Global Tropics Hazards And Benefits Outlook

12/29/2020

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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

Cool shading
More clouds/rain

Warm shading
Less clouds/rain
Synopsis of Climate Modes

**ENSO: (December 10, 2020 Update)**

- 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 MJO is weak but dynamical guidance suggests an event will begin over the Indian Ocean during Week-2.

- Other tropical wave modes are weak, most of the GTH forecast is based on the current La Niña state plus the predicted MJO.
Global Tropics Hazards and Benefits Outlook - Climate Prediction Center

Week 1 - Valid: Dec 30, 2020 - Jan 05, 2021

Week 2 - Valid: Jan 06, 2021 - Jan 12, 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: 12/29/2020
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.
Wave-1 pattern related to weak MJO activity during early-mid December.

Persistent convection over the Maritime Continent is consistent with La Niña.

There is no obvious MJO signal now, but this could change during Week-2.
The GEFS ensemble mean and many ECMWF ensemble members predict an MJO over the Indian Ocean during Week-2.

Interestingly, the ECMWF ensemble mean is predicting a weaker MJO signal than it did yesterday.
Average Conditions when the MJO is present

Note the suppressed convection over the Maritime Continent during Phase 2 that could destructively interfere with the ENSO signal.

CAVEAT: These panels are representative of robust MJO events.
Discrete MJO activity shows up in the filtering during November and again in mid/late December.

Low frequency remains the strongest driver of the pattern.
Connections to U.S. Impacts
PNA: Observed & ENSM forecasts

500mb Z (Obs: 01Sep2020 - 29Dec2020) PNA index

mean=0.1038

cor(w/obs)=0.8432

500mb Z (7-day Forecast) PNA index

mean=0.1223

cor(w/obs)=0.8432

500mb Z (10-day Forecast) PNA index

mean=0.1535

cor(w/obs)=0.5385

500mb Z (14-day Forecast) PNA index

mean=0.1542

cor(w/obs)=0.2322
Week 2 – Temperature and Precipitation
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Confidence
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