



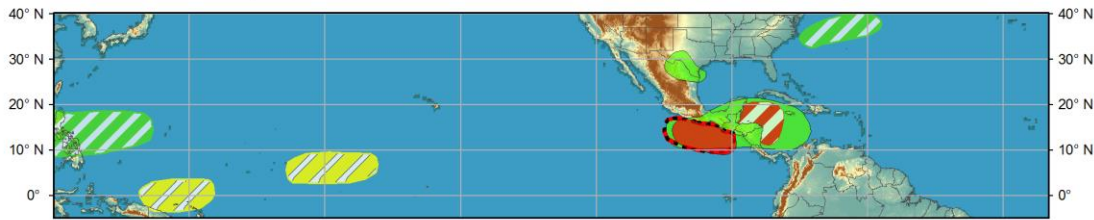
# Global Tropics Hazards and Benefits Outlook - Climate Prediction Center



## Week 1 - Valid: Sep 23 2017 - Sep 26 2017



## Week 2 - Valid: Sep 27 2017 - Oct 03 2017



Confidence  
High Moderate

Produced: 09/22/2017  
Forecaster: Pugh

- 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 pattern of 200-hpa velocity potential (VP) anomalies became more coherent and Wave-1 in appearance during the past week with enhanced convection across the eastern Indian Ocean, Maritime Continent, and west Pacific. Although the CPC index based on the 200-hpa VP indicates the early stages of a strengthening MJO, the RMM index has featured a weak MJO since late August. Dynamical model forecasts indicate an increase in amplitude of the RMM index in Phase 7 during the next week. It is uncertain on how the MJO evolves through the beginning of October with the ECMWF model favoring a fast eastward propagation, more typical of an atmospheric Kelvin wave.

Hurricane Maria made landfall near Yabucoa, Puerto Rico early on September 20 with maximum sustained winds of 155mph and a minimum central pressure of 917mb. Maria was the first Category-4 hurricane to make landfall in Puerto Rico since the San Ciprian Hurricane of 1932. As of 11am EDT on September 22, the National Hurricane Center forecasts Hurricane Maria to gradually weaken as it tracks north over the western Atlantic due to southwesterly wind shear and decreasing sea surface temperatures. Model guidance remains consistent that Maria tracks west of Bermuda and is then steered away from the East Coast of the United States by an upper-level trough on September 28 and 29. Long-lived tropical cyclone Jose (16 days) became post-tropical on September 21 as it remains nearly

stationary offshore of New England. Jose is the 7th longest-lived Atlantic named storm during the satellite era, beginning in 1966.

The focus for tropical cyclone (TC) development is expected to shift to the western Caribbean Sea during the September 27-October 3 period. The main development region of the Atlantic basin typically becomes less active during October, while the Caribbean Sea is a more active region for TC genesis. Based on the GEFS and ECMWF models along with climatology, the chances for TC development are forecast to increase across the southwest Caribbean Sea, during early October. Environmental conditions are favorable for the formation of a tropical depression during the next 48 hours near the southwest coast of Mexico where very heavy rainfall is likely. High confidence exists for another tropical cyclone to form over the east Pacific from September 27-October 3. Please refer to the National Hurricane Center for the latest updates and forecasts on tropical cyclones in the Atlantic and east Pacific basins.

The above-average rainfall area over the western Atlantic is consistent with the predicted track of Hurricane Maria. An upper-level trough and slow-moving cold front are likely to result in heavy rainfall (1 to 5 inches, locally more) across the middle and upper Rio Grande Valley along with the southern Great Plains through September 26. Above-average rainfall is likely to persist along the middle and lower Rio Grande Valley and northeast Mexico from September 27-October 3. Elsewhere, the favored areas for above- and below-normal rainfall were modified to reflect the latest GFS and CFS precipitation forecasts.

The original discussion released on September 19 follows.

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The MJO was weak during mid-September, according to the Wheeler-Hendon RMM index and the CPC index based on the 200-hpa Velocity Potential. The consensus among dynamical model forecasts indicates a weak MJO signal through late September. Tropical cyclones, an atmospheric Kelvin wave, and the low frequency base state are likely to be the major influences on anomalous rainfall patterns across the global tropics.

As of 11am EST on September 19, Hurricane Jose is located over the western Atlantic (36.5N/71.7W) and moving north. Although Jose is likely to remain offshore of the East Coast, the large cyclone will

continue to cause gusty winds and large swells along Long Island and the southeast New England coastline.

Hurricane Maria formed to the east of the Leeward Islands, and rapidly intensified to become a Category 5 hurricane on September 18 as it approached Dominica. Maria became the 2nd Category 5 hurricane of the 2017 Atlantic season. Maria is likely to affect the U.S. and British Virgin Islands and Puerto Rico as a dangerous major hurricane during the next 48 hours. Heavy rainfall is likely to trigger life-threatening flash flooding and mudslides across these areas. The above-average rainfall area during Week-1 is consistent with the predicted track of Maria. Forecast confidence in the exact area for above-average rainfall decreases to moderate near the 30th parallel, reflecting the increasing ensemble spread as Maria gains latitude. Please refer to the National Hurricane Center for the latest updates and forecasts on Hurricane Maria.

A pair of tropical cyclones (Norma and Otis) developed over the East Pacific during the past week and both are forecast to dissipate soon. A trough of low pressure is currently located near the southern coast of Mexico. Environmental conditions are conducive for tropical cyclone (TC) development. Based on good model agreement and continuity, high confidence of TC development exists across the East Pacific during Week-1. Above-average rainfall is also likely for this region of the East Pacific. Elsewhere across the global tropics, model guidance indicates only weak signals for TC development east of the Philippines and over the South China Sea.

In the wake of a predicted Kelvin wave, conditions appear to remain favorable for another tropical cyclone (TC) to form over the East Pacific during Week-2. The GFS and ECMWF models support TC genesis in the outlined area (moderate confidence). Although the latest model guidance backed off on TC development over the Atlantic Basin during Week-2, this area will be closely monitored in the updated outlook issued on Sep 22. At this time, the most likely time for TC formation would be late in Week-2, at the beginning of October, anywhere from east of the Lesser Antilles to the western Caribbean Sea. During October, the typical area for TC genesis shifts from the main development region of the Atlantic to the western Caribbean.

A mid-latitude upper-level trough, slow-moving cold front, and an influx of subtropical moisture are likely to result in above-average rainfall across the southern Great Plains and upper Rio Grande Valley of the United States. Above-average rainfall is expected to linger across these areas through the early parts of Week-2. Meanwhile, across the tropical Eastern Hemisphere, the favored areas of above and below-average rainfall are based on the consensus between the CFS, ECMWF, and GFS models along with the

low-frequency base state. During Week-1, a monsoon low is expected to shift west and enhance rainfall amounts across Madhya Pradesh and Uttar Pradesh of India.

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