Global Tropics Hazards And Benefits Outlook

12/27/2016

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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
Tropical Cyclone Outlook

**Typhoon Nock-ten**
- Maximum sustained winds of 135 knots
- Strongest tropical cyclone to make landfall in the Philippines this year

**Tropical Cyclone Yvette**
- Developed on Dec 19
- Enhanced moisture contributed to heavy rainfall (more than 200 mm) along Kimberley coast of Western Australia
Synopsis of Climate Modes

**ENSO:**
- **La Niña Advisory**

La Niña conditions are present, with a transition to ENSO-neutral favored during January-March, 2017.

**MJO and other subseasonal tropical variability:**
- MJO remains weak according to most diagnostic tools.
- Dynamical models maintain a weak MJO signal during the next two weeks.
- La Niña conditions continue to play a role in anomalous tropical convection.

**Extratropics:**
- The extended range temperature and precipitation forecasts for the U.S. are not likely to be impacted by the MJO, but more likely to be affected by a blocking ridge at the higher latitudes of North America.
Global Tropics Hazards and Benefits Outlook - Climate Prediction Center

Week 1 - Valid: Dec 28, 2016 - Jan 03, 2017

Week 2 - Valid: Jan 04, 2017 - Jan 10, 2017

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: 12/27/2016
Forecaster: Pugh

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.
IR Satellite & 200-hpa Velocity Potential Anomalies

Green: Enhanced Divergence  Brown: Enhanced Convergence

Ill-defined pattern

More coherent pattern of upper-level divergence (convergence) across the Maritime Continent and Pacific (Americas to Indian Ocean).

Other modes and remnant tropical cyclones interfering with the pattern.
Wheeler-Hendon based analyses of model forecasts indicate an amplifying signal during Week-1 followed by a rapid decrease in amplitude during Week-2.
Everything against backdrop of **low frequency** state of La Niña.

**Kelvin wave** crossed the Western Hemisphere past week.

**Rossby wave** over South America.
Connections to U.S. Impacts
AO: Observed & ENSM forecasts

1000mb Z (Obs: 30Aug2016 – 27Dec2016)  AD index
mean = -0.0063

1000mb Z (7day Forecast)  AD index
mean = -0.2523  cor(w/obs) = 0.9254

1000mb Z (10day Forecast)  AD index
mean = -0.5346  cor(w/obs) = 0.8085

1000mb Z (14day Forecast)  AD index
mean = -0.9095  cor(w/obs) = 0.4403
Week 2 – Temperature and Precipitation

8-14 DAY OUTLOOK
TEMPERATURE PROBABILITY
MADE 26 DEC 2016
VALID JAN 03 – 09, 2017

8-14 DAY OUTLOOK
PRECIPITATION PROBABILITY
MADE 26 DEC 2016
VALID JAN 03 – 09, 2017
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