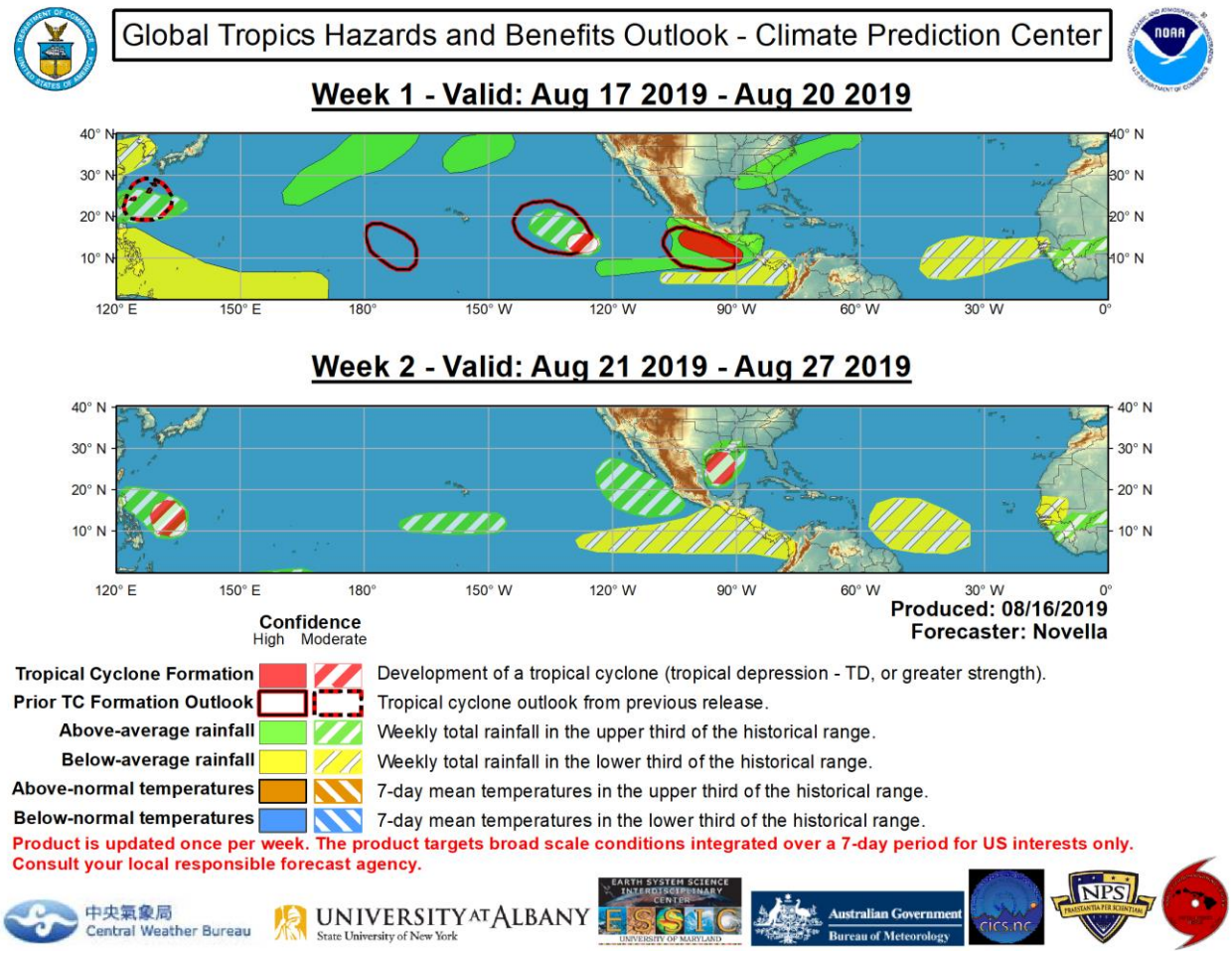

Main changes this morning concern the weaker potential for tropical cyclogenesis in parts of the Pacific Ocean and the possible formation of a cyclone in the Gulf of Mexico. Model guidance continues to show little to no signs of tropical cyclone activity through Week-2 across the equatorial Atlantic which is becoming more unusual for this time of the year. No tropical cyclones have formed during the past several days.

In the eastern Pacific, this morning's model guidance still depicts the development of a tropical low to form off the coast of Central America. Since earlier this week, NHC has increased the chance of formation from 30% to 70% for the next five days. Latest GFS and GEFS guidance show cyclone formation near the end of the Week-1 period with the low tracking northwestward along southern Mexico and Baja California. ECMWF guidance mimics both GEFS and GFS relative to the invest area and timing, but maintains a more westerly solution with its track into the Week-2 period. Further west, the odds of formation associated with another tropical wave (located approximately 1100 miles southwest of the southern tip of Baja California) have significantly lowered (10%) since earlier this week. Models show some potential for development during the next few days before it is expected to encounter a high shear environment east of Hawaii.

In the central Pacific, models have backed off of a tropical wave that was expected to develop into a cyclone just to east of the Dateline during Week-1. Some GEFS ensemble members maintain an area of low pressure, but confidence is low for any development. In the western Pacific, both GEFS and ECMWF still maintain a broad area of low pressure in the Philippine Sea during the end of Week-1 and into Week-2, but it is more likely the formation of a tropical low would now occur after the beginning of Week-2 in the region. Additionally, both GFS and GEFS guidance during Week-2 continue to depict the formation a tropical low in the Gulf of Mexico that tracks to the north and bringing enhanced precipitation over the coastal Gulf States of the U.S. However, with ECMWF showing stronger subtropical ridging in the region, confidence remains moderate for any tropical low formation during Week-2.

Little changes have occurred with the current state and forecast evolution of the MJO. Both GEFS and ECMWF RMM forecasts reflect little to no activity throughout Week-1 and most of Week-2. However, there is fair agreement between model ensemble members which suggest a possible reemergence of the MJO in phases 1 and 2 during the later portion of Week-2. If an MJO does develop during late August, it is expected that the main development region in the Atlantic would become more favorable for tropical activity. Forecasts for suppressed and enhanced rainfall have been adjusted using a consensus of updated dynamical model forecasts and anticipated tropical cyclone tracks.

----- Original Discussion from Tuesday, August 13, 2019 follows: -----

During early August, the MJO continues to be incoherent and weak. According to the RMM index, the MJO signal showed signs of strengthening and some eastward propagation over the Maritime continent during the last week; however it is likely this signal is more reflective of an enhancement of lower level easterly winds near the Dateline, producing a spurious increase in RMM space. Both GEFS and ECMWF models are in good agreement this week that any MJO activity in RMM space is forecast to rapidly weaken during the beginning of Week-1, and remain within the unit circle throughout remainder of Week-1 and Week-2. However, some ensemble members do suggest some re-strengthening and eastward propagation of the MJO during Week-2.

With westward moving subseasonal variability prevailing in the model forecasts, enhanced precipitation and increased tropical wave activity are forecast across the Pacific Ocean during Week-1, with generally suppressed convection across the Maritime Continent during Weeks 1 and 2. In the eastern Pacific, above-average observed sea surface temperatures and forecast low environmental shear are expected to support the gradual development of two tropical disturbances. First, NHC is currently monitoring a

cluster of thunderstorms 1100 miles southwest of the southern tip of Baja California with an increased chance (70%) of formation this week, and a likely northwestward track before weakening before the end of the Week-1 period. The second eastern Pacific disturbance is forecast to form off the Gulf of Tehuantepec and also track northeastward through Week-1. Deterministic model guidance suggests a higher potential for the second low to rapidly deepen (<970 hPa), increasing the risk for impacts. While this disturbance is not currently forecast to make landfall, its expected track in the vicinity of the Gulf of California may trigger a gulf surge event to increase moisture availability for heavy rainfall associated with the North American Monsoon.

Over the Central Pacific, there is a moderate chance another tropical disturbance forming west-southwest of Hawaii. Model guidance depicts this low tracking westward before weakening northeast of Wake Island in the western Pacific by the end of Week-1. In the wake of Tropical Storm Krosa in the West Pacific basin, models depict both a broad and persistent area of low pressure centered in the Philippine Sea which could result in another tropical low developing in the region towards the end of Week-1. Both GEFS and ECMWF models do not show much strengthening of the disturbance once it forms, as it is forecast to track towards the west over eastern China. During Week-2, conditions are expected to become less favorable in the Pacific for tropical cyclogenesis. The GEFS model depicts a stronger tropical low developing over Philippine Sea during the earlier portion of Week-2; however, confidence for the development of this system remains low.

Forecasts for suppressed and enhanced rainfall were made using a consensus of dynamical model forecasts and anticipated tropical cyclone tracks. Over eastern Asia and the Maritime Continent, a broad of area of mean upper-level convergence is expected to suppress precipitation in the region. Conversely, parts of the equatorial Indian Ocean and India subcontinent are expected to be under the influence of lower-level convergence and upper-level divergence to enhance precipitation during Week-1. In the western hemisphere, a stalled frontal boundary forecast over the southeastern CONUS is expected to produce above-average precipitation during Week-1. Model guidance depicts heavy rainfall amounts in excess of 2 inches which may trigger local flooding in the region. In the southern hemisphere, the passage of a strong cold front over southern South America is forecast to bring anomalously cold temperatures (10-12 degrees C below average), with some local areas in southern Brazil, Uruguay, and Argentina expected to experience near to below freezing temperatures during the early portion of Week-1. Forecasts over Africa are made in consultation with CPCs international desk, and can represent local-scale conditions in addition to global-scale variability.