

Global Tropics Hazards And Benefits Outlook

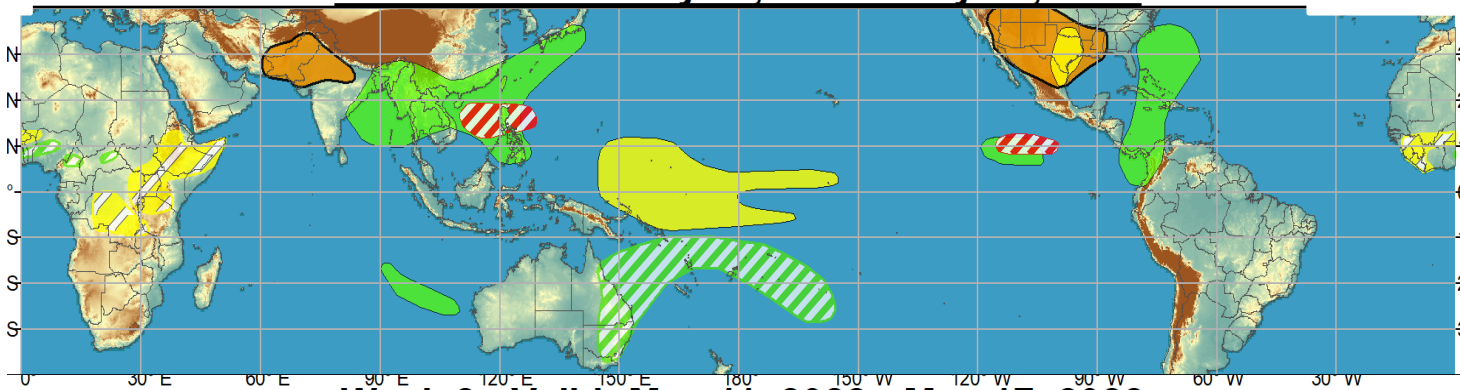
5/17/2022

Thomas Collow

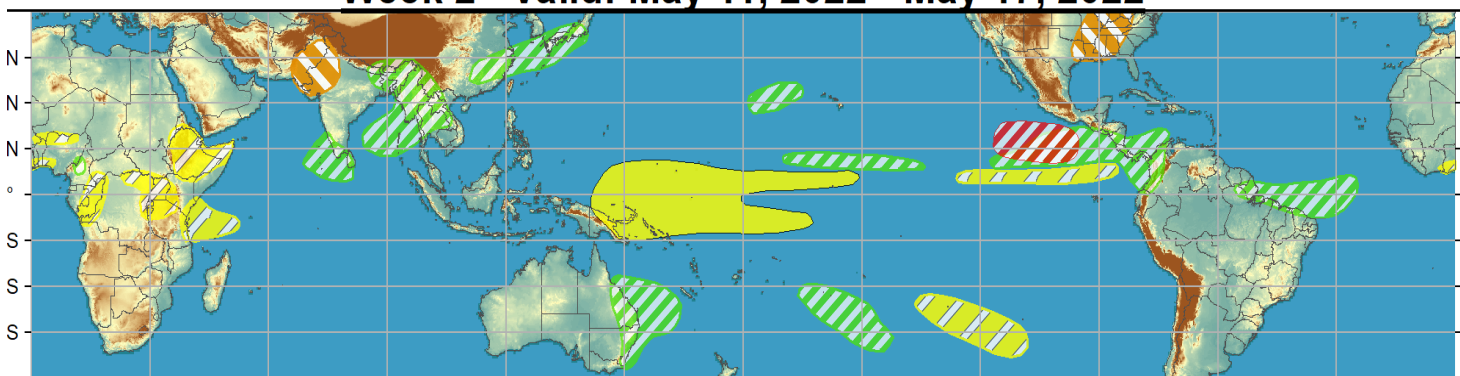
Outline

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

Week 1 - Valid: May 11, 2022 - May 17, 2022

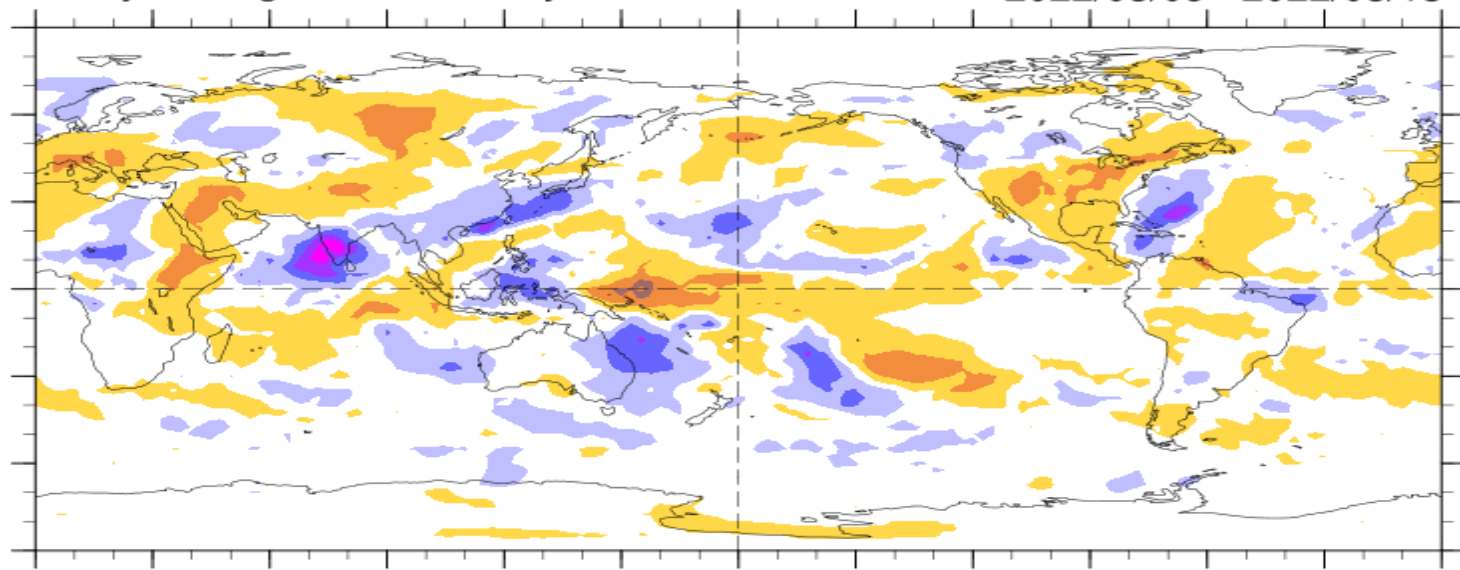


Week 2 - Valid: May 11, 2022 - May 17, 2022



7-Day Average OLR Anomaly

2022/05/09 - 2022/05/15



Outlook Review

No tropical cyclone formations in the past week

Cool shading
More clouds/rain

Warm shading
Less clouds/rain

Synopsis of Climate Modes

ENSO: (May 12, 2022 Update)

next update on Thursday, June 9th

- ENSO Alert System Status: [La Niña Advisory](#)
- Though La Niña is favored to continue, the odds for La Niña decrease into the late Northern Hemisphere summer (58% chance in August-October 2022) before slightly increasing through the Northern Hemisphere fall and early winter 2022 (61% chance).

MJO and other subseasonal tropical variability:

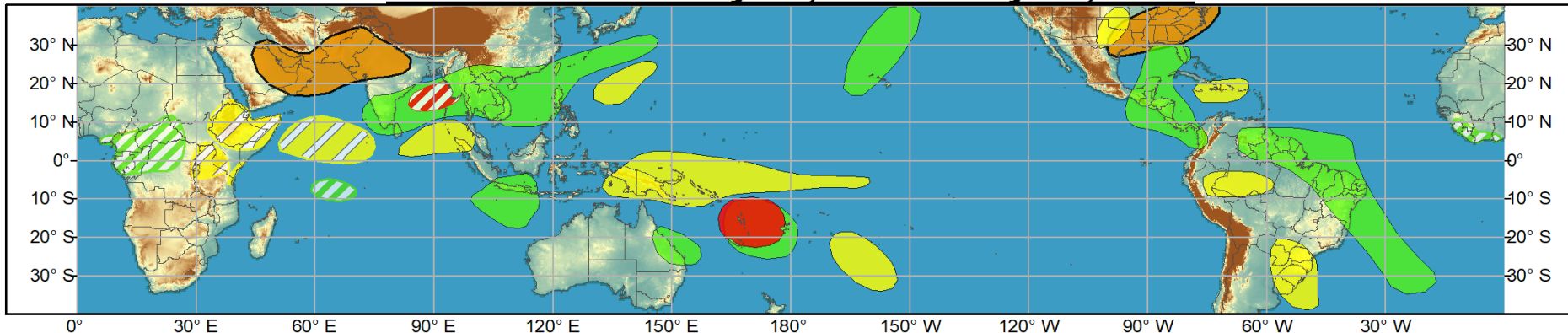
- During the past week, the amplitude of the RMM-based Madden Julian Oscillation (MJO) index has increased across the Maritime Continent and Western Pacific.
- This is more likely attributed to constructive interference between a convectively coupled Kelvin Wave and enhanced Rossby Wave activity in the region, rather than a canonical MJO.
- This Kelvin Wave is forecast to quickly propagate eastward during the next week, increasing the potential for pre-season TC development in the East Pacific, Gulf of Mexico, or the far western Caribbean, although uncertainty remains fairly high.



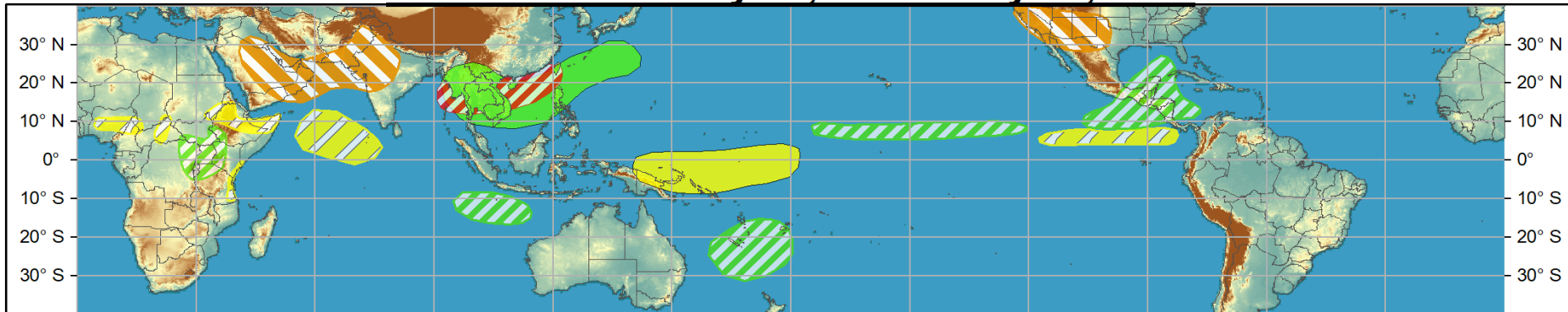
Global Tropics Hazards and Benefits Outlook - Climate Prediction Center



Week 1 - Valid: May 18, 2022 - May 24, 2022



Week 2 - Valid: May 25, 2022 - May 31, 2022



Produced: 05/17/2022

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.



IR Satellite & 200-hpa Velocity Potential Anomalies

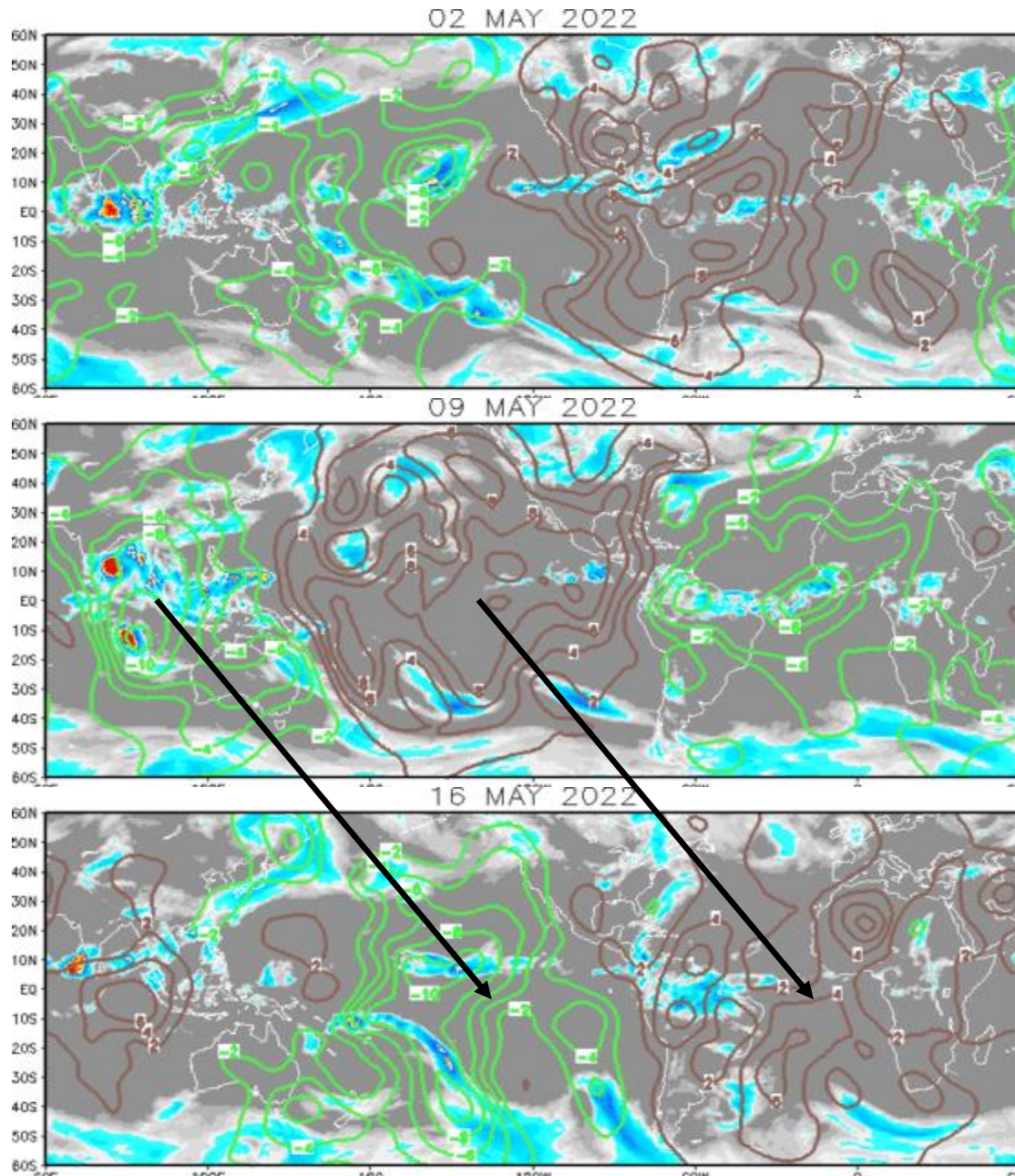
Green: Enhanced Divergence

Brown: Enhanced Convergence

Wave-1 asymmetry pattern observed in the upper-level spatial velocity potential field.

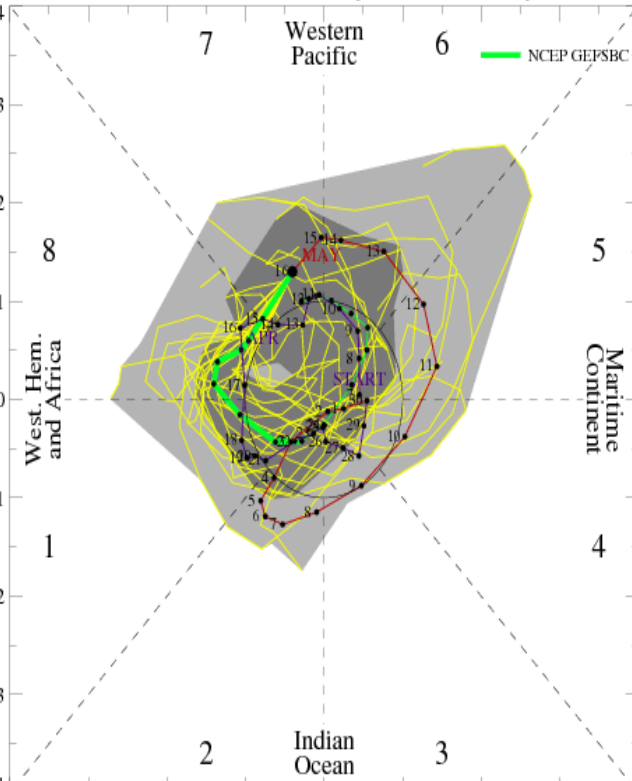
During early May, enhanced convection continued over the Indian Ocean and Maritime Continent, with suppressed convection downstream over much of the Pacific.

Convective envelope quickly propagates eastward, with enhanced convection shifting into the eastern and central Pacific.

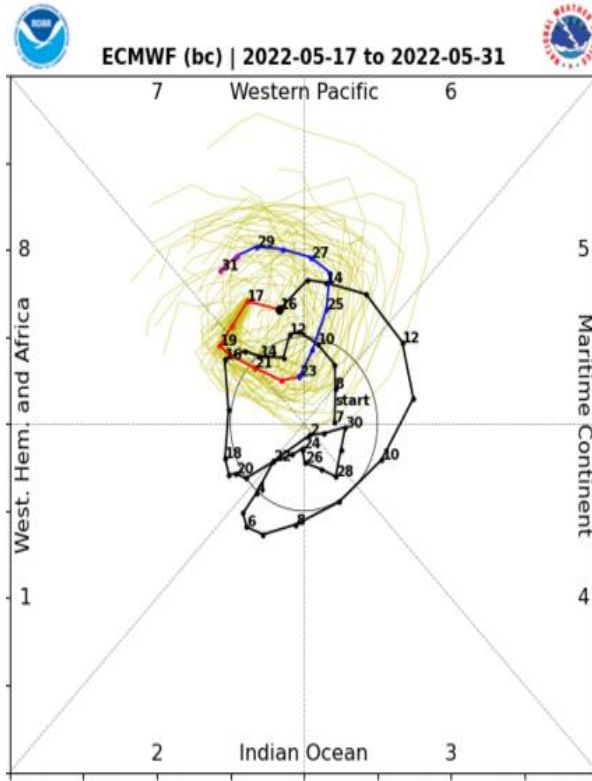


MJO Observation/Forecast

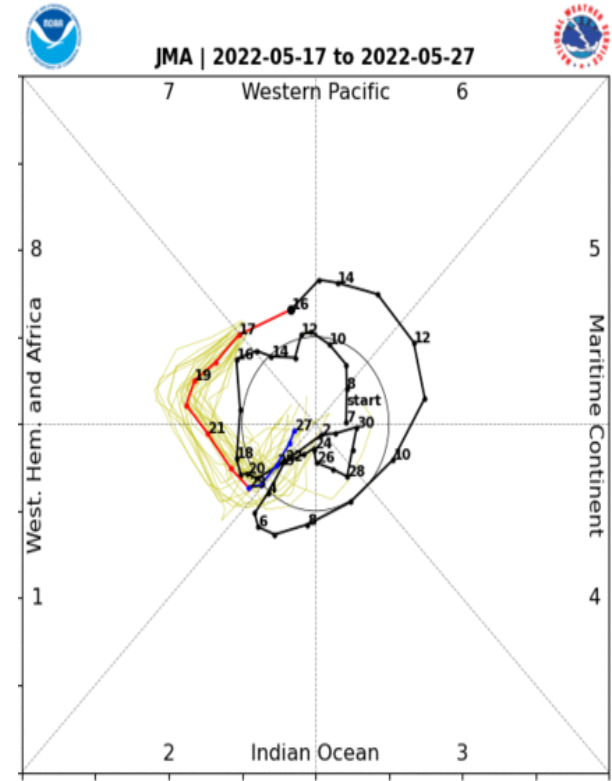
[RMM1, RMM2] forecast for May-17-2022 to May-31-2022



GEFS



ECMWF



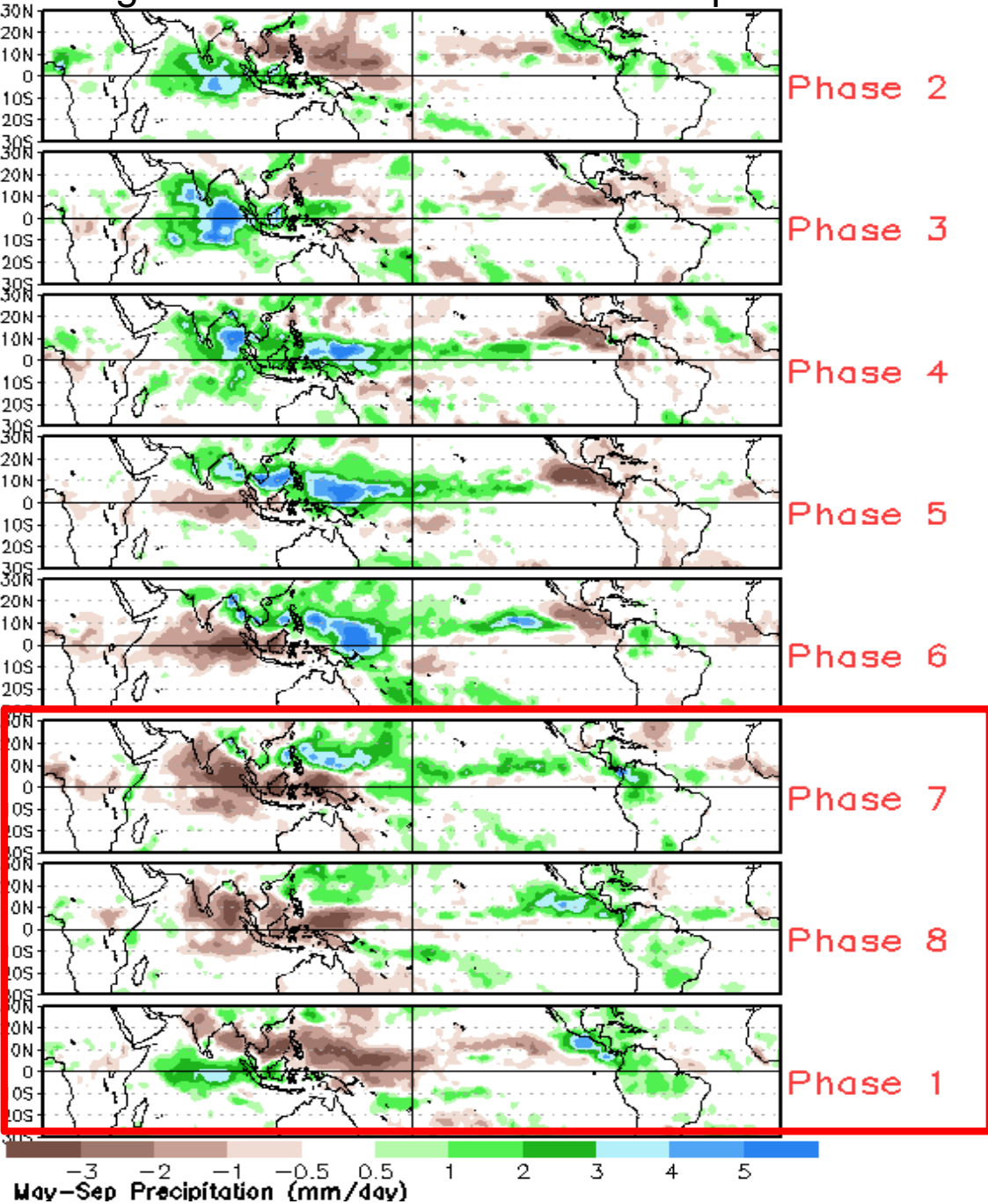
JMA

The GEFS depicts a fast eastward circumnavigation of the enhanced RMM-based signal during the next 2 weeks, consistent with a convectively coupled Kelvin wave.

The ECMWF ensembles depict a meandering signal across the western Pacific, with limited eastward propagation likely due to destructive interference with La Niña.

The JMA depicts some initial eastward propagation, but weakens the signal by week-2.

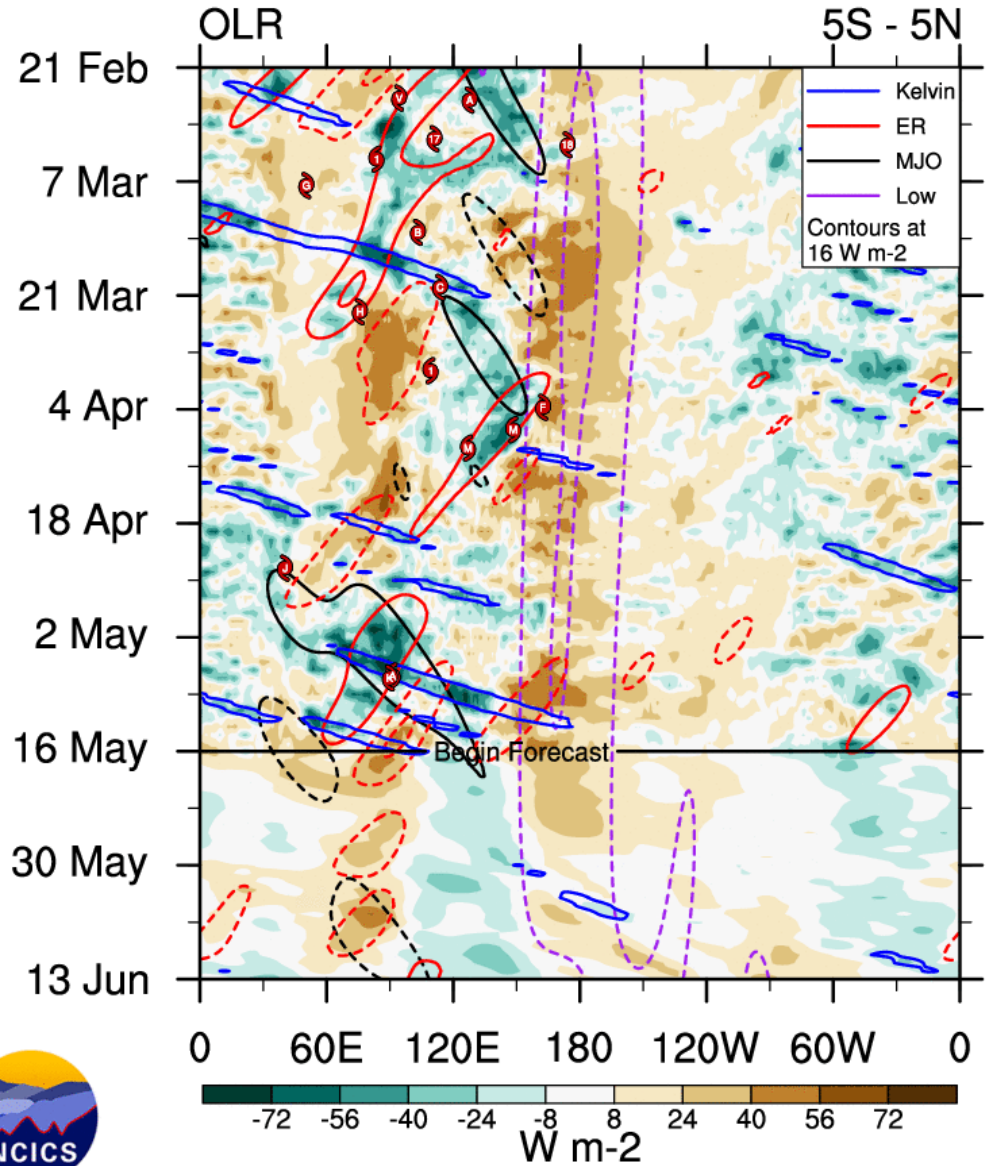
Average Conditions when the MJO is present



CAVEAT: These panels are representative of robust MJO events.

Constructive interference between **Kelvin** and **Rossby** wave activity led to enhanced convection and subsequent negative OLR anomalies across the Indian Ocean and Maritime Continent in early May.

Low frequency contours depict La Niña conditions.

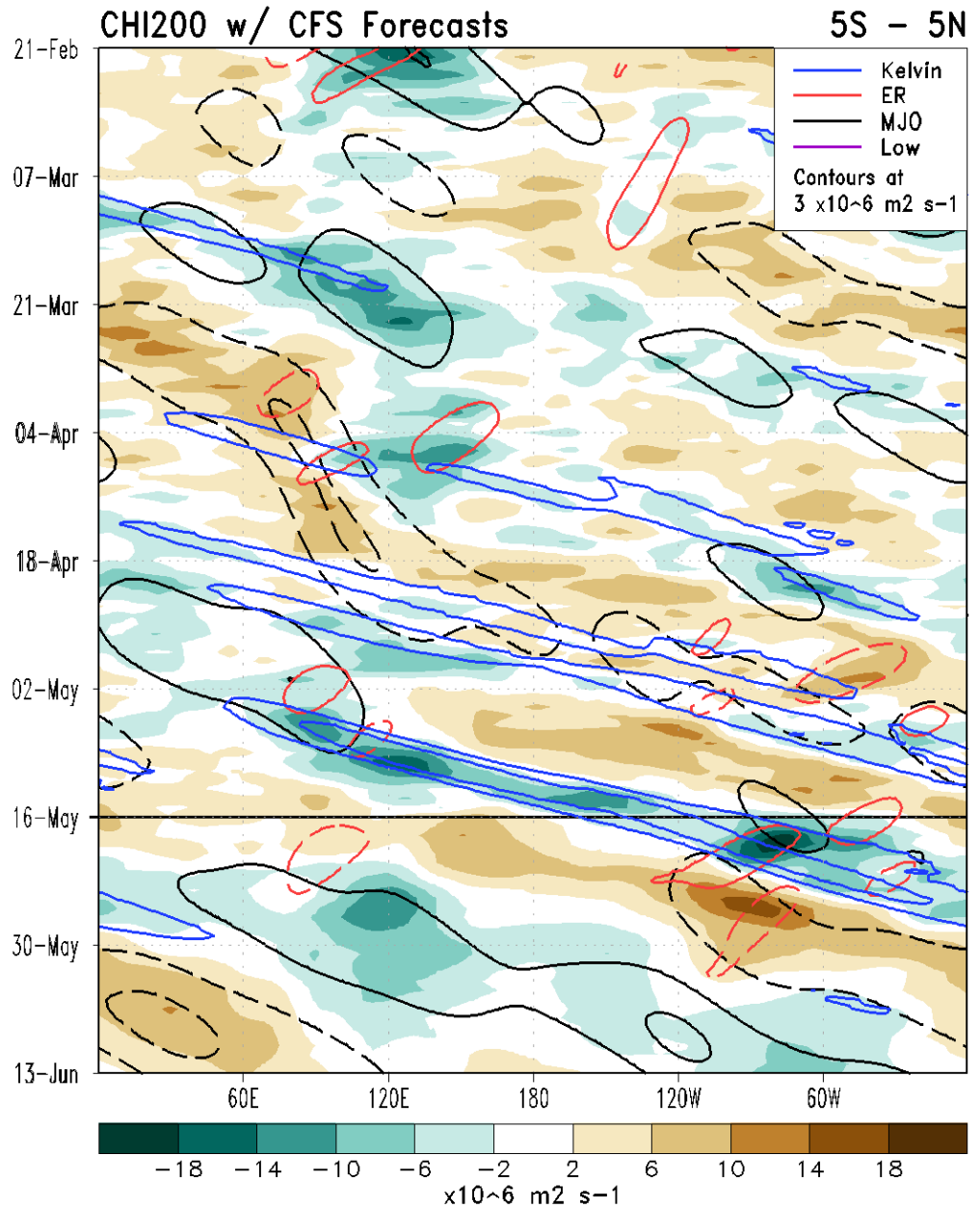


ncics.org/mjo

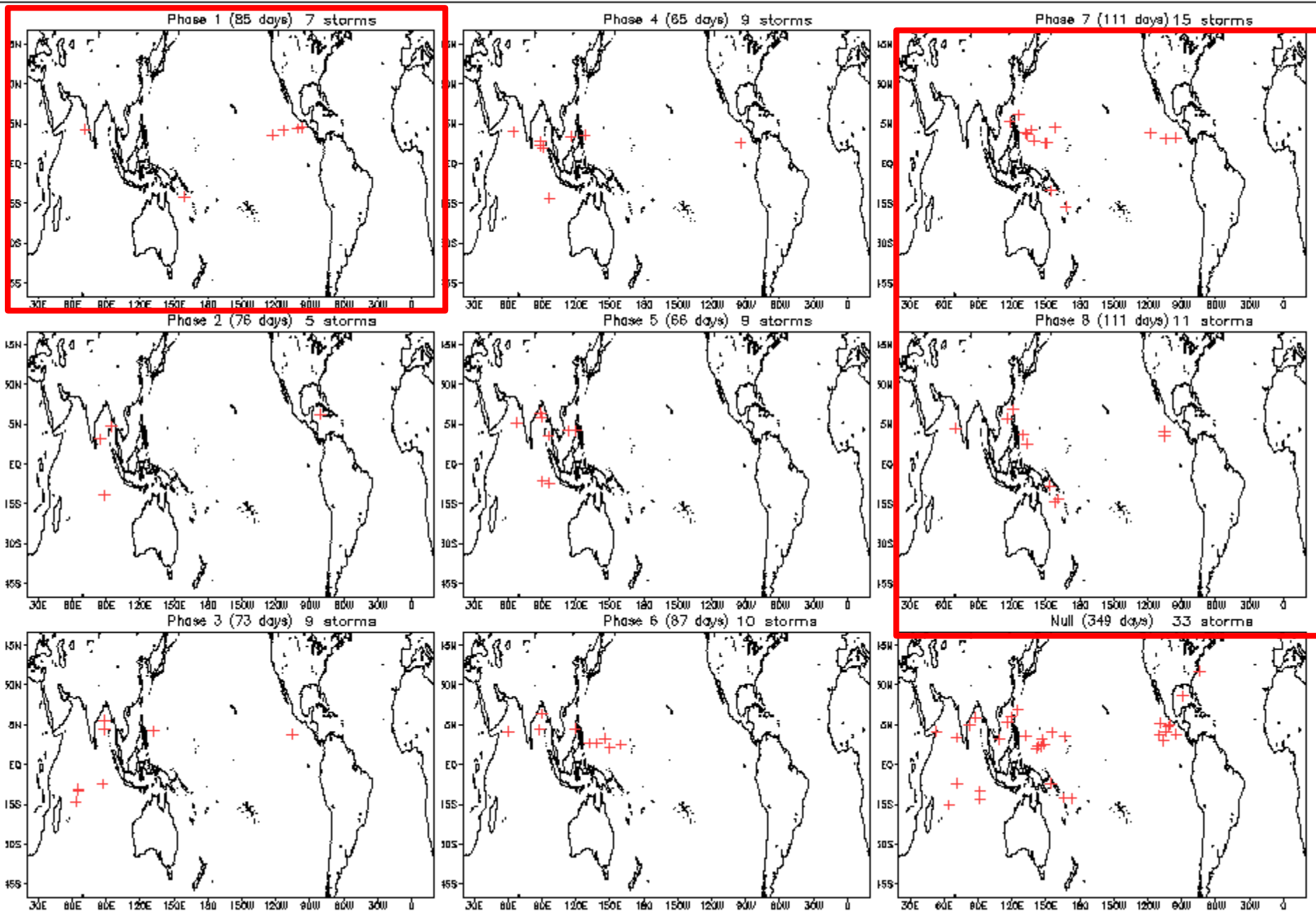
Tue 2022-05-17 15:10 UTC

Carl Schreck
carl_schreck@ncsu.edu

Using the upper-level velocity potential filtering, there is a large signal for a **Kelvin Wave** to circumnavigate the globe during the next 2 weeks.



May Tropical Storm Formation by MJO phase





Five-Day Graphical Tropical Weather Outlook

National Hurricane Center Miami, Florida



8:00 am EDT
Tue May 17 2022

100W 90W 80W 70W 60W 50W 40W 30W 20W

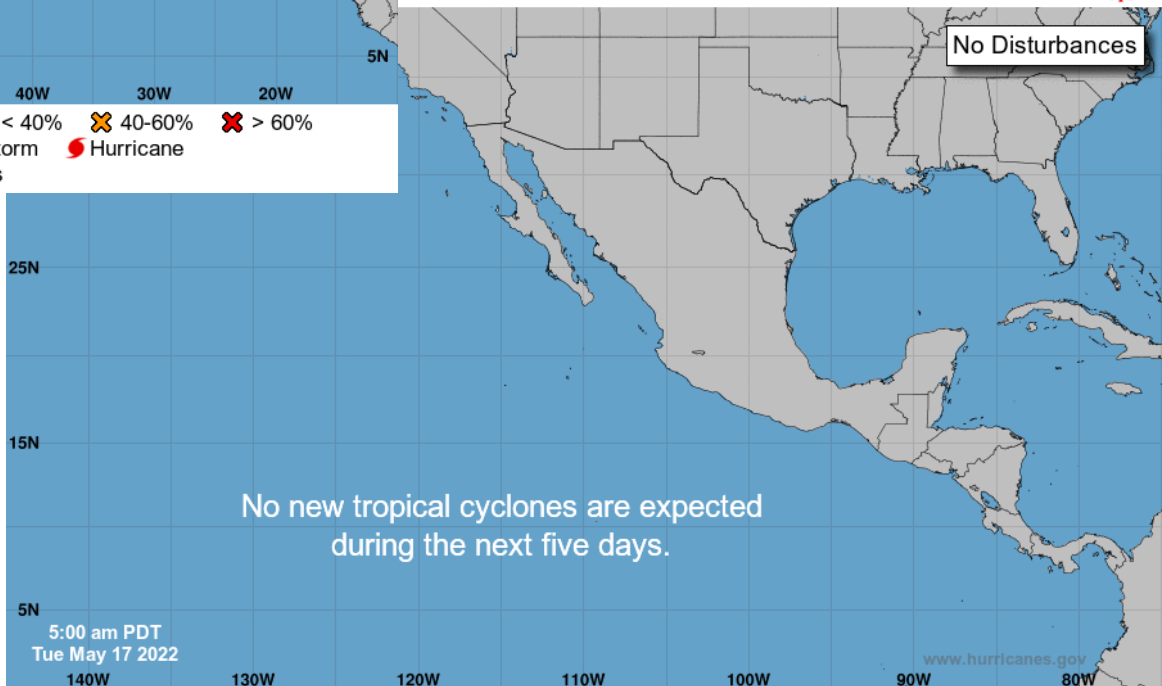
Current Disturbances and Five-Day Cyclone Formation Chance: < 40% 40-60% > 60%

Tropical or Sub-Tropical Cyclone: Depression Storm Hurricane

Post-Tropical Cyclone or Remnants

Graphical Tropical Weather Outlook

National Hurricane Center Miami, Florida



No Disturbances

5:00 am PDT
Tue May 17 2022

140W 130W 120W 110W 100W 90W 80W

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

Tropical or Sub-Tropical Cyclone: Depression Storm Hurricane

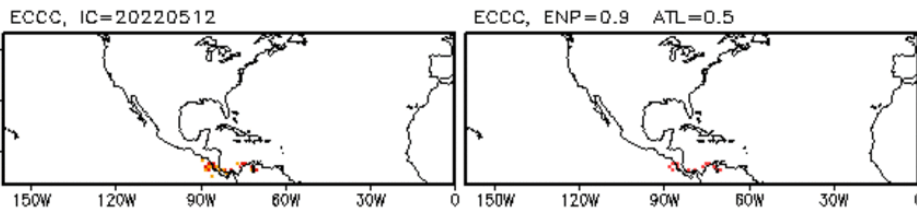
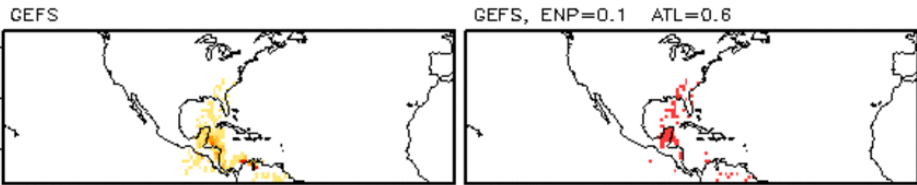
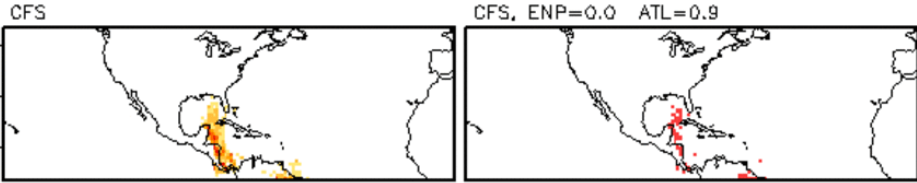
Post-Tropical Cyclone or Remnants

Storm Track Density Distribution, IC=20220516

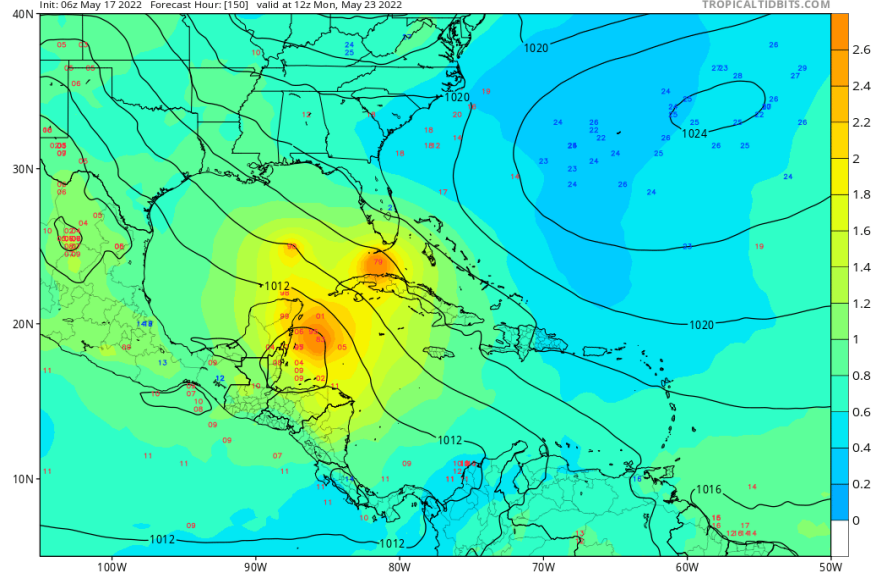
Week 1 Forecast: 0518-0524

TRACK DENSITY

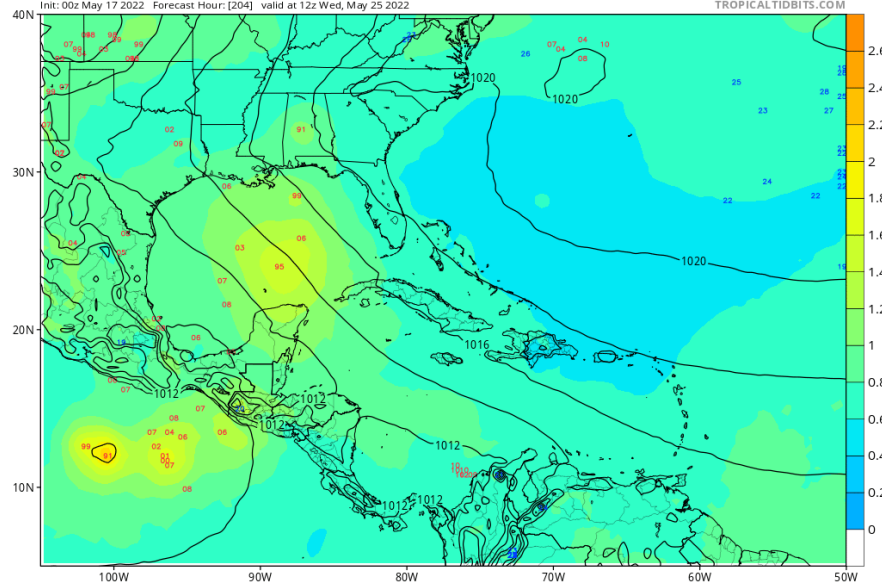
FILTERED



GEFS Mean MSLP (mb), Ensemble Member Pressure Centers (Lows: red | Highs: blue), & Normalized Spread (σ)

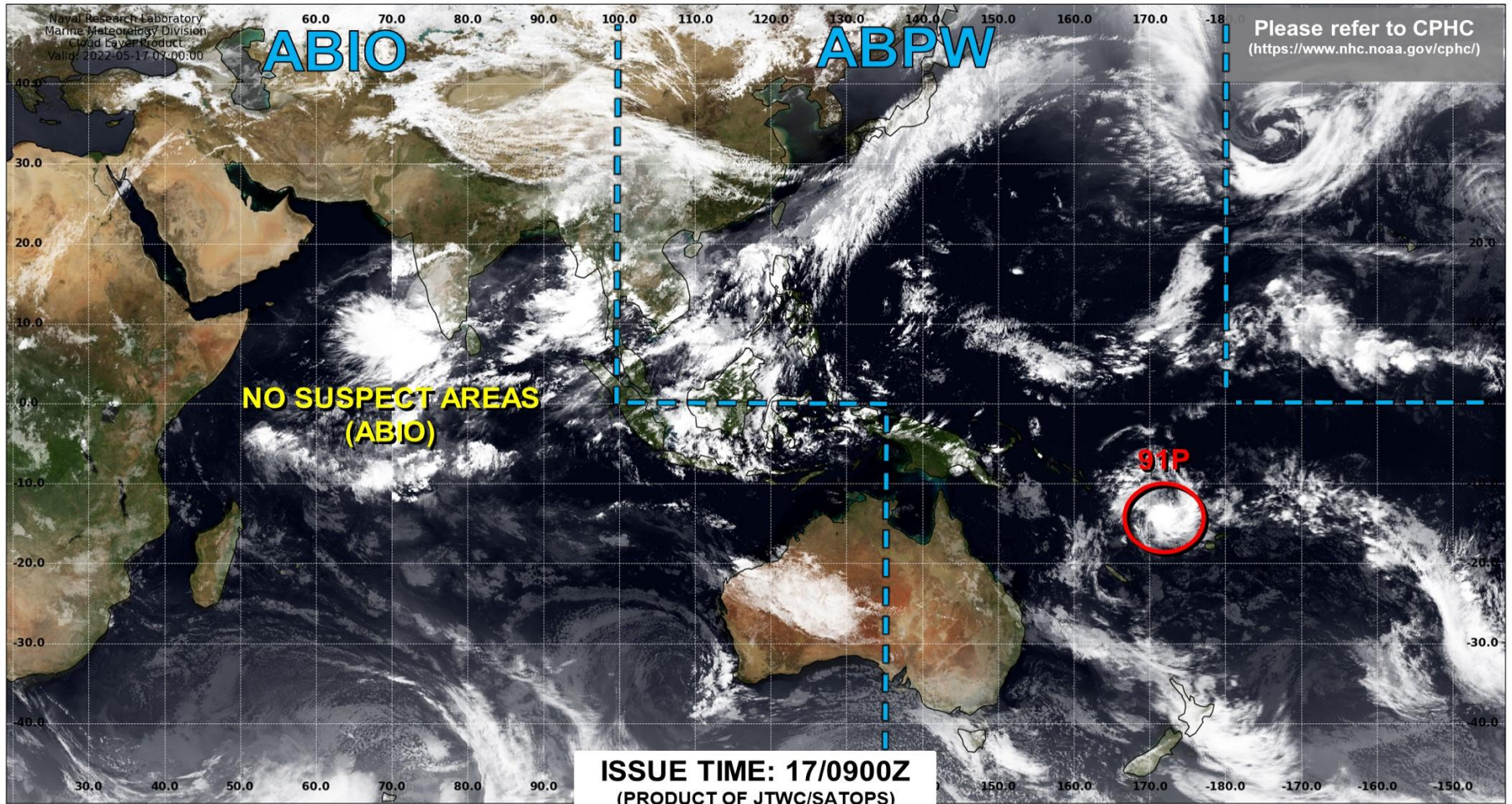







EPS Mean MSLP (mb), Ensemble Member Pressure Centers (Lows: red | Highs: blue), & Normalized Spread (σ)





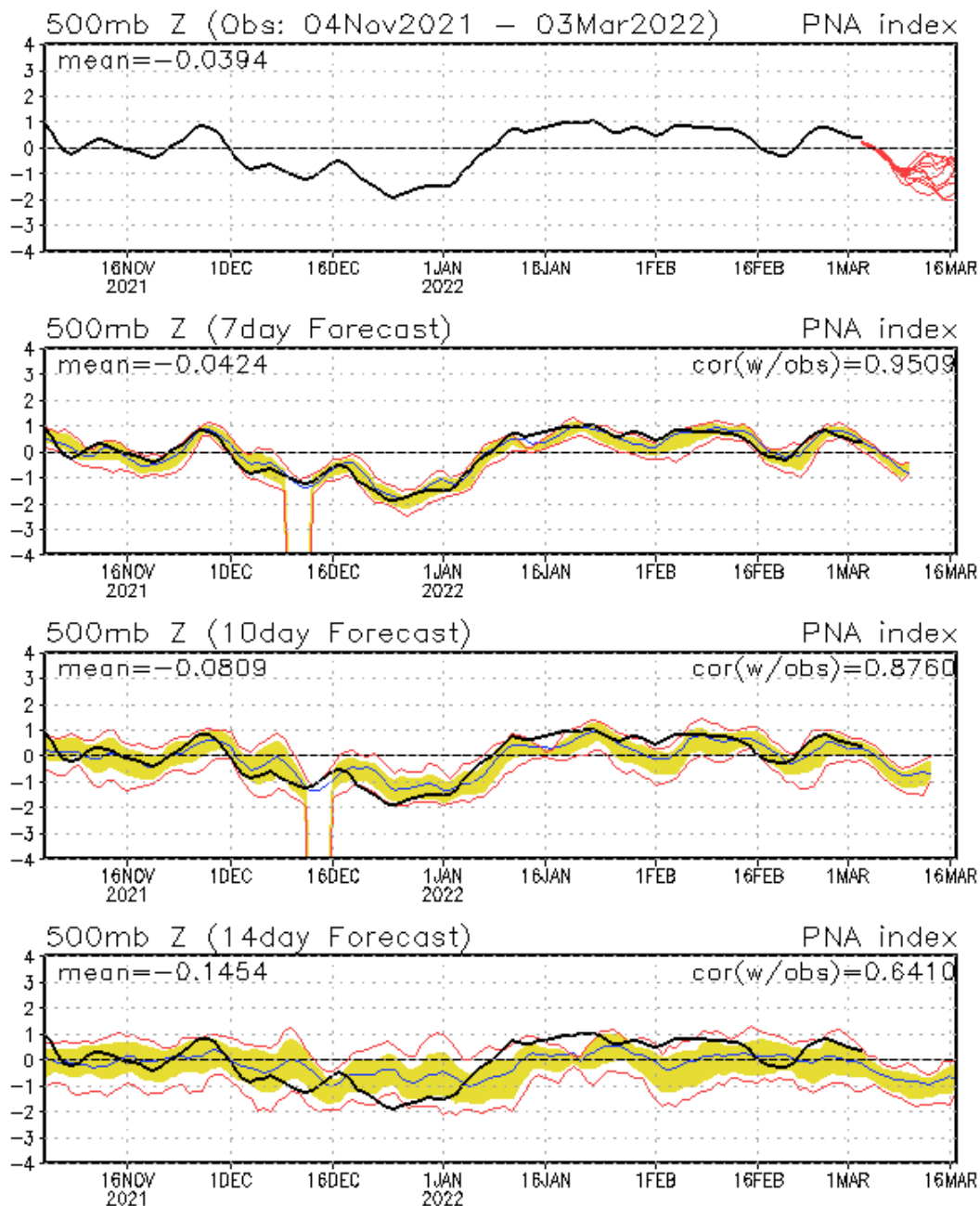
JOINT TYPHOON WARNING CENTER



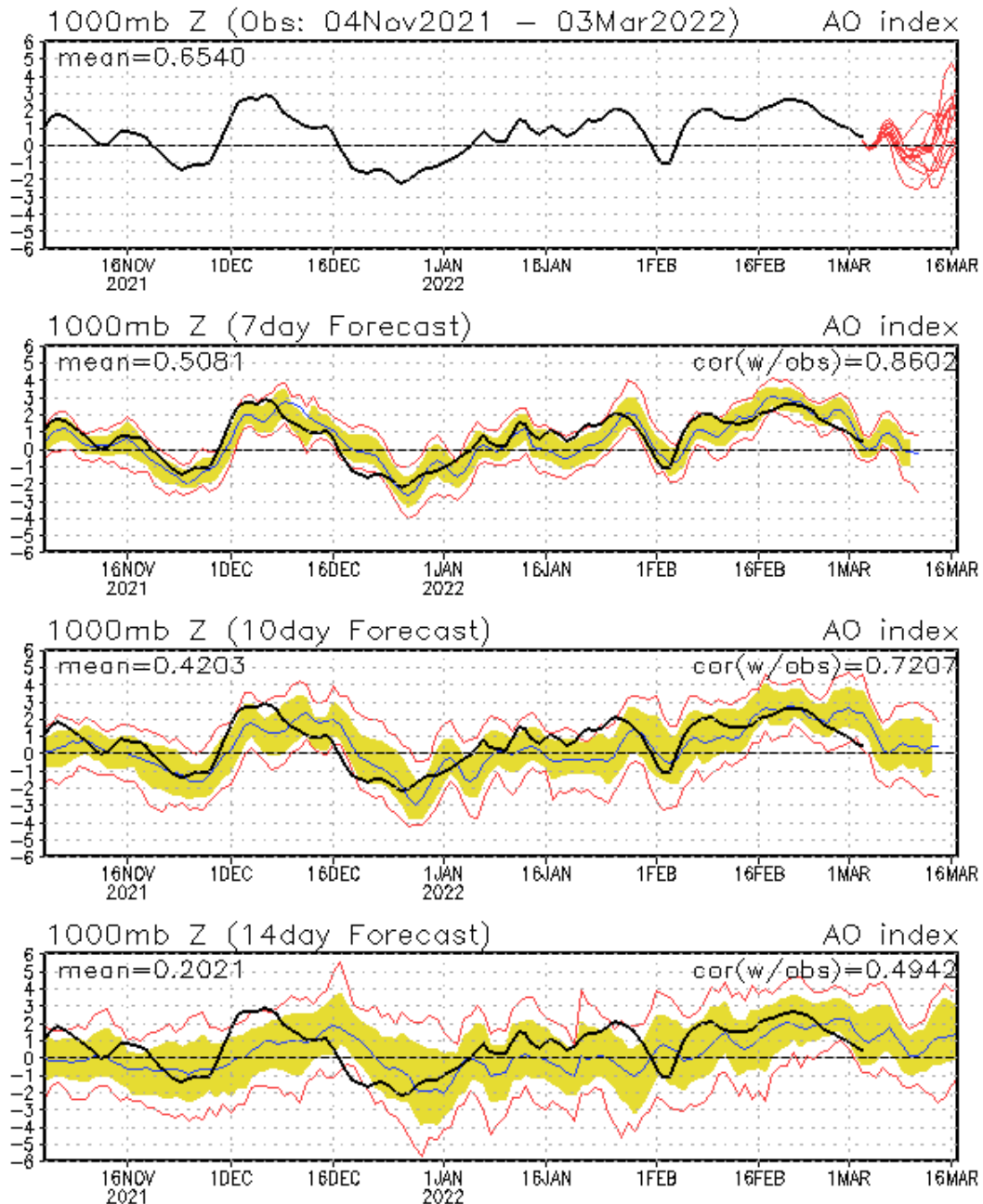
 <p>LOW</p>	 <p>MEDIUM</p>	 <p>HIGH</p>	 <p>SUB TROPICAL</p>	
<p>TC development unlikely within 24 hours</p>	<p>TC development likely, but expected to occur beyond 24 hours</p>	<p>TC development likely within 24 hours (Reference TCFA)</p>	<p>Monitoring for potential transition to TC. Invest label color denotes tropical transition probability</p>	<p>Tropical Cyclone (Reference Warning)</p>

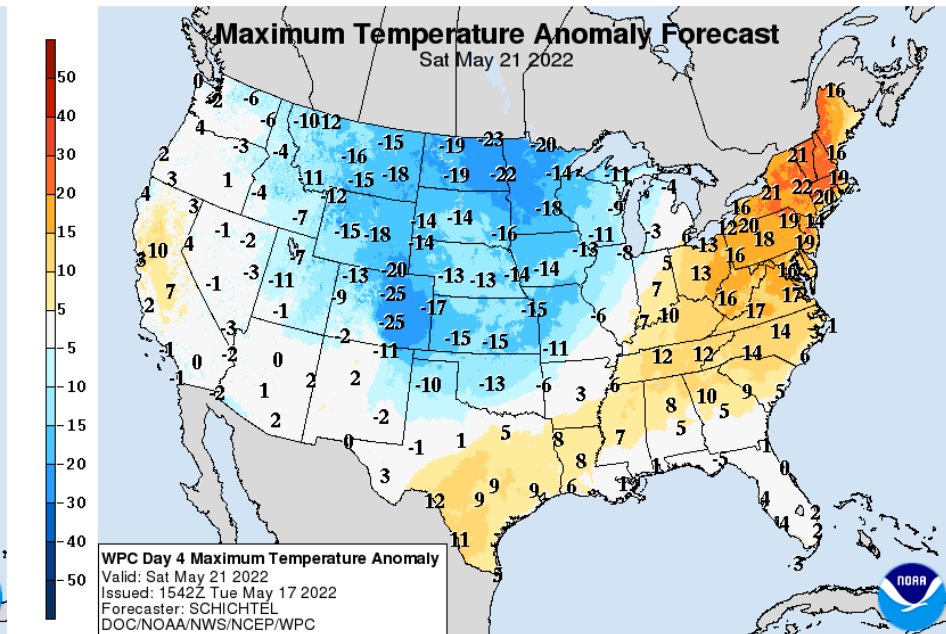
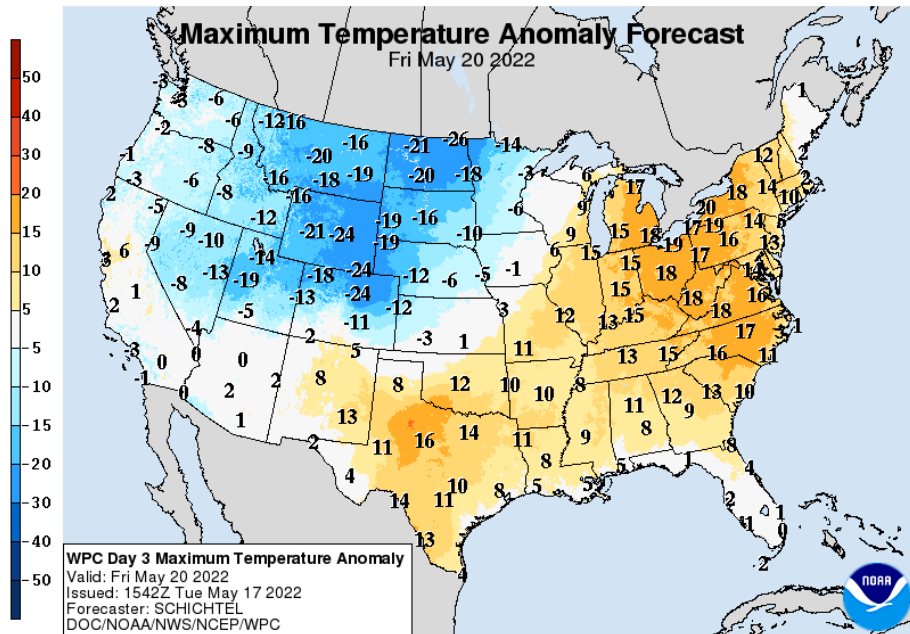
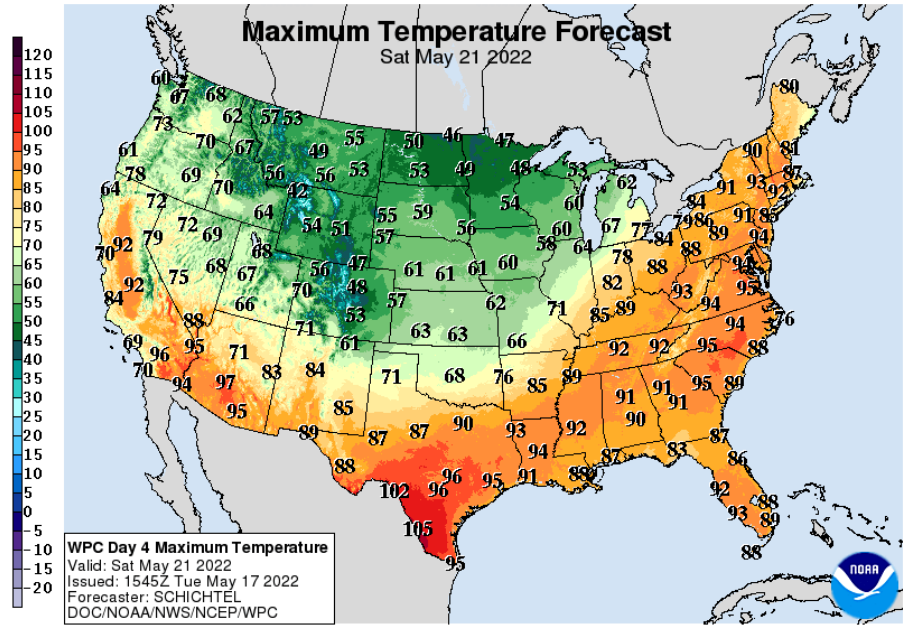
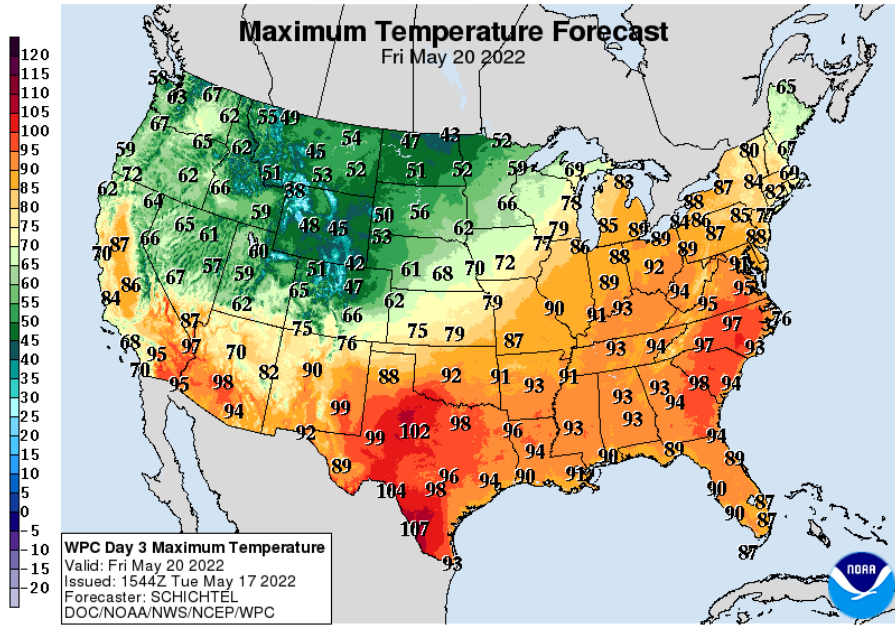
Connections to U.S. Impacts

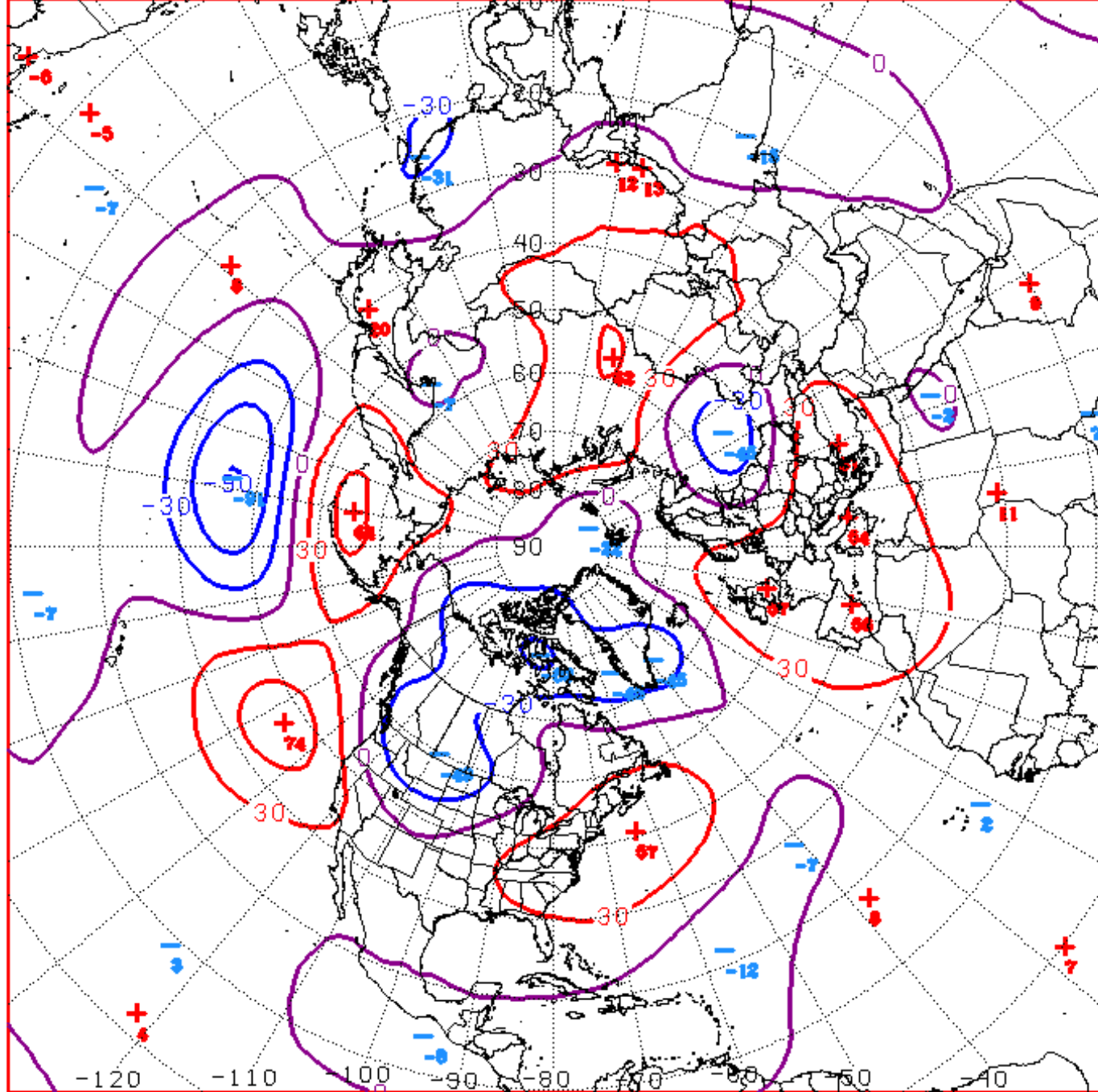
PNA: Observed & ENSM forecasts



AO: Observed & ENSM forecasts







D+11 500 MB ANOMALIES FROM ALZ ENSM
CPC MAP MADE MAY 17 2022 1350 UTC CNTD MAY 28 2022

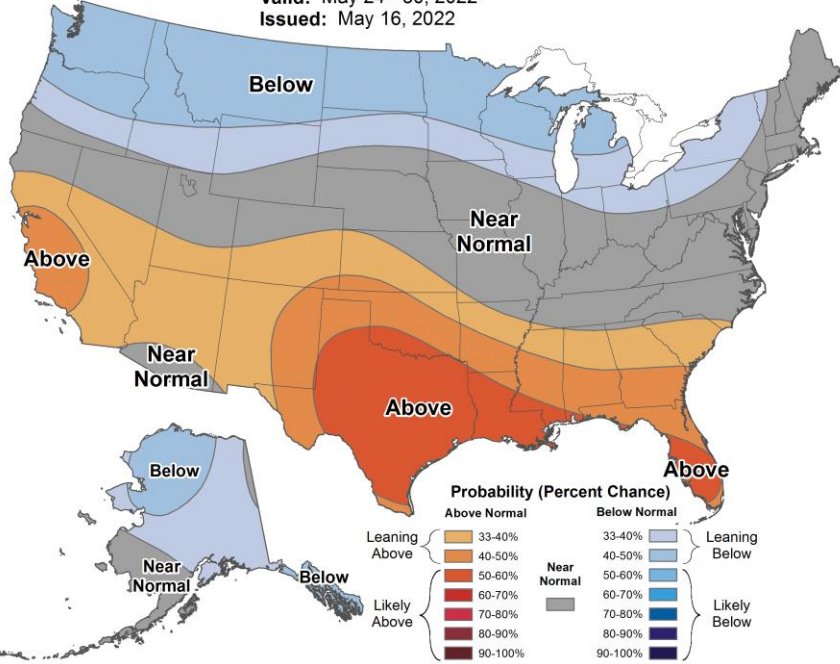
Week 2 – Temperature and Precipitation



8-14 Day Temperature Outlook



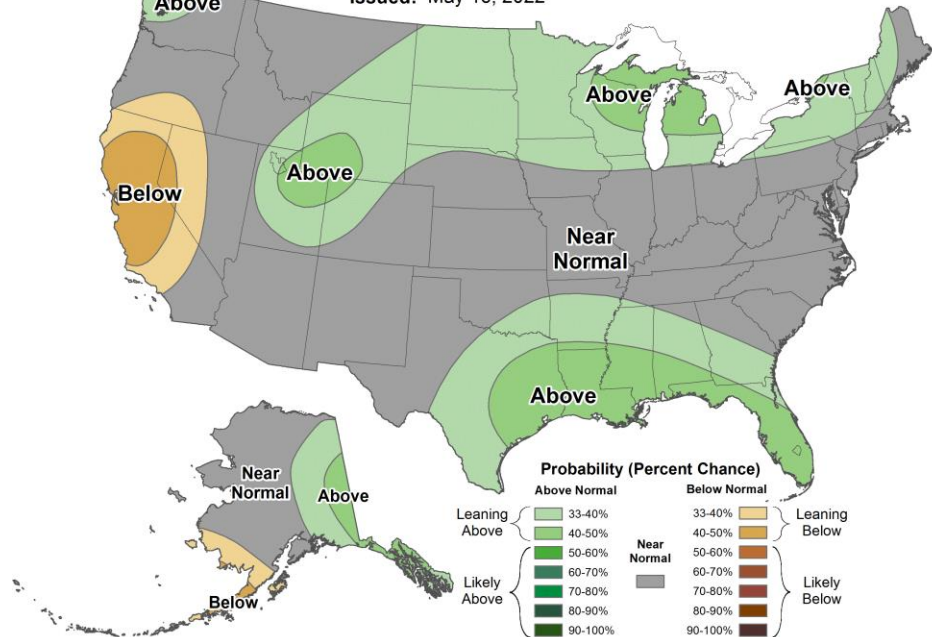
Valid: May 24 - 30, 2022
Issued: May 16, 2022



8-14 Day Precipitation Outlook



Valid: May 24 - 30, 2022
Issued: May 16, 2022



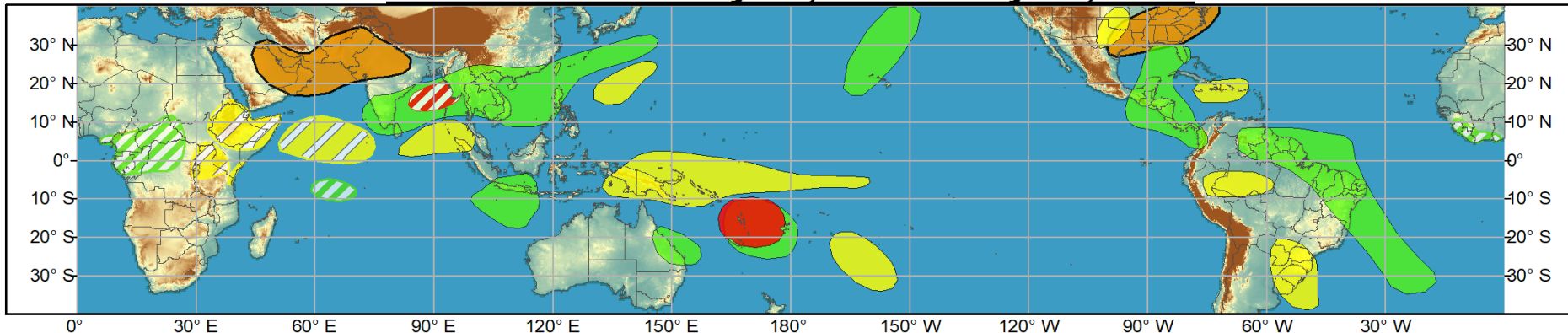
Since we are in an amplified, stable pattern today's outlooks are likely to be similar.



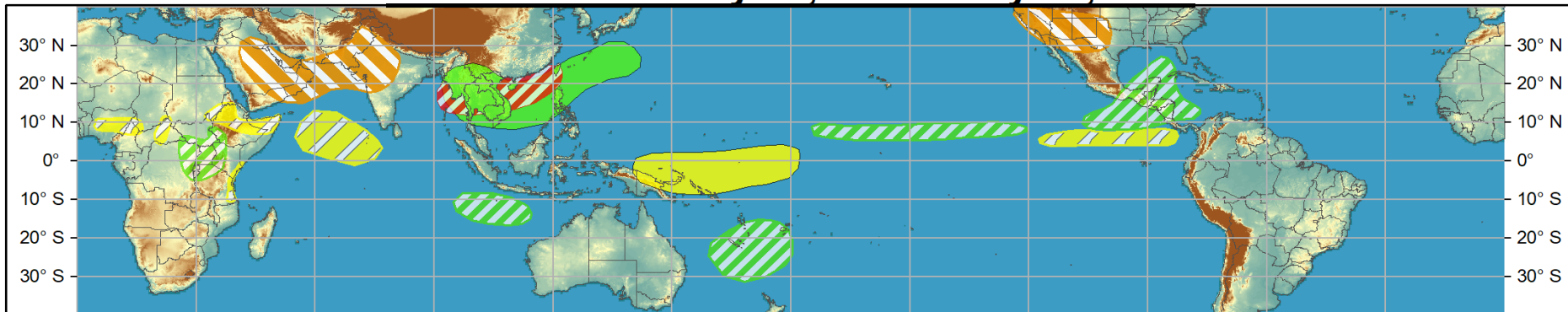
Global Tropics Hazards and Benefits Outlook - Climate Prediction Center



Week 1 - Valid: May 18, 2022 - May 24, 2022



Week 2 - Valid: May 25, 2022 - May 31, 2022



Produced: 05/17/2022

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.

