

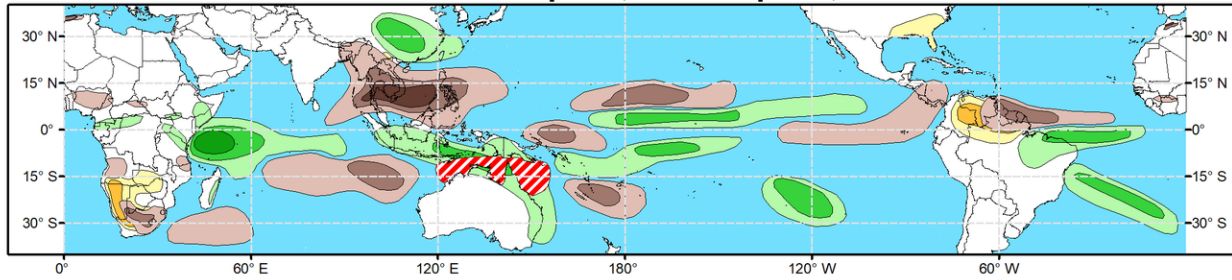


Global Tropics Hazards Outlook

Climate Prediction Center

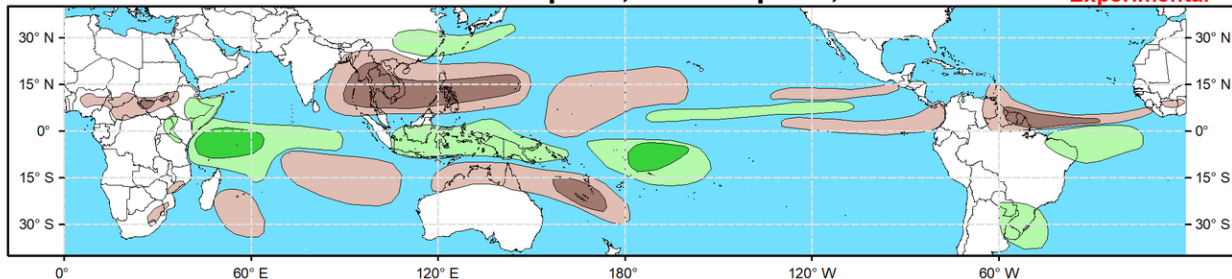


Week 2 - Valid: Apr 17, 2024 - Apr 23, 2024




Week 3 - Valid: Apr 24, 2024 - Apr 30, 2024

**** Experimental ****



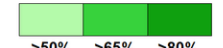
Tropical Cyclone (TC) Formation Probability



>20% >40% >60%

Tropical Depression (TD) or greater strength

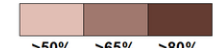
Above-Average Rainfall Probability



>50% >65% >80%

Weekly total rainfall in the Upper third of the historical range

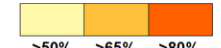
Below-Average Rainfall Probability



>50% >65% >80%

Weekly total rainfall in the Lower third of the historical range

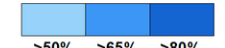
Above-Average Temperatures Probability



>50% >65% >80%

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

Below-Average Temperatures Probability



>50% >65% >80%

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

Issued: 04/09/2024
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.

Since propagating eastward from the western Hemisphere, objectively filtered tropical wave analysis of upper-level velocity potential anomalies shows that the Madden-Julian Oscillation (MJO) encountered strong destructive interference with Equatorial Rossby Wave (ERW) activity since late March. This likely resulted in a slowed and weakened signal in the RMM observations, though continued eastward propagation of the MJO signal over the Indian Ocean remains evident in RMM space, where the enhanced phase has entered the Maritime Continent (phase 4). Notably, the strong ERW activity led to an uptick lower-level westerlies observed over the equatorial Pacific, which not only eroded the enhanced trades associated with the suppressed phase of the MJO crossing the Date Line, but also may have implications on the transitioning El Nino state by delaying or suppressing much of the subsurface cooling ongoing in the basin.

Looking ahead, RMM forecasts generally favor weaker and less coherent intraseasonal activity with several dynamical model ensemble means crashing the MJO signal into the unit circle. While some ensemble member solutions continue to point to continued eastward propagation into the western Pacific at a higher amplitude, the overall predicted weakening of the MJO appears to be tied to destructive interference with a low frequency signal developing over Africa and the western Indian Ocean. The associated large-scale convective and circulation anomalies are resemblant of a positive Indian Ocean Dipole (+IOD) akin to the event observed last fall, and while such an event is unusual during this time of year, the thinking is that these anomalies appear to be residual responses of the decaying El Nino, and are not likely to persist in the coming months. Nevertheless, the emerging low-frequency signal is non-trivial, and looks to become a more predominant driver of tropical variability, with the MJO perhaps playing less of a role moving forward. Upper-level velocity potential anomaly

forecasts offer a more coherent MJO perspective than the RMM forecasts, and feature the enhanced phase of the MJO reaching the western Pacific in the next few weeks. However, compared to previous outlooks, there remains an overall larger degree of uncertainty in regards to the strength and evolution of the MJO amidst the shifting background state through the end of April.

During the past week, one Tropical Cyclone (TC) formed in the global tropics. Since forming on 4/5 in the Timor Sea, TC Olga underwent extreme rapid intensification with a wind speed increase from 50 to 100 kts in 24 hours, and peaked at category 4 strength during the past weekend. Currently located near 17S/117E as a Tropical Storm and tracking to the southwest, the Joint Typhoon Warning Center (JTWC) expects Olga to succumb to continued dry air entrainment and strong vertical wind shear, and dissipate in the next few days. However, increased winds and precipitation, with locally heavier amounts are possible over parts of western Australia early in week-1.

For TC formation potential in the coming weeks, the aforementioned ERW is expected to continue propagating westward from the Pacific and begin to constructively interfere with the enhanced convective MJO envelope over the Maritime Continent within the next week or so. This wave phasing is expected to lead to an uptick in convection and a strengthening of lower-level westerlies favorable for TC development, which is supported in the probabilistic TC genesis tools depicting increased chances for formation to the north of Australia. Although these tools show the highest odds for development during week-1, 20% chances are posted from approximately 120E to 155E should there be any delay in formation. The addition of 20% chances were considered for week-2 over a portion of the western Pacific and southwestern Indian Ocean based on these tools, however these are omitted from the outlook due to the favored prevalence of anomalous lower-level easterlies to increase shear in these regions, as well as climatology. Incidentally, late April marks the climatologically quietest time of the year for TC development globally (less than 25 TCs formed during the end of April from 1979 to 2022). In light of this, greater uncertainty with the MJO, and little to no coherence with signals in the probabilistic TC tools, no corresponding TC areas are highlighted for the week-3 period. Beyond this time, the northern Indian Ocean, western and eastern Pacific will draw more attention in the upcoming outlooks, as these basins become more climatologically active later in May.

The precipitation outlook for weeks 2 and 3 is based on a springtime ENSO composites, potential TC activity, and a skill weighted blend of GEFS, ECMWF, CFS and Canadian ensemble mean solutions, with less input from Maritime Continent and western Pacific MJO composites. For temperatures, above-normal conditions are expected to continue over parts of southern Africa, southeast Asia, and northern South America, where combined with near to below normal precipitation forecast, is expected to degrade vegetation health, worsen drought, and sustain water supply concerns for many areas in the highlighted regions. For hazardous weather conditions in the U.S. 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 made over Africa are made in coordination with the International Desk at CPC.