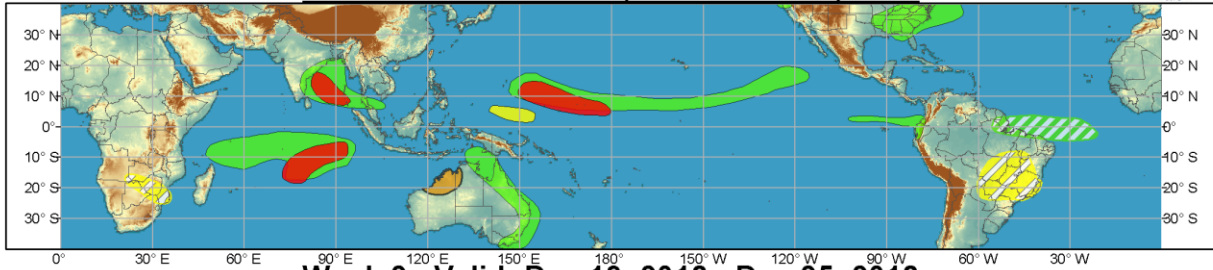




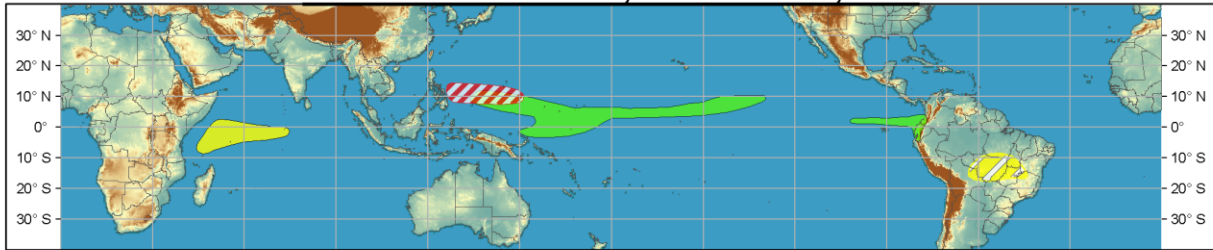
Global Tropics Hazards and Benefits Outlook - Climate Prediction Center



Week 1 - Valid: Dec 12, 2018 - Dec 18, 2018



Week 2 - Valid: Dec 19, 2018 - Dec 25, 2018



Confidence
High Moderate

Tropical Cyclone Formation			Development of a tropical cyclone (tropical depression - TD, or greater strength).
Above-average rainfall			Weekly total rainfall in the upper third of the historical range.
Below-average rainfall			Weekly total rainfall in the lower third of the historical range.
Above-normal temperatures			7-day mean temperatures in the upper third of the historical range.
Below-normal temperatures			7-day mean temperatures in the lower third of the historical range.

Produced: 12/11/2018
Forecaster: D.Harnos

Product is updated once per week, except from 6/1 - 11/30 for the region from 120E to 0, 0 to 40N. The product targets broad scale conditions integrated over a 7-day period for US interests only. Consult your local responsible forecast agency.



The Madden-Julian Oscillation (MJO) continued its eastward propagation during the past week, emerging over the Indian Ocean and shifting to the eastern part of the basin in recent days. This signal has circumnavigated the globe over the last 32 days, consistent with the faster end of the phase speed spectrum of the MJO. Model forecasts of the behavior of the MJO over the coming two weeks are highly varied, tied to forecast tropical cyclone (TC) activity over the Eastern Hemisphere that is likely to be associated with the passage of the ongoing MJO event in addition to extratropical influences over the Western Hemisphere. The TC activity manifests in the MJO forecasts by the RMM index looping westward before continuing eastward, as the anomalous westerlies on the equatorward side of westward tracking TCs project onto the RMM index, but is split between the westward tracking TCs and eastward propagating intraseasonal envelope. Further complicating the interpretation, 200-hPa troughing over the southeast Pacific is resulting in another region of anomalous westerlies that similarly project onto the RMM index, resulting in yet another center of action. These distinct centers are all competing with one another, resulting in clustering among dynamical model guidance, dependent upon which center is favored to dominate in the model forecasts. The forecast here favors continuation of the MJO-related signal over the Indian Ocean and tracking to the Maritime Continent, while downplaying the Western Hemisphere signal favored by the CFS. Similarly, the ECMWF forecast appears slightly too slow, as it aliases in the TC activity to the RMM index as it stalls the intraseasonal signal over the

Maritime Continent by Week-2. MJO Phases 3/4 are anticipated during Week-1, with Phases 4/5 during Week-2.

No new TCs developed in the past week. Tropical Storm Owen redeveloped over the Gulf of Carpentaria on 11 December, after initially forming on 3 December. Twin tropical cyclones are possible in the eastern Indian Ocean in the wake of the anomalous westerlies along the equator tied to the passage of the MJO envelope, with high confidence of a system forming in either hemisphere. Elsewhere, the Joint Typhoon Warning Center is monitoring a disturbance near 4N/180E as of 11 December, giving it a moderate chance of becoming a TC within the next 24 hours. Dynamical model guidance consistently captures this system, while sea-surface temperatures (SSTs) are highly favorable (in excess of 30 degrees C) across the region resulting in high confidence of tropical cyclogenesis over the next seven days. Lastly during Week-1, model guidance suggest the potential for a weak disturbance to spin up in the southwestern Indian Ocean to the northeast of Madagascar although confidence remains low of it becoming a TC. In Week-2, TC formation potential is elevated from the Philippines eastward to 150E along 10N, consistent with the MJO forecast to be over the Maritime Continent.

Precipitation forecasts during Week-1 are elevated with high confidence in association with forecast TC activity in the Bay of Bengal, southern Indian Ocean, West Pacific, and along the east coast of Australia (due to the redevelopment of Tropical Storm Owen). Persistent anomalously warm SSTs result in the high confidence of above-normal rainfall extending east from the West Pacific TC formation region into the eastern Pacific and a small region from near the Galapagos Islands towards southern Colombia and northern Ecuador during Week-1 and Week-2. Extratropical frontal activity is forecast to result in high confidence of above-normal precipitation for Northern California and the southeastern quarter of the U.S. during Week-1. The suppressed phase of the MJO is forecast to bring below-normal rains with high confidence to a small region north of New Guinea, despite the persistent warm SSTs in the area. By Week-2, suppression of rainfall over the western Indian Ocean is forecast as the active phase of the MJO shifts over the Maritime Continent. Below-normal rainfall forecast with moderate confidence across portions of eastern Brazil in both weeks is tied to empirical perspectives of the MJO crossing from the Indian Ocean to the Maritime Continent. Remaining forecast areas of above- or below-normal precipitation are tied to consensus among dynamical model guidance. Lastly, above-normal temperatures are favored with high confidence during Week-1 across portions of Western Australia with widespread daily high temperatures in the 40-45 degrees C range anticipated.

Forecasts over Africa are made in consultation with the CPC international desk, and can represent local scale conditions in addition to global scale variability.