Global Tropics Hazards And Benefits Outlook

1/12/2021

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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
Synopsis of Climate Modes

**ENSO:** (December 10, 2020 Update)  
next update on 14th of Jan.!

- ENSO Alert System Status: [La Niña Advisory](#)

- La Niña is likely to continue through the Northern Hemisphere winter 2020-21 (~95% chance during January-March), with a potential transition during the spring 2021 (~50% chance of Neutral during April-June).

**MJO and other subseasonal tropical variability:**

- The amplitude of the MJO indices increased during the past week, suggesting potential convectively coupled Kelvin wave or renewed MJO activity over the Indian Ocean.

- Strong Rossby wave activity over the Maritime Continent and Indian Ocean may be projecting onto the indices as well.

- Dynamical models show a weakening signal as the Rossby waves move out of phase with the MJO/Kelvin wave activity.

- While several ensemble members of the GEFS and ECMWF show an increasing West Pacific signal in Week-2, confidence is low, and the ongoing La Niña is favored to remain the dominant driver of tropical convective anomalies.
Global Tropics Hazards and Benefits Outlook - Climate Prediction Center

Week 1 - Valid: Jan 13, 2021 - Jan 19, 2021

Week 2 - Valid: Jan 20, 2021 - Jan 26, 2021

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: 01/12/2021
Forecaster: Allgood

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.
Enhanced Walker Circulation due to La Niña is the most prominent feature.

Some enhancement over the Indian Ocean became apparent by early January.

Strongly negative upper-level VP anomalies over the Indian Ocean indicate the initiation of a broad-scale enhanced convective envelope.
GEFS and ECWMF in good agreement supporting weakening of the MJO signal due to Rossby wave interference.

Some ensemble members show a signal emerging over the West Pacific by late Week-2.

Confidence remains low that MJO activity will substantially impact the ongoing La Niña response.
Average Conditions when the MJO is present

Enhanced convection is usually centered over the equatorial I.O., but dynamical model forecasts show most of the convection associated with the current projection to be off-equator.

CAVEAT: These panels are representative of robust MJO events.
**Kelvin wave** activity returning to the Indian Ocean may have helped amplify the RMM-based MJO index.

**Rossby wave** activity is present (more apparent in the meridionally wider band).

**Low frequency** contours depict ENSO cold conditions and are the dominant feature.
January Tropical Storm Formation by MJO phase
Connections to U.S. Impacts
AO: Observed & ENSM forecasts

1000mb Z (Obs: 15Sep2020 - 12Jan2021)

mean=-0.1180

1000mb Z (7day Forecast)

mean=-0.5520  cor(w/obs)=0.9277

1000mb Z (10day Forecast)

mean=-0.6136  cor(w/obs)=0.8146

1000mb Z (14day Forecast)

mean=-0.5790  cor(w/obs)=0.6457
Week 2 – Temperature and Precipitation

Since we are in an amplified, stable pattern today’s outlooks are likely to be similar.
Global Tropics Hazards and Benefits Outlook - Climate Prediction Center

Week 1 - Valid: Jan 13, 2021 - Jan 19, 2021

Week 2 - Valid: Jan 20, 2021 - Jan 26, 2021

Tropical Cyclone Formation
- High: Development of a tropical cyclone (tropical depression - TD, or greater strength).
- Moderate: 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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