Global Tropics Hazards And Benefits Outlook

December 30, 2014

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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

Cool shading  
More clouds/rain

Warm shading  
Less clouds/rain

Week 1 - Valid: Dec 24, 2014 - Dec 30, 2014

Week 2 - Valid: Dec 24, 2014 - Dec 30, 2014
Synopsis of Climate Modes

**ENSO:**
- Current: ENSO-neutral
- Outlook: There is an approximately 65% chance that El Niño conditions will be present during the Northern Hemisphere winter and last into the Northern Hemisphere spring 2015.

**MJO and other subseasonal tropical variability:**
- The MJO remained a significant part of the circulation. Kelvin and Equatorial Rossby waves are also contributing.
- Most dynamical model MJO index forecasts depict a continuation of the signal, with some statistical tools showing less of a robust signal. The statistical tools have been much more accurate during the past 2 weeks.

**Extratropics:**
- The extended range forecast for the U.S. is not likely to be largely impacted directly by the MJO, but there is a chance for impact to the U.S. is likely later (days 15-20) as convection over the West Pacific interacts with the East Asian Jet. Internal, mid-latitude variability it likely to drive much of the pattern of the CONUS through day 14.
Global Tropics Hazards and Benefits Outlook - Climate Prediction Center

Week 1 - Valid: Dec 31, 2014 - Jan 06, 2015

Week 2 - Valid: Jan 07, 2015 - Jan 13, 2015

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: 12/30/2014
Forecaster: Rosencrans

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

Base state and transient features evident.
Wheeler-Hendon based analyses of model forecasts indicate a persistent MJO.

Models indicate convection aligns with Phase 4, forecast through Phase 5.
Average Conditions when the MJO is present

CAVEAT: These panels are representative of robust MJO events.
Lagged composites from MJO
5-day intervals

WHMJO Phase 4 olr Lagged Composite (djf)

+5-day

+10-days

+15-days

+20-days
CFSv2 Weeks 1 & 2 Precipitation
16 Member Ensemble Mean Forecast from 29Dec2014

Week 1 Anomalies (mm/day) 30Dec2014–5Jan2015

Week 2 Anomalies (mm/day) 6Jan2015–12Jan2015
Evolving ENSO contributing.

MJO active over the Maritime Continent.

Kelvin Wave to impact wPac and ePac.
January Tropical Storm Formation by MJO phase

- Phase 1 (67 days): 14 storms
- Phase 2 (101 days): 15 storms
- Phase 3 (112 days): 20 storms
- Phase 4 (69 days): 11 storms
- Phase 5 (67 days): 8 storms
- Phase 6 (86 days): 18 storms
- Phase 7 (81 days): 11 storms
- Phase 8 (105 days): 16 storms
- Null (36+ days): 67 storms
Connections to U.S. Impacts
Lagged composites from MJO
5-day intervals
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