SAGA Explorer for iPad

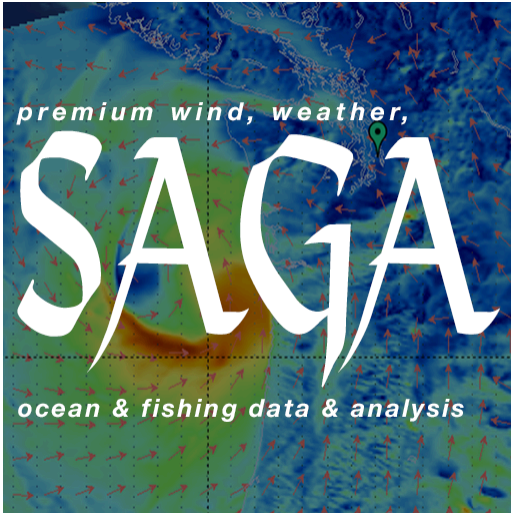User guide

1. Table of Contents

2. First Launch

Launch SAGA Explorer on your iPad.

On first launch you will be prompted to enter your account Username and Password and then tap the Sign In button. If you do not already have an account from OCENS you can register for one at www.ocens.com/saga.

*You can demo the app and data for 3 days using a username of '**demosaga**' and a password of '**demosaga**'. This username and password set should auto-fill your sign-in screen. This will activate a demo account that will be good for 3 days of full app and data access.*

After tapping the *Sign In* button you will be taken to the Map page to identify the region of the world in which you are interested.

Or click on the Samples button to go to the View screen and see a dropdown list of sample files to use.
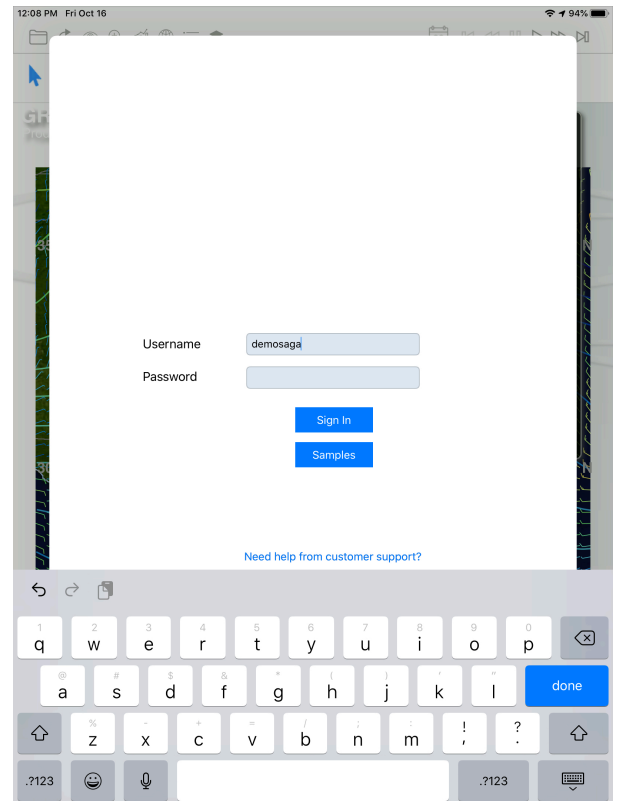
3. Video Tutorials

Here are some links to our video tutorials:

 First Launch

 View Screen Icons

 Watch Using the Saga Map screen video tutorial

 View video tutorial on Text, Buoy, and Radar selections

 View video tutorial on GRIB data selections

 Watch the route finder video tutorial

 Watch the Trip Planner video tutorial

 Click here to see our YouTube discussion of the Thermocline (You will need to have an internet connection for this)

4. Quick Use

At the base of your SAGA screen:

1. Select Map and move and resize your box to the location for which you want data.

2. Go to Products and pick your GRIB product set and forecast period. Decide if you want text forecasts, buoy data and/or Nexrad radar content and, if so, add products for the layer(s) of interest to you.

GRIB Met: ⌃

Met Fast
Wind, Pressure and Precipitation at FAST Resolution   -

Met High
Wind, Pressure and Precipitation at HIGH Resolution   -

Met Super
Wind and Precipitation at SUPER Resolution around the US and Caribbean   -

GRIB Ocean: ⌄

GRIB Fishing: ⌄

GRIB Special: ⌄

Text Forecasts Layer:

Coastal Zones Text Forecast
Please select coastal zones to download.   -

Offshore Zones Text Forecast
Please select offshore zones to download.   -

High Seas Zones Text Forecast
Please select high seas zones to download.   -

Buoy Layer:

Buoy Observations
Marine Buoy Observations   None

Radar Layer:

Radar Echos (NEXRAD)
Please select NEXRAD sites Images to download.   -

View   🌐 Map   ☰ **Products**   ⤓ Connect   ⚙ Preferences   FAQ

3. Go to Connect and choose your Communication Method.

App Store 9:58 AM Thu Oct 8   1%

Iridium GO!   Download

Communication Method   Direct Connection

Geographic Region: (33.5° N

Devices	Done
Direct Connection	
Hughes BGAN	
Wideye Sabre	
JRC Fleet Broadband	
Skipper Fleet Broadband	
Iridium GO!	✓
Sidekick Iridium	
Sidekick Globalstar	
Sidekick IsatPhone	
Sidekick MSAT USA	
Sidekick Sailor FBB	
Wideye iSavi	
Globalstar Sat-Fi	

Cancel   Done

DIALER PREFERE

Communicati   Iridium GO! ›

IRIDIUM GO! ACC

Username

Password

Low and High Re

OCENS WEATHE

Username

Password

Gateway   35.166.91.213

Port   194

View   Map   Products   Connect   Preferences   FAQ

4. Press Download at the top of the Connect page.

SAGA Explorer for iPad

⤓ Download

Communication Method   Direct Connection

Geographic Region: (33.5° N ••• 21.2° N) – (84.6° W ••• 72.3° W)

Low and High Resolution GRIBs

Downloads estimated size: 0 bytes
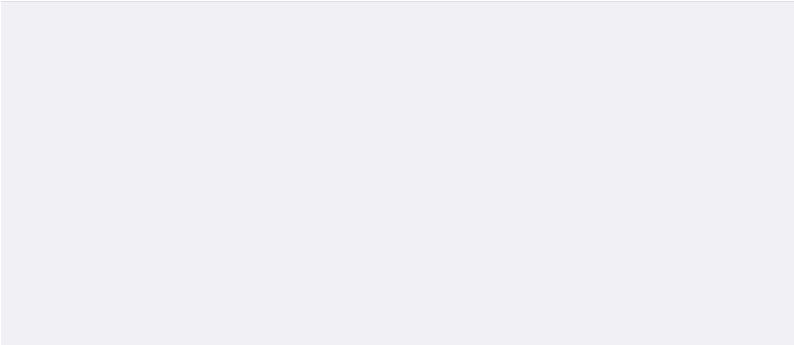
View   Map   Products   Connect   Preferences   FAQ

4.1. Working with Layers

Your GRIB data will always be the base layer on your View screen. You cannot turn off the GRIB view.

Other layers (text forecasts, marine buoy data, and Nexrad radar data) can be turned on and off.

Once on the View screen, find the Layers Display icon at the top of the screen and tap to tag the layers you want visible on the View screen.

> NOTE: Coastal and/or Offshore Text Forecasts can be displayed with Buoy and Radar data but cannot be displayed with High Seas Text Forecasts.
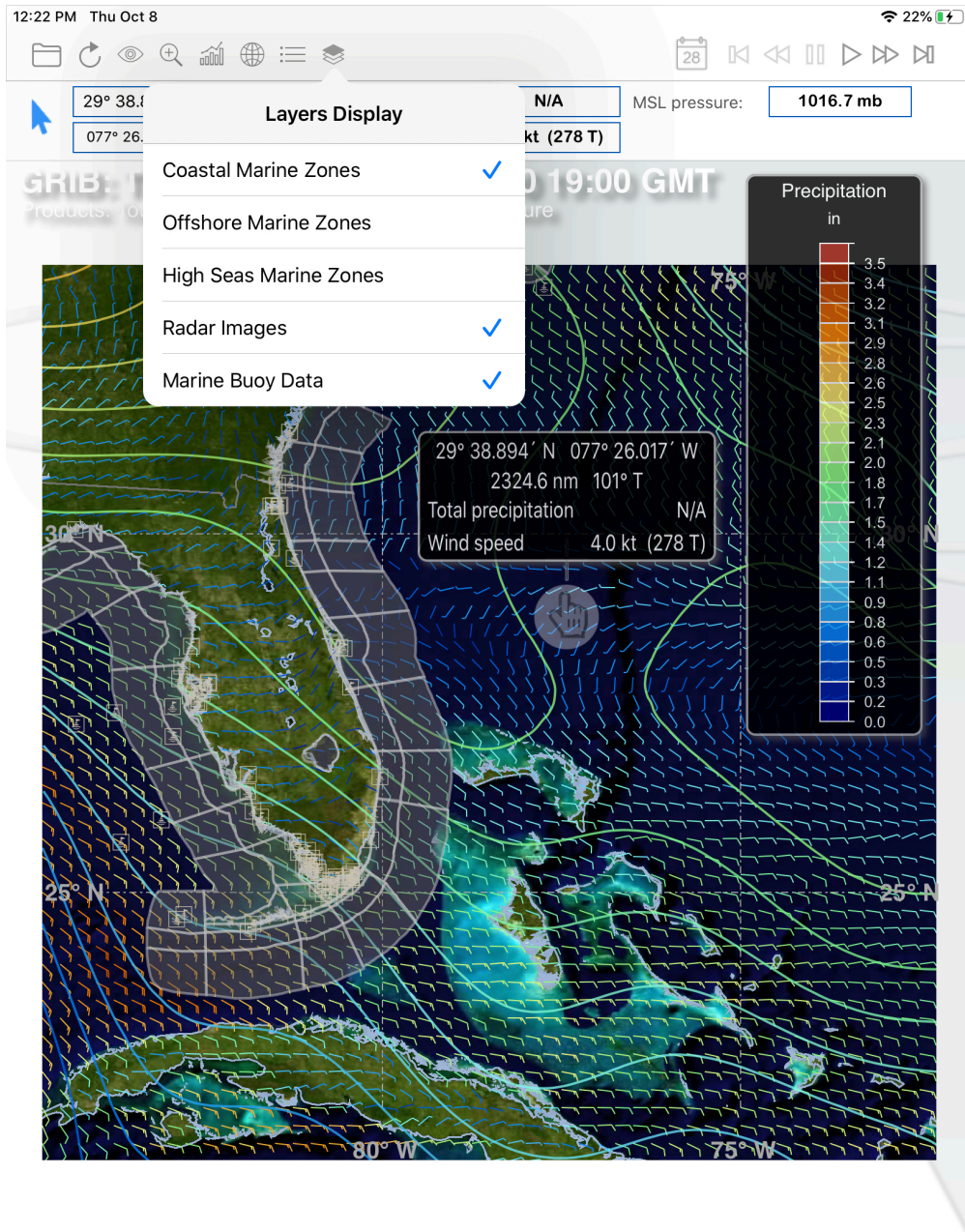
4.1.1. Text Layers

If Coastal and/or Offshore Text Forecasts are tagged, the locations of each area will appear on your View screen as transparent shapes tracing the coastline and/or offshore. If a shape is colored light green, you have downloaded a text file for this location and the data is current (less than 6 hours old). If the shape is colored red, the data is older than six hours.
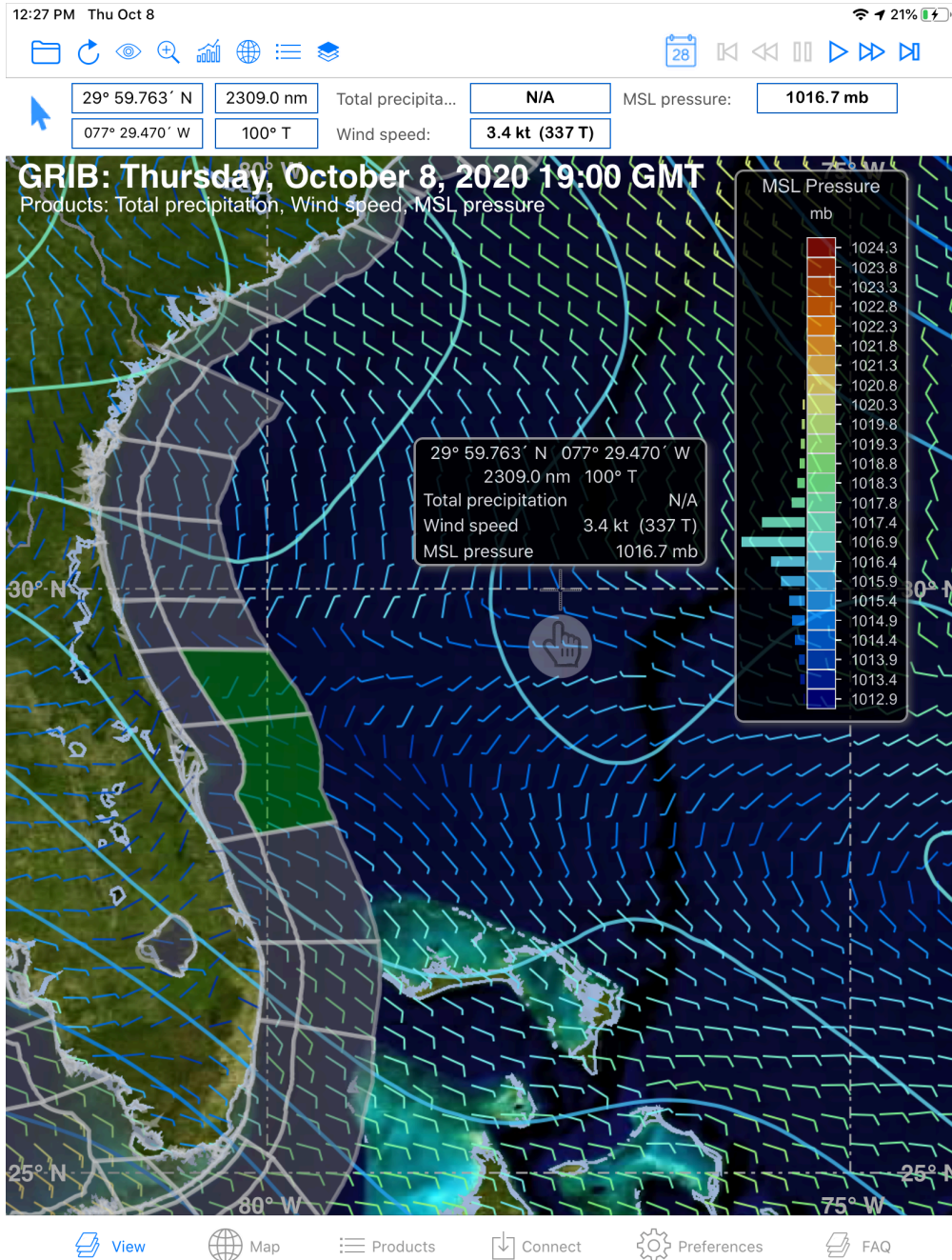
Tap on any transparent green shape and the text forecast for that location will appear as a pop-up.

To the left of the actual text forecast in the pop-up will be a list of other text forecasts that also have been downloaded. Double-tap any of these other forecasts to view it.

NOTE: Do you see a + next to text forecast id in the list of text forecasts? This means you can add this text forecast to your next download by simply tapping on the +

Copyright OCENS Inc.   www.ocens.com   support@ocens.com

SAGA Explorer for iPad

12:29 PM   Thu Oct 8   21%

29° 59.763′ N   2309.0 nm   Total precipita...   **N/A**   MSL pressure: **1016.7 mb**

077° 29.470′ W   100° T   Wind speed: **3.4 kt (337 T)**

GRIB: Thursday, October 8, 2020 19:00 GMT
Products: Total precipitation, Wind speed, MSL pressure

MSL Pressure
mb

1024.3
1023.8
1023.3
1022.8
1022.3
1021.8
1021.3
1020.8
1020.3
1019.8
1019.3
1018.8
1018.3
1017.8
1017.4
1016.9
1016.4
1015.9
1015.4
1014.9
1014.4
1013.9
1013.4
1012.9

Marine Zone Text Forecast   Close

AMZS75   (+)

AMZ570

AMZ572

Coastal: AMZ570

Flagler Beach to Volusia-Brevard County Line 20-60 nm

29° 11.088′ N   080° 11.742′ W

Expires:202010091000;;991076
FZUS52 KMLB 081916
CWFMLB

Coastal Waters Forecast for East Central Florida
National Weather Service Melbourne FL
316 PM EDT Thu Oct 8 2020

Atlantic coastal waters from Flagler Beach to Jupiter Inlet out 60 nm.

AMZ570-091000-
Flagler Beach to Volusia-Brevard County Line 20-60 nm-
316 PM EDT Thu Oct 8 2020

.TONIGHT...East winds 10 to 15 knots. Seas 3 to 4 feet with a dominant period 8 seconds. Chance of showers and slight chance of
thunderstorms.
.FRIDAY...East winds 10 to 15 knots increasing to 15 to 20 knots in the afternoon. Seas 3 to 5 feet with a dominant period 5 seconds. Chance of showers in the morning. Slight chance of thunderstorms. Showers likely in the afternoon.
.FRIDAY NIGHT...Southeast winds 15 to 20 knots. Seas 4 to 5 feet
with a dominant period 6 seconds. Chance of showers and
slight

View   Map   Products   Connect   Preferences   FAQ

4.1.2. Buoy Layer

When you add Buoys to your Product list all Marine Buoys existing within the geographic area you have boxed on the Map page will be downloaded.
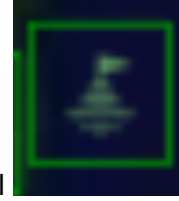
The location of each buoy is depicted on the View screen with this symbol .

Tap on the symbol to read the most current weather conditions at that buoy. A popup will appear. As with text forecasts, to the left of the buoy report will be a list of other buoys in the immediate area. Tap or double-tap on buoys in this list to view their data.

SAGA Explorer for iPad

12:33 PM Thu Oct 8

| 30° 49.872′ N | 2136.0 nm | Total precipita... | N/A | MSL pressure: | 1017.5 mb |
| 081° 01.369′ W | 103° T | Wind speed: | 5.9 kt (348 T) | | |

GRIB: Thursday, October 8, 2020 19:00 GMT
Products: Total precipitation, Wind speed, MSL pressure

Buoy Weather Conditions   Close

FRDF1

LTJF1

MYPF1

BLIF1

41112

DMSF1

FRDF1

Current Conditions at Fernandina Beach, FL

30° 40.500′ N   081° 27.900′ W

NDBC/FRDF1

8720030 - Fernandina Beach, FL
30.675N 81.465W

Weather Conditions

2:48 pm EDT 08-Oct-2020
Wind: NNE (20°), 6 kts (11 kph)
Gust: 10 kts (18 kph)
Pressure: 30.04 inHg (1017.3 mb)
Air Temp: 86 °F (30 °C)
Water Temp: 75 °F (24 °C)

30° N   30° N

80° W

View   Map   Products   Connect   Preferences   FAQ

Buoy data is updated hourly.

Copyright OCENS Inc.   www.ocens.com   support@ocens.com

4.1.3. Radar Layer

Activating the Radar layer displays radar loops for all the radar sites you have tagged on the Products page.

12:49 PM   Thu Oct 8   23%

NEXRAD Sites   Done

CLX
Charleston, SC (32° 33.036´ N .. 080° 46.782´ W)

MHX
Morehead City, NC (34° 46.566´ N .. 076° 52.566´ W)

MLB
Melbourne, FL (28° 06.798´ N .. 080° 39.252´ W)

GSP
Greer, SC (34° 52.998´ N .. 082° 13.200´ W)

TBW
Tampa, FL (27° 42.336´ N .. 082° 24.102´ W)

AMX   ✓
Miami, FL (25° 36.666´ N .. 080° 24.768´ W)

CAE
Columbia, SC (33° 56.916´ N .. 081° 07.098´ W)

RAX
Raleigh, NC (35° 39.936´ N .. 078° 29.382´ W)

JGX
Robins AFB, GA (32° 40.518´ N .. 083° 21.066´ W)

LTX
Wilmington, NC (33° 59.364´ N .. 078° 25.734´ W)

JAX   ✓
Jacksonville, FL (30° 29.082´ N .. 081° 42.114´ W)

VAX
Moody AFB, GA (30° 33.498´ N .. 083° 00.336´ W)

BYX

1 day

nd Caribbean

-
-
-

Buoy Observations   All
Marine Buoy Observations

Radar Layer:

Radar Echos (NEXRAD)   ✓
AMX, JAX

View   Map   Products   Connect   Preferences   FAQ

SAGA Explorer for iPad

8:31 AM Wed Sep 16

| 30° 30.894′ N | 2004.6 nm | Total precipita... | N/A | MSL pressure: | 1011.0 mb |
| 085° 01.017′ W | 107° T | Wind speed: | 11.7 kt (098 T) | | |

GRIB: Wednesday, September 16, 2020 19:00 GMT
Products: Total precipitation, Wind speed, MSL pressure

BMX - Birmingham, AL.
SEP 16, 2020 15:10 UTC

MXX - Maxwell AFB, AL.
SEP 16, 2020 15:02 UTC

View   Map   Products   Connect   Preferences   FAQ

Copyright OCENS Inc.   www.ocens.com   support@ocens.com

5. Tool Bar

Lets look over the various items on the SAGA Explorer tool bar.

Listed from left to right:

File folder

>This contains the GRIB files that you have downloaded as well as a section of sample files for you to work with.

>>*You will notice that of the files you have downloaded there is the one combined file (labeled 'GRIB_date_x.grb'). The other single product files start with the model and type of file in the name.*

Refresh tool

>Should your images need to be refreshed you can tap this.

View tool

>This will allow you to turn on and off the following:

>>• ***The Color Palette***

>>>When this feature is on you can reposition the graph by dragging it to a different location on the screen. To change what parameters are being referenced select the title and then select what you want from the available choices.

>>• ***Curser Position indicator***

>>>This is displayed near the top of your screen showing the lat/lon of the cursor as well as the range and bearing from your home location to the cursor. This can also be turned on an off from the Preferences screen.

>>• ***On Screen Cursor Values***

>>>This displays a box just above your cursor showing the lat / lon and values for the data that is being displayed on the map at that position. This can also be turned on an off from the Preferences screen.

>>• ***Home Location***

>>>When this is on your home location is updated using data available from your device and displayed on the map.

Zoom

>*This tool provides a quick way to scale your image to the window. More: How do I zoom?*

Graphs

>• ***Route Finder***

>>*The route finder profile is a plot of the values of the main weather parameter located on a great circle line between two arbitrary points on the chart. You can move either points in any direction by holding the left mouse button and dragging to the desired new point. The route finder profile works for both single frame and animated charts.*

>• ***Time Profile***

>>*The time data profile is a plot of the values of the main weather parameter located at the mouse position through time. As you move your mouse position, a new time plot is displayed. The time data profile works for multiple time frame GRIB charts.*

>• ***Trip Planner***

>>*The route finder profile is a plot of the values of the main weather parameter located on a great circle line between two arbitrary points on the chart. You can move either points in any direction by holding*

the left mouse button and dragging to the desired new point. The route finder profile only works for multi frame charts.

- ***Thermocline***
    SAGA Explorer provides global access to sub-surface temperature data down to 1000 meters. These are individual files you can download. It also offers a Thermocline product which combines all those layers into one file so you get a complete picture of subsurface conditions around you. The Thermocline tool shows you the depth of the mixed layer in the ocean.

Map Outlines
Here you can turn on and off various features of the map display.

Plotting GRIBs
This menu allows you to turn on and off the various GRIB data that you currently have layered on your screen.

Layers Display
SAGA can download and simultaneously layger GRIB data, coastal/offshore/high seas text forecasts, Nexrad radar imagery. and Marine Buoy data. GRIB data is always displayed as your 'base' layer. This Layers Display is where you decide what layers in addition to GRIB you want to see for a particular analysis.

Select Frame
This menu allows you to go directly to a time frame in the file you are viewing.

Player controls
*These tools allow you to control the animation of the GRIB data frames.*

▶ View screen icons video tutorial

5.1. Graphs and Analytics

SAGA provides unprecedented analytical horsepower to contribute to your weather decisions. Tools unique to SAGA include Route Finder, Time Profile, Trip Planner and Thermocline.

5.1.1. Route Finder

The Route Finder tool is a graphing assistant found under the Graph icon at the top of the View screen in SAGA. When selected, a red line immediately bisects your GRIB display (with one end labeled A and the other B) and a graph insert appears.
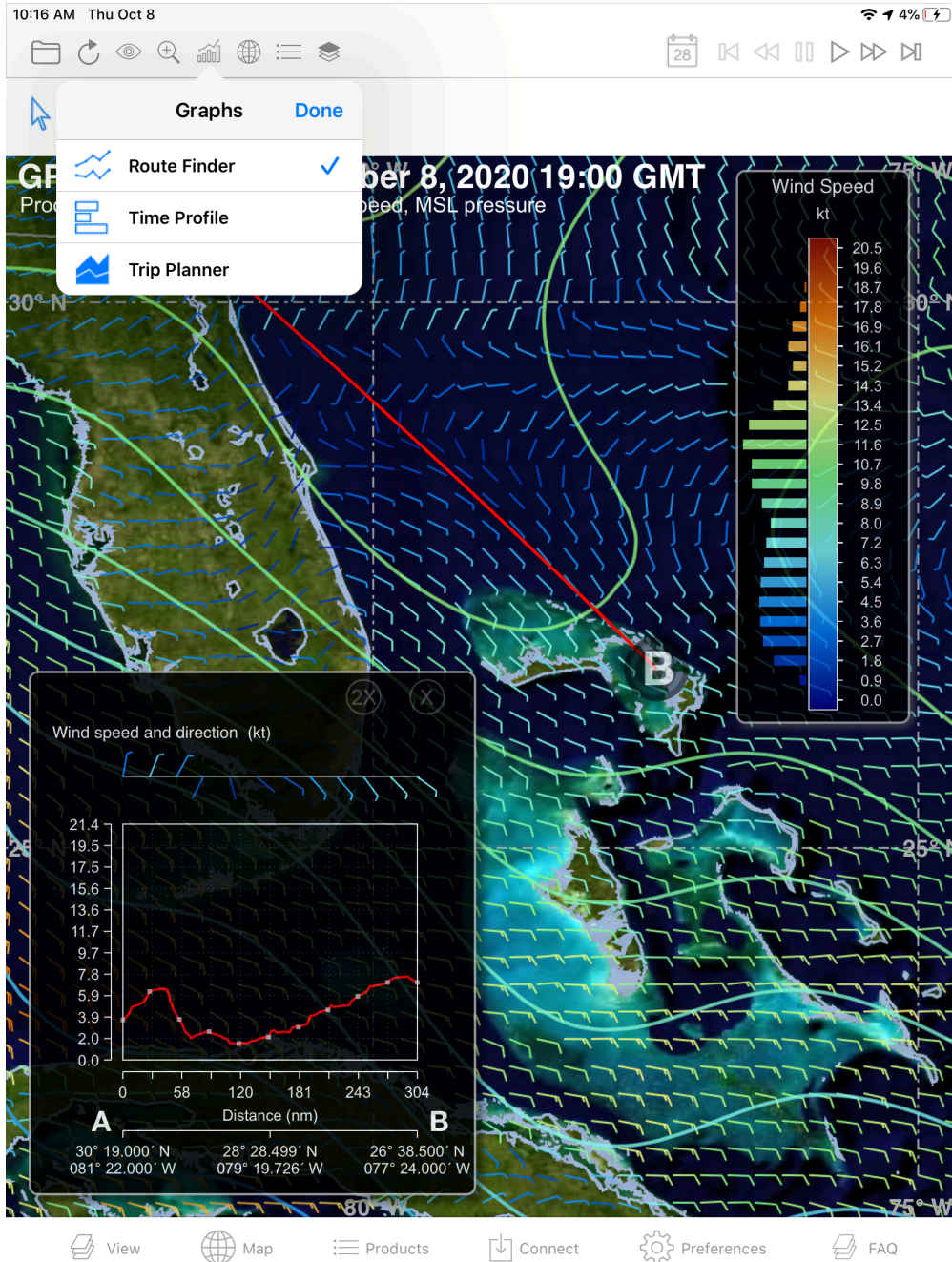

The X axis of the graph relates to the distance between A and B. The Y axis shows you the intensity of the variable you are studying (e.g. knots of wind or mb of pressure). If you have a multi-variable grib product such as wind, above the graph is shown data like wind direction. Below the graph is displayed the latitude and longitude points associated with points A and B.

Why would I use the Route Finder tool?

SAGA Explorer for iPad

Tap and hold on either end of the red line to move that end to a starting or ending spot of interest to you. Watch the graph change as you move the end point. The Route Finder tool is a good way to quickly look at the forecast weather along different routes you can take to your destination.
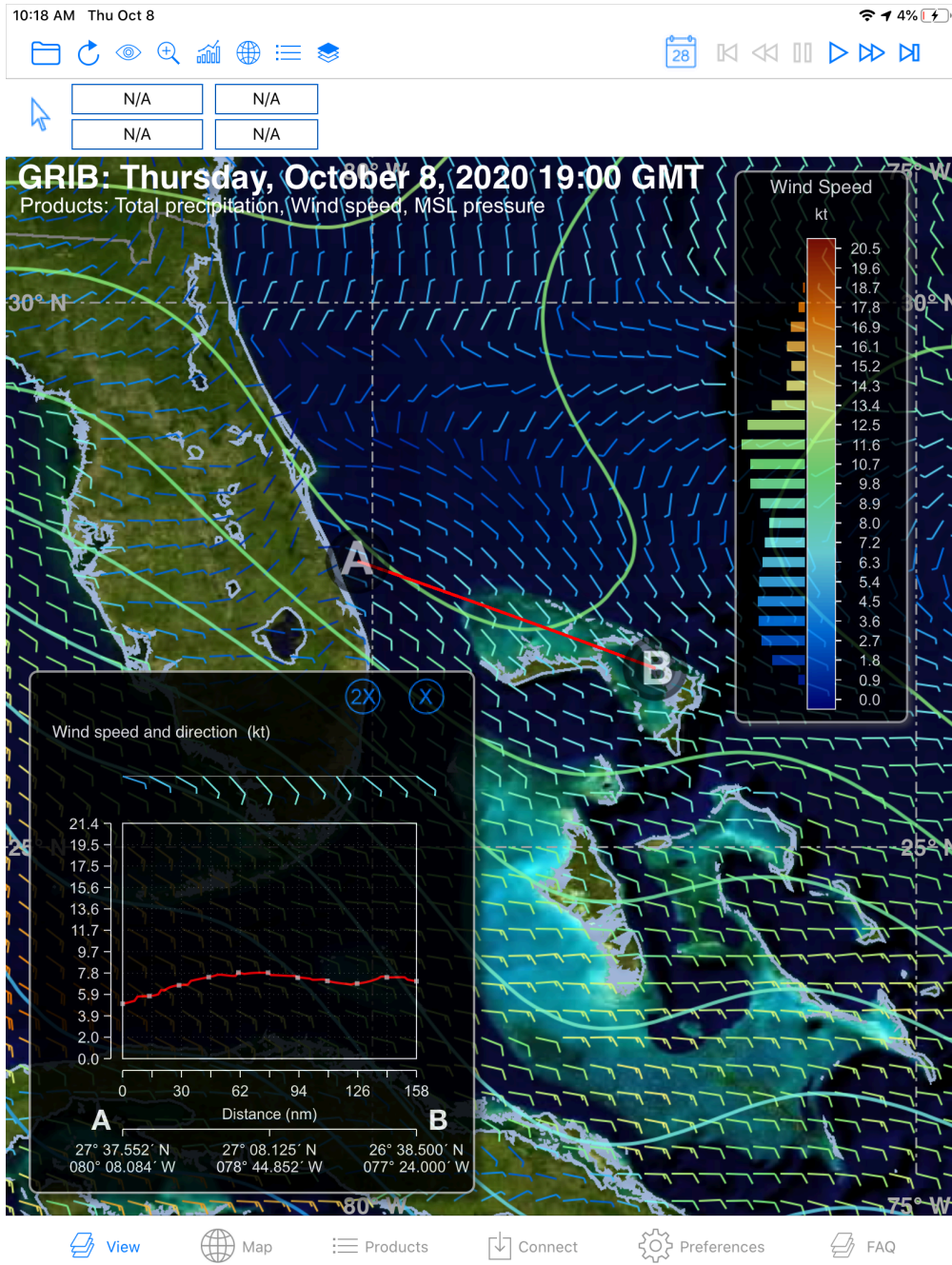
5.1.2. Time Profiler

The Time Profiler is another analytical assistant found under the Graph icon on the View screen in SAGA. Tap on the Time Profile tool and a graph appears with the X axis referring to the weather variable level (eg wind speed in knots or pressure in mb) and the Y axis referring to time.
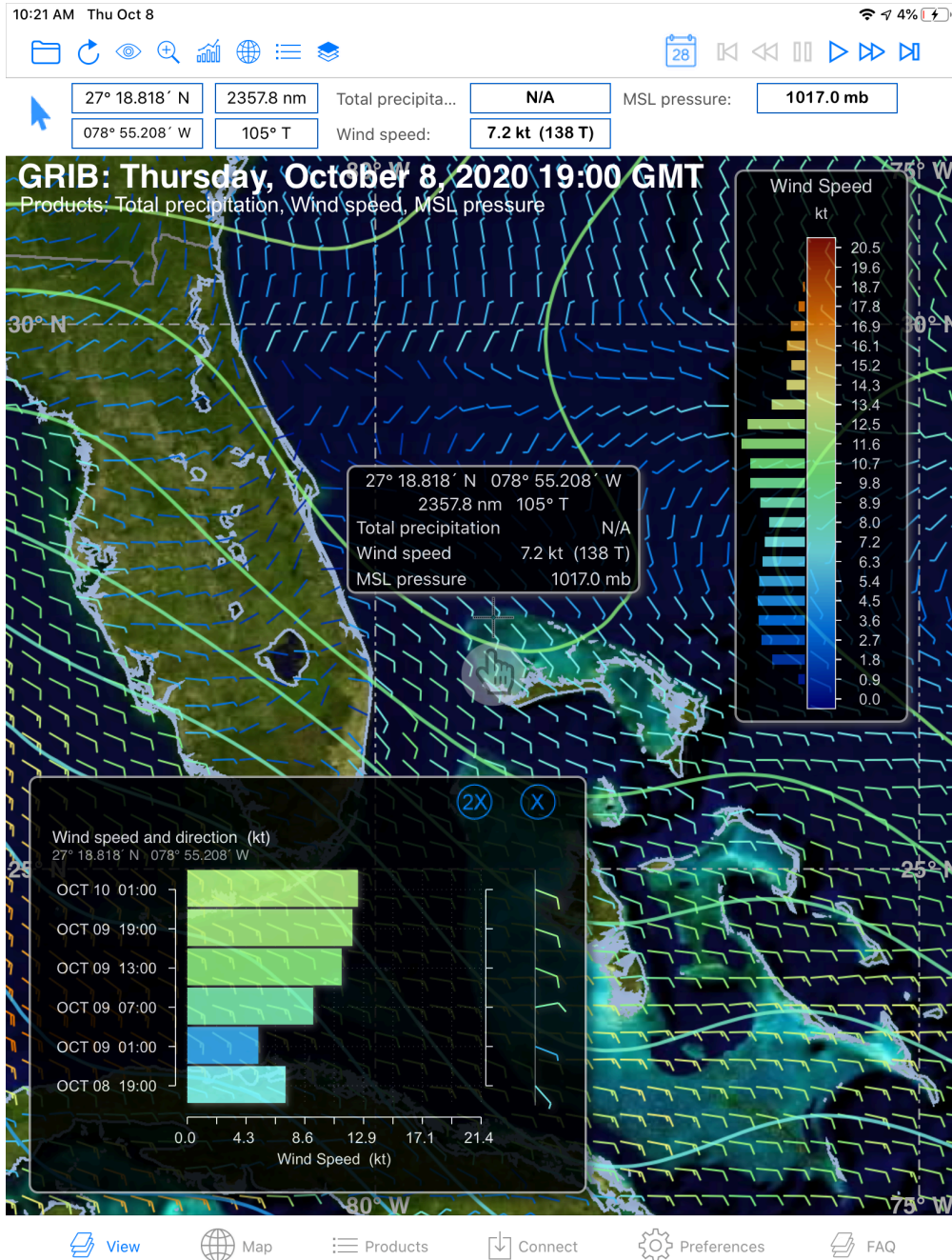

Off to the right are secondary variables associated with this product. Clicking the 2X icon in the upper right corner of the graph, doubles the size of the graph. 1X reduces it to normal size. X closes the graph.

Why would I use the Time Profile tool?

Find the Cursor Position pointer (it's a transparent box with a finger pointing to it). Put your finger on the graphical finger and move it around the screen. Watch the contents of the Time Profile tool. The Time Profiler is letting you look through time at any single position on the graph without paging through each frame of the grib. It offers a quick
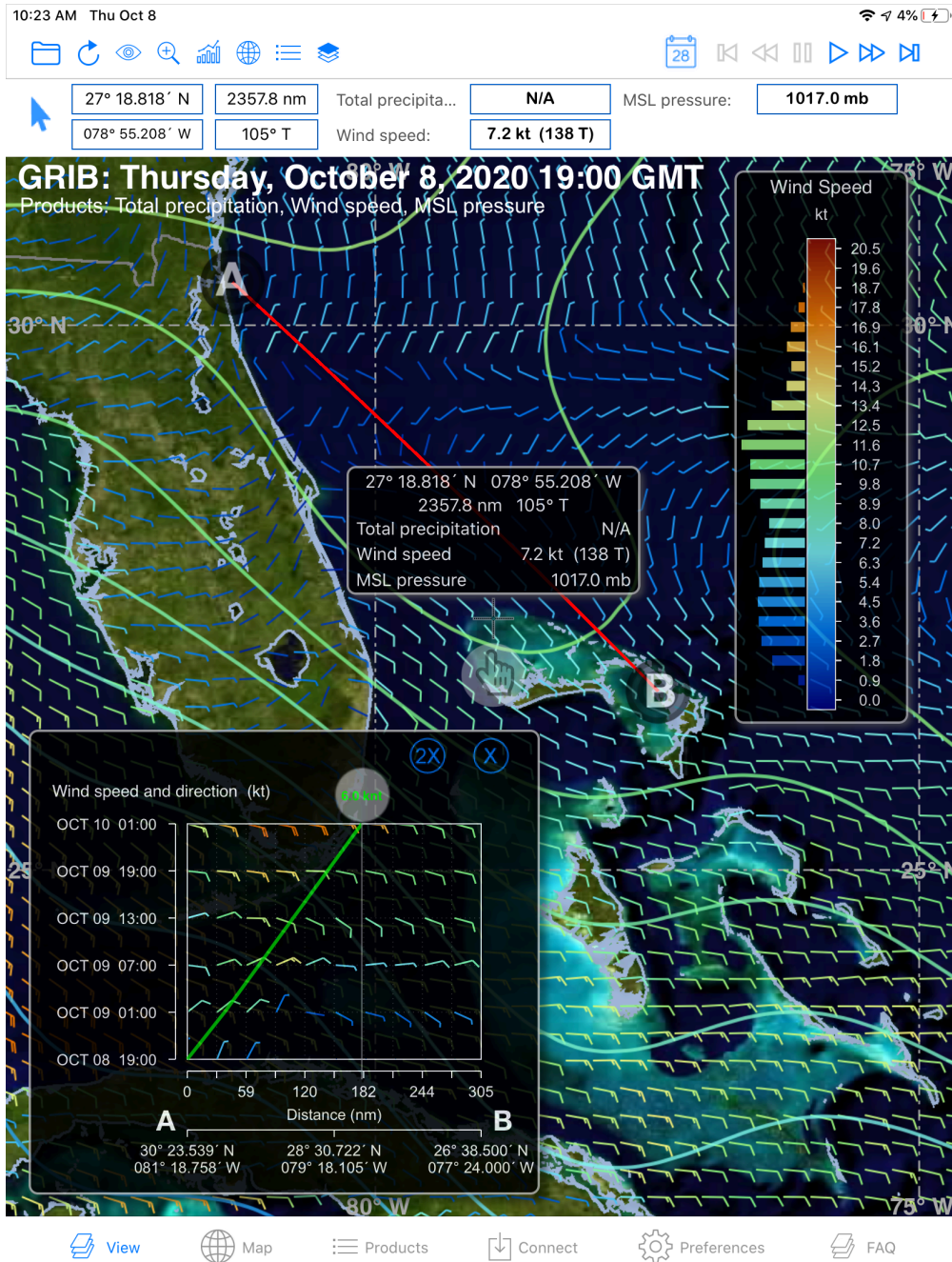
means of assessing whether now is the time to leave or if its better to wait or how conditions might be changing at several points along a planned route.
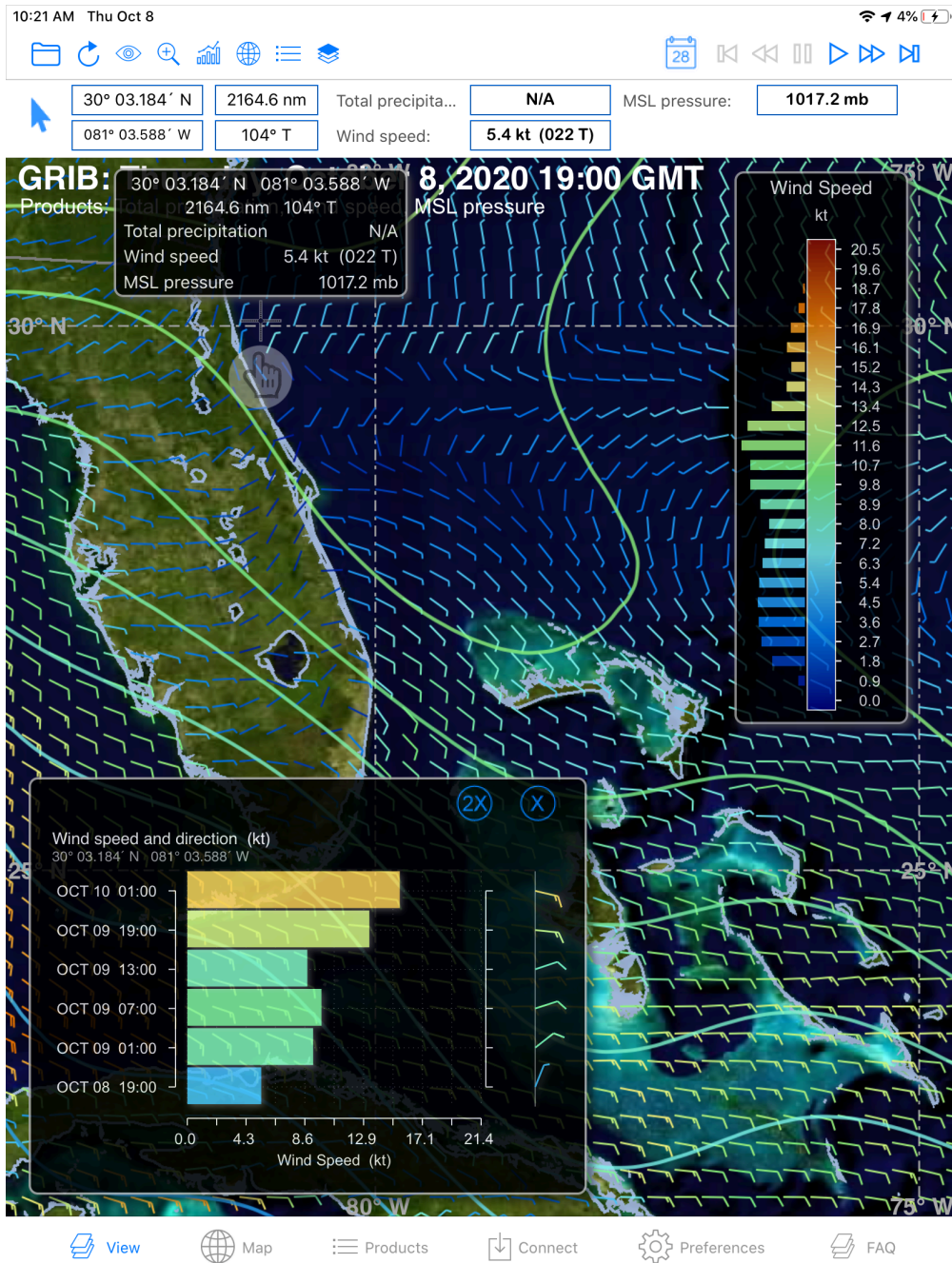
5.1.3. Trip Planner

Trip Planner is combining the information in Route Finder with that in the Time Profile to produce a quick look at the optimum route to your destination.

Like its siblings, the first thing to happen when you select Trip Planner is that a draft A-B route is drawn on your background weather map. You can grab A or B and move them to the actual start and end points of your upcoming voyage.

Knowing your start and end, A-B, locations, SAGA plots distance from your starting point on the Trip Planner graph's X axis and departure dates and times on the Y axis, then adds two adjustable, sliding 'bubbles'. One bubble moves up and down along the departure data axis to let you change your departure date. A second bubble moves along the top of your graph and calculates boat speed.

Notice that if you move the departure bubble up the date axis to later departure dates, the boat speed bubble moves left and speed posted inside that bubble does not change. As such, if you are departing later and moving at the same speed, you will not get as far along the 'distance from start'.

Of course, you may want to adjust your boat speed once you have changed the departure date. Do so by dragging the boat speed bubble right (or left). Note a transparent dropline to the X, distance-from-start, axis moves with you when you move the boat speed bubble. This allows you to easily see how far along your voyage route you will get at that boat speed and with that departure date.

How would I use the Trip Planner?

Start by looking at the field of weather data plotted inside of the Trip Planner graph. Are there obvious disturbances or weather events and wind conditions you would like to avoid in that field of data? Can you avoid them by changing your departure date or keeping a departure date and traveling slower or faster (if possible)? Trip Planner lets you evaluate and answer that question. It also lets you quickly reassess that conclusion as the model updates at each of its cycles.

Alternatively, you know how fast you are likely to sail or motor. Adjust the boat speed icon to that speed, then move the departure date bubble to evaluate alternative departure dates relative to the weather forecasted along and around your A-B route. This may reveal a better departure date or one which provides smoother or more comfortable sailing. Or maybe a departure date that allows you to take advantage of optimum wind conditions and faster sailing for your trip. By moving the line around, in effect you can search for a route that offers the best weather conditions for you and your sailing goals.

[▶] Watch the Trip Planner video tutorial

5.1.4. Thermocline

Sub-Surface Temperatures and FishMap with Thermocline

[YouTube icon] Click here to see our YouTube discussion of the Thermocline (You will need to have an internet connection for this)

The Thermocline tool is found under the Graphs icon on the View page of SAGA. It only appears when you have selected and downloaded the preconfigured Fishing Thermocline product suite on the Products page.

Once you have launched the Thermocline tool, you see a grid with depths along the vertical axis dropping from the surface to the deepest layer of the Thermocline grib you just downloaded.
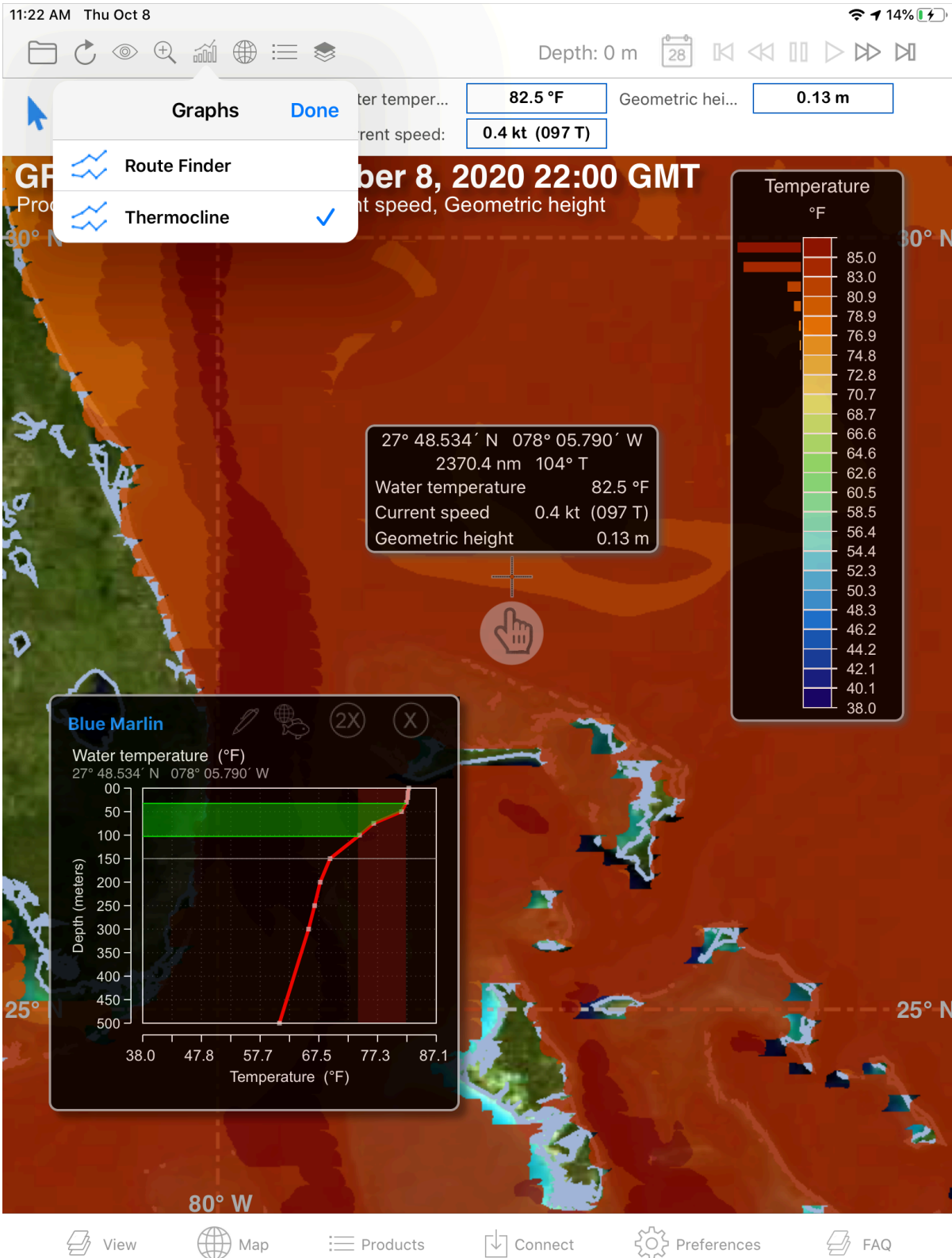
Depths are presented in meters or feet depending on your preference (you can change units by going to Preferences page in SAGA and selecting the Units and Formats menu). Below the grid are temperature values. These are the full range of temperatures present across ALL the temperature layers in your Thermocline.

Now grab the finger pointer and begin to move it around the GRIB file in the background. Do you see the red line which appears immediately inside the grid? This is the Thermocline. Looking at it closer you see it's the change in temperature (look at the temperature scale below the graph) as a function of depth (#'s along the side).

5.1.4.1. Mixed Layer Depth

Usually the Thermocline will drop straight or nearly straight down for 10s if not 100s of meters. It is saying that temperature is more or less steady through this range of depths. Then it will break sharply to your left and in doing so identify a layer in the sub-surface where temperature drops fast. The area above this shelf is called the Mixed Layer as water in this region easily mixes because of its similar physical properties.
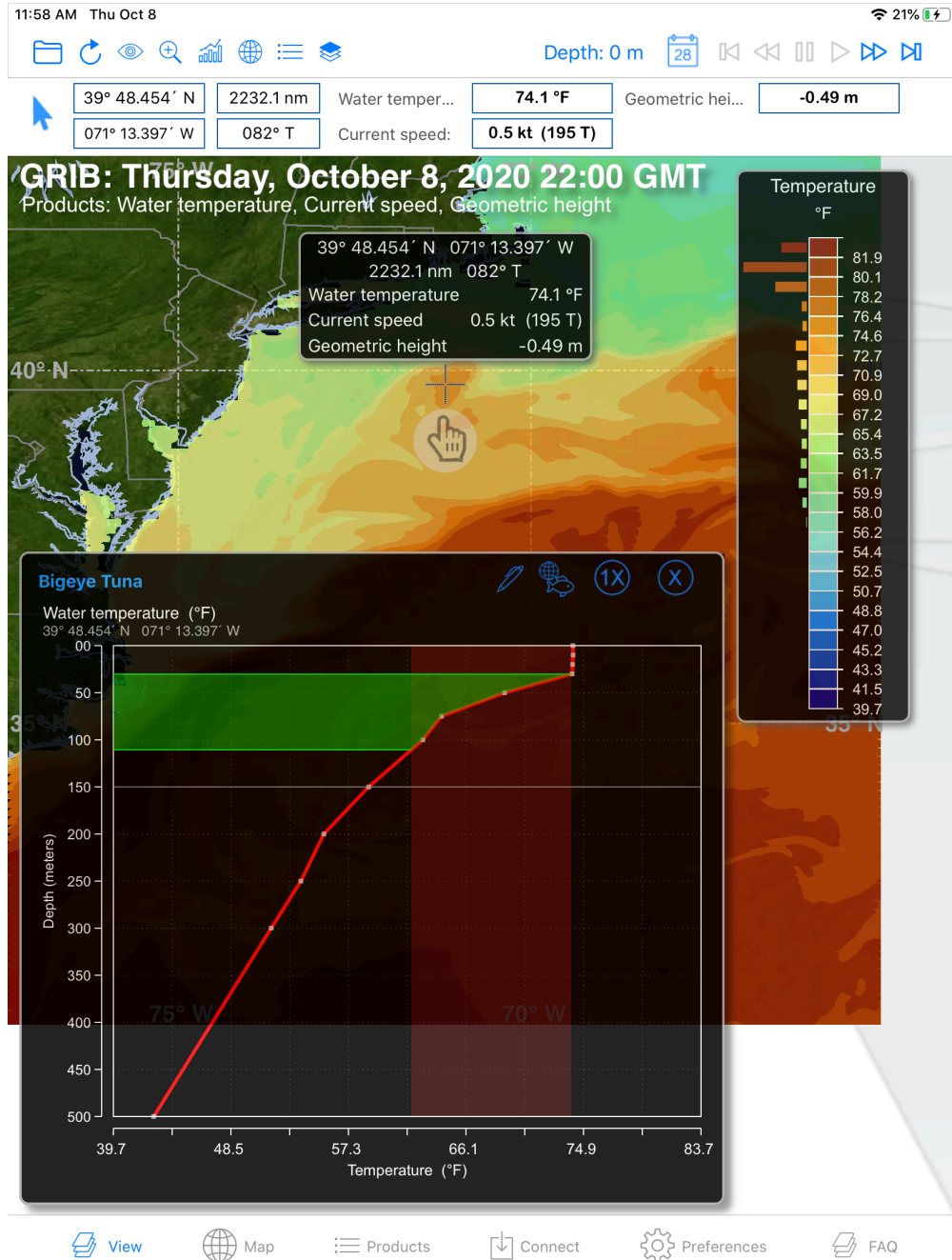
But the sharp break in temperature creates something of a wall between these warmer, mixed layers above and colder stratified layers below. It's a hugely important control zone for thermometric species like tuna and billfish. These species can then move between the zone below it preferred by their physical processes and the zone above it preferred by their prey. Knowing where the mixed layer lies and how the preferred temperatures of these species relate to that zone can provide another factor contributing to fishing success.

5.1.4.2. Target Species Optimum Temp at Depth

SAGA provides additional insight into your analysis of the water column. Look above the red Thermocline and to the upper left corner of the Thermocline box (above the word Water Temperature). You should see the name of a fish species there. Tap on it to see a list of 40 fish species.
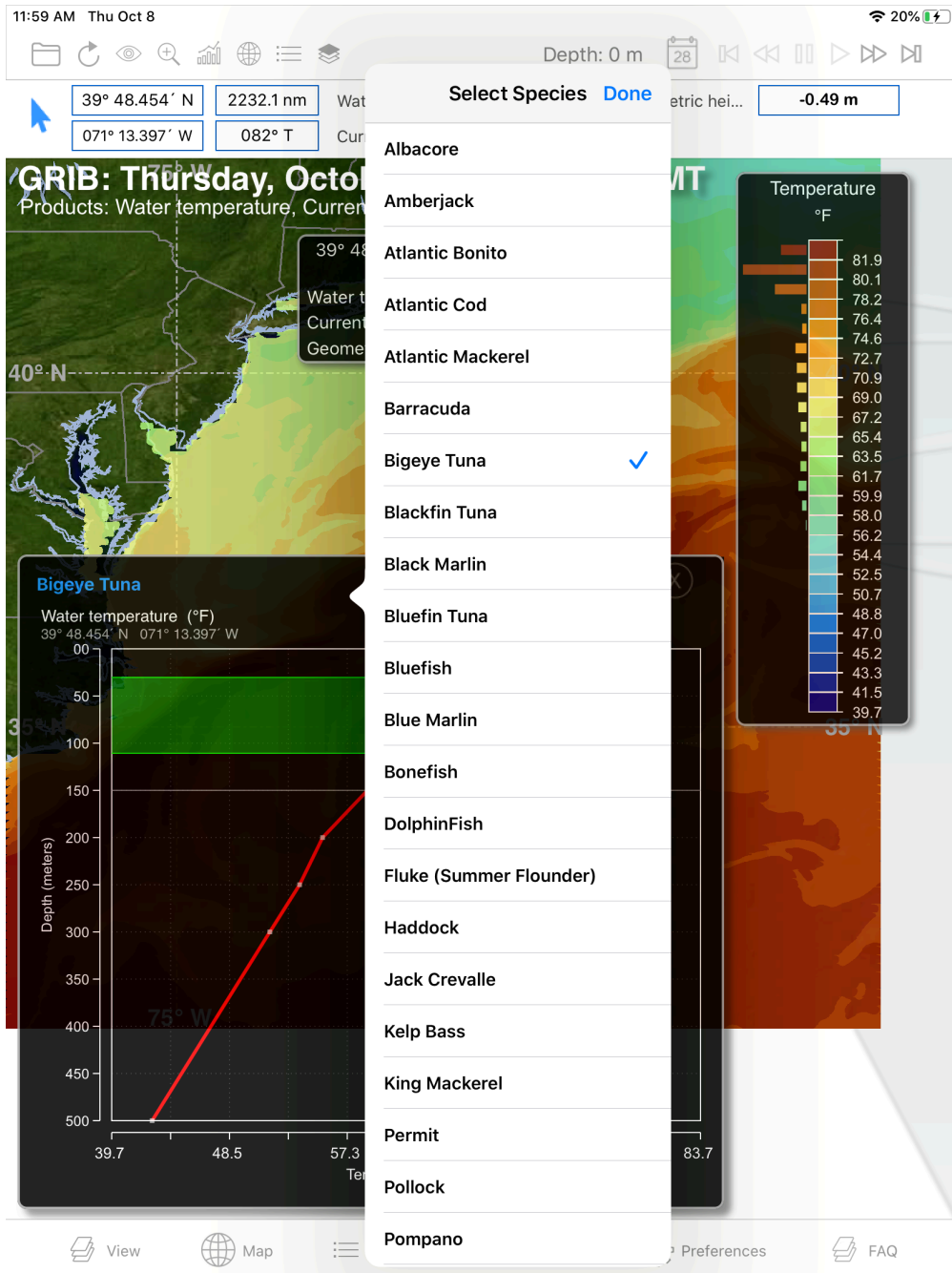
Select the Fish Species you are targeting; lets use Bigeye Tuna in this example. Once we select Bigeye, a subtle shaded vertical column appears in the grid behind the red Thermocline line which we will call the Optimum Temperature (FishOT) range. You will notice that the location of this column will move right or left in the graph depending on what species you have selected. It is showing you the temperature range favored by the species you have selected.
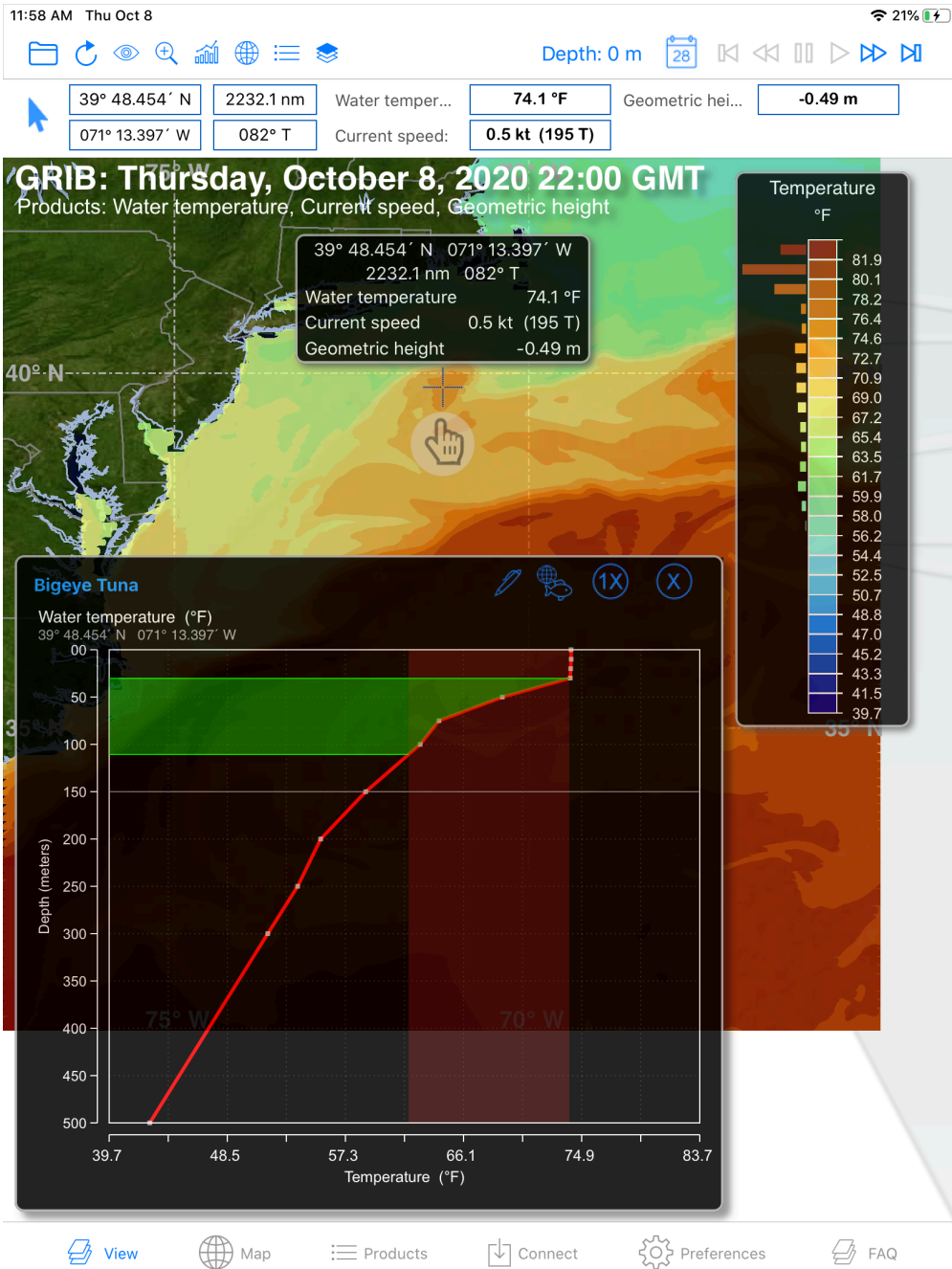
Move your cursor back into the grib. If there are temperatures in the grib favored by your target you will all of a sudden see a green, horizontal bar extending from the vertical depth axis on the far left to the right until it reaches the Thermocline curve. We'll call this bar the Optimum Temperature at Depth or OTD bar. The upper edge of the OTD bar is equal to the maximum temperature for your target species and it is positioned to show you the depth at which this temperature occurs in the ocean underneath your cursor. Similarly, the lower edge of the OTD bar represents the minimum temperature for your target species and the depth at which that minimum temperature is located. In short, this horizontal bar shows you the depths at which the optimum temperatures for your target species exist in the ocean at the position of your cursor.

5.1.4.3. Adjusting Target or Target Temp Range

Disagree with the Optimum Temperature range we've started with for your target species? No problem. Simply click on the icon which looks like a pen at the top of the grid,

change the upper and lower temperatures to values you prefer by sliding the temperature bubbles to the right or left and click Save.
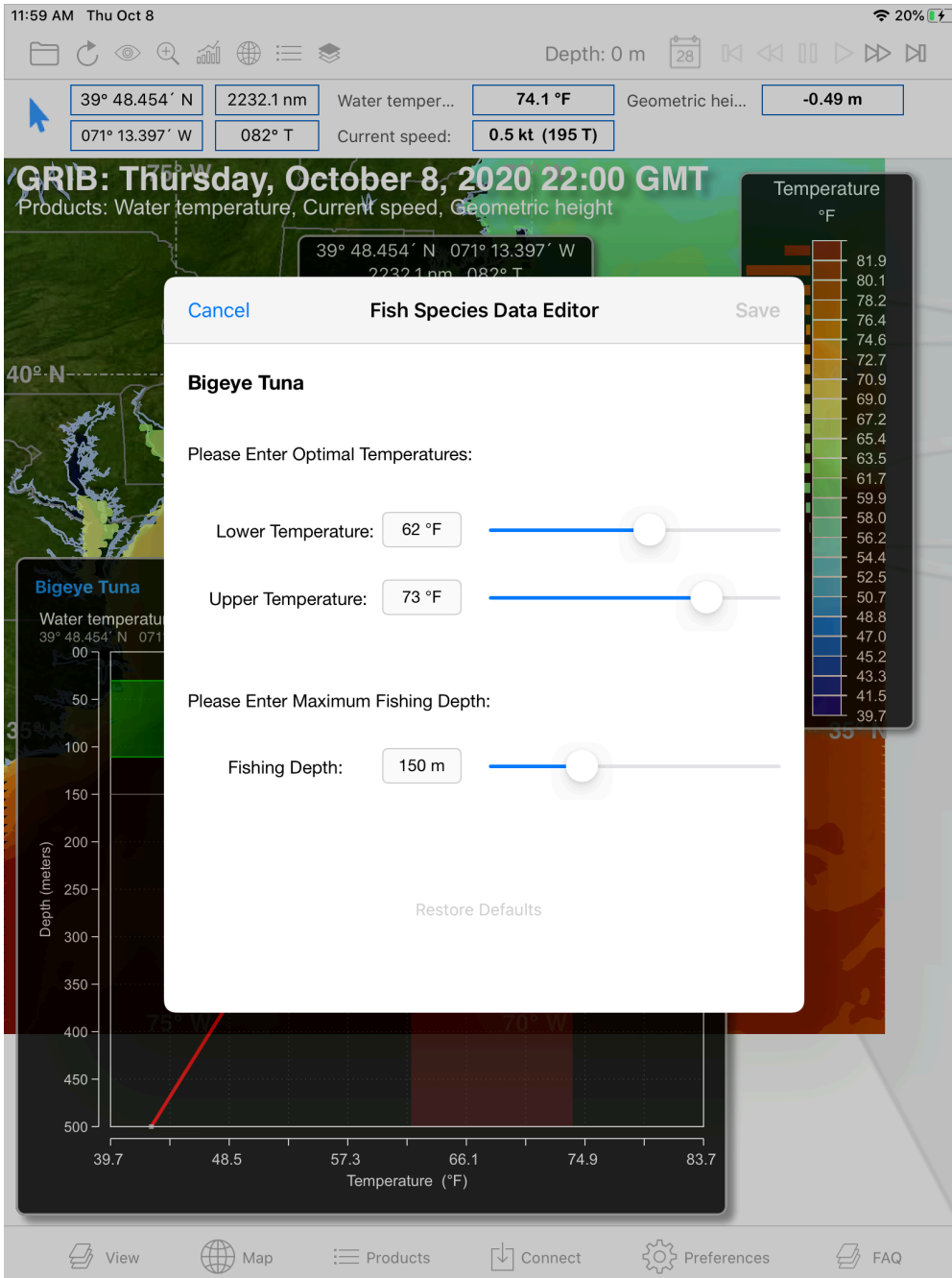
New temperatures are saved on a species-by-species basis. Should you want to switch back to the original values, click on Restore Defaults at the base of the Edit screen and the original temperatures for that species will be reloaded.

Or maybe you are targeting a species not listed on the pull-down? Scroll to the bottom of the list of included species to find Other Species 1, 2 or 3. Select one of these and customize the temperature ranges to your liking for that species.
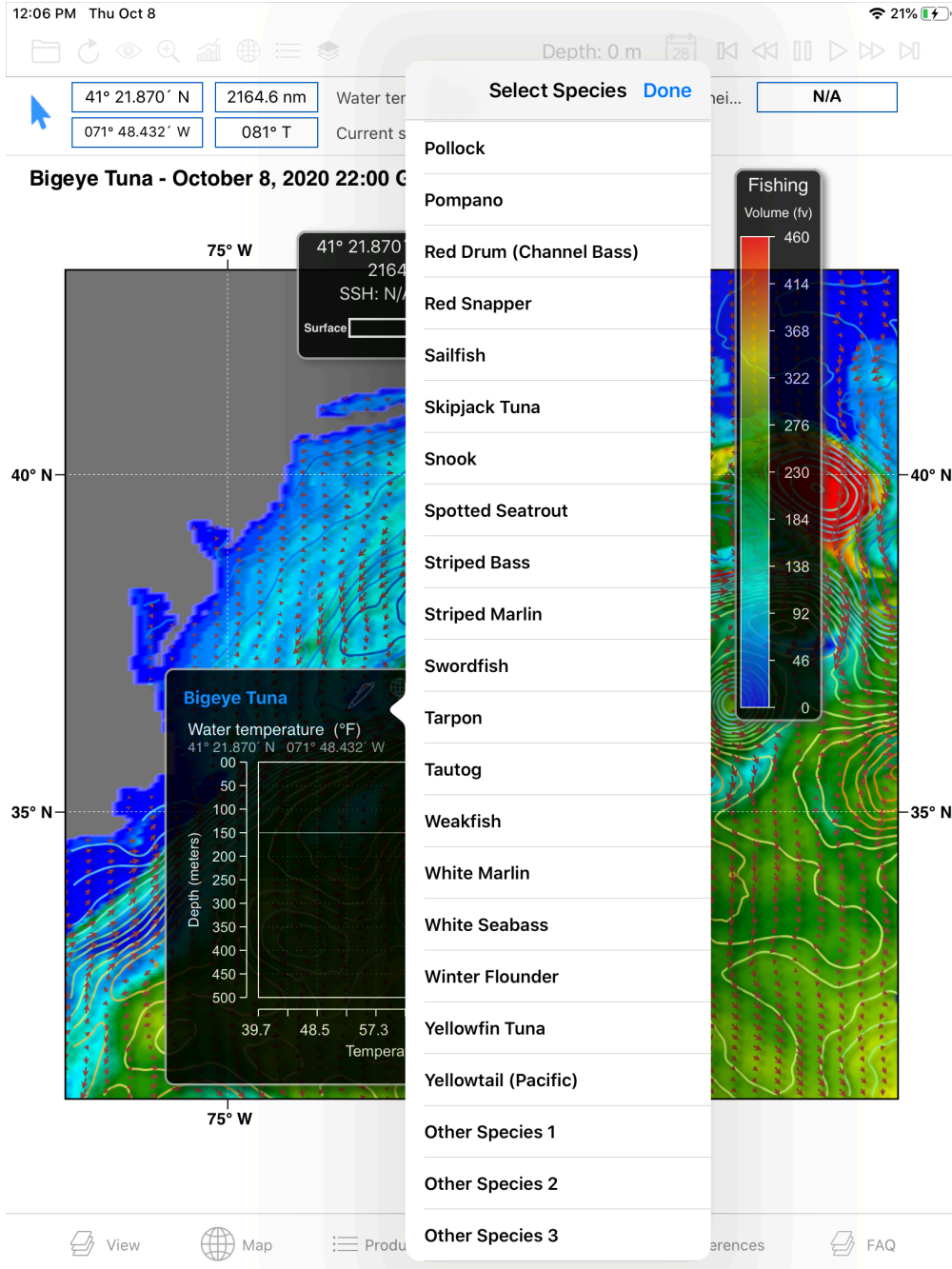
5.1.4.4. Fishing Depth

On the Target Species Edit screen you can also set the Fishing Depth for your vessel or gear. Even though the thermocline graph may show a lot of water at the preferred temperatures for your target at a location, what if the temperatures are too deep for you to use? The white line you see cutting across the Thermocline graph is the Maximum Fishing Depth for your boat or gear.
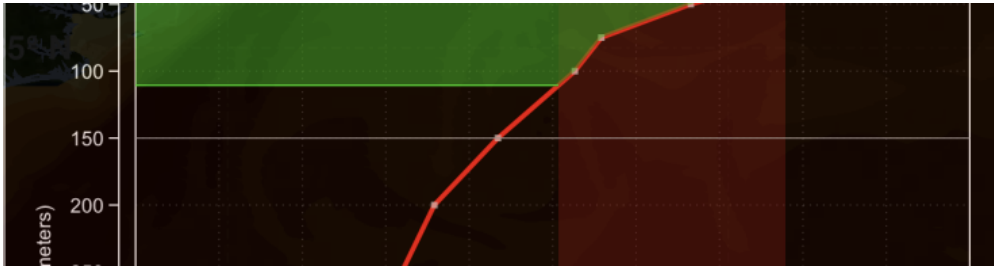
Adjust the depth of this line by clicking on the Edit pen and sliding the Fishing Depth slider left or right.

Cancel   **Fish Species Data Editor**   Save

Bigeye Tuna

Please Enter Optimal Temperatures:

Lower Temperature: | 62 °F |

Upper Temperature: | 73 °F |

Please Enter Maximum Fishing Depth:

Fishing Depth: | 150 m |

Restore Defaults

5.1.4.5. Fishing Volume

Let's move your cursor around the background GRIB until you once again see the green bar extend outward from the left axis to the red Thermocline line. The portion of this bar which lies ABOVE your Maximium Fishing Depth represents the Fishing Volume (temperature x depth) for your target species at this location.
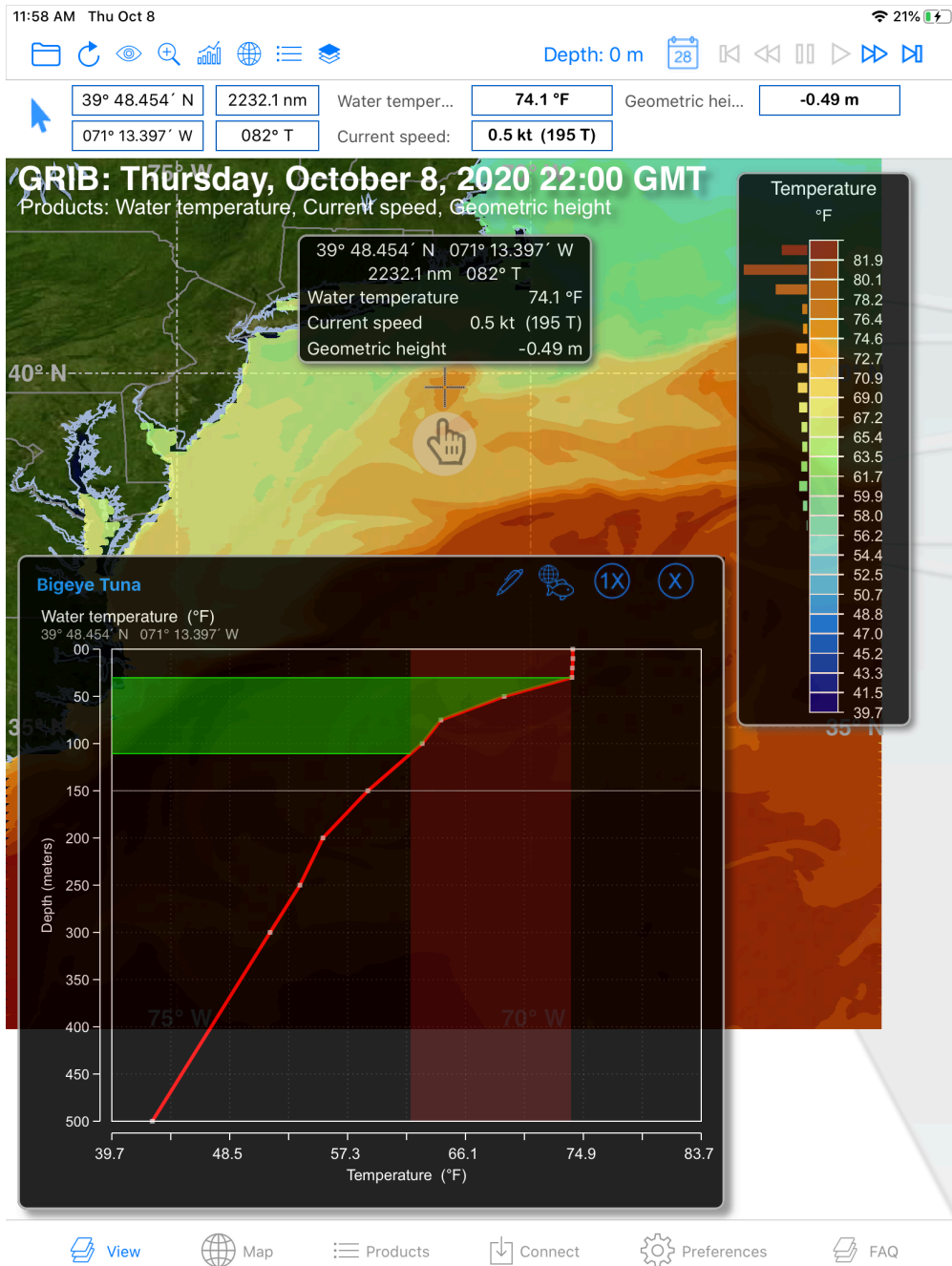
In general, the bigger this area above the Max Fishing Depth the more opportunity to find your target species at this location. That is a really important point. For example, if all the preferred temperatures (and thus the green Fishing Volume bar) for the species you are targeting are deeper than you can fish, then your fishing volume is zero.

Move your cursor around the downloaded Thermocline file and observe how the Thermocline, the OTD bar and the Fishable Volume triangle change with location. Again, bigger bars mean there is more water at this location which is at temperatures that match your target species Optimum Temperature. Smaller bars mean there is less such water.

Other factors being equal, opportunities for successful fishing outcomes should increase as the size of the Fishable Volume increases.

5.1.4.6. FishMap

We could stop right there and have an amazing fish finding tool. But we don't stop!

By moving your cursor around you can inspect your fishing area and assess accessible Fishing Volume and Mixed Layer Depth point by point. But what if you then had a means of assessing how Fishing Volume and thus fishing opportunity changes across the whole field of the GRIB you downloaded? In one picture! A means of integrating not only across the ocean but also looking vertically 'into' the ocean? That summarized this in one color-coded picture highlighting how the fishing volume for your target and your boat/gear changes in the whole ocean around you?

We've done that... This is the Fish Map.

Click on the icon above your Thermocline graph that looks like a fish. Three things happen:
1) Your background water temperature grib is replaced by a new rendering, the FishMap,
2) The temperature palette is replaced by a Fishing Volume palette and
3) An OTD meter appears in your cursor tracking graphic.

Bigeye Tuna - October 8, 2020 22:00 GMT
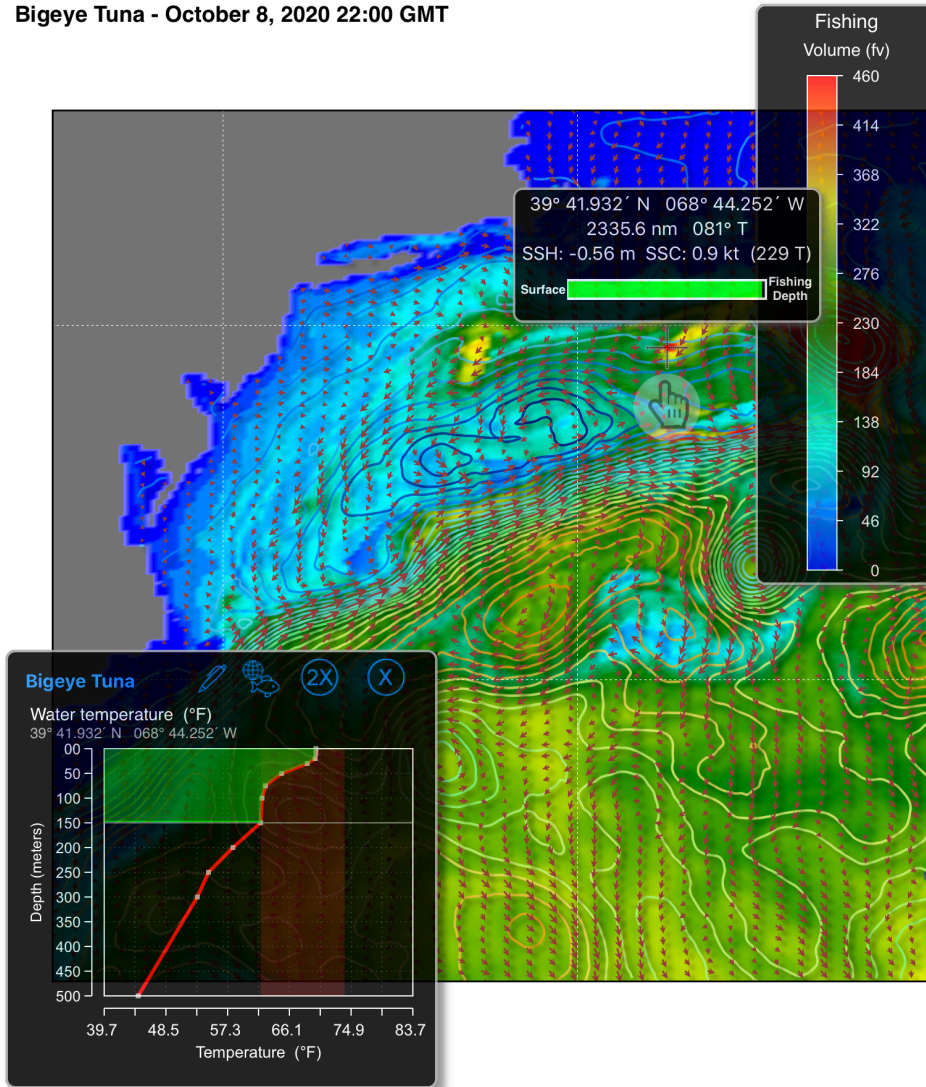
Let's explain each of them:

1) The background rendering now depicts the same area of the ocean that you have been looking at with your background GRIB and the Thermocline chart. Except that now we are no longer looking at the temperatures themselves but instead the amount of water containing target temperatures positioned above your maximum fishing depth. Again, and this is important, even though they are color-coded, these are NOT temperatures. The colors are Fishing Volumes. In one step, SAGA has swept through your background GRIB at ALL depth levels, calculated the Fishing Volume bar we described above and adjusted it for your Maximum Fishing Depth, at each of those points. It then color coded the volumes it came up with and plotted them as the FishMap;

2) The fishing volumes in the FishMap are shaded from cold blue to hot red. Find the Fishing Volume palette and notice how as the colors move towards red, the Fishing Volumes increase. In short, your eye is quickly drawn to

Copyright OCENS Inc.   www.ocens.com   support@ocens.com

the bright yellows and reds in the Fishing Map because those areas of the ocean contain more water at your target temps and depths than do the areas shaded green and blue.

3) The OTD meter in your cursor tracking graphic provides another quick means of assessing fishability. Notice that the horizontal OTD meter says Surface at its left end and Fishing Depth (the depth you have set for your gear) at the right end of the meter. As you move your cursor around the FishMap, the amount and position of the green in the OTD meter changes.

      a) If your target species temperatures extend from the surface all the way to the fishing depth, then the OTD meter will be all green.
      b) If the temperatures start at the surface and go down to a certain depth than the green will start from the left and extend to the right; or c) Target temperatures may be at depth and extend upwards but not quite to the surface. Then the green bar moves from the right to the left. With this meter we are trying to provide 3-D insights from a 2-D rendering.

6. Data Display

Below the top menu bar you will see data fields that are related to the curser position.

| 46° 50.787′ N | 252.1 nm | MSL pressure: | 1021.3 mb | | 47° 23.901′ N |
| 128° 25.534′ W | 265° T | | | | 122° 19.464′ W |
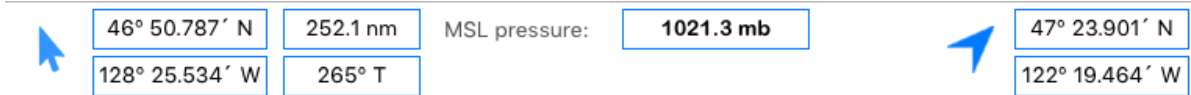
This data includes:

Finger Position indicator icon
• *You can touch this icon to toggle this feature on (solid blue) and off (blue outline). When this feature is on you will see the following:*
• *Cursor lat/lon.*
• *Range and Bearing to cursor from home location.*
• *A variety of values based on what data you are viewing and the finger pointer position on the map.*

• *Home Location Indicator icon. You can touch this icon to toggle this feature on (solid blue) and off (blue outline).*
• *Home locations lat/lon.*

Active Curser Position shown on map

Active Home Location shown on map

 View screen tools video tutorial

7. Screen Bottom Buttons

The buttons on the bottom of the screen will take you to the various screens.

View

Analyze your acquired GRIB and weather data layers here. You are automatically returned to this screen at the end of any data download to view and manage the acquired content.

Map

Move and resize the red geo-box on this page to select the area of the world for which you want to retrieve data.

Products

GRIB, text, radar and buoy libraries from which you can customize your weather download are presented here

Connect

Summarizes the data you are about to download, the size of that data download in kilobytes and allows you to choose the communication pathway, including satellite options, you will use to download that data.

Preferences

Control screens you use to define the look and feel of your personal deployment of SAGA.

FAQ

Answers to questions you may have about data types, analytical tools, connection methods and much more.

7.1. View

| View | Map | Products | Connect | Preferences | FAQ |

The **View** button takes you to the main page to view downloaded files

View   Map   Products   Connect   Preferences   FAQ

7.2. Map

The Map button takes you to a world map on which you can define the geographic region for your custom weather downloads.

Select the Geographic Region for your weather download by placing your finger in the middle of the red box and dragging it over the area you desire.

Resize the box by dragging one of the corners in or out. As you make the box bigger or smaller its XY dimensions in degrees display dynamically. The box will go no smaller than 6 degrees by 6 degrees.

Bumping the red box against the East or West edge of the world map, while your finger remains in the center of the box, will slow the west edge further west and the east edge further east. More quickly reposition the base map by moving your finger out of the red box and touching the map anywhere else. Hold and drag the map left or right.

Tap the Reset button in the upper left to return the box to where it was when you began this session.

Tap the Center button in the upper left to move the red box to the East-West center of the area of the world in which it sits on your screen.

When finished, tap on the View, Products, Connect or Preferences menu at the screen bottom.

▶ Watch Using the Saga Map screen video tutorial

7.3. Products

The Products page is the beating heart of the SAGA weather library. Identify the GRIBs and other data you want to acquire for your target area with SAGA through your satellite or other data connection.

The Products page is broken into 7 levels:

[GRIB Met](#) containing [Met Fast](#), [Met High](#) and [Met Super](#) levels

[GRIB Ocean](#) containing [Ocean Fast](#), [Ocean High](#) and [Ocean Currents](#) levels.

[GRIB Fishing](#) containing [Fishing Surface](#), [Fishing Thermocline](#), and [Fishing Subsurface](#) levels.

[GRIB Special](#) containing [GFS Hourly](#) forecasts and [Storm](#) levels.

▶ [View video tutorial on GRIB data selections](#)

[Text Forecasts](#) containing [Coastal Zone](#), [Offshore](#) and [High Seas](#) levels.

[Marine Buoys](#) and,

[Nexrad Radar](#)

▶ [View video tutorial on Text, Buoy, and Radar selections](#)

1:26 PM Wed Oct 14	📶 ⚷ 100% 🔋

GRIB Met: ⌄

GRIB Ocean: ⌄

GRIB Fishing: ⌄

GRIB Special: ⌄

Special GFS Hourly
Hourly Wind, Pressure and Precipitation at HIGH Resolution -

Storm
Lightning, CAPE, and Lifted Index -

Text Forecasts Layer:

Coastal Zones Text Forecast
Please select coastal zones to download. -

Offshore Zones Text Forecast
Please select offshore zones to download. -

High Seas Zones Text Forecast
Please select high seas zones to download. -

Buoy Layer:

Buoy Observations
Marine Buoy Observations None

Radar Layer:

Radar Echos (NEXRAD)
Please select NEXRAD sites Images to download. -

View   Map   Products   Connect   Preferences   FAQ

7.3.1. GRIB Met

The GRIB Met level permits quick, one-tap selection of weather content in three resolutions, Fast (low 1 degree resolution), High (0.25 degree resolution) or Super (0.1 degree and higher resolution).

GRIB Met:	⌄
Met Fast Wind, Pressure and Precipitation at FAST Resolution	-
Met High Wind, Pressure and Precipitation at HIGH Resolution	1 day
Met Super Wind and Precipitation at SUPER Resolution around the US and Caribbean	-

▶ View video tutorial on GRIB data selections

7.3.1.1. Met Fast

Met Fast group is a pre-configured set of wind, pressure and precipitation data at 1 degree of spatial resolution.We use the most recent upgrade of the GFS model, the FV3, as the basis of this Met section. The FV3 increased the power and resolution of the GFS, most recently it correctly predicting the path of category 4 Hurricane Laura over southwestern Louisiana in August 2020 when other well-known models were sending it elsewhere.

Use the Met Fast section to get a quick assessment of impending weather anywhere from 1 to 7 days out (with 4 frames per day) and especially if you will be retrieving weather data over low bandwidth satellite connections. Data updates on the half-hour at approximately 5, 11, 17 and 2300 UTC.

If you see a weather event in the Met Fast data at which you want a closer look, then move to Met High to get a closer look...

7.3.1.2. Met High

The Met High data also is a preconfigured set of wind, pressure and precipitation content but now it is at a resolution (0.25 degrees) 12x greater than the Fast data. For example, in any 3 degree x 3 degree block. Met High will provide 144 data points as opposed to 12 data points for the Fast product. But an important factor if using low bandwidth the satellite, file size increases proportionally. A 20 second download of the Fast content turns into a 3 minute download of the High product.

We also use NOAA's new GFS FV3 model as the base of this level. Met High data is available at 1 to 7 day forecast lengths. Each day is further broken into 4 frames separated by 6 hours apiece with the models updating at approximately 5, 11, 17, and 2300 UTC.

7.3.1.3. Met Super

If you have a Wi-Fi or high bandwidth satellite connection, then the Met Super section is also an option. We use RAP and HRRR data in the Met Super section. Please review the RAP and HRRR section of the FAQ file to better understand the scope, resolution and coverage of these data. Bottomline, tremendous spatial resolution but at a cost in file size. Some products resolve to as high as 30 data points per degree of lat/lon.

The Met Super data forecasts wind and precipitation data out 24 hours. You can select one or more 3 hour forecast blocks when choosing to use Met Super data. This super resolution data updates at approximately the quarter hour, every hour.

7.3.2. GRIB Ocean

GRIB Ocean content includes preconfigured sets of waves, wind, precipitation and pressure content at [Fast](#) (1 degree) and [High](#) (0.25 degree) resolution as well as [Ocean Currents](#) information.

GRIB Ocean:	⌃
Ocean Fast Waves, Wind, Pressure, and Precipitation at FAST Resolution	-
Ocean High Waves, Wind, Pressure, and Precipitation at HIGH Resolution	-
Ocean Currents Ocean Surface Currents	-

7.3.2.1. Ocean Fast

The Ocean Fast layer provides wave, wind, precipitation and pressure content. We choose the best model available for the particular area of the world ocean in which you are interested. Obviously, the Great Lakes model is in play for your Great Lakes wave and met information, then the NDFD for all areas covered by the NDFD and then the WW3 Navy model for all other locations.

Data is available for forecast periods from 1 to 7 days. NDFD and Great Lakes data update at approximately 4, 10, 16 and 2200 UTC. The WW3_Navy model updates at approximately 7 and 1900 UTC

7.3.2.2. Ocean High

The Ocean High layer also provides wave, wind, pressure and precipitation data but now at a higher resolution of 0.1 to 0.2 degrees. We switch to the high resolution version of the Great Lakes model, use the NDFD and RAP/HRRR models around the US, Caribbean and Hawai and the Multi_Global source elsewhere. Globally, the latter model provides resolution at 0.2 to 0.25 in this Ocean High deployment as to the 1 degree global resolution presented in the Ocean Fast data.

As would be expected with higher resolution data, file sizes and download durations increase when you decide to use these data instead of those associated with the Ocean Fast. Expect size and download times to be 3 to 4x larger than when downloading the same region using Ocean Fast data.

Data is available for forecast periods of from 1 to 7 days. Data is updated 4 times each day at approximately 5, 11, 17 and 23 UTC.

7.3.2.3. Ocean Currents

Ocean current data for forecast periods of 1 to 5 days is available here. The spatial resolution of the data is 0.083 degrees. Data is updated daily at approximately 1700 UTC.

7.3.3. GRIB Fishing

Trusted and exceptionally affordable fishing data is available in this section. The preconfigured data sets include Fishing Surface consisting of sea surface temperature, sea surface height and sea surface currents; Fishing Thermocline containing sub-surface fishing temperatures profiles down to a depth of 1000 meters along with sea surface height and sea surface currents; and Fishing Subsurface which allows you to select temperature and specific depths and layer this with surface height and currents.

Content within each preconfigured data set automatically layer on one another to allow you to look through the data to make clinical assessments of fishing opportunity.

GRIB Fishing:	⌄
Fishing Surface Sea Surface Temperature, Height and Currents	3 days
Fishing Thermocline Sub-surface Thermocline with Surface Height and Currents	-
Fishing Subsurface Sub-surface Temperature at Depth with Surface Height and Currents	-

7.3.3.1. Fishing Surface

Fishing Surface is a preconfigured set of global sea surface temperature (SST), sea surface height (SSH) and sea surface current (SSC) data available at 0.083 degrees of spatial resolution.

Data is available for forecast periods of 1 to 5 days. It is updated daily at 1700 UTC.

7.3.3.2. Fishing Thermocline

The preconfigured Fishing Thermocline product set moves your analysis beneath the ocean surface. It consolidates into one download temperatures at 13 subsurface temperatures ranging from 10 to 1000 meters. You can choose to look at any one of these layers in relation to SSH and SSC data for the same region or use the SAGA Thermocline tool to dig into the sub-surface conditions that affect your target species.

Just some of the capabilities of the Thermocline tool include the identification of the depth of the Mixed Layer under any surface position, the ability to choose your target species and the preferred fishing temperatures of that species, the volume of sub-surface water that exists in that temperature range for any given location and across your entire fishing region, the maximum fishing depth at which the gear you use can operate and how much water at your preferred temperatures exists above and below that depth. Add to this the layering of these data with SSH and SSC information and you have a one-of-a-kind fishing tool.

Thermocline data is updated once each data at approximately 900 UTC. Spatial resolution is 0.075 degrees.

7.3.3.3. Fishing SubSurface

Whereas the Fishing Thermocline download retrieves the entire set of sub-surface temperature from 0 to 1000 meters, the Fishing SubSurface layer allows the choice of a target sub-surface layer. Thirteen layers ranging from 0 to 1000 m are available. The preconfigured content set retrieves SSH and SSC data along with the sub-SST data for the target region.

Sub-surface data is updated once each data at approximately 900 UTC. Spatial resolution is 0.075 degrees

7.3.4. GRIB Special

Into this category we have placed product sets that do not fit neatly into one of our other GRIB levels. It includes [hourly high-resolution wind, pressure and precipitation data](#) as well as [lightning, lifted index and CAPE](#) content.

GRIB Special:	⌃
Special GFS Hourly Hourly Wind, Pressure and Precipitation at HIGH Resolution	-
Storm Lightning, CAPE, and Lifted Index	-

7.3.4.1. Special GFS Hourly

If weather is changing rapidly or you have a shorter transit, the GFS Hourly set of wind, pressure, and precipitation information increases the number of weather looks from one every six hours to one every hour.

Data is made available in 6 hour blocks from 006 through 126 hours with each block consisting of 6 forecasts. You can choose one or more than one of these blocks in your data request.

Model runs are conducted every three hours with new data pulled on the quarter hour starting at 0100 UTC. The spatial resolution of the data is 0.25 degrees.

7.3.4.2. Lightning, Lifted Index & CAPE

This preconfigured set focuses on storm development and location by either evaluating atmospheric instability (CAPE and Lifted Index) or showing in near-real time Lightning strikes which commonly occur at frontal edges.

CAPE and Lifted Index data are available at 0.025 degrees of spatial resolution and are updated 4x per day at 5, 11, 17 and 2300 UTC.

Lightning data is presented as lightning strike points. New data is pulled ever 15 minutes to OCENS' Everon servers and the 4 most recent retrievals are compiled into the download you receive when you retrieve this preconfigured product set. Consequently, lightning data is some of the most timely met data available in SAGA. Combining its measure of near-real-time strike information to assess the current location of frontal edges with the likelihood of storm development provided by CAPE and Lifted Index information provides an exceptional and powerful means of remote storm monitoring.

7.3.5. Text Forecasts

Coastal and Offshore forecasts are available for the US, Caribbean, and parts of Canada. High Seas and Met Area forecasts are available globally.

Text Forecasts Layer:	
Coastal Zones Text Forecast Please select coastal zones to download.	-
Offshore Zones Text Forecast Please select offshore zones to download.	-
High Seas Zones Text Forecast Please select high seas zones to download.	-

The text forecasts you will see available to you are a function of the geographic region you have identified and boxed on the Map page.

SAGA Explorer for iPad

Coastal Marine zones   **Done**

AMZ550
Flagler Beach to Volusia-Brevard County Line 0-20 nm

AMZ552
Volusia-Brevard County Line to Sebastian Inlet 0-20 nm

AMZ555
Sebastian Inlet to Jupiter Inlet 0-20 nm

AMZ570
Flagler Beach to Volusia-Brevard County Line 20-60 nm

AMZ572
Volusia-Brevard County Line to Sebastian Inlet 20-60 nm

AMZ575
Sebastian Inlet to Jupiter Inlet 20-60 nm

AMZ610
Lake Okeechobee

AMZ630
Biscayne Bay

AMZ650
Coastal waters from Jupiter Inlet to Deerfield Beach FL out 20 NM

AMZ651
Coastal waters from Deerfield Beach to Ocean Reef FL out 20 NM

AMZ670
Waters from Jupiter Inlet to Deerfield Beach FL from 20 to 60 NM

AMZ671
Waters from Deerfield Beach to Ocean Reef FL from 20 to 60 NM exc...

GMZ031
Florida Bay including Barnes Sound, Blackwater Sound, and Buttonwo...

GMZ032
Bayside and Gulf side from Craig Key to West End of Seven Mile Bridge

GMZ035
Gulf of Mexico from West End of Seven Mile Bridge to Halfmoon Shoa...

GMZ042
Hawk Channel from Ocean Reef to Craig Key out to the reef

GMZ043
Hawk Channel from Craig Key to west end of Seven Mile Bridge out to...

GMZ044
Hawk Channel from west end of Seven Mile Bridge to Halfmoon Shoal...

GMZ052
Straits of Florida from Ocean Reef to Craig Key out 20 NM

GMZ053
Straits of Florida from Craig Key to west end of Seven Mile Bridge out...

All

Preferences   FAQ

[▶] [View video tutorial on Text, Buoy, and Radar selections](#)
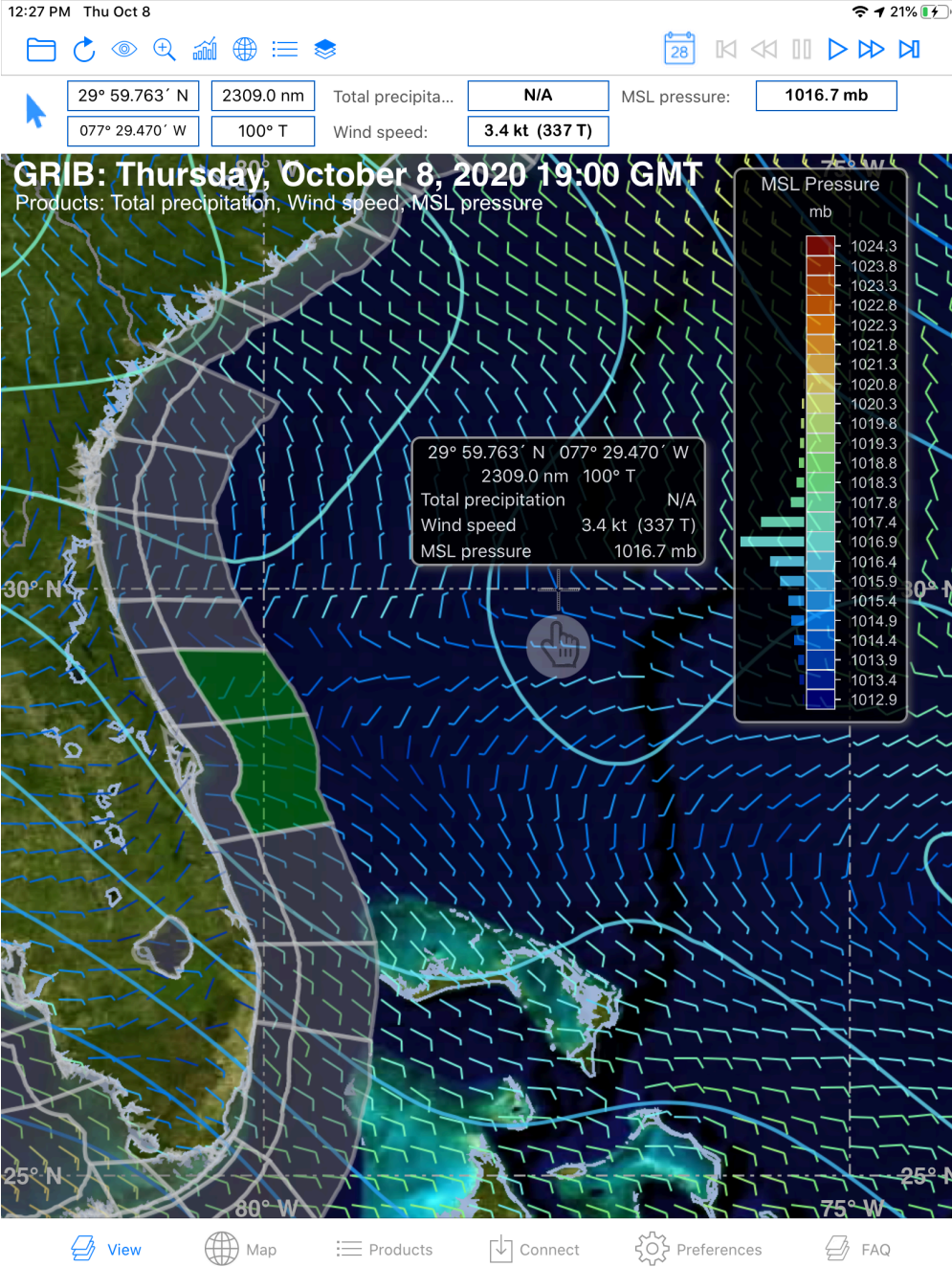
7.3.5.1. Coastal Forecasts

Almost 600 coastal forecasts covering the US, Caribbean, Puerto Rico and Canada are available. The Coastal forecasts are generally updated every 6 hours or as conditions warrant.

Tap the Coastal Zones Text Forecast layer and a drop down will appear showing you the forecasts available for the geographic area you have boxed on the Map screen. Tap on one or more of these forecasts to slot it for download with your next pull request.
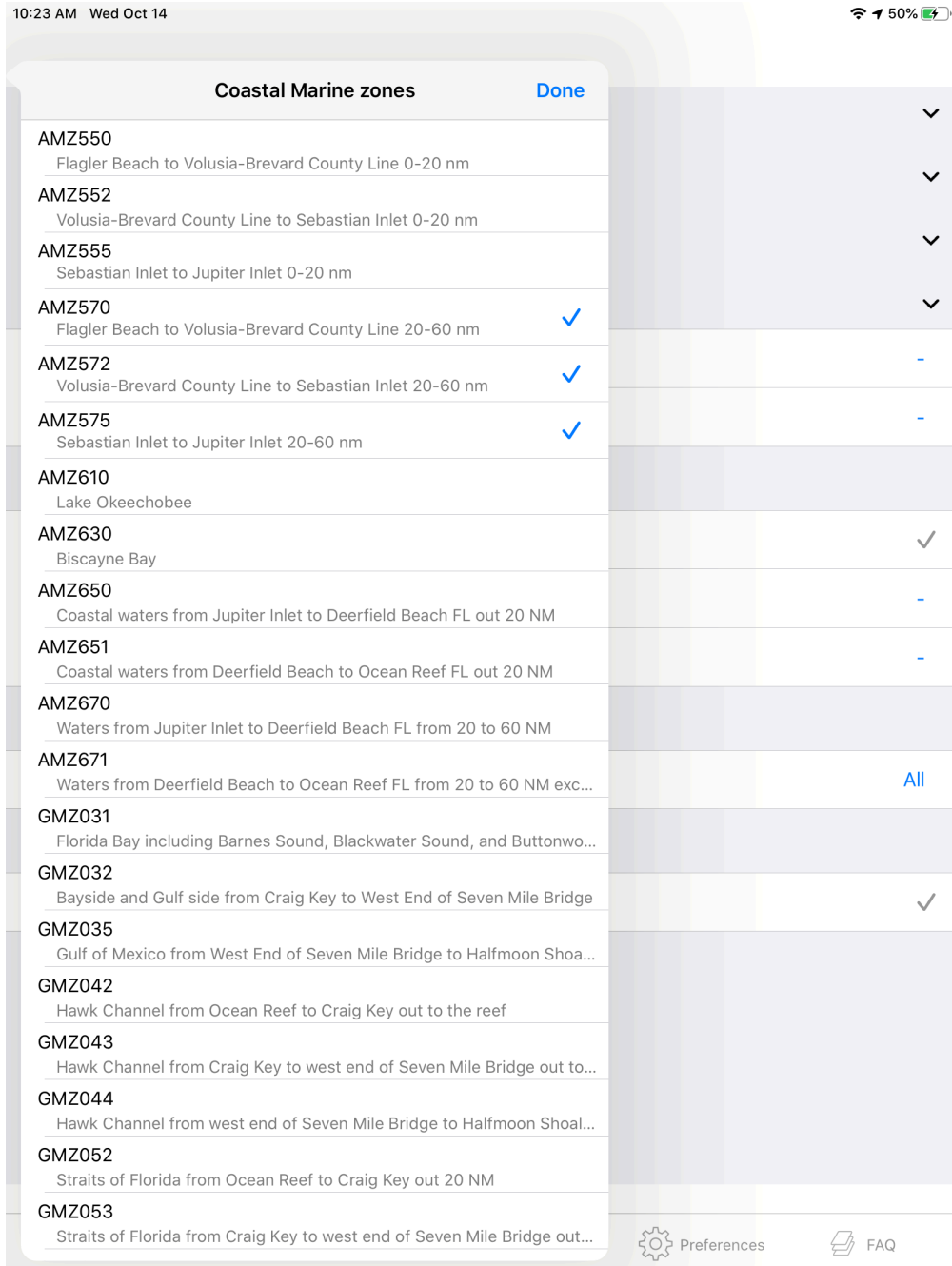
Once downloaded

SAGA Explorer for iPad

Copyright OCENS Inc.   www.ocens.com   support@ocens.com

7.3.5.2. Offshore Forecasts

Almost 200 offshore forecasts covering the US, Great Lakes, Caribbean, Puerto Rico and Canada as well as various locations in the Atlantic and Pacific are available. The Offshore forecasts are generally updated every 6 hours or as conditions warrant.

Tap the Offshore Text Forecast layer and a drop down will appear showing you the forecasts available for the geographic area you have boxed on the Map screen. Tap on one or more of these forecasts to slot it for download with your next pull request.

7.3.5.3. High Seas Forecasts

SAGA provides global High Seas and Met Area text forecast coverage The High Seas forecasts are generally updated every 6 hours or as conditions warrant.

If added to your download list, SAGA will present a drop down of the High Seas forecasts adjacent to any portion of the geographic area you have boxed on the Map page. Tap on one or more of these forecasts to add it your Download set.

7.3.6. Buoys

SAGA provides access to almost 1000 marine buoys covering the US, Caribbean, Puerto Rico, Hawaii, Alaska and around the Atlantic and Pacific.

When the buoy layer is selected, SAGA will download all content for all of the buoys inside of the geographic area you have boxed on the Map page.

Buoy data are updated hourly to the OCENS Everon servers.

View video tutorial on Text, Buoy, and Radar selections

7.3.7. Radar Layer

SAGA provides Nexrad radar data for radar sites in the continental US, Hawaii, Alaska, and Puerto Rico.

SAGA radar data is a radar animation of the 10 most recent radar echoes for a station. Since each echo is replaced with a new one every 10 minutes, one animation covers the most recent 1 hour and 40 minutes of echoes at the subject station. We present the composite short range radar reflectivity in that animation.

If the geographic area you have selected on the Map overlaps an active radar site that site will appear on a dropdown list which will appear when you select the Radar Layer. Tap on one or more of the radar sites which appear on this list to add it to your download set.
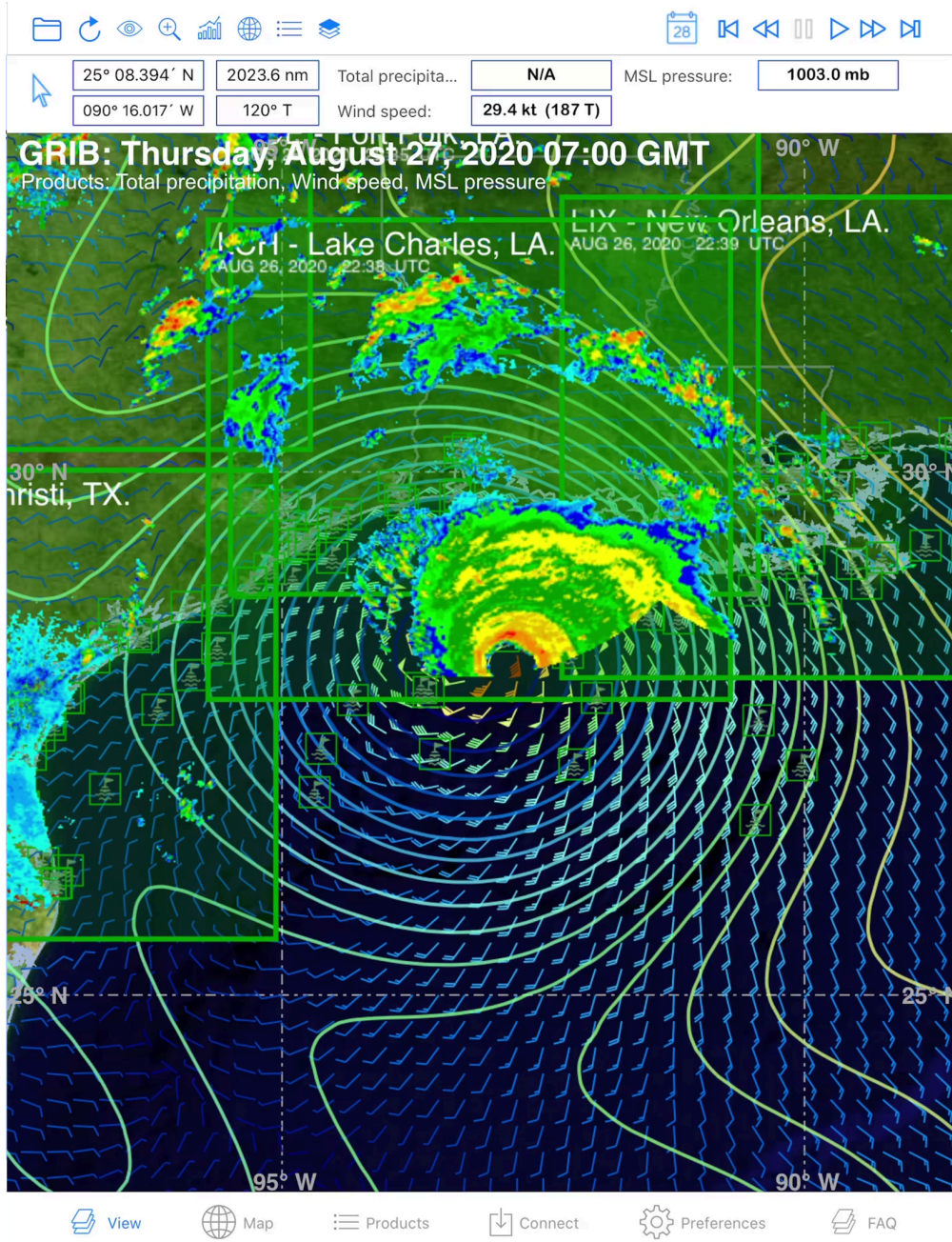
▶ View video tutorial on Text, Buoy, and Radar selections

7.4. Connect

Its on the Connect page where you select your Wi-Fi, satellite or other Communication Method which you will use to download data.

On the Connect page you will also find a summary of:

1. The geographic area you boxed on the Map page; both the box on a local map and the bounding corners of that box.

2. An estimate of the size, in kilobytes, of the data you are preparing to download.

3. A summary of the GRIB data and other data layers in your pending download. If other data layers have been selected, this summary will provide the short code names of the associated coastal, offshore and high seas forecasts and radar overlays. Short codes are not presented for buoy data.

SAGA Explorer for iPad

⤓ **Download**

Communication Method   **Direct Connection**

Geographic Region: (29.4° N ••• 23.4° N) - (81.5° W ••• 75.5° W)

Low and High Resolution GRIBs

Downloads estimated size: 111 kb

Fishing Surface   **3 days**
Sea Surface Temperature, Height and Currents

Coastal Zones Text Forecast
AMZ570, AMZ572, AMZ575

High Seas Zones Text Forecast
HIGH2

Marine Buoy Observations

Radar Overlay
AMX

View   🌐 Map   ☰ Products   ⤓ **Connect**   ⚙ Preferences   FAQ

7.4.1. Communication Method

Tapping on the Communication Method line will take you into the Connection Preferences screen. You can change the Dialer Preferences by tapping on the Communication Method line and then selecting your Device and tapping "Done" in the upper right corner.

> *For standard or always on Internet connections choose the Direct Connection. If you choose any of the other devices you may see additional default information appear – leave these default settings alone unless directed to make a change by OCENS support personnel.*

When finished here tap "Done" in the upper right.

Iridium GO exec:

When using the the **Iridium GO exec** you will need to set the connection setting in Saga to "**Direct Connection**".
Next you will need to setup a Web/App profile on the GO exec:
In the Iridium GO exec app -
From the Application setting: Device Settings menu choose Web/App
Profiles to see the full list of redefined profiles and user defined profiles.

• Press the '+' button in the top right corner to add a new profile.
  a. Provide a name and description for the profile: "**OCENS SAGA**"
  b. DNS Blocking : "**On**"
  c. Rule policy "**Block All Except Filters**"
  d. Use the + button in the Profile Rules section to add rules to the profile.
  e. Each rule added needs to define.
    i. IP address: "**35.166.91.213**"
    ii. Port: "**Single**" and "**194**"
    iii. Protocol: "**TCP**"
Be sure to hit "Save" in the upper right before exiting this screen then "Save" again on the next screen"

When enabling the data connection – choose the new Web/App Profile that you created:
"OCENS SAGA" the tap "Connect". Now you can return to the Saga app and and tap the Download link to download your updated weather information.
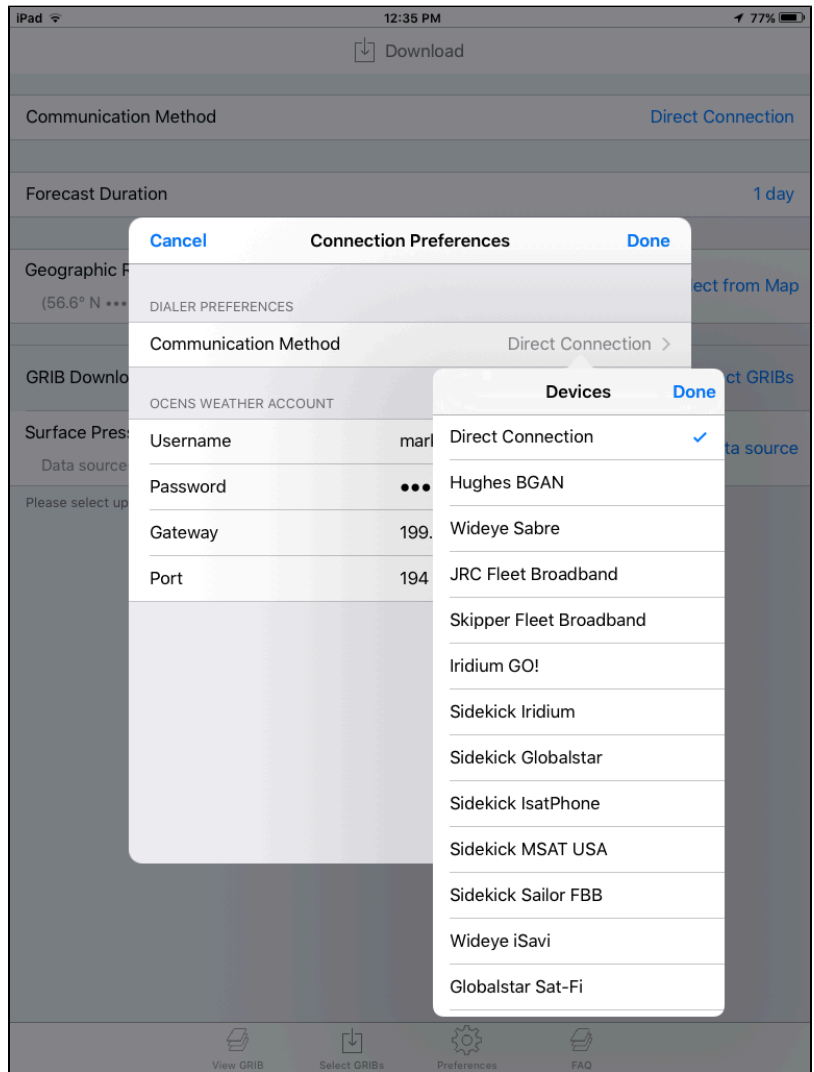
7.5. Preferences

The **Preferences** page has many of the advanced settings for how the GRIB data are displayed in the app.

OCENS Weather Account
> Review or correct your Username and Password.

Home Location
> Allows you to turn the following features on and off:

> > **Use Device Location**
> > > Uses positioning data from your device to display your home location on the map

> > **Plot home location on chart**

> > **Animate home location icon**
> > > Causes the home location icon to flash.

> > **Display local date/time on all plots**
> > > Displays your local time on plot rather than GMT.

Display
> • General
> > Date and time stamp location
> > > Set date and time stamp location on screen.
> > Activate finger position coordinates
> > Display finger coordinates
> • Animation Speed
> > This allows you to adjust the speed of the transition from one screen to the next in a SAGA animation.

Units and Formats
> • Measurements Units
> > This allows you to change how the distance and measurements are displayed
> • Formats
> > Here you can change how position data, Angle (or heading) information, and time is displayed

Overlays
> • Map Preferences
> > This section allows you to change how the map features are displayed.

12:47 PM Wed Oct 14	📶 ✈ 89% 🔋

Preferences

General

👤 OCENS Weather Account ›
➤ Home Location ›
📱 Display ›
📐 Units and Formats ›

Overlays

🌐 Map Preferences ›
📑 GRIB Parameters ›

Application Information

Saga Explorer Version   1.0.2 (1)

Copyright © 2014-2020. All Rights Reserved.   Ocens Inc.

View   Map   Products   Connect   Preferences   FAQ
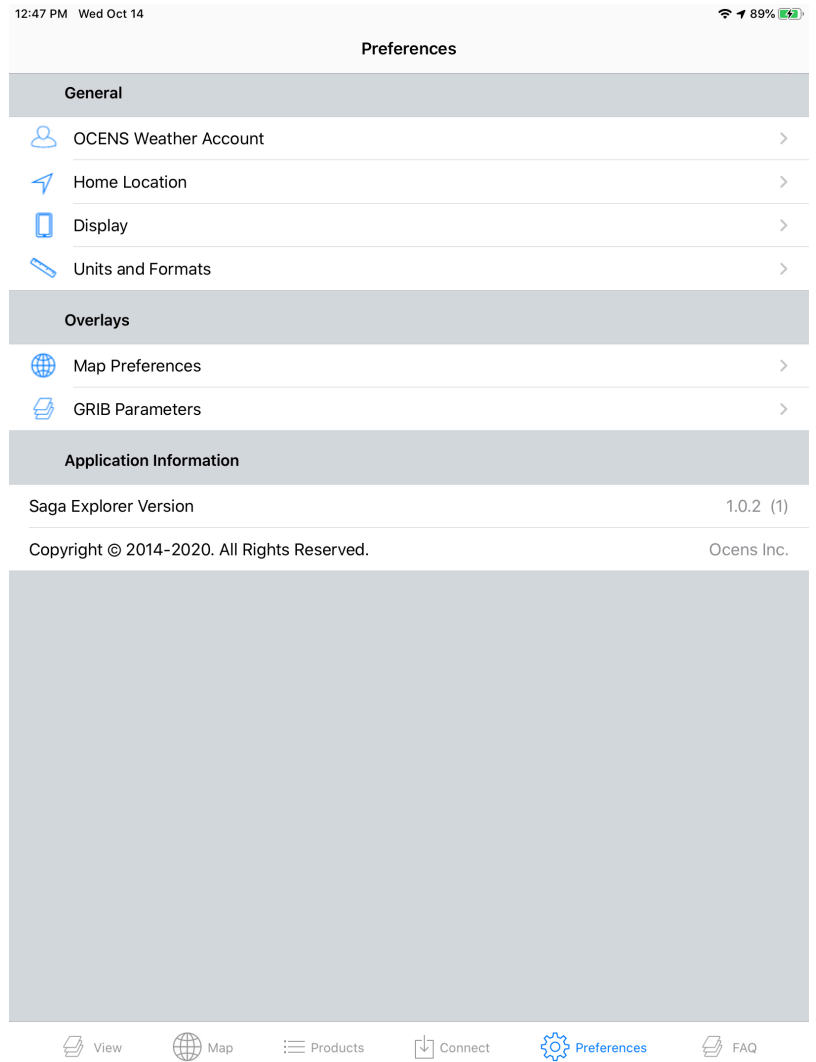
- GRIB Parameters
  - *General Options*
    - Display grid values
      - Turning this on will display the GRIB parameter at each data point.

  - *Current Document Parameters*
    - This lists the current parameters being displayed and allows you to change how they are represented on the screen.

  - *All Document Parameters*
    - This lists all of the supported parameters and allows you to change how they are represented on the screen.

All GRIB Parameters

Here you can alter how any particular parameter is displayed on the screen. You can change things like: Plot Type – lines or color fills, measurement units, colors, and transparency.

8. FAQ

8.1. Why can't I download a GRIB file?

There could be a few reasons but if you are just starting out, its possible that your demo period has ended and you are trying to access OCENS' Everon servers without an active account.

Other reasons that could explain why I am unable to download?

1. Check to be sure you are attached to the correct Wi-Fi device in your iPad's General Settings. This is often a problem when users are running through a satellite Wi-Fi connection; SAGA is compatible with Iridium, Inmarsat and Globalstar satellite phones, our Sidekick Wi-Fi router as well as your local Wi-Fi connection (home, office, etc).
2. Ensure that the device you have selected as your Communication Method on the Connect page of SAGA is the same device you have selected in (1) above;
3. If you do have an active Everon account, be sure you have entered your correct username and password in the SAGA Preferences;
4. If using an Iridium GO!, check that username 'guest' and password 'guest' (each without the apostrophes) is entered as the Iridium GO! account username and password. You will see these on the screen after you change your Connection Method from Direct Connection to Iridium GO!
5. With any satellite device, verify that you have sufficient signal strength. If Iridium you should have a minimum of 4 to 5 signal bars on your phone in order to conduct a data transfer.
6. Check to see if iCloud Drive is ON and if it is turn it OFF. This is quite common. If iCloud is on, it will attempt to update once the connection is opened to your satellite device. It will fail to open but the process of its failure will interfere with access to the weather downloads. Go to your iPad Settings, find iCloud, and turn iCloud Drive from ON to OFF.
7. The firmware on your Iridium GO! Make sure this is current. Contact OCENS if you have a question about the latest GO! firmware version.

See Communication Method

8.2. How long does my demo period last?

There is a 3 day period after installation when you can access the OCENS Everon servers as a SAGA demo user using the demosaga account settings. The demo username and password is pre-configured during this time period.

What happens after my demo period expires?

You can continue to use SAGA with GRIB 1 GRIB files you acquire from other sources or as attachments to emails sent to you. You can do this without signing up for any other OCENS service; or you can sign up for the SAGA weather and ocean data service (www.ocens.com/saga) which delivers GRIB, text, buoy and radar
 files to you from around the world through Wi-Fi and satellite connections.

8.3. Will this work through my home internet?

Yes. Of course, you must connect your iPad to the home Wi-Fi in your iPad's General Settings.
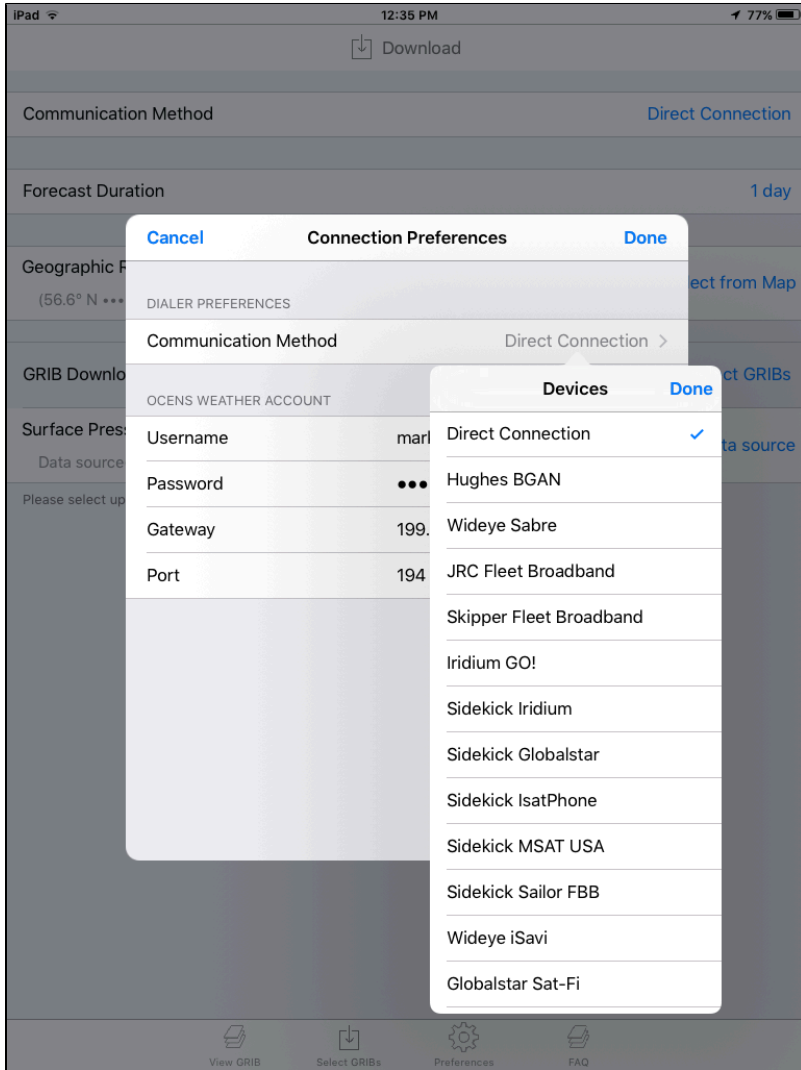
8.4. Can SAGA open GRIB files that are emailed to me?

Yes.

How do I open a GRIB that has been emailed to me?
Find the email and its attachment, then press and hold on the attachment until the iPad advises what iPad software is available to possibly open the file. When this happens, slide over and select SAGA. SAGA will auto-open and navigate the GRIB. The GRIB must be a properly constructed GRIB 1 grib.

8.5. Do I need an account to use this app?

To get the most out of SAGA, a weather account with OCENS on our Everon server is recommended but it is NOT mandatory. Whether or not you have an account with OCENS, SAGA will display and process GRIB1 gribs that are emailed to you.

What are the benefits of an Everon account?

Everon servers provide on-demand delivery of weather, ocean & fishing data from multiple GRIB models for any location on land or sea. Met data available from Everon includes wind, surface pressure, precipitation, lifted index, CAPE, and lghtning data, RAP NAM & CONUS, NDFD vector & many more. Ocean data available from Everon includes wave, sea temperature, sub-surface temperature, sea surface height, ocean currents, & mixed layer depth.

8.6. Pricing

How much does an OCENS Everon account cost?

There are three options:

• Postpaid: You pay an annual fee of $49 to maintain an account and then a small content fee for each download.
• Prepaid Unlimited: You pay a fixed fee for a fixed period of time for an unlimited number of downloads.
      a. There are two prepaid flavors:
            i. Met: Unlimited access to 'met' data such as wind, pressure, precipitation, lifted index, CAPE and others. We include wave data in the met category
            ii. Met and Ocean: Unlimited access to all the met data in (a) plus ocean data such as sea temperature, ocean currents, sea surface height, thermocline and mixed layer depth.

What are the content fees associated with Postpaid plan downloads?

If you choose this plan your credit card will be billed monthly for your weather file downloads according to the following schedule; per file:
 Met data includes wind, waves, surface pressure, 500 mb height, precipitation, cloud cover, lifted index, CAPE, and air temperature.
• Class 1: 1 day Met: 30 cents
• Class 2: 2 day Met: 35 cents
• Class 3: 3 day Met: 40 cents
• Class 4: 4 day Met: 45 cents
• Class 5: 5 day Met: 50 cents
• Class 6: 6 day Met: 60 cents
• Class 7: 7 day Met: 70 cents

  Ocean data includes ocean currents, sea surface and sub-surface temperature, sea surface height, and sea surface currents. All of these products are considered Class 10 products.
 • Class 10: SST/Sub-SST/Thermocline/SSH//SSC/MLD: $5.00 to $9.00 depending on # of days.

What is your pricing for SAGA Explorer Unlimited Met plans?

Unlimited GRIB Met plans include unlimited access to wind, wave, surface pressure, 500mb height, precipitation, cloud cover, lifted index, CAPE, and air temperature.
• 1 month $45*
• 3 month $75*
• 6 month $120*
• 12 months $180*
  *Downloads of Class 10 ocean products are NOT included in your Unlimited GRIB Met plan and will be charged separately at $5 per piece downloaded.

What is your pricing for SAGA Explorer Unlimited Met and Ocean plans?

Unlimited GRIB Met and Ocean data plans include all Met data (see above) as well as ocean currents, sea surface temperature, sea surface height, sea surface salinity, mixed layer depth and chlorophyll.
• 1 month $100
• 3 month $225
• 6 month $420
• 12 month $750

Can I download ocean data even if I have only signed up under an Unlimited Met plan?

Yes. Ocean data are classified as Class 10 products. Class 10 products are priced at $5 to $9 per product. You will be billed separately at $5 to $9 per download when downloading a Class 10 ocean product within an Unlimited Met-only subscription.

8.7. How does the Resume capability work?

When working through a satellite connection, you may at times experience a degradation of signal strength. If the signal drops sufficiently your data connection will be lost. When signal is restored, SAGA's resume capability will now continue the file download from where it dropped rather than force you to download the entire file again. This can offer a substantial potential savings in airtime.

But just how does Resume work?

Most of us monitor our downloads pretty closely as they process. If signal drops to the point of losing the data connection, SAGA will post a message such as 'Deactivating Connection', followed 10 to 20 seconds later with a message 'Unable to Connect to Server'. At this point, begin monitoring the signal strength meter on your device. Once you see it move to and stabilize at 4 to 5 bars of signal, return to SAGA and press the Download button on the Connect page. SAGA will reach out to your device and commence the dialing process. At some stage within this process, SAGA will post a query to you of the form, Resume Previous Download, Yes or No. If Yes, upon its reconnection to the OCENS Everon servers, SAGA will continue your previous download from the point where the connection broke. If No, SAGA will start from byte 1 and download the entire file or file group again.

8.8. Types of GRIBs

This section discusses some of the less well-known types of GRIB data which are available in SAGA Explorer.

8.8.1. RAP and HRRR

The Rapid Refresh (RAP) model is available in three forms. The RAP HiRes (also called RAP CONUS) model is focused on the continental US. Nevertheless, it provides marine coverage out to about 130 degrees W on the US West Coast and about 60 degrees West along the US East Coast. Much of the Caribbean is also covered as is all of the Gulf of Mexico and Gulf of California. It offers about 8 data points for each degree of coverage.

The second RAP model is the RAP Fast (also call RAP NAM). This RAP Fast model covers all of North America, including Alaska, Hawaii, and Central America. A chunk of northern South America is also included in this model. This is a lower spatial resolution model than the RAP HiRes providing 3 data points per degree (compared to 8 data points per degree in the HiRes). For the satellite user, this is important because for the same area, a RAP Fast file will download faster than a RAP HiRes because it contains fewer data points.

Both RAP models offer 1 hour temporal resolution model forecasting over an 18 hour time period. Each was constructed to serve the needs of users needing frequently updated short-term forecasts. This means it is most commonly used by aviators and severe weather forecasters. However, these features will benefit any SAGA Explorer user monitoring short-term weather conditions changing at a pace that is faster than the 3 or 6 hour model update frequencies typical of most weather models.

The third RAP variant is the Very High Resolution Rapid Refresh (HRRR) model. This is awesome data with a spatial resolution of about 3 km or more than 30 data points per degree. Data is of such a high resolution that it can be used in inland waters such as Chesapeake Bay, Long Island Sound, Puget Sound, San Francisco Bay and others. In Puget Sound, for example, the HRRR model returns 3 to 4 wind barbs where other models display 1 at most. Of course, the trade off for this high spatial resolution is BIG file size. So when using HRRR data, be sure your GRIB boxes are 1 or 2 degrees at most if connecting through a satellite phone. Expand if on cellular or network connections.

RAP wind, precipitation, CAPE, lifted index, air temperature, 500 mb and cloud cover GRIBs are available in all models. Pressure data is also available in the HRRR data set. You must choose a Forecast Duration of 03 through 18 hours in order to have access to ANY of the RAP data in the Global Wind category. If you select 03 through 18 for a Forecast Duration AND you want to access the HRRR data, you will be asked to select one or more time periods when you actually pick HRRR from the Global Wind drop down.

Selection of RAP Fast, RAP HiRes or HRRR is an either/or proposition. You cannot select more than one model source at a time.

8.8.2. Lightning

As you can imagine, lightning data are phenomenal ways to track storm movement. Lightning data are available in SAGA Explorer for the Northern Hemisphere from 160E to the Prime Meridian (0). Lightning data is collected every 15 minutes by remote sensors, processed and pulled to the OCENS Everon servers in GRIB form. The most recent 4 frames of data are included in each of your downloads of Lightning data. In general, the age of the most recent of these frames ranges from 15 to 30 minutes depending on the timing of your data request. Access to the most recent 4 frames allows you to gain a quick sense of the movement of the storms around you by clicking on the SAGA Explorer Animate button. These four frames will process in a looping movie.

Lightning data is displayed in strike densities which are expressed as the number of lightning strikes per square kilometer per minute x 1000. As that's a rather obtuse variable its a good thing that specific strike densities are less important than their relative densities. For one thing you want to know where the storms are located and a quick scan of the GRIB frames immediately answers this question for you. Secondly, now that you've spotted the storm, how intense is it? Answer this by either looking at the color assigned to the cell or cell components by SAGA Explorer or by passing your cursor over the storm cells. The higher the number of strikes the more intense the storm. mapping. Storm cell centers frankly pop out at you when using this tool Lightning data will be 'available' for download for any forecast duration from 1 day to 7 days. However, you will only ever retrieve data for the most recent 60 minutes. We just felt it is friendlier to allow you to pull lightning data no matter how may days of other forecast data you are retrieving.

8.8.3. NDFD

For decades some of the finest weather forecasts in the world were captured in the weather charts produced by the NOAA Ocean Prediction Center. Forecasters pored over the very best available model, buoy, ship of opportunity and satellite data, combined this with their years of forecasting experience and local knowledge and produced weather charts every ocean mariner learned to rely upon. Until the 1990's, these charts were only available via weatherfax broadcast and mariners went through reams of chart paper and hours of time tuning their weather fax radios to receive the data. With the growth of the Internet in the late 1990s, chart distribution expanded to this medium and OCENS WeatherStation was the first such service to make them available to satellite phone users.

For years, NOAA has been working on the next step in this evolution. To move the static OPC and NHC weather charts and their classic picture file formats into GRIB data so these data become all that more relevant to the at-sea user now dependent on satellite phones, electronic charting and so many other components of the electronic ship. The first realization of these efforts is that which is now available in the NDFD data just released in GE Plus. NDFD data preserve all the human intelligence and local knowledge put into the OPC and NHC charts but make this information available in the form of GRIBs which can be animated, layered and closely analyzed.

Presently, only wind and significant wave height data is available in the NDFD form. Furthermore, the geographic coverage of the NDFD GRIB data is, to say the least, disjointed. A map of that coverage is presented below. NOAA is working to expand both the coverage and the type of data available as NDFD GRIBs in the next few years.
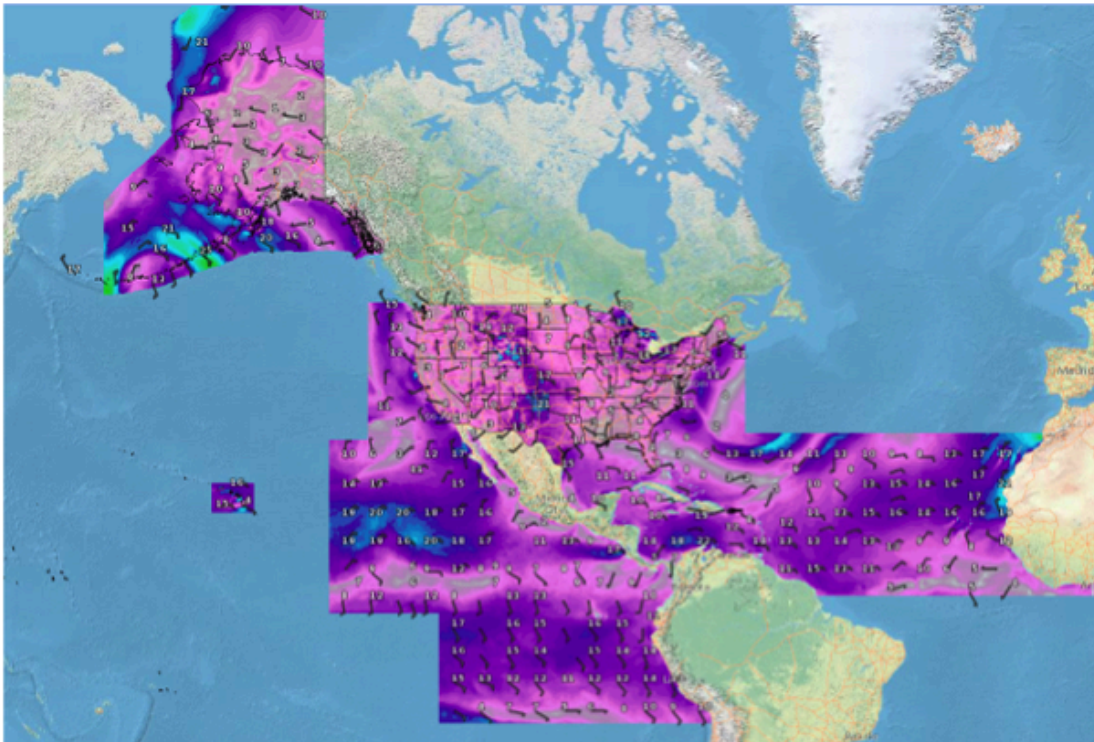

Figure 1. Coverage of the NDFD wind and SWH data. Wind arrows in this global view do not reflect what we obtain by download, which is one arrow every 0.12°.

NDFD data in SAGA Explorer is available at two resolutions. NDFD Fast data is at 0.25 degree (4 data points per degree) while NDFD HiRes is 0.125 degree data or 8 data points per degree. As an example of the difference this makes on download times, a 10x10 NDFD HiRes wind GRIB will take just under 4 Iridium minutes to download. The same 10x10 area in NDFD Fast data consumes about 1.5 minutes of Iridium airtime.

NDFD data are available for forecast durations of 1 through 6 days inside of the Ocean Wind and Ocean Wave sections of SAGA Explorer.

8.8.4. Great Lakes

The newly added Great Lakes wind and wave data is available in two flavors. The very high resolution data is available at a scale of 1/16 of a degree or approximately one data point every 3.75 miles. The coarser resolution, roughly 8 mile scale data, is labeled FAST in SAGA because its downloads occur much more quickly than the fine resolution product. FAST file sizes are roughly just 10% of the size of the high resolution product.
Great Lakes GRIBs are available for forecast durations of 1 through 7 days inside of the Ocean Wind and Ocean Wave sections of GE Plus.

8.8.5. Thermocline

Sub-Surface Temperatures and FishMap with Thermocline

SAGA Explorer provides global access to sub-surface temperature data down to 1000 meters. These are individual files you can download. It also offers a Thermocline product which combines all those layers into one file so you get a complete picture of subsurface conditions around you.

The Thermocline tool shows you the depth of the mixed layer in the ocean. And because we combine the tool with the preferred temperature ranges of 40 different fish species, it also shows you the depth in the ocean around you at which those preferred temperatures are located.

To top it off, we then create a Fishing Map showing you how the amount water at those preferred temperatures changes across the fishing area of interest to you. In short the FishMap identifies areas where opportunities to find your target species should be highest.

These data are found under the Fishing section of the Select GRIBs menu on the Select GRIBs page. Sub-surface temperatures are available at 12 levels from 10 m to 1000 m below the surface. All layers are forecast out 1 day into the future (regardless of the forecast duration you have specified elsewhere on the Select GRIBs page). Select the layer or layers of interest to you by tagging each with a light tap. Once your layers are selected for the region of interest to you press Download at the top of the Get GRIBs page. Data will be retrieved and presented on the View GRIB page. Things get even more interesting if you select the FishMap with Thermocline product on the Select GRIBs page! In this product, we merge all 12 sub-surface layers into a single file. You cannot download the FishMap with Thermocline product and one or more sub- surface temperature layers. Its one product type or the other. Since the FishMap with Thermocline contains ALL of the sub-surface layers it would be pointless to download both it and individuals sub-SST layers.

8.8.6. CAPE

Convective Available Potential Energy (CAPE): CAPE is an indicator, in addition to Lifted Index, of atmospheric instability, which makes it very valuable in predicting severe weather. The higher the CAPE value the greater the instability. Data is presented in terms of joules/kg. Very severe weather events have been associated with CAPE values of several thousand joules/kg. In general, high values would be associated with low Lifted Index values.

8.8.7. Lifted Index

When the Lifted Index value is positive, the atmosphere (at the respective height) is stable and when the value is negative, the atmosphere is unstable. Unstable atmospheric conditions can contribute or be associated with thunderstorm and other dangerous weather conditions. In general, low Lifted Index values would be associated with high CAPE values.

8.9. Requesting GRIBs

How do I request GRIBs and other layers after signing up for the OCENS service

At the base of your SAGA screen:

1. Select Map and move and resize your box to the location for which you want data.

2. Go to Products and pick your GRIB product set and forecast period.

3. Decide if you want text forecasts, buoy data and/or Nexrad radar content and, if so, add products for the layers of interest to you.

4. Go to Connect and choose your Communication Method.

5. Press Download at the top of the Connect page.

Can I choose a rectangular geographic region instead of a square region?
No. All regions are square boxes. Once downloaded, you can zoom within any portion of the downloaded file(s).

How come some downloads take a long time over a satellite connection?
Because most handheld satellite phones are SLOW. Remember, Iridium phones and the GO! operate at a speed of 2400 baud. That speed only downloads 18000 bytes in one minute. IsatPhones are even slower. Globalstar phones are a little faster but still nothing like your home internet speeds.

How can I speed up the downloads?
Choose fewer days, a smaller box (generally a 10x10 or 15x15 degree box is plenty big) and/or fewer and or one of the preconfigured FAST GRIB product sets.

How can I best use the file size estimates SAGA provides to me on the Select GRIB page?
As you add files to your download, change the number of days in your forecast period or adjust the map size, SAGA will show you an approximate file size in kilobytes on the Connect page.

Of course, by itself the file size meter can give you immediate feedback on the relative size of your days, map and file selection decisions (bigger numbers of kb will take longer to download than smaller numbers). Taken a step further, however, the file size value can give you a pretty good assessment of just how long it will take you to process a download through your satellite device if you also know the rough speed which your satellite service can process data. What follows are some guidelines on service speed:
Iridium handhelds and GO!: 18 kb per minute
Iridium OpenPort: 960 kb per minute
Inmarsat IsatPhone: 9 kb per minute
Inmarsat Fleet Broadband 150 / FleetOne: 1,125 kb per minute
Inmarsat Fleet Broadband 250: 2,250 kb per minute
Globalstar handhelds and SatFi: 72 kb per minute
VSAT V3: 1000 megabytes per minute

8.10. Analyzing your data

8.10.1. How do I change the variable that appears in Time Profile or Route Finder graph?

What if I've downloaded several weather variables... How do I change the variable that appears in the graph?

Find the color palette on the SAGA screen. Tap on the weather variable name that appears at the top of that palette. A pop-up appears that let's you select the variable of interest to you that you want to appear in Route Finder, Time Profiler or Trip Planner. You can do this before or after you launch each one of these tools.

8.10.2. What animation tools are available?

The animation icons appear in the upper right corner of the SAGA screen. You can click the Play button to start a looping animation, click frame by frame forward or frame by frame backward, or click to go to the very end or the very beginning of the set of frames you have downloaded.

8.10.3. How do I zoom?

Use your thumb and forefinger to pinch the display to zoom in or spread the display to zoom out.

8.10.4. How do I view only 1 GRIB from a multi-GRIB layered download?

SAGA automatically layers all the data you requested into one picture. So if you download wind and waves and pressure, you'll see one chart on the View GRIB screen displaying each of those variables for each data point. You can, however, turn off the display of one or more of these variables. Simply find the Plotting GRIBs icon at the top of the screen (it looks like three rows of dots and dashes) and uncheck the variable type(s) you do not want to view.
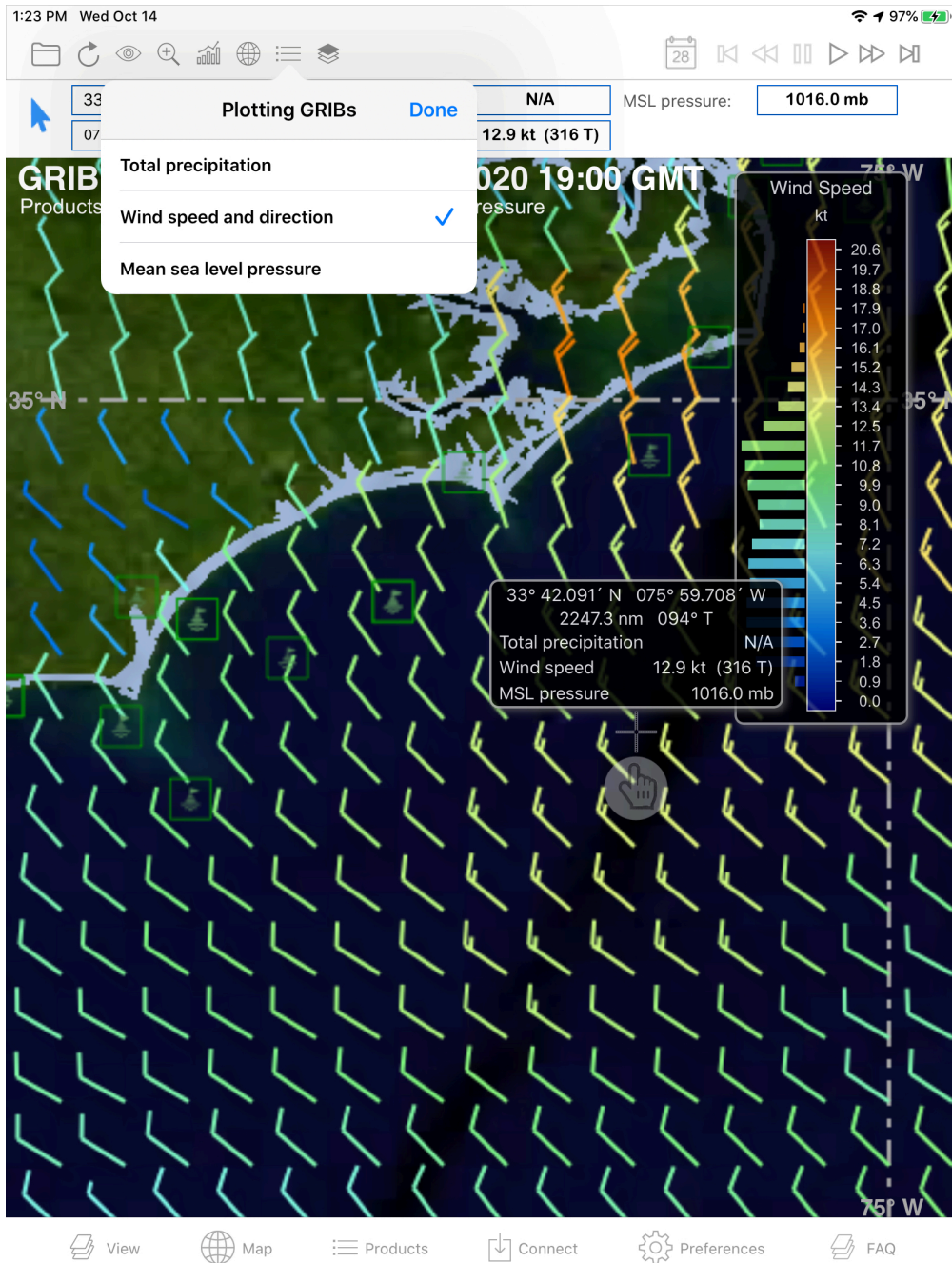
8.10.5. How do I post the numeric values of each data point on the View GRIB screen?

Go to Preferences. Select GRIB Parameters, then enable Display Grid values.

8.10.6. How do I Delete GRIBs?

On the View screen, find the Archive folder in the upper left corner of the screen. This shows all files recently downloaded. Swipe left on the file you want to delete.

9. Contact OCENS

OCENS Inc.
22608 Marine View Drive S, Suite 300
Des Moines WA 98198

Website: www.ocens.com
Email Sales: sales@ocens.com
Email Support: support@ocens.com

Phone: 206.878.8270