Aqua Map: Wind, Waves, and Currents

Aqua Map now includes weather in their app. That sounds so mundane that it may produce an immediate yawn. There are so many dedicated weather apps out there already, what could they possibly offer that's not already available? Are they seriously going to compete with Windy or PredictWind? It's a lost cause, one might think, but the genius developers at Aqua Map have produced a unique capability. There are three legs to the weather offering: **wind**, **waves**, and **ocean currents**. So how will Aqua Map differentiate itself from the multitude of weather apps already out there? Here are some details.

Wind. Aqua Map uses NOAA's HRRR model for wind. It's a state-of-the-art prediction model by NOAA that's getting great reviews for accuracy with a resolution of 3 km. It's updated once an hour with radar inputs every 15 minutes. It predicts for 48 hours so far and only in and near the continental US but within that window, it is more accurate than any other model, especially with the hourly updates with 15-minute radar inputs.

The wind is shown with arrows and a number for speed across the chart which can be easily turned on and off for clarity. It comes with a slider for advancing the prediction across 48 hours - which also advances any tide and current stations in view on the chart, handy for predicting wind against tide conditions at inlets.

With a tap on any chart location, a pop-up will appear with the full weather conditions for that point and a sidebar with access to a seven-day general prediction. Also on the sidebar is a link to the text NOAA 5-day coastal marine prediction, the same forecast given over VHF but in text form to be read at your leisure. The tap on the chart knows which NOAA marine forecast to load, no searching.

Waves. Another selectable display is wave direction and wave height. This won't be from HRRR but from the Wavewatch III model from NOAA. The 48-hour slider is used to predict waves, tides, and tidal currents too – handy at an inlet to see if you have tide against wind.

Ocean Currents. A third selectable display is ocean currents, an innovated step by Aqua Map, most notably the Gulf Stream. The predictions come from the Global Real-Time Ocean Forecast System from NOAA. It shows current direction, speed, and even eddies. It comes with a 48-hour prediction slider. I think it will be a favorite of those going to the Bahamas.

The three displays are color-coded for intensity with red being the most intense. The size and density of the display icons are selectable with a slider in the *Settings* menu as to whether you want to see numbers (for speed) for each icon on the chart or just a color code along with the directional icons matching a color-coded legend on the side of the display. All three displays cover the entire world but the wind display for the US coastal waters uses NOAA's HRRR high-accuracy model.

So, what dedicated weather apps have the same capability? PredictWind offers HRRR but as far as I can tell from their documentation, it's only updated every six hours and does not display speed except at a single point with a tap. Windy does not offer HRRR at all. I cannot find any of the major apps that offer ocean currents. It is a great update!

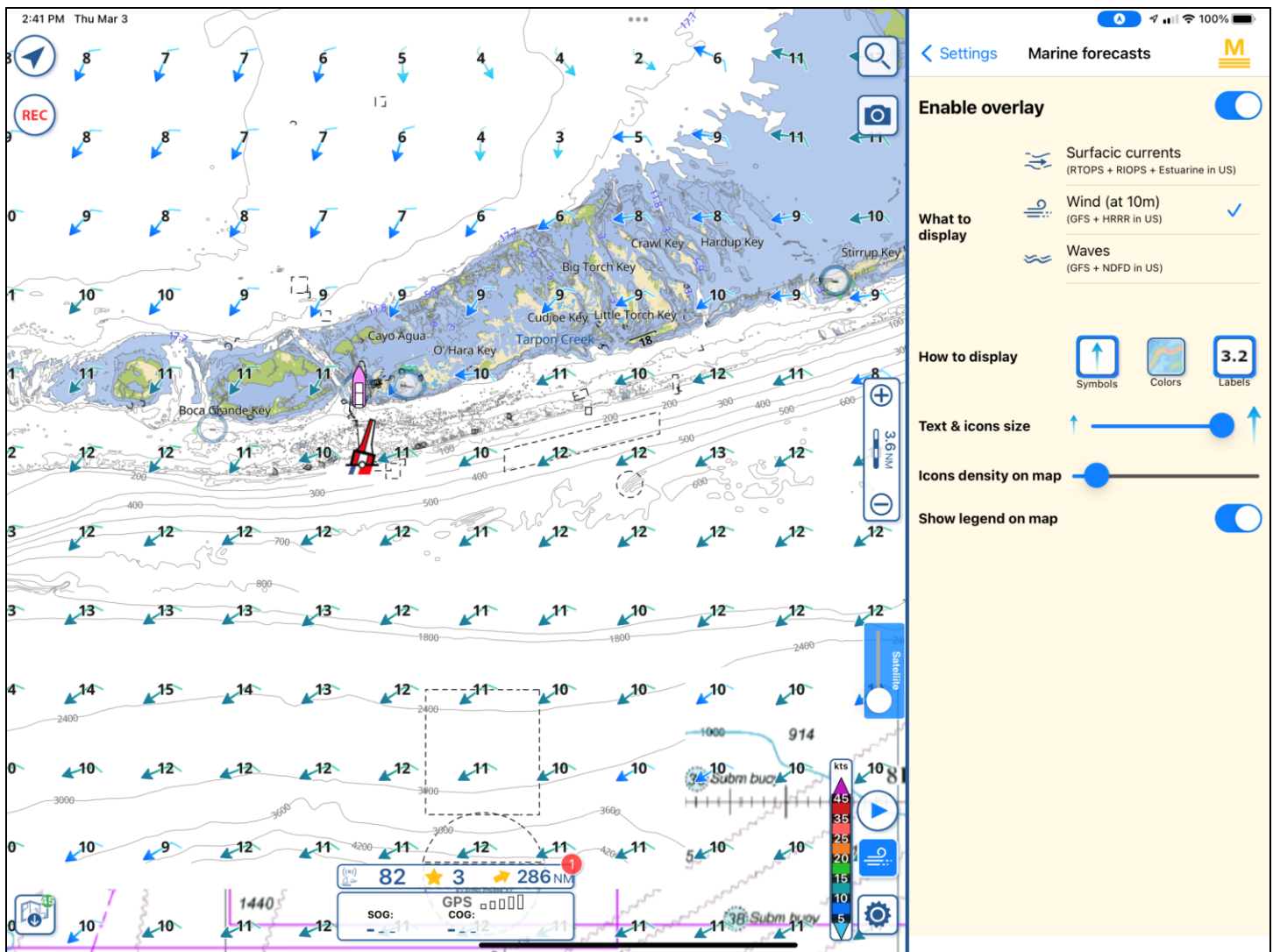Enough words, how about some screenshots!

Fig 1 Aqua Map Wind

Tap on *Settings* and select *Marine Forecasts* to get the screenshot shown above. In the example, *Enable Overlay* is turned on, *How to Display* show *Symbols* and *Labels* (speed) chosen (blue outline box). *Text & Icon Size* slider is to the right (biggest), *Icon Density on Map* is set mostly to the left (sparse), and *Show Legend On Map* is turned on. The legend is the vertical color bar at bottom right with blue for less wind and red for the most with other colors in-between.

Most of the functions can also be controlled with just the icons on the chart at bottom right. The wind icon is presently selected (shows blue). A tap on that icon shows a choice of displaying wind, waves, or ocean currents so you can switch between them without having to go through the *Settings* menu. You will also note the new location of the Settings menu – parked at the right side of the display instead of in the middle of the screen – covering part of the chart. You can change settings in the menu and see the immediate effects on the chart display.

Note the icon just above the wave icon, it looks like a blue sideways triangle. A tap on that icon brings up a 48-hour prediction slider for whatever is selected: winds, waves, or ocean currents. All the icons are toggles, meaning that they turn the function on and off with a tap. Tap once to see the wind display, tap again and the display is clear again for easy navigation. You can leave the icons on if you want or turn them off once you've seen the prediction for clarity in navigation.

To use the wind, waves, and ocean currents, you will need an internet connection. It's a lot to digest but it's very powerful – but wait, there's more, much more!
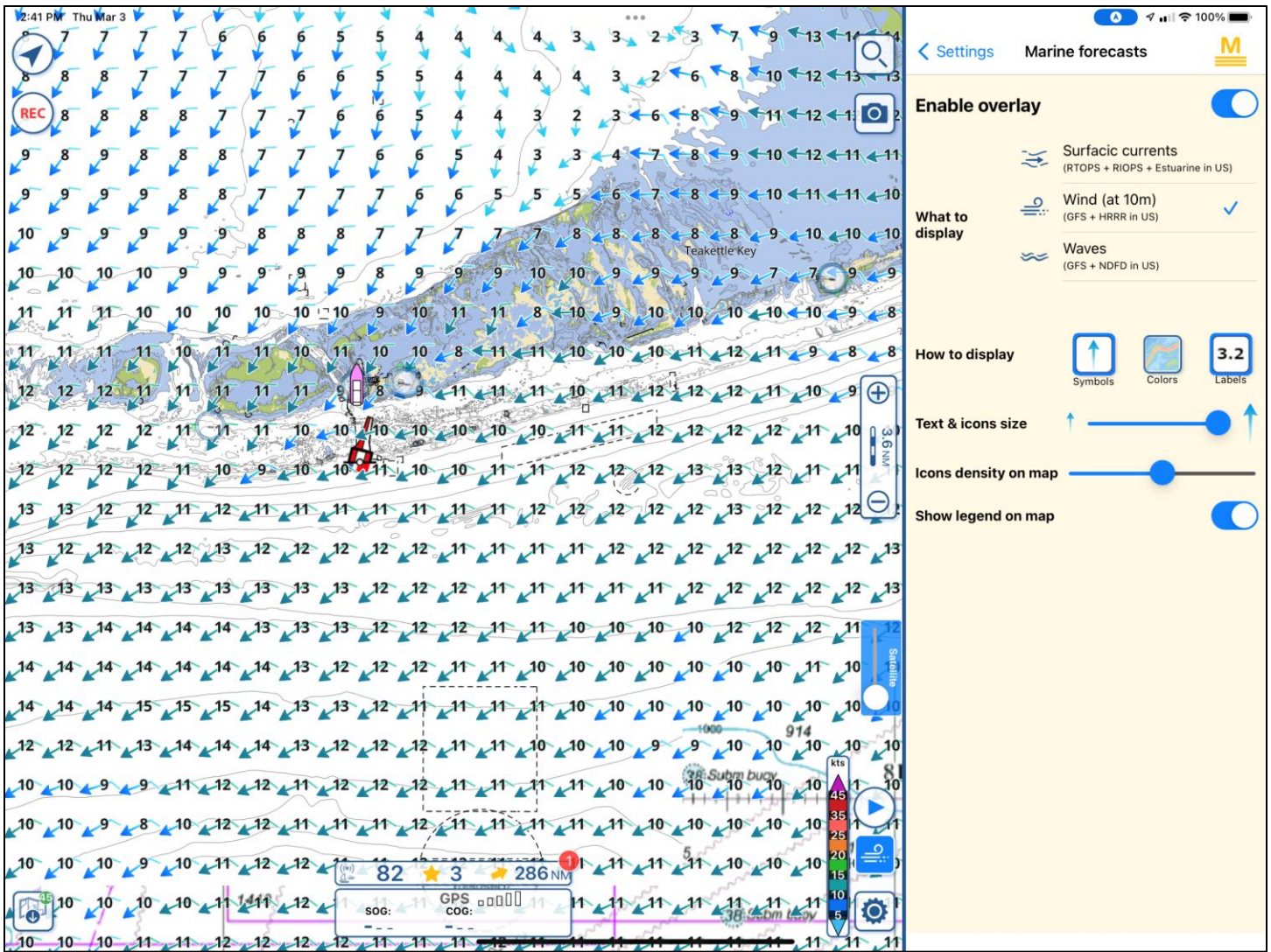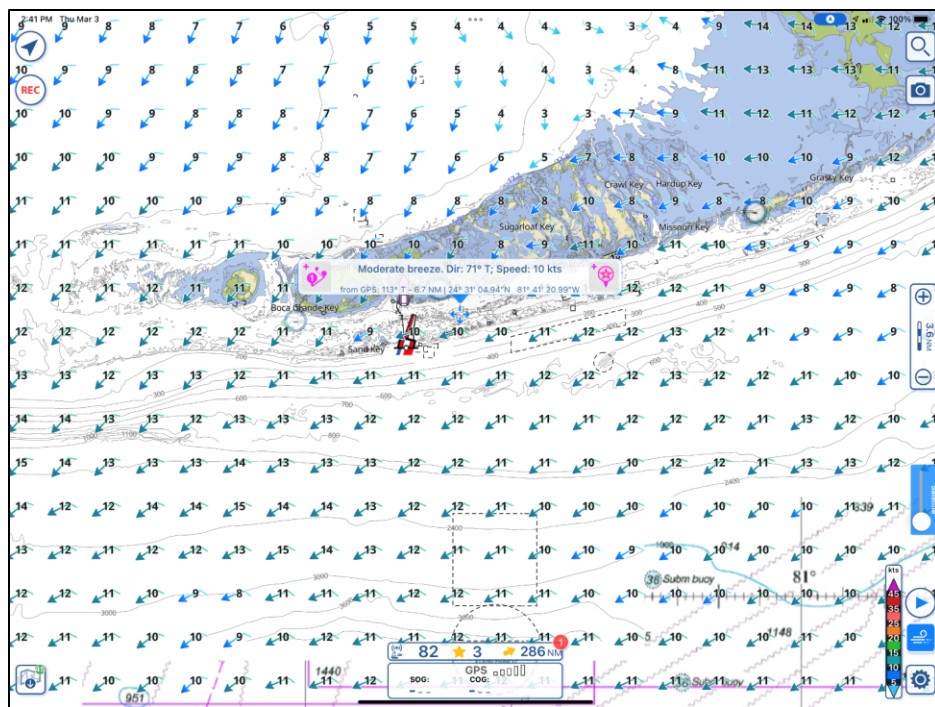
Fig 2 Aqua Map Wind with higher density of wind icons

Fig 2 is the same display as Fig 1 except for the *Icons Density On Map* slider being pushed to the middle of the range. You can get more wind icons per square inch on the display – if you want it. The feature shows the thought that went into the design to allow the users to fine-tune the display to their liking, needed for the wide range of screen sizes in devices.

Fig 3 is the same display as Fig 1 but with the *Setting* menu turned off so the entire screen is available for navigation.

Fig 3 Aqua Map display with the Settings menu turned off – so the entire display is the chart
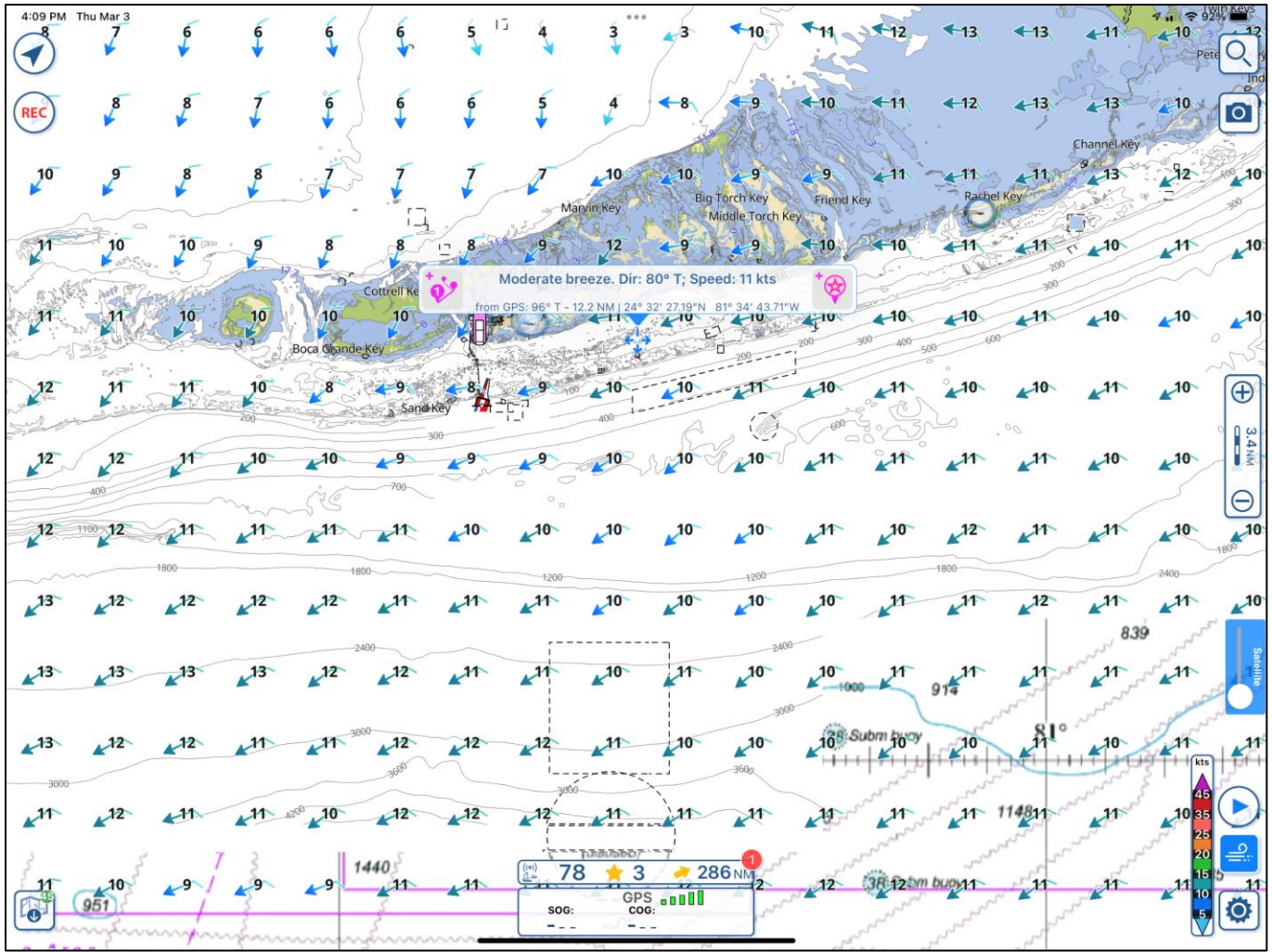
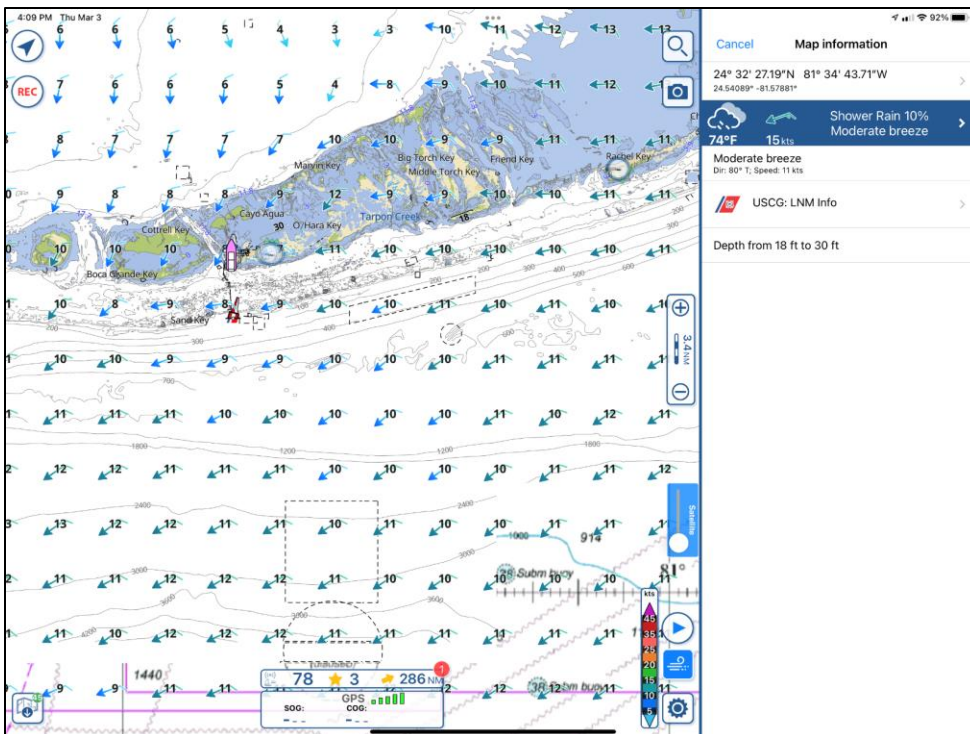*Fig 4 Aqua Map showing a text box pop up with a finger tap in Hawk Channel*

Fib 5 Result of tap on text box in Fig 4

Aqua Map also provides a point weather prediction. Just tap on the screen and a text box will pop up showing the local conditions. The example in Fig 4 shows a *Moderate Breeze, Dir 80 T: Speed 11 kts*. when tapped in the Hawk Channel. Tap in the middle of the text box and you get Fig 5.

Fig 5 shows a selection of options at the right, one being the weather. Tap on the blue weather box to get Fig 6 on the next page.
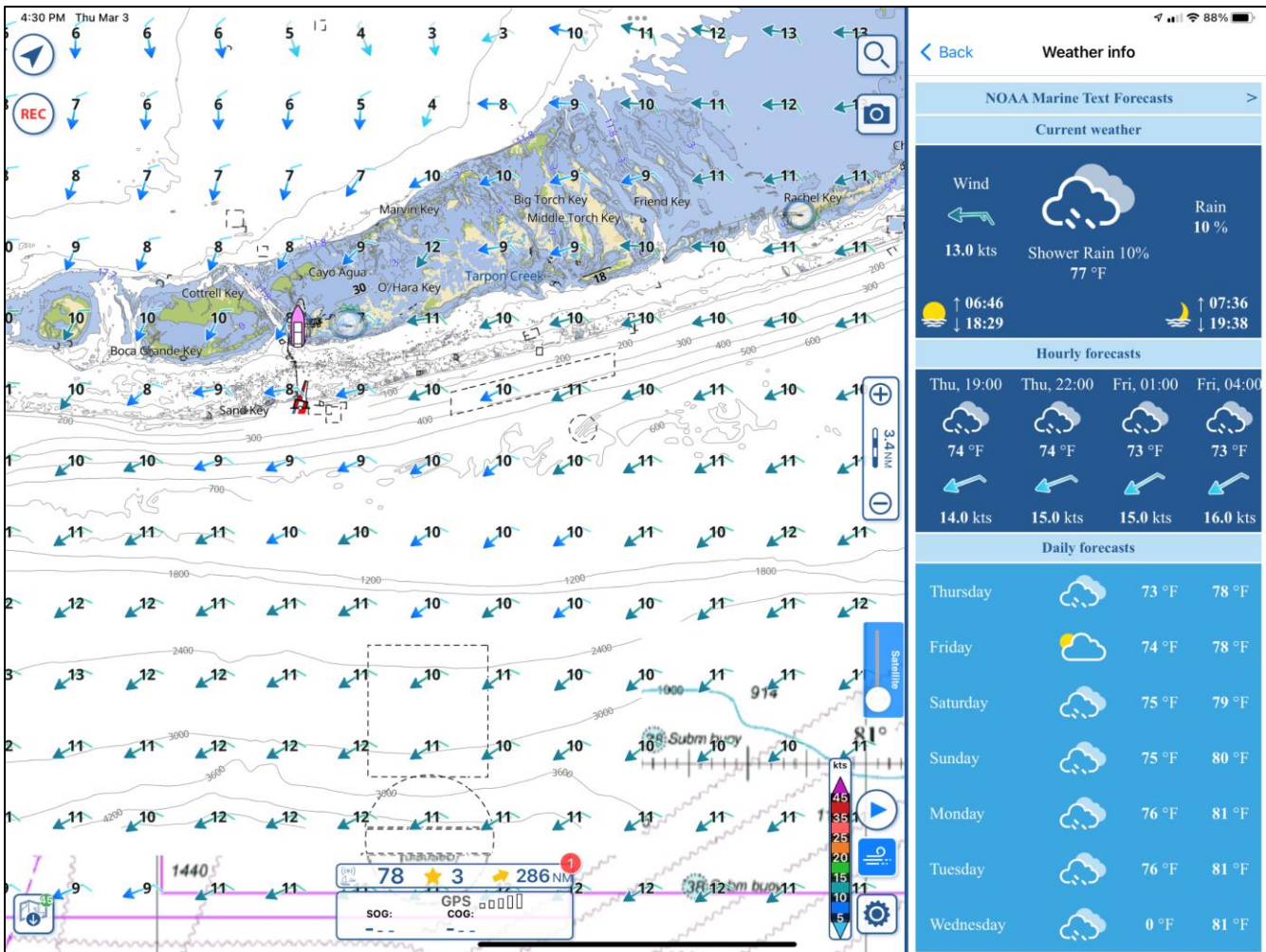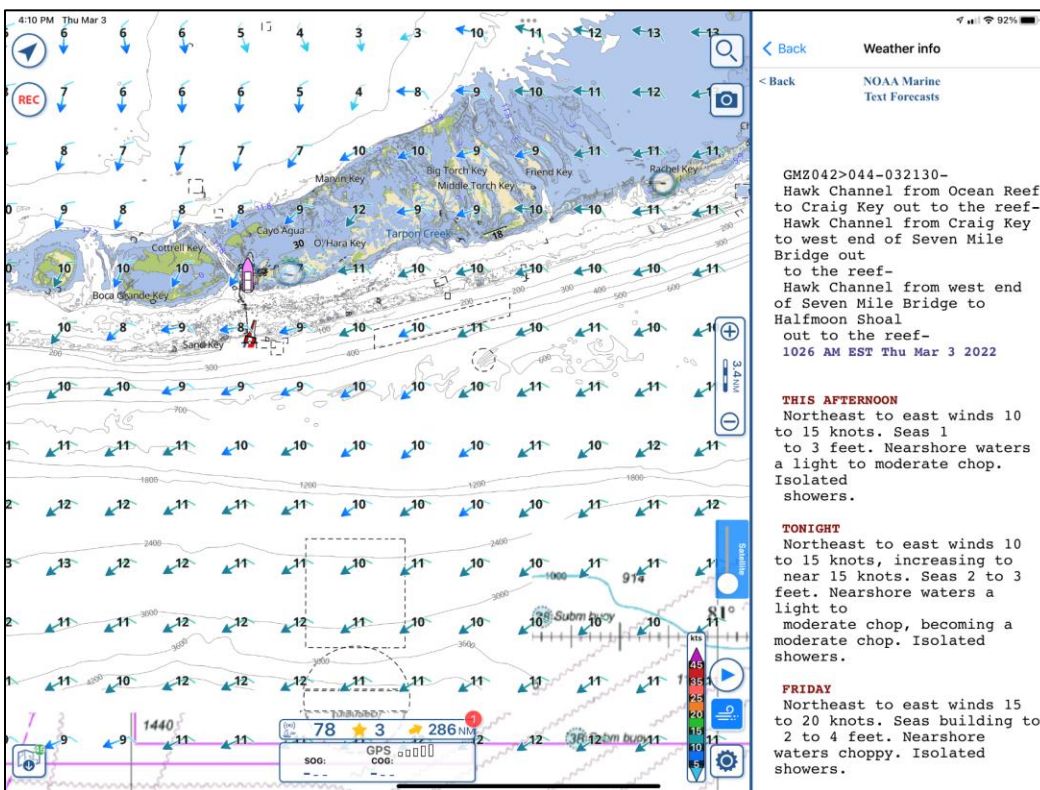
Fig 6 Aqua Map Seven Day forecast

Fig 7 NOAA Marine 5 day Text Forecast

The forecast is just an overview but look at one of the selections – at the top is NOAA Marine Text Forecasts, tap on that.

In Fig 7, the NOAA 5-day marine forecast is displayed. Aqua Map shows the NOAA forecast for the location on the chart where you tapped. I tapped in Hawk Channel so it showed the Hawk Channel forecast. If I had tapped farther out, in the Straights of Florida, it would have shown the marine forecast for that area. How handy is that!

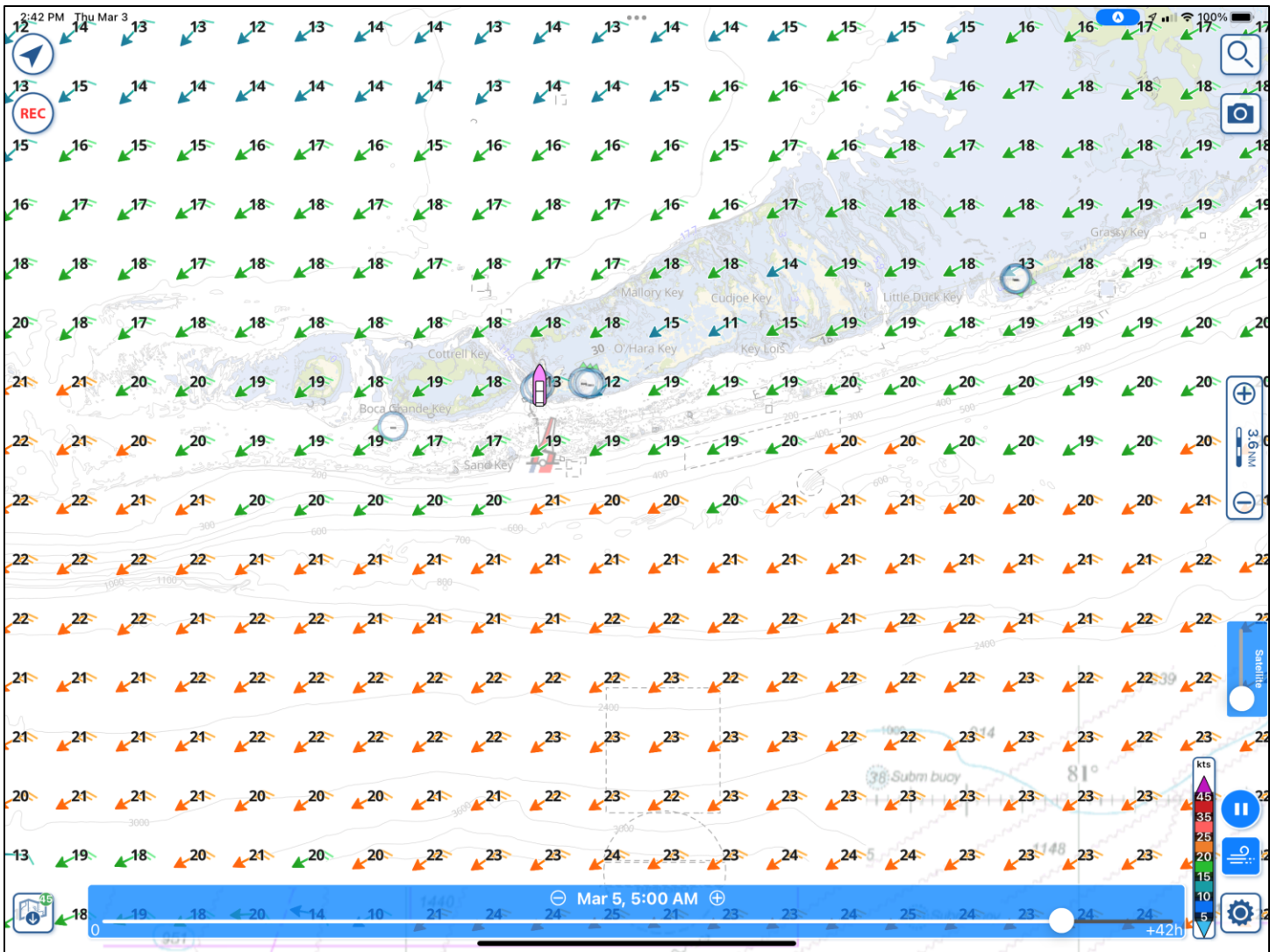The NOAA marine forecast scrolls up so you can see the entire 5-day forecast.

Fig 8 Aqua Map with the prediction slider advanced two days
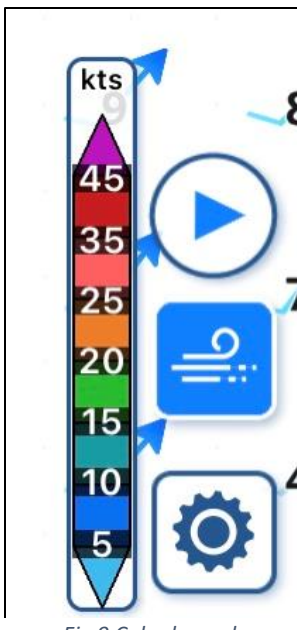

Fig 9 Color legend

With a tap on the prediction slider (the sideways blue triangle), you can see the HRRR prediction for wind. In the example, I advanced it to March 5 at 5:00 am. Looks like some wind is coming! It matches up pretty well with the NOAA marine text forecast of 20 to 25 kt winds (HRRR shows the average wind) out of the east. Fig 9 shows a detail of the chart legend for wind speed.

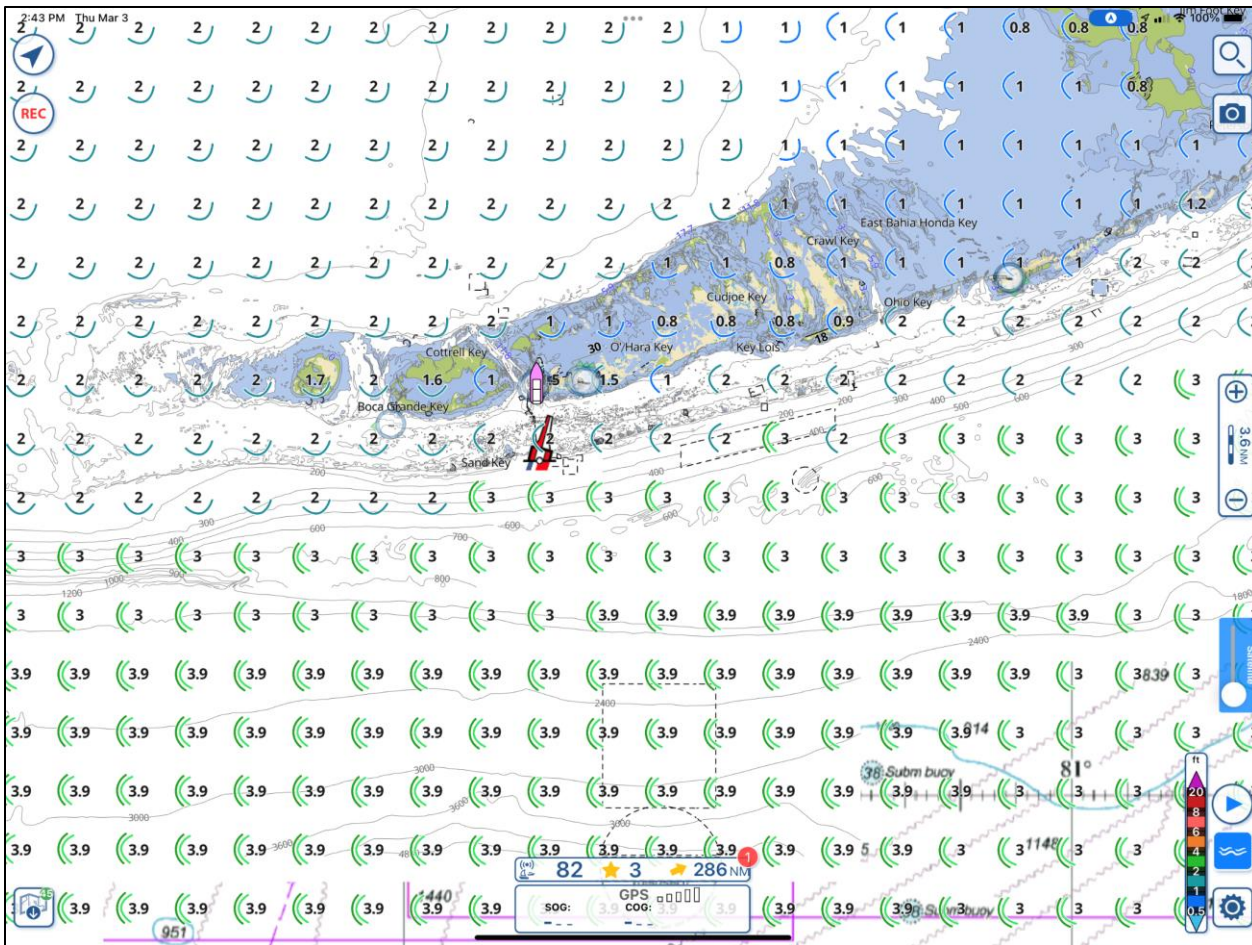Okay, what about waves? That's next on our screenshot list. See Fig 10 on the next page.
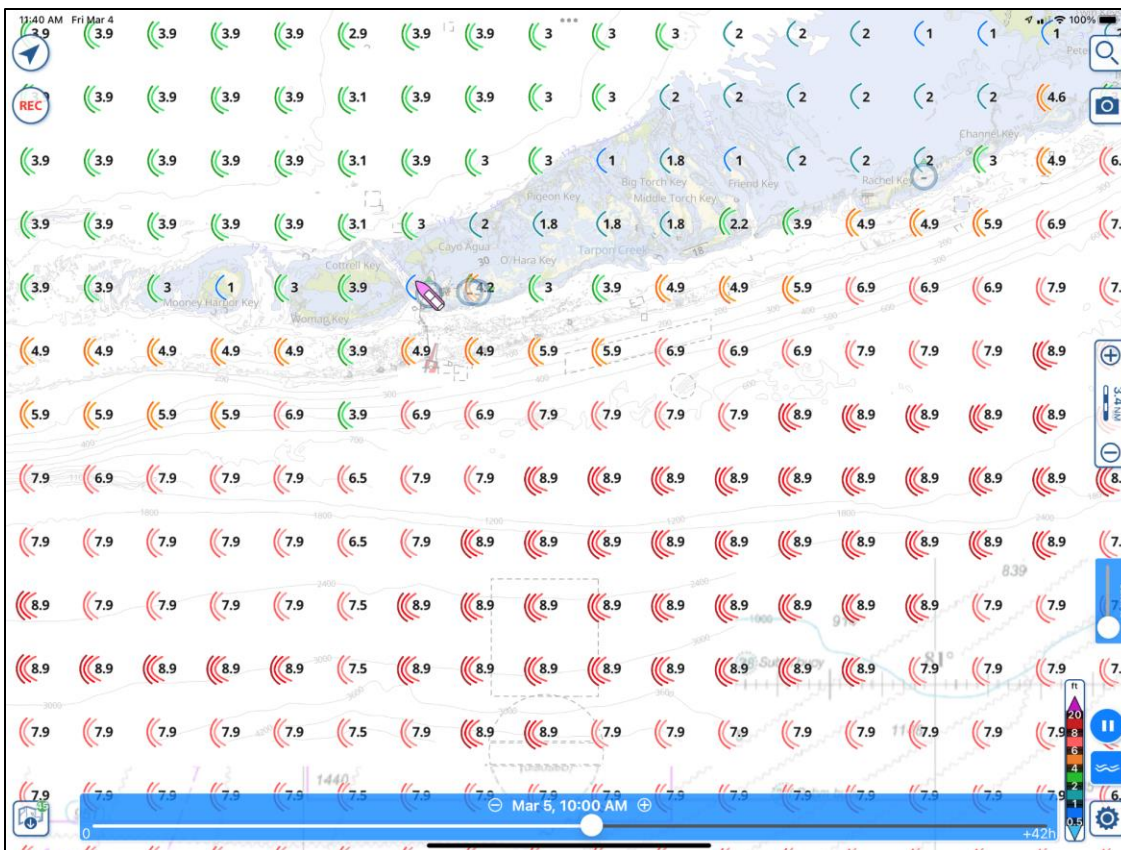
Fig 10 Wave Display

Fig 11 Wave Prediction for 2/5/2022

The icons show the wave direction and the numbers show the average wave heights as of today, 3/4/2022. I don't think you would want to be going east in the predicted weather shown in Fig 11 and Fig 8 for Saturday, 2/5/2022.
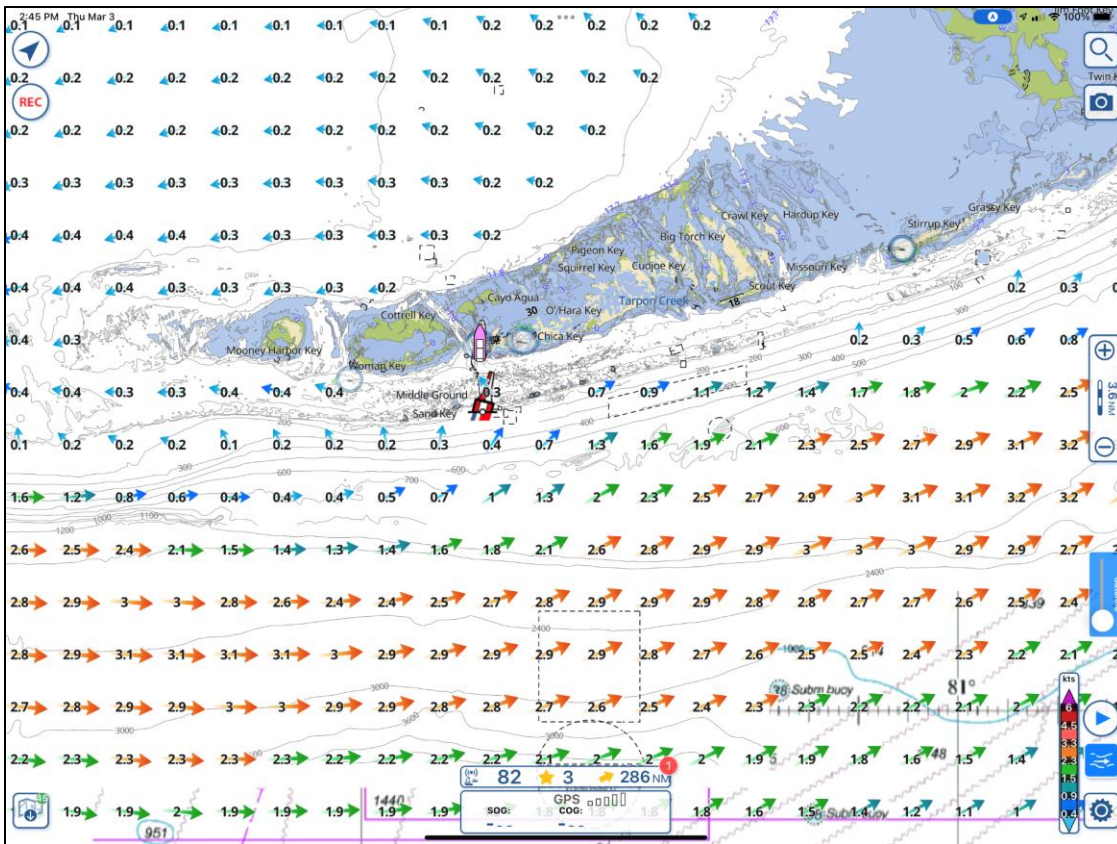
Fig 12 Ocean Currents

Fig 13 Gulf Stream currents off Miami

The display in Fig 12 shows ocean currents with an arrow (color-coded per the legend at bottom right) and a number showing the speed in kts. You can see just how far from land you have to go to get the eastward speed assist of the Gulf Stream. The prediction slider also works with the ocean current display so you can see how the ocean currents are predicted to change with time.
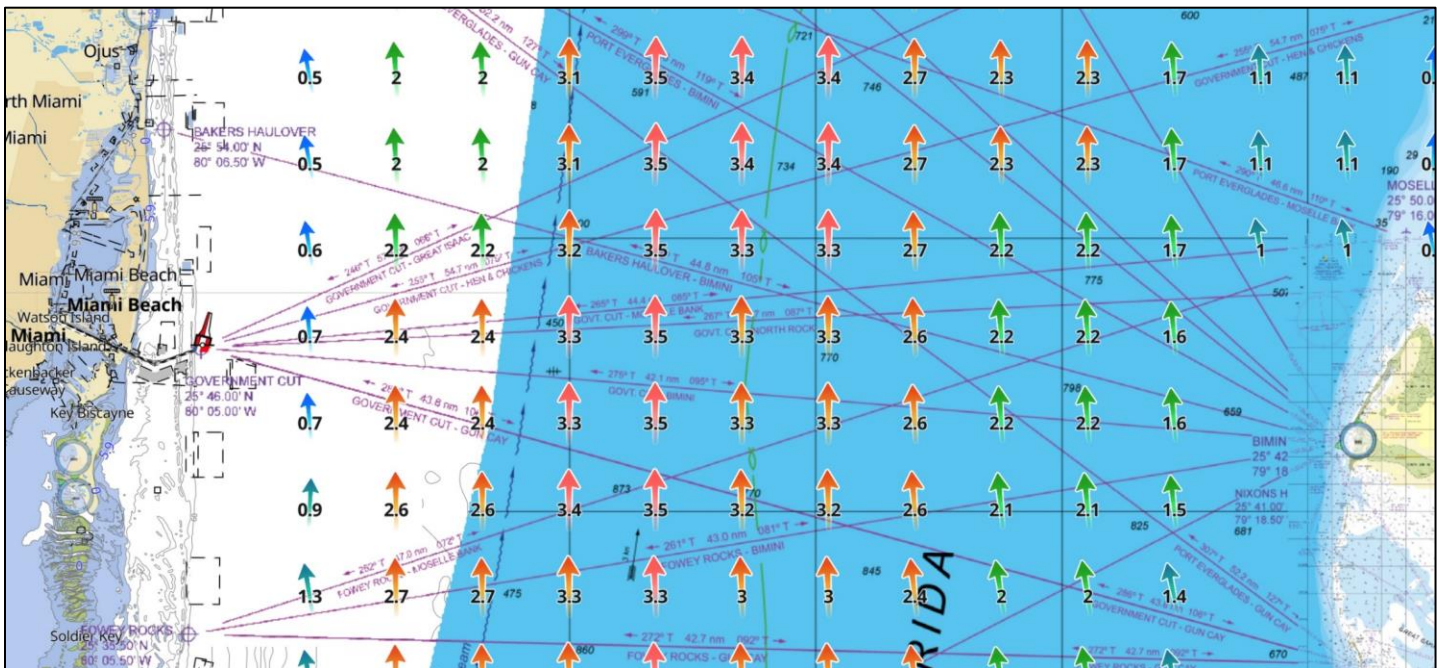
The chart in Fig 13 shows the Gulf Stream between Miami and Bimini. Using the icons at bottom right for wind and waves, you can use the prediction slider to see conditions up to 48 hours in advance and determine if there is wind against current conditions and the size of the wind-driven waves – and just where the edge of the Gulf Stream is located.

Let me close with another feature I haven't yet mentioned, the ability to color-code speed for any of the three options: wind, waves, or ocean currents.
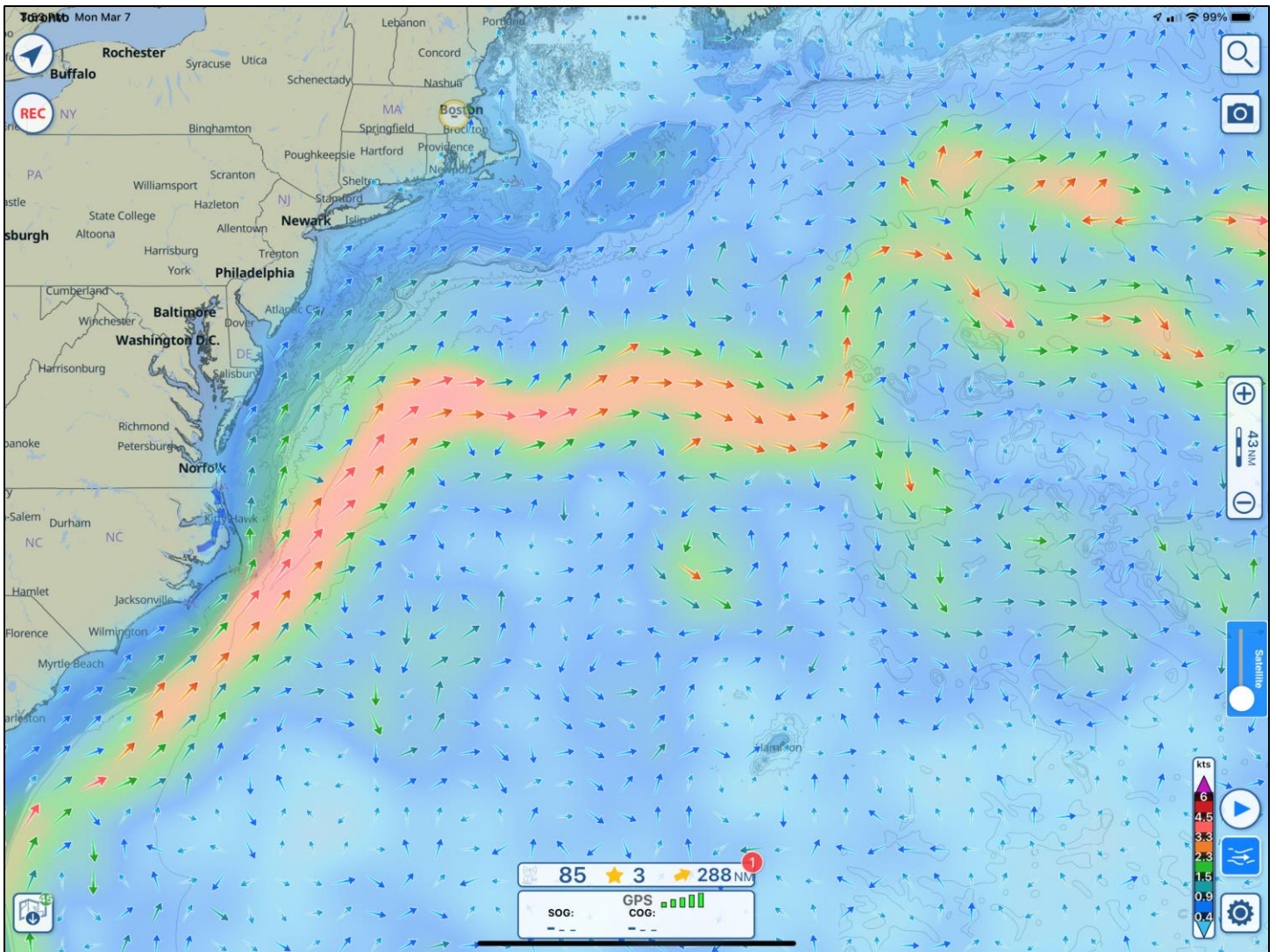
Fig 14 – Gulf Stream in color

In the example in Fig 14, I've chosen the color-code option for ocean current speed to show the Gulf Stream as it meanders northward in the Atlantic. It's handy for a general sense of when you will encounter it when heading south from New England to Bermuda or the Caribbean. You can zoom in to find just when the current will be seen on your route. This chart is also a reminder that the wind, waves, and ocean currents display, and forecasts are a worldwide feature! Turn on the color option, select wind, waves, or ocean currents, and pan across the world to see global weather, it's quite beautiful and handy in quickly finding storms and currents to avoid if you're crossing oceans.

The features all come as part of the Aqua Map Master subscription. In this modern world of weather modeling, why not have all the weather data at your fingertips? It not only makes navigation easier but makes your boating safer. After all, have fun on the water, who needs the stress of the unexpected – when it can so easily be avoided, at least for the weather.