

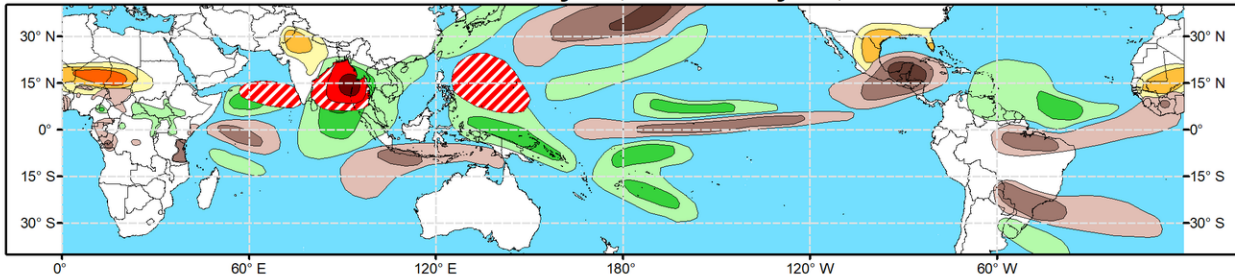


Global Tropics Hazards Outlook

Climate Prediction Center

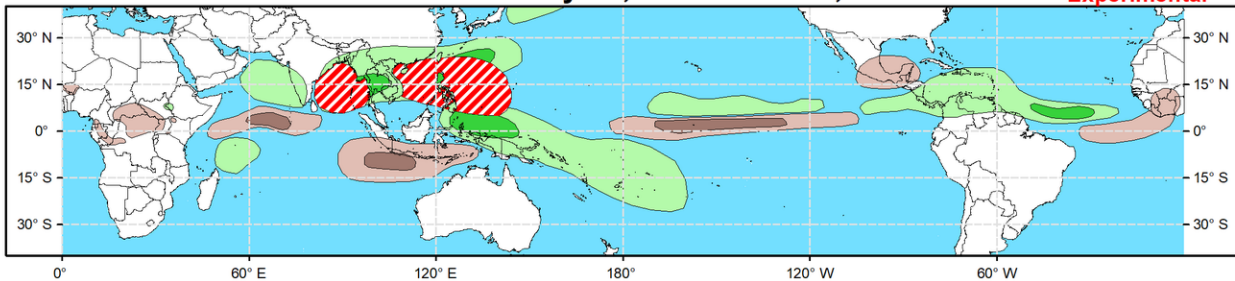


Week 2 - Valid: May 22, 2024 - May 28, 2024

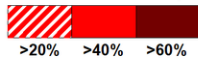


Week 3 - Valid: May 29, 2024 - Jun 04, 2024

**** Experimental ****

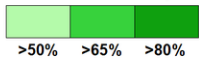


Tropical Cyclone (TC) Formation Probability



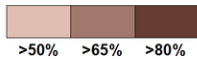
Tropical Depression (TD) or greater strength

Above-Average Rainfall Probability



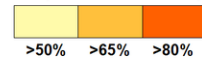
Weekly total rainfall in the Upper third of the historical range

Below-Average Rainfall Probability



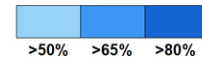
Weekly total rainfall in the Lower third of the historical range

Above-Average Temperatures Probability



7-day max temperatures in the Upper third of the historical range

Below-Average Temperatures Probability



7-day min temperatures in the Lower third of the historical range

Issued: 05/14/2024

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.

Following a brief period of more coherent Madden-Julian Oscillation (MJO) activity during late April, the MJO has since weakened and became increasingly disorganized. The observed upper-level velocity potential anomaly fields depict a poor representation of the enhanced divergence envelope crossing the western Hemisphere, where there appears to be two other convective centers throughout the global tropics; one tied to a low frequency response in the western Indian Ocean, and another tied to Kelvin wave activity moving over the tropical Americas. The multiple centers of action have led to a much weakened signal in RMM space, as other modes of tropical variability have played a superseding role in driving convective and circulation anomalies during the past week or so.

Moving forward, however, there is growing support in the RMM forecasts for renewed MJO activity during the next week, with the enhanced phase propagating eastward from the Indian Ocean and crossing the Maritime Continent at a potentially moderate amplitude through the end of May. The amplifying MJO signal in RMM space over the Indian Ocean may, in part, be explained by constructive interference with the aforementioned modes of tropical variability in the basin, and consequently, there is still some question as to the potential coherence of the MJO with other modes of tropical variability favored to remain at play during the next several weeks. There is also uncertainty in regards to MJO phase speed, as upper-level velocity potential anomaly forecasts in the GEFs and ECMWF depict very different placements of the enhanced and suppressed convective envelopes by the end of the month. A slower, and more canonical phase speed favored in the GEFs may be in response to monsoonal circulations taking shape over Asia and Africa, though the Kelvin wave-like MJO phase speed featured in the ECMWF has been the predominant mode this spring. Despite these uncertainties, the large-scale circulation looks conducive for

tropical cyclogenesis in the northern Indian Ocean and western Pacific later in May. Conversely, more unfavorable conditions for Tropical Cyclone (TC) development are anticipated over the tropical Americas following a potentially early start of the Hurricane season in the eastern Pacific during week-1.

No tropical cyclones formed during the past week. For week-1, the Joint Typhoon Warning Center (JTWC) is monitoring a tropical disturbance (92S) to the north of Madagascar. While formation chances are currently designated as low in the near-term, deterministic solutions have been fairly bullish for gradual development later this week. Any TC formation during this time of the year in the southwestern Indian Ocean would be very unusual, but is suggestive of the increasingly favorable conditions becoming established in the Indian Ocean. In the western Hemisphere, the National Hurricane Center (NHC) has yet to start issuing their regular Tropical Weather Outlooks (TWOs) with the start of the eastern Pacific Hurricane season beginning tomorrow (5/15). However, there is good continuity and support in the probabilistic TC genesis tools and raw ensembles for potential TC formation to the south of Mexico during mid to late week-1 before the suppressed phase of the MJO strengthens overhead.

For week-2, both the GEFs and ECMWF favor a band of strongly anomalous lower-level westerlies expanding eastward throughout the equatorial Indian Ocean tied to the renewed MJO. With anomalous easterlies favored to the north to induce a broad region of cyclonic flow, this results in elevated TC formation chances over the northern Indian Ocean during week-2. Based on climatology, and continued support in the probabilistic TC genesis tools, 60% chances for development are posted in the Bay of Bengal, with 20% chances in the Arabian Sea. Notably, strongly positive SST anomalies are observed throughout the entire basin, with some parts registering over 31 degrees C in the weekly mean which could provide plenty of fuel for any TCs that develop. These tools also show modest signals for additional development to the south of the equator between 70E and 80E, though given climatology for late May, there is not enough confidence to post a corresponding TC area for week-2. In the western Pacific, 20% chances for TC development are posted in the Philippine Sea in association with an equatorial Rossby wave forecast and support in the raw ensembles. Higher chances were considered, however odds for development are highest in the tools late in week-1, and any areas of low pressure may struggle to intensify with increased shear favored in the GEFs near the Marianas.

Should the MJO maintain coherence while propagating eastward across the Maritime Continent and possibly reach the Western Pacific during week-3, this would continue to favor additional TC development in the northern Indian Ocean and western Pacific based on historical MJO/TC composites. Therefore, 20% chances are posted across the Bay of Bengal and western Pacific which is consistent with signals in the probabilistic tools for week-3. These tools also point to reemerging signals in the eastern Pacific and Caribbean by the start of June. While TC genesis is certainly possible associated with transient equatorial Kelvin and/or Rossby waves that develop, no corresponding TC areas are posted in the outlook as TC formation would become more favorable later during the week-4 timeframe, even with the faster MJO propagation speed featured in the ECMWF.

The precipitation outlooks for weeks 2 and 3 are based on a historical skill weighted blend of the GEFs, CFS, ECCO, and ECMWF models, MJO composites and anticipated TC tracks. For temperatures, pre-monsoonal excessive heat, with maximum daytime temperatures possibly exceeding 110 deg F, is favored for many parts of the Sahel in Africa as well as portions of India and Pakistan. An amplifying subtropical ridge centered over the lower-latitudes of North America is also expected to increase the risk of excessive heat over the southern tier of the CONUS. For hazardous weather conditions in your area during the coming two week period, 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 issued over Africa are made in coordination with the International Desk at CPC.