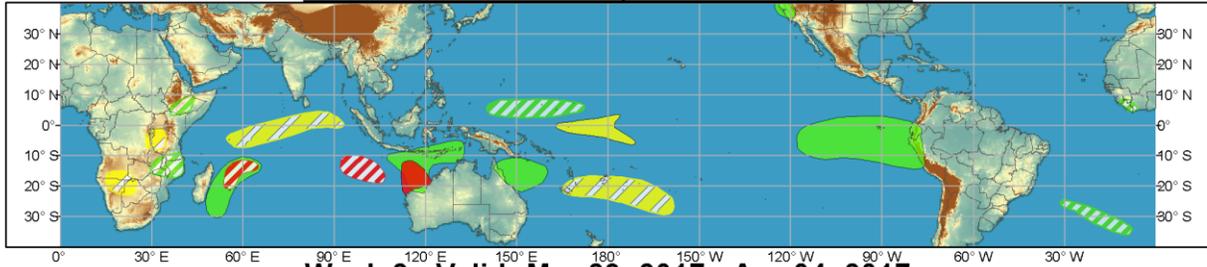




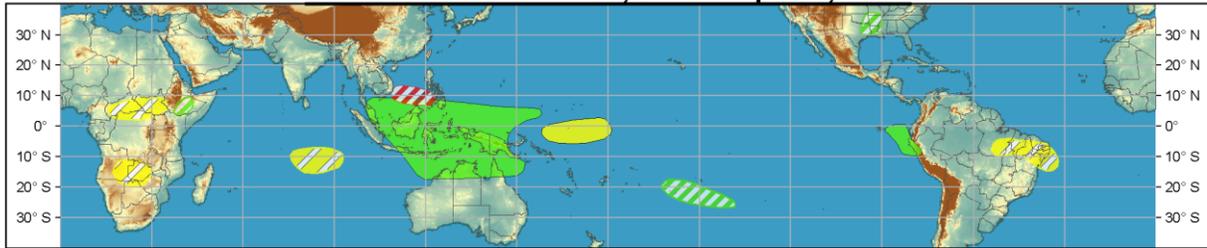
Global Tropics Hazards and Benefits Outlook - Climate Prediction Center



Week 1 - Valid: Mar 22, 2017 - Mar 28, 2017



Week 2 - Valid: Mar 29, 2017 - Apr 04, 2017



Confidence
High Moderate

- Tropical Cyclone Formation** (High Confidence: Red box, Moderate Confidence: Red with diagonal lines) Development of a tropical cyclone (tropical depression - TD, or greater strength).
- Above-average rainfall** (Green with diagonal lines) Weekly total rainfall in the upper third of the historical range.
- Below-average rainfall** (Yellow with diagonal lines) Weekly total rainfall in the lower third of the historical range.
- Above-normal temperatures** (Orange with diagonal lines) 7-day mean temperatures in the upper third of the historical range.
- Below-normal temperatures** (Blue with diagonal lines) 7-day mean temperatures in the lower third of the historical range.

Produced: 03/21/2017

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.



Madden-Julian Oscillation (MJO) activity remained obscured to incoherent over the past week, with the RMM index remaining at low amplitude throughout the period, while the CPC velocity potential-based index suggests the active MJO phase having a weak influence in the vicinity of the Maritime Continent or West Pacific. Most pronounced climate signals appear tied to a low frequency wavenumber-2 pattern with enhanced (suppressed) convection over the Maritime Continent and East Pacific (Indian Ocean and Central Pacific). The enhanced convection in the East Pacific, and the associated devastating heavy rains observed in portions of western South America, are tied to the large sea surface temperature (SST) anomalies observed in this region, with the latest weekly Nino 1+2 value registering +2.6 degrees C. The tripole of suppressed-active-suppressed convection spanning from the Indian Ocean through the Central Pacific has been lingering since last July, and is tied to prior climatic states of the negative phase of the Indian Ocean Dipole and the weak La Nina event observed during boreal autumn.

What little active MJO influence remains would destructively interfering with the low frequency state in the West Pacific during the forecast period, limiting any potential impacts. Dynamical models suggest an emerging active MJO signal over the Indian Ocean by Week-2, yet this is inconsistent with both the low frequency state and the most recent observed intraseasonal activity to the east of this region; therefore,

this potential solution is heavily discounted. The low frequency state is expected to drive the tropical impacts during the upcoming two weeks, with extratropical influences murky due to the unique scenario of anomalously warm SSTs in the East Pacific that lack westward extension along the equator as would be anticipated based on previous warm El Niño-Southern Oscillation events. The anomalously warm SSTs in the East Pacific also appear predominantly surface driven, with little warm water available at depth, such that active convection may limit subsequent warming for the waters here due to the dependence on incoming shortwave radiation to build and maintain the observed anomalies.

No tropical cyclone activity was observed globally over the past week. The Joint Typhoon Warning Center currently gives a low chance of development prior to the forecast period for a low pressure system near 15S/117E. Both GEFS and ECENS guidance supports the system tracking south and undergoing tropical cyclogenesis before making landfall near the Pilbara Coast during Week-1, resulting in a high confidence of tropical cyclone formation. Elsewhere, tropical cyclogenesis is suggested within the monsoon trough to the south of Indonesia during Week-1 by ensemble guidance with moderate confidence, and an accompanying southeastward track towards Western Australia forecast. ECENS guidance suggests possible tropical cyclone formation to the northeast of Madagascar during Week-1, resulting in a moderate confidence of tropical cyclogenesis for this area. During Week-2 some GEFS members support possible tropical cyclogenesis in the South China Sea, with broad low-level troughing forecast in the ensemble mean, resulting in a moderate confidence of formation.

In the absence of a pronounced MJO signal, the current outlook is driven predominantly by the observed low frequency state with secondary influences from the aforementioned possible tropical cyclone activity and dynamical model consensus. During Week-1, above-normal rains are forecast in the East Pacific with high confidence for the area where recently observed SST values exceed the convective threshold of 27 degrees C and ensemble guidance supports this precipitation. Robust signals in dynamical model guidance are also forecast in the Coral Sea that are consistent with low frequency activity, resulting in a high confidence of much above-normal rains. A high confidence of below-normal rainfall is forecast in the Central Pacific near the antimeridian for both weeks, associated with continuing low frequency activity. High confidence of above-average precipitation is also forecast across the western U.S. during Week-1, tied with a surge of Pacific moisture anticipated to impact the region. Remaining areas highlighted during Week-1 have moderate confidence, and are consensus driven by dynamical model guidance.

The Week-2 outlook is once again driven heavily by the low frequency state anticipated to continue into this period. High confidence of above-normal rainfall in the vicinity of the Maritime Continent and East Pacific continue, with some uncertainty as to the coverage and extent of the rains for the East Pacific. Remaining portions of the tropics are highlighted for above-normal precipitation with moderate

confidence in line with consistent ensemble guidance. Above-normal rains are possible in portions of the Great Plains with a mid-latitude cyclone potentially forming downstream of a 500-hPa trough.

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