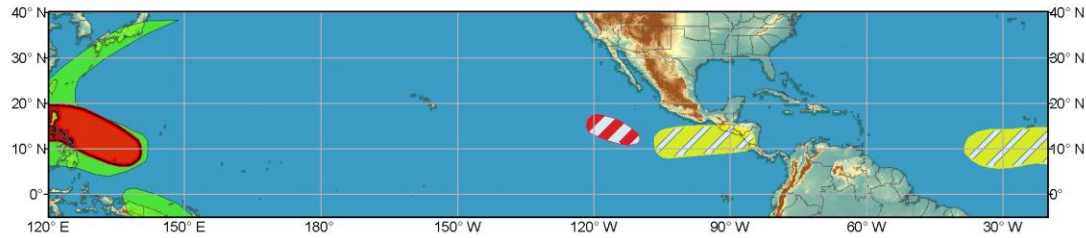




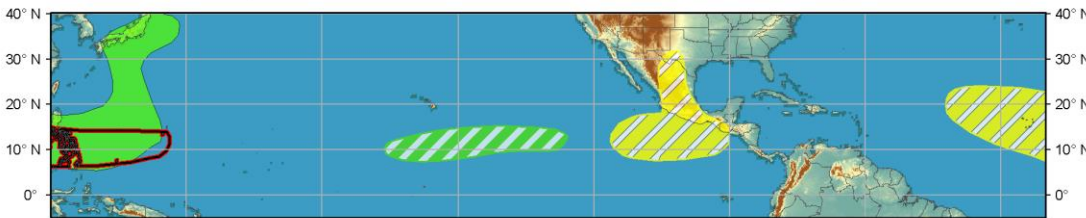
Global Tropics Hazards and Benefits Outlook - Climate Prediction Center



Week 1 - Valid: Oct 14 2017 - Oct 17 2017



Week 2 - Valid: Oct 18 2017 - Oct 24 2017



Confidence
High Moderate

Produced: 10/13/2017
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 perspectives from the initial outlook appear on track, with the MJO remaining over the Maritime Continent at present. Circulation fields reveal a robust event, while the outgoing longwave radiation component remains relatively modest. Dynamical models continue to forecast the progression of the event across the Maritime Continent over the coming two weeks, albeit slightly faster than they were earlier in the week, and take the MJO into the West Pacific by the second half of Week-2.

Tropical Storm Khanun formed east of Luzon on the 12th and is forecast to track into the South China Sea and intensify into a Typhoon by the Joint Typhoon Warning Center (JTWC). JTWC brings Khanun across Hainan Island early next week and then into Northern Vietnam, which is still reeling from mudslides and flooding due to Tropical Depression 23. Dynamical models continue to indicate an active West Pacific in terms of tropical cyclones (TCs), particularly from the South China Sea through approximately 140E. Both the GFS and ECMWF ensembles consistently spin up another TC east of the Philippines late in the Week-1 period, but differ substantially in regards to its forecast track. The GFS follows a similar track to Khanun with a slight northward displacement, while the ECMWF recurves this system northward toward Southern Japan due to it forecasting a greater reduction in the anomalous midlatitude ridging relative to the GEFS. The Week-2 tropical cyclone region in the West Pacific is

dropped in the updated outlook, as cyclogenesis appears more likely to happen during Week-1. Closer to home, the National Hurricane Center (NHC) gives a system several hundred miles south of Baja a 60% chance of developing in the next 5 days, which translates to moderate confidence in the updated forecast here. This system is forecast to push northwest over the course of the week, with no U.S. implications. In the Atlantic, NHC is monitoring an easterly wave near 17N/55W and giving it a 30% chance of becoming a tropical cyclone in the next 5 days. This system is forecast to recurve into the North Atlantic and not threaten the U.S., and is left off the updated forecast due to the slim odds of development resulting from detrimental background conditions with large-scale suppression of TC activity favored in the Atlantic when the MJO is over the Maritime Continent. Hurricane Ophelia remains in the northeast Atlantic, and is forecast to undergo extratropical transition and track towards Ireland early next week.

Precipitation forecast areas were adjusted to account for changes in the outlook regarding TCs and to account for rains that have fallen during the last 48 hours.

----- The previous discussion from 10 October follows below -----

The recent lull in observed intraseasonal variability appears to have passed, with a coherent signal consistent with the Madden-Julian Oscillation (MJO) emerging over the Maritime Continent in recent days. This is reflected in a pronounced wavenumber-1 signature in the 200-hPa velocity potential field that indicates enhanced (suppressed) upper level divergence over the Eastern (Western) Hemisphere. There appears to be a limited outgoing longwave radiation (OLR) component to the MJO at present, with the envelope more closely tied to circulation signals in the zonal winds both at 850 and 200 hPa. Various ensemble suites show consistent strengthening of the MJO signal in Phase 4 over the Maritime Continent during Week-1, before propagation into Phase 5 by Week-2. The GEFS and CFS are slower to progress this signal and do not pass the Maritime Continent by the end of Week-2, while the ECMWF and Canadian forecasts enter the West Pacific (Phase 6). The ECMWF perspective is favored here, with a robust MJO envelope just making it into the West Pacific by the end of the forecast period.

The last week saw a four tropical cyclones (TCs) develop. Hurricane Nate formed near 12N/82W on 4 October, and strengthened into a Category 1 Hurricane prior to making landfall near the mouth of the Mississippi River on 8 October. Tropical Storm Ophelia formed in the North Atlantic on the 9th of October. Ophelia continues to churn near 32N at the time this forecast is issued, with the National Hurricane Center (NHC) forecasting intensification to hurricane status during the 11th of October and a track away from the United States. Tropical Storm Ramon briefly developed on the 4th of October in the East Pacific, before dissipating the following day. Tropical Depression 23 developed in the South China

Sea on the 8th of October, making landfall in Northern Vietnam on 10th of October and bringing heavy rain and flooding concerns to the region.

NHC indicates no tropical cyclone formation likely during the next 5 days in either the Atlantic or East Pacific, which aligns with the expected MJO response in TC activity over those basins for an active MJO event over the Maritime Continent. The emerging MJO in the Eastern Hemisphere suggests a potential cap on the hyperactive Atlantic hurricane season, as a favorable circulation pattern would not be likely to emerge across the basin until some point in November. The pattern instead favors the relatively quiet West Pacific basin reawakening over the next few weeks. Satellite imagery indicates a monsoon trough extending from the South China Sea through Micronesia. Model guidance consistently indicates possible TC formation and an eventual westward track along this boundary between the Philippines and Marianas early in Week-1, with another system possible toward the end of Week-1 and into Week-2. There is also some potential for development in the South China Sea. Given the substantial signal for TC development in both weeks, consistent with MJO composites of TC formation, a high risk of tropical cyclone formation is given for this area in both weeks. The OZ deterministic European model also spins up a TC in the Bay of Bengal early in Week-2, with its ensemble members also indicating anomalously low pressure here. The GEFS also has a disturbance in this area, but is quicker to develop it during Week-1. The ECMWF solution is favored, given it appears to have a better handle on the intraseasonal signals in the Eastern Hemisphere at present, and thus a moderate risk of TC formation is forecast in the Bay of Bengal during Week-2.

The forecast outlooks for the next two weeks are relatively high in terms of confidence, given the emerging MJO signal and aforementioned TC expectations. High confidence for above-average rains are forecast in both weeks from the Bay of Bengal eastward to near Guam and the Marianas in association with the forecast monsoon trough presence and any TCs that develop within it. There is also high confidence for anomalous dryness to persist over the equatorial Indian Ocean into Week-1 due to the active intraseasonal envelope being east of the region. Equatorial Rossby wave activity also yields high confidence for above-average rains for portions of New Guinea and the South Pacific. Suppressed rains are forecast with moderate confidence in both weeks over the tropical Atlantic and East Pacific in association with enhanced trades helping to limit possible TC development. Remaining forecast areas in each week are generally a result of dynamical model consensus between the GFS and ECMWF ensemble suites, with less clear linkages to canonical tropical modes of variability.

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