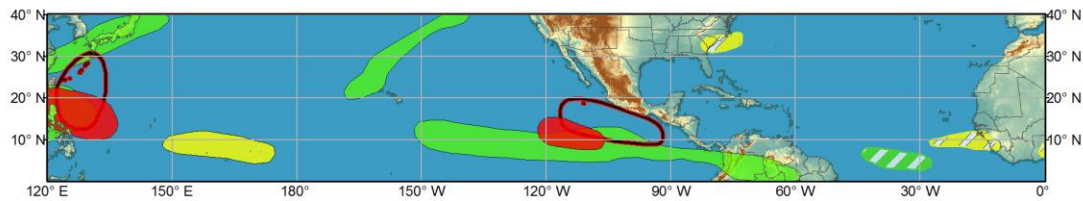




Global Tropics Hazards and Benefits Outlook - Climate Prediction Center



Week 1 - Valid: Jun 29 2019 - Jul 02 2019



Week 2 - Valid: Jul 03 2019 - Jul 09 2019



Confidence
High Moderate

Produced: 06/28/2019
Forecaster: Allgood

- 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.



As reflected in the RMM index, the MJO signal which had weakened earlier in the week has now restrengthened over the past few days. This change was associated with a Rossby wave that has moved away from the MJO enhanced phase, which is now centered over the east-central Pacific. Dynamical models continue to depict weak MJO activity during the next week, but most consistently show the MJO signal re-emerging over the Indian Ocean towards the end of Week-2. The stronger East Pacific signal may aid in an increase in East or Central Pacific TC activity during the next 2 weeks.

The outlook was updated to reflect the latest dynamical model guidance and forecast information from the National Hurricane Center and Joint Typhoon Warning Center. Invest 94W in the West Pacific never developed into a tropical cyclone before becoming entrained in the Meiyu Front. A second disturbance, Invest 95W, is currently east of the Philippines and has a high potential for tropical cyclogenesis. Should a tropical cyclone develop, dynamical models generally favor a northwesterly track near the Philippines and over the South China Sea. Over the East Pacific, Tropical Storm Alvin developed from Invest 93E and is forecast to weaken over the next several days. A second disturbance to the east of tropical cyclone Alvin has a high potential for formation over the next four or five days. This potential was indicated in the initial outlook, but the formation region appears to be further south than the model guidance

depicted earlier in the week. Should this system develop, the GEFS ensembles favor a westerly track, and the system may move into the central Pacific. During the Day 5-11 period, dynamical models favor the development of a third tropical cyclone in the same general vicinity of the East Pacific. No tropical cyclone development is anticipated over the Atlantic basin.

Forecasts for below- and above-average precipitation were modified to reflect the latest model guidance.

The original discussion released on June 25, 2019 follows.

The MJO weakened over the past week, with the remnant enhanced phase now over the West Pacific. Based on the abrupt "left turn" in the Wheeler-Hendon diagram of the RMM index, the primary culprit for this weakening seems to be influences from a strong Rossby wave over the central Pacific. The easterly (suppressed) phase of this Rossby wave projects strongly onto time-longitude plots of low-level zonal wind anomalies, and the destructive interference with the MJO enhanced convective envelope reduces the potential for a second widespread westerly wind burst event similar to what occurred in May. Dynamical model MJO index forecasts depict a continuation of weak MJO activity over the next two weeks. Despite the weak MJO presentation in the OLR and low-level wind fields, the signal remains fairly robust in the upper-levels. This suggests that the MJO may continue propagating eastward and the low-level response may become more apparent as the MJO enhanced phase and the Rossby wave suppressed phase diverge. Therefore, the MJO is anticipated to continue playing a role in the evolution of the global tropical convective pattern, but with reduced confidence compared to previous weeks.

No new tropical cyclones formed during the past week, and both the West and East Pacific basins have had suppressed activity during the past month. The Joint Typhoon Warning Center is currently monitoring a disturbance east of the Philippines (94W), and there is a high potential for brief tropical cyclogenesis before the system becomes entrained in the Meiyu Front near southern Japan. The National Hurricane Center is monitoring a second disturbance south of Mexico (93E), and there is a high potential (70 percent) for tropical cyclone development over the next five days. Later during the Week-1 period or early in Week-2, dynamical models support the potential for a second East Pacific tropical cyclone forming close to the southern coast of Mexico, east of 93E. Neither potential East Pacific tropical cyclone is forecast to track close to the Baja California peninsula, and therefore little impact on the Southwest U.S. monsoon is anticipated. Tropical cyclone development is possible over the central Pacific

southeast of Hawaii during Week-2, but the latest GEFS runs have indicated a reduced potential for formation. Elsewhere, there is insufficient confidence to forecast likely regions for additional tropical cyclone development.

Forecasts for above- and below-average precipitation were made using a consensus of dynamical model forecast information, anticipating continued MJO propagation to the East Pacific and Western Hemisphere. The CFS and ECMWF were quite consistent during Week-1, allowing for a fairly detailed depiction of areas favorable for anomalous precipitation. Robust cross-equatorial flow was observed over the west-central Indian Ocean over the past several days, which increases the potential for northward advancement of the delayed South Asian Monsoon. While model forecasts depict above-average precipitation over central India, below-average rainfall is favored to continue across parts of southern India. Suppressed rainfall, partly due to Rossby wave activity, is forecast for Guam and adjacent areas of the Northwest Pacific, while areas of above-normal rainfall are forecast for the Philippines, Taiwan, and Japan, due to interactions between 94W and the Meiyu Front, along the equator near New Guinea due to MJO activity, and across parts of the South Pacific, including American Samoa. Enhanced rainfall is favored for Hawaii's western islands, and enhanced ITCZ precipitation is forecast over the East Pacific and over parts of northern South America.

During Week-2, the ECMWF favors enhanced rainfall over northern India and the southwestern Indian Ocean, while generally suppressed convection is forecast across the Maritime Continent south of the equator. The MJO may contribute to continued active ITCZ regions over the central and eastern Pacific, while enhanced rainfall associated with the Meiyu front is expected to continue across parts of East Asia and Japan.

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