Global Tropics Hazards And Benefits Outlook

11/2/2021

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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

TCs formed since 10/27:

Wanda (10/31)

Cool shading
More clouds/rain

Warm shading
Less clouds/rain
Synopsis of Climate Modes

**ENSO: (October 14, 2021 Update)**

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

- La Niña conditions have developed and are expected to continue with an 87% chance of La Niña in December 2021 - February 2022.

**MJO and other subseasonal tropical variability:**

- The MJO signal remains weak with enhanced convection persisting cross the Maritime Continent, consistent with the low frequency La Niña base state.

- A Convectively Coupled Kelvin Wave (KW) emerged from this main convective envelope, and has circumnavigated much of the globe during the month of October.

- As this KW moves back over the Indian Ocean and Maritime Continent, it will likely reinvigorate the MJO signal to some degree over the next 2 weeks.

- While some eastward propagation of the intraseasonal signal is possible, the well established low frequency signal is likely to inhibit its eastward progression beyond the far Western Pacific.
Global Tropics Hazards and Benefits Outlook - Climate Prediction Center

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

Week 2 - Valid: Nov 10, 2021 - Nov 16, 2021

Produced: 11/02/2021
Forecaster: Collow

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.
Rapid weakening during mid-October as the enhanced phase destructively interfered with the base state (La Niña). Rossby wave activity over the I.O.

A larger-scale signal has recently redeveloped over the eastern Indian Ocean.

Kelvin Wave indicated across the Eastern Atlantic and Africa.
Dynamical models show a renewed eastward propagation of the MJO signal within the RMM-unit circle, with possible amplification across the Maritime Continent and Western Pacific over the next 2 weeks.

There is a fairly large spread among the ensemble members. The ECMWF ensemble is the most robust in terms of amplification.
Average Conditions when the MJO is present

CAVEAT: These panels are representative of robust MJO events.
**MJO** signal has been weak or non-existent for much of October.

**Kelvin wave** activity is currently over the eastern Atlantic and is forecast to move into the Indian Ocean.

**Low frequency** contours depict La Niña conditions.
Kelvin wave shows up better using the 200-hPa velocity potential compared to the OLR on the previous slide.

Forecast to interact with established convective signal across the Indian Ocean.
Five-Day Graphical Tropical Weather Outlook
National Hurricane Center Miami, Florida

Current Disturbances and Five-Day Cyclone Formation Chance: ▲ < 40% ▲ 40-60% ▲ > 60%
Tropical or Sub-Tropical Cyclone: • Depression • Storm • Hurricane
Post-Tropical Cyclone or Remnants

All Disturbances

2:00 pm EDT Tue Nov 2 2021
11:00 am PDT Tue Nov 2 2021
Several 12z GEFS ensemble members indicate tropical cyclone (TC) development over the Eastern Arabian Sea as the aforementioned Kelvin Wave interacts with the enhanced convection across the Indian Ocean.

There is also a decent TC signal emerging over the Eastern Pacific with surface low pressure near Central America forecast to move into the basin.
Connections to U.S. Impacts
PNA: Observed & ENSM forecasts

500mb Z (Obs: 08Jul2021 - 02Nov2021)  PNA index
mean=0.0712

500mb Z (7day Forecast)  PNA index
mean=0.1349  cor(w/obs)=0.9081

500mb Z (10day Forecast)  PNA index
mean=0.1176  cor(w/obs)=0.8444

500mb Z (14day Forecast)  PNA index
mean=0.1250  cor(w/obs)=0.7215
AO: Observed & ENSM forecasts

1000mb Z (Obs: 06Jul2021 – 02Nov2021)  AD index

mean=0.0062

1000mb Z (7day Forecast)  AD index

mean=-0.1593  cor(w/obs)=0.8634

1000mb Z (10day Forecast)  AD index

mean=-0.1177  cor(w/obs)=0.7582

1000mb Z (14day Forecast)  AD index

mean=0.0164  cor(w/obs)=0.6812
Week 2 – Temperature and Precipitation

8-14 Day Temperature Outlook
Valid: November 9 - 15, 2021
Issued: November 1, 2021

8-14 Day Precipitation Outlook
Valid: November 9 - 15, 2021
Issued: November 1, 2021
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