Global Tropics Hazards And Benefits Outlook

4/20/2021

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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

Typhoon Surigae
4/13/2021

Cool shading
More clouds/rain

Warm shading
Less clouds/rain
Synopsis of Climate Modes

**ENSO:** (April 8, 2021 Update)  
next update on May 13, 2021

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

- A transition from La Niña to ENSO-Neutral is likely in the next month or so, with an 80% chance of ENSO-neutral during May-July 2021.

**MJO and other subseasonal tropical variability:**

- The MJO has been active since mid-February and is likely to take a second trip around the globe during the next several weeks.

- Dynamical models favor continued MJO propagation, though there is uncertainty regarding its strength.

- Warming SSTs throughout the central Pacific, associated with La Niña’s decline, will likely help the MJO maintain its amplitude as it moves over the Pacific.

- The projected evolution of the MJO through RMM Phases 7-8 during the next two weeks favors above normal temperatures throughout the western U.S. and below normal temperatures throughout the East.
  - The relationships between the MJO and CONUS weather generally weaken as the general circulation spins down on the way into summer.
A standard Wave-1 pattern, anchored by the MJO, in early April.

The large-scale Wave-1 pattern is interrupted by tropical cyclone activity in the West Pacific.
Models are in good agreement regarding MJO re-emergence over the Indian Ocean during Week-2.

The ECMWF extended run weakens the MJO in mid-May. However, the ECMWF has been forecasting a similar pattern for the last several runs and is likely biased. I believe the MJO is likely to continue throughout the month of May instead of weakening.
Average Conditions when the MJO is present

CAVEAT: These panels are representative of robust MJO events.
MJO & Kelvin wave activity is apparent in the OLR field since mid-March.

Low frequency contours depict the weakening La Nina conditions.
7-day CHI200 with CFS forecasts
April Tropical Storm Formation by MJO phase
Connections to U.S. Impacts
PNA: Observed & ENSM forecasts

500mb Z (Obs: 22Dec2020 – 20Apr2021) PNA index

mean = -0.0541

500mb Z (7day Forecast) PNA index

mean = -0.0675  cor(w/obs) = 0.9117

500mb Z (10day Forecast) PNA index

mean = -0.0869  cor(w/obs) = 0.8247

500mb Z (14day Forecast) PNA index

mean = -0.0954  cor(w/obs) = 0.6553
Week 2 – Temperature and Precipitation

Forecasts issued on April 19, 2021
Global Tropics Hazards and Benefits Outlook - Climate Prediction Center

Week 1 - Valid: Apr 21, 2021 - Apr 27, 2021

Week 2 - Valid: Apr 28, 2021 - May 04, 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: 04/20/2021
Forecaster: MacRitchie

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.