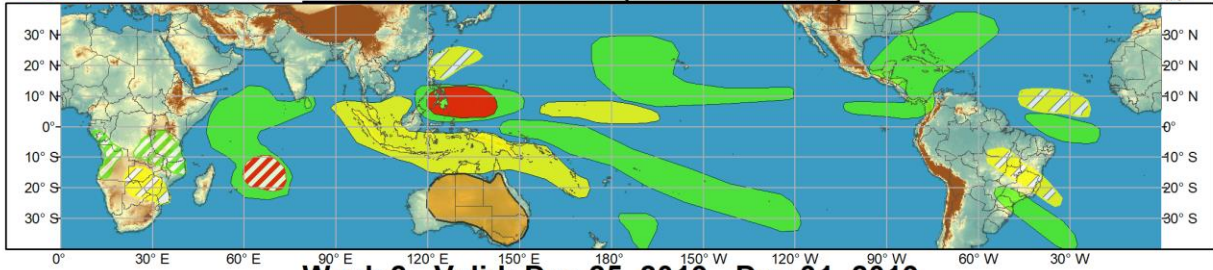




Global Tropics Hazards and Benefits Outlook - Climate Prediction Center



Week 1 - Valid: Dec 18, 2019 - Dec 24, 2019



Week 2 - Valid: Dec 25, 2019 - Dec 31, 2019



Produced: 12/17/2019

Forecaster: Novella

Confidence		
High	Moderate	
		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.

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.



Over the past several days, the RMM index has indicated that the MJO gradually weakened in amplitude and slightly propagated eastward into Phase 3 over the Indian Ocean. Analysis of the evolution of upper-level velocity potential anomalies suggests the MJO has also become less organized. While enhanced convection remains centered over the equatorial Indian Ocean, there is a weaker signal for suppressed convection over parts of the Maritime Continent. The decrease in subsidence and upper-level convergence over the Maritime Continent is also supported by trends in the OLR and zonal wind anomaly fields during mid-December. Dynamical model forecasts of the RMM index are in fair agreement with a continued weakening of the MJO, which suggests that the MJO is beginning to destructively interfere with the positive phase of the Indian Ocean Dipole (IOD) whose low frequency footprint has prevailed across the global tropics since early fall. Both the GEFS and ECMWF ensemble means indicate the MJO will remain within the unit circle in RMM space during Week-1 before reemerging over the Western Pacific during Week-2. During this time, the GEFS depicts a slightly more progressive evolution than the ECMWF with an MJO that reemerges in Phases 6/7. Though, there are several ECMWF members that maintain a reemerging MJO over Phases 5/6 by late December.

No tropical cyclones (TC) formed during the last week. For the remainder of December, model guidance and tools suggest a slight uptick in potential tropical cyclone activity in the Western Pacific and Southern Indian and Pacific Ocean basins. Near the Philippines, there is a high confidence of TC formation with above-average sea surface temperatures (SST) and a reduced wind shear forecast by the GFS and GEFS. With deterministic and ensemble guidance from the ECMWF maintaining a more westerly solution for tropical cyclogenesis in the South China Sea, a broad TC formation area is posted in the outlook for Week-1. Following the formations of TC Belna and Ambali in the Southern Indian Ocean in early December, models predict another TC will develop near 12S/70E during Week-1. With above-average SSTs in place in the southwestern Indian Ocean, some gradual intensification and a westerly track towards Madagascar is expected by the end of Week-1. However, due to some run to run inconsistency with the formation area, timing, and path, a moderate confidence is posted for the region.

There is high (moderate) confidence of much above normal temperatures across many portions of Australia during Week-1 (Week-2). During Week-1, models show daytime maximum temperatures exceeding 40 (degrees C) throughout much of the country and above 45 (degrees C) in parts of the South Australia and New South Wales provinces. A moderate confidence of above normal temperatures is posted for Week-2, as models suggest a moderation of maximum temperatures towards the end of December. Over the U.S., upper-level ridging forecast favors much above normal maximum temperatures across the Southern Plains and southeastern U.S. While not hazardous, there is an increased chance that daytime maximum temperatures exceed the 85th percentile for late December. For precipitation, there is good model agreement with high amplitude troughing developing over the eastern Pacific Ocean to favor Pacific flow and enhanced precipitation throughout the southwestern CONUS during Week-2.

Forecasts for suppressed and enhanced tropical rainfall are based on a consensus of dynamical model guidance with anticipated TC tracks, the atmospheric response to the MJO, and the low frequency variability of the IOD. In the eastern Hemisphere, enhanced precipitation is generally favored over the western Indian Ocean, with suppressed precipitation expected to continue over the eastern Indian Ocean and Maritime Continent during Week-1. By Week-2, conditions over portions of the Maritime Continent look to become slightly wetter in the models which is consistent with RMM index forecasts. In the western Hemisphere, models depict a Kona Low developing to the west of Hawaii which is expected to produce a broad area of enhanced precipitation across the Central Pacific and increased rainfall across the Hawaiian Islands. Over the Caribbean, cold air advection and strong northerly flow associated with a southward reaching cold front is expected to produce locally heavy precipitation over parts of southern Mexico and the Central America during the early portion of Week-1. The heavy rainfall forecast may result in flooding and landslides across the higher elevations of the region.

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