

Global Tropics Hazards And Benefits Outlook

6/7/2022

Thomas Collow

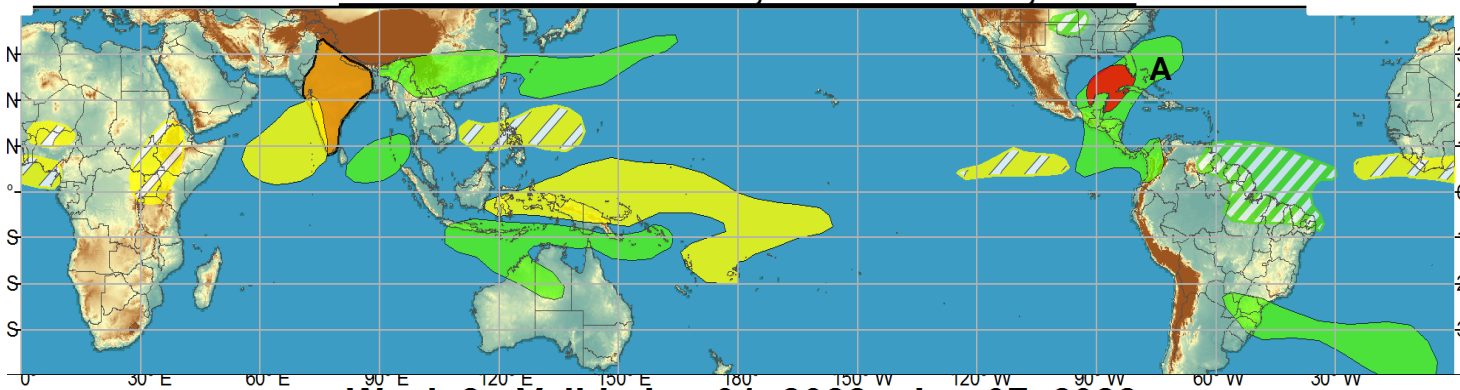
Outline

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

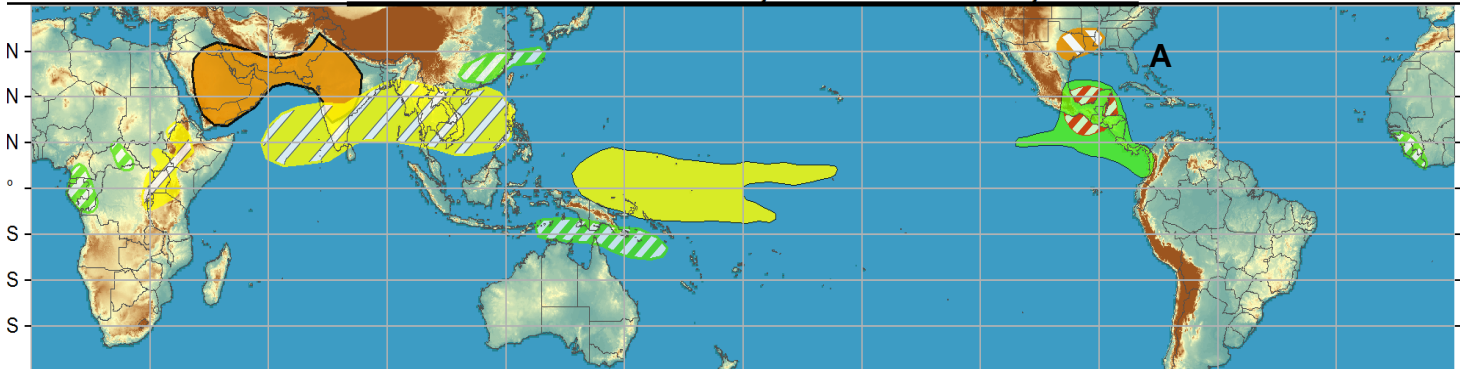
Outlook Review

A = Tropical Storm
Alex (6/5)

Week 1 - Valid: Jun 01, 2022 - Jun 07, 2022



Week 2 - Valid: Jun 01, 2022 - Jun 07, 2022

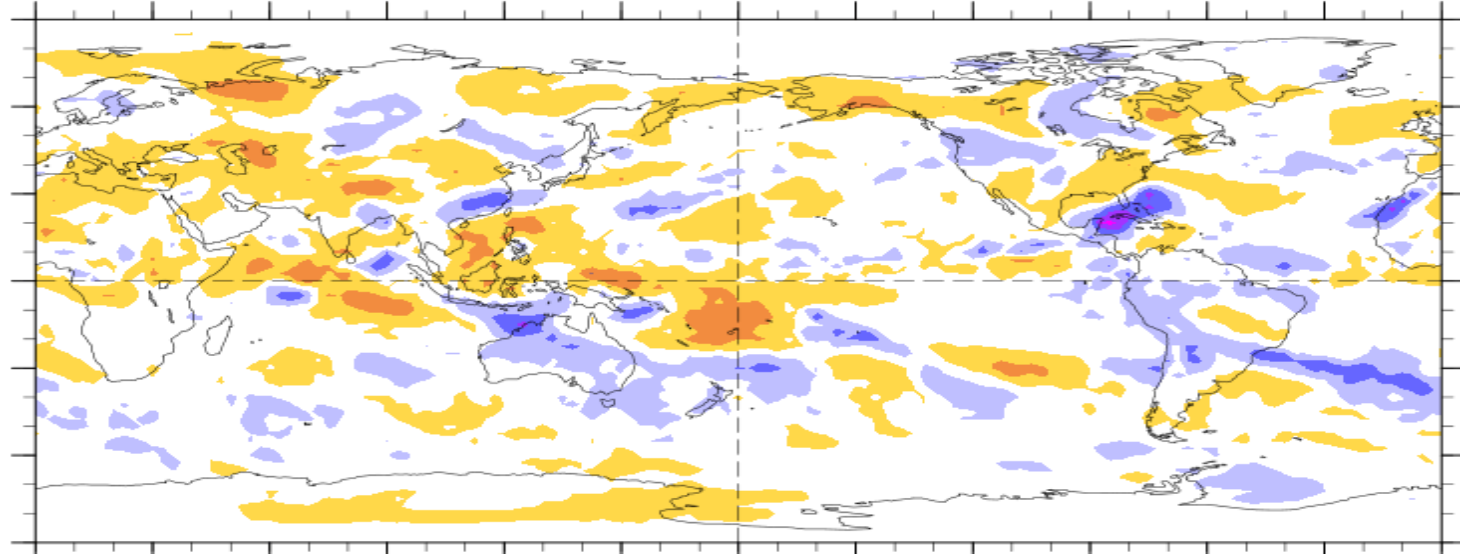


7-Day Average OLR Anomaly

2022/05/30 - 2022/06/05

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:

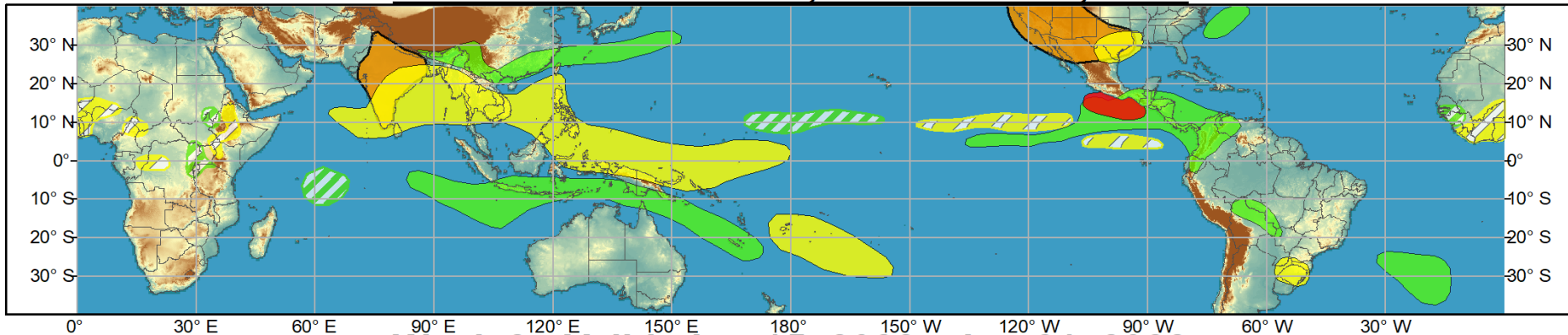
- Fast moving Kelvin Wave activity has been the dominant signal across the equatorial regions during the past month, which has projected onto the RMM-based MJO index.
- Following a complete circumnavigation of the globe, the strongest convective enhancement currently resides over the Atlantic.
- Dynamical models generally indicate a somewhat slower and weakening signal during the next week, perhaps meandering over the Atlantic or Eastern Pacific.
- The convective pattern remains favorable for additional tropical cyclone development in the Eastern Pacific later this week, and perhaps over the northwest Caribbean and southern Gulf of Mexico during week-2.



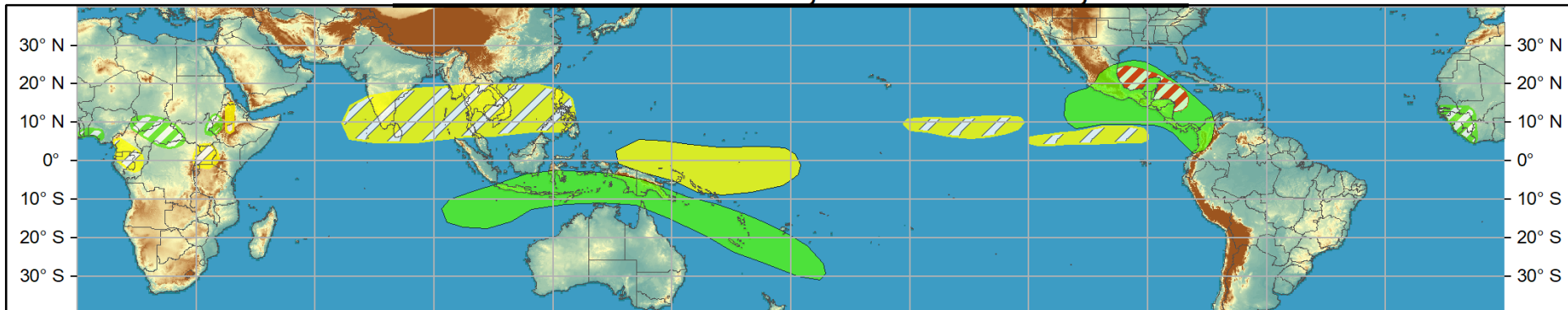
Global Tropics Hazards and Benefits Outlook - Climate Prediction Center



Week 1 - Valid: Jun 08, 2022 - Jun 14, 2022













Week 2 - Valid: Jun 15, 2022 - Jun 21, 2022



Produced: 06/07/2022

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.
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IR Satellite & 200-hpa Velocity Potential Anomalies

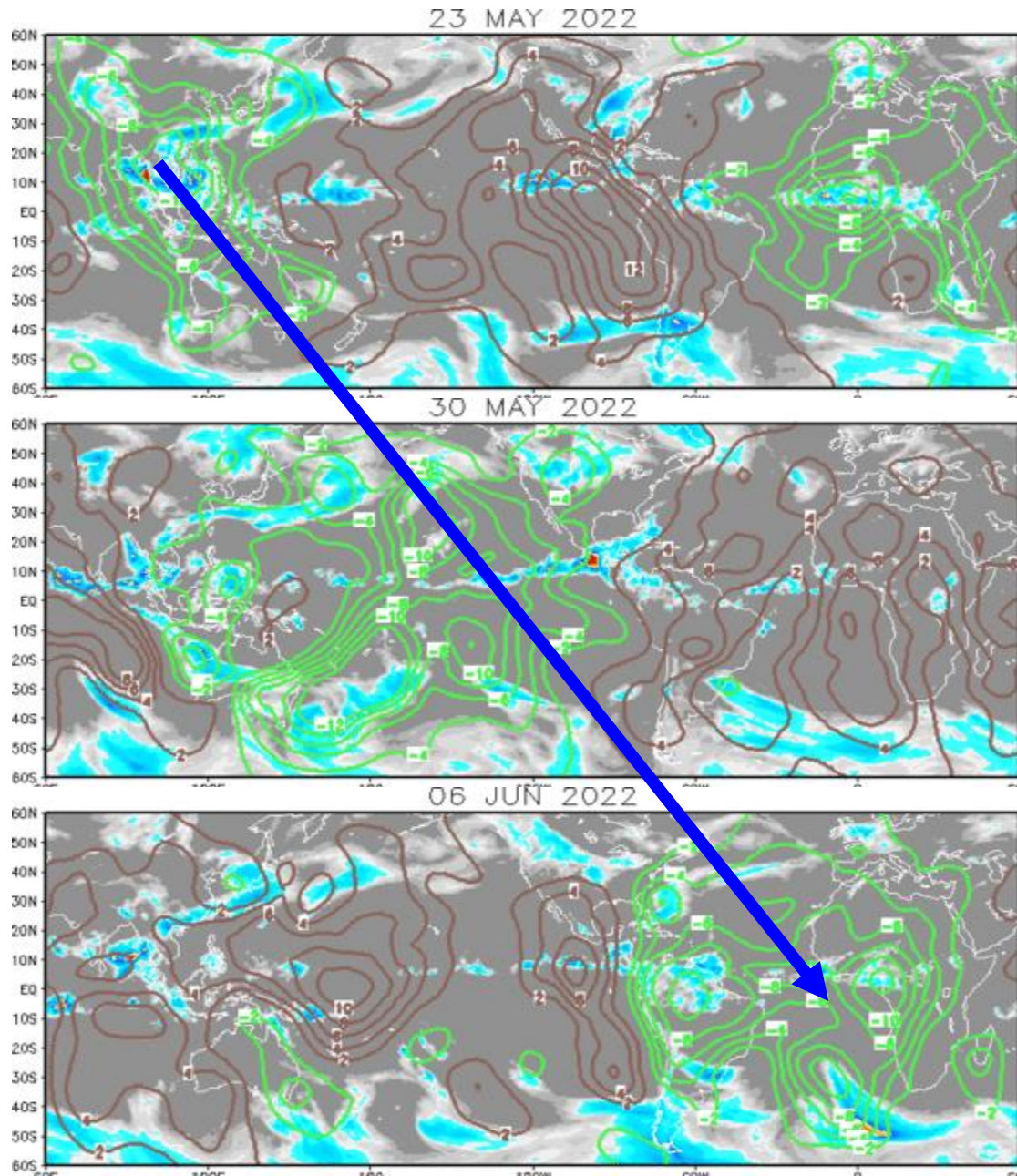
Green: Enhanced Divergence

Brown: Enhanced Convergence

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

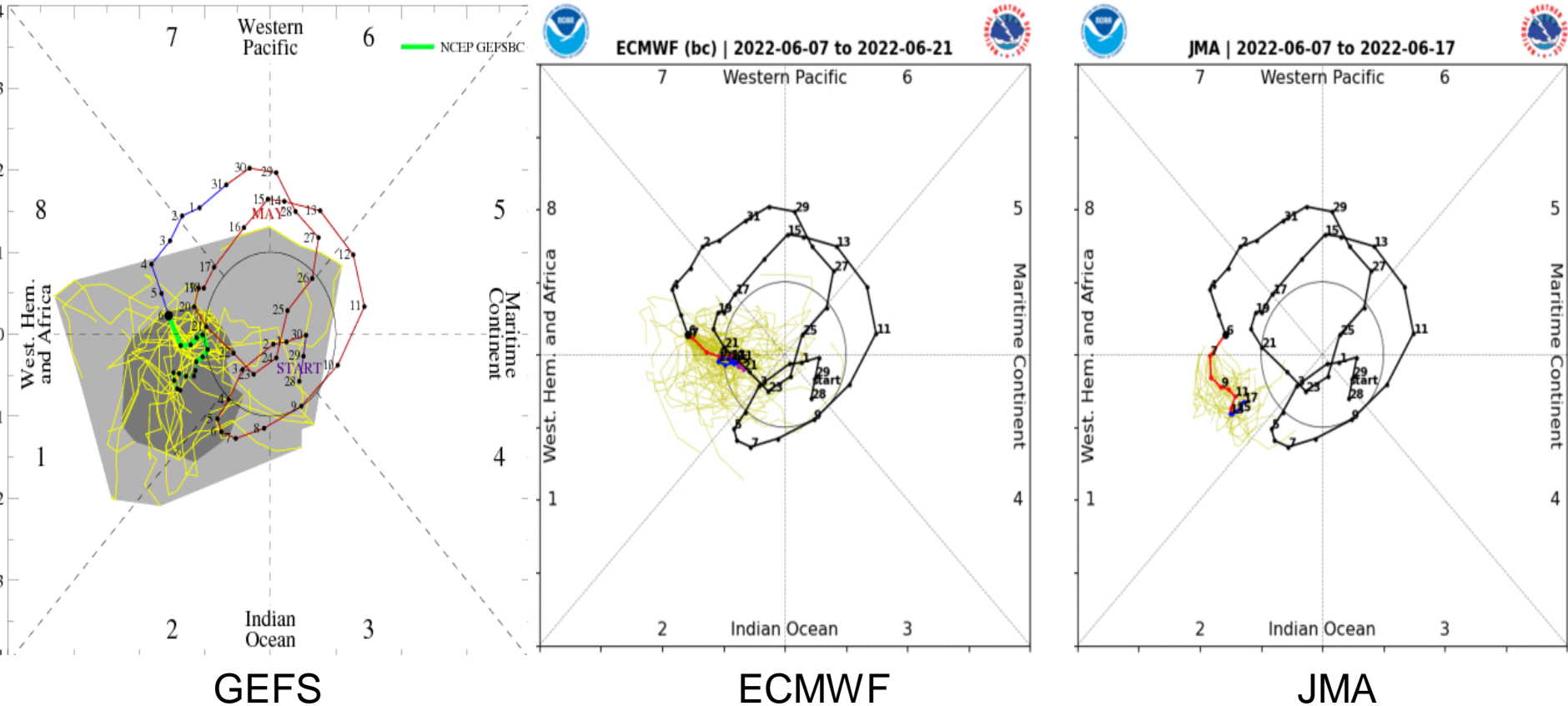
Within a week, enhanced convection quickly shifted from Asia and the Maritime Continent to the Pacific, indicative of a Kelvin Wave.

Enhanced convection is now observed across the Atlantic and extending into Africa, with suppressed convection over Asia and much of the Pacific.



MJO Observation/Forecast

[RMM1, RMM2] forecast for Jun-07-2022 to Jun-21-2022

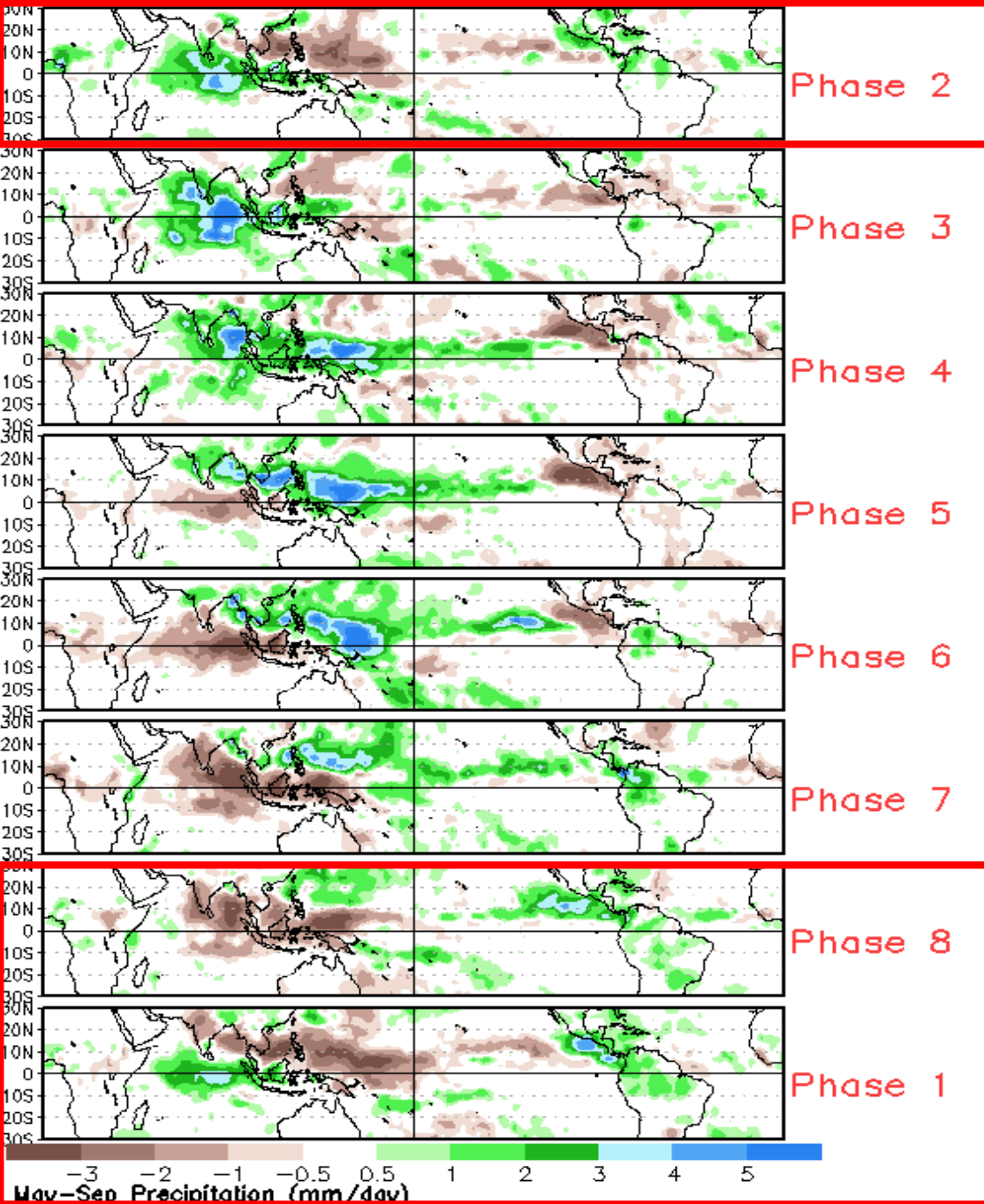


The GEFS and ECMWF ensembles both weaken the RMM-based MJO signal during the next week, with some meandering of the signal across the Atlantic and Eastern Pacific.

The GEFS indicates a slow eastward propagation beginning during week-2.

The JMA continues to propagate the convective signal more to the east during week-1 relative to the other guidance.

Average Conditions when the MJO is present

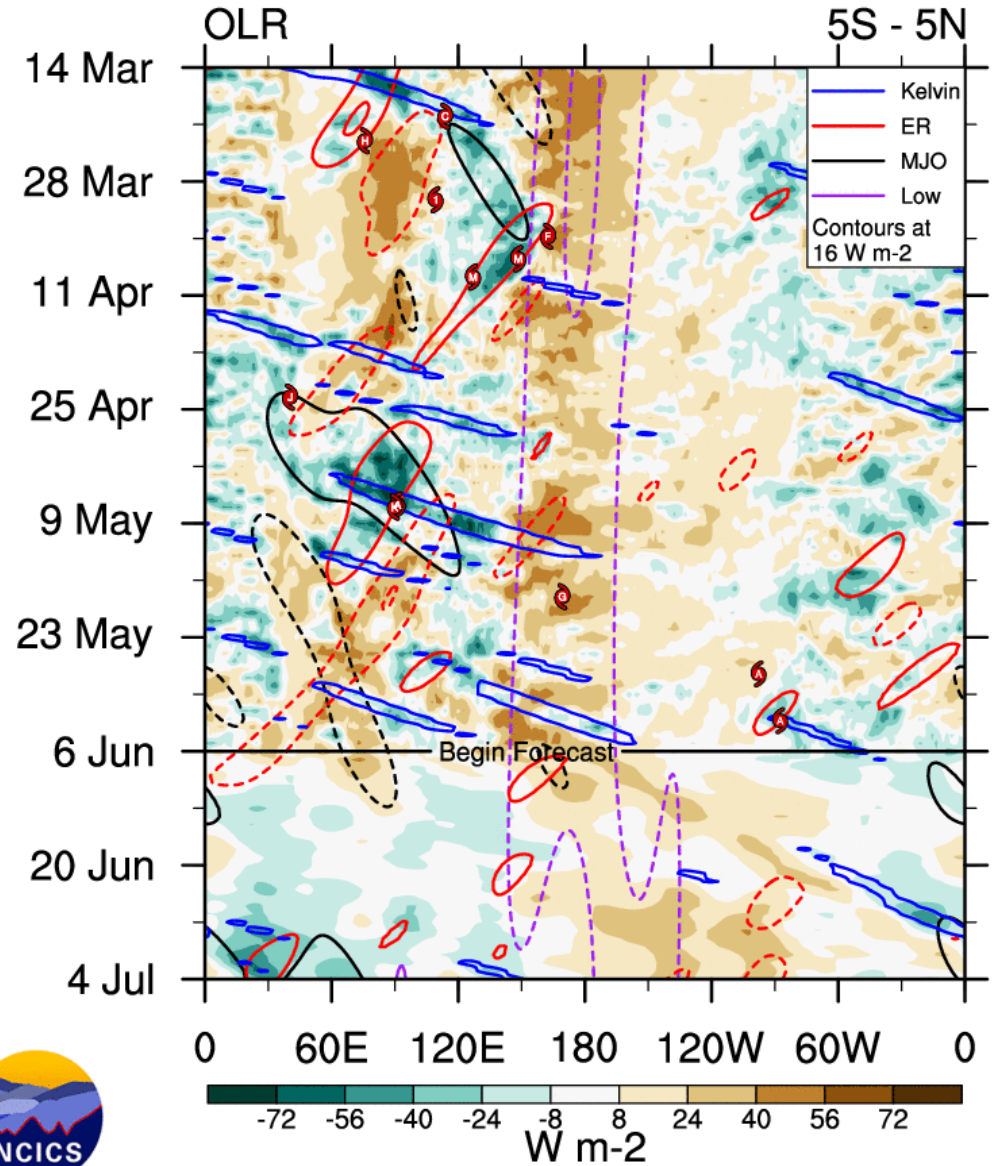


CAVEAT: These panels are representative of robust MJO events.

Robust convectively coupled **Kelvin wave** activity was the dominant mode of activity during May and early June.

Constructive interference with **Rossby Wave** activity led to an uptick in convection across parts of the Maritime Continent and near the Americas.

The **Low frequency** La Niña response is a bit less apparent due to Kelvin Wave interference.



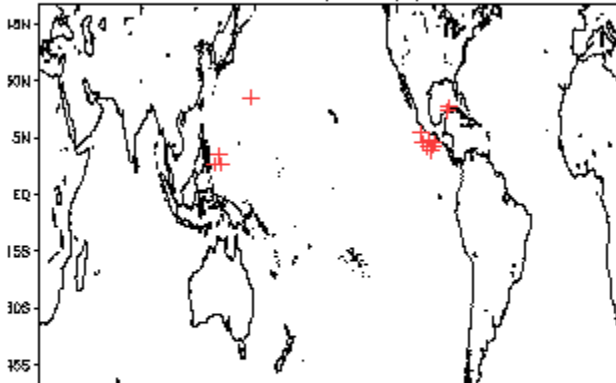
ncics.org/mjo

Tue 2022-06-07 15:13 UTC

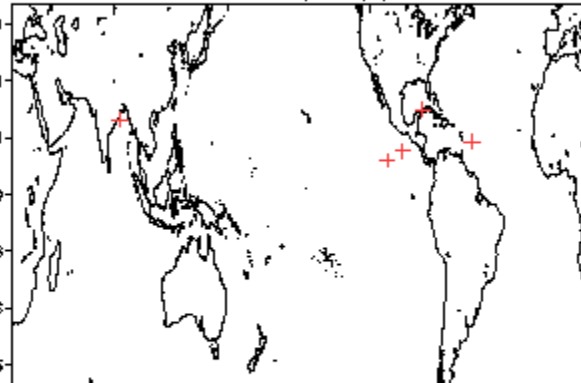
Carl Schreck
carl_schreck@ncsu.edu

June Tropical Storm Formation by MJO phase

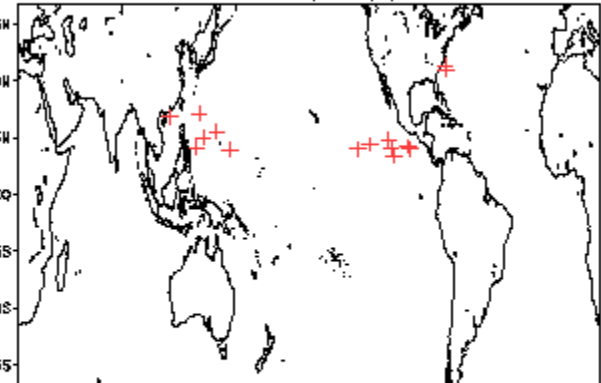
Phase 1 (104 days) 14 storms



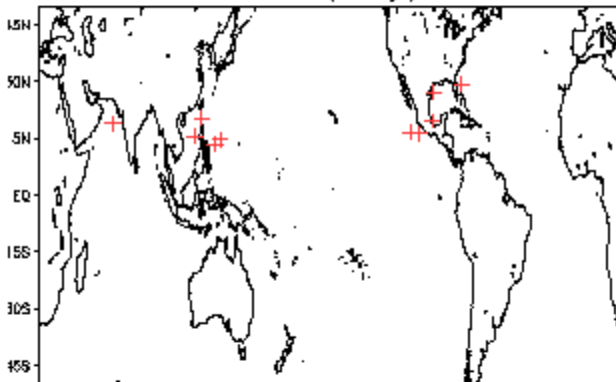
Phase 4 (80 days) 6 storms



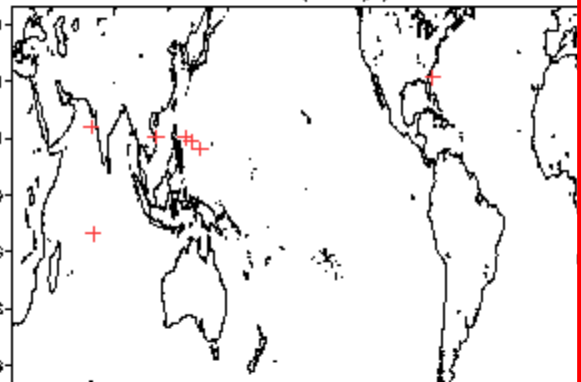
Phase 7 (45 days) 16 storms



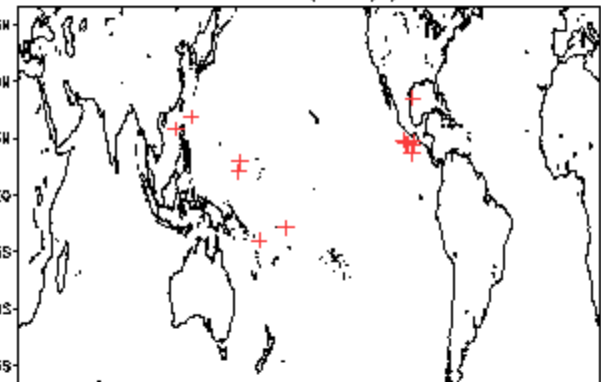
Phase 2 (82 days) 11 storms



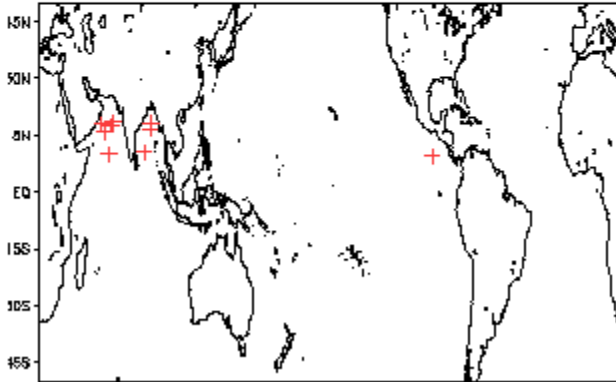
Phase 5 (77 days) 8 storms



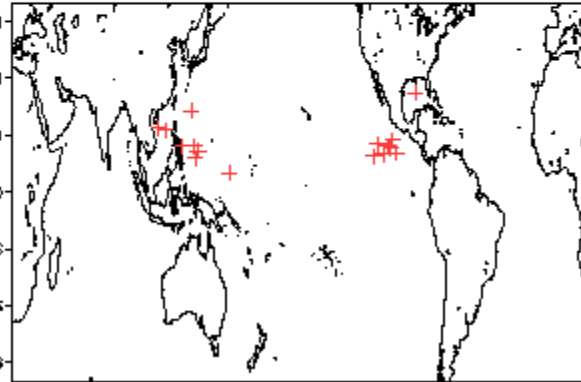
Phase 8 (70 days) 15 storms



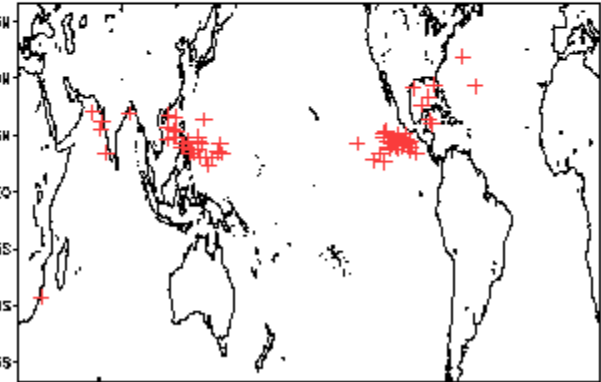
Phase 3 (57 days) 10 storms



Phase 6 (82 days) 17 storms



Null (423 days) 71 storms



Tropical Storm Alex



Peak Intensity: 70 mph;
Precursor disturbance (PTC 1) brought heavy rain to south Florida.



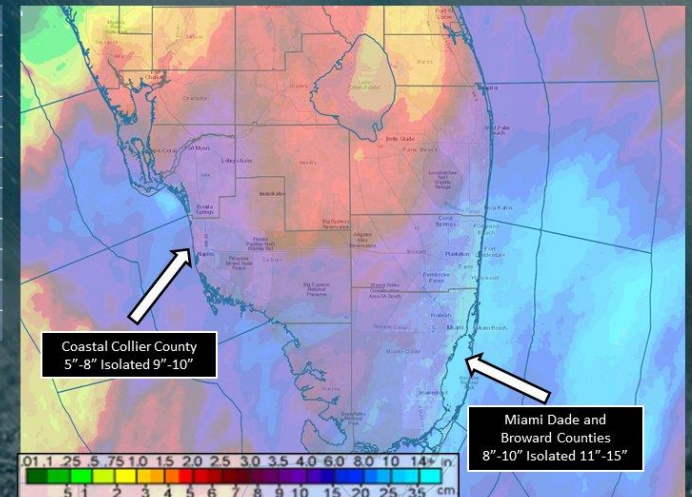
NWS Miami - South Florida

Total Observed Rainfall From PTC 1

Past 48 Hours Ending 6/5/2022 at 8:44 AM

Location	Rain (In.)
Hollywood	14.85
Margate 0.4W	14.79
Biscayne Park 0.3E	12.72
Palmetto Bay 0.5NW	11.02
Coral Terrace 1.3 SSE	10.28
Pompano Beach Highlands 0.7 E	10.14
Margate 0.8 NNW	10.08
Big Cypress NR Everglades City 5NFL	9.98
Boca Raton 2.7 NE	9.89
Pompano Beach 1.2 NNE	9.59

Source: Preliminary Observed Rainfall Reports and Radar Estimates





Five-Day Graphical Tropical Weather Outlook

National Hurricane Center Miami, Florida



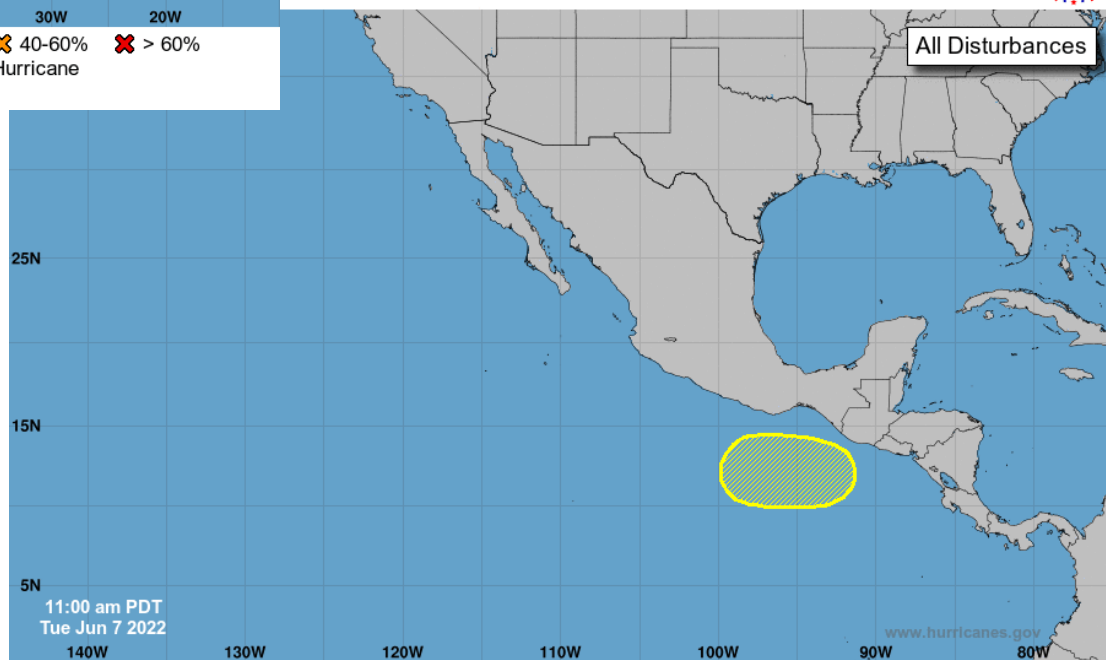
Current Disturbances and Five-Day Cyclone Formation Chance: < 40% 40-60% > 60%

Tropical or Sub-Tropical Cyclone: Depression Storm Hurricane

Post-Tropical Cyclone or Remnants

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

Storm Track Density Distribution, IC=20220606

Week 1 Forecast: 0608-0614

TRACK DENSITY

FILTERED

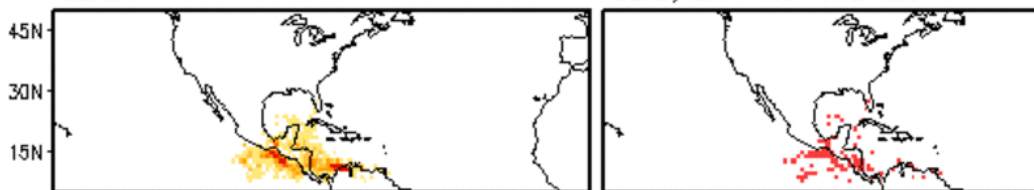
CFS

CFS, ENP=1.1 ATL=0.1



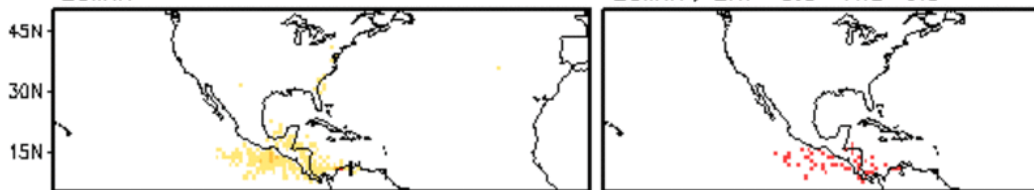
GEFS

GEFS, ENP=1.0 ATL=0.6



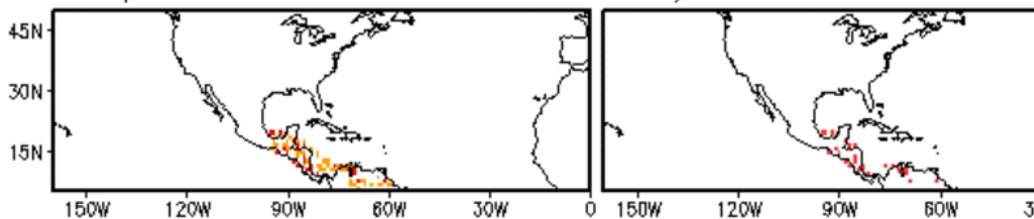
ECMWF

ECMWF, ENP=0.9 ATL=0.3



ECCC, IC=20220602

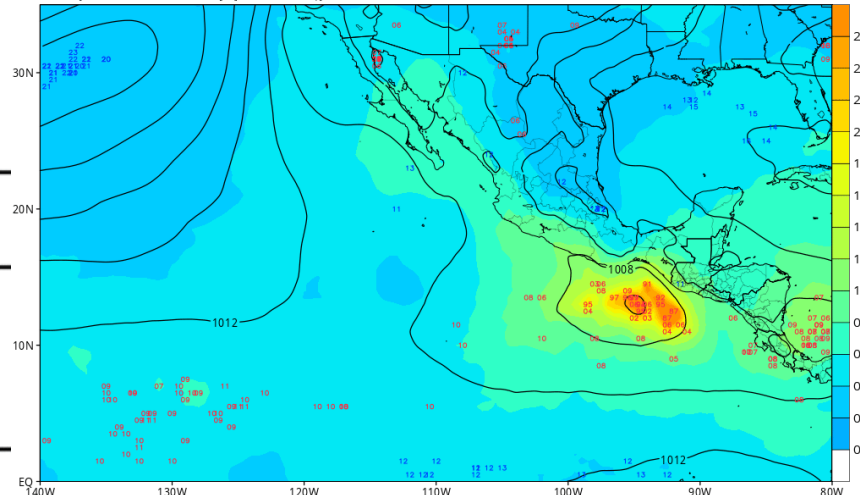
ECCC, ENP=0.7 ATL=1.6



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

Init: 12z Jun 07 2022 Forecast Hour: [72] valid at 12z Fri, Jun 10 2022

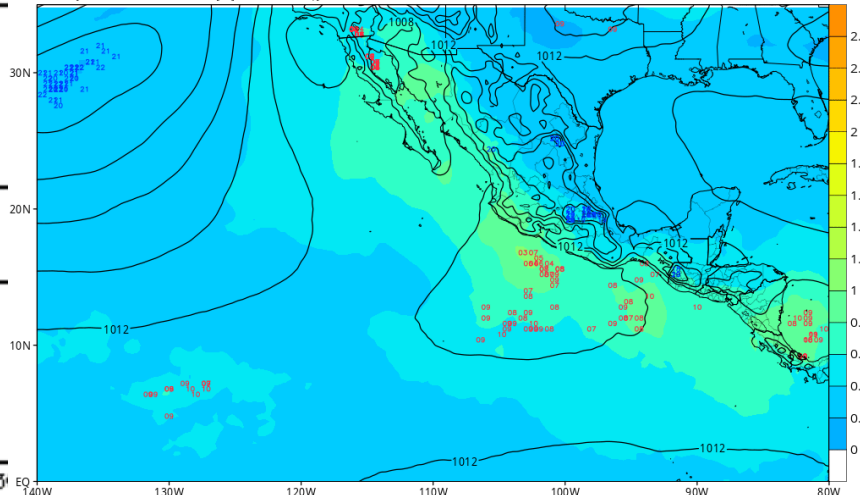
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EPS Mean MSLP (mb), Ensemble Member Pressure Centers (Lows: red | High: blue), & Normalized Spread (σ)

Init: 00z Jun 07 2022 Forecast Hour: [84] valid at 12z Fri, Jun 10 2022

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Storm Track Density Distribution, IC=20220606

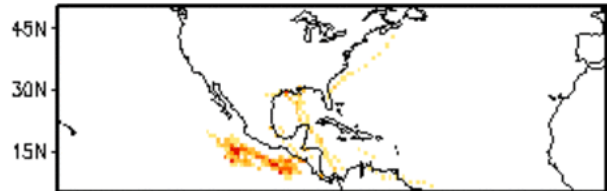
Week 2 Forecast: 0615-0621

TRACK DENSITY

FILTERED

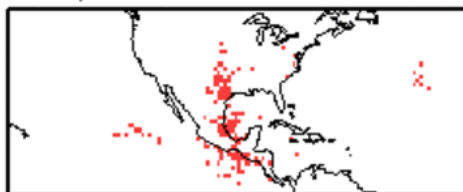
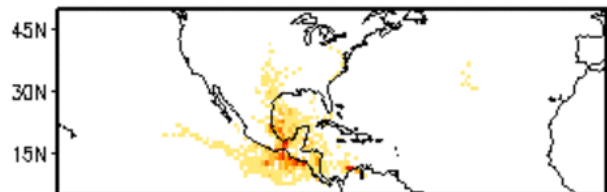
CFS

CFS, ENP=1.1 ATL=0.0



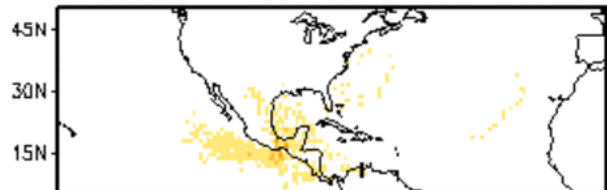
GEFS

GEFS, ENP=1.3 ATL=0.6



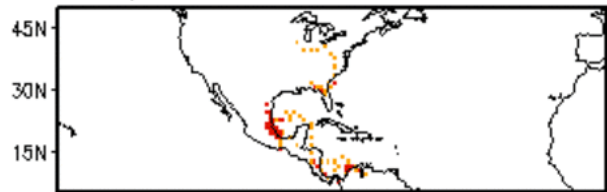
ECMWF

ECMWF, ENP=1.3 ATL=0.5



ECCC, IC=20220602

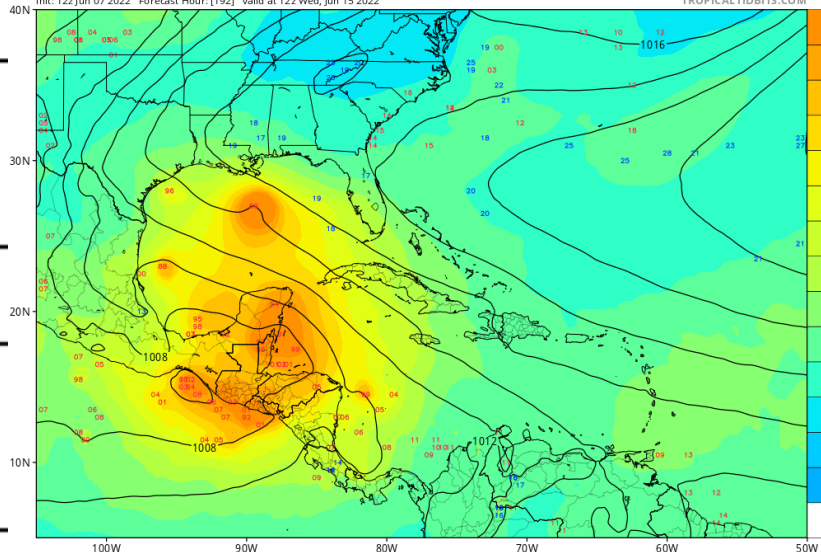
ECCC, ENP=1.1 ATL=1.8



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

Ini: 12z Jun 07 2022 Forecast Hour: [192] valid at 12z Wed, Jun 15 2022

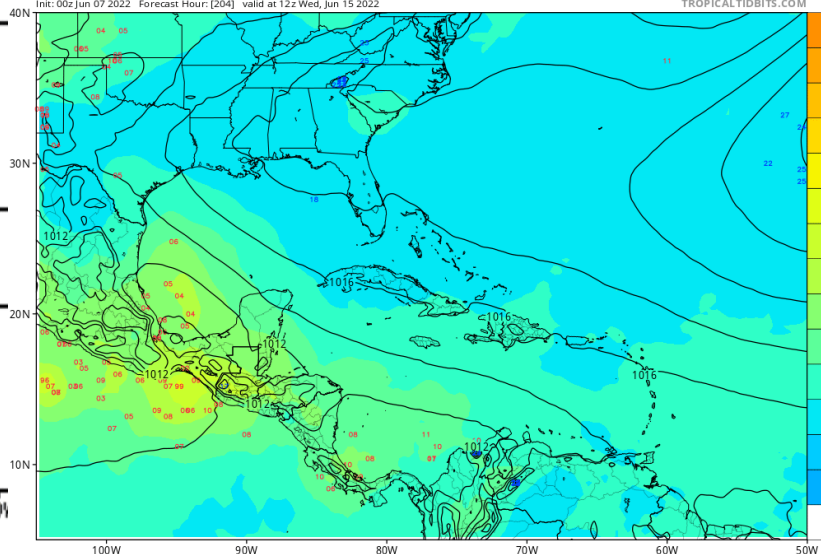
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EPS Mean MSLP (mb), Ensemble Member Pressure Centers (Lows: red | Highs: blue), & Normalized Spread (σ)

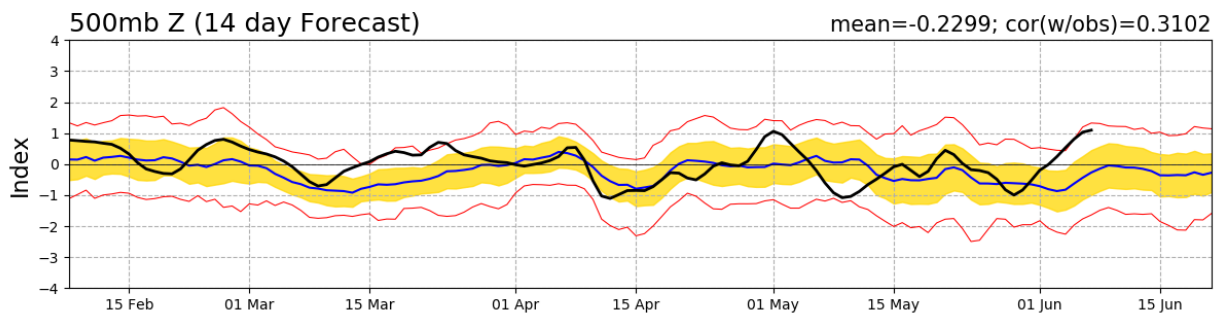
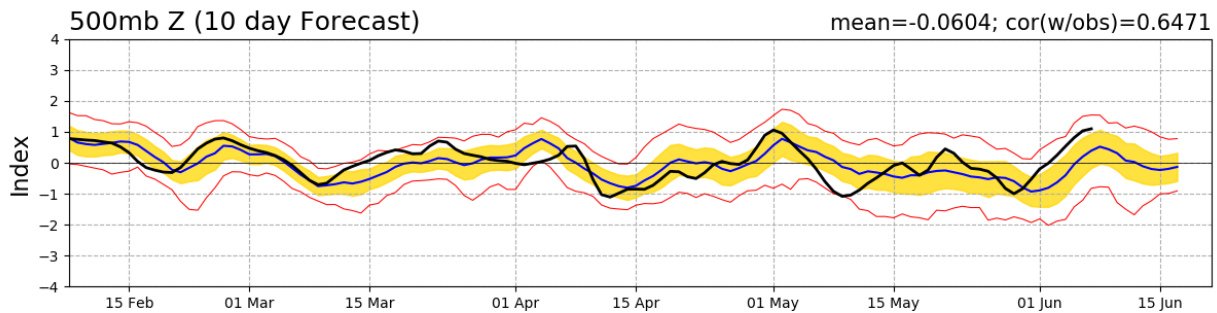
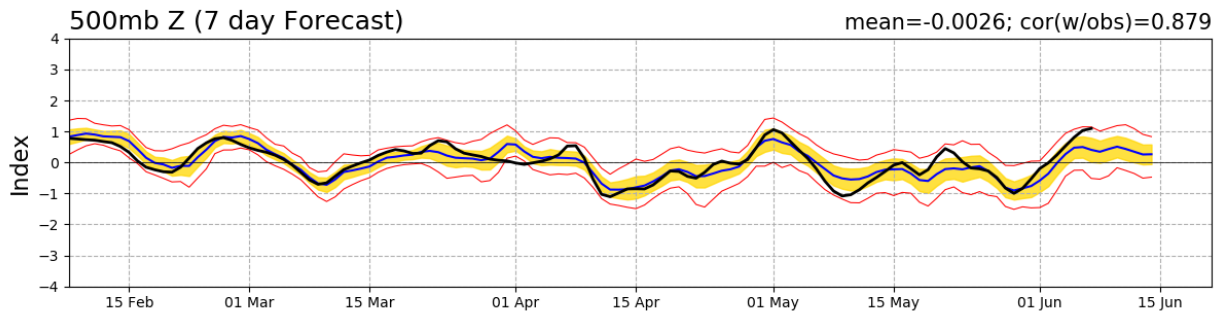
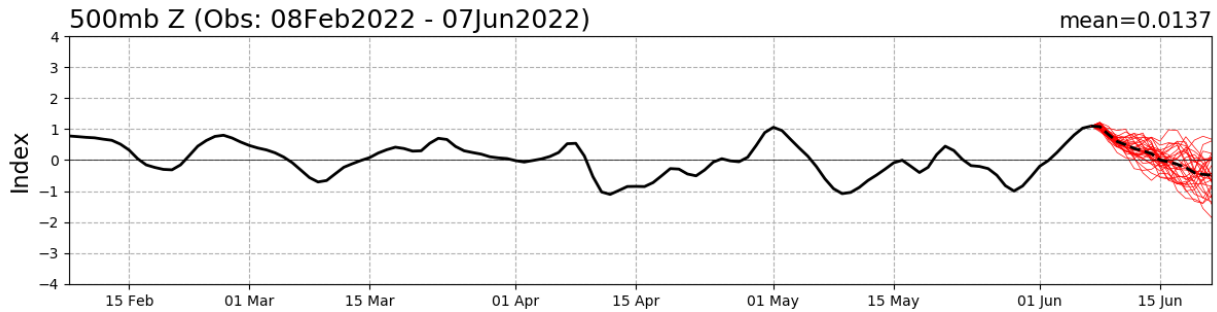
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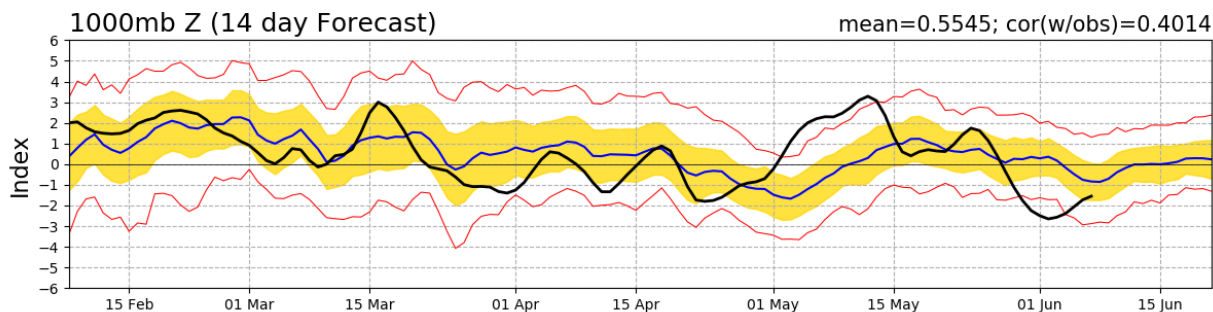
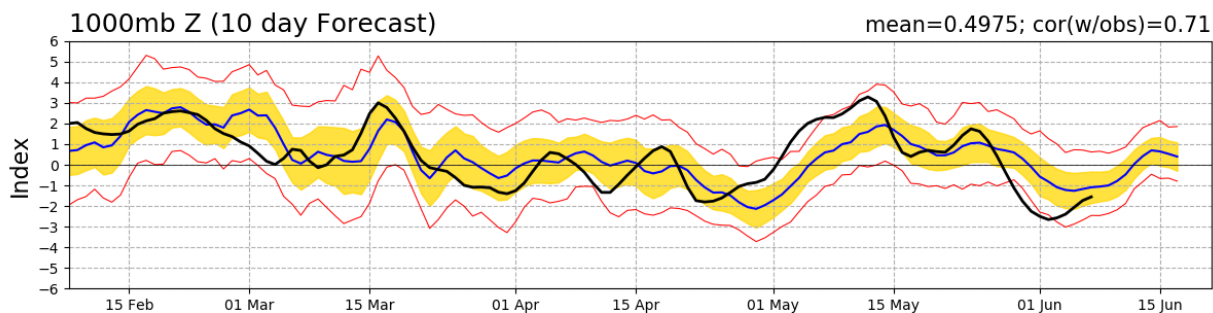
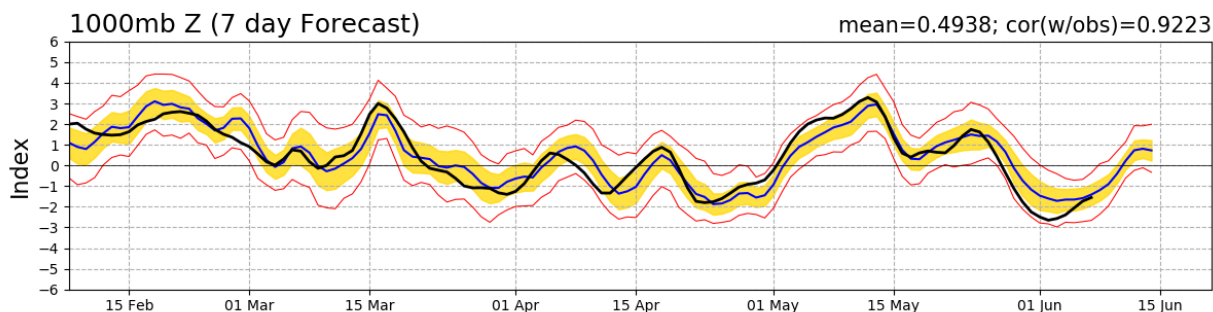
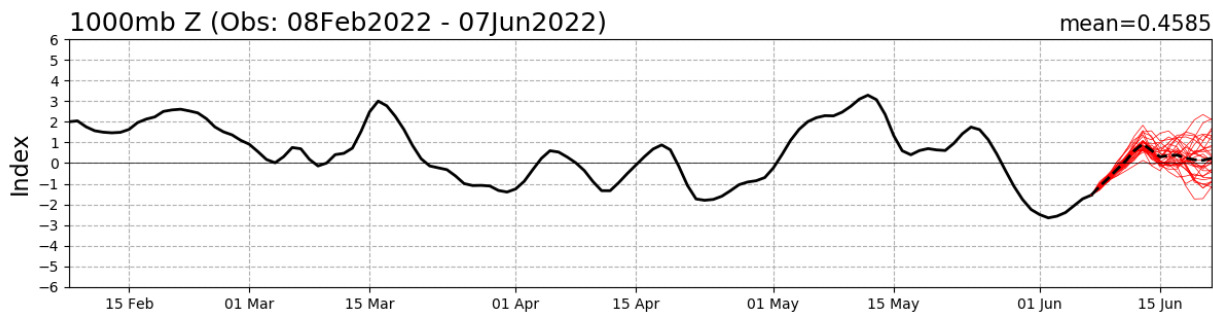


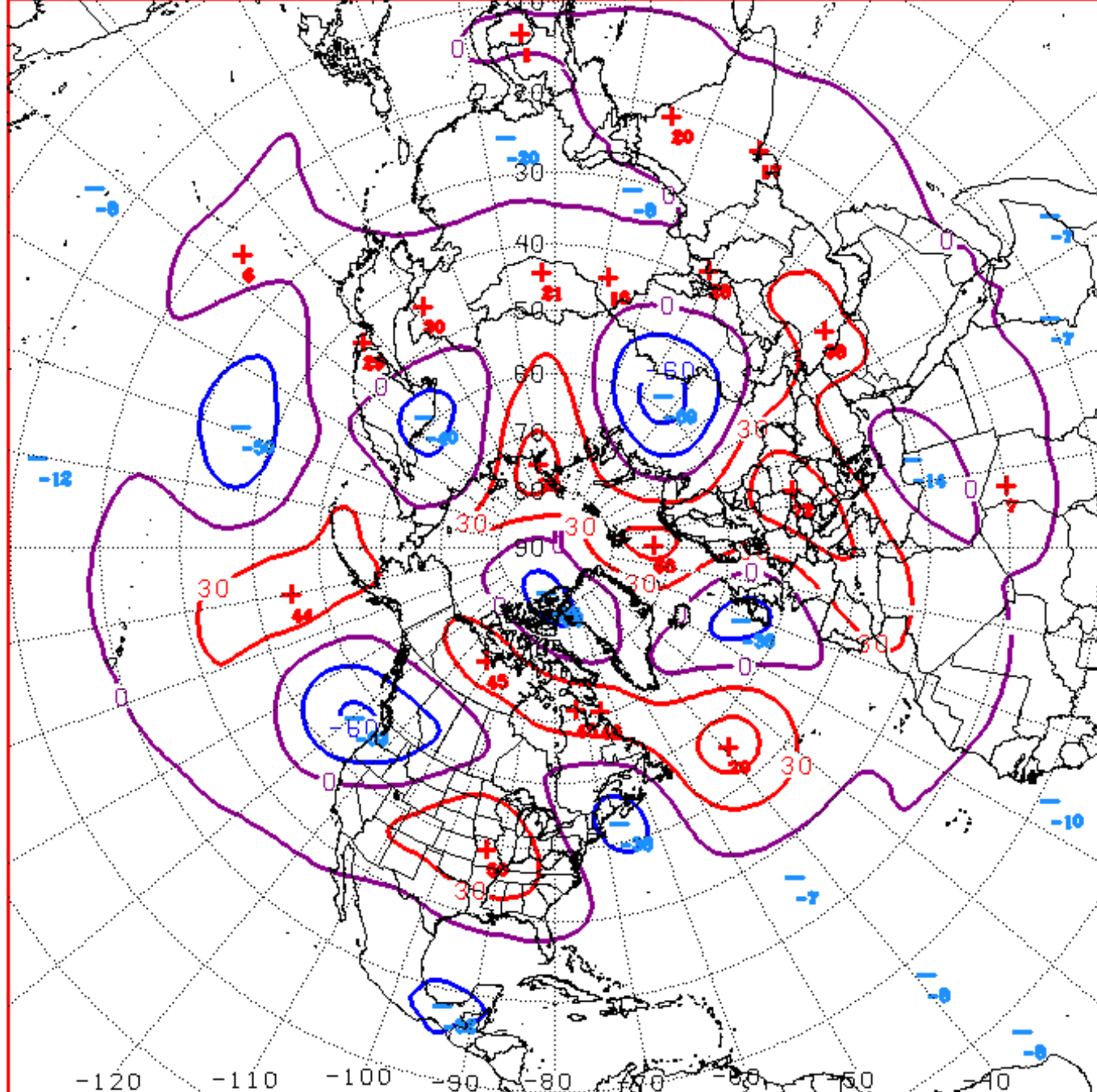
Connections to U.S. Impacts

PNA Index: Observed & GEFS Forecasts



AO Index: Observed & GEFS Forecasts





-120 -110 -100 -90 -80 -70 -60 -50

D+11 500 MB ANOMALIES FROM ALZ ENSM
CPC MAP MADE JUN 07 2022 1354 UTC CNTD JUN 18 2022

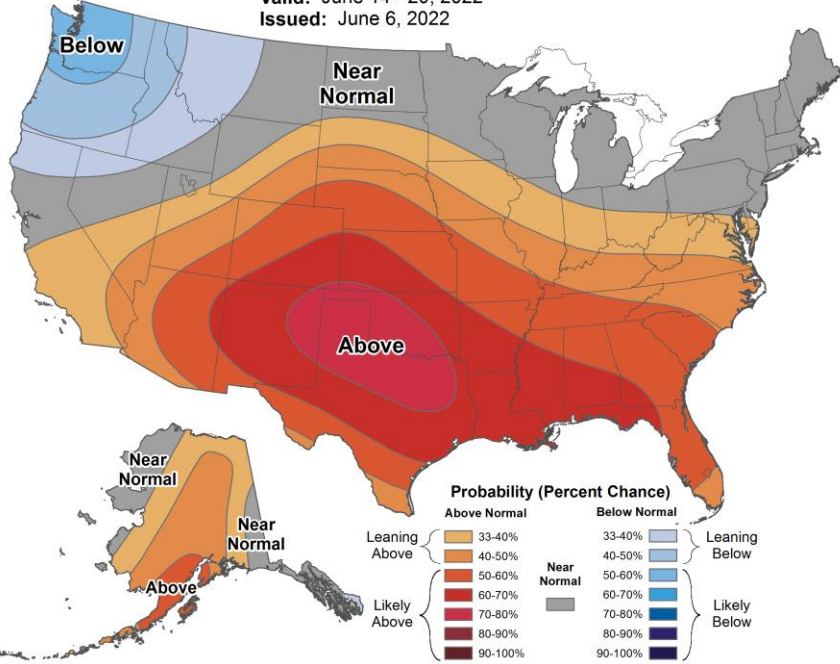
Week 2 – Temperature and Precipitation



8-14 Day Temperature Outlook



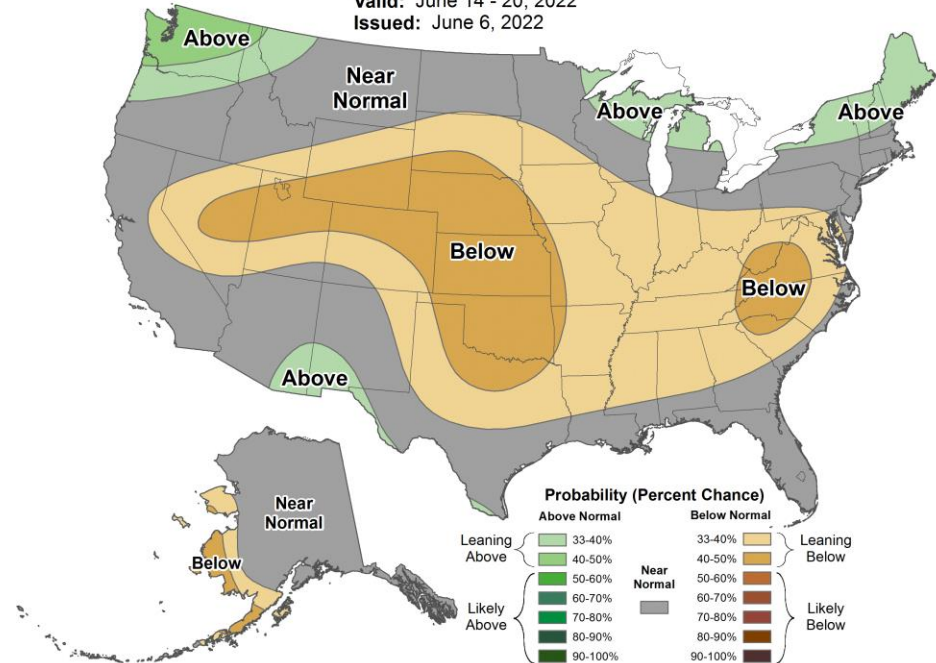
Valid: June 14 - 20, 2022
 Issued: June 6, 2022



8-14 Day Precipitation Outlook



Valid: June 14 - 20, 2022
 Issued: June 6, 2022

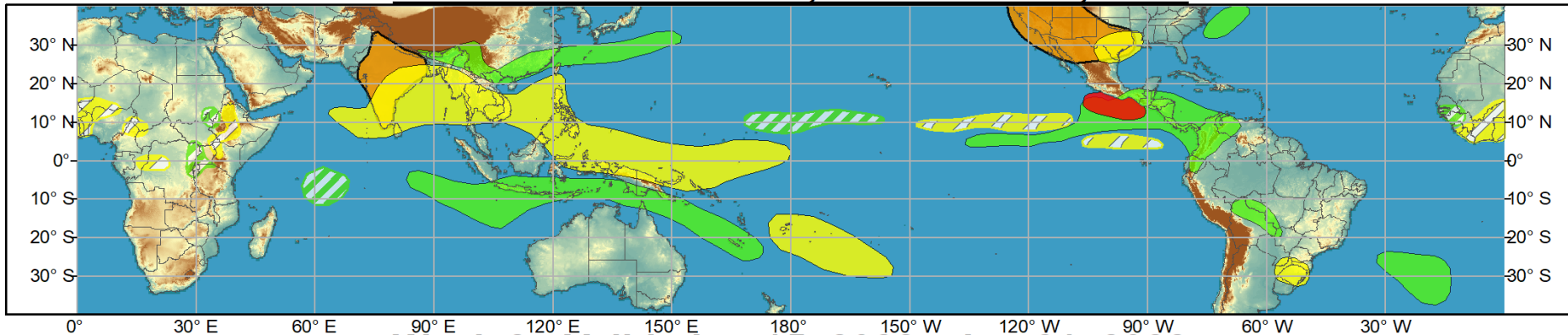




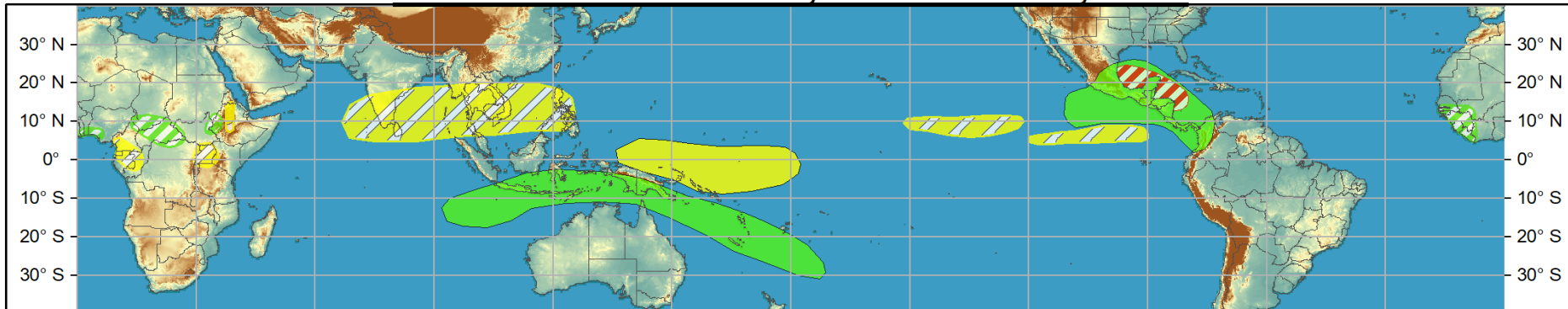
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