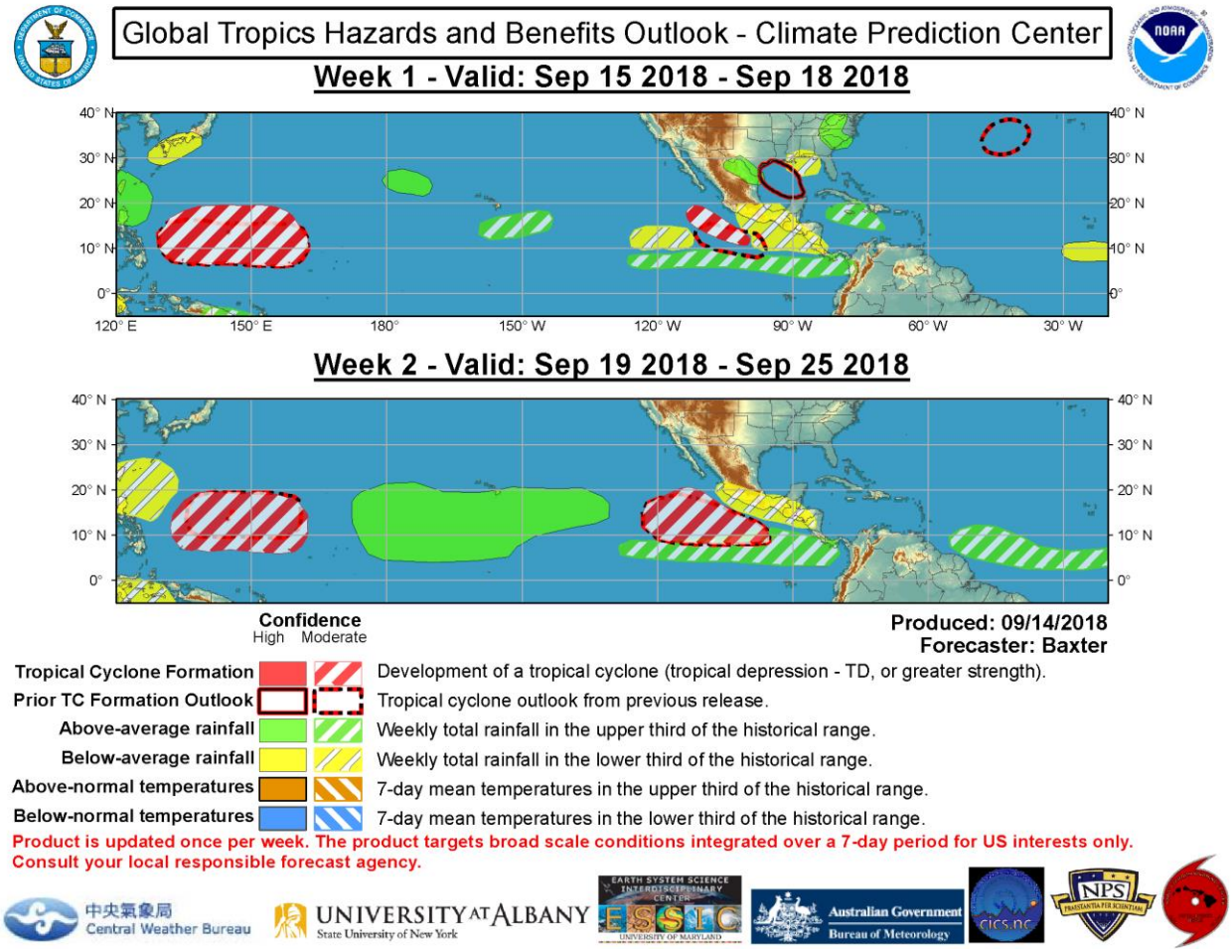

The MJO has weakened as observed by both the RMM and CPC indices; this evolution was more or less expected given the superposition of modes that was previously leading to a stronger projection. The GEFS and ECMWF have come into better agreement over the past few days, with both systems now intensifying the low-frequency state over the Pacific during the next one to two weeks. Both model systems also indicate some eastward progression of an enhanced convective signal over the Western Hemisphere during Week-2.

Hurricane Florence made landfall this morning over southern North Carolina. Potentially catastrophic flooding is possible over parts of the Carolinas due to both heavy rains and storm surge. Tropical Storm Joyce formed as forecast over the North Atlantic, and is forecast to track northeastward in the wake of Tropical Storm Helene. Tropical Strom Isaac tracked through the Lesser Antilles, and has since weakened to a tropical depression. This system is forecast to track northwestward over the next several days, with some model runs showing intensification as it approaches and enters the Gulf of Mexico. This should be monitored closely by interested parties over the next few days. A tropical disturbance is no longer favored to develop into a tropical cyclone (TC) over the western Gulf of Mexico, but is expected to bring heavy rain to South Texas and northeastern Mexico over the next few days. The GEFS indicates

anomalously strong wind shear over the Atlantic main development region during at least the next 10 days, and model forecasts do not strongly favor additional TC formation during this forecast period.

Over the East Pacific, NHC highlights a 60 percent chance of TC development over the next 5 days. This system is forecast to track fairly close to the coast, and could lead to a moisture surge into western Mexico and the Southwest CONUS. A second system could develop in the updated Week-2 period to the south of this earlier disturbance. Farther west, the remnants of Tropical Storm Olivia, which impacted Hawaii earlier in the week, are expected to track generally northwestward.

Over the West Pacific, the big story is Super Typhoon Mangkhut, which is forecast to make a first landfall over the far northern Philippines by 00Z September 15. A second landfall between the Hainan Peninsula and Hong Kong is forecast near 12Z September 16 by the Joint Typhoon Warning Center. Conditions appear broadly favorable for one or two TCs to develop east of Philippines during the forecast period, and so a moderate risk of TC formation is indicated for both periods.

Areas favoring above- or below-median rainfall were modified based on forecast TC tracks as well as the latest ECMWF, GEFS, and CFS model guidance.

The previous discussion, issued September 11, follows below:

The CPC MJO assessment remains largely unchanged from last week. The RMM index has increased in amplitude over the Western Hemisphere during the past week, largely due to low-level westerly wind anomalies associated with multiple modes of variability acting across time scales. There appears to be an eastward-moving subseasonal signal in the velocity potential field that could be due to both a weak canonical MJO event as well as the impact of the extratropics on the tropical circulation. The various dynamical ensemble systems are favoring a low frequency signal over the Pacific and Western Hemisphere during the next two weeks that projects at least somewhat onto the RMM index. At the same time, the Pacific remains to exhibit signs of oceanic-atmospheric coupling that are consistent with the low-frequency evolution toward a warm ENSO event, even if only of modest amplitude. The various

dynamical models are used to construct the precipitation forecasts, along with the official forecast tracks of the many ongoing tropical cyclones (TCs). Given the number and potential impacts of the various ongoing and potential TCs, the remainder of the discussion will focus specifically on aspects of the outlook related to TCs.

Hurricane Florence is the headliner among three active named storms in the Atlantic basin. Florence is forecast to make landfall over the Carolinas on September 14 as a major hurricane. Tropical Storm Isaac is forecast to impact the Lesser Antilles as a strong tropical storm or weak hurricane later this week, before continuing into the Caribbean. Farther east, Hurricane Helene is forecast to turn northward between 35W and 40W late this week before accelerating into the Northeast Atlantic this weekend. Two areas are being monitored for tropical cyclogenesis during Week-1: the western Gulf of Mexico and the central Atlantic near 35N. The former is more likely to develop and could result in a landfalling system with heavy rain over South Texas, while the latter would be a subtropical system, at least initially, tracking westward under a blocking high pressure system to the north. Tropical cyclogenesis is not currently expected during Week-2 over the Atlantic Basin.

Over the central and eastern Pacific basin the big player is Tropical Storm Olivia that is forecast to track across Hawaii from northeast to southwest on September 12. Farther east Tropical Depression Paul is dissipating with little fanfare. TC formation over the far eastern Pacific is possible late in Week-1 or during Week-2 based on the latest guidance and the low-frequency state.

The West Pacific is also active, with Super Typhoon Mangkhut forecast to track near the northern Philippines toward Hong Kong by September 16. It is forecast to weaken somewhat as it tracks across the South China Sea toward southeastern China. Tropical Storm Barijat is forecast to track toward the Hainan Peninsula and then toward northern Vietnam during the next few days. Heavy rain is likely to be the main hazard with this system. Tropical cyclogenesis is forecast with moderate confidence over the West Pacific east of the Philippines during both Week-1 and Week-2. The ECMWF ensemble mean forecast suggests that conditions are broadly favorable for TC formation over this area.

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