Global Tropics Hazards And Benefits Outlook

3/24/2020

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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

Global Tropics Hazards and Benefits Outlook - Climate Prediction Center

Week 1 - Valid: Mar 18, 2020 - Mar 24, 2020

Week 2 - Valid: Mar 18, 2020 - Mar 24, 2020

7-Day Average OLR Anomaly 2020/03/16 - 2020/03/22

Cool shading
More clouds/rain

Warm shading
Less clouds/rain
ENSO: (March 12, 2020 Update)  

- ENSO Alert System Status: Not Active

- ENSO-neutral is favored for the Northern Hemisphere spring 2020 (~65% chance), continuing through summer 2020 (~55% chance).

MJO and other subseasonal tropical variability:

- A fast, eastward propagating signal is clearly apparent in the wind field, especially upper levels. Period is ~20 days, which is much faster than a canonical MJO.

- Global convective anomalies do not reflect robust MJO activity. The low frequency state (enhanced I.O. and West Pacific) remain the primary drivers.

- Model forecasts depict a continued rapid eastward progression of the signal in the wind field, with the convective pattern remaining fairly stationary.

- Given the lack of a coherent response to the fast intraseasonal signal in the tropical convective field and the time of year, the MJO is not anticipated to strongly impact the midlatitude circulation.
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Week 1 - Valid: Mar 25, 2020 - Mar 31, 2020

Week 2 - Valid: Apr 01, 2020 - Apr 07, 2020

Produced: 03/24/2020
Forecaster: Allgood

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.
The upper-level pattern became more chaotic as the enhanced signal raced to the Pacific.

The pattern remained fairly weak. Note the fast movement of the enhanced “envelope” across the Pacific.

Similar to the beginning of March, the signal has become more coherent as the enhanced envelope returned to the Western Hemisphere/I.O.
All models depict eastward propagation of the signal, somewhat consistent with MJO activity.

The ECMWF is the fastest and weakest, consistent with an event not well coupled to convection.
Average Conditions when the MJO is present

**CAVEAT:** These panels are representative of robust MJO events.

Week-1: Phases 4/5

Dynamical model forecasts are similar over the Pacific, NOT the I.O.

**CAVEAT:** These panels are representative of robust MJO events.
MJO band shows up with the suppressed signal, but there are no robust enhanced convective anomalies.

**Kelvin wave** activity is apparent.

**Low frequency** signal over the Pacific weakened during March (moved off-equator)
March Tropical Storm Formation by MJO phase

Phase 1 (98 days) 7 storms
Phase 2 (111 days) 17 storms
Phase 3 (108 days) 11 storms
Phase 4 (72 days) 12 storms
Phase 5 (77 days) 17 storms
Phase 6 (76 days) 16 storms
Phase 7 (81 days) 16 storms
Phase 8 (92 days) 8 storms
Null (322 days) 40 storms
Days 1-4

Day 5-8

Day 9-12

Day 13-15
Connections to U.S. Impacts
AO: Observed & ENSM forecasts

1000mb Z (Obs: 26Nov2019 - 24Mar2020) AD index
mean = 2.0451

1000mb Z (7day Forecast) AD index
mean = 1.8507  cor(w/obs) = 0.9233

1000mb Z (10day Forecast) AD index
mean = 1.4541  cor(w/obs) = 0.8330

1000mb Z (14day Forecast) AD index
mean = 0.8728  cor(w/obs) = 0.5506
Pattern shift to warmer/drier in the West. More “N” for the Northeast in today’s forecast.
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