

# Global Tropics Hazards And Benefits Outlook

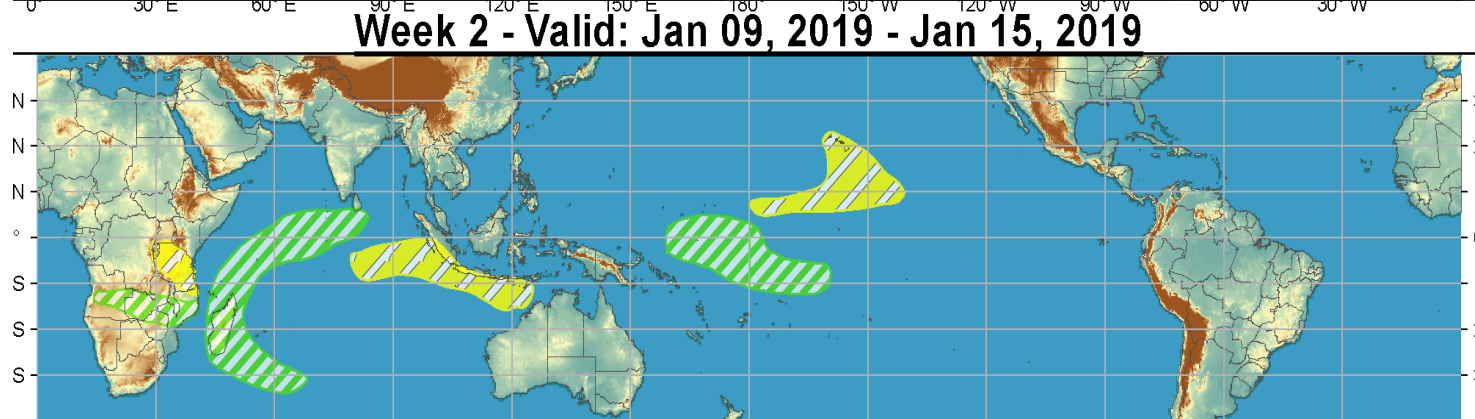
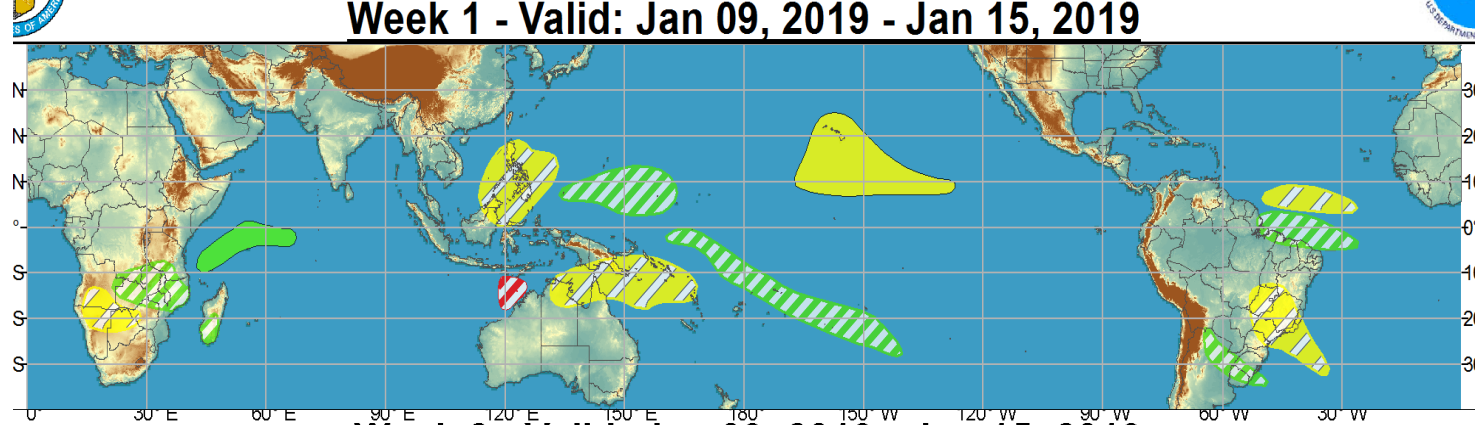
1/15/2019

Christina Maurin

## 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



**No TC  
formations**

Cool shading  
More clouds/rain

Warm shading  
Less clouds/rain

OLR observations N/A

# Synopsis of Climate Modes

## **ENSO: (13 Dec, 2018 Update)**

- ENSO Alert System Status: [El Niño Watch](#)
- El Niño is expected to form and continue through the Northern Hemisphere spring 2019 (~65% chance).
- Regardless of the above-average SSTs, the atmospheric circulation over the tropical Pacific has not yet shown clear evidence of coupling to the ocean.'

## **MJO and other subseasonal tropical variability:**

- The MJO stalled in Phase 8 during the past week, likely due to Rossby wave interactions, and the signal weakened.
- Dynamical models indicate that the signal is likely to re-emerge somewhere over the Indian Ocean to eastern Maritime Continent in Week-1, with continued propagation toward the western and central Pacific in Week-2. Model guidance does some differences in the speed of the propagation.

## **Extratropics:**

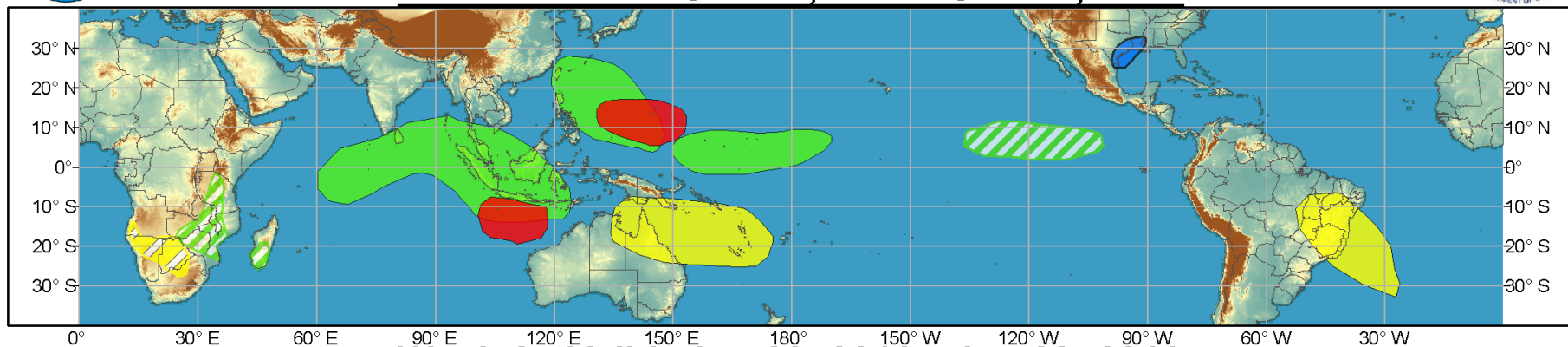
- Upper-level troughing and cold air outbreaks are expected across the eastern two-thirds of the US in Week-2, consistent with the lagged impacts from the MJO passing over the western hemisphere last week.



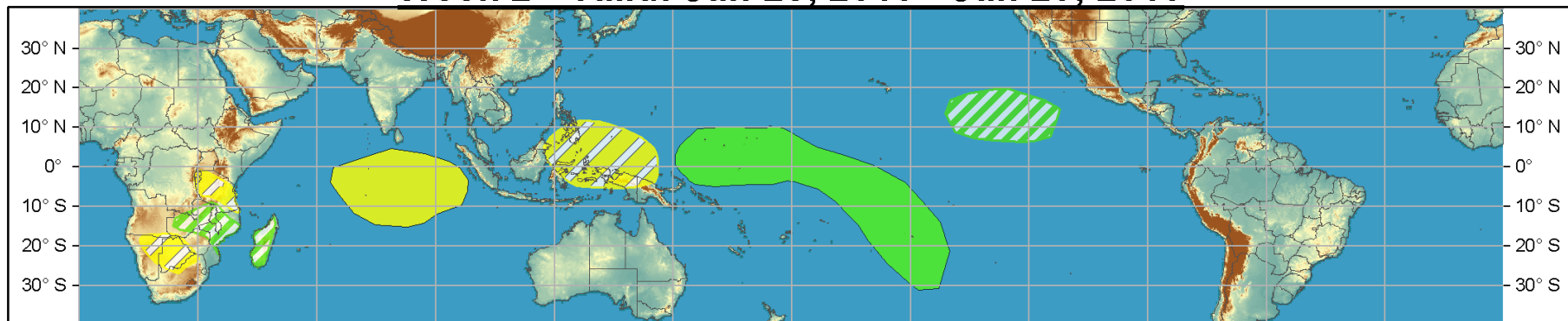
# Global Tropics Hazards and Benefits Outlook - Climate Prediction Center



## Week 1 - Valid: Jan 16, 2019 - Jan 22, 2019



## Week 2 - Valid: Jan 23, 2019 - Jan 29, 2019



**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.
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Produced: 01/15/2019

Forecaster: Maurin

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# IR Satellite & 200-hpa Velocity Potential Anomalies

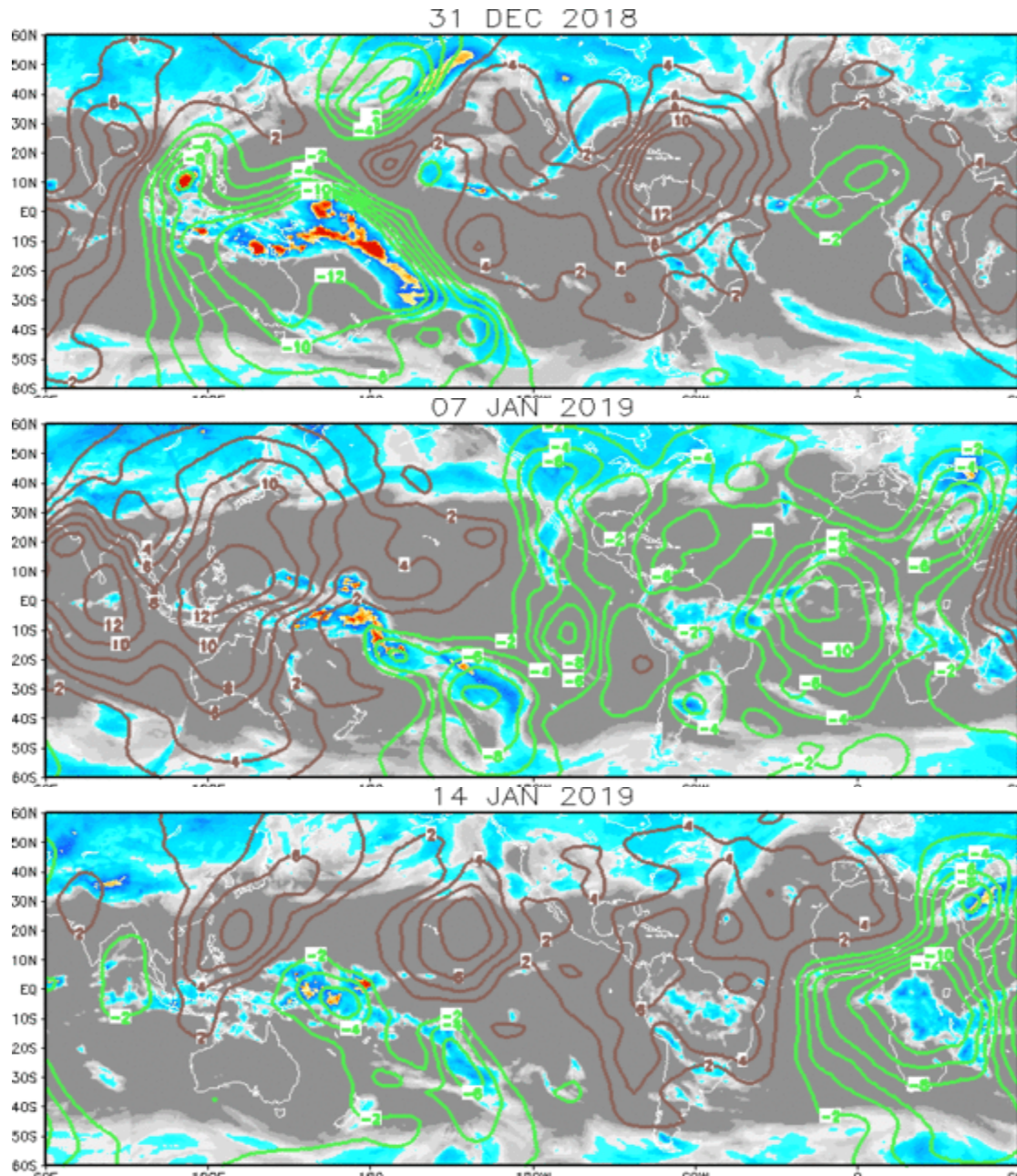
Green: Enhanced Divergence

Brown: Enhanced Convergence

Enhanced convergence stretching from central Pacific to the eastern Indian Ocean; active SPCZ.

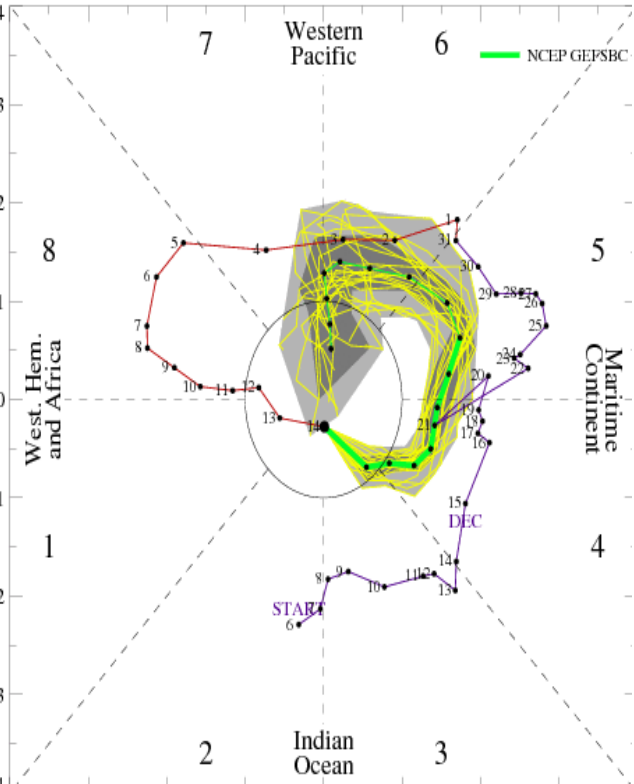
Wave-1 pattern, enhanced convergence from Indian Ocean stretching to Maritime Continent. Convective signal over eastern Pacific and Americas.

Noisy Wave-2 pattern, suppressed convection over the Americas and parts of the Maritime Continent. Enhanced moving from Africa into Indian Ocean, and over SPCZ.



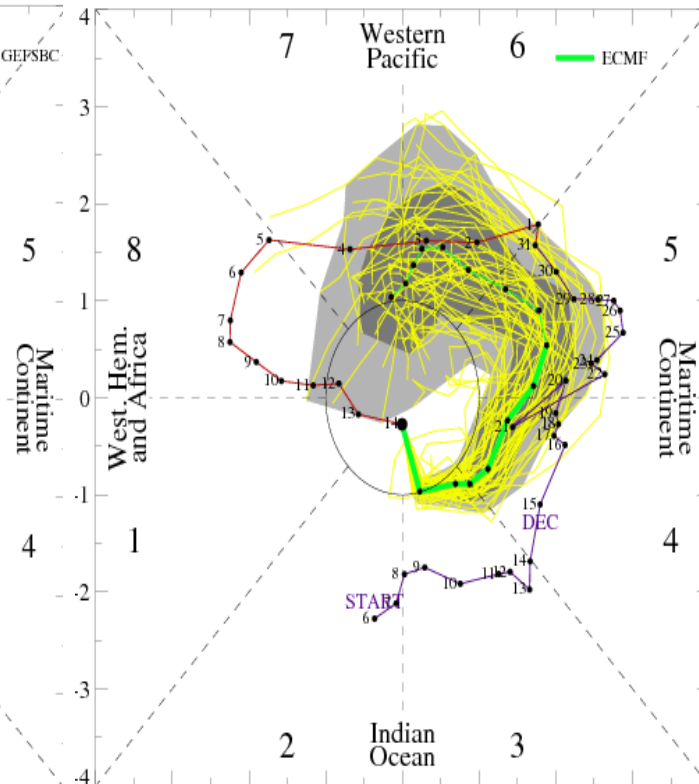
# MJO Observation/Forecast

[RMM1, RMM2] forecast for Jan-15-2019 to Jan-29-2019



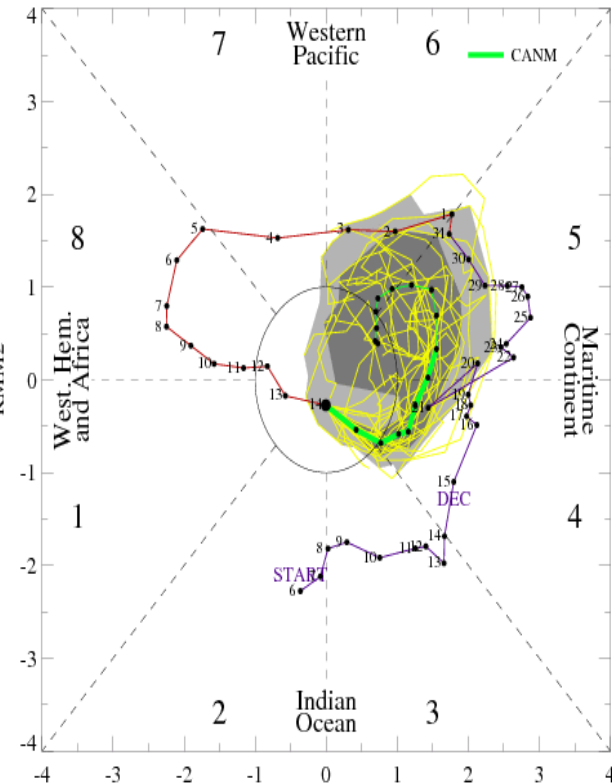
GEFS

MJO Index Forecast for 15Jan2019-29Jan2019



ECMWF

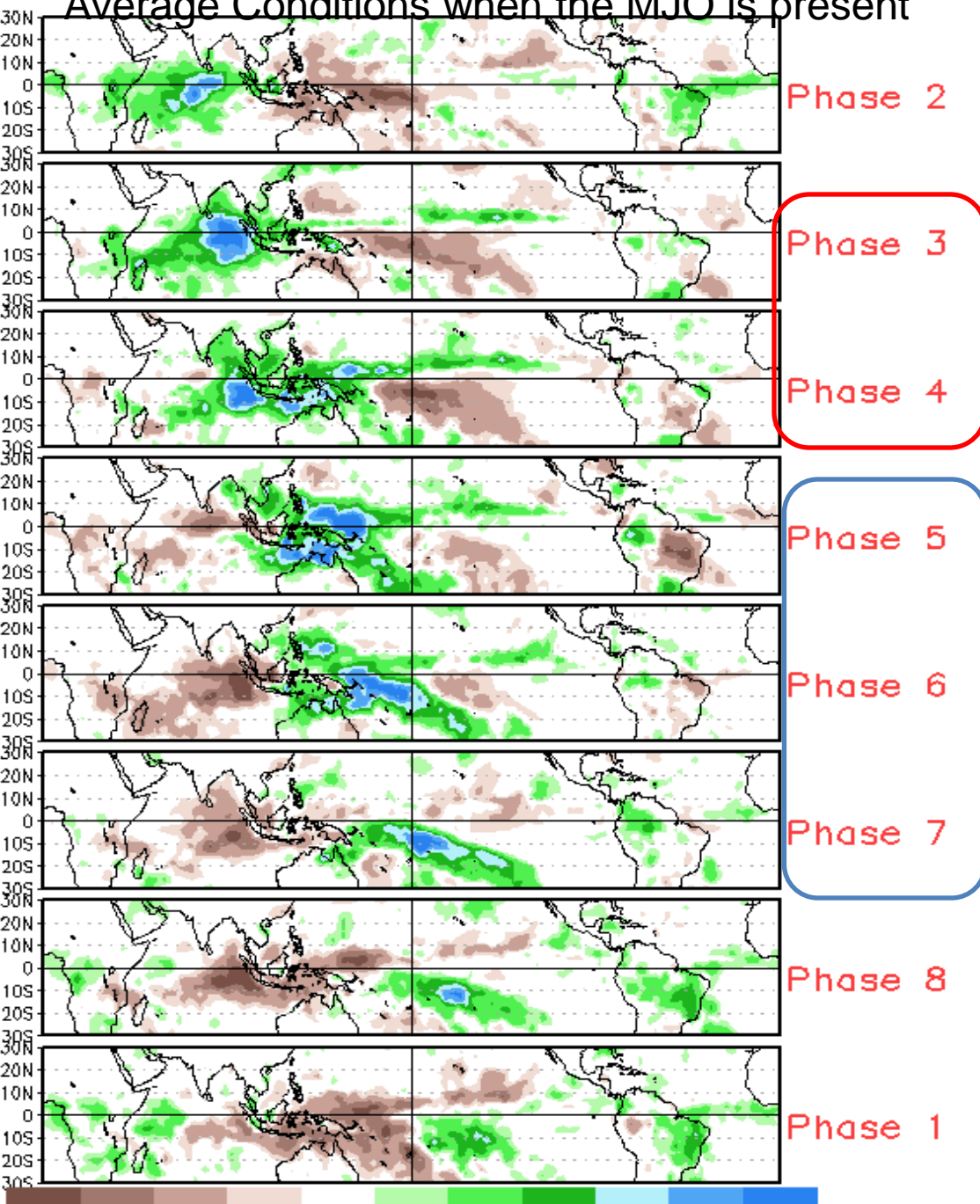
MJO Index Forecast for 15Jan2019-29Jan2019



CMC

Dynamical guidance indicates that the MJO signal is expected to re-emerge somewhere between the Indian Ocean and Maritime Continent (Phases 3/4). The signal is forecast to continue eastward propagation toward the western and central Pacific in Week-2.

# Average Conditions when the MJO is present



CAVEAT: These panels are representative of robust MJO events.



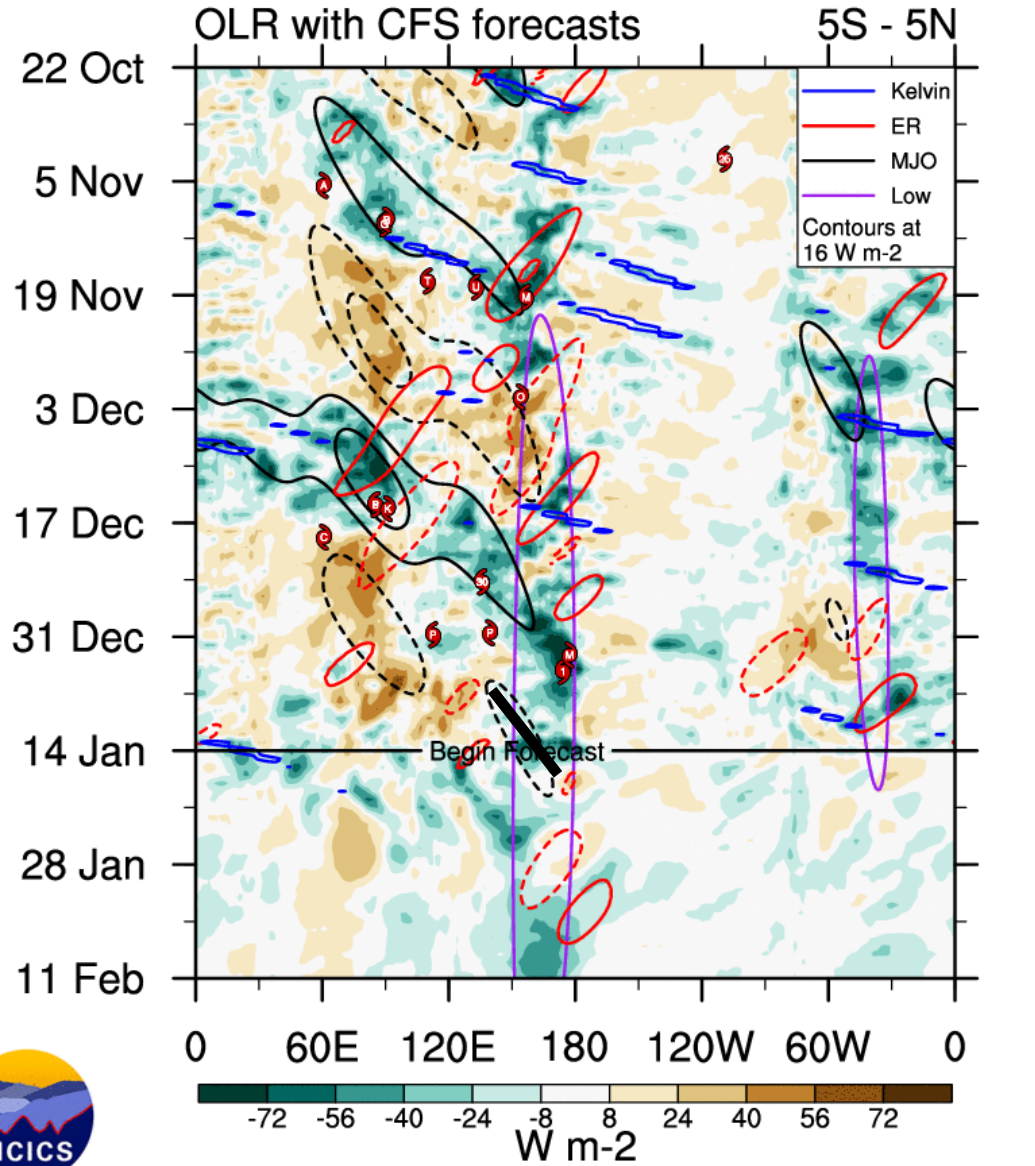
MJO is expected to be modest and forecast to propagate eastward over the Maritime Continent.

Rossby wave activity is also forecast to continue to be player in the tropics through the next 2 weeks.

The low-frequency pattern is likely to become more influential in the coming weeks.



[ncics.org/mjo](http://ncics.org/mjo)

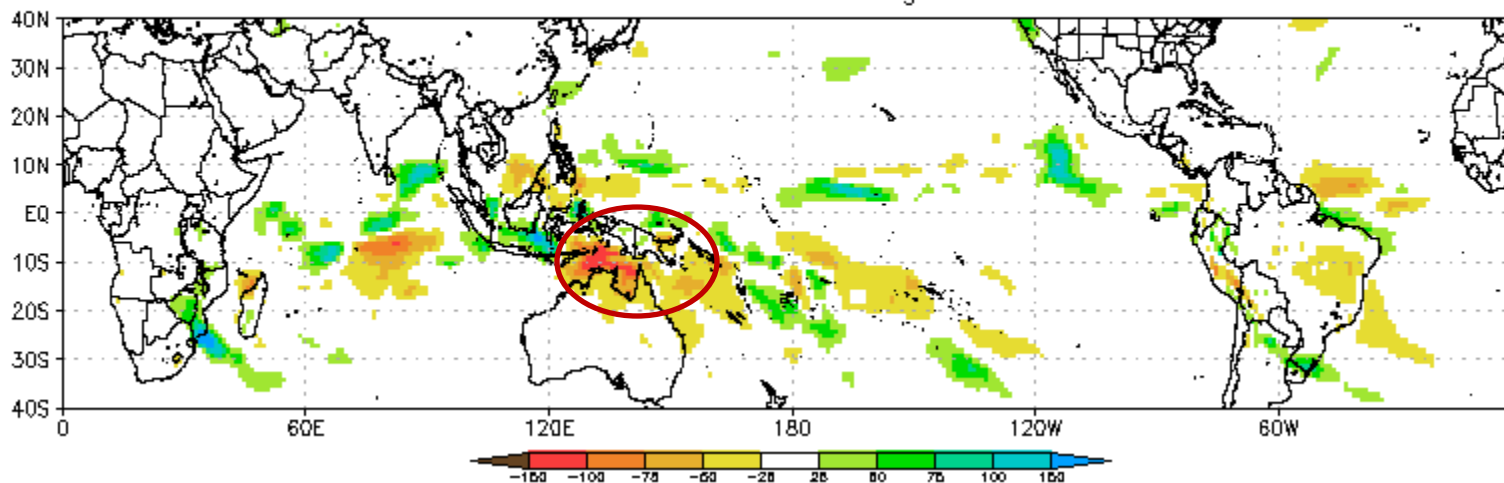


Tue 2019-01-15 1612 UTC

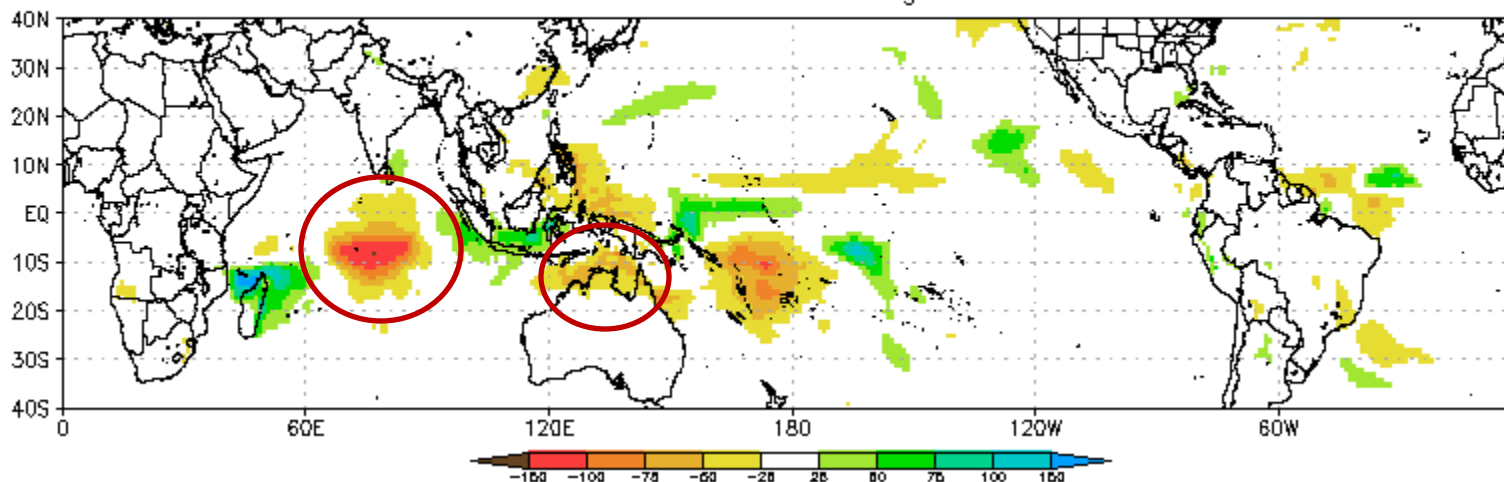
Carl Schreck (cjschrec@ncsu.edu)

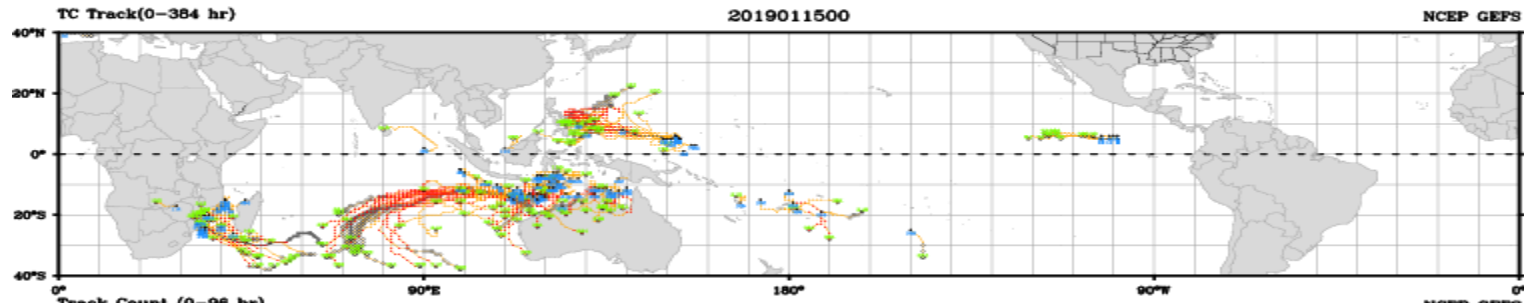


CFS Precipitation Anomalies (mm) Issued 14Jan2019  
Week-1 Forecast Ending 22Jan2019

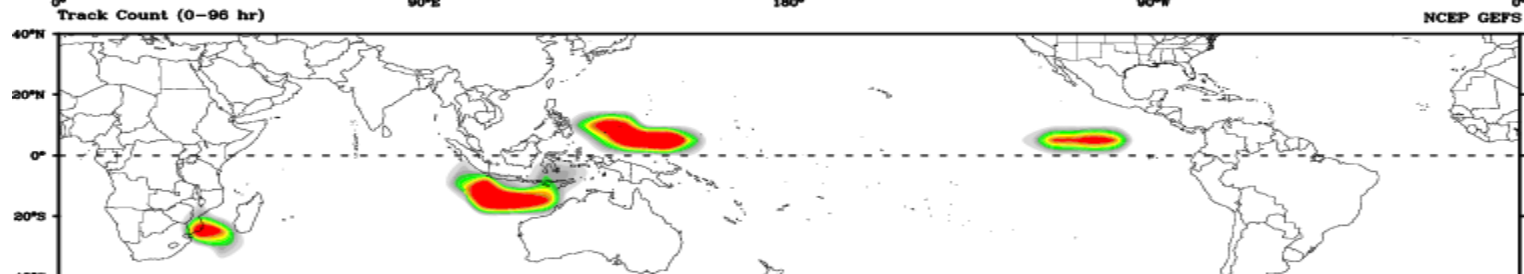


CFS Precipitation Anomalies (mm) Issued 14Jan2019  
Week-2 Forecast Ending 29Jan2019

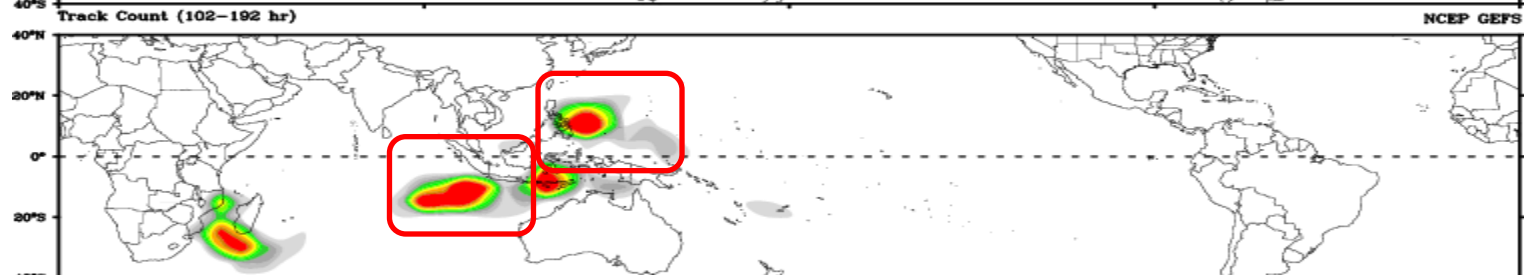




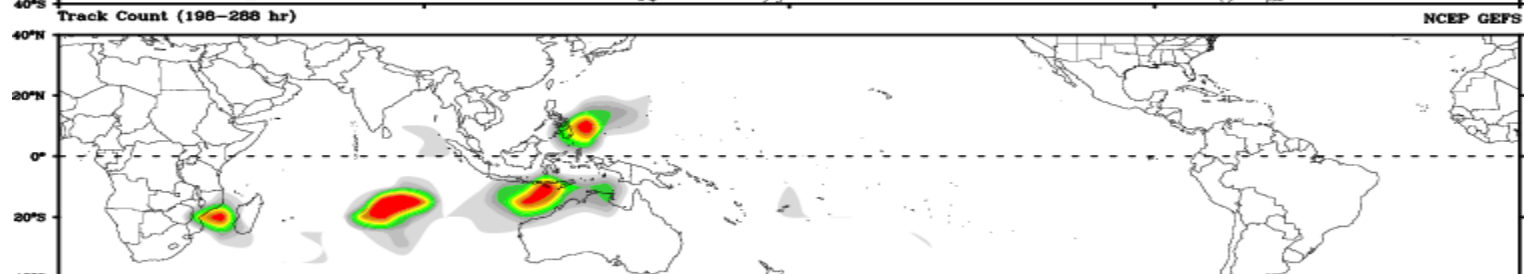
Days 1-4



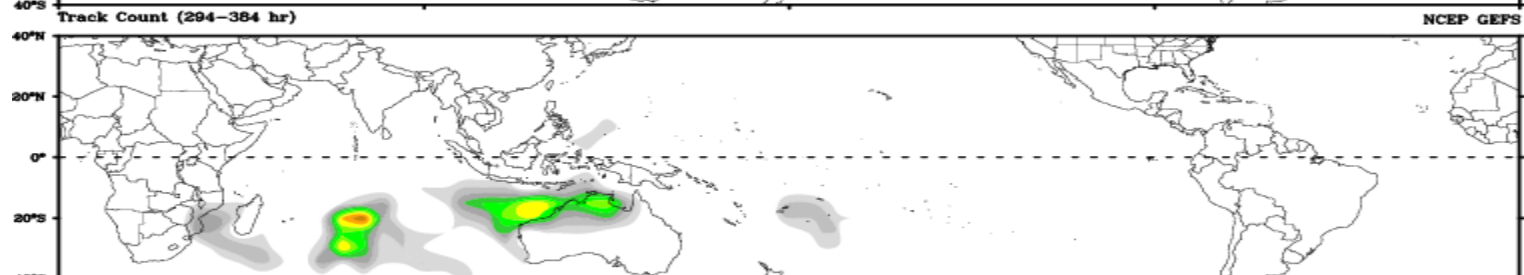
Day 5-8



Day 9-12

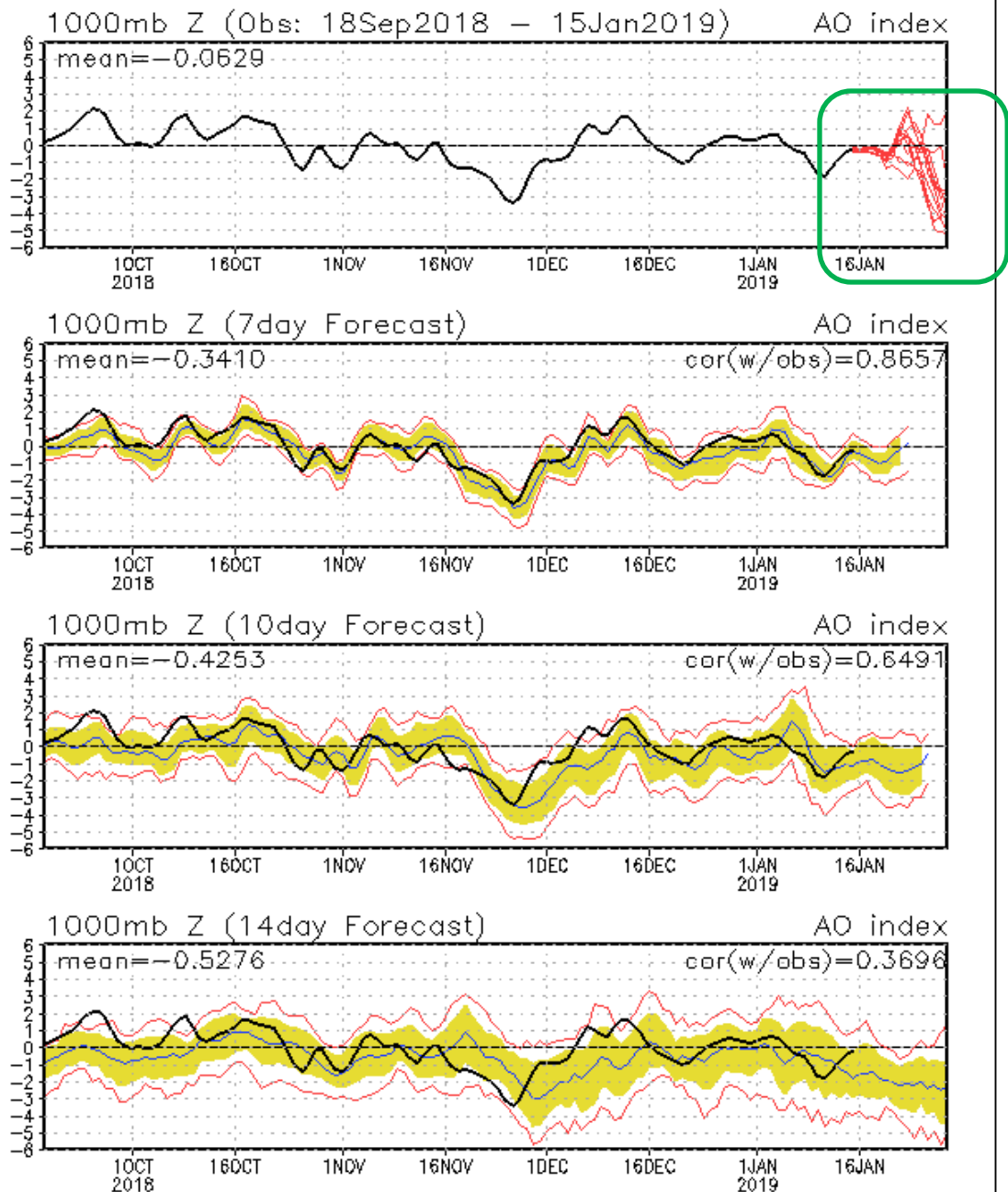


Day 13-15



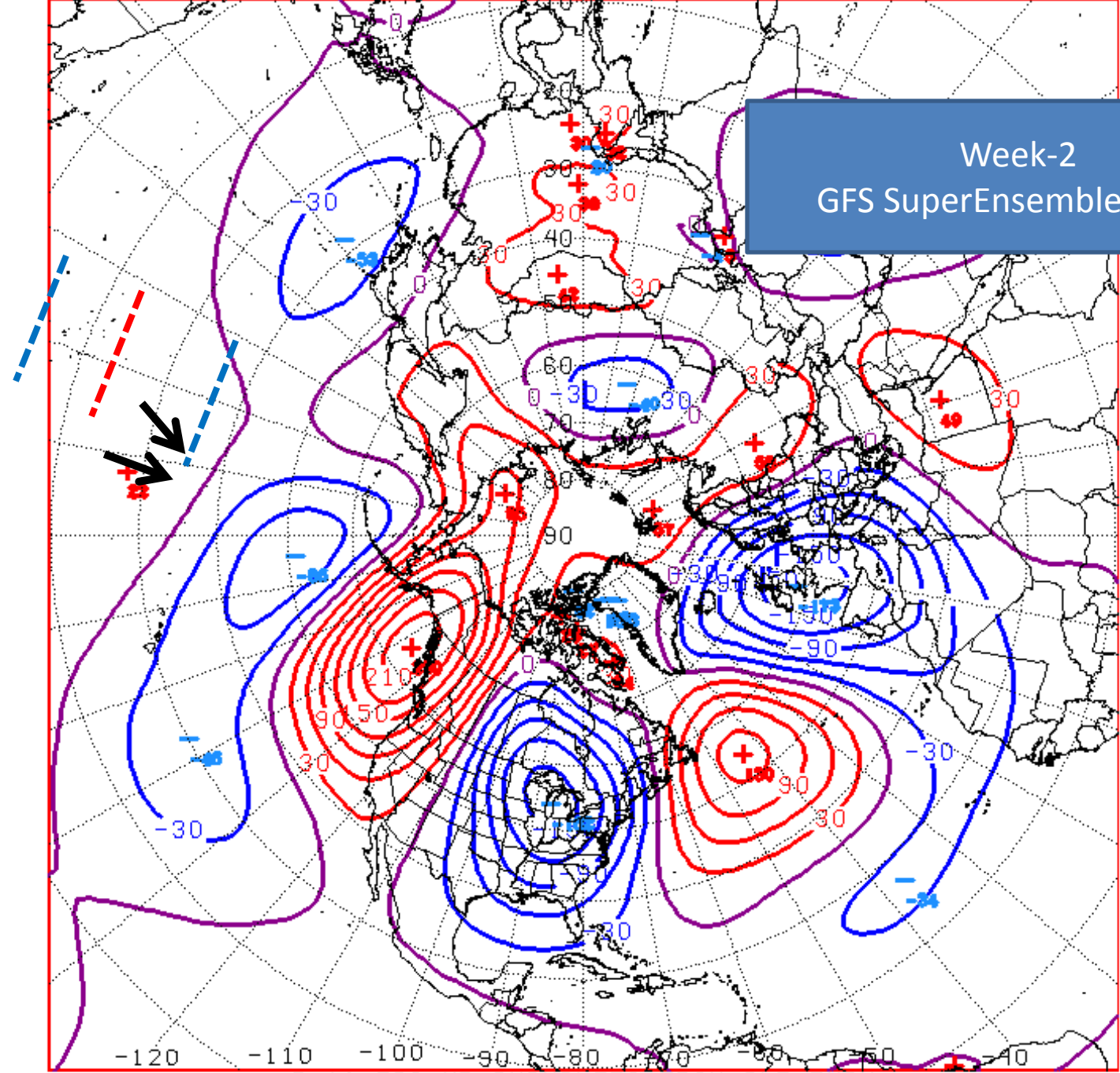
# Connections to U.S. Impacts

## AO: Observed & ENSM forecasts



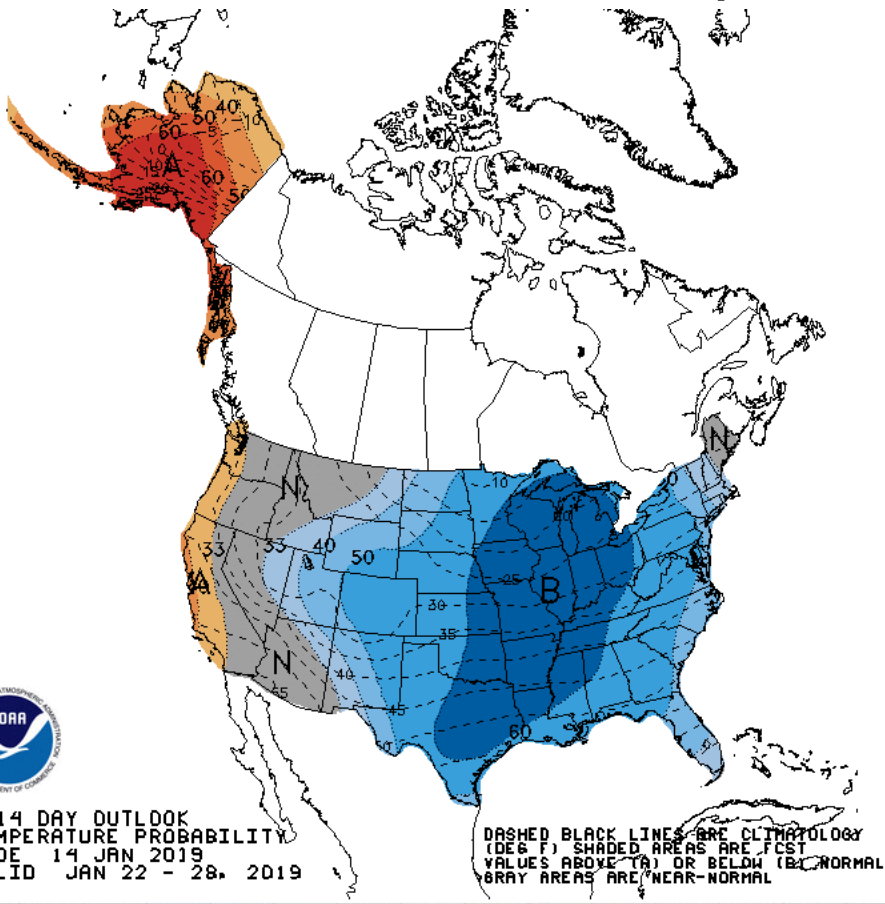


Week-2  
GFS SuperEnsemble Mean



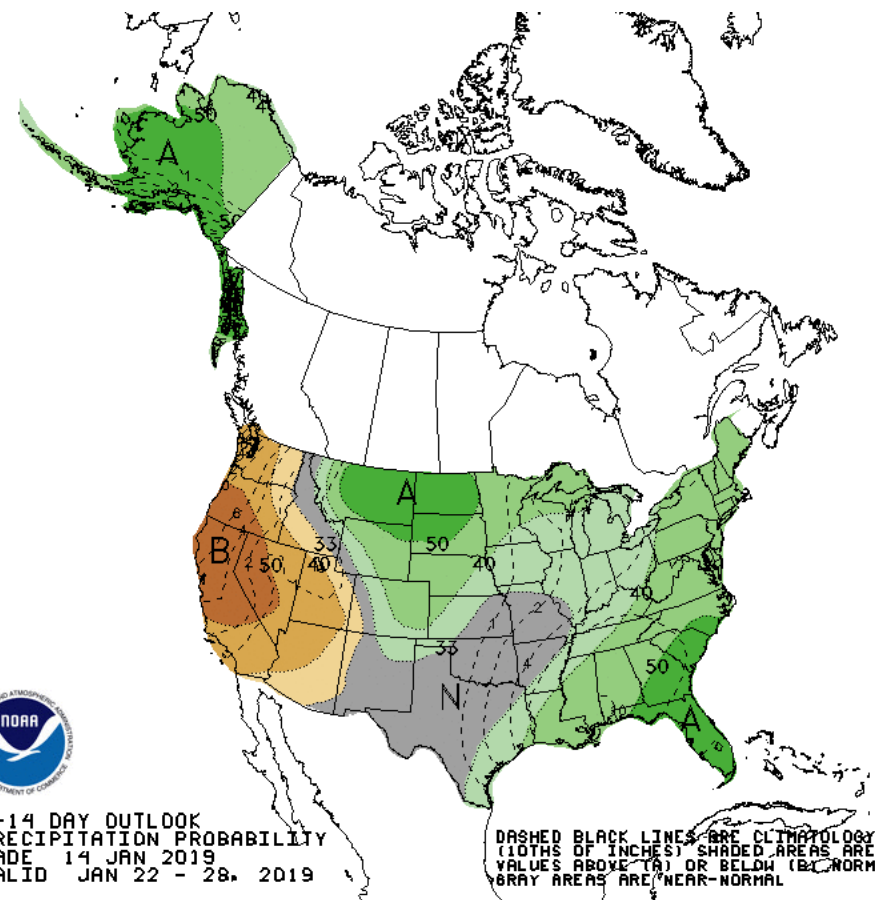
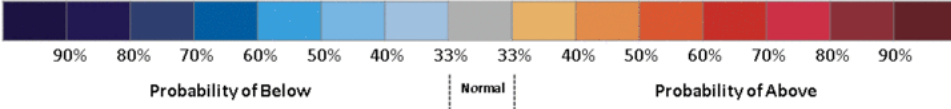
D+11 500 MB ANOMALIES FROM ALZ ENSM  
CPC MAP MADE JAN 15 2019 1306 UTC CNTD JAN 26 2019

# Week 2 – Temperature and Precipitation



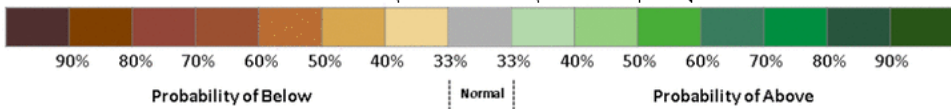
8-14 DAY OUTLOOK  
TEMPERATURE PROBABILITY  
MADE 14 JAN 2019  
VALID JAN 22 - 28, 2019

DASHED BLACK LINES ARE CLIMATOLOGY (DEG F). SHADED AREAS ARE FCST VALUES ABOVE (A) OR BELOW (B) NORMAL. GRAY AREAS ARE NEAR-NORMAL.

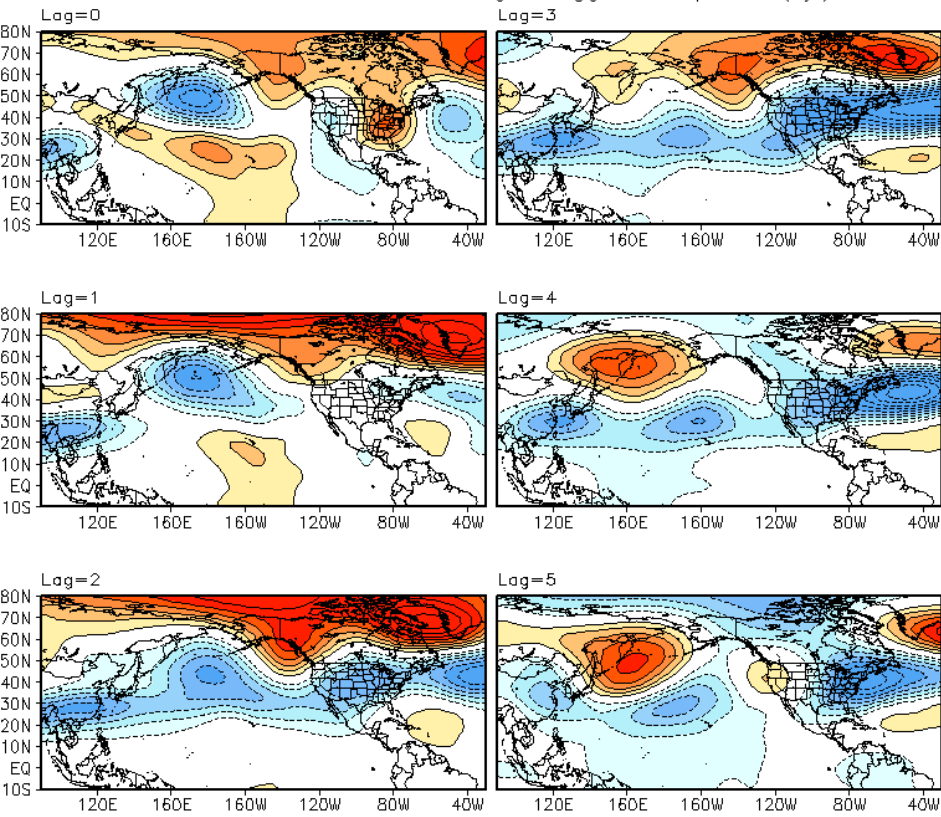


8-14 DAY OUTLOOK  
PRECIPITATION PROBABILITY  
MADE 14 JAN 2019  
VALID JAN 22 - 28, 2019

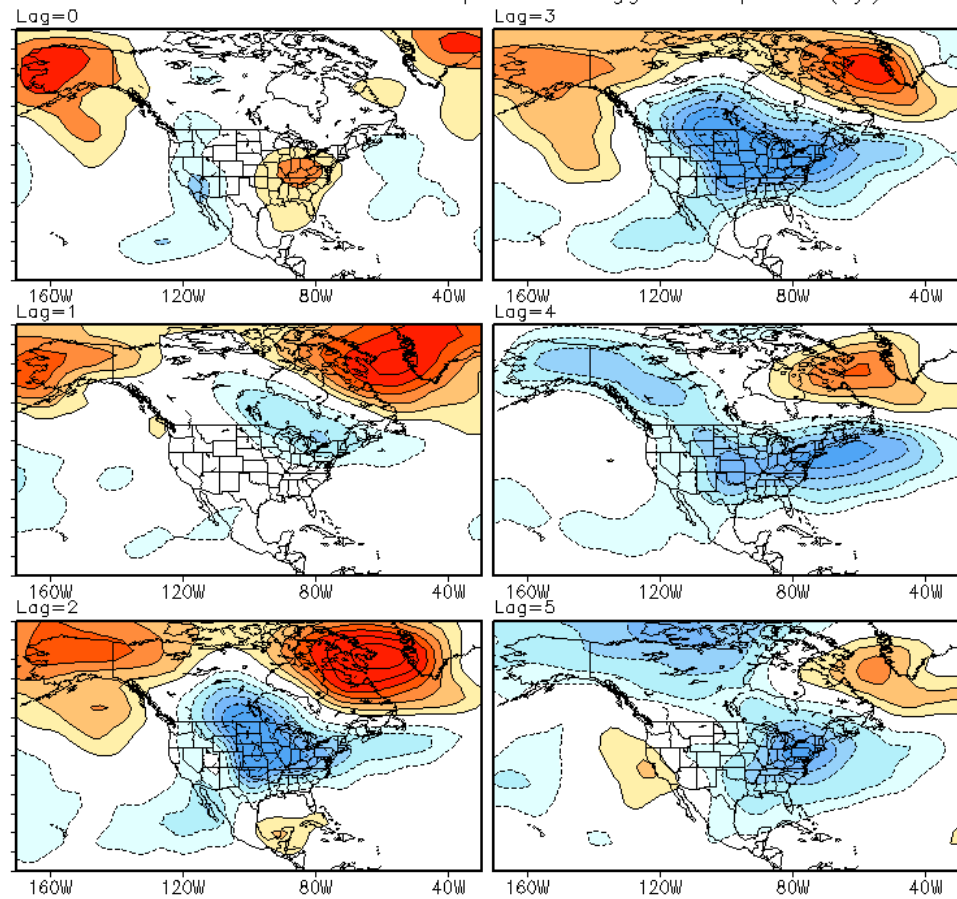
DASHED BLACK LINES ARE CLIMATOLOGY (TENTHS OF INCHES). SHADED AREAS ARE FCST VALUES ABOVE (A) OR BELOW (B) NORMAL. GRAY AREAS ARE NEAR-NORMAL.



RMM Phase 7 200-hPa Height Lagged Composite (djf)



RMM Phase 7 850-hPa Temperature Lagged Composite (djf)



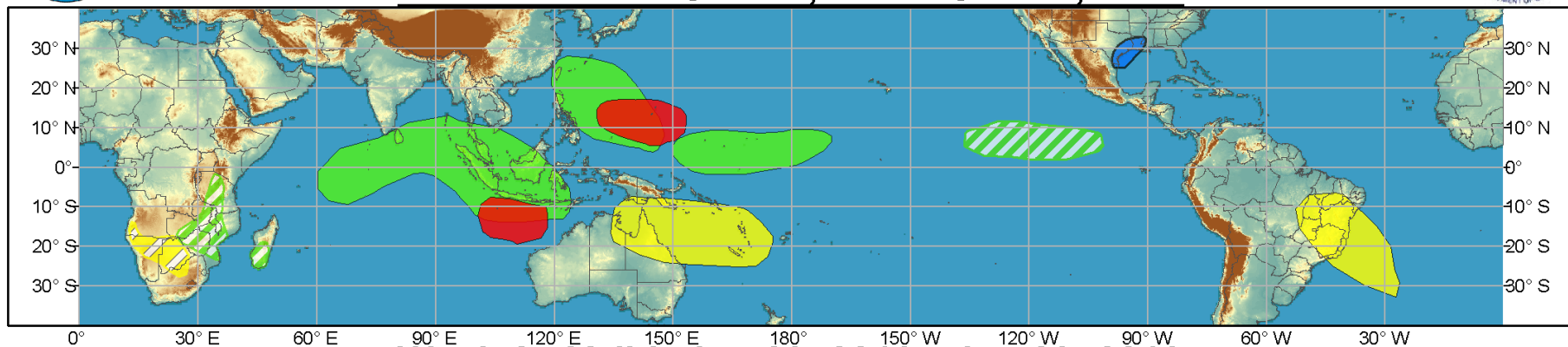




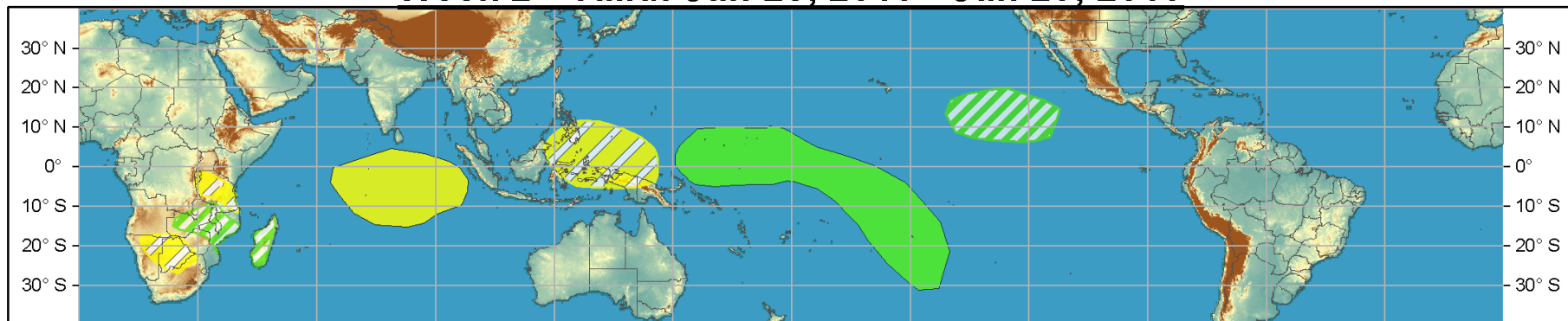
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