



Global Tropics Hazards and Benefits Outlook - Climate Prediction Center



Week 1 - Valid: Dec 03, 2014 - Dec 09, 2014



Week 2 - Valid: Dec 10, 2014 - Dec 16, 2014



Produced: 12/02/2014

Forecaster: Baxter

- | Confidence | | |
|------------|----------|--|
| High | Moderate | |
| | | Tropical Cyclone Formation Development of a tropical cyclone (tropical depression - TD, or greater strength). |
| | | 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, except from 6/1 - 11/30 for the region from 120E to 0, 0 to 40N. The product targets broad scale conditions integrated over a 7-day period for US interests only. Consult your local responsible forecast agency.



A coherent MJO signal remained evident during the past week. The RMM index and the CPC Velocity Potential index both indicate a strong signal currently centered over the Maritime Continent and propagating rapidly eastward. There is some evidence that a robust equatorial Rossby wave and atmospheric Kelvin wave activity are contributing to the enhanced convection as well. The upper-level velocity potential spatial map depicts a Wave-1 structure, with the enhanced (suppressed) phase centered over the Maritime Continent (Atlantic Ocean).

Dynamical model forecasts indicate a continued propagation of a robust MJO signal into the Western Pacific, where warmer-than-normal SSTs are supportive. The statistical guidance indicates continued MJO activity as well. There is more uncertainty in Week-2 and beyond, as the ensemble guidance weakens the signal dramatically.

Typhoon Hagupit formed over the West Pacific and is forecast to become a super typhoon. There is a fair amount of uncertainty with respect to the track, as the GFS recures the cyclone east of the Philippines, while the ECMWF takes the storm through the Philippines. A moderate shape for above-

average rainfall is depicted over the Philippines to highlight this potential. The best odds for TC formation during the upcoming week are over the southern Indian Ocean, though at only moderate confidence. During Week-2, there are no strong signals for TC development, though a low risk of formation exists over the northwestern Pacific and southern Indian Ocean.

Above-average rains are favored over the eastern Maritime Continent and western Pacific, largely due to MJO activity. The low-frequency state supports enhanced convection north of the equator in the eastern Pacific, while forecast MJO evolution favors below-average rainfall in the Indian Ocean and equatorial Africa. Precipitation shapes over Central and South America are based on good agreement between the CFS and ECMWF model forecasts. The lack of high-confidence shapes over the Eastern Hemisphere is due to model disagreement and a reliance on statistical tools. Enhanced odds for below-average rainfall over Hawaii are based on model guidance and the low-frequency state.

During Week-2, the eastward movement of the MJO is likely to enhance rains over the western Pacific, while suppressing rainfall over parts of the Indian Ocean. Destructive interference between the enhanced phase of an equatorial Rossby wave and the suppressed MJO phase leads to little signal over the far eastern Indian Ocean and western Maritime Continent. The remaining shapes on the map are consistent with the low-frequency state and generally supported by model guidance.