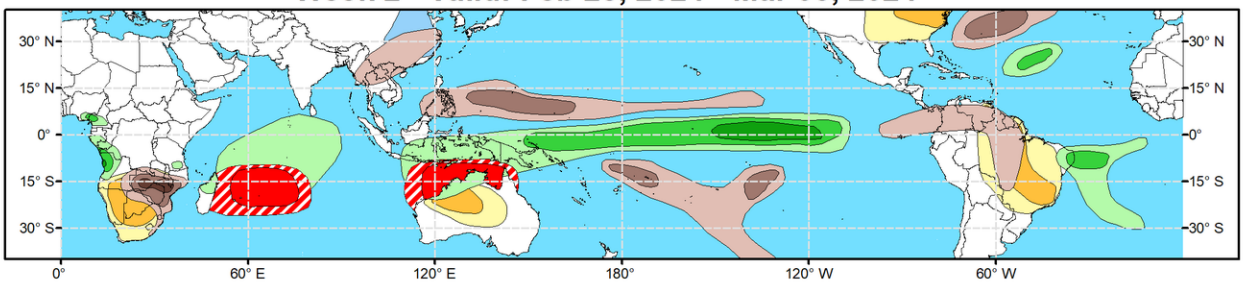
Global Tropics Hazards Outlook

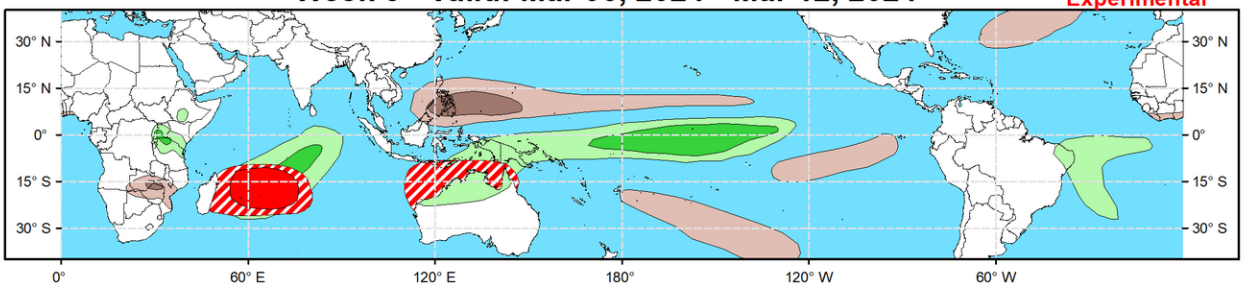
Climate Prediction Center

Week 2 - Valid: Feb 28, 2024 - Mar 05, 2024



Week 3 - Valid: Mar 06, 2024 - Mar 12, 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: 02/20/2024
Forecaster: Barandiaran

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.

RMM observations show a westward retreat of the MJO signal over the Western Pacific earlier this month, but the MJO has since resumed its eastward propagation and has moved into phase 8 (Western Hemisphere) in RMM space. Consistent with model guidance since last week, a much weakened MJO is generally favored in the RMM forecasts, with model solutions showing the signal mostly remaining within the unit circle during the next two weeks. However, there is some question as to whether this weakening is reflective of a disorganizing MJO or the removal of the 120-day mean which is strongly skewing the MJO signal to the right in RMM space. Upper-level velocity potential anomaly and OLR forecasts suggest the latter, which depict a more coherent MJO moving forward. Anomalous lower-level westerlies forecast continue to enhance probabilities for tropical cyclone (TC) development for the southwestern Indian Ocean through early March.

It has been an active week for TCs around the globe, with 5 TCs that formed in 4 different basins. In the South Pacific, TC 15P formed east of the Cook Islands on February 15 and quickly dissipated. In the Australia region, TC Lincoln formed in the Gulf of Carpentaria on February 15 and moved inland quickly, bringing heavy rain to northwestern Australia. In the South Indian Ocean, on February 17 TC Djoungou formed east of Madagascar. It moved southwestward and became very strong before weakening and transitioning to an extratropical system. On February 18 TC Eleanor formed, also east of Madagascar. It is currently still active, meandering near Mauritius, and is currently forecast to eventually move towards Madagascar. For the latest information on TC Eleanor please refer to the Joint Typhoon Warning Center (JTWC). Finally, a rare South Atlantic TC formed southeast of Rio de Janeiro on February 18. It strengthened and was named Akara on February 19, and is currently tracking south.

Despite a relatively weak RMM signal among forecast models, other indicators of MJO activity suggest a stronger MJO than might otherwise be expected. Upper-level velocity potential anomaly forecasts portray a weak to moderate MJO taking shape during weeks 2-3, with increasing anomalous divergence aloft over Africa and into the Indian Ocean as the forecast period progresses. This results in a moderate probability (>40%) for TC activity in the southwestern Indian Ocean during weeks 2-3. Interestingly, Indian Ocean MJO (phases 2 and 3) events historically lead to decreased chances for TC formation near Australia and the Maritime Continent but guidance from both the GEFS and ECMWF suggest a higher chance for TC genesis during the forecast period across the northern Australian coast than might otherwise be indicated, possibly due to Rossby or Kelvin wave interference. The large-scale environment is expected to remain weakly favorable for TC development over the southeastern Indian Ocean during week-3, and 20% chances for TC genesis are issued for portions of the northern Australian coast.

The precipitation outlook for weeks 2 and 3 is based on potential TC activity, the anticipated state of the MJO, and a skill-weighted consensus of GEFS, CFS, Canadian, and ECMWF ensemble mean solutions. Above-normal precipitation continues for the Equatorial Eastern Pacific for both weeks, a response to the El Nino conditions, while suppressed precipitation is favored to the north and south of the El Nino-enhanced precipitation. Continued below-normal precipitation is indicated for portions of northern South America for week-2, and above-normal temperatures are likely for eastern Brazil during both weeks. Above-normal precipitation becomes more likely over the western Indian Ocean as the next MJO cycle begins during the forecast period. During week-2, above-normal temperatures are likely for the eastern U.S., much of Brazil, portions of western Australia, and much of southern Africa, while below-normal temperatures are favored for eastern China.

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 produced by the Weather Prediction Center, and the CPC Week-2 Hazards Outlook. Forecasts made over Africa are made in coordination with the International Desk at CPC.