

Weather Related Resources – Websites & Apps

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As a cruising boater concerned with safety, an awareness of anticipated weather conditions are a high priority, especially when boating on the Great Lakes. As an ABC-FLX Wx course instructor I have a particular interest in Wx related resources, apps and tools. My mate (Admiral) has also taken the ABC-FLX Wx course and keeps an eye on the sky as well as forecasts and radar. There are a large number of Wx apps and websites and many of us have our favorites. The following are the ones we find useful and utilize frequently. I can't say these are superior to any others but I will attempt to outline the features that we find useful and possibly some tips to get the most out of these or other resources you use.

While many Wx conditions contribute to the comfort and enjoyment while boating there are a few aspects that affect safety and in my mind are priorities when planning each day's cruise. The primary Wx conditions that affect safety are: Storms - especially electrical storms, fog, winds and wind related waves.

Our "Go To" app for everyday Wx forecasts is the **NOAA Wx App**.

It provides current conditions and daily and hourly forecasts for 7 days. It also includes an animated Radar feature. The above is available for your current location and several "favorite" locations you can save and easily select. The app includes wind speed and direction in addition to the typical temperature & precipitation forecasts. Dew point and the Temp / Dew Pt spread allows you to do your own "fog forecasting". Settings let you choose preferred units and various options. The only limitation that will affect us is that this app is for US locations only.

Environment Canada provides a **Canada Wx App** that is comparable to the above NOAA Wx App. I have loaded and started to access this app to become familiar w/ forecasts for our intended cruising area.

National Weather Service – The NWS Buffalo Field Office provides Wx forecasts for all of Lake Ontario.

[NWS Buffalo Area Forecast Discussion](#) Provides a plain language discussion that includes: SYNOPSIS, NEAR TERM, SHORT TERM, LONG TERM, AVIATION and MARINE Forecasts for the general area and all of Lake Ontario.

A fellow boater I have become acquainted with via the online TrawlerForum.com is a retired meteorologist and is on a multi-year cruise. His 2 year, 20,000 NM cruising itinerary has included 2 Atlantic crossings, a Panama Canal transit and is currently in the Pacific NW with plans to cruise to Asia next. He has been instrumental in acquainting me with a Wx App & website (**windy.com**) that I was not familiar with previously, but have come to like very much.

WINDY.COM - Is a free iOS & Android App and Website. The app is full-featured and easy to use on mobile devices and in some respects, is even better than the website. Some features I especially like and believe will be useful while cruising are:

World-Wide - Windy App provides world-wide Wx reporting & forecasting that allows you to pan and zoom to the area you are interested in. You can select a location and step through the forecast (several forecasts, actually) in one-hour increments. Zooming out lets you view the "Big Picture" of surrounding conditions that influence your local area...

Plus, it's an amazing graphical presentation to look at and play with!

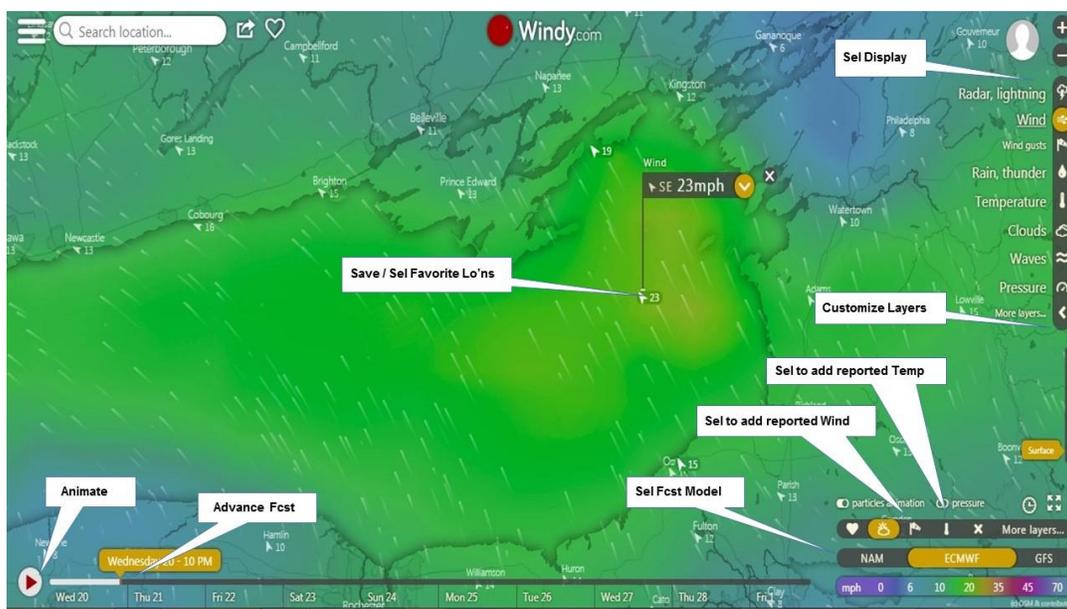
Customize settings - The default Windy.com settings aren't ideal for all interests but by establishing a personal account you can customize & save your settings, set preferred units, default screens and customize the menu choices you can select to view different Wx parameters and forecasts.

Overlay live conditions - To get a sense of how accurate the models are, I try to keep an eye on actual observed conditions and compare them to predicted conditions. Turning on "Reported" wind or temp overlays actual conditions from Wx buoys & reporting weather stations providing a comparison between forecasts and real life conditions.

Multiple Forecasting Models – Windy provides access to several forecasting models that you can either select as a preferred model or see multiple model side by side for comparison purposes. My meteorologist acquaintance has recommended using the NWS Buffalo information coupled with the Windy NAM short term / small scale forecasts for our cruising area. (See the discussion below regarding different forecasting models)

Extensive menu Selections – Windy lets you choose the parameters (layers) that you are most interested in and provides easy access via a custom menu. In addition to the normal Wx factors of temp, precipitation & clouds the items I find especially useful for cruising safety include: wind – speed, direction & gusts; waves – wave & swell hts & direction; fog; rain / thunder plus radar / lightening. All of these are available graphically

Animation - Select a location, either your current or one of interest along your planned route and animate the forecast to watch (backing or veering) wind shifts and speed changes and waves Hts can be viewed over time.



Overall cruising recommendations for use of Windy.com and other Wx forecasting sites –

1. **Short term more accurate** – pretty intuitive but don't rely on med – long term f'csts w/o double checking before venturing out.
Every day needs a fresh evaluation regardless what previous plans or forecasts were for today.
2. **Watch for trends** - Sometimes the forecast model is off by a few hours, other times it underestimates or overestimates parameters (e.g. wind speed), but it's rarely entirely wrong!

If the trend is for increasing wind, particularly if the increase is significant, use caution!
The weather could come earlier / later or be worse than predicted.

3. **Don't disregard any forecasts** - If any Windy model or NOAA or Environment Canada forecast shows a substantially different forecast, don't ignore any forecast!
Instead, I would consider any forecast a "worst case" that could materialize, (even if it doesn't agree with other sources or models).
Erring on the side of caution rarely creates unsafe or uncomfortable conditions.

Plan flexible cruise itineraries – Any good cruise plan should include flexibility via layovers, Wx days, etc. to avoid any pressure to "push on" when conditions are unsafe or uncertain.

Forecasting Models

Several model parameters are important when comparing models:

Horizontal resolution – A smaller grid (usually expressed in km) will provide better resolution for local conditions, larger grids are adequate for longer term global forecasts.

Frequency of runs – more runs create shorter times between updates

NAM (North American Mesoscale Model) ~5km grid; Designed to handle smaller systems across the United States and parts of Canada and Mexico. The NAM is a short term model run four times a day (00, 06, 12, 18 UTC) out to 84 hours.

GFS (Global Forecast System) is a global computer model run by the US National Weather Service (NWS). The GFS horizontal resolution ~13 km for the first 10 days and ~27 km from 10-16 days, output is produced every hour for the first 5 days, three hourly through day 10. The GFS is designed to handle large-scale systems like nor'easters, hurricanes, the polar vortex, or the jet stream across the entire world.

NOTE: *The GFS model is most notable for incorrectly predicting Hurricane Sandy while the ECMWF (European) model predicted landfall correctly out 7 days.*

During 2019, as a result of a recent tenfold increase in computing power, a **GFS** model upgrade is planned that will increase its horizontal resolution to ~9 km out to 16 days

ECMWF (European Centre for Medium-Range Weather Forecasts) informally the "European model" has a horizontal resolution ~9km and is produced every three hours for first 6 days, six hourly through day 10.