Global Tropics Hazards And Benefits Outlook

1/22/2019

Dan Harnos

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

TS Desmond: 1/20-1/21

Cool shading
More clouds/rain

Warm shading
Less clouds/rain
Synopsis of Climate Modes

**ENSO: (10 January, 2019 Update)**

- **ENSO Alert System Status:** [El Niño Watch](#)

- El Niño is expected to form and continue through the Northern Hemisphere spring 2019 (~65% chance).
- Given the timing and that a weak event is favored, *significant global impacts are not anticipated* during the remainder of winter, even if conditions were to form.

**MJO and other subseasonal tropical variability:**

- The MJO rapidly crossed the Western Hemisphere the past week, and is presently over the Maritime Continent.
- Dynamical models indicate that the MJO is likely to enter the West Pacific during this week, before stalling and weakening ensues. Some of this could be a result of a competing signal currently over the Western Hemisphere, forced by the extratropics.

**Extratropics:**

- The North American circulation pattern is not currently consistent with the MJO being over the Maritime Continent, but appears “locked in” to the negative Arctic Oscillation state expected from the signal crossing the Western Hemisphere a week ago. The MJO would support the potential for reinforcing shots of cold air into the eastern U.S. during the first half of February.
Global Tropics Hazards and Benefits Outlook - Climate Prediction Center

Week 1 - Valid: Jan 23, 2019 - Jan 29, 2019

Week 2 - Valid: Jan 30, 2019 - Feb 05, 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: 01/22/2019
Forecaster: D.Harnos

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.
Wave-1 pattern, enhanced convergence from Indian Ocean stretching to Maritime Continent. Convective signal over eastern Pacific and Americas.

Noisy Wave-2 pattern, suppressed convection over the Americas and parts of the Maritime Continent. Enhanced moving from Africa into Indian Ocean, and over SPCZ.

Resumption of Wave-1 pattern with enhanced (suppressed) convection over the Eastern (Western) Hemisphere.
Model guidance consistently brings the MJO into the West Pacific during Week-1, before stalling the signal there in Week-2.

GFS: Emphasizes Rossby wave activity, with the curl back into Phase 5.
ECMWF: Some members continue into the WH, most cross towards Phase 2.
Canadian: Similar to ECMWF (forecast is 5 days shorter).
MJO is expected to be modest and forecast to propagate eastward over the Maritime Continent.

Rossby wave activity is also forecast to continue to be player in the tropics through the next 2 weeks.

The low-frequency pattern is likely to become more influential in the coming weeks.
Cyclonic wavebreaking from the extratropics is causing anomalous westerlies over the East Pacific.

The ECMWF keys on this feature being the primary intraseasonal mode, the CFS (seen at right) shows something similar.
Average Conditions when the MJO is present

CAVEAT: These panels are representative of robust MJO events.

Week-1: Phase 5/6
Week-2: Phase 6/7
January Tropical Storm Formation by MJO phase
Connections to U.S. Impacts
Siberian air imported into the U.S.

Week-2 ECMWF Mean
Lag-4 (days 15-19) similarities:

- Trough east of Hawaii
- Alaska ridge (displaced west)
- Troughing over Great Lakes
- Ridging across polar latitudes
Eastward shift in the ridge-trough today, likely resulting in increasing probabilities for warmth in the Western US.
Global Tropics Hazards and Benefits Outlook - Climate Prediction Center

Week 1 - Valid: Jan 23, 2019 - Jan 29, 2019

Week 2 - Valid: Jan 30, 2019 - Feb 05, 2019

Produced: 01/22/2019
Forecaster: D.Harnos

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.