



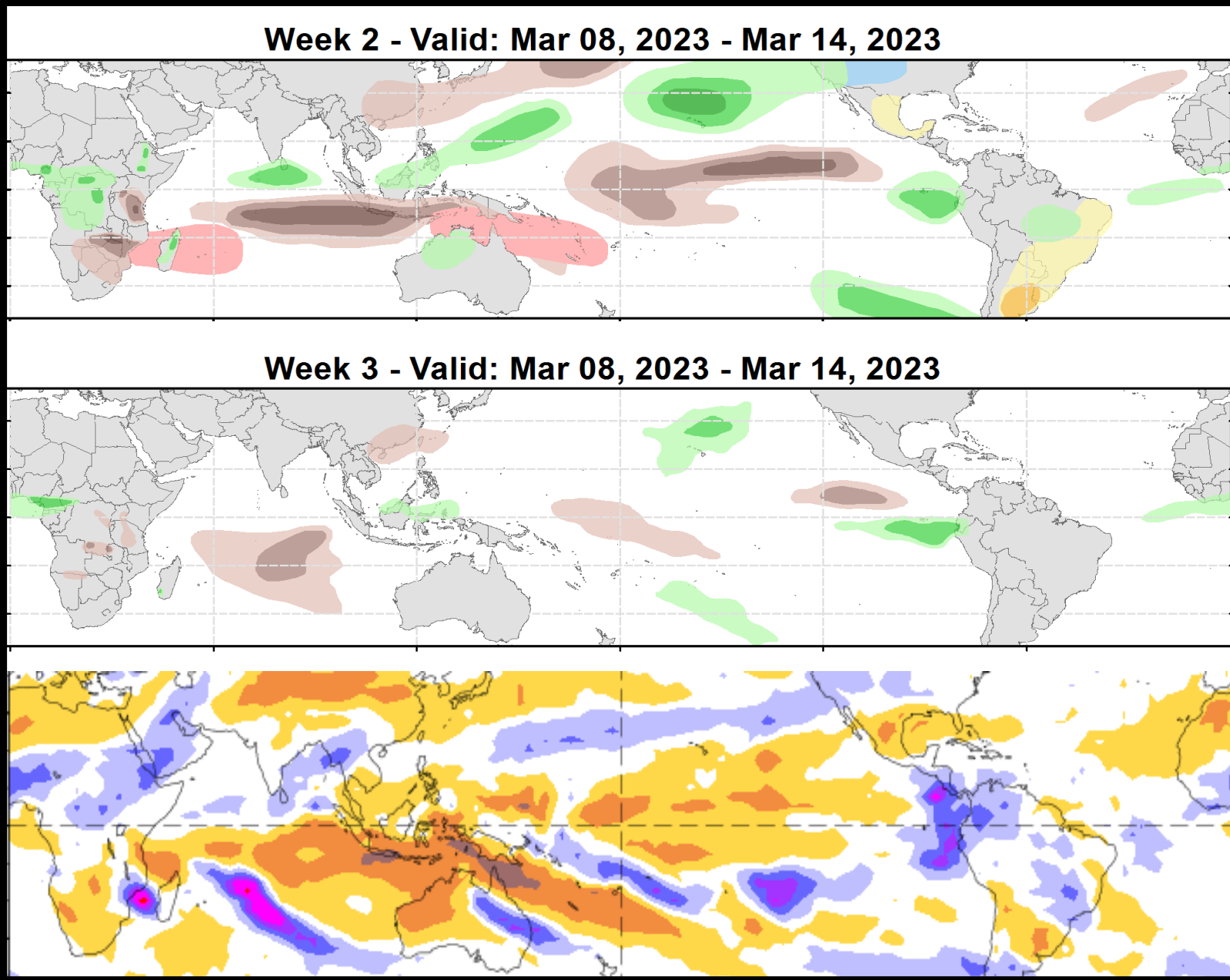
Weeks 2-3 Global Tropics Hazards Outlook

3/14/2023

Danny Barandiaran
NWS / NCEP / Climate Prediction Center

Outlook Review: TC development & anomalous precipitation during the past week

- No TCs this week



Synopsis of Climate Modes:

ENSO: (Mar 9, 2023 Update) *next update on Thursday, Apr 13th*

- ENSO Alert System Status: [Final La Niña Advisory](#)
- La Niña has ended and ENSO-neutral conditions are expected to continue through the Northern Hemisphere spring and early summer 2023.

MJO and other subseasonal tropical variability:

- The MJO strengthened significantly over the first half of March, and is currently in phase 8 at very high amplitude.
- Dynamical model MJO index forecasts depict a weakening MJO signal propagating eastward into the Indian Ocean towards the end of March.
- There have been notable disruptions to synoptic features associated with the long-lived La Nina base state.

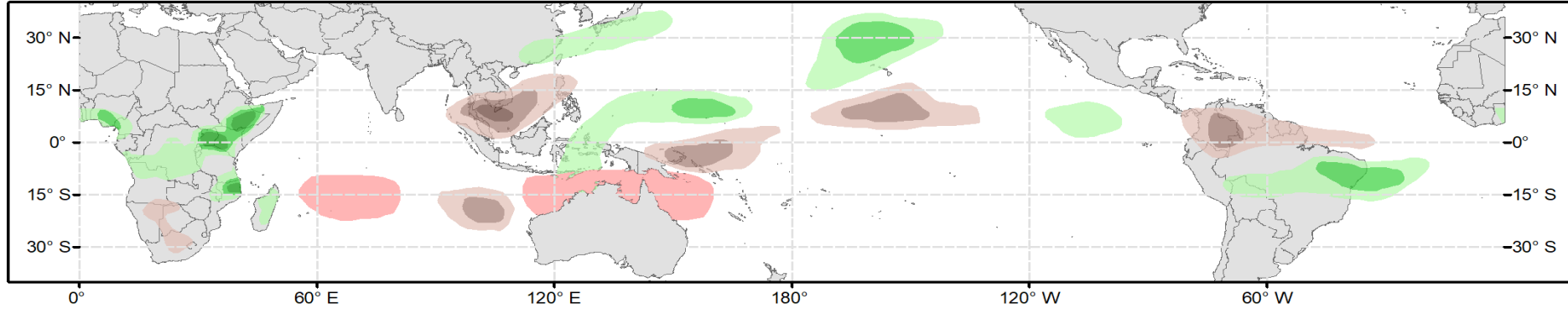
GTH Outlook:



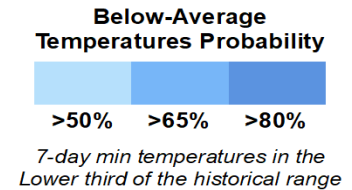
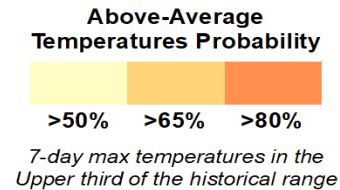
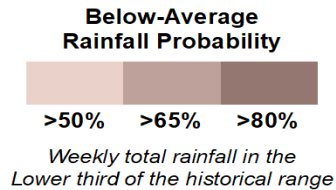
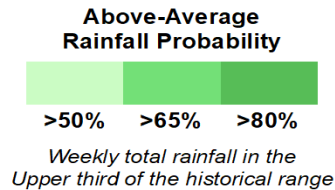
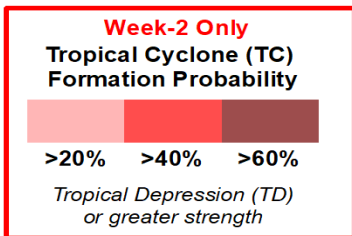
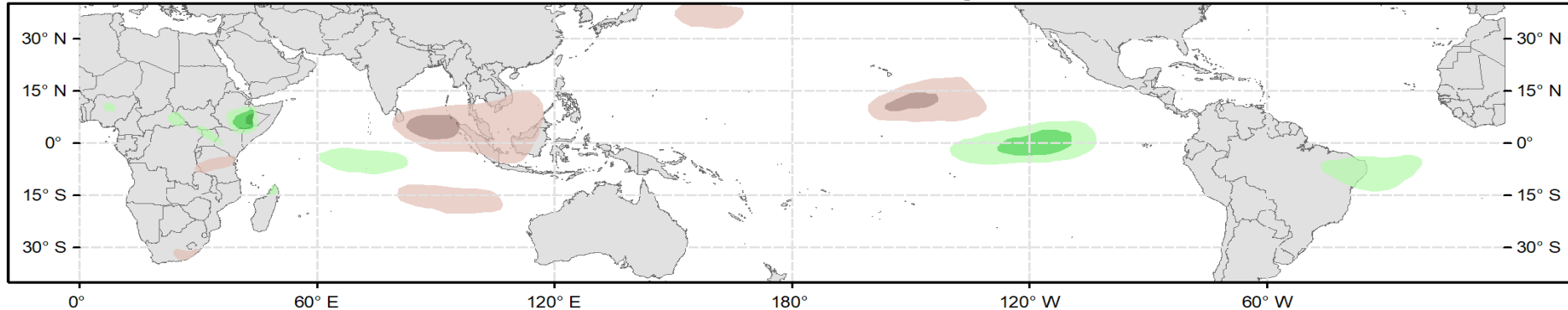
Global Tropics Hazards Outlook Climate Prediction Center



Week 2 - Valid: Mar 22, 2023 - Mar 28, 2023



Week 3 - Valid: Mar 29, 2023 - Apr 04, 2023

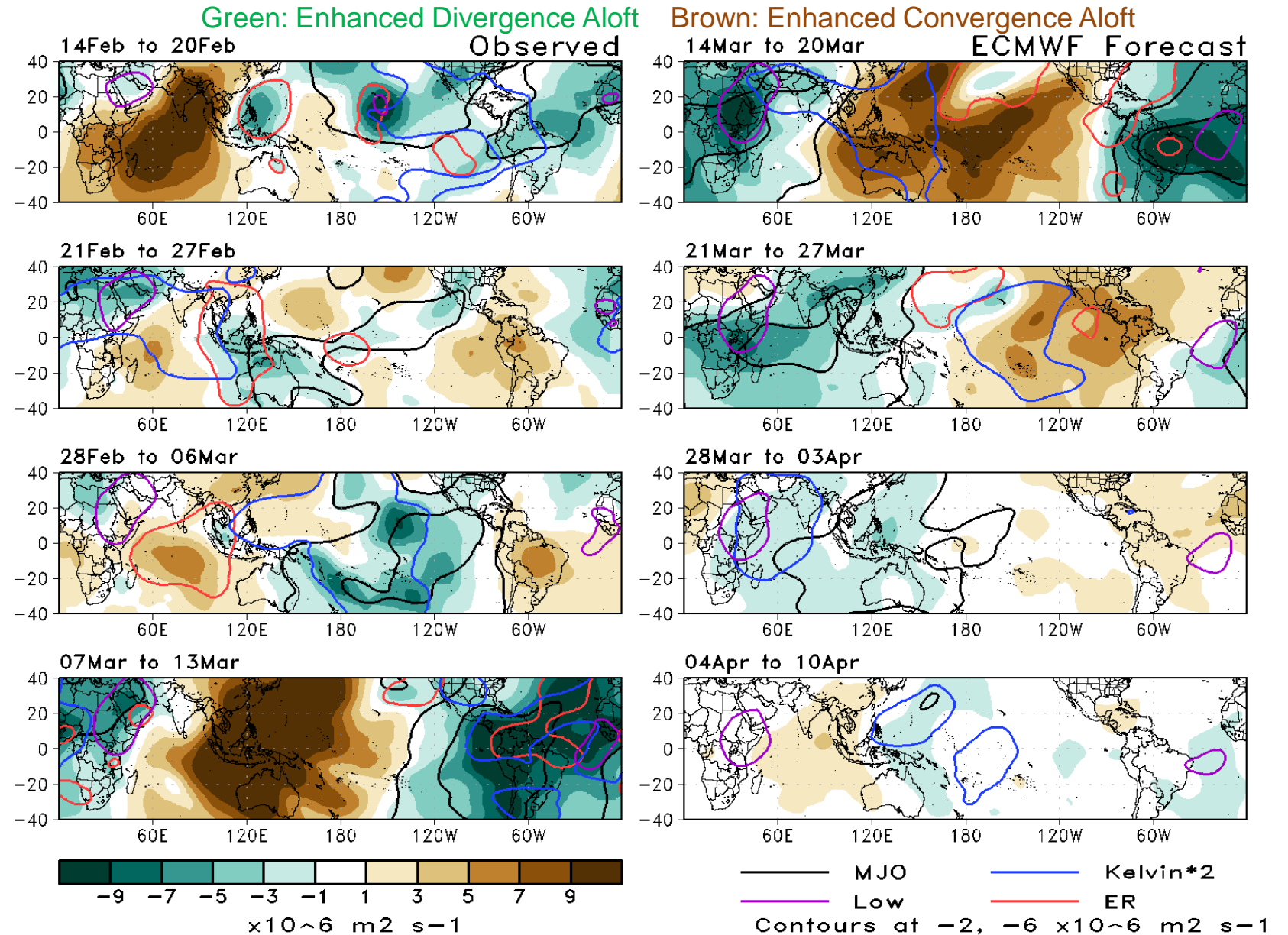


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Forecaster: Barandiaran

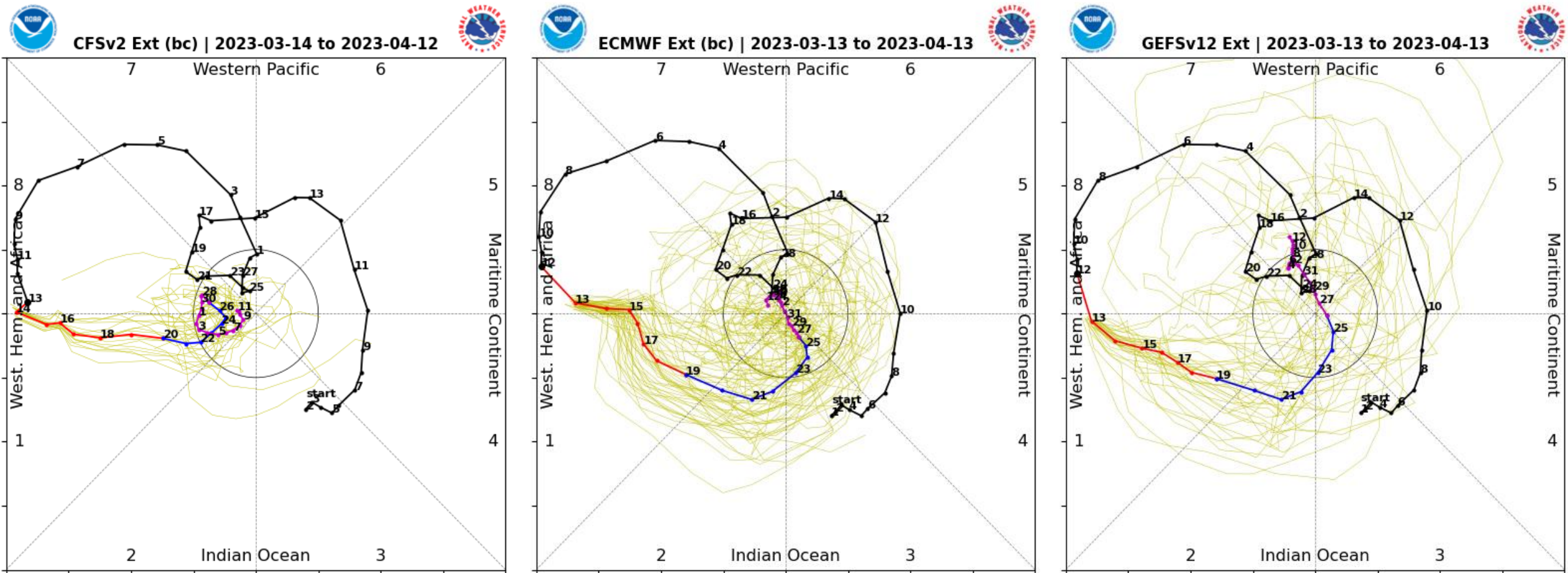
This product is updated once per week and targets broad scale conditions integrated over a 7-day period for US interests only. Consult your local responsible forecast agency.

200-hPa Velocity Potential Anomaly Maps:

- A very amplified MJO in phase 1 is favored for week-1, with strongly enhanced divergence aloft over the Americas and Africa.
- Signal weakens during weeks 2 and 3, with continued eastward propagation of the enhanced convective envelope into the Indian Ocean.

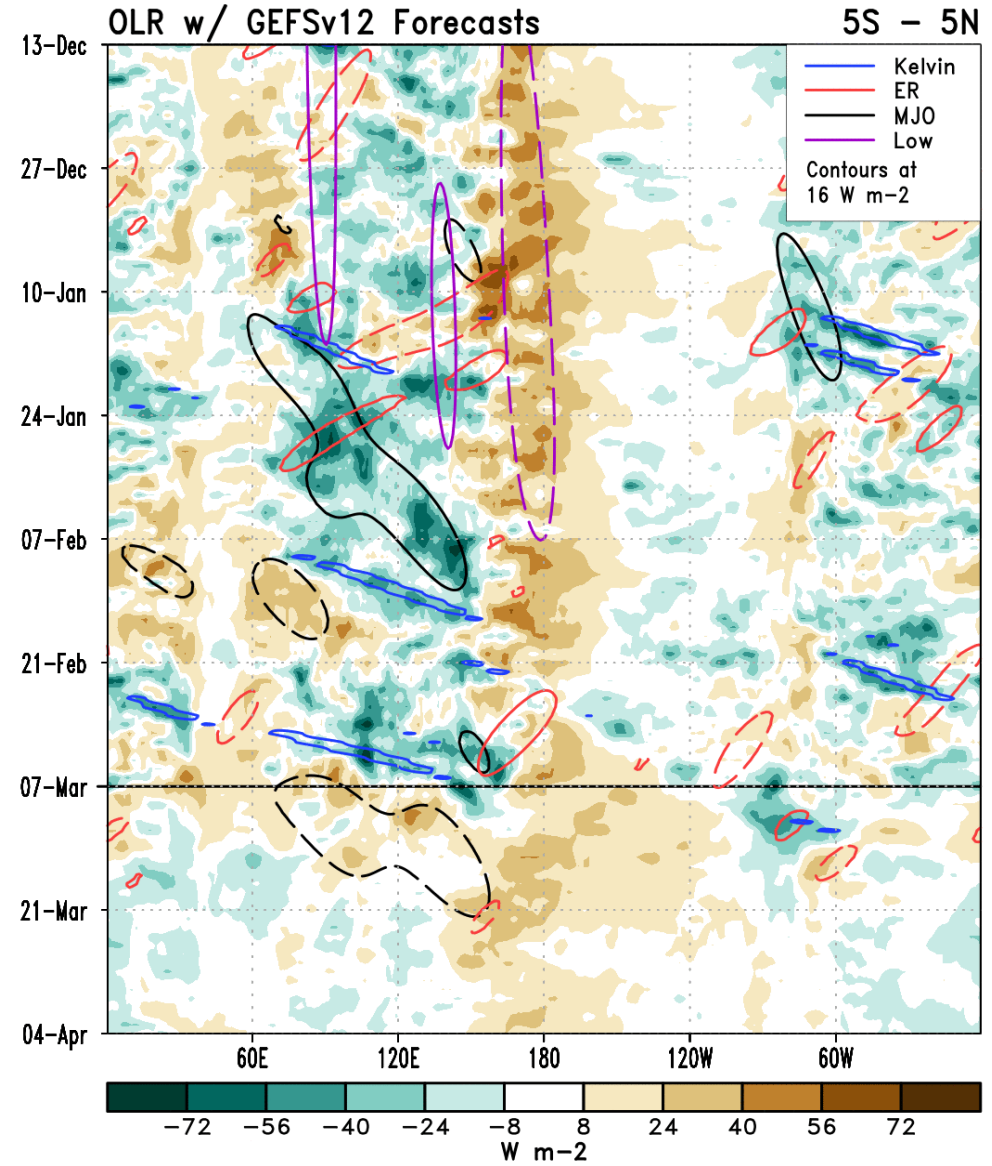
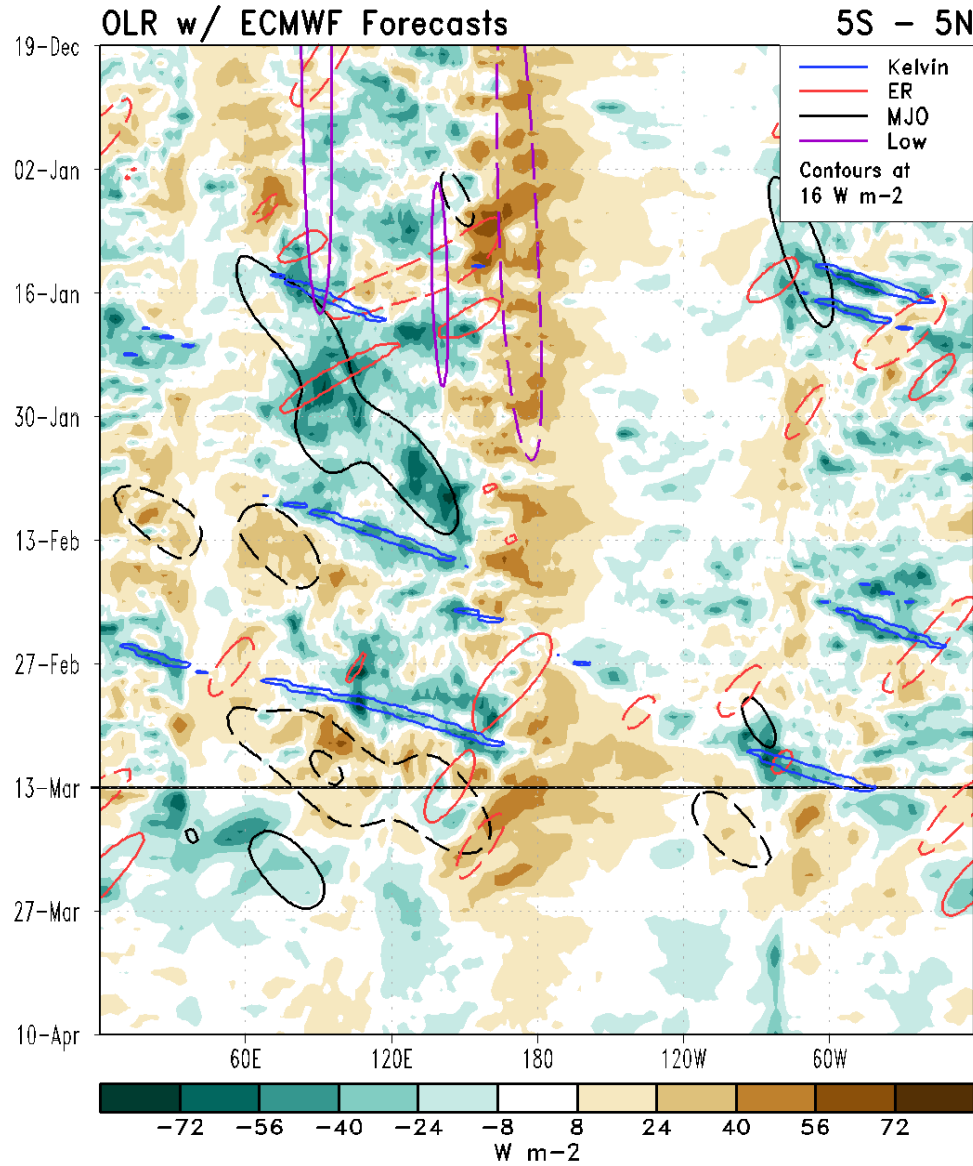


RMM Index Observations & Forecasts:



- Dynamical model MJO index forecasts are in good agreement that the MJO propagates eastward during weeks 1&2, with a steadily decreasing signal strength.
- There is more uncertainty for week-3, with the GEFS and ECMWF extended runs suggesting continued eastward propagation of RMM signal. CFS and BOMM favor a slowdown of eastward movement, with diverging solutions as to signal strength.

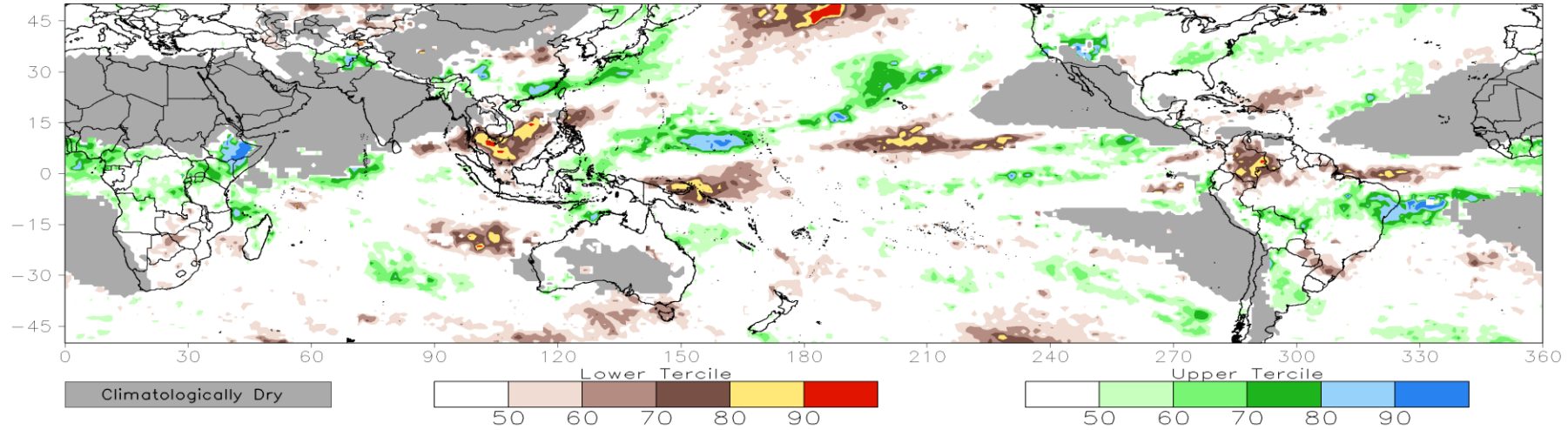
Outgoing Longwave Radiation (OLR) Anomaly Time/Lon Plots:



Consolidated Probabilistic Precipitation: Weeks 2 & 3

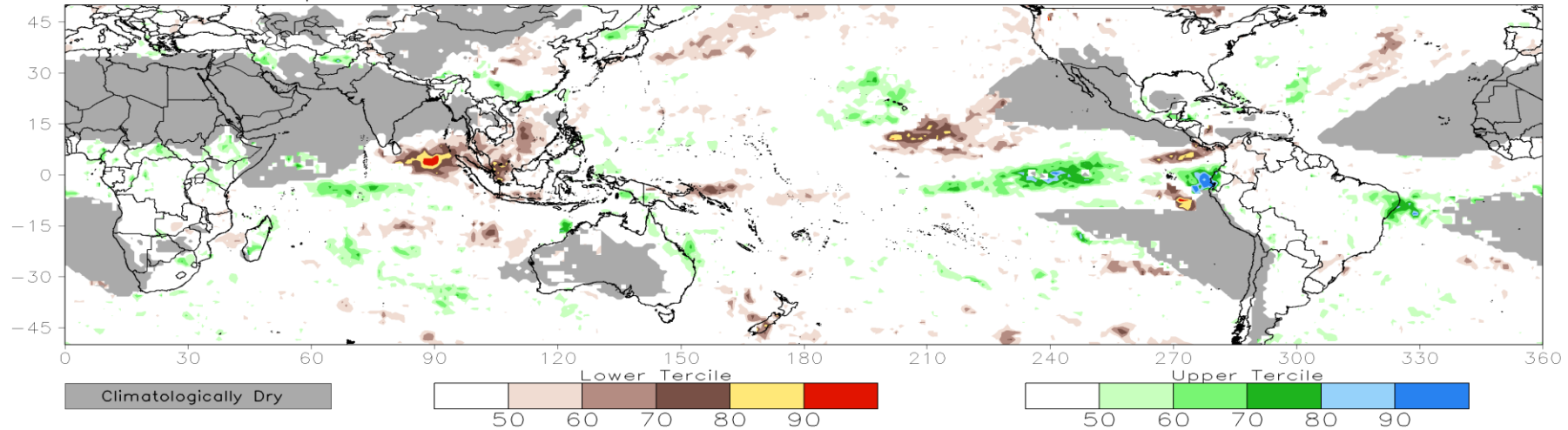
CONS 00z: Week2 Probability for Total Rainfall Below(Above) Lower(Upper) Tercile (%)

Valid: 22Mar2023–28Mar2023



CONS 00z: Week3 Probability for Total Rainfall Below(Above) Lower(Upper) Tercile (%)

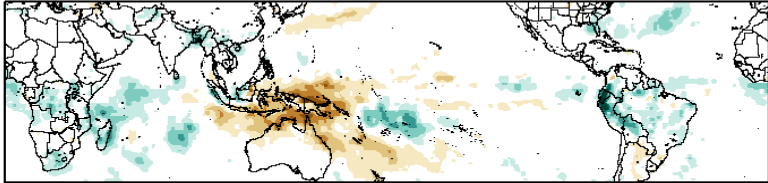
Valid: 29Mar2023–04Apr2023



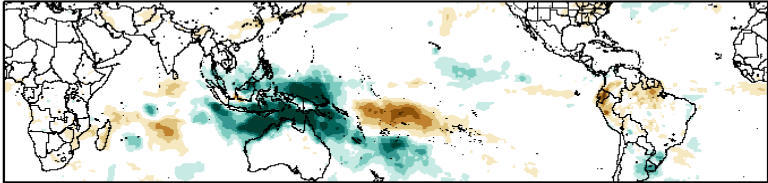
Historical Precipitation Anomalies By MJO Phase:

FMA MJO Composite: GPCP1DD (mm/day)

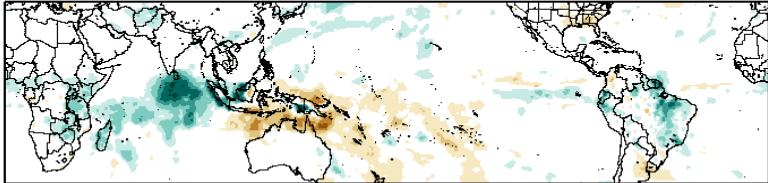
Phase 1



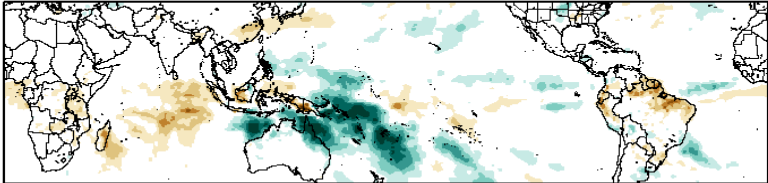
Phase 5



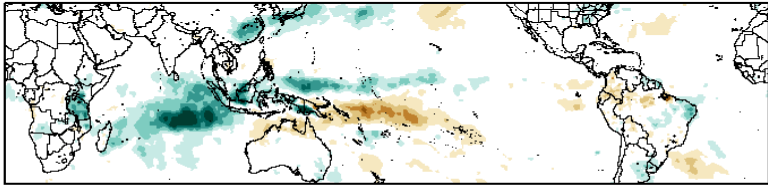
Phase 2



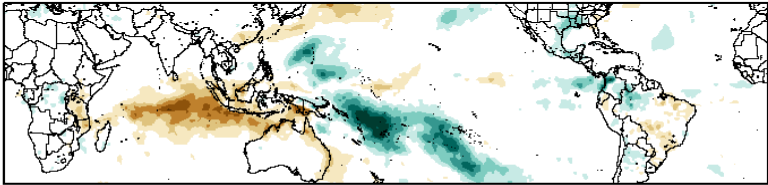
Phase 6



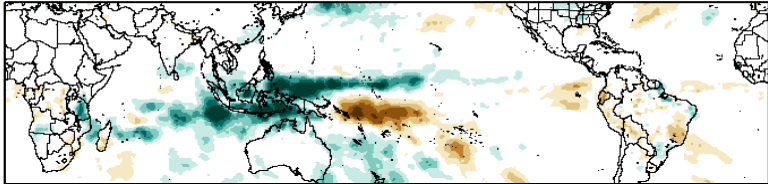
Phase 3



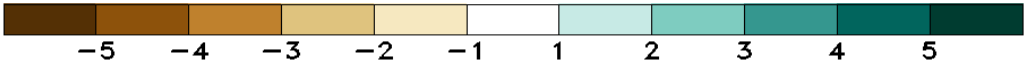
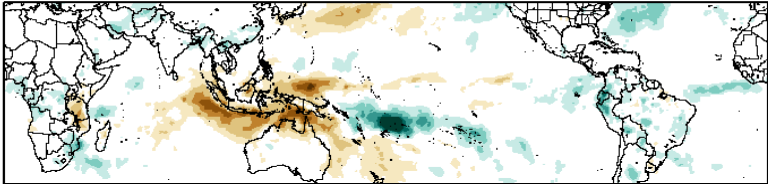
Phase 7



Phase 4

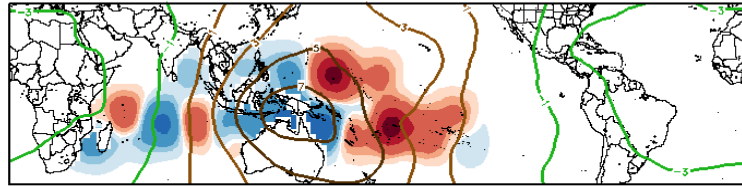


Phase 8

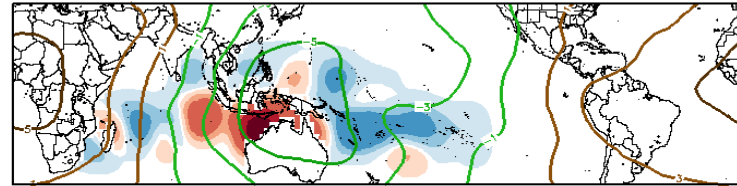


Historical TC Origin Anomalies By MJO Phase & Weeks 2+3 Genesis Climo:

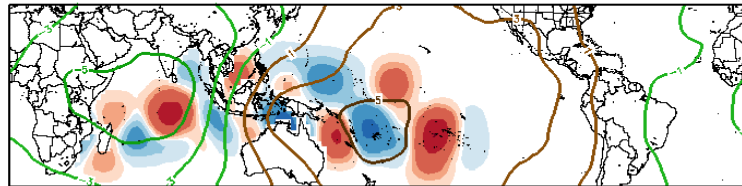
FMA MJO Composite: Mean TC Origin Density Anomaly ($\#TCs/277km^2*100$)
w/ FMA CHI200 ($\times 10^6 m^2 s^{-1}$) / Contours every $2 \times 10^6 m^2 s^{-1}$



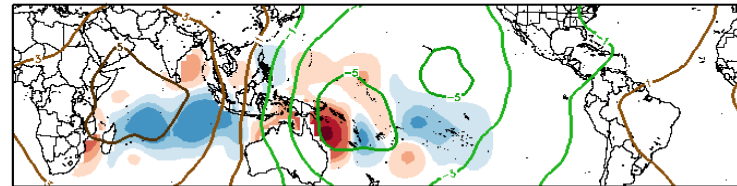
Phase 1



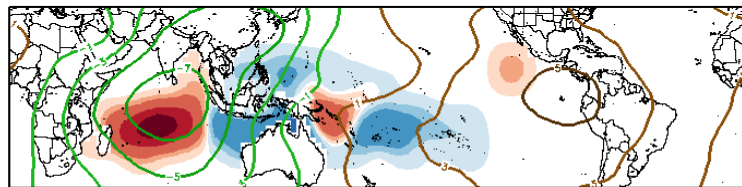
Phase 5



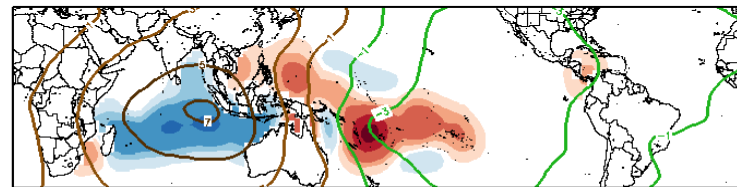
Phase 2



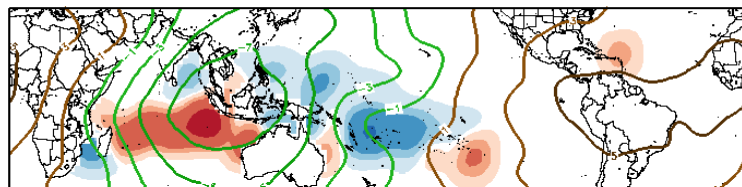
Phase 6



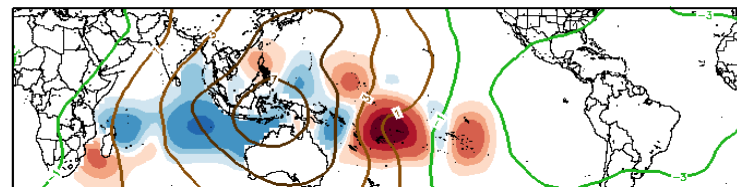
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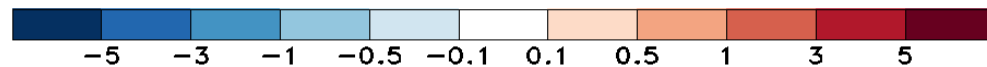
Phase 7



Phase 4



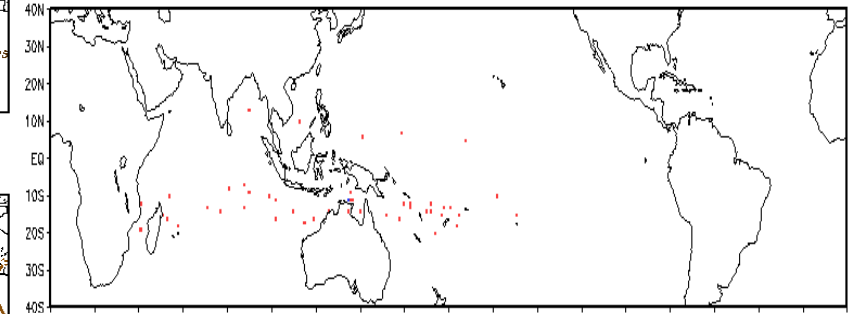
Phase 8



Experimental

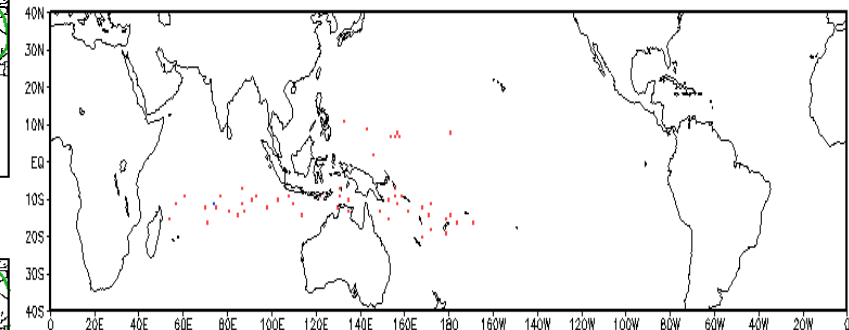
Observed TC Genesis, 1979–2021

7-day Period 0322 to 0328

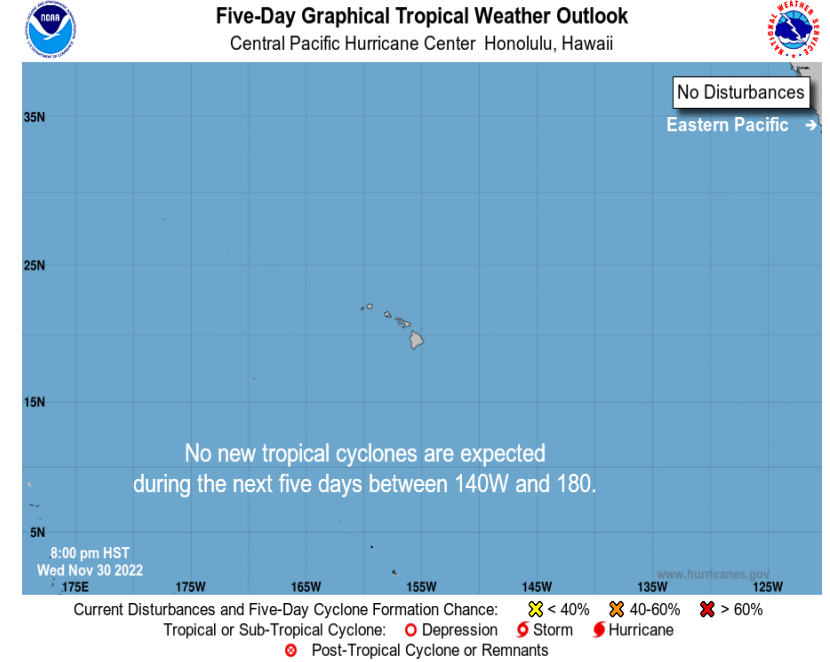
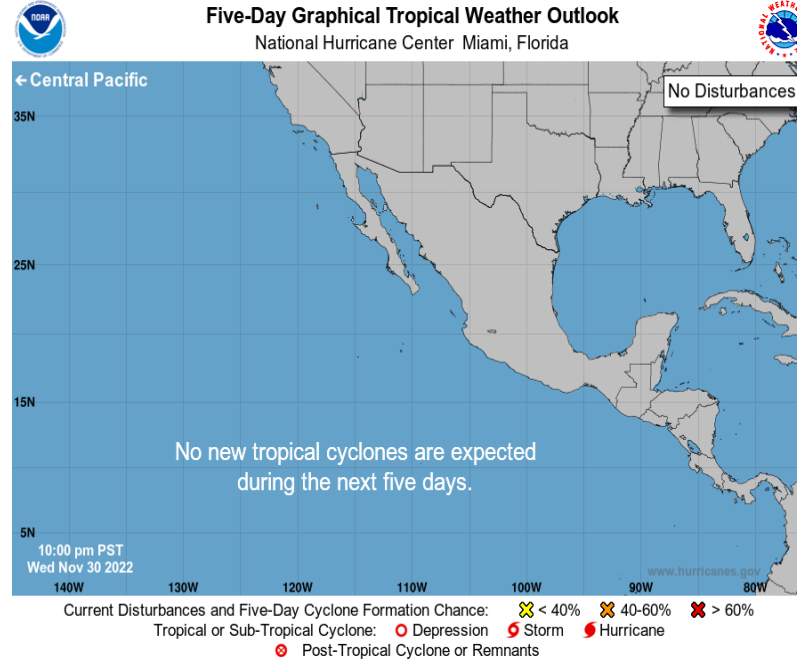
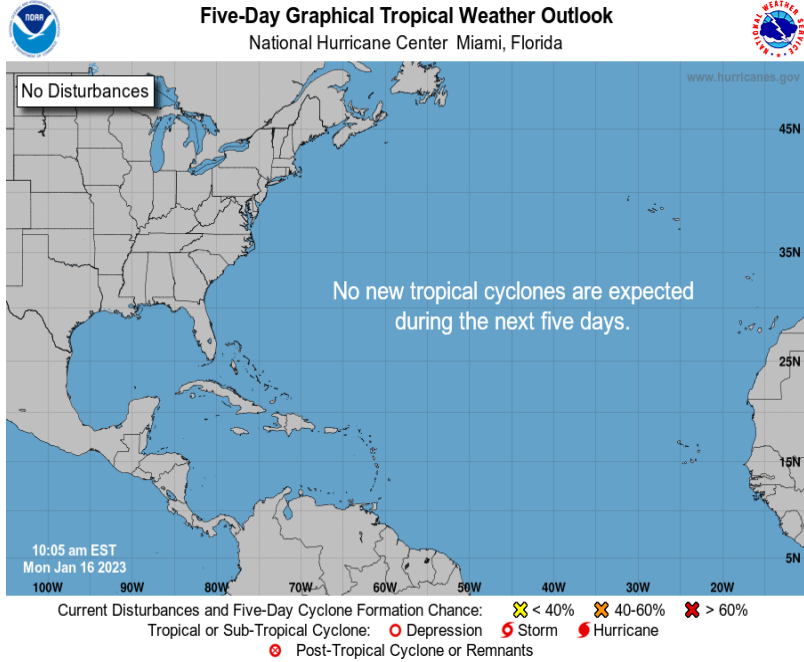


Observed TC Genesis, 1979–2021

7-day Period 0329 to 0404



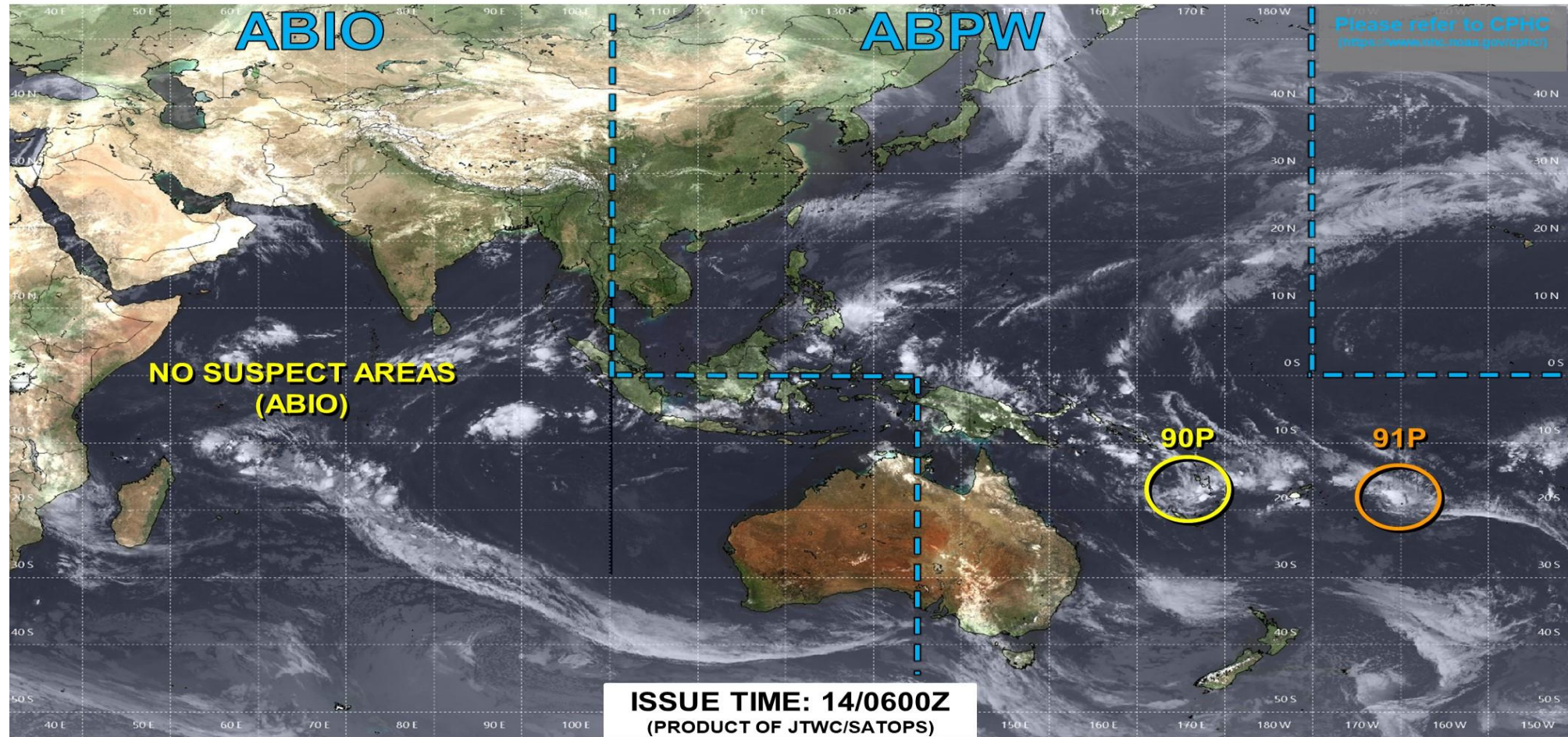
Tropical Cyclone Monitoring/Forecast: NHC



Tropical Cyclone Monitoring/Forecast: JTWC



JOINT TYPHOON WARNING CENTER



TC development unlikely within 24 hours



TC development likely, but expected to occur beyond 24 hours



TC development likely within 24 hours (Reference TCFA)



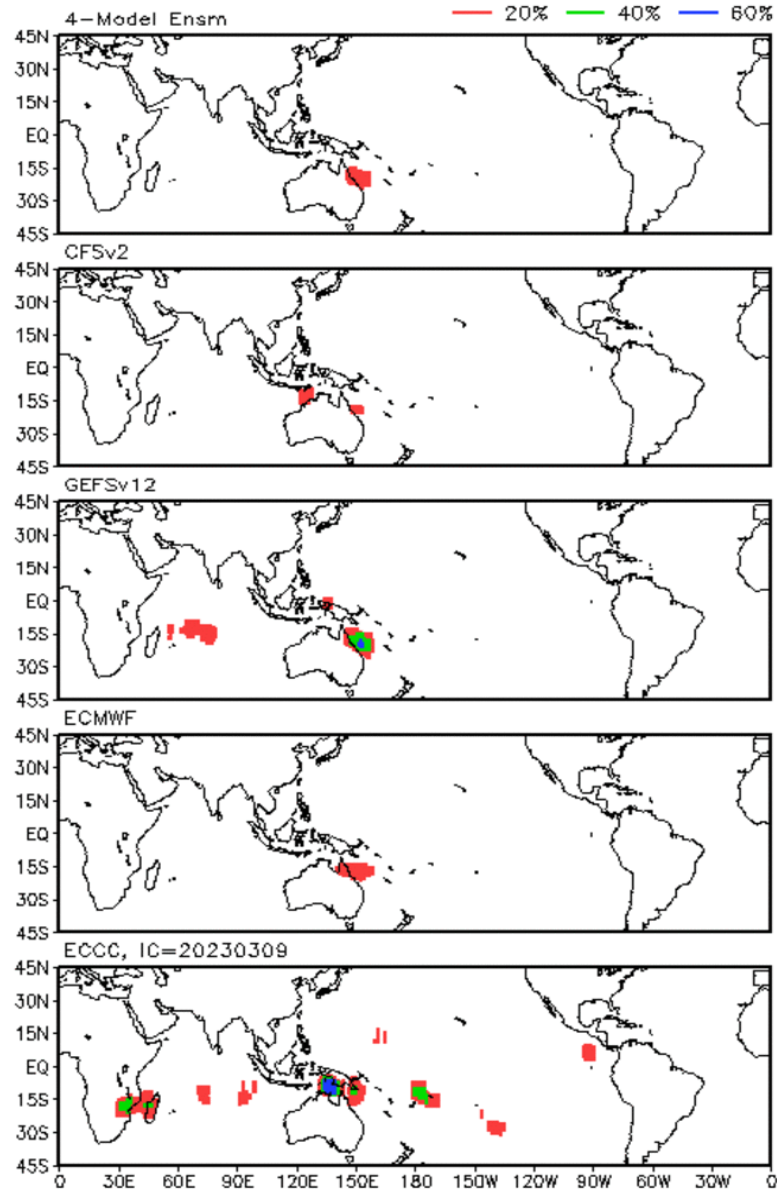
Monitoring for potential transition to TC. Invest label color denotes tropical transition probability



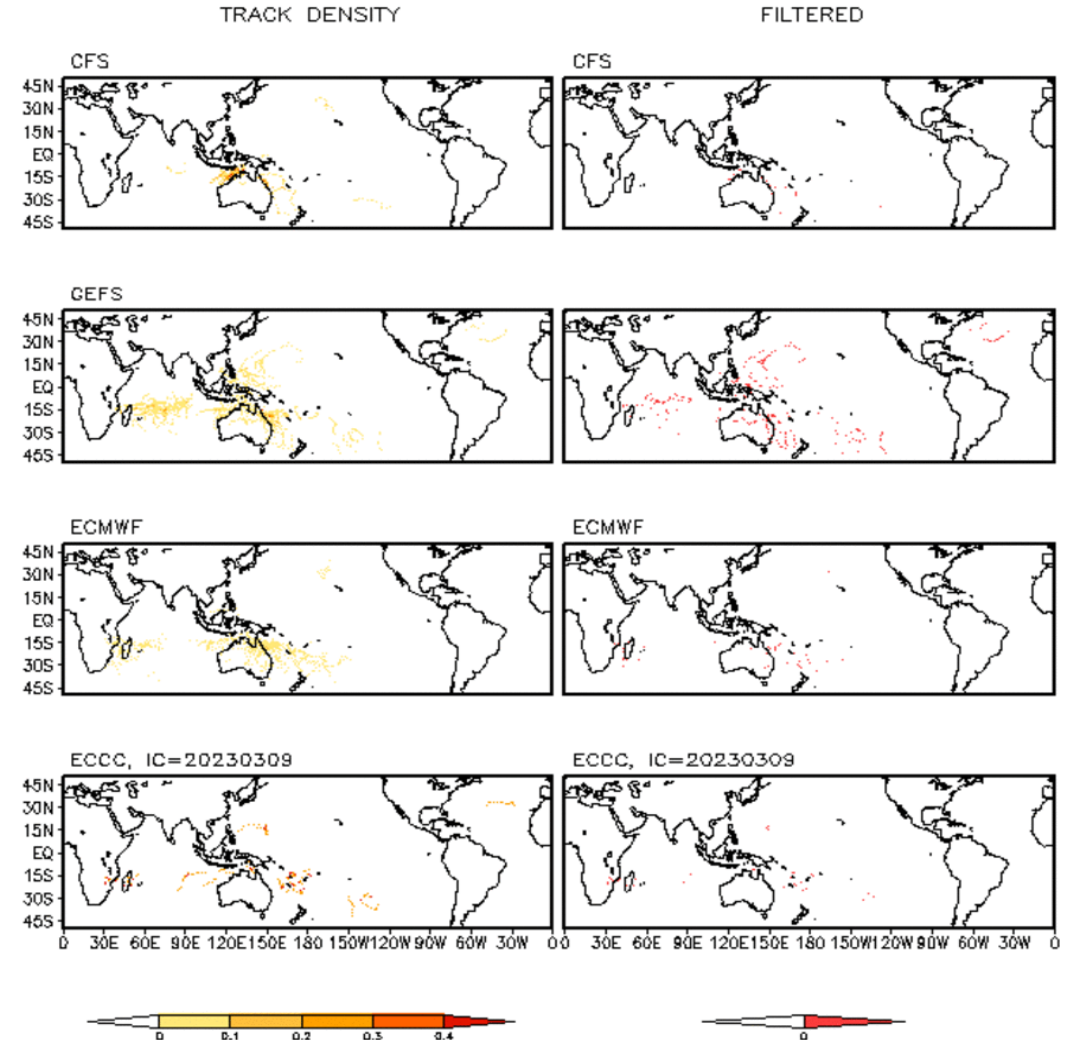
Tropical Cyclone (Reference Warning)

Multi-Model TC Track Probabilities/Densities: Week-2

Storm Track Probabilities, IC=20230313
Week 2: 0322 - 0328

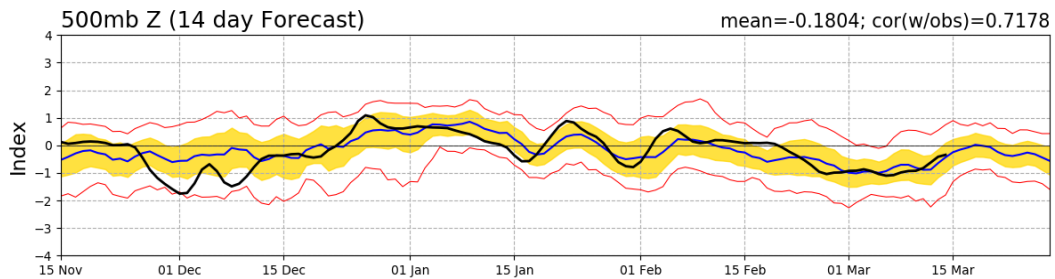
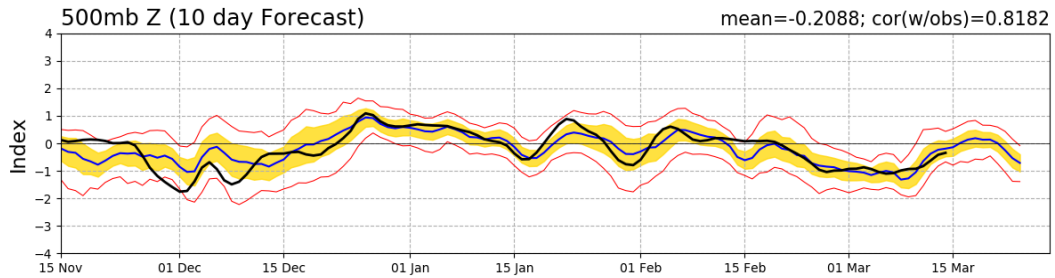
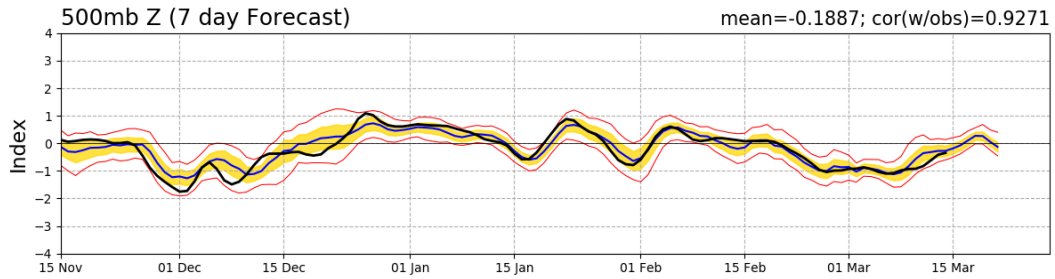
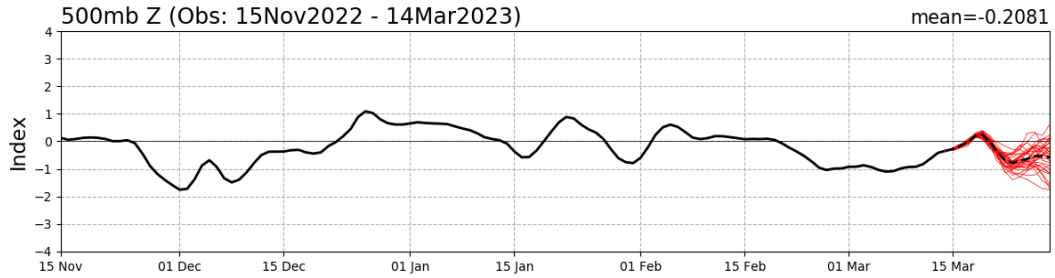


Storm Track Density Distribution, IC=20230313
Week 2 Forecast: 0322-0328

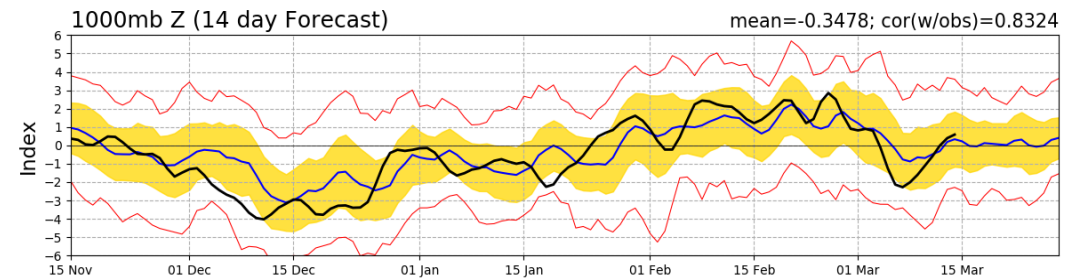
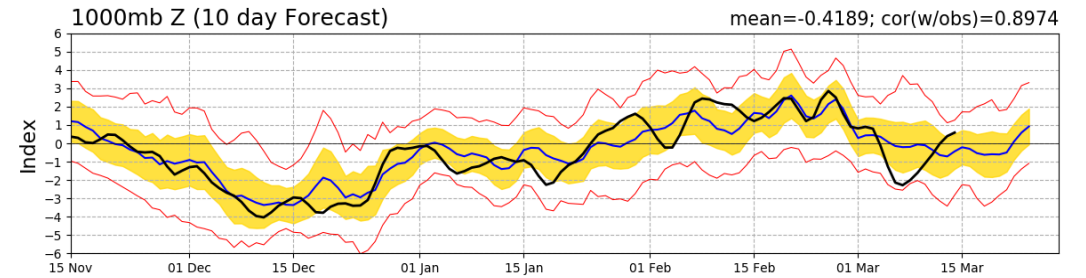
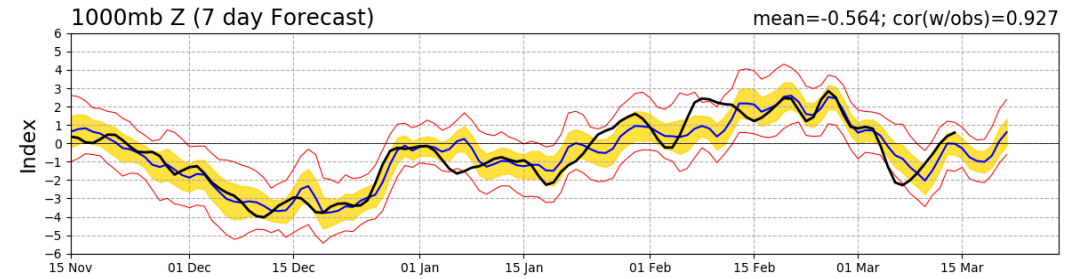
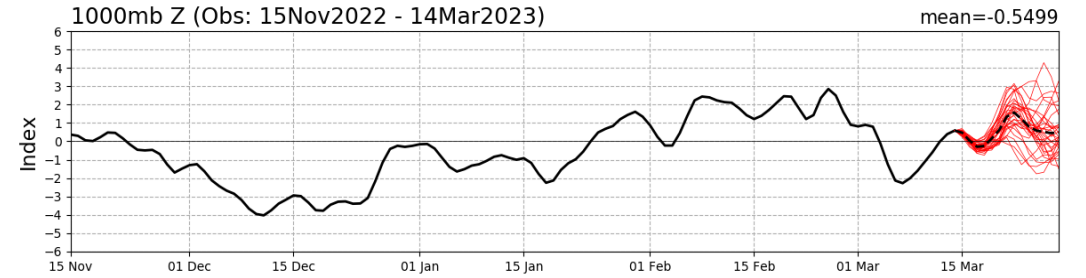


Teleconnection Indices: PNA / AO:

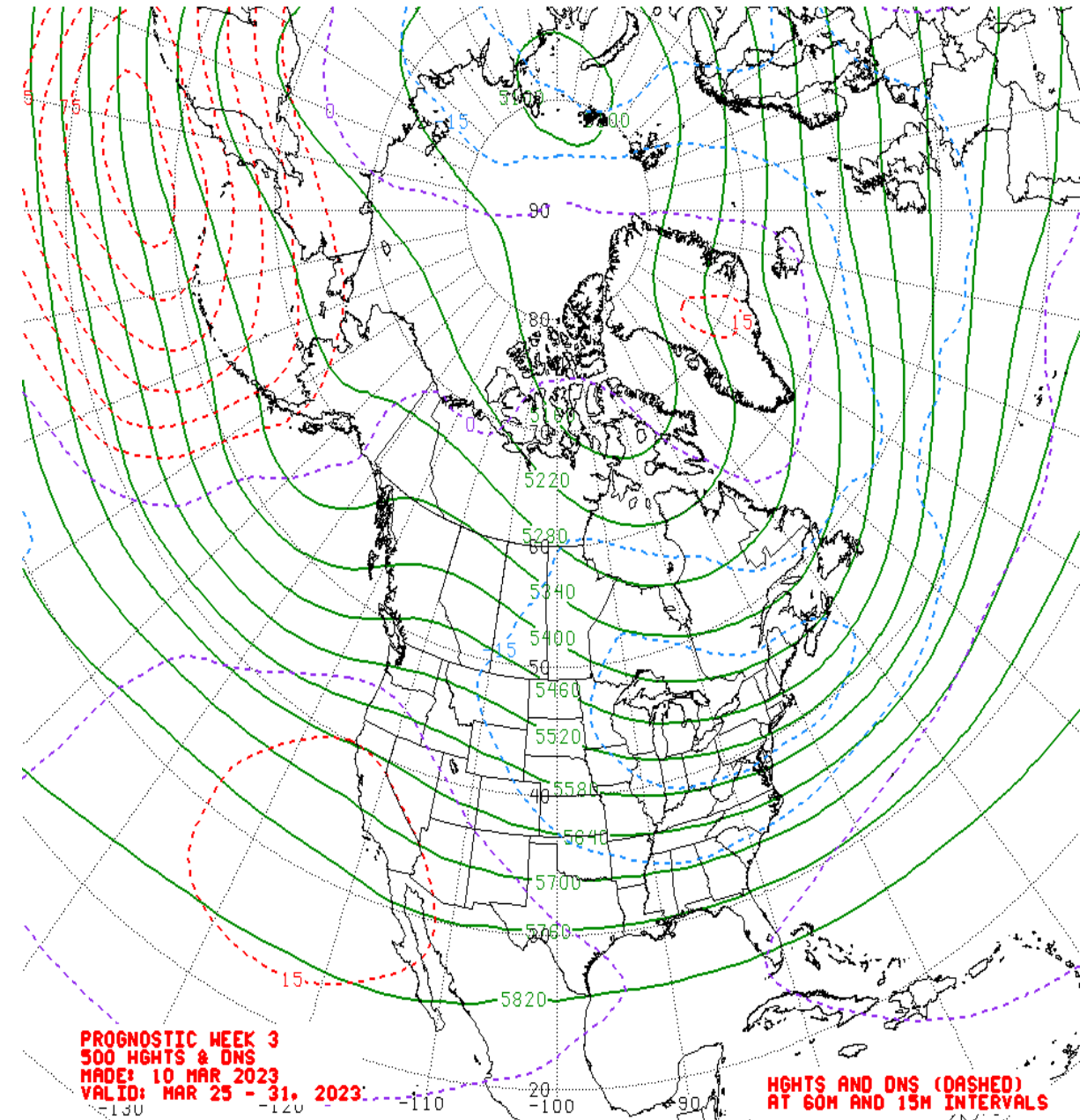
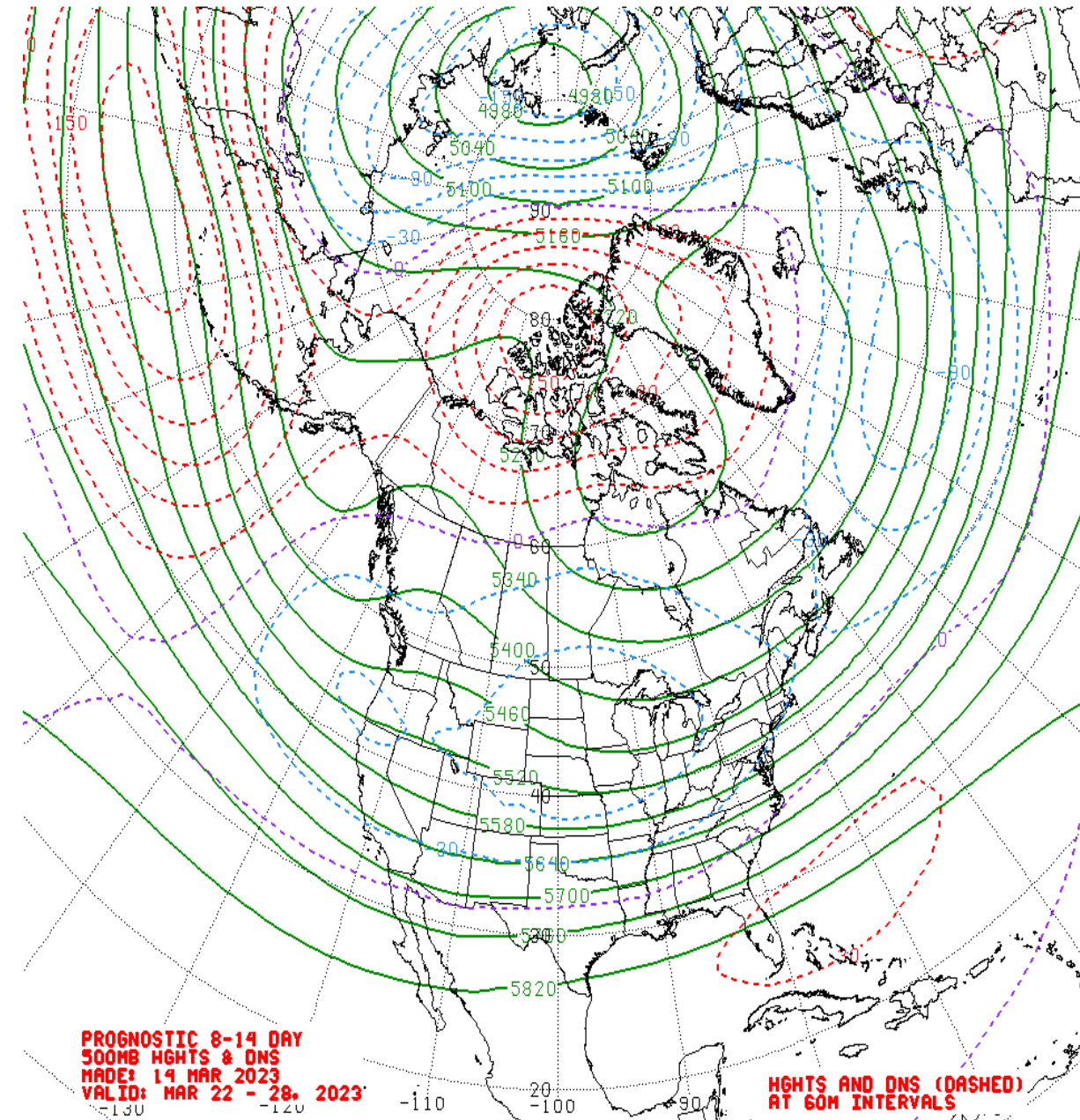
PNA Index: Observed & GEFS Forecasts



AO Index: Observed & GEFS Forecasts



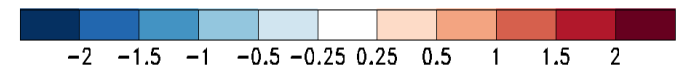
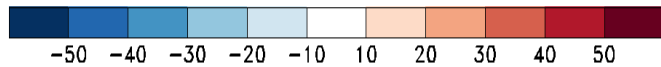
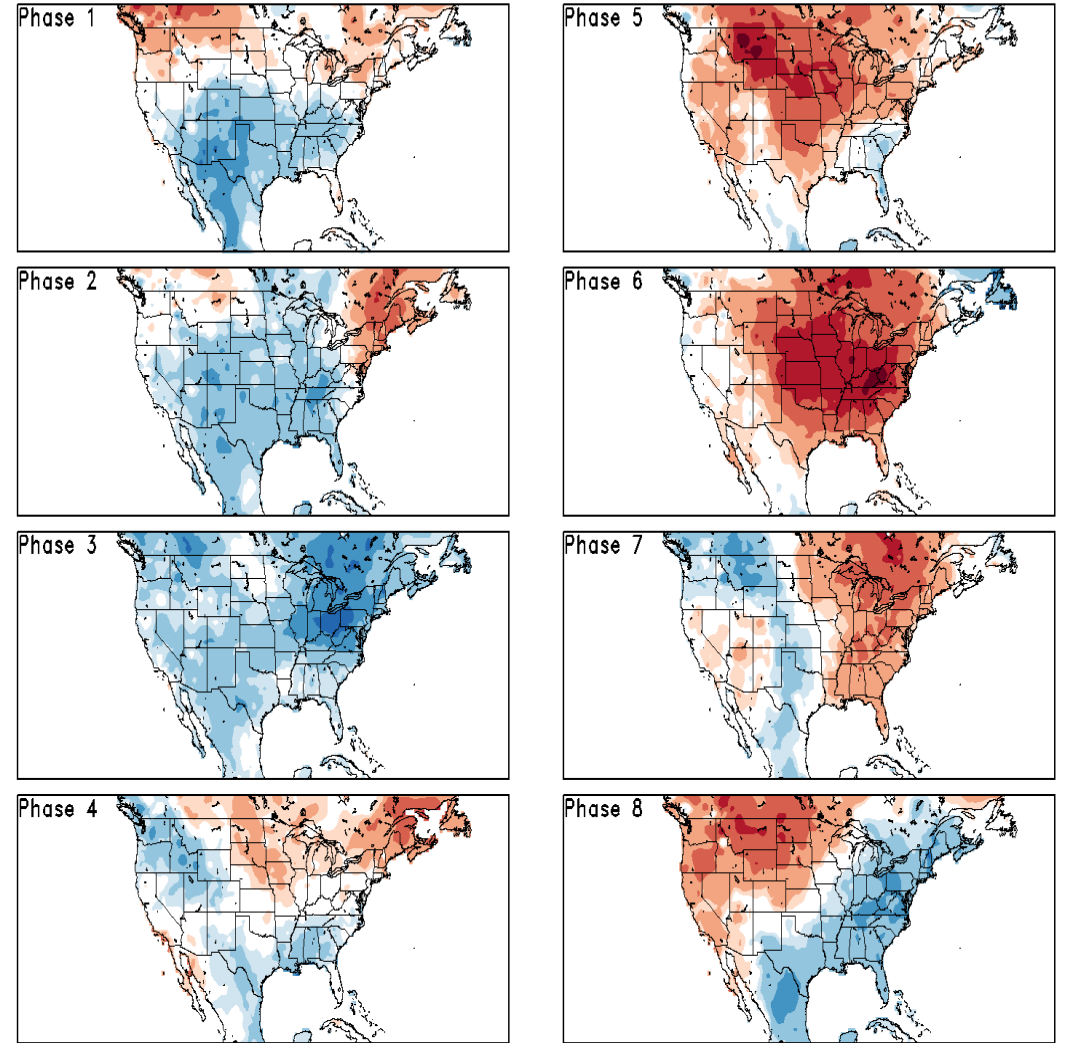
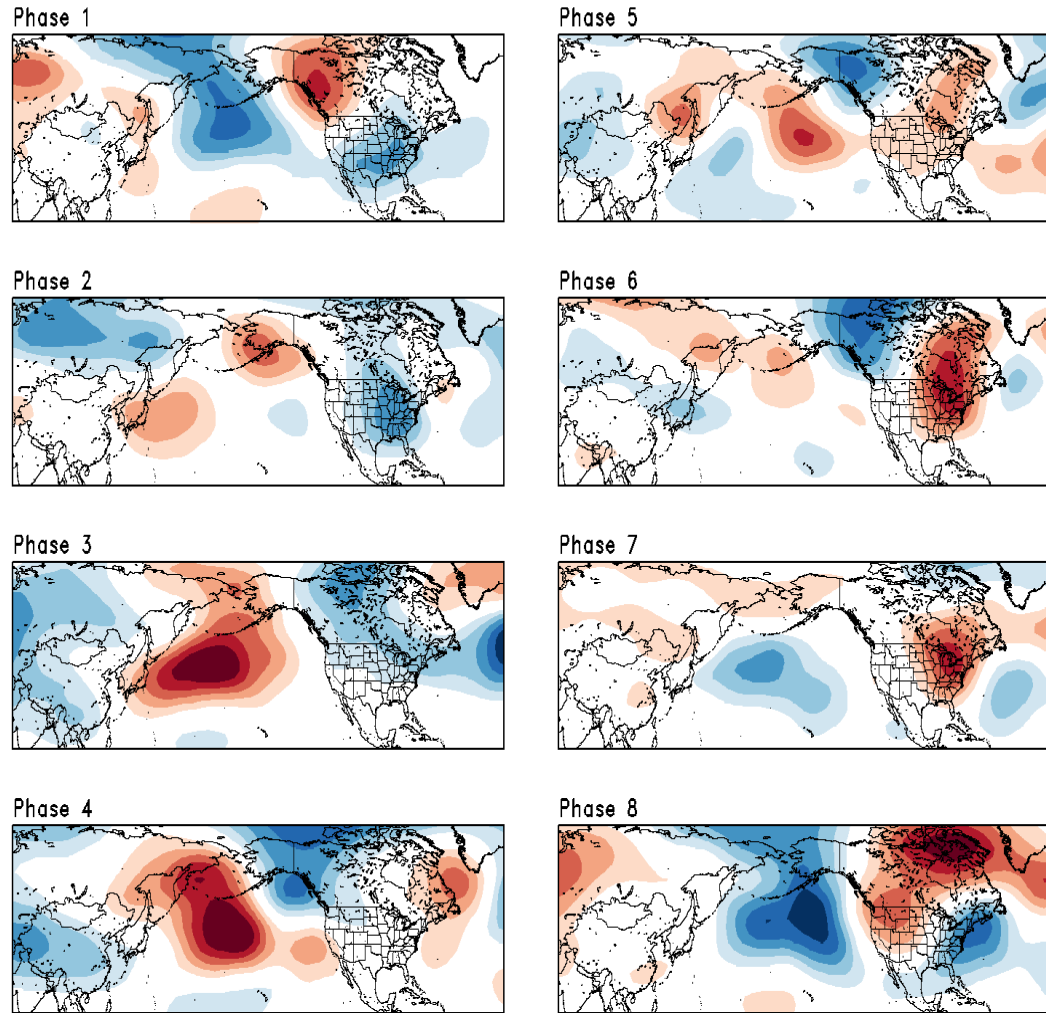
Mean 500-hPa Height Anomaly Forecasts:



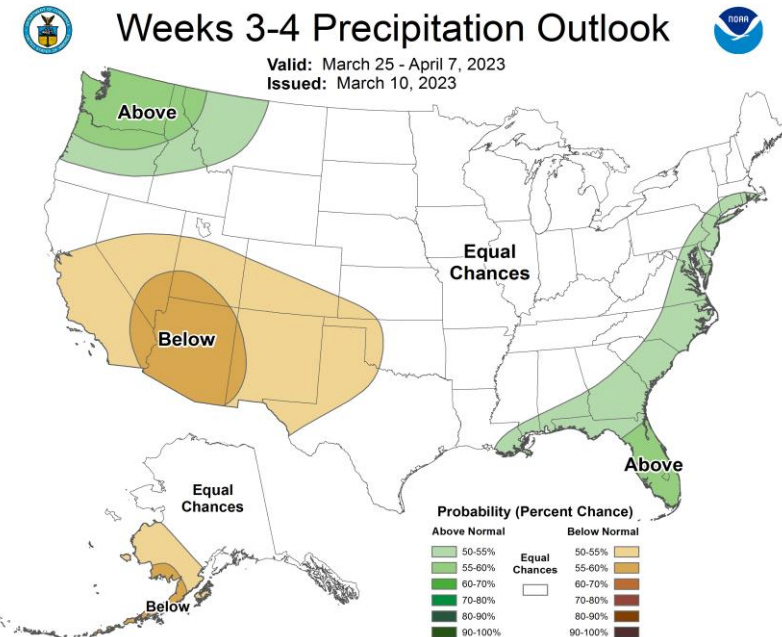
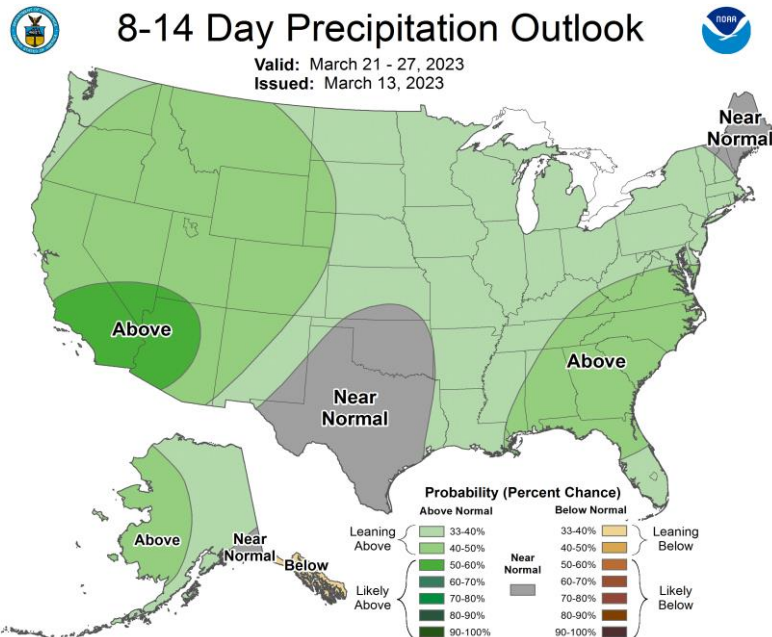
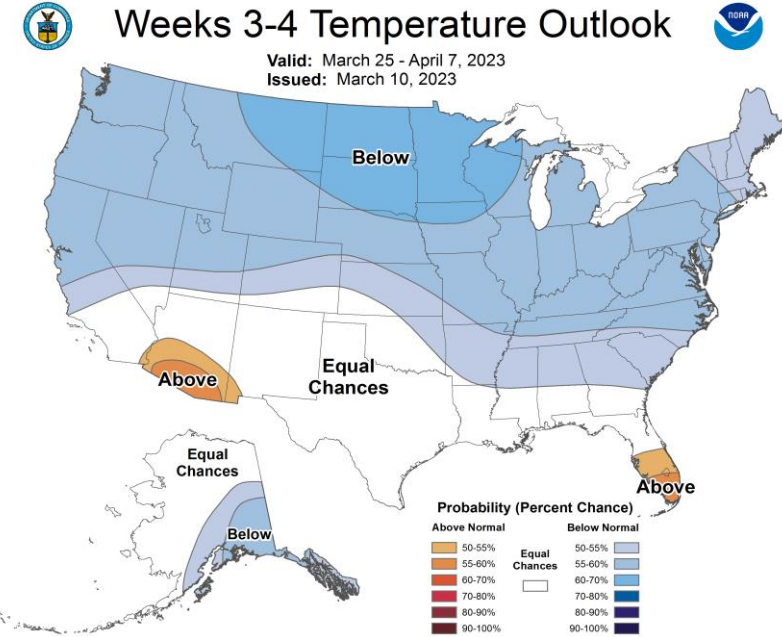
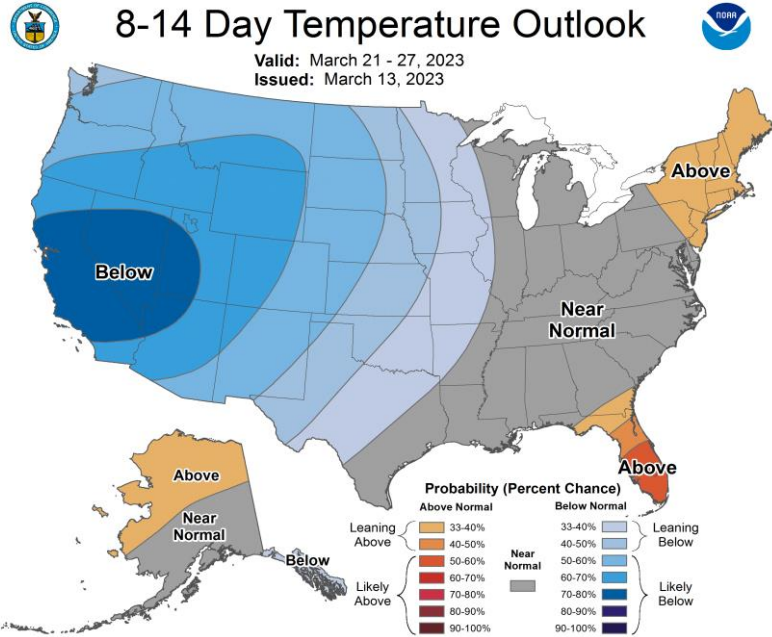
Historical 500-hPa Height & U.S. Temperatures By MJO Phase:

FMA MJO Composite: CDAS 500-hPa Height (m)

FMA MJO Composite: GLBT (degC)



Official Temperature & Precipitation Forecasts:



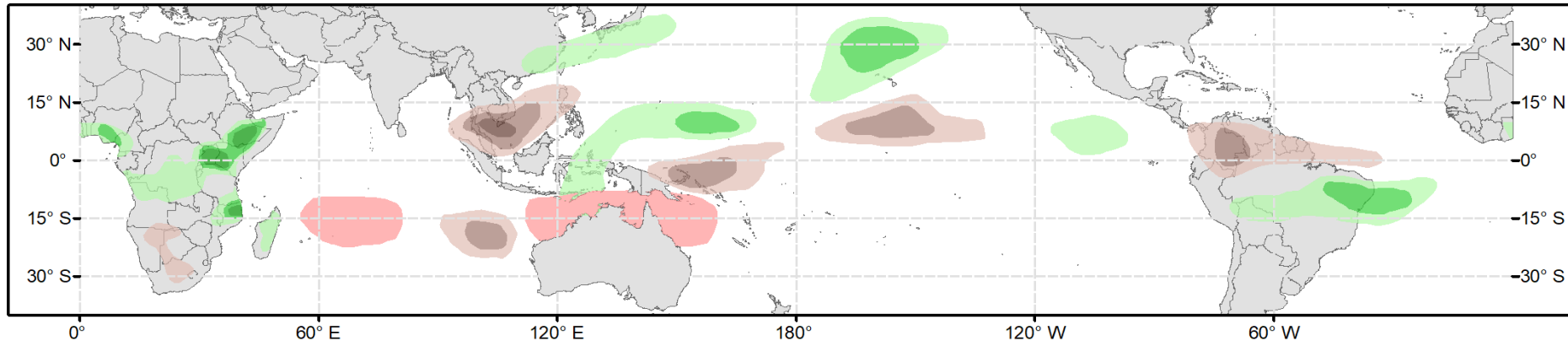


Global Tropics Hazards Outlook

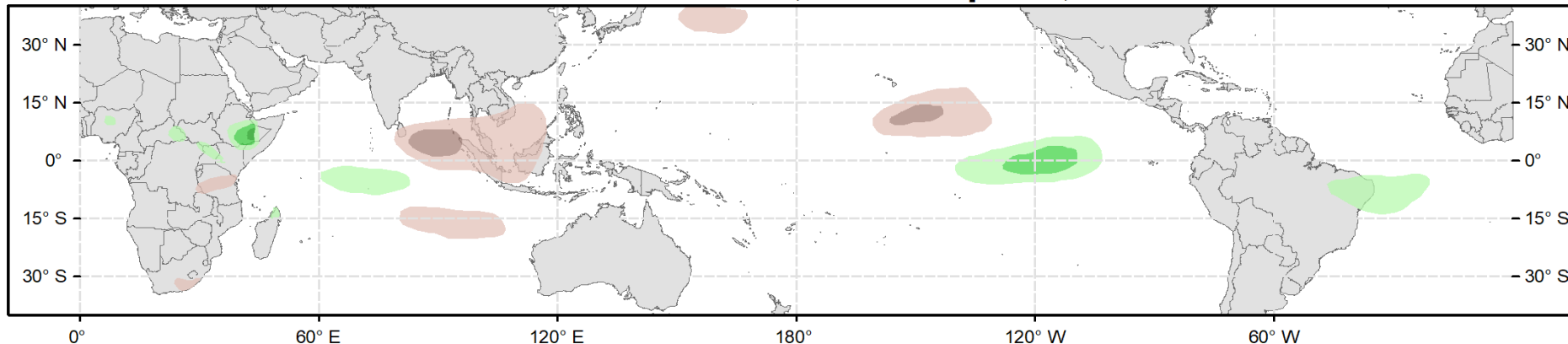
Climate Prediction Center



Week 2 - Valid: Mar 22, 2023 - Mar 28, 2023



Week 3 - Valid: Mar 29, 2023 - Apr 04, 2023



Week-2 Only

Tropical Cyclone (TC) Formation Probability

>20% >40% >60%

Tropical Depression (TD) or greater strength

Above-Average Rainfall Probability

>50% >65% >80%

Weekly total rainfall in the Upper third of the historical range

Below-Average Rainfall Probability

>50% >65% >80%

Weekly total rainfall in the Lower third of the historical range

Above-Average Temperatures Probability

>50% >65% >80%

7-day max temperatures in the Upper third of the historical range

Below-Average Temperatures Probability

>50% >65% >80%

7-day min temperatures in the Lower third of the historical range

Issued: 03/14/2023

Forecaster: Barandiaran

This product is updated once per week and targets broad scale conditions integrated over a 7-day period for US interests only. Consult your local responsible forecast agency.