



CHELSEA'S

# Weather Resource Guide for Offshore Sailing

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## Understand Types of Weather Data

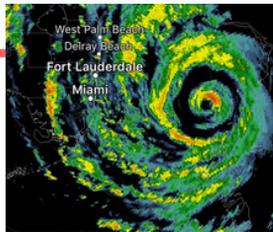
It is important to understand what kind of data you are looking at. Is it ground-truth observation or is it a projected forecast? Does it have human forecaster input? You want to make sure you are looking at accurate data from a quality source, ideally that has also been reviewed by a meteorologist whenever possible.



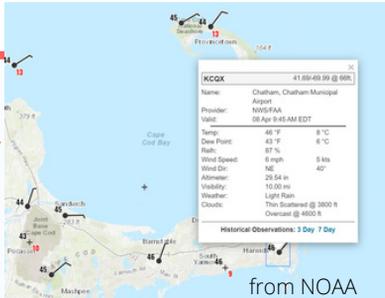
### OBSERVATIONS

Real, ground-truth readings from instruments showing what is currently happening in the atmosphere.

Examples: Wind readings, Radar, Satellite Images, Weather balloon data (Radiosondes), Temperatures



from RadarScope



from NOAA

### COMPUTER MODEL DATA

Mathematical model projections of what could happen in the atmosphere.

Observations from around the globe are put into super computers as initial conditions. Assumptions and approximations are made about how the atmosphere will behave. The computers then run millions of mathematical equations, and the output is a numerical weather forecast.

In the sailing community, these are often called "gribs" referring to the output file type (.grib) from the computer models.

Examples of models: GFS, NAM, ECMWF, HRRR, CMC, ICON, etc.



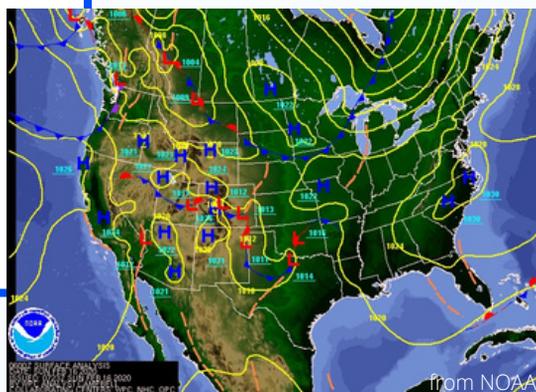
from windy.com



### ANALYZED DATA

Analyses are edited and verified by human forecasters, making them more accurate than computer model forecasts. Most National Weather Service products count as analyzed data. Whenever possible, verify that you are looking at an analysis and not a model forecast.

To the right is a surface analysis; a weather map showing current locations of weather features such as highs, lows, and fronts, based on the ground observations that is verified by human forecasters.



from NOAA

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Check out at least 1 source from each major category

Observations (red box) give you an idea of what the weather is doing right now. A Surface Analysis (blue box) will give you an accurate big-picture idea of the atmosphere. Then, look at a few different computer models (yellow box) to see what matches with what is happening now. Other analyzed data (blue) will help you determine which forecast is most accurate.

# Observations

## The one-stop shop: NowCOAST from NOAA

overlay radar, satellite, observations, marine warnings, on nautical charts

### Wind & Weather

- SailFlow / iWindsurf (web + mobile app)
  - use [sailflow.com/chelsea](http://sailflow.com/chelsea) for a discount
- National Data Buoy Center
- NOAA Weather & Hazards Data Viewer
  - go to Overlays -> Observations -> Surface Observations
- WeatherObs.com - worldwide



from SailFlow

### Global Satellite Imagery

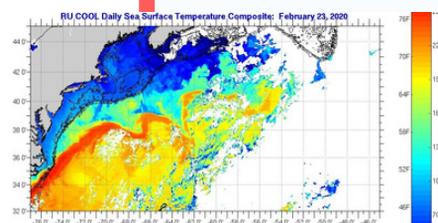
- basic: NASA World Satellite (click map to zoom)
- advanced: RAMMB/CIRA interactive Satellite
- UW-Madison SSEC w/ GoogleEarth
- NOAA Aviation Weather Center
- Sat24 - Europe
- Southwest Pacific

### Radar (coastal)

- ZoomRadar
- NOAA National Weather Service Radar
- Bermuda Radar
- Caribbean Composite (from Barbados Weather)

### Ocean Temp & Current

- NOAA Ocean Prediction Center (OPC)
- Sea Surface Temps (SST)
- Great Lakes Environmental Research Lab
- Rutgers Gulf Stream



from Rutgers

## Tips

- Don't get overwhelmed! There is SO much data out there.
- Find a few sources from this list that you like and stick with them.



## Analyses by Forecasters

- [Ocean Prediction Center \(OPC\)](#)
- [National Hurricane Center \(NHC\)](#)
- [National Weather Service \(NWS\) local forecasts](#)
- [Pro forecasts from SeaTactics](#)
- [UKMet Office - for Europe](#)

## Model Data

### The Major Models

- Global Models - best for big picture forecasting, gradient wind, and longer term forecast
  - GFS (American from NOAA)
  - ECMWF (European)
  - Others: UKMET, CMC (Canadian), NAVGEM (US)
- Regional Models- coastal use only, hi-res, better for short term.
  - NAM (North American Model, NOAA)
  - HRRR (High Resolution Rapid Refresh, NOAA)
  - ARPEGE /AROME (France + Mediterranean)

### Web Sources

- [Windy.com](#) - toggle 'on' pressure in bottom right
- [TropicalTidbits](#) - Select "Regions" to change area to offshore
- [SailFlow](#) - coastal model data available

### Getting Grib Files & Charts

- [SailDocs](#) - free by e-mail
- Low bandwidth options- [NOAA Products by email or FTPmail](#)
- [NOAA OPC Atlantic and Pacific Briefings](#)
- [OpenSkiron](#) - for Europe & Mediterranean

## Tips

- Look at a couple of different computer models to get a "feel" for what they are saying
- Which matches best with what is happening now?
- Remember, there is no 1 model better than the rest
- Never rely solely on computer models to be 100% correct!

## Programs & Software

- [Expedition Marine](#) - comprehensive software with grib file viewer and route optimization. Download Free.
- [Model Accuracy](#) - Determine which grib file(s) are most accurate against real wind observations (from boat log data or a NOAA buoy) Download Free.
- [RadarScope](#) (desktop and mobile app) - for the highest quality radar and storm tracking. Best for Intermediate to advanced users. (\$9.99 one-time)
- [CloudRun](#) - Use the Forecast Wizard to run a WRF model for a custom area. (Pay per use)

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## Practice Good Habits

### **Practice your forecasting before you go out on the water**

Use online weather resources and create your own hypothesis, or work with a forecaster. Then observe + notice what really happened - did it match your hypothesis? Check with your coach or email me if you have questions!

### **Record what happened and when**

The top sailors keep journals of observed weather conditions. On offshore trips, I try to record observations every few hours, along with any significant weather or wind shifts so I can easily understand what happened.

### **Keep Learning!**

Check out all of our free content on YouTube, Instagram and our newsletter. Ready to take your weather knowledge to the next level? Sign up for a webinar series or online course through SeaTactics.

# Questions? Want to learn more?

## I'd love to work with you!



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Learn more about me [here](#)

