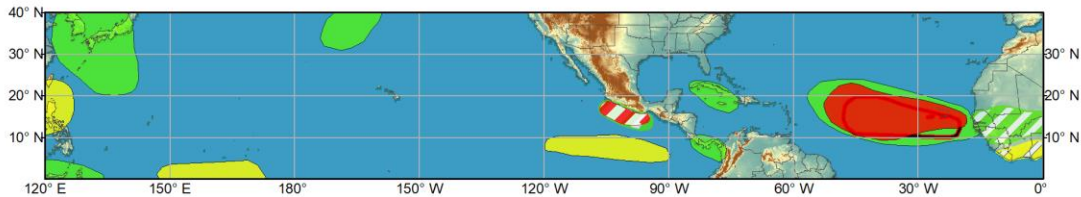




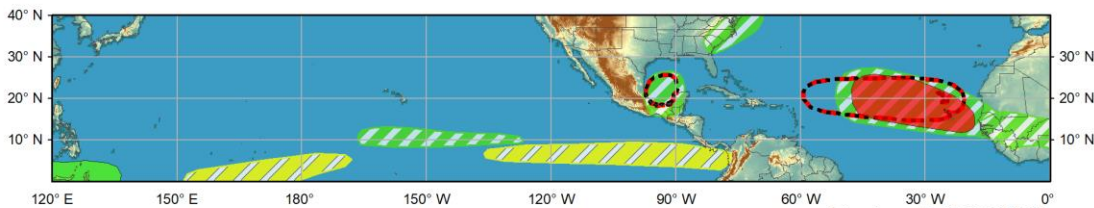
Global Tropics Hazards and Benefits Outlook - Climate Prediction Center



Week 1 - Valid: Sep 05 2020 - Sep 08 2020



Week 2 - Valid: Sep 09 2020 - Sep 15 2020



Confidence
High Moderate

Produced: 09/04/2020
Forecaster: Novella

- 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 enhanced phase of the MJO remains over the Indian Ocean, with an envelope of anomalous upper-level divergence continuing to extend from the eastern Atlantic into the western Indian Ocean. The suppressed phase remains predominantly over the Pacific, with the strongest upper-level convergence anomalies now centered over the eastern Pacific. The amplitude of the MJO is expected to gradually weaken over the next several days, with increased uncertainty of the state of the MJO heading into mid-September. Models favor continued easterly wave activity and support an active Atlantic basin during the outlook periods.

Following the formation of TC's Omar and Nana in the Atlantic earlier this week, no new tropical cyclones (TC) have formed across the basin since earlier this week. TS Omar peaked at Tropical Storm intensity to the northwest of Bermuda and since weakened and become post-tropical as it continues to track east in the open waters of the Atlantic. In the Caribbean, Hurricane Nana strengthened to a category 1 Hurricane prior to making landfall over southern Belize, triggering heavy rainfall and localized flooding over northern Honduras. As the remnant low is expected to continue to track west over Guatemala and into the Pacific, there is an increased chance that the low will reform over the next five

days according to the National Hurricane Center (NHC), and a moderate confidence area is added to the outlook.

With the peak of the Atlantic Hurricane season upon us, all eyes remain focused in the Main Development Region (MDR) with multiple tropical waves continuing to propagate off West Africa. Currently, NHC is monitoring three individual areas with an elevated potential for development during the next five days, and there has been good continuity in the model ensemble means and TC tools with the formation of at least one closed low in the eastern tropical Atlantic. Thus, the high confidence area for TC formation is maintained and slightly broadened compared to the original outlook earlier this week. For days 5-11 (9/9 to 9/15), the confidence associated with the original area highlighting increased odds of TC formation is elevated from moderate to high confidence. This change is made to capture any delayed development in these disturbances in the later period and is also supported by model guidance and probabilistic tools. The moderate confidence area for TC development over the southern Gulf of Mexico in the original outlook, has been removed due to the lack of support in the latest guidance and tools.

Across the western Pacific, Typhoon Maysak made landfall as a category 2 typhoon over Korean Peninsula on 9/3. Typhoon Maysak brought heavy rains, flooding, and damages to infrastructure to parts of South Korea. As Maysak occurred about a week after Typhoon Bavi made landfall in the region, respite looks less likely over the Korean Peninsula as attention shifts to Super Typhoon Haishen (formerly Tropical Storm 11) located in the Philippine Sea. Haishen is currently at category 4 strength, and is forecast to intensify to a category 5 system over the next 24 hours and track northeast into the East China Sea. According to the Joint Typhoon Warning Center (JTWC), the system is then forecast to weaken as it encounters a more unfavorable shear environment, while accelerating to the north, beginning its extratropical transition, and likely making landfall over South Korea. Regardless of intensity, heavy rainfall and high winds are likely to exacerbate already saturated ground conditions and possibly cause additional devastation over parts of the Korean Peninsula. Following Haishen, tropical activity is expected to become quieter in the western Pacific and no TC areas are posted in today's updated outlook.

Modifications to the favored areas of above- and below-average rainfall from the previous outlook are based on GFS, CFS, and ECMWF precipitation output as well as anticipated storm tracks.

----- Original Discussion from Tuesday, September 1, 2020 follows: -----

The enhanced phase of the MJO is currently over the Indian Ocean and has completed a full global circumnavigation since late July. Upper-level velocity potential anomalies continue to depict a wave-1 pattern, with much of the enhanced envelope continuing to extend from the Atlantic to the Indian Ocean, and anomalous upper-level convergence now overspreading the Pacific Ocean. Dynamical model forecasts indicate a continued eastward propagation of the MJO over the Indian Ocean and into the Maritime Continent, while gradually weakening in amplitude during early September. Compared to previous model guidance, there is better agreement in the models relative to this predicted weakening, as all ensemble means fall within the unit circle in RMM space by the start of week-2. The ECMWF weakens the intraseasonal signal substantially, however, there are a number of ensemble members which depict the signal maintaining a higher amplitude while propagating over the Maritime Continent and into the Western Pacific by mid-September. Despite some of this weakening, there are still elevated chances for tropical cyclone (TC) development across the tropical Atlantic according to guidance, while TC activity looks to quiet down over the Eastern Pacific consistent with the suppressed phase of the MJO over the region during early September.

Several TC's have developed during the last seven days. In the Western Pacific, TC Maysak formed on 8/28 in the Philippine Sea and has continued to track north-northwestward into the East China Sea and has strengthened to a category 4 Typhoon. It is forecast to gradually weaken before making landfall over the Korean Peninsula during the next 24-36 hours. Tropical Storm Eleven formed on 8/31 north of the Mariana Islands (22N / 145E). This storm is expected to briefly track westward before turning north towards Japan under a more favorable shear environment and rapidly strengthen into a major system over the next several days. Please refer to the Joint Typhoon Warning Center for the latest updates on these two systems. Model guidance continues to suggest that the extratropical transitioning of these cyclones are likely to reinforce a high amplitude mid-level pattern over North America. In the eastern Pacific, two weak tropical cyclones, Hernan and Iselle, both formed on 8/26 to the southwest of the Baja Peninsula. Both systems aided in bringing increased moisture and rainfall across many anomalously dry parts of western Mexico and the U.S. Desert Southwest during the last week. Following TC's Marco and Laura in late August over the Atlantic, Tropical Depression Fifteen formed on 8/31 offshore of the Carolinas. This system is forecast to weaken out in the Atlantic and is not expected to impact the eastern U.S. over the next few days. Lastly, Tropical Storm Nana which formed today (9/1) to the south of Jamaica. Nana is forecast to track westward into the Gulf of Honduras and gradually strengthen into a category 1 Hurricane before making landfall over Belize over the next few days. Please refer to the National Hurricane Center (NHC) for the latest updates on this system.

For week-1, NHC is currently monitoring a tropical wave that is predicted to move off the coast of West Africa and models continue to depict gradual development this week. Given the enhanced phase of the MJO, climatology, and run-to-run continuity in the models, a high confidence area is added over the Main Development Region (MDR) for week-1. In the eastern and western Pacific, no TC areas are included in the outlook for week-1 due to little to no signal for TC formation in the models and

probabilistic tools, consistent with the suppressed phase of the MJO. Over the equatorial Indian Ocean, the GEFS and CFS favor the formation of a closed low, tied to the enhanced phase of the MJO. However, given the lack of support in other models, inconsistency in the tools, and climatology in the region, a TC area is not added to the outlook.

For week-2, both model ensembles and probabilistic tools favor an area of enhanced precipitation and possible development in the southern Gulf of Mexico during week-2, and a moderate confidence for TC development is added over the region. In addition to climatology, model guidance and TC tools both maintain an elevated TC potential in the MDR during week-2. A broad moderate confidence area is highlighted over the region and is extended slightly north and west compared to the week-1 TC area in accordance with the latest guidance. Lastly, TC tools are beginning to indicate elevated probabilities for TC formation to the east of Hainan in the western Pacific in week-2. However, due to a lack of support from ensemble and deterministic guidance at this time, no TC area is included but this area will continue to be monitored in upcoming outlooks.

The precipitation outlook during the next two weeks is based on the model consensus among dynamical models and MJO composites for phases 2 through 4, with influences from the low frequency base state, and anticipated TC tracks. Forecasts over Africa are made in consultation with the International Desk at CPC, and can represent local scale conditions in addition to global scale variability.