

Global Tropics Hazards And Benefits Outlook

6/15/2021

Dan Harnos

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

TS Koguma

6/12

Peak: 35 knots

TS Carlos

6/12-present

Peak: 45 knots

TS Bill

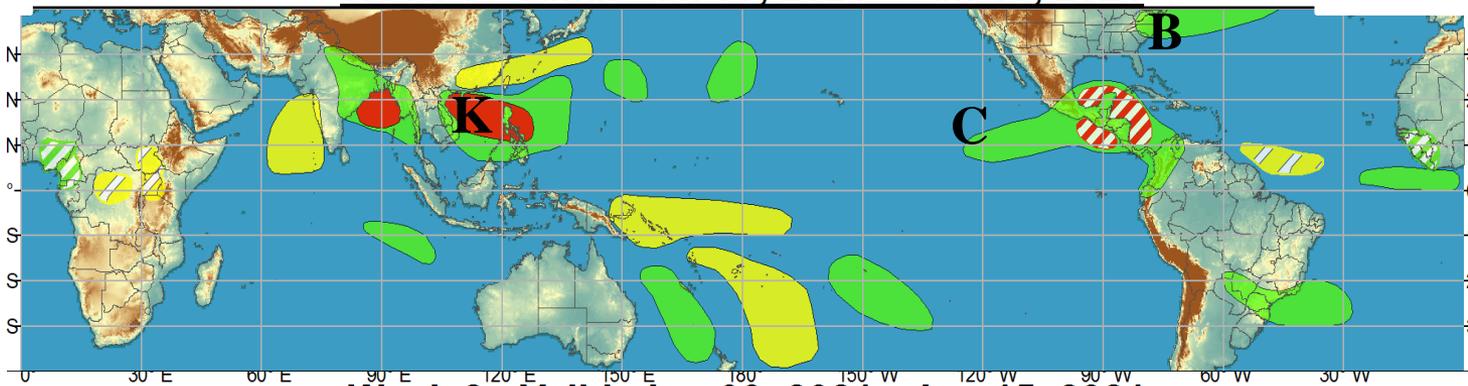
6/14-present

Peak: 45 knots

Cool shading
More clouds/rain

Warm shading
Less clouds/rain

Week 1 - Valid: Jun 09, 2021 - Jun 15, 2021

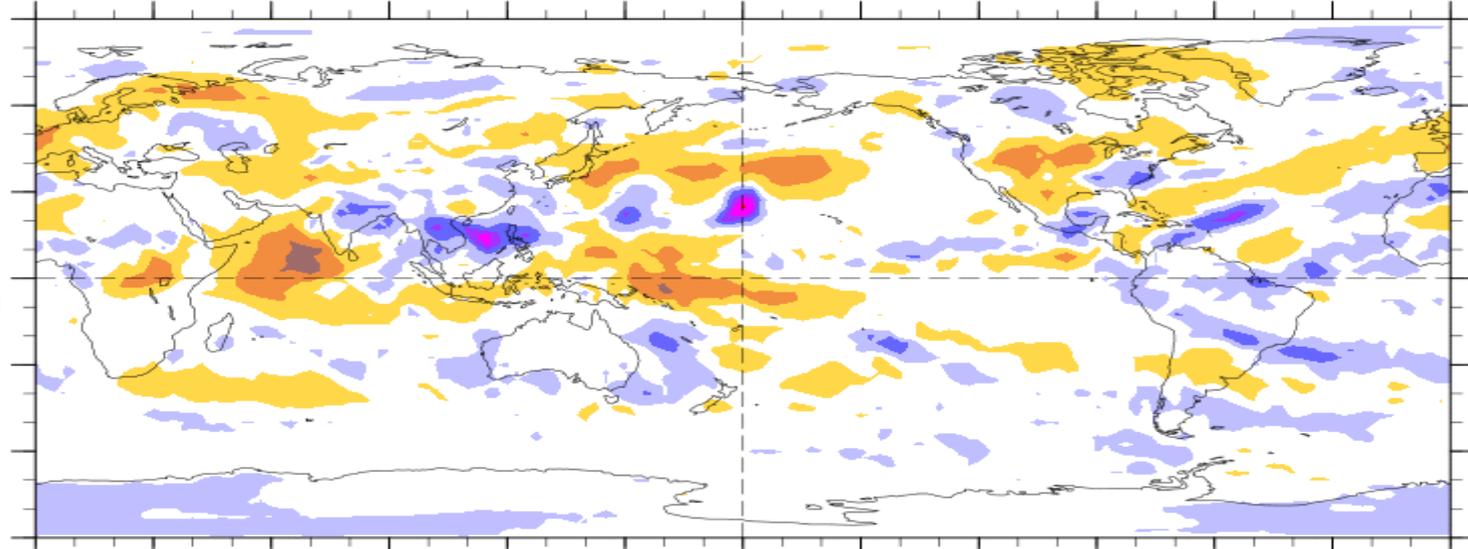


Week 2 - Valid: Jun 09, 2021 - Jun 15, 2021



7-Day Average OLR Anomaly

2021/06/07 - 2021/06/13



Synopsis of Climate Modes

ENSO: (10 June, 2021 Update)

next update on 8th of July

- ENSO Alert System Status: Not Active
- ENSO-neutral conditions are favored through the Northern Hemisphere summer (78% chance for the June-August season) and fall (50% chance for the September-November season).

MJO and other subseasonal tropical variability:

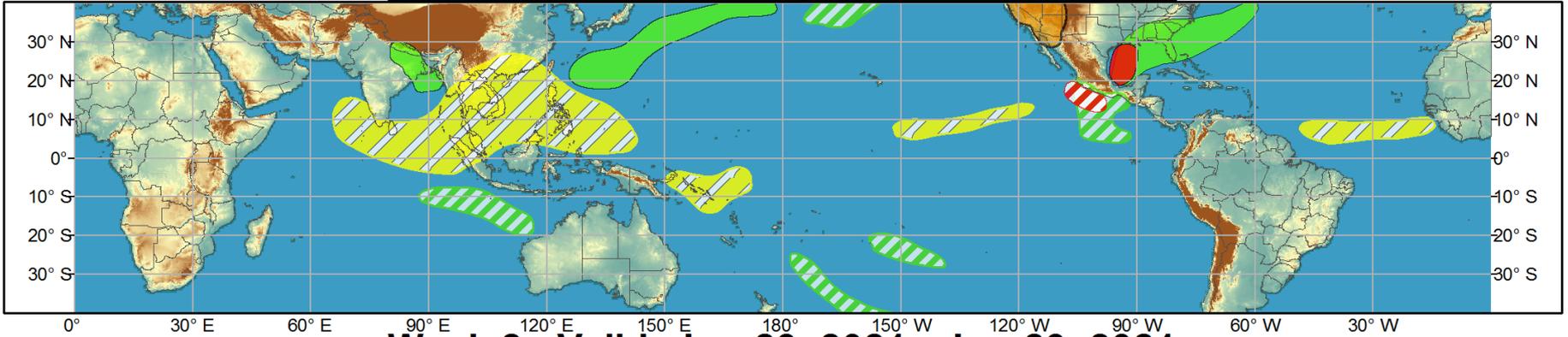
- Two centers of action are enhancing convection over Africa (the MJO) and Southeast Asia (an atmospheric Kelvin wave).
- Model guidance shows the center over Africa being the focus initially, before shifting to emphasize the region initially over Southeast Asia.
- Both Kelvin wave and MJO activity over the Western Hemisphere support increased tropical cyclone formation odds over the East Pacific and far western Caribbean or Gulf of Mexico.



Global Tropics Hazards and Benefits Outlook - Climate Prediction Center



Week 1 - Valid: Jun 16, 2021 - Jun 22, 2021



Week 2 - Valid: Jun 23, 2021 - Jun 29, 2021



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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Forecaster: Harnos

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IR Satellite & 200-hpa Velocity Potential Anomalies

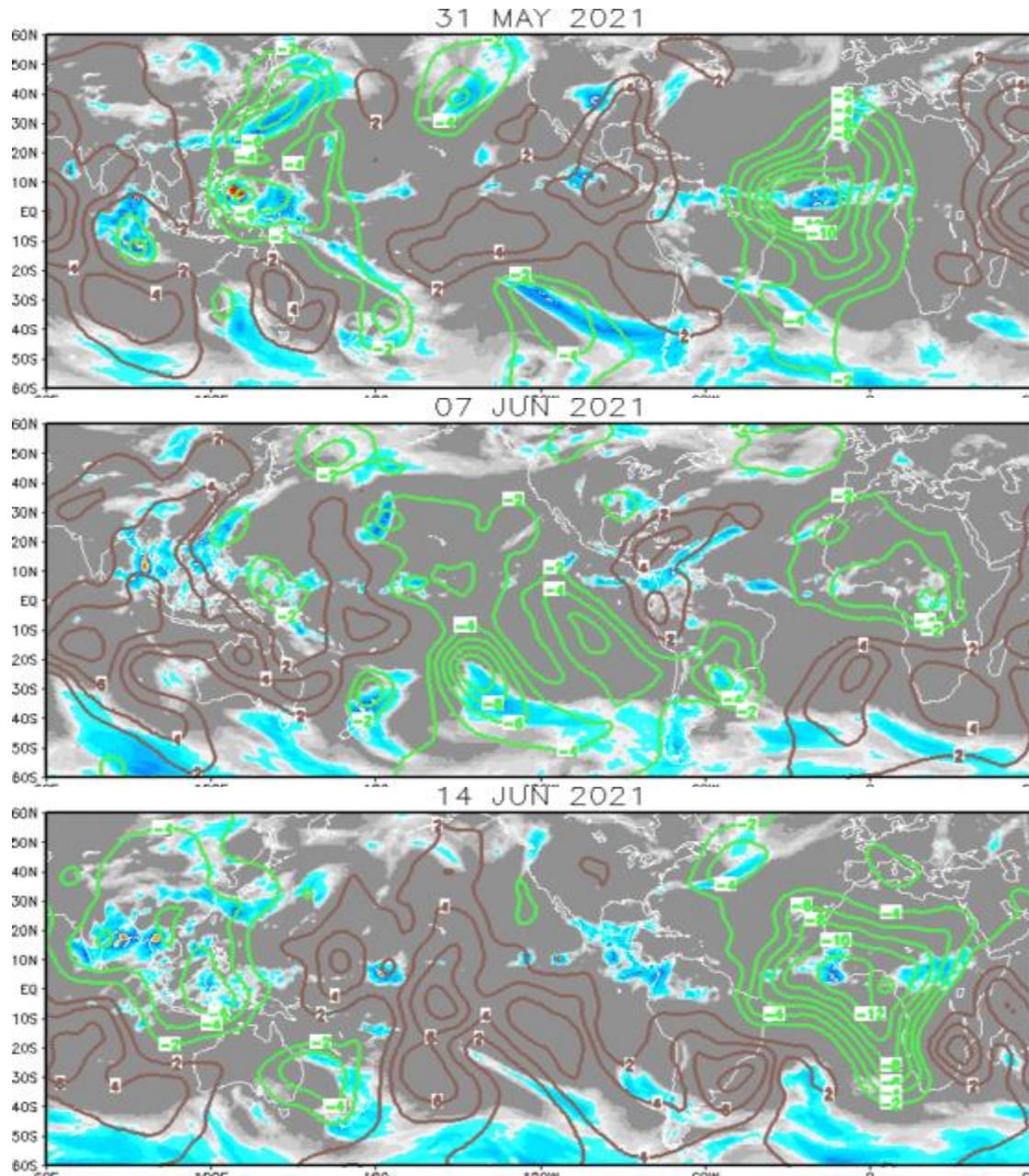
Green: Enhanced Divergence

Brown: Enhanced Convergence

Wave-2 structure with one center over the West Pacific and another near the Prime Meridian.

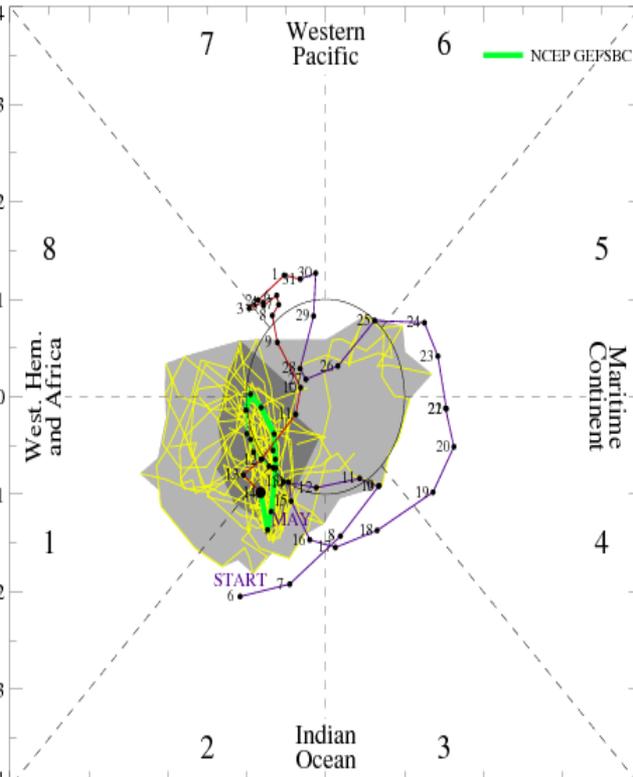
Eastward progression of both centers of action, with the center over the Eastern Hemisphere progressing more rapidly than the other center.

Both centers continue pushing east.

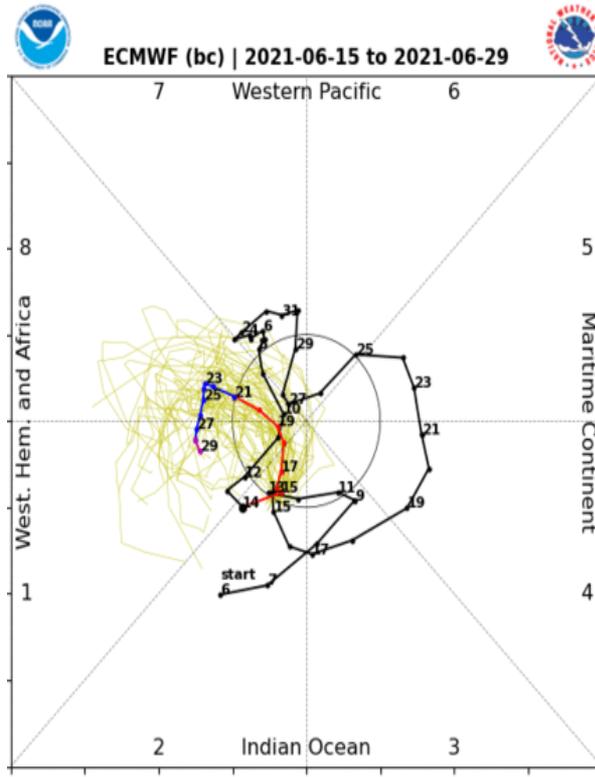


MJO Observation/Forecast

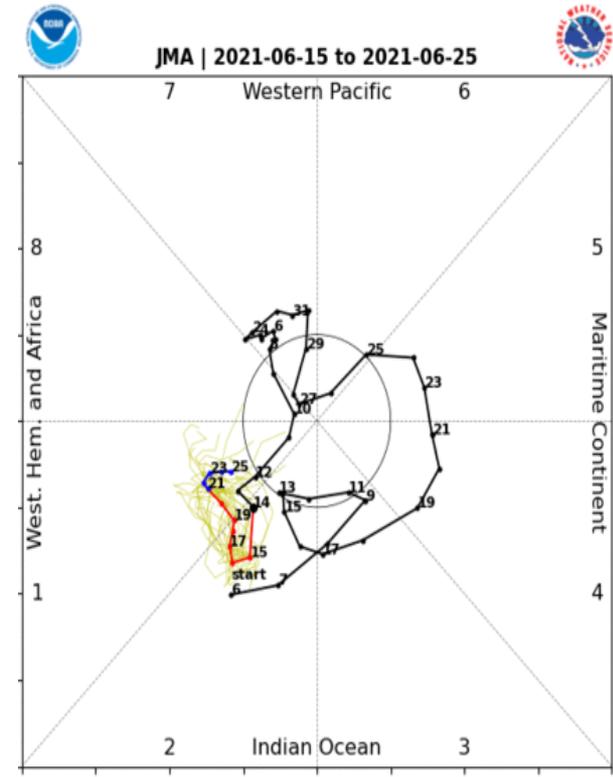
[RMM1, RMM2] forecast for Jun-15-2021 to Jun-29-2021



GEFS



ECMWF

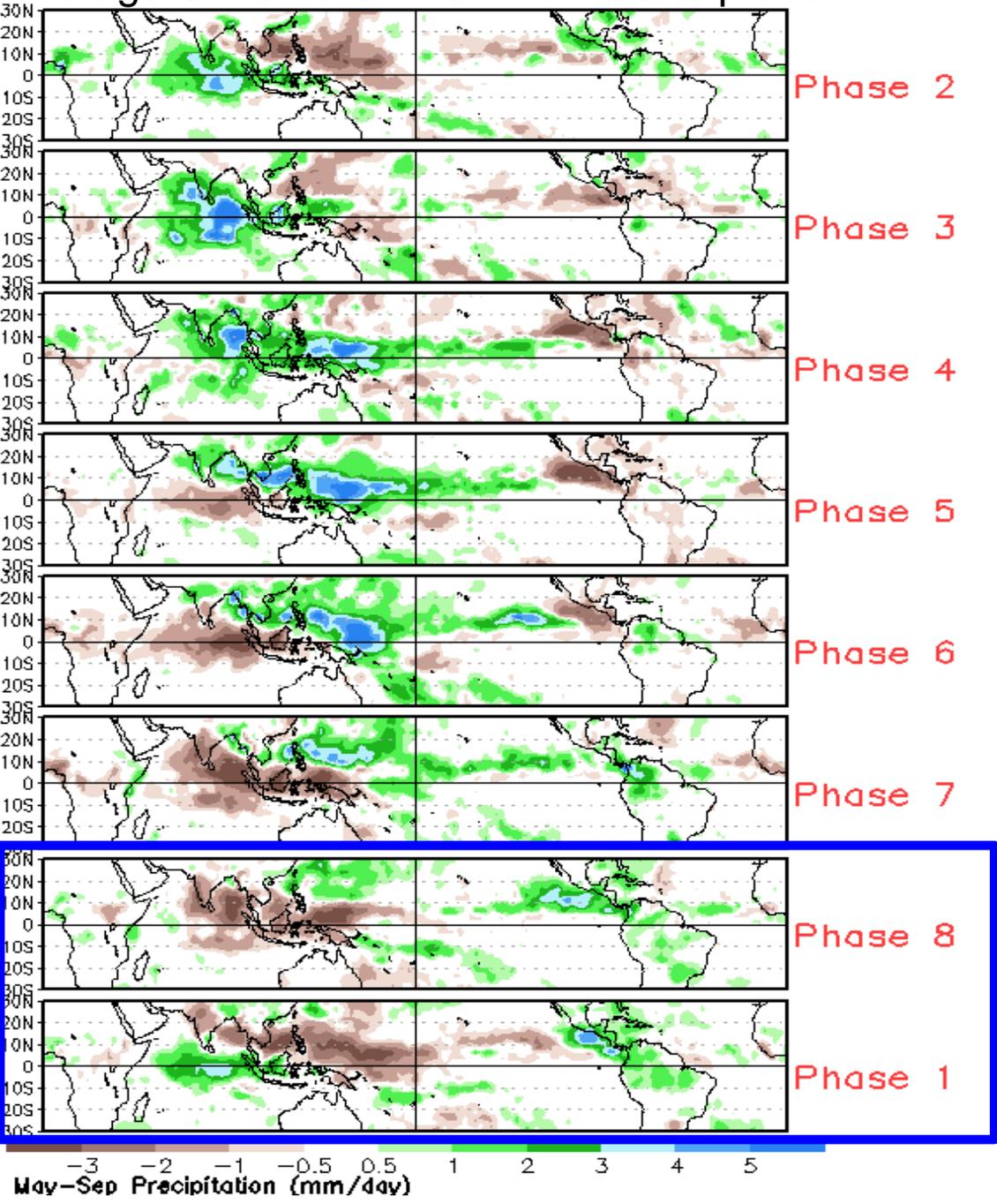


JMA

Both the GEFS and ECMWF show some weakening of the signal over the next week, before re-emerging over the Western Hemisphere. This is likely the RMM index shifting focus from the Center currently over Africa, to the other center (presently over Southeast Asia).

JMA emphasizes Rossby wave activity with westward propagation the next 2 weeks.

Average Conditions when the MJO is present

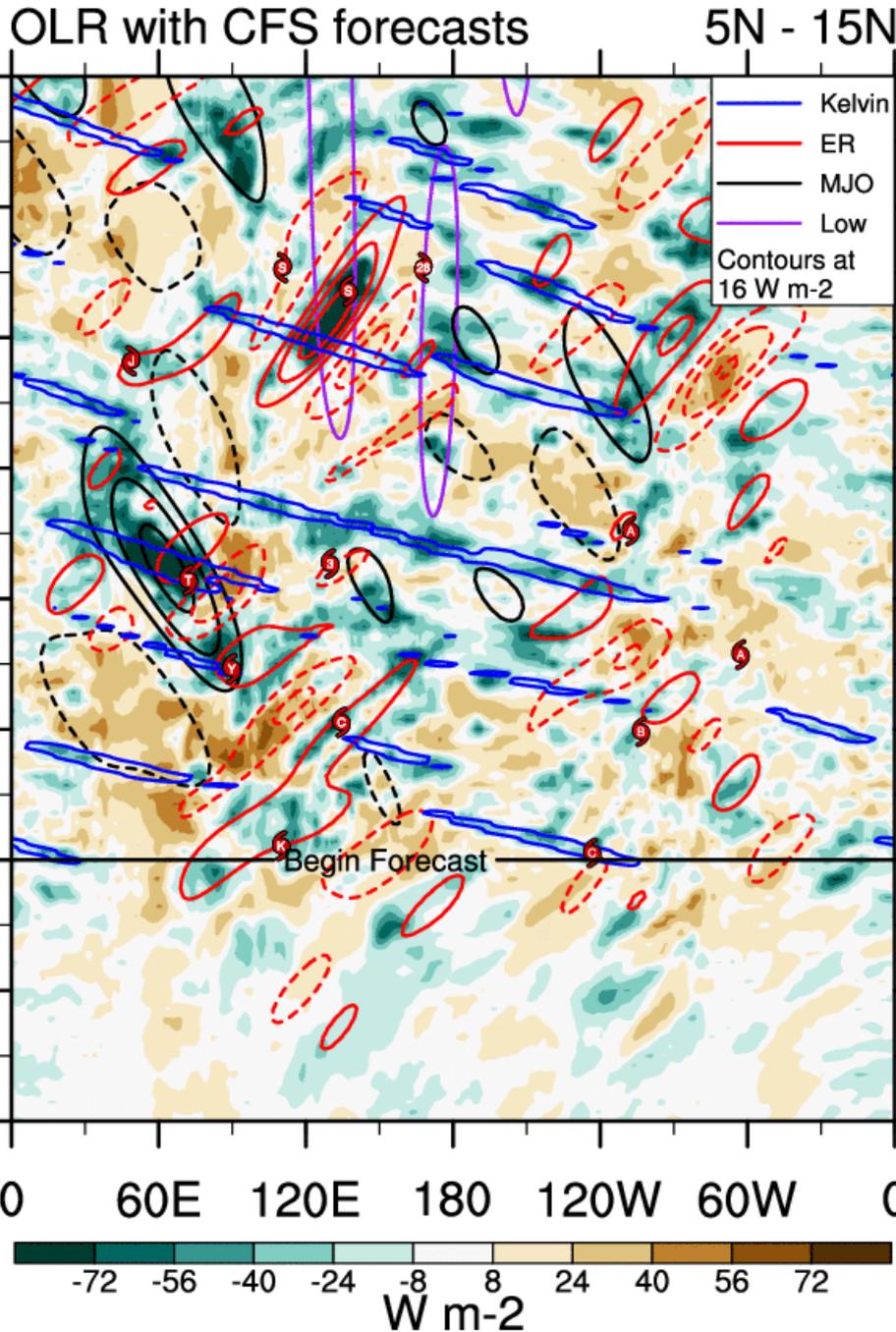


CAVEAT: These panels are representative of robust MJO events.

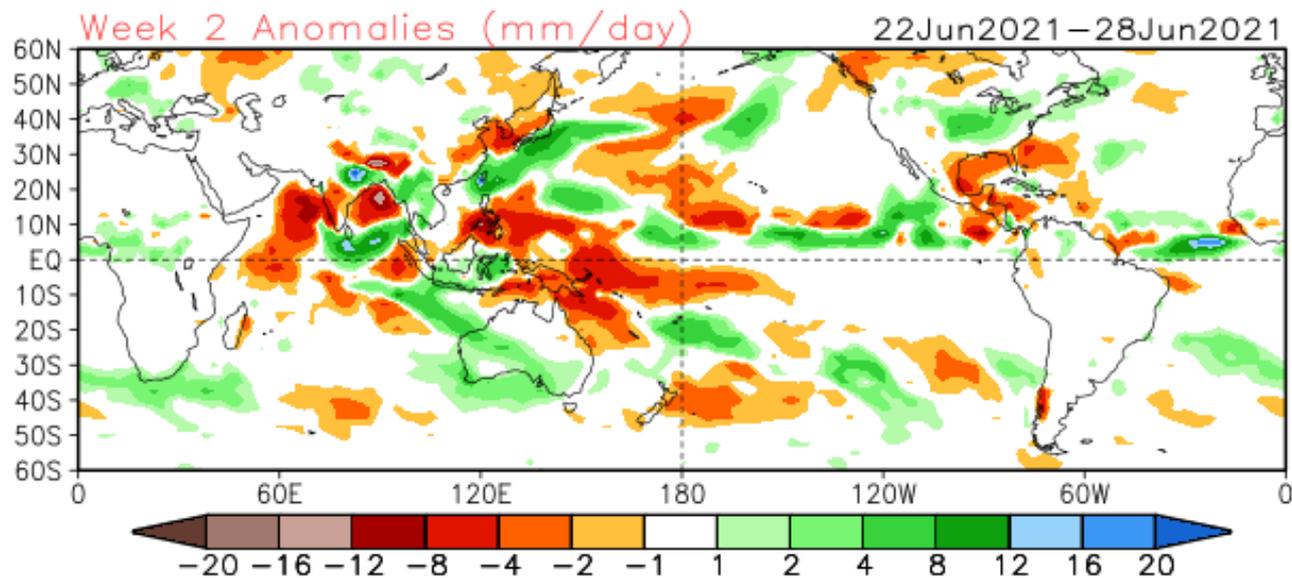
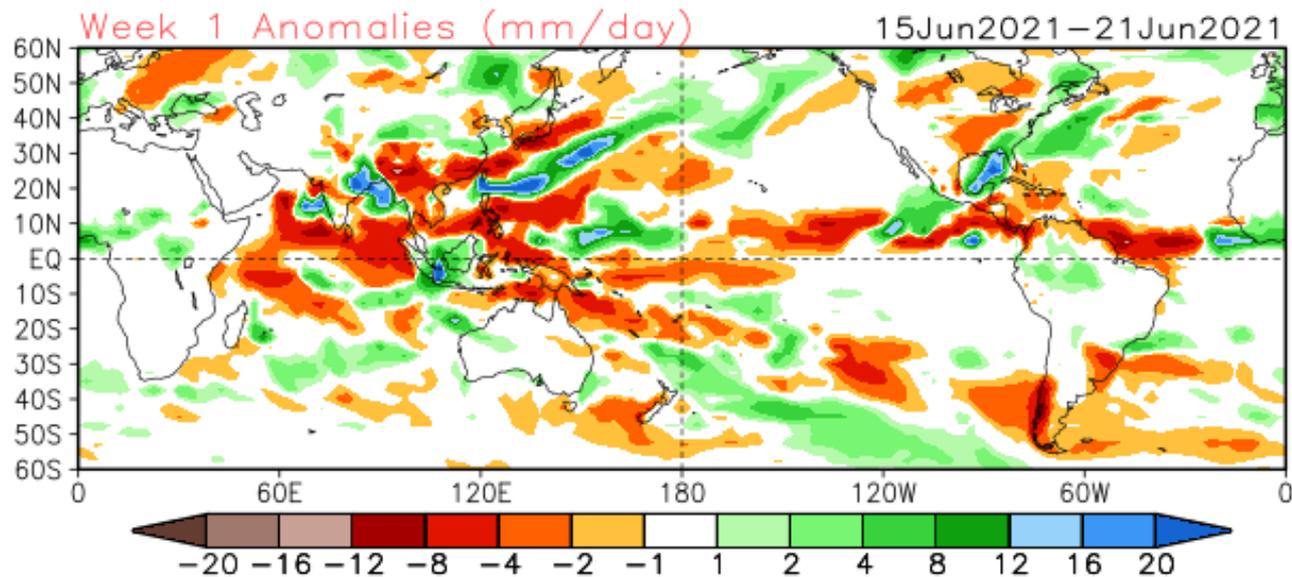
Kelvin wave activity apparent is apparent over Africa and the Pacific.

A robust **equatorial Rossby wave** has tracked from near the Date Line to 60°E since late May.

More **Rossby waves** are apparent over the tropics, particularly the Eastern Hemisphere.

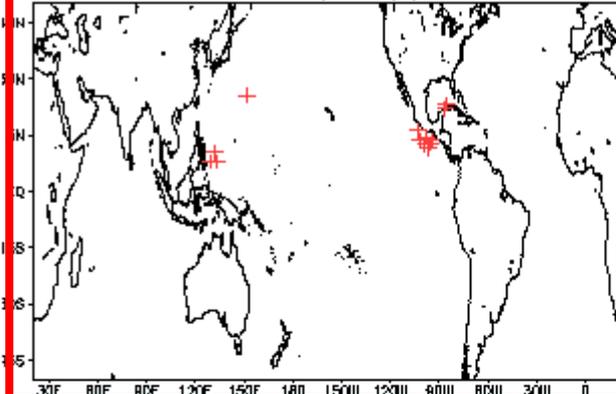


CFSv2 Weeks 1 & 2 Precipitation
16 Member Ensemble Mean Forecast from 14Jun2021

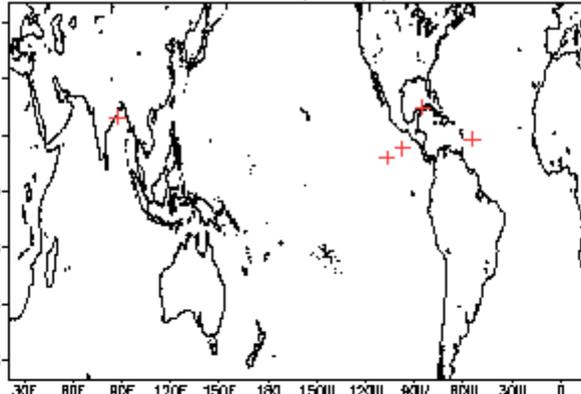


June Tropical Storm Formation by MJO phase

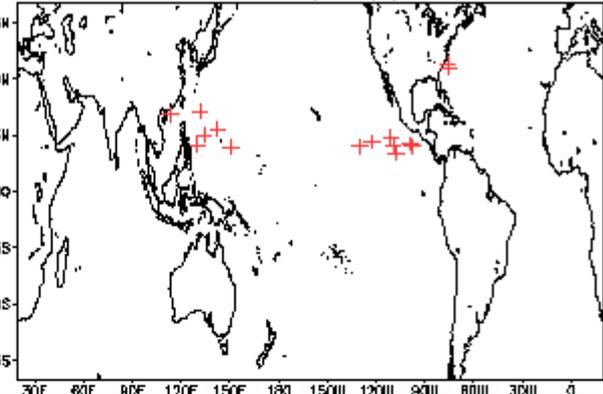
Phase 1 (104 days) 14 storms



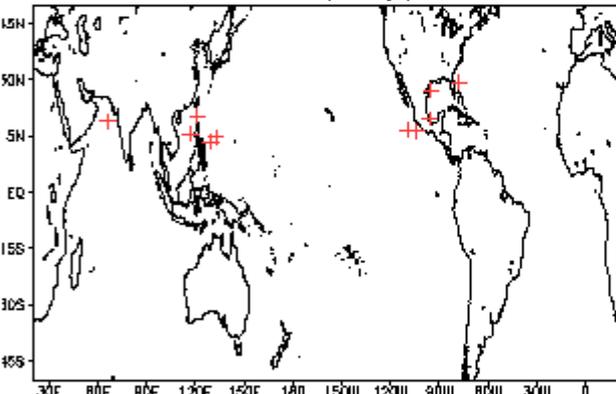
Phase 4 (80 days) 6 storms



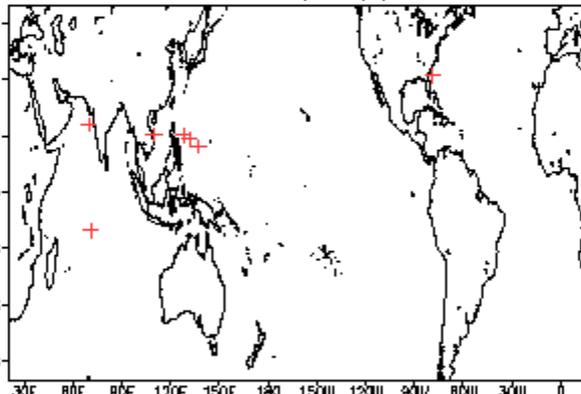
Phase 7 (45 days) 16 storms



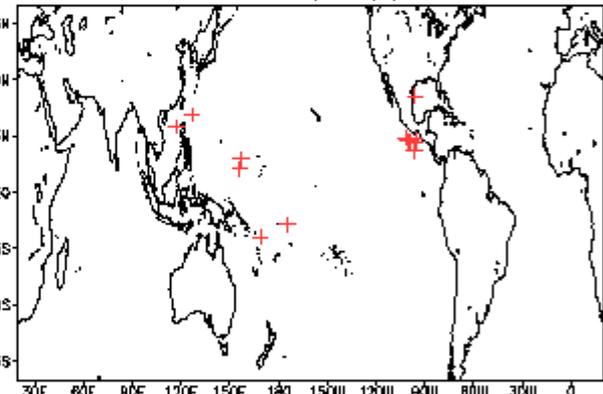
Phase 2 (82 days) 11 storms



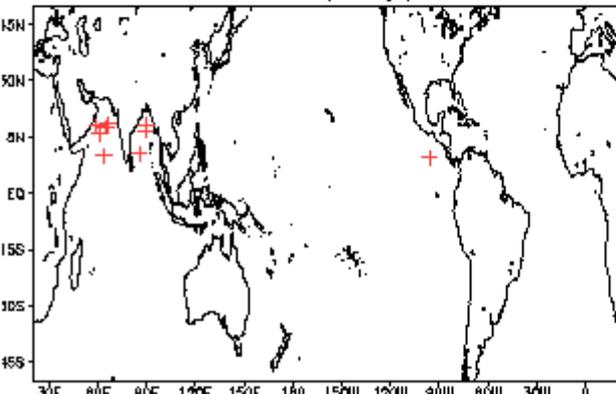
Phase 5 (77 days) 8 storms



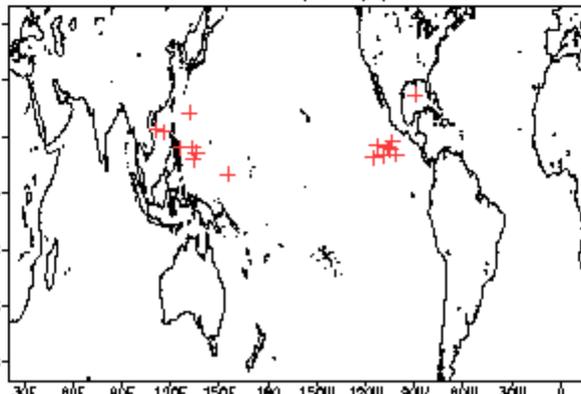
Phase 8 (70 days) 15 storms



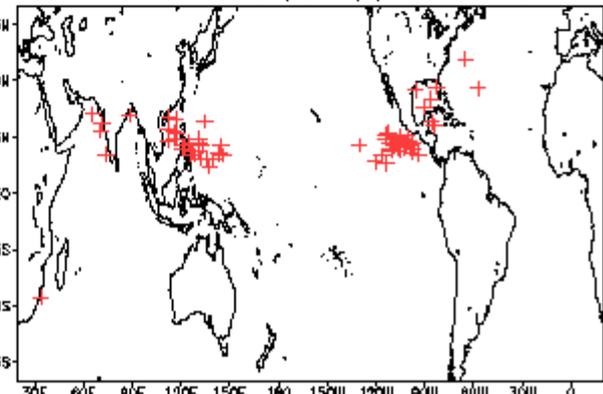
Phase 3 (57 days) 10 storms



Phase 6 (82 days) 17 storms



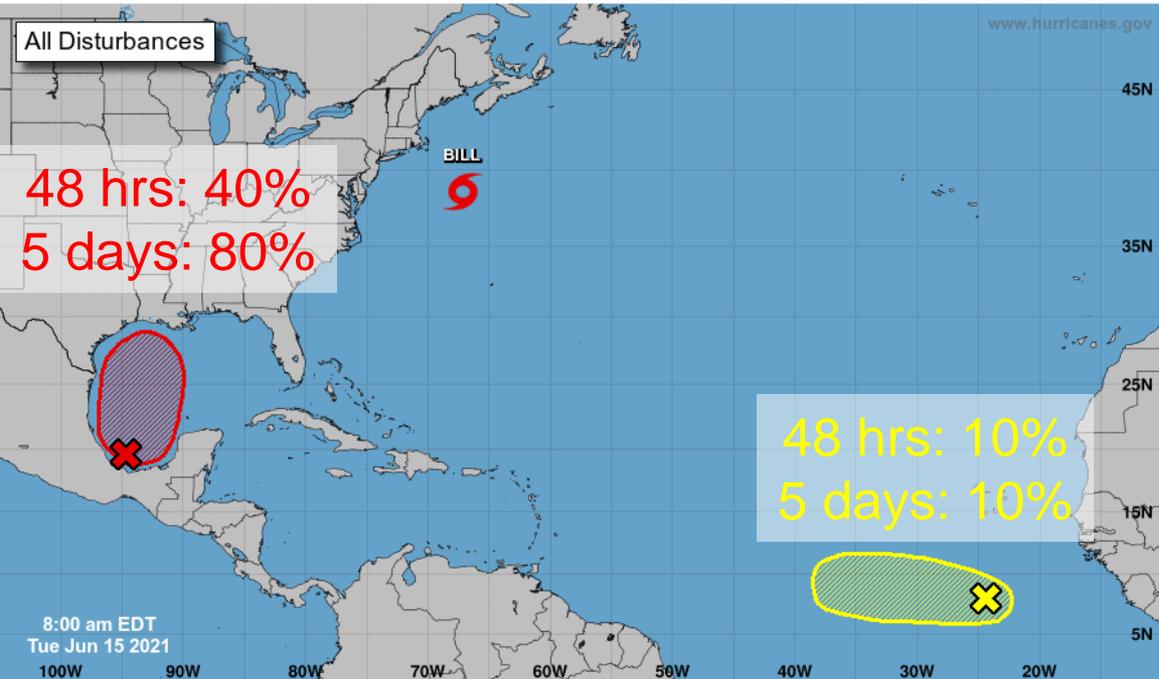
Null (423 days) 71 storms





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

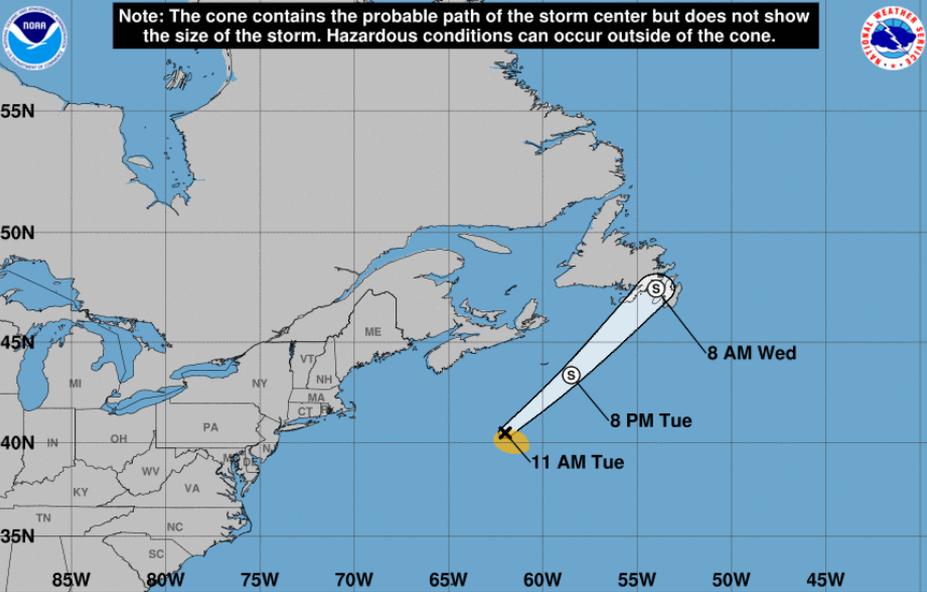
National Hurricane Center Miami, Florida



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



Note: The cone contains the probable path of the storm center but does not show the size of the storm. Hazardous conditions can occur outside of the cone.

Tropical Storm Bill

Tuesday June 15, 2021
11 AM AST Advisory 5
NWS National Hurricane Center

Current information: x

Center location 40.5 N 62.0 W
Maximum sustained wind 60 mph
Movement NE at 38 mph

Forecast positions:

● Tropical Cyclone ○ Post/Potential TC
Sustained winds: D < 39 mph
S 39-73 mph H 74-110 mph M > 110 mph

Potential track area:

Day 1-3 Day 4-5

Watches:

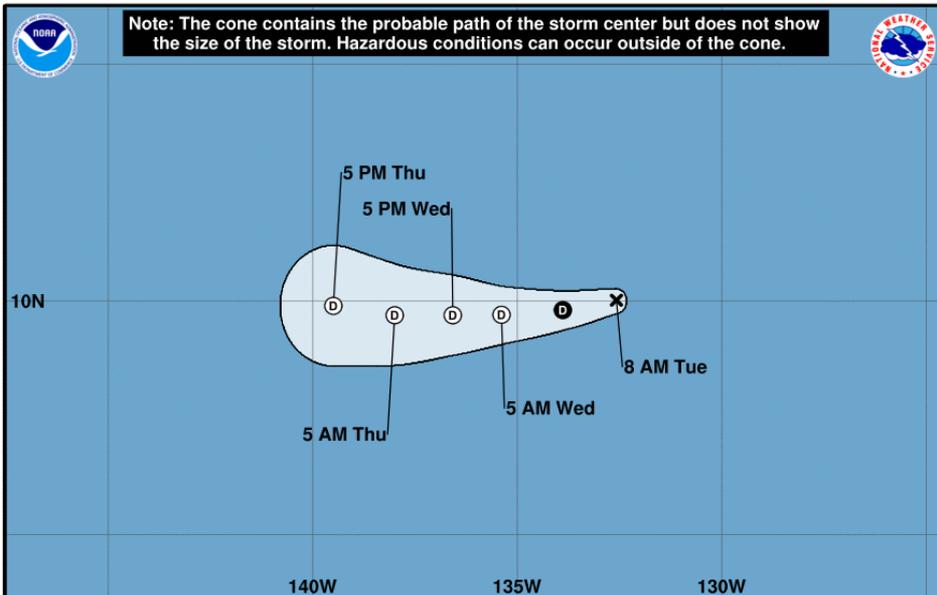
Hurricane Trop Stm

Warnings:

Hurricane Trop Stm

Current wind extent:

Hurricane Trop Stm



Note: The cone contains the probable path of the storm center but does not show the size of the storm. Hazardous conditions can occur outside of the cone.

Tropical Depression Carlos

Tuesday June 15, 2021
8 AM PDT Advisory 12
NWS National Hurricane Center

Current information: x

Center location 10.0 N 132.6 W
Maximum sustained wind 35 mph
Movement W at 10 mph

Forecast positions:

● Tropical Cyclone ○ Post/Potential TC
Sustained winds: D < 39 mph
S 39-73 mph H 74-110 mph M > 110 mph

Potential track area:

Day 1-3 Day 4-5

Watches:

Hurricane Trop Stm

Warnings:

Hurricane Trop Stm

Current wind extent:

Hurricane Trop Stm

Storm Track Density Distribution, IC=20210614
Week 1 Forecast: 0616-0622

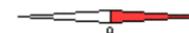
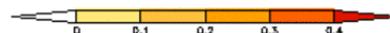
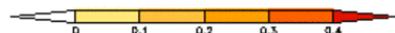
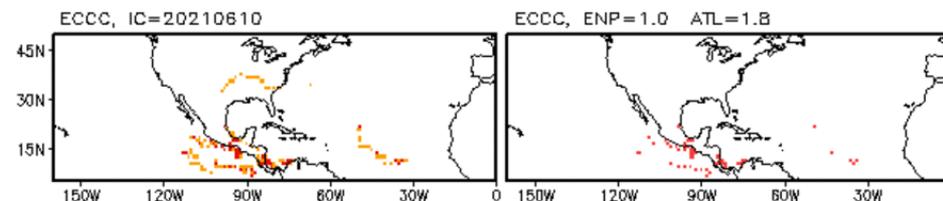
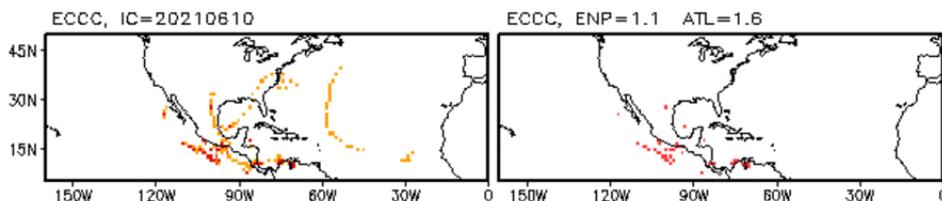
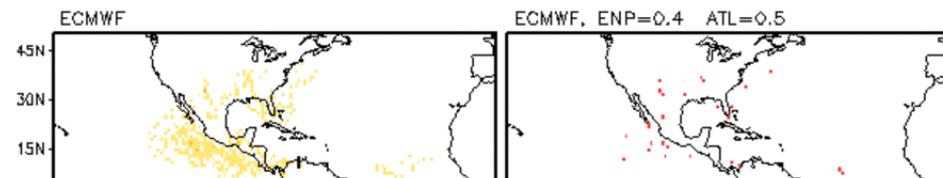
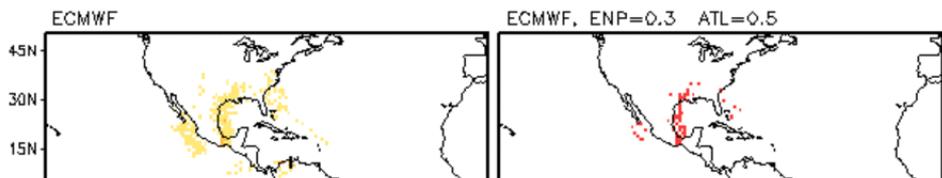
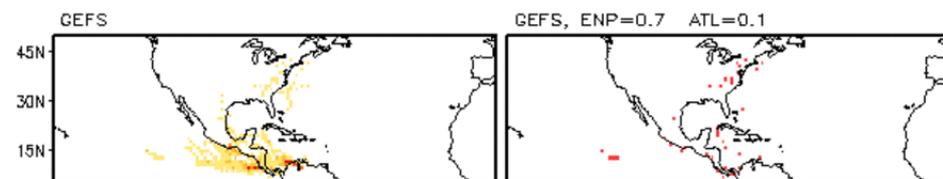
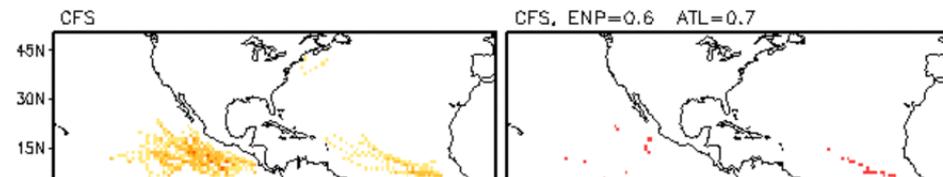
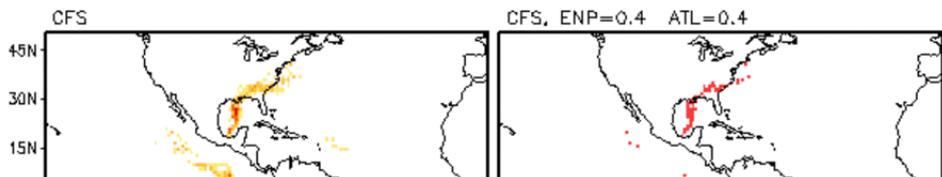
Storm Track Density Distribution, IC=20210614
Week 2 Forecast: 0623-0629

TRACK DENSITY

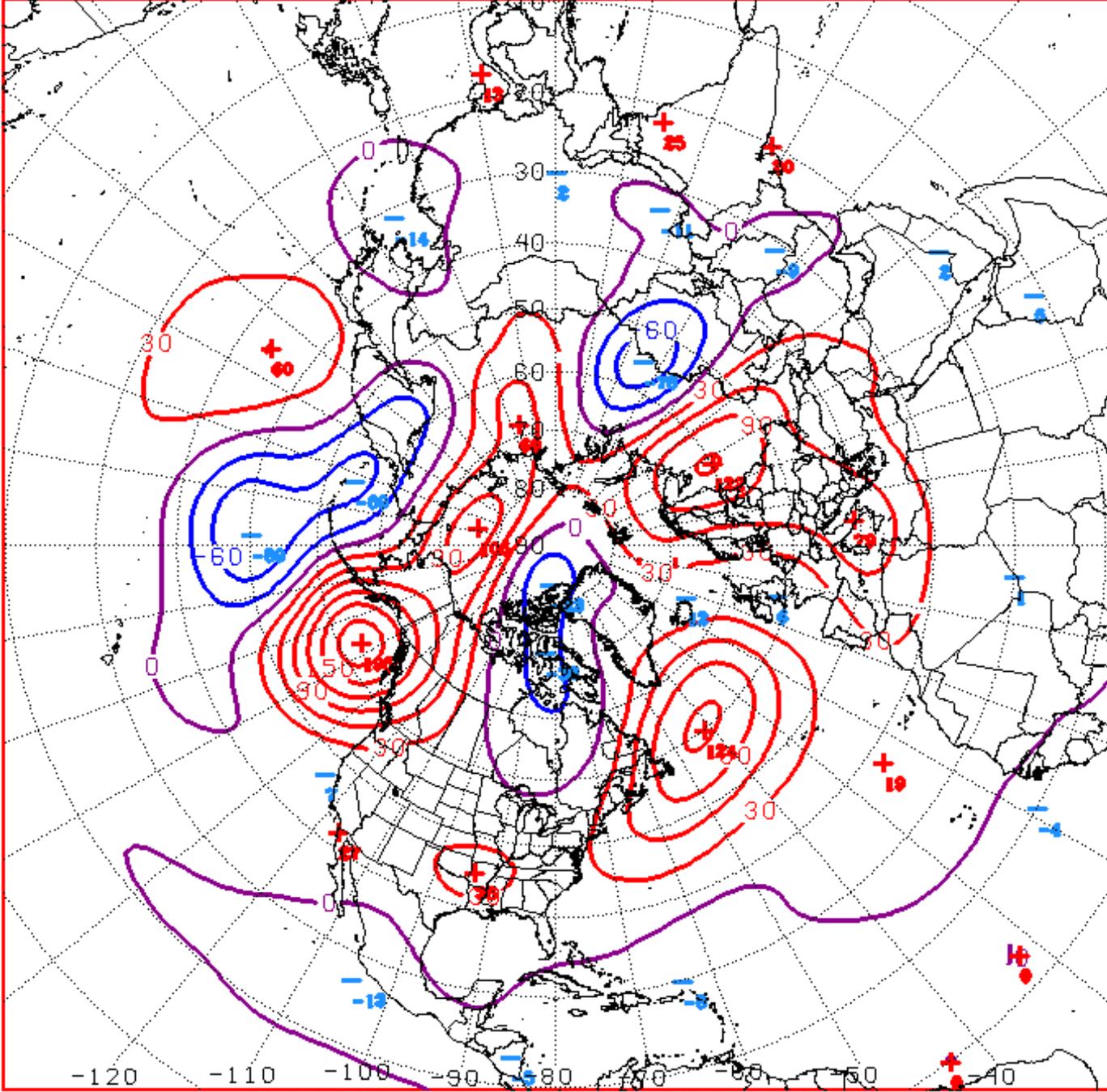
FILTERED

TRACK DENSITY

FILTERED

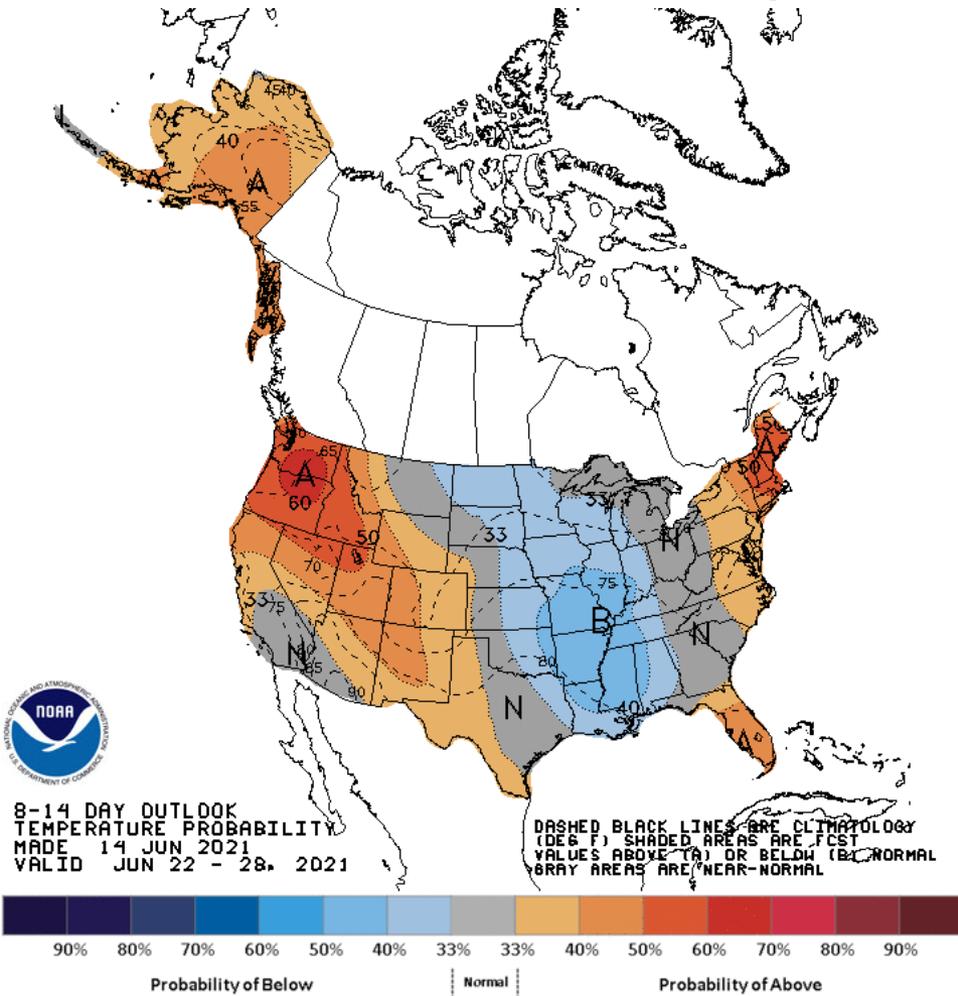


Connections to U.S. Impacts

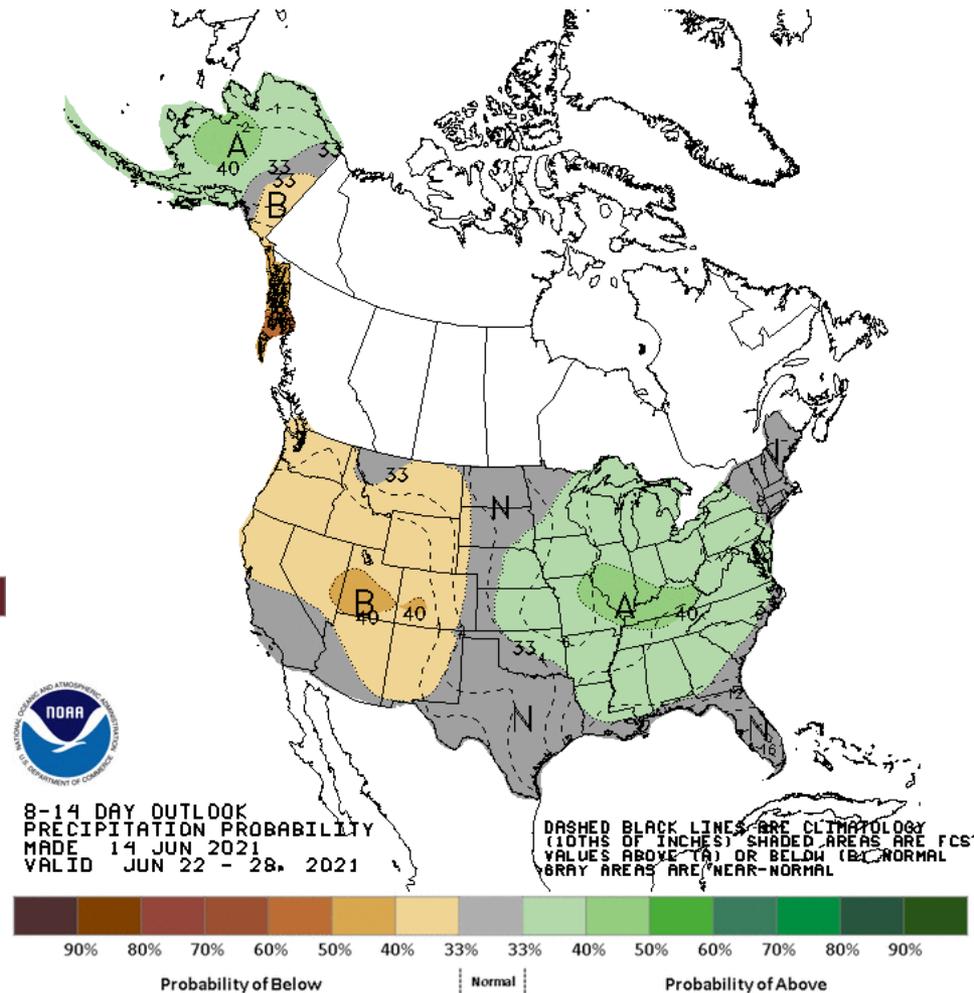


D+11 500 MB ANOMALIES FROM 00Z ECMM
 CPC MAP MADE JUN 15 2021 1056 UTC CNTD JUN 26 2021

Week 2 – Temperature and Precipitation



Above-normal temperatures chances are likely to increase today over the Southwest and Lower Mississippi Valley.

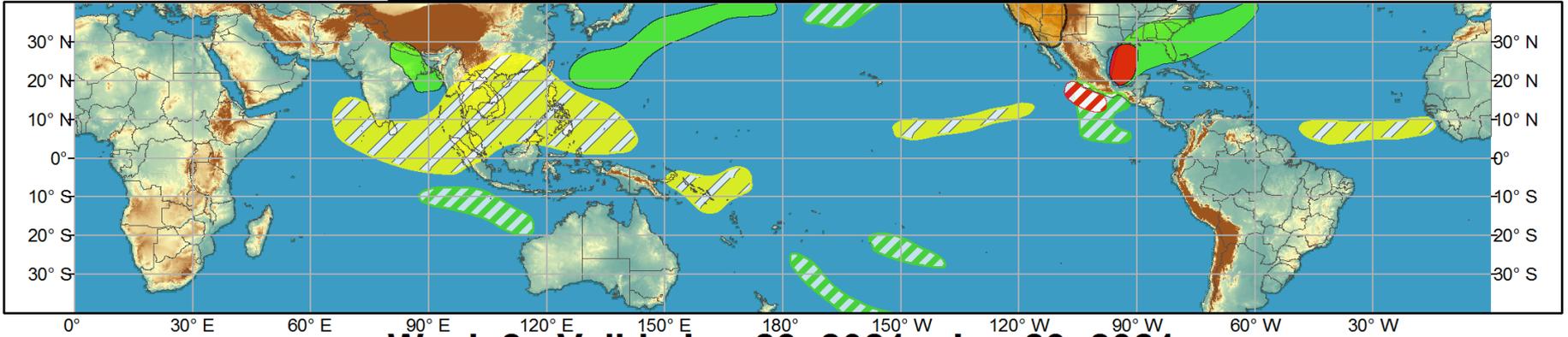




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