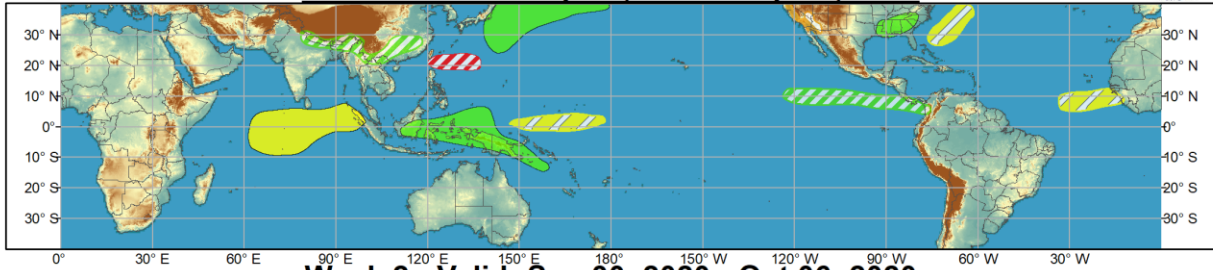




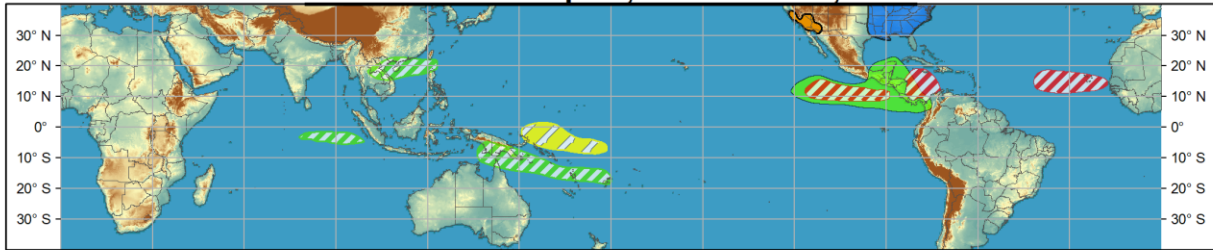
Global Tropics Hazards and Benefits Outlook - Climate Prediction Center



Week 1 - Valid: Sep 23, 2020 - Sep 29, 2020



Week 2 - Valid: Sep 30, 2020 - Oct 06, 2020



Produced: 09/22/2020

Forecaster: Harnos

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|-----------------------------------|----------|--|
| 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. |

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 course of the past week the Madden-Julian Oscillation (MJO) was over the Maritime Continent, with the RMM index showing a brief emergence outside the unit circle in Phase 4 before returning to a low amplitude and reaching Phase 5 in recent days. In addition to the MJO, La Nina conditions remain in effect and will continue to shape the upcoming weeks. Ensemble guidance is mixed on the interplay of these two modes of variability. The GEFS tends to split the difference between both, with the two destructively interfering over the next two weeks as the MJO propagates across the Pacific at a relatively slow phase speed. The ECMWF is a slower solution than the GEFS, with a westward shift late in Week-2 likely tied to equatorial Rossby wave activity over the West Pacific. Also muddying the prospective forecast is the need to evaluate the contribution of increased shortwave radiation for the areas seeing suppressed convection from the low-frequency state. This insolation component acts as an effective cap on how much cooling can be observed in sea surface temperatures (SSTs) near the Date Line where SSTs are climatologically near convective threshold values. In general, RMM Phase 5/6 conditions are favored during Week-1, with limited intraseasonal influences during Week-2 tied to uncertainty in progression of the MJO and destructive interference with La Nina. A pair of Kelvin waves are also presently analyzed, with the first over eastern Africa and the other over the Central Pacific. The former feature is forecast to reach the East Pacific by Week-2, while the latter feature is likely to dissipate in the next few days.

During the last week Tropical Storms Wilfred and Beta formed in the Atlantic, in addition to subtropical storm Alpha. Wilfred was short-lived between the 18th and 20th, with peak winds of only 35 mph over the Central Atlantic. Beta developed in the Bay of Campeche on the 18th and made landfall over Texas earlier today. Alpha formed just prior to making landfall over Portugal on the 18th. Hurricane Teddy formed prior to the period and is undergoing extratropical transition before impacting the Canadian Maritimes this week. Tropical Storm Paulette also recently redeveloped southeast of the Azores and is forecast to dissipate later this week. In the East Pacific, Tropical Storm Lowell developed on the 21st and is currently forecast to track westward through the weekend and maintain its strength. Tropical Storm Dolphin developed on the 20th over the West Pacific, and forecast to track northward and impact Japan in the coming days.

The only other system being monitored in any basin for tropical cyclone (TC) development at present is the chance of something spinning up at the end of a cold front trailing from Hurricane Teddy through the Florida Keys. The National Hurricane Center gives this only a 10% chance of happening through the next 5 days. Week-1 looks fairly quiet otherwise, outside of a moderate chance for a TC developing near the Luzon Strait late in the period and tracking eastward, as supported by the ECMWF model. Week-2 looks more active closer to North America, tied to forecast Kelvin wave activity and the suppressed MJO envelope shifting east toward Africa and the Indian Ocean. Moderate confidence exists for at least one TC to form in the East Pacific along roughly 10N in Week-2. Climatological Atlantic TC activity by October typically shifts away from the Main Development Region (MDR) and closer to North America (e.g. the Gulf of Mexico and Caribbean). Model guidance shows an uptick in TC activity chances over the Western Caribbean during Week-2, with any disturbances here likely tracking to the north-northwest (moderate confidence). Even with the typical aforementioned shift away from the MDR in October, model guidance shows continued easterly wave activity off of Africa with development potential for each of these during Week-2, resulting in a late-season moderate risk for tropical cyclogenesis centered on 15N between roughly 20-40W.

Above-normal forecasts with high confidence during Week-1 are tied to forecast TC tracks (Beta and Dolphin) and active MJO envelope over the Maritime confidence. The suppressed phase of the MJO results in high confidence for below-normal rains over the Indian Ocean and moderate confidence over the MDR during Week-1. The low frequency state supports below-normal rains east of the Maritime Continent during Week-1, although the intraseasonal component makes this only have moderate confidence. Remaining precipitation forecasts are tied to consensus of the CFS, ECMWF, and GEFS ensembles. Heat looks to build over the western U.S. late in Week-1 tied to mid-latitude ridging, resulting in moderate confidence for above-normal temperatures.

The Week-2 outlook is fairly low confidence, lending to the potential destructive interference of the MJO and La Nina, coupled with uncertainty regarding the MJO's propagation. Highest confidence for

precipitation is tied to enhanced rains over the East Pacific, Central America, and western Caribbean tied to possible TC activity linked to a forecast Kelvin wave passage. Moderate confidence for above-normal (below-normal) rains over the Maritime Continent (West Pacific) are tied to the anticipated MJO envelope (La Nina). Heat is forecast to build over the western U.S., resulting in high confidence for above-normal temperatures. Downstream of the forecast ridge, troughing over the eastern U.S. is likely to lead to early season frosts and freezes for many places which translates to a high risk for below-normal temperatures in Week-2 across most areas east of the Great Plains.

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