Global Tropics Hazards And Benefits Outlook
1/7/2020

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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

TC Blake:
- 5th – present
- Peak: 50 knots

Cool shading
More clouds/rain

Warm shading
Less clouds/rain
Synopsis of Climate Modes

**ENSO: (December 12, 2019 Update)**

- ENSO Alert System Status: Not Active

- ENSO-neutral is favored during the Northern Hemisphere winter 2019-20 (70% chance), continuing through spring 2020 (~65% chance).

**MJO and other subseasonal tropical variability:**

- The Indian Ocean Dipole has become neutral.

- The Madden-Julian Oscillation recently emerged over the Western Maritime Continent and is forecast to reach the West Pacific by Week-2.

- Typically the MJO crossing the Maritime Continent to the West Pacific results in below-normal (above-normal) temperatures across western (eastern) North America, as have been observed recently. By February the tropics would support below-normal temperatures emerging across the Northeast, as above-normal temperatures shift westward.
Global Tropics Hazards and Benefits Outlook - Climate Prediction Center

Week 1 - Valid: Jan 08, 2020 - Jan 14, 2020

Week 2 - Valid: Jan 15, 2020 - Jan 21, 2020

Produced: 01/07/2020
Forecaster: Harnos

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.
IR Satellite & 200-hpa Velocity Potential Anomalies

Green: Enhanced Divergence    Brown: Enhanced Convergence

+IOD signature (wet Arabian Sea and western Indian Ocean, dry Maritime Continent and Australia).

Some eastward propagation of enhanced convective anomalies over the Pacific. Substantial drying over the Arabian Sea.

Convection explodes over the Maritime Continent, supporting the full demise of the +IOD.
Models unanimously forecast a strengthening MJO that crosses the Maritime Continent by the second half of January.

While a robust MJO is anticipated, it may be overdone, as the downfall of the +IOD is likely causing the RMM to be biased toward Phases 4/5.
Average Conditions when the MJO is present

CAVEAT: These panels are representative of robust MJO events.

Week-1: Phases 4/5
Week-2: Phases 5/6
MJO and Rossby wave presence near 120E.

Kelvin wave over the Indian Ocean.

Low frequency contours from +IOD have timed out, but something west of the Date Line (weak El Niño?)
JOINT TYPOHOOON WARNING CENTER

TC 06S “BLAKE”

IMAGE TIME: 07/0600Z
(PRODUCT OF JTWC/SATOPS)

LOW
TC development unlikely within 24 hours

MEDIUM
TC development likely, but expected to occur beyond 24 hours

HIGH
TC development likely within 24 hours (Reference TCFA)

SUB TROPICAL
Monitoring for potential transition to TC. Invest color denotes tropical transition probability

Tropical Cyclone (Reference Warning)
Connections to U.S. Impacts
Now - 5 days later

6 - 10 days later

11 - 15 days later

16 - 20 days later

21 - 25 days later

CAVEAT: Other mechanisms will always be at play, aside from the MJO!
Week 2 – Temperature and Precipitation

Since we are in an amplified, stable pattern today’s outlooks are likely to be similar.
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Confidence

- **High**
  - **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.

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