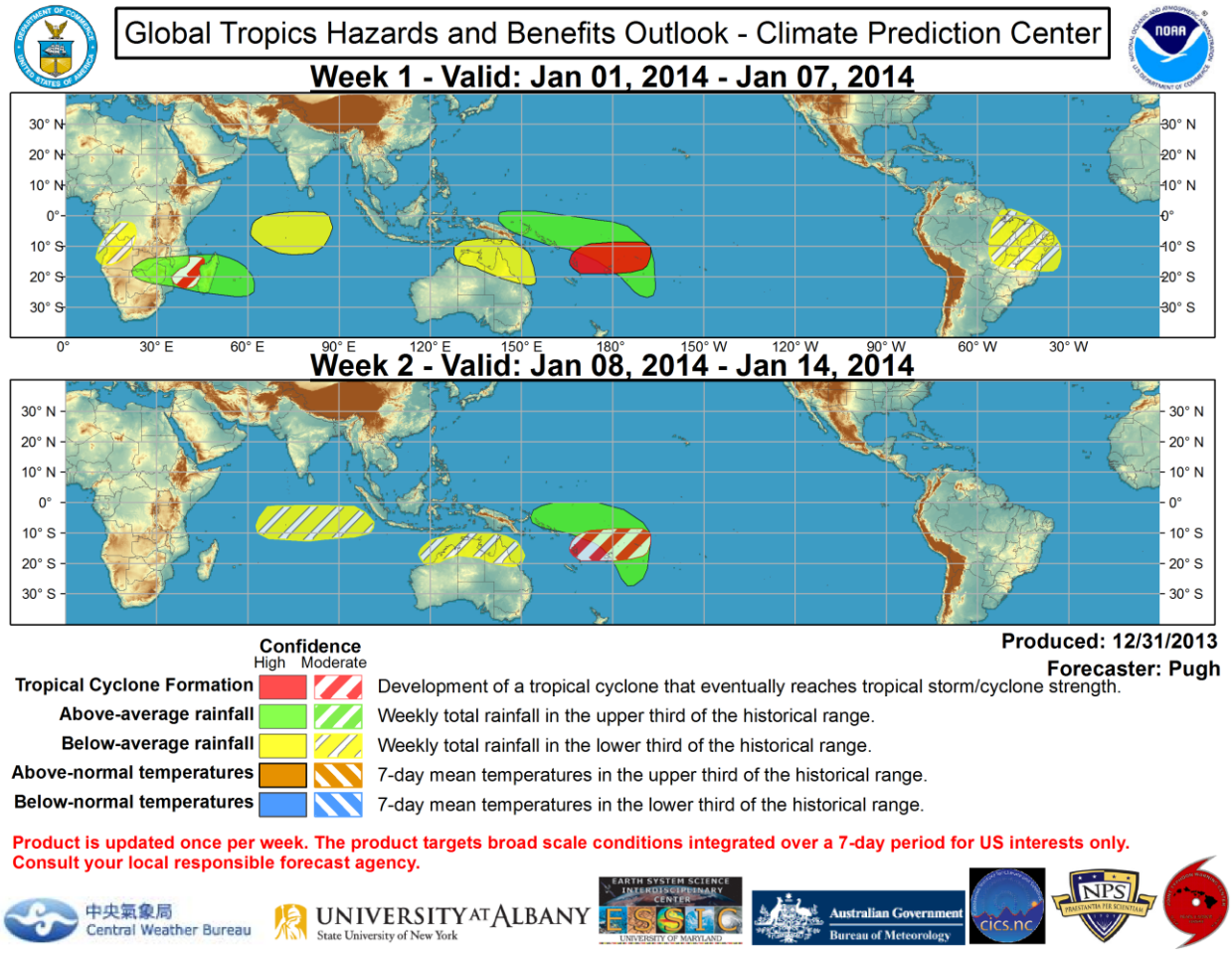


The MJO is coherent among some of the diagnostic tools, but the amplitude of the signal remains weak due to interference from other types of subseasonal tropical variability. During the past week, enhanced convection shifted east to the Maritime Continent and near the Date Line across the South Pacific. Eastward propagation of negative 200-hPa velocity potential anomalies from the eastern Indian Ocean to the Maritime Continent during late December is consistent with a more organized MJO signal in Phase-6 of the RMM Index. As of December 31, an atmospheric Kelvin Wave is entering the Maritime Continent and resulting in constructive interference with the enhanced phase of the MJO.

Large differences exist among the dynamical models with the evolution of the MJO during the next two weeks. The GFS and its ensemble members favor a nearly stationary pattern of enhanced convection across the southwest Pacific, while the other dynamical models depict a continued eastward propagation of the MJO although with varying speed. Based on recent observations and dynamical forecasts, enhanced convective anomalies associated with the MJO are expected to shift east across the west Pacific during Week-1. This outlook is based primarily on recent CFS precipitation anomalies and MJO precipitation composites for Phases 6 through 8. Uncertainty increases during Week-2 as dynamical model guidance varies on whether a coherent MJO signal enters the Western Hemisphere.

Tropical Cyclone Christine developed over the Timor Sea, north of Australia, on December 28. Christine reached a maximum intensity of 85 knots before making landfall in Roebourne, Australia on December 30. Meanwhile, Tropical Cyclone Bejisa intensified rapidly northeast of Madagascar in the warm waters of the southwest Indian Ocean. Bejisa became a Category-3 storm with maximum sustained winds of 105 knots. The Joint Typhoon Warning Center calls for additional strengthening of Tropical Cyclone Bejisa on January 1 before it weakens east of Madagascar. Intense Tropical Cyclone Bejisa is forecast to affect Reunion Island early in Week-1. During the next two weeks, one or more tropical cyclones are expected to form near the Date Line across the South Pacific. This forecast of tropical cyclogenesis is supported by the enhanced convective phase of the MJO, above-normal sea surface temperatures, and model guidance. Also, the GFS model remains consistent in depicting tropical cyclone development across the Mozambique Channel during Week-1.

Enhanced convection mostly associated with tropical cyclone activity is expected across the Mozambique Channel, Madagascar, and parts of the southwest Indian Ocean. Enhanced convection, forecast from northeast New Guinea southeast across the South Pacific Convergence Zone (SPCZ), is supported by MJO precipitation composites and model guidance. Suppressed convection is anticipated over the equatorial Indian Ocean, consistent with the MJO. Current satellite imagery and model guidance favor suppressed convection across northern Australia. Suppressed convection is also favored for Angola and the Democratic Republic of the Congo due to anomalous low-level divergence.

During Week-2, MJO precipitation composites for Phases 7 and 8 of the RMM index favor a continuation of enhanced convection near the Date Line and along the SPCZ with suppressed convection for the equatorial Indian Ocean and northern Australia.