

Global Tropics Hazards And Benefits Outlook

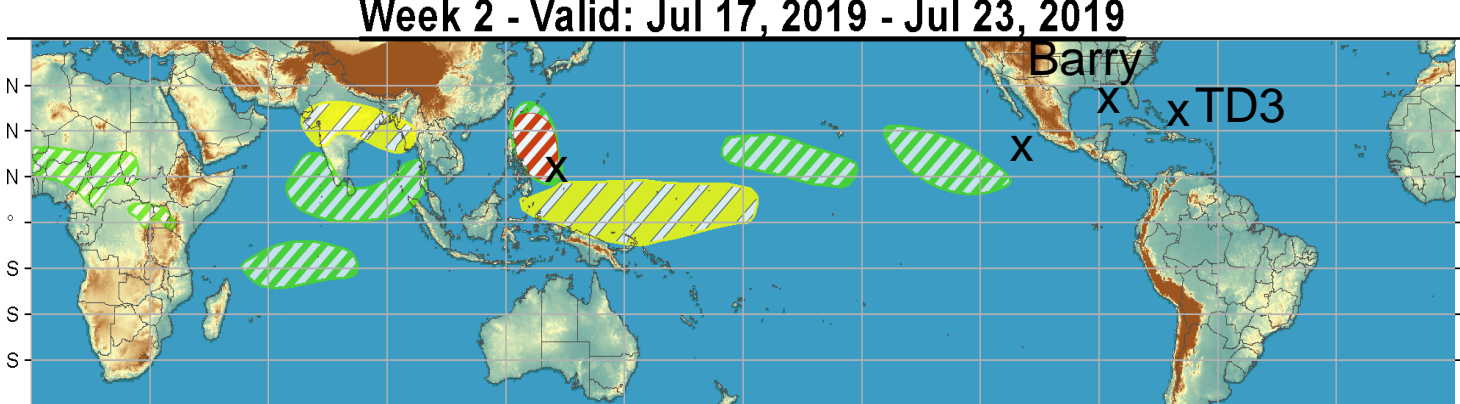
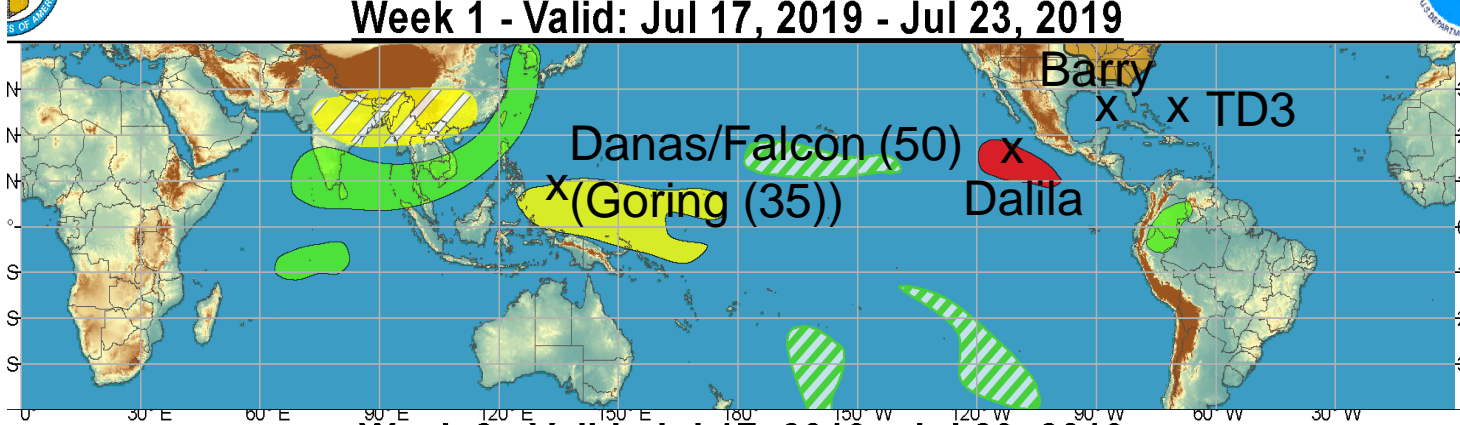
7/23/2019

Anthony Artusa

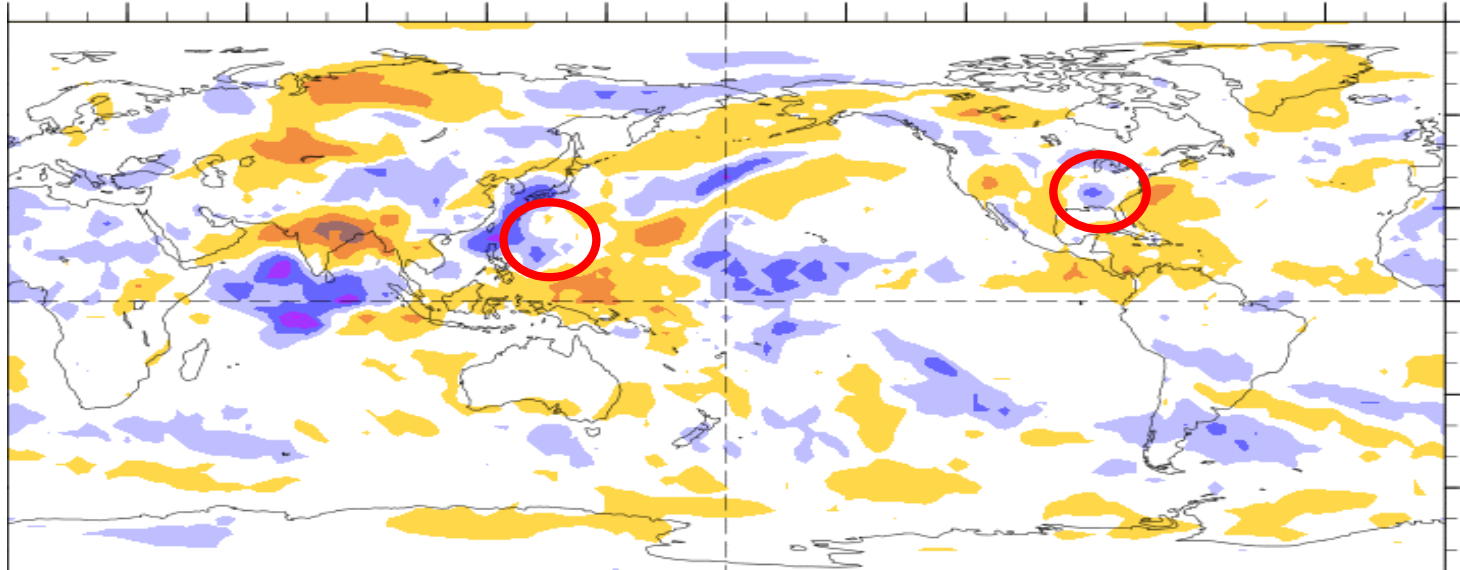
Outline

1. Review of Recent Conditions
2. Synopsis of Climate Modes
3. GTH Outlook and Forecast Discussion
4. Connections to U.S. Impacts

Outlook Review



7-Day Average OLR Anomaly 2019/07/15 - 2019/07/21



Cool shading
More clouds/rain

Warm shading
Less clouds/rain

Synopsis of Climate Modes

ENSO: (July 22, 2019)

- ENSO Alert System Status: [El Niño Advisory](#)
- A transition from El Niño to ENSO-neutral is expected in the next month or two, with ENSO-neutral most likely to continue through the Northern Hemisphere fall and winter.

MJO and other subseasonal tropical variability:

- The MJO was largely incoherent. Enhanced phase over Western Hemisphere and western Indian Ocean. Suppressed phase over Maritime Continent. Strong Kelvin wave near 120W... weakening equatorial Rossby wave over Indian Ocean.
- Dynamical models indicate a weak MJO through the next two weeks. Greatest uncertainty is in location... enhanced phase anywhere from Phase 1-5.

Extratropics:

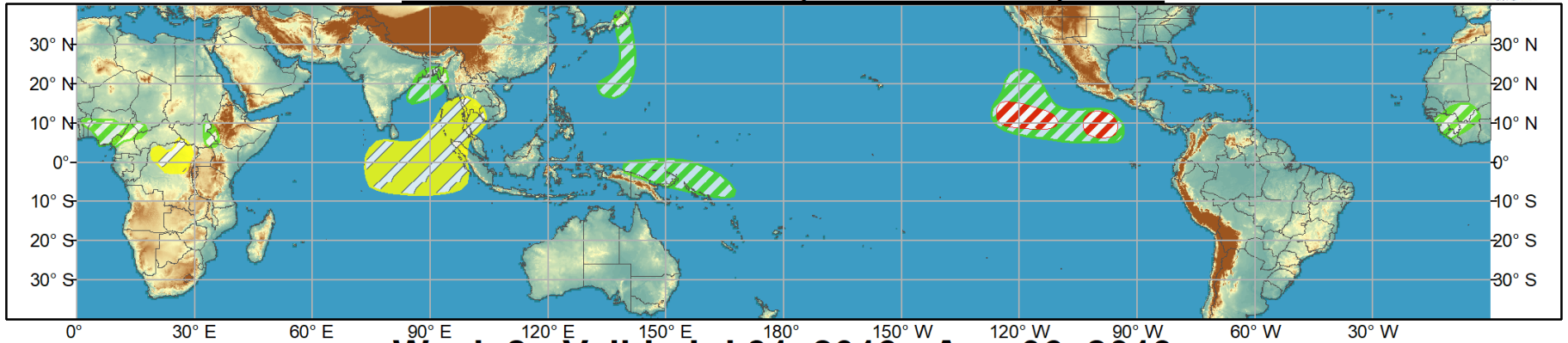
- The extended range temperature and precipitation forecasts for the U.S. are not likely to be impacted by MJO activity. Though moisture may stream into the Southwest in Week-2, depending on how close eastern Pacific tropical cyclones can get (including Gulf surges).



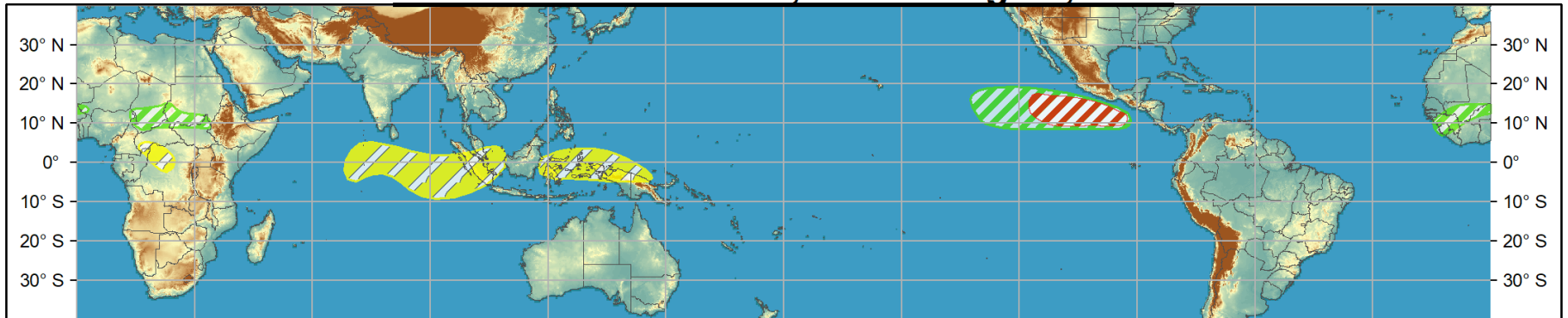
Global Tropics Hazards and Benefits Outlook - Climate Prediction Center



Week 1 - Valid: Jul 24, 2019 - Jul 30, 2019



Week 2 - Valid: Jul 31, 2019 - Aug 06, 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.

Below-normal temperatures



7-day mean temperatures in the lower third of the historical range.

Produced: 07/23/2019

Forecaster: Artusa

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.



IR Satellite & 200-hpa Velocity Potential Anomalies

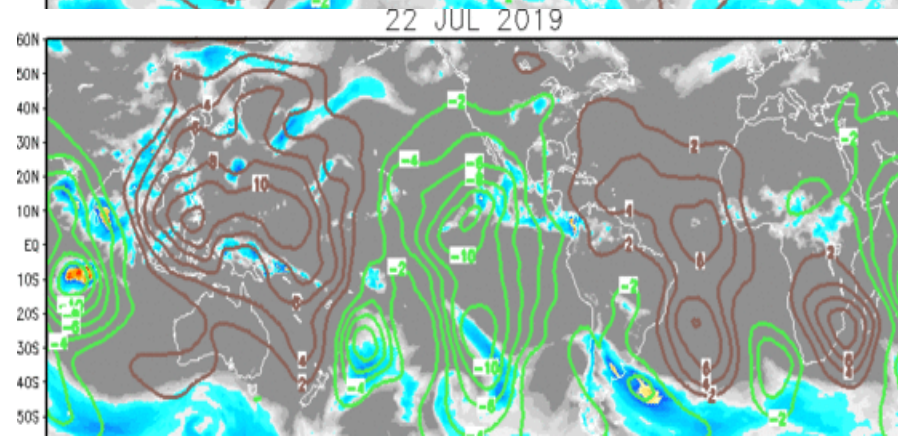
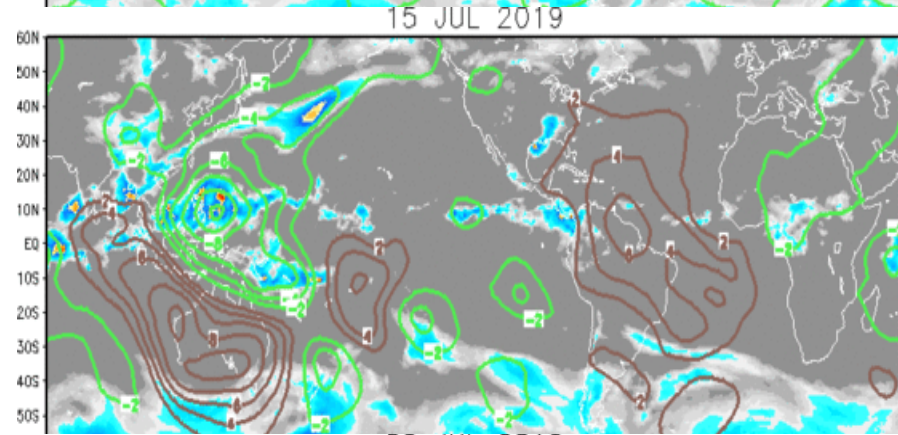
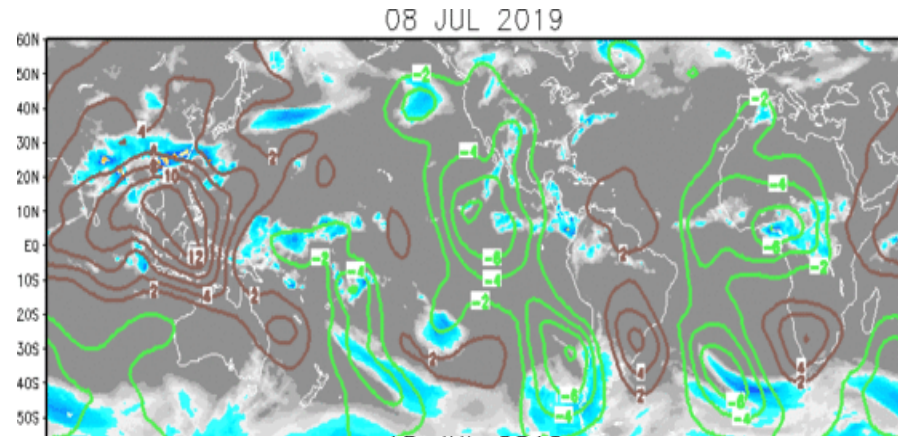
Green: Enhanced Divergence

Brown: Enhanced Convergence

Enhanced convection over eastern Pacific, South Atlantic & much of Africa. Suppressed over Asia.

Enhanced convection over Maritime Continent ; suppressed over most of Australia.

Well-defined Wave-2 pattern.
Enhanced phase over east Pacific & Indian Ocean;
suppressed over Maritime Continent, west Pacific, Atlantic

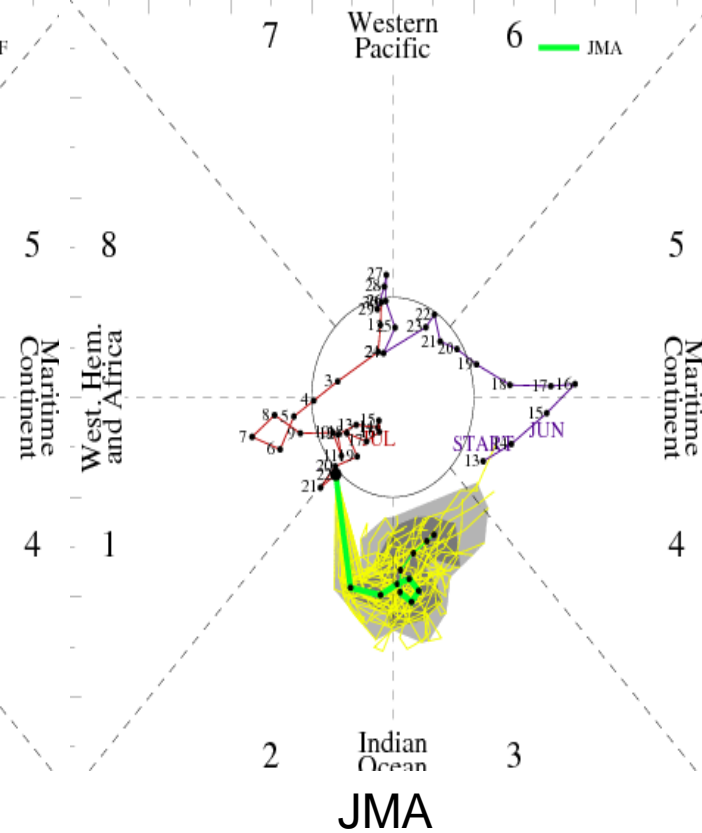
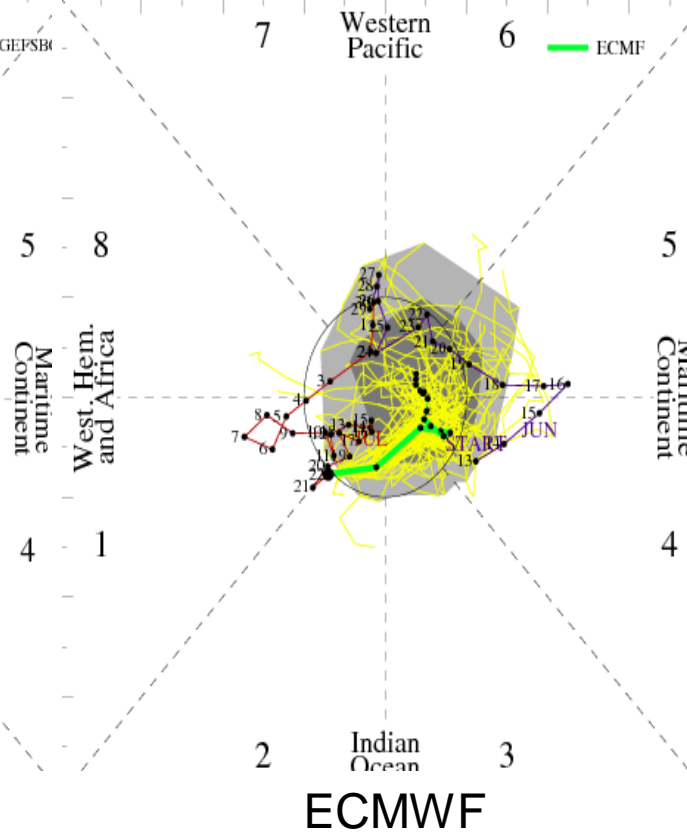
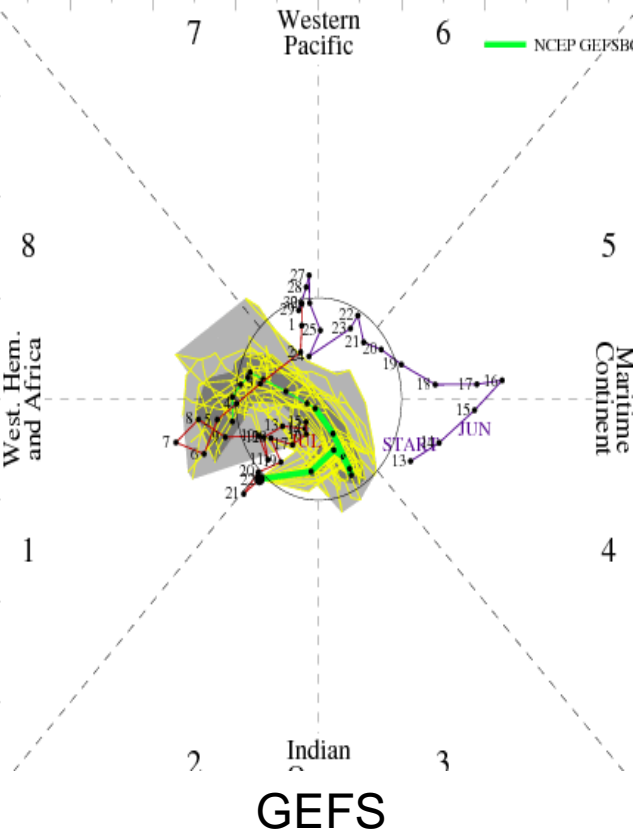


MJO Observation/Forecast

[RMM1, RMM2] forecast for Jul-23-2019 to Aug-06-2019

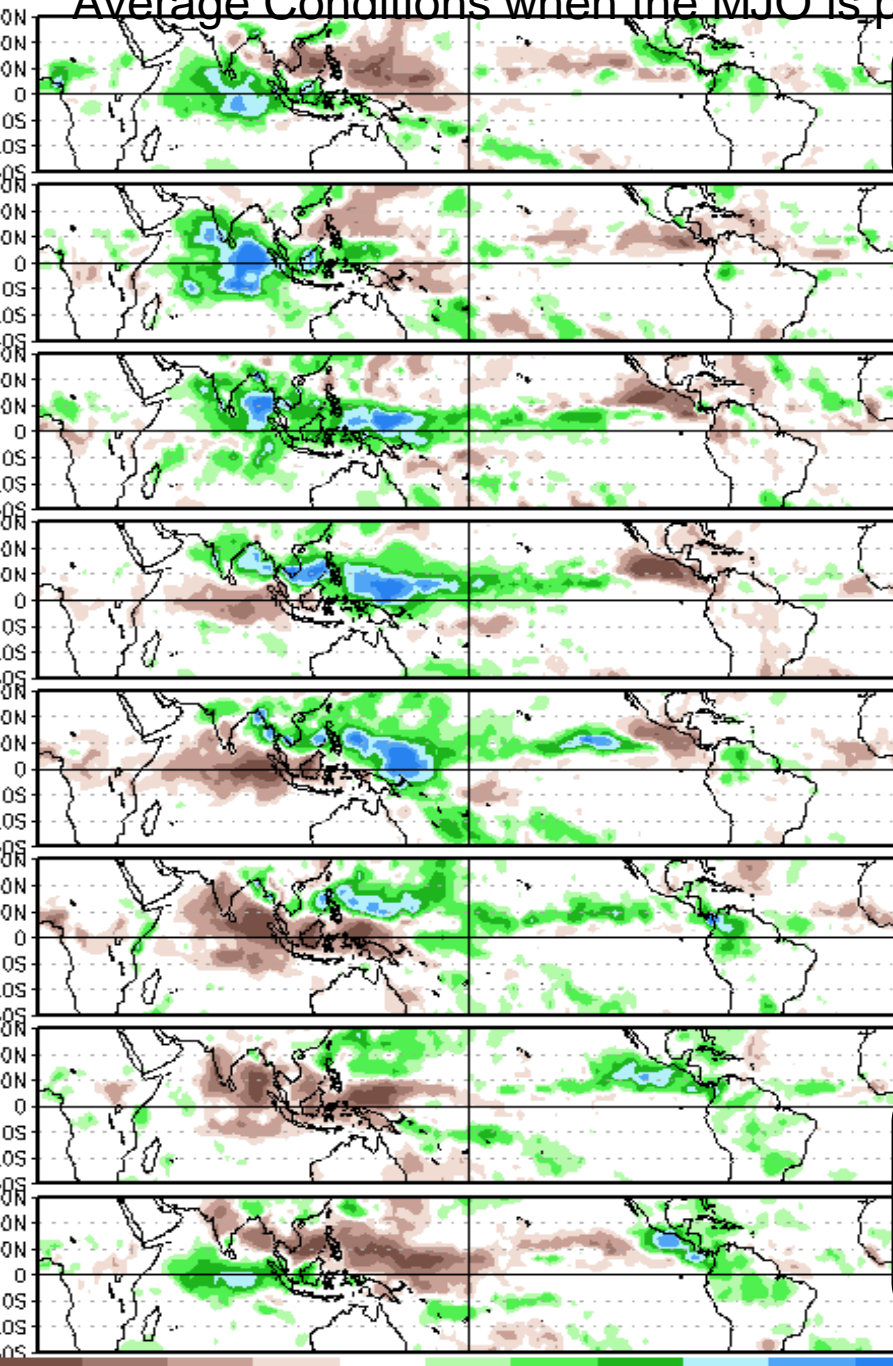
MJO Index Forecast for 23Jul2019-06Aug2019

MJO Index Forecast for 23Jul2019-31Jul2019



Wheeler-Hendon based analyses of model forecasts indicate large disagreement in phase and amplitude of MJO signal (especially the JMA). Some interference expected from equatorial Rossby waves.

Average Conditions when the MJO is present



Phase 2

Phase 3

Phase 4

Phase 5

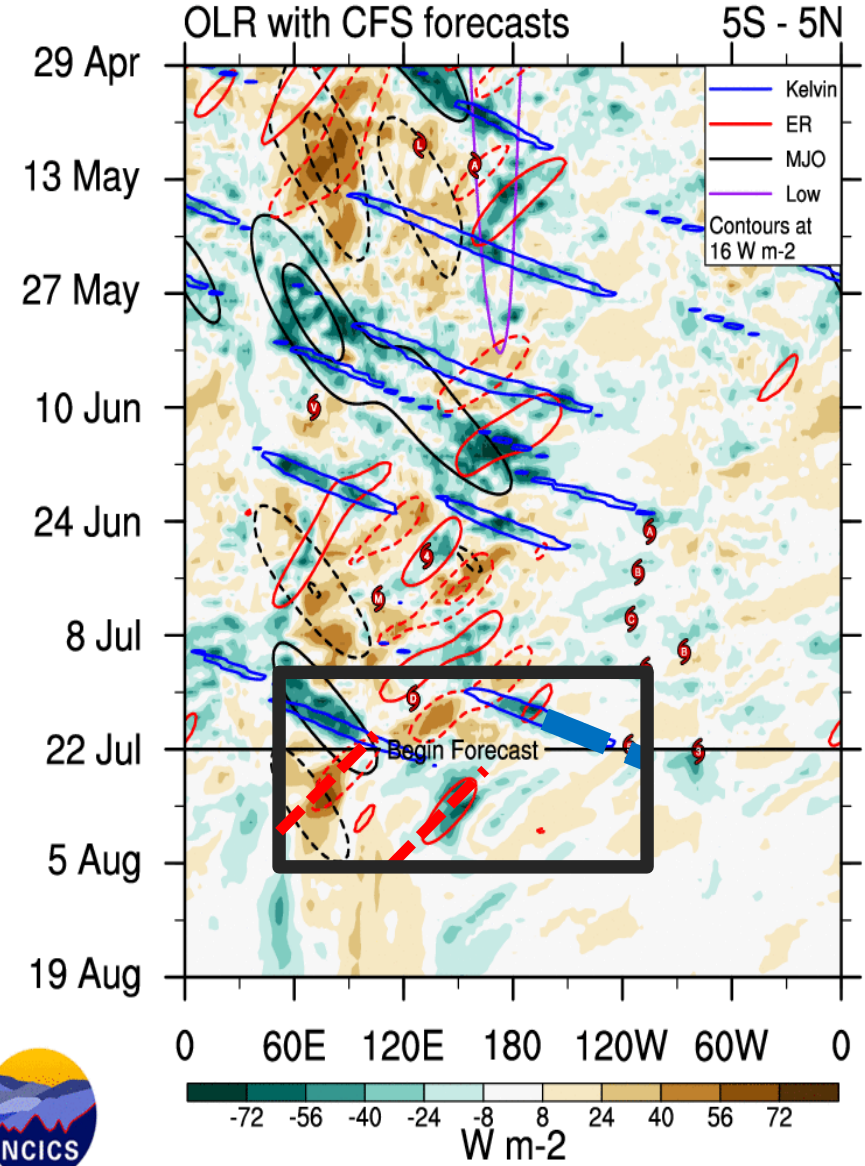
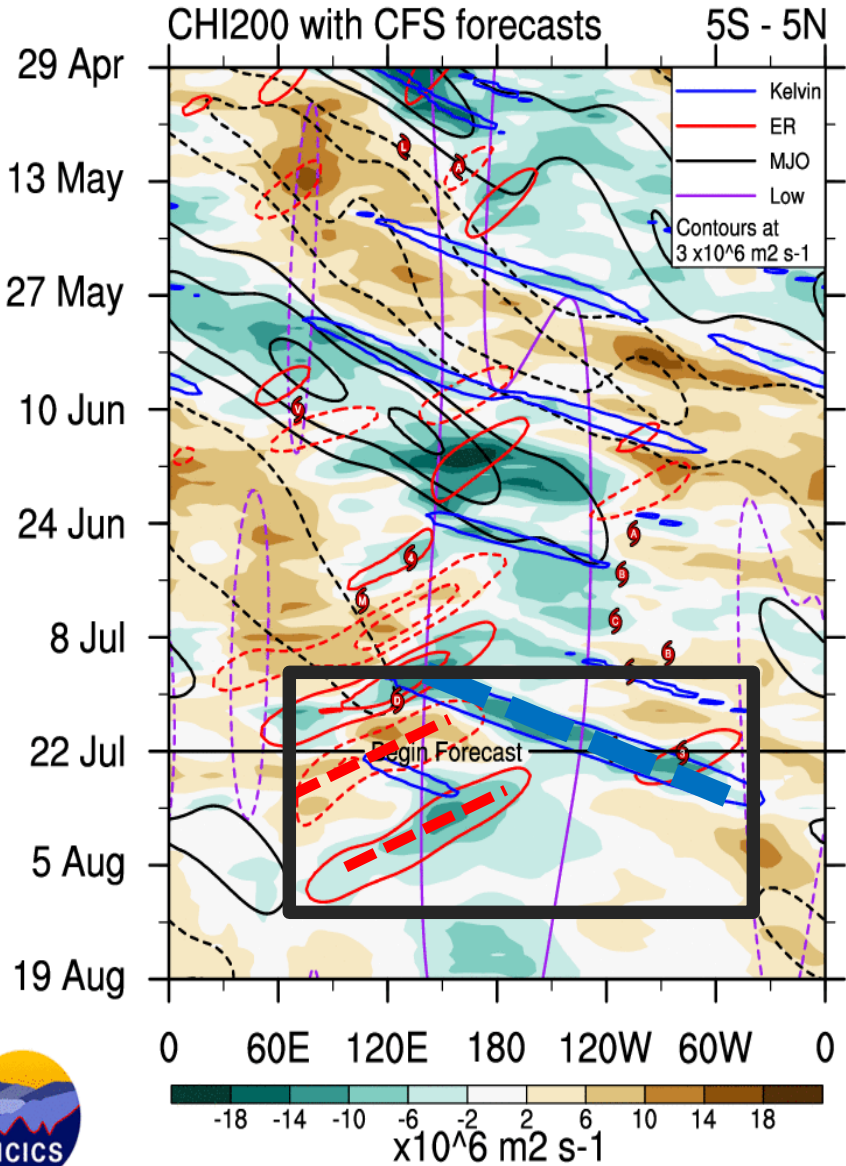
Phase 6

Phase 7

Phase 8

Phase 1

CAVEAT: These panels are representative of robust MJO events.



ncics.org/mjo

Tue 2019-07-23 1009 UTC

Carl Schreck (cjschrec@ncsu.edu)



ncics.org/mjo

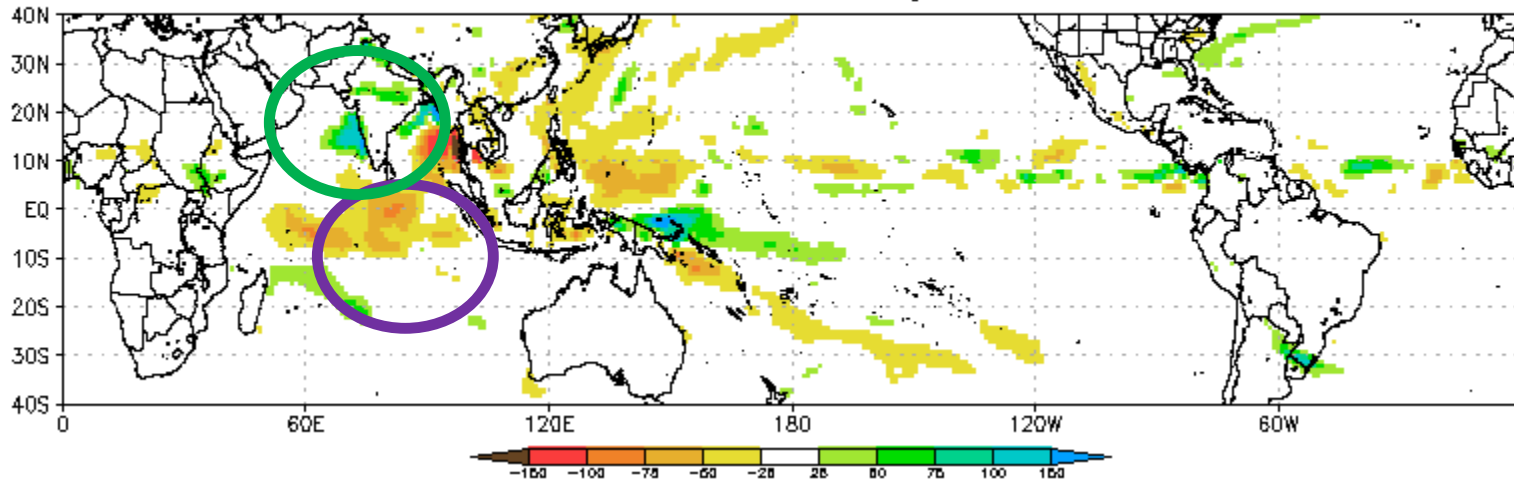
Tue 2019-07-23 1513 UTC

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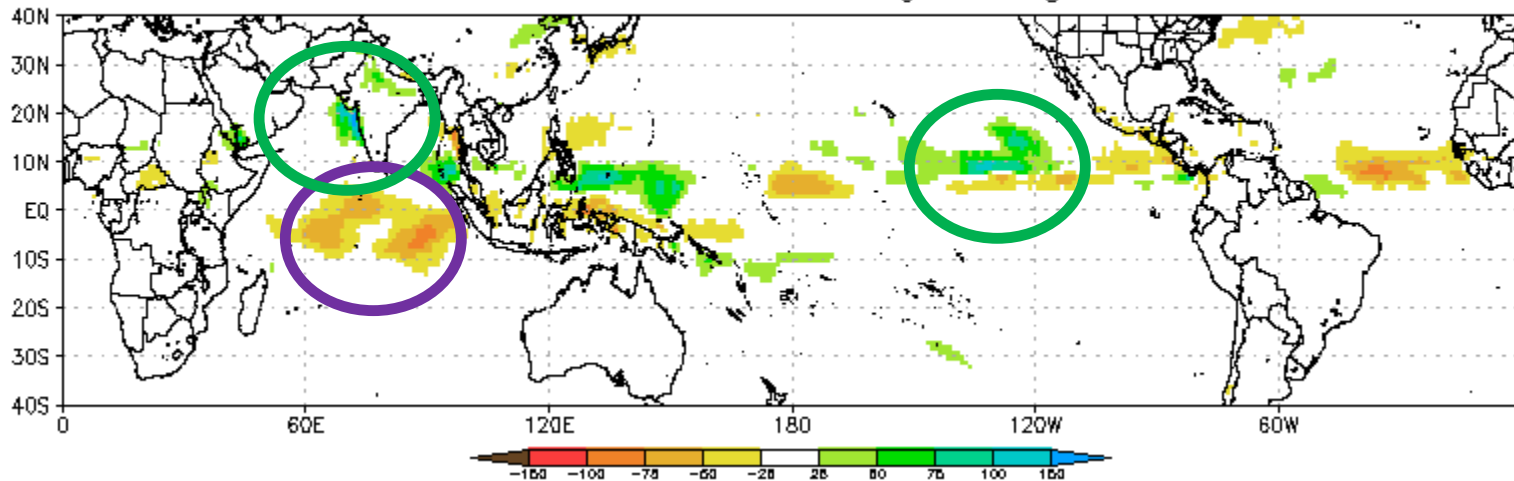
Rossby wave(s) and **Kelvin wave** having an influence

Low-frequency pattern may be playing a role near Date Line

CFS Precipitation Anomalies (mm) Issued 22Jul2019
Week-1 Forecast Ending 30Jul2019



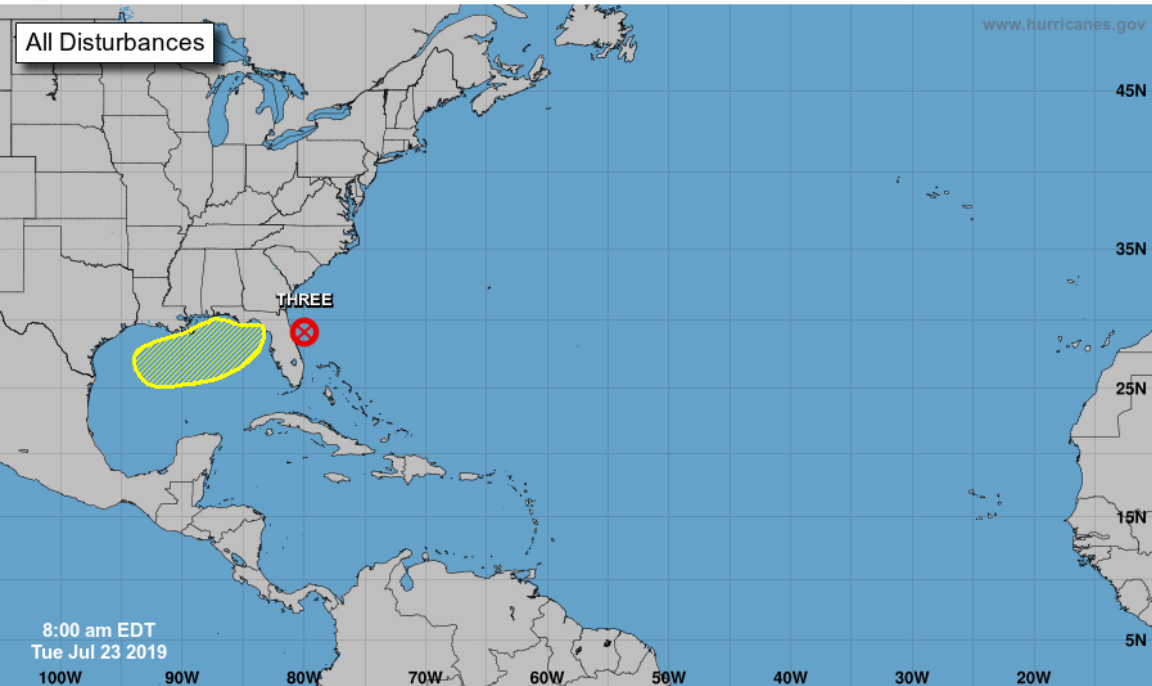
CFS Precipitation Anomalies (mm) Issued 22Jul2019
Week-2 Forecast Ending 06Aug2019





Five-Day Graphical Tropical Weather Outlook

National Hurricane Center Miami, Florida



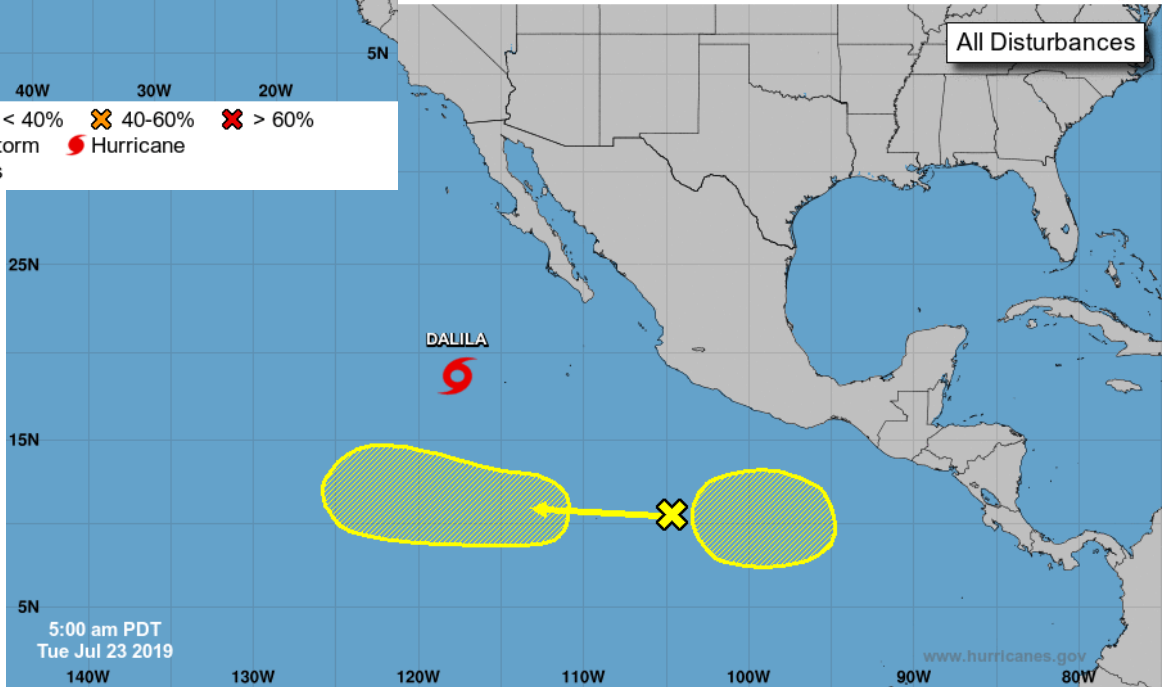
Current Disturbances and Five-Day Cyclone Formation Chance: < 40% 40-60% > 60%

Tropical or Sub-Tropical Cyclone: Depression Storm Hurricane

Post-Tropical Cyclone or Remnants

Graphical Tropical Weather Outlook

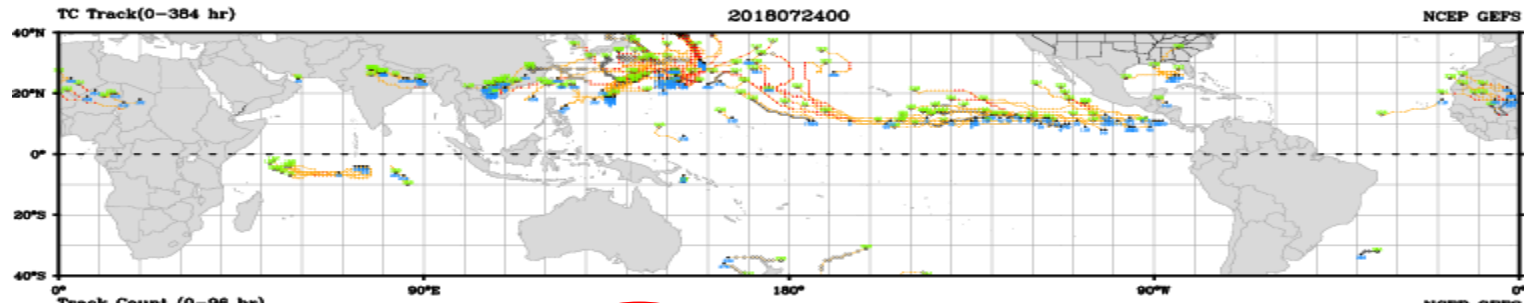
National Hurricane Center Miami, Florida



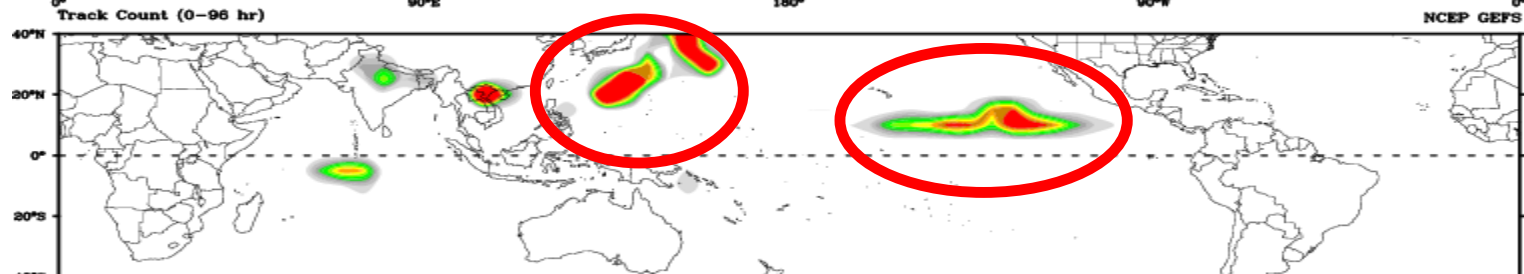
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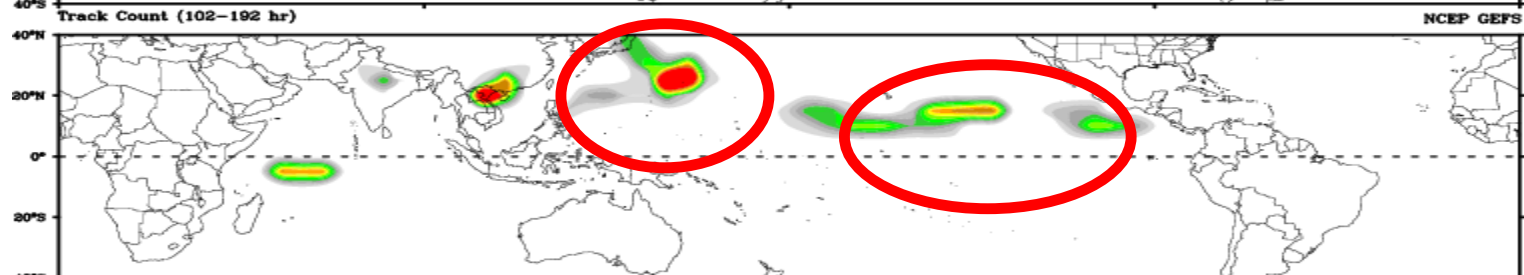
Post-Tropical Cyclone or Remnants



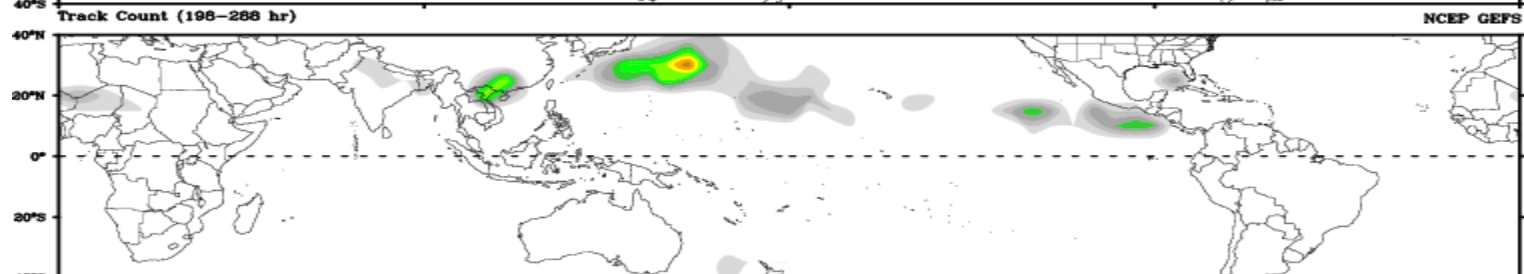
Days 1-4



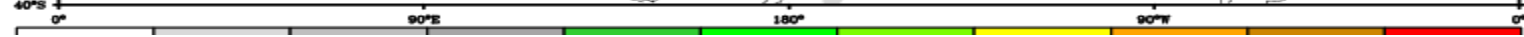
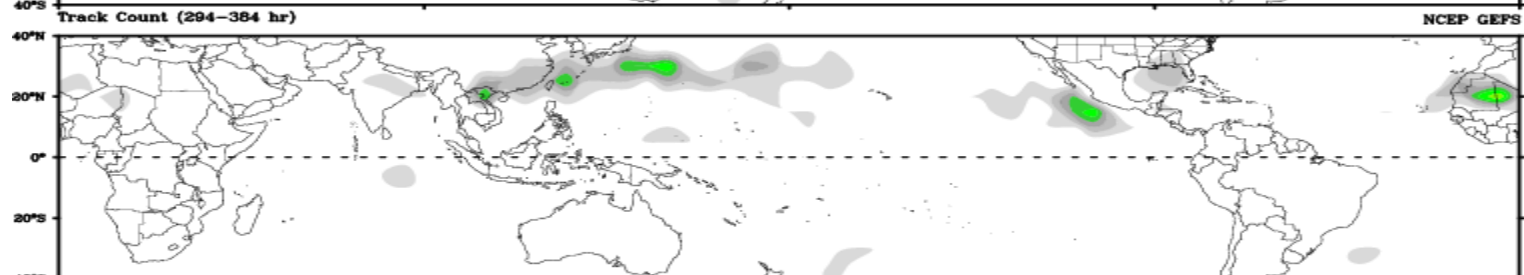
Day 5-8



Day 9-12

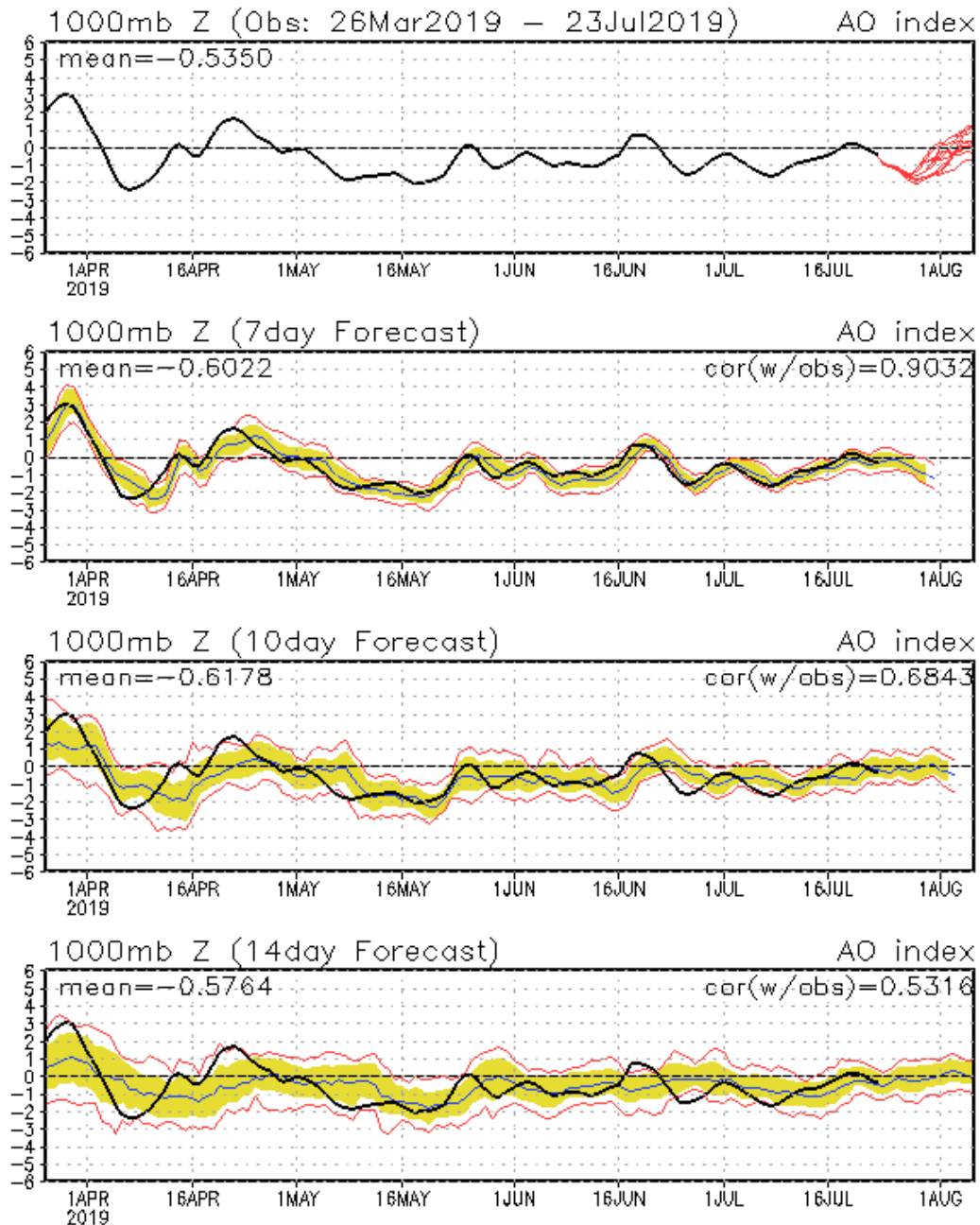


Day 13-15



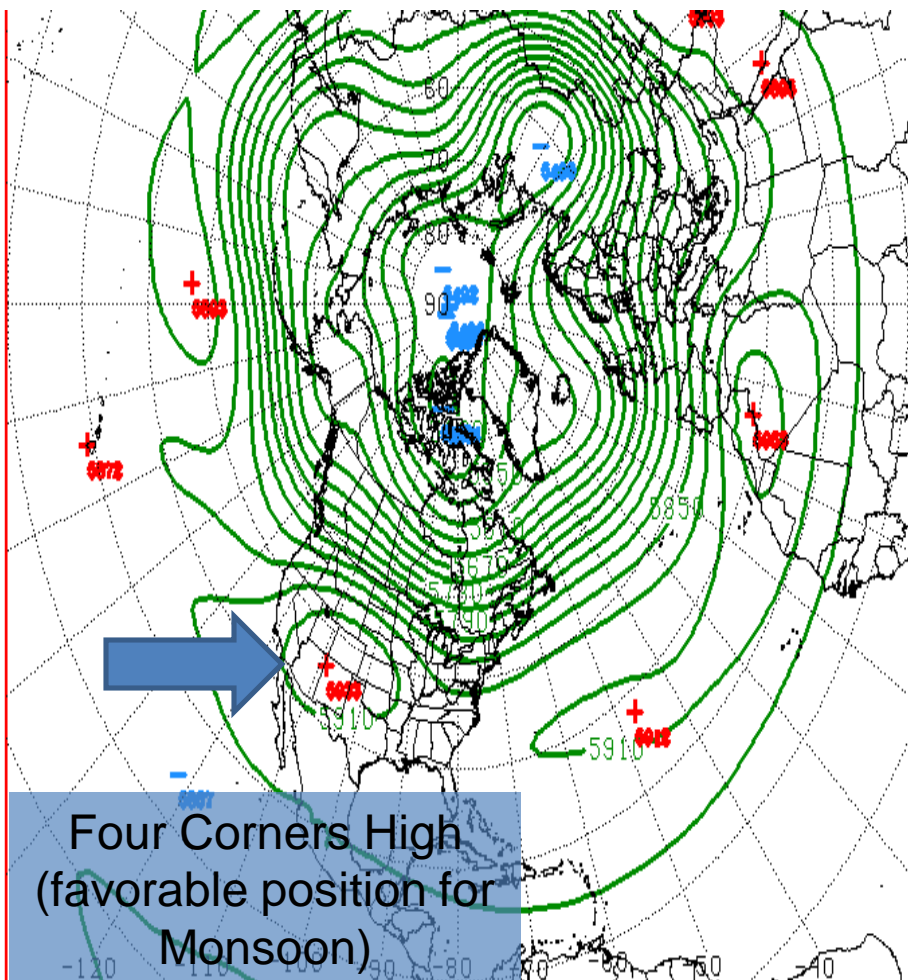
Connections to U.S. Impacts

AO: Observed & ENSM forecasts



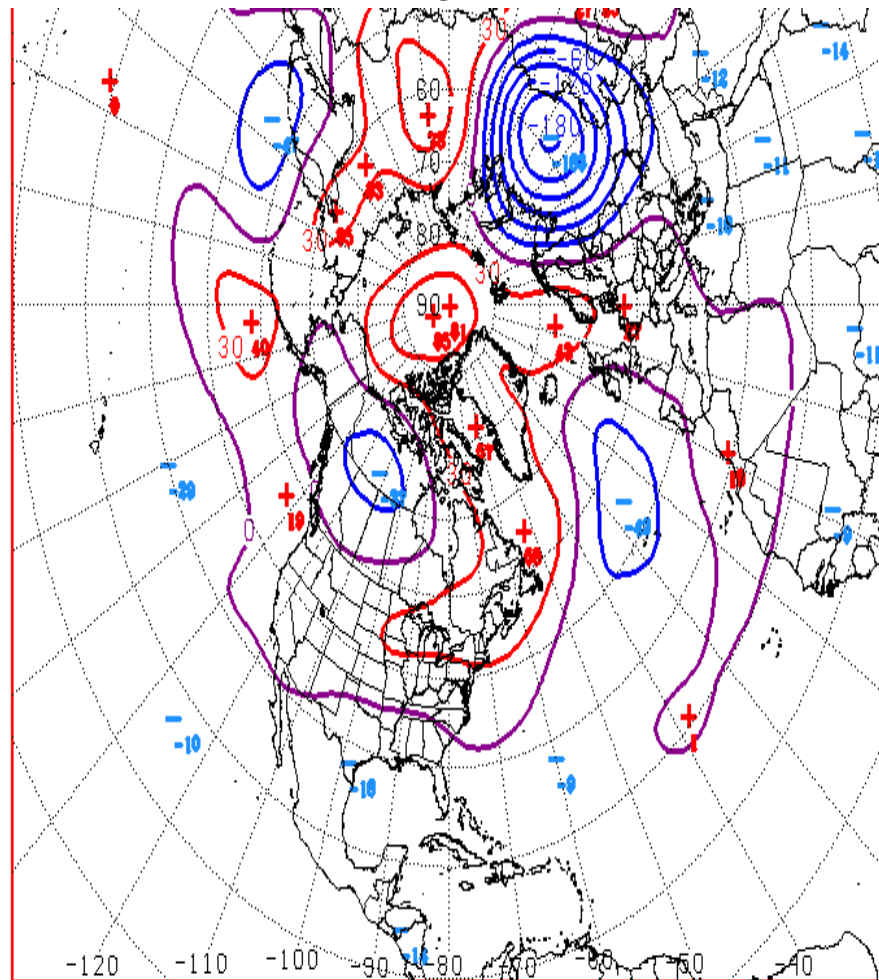
GFS Super-ensemble mean (Week-2)

500-hPa Heights



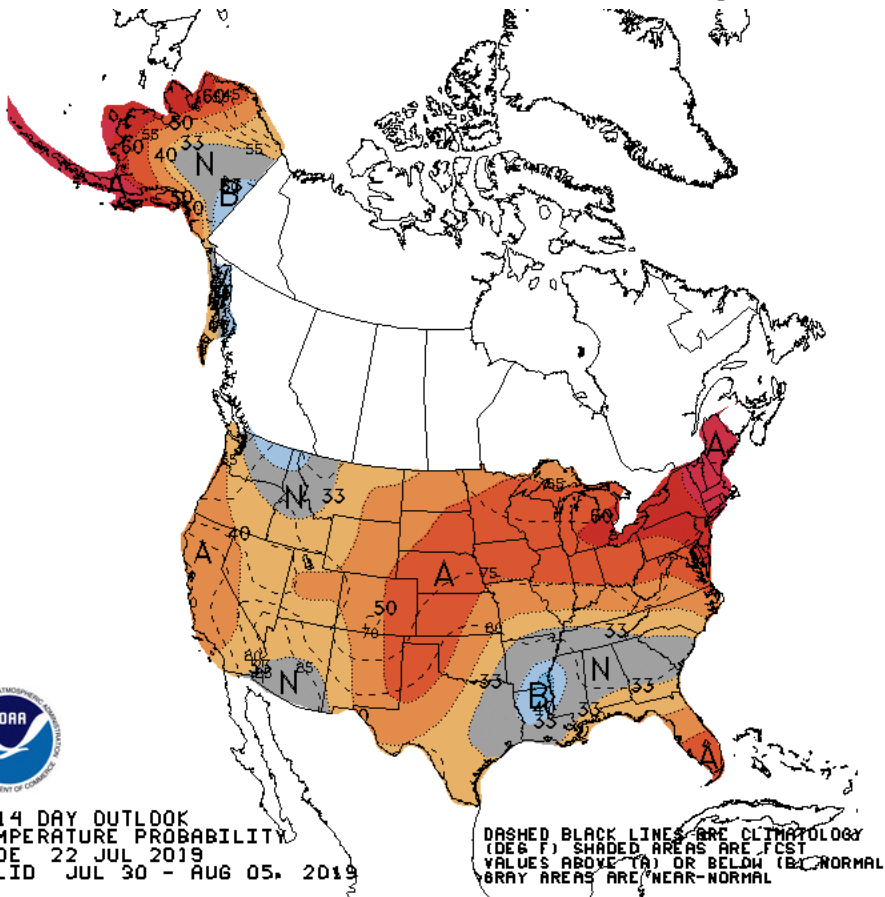
D+11 500 MB HEIGHTS FROM ALZ ENSM
CPC MAP MADE JUL 23 2019 1306 UTC CNTD AUG 03 2019

500-hPa Height Anomalies

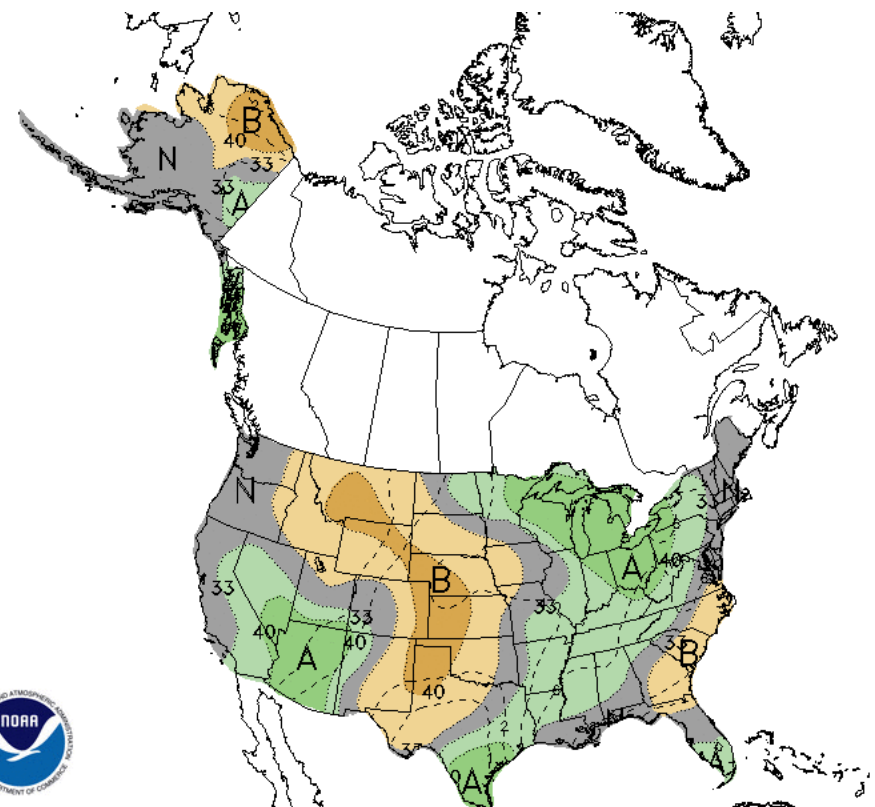
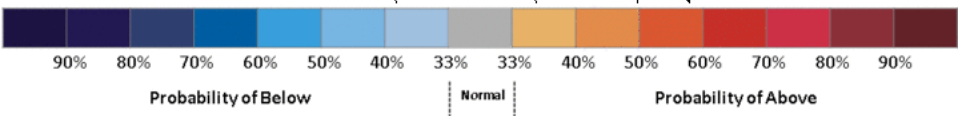


D+11 500 MB ANOMALIES FROM ALZ ENSM
CPC MAP MADE JUL 23 2019 1307 UTC CNTD AUG 03 2019

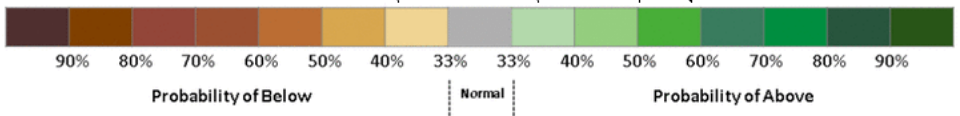
Week 2 – Temperature and Precipitation



8-14 DAY OUTLOOK
TEMPERATURE PROBABILITY
MADE 22 JUL 2019
VALID JUL 30 - AUG 05, 2019



8-14 DAY OUTLOOK
PRECIPITATION PROBABILITY
MADE 22 JUL 2019
VALID JUL 30 - AUG 05, 2019

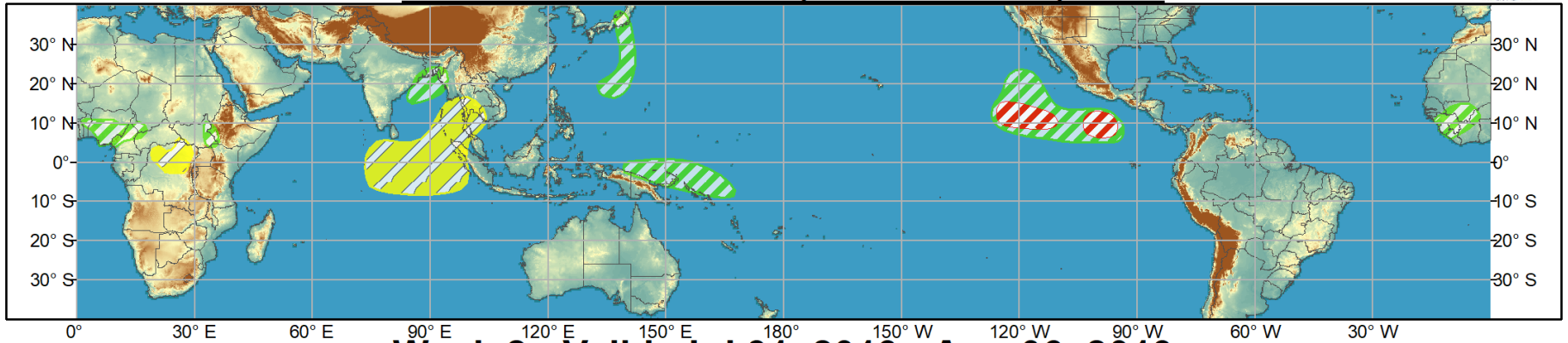




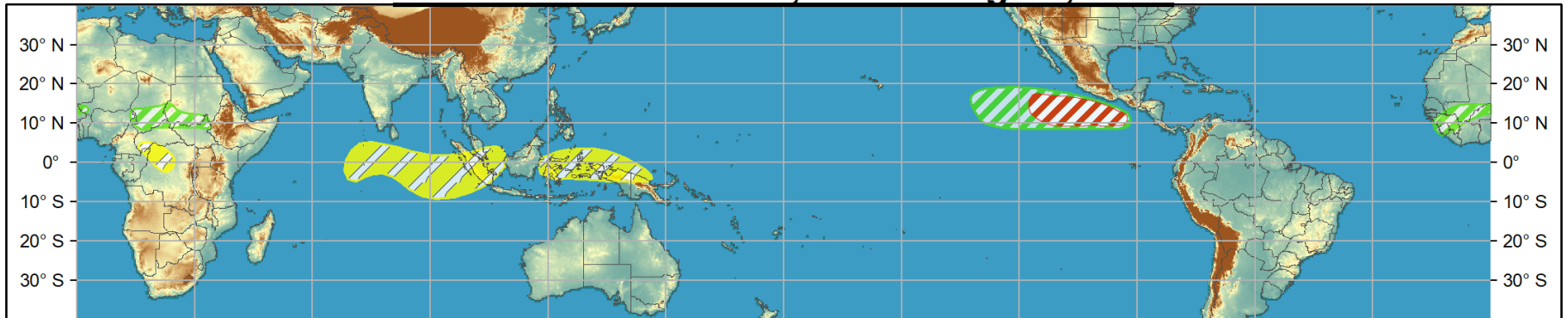
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