

The MJO remained active and strong during the past week, although eastward propagation slowed. The enhanced convective phase is currently located across the central Pacific and during the past week enhanced convection associated with the MJO was observed as an eastward shifted South Pacific Convergence Zone (SPCZ) in south-central Pacific ocean and across parts of Brazil. Atmospheric Kelvin wave (KW) activity contributed to some areas of enhanced convection over Africa. Suppressed convection associated with the MJO was evident across the Indian Ocean. Two tropical cyclones were observed during the past week, Oswald in the Gulf of Carpenteria and Garry across the south-central Pacific. The tropical disturbance that eventually led to Oswald was part of enhanced convection across parts of the southern Maritime continent that resulted in severe flooding in this area.

Interaction with an equatorial Rossby wave (ERW) and residual tropical cyclone activity and associated wind responses resulted in a decrease in eastward propagation as represented by the RMM index. Moreover, the above interactions with the ERW and KW activity has resulted in some observational indicators being less coherent than previous weeks. This is expected to be temporary and the MJO convective envelope is anticipated to continued its eastward propagation especially as we approach

Week-2 as supported by some dynamical RMM index forecasts and other empirical forecast tools. The enhanced convective phase is forecast to cross the western hemisphere during the next two weeks.

The current Global Tropics Hazards and Benefits Outlook for Week-1 remains largely based on the ongoing strong MJO signal expected to reside in RMM phases 7/8, augmented by CFS precipitation forecasts where deemed helpful. Enhanced probabilities of above-median rainfall are forecast for parts of the south-central Pacific Islands and parts of Brazil with suppressed rainfall favored for parts of the Indian Ocean, Maritime continent, Hawaii and select areas in east-central and southern Africa. CFS model guidance favors above-median precipitation for parts of southeast Africa and Madagascar. The MJO also favors a continuation for the enhanced likelihood of tropical cyclogenesis for the south Pacific ocean during both Week 1 and 2, although confidence decreases during Week-2.

As we move into Week-2, MJO associated enhanced convection is favored to continue across parts of the south Pacific and Brazil and develop over areas of central Africa, southeast Africa and extending northeast to the western Indian Ocean. Moderate confidence is indicated for the eastern portions of these areas due to timing issues as the impact of the MJO would enter this area late in Week-2. It is highlighted here because often KW activity can preced the main MJO convective envelope. Drier-than-average conditions are forecast to shift eastward with the MJO and impact the Maritime continent and far western Pacific.

The MJO will continue to impact the extratropics in the coming weeks. MJO associated convection has shifted the longwave pattern eastward across the Pacific-North America sector and on average a positive PNA is favored with a ridge across western North America and a trough across eastern North America. Below-normal temperatures on average are favored across parts of the central and eastern U.S. into the first half of February. If the MJO remains robust through mid-February and enhanced convection once again enters the Indian Ocean, chances may become elevated for above (below) normal temperatures across the eastern (western) U.S. in late February. This is generally consistent with the latest CFS forecast guidance. In the mean, the MJO would also support drier-than-average conditions over much of the western CONUS, although the MJO would favor an enhanced subtropical jet later in January into early February during the time when the RMM index is located in phases 8 and 1.