

Larger scale factors

NOAA/NWS Climate Prediction Center

- El Nino - Southern Oscillation – NEUTRAL
 - Expected to continue through the summer and into winter 2025 – 2026
- Neutral – trades – neither enhanced nor reduced
 - Winds dependent on the **east Pacific High**, location, orientation, strength
- There is little to no apparent signal for a strengthening MJO... from the dynamical models during the next two to three weeks.
- From July 2-8, the GEFS depicts another Kelvin Wave crossing the East Pacific and there is enough ensemble member support to designate at least a 20 percent chance of TC development. By week-3 (July 9-15), model guidance indicates less favorable conditions, including higher wind shear, across the East Pacific and no TC development is expected.

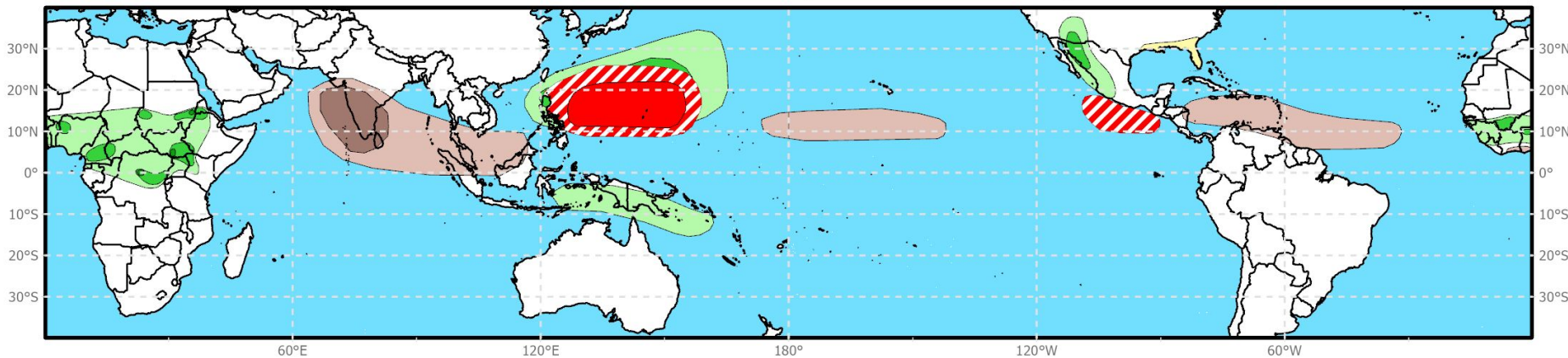


Global Tropics Hazards Outlook

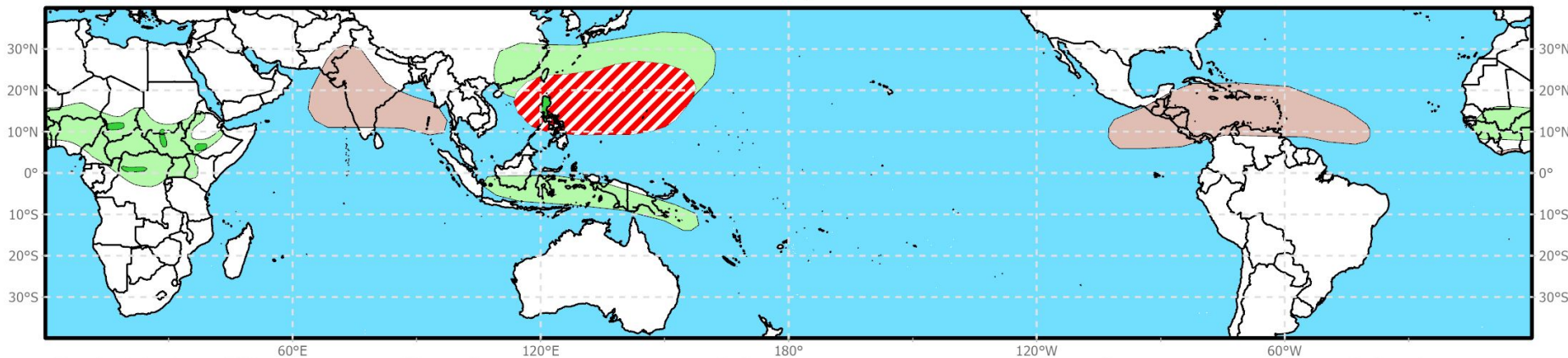
Climate Prediction Center



Week 2 - Valid: Jul 02, 2025 - Jul 08, 2025



Week 3 - Valid: Jul 09, 2025 - Jul 15, 2025



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 mean temperatures in the Upper third of the historical range

Below-Average Temperatures Probability



>50% >65% >80%

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

Issued: 06/24/2025

Forecaster: Pugh

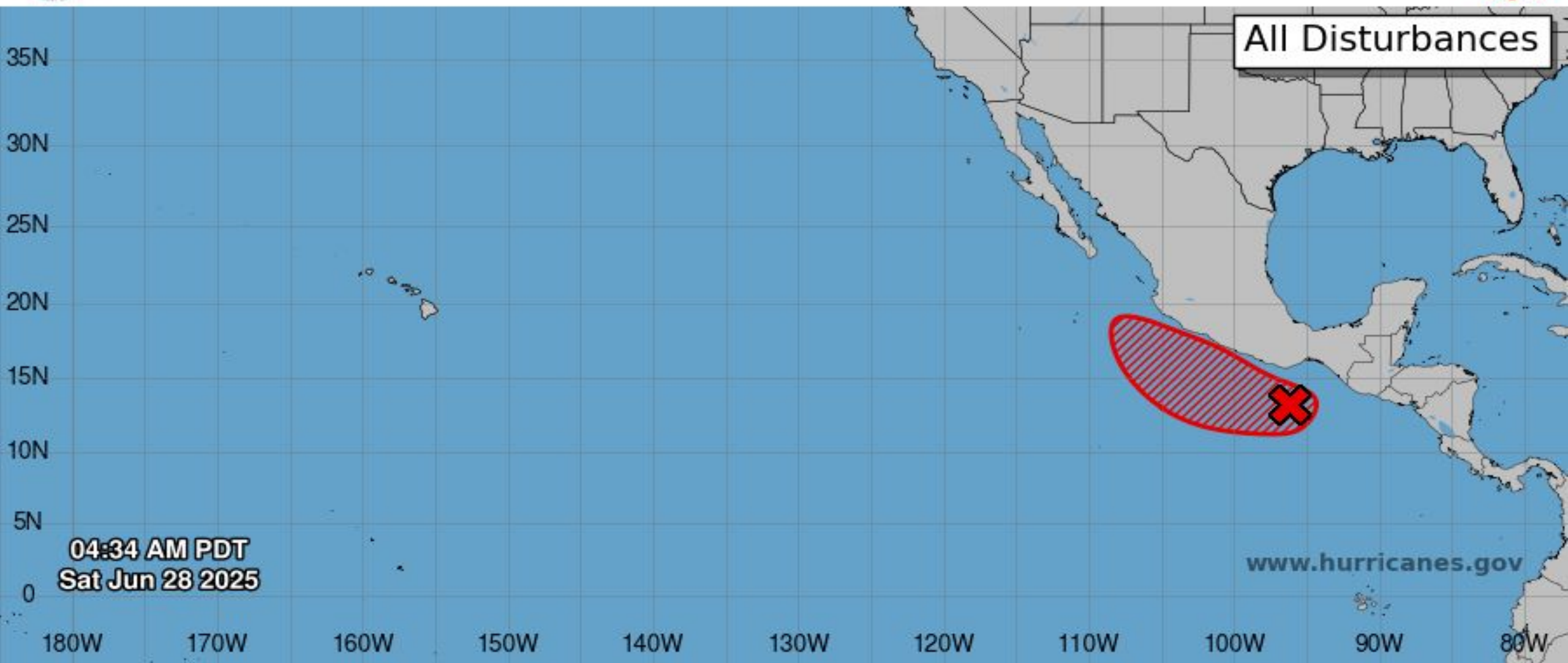
This product is updated once per week and targets broad scale conditions integrated over a 7-day period for US interests only. Consult your local responsible forecast agency.

<https://www.cpc.ncep.noaa.gov/products/precip/CWlink/ghaz/index.php>



Seven-Day Graphical Tropical Weather Outlook

National Hurricane Center Miami, Florida



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

Tropical or Sub-Tropical Cyclone: Depression Storm Hurricane

Post-Tropical Cyclone or Remnants

National Hurricane Center Products

(includes central Pacific (140 – 180 deg)

<https://www.nhc.noaa.gov/>

- **TWO** – Tropical Weather Outlook
- **TCD** – Tropical Cyclone Discussion
- **TCM** – Tropical Cyclone Message

Recommend gaining familiarity prior to departure (just in case)
Also, there is the return passage.



Receiving information - FTPMAIL



Directions

<https://ocean.weather.gov/ftpmail.php>

Email to: **NWS.FTPMail.OPS@noaa.gov**

Subject – any subject you like

Body of email:

open

cd data

cd hurricane_products

cd eastern_pacific

cd weather

get outlook.txt

quit

Example to receive instructions and header (filenames) of products for:
1. Tropical Weather Outlook

Received ABPZ20 KNHC 281755
TWOEP

Tropical Weather Outlook
NWS National Hurricane Center Miami FL
1100 AM PDT Sat Jun 28 2025

For the eastern and central North Pacific east of 180 longitude:

Offshore of Southern Mexico (EP95):
Showers and thunderstorms associated with a broad area of low pressure located a few hundred miles south-southwest of the Gulf of Tehuantepec continue to show signs of organization. Environmental conditions appear conducive for development, and a tropical depression is expected to form during the next day or so while the system moves slowly west-northwestward off the coast of southern Mexico. Potential Tropical Cyclone advisories could be initiated later today. For additional information, including gale warnings, please see High Seas Forecasts issued by the National Weather Service. Regardless of development, locally heavy rainfall is expected over portions of Central America and southeastern Mexico through the weekend.

* Formation chance through 48 hours...high...80 percent.

• Formation chance through 7 days...high...90 percent.

• \$\$

• Forecaster Pasch

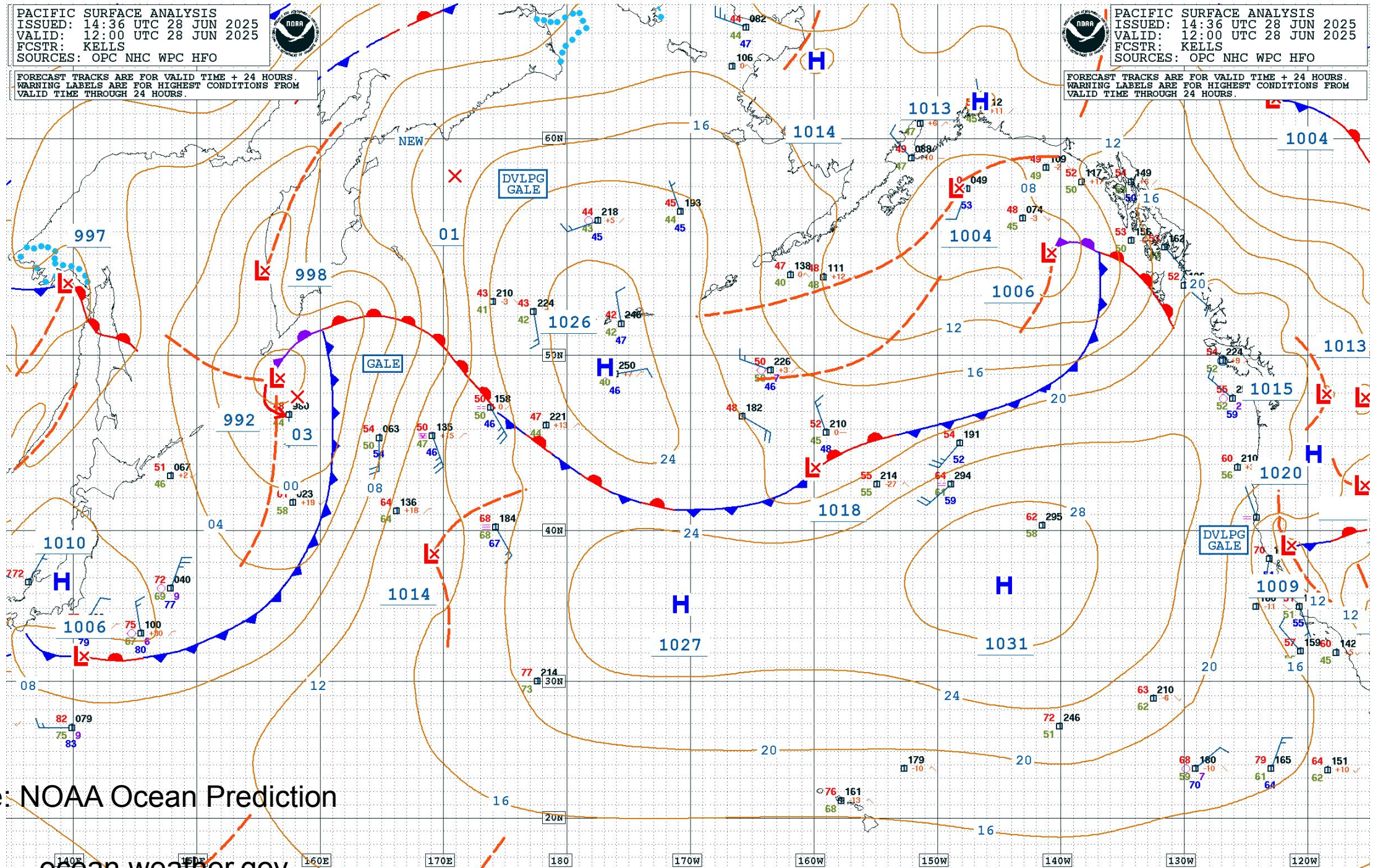
PACIFIC SURFACE ANALYSIS
ISSUED: 14:36 UTC 28 JUN 2025
VALID: 12:00 UTC 28 JUN 2025
FCSTR: KELLS
SOURCES: OPC NHC WPC HFO



FORECAST TRACKS ARE FOR VALID TIME + 24 HOURS.
WARNING LABELS ARE FOR HIGHEST CONDITIONS FROM
VALID TIME THROUGH 24 HOURS.

PACIFIC SURFACE ANALYSIS
ISSUED: 14:36 UTC 28 JUN 2025
VALID: 12:00 UTC 28 JUN 2025
FCSTR: KELLS
SOURCES: OPC NHC WPC HFO

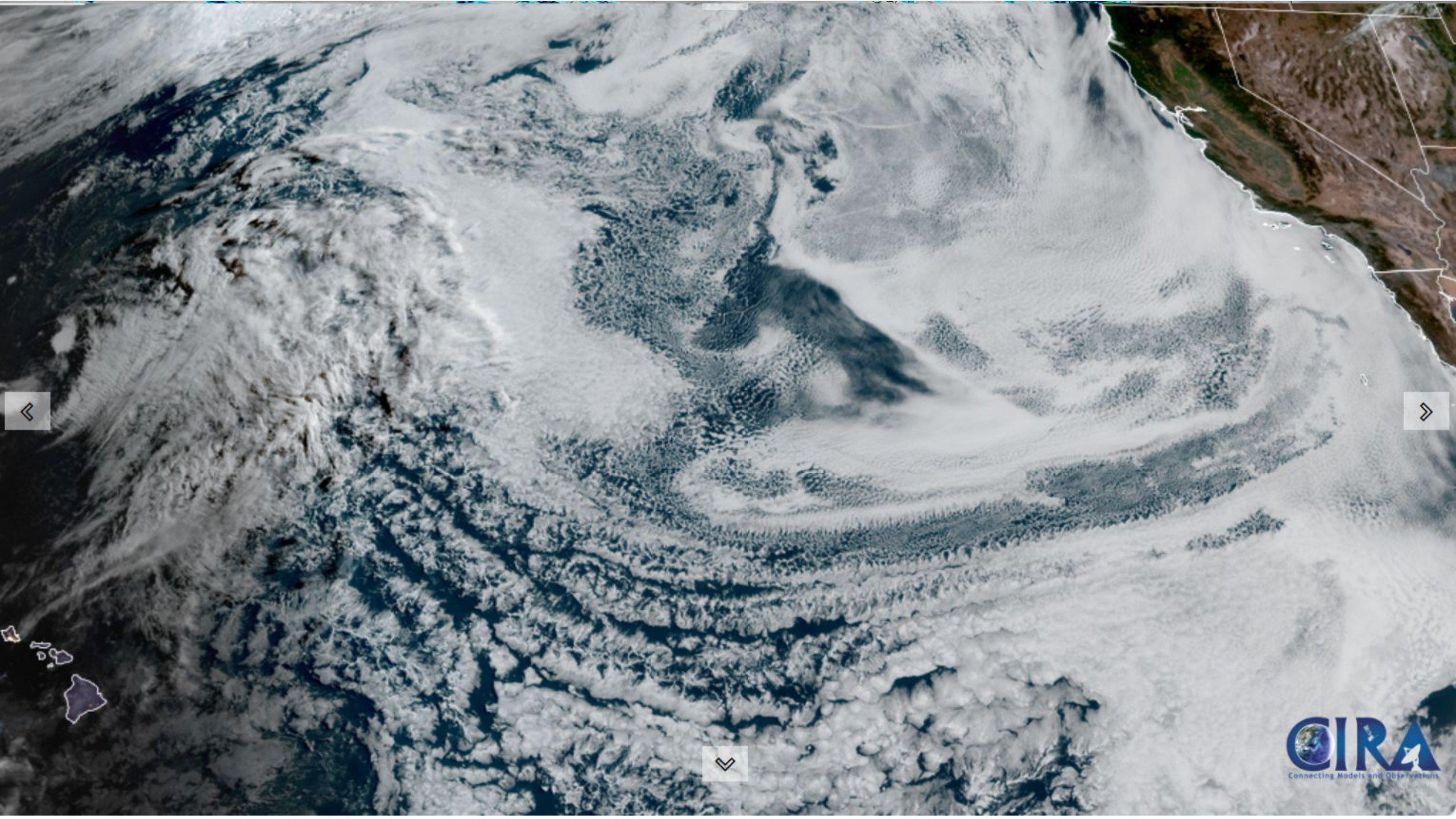
FORECAST TRACKS ARE FOR VALID TIME + 24 HOURS.
WARNING LABELS ARE FOR HIGHEST CONDITIONS FROM
VALID TIME THROUGH 24 HOURS.



Source: NOAA Ocean Prediction Center

ocean.weather.gov NWS/NCEP - Ocean Prediction Center ocean.weather.gov

NWS/NCEP - Ocean Prediction Center ocean.weather.gov



Search location...



Windy.com



Menu



- Weather radar
- Satellite
- 12 Radar+
- Wind
- Rain, thunder
- Temperature
- Hurricane tracker
- Clouds
- Waves
- Rain accumulat...

pressure particles animation

+ - 3D

Airp. WMO PWS ShipBuoy

°C -33 -43 -53 -63 -73



16:55Z - 7m ago

forecast

BLUE VIS INF

Overlay with radar

Archive 12h 6h 1h

My location

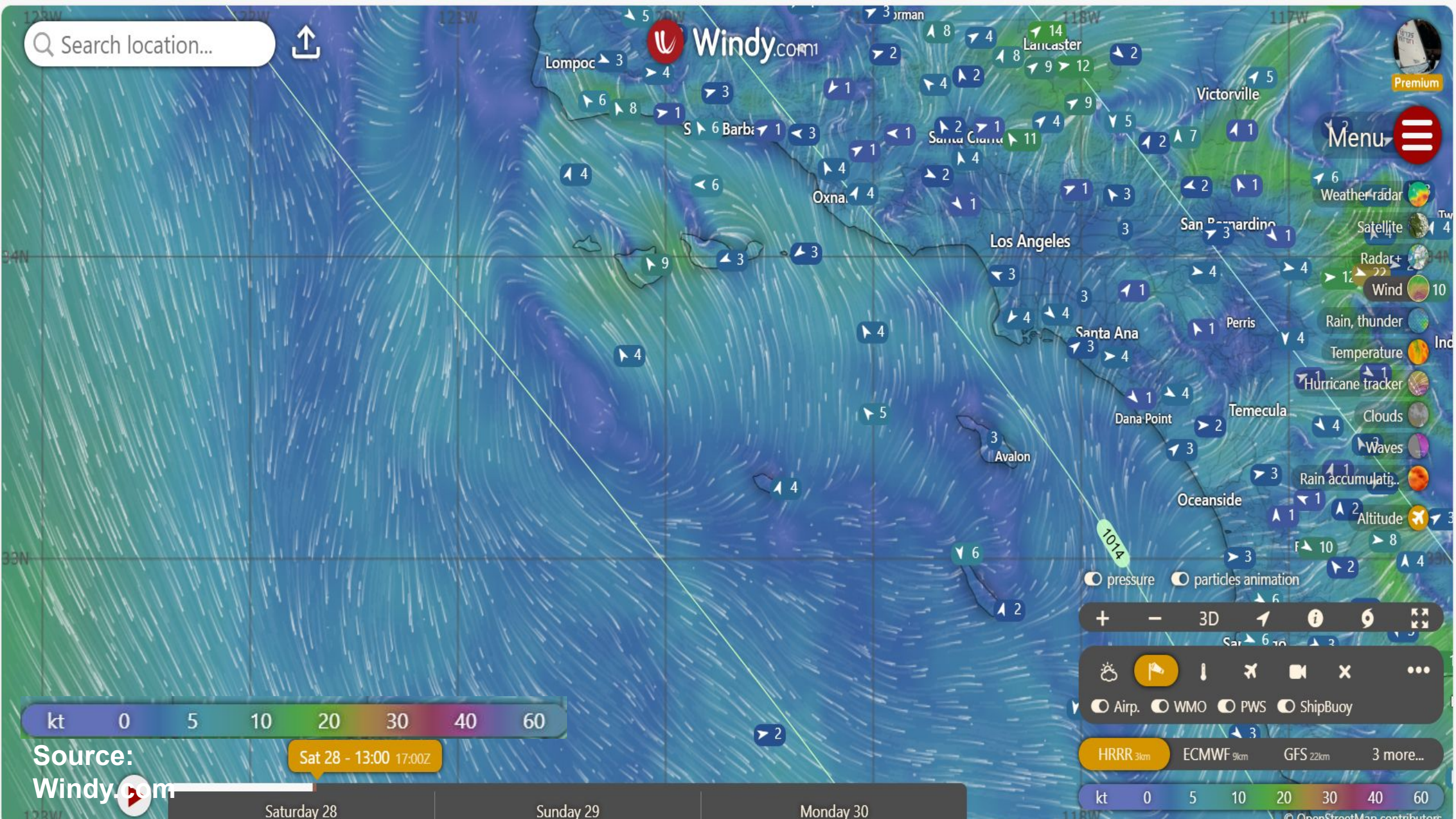
Show lightning

Sound

Source: Windy.com

© OpenStreetMap contributors

Search location...



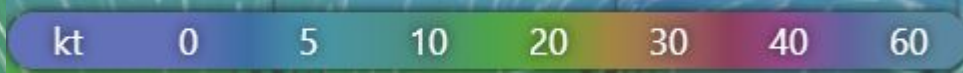
- Weather radar
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- Hurricane tracker
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- Waves
- Rain accumulati...
- Altitude

- pressure
- particles animation

Map navigation controls: zoom in (+), zoom out (-), 3D view, compass, location, full screen, and other utility icons.

- Airp.
- WMO
- PWS
- ShipBuoy

- HRRR 3km
- ECMWF 9km
- GFS 22km
- 3 more...



Source: Windy.com Sat 28 - 13:00 17:00Z

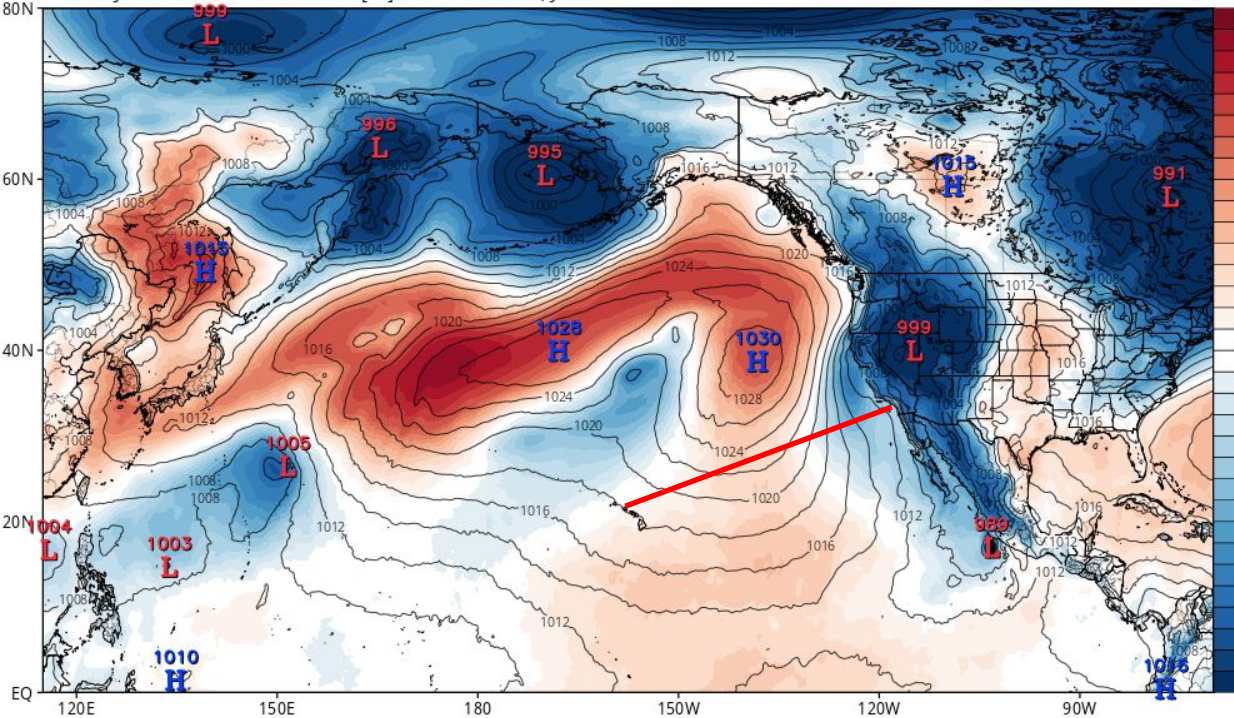
Forecast timeline: Saturday 28, Sunday 29, Monday 30. Includes a small weather icon for Saturday 28.



GFS MSLP and Anomaly (hPa) (based on CFSR 1981-2010 Climatology)

Init: 00z Jun 28 2025 Forecast Hour: [90] valid at 18z Tue, Jul 01 2025

TROPICALTIDBITS.COM



GFS – NOAA Global Forecast System

Models initial times:
0000 UTC 28 Jun
2025

Forecast Hour 90 1800 UTC 01 July 2025

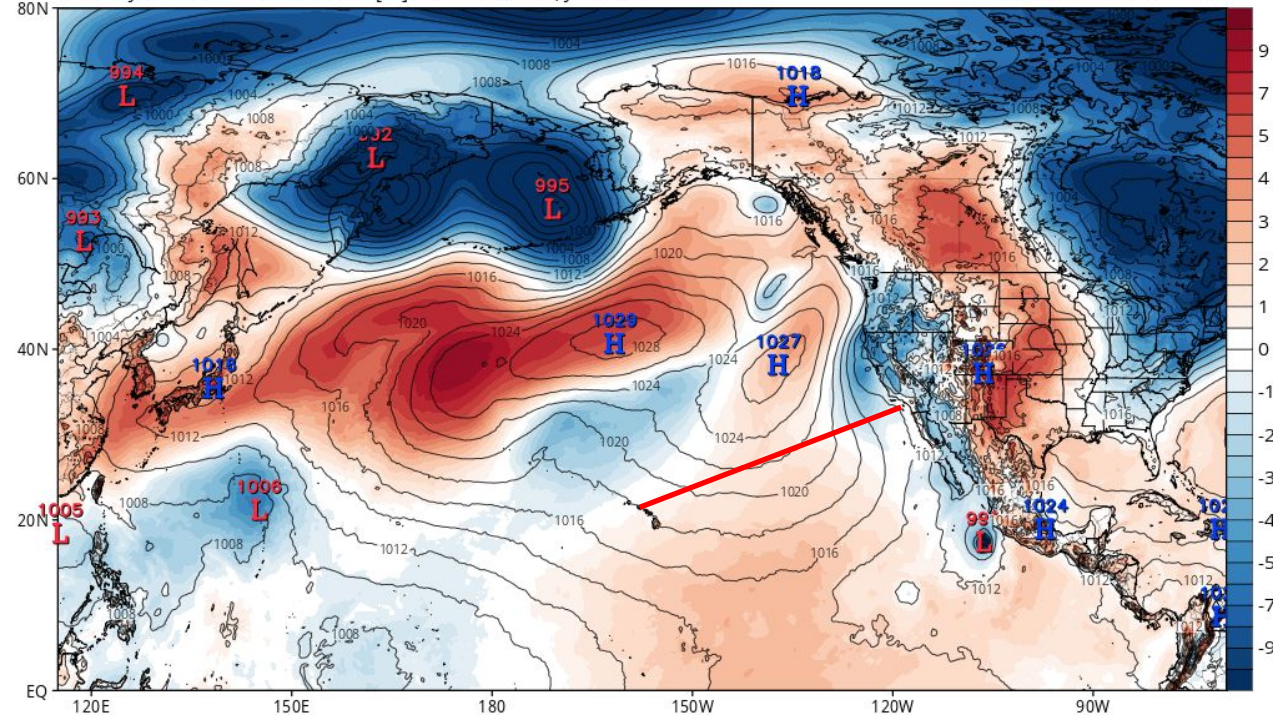
Mean Sea Level Pressure hPa/mb
Anomaly from historical 1981 - 2010

ECMWF – deterministic model

ECMWF MSLP and Anomaly (hPa) (based on CFSR 1981-2010 Climatology)

Init: 00z Jun 28 2025 Forecast Hour: [90] valid at 18z Tue, Jul 01 2025

TROPICALTIDBITS.COM

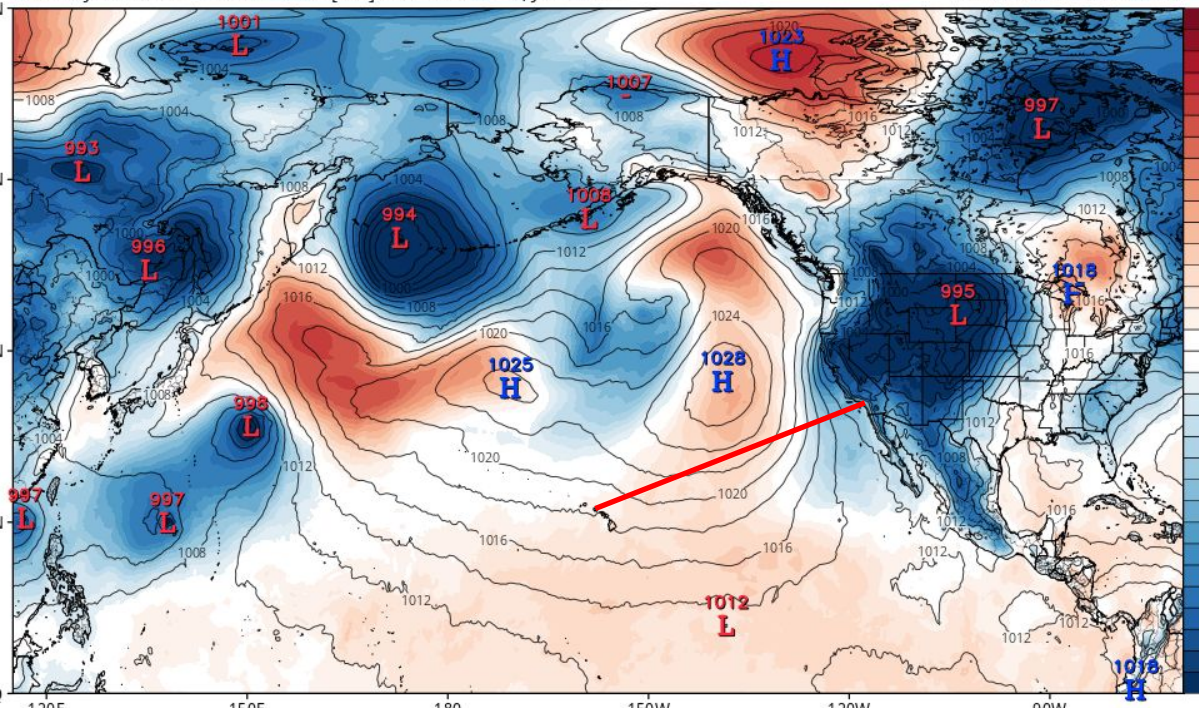


Source: Tropical
Tidbits

GFS MSLP and Anomaly (hPa) (based on CFSR 1981-2010 Climatology)

Init: 00z Jun 28 2025 Forecast Hour: [138] valid at 18z Thu, Jul 03 2025

TROPICALTIDBITS.COM



GFS – NOAA Global Forecast System

Models initial times:
0000 UTC 28 Jun
2025

Forecast Hour 138 1800 UTC 03 July 2025

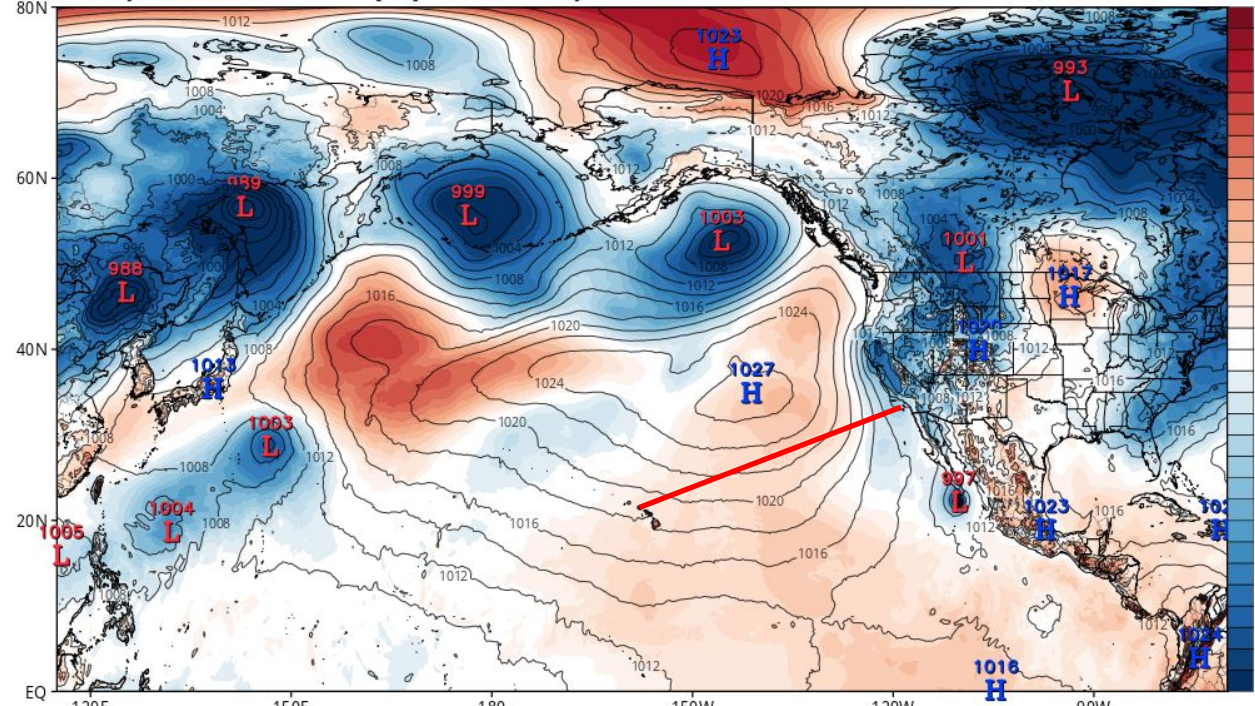
Mean Sea Level Pressure hPa/mb
Anomaly from historical 1981 - 2010

ECMWF – deterministic

ECMWF MSLP and Anomaly (hPa) (based on CFSR 1981-2010 Climatology)

Init: 00z Jun 28 2025 Forecast Hour: [138] valid at 18z Thu, Jul 03 2025

TROPICALTIDBITS.COM

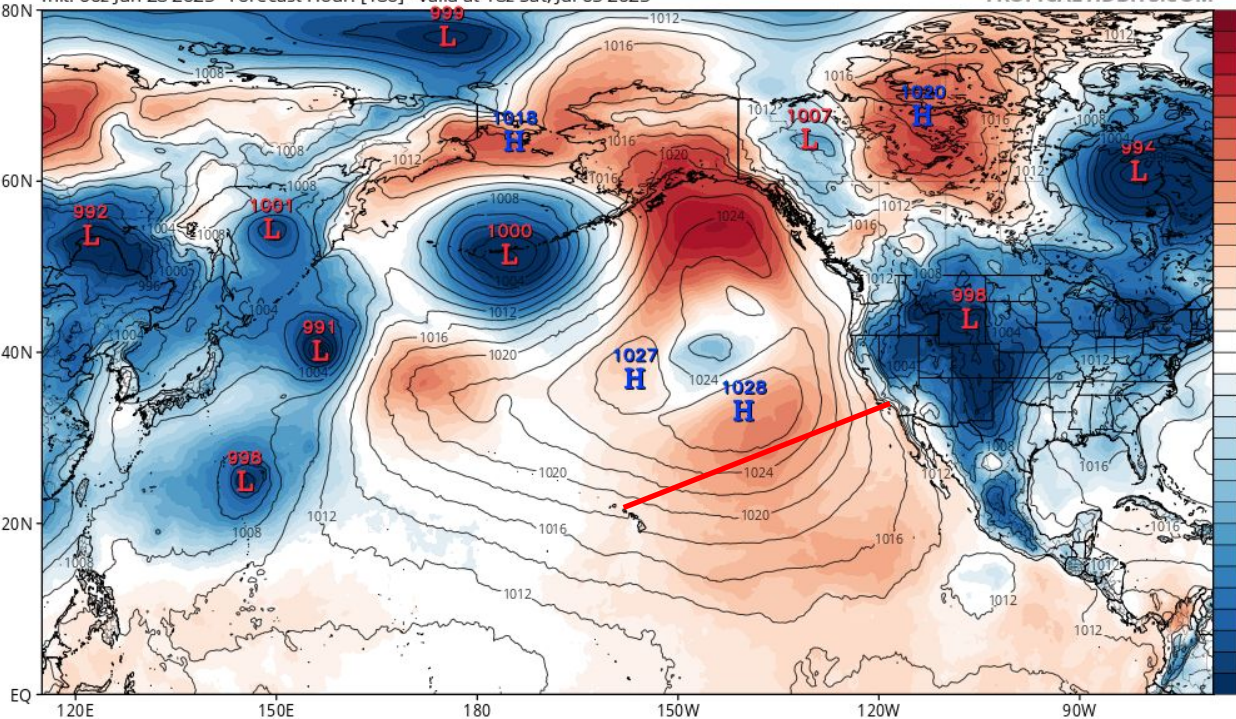


Source: Tropical
Tidbits

GFS MSLP and Anomaly (hPa) (based on CFSR 1981-2010 Climatology)

Init: 00z Jun 28 2025 Forecast Hour: [186] valid at 18z Sat, Jul 05 2025

TROPICALTIDBITS.COM



GFS – NOAA Global Forecast System

Models initial times:
0000 UTC 28 Jun
2025

Forecast Hour 186 1800 UTC 05 July 2025

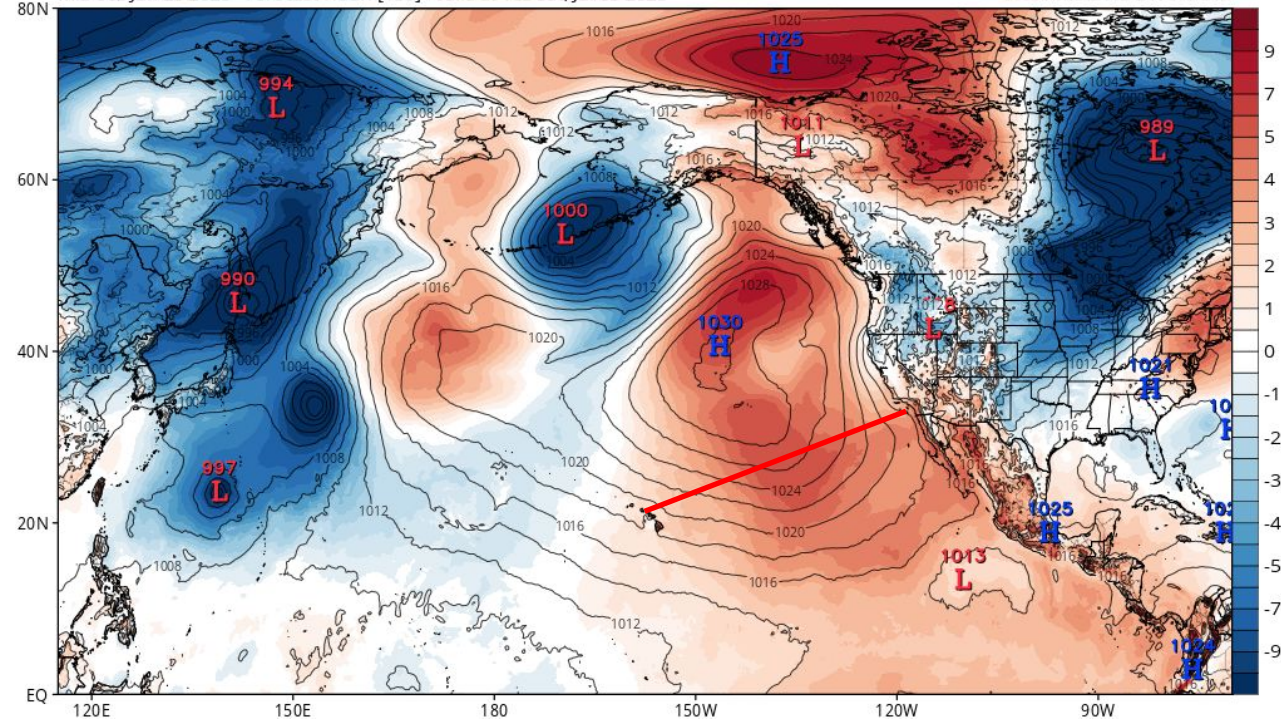
Mean Sea Level Pressure hPa/mb
Anomaly from historical 1981 - 2010

ECMWF – deterministic

ECMWF MSLP and Anomaly (hPa) (based on CFSR 1981-2010 Climatology)

Init: 00z Jun 28 2025 Forecast Hour: [186] valid at 18z Sat, Jul 05 2025

TROPICALTIDBITS.COM

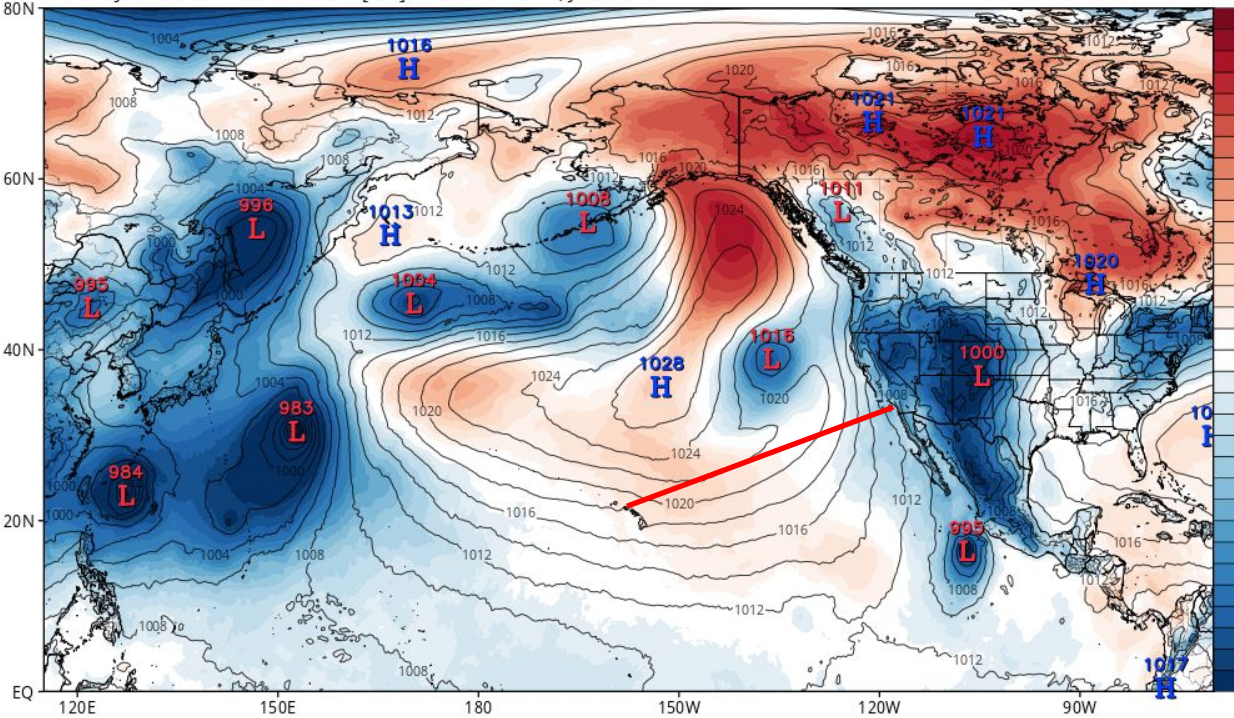


Source: Tropical
Tidbits

GFS MSLP and Anomaly (hPa) (based on CFSR 1981-2010 Climatology)

Init: 00z Jun 28 2025 Forecast Hour: [234] valid at 18z Mon, Jul 07 2025

TROPICALTIDBITS.COM



GFS – NOAA Global Forecast System

Models initial times:
0000 UTC 28 Jun
2025

Forecast Hour 234 1800 UTC 07 July 2025

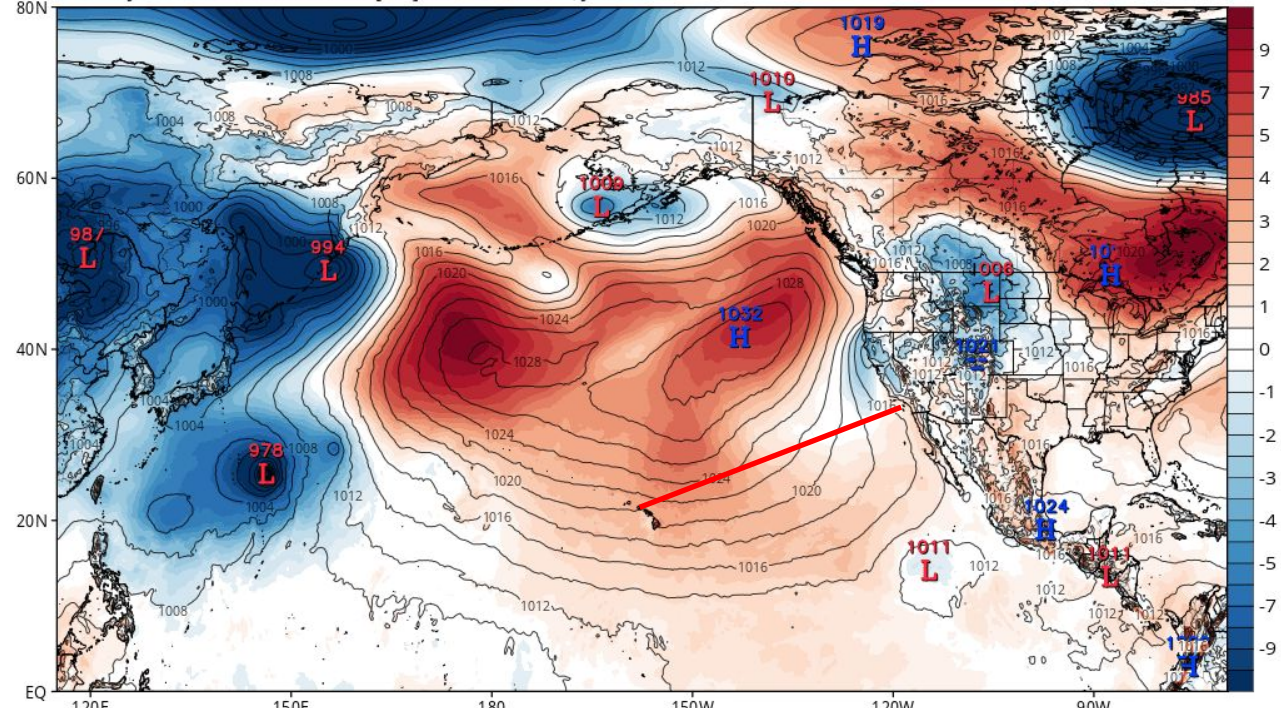
Mean Sea Level Pressure hPa/mb
Anomaly from historical 1981 - 2010

ECMWF – deterministic

ECMWF MSLP and Anomaly (hPa) (based on CFSR 1981-2010 Climatology)

Init: 00z Jun 28 2025 Forecast Hour: [234] valid at 18z Mon, Jul 07 2025

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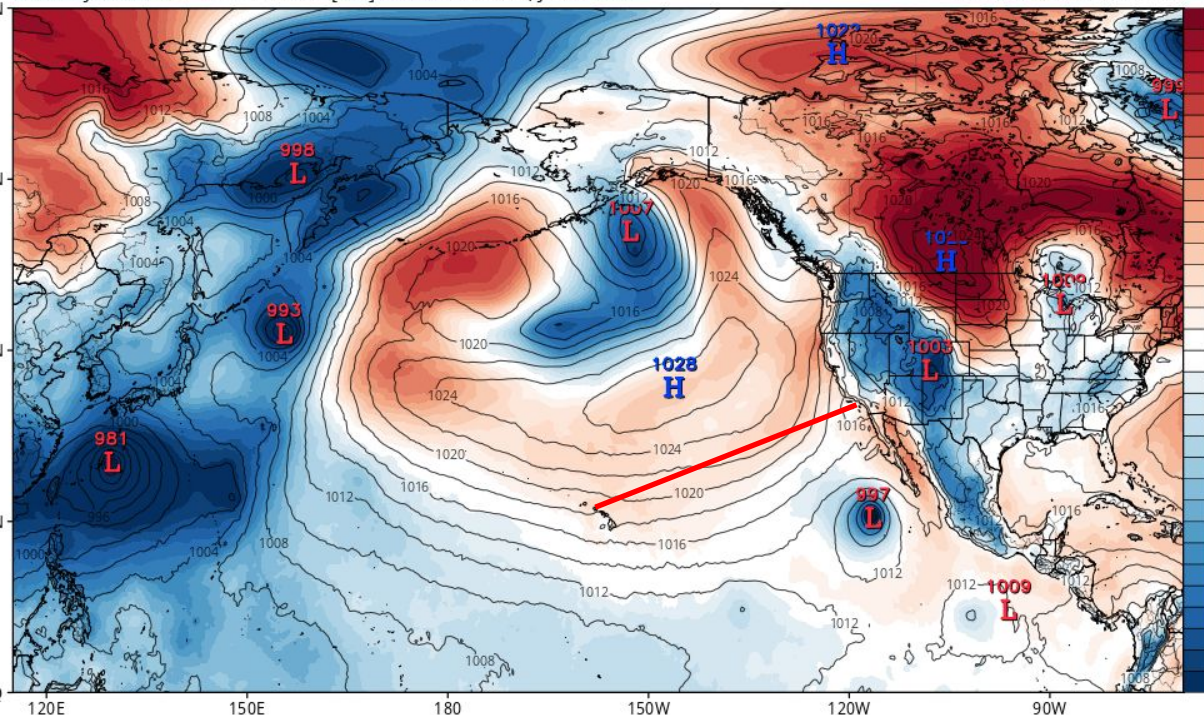


Source: Tropical
Tidbits

GFS MSLP and Anomaly (hPa) (based on CFSR 1981-2010 Climatology)

Init: 00z Jun 28 2025 Forecast Hour: [282] valid at 18z Wed, Jul 09 2025

TROPICALTIDBITS.COM



GFS – NOAA Global Forecast System

Models initial times:
0000 UTC 28 Jun 2025

Forecast Hour 282 1800 UTC 09 July 2025

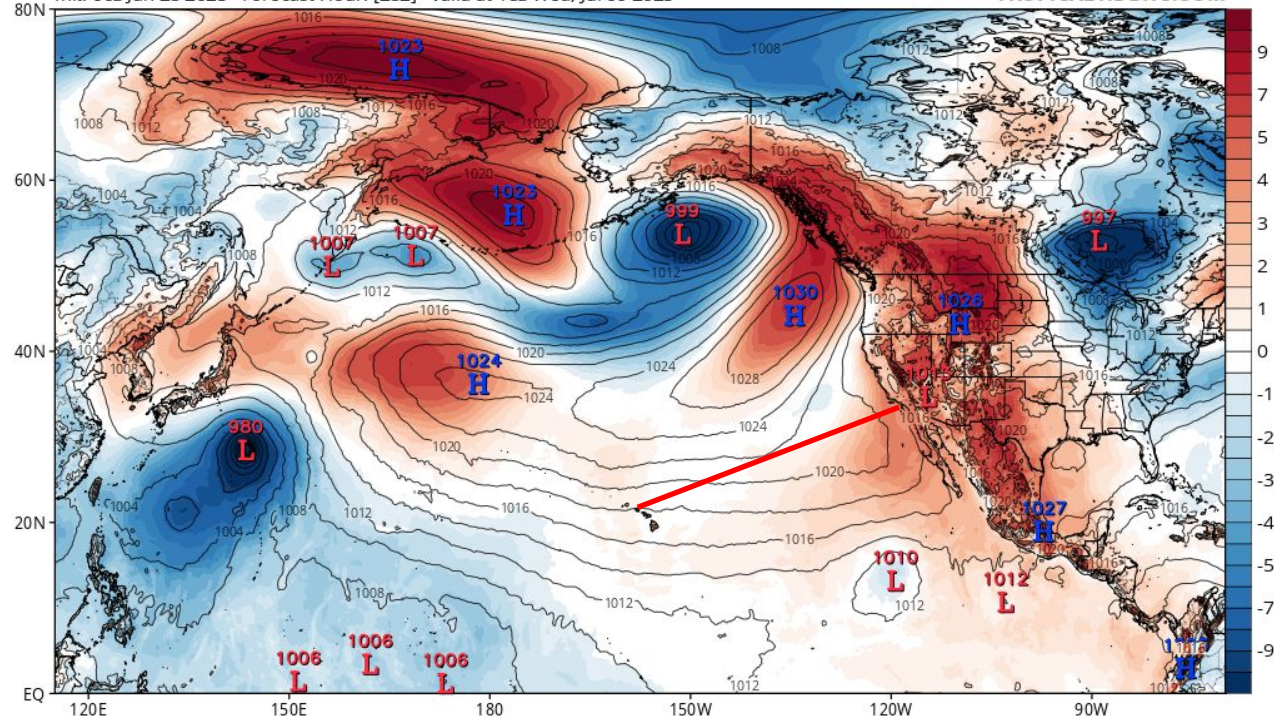
Mean Sea Level Pressure hPa/mb
Anomaly from historical 1981 - 2010

ECMWF – deterministic

ECMWF MSLP and Anomaly (hPa) (based on CFSR 1981-2010 Climatology)

Init: 00z Jun 28 2025 Forecast Hour: [282] valid at 18z Wed, Jul 09 2025

TROPICALTIDBITS.COM

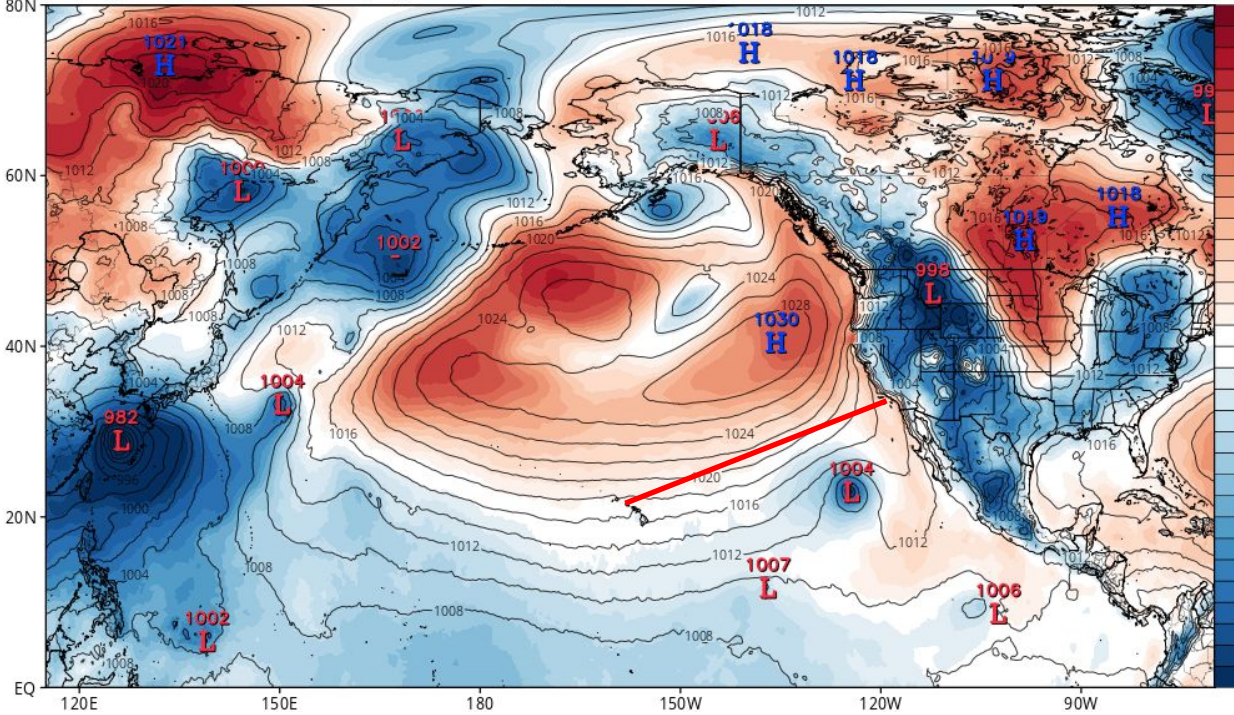


Source: Tropical Tidbits

GFS MSLP and Anomaly (hPa) (based on CFSR 1981-2010 Climatology)

Init: 00z Jun 28 2025 Forecast Hour: [312] valid at 00z Fri, Jul 11 2025

TROPICALTIDBITS.COM



Models initial times:
0000 UTC 28 Jun
2025

Source: Tropical
Tidbits

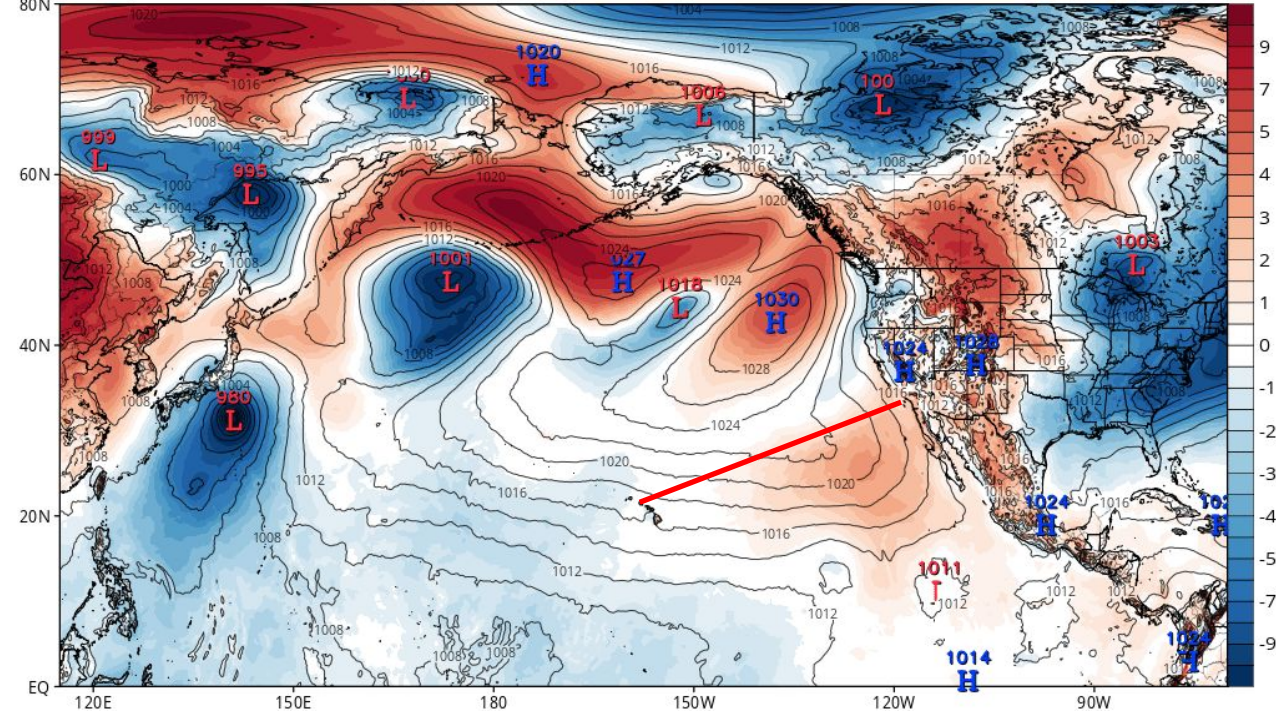
Forecast Hour 330 1800 UTC 11 July 2025

Mean Sea Level Pressure hPa/mb
Anomaly from historical 1981 - 2010

ECMWF MSLP and Anomaly (hPa) (based on CFSR 1981-2010 Climatology)

Init: 00z Jun 28 2025 Forecast Hour: [330] valid at 18z Fri, Jul 11 2025

TROPICALTIDBITS.COM



Numerical Models (GRIB format)

- **NOAA**

- **GFS** – Global Forecast System

- Runs – 0000, 0600, 1200, 1800 UTC
 - Output – hourly through 120 hours, forecast through 15 days

- **NAM** – North American Mesoscale Model

- Runs – 0000, 0600, 1200, 1800 UTC
 - Output – hourly through 72 hours

- **HRRR** – High Resolution Rapid Refresh (extended CONUS domain)

- Runs – hourly
 - Output – 0000, 0600, 1200, 1800 – 48 hr forecast window, hourly
 - Non-synoptic runs – 18 hour forecast window, hourly

- **NAM – HI** – Hawaii domain or HIRES HI nest

- Runs – 0000, 0600, 1200, 1800
 - Output – 36 hr forecast window

Search location...



NOAA - GFS
0600 UTC 28 Jun
2025
Valid 1800 Z 1 July
F-84



Menu



Weather radar



Satellite



Hermosillo Radar+



Wind



Rain, thunder



Temperature



Hurricane tracker



Clouds



Waves



Rain accumulati...



Altitude



pressure particles animation

Navigation controls: +, -, 3D, compass, info, refresh, full screen

Weather layer controls: rain, radar, altitude, camera, close, menu

ECMWF 9km GFS 22km ICON 13km 3 more...

Wind speed scale: kt 0 5 10 20 30 40 60

Source: windy.com

Tue 1 - 14:00 18:00Z



Sat 28 Sun 29 30 1 2 3 4 5 6 7 8 9 10 11 12

Search location...



NOAA - GFS
0600 UTC 28 Jun
2025
Valid 1800 Z 3 July
F-132



Menu

Ciud

Weather radar

Satellite

Hermosillo
93°

Radar+

Wind

Rain, thunder

Temperature

Hurricane tracker

Clouds

Waves

Rain accumulati...

Altitude

pressure particles animation

+ - 3D

Navigation icons

ECMWF 9km GFS 22km ICON 13km 3 more...

kt 0 5 10 20 30 40 60

kt 0 5 10 20 30 40 60

Source:
windy.com

Thu 3 - 14:00 18:00Z

Sat 28 Sun 29 30 1 2 3 4 5 6 7 8 9 10 11 12

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Search location...



Windy.com

NOAA - GFS
0600 UTC 28 Jun
2025
Valid 1800 Z 5 July
F-180

NOAA - GFS

Premium



- Weather radar
- Satellite
- Hermosillo Radar+
- Wind
- Rain, thunder
- Temperature
- Hurricane tracker
- Clouds
- Waves
- Rain accumulati...
- Altitude

pressure particles animation

+ - 3D ↶ ⓘ ⌛ ⌂

NOAA - GFS

ECMWF 9km GFS 22km ICON 13km 3 more...

kt 0 5 10 20 30 40 60

kt 0 5 10 20 30 40 60

Sat 5 - 14:00 18:00Z

Source:
Windy.com



Sat 28 Sun 29 30 1 2 3 4 5 6 7 8 9 10 11 12

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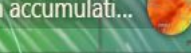
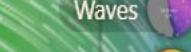
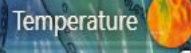
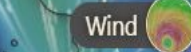
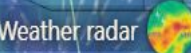
Search location...



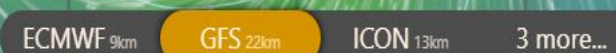
NOAA - GFS
0600 UTC 28 Jun
2025
Valid 1800 Z 9 July
F-276



Menu



pressure particles animation



Wed 9 - 14:00 18:00Z

Source:
Windy.com



Sat 28 Sun 29 30 1 2 3 4 5 6 7 8 9 10 11 12

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Search location...



NOAA - GFS
0600 UTC 28 Jun
2025
Valid 1800 Z 11 July
F-324

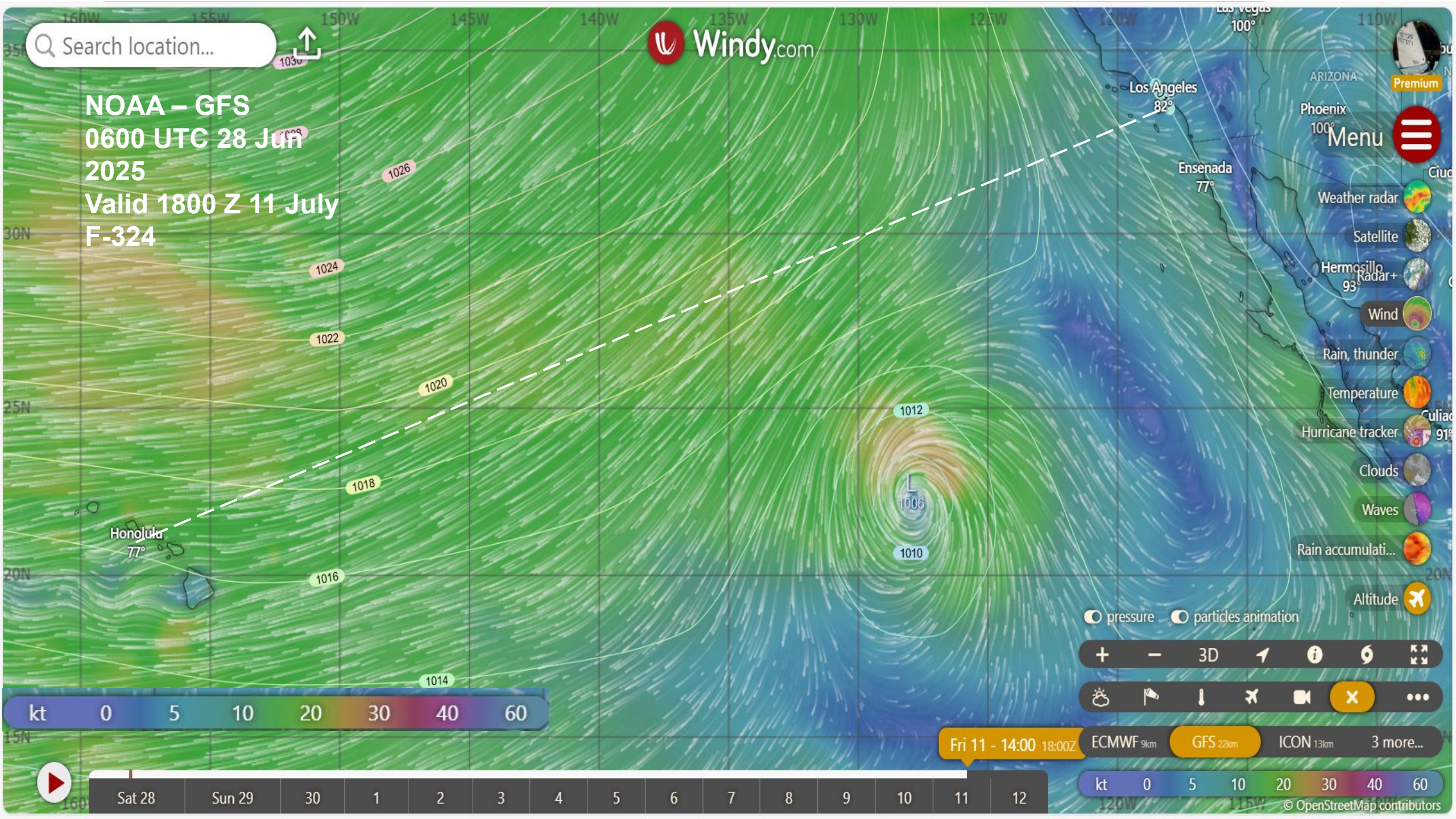


Premium



Menu

- Weather radar
- Satellite
- Hermosillo Radar+
- Wind
- Rain, thunder
- Temperature
- Hurricane tracker
- Clouds
- Waves
- Rain accumulati...
- Altitude



pressure particles animation

Map navigation controls: + (zoom in), - (zoom out), 3D, compass, info, refresh, and full screen icons.

Forecast model selection: Fri 11 - 14:00 18:00Z, ECMWF 9km, GFS 22km (selected), ICON 13km, 3 more...

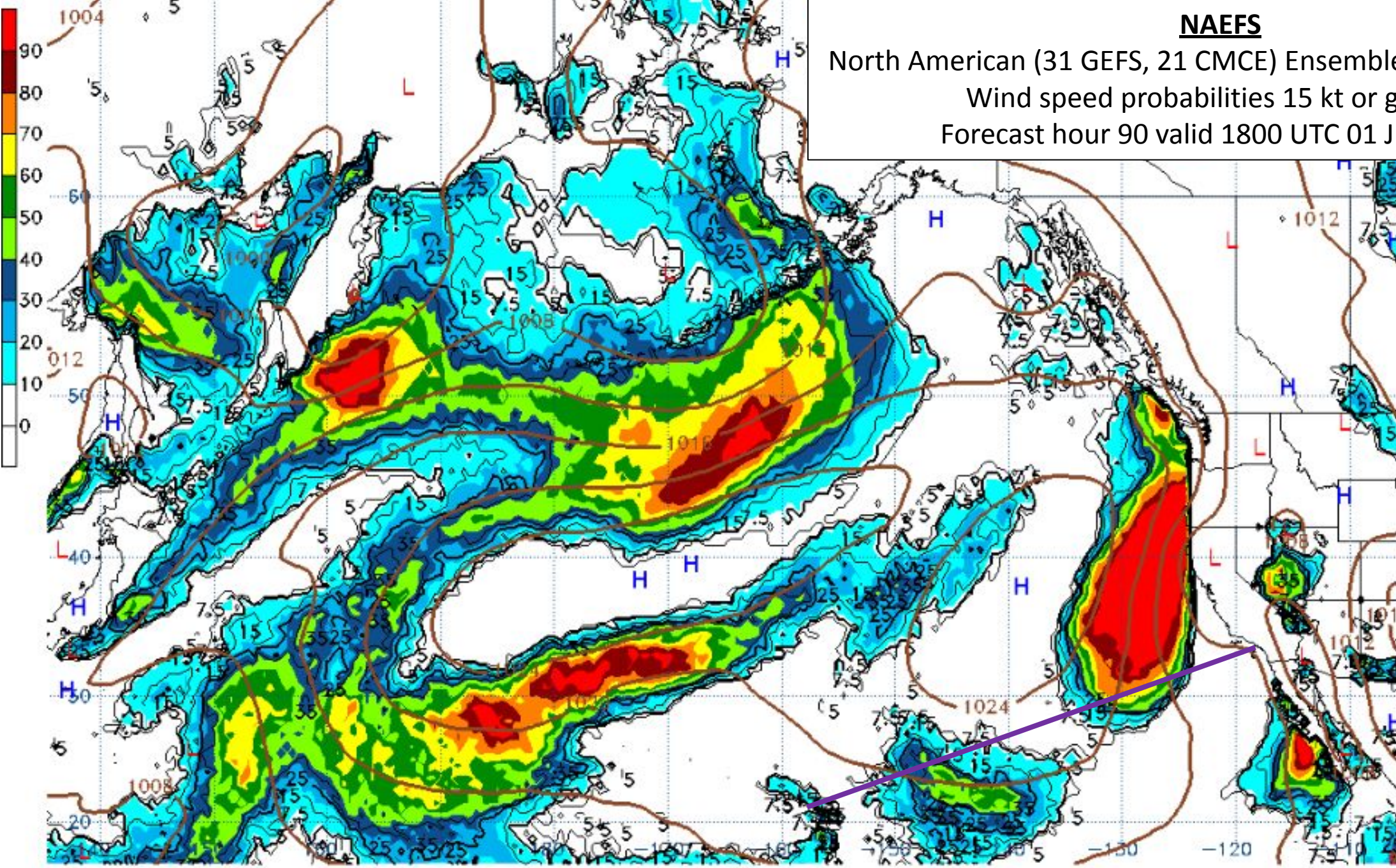
Secondary wind speed scale: kt 0 5 10 20 30 40 60



Time navigation bar: Sat 28, Sun 29, 30, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12

NAEFS

North American (31 GEFS, 21 CMCE) Ensemble Forecast System
Wind speed probabilities 15 kt or greater
Forecast hour 90 valid 1800 UTC 01 July 2025



Probability(GEFS 10m WIND >= 15kt) (%) and GEFS ensemble mean PMSL (mb)
20250628/0000 UTC F090 valid Tue 20250701/1800 UTC

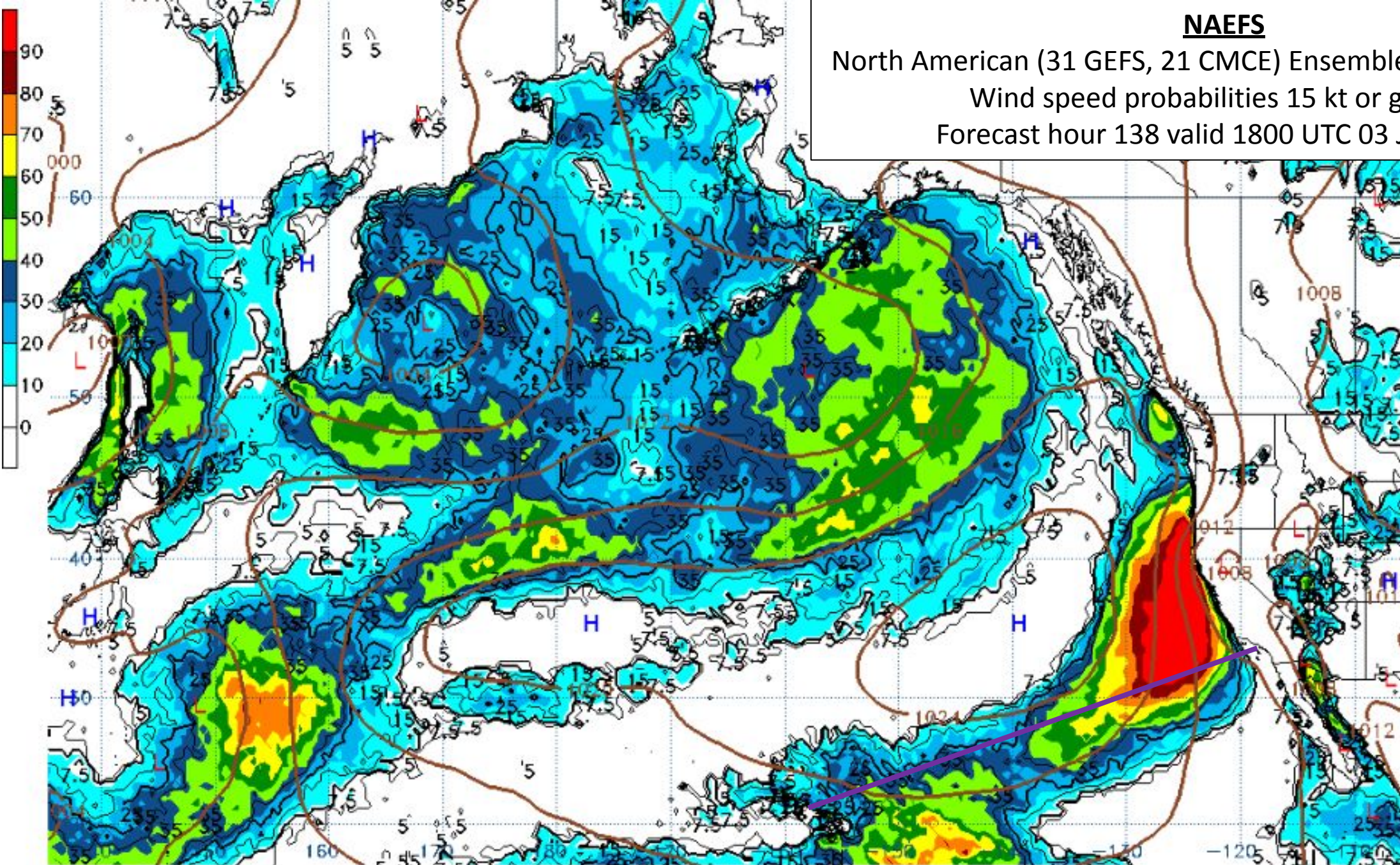
Source: NOAA

NAEFS

North American (31 GEFS, 21 CMCE) Ensemble Forecast System

Wind speed probabilities 15 kt or greater

Forecast hour 138 valid 1800 UTC 03 July 2025

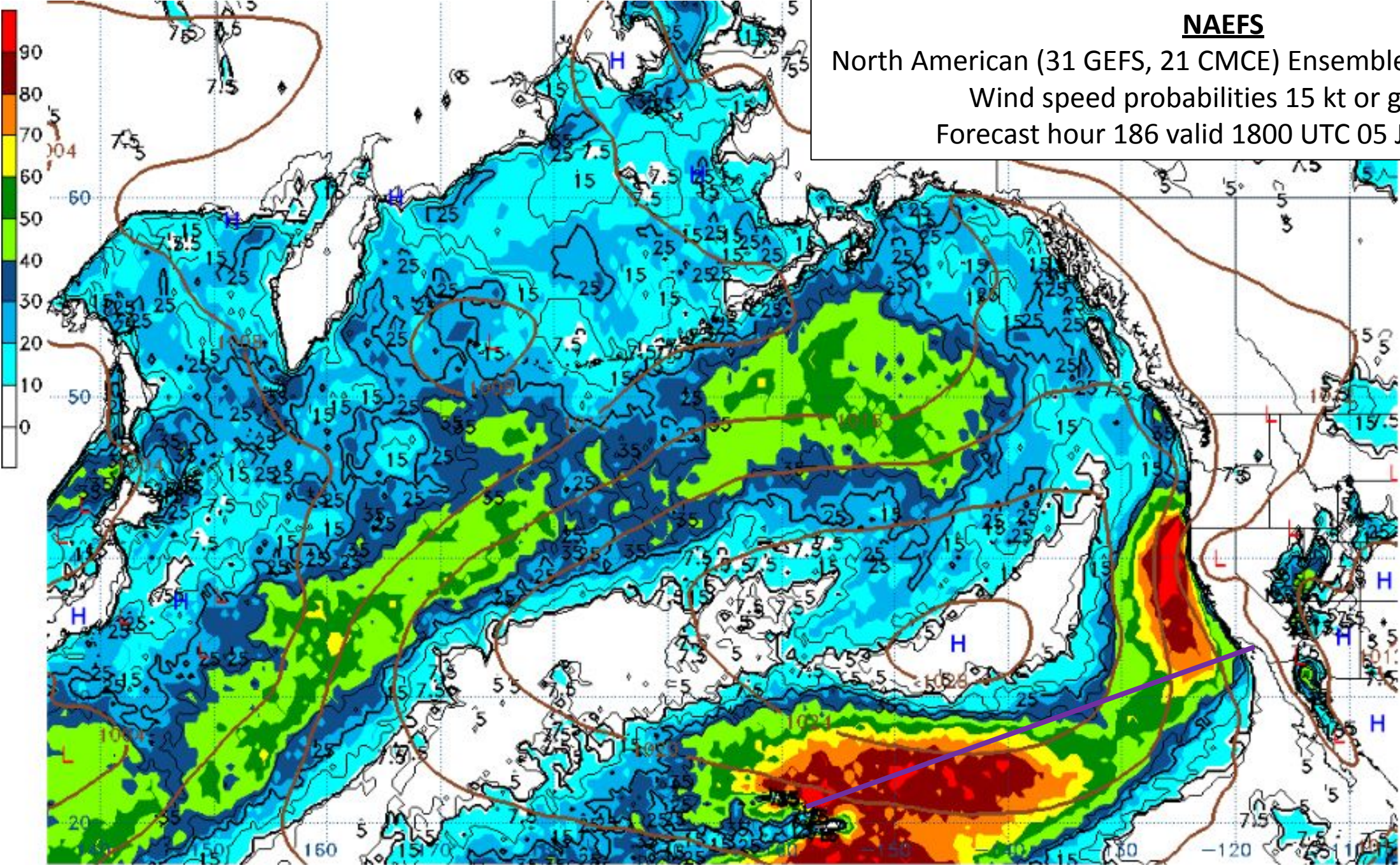


Probability(GEFS 10m WIND \geq 15kt) (%) and GEFS ensemble mean PMSL (mb)
20250628/0000 UTC F138 valid Thu 20250703/1800 UTC

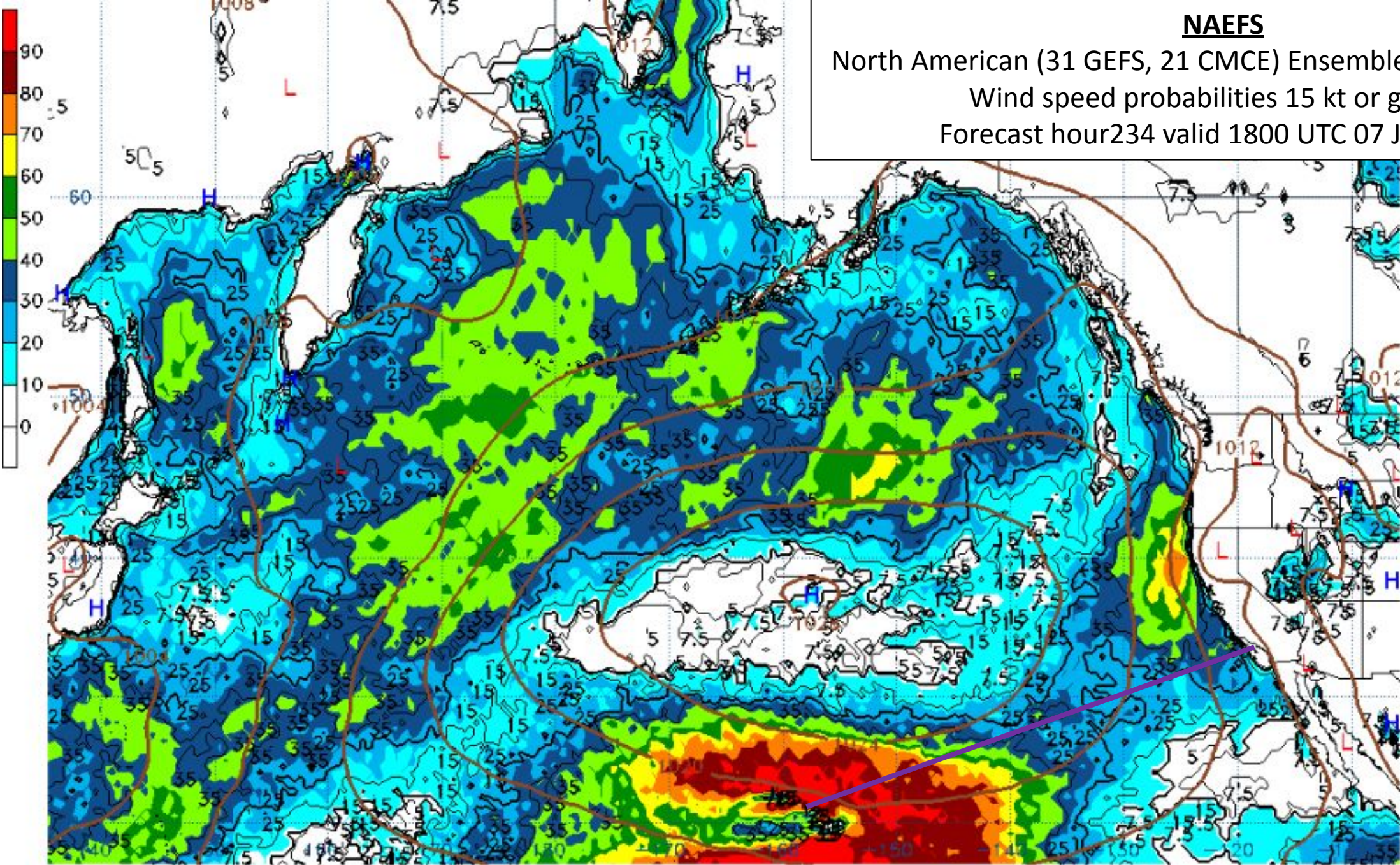
Source: NOAA

NAEFS

North American (31 GEFS, 21 CMCE) Ensemble Forecast System
Wind speed probabilities 15 kt or greater
Forecast hour 186 valid 1800 UTC 05 July 2025



Probability(GEFS 10m WIND \geq 15kt) (%) and GEFS ensemble mean PMSL (mb)
20250628/0000 UTC F186 valid Sat 20250705/1800 UTC



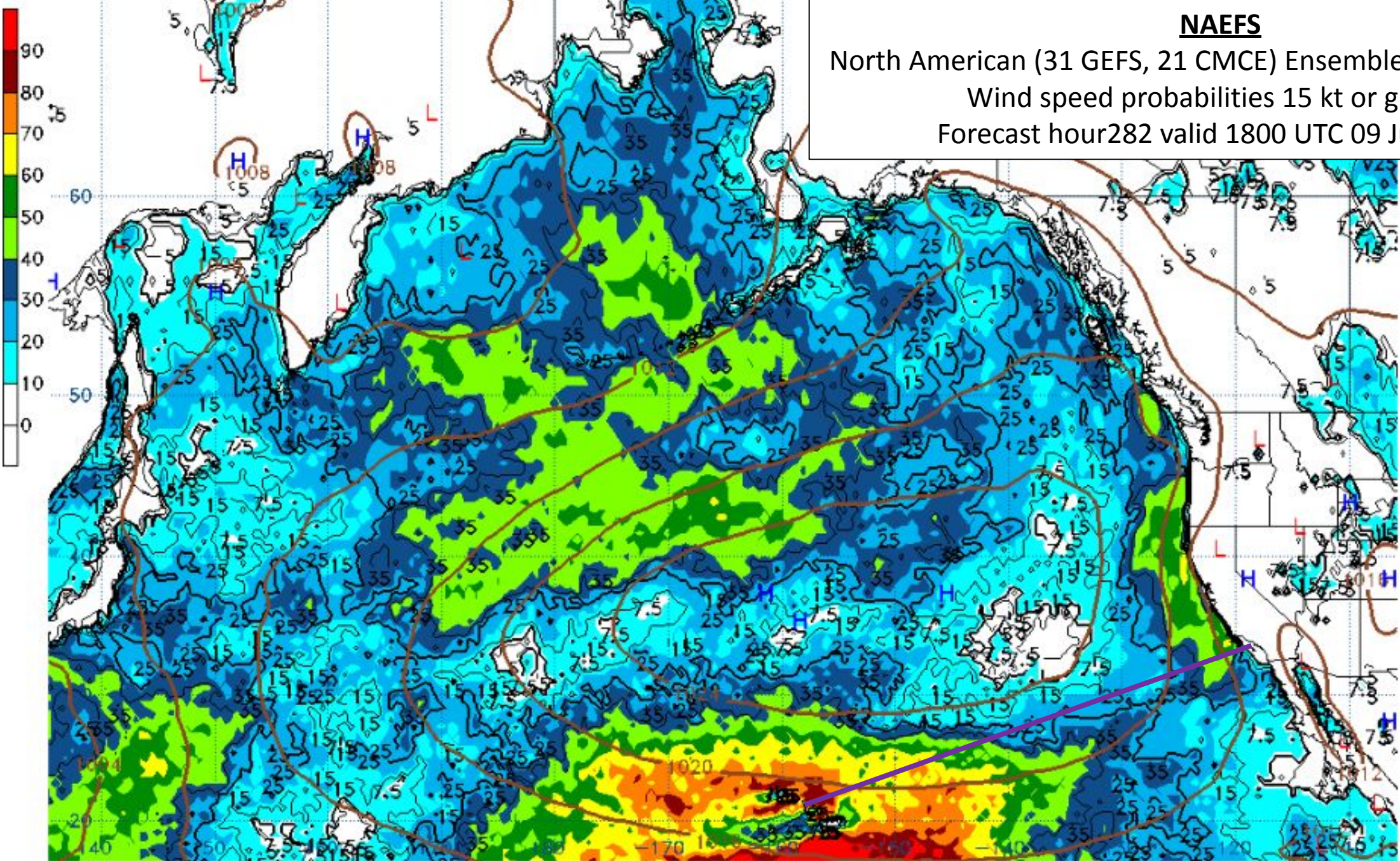
NAEFS
North American (31 GEFS, 21 CMCE) Ensemble Forecast System
Wind speed probabilities 15 kt or greater
Forecast hour 234 valid 1800 UTC 07 July 2025

Probability(GEFS 10m WIND >= 15kt) (%) and GEFS ensemble mean PMSL (mb)
20250628/0000 UTC F234 valid Mon 20250707/1800 UTC

Source: NOAA

NAEFS

North American (31 GEFS, 21 CMCE) Ensemble Forecast System
Wind speed probabilities 15 kt or greater
Forecast hour 282 valid 1800 UTC 09 July 2025

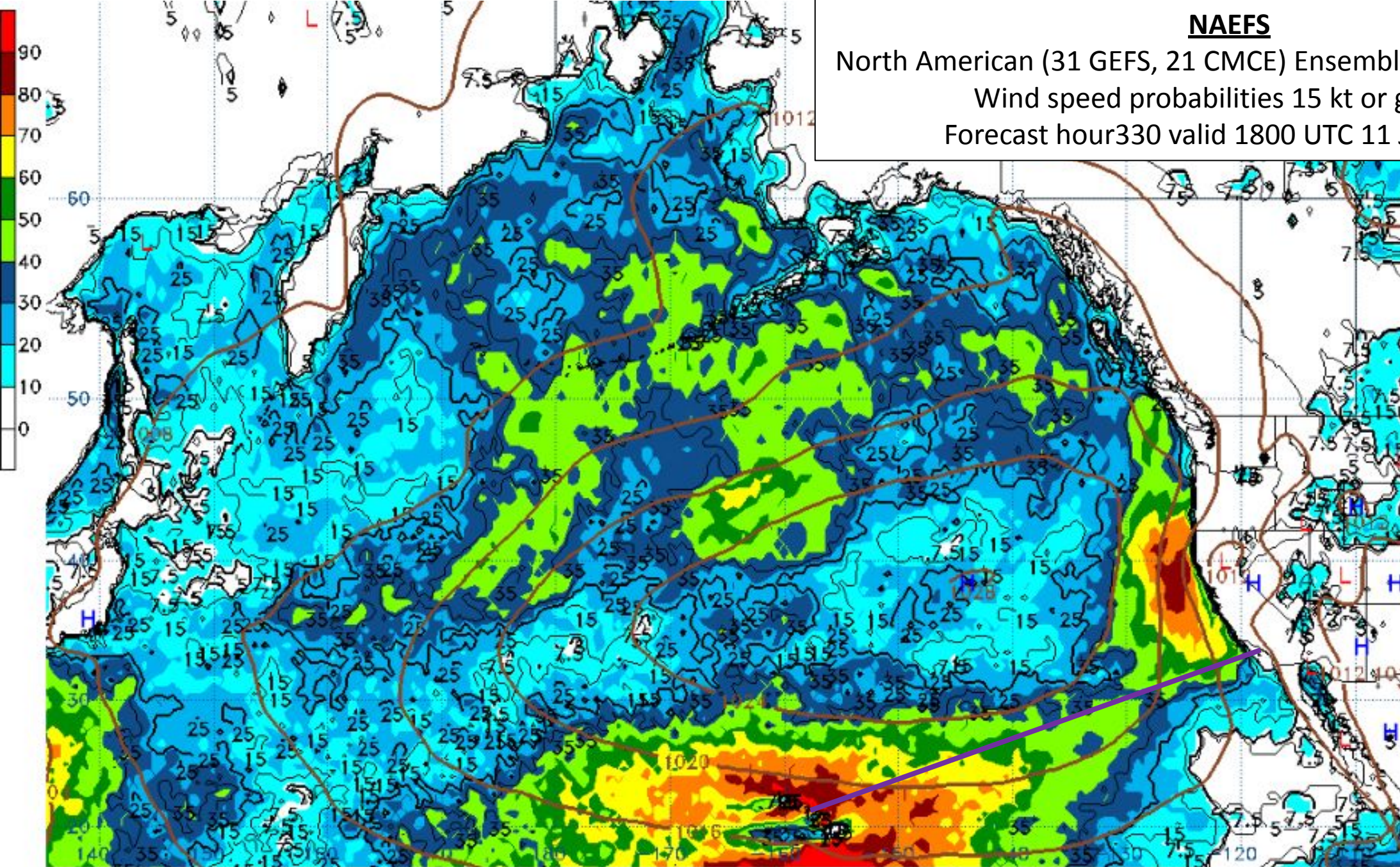


Probability(GEFS 10m WIND >= 15kt) (%) and GEFS ensemble mean PMSL (mb)
20250628/0000 UTC F282 valid Wed 20250709/1800 UTC

Source: NOAA

NAEFS

North American (31 GEFS, 21 CMCE) Ensemble Forecast System
Wind speed probabilities 15 kt or greater
Forecast hour 330 valid 1800 UTC 11 July 2025

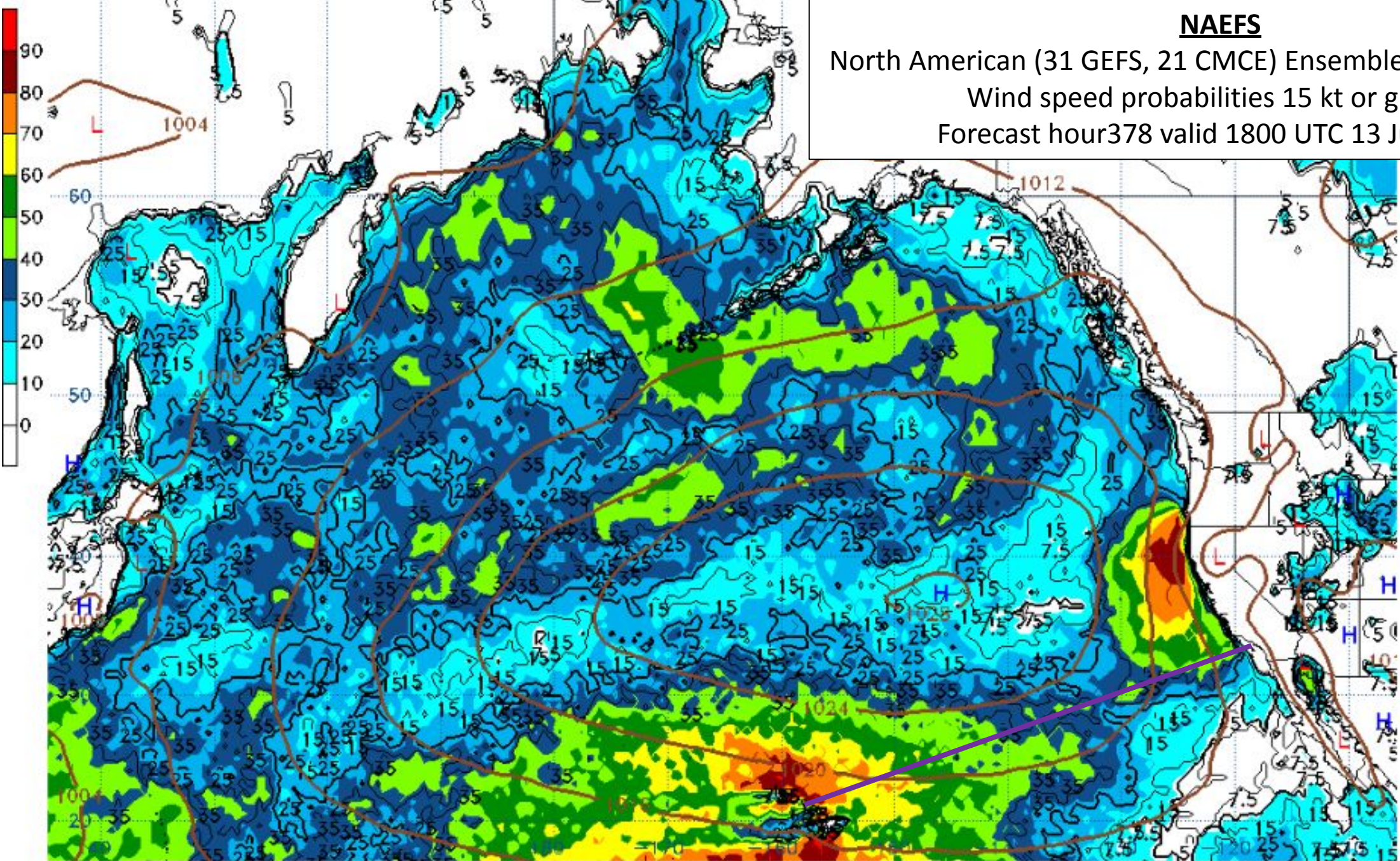


Probability(GEFS 10m WIND >= 15kt) (%) and GEFS ensemble mean PMSL (mb)
20250628/0000 UTC F330 valid Fri 20250711/1800 UTC

Source: NOAA

NAEFS

North American (31 GEFS, 21 CMCE) Ensemble Forecast System
Wind speed probabilities 15 kt or greater
Forecast hour 378 valid 1800 UTC 13 July 2025



Probability(GEFS 10m WIND >= 15kt) (%) and GEFS ensemble mean PMSL (mb)
20250628/0000 UTC F378 valid Sun 20250713/1800 UTC

Source: NOAA

Summary

- Balance the information you use – routing tools,
 - and authoritative information - NOAA
 - Update frequently
- Recommend you are familiar with products tropical cyclone products.
 - Tropical Weather Outlook, (TWO), Tropical Cyclone Messages (TCM)
 - Tropical Cyclone Discussions (TCDs)
- Large scale – ENSO is neutral (not a factor on trades)
 - MJO – disorganized – no strong signal
 - Tropical Cyclone activity – July 2-8 - potential EPAC
 - Potential reduced July 9-15 . (NOAA Climate Prediction Center)
- Mid and higher latitudes are active – impact both trades and northerlies