Global Tropics Hazards And Benefits Outlook

2/26/2019

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Outline

1. Review of Recent Conditions
2. Synopsis of Climate Modes
3. GTH Outlook and Forecast Discussion
4. Connections to U.S. Impacts
Outlook Review

Typhoon Wutip
2/19- Present

TC Sixteen
2/26-Present

Cool shading
More clouds/rain

Warm shading
Less clouds/rain
Synopsis of Climate Modes

**ENSO: (February 14, 2019 Update)**
- ENSO Alert System Status: [El Niño Advisory](#)

- Weak El Niño conditions are present and are expected to continue through the Northern Hemisphere spring 2019 (~ 55% chance).

**MJO and other subseasonal tropical variability:**
- The MJO continued slow eastward propagation over the Pacific, starting to shift toward the Western Hemisphere with a moderate amplitude.

- Dynamical and statistical model guidance indicate that the signal is expected to re-emerge over the Indian Ocean late in Week-1, moving at a fairly fast phase speed. Into Week-2, the signal is expected to maintain amplitude and shift toward the western Maritime Continent.

**Extratropics:**
- With the MJO signal moving over the Western Hemisphere in Week-1, composites show amplified troughing and cold temperatures over the contiguous U.S., which is currently being seen in the extended range forecast. Influences from MJO and El Nino are also expected to lead to possible atmospheric river activity for parts of the West Coast.
Week 1 - Valid: Feb 27, 2019 - Mar 05, 2019

Week 2 - Valid: Mar 06, 2019 - Mar 12, 2019

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.

Produced: 02/26/2019
Forecaster: Maurin

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.
Coherent wave-1 pattern, with constructive interference between MJO, El Niño and Rossby waves over the West Pacific.

Wave-1 pattern starting to break down, much noisier field. Rossby wave activity is evident. MJO has shifted further east over the Pacific; now destructive interference in the West Pacific.

Wave-1 pattern starting to become more coherent. MJO signal re-emerging over the Indian Ocean, with suppressed convection anchored still over the Maritime Continent. Enhanced signal also over parts of the West Pacific likely due to El Niño.
Dynamical model guidance shows good agreement for the eastward propagation of the signal through weeks 1 and 2. The signal is expected to transition over the Western Hemisphere and into the Indian Ocean for Week 1, with a shift toward the western Maritime Continent in Week-2.
Average Conditions when the MJO is present

CAVEAT: These panels are representative of robust MJO events.
**MJO footprint** seen better in the upper-level fields in the eastern Pacific, crossing WH. Continued **Rossby wave** and **Kelvin wave** activity having an influence. **Low-frequency pattern** influence has become established along the Date Line.
Ensemble-based Probability (%) of TC genesis using these global ensembles: NCEP ECMWF

For forecasts during the 00-120h period from initial time = 2019022512
Connections to U.S. Impacts
AO: Observed & ENSM forecasts

1000mb Z (Obs: 30Oct2018 - 26Feb2019)

- Mean: -0.1870

1000mb Z (7 Day Forecast)

- Mean: -0.4602
- Corr (w/obs): 0.9078

1000mb Z (10 Day Forecast)

- Mean: -0.6260
- Corr (w/obs): 0.7249

1000mb Z (14 Day Forecast)

- Mean: -1.0047
- Corr (w/obs): 0.3172
Week 2 – Temperature and Precipitation
Global Tropics Hazards and Benefits Outlook - Climate Prediction Center

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