

COHO HO HO

Getting down the coast safely while  
having fun.

- Be smart about the weather.
- Be your own weather forecaster.
- Utilize good sources of weather information.
- Keep an accurate weather log and encourage your crew to enter their own observations.
- Practice forecasting well BEFORE you leave.

**Marine Weather in the Pacific NW:  
Where to get it and how to interpret it once you get it!**



# Bruce Hedrick

- I've raced and cruised around the PacNW for over 50 years.
- I am currently the Chief Forecaster for Meadow Point Marine, providing event specific weather forecasts, as well as vessel routing services for both power and sail.
- I've cruised from Seward to the Panama Canal, through the Canal and north to Florida, south from Florida to Antigua and back to St Thomas. I've sailed in 14 TransPacific Races, 48 Swiftsures and I continue to actively race as well as charter in other parts of the world.

# Seminar Outline



- Sources of the BIG Picture (Synoptic Weather) and how to read them.
- 500MB Charts, the Jet Stream and why it is important
- Other NOAA Charts of interest.
- Sources of Regional Surface Weather Conditions.
- Other Big Picture Sources
- Reference materials
- Questions?

# Start by looking at the Big Picture

Get the Charts from NOAA's National Weather Service, Marine Forecasts.

<https://w2.weather.gov/marine/ptreyes>

# NOAA Charts

**NATIONAL WEATHER SERVICE**  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

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## Radiofax Charts - Pt. Reyes, CA

[Weather.gov](#) > [Marine, Tropical and Tsunami Services Branch](#) > Radiofax Charts - Pt. Reyes, CA

**Marine, Tropical and Tsunami Services Branch**  
National Program

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[Marine Text Forecasts](#)   [Radiofax Charts](#)   [Observations](#)   [Dissemination](#)   [Graphic Products](#)   [Get Products via Email](#)   [Items of Interest](#)   [FAQ](#)

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### NWS radiofax charts for the North Pacific and Tropical East Pacific

The latest version of marine weather charts for broadcast by the U.S. Coast Guard are available from the National Weather Service Telecommunication Gateway on this server. The listed charts are in the G4 (T4) format and enveloped in TIFF for viewing, also available in GIF format. Satellite images are in JPEG format.

Reports from mariners of both poor AND good radio reception, as well as any other comments about weather broadcast services and forecast products are always greatly appreciated. Please be specific as possible noting your location, equipment/software used, date(s), time(s), frequency(s), mode (fax, voice, NAVTEX, etc.), signal strength, and problem observed (e.g. interference, noise, sync loss, echoes, etc), product name (e.g. high seas text forecast for METAREA IV, if internet state link, etc.). Send your comments to: [Questions, Comments?](#)

Effective September 19, 2018, the radiofax broadcast schedule for Pt Reyes (NMC) was adjusted to include 72 hour forecast products for surface and wind/wave charts for the North Pacific (Pt Reyes).

SIZE and UPDATED... refer to .TIF version of files

Many of these charts are also broadcast from [Kodiak, Alaska](#) and [Honolulu, Hawaii](#)

**Condensed version of this page showing only the latest charts (few color charts available)**  
[Printer Friendly Weather Briefing for the North Pacific](#) showing the latest charts  
[Printer Friendly Weather Briefing for the Tropical East Pacific](#) showing the latest charts  
[Product Loops](#)  
[Radiofax Information](#)  
[Worldwide Marine Radiofacsimile Broadcast Schedules](#) (PDF)  
These products also available via [E-mail](#) or [FTP](#)  
[Radiofacsimile User's Guide](#)  
[Key Terms and Symbols](#) for these charts  
[Missed Charts](#) for the Current Month(if any)  
[Historic Weather and Satellite Data](#)  
[Caution](#)

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- [Wind/Wave Charts](#)
- [Tropical Wind/Wave Charts](#)
- [Surface Charts](#)
- [Tropical Surface Charts](#)
- [Upper Air Charts](#)
- [Tropical Cyclone/High Wind Wave Charts](#)
- [Sea Surface Temperatures](#)
- [Satellite Imagery](#)
- [Schedule and Miscellaneous](#)

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**Wind/Wave Charts**

|                                                 |                     |                     |                       |
|-------------------------------------------------|---------------------|---------------------|-----------------------|
| 00Z Sea State Analysis 20N-70N 115W-135E        | <a href="#">TIF</a> | <a href="#">GIF</a> | <a href="#">COLOR</a> |
| 00Z Wind/Wave Analysis 18N-62N E of 157W*       | <a href="#">TIF</a> | <a href="#">GIF</a> | <a href="#">COLOR</a> |
| 06Z Wind/Wave Analysis 18N-62N E of 157W        | <a href="#">TIF</a> | <a href="#">GIF</a> | <a href="#">COLOR</a> |
| 12Z Wind/Wave Analysis 18N-62N E of 157W        | <a href="#">TIF</a> | <a href="#">GIF</a> | <a href="#">COLOR</a> |
| 18Z Wind/Wave Analysis 18N-62N E of 157W        | <a href="#">TIF</a> | <a href="#">GIF</a> | <a href="#">COLOR</a> |
| 24HR Wind/Wave Forecast VT00Z 18N-62N E of 157W | <a href="#">TIF</a> | <a href="#">GIF</a> | <a href="#">COLOR</a> |

# Available Charts

- [Wind/Wave Charts](#)
- [Tropical Wind/Wave Charts](#)
- [Surface Charts](#)
- [Tropical Surface Charts](#)
- [Upper Air Charts](#)
- [Tropical Cyclone/High Wind Wave Charts](#)
- [Sea Surface Temperatures](#)
- [Satellite Imagery](#)
- [Schedule and Miscellaneous](#)



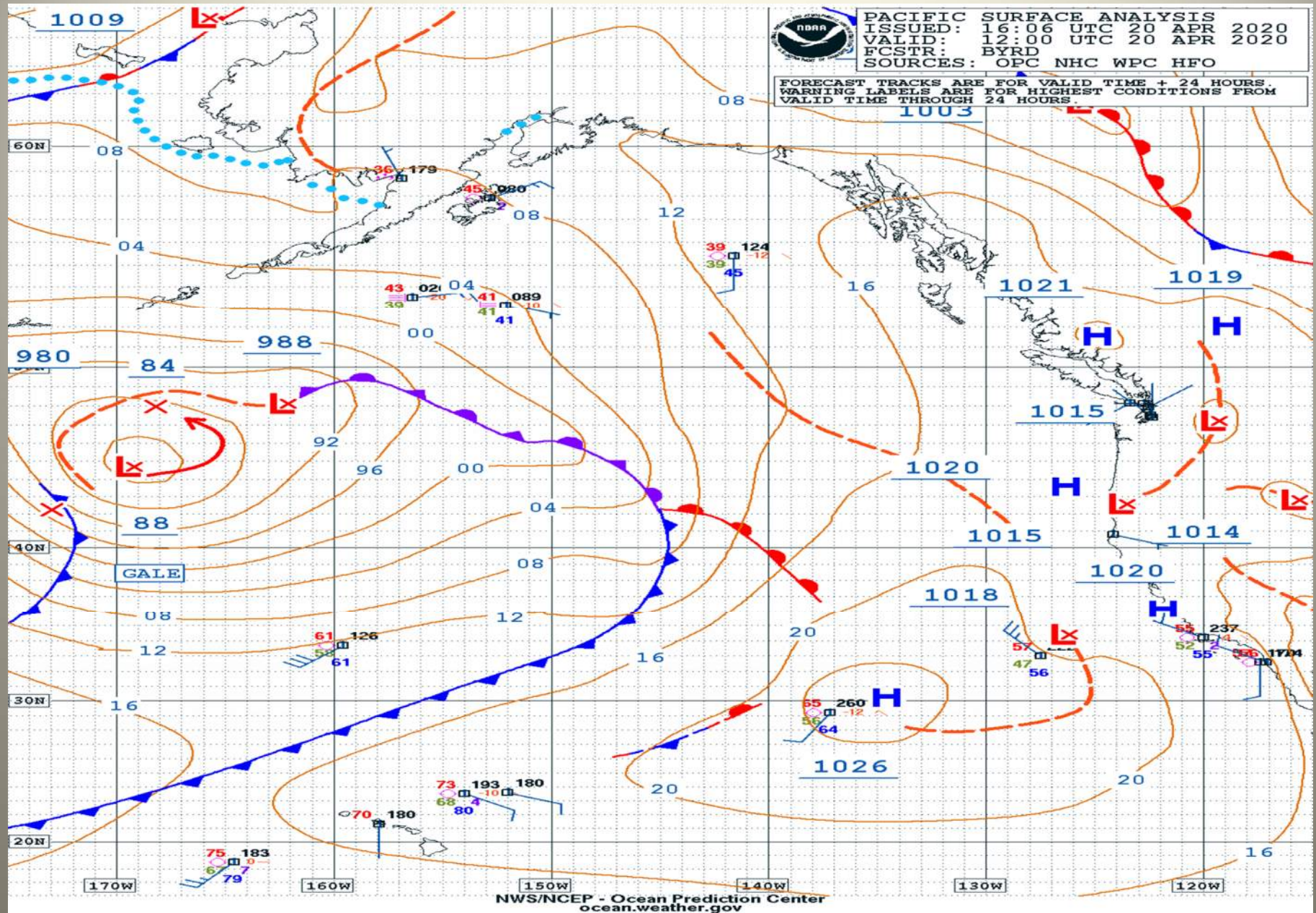
Within each section you have a lot of options.

### Surface Charts

|                                                        |                     |                     |                       |
|--------------------------------------------------------|---------------------|---------------------|-----------------------|
| 00Z Sfc Analysis NE Pacific (Part 1) 20N-70N 115W-175W | <a href="#">TIF</a> | <a href="#">GIF</a> | <a href="#">COLOR</a> |
| 00Z Sfc Analysis NW Pacific (Part 2) 20N-70N 175W-135E | <a href="#">TIF</a> | <a href="#">GIF</a> | <a href="#">COLOR</a> |
| 06Z Sfc Analysis NE Pacific (Part 1) 20N-70N 115W-175W | <a href="#">TIF</a> | <a href="#">GIF</a> | <a href="#">COLOR</a> |
| 06Z Sfc Analysis NW Pacific (Part 2) 20N-70N 175W-135E | <a href="#">TIF</a> | <a href="#">GIF</a> | <a href="#">COLOR</a> |
| 12Z Sfc Analysis NE Pacific (Part 1) 20N-70N 115W-175W | <a href="#">TIF</a> | <a href="#">GIF</a> | <a href="#">COLOR</a> |
| 12Z Sfc Analysis NW Pacific (Part 2) 20N-70N 175W-135E | <a href="#">TIF</a> | <a href="#">GIF</a> | <a href="#">COLOR</a> |
| 18Z Sfc Analysis NE Pacific (Part 1) 20N-70N 115W-175W | <a href="#">TIF</a> | <a href="#">GIF</a> | <a href="#">COLOR</a> |
| 18Z Sfc Analysis NW Pacific (Part 2) 20N-70N 175W-135E | <a href="#">TIF</a> | <a href="#">GIF</a> | <a href="#">COLOR</a> |
| 24HR Sfc Forecast VT00Z 18N-62N E of 157W              | <a href="#">TIF</a> | <a href="#">GIF</a> | <a href="#">COLOR</a> |
| 24HR Sfc Forecast VT12Z 18N-62N E of 157W              | <a href="#">TIF</a> | <a href="#">GIF</a> | <a href="#">COLOR</a> |
| 48HR Sfc Forecast VT00Z 20N-70N 115W-135E              | <a href="#">TIF</a> | <a href="#">GIF</a> | <a href="#">COLOR</a> |
| 48HR Sfc Forecast VT12Z 20N-70N, 115W-135E             | <a href="#">TIF</a> | <a href="#">GIF</a> | <a href="#">COLOR</a> |
| 72HR Sfc Forecast VT12Z 20N-70N 115W-135E              | <a href="#">TIF</a> | <a href="#">GIF</a> | <a href="#">COLOR</a> |
| 96HR Sfc Forecast VT12Z 20N-70N 115W-135E              | <a href="#">TIF</a> | <a href="#">GIF</a> | <a href="#">COLOR</a> |

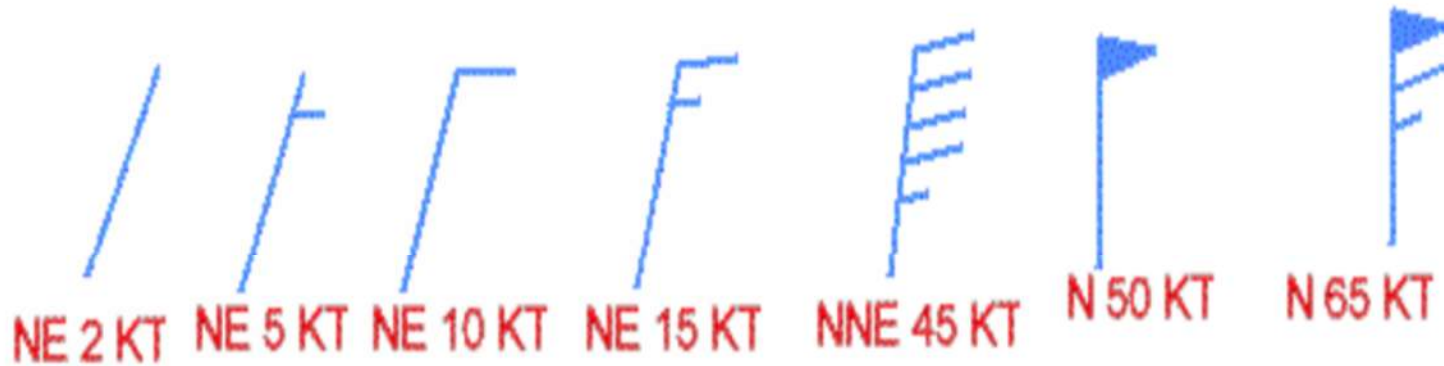


# Now we get to the fun stuff.



# NOAA Charts

## Wind Speed and Direction



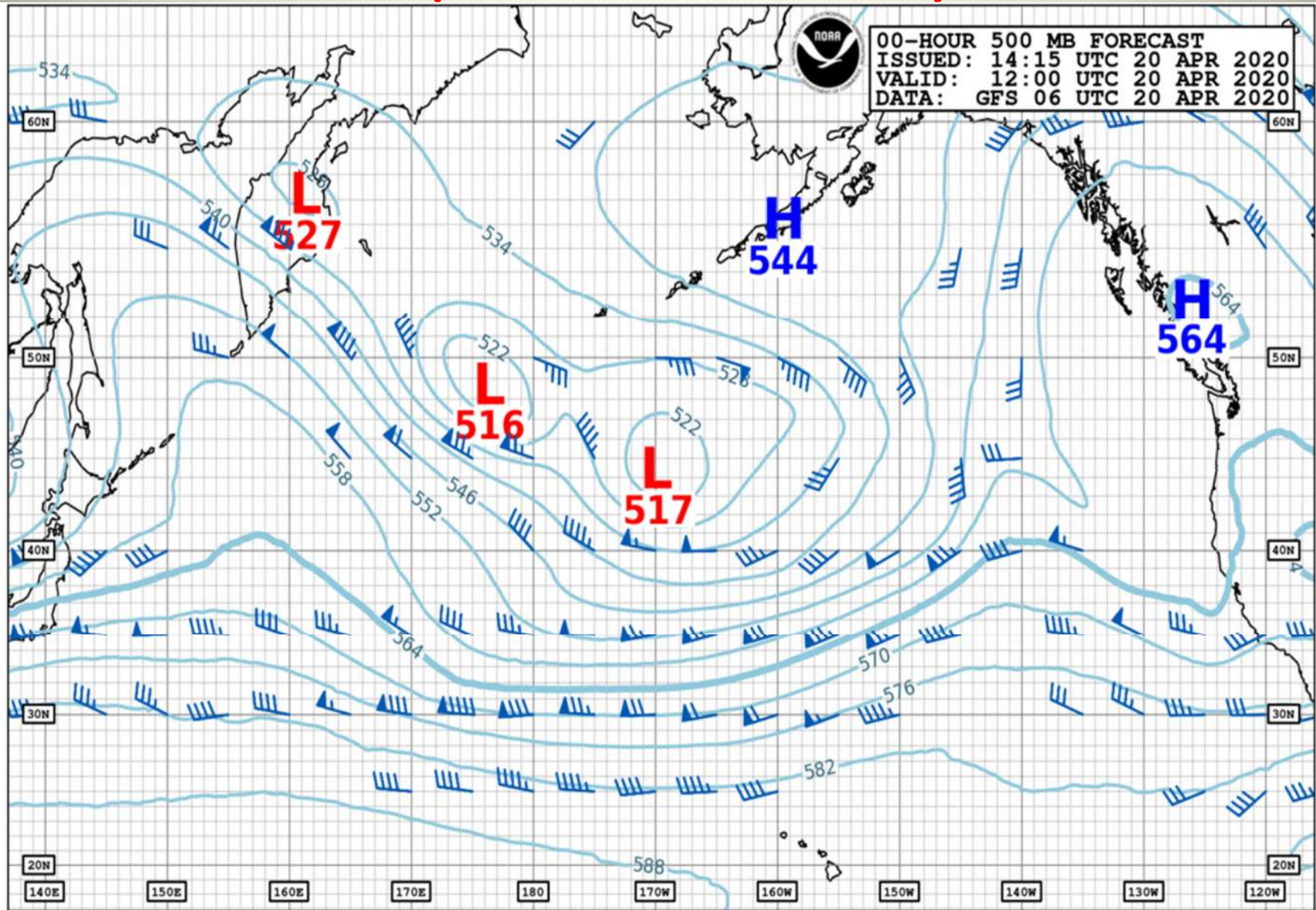
Half Feathers = 5 knots

Full Feathers = 10 knots

Flags = 50 knots

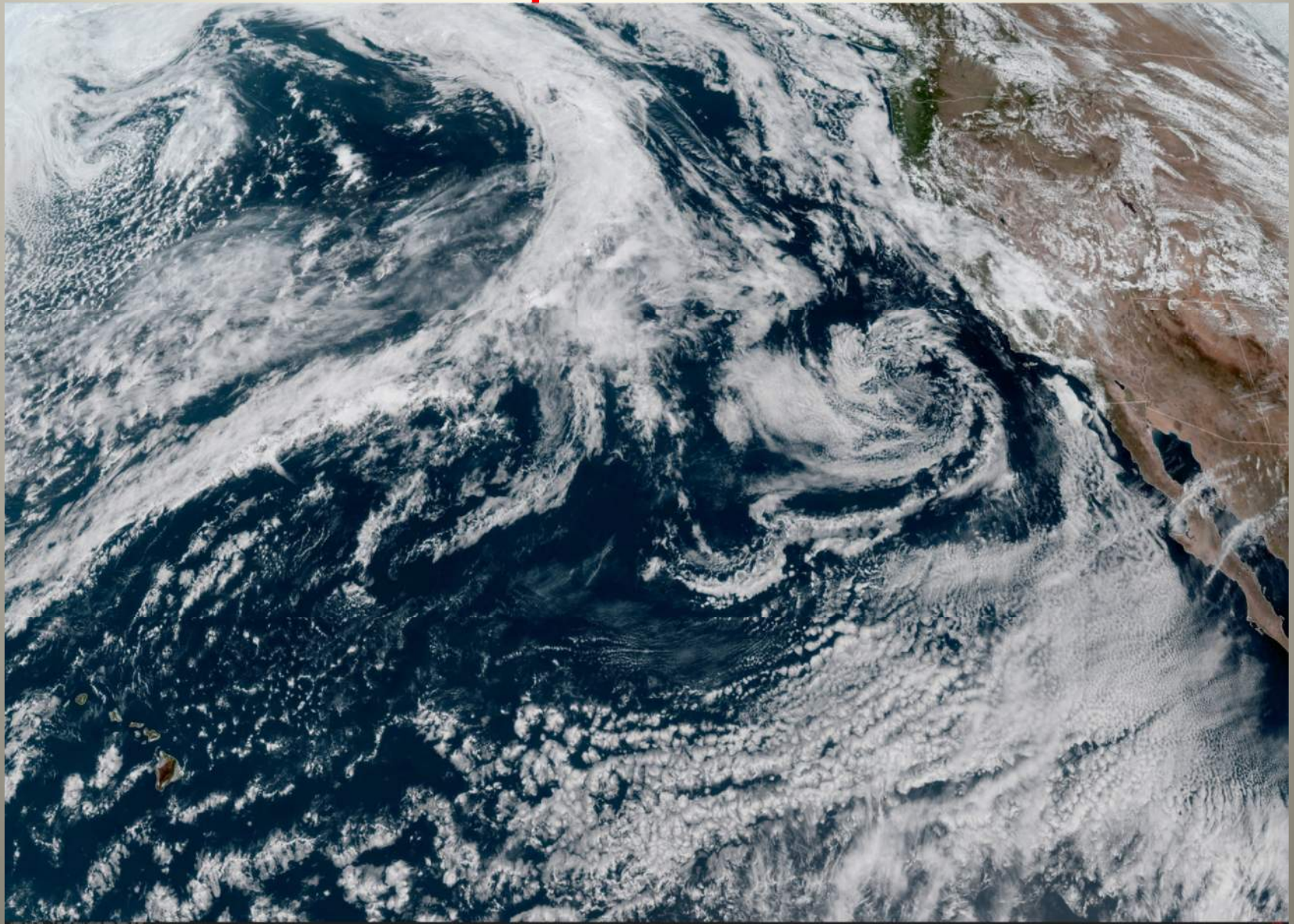


# 20 Apr 500mb Analysis



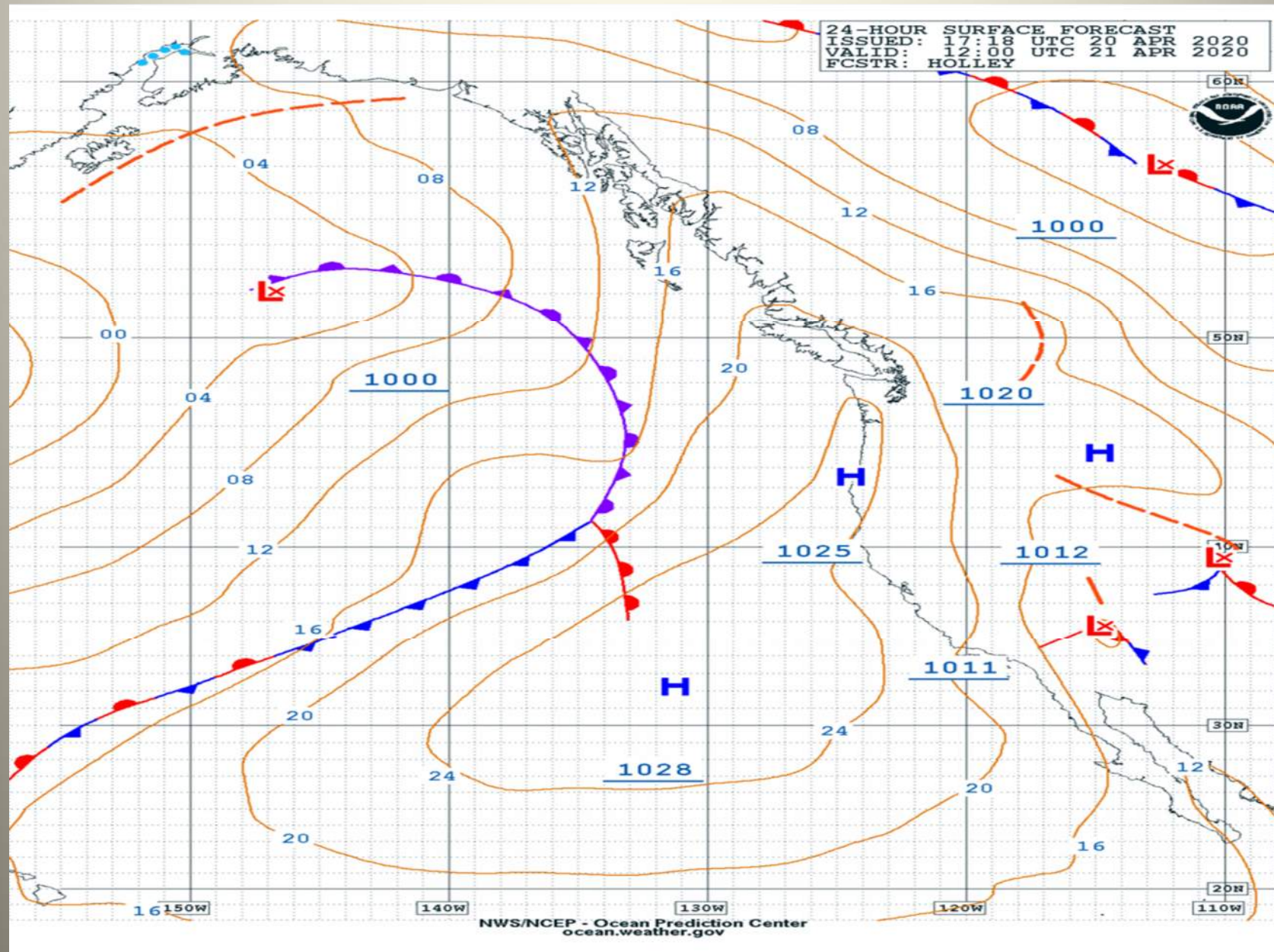


20 Apr Sat Pic



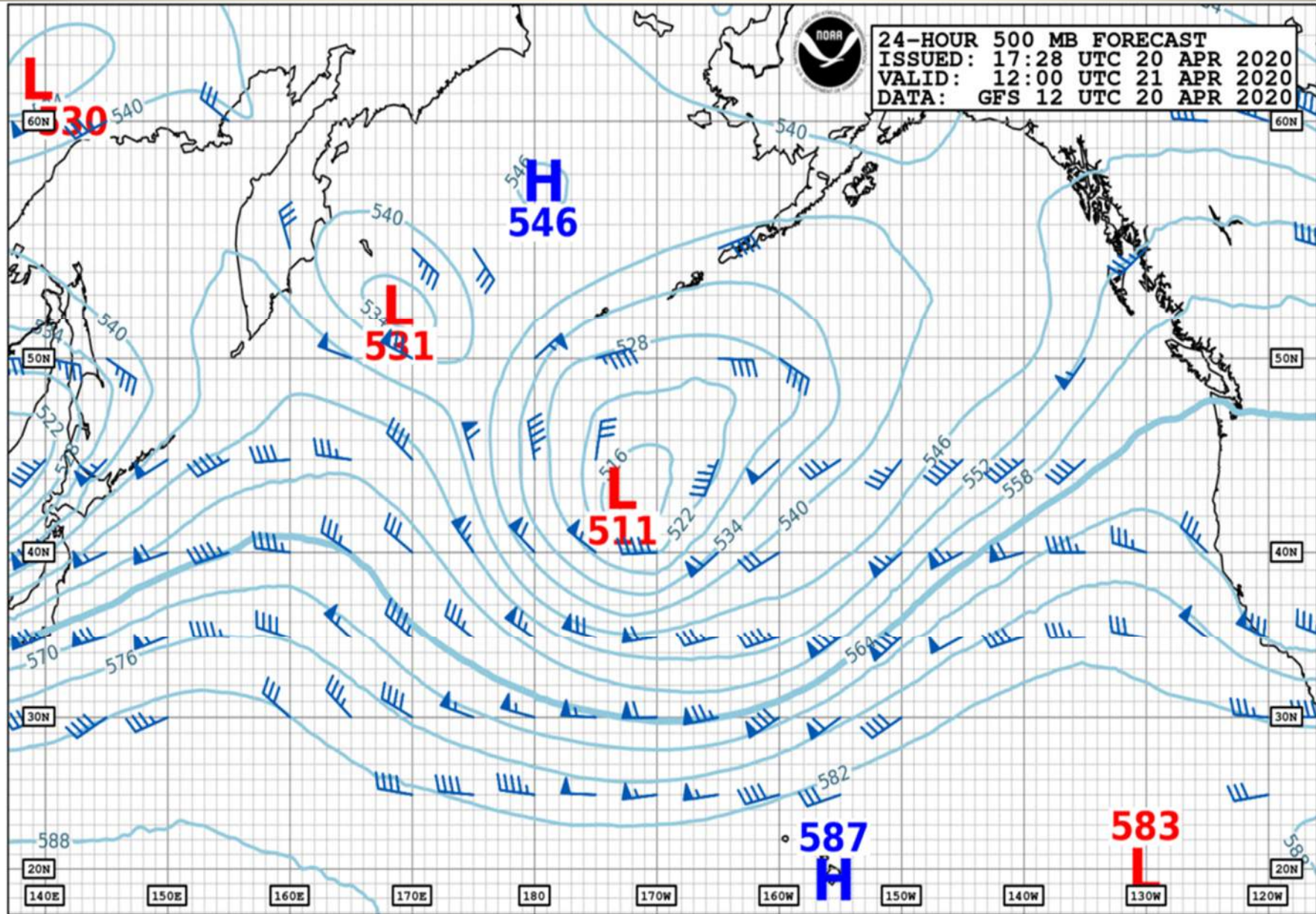


# 24 Hr Surface Forecast



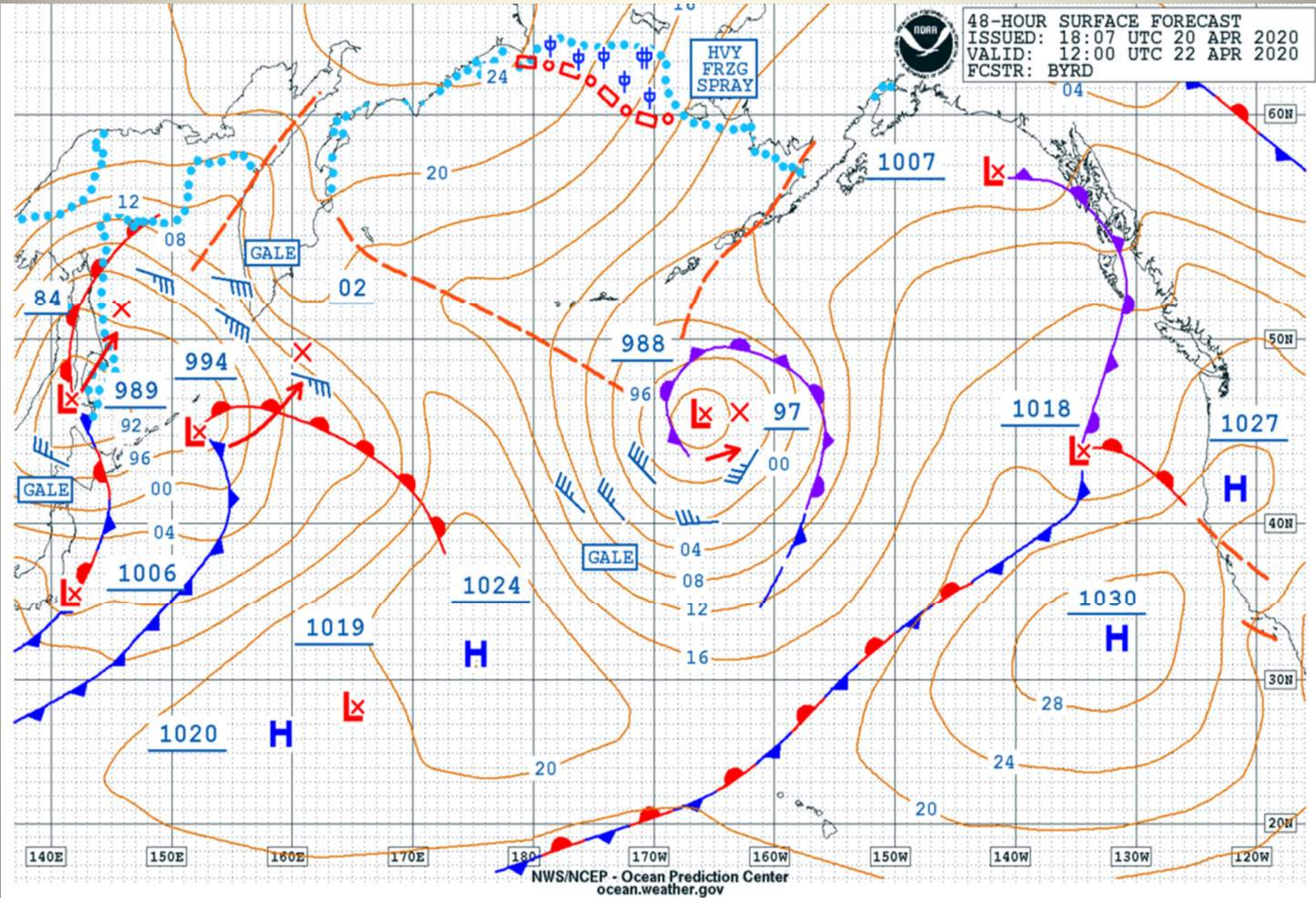


# 24 Hr 500MB



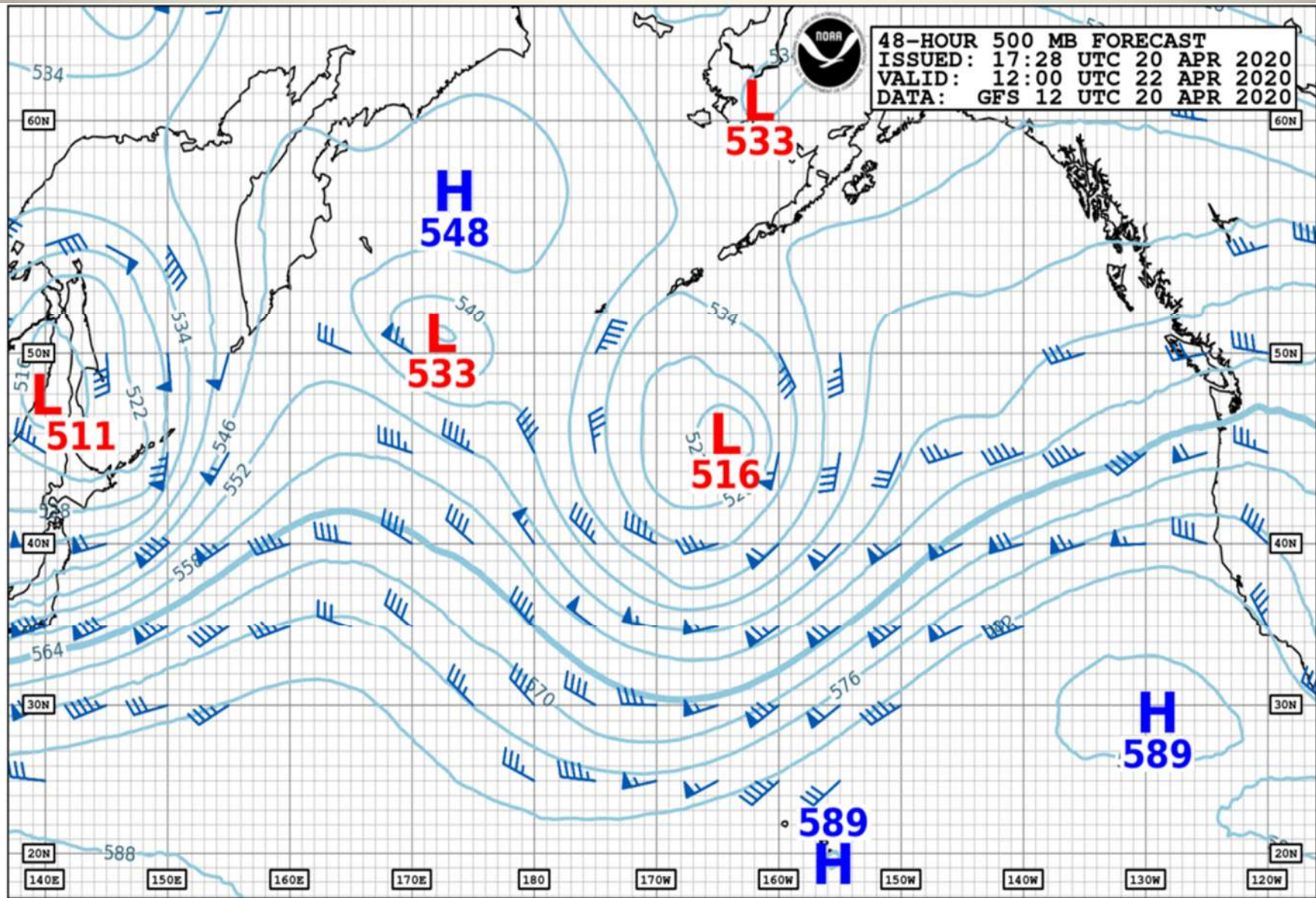


# 48 Hr Surface Forecast



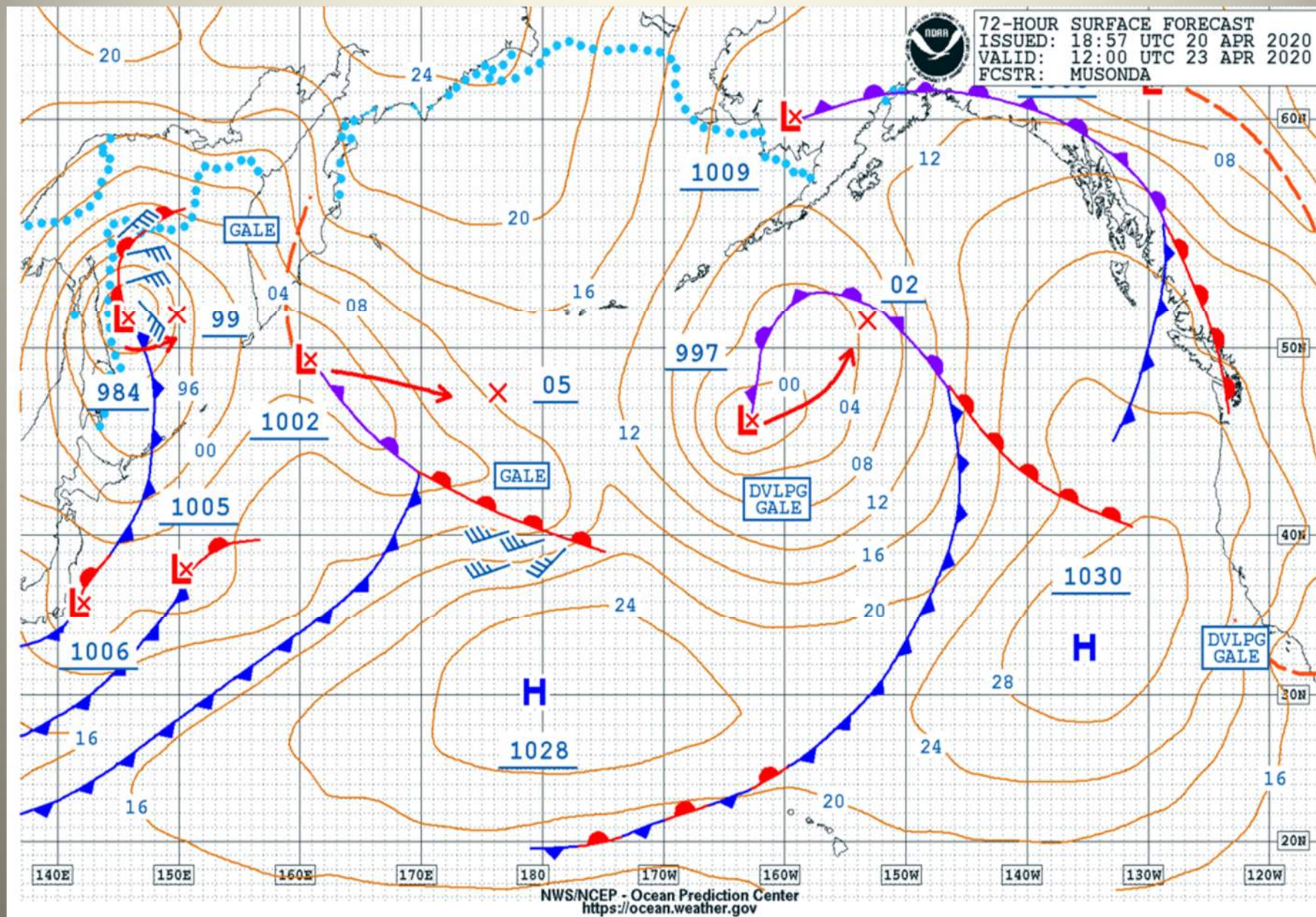


# 48 Hr 500MB



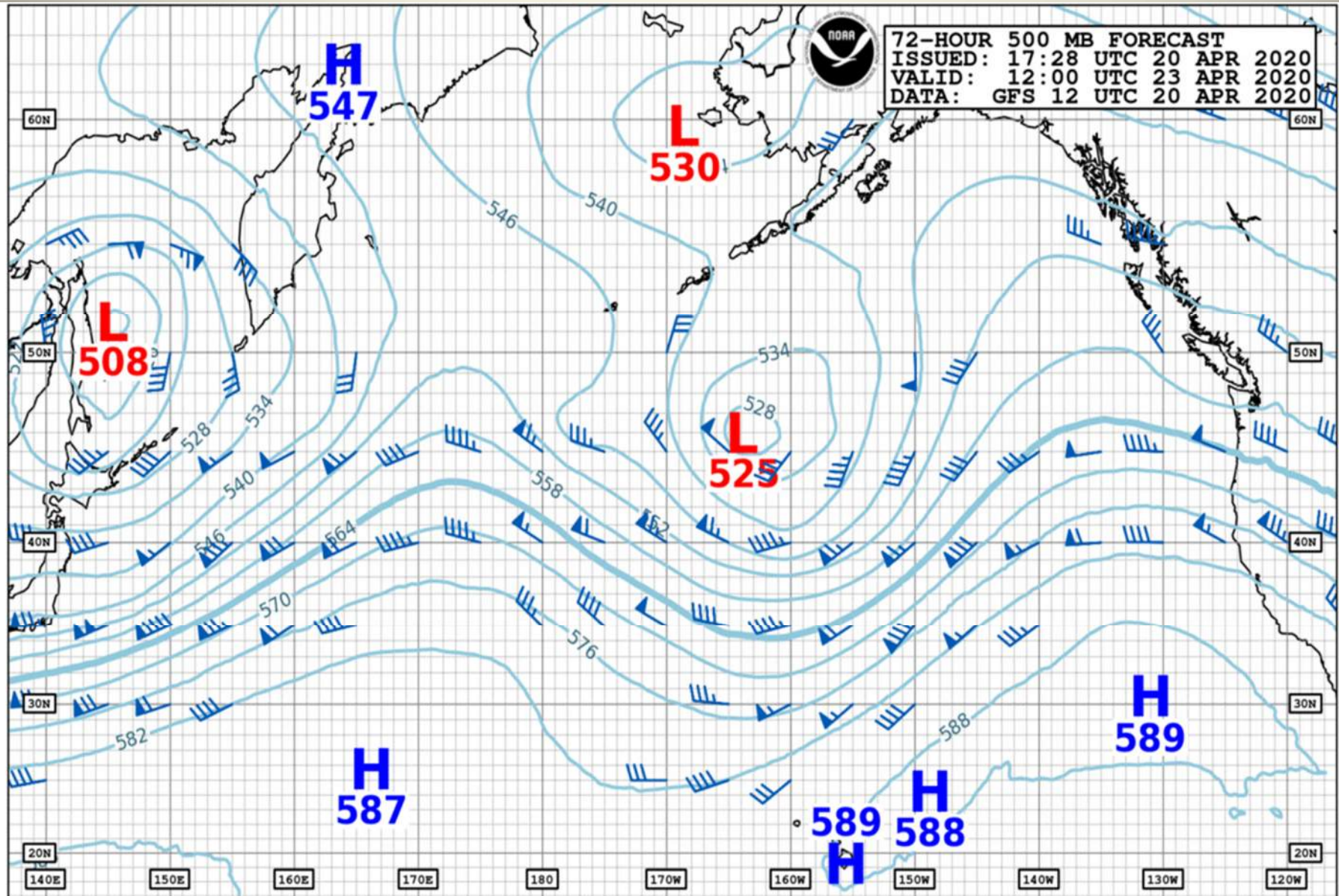


# 72 Hr Surface Forecast





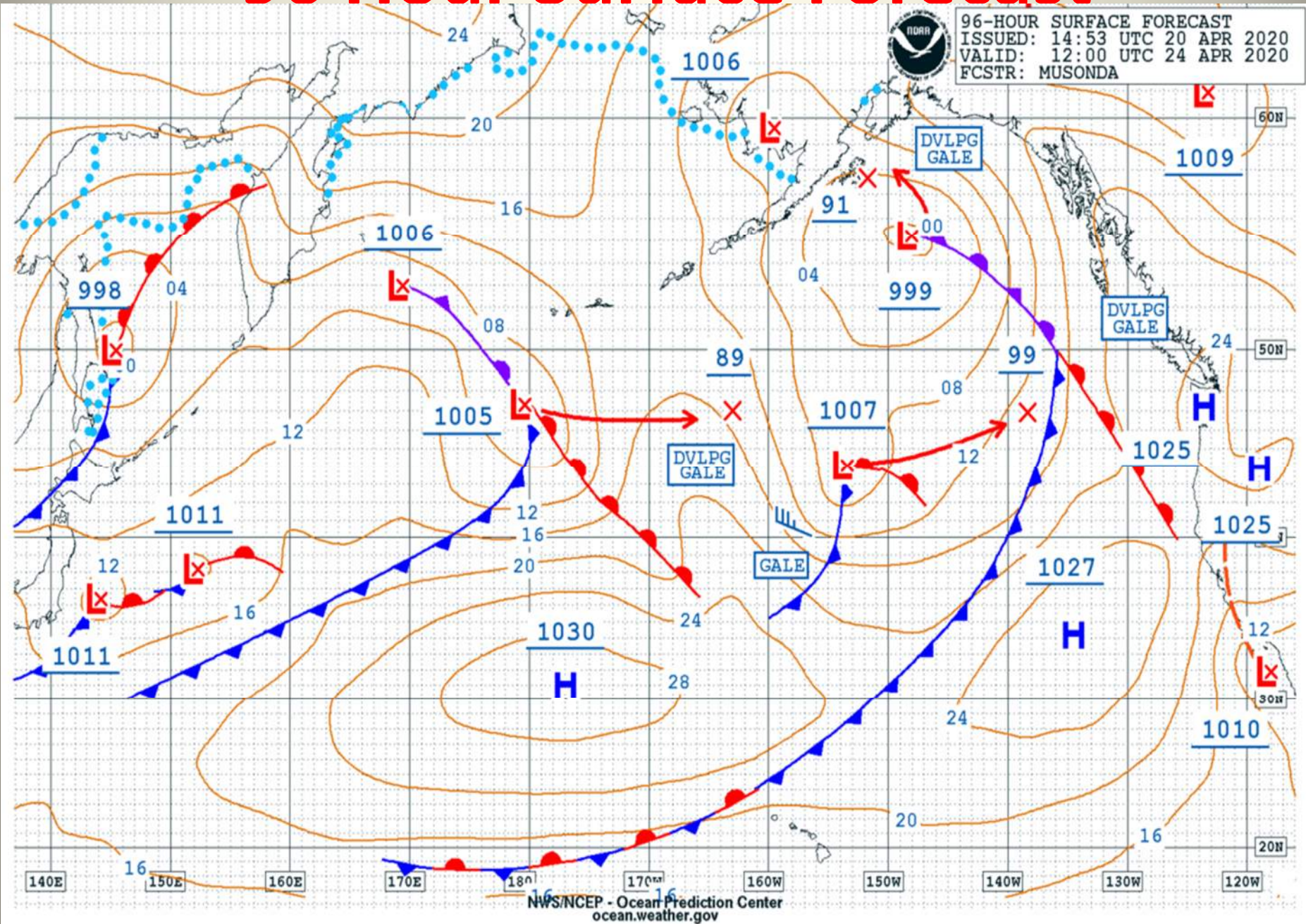
# 72 Hr 500MB



**72-HOUR 500 MB FORECAST**  
ISSUED: 17:28 UTC 20 APR 2020  
VALID: 12:00 UTC 23 APR 2020  
DATA: GFS 12 UTC 20 APR 2020

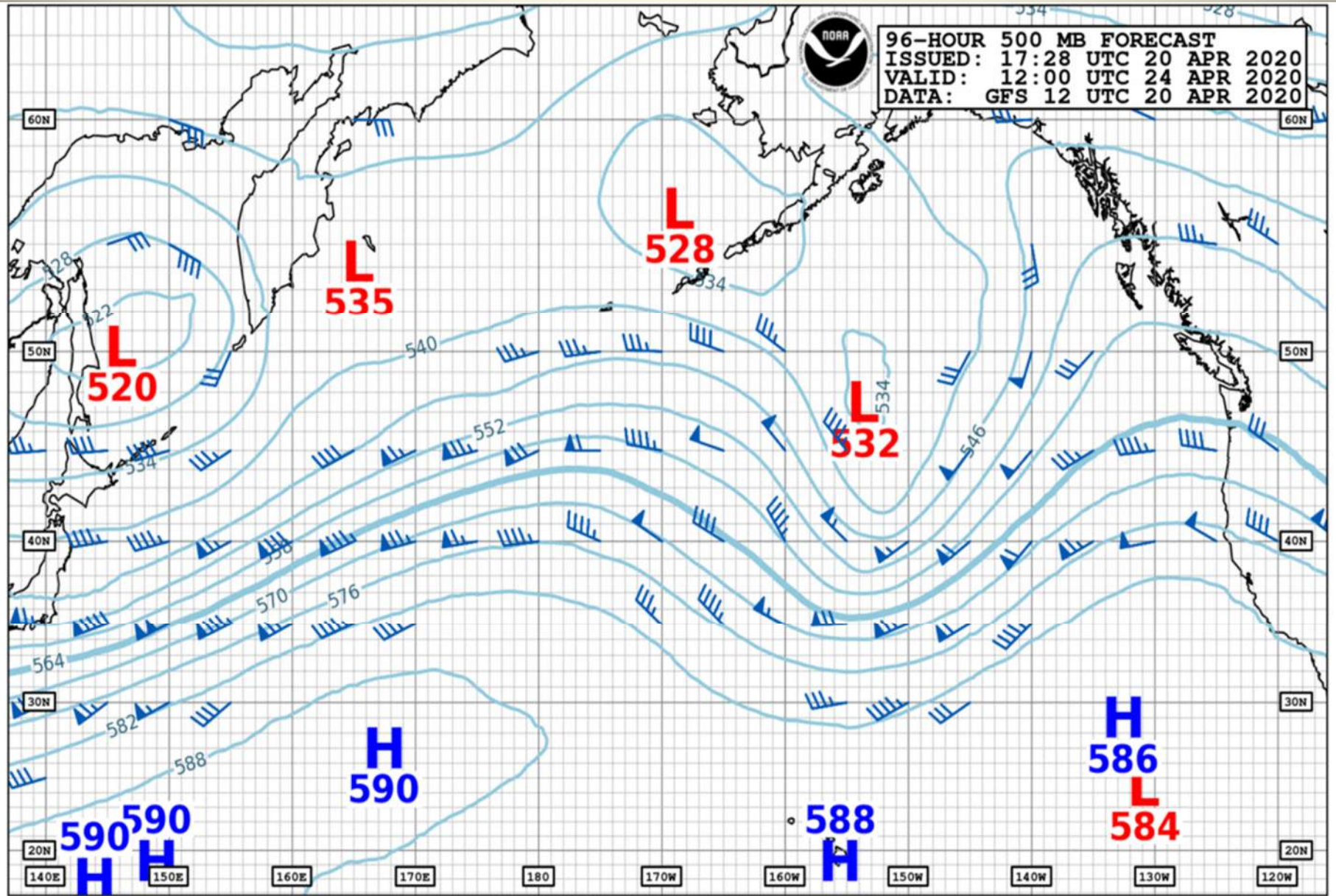


# 96 Hour Surface Forecast





# 96HR 500MB





# Regional Surface Conditions

- Western Washington Surface Conditions

<https://atmos.washington.edu/cgi-bin/latest.cgi?sfcplots-wwa>

- National Data Buoy Center

[https://www.ndbc.noaa.gov/station\\_page.php?station=WPOW1](https://www.ndbc.noaa.gov/station_page.php?station=WPOW1)

- National Weather Service Seattle

<https://www.weather.gov/sew/>

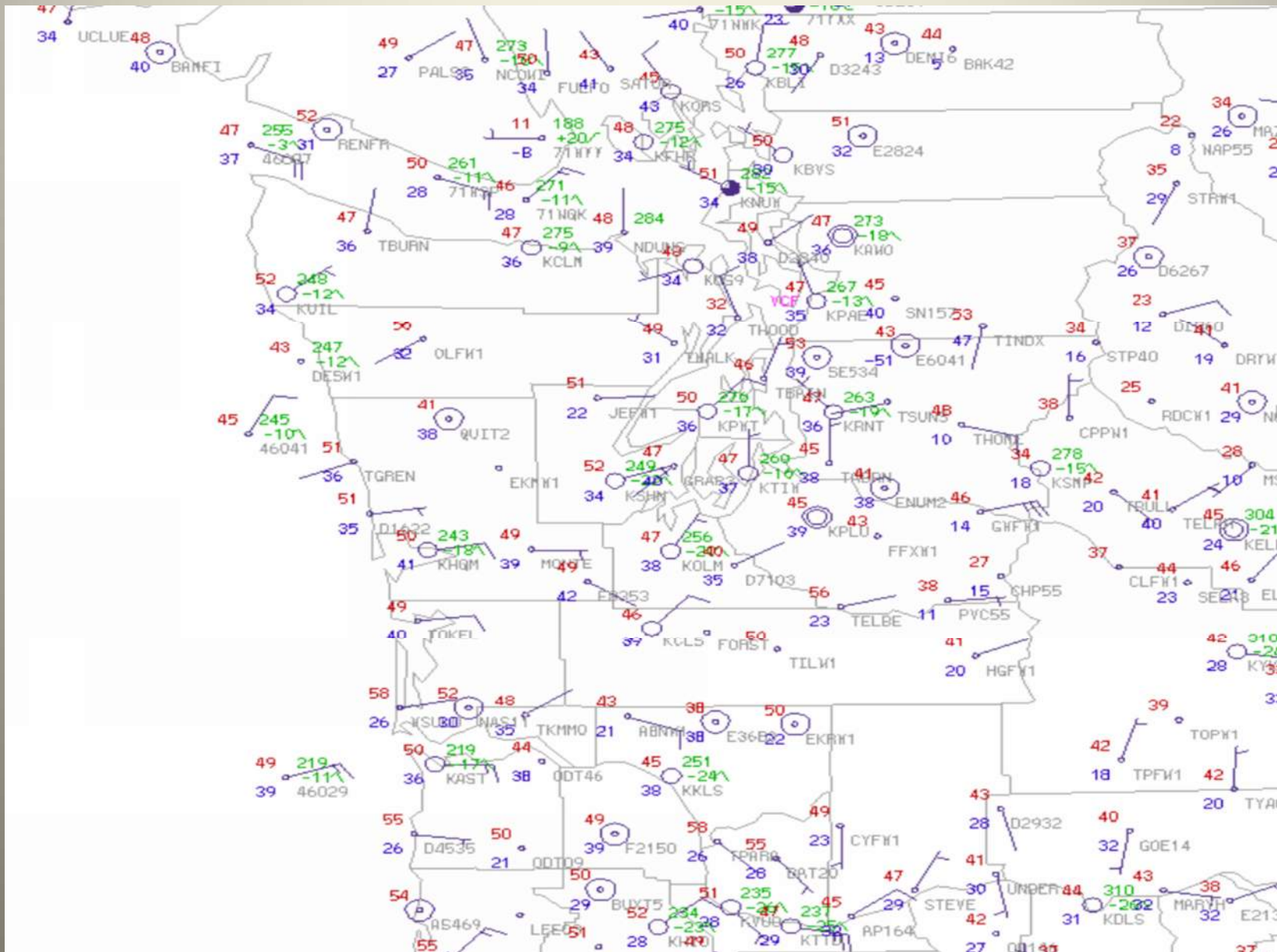
- Sail Flow

<https://www.sailflow.com/map#47.568,-123.004,10,1>

- University of Washington MM5 High Resolution

<https://atmos.washington.edu/mm5rt/>

# Regional Surface Conditions



# Station Plots

## Station Plots

### Decoding Station Plots



| Weather Parameter                               | Weather Symbol | Weather Symbol Decoded                              |
|-------------------------------------------------|----------------|-----------------------------------------------------|
| Station ID                                      | KPZH           | Ship identifier                                     |
| Temperature (fahrenheit or celsius)             | 70             | 70 degrees fahrenheit                               |
| Present weather                                 | K              | Thunderstorm (additional present weather symbols)   |
| Dew point temperature (fahrenheit or celsius)   | 68             | 68 degrees fahrenheit                               |
| Wind speed, direction, sky cover                |                | South-Southwest at 25 kt, overcast                  |
| Station Pressure (mb)                           | 048            | 1004.8 mb                                           |
| 3 hour pressure tendency                        | -7 \           | -0.7 mb pressure decrease with steady pressure fall |
| optional wave height (feet or meter)            | 11             | 11 feet                                             |
| Sea Surface Temperature (fahrenheit or celsius) | 75             | 75 degrees fahrenheit                               |

KPZH

70

048



-7



68

11

75

# National Data Buoy Center

## Station WPOW1 - West Point, WA

Owned and maintained by National Data Buoy Center  
C-MAN Station  
MARS payload  
47.662 N 122.436 W (47°39'44" N 122°26'9" W)

Site elevation: 3 m above mean sea level  
Air temp height: 5.5 m above site elevation  
Anemometer height: 9.8 m above site elevation  
Barometer elevation: 8.8 m above mean sea level

[Latest NWS Marine Forecast](#)

[Important Notice to Mariners](#)

[Search And Rescue \(SAR\) Data](#)

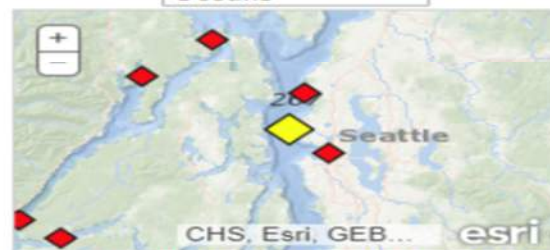
[Meteorological Observations from Nearby Stations and Ships](#) 

Sector pictures are available for this station at [0](#), [45](#), [90](#), [135](#), [180](#), [225](#), [270](#), [315](#) degrees.

**(SECTOR PHOTOS ARE NOT IN REAL-TIME AND ARE NOT UPDATED!)**



Oceans 



Large icon indicates selected station. [Disclaimer](#)  
◆ Stations with recent data  
◆ Stations with no data in last 8 hours  
(24 hours for tsunami stations)

## Conditions at WPOW1 as of (11:00 am PST) 1900 GMT on 01/30/2020:

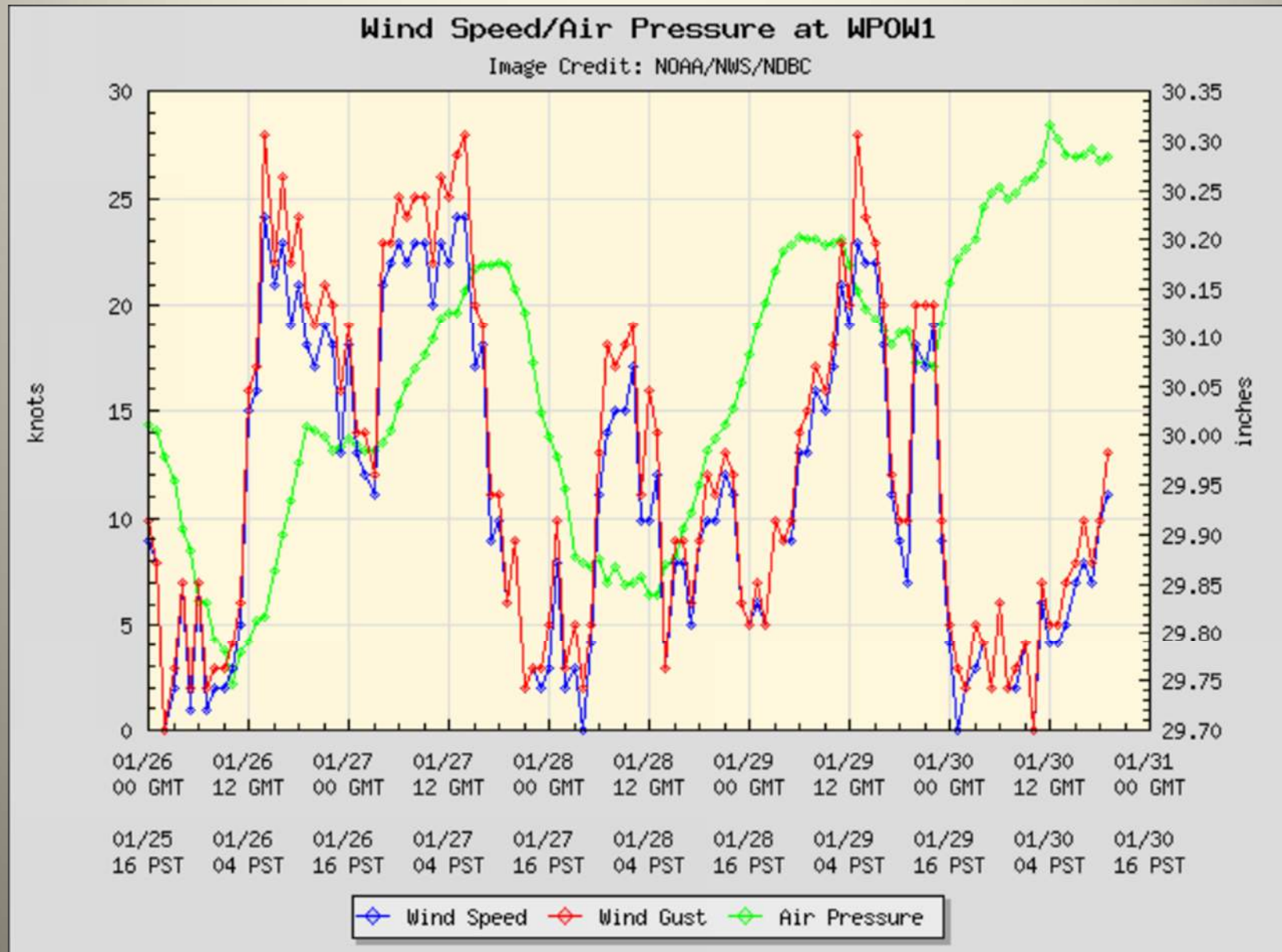
Unit of Measure:  Time Zone:

*Click on the graph icon in the table below to see a time series plot of the last five days of that observation.*

|                                                                                     |                                                                     |                      |
|-------------------------------------------------------------------------------------|---------------------------------------------------------------------|----------------------|
|  | Wind Direction (WDIR):                                              | SSW ( 200 deg true ) |
|  | Wind Speed (WSPD):                                                  | 11 kts               |
|  | Wind Gust (GST):                                                    | 13 kts               |
|  | Atmospheric Pressure (PRES):                                        | 30.28 in             |
|  | Pressure Tendency (PTDY):                                           | +0.00 in ( Steady )  |
|  | Air Temperature (ATMP):                                             | 45.9 °F              |
|  | Dew Point (DEWP):                                                   | 44.8 °F              |
|  | Wind Chill (CHILL):                                                 | 39.9 °F              |
|  | Wind Speed at 10 meters (WSPD10M):                                  | 12 kts               |
|  | Wind Speed at 20 meters (WSPD20M):                                  | 12 kts               |
|                                                                                     | <a href="#">Combined plot of Wind Speed, Gust, and Air Pressure</a> |                      |

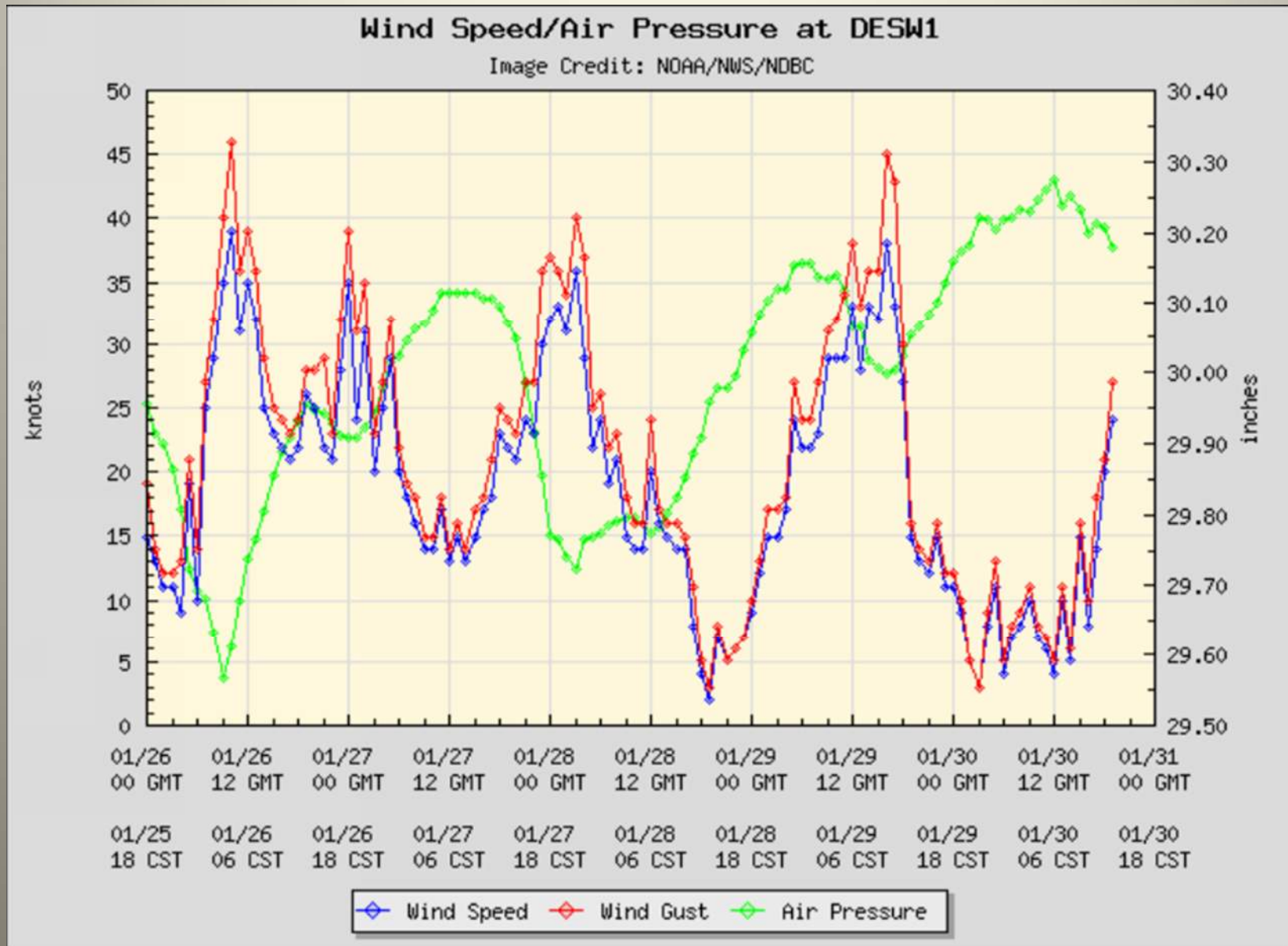


# West Point Plot





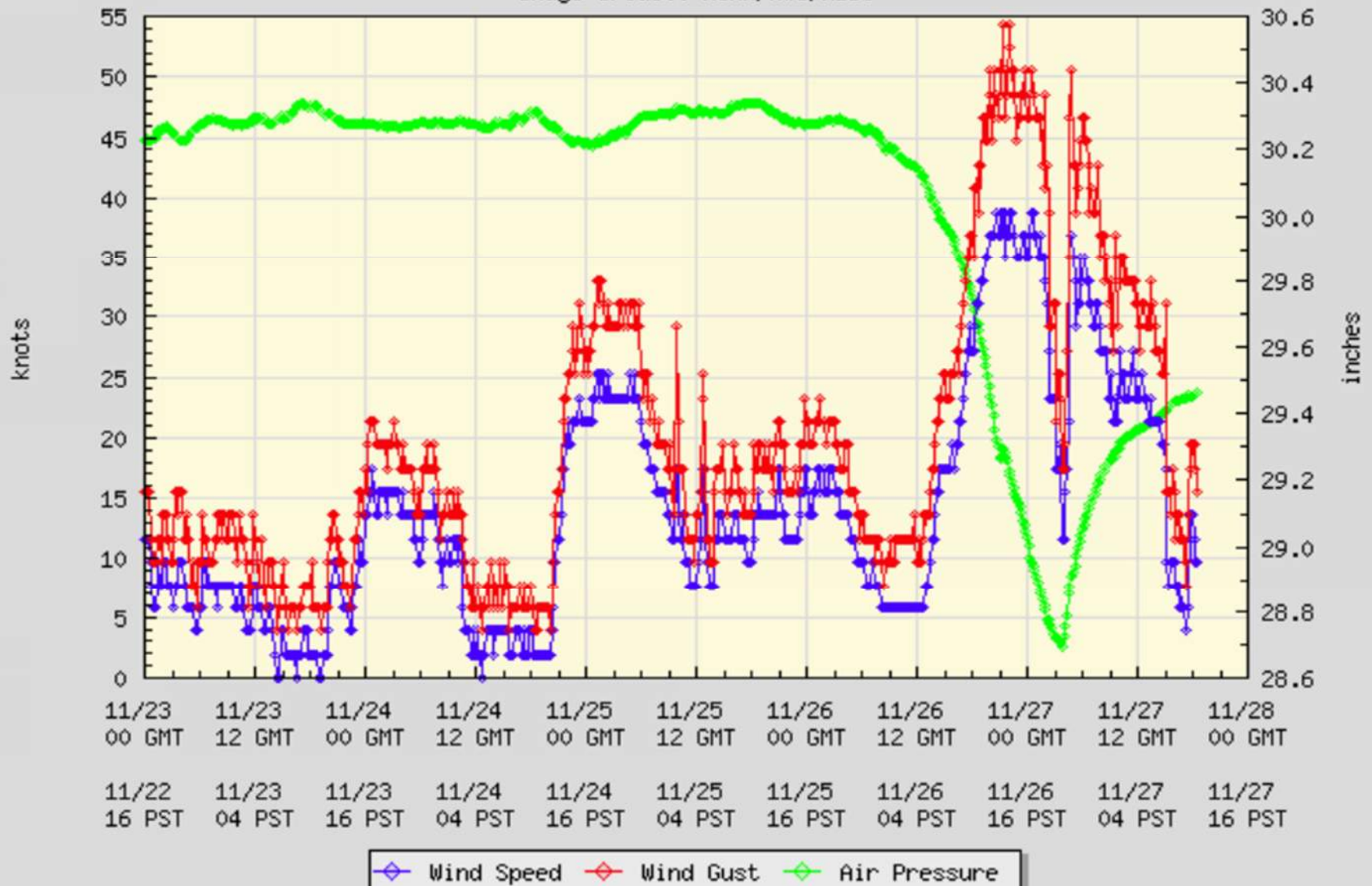
# Destruction Island



# NDBC St. Georges Reef

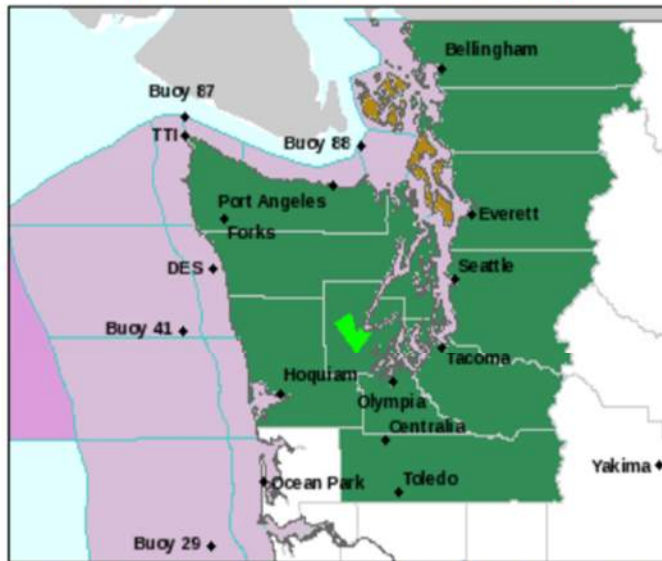
Wind Speed/Air Pressure at 46027

Image Credit: NOAA/NWS/NDBC



# National Weather Service Seattle

Click a location below for detailed forecast.



[Watches, Warnings & Advisories](#)



[Flood Warning](#)



[Gale Warning](#)



[Small Craft Advisory](#)



[Gale Watch](#)



[Flood Watch](#)



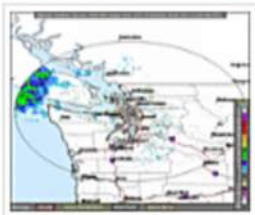
[High Wind Watch](#)



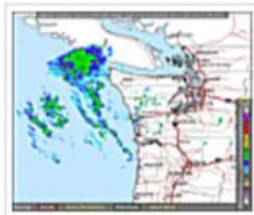
Last Map Update: Thu, Jan. 30, 2020 at 12:13:30 pm PST

Text Product Selector (Selected product opens in current window)

Latest Text Products Issued by SEW



[Seattle](#)



[Langley Hill](#)



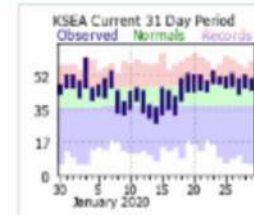
[Satellite](#)



[Weather Map](#)



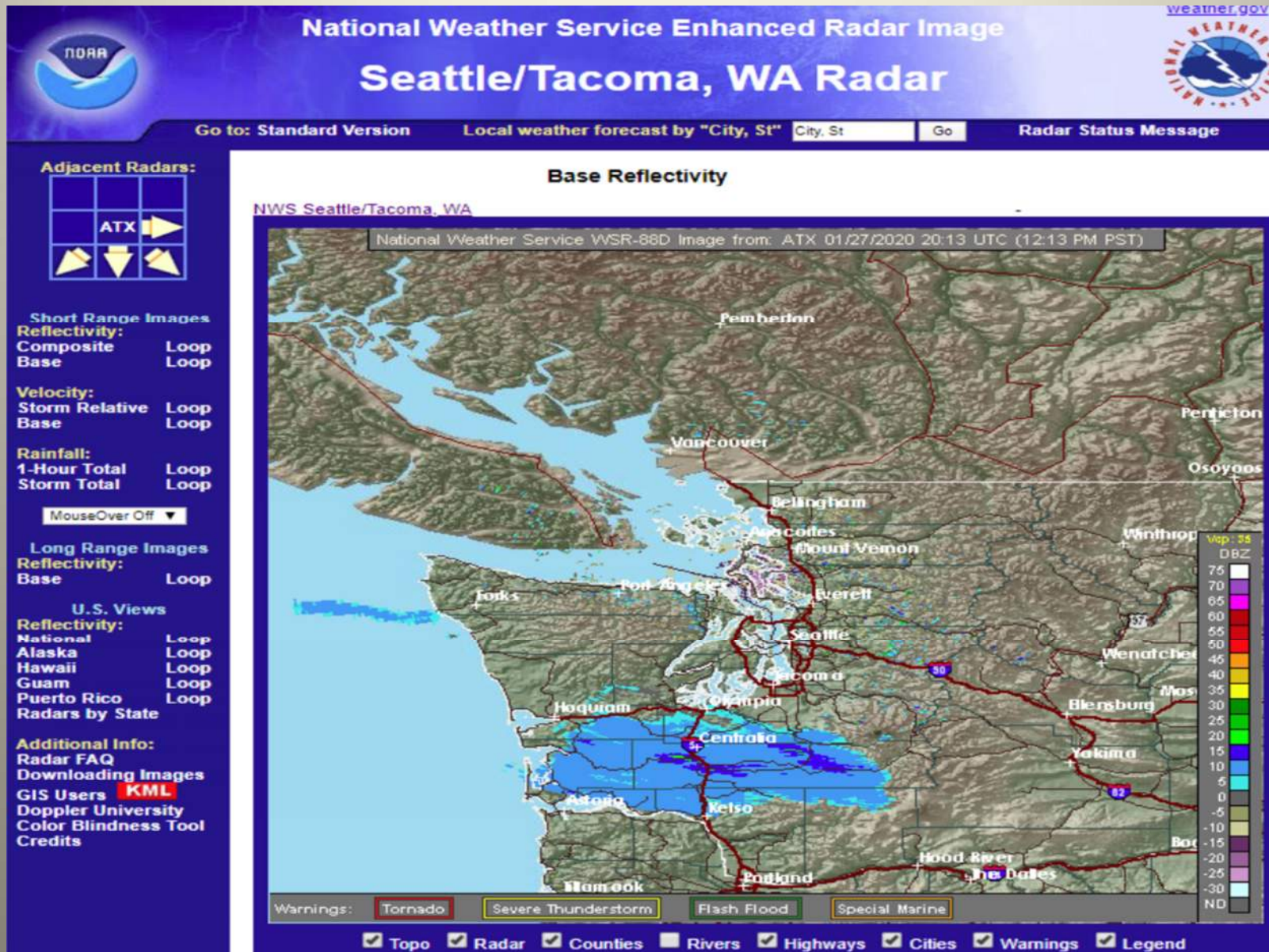
[Forecast Weather Tables](#)



[Sea-Tac Current 31 Day Period](#)

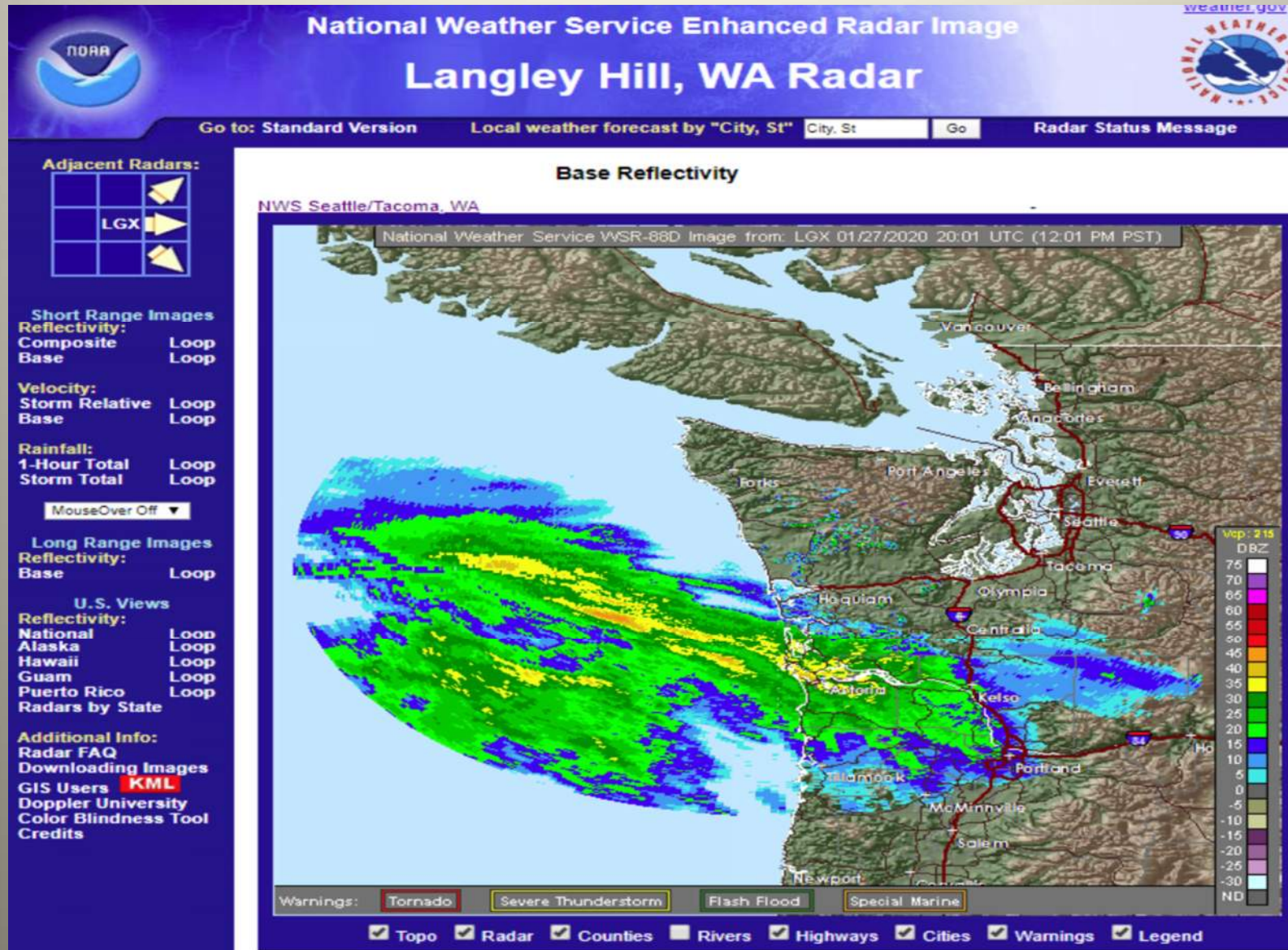


# NWS Sea





# NWS Langley Hill





# NWS Langley Hill Doppler





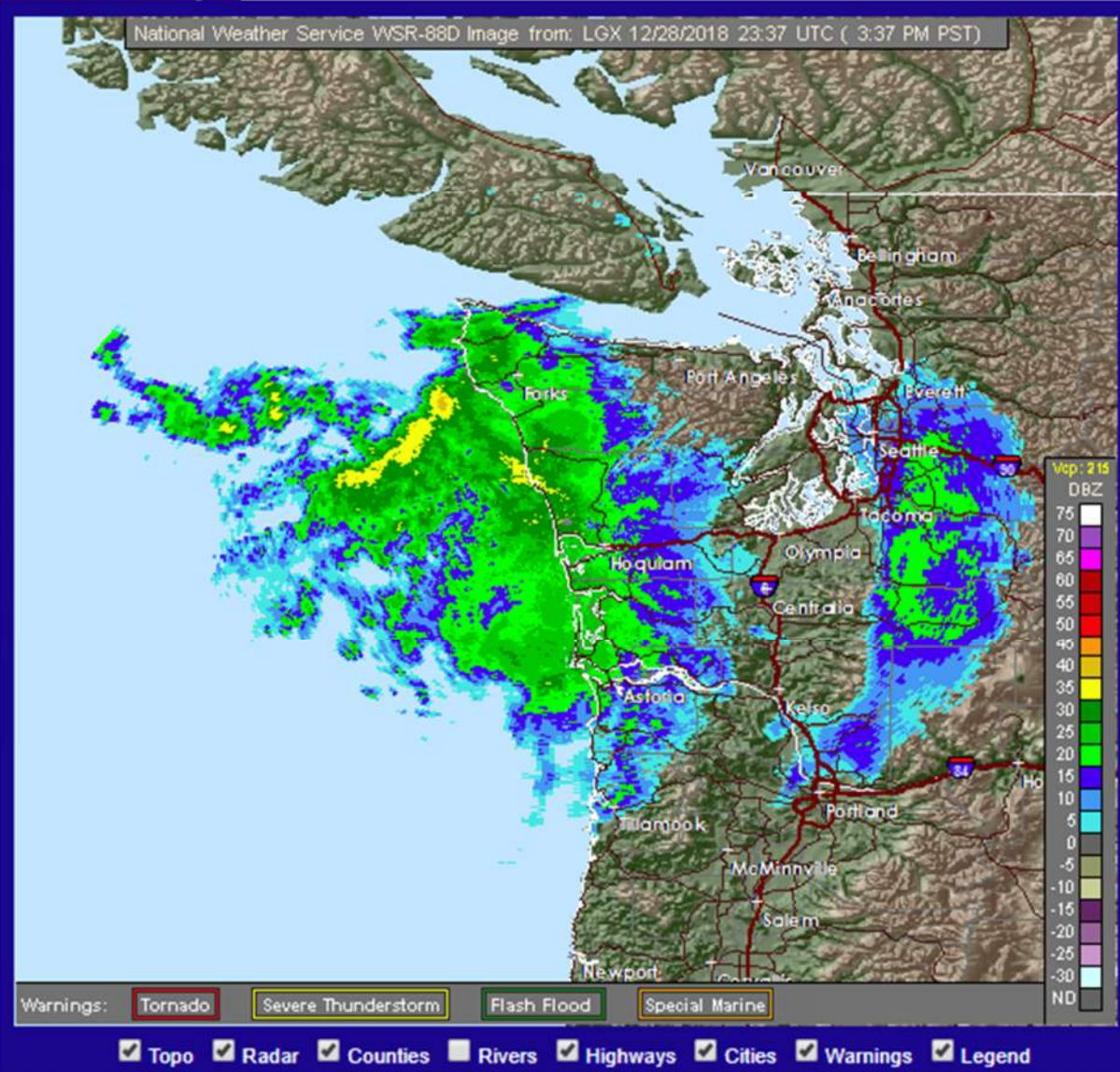
# Langley Hill, WA Radar



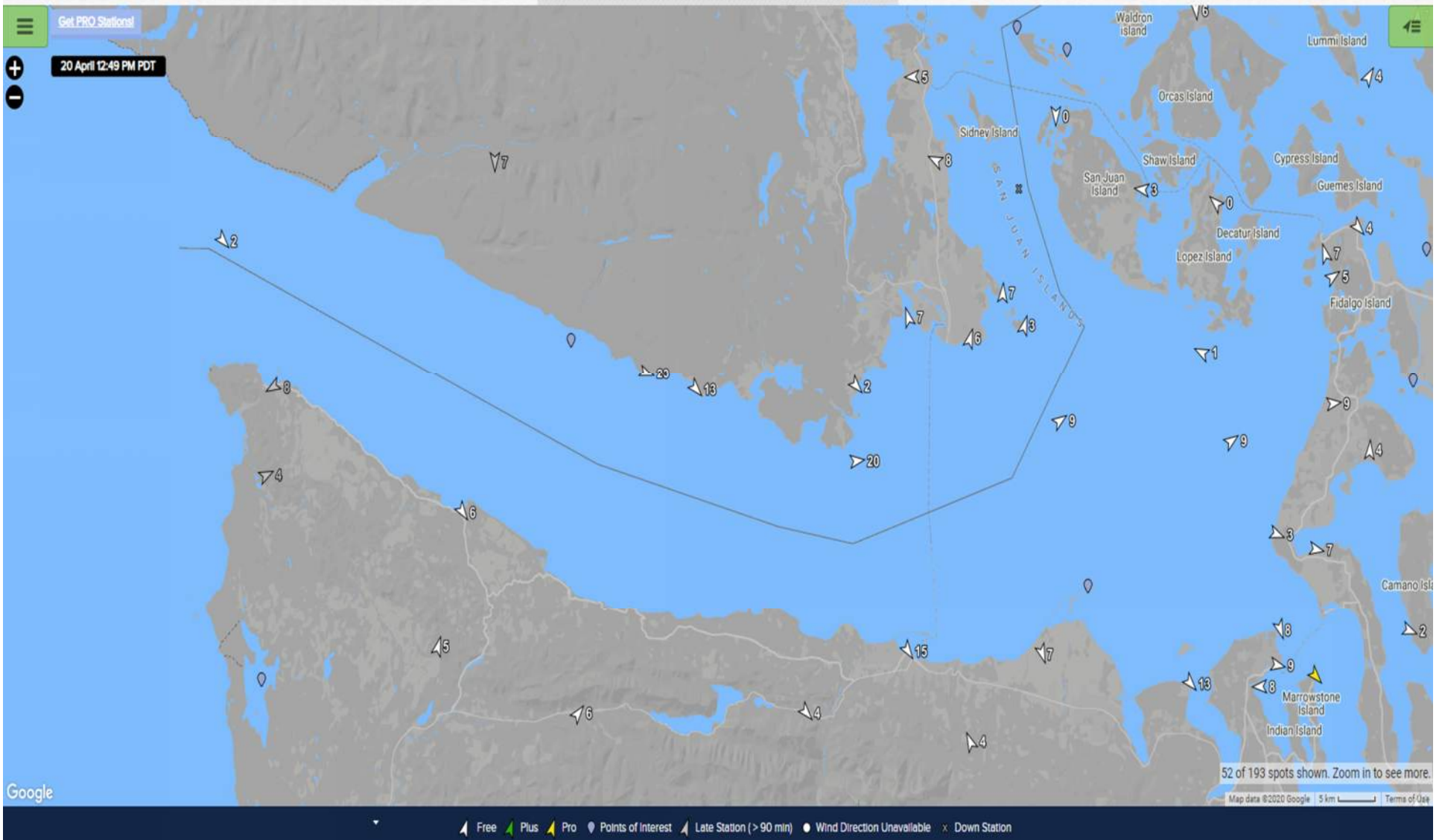
Standard Version Local weather forecast by "City, St"  Go Radar Status Message

## Base Reflectivity

NWS Seattle/Tacoma, WA



# 20 April SailFlow



# UW MM5 High Resolution

## Pacific Northwest Environmental Forecasts and Observations

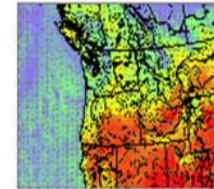
Supported by the [Northwest Modeling Consortium](#)

### High Resolution Model Forecasts

[More Information](#)  
[Forecast Graphics Description](#)

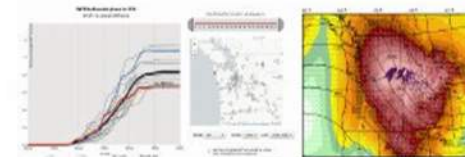
WRF-GFS  
[36km](#) [12km](#) [4km](#) [1 1/3km](#)  
[Past Runs](#)  
[Current Run](#)  
Status  
complete

MM5-NAM  
[36km](#) [12km](#)  
[Past Run](#)  
[Current Run](#)  
Status  
complete



### UW Ensemble Forecast System

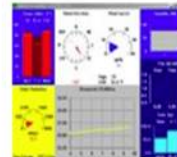
[More Information](#)



[Experimental 4-km Ensembles](#)

### NW Regional Observations and Real Time Verification

[More Information](#)



[NW Regional Observations](#)



[Observation Quality Control](#)

### Regional Applications

[More Information](#)



[Transportation](#)



[Air Quality](#)



[Fire Weather](#)  
[Airfire Bluesky](#)  
[Fire Watch](#)

Updated: Tue Jan 29 13:44:03 PST 2019



**WRF-GFS 1 1/3 km Domain**  
**Time-independent Page**

| Product                                                                 | Loop By Type                                         | Forecast Hour                    |     |     |     |     |     |     |     |     |     |     |     |     |    |
|-------------------------------------------------------------------------|------------------------------------------------------|----------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
|                                                                         |                                                      | L 0                              | L 6 | L12 | L18 | L24 | L30 | L36 | L42 | L48 | L54 | L60 | L66 | L72 |    |
| 1 1/3km<br>All Types                                                    | Loop by Hour                                         |                                  |     |     |     |     |     |     |     |     |     |     |     |     |    |
|                                                                         | <i>Now excludes soundings</i>                        |                                  |     |     |     |     |     |     |     |     |     |     |     |     |    |
| 1 1/3km<br>Surface<br><a href="#">Map of<br/>1 1/3km<br/>Subdomains</a> | SLP, 10 m winds, and temp                            | <a href="#">Loop Latest Only</a> | 0   | 6   | 12  | 18  | 24  | 30  | 36  | 42  | 48  | 54  | 60  | 66  | 72 |
|                                                                         | WA SLP, 10m winds, and temp                          | <a href="#">Loop Latest Only</a> | 0   | 6   | 12  | 18  | 24  | 30  | 36  | 42  | 48  | 54  | 60  | 66  | 72 |
|                                                                         | Western WA SLP, 10m winds, and temp                  | <a href="#">Loop Latest Only</a> | 0   | 6   | 12  | 18  | 24  | 30  | 36  | 42  | 48  | 54  | 60  | 66  | 72 |
|                                                                         | Puget Sound SLP, 10m winds, and temp                 | <a href="#">Loop Latest Only</a> | 0   | 6   | 12  | 18  | 24  | 30  | 36  | 42  | 48  | 54  | 60  | 66  | 72 |
|                                                                         | Lightning NCAR General Thunder Parameter             | <a href="#">Loop Latest Only</a> | 0   | 6   | 12  | 18  | 24  | 30  | 36  | 42  | 48  | 54  | 60  | 66  | 72 |
|                                                                         | Lightning CAPE > 200 and Precip                      | <a href="#">Loop Latest Only</a> | 0   | 6   | 12  | 18  | 24  | 30  | 36  | 42  | 48  | 54  | 60  | 66  | 72 |
|                                                                         | Temperature                                          | <a href="#">Loop Latest Only</a> | 0   | 6   | 12  | 18  | 24  | 30  | 36  | 42  | 48  | 54  | 60  | 66  | 72 |
|                                                                         | WA Surface (2m) temperature                          | <a href="#">Loop Latest Only</a> | 0   | 6   | 12  | 18  | 24  | 30  | 36  | 42  | 48  | 54  | 60  | 66  | 72 |
|                                                                         | 10m Wind Speed                                       | <a href="#">Loop Latest Only</a> | 0   | 6   | 12  | 18  | 24  | 30  | 36  | 42  | 48  | 54  | 60  | 66  | 72 |
|                                                                         | WA 10m Wind Speed<br>highlighting low speeds         | <a href="#">Loop Latest Only</a> | 0   | 6   | 12  | 18  | 24  | 30  | 36  | 42  | 48  | 54  | 60  | 66  | 72 |
|                                                                         | Western WA 10m Wind Speed                            | <a href="#">Loop Latest Only</a> | 0   | 6   | 12  | 18  | 24  | 30  | 36  | 42  | 48  | 54  | 60  | 66  | 72 |
|                                                                         | Western WA 10m Wind Speed<br>highlighting low speeds | <a href="#">Loop Latest Only</a> | 0   | 6   | 12  | 18  | 24  | 30  | 36  | 42  | 48  | 54  | 60  | 66  | 72 |
|                                                                         | Eastern WA 10m Wind Speed                            | <a href="#">Loop Latest Only</a> | 0   | 6   | 12  | 18  | 24  | 30  | 36  | 42  | 48  | 54  | 60  | 66  | 72 |
|                                                                         | Puget Sound 10m Wind Speed                           | <a href="#">Loop Latest Only</a> | 0   | 6   | 12  | 18  | 24  | 30  | 36  | 42  | 48  | 54  | 60  | 66  | 72 |
|                                                                         | Northern Waters 10m Wind Speed                       | <a href="#">Loop Latest Only</a> | 0   | 6   | 12  | 18  | 24  | 30  | 36  | 42  | 48  | 54  | 60  | 66  | 72 |
|                                                                         | Central Coast 10m Wind Speed                         | <a href="#">Loop Latest Only</a> | 0   | 6   | 12  | 18  | 24  | 30  | 36  | 42  | 48  | 54  | 60  | 66  | 72 |
|                                                                         | Northern Mountains 10m Wind Speed                    | <a href="#">Loop Latest Only</a> | 0   | 6   | 12  | 18  | 24  | 30  | 36  | 42  | 48  | 54  | 60  | 66  | 72 |
|                                                                         | Central Mountains 10m Wind Speed                     | <a href="#">Loop Latest Only</a> | 0   | 6   | 12  | 18  | 24  | 30  | 36  | 42  | 48  | 54  | 60  | 66  | 72 |
|                                                                         | Spokane Area 10m Wind Speed                          | <a href="#">Loop Latest Only</a> | 0   | 6   | 12  | 18  | 24  | 30  | 36  | 42  | 48  | 54  | 60  | 66  | 72 |
|                                                                         | Missoula Area 10m Wind Speed                         | <a href="#">Loop Latest Only</a> | 0   | 6   | 12  | 18  | 24  | 30  | 36  | 42  | 48  | 54  | 60  | 66  | 72 |
|                                                                         | Columbia Gorge 10m Wind Speed                        | <a href="#">Loop Latest Only</a> | 0   | 6   | 12  | 18  | 24  | 30  | 36  | 42  | 48  | 54  | 60  | 66  | 72 |
|                                                                         | Gorge West 10m Wind Speed                            | <a href="#">Loop Latest Only</a> | 0   | 6   | 12  | 18  | 24  | 30  | 36  | 42  | 48  | 54  | 60  | 66  | 72 |
|                                                                         | Gorge East 10m Wind Speed                            | <a href="#">Loop Latest Only</a> | 0   | 6   | 12  | 18  | 24  | 30  | 36  | 42  | 48  | 54  | 60  | 66  | 72 |
|                                                                         | Oregon Coast 10m Wind Speed                          | <a href="#">Loop Latest Only</a> | 0   | 6   | 12  | 18  | 24  | 30  | 36  | 42  | 48  | 54  | 60  | 66  | 72 |
|                                                                         | Oregon Eastern Slopes 10m Wind Speed                 | <a href="#">Loop Latest Only</a> | 0   | 6   | 12  | 18  | 24  | 30  | 36  | 42  | 48  | 54  | 60  | 66  | 72 |
|                                                                         | Southwest Oregon 10m Wind Speed                      | <a href="#">Loop Latest Only</a> | 0   | 6   | 12  | 18  | 24  | 30  | 36  | 42  | 48  | 54  | 60  | 66  | 72 |
|                                                                         | Southwest Idaho 10m Wind Speed                       | <a href="#">Loop Latest Only</a> | 0   | 6   | 12  | 18  | 24  | 30  | 36  | 42  | 48  | 54  | 60  | 66  | 72 |



# UW MM5 30 Jan 1600hrs

UW WRF-GFS 1.33km Domain

Init: 12 UTC Thu 30 Jan 20

Fest: 12.00 h

Valid: 00 UTC Fri 31 Jan 20 (16 PST Thu 30 Jan 20 )

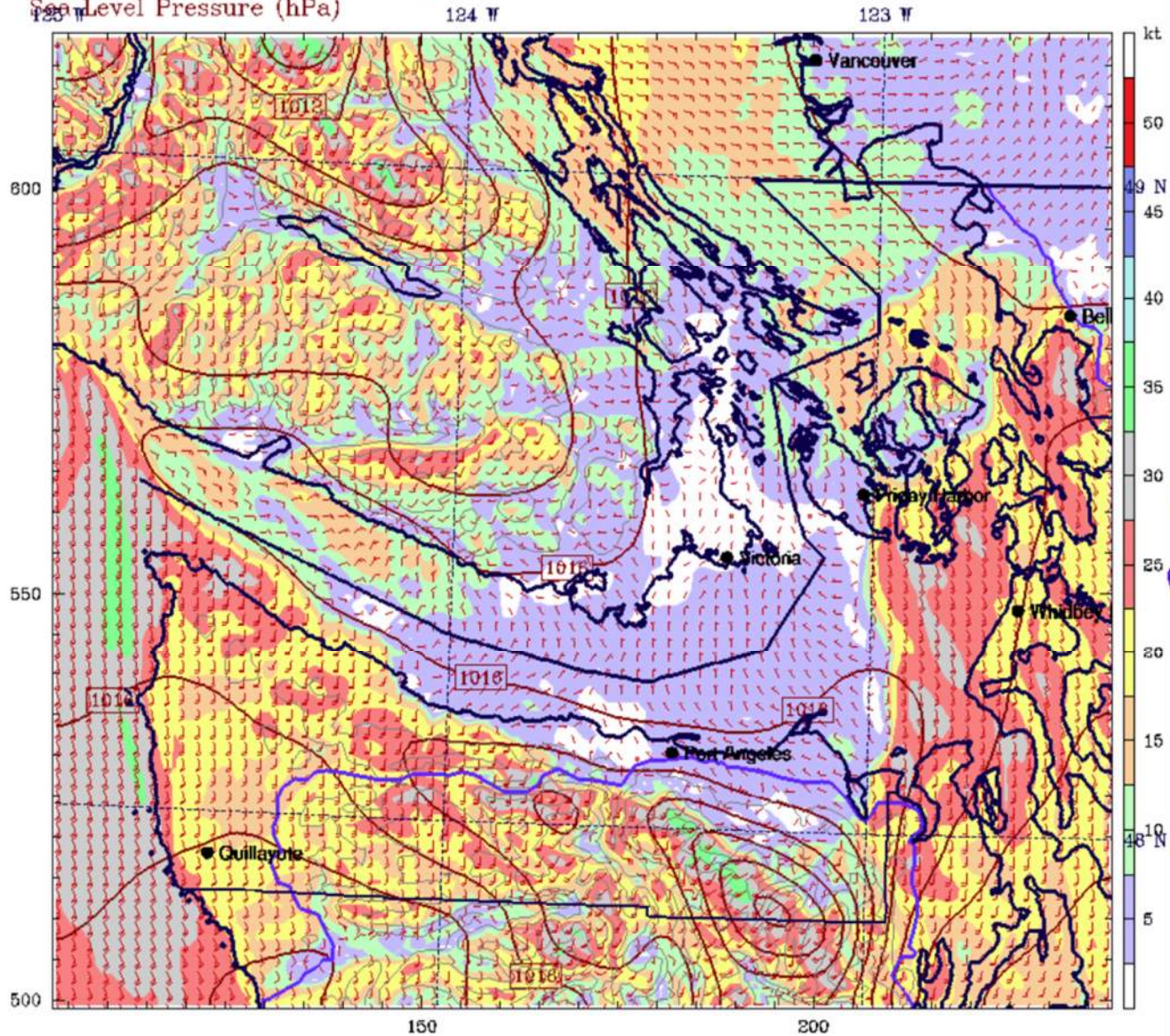
10m Wind Speed (knots)

Wind at 10m (full barb = 10kts)

Sea Level Pressure (hPa)

[previous forecast hour](#)

[next forecast hour](#)





# 20 Apr MM5 Puget Sound

UW WRF-GFS 1.33km Domain

Init: 12 UTC Mon 20 Apr 20

Fcst: 12.00 h

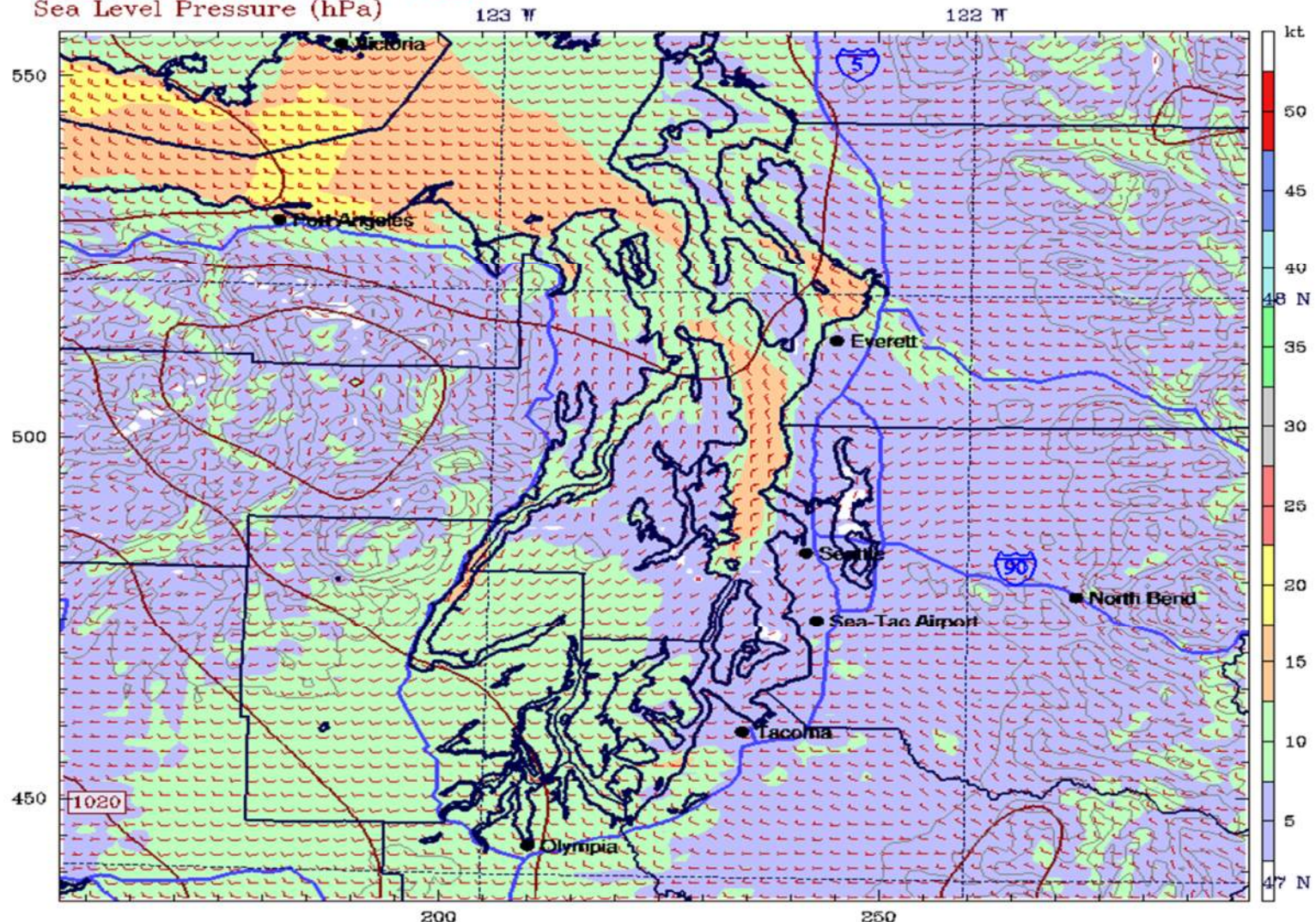
Valid: 00 UTC Tue 21 Apr 20

(17 PDT Mon 20 Apr 20 )

10m Wind Speed (knots)

Wind at 10m (full barb = 10kts)

Sea Level Pressure (hPa)



CONTOURS: UNITS=hPa LOW= 1016.0 HIGH= 1020.0 INTERVAL= 1.0000  
Model Info: V4.1.3 No Cu YSU PBL Thompson Noah-MP 1.3 km, 37 levels, 8 sec  
LW: RRTMG SW: RRTMG DIFF: full KM: 2D Smagor INIT: RAP+GFS



# 20 Apr UW MM5 Straits of JdF

UW WRF-GFS 1.33km Domain

Init: 12 UTC Mon 20 Apr 20

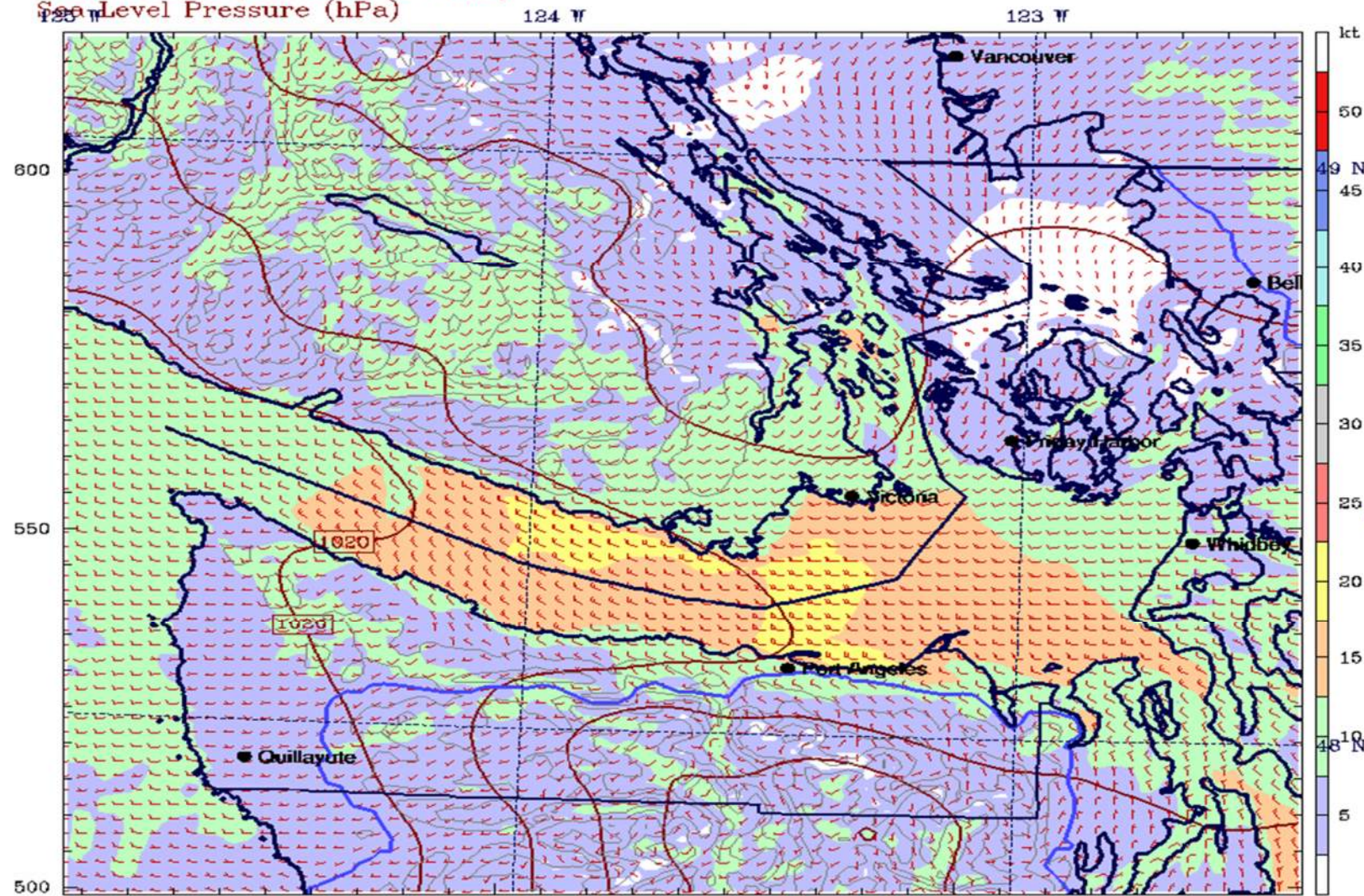
Fcst: 12.00 h

Valid: 00 UTC Tue 21 Apr 20 (17 PDT Mon 20 Apr 20)

10m Wind Speed (knots)

Wind at 10m (full barb = 10kts)

Sea Level Pressure (hPa)



CONTOURS: UNITS=hPa LOW= 1016.0 HIGH= 1020.0 INTERVAL= 1.0000  
Model Info: V4.1.3 No Cu YSU PBL Thompson Noah-MP 1.3 km, 37 levels, 8 sec  
LW: RRTMG SW: RRTMG DIFF: full KM: 2D Smagor INIT: RAP+GFS



# 20 Apr UW MM5 Central Oregon

UW WRF-GFS 1.33km Domain

Init: 12 UTC Mon 20 Apr 20

Fcst: 12.00 h

Valid: 00 UTC Tue 21 Apr 20 (17 PDT Mon 20 Apr 20)

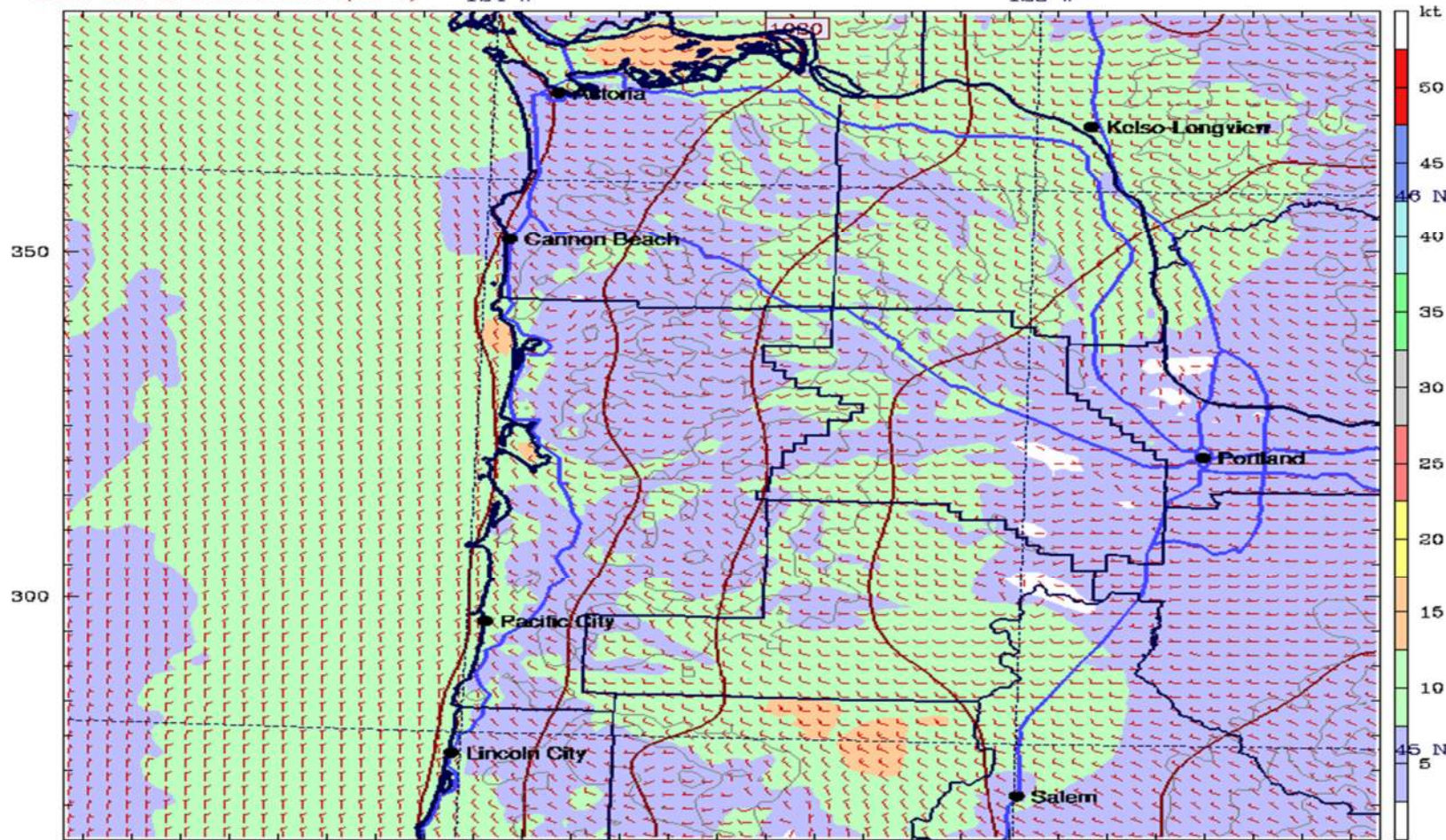
10m Wind Speed (knots)

Wind at 10m (full barb = 10kts)

Sea Level Pressure (hPa)

124 W

123 W



150 200  
CONTOURS: UNITS=hPa LOW= 1018.0 HIGH= 1021.0 INTERVAL= 1.0000  
Model Info: V4.1.3 No Cu YSU PBL Thompson Noah-MP 1.3 km, 37 levels, 8 sec  
LW: RRTMG SW: RRTMG DIFF: full KM: 2D Smagor INIT: RAP+GFS

# Other Long Range Sources

US Navy FNMOC, Fleet Numerical Meteorology  
and Oceanography Center

Ocean Prediction Center



# US Navy FNMOC

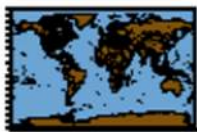
Global Areas

Tropical/WW3 TC Official Areas

Regional Models

Ensemble Models

Global



[NVG](#) [GFS](#) [ENS](#)  
[NUOPC](#) [WW3](#)  
[FLEWT](#)

N America



[NVG](#) [GFS](#) [ENS](#)  
[NUOPC](#) [WW3](#)

N Atlantic



[NVG](#) [GFS](#) [ENS](#)  
[NUOPC](#) [FLEWT](#)  
[WW3](#)

N Atlantic



[NVG](#) [GFS](#) [ENS](#)  
[NUOPC](#) [FLEWT](#)  
[WW3](#)

CONUS



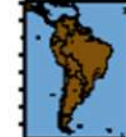
[NVG](#) [GFS](#) [ENS](#)  
[NUOPC](#) [WW3](#)  
[FLEWT](#)

GOMEX



[NVG](#) [GFS](#) [ENS](#)  
[NUOPC](#) [WW3](#)

S America



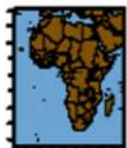
[NVG](#) [GFS](#) [ENS](#)  
[NUOPC](#) [WW3](#)

S Atlantic



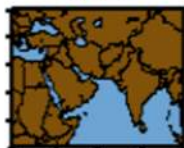
[NVG](#) [GFS](#) [ENS](#)  
[NUOPC](#) [WW3](#)  
[FLEWT](#)

Africa



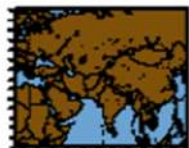
[NVG](#) [GFS](#) [ENS](#)  
[NUOPC](#) [WW3](#)

SW Asia



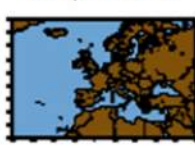
[NVG](#) [GFS](#) [ENS](#)  
[NUOPC](#) [WW3](#)

EurAsia



[NVG](#) [GFS](#) [ENS](#)  
[NUOPC](#) [FLEWT](#)  
[WW3](#)

Europe & NE Atl



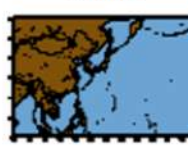
[NVG](#) [GFS](#) [ENS](#)  
[NUOPC](#) [WW3](#)  
[FLEWT](#)

Europe & Med



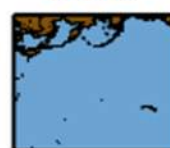
[NVG](#) [GFS](#) [ENS](#)  
[NUOPC](#) [WW3](#)  
[FLEWT](#)

W Pacific



[NVG](#) [GFS](#) [ENS](#)  
[NUOPC](#) [WW3](#)  
[FLEWT](#)

N Pacific



[NVG](#) [GFS](#) [ENS](#)  
[NUOPC](#) [WW3](#)

E Pacific



[NVG](#) [GFS](#) [ENS](#)  
[NUOPC](#) [WW3](#)  
[FLEWT](#)

S Pacific



[NVG](#) [GFS](#) [ENS](#)  
[NUOPC](#) [WW3](#)

Arctic



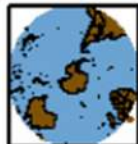
[NVG](#) [GFS](#) [ENS](#)  
[NUOPC](#) [WW3](#)

N Hemisphere



[NVG](#) [GFS](#) [ENS](#)  
[NUOPC](#) [WW3](#)

S Hemisphere



[NVG](#) [GFS](#) [ENS](#)  
[NUOPC](#) [WW3](#)

JRM



[NVG](#) [GFS](#) [ENS](#)  
[NUOPC](#) [WW3](#)

DGAR



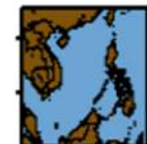
[NVG](#) [GFS](#) [ENS](#)  
[NUOPC](#) [WW3](#)

ECS



[NVG](#) [GFS](#) [ENS](#)  
[NUOPC](#) [WW3](#)

SCS



[NVG](#) [GFS](#) [ENS](#)  
[NUOPC](#) [WW3](#)

# US Navy FNMOC

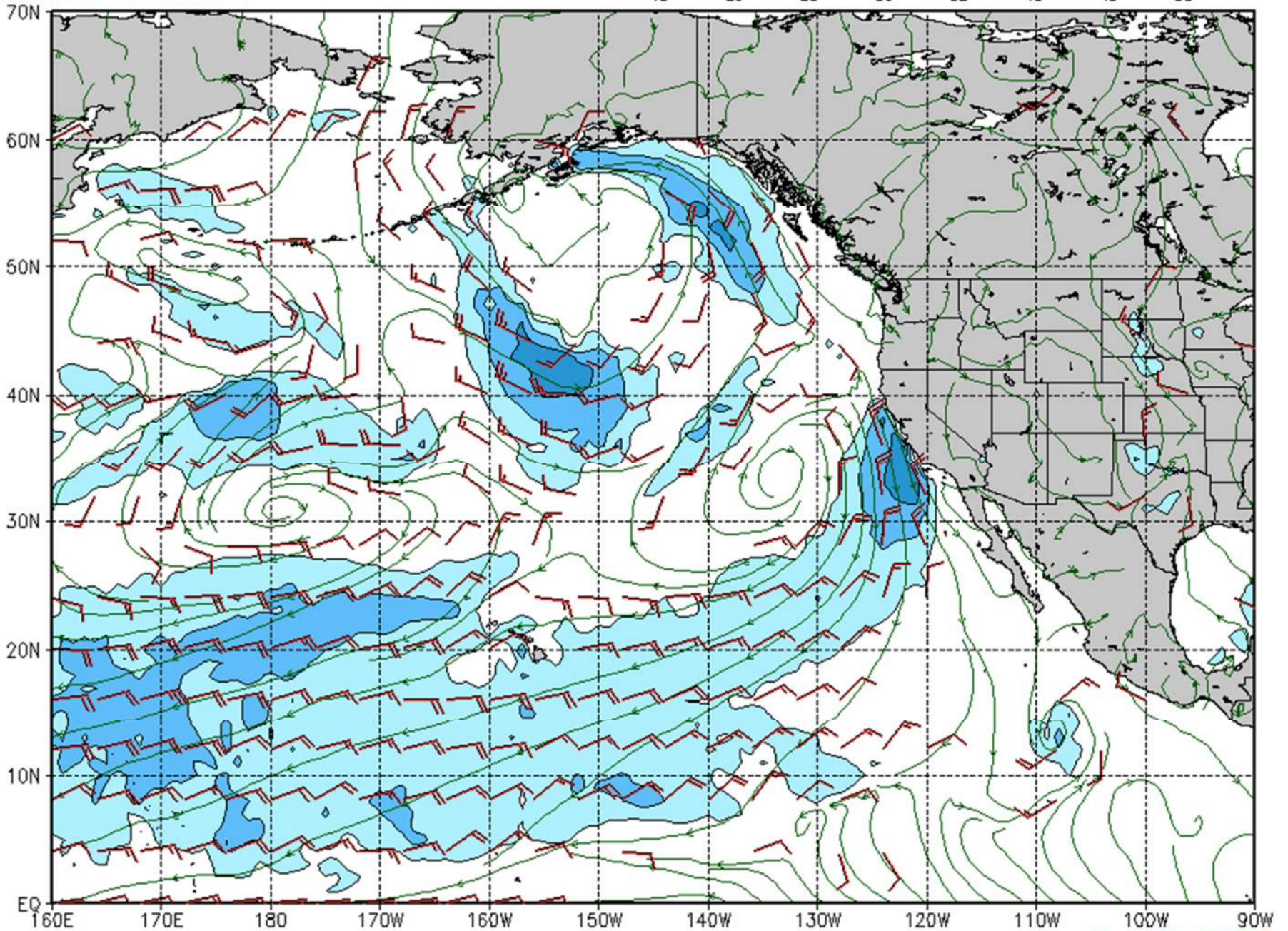
|                                                                     |      | Model: NAVGEM, FAROP, WW3, NCODA, FLEWT                                                                                |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |   |   |   |   |   |
|---------------------------------------------------------------------|------|------------------------------------------------------------------------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---|---|---|---|---|---|---|---|---|---|---|---|---|
|                                                                     |      | Area: E Pacific                                                                                                        |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |   |   |   |   |   |
|                                                                     |      | Product Sets: <u>Aviation</u> <u>Core</u> <u>Tropical</u> <u>UpperAir</u> <u>SeaState</u> <u>Warfighter</u> <u>All</u> |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Warfighter Products                                                 | Loop | Tau                                                                                                                    | 000 | 006 | 012 | 018 | 024 | 030 | 036 | 042 | 048 | 054 | 060 | 066 | 072 | 078 | 084 | 090 | 096 | 102 | 108 | 114 | 120 | 126 | 132 | 138 | 144 | 150 | 156 | 162 | 168 | 174 | 180 | 186 | 192 | 198 | 204 | 210 | 216 | 222 | 228 | 234 | 240 | KML |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Surface (10 meter) Wind Barbs, Streamlines, Isotachs [kts]          | ●    | <a href="#">all</a>                                                                                                    | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ● | ● | ● | ● | ● | ● | ● |   |   |   |   |   |   |
| Surface Temperature [degC]                                          | ●    | <a href="#">all</a>                                                                                                    | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |   |   |   |
| Previous 6-hr Precipitation Rate [mm] and Sea Level Pressure [hPa]  | ●    | <a href="#">all</a>                                                                                                    | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |   |   |   |
| FNMOC Wave Watch 3 Sig Wave Heights [ft], Over Ocean Sfc Winds [kt] | ●    | <a href="#">all</a>                                                                                                    | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ○   | ○   | ○   | ○   | ○   | ○   | ○   | ○   | ○   | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ● |   |
| Aerosol Surface Visibility [nm], Winds [kts]                        | ●    | <a href="#">all</a>                                                                                                    | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ○   | ○   | ○   | ○   | ○   | ○   | ○   | ○   | ○   | ○   | ○   | ○   | ○   | ○   | ○   | ○   | ○   | ○   | ○   | ○   | ○   | ○   | ○   | ○   | ○   | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ● |
| Aerosol Optical Depth, 925mb Winds [kts]                            | ●    | <a href="#">all</a>                                                                                                    | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ○   | ○   | ○   | ○   | ○   | ○   | ○   | ○   | ○   | ○   | ○   | ○   | ○   | ○   | ○   | ○   | ○   | ○   | ○   | ○   | ○   | ○   | ○   | ○   | ○   | ○   | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ● |
| Sea Surface Temperature                                             | ○    | <a href="#">all</a>                                                                                                    | ●   | ○   | ○   | ○   | ○   | ○   | ○   | ○   | ○   | ○   | ○   | ○   | ○   | ○   | ○   | ○   | ○   | ○   | ○   | ○   | ○   | ○   | ○   | ○   | ○   | ○   | ○   | ○   | ○   | ○   | ○   | ○   | ○   | ○   | ○   | ○   | ○   | ○   | ○   | ○   | ○   | ○   | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ● |

●:Image from selected DTG. ○:12-Hour old image. ●:24-Hour old image. ○:No image in last 2 model runs.

Available DTGs [2019012806](#) [2019012812](#)  
[2019012818](#) [2019012900](#)  
[2019012906](#) [2019012912](#)



UNCLASSIFIED



VT: Fri 12Z 24 APR 20  
NCEP CFS (10): Surface (10m) Isotherms Barbs Streamlines [kt]

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# Ocean Prediction Center

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Local Forecast



## OCEAN PREDICTION CENTER

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## Briefings for the Atlantic and Pacific

The briefing page is meant for printing out most of the marine weather charts and/or the text forecasts created by the Ocean Prediction Center. If you have a slow connection it will take some time to download the graphics.

When using the print command try the landscape option to properly orient the charts in the Atlantic. The Atlantic and Pacific charts briefing packages will have the most recent charts. The charts will include the 500 mb analysis, surface analysis, offshore & adjacent waters sea state analysis, high seas sea state analysis, 24 hour Atlantic 500 mb, 24 hour surface, 24 hour wind/wave, 48 hour 500 mb, 48 hour surface, 48 hour wind/wave, 48 hour wave period, 96 hour 500 mb, 96 hour surface, and 96 hour wind/wave charts, and the 96 hour wave period. In addition the Atlantic and Pacific text briefing package will include the latest marine weather discussion, offshore forecast, and the high seas forecasts.

**Atlantic Briefing:** [Marine charts](#) | [Text Forecasts](#)

**Pacific Briefing:** [Marine charts](#) | [Text forecasts](#)



# OPC Charts and Text Frcst

FZPN25 KWBC 021530  
OFFPZ5

Offshore Waters Forecast  
NWS Ocean Prediction Center Washington DC  
830 AM PDT Tue Apr 2 2019

Washington and Oregon waters-  
Inner waters from 60 nm to 150 nm offshore.  
Outer waters from 150 nm to 250 nm offshore.

Seas given as significant wave height, which is the average height of the highest 1/3 of the waves. Individual waves may be more than twice the significant wave height.

PZZ898-030430-  
830 AM PDT Tue Apr 2 2019

.SYNOPSIS FOR WASHINGTON AND OREGON WATERS...An area of low pressure will weaken as it moves NE across the region today and tonight before moving inland over Vancouver island early Wed. High pressure will build in from the W Wed, then move inland Wed night. A cold front will weaken as it crosses the waters Thu. Low pressure will approach the area Thu night, then move into the waters Fri. The low will move N of the region Fri night. Another low will move into the W portion Sat, then continue N of the waters Sat night.

\$\$

PZZ800-030430-  
Cape Flattery to Cape Shoalwater between 60 nm and 150 nm offshore-  
830 AM PDT Tue Apr 2 2019

...GALE FORCE WINDS POSSIBLE FRI...

.TODAY...N to NE winds less than 10 kt, becoming E. Seas 5 to 7 ft. Chance of rain.  
.TONIGHT...Variable winds less than 10 kt. Seas 5 to 6 ft. Chance of rain.  
.WED...W to NW winds 5 to 15 kt, becoming W 10 to 20 kt. Seas 4 to 5 ft.  
.WED NIGHT...W winds 5 to 15 kt, becoming S 5 to 10 kt. Seas 4 to 5 ft.  
.THU...SE winds 5 to 15 kt, increasing to 10 to 20 kt. Seas 4 to 5 ft.  
.THU NIGHT...SE winds 15 to 20 kt, becoming S 15 to 20 kt. Seas 4 to 8 ft.  
.FRI...S to SE winds 15 to 20 kt, becoming SE 25 to 35 kt. Seas 7 to 8 ft, building to 8 to 13 ft.  
.FRI NIGHT...SW winds 30 to 40 kt, diminishing to 20 to 25 kt. Seas 11 to 16 ft.  
.SAT...S winds 20 to 30 kt, becoming S to SE 35 to 45 kt. Seas 16 to 24 ft.  
.SAT NIGHT...SW winds 35 to 45 kt, diminishing to 20 to 30 kt. Seas 18 to 27 ft.

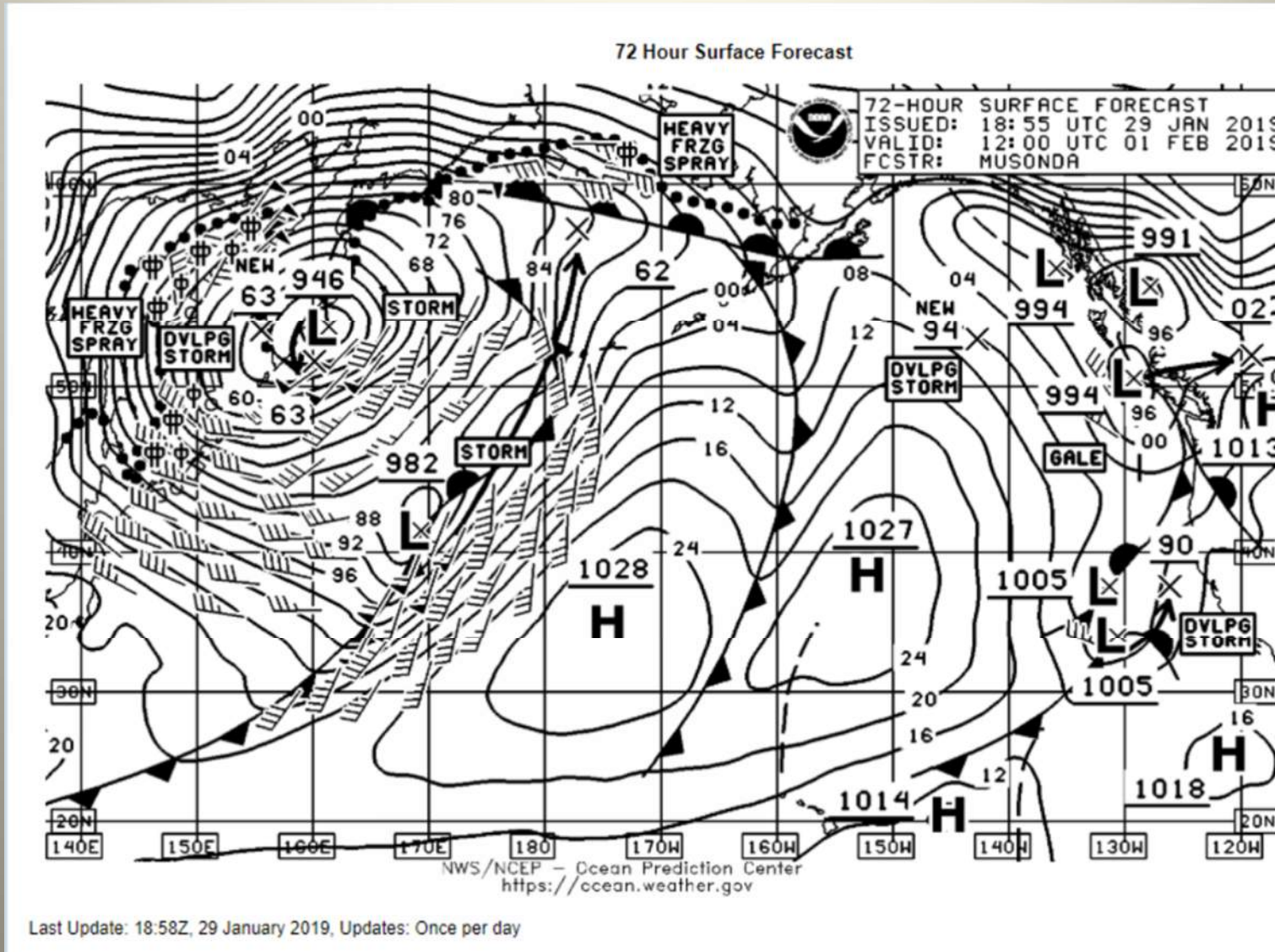
\$\$

PZZ900-030430-  
Cape Flattery to Cape Shoalwater between 150 nm and 250 nm offshore-  
830 AM PDT Tue Apr 2 2019

...GALE FORCE WINDS POSSIBLE FRI NIGHT...

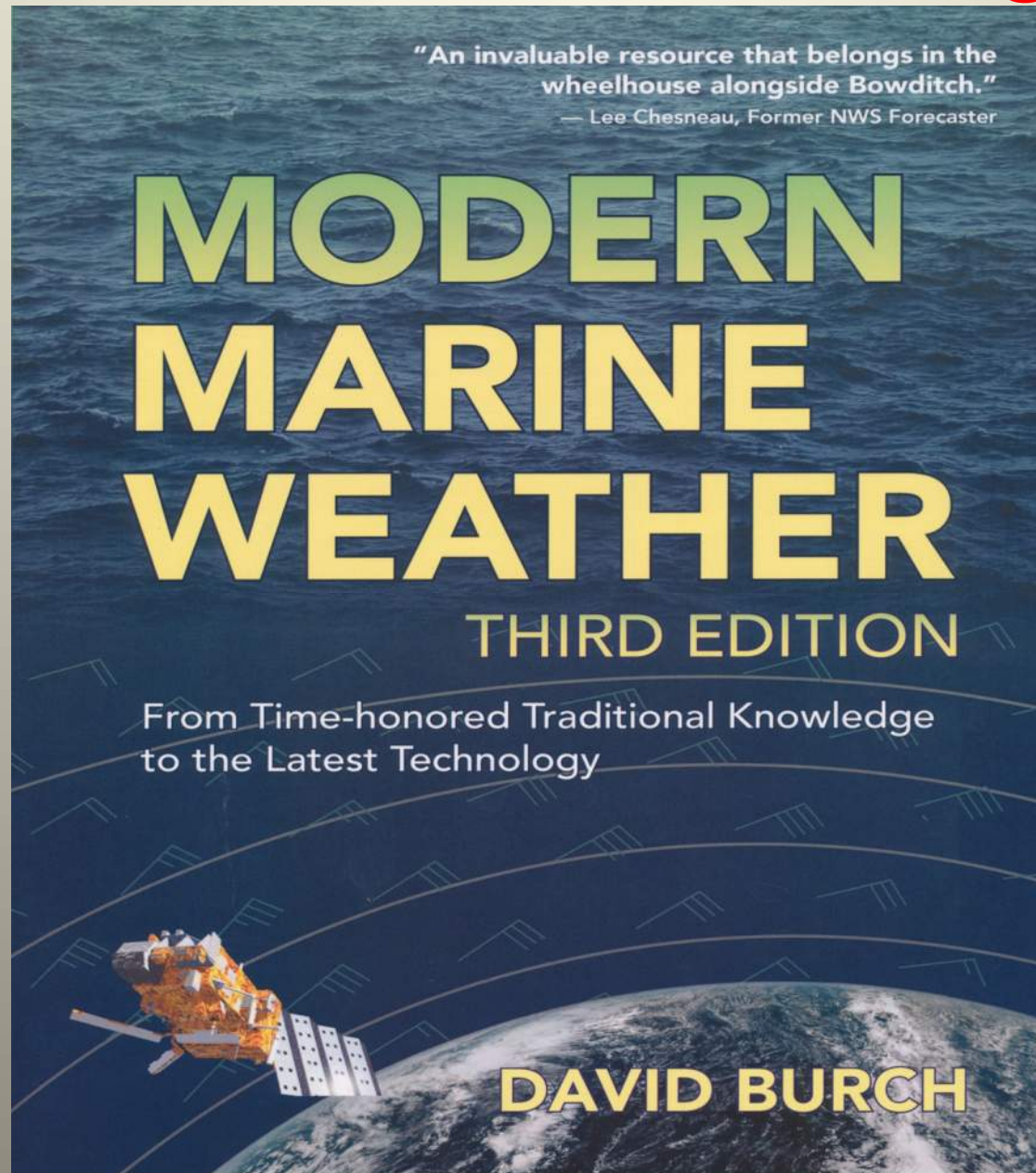
.TODAY...E to NE winds 5 to 15 kt, becoming N to NE. Seas 5 to 7 ft.  
.TONIGHT...N to NE winds less than 10 kt, becoming NW. Seas 4 to 6 ft. Chance of rain.

# OPC Charts and Text Frcst





# Recommended Reading



# Modern Marine Weather

- Available Directly from: Starpath Publications:  
[www.starpathpublications.com](http://www.starpathpublications.com)
- [Surviving the Storm, by Steve and Linda Dashew](#)
- [Questions??](#)
- I will supply you with all the URL's used today, just drop me a note at [LBHedrick@comcast.net](mailto:LBHedrick@comcast.net)
- I also Blog just about every Friday with a weekend weather outlook at [www.sailish.com](http://www.sailish.com)
- <https://davidburchnavigation.blogspot.com/2019/08/exciting-new-barometer-for-navigators.html>