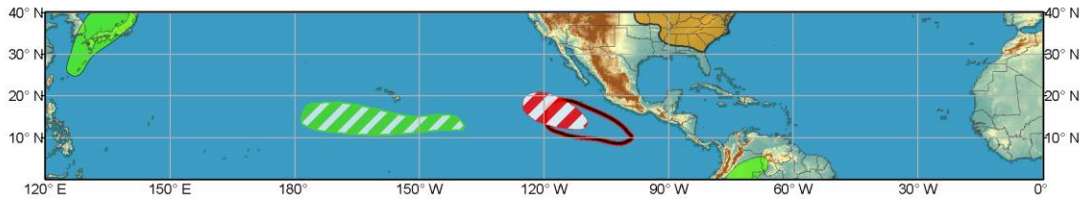




Global Tropics Hazards and Benefits Outlook - Climate Prediction Center



Week 1 - Valid: Jul 20 2019 - Jul 23 2019



Week 2 - Valid: Jul 24 2019 - Jul 30 2019



Confidence
High Moderate

Produced: 07/19/2019
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 thinking from the original update remains largely on track regarding continued weakness of the MJO's influence relative to other large-scale modes of tropical variability. What remains of the enhanced MJO envelope is likely to shift over the Indian Ocean next week, but continue to be masked by robust equatorial Rossby wave activity over the Indian Ocean and Kelvin wave activity over the Western Hemisphere. Models also support the possibility of more Kelvin wave activity ejecting from the enhanced MJO envelope, further confounding interpretation of tropical modes of variability and their associated influences on precipitation.

Resulting changes are minimal to the Week-1 outlook. The Week-1 East Pacific tropical cyclogenesis region is downgraded to moderate confidence, as it now only encompasses one system being monitored by the National Hurricane Center (NHC), which they give a 60% chance of development during the forecast period. Further west, a second area being monitored by the NHC in the East Pacific has a 20% chance of developing over the next five days resulting in it being left off the updated outlook. West Pacific precipitation was adjusted slightly in Week-1 to account for the latest forecast track of Tropical Storm Danas. Week-2 now features remarkably poor agreement between the CFS and ECMWF guidance,

lowering confidence from the initial outlook even further. That said, both models continue to support TC formation potential in the East Pacific, although shifted east-southeastward from the initial outlook.

The original discussion from Tuesday, July 16th follows below.

The Madden-Julian Oscillation (MJO) reverted to an incoherent state over the course of the past week as expected, with multiple competing modes of tropical variability serving to mask what remains of the primary MJO envelope. What remains of the MJO looks likely to shift from over Africa to the Indian Ocean during the course of Week-1, although how substantial its impacts are remains to be seen given the robust equatorial Rossby wave activity that has been observed over this basin since mid-June. Models diverge in how pronounced the MJO becomes with some downplaying the other modes of variability (e.g. the GEFS), while others continue to muddy the MJO signal (e.g. the ECMWF). Generally some hint of the MJO being in Phase 1 during Week-1 and then shifting to Phase 2 or 3 for Week-2 make it into the forecast, although confidence is low on widespread, significant MJO-driven impacts during the next two weeks.

During the past week Hurricane Barry formed over the Northern Gulf of Mexico. Barry developed from an extratropical low that drifted southeastward over the warm Gulf waters, becoming a marginal Category 1 Hurricane before making landfall over the Louisiana coastline on the 13th. Barry's primary impacts included heavy rainfall from the TC and its predecessor disturbance (totals of up to a foot or more) and a storm surge of up to 7 feet as the system came ashore. The Atlantic appears likely to return to a quiet state over the next two weeks, with attention focused instead on activity in the Pacific. In the West Pacific, the quiet year to date was interrupted by the formation of Tropical Depression 6 east of Luzon on 16th. This system is forecast to track northward with impacts to Taiwan and eastern China during the next few days as the system likely intensifies to tropical storm strength. Looking forward, the more active part of the Pacific appears to be the East Pacific, with three TCs possible over the next two weeks. During Week-1, the National Hurricane Center is monitoring a westward-moving wave near 11N/91W with a 50% chance this system develops over the next 5 days. Later in Week-1, model guidance suggests the potential for a second system developing in this general vicinity and tracking to the northwest while staying well off the Mexican coastline. Given the possibility for both systems to form in the same general area, a single region with high confidence for TC formation is given during Week-1. Later in Week-2, another TC may develop in this same area while taking a similar track to the second system from Week-1, resulting in a moderate confidence of TC formation for a similar area during Week-2.

Confidence is highest for above-normal precipitation across an arc stretching from southern India eastward across Southeast Asia through the East China Sea tied to equatorial Rossby wave activity and the forecast track of Tropical Depression 6. Across the southern Indian Ocean, confidence is also high for above-normal precipitation where low frequency conditions have favored anomalous convection. Model guidance is consistently dry across the West Pacific, despite the lack of canonical tropical modes driving this feature, but high confidence exists for below-normal precipitation anyway given the quiet 2019 tropical cyclone season for the region. High confidence also exists for above-normal precipitation across portions of northwestern South America tied to a robust tropical wave moving through the region coupled with anomalously high precipitable water observations. Persistent above-normal sea surface temperatures south of Hawaii support the moderate confidence for above-normal precipitation for this area. The suppressed phase of an equatorial Rossby wave supports a moderate confidence of below-normal precipitation stretching from eastern India through southern China. High confidence exists for above-normal temperatures across much of the eastern half of the U.S. during Week-1 tied to a robust extratropical ridge that does not appear tied to the MJO.

The enhanced (suppressed) portions of equatorial Rossby wave activity are forecast to yield high confidence of above-normal (below-normal) precipitation across Central India through Myanmar (the eastern Indian Ocean through West Pacific) during Week-2. Remaining areas of above-normal precipitation forecast in Week-2 are tied to the low frequency state (southern Indian Ocean and South Pacific) and easterly wave activity in far southern portions of the tropical Atlantic.