

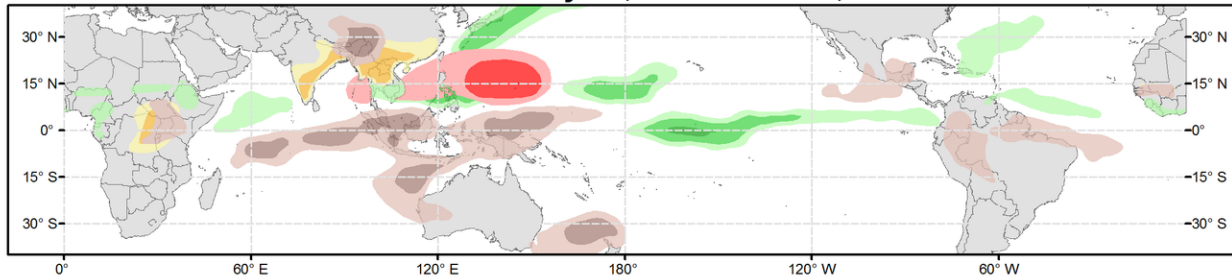


# Global Tropics Hazards Outlook

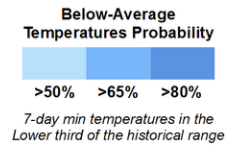
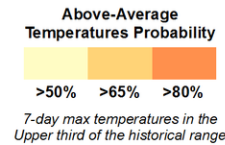
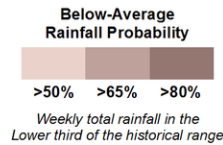
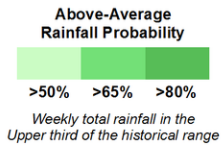
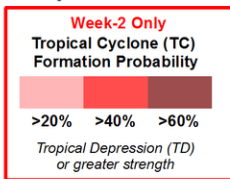
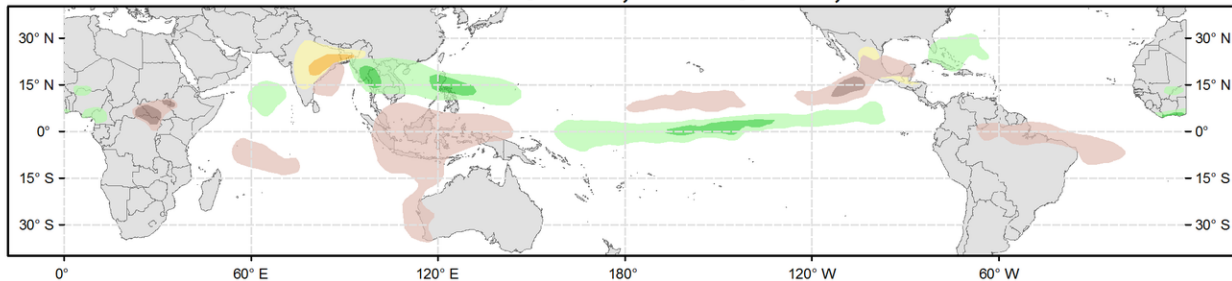
## Climate Prediction Center



**Week 2 - Valid: May 31, 2023 - Jun 06, 2023**



**Week 3 - Valid: Jun 07, 2023 - Jun 13, 2023**



**Issued: 05/23/2023**  
**Forecaster: Allgood**

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.

An active Madden-Julian Oscillation (MJO) signal remains apparent in various atmospheric fields, and continues to project well on the RMM-based and CPC upper-level velocity potential based MJO indices. Recent observations have indicated that other modes are interfering with this intraseasonal signal. Notably, the large circulation of Typhoon Mawar over the West Pacific, and persistent anomalously strong upper-level westerly winds over the East Pacific have caused a slowdown in the eastward propagation of the MJO, which had been on the fast end of the 30–60 day circumnavigational envelope throughout much of the Boreal Spring. The confluence of these modes has resulted in a very strong westerly wind burst (WWB) along the equatorial West Pacific, co-located with the warmest waters of the West Pacific warm pool. This WWB is likely to generate a strong and breaking downwelling oceanic Kelvin wave, which would serve to reinforce and increase the influx of warmer upper-ocean water across the equatorial Pacific. Therefore the MJO slowdown and tropical cyclone activity over the Pacific increases confidence in a transition towards El Niño conditions.

Dynamical model MJO index forecasts are mixed, with the GEFS showing a breakdown of the eastward propagation over the next two weeks, favoring a more persistent pattern of enhancement across the Pacific. This persistence may be due both to continued West Pacific tropical cyclone activity in the model forecasts, as well as a depiction of the transition towards an ENSO warm base state. By Week-3, several ensemble members show a resumption of eastward propagation across the Western Hemisphere. The ECMWF is more progressive in general, depicting a transition across the Western Hemisphere during Week-2, with the enhanced phase potentially reaching the Indian Ocean by Week-3. However, most ECMWF ensemble members depict a weak signal overall. Based on these forecasts, there is increased uncertainty with respect to the influence

of the MJO on the global tropical convective pattern during the Weeks 2-3 time period, although the signal is likely to remain active. The ENSO base state will likely begin emerging as the dominant mode of tropical variability, especially after the outlook period in response to the potential downwelling oceanic Kelvin wave generated in response to the current strong WWB.

Super-Typhoon Mawar formed on 20 May over the West Pacific basin at a fairly low latitude, which allowed for a projection of strong low-level westerlies on the Equator. Currently near Category-5 intensity on the Saffir-Simpson scale, forecasts from the Joint Typhoon Warning Center bring the tropical cyclone near or over Guam within the next 24 hours at Category-5 intensity. Severe to devastating impacts from wind, flooding, and storm surge are likely across Guam and portions of the Mariana Islands. Dynamical models generally depict continued west-northwestward movement of Super-Typhoon Mawar during Week-1, with the cyclone arriving east of Taiwan at the beginning of the Week-2 period. A recurve towards the north and northeast is anticipated, with the cyclone potentially impacting Japan during Week-2. The West Pacific is favored to remain active during Week-2, as the MJO favors enhanced convection across the South China Sea, Philippines, and the Northwest Pacific, with the axis of enhanced convection shifting poleward from its current position. Tropical cyclogenesis is also possible as far west as the eastern Bay of Bengal, where vertical shear remains sufficiently low due to a slightly delayed monsoon onset. Although the MJO or Kelvin wave activity moving ahead of the main enhanced convective envelope typically would favor tropical cyclogenesis over the East Pacific basin, strong westerly shear remains in place, which would largely limit development. Should these westerlies relax, tropical cyclogenesis would become increasingly likely.

Forecasts for above- and below-normal precipitation are based on an anticipated atmospheric response to continued warming across the Equatorial Pacific, MJO activity progressing slowly across the Pacific, and a consensus of dynamical model guidance. Above-normal precipitation during Week-2 along and east of Japan is in association with Typhoon Mawar. Suppressed (enhanced) convection across the Maritime Continent (tropical Pacific) during both Weeks 2 and 3 are consistent with both the MJO and the transitioning base state. A weakness in the midlatitude height field as well as a potential for MJO propagation favors enhanced precipitation across portions of the North Atlantic, with a slight chance for brief tropical or subtropical cyclone development. Suppressed rainfall across portions of South and Southeast Asia related to a delayed monsoon onset may promote heatwaves and severe weather outbreaks. Drier conditions across portions of east-central Africa and the Sahel region during Week-2 may also result in periods of excessive heat.

Precipitation forecasts for Africa are based on coordination with the CPC International Desk and can reflect smaller-scale conditions. For hazardous weather conditions across the US during Week-2, please utilize the CPC Week-2 probabilistic hazards assessment.