Global Tropics Hazards And Benefits Outlook

3/9/2021

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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

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Week 1 - Valid: Mar 03, 2021 - Mar 09, 2021

Week 2 - Valid: Mar 03, 2021 - Mar 09, 2021

7-Day Average OLR Anomaly 2021/03/01 - 2021/03/07

Cool shading  More clouds/rain

Warm shading  Less clouds/rain

NOAA/PSL  Base Period: 1981-2010
ENSO: (February 11, 2021 Update)  

- ENSO Alert System Status: La Niña Advisory

- There is a ~60% chance of a transition from La Niña to ENSO-Neutral during the Northern Hemisphere spring 2021 (April-June).

MJO and other subseasonal tropical variability:

- An MJO signal remains apparent in the upper-level velocity potential field, though La Niña and Rossby wave activity are weakening the signal in other fields.

- Dynamical models favor a strengthening MJO signal as it reaches the East Pacific and Western Hemisphere. What happens after that is highly uncertain.

- A downwelling oceanic Kelvin wave is beginning to erode the western extent of the cold equatorial Pacific. The current MJO has not contributed much to this signal.

- The MJO favors heavy precipitation across northern South America, with a potential for flooding impacts. Additional heavy rainfall is also favored for Hawaii.
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Week 1 - Valid: Mar 10, 2021 - Mar 16, 2021

Week 2 - Valid: Mar 17, 2021 - Mar 23, 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: 03/09/2021
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 Maritime Continent/SPCZ related to very strong Rossby wave (that also helped generate the oceanic Kelvin wave). CCKW over Africa.

Rossby/Kelvin wave interference helped generate a broader convective envelope over the Indian Ocean/Maritime Continent.

The enhanced envelope has propagated eastward across the Pacific, though most of the signal is off-Equator due to La Niña interference.
GEFS and ECWMF both show some amplification over the East Pacific or Western Hemisphere in Week-1.

High uncertainty in Week-2, with some ensemble members depicting a strong event while others crash into the unit circle. GEFS also shows considerable variability in eastward progression of the signal.
Average Conditions when the MJO is present

CAVEAT: These panels are representative of robust MJO events.
MJO activity is less apparent in the OLR field, though there are hints of eastward propagation.

Low frequency contours depict ENSO cold conditions, which continue to dominate the pattern close to the Equator.
March Tropical Storm Formation by MJO phase

Phase 1 (38 days) 7 storms
Phase 4 (72 days) 12 storms
Phase 7 (81 days) 16 storms
Phase 2 (111 days) 17 storms
Phase 5 (77 days) 17 storms
Phase 8 (92 days) 8 storms
Phase 3 (108 days) 11 storms
Phase 6 (72 days) 16 storms
Null (322 days) 40 storms
Cyclone Habana

Week-1

Week-2
Connections to U.S. Impacts
Hawaii Flooding

Hana Highway
(Maui)

Evacuations ordered due to failure of Kaupakalua Dam
Since we are in an amplified, stable pattern today’s outlooks are likely to be similar.
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