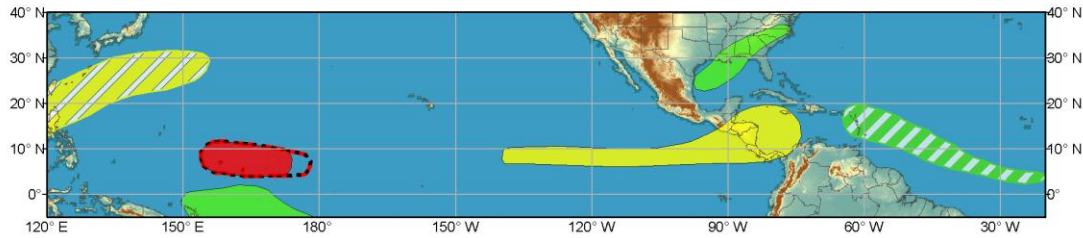




Global Tropics Hazards and Benefits Outlook - Climate Prediction Center



Week 1 - Valid: Nov 10 2018 - Nov 13 2018



Week 2 - Valid: Nov 14 2018 - Nov 20 2018



Confidence
High Moderate

Produced: 11/09/2018
Forecaster: D.Harnos

- Tropical Cyclone Formation** Development of a tropical cyclone (tropical depression - TD, or greater strength).
- Prior TC Formation Outlook** Tropical cyclone outlook from previous release.
- 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. The product targets broad scale conditions integrated over a 7-day period for US interests only. Consult your local responsible forecast agency.



The original outlook appears largely on track, with all three Week-1 areas indicated for possible tropical cyclogenesis in the initial outlook currently being monitored for possible tropical cyclone (TC) formation by the Joint Typhoon Warning Center (JTWC) during the next 24 hours. The only one of these in the Friday update domain is currently near 8.5N/172E and is given a high chance of development in the next 24 hours by JTWC, and is also upgraded to high confidence in our outlook. In Week-2, TC activity appears to be on the increase across the West Pacific in the wake of a Kelvin wave forecast to cross the basin during the next few days. Wind shear is also forecast to weaken, and become easterly, further supporting an increase in West Pacific TC potential. In addition, sea surface temperatures for the basin generally remain above 29 degrees C (anomalies of +0.5 to +1.5 degrees C). Multiple disturbances may form in Week-2 between Guam and the Antimeridian near 10N, some of which may strengthen into TCs. A broad region of moderate confidence for TC development is added to the Week-2 forecast map to account for this potential.

Possible late season TC activity in the Atlantic or East Pacific continues to appear unlikely during the next two weeks. Some general troughing is forecast near 8N between 90-100W late in Week-1 into early in Week-2, but development appears unlikely given anomalous westerly wind shear of 10-15 m/s in the

forecast and the suppressed envelope of the Madden-Julian Oscillation helping to limit convective development for the region. Late in Week-2, a Kelvin wave is forecast in the East Pacific, which could yield an uptick in TC potential beyond the forecast period, with wind shear also forecast to weaken and reverse to more favorable easterly values in late November.

Above- and below-normal precipitation shapes were slightly refined to reflect the latest model guidance from the GFS, CFS, and ECMWF ensembles.

----- The original discussion from 6 November follows below. -----

The RMM and CPC velocity potential-based indices each indicate an active Madden-Julian Oscillation (MJO) with its enhanced phase presently over the Indian Ocean. The phase speed of the event is on the very fast end of canonical MJO values, thus there is some uncertainty whether this event is more of a Kelvin wave or simply aliasing in Kelvin wave activity emerging from the MJO envelope. Dynamical and statistical forecasts are consistent in continuing the rapid eastward propagation of this event. During Week-1, the MJO is forecast to be in Phases 2 and 3 (predominantly 3), while in Week-2 the MJO will be in a combination of Phases 4 and 5. Some of the faster propagating members even bring the signal into the West Pacific late in Week-2. Models do show decrease in RMM amplitude in Phases 3 and 4, although this is discounted due to aliasing of the low frequency signal into the RMM index, where Phases 7 and 8 are favored due to the building El Nino event over the last 120 days. Ensemble mean forecasts of the RMM index are also to be taken cautiously late in Week-2, as the broad spread in phase speed of the individual members when averaged together is washing out the signal, resulting in a mean forecast near the origin, despite the actual ensemble members not supporting a weakening of the RMM index.

During the previous week a pair of tropical cyclones (TCs) formed. Tropical storm Xavier developed in the East Pacific on 3 November, and brought heavy rains to southwestern Mexico. More recently, Tropical Cyclone 3 developed in the southwestern Indian Ocean on 6 November. This system is forecast to track to the southwest and potentially brush Madagascar during the coming week.

TC activity is forecast to be focused primarily across the Indian Ocean during the coming week, tied to the eastward propagating low-level westerly anomalies associated with the intraseasonal envelope propagating towards the Maritime Continent. A number of equatorial Rossby waves are forecast in the wake of this envelope, with twin tropical cyclones possible in the Bay of Bengal (high confidence) and southeastern Indian Ocean (moderate confidence). Also in Week-1, a Rossby wave is forecast to track

from near the antimeridian towards 150E between 5-10 N and may become a TC (moderate confidence), despite the suppressed phase of the MJO acting to oppose any development. In Week-2, models indicate the potential for a TC to develop in the South China Sea and track towards Vietnam, resulting in the only TC formation area on the map for that lead.

During Week-1, high confidence for above-average rainfall exists: across the eastern Indian Ocean associated with the enhanced phase of the intraseasonal event and pair of possible TCs, southwestern Indian Ocean tied to Tropical Cyclone 3, over southeastern Brazil tied to the MJO in Phase 2, along the Gulf of Mexico and eastern seaboard of the U.S. tied to midlatitude frontal activity, and east of the Maritime Continent tied to the low frequency state. High confidence for below-normal precipitation extends across much of the East Pacific and into the Western Caribbean in Week-1, linked to large-scale positive velocity potential anomalies out ahead of the MJO envelope helping to suppress convection. Remaining precipitation areas of moderate confidence during Week-1 are tied to model agreement between the GFS, CFS, and ECMWF ensembles.

In Week-2, high confidence remains for the low frequency area of above-normal rainfall to the east of the Maritime Continent, which may also be constructively interfered with by the intraseasonal envelope if some of the faster model solutions emerge. Below-normal rains are forecast across the Indian Ocean in the wake of the enhanced phase of the intraseasonal envelope.

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