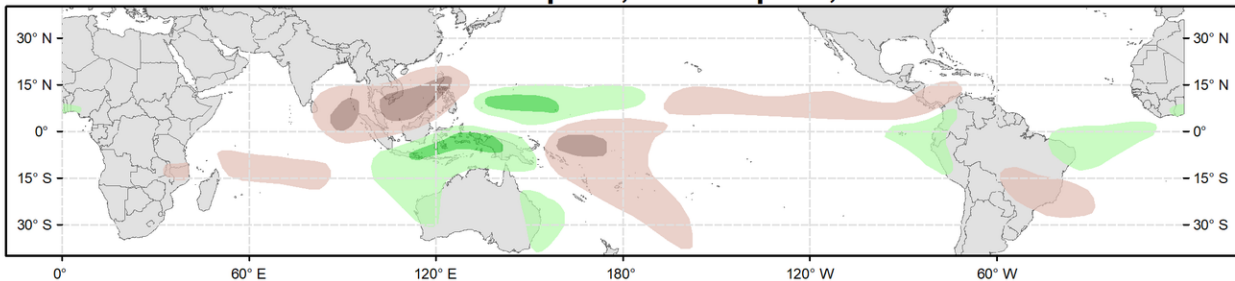
Climate Prediction Center



Week 2 - Valid: Mar 29, 2023 - Apr 04, 2023



Week 3 - Valid: Apr 05, 2023 - Apr 11, 2023



Issued: 03/21/2023
Forecaster: Novella

This product is updated once per week and targets broad scale conditions integrated over a 7-day period for US interests only. Consult your local responsible forecast agency.

Through mid-March, strong Madden Julian Oscillation (MJO) activity remains present in the latest observations and the RMM index indicates the enhanced phase crossed the Western Hemisphere and is about to enter the Indian Ocean (phase 2). Looking ahead, there has been good continuity in the RMM forecasts favoring a rapidly weakening MJO signal as it crosses the Indian Ocean during the next few weeks. Despite the good agreement among the dynamical models, there is little confidence in this realization for a number of reasons. Irrespective of its eventual amplitude in RMM space, these forecasts maintain a steady eastward propagation of the signal, and models have been shown to struggle in maintaining any coherence of the MJO as it approaches the Maritime Continent. Similar to the MJOs passage over this part of tropics earlier this year, a sharp loss in RMM amplitude was erroneously predicted, likely related to the 120-day mean removal in RMM computation and/or competing modes of variability, which can both render a weaker mean RMM solution and skew the signal towards the west. Although the MJO less likely to match its substantial intensity earlier this month, the MJO is nonetheless favored to maintain an organized structure through the end of March and into April. This is supported by lower-level zonal wind guidance, and even better supported in the upper-level velocity potential anomaly forecasts which clearly reveal an eastward propagating envelope of enhanced conditions, with MJO activity coming through the objective wavenumber-frequency filtering over the Indian Ocean and Maritime Continent during the next three weeks.

In light of continued MJO activity forecast, the large-scale environment is expected to be conducive for tropical cyclone (TC) development over the Indian Ocean, with decreased chances for formation over the South Pacific heading into April. Although MJO teleconnections can become more tenuous during boreal spring, the extratropical response associated with Maritime Continent events

would favor increasing mid-level heights and above-normal temperatures for parts of the eastern Contiguous U.S. (CONUS) later in April. Additionally, a residual low frequency circulation is expected to play a role in the downstream response as well. Despite oceanic indicators being reflective of the transition to ENSO-neutral conditions, models show the persistence of an enhanced trade wind regime over the Equatorial Pacific, along with a suppressed convective footprint near the Date Line consistent with an outgoing La Nina. These features are favored to eventually dissipate, though its lingering effects during April may also lead to warmer temperatures over the U.S., particularly over the Southeast and south-central CONUS.

No TCs formed during the past week, as the tropics have been relatively quiet since the beginning of March (TC Kevin was last to form in South Pacific on 3/1). Consistent with the enhanced phase of the MJO favored over the Indian Ocean during the two weeks, ensembles and probabilistic tools show the return of potential TC formation over the basin by this weekend. The challenge for week-2 is that many of these signals in the guidance are decaying before the start of the period, suggestive of genesis during late week-1. To account for uncertainty in timing, slight chances for TC development are posted to the east of Madagascar, as well as over the southeastern Indian Ocean extending into the Timor Sea where consensus is greatest in the guidance. No TC formation areas are issued over the South Pacific due to the lack of support in the models.

Forecasts for above- and below-normal precipitation are based on a skill weighted blend of extended range dynamical models, the anticipated continuation of the low frequency circulation, and historical MJO composites. Notably, above-normal precipitation favored over the eastern equatorial Pacific through early April may adversely impact parts of northern Peru, which has experienced floods and landslides due to heavy rainfall received during March. For hazardous weather concerns in your area during the next two weeks, please refer to your local NWS office, the Medium Range Hazards forecast from the Weather Prediction Center (WPC), and the CPC Week-2 Hazards Outlook. Forecasts over Africa are made in coordination with the International Desk at CPC.