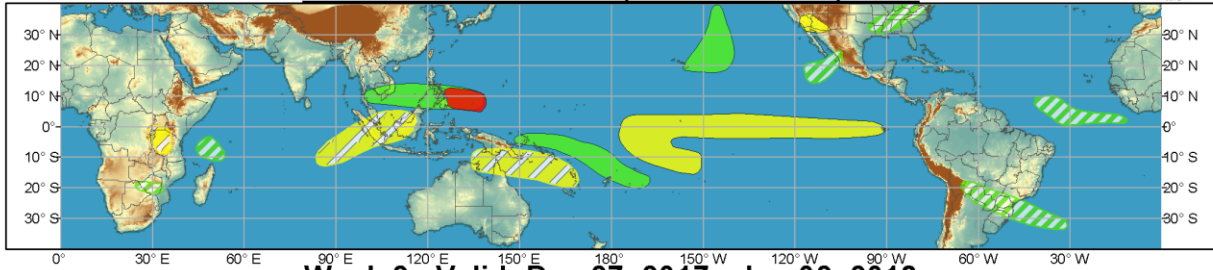




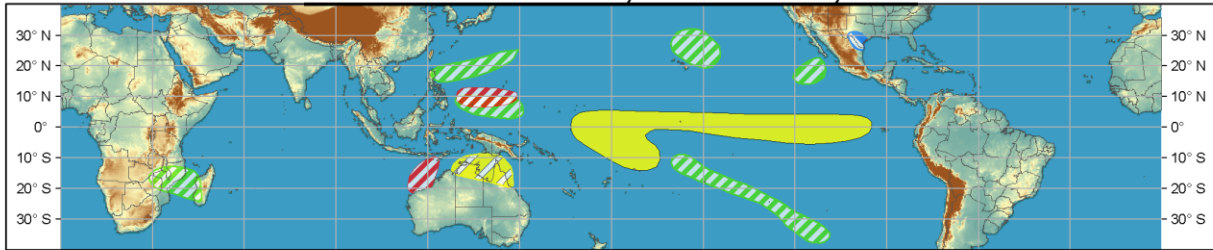
Global Tropics Hazards and Benefits Outlook - Climate Prediction Center



Week 1 - Valid: Dec 20, 2017 - Dec 26, 2017



Week 2 - Valid: Dec 27, 2017 - Jan 02, 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: 12/19/2017

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) exhibited some anticipated signs of weakness over the past 7 days due to interference with other modes of tropical variability. The CPC velocity potential-based index showed a slowing of the intraseasonal signal over the West and Central Pacific, with slight signs of eastward propagation in the last few days. Conversely, the RMM-index exhibited an atypical loop from Phase 7 to 6, and back again to Phase 7, in association with equatorial Rossby wave activity near the Date Line. Model forecasts of the RMM-index generally bring the MJO across into Phase 8 during Week-1 with some signs of degradation by late in the week despite continued eastward propagation of the intraseasonal envelope through Week-2. The GEFS is the lowest amplitude forecast, bringing the MJO signal within the unit circle by late in Week-1 before potential re-emergence over the Indian Ocean late in Week-2 or early in Week-3. The ECMWF ensemble suite is split with about half of its members retaining an active MJO through Phase 1 during Week-2, while the other members lie within the unit circle, but all again approach the Indian Ocean by late in Week-2 or early Week-3. The favored solution here is continuation of the active MJO event through Phase 8 during Week-1 and Phase 1 during Week-2. The building La Nina event in the Central Pacific appears to be biasing the RMM index towards Phases 4/5 and away from 8/1 that may be artificially weakening the MJO signal in that framework. The presence of an active MJO over the Western Hemisphere generally would suggest limited teleconnection influence over North America during the outlook period.

During the previous week Tropical Storm Kai-Tak formed east of the Philippines on the 13th of December. The tropical cyclone (TC) drifted westward across the Philippines over the past weekend, bringing heavy rains and mudslides that killed at least 32 residents with dozens more remain missing. Kai-Tak continues to churn over the South China Sea as of the 19th, with it forecast by the Joint Typhoon Warning Center (JTWC) to remain a tropical storm or tropical depression through this weekend when it approaches the Malay Peninsula.

TC formation during Week-1 appears most likely east of the Philippines, similar to where Kai-Tak developed last week. JTWC is currently monitoring a disturbance near 8N/139E that is forecast to track westward and strengthen during the next few days. While JTWC gives this system a low chance of developing in the next 24 hours, it has a high probability of formation during the full course of Week-1. Ensemble guidance also suggests favorable tropical cyclogenesis odds in a similar region of the West Pacific during Week-2, resulting in moderate confidence for a second TC forming in the latter week of the outlook. Despite the slow start to the Southern Hemisphere TC season, late in Week-1 or early in Week-2 dynamical model guidance shows some evidence of a TC forming in the Timor Sea that then tracks southwards towards the Kimberley Coast of Australia. Moderate confidence in TC formation is forecast in the aforementioned area during Week-2, with lesser chances of development late in Week-1.

For Week-1 of the outlook, the following areas are favored for high confidence of above-normal precipitation: from the Malay Peninsula through east of the Philippines, in association with Kai-Tak and the potential second TC; east of New Guinea through the South Pacific, along the South Pacific convergence zone; and east of Hawaii in association with mid-latitude troughing. High confidence for below-average rainfall is forecast in the Central and East Pacific where anomalously cold sea surface temperatures may limit convection in association with the ongoing La Nina event. High confidence for below-average precipitation also exists over the southwestern U.S. where anomalous ridging is favored downstream of the troughing near Hawaii. Moderate confidence for suppressed rainfall in Week-1 exists over the western Maritime Continent and northeast of Australia in line with the suppressed phase of the MJO passing through these areas. Mid-latitude frontal activity is anticipated to bring moderate chances for above-average precipitation across the eastern U.S. and from Paraguay through southern Brazil. Remaining areas forecast to experience moderate confidence for above- or below-average precipitation in Week-1 result from consistency among dynamical model guidance without clear tropical linkages.

During Week-2, high confidence remains for suppressed rainfall east of the Date Line in the equatorial Pacific from the ongoing La Nina event. Moderate confidence for above-average rains exists in association with the potential TC east of the Philippines and with the persistent troughing near Hawaii. Remaining areas indicated to experience anomalous precipitation during Week-2 result from overlap

among dynamical model guidance. Lastly, moderate confidence for hazardous below-normal temperatures exists across northeastern Mexico, the Rio Grande Valley, and South Texas in Week-2 where frost or freeze potential exists in conjunction with an equatorward surge of Arctic air. This cold surge is consistent with the empirical lagged response of the MJO being in Phase 7 last week and the cold response in this region approximately 15-20 days later.

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