

Exploring OpenCPN V5

Subjects

- FIND THE MANUAL: not always obvious
- ADD CHARTS: need to see where you are
- CHART GROUPS: a bit of housekeeping/organizing
- PROGRAM SETTINGS: (GPS, Change COM Ports, Depth Units)
- ROUTES: create, save, change and display
 - LOCK WAYPOINTS: avoid 'finger farts'
- TRACKS: create, save and display
- ANCHORAGES: save and display
- LAYERS: create and display
- PLUGINS: enhancements that add to the experience

Version 5.0 (1 Nov 19)

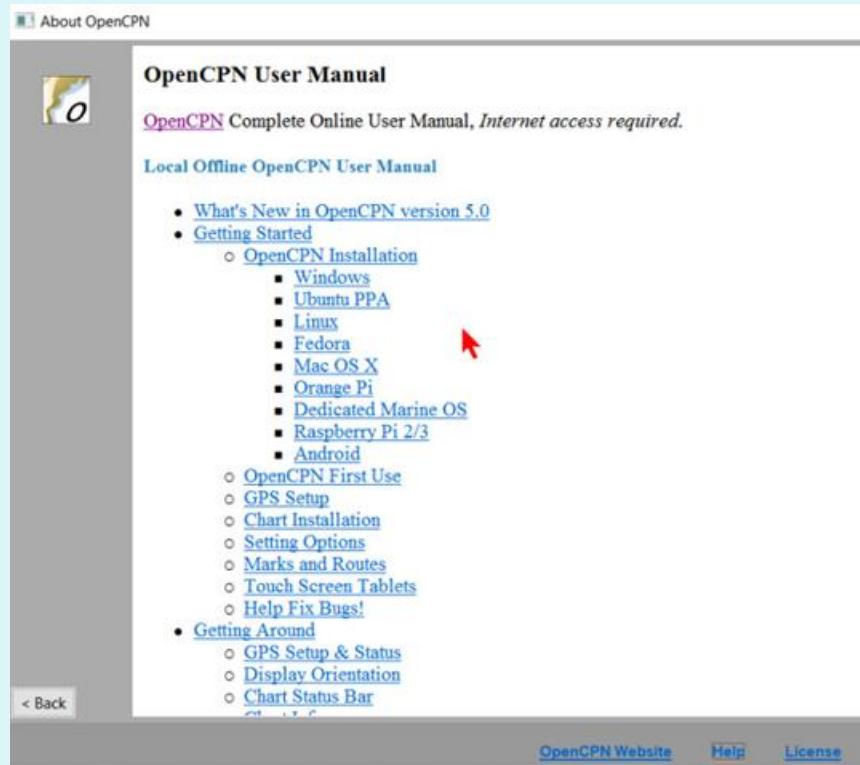
FIND THE MANUAL

On the Tool Bar click on the icon with the '?' mark. Next click on the 'Help' link.



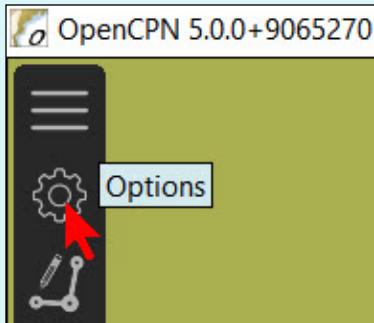
FIND THE MANUAL

The Embedded Manual opens. Note that you do not have to be online. This manual opens from within your computer browser (Firefox, Microsoft Edge, etc.)

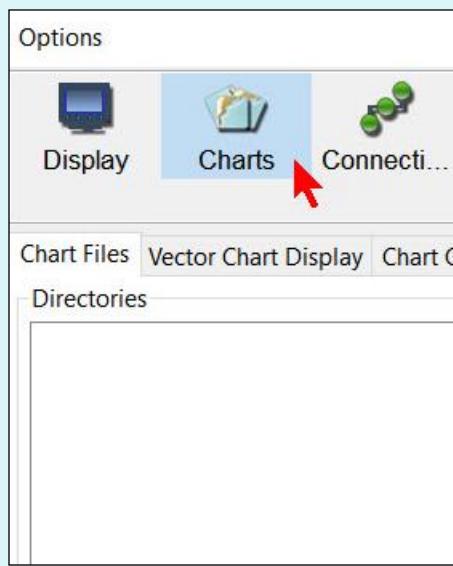


If this is your first time to be using Version 5 of the OpenCPN program, have a read of 'What's New in OpenCPN Version 5.0'

ADD CHARTS



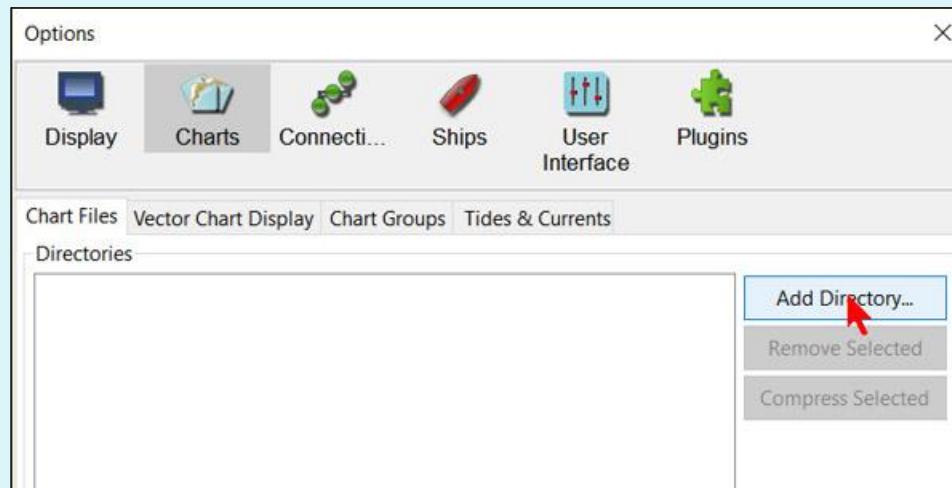
On the Tool Bar click on 'Options' (the 'gear') to display this page shown below



Click on 'Charts'

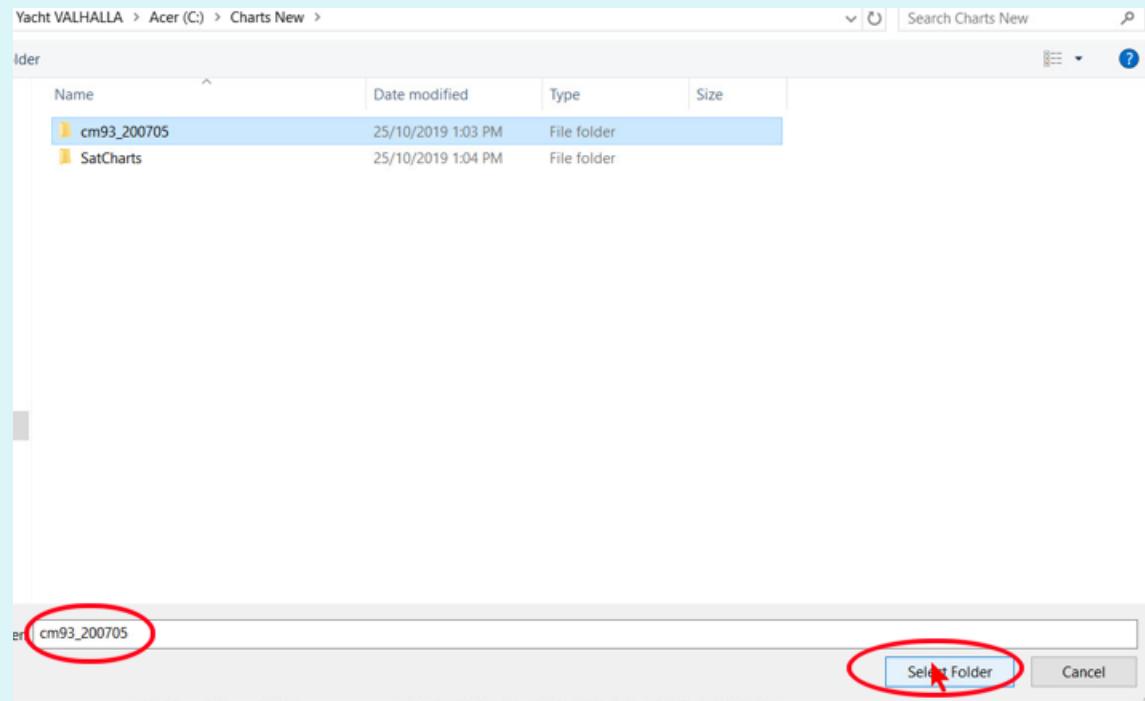
ADD CHARTS

Click on ‘Add Directory ...’



ADD CHARTS

Navigate to where you have charts stored on your computer. Select the chart folder you want to add (in this case the cm93 vector charts). Click on ‘Select Folder’

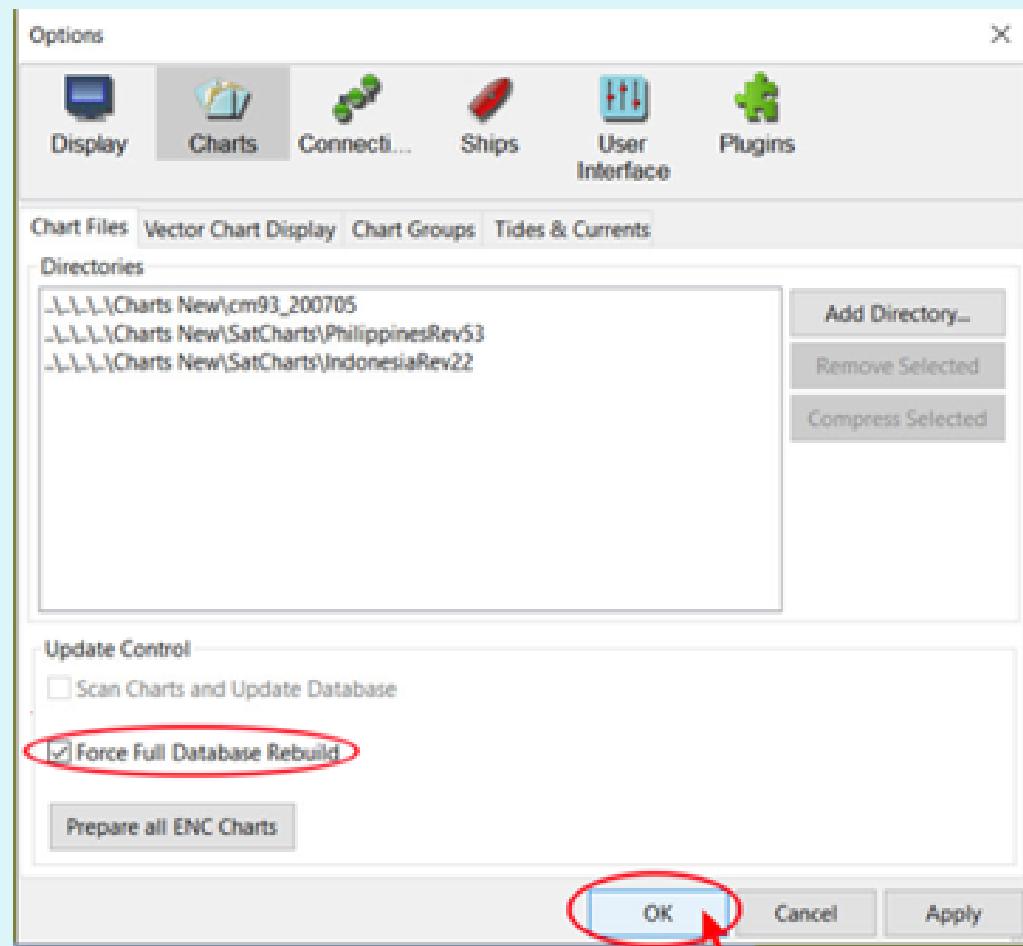


ADD CHARTS

Select the other charts you want to add. In this case I have selected satellite imagery charts (SatCharts) of the Philippines and of Indonesia.

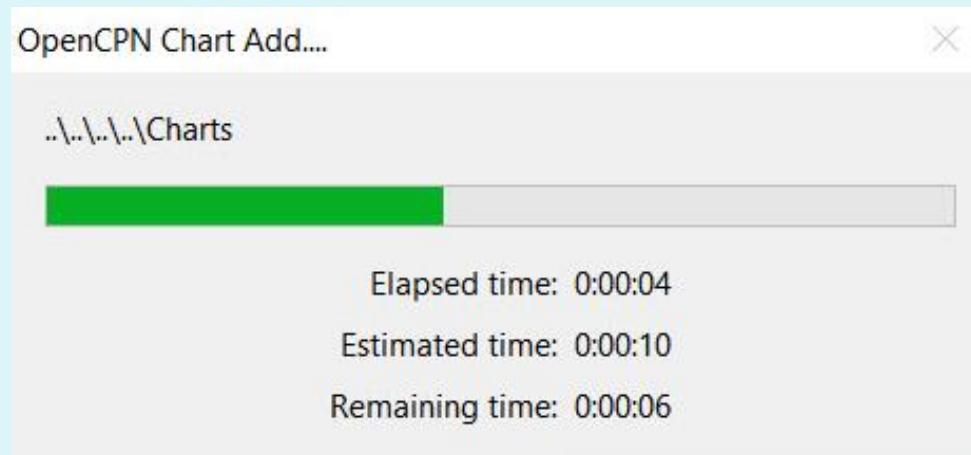
Check the box 'Force Full Database Rebuild' and click 'OK' which closes the screen.

(Checking 'Apply' leaves this screen open)



ADD CHARTS

Wait while the database is updated.



ADD CHARTS

The overlay charts are shown by the small red outlines.
To avoid slowing down the computer it is good to have 'Chart Groups'

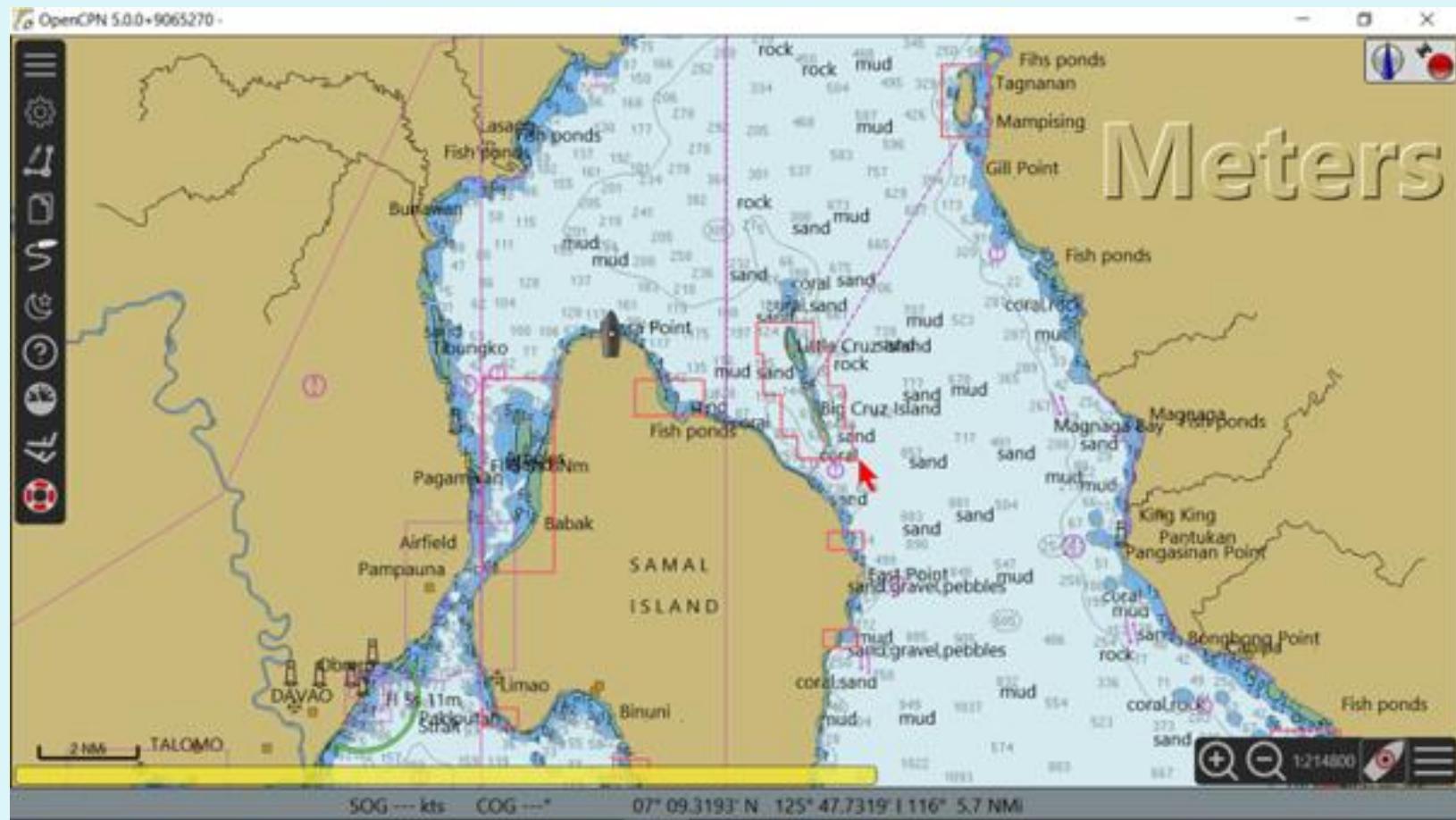


CHART GROUPS

On the ‘Options/Charts/Chart Groups’ page, click on ‘New Group ...’

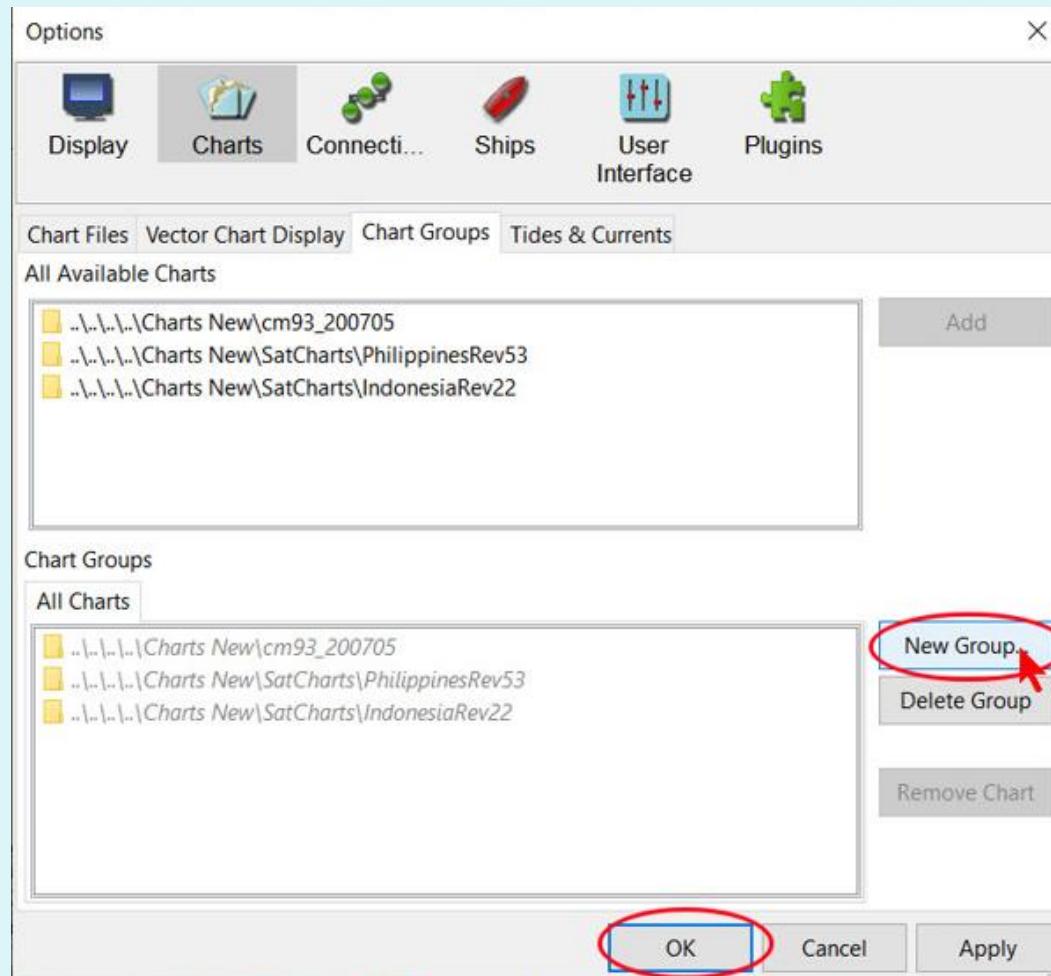
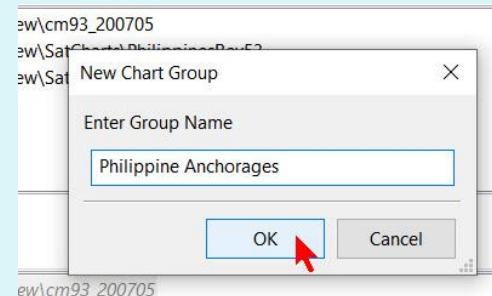


CHART GROUPS

Enter a name for the group and click 'OK'



Highlight the charts to be added to this group, one by one, and click on 'Add'.

I recommend adding the Cm93 charts to each group.

The selected charts appear in the group.

For the next group click on 'New Group ..'

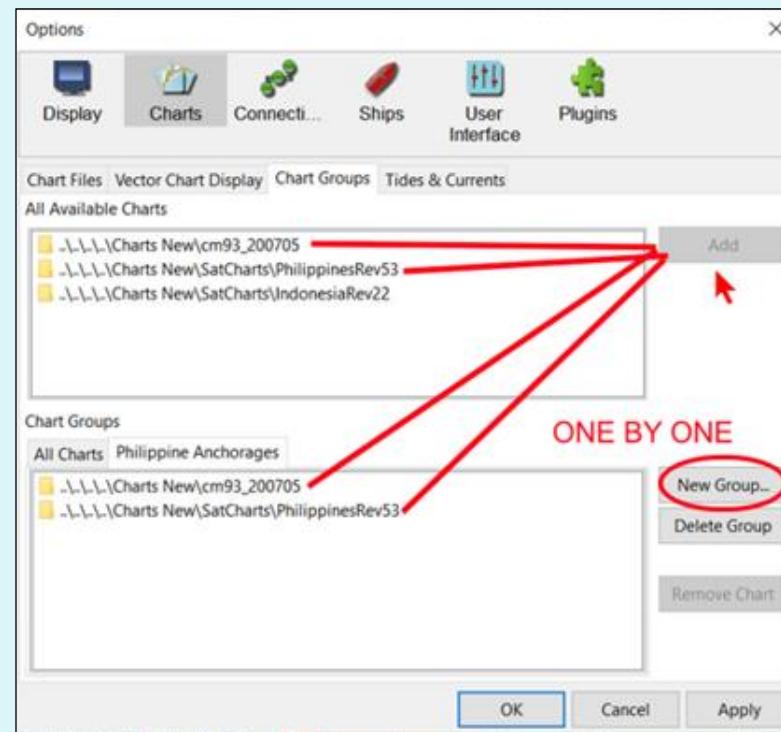


CHART GROUPS

Here the second group for Indonesia charts has been created. Click on 'OK'

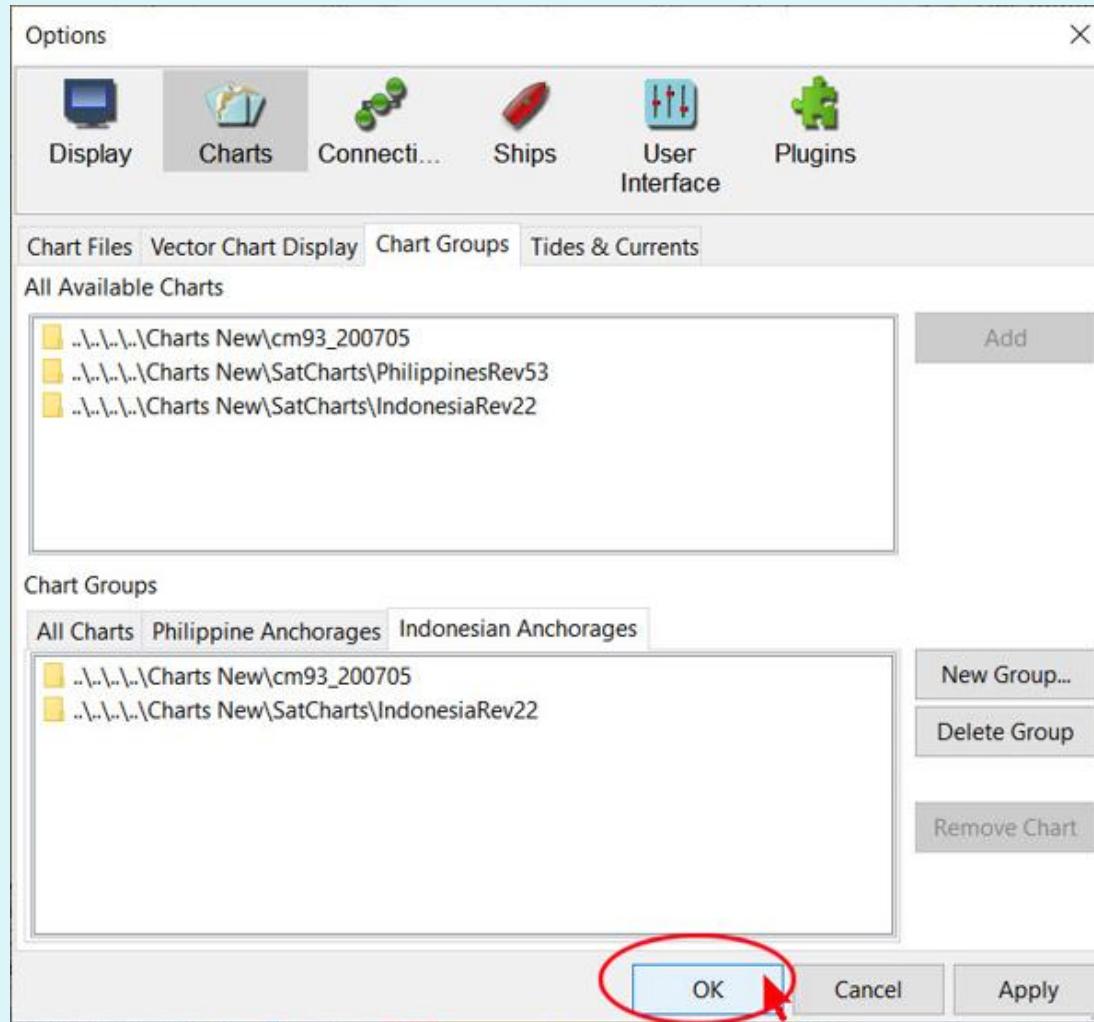


CHART GROUPS

To display a desired chart group, right-click on the OpenCPN screen and click on 'Chart Groups' then click on the one you want to be displayed e.g. Philippine Anchorages.



CHART GROUPS

The Indonesian charts are not displayed. They will not be moved to slow down the computer but are available at any time for display by right-clicking.

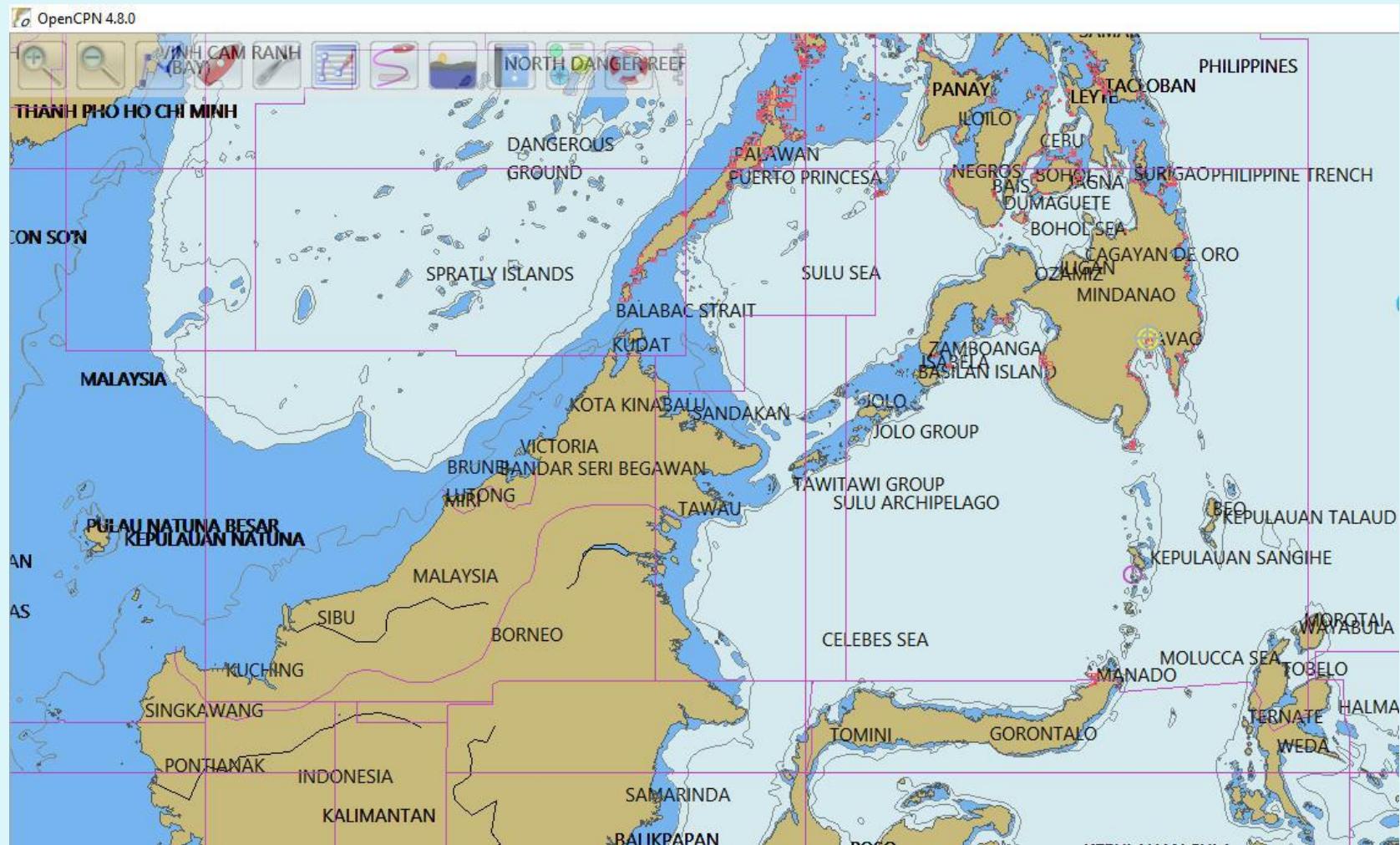


CHART GROUPS

Shortcuts

A convenient feature to switch between chart groups is to use the number keys as shortcuts to the chart groups.

‘0’ displays all active charts.

‘1’ displays the first chart group that was created.

‘2’ displays the second chart group that was created.

‘etc’

PROGRAM SETTINGS

GPS

GPS Installation & Connection

When OpenCPN is first installed, there are no connections to a device to provide position, course and speed information to the program. To obtain this needed information for use underway it is necessary to obtain a GPS signal from an external device such as a fixed or handheld GPS or some other device such as an AIS receiver or transceiver which has the data available.

PROGRAM SETTINGS

GPS

A COM Port is usually used though other connections such as Bluetooth and network connections can be used as well. I will describe using an external ‘hockey puck’ USB GPS which is reasonably priced and does an excellent job as long as it has a view of the sky and not inhibited by the vessel construction (such as metal whereas FRG is OK)

PROGRAM SETTINGS

GPS

For this example I've picked the Globalsat BU-353S4.



Although an optical disk with drivers comes with the GPS, I recommend you download the latest driver from the GPS support website, in this case:

<http://usglobalsat.com/s-172-bu-353-s4-support.aspx>

PROGRAM SETTINGS

GPS

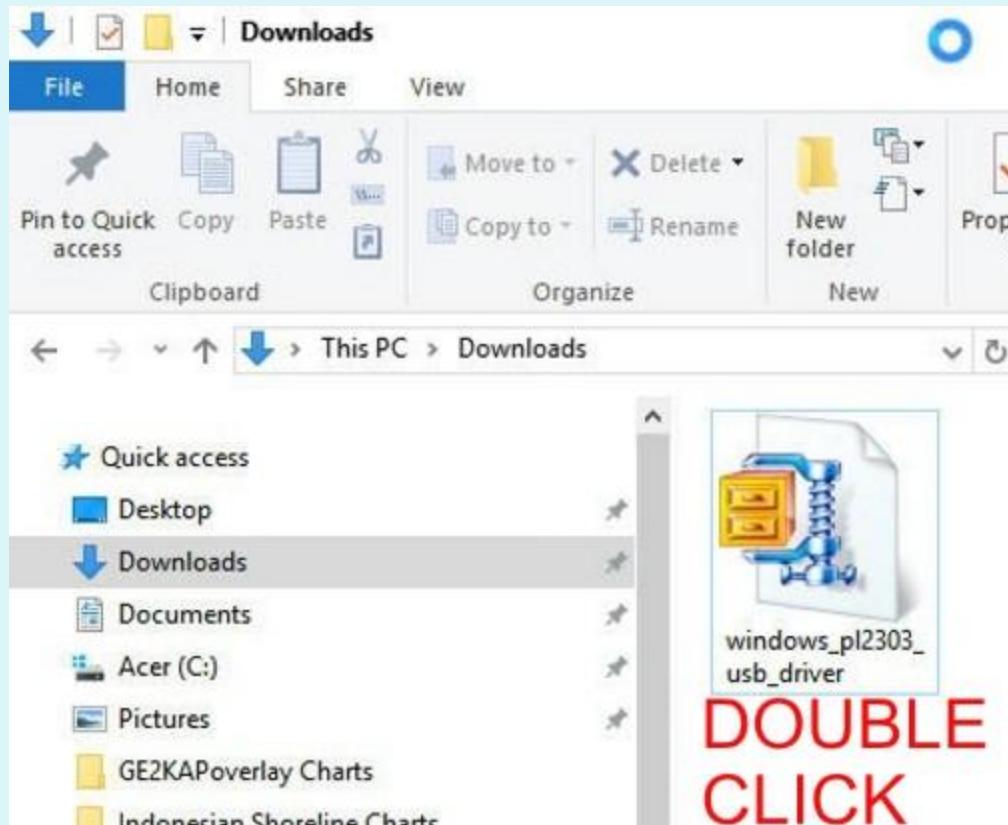
From this website you can download the latest driver for several operating systems. In this example I am using Windows 10.

The screenshot shows a web browser displaying the usglobalsat.com/s-172-bu-353-s4-support.aspx page. The page title is "BU-353-S4 Support". On the left sidebar, there are sections for "LATEST NEWS", "EVENTS" (showing a calendar for November), and "NEW PRODUCTS" (with a link to "View Our 2013 Catalog"). The main content area features an image of a black GPS receiver connected by a USB cable. To the right of the image, under the heading "Downloads:", is a list of links for various drivers and resources, including "Windows 10/8/7/Vista/XP USB Driver" (which is highlighted with a red border). Below this list, a red text overlay reads: "<< CLICK ON THIS LINK TO DOWNLOAD THE DRIVER". The top navigation bar includes links for "ABOUT US", "PRODUCTS", "SUPPORT", "FIND A STORE", "PARTNERS", "CONTACT US", and "FORUM". The top right corner shows social media links for YouTube, Twitter, Facebook, and Google+. The address bar at the top of the browser window also displays the URL.

PROGRAM SETTINGS

GPS

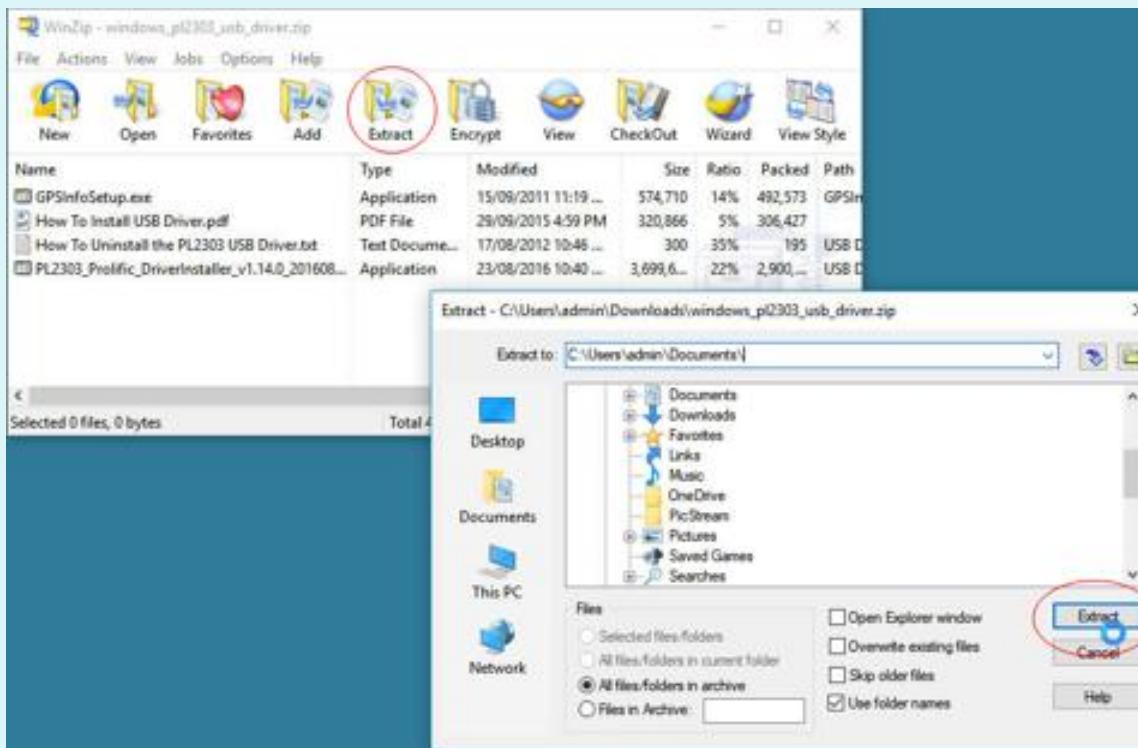
Navigate to the Downloads folder on the computer and double-click on the downloaded compressed file.



PROGRAM SETTINGS

GPS

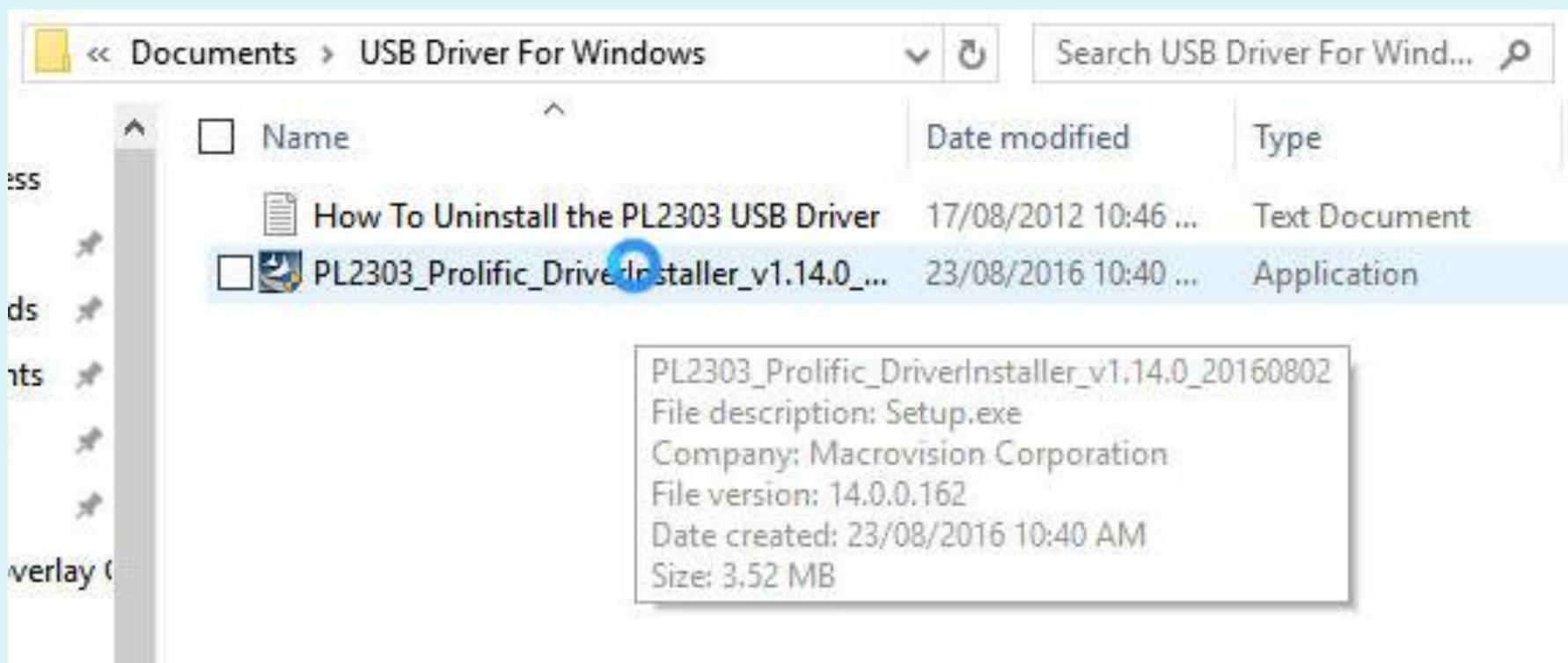
Uncompress and save to a convenient location.
In this case I have extracted to the Documents
folder on the computer. The folder name is
'USB Driver For Windows'



PROGRAM SETTINGS

GPS

Navigate to where it was saved, open the folder and launch the installer (double-click). Follow the prompts to the ‘Finish’ and the driver will be installed



PROGRAM SETTINGS

GPS

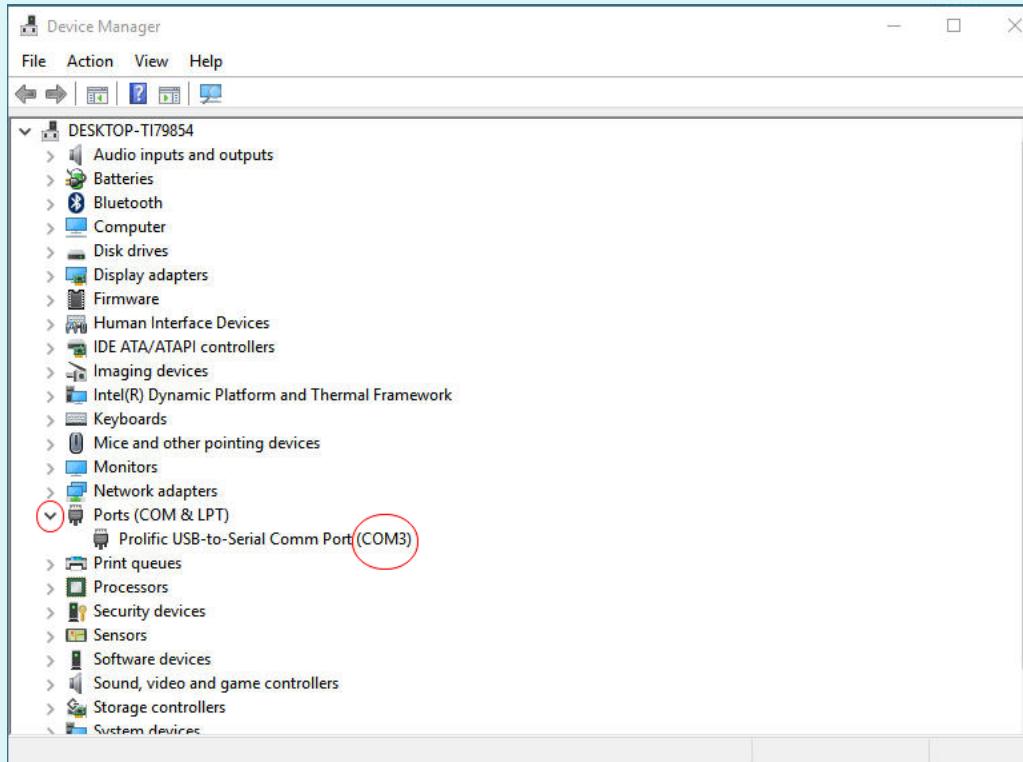
FINDING THE COM PORT NUMBER

The computer has the driver ready to be associated with the COM ports on the machine. When you insert the GPS into a USB port, a COM Port number will be assigned by the computer. You will need to know this number when linking the GPS to OpenCPN.

PROGRAM SETTINGS

GPS

Insert the GPS into any USB port. Go to the **Device Manager** on the computer. Click on the ‘>’ to the left of the entry ‘Ports (COM & LPT)’. Note the GPS in this USB port is assigned ‘COM3’



PROGRAM SETTINGS

GPS

How do I know if the GPS is ON?

Your USB GPS must be plugged into your laptop's USB port to get power. If your PC is on and the COM port was configured properly, the GPS receiver is on and receiving the streaming GPS data. In addition the Globalsat USB GPS has a built-in LED status indicator that shows the following:

LED OFF:

GPS receiver is off (no power).

LED ON

(solid): No fix, searching for GPS signals.

LED FLASHING:

Position fix established and GPS signals are being received.

PROGRAM SETTINGS

GPS

OpenCPN CONNECTION

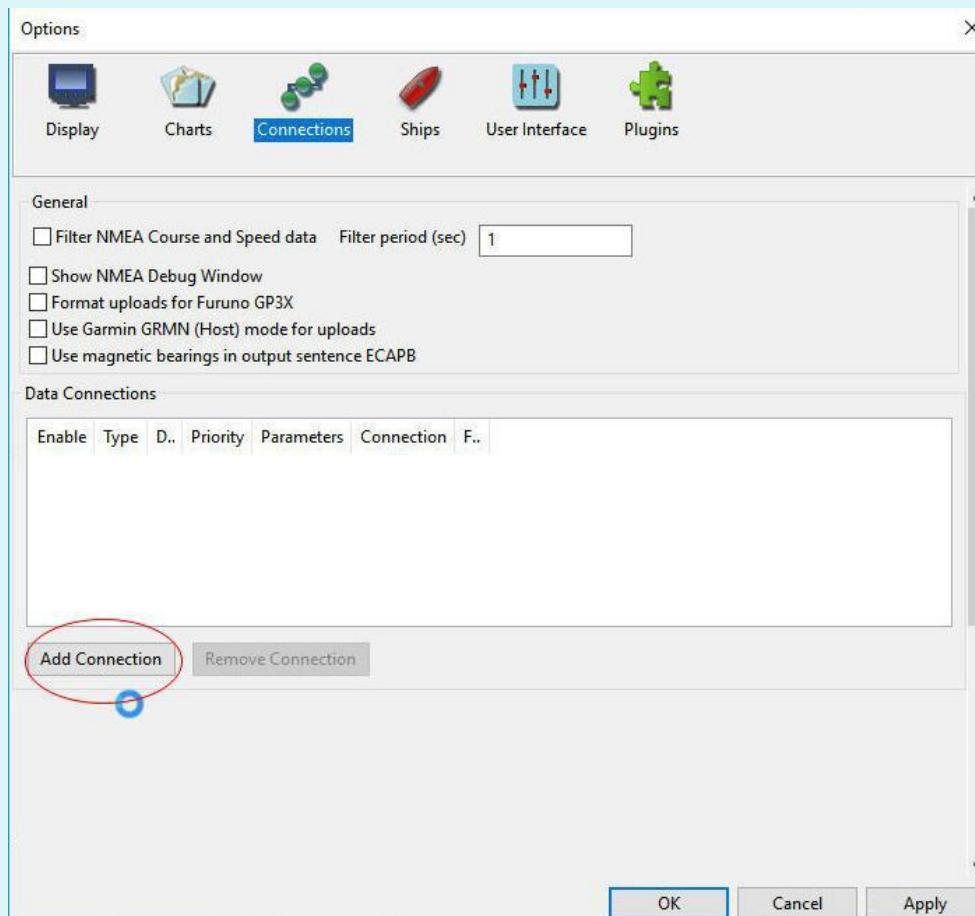
With the GPS installed in the computer's USB
and receiving a position (Red LED is blinking)
it's now time to connect it to OpenCPN

PROGRAM SETTINGS

GPS

Launch OpenCPN

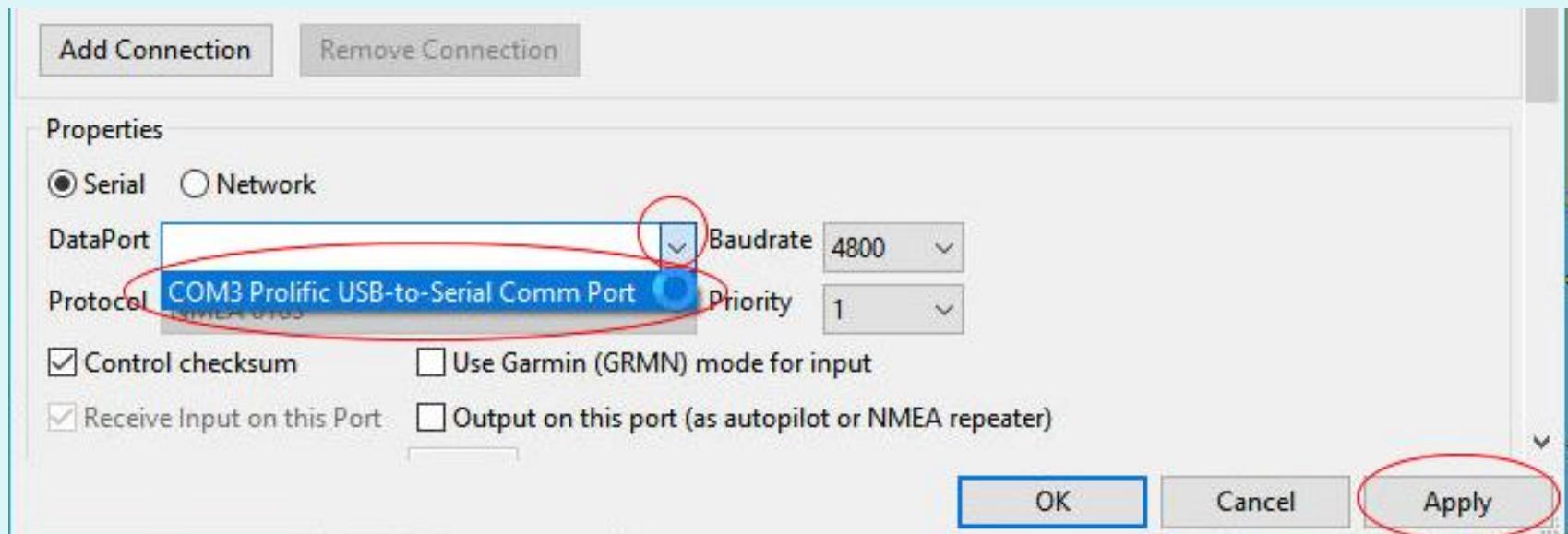
In Options/Connections click on 'Add Connection'



PROGRAM SETTINGS

GPS

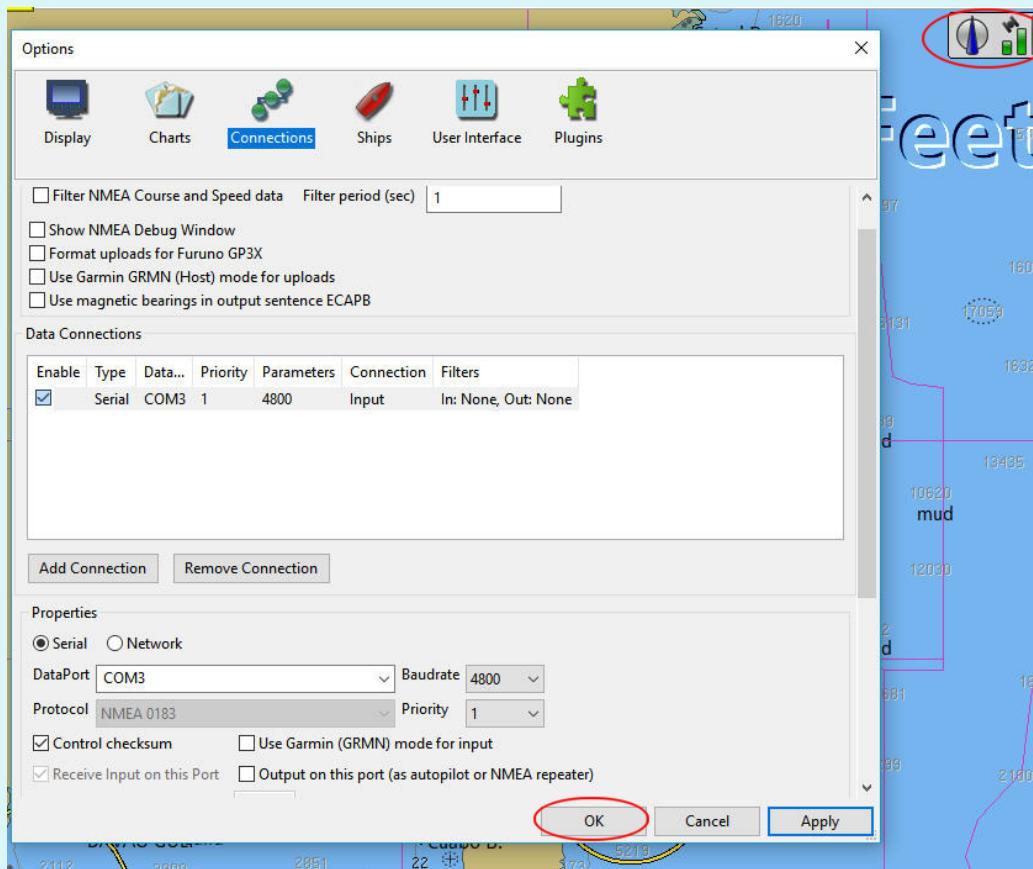
Click on the elevator to reveal the installed GPS at COM3. Success! Click on the highlighted text then click on ‘Apply’



PROGRAM SETTINGS

GPS

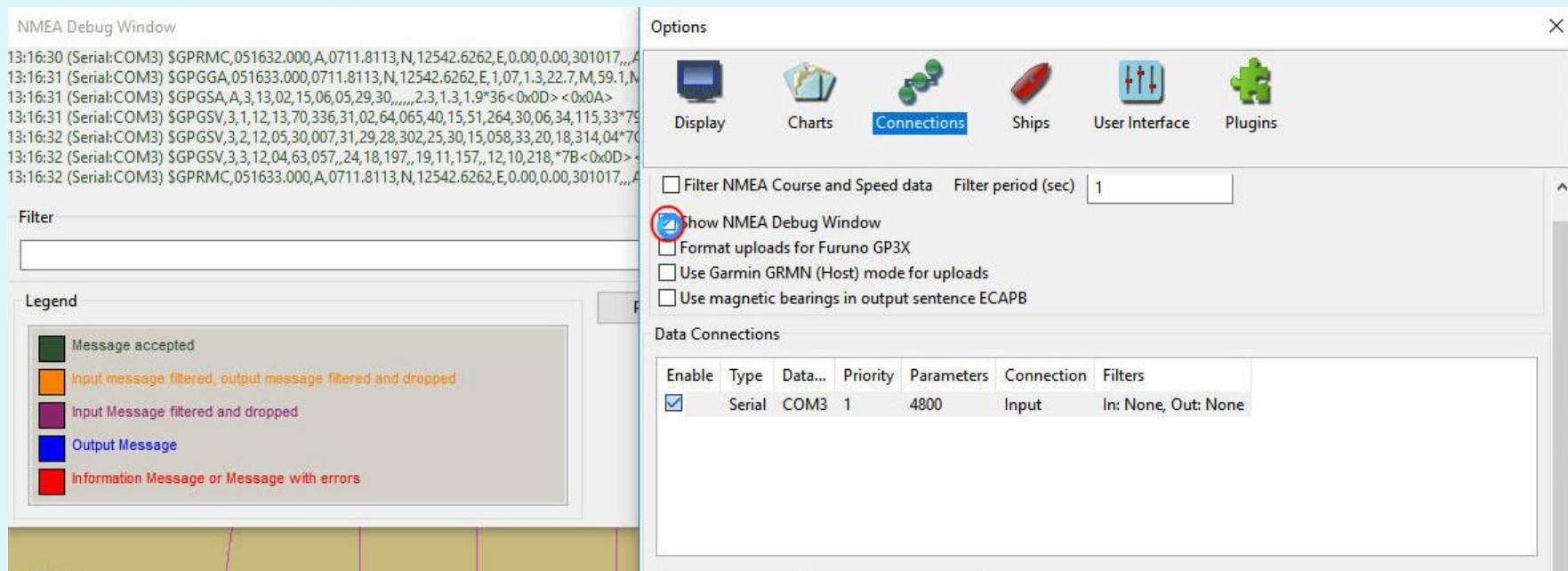
The Options screen shows that COM3 has been enabled and the green bars in the upper right hand corner show a position has been received



PROGRAM SETTINGS

GPS

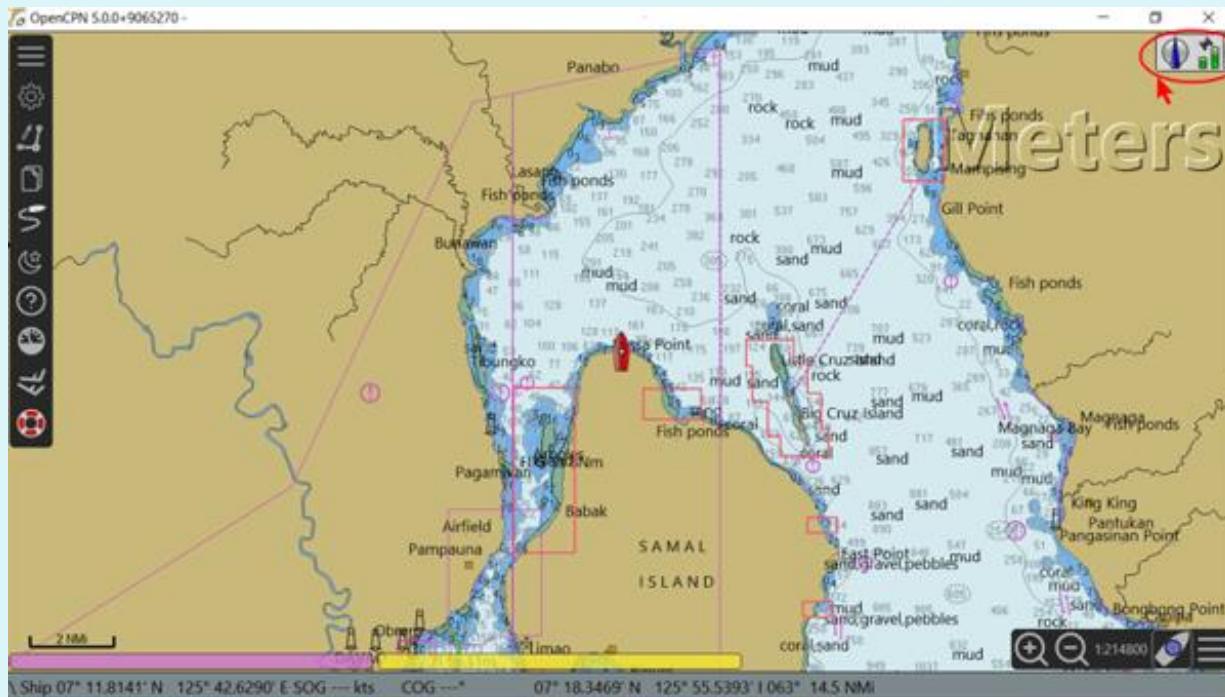
As a further check you can select the 'Show NMEA Debug Window' box. The incoming NMEA data will scroll up the DeBug window.



PROGRAM SETTINGS

GPS

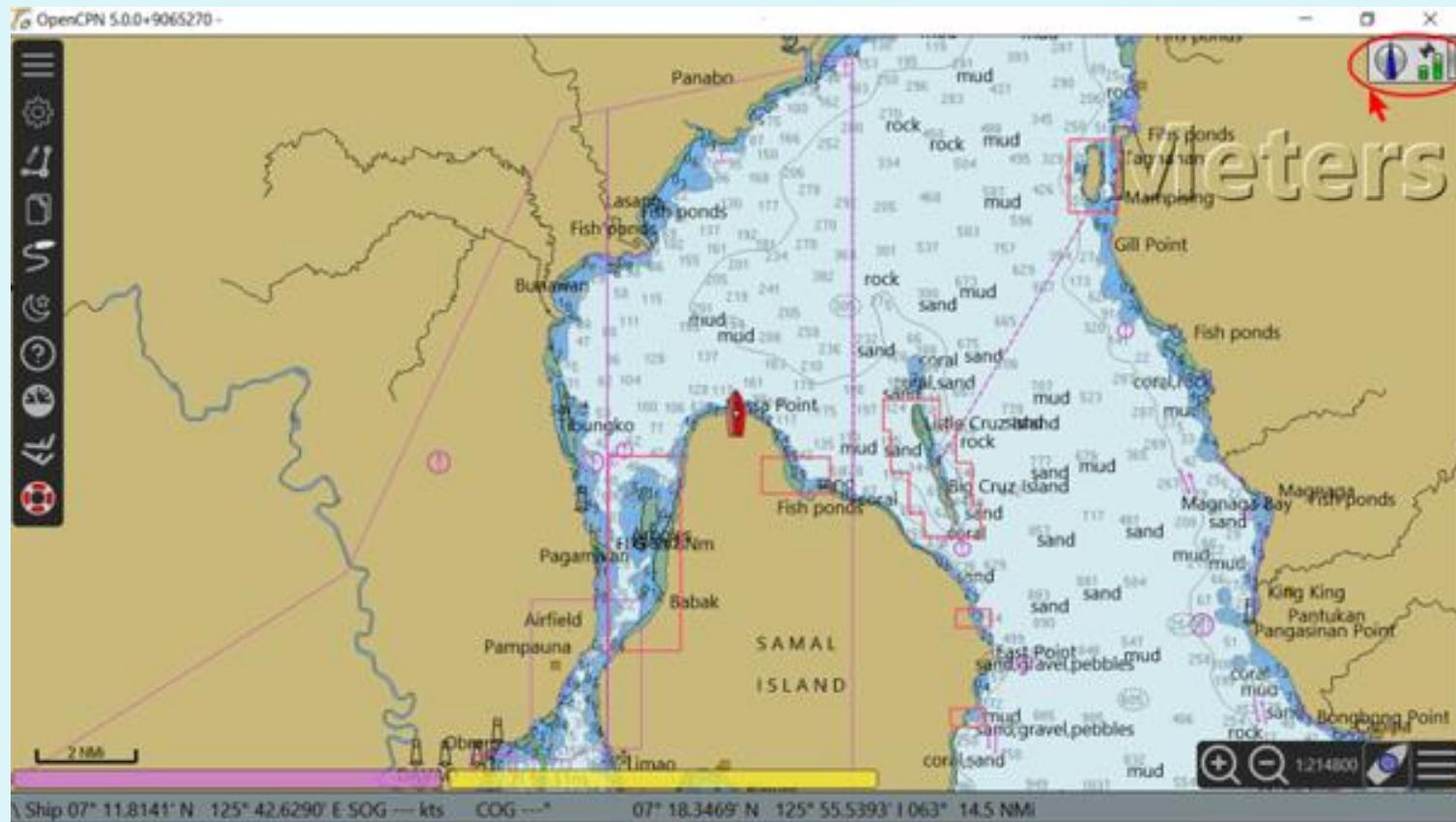
Uncheck the ‘Show NMEA Debug Window’ box and click on ‘OK’ to return to the OpenCPN screen



PROGRAM SETTINGS

GPS

On the OpenCPN screen the GPS will be seen as green bars in the upper right hand corner and the boat icon will be red in color.



PROGRAM SETTINGS

GPS

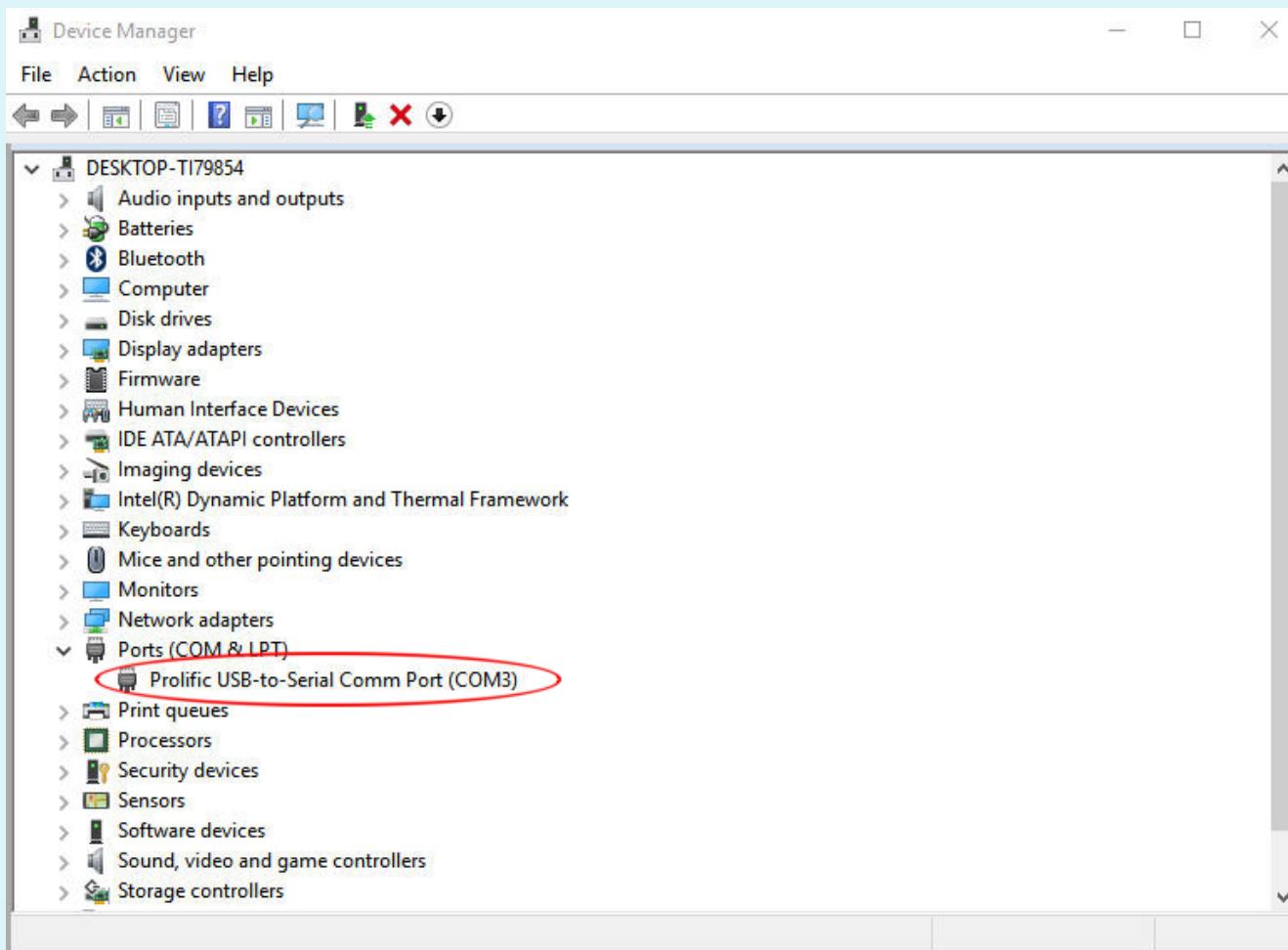
CHANGE GPS COM PORT NUMBER

When the GPS is inserted into a USB port the computer assigns a COM port number based on some internal rules. With multiple USB ports the number can be different for each port used. If, for convenience, you want a particular COM port number to be assigned and/or all USB ports to have the same number the **Device Manager** is used to make these assignments.

PROGRAM SETTINGS

GPS

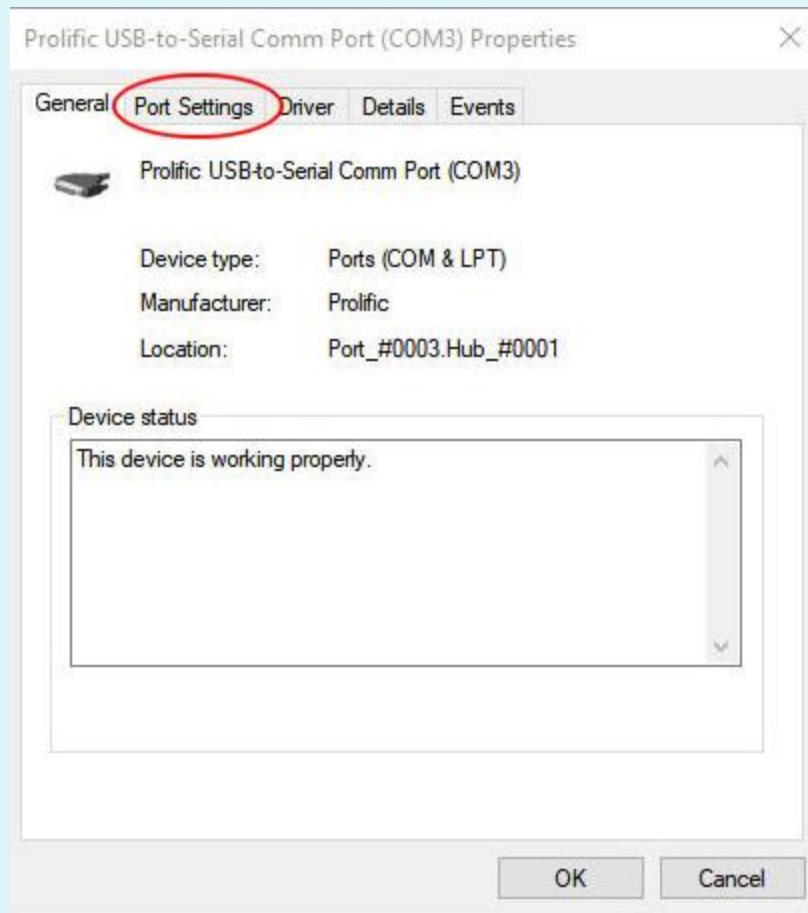
Display the COM port assignment and right-click on it.



PROGRAM SETTINGS

GPS

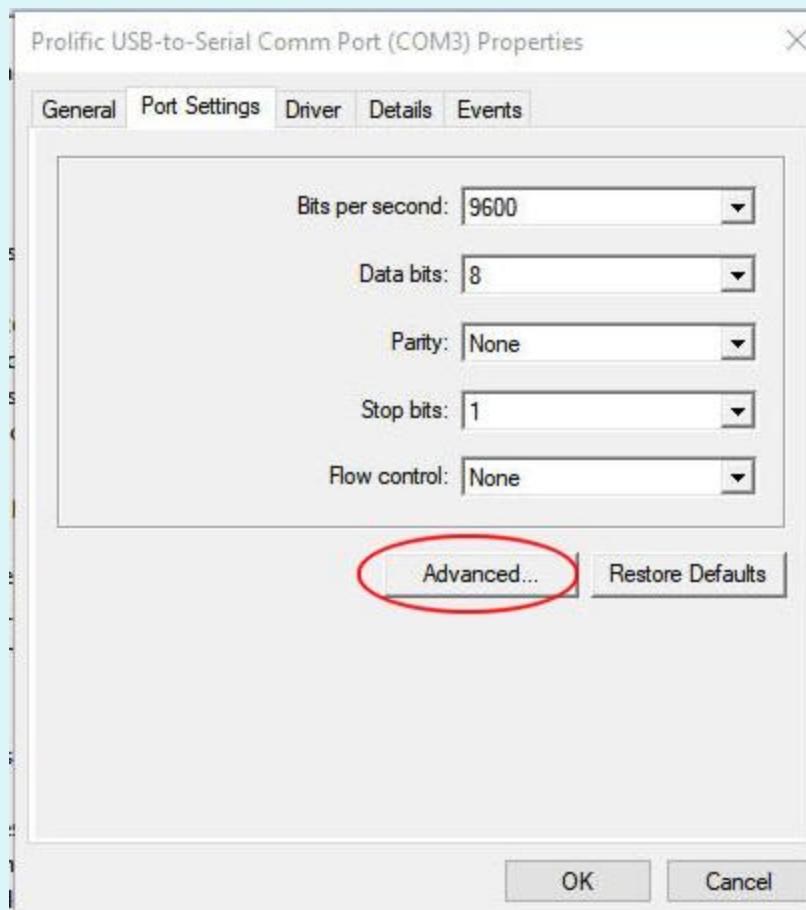
Click on the ‘Port Settings’ tab.



PROGRAM SETTINGS

GPS

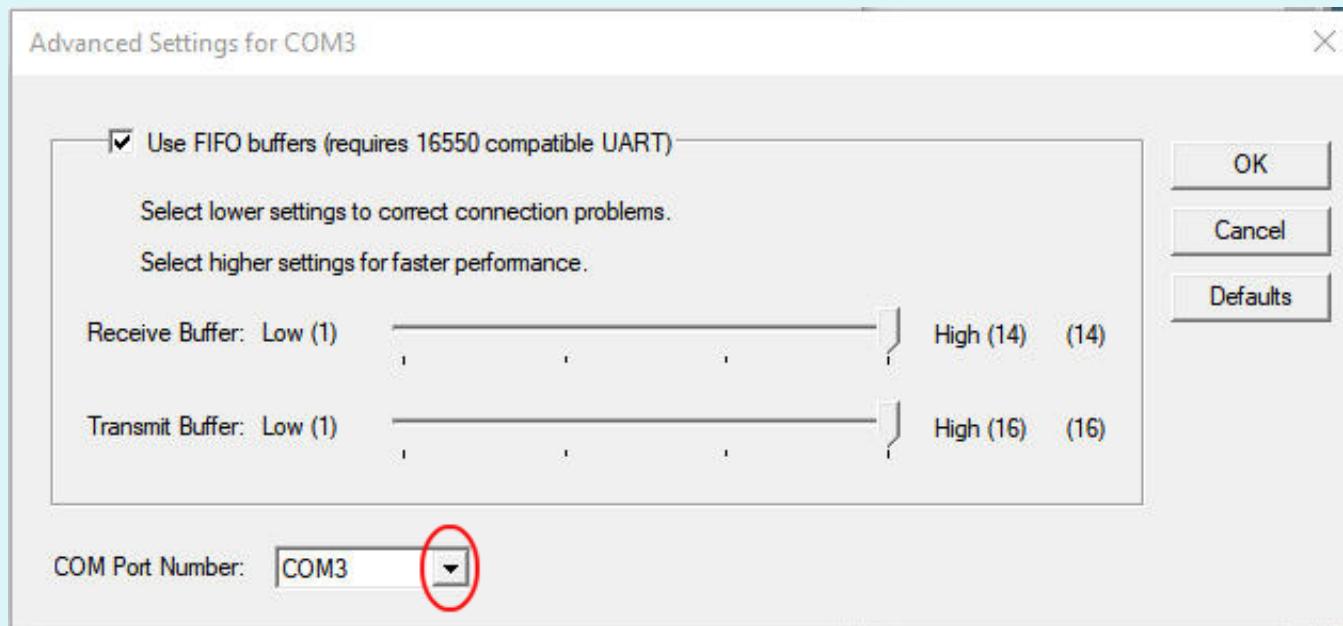
Click on the ‘Advanced’ button



PROGRAM SETTINGS

GPS

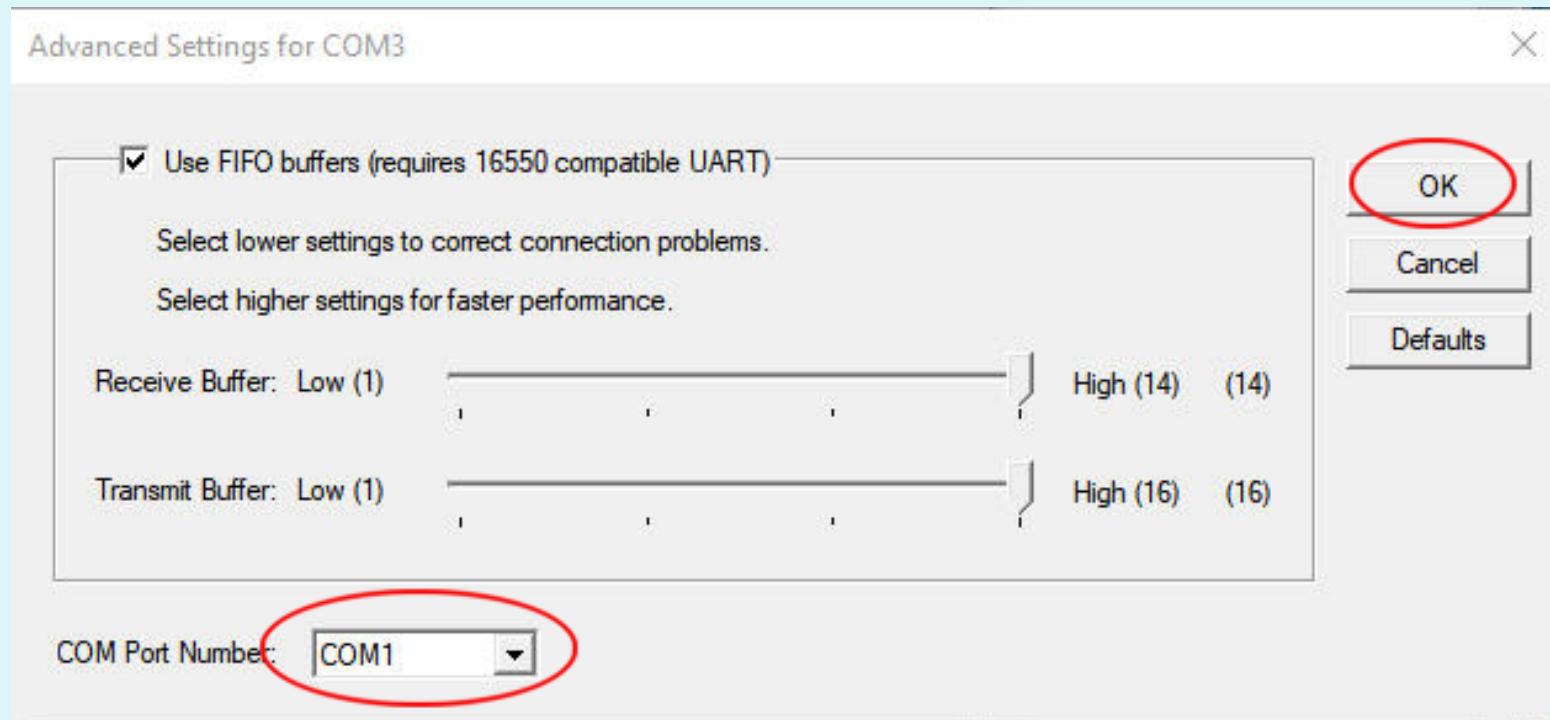
Click on the ‘COM Port Number’ elevator



PROGRAM SETTINGS

GPS

From the elevator select the desired COM port number (in this case COM1) and click ‘OK’



PROGRAM SETTINGS

GPS

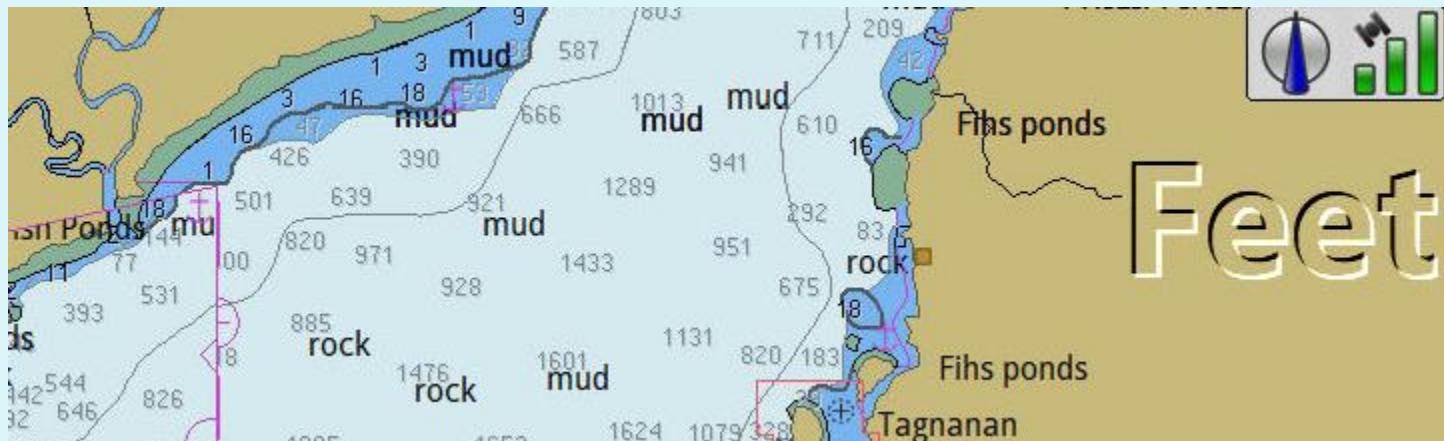
If for convenience you want all USB ports to be the same COM port number, repeat the above for each of the other USB ports. Since you have assigned COM1 to the first USB port you will get this error message. At each instance click on 'Yes'. **Remember to correct the COM Port in OpenCPN if you have changed the number.**



PROGRAM SETTINGS

Display Depth Units

My display shows soundings in feet.



I have chosen this unit since my depth sounder displays depths in feet.
You have a choice of units to be displayed.

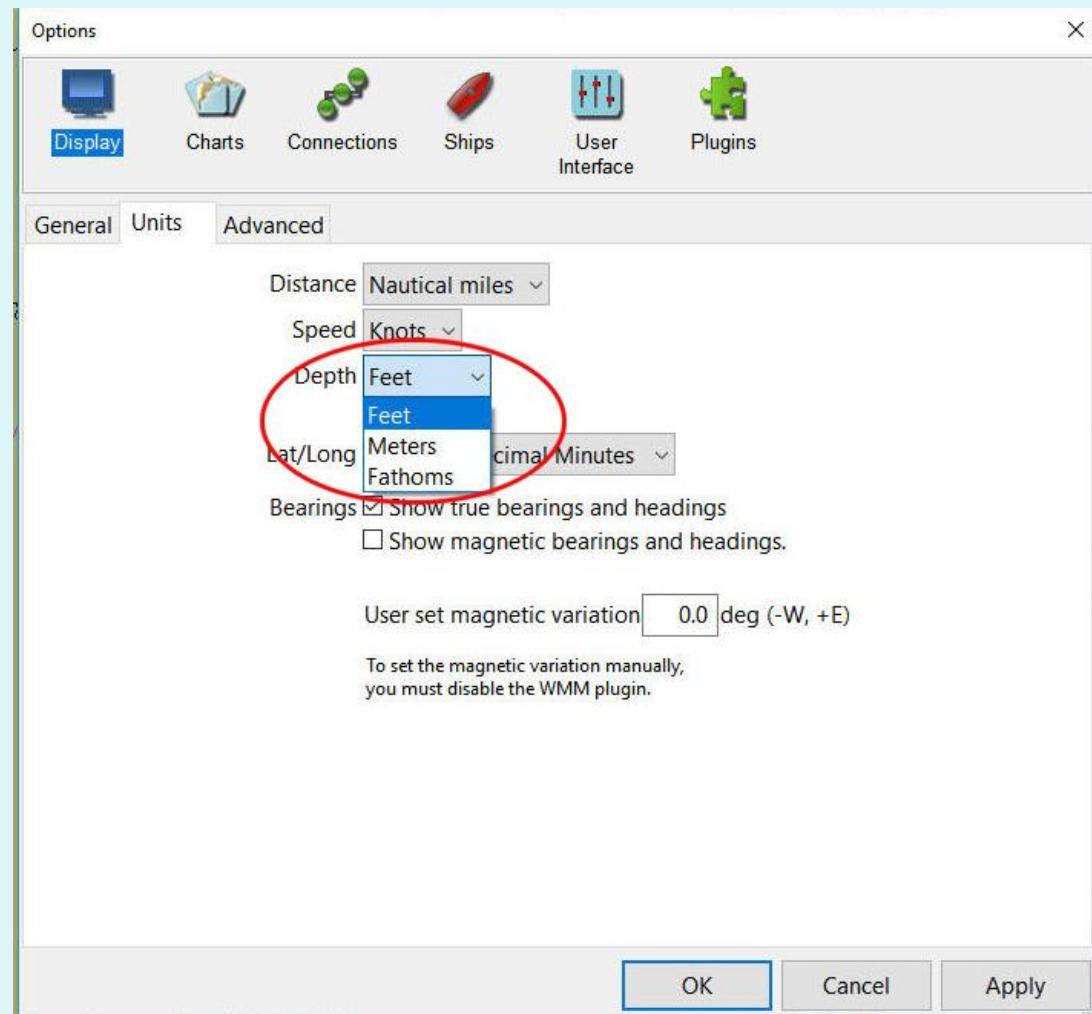
PROGRAM SETTINGS

Display Depth Units

Go to 'Options/Display' Units '

You have the choices as shown; Feet, Meters Or Fathoms.

Other units such as distance, speed and position can be changed here as well.



ROUTES

Create a Route

Begin by selecting the 'Create Route' tool on the Tool Bar. (The shortcut is to hold down the 'CTL' key and press 'R'.)



The cursor turns into a 'PENCIL' shape and the Taskbar is minimized.

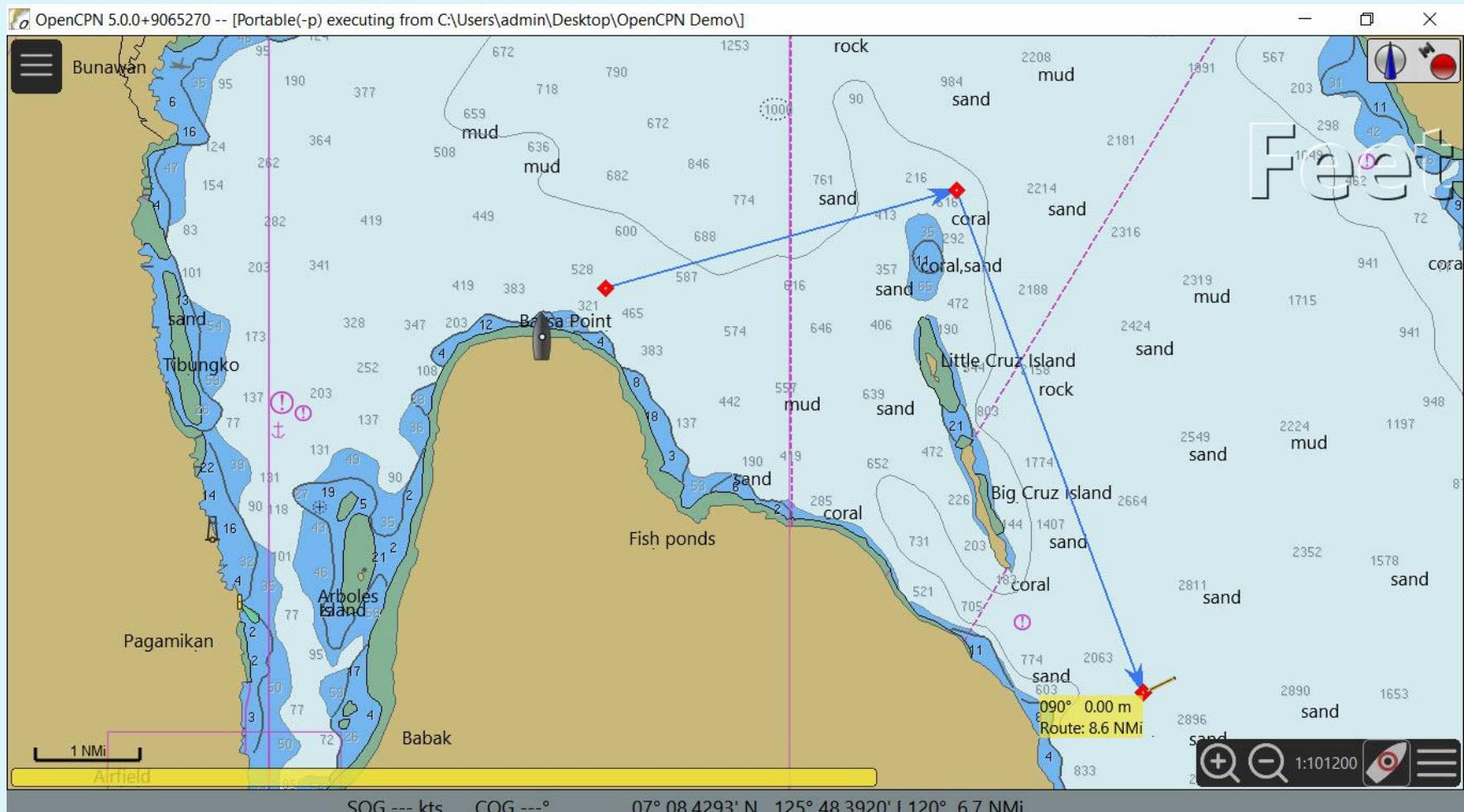


ROUTES

Create a Route

Click the 'pencil' pointer at desired locations to describe a route.

Continue dropping waypoints until the route has been completed then press the 'Esc' key to stop. (Alternatively right-click and select 'End Route')



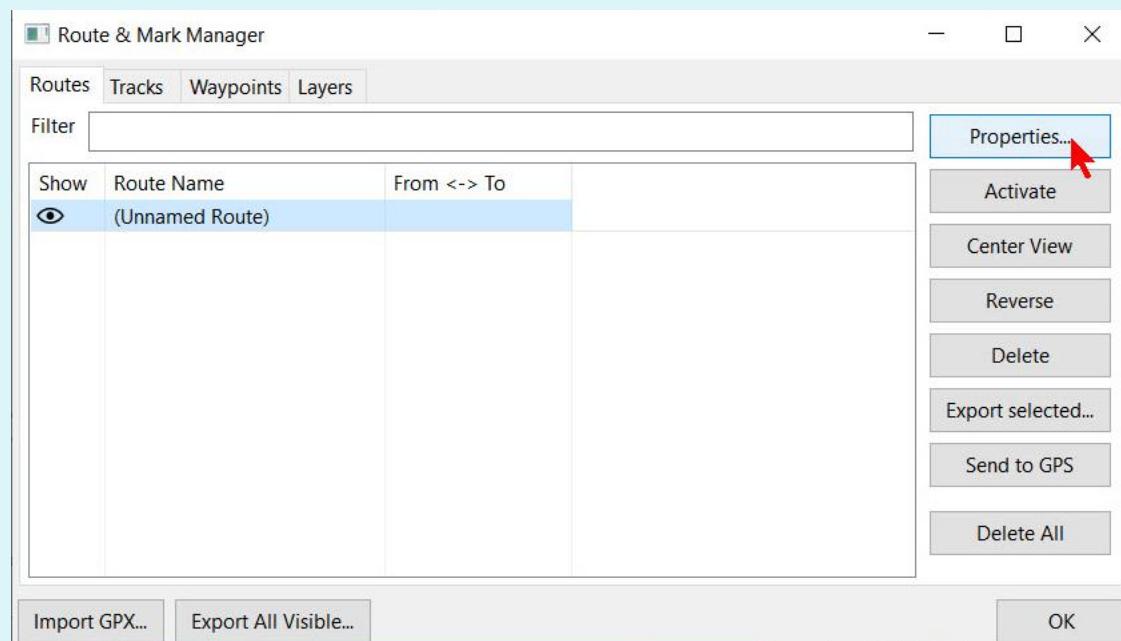
ROUTES

Create a Route

Open the ‘Route & Mark Manager’ from the Tool Bar.



On the ‘Routes’ tab
select the new
(Unnamed Route)
then click on
'Properties'



ROUTES

Create a Route

Here you can give the route a name (e.g. SAMPLE ROUTE).
The route properties such as the length of the route and waypoint details
are presented here.

Route Properties

Properties

Name: SAMPLE ROUTE

Depart From: [] Destination: []

Total distance: 7.21 NMi Plan speed: 6.00 Time enroute: 01 Hours 12 Minutes Departure Time (m/d/y h:m): []

Time shown as: UTC Local @ PC LMT @ Location Color: Default color Style: Default Width: Default

Waypoints

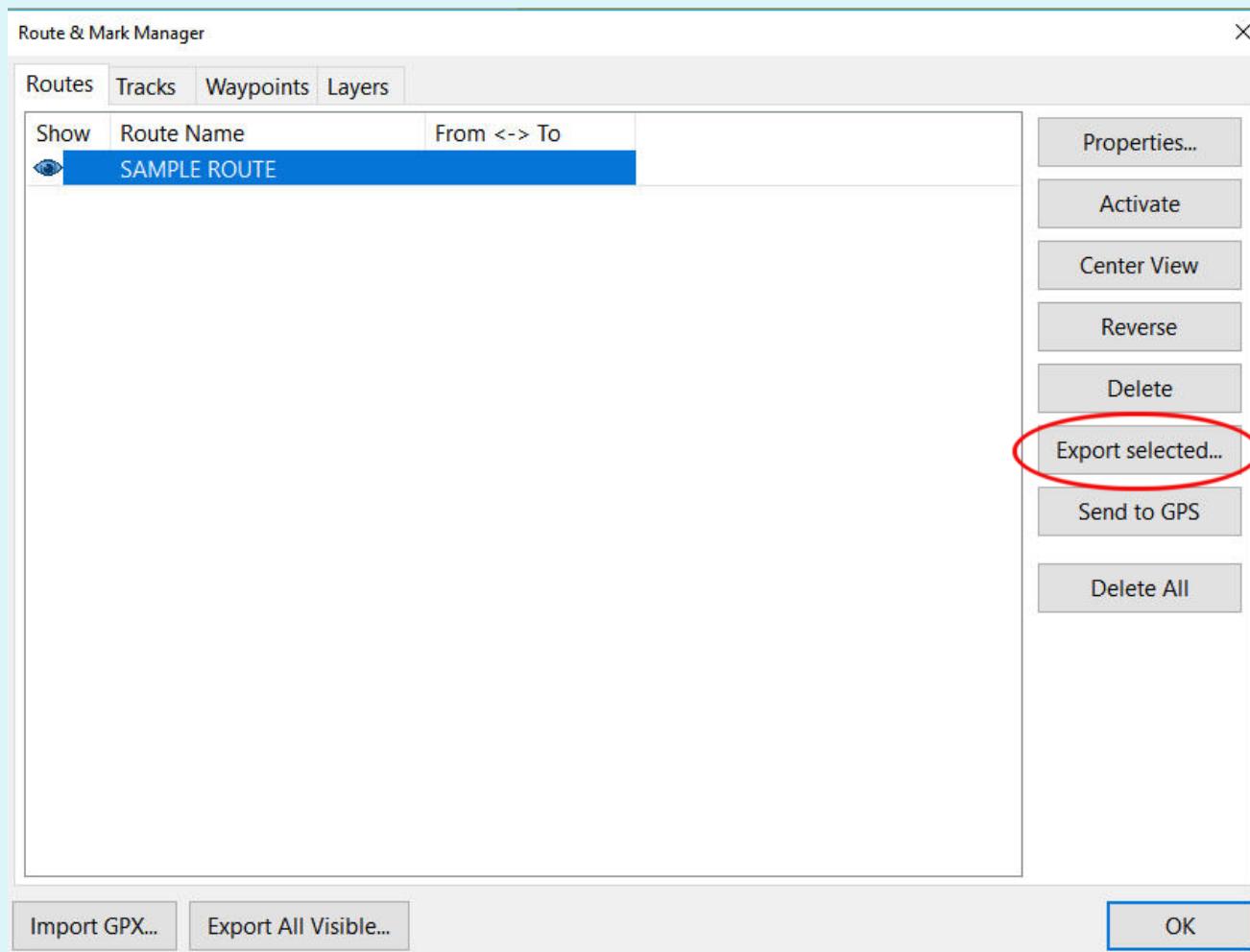
L..	To Waypoint	Distance	Bearing	Latitude	Longitude	ETE	Speed	Next tide e...	Description	Co
---	001	0.58 NMi	048 Deg. T	07 12.2 N	125 43.1 E	Start	6.00			072
1	002	2.95 NMi	072 Deg. T	07 13.1 N	125 45.9 E	00 H 29 M	6.00			091
2	003	0.80 NMi	091 Deg. T	07 13.1 N	125 46.7 E	00 H 37 M	6.00			167
3	004	3.45 NMi	167 Deg. T	07 09.7 N	125 47.4 E	01 H 12 M	6.00			

Print Route Extend Route Split Route Cancel OK

ROUTES

Save a Route

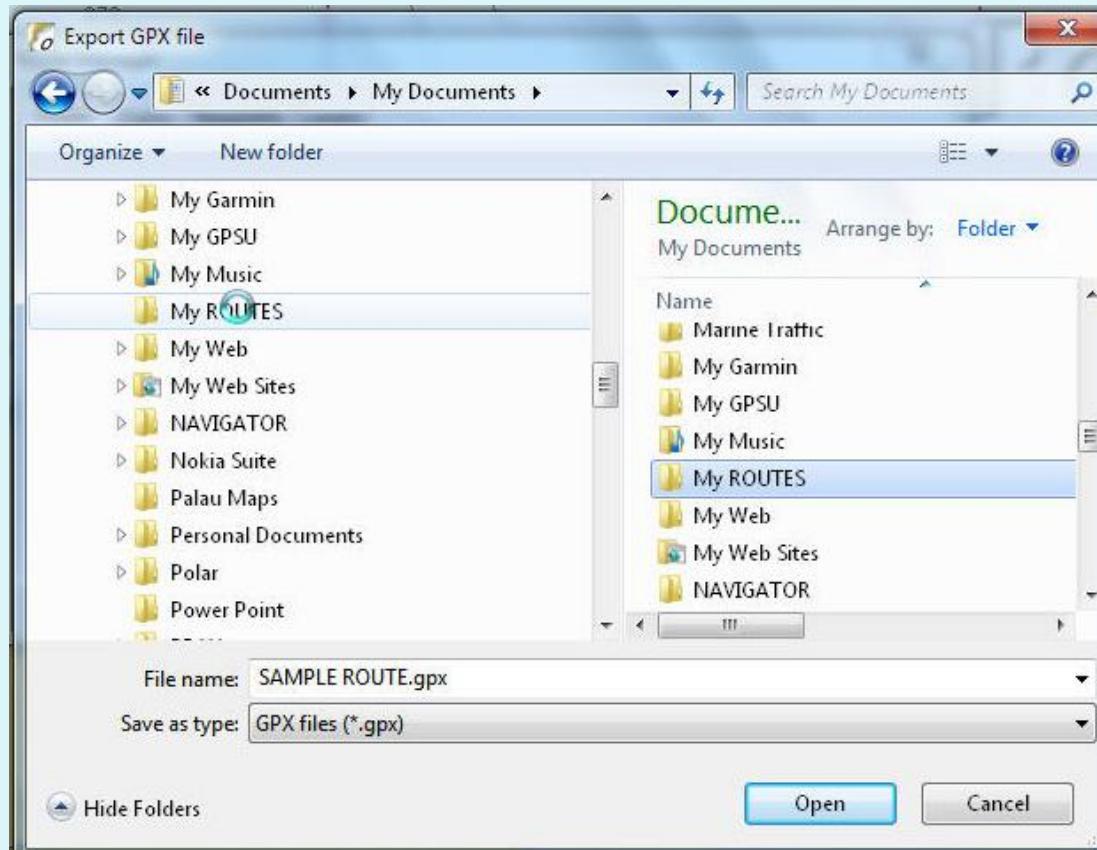
To save the route for future reference go to the 'Route & Mark Manager'. Select the route and click on 'Export selected ...'.



ROUTES

Save a Route

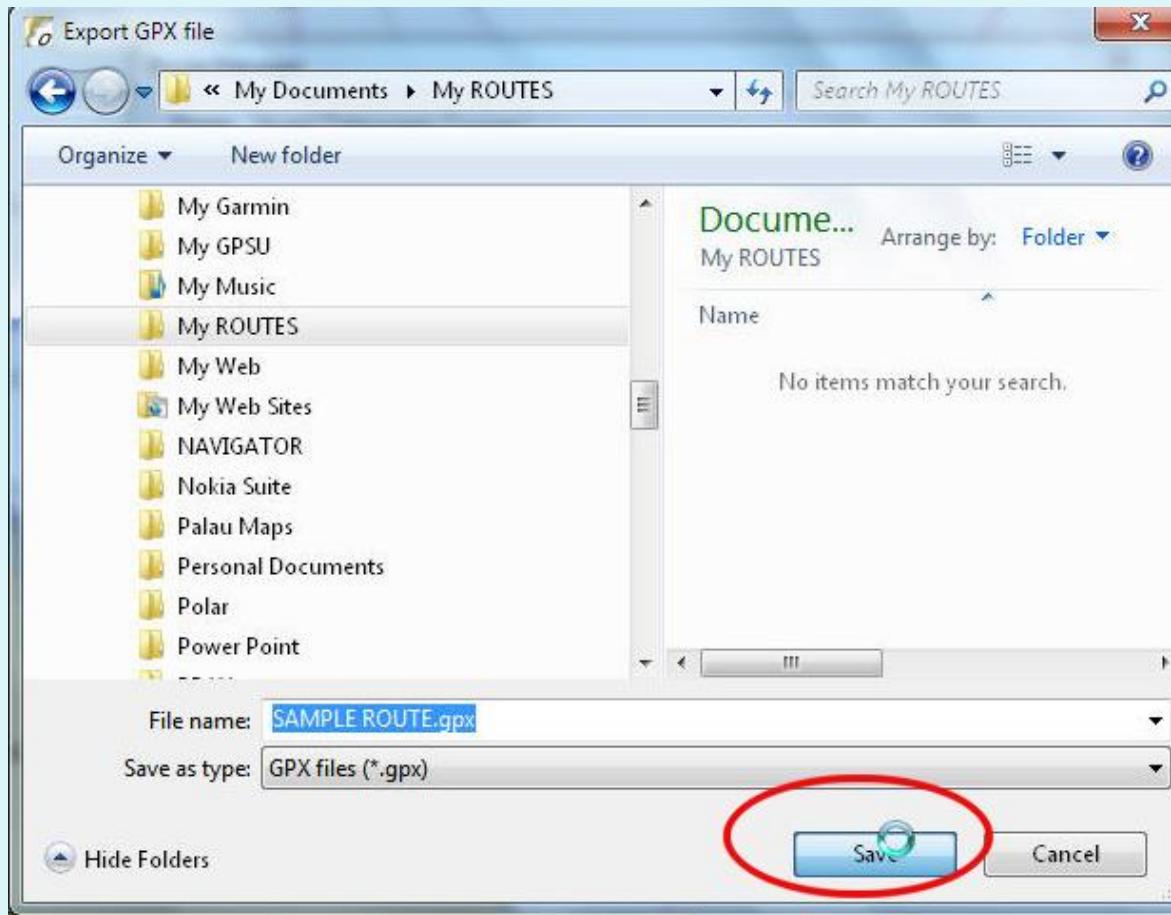
Navigate to where you save your routes (e.g. such as My Routes under My Documents) and open the folder.



ROUTES

Save a Route

Click on 'Save' and the route is saved to the hard drive.



ROUTES

Change a Route

To make changes within a route, right-click on the route and click on 'Insert waypoint'

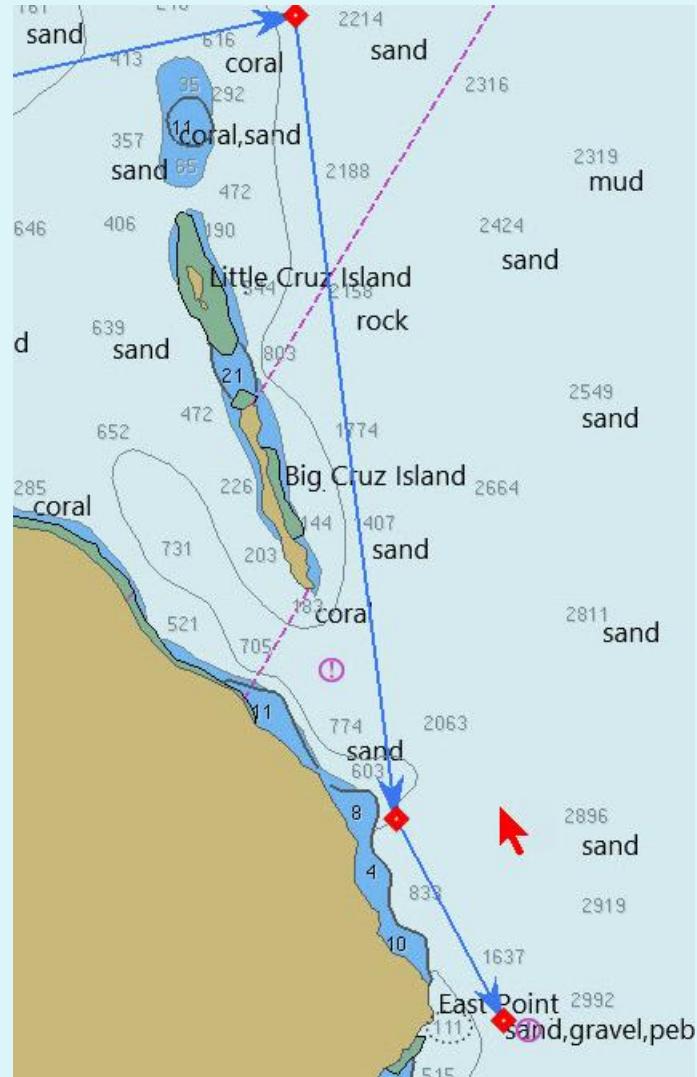


ROUTES

Change a Route

Place the cursor on the newly created waypoint and move it to the desired location

(But)



ROUTES

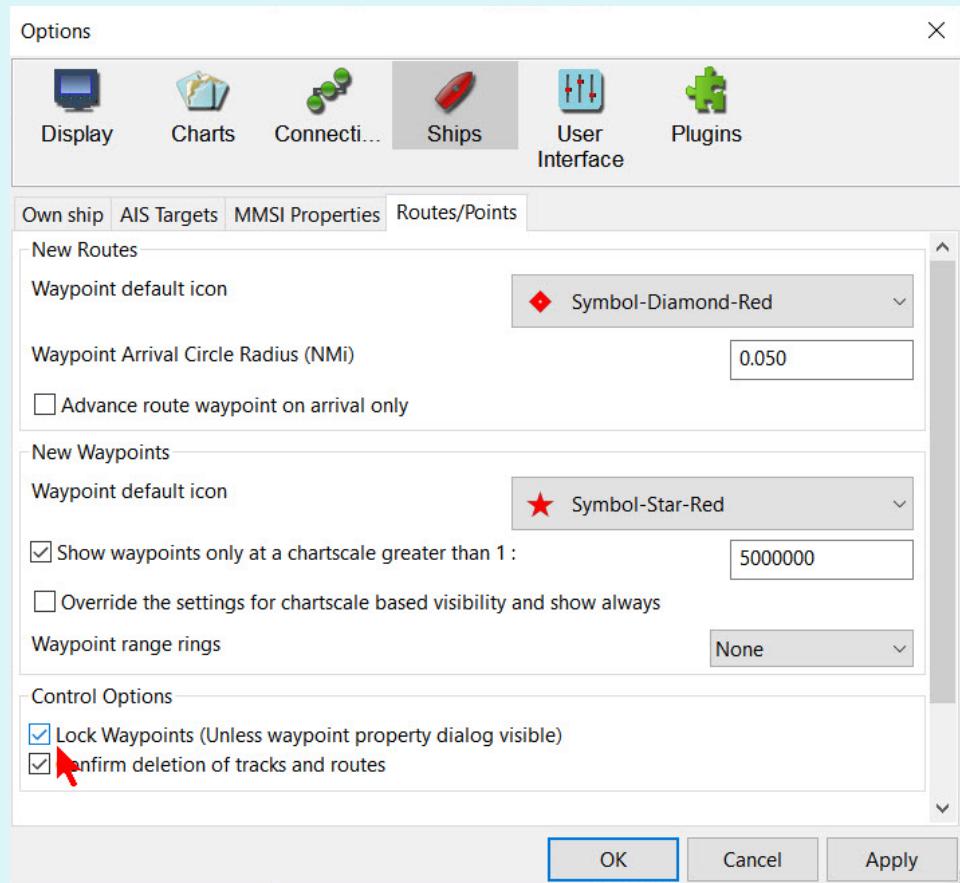
Change a Route

It may happen that you cannot move a waypoint on the newly created route.

This is because all waypoints have been 'LOCKED'

Go to 'Options/Ships/Routes/Points AND UNCHECK the box 'Lock Waypoints...'

(More discussion on this later)



ROUTES

Change a Route

Displaying the ‘Route Properties’ shows the changes to the route. Longer distance and the new waypoint that was added.

Route Properties

Properties

Name
SAMPLE ROUTE

Depart From Destination

Total distance Plan speed Time enroute Departure Time (m/d/y h:m)

7.38 NMi 6.00 01 Hours 13 Minutes

Time shown as
 UTC Local @ PC LMT @ Location Color: Default color Style: Default Width: Default

Waypoints

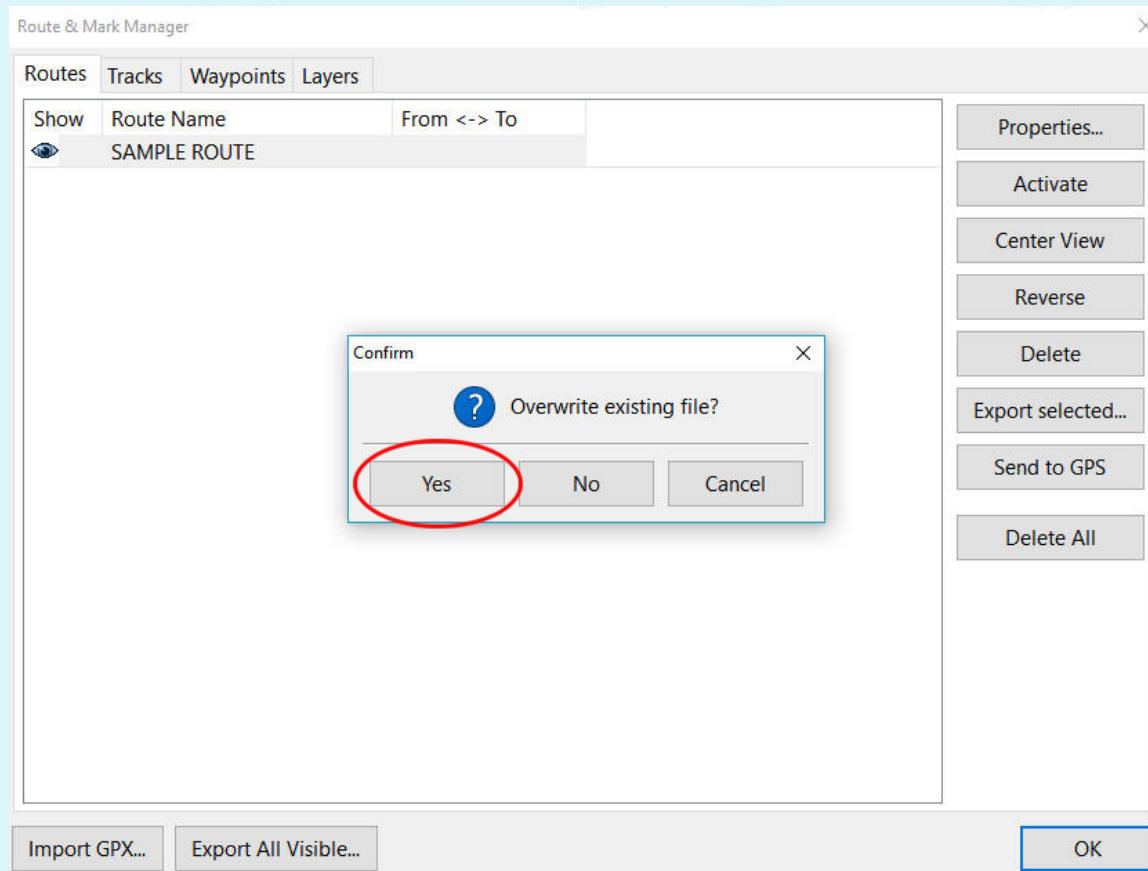
L..	To Waypoint	Distance	Bearing	Latitude	Longitude	ETE	Speed	Next tide e...	Description	Co
---	001	0.58 NMi	048 Deg. T	07 12.2 N	125 43.1 E	Start	6.00			072
1	002	2.95 NMi	072 Deg. T	07 13.1 N	125 45.9 E	00 H 29 M	6.00			091
2	003	0.80 NMi	091 Deg. T	07 13.1 N	125 46.7 E	00 H 37 M	6.00			186
3	NM001	1.06 NMi	186 Deg. T	07 12.1 N	125 46.6 E	00 H 48 M	6.00			161
4	004	2.56 NMi	161 Deg. T	07 09.6 N	125 47.4 E	01 H 13 M	6.00			

Print Route Extend Route Split Route Cancel OK

ROUTES

Change a Route

The route was saved previously and does not contain the newly created information. From the ‘Route & Mark Manager’ export the route again letting it overwrite the old route.



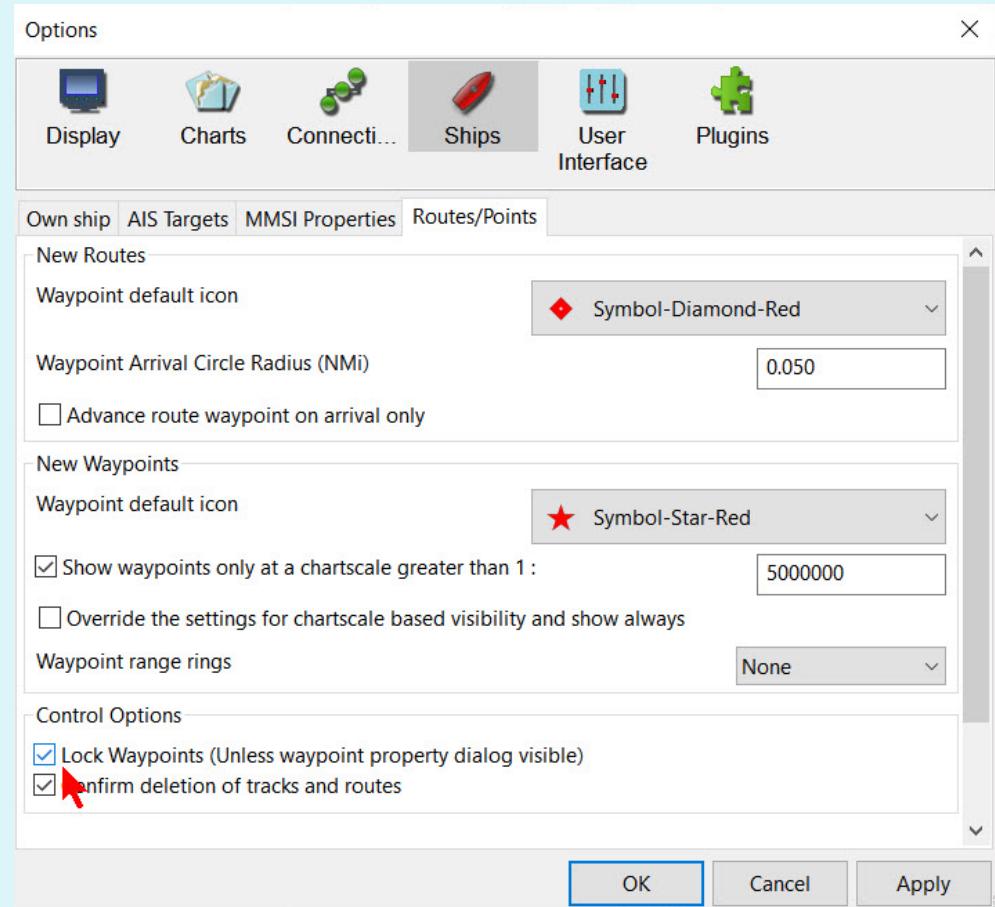
LOCK WAYPOINTS

Earlier we saw how to lock or unlock waypoints using The appropriate ‘Options’ page.

The rationale for keeping waypoints locked is to avoid the accidental change of a waypoint location while underway and following a route. (A ‘finger fart’)

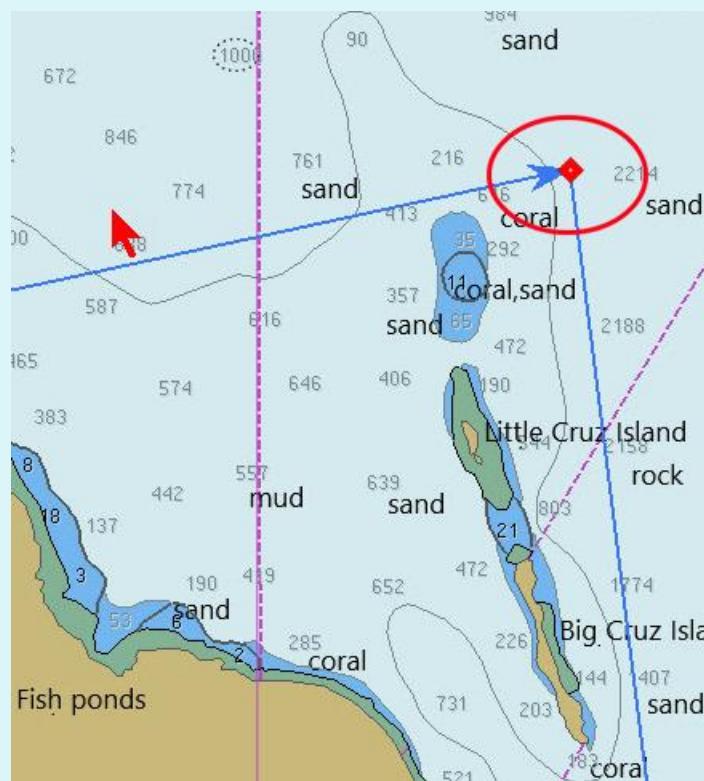
An alternative exists to allow a waypoint to be temporarily unlocked and moved.

Note it says ‘(Unless waypoint Property dialog visible)



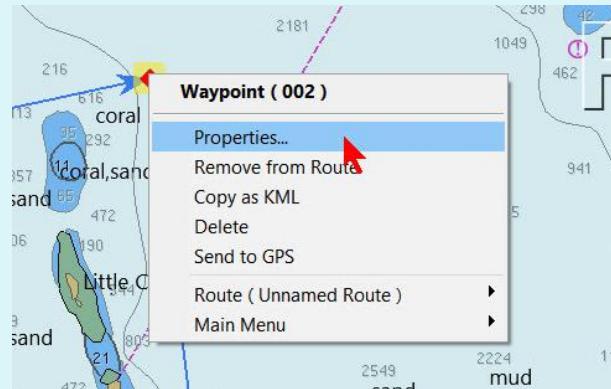
LOCK WAYPOINTS

Here is a waypoint in a route I want to move. With the waypoints locked I cannot click and drag it.

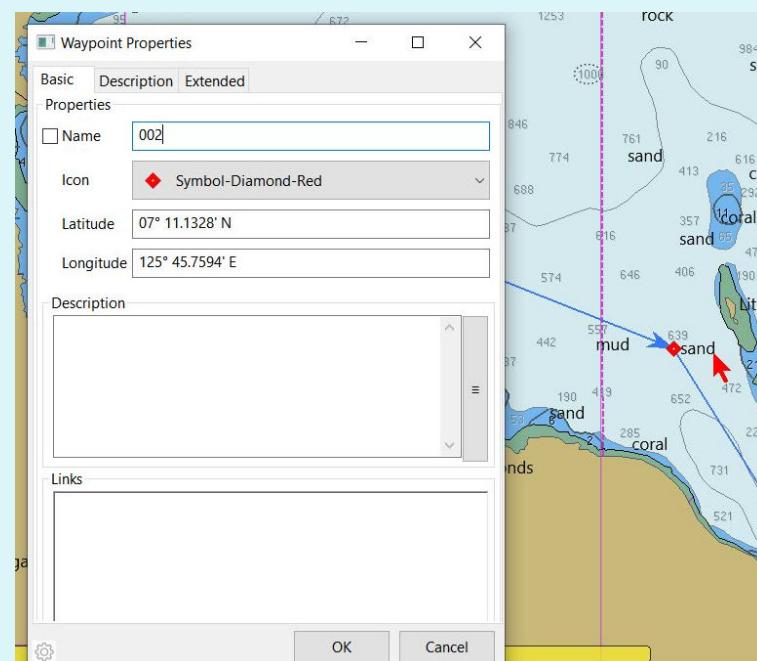


LOCK WAYPOINTS

Right-click on the waypoint and select 'Properties'. (An alternative is to double-click on the waypoint)



While the waypoint 'Properties' dialog screen is open the waypoint can now be moved.



LOCK WAYPOINTS

Closing the ‘Properties’ dialog again locks the waypoint in the new position.

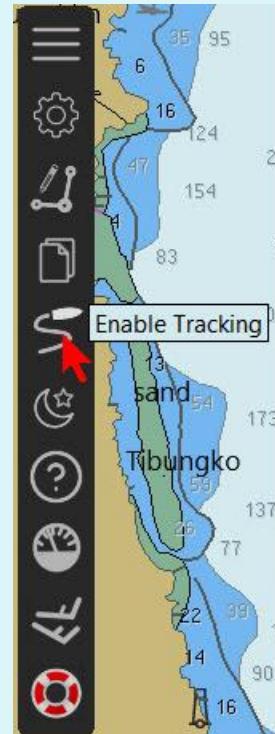
REMEMBER TO ‘Save’ THIS CHANGED ROUTE!



TRACKS

Create a Track

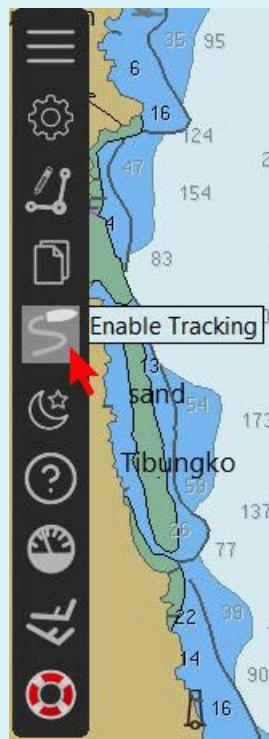
Click on the ‘Enable Tracking’ icon to activate displaying your track.



TRACKS

Create a Track

Tracking is confirmed by the icon becoming shaded.



TRACKS

Create a Track

The vessel's track is displayed.

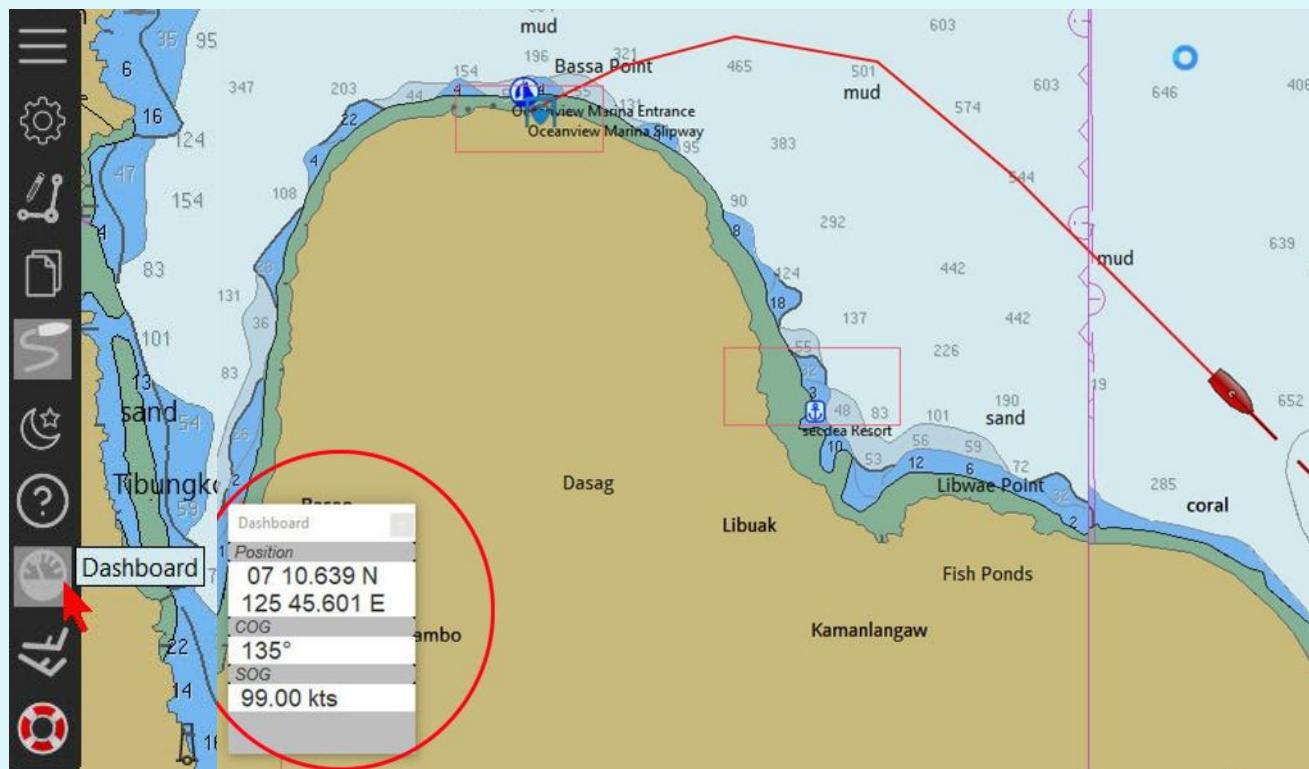
(No, my boat wasn't doing 99 knots .. I used GPS simulation to save time ☺)



TRACKS

Create a Track

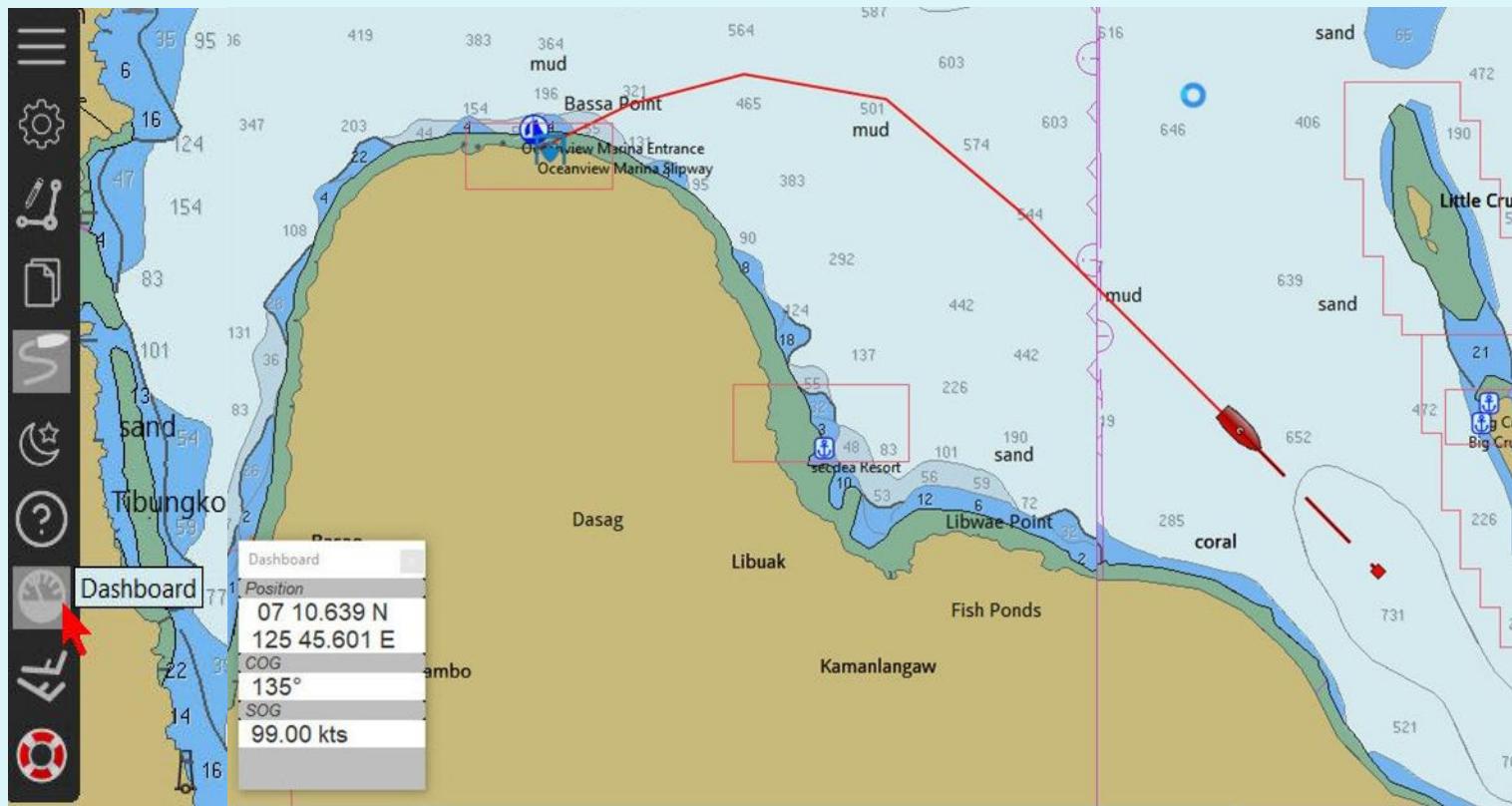
Note the Dashboard has been displayed by clicking on the Icon in the Taskbar



TRACKS

Create a Track

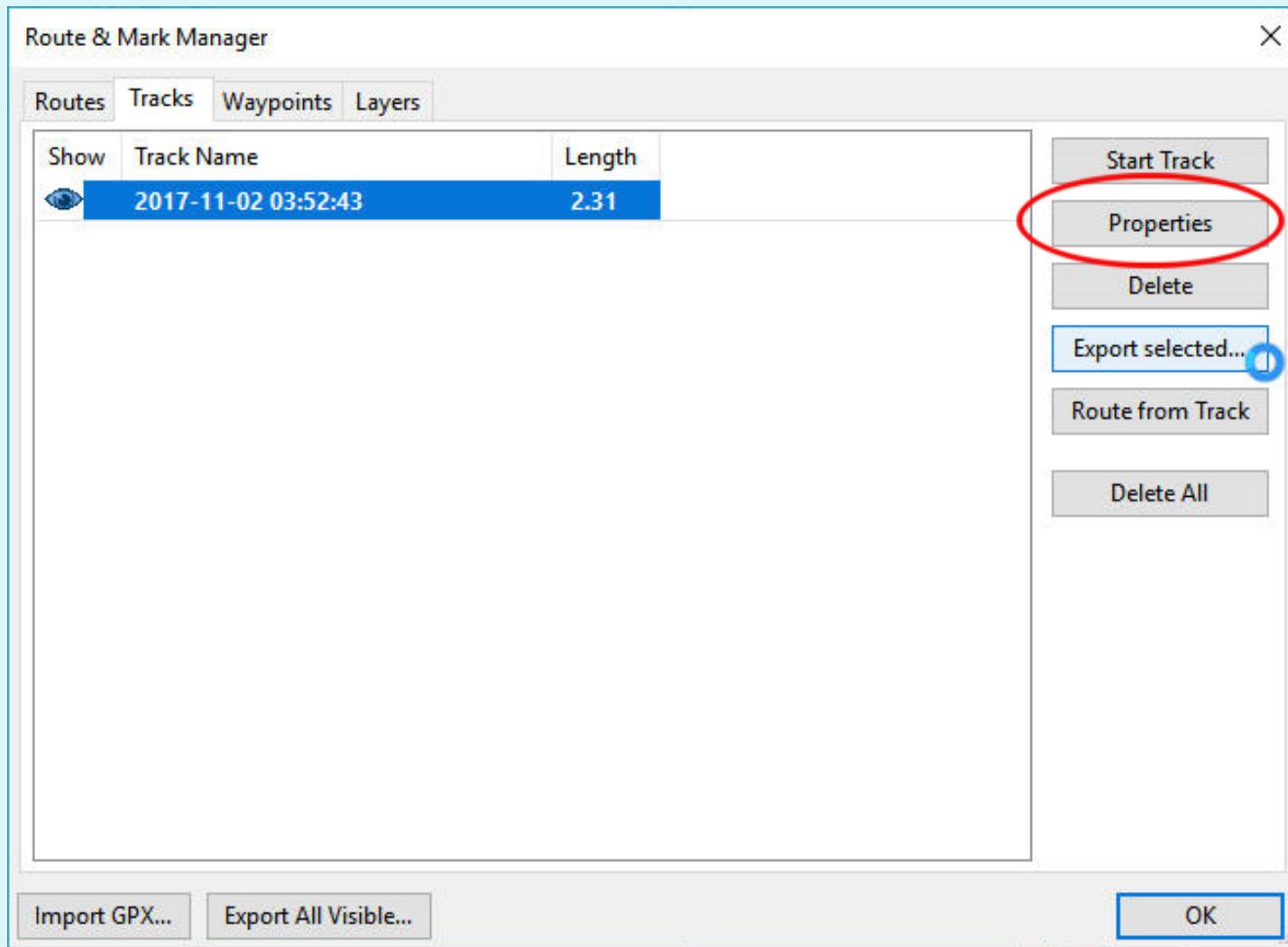
The simulation is stopped here to describe saving the track.



TRACKS

Save a Track

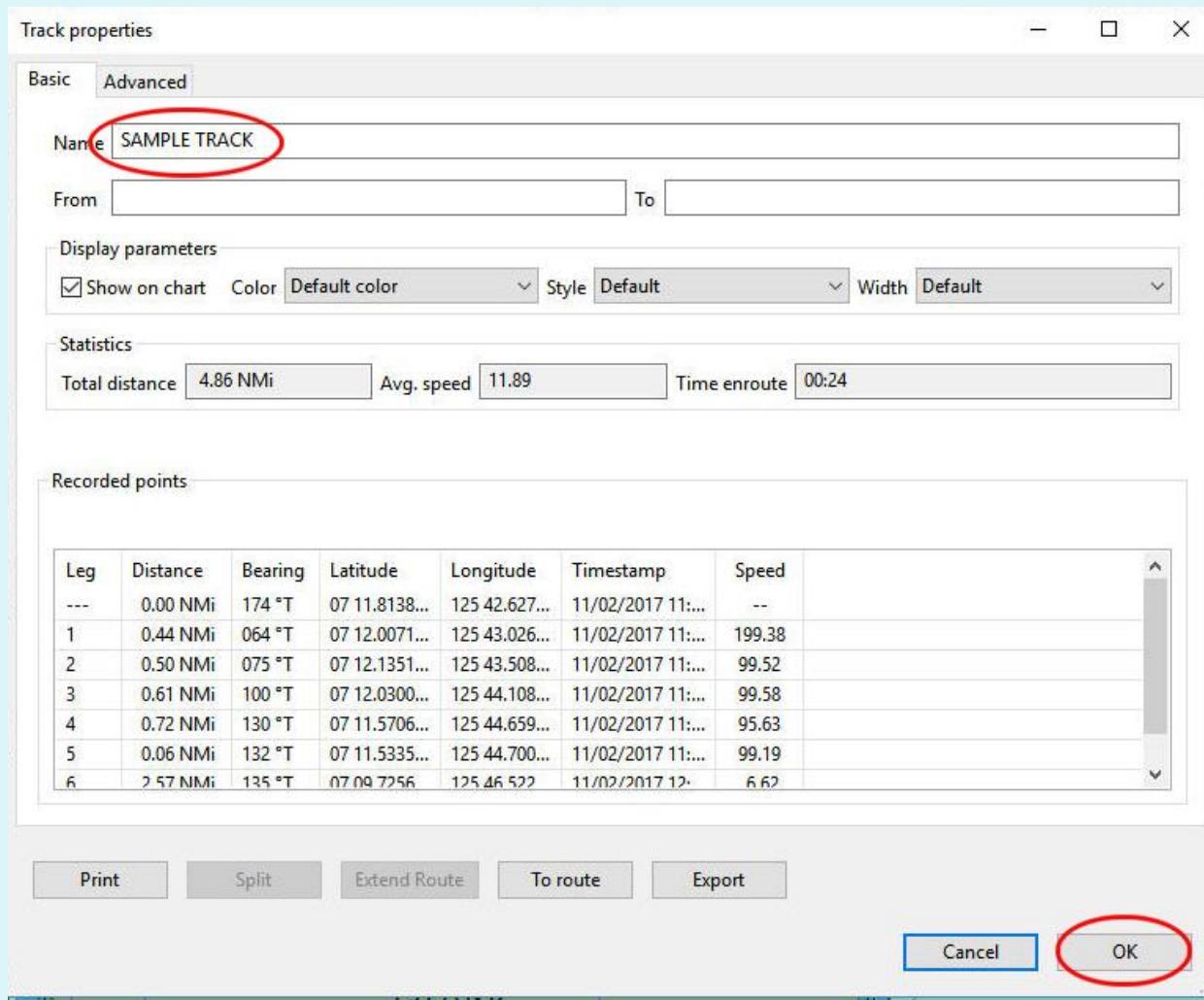
In the ‘Route & Mark Manager’ highlight the track and click on ‘Properties’



TRACKS

Save a Track

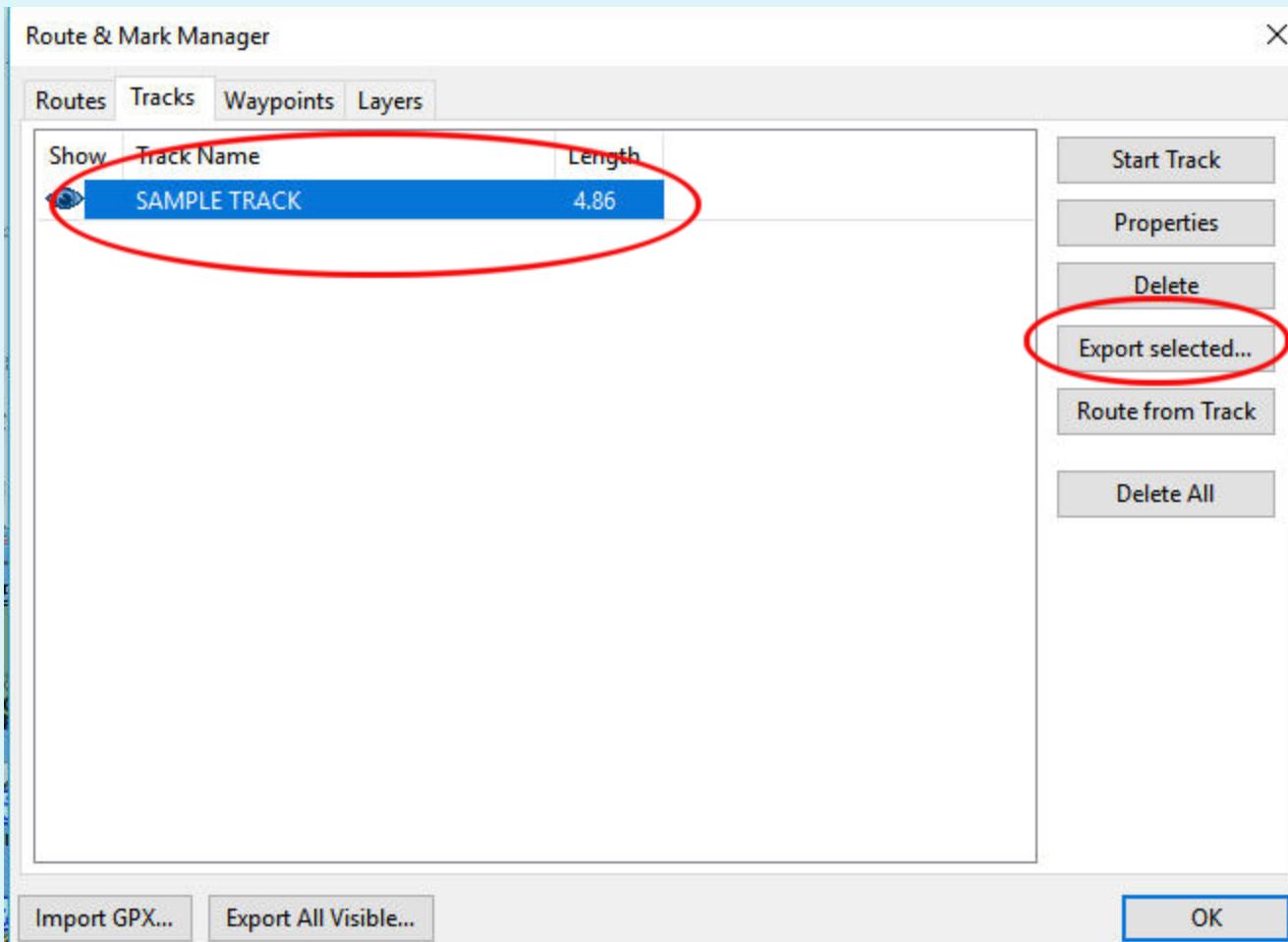
Give the track a name (in this case ‘SAMPLE TRACK’) then click on ‘OK’



TRACKS

Save a Track

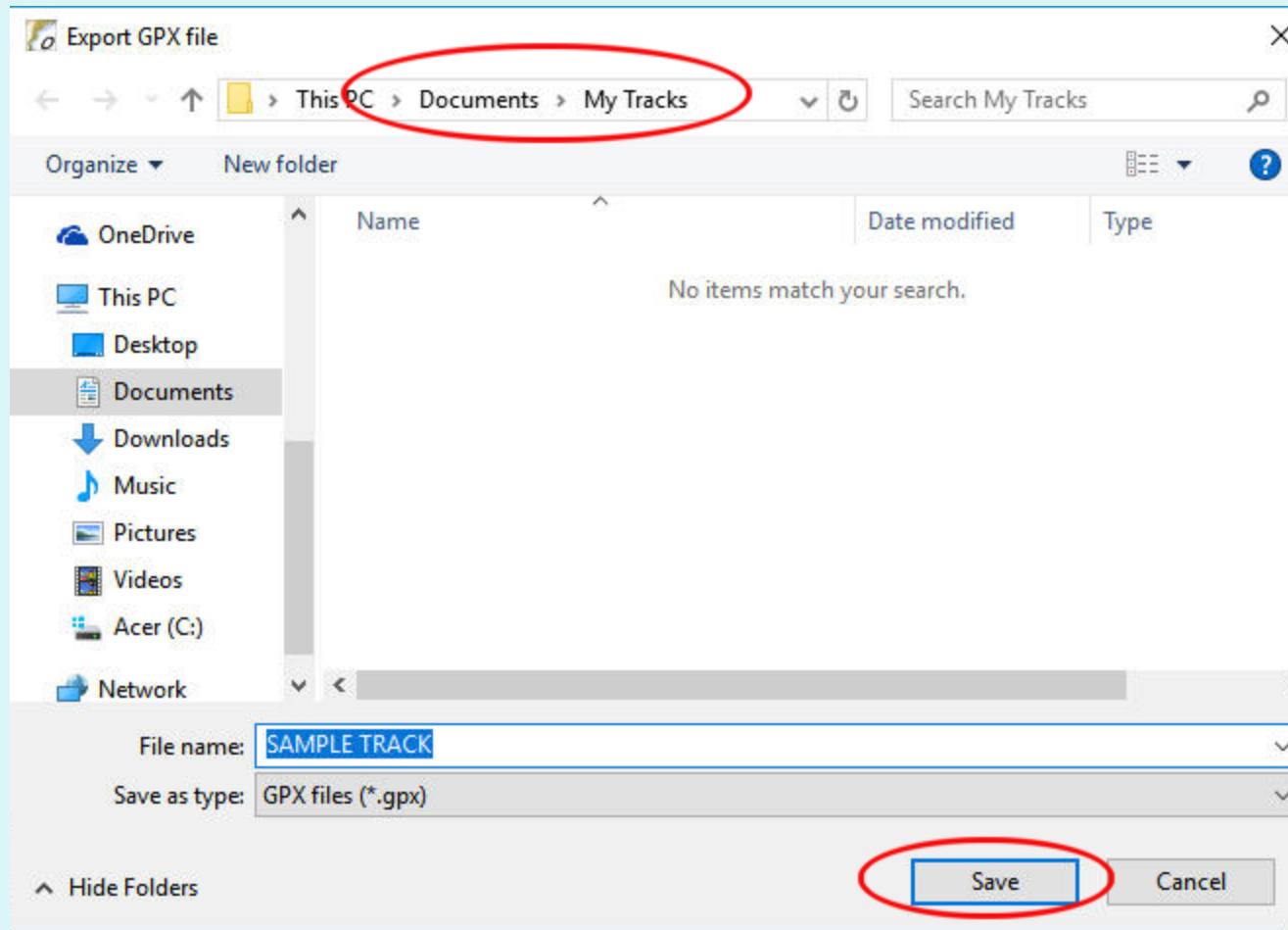
Select the named track and click on 'Export selected ...':



TRACKS

Save a Track

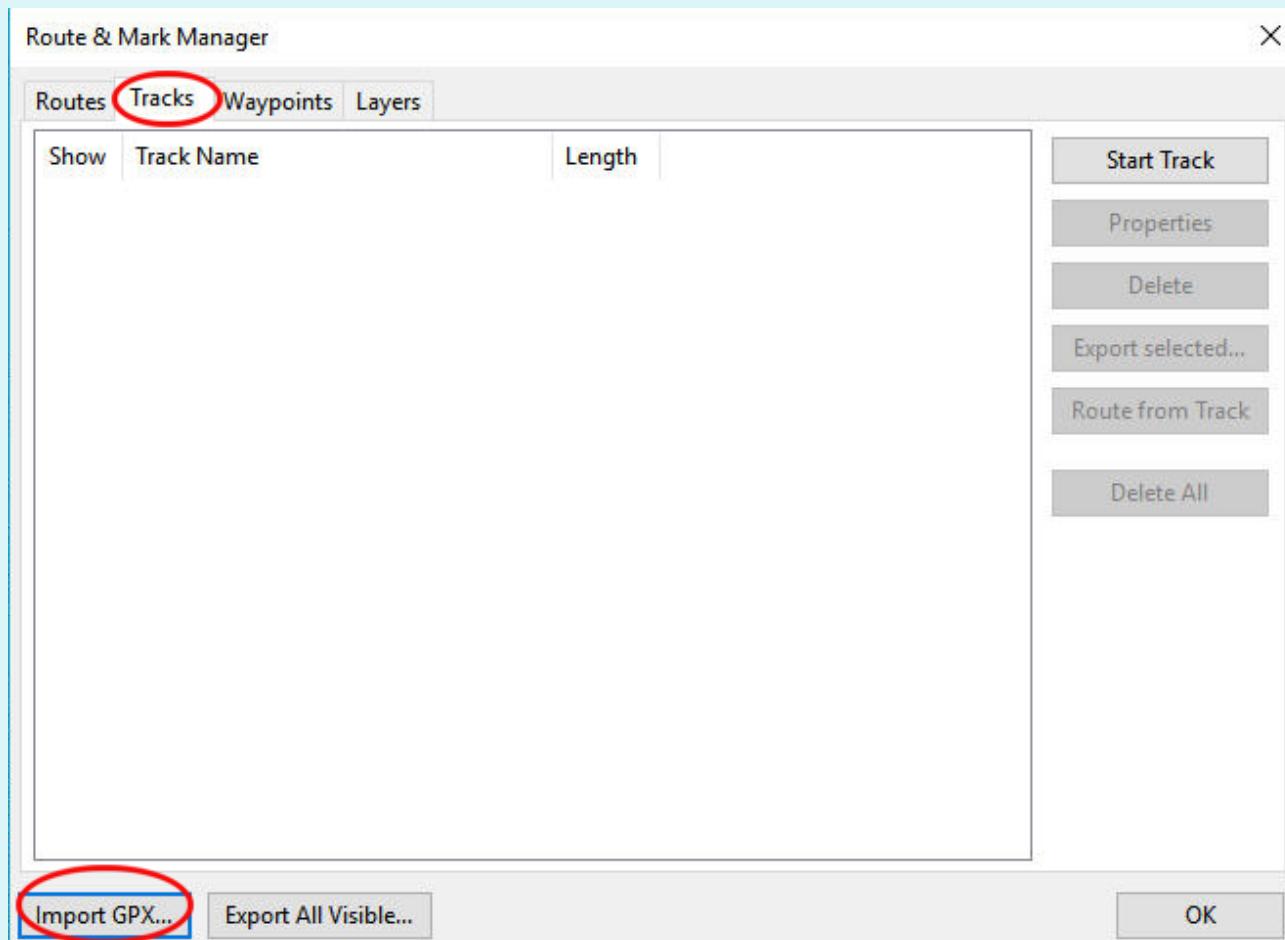
Navigate to where you save your tracks and click on 'Save'. The track is now saved on the hard drive for future reference.



TRACKS

Display a Saved Track

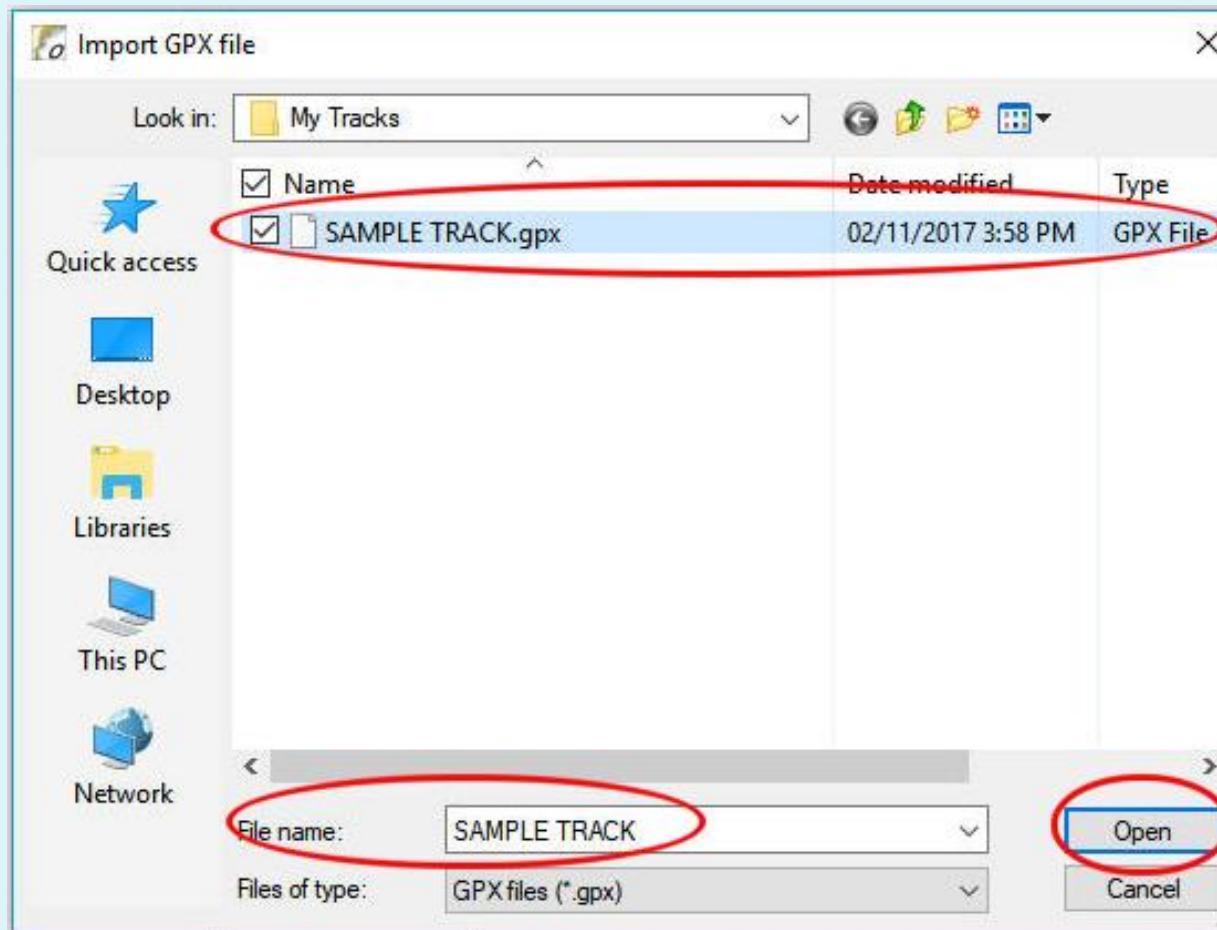
To display a saved track, in ‘Route & Mark Manager’ select the ‘Tracks’ tab and click on ‘Import GPX ...’



TRACKS

Display a Saved Track

Navigate to your saved tracks, select the desired one (which fills in the 'File name box) and click on 'Open'.



TRACKS

Display a Saved Track

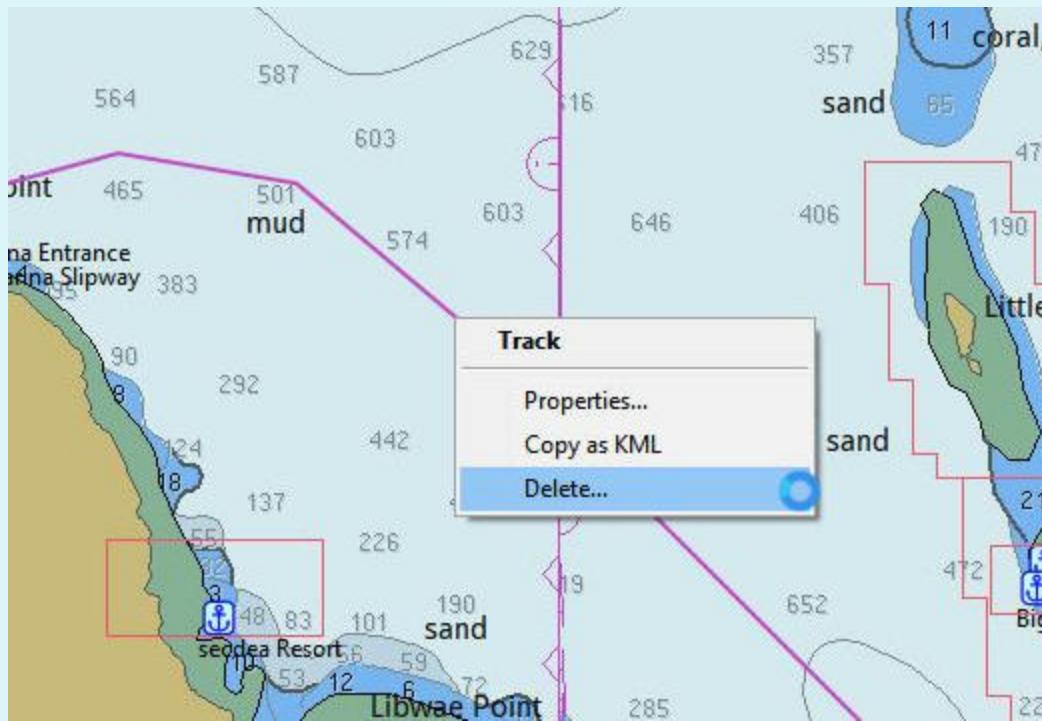
The track is displayed again on the chart.



TRACKS

Display a Saved Track

You can delete the track from the screen using the ‘Route & Mark Manager’ or by right-clicking on the track and selecting ‘Delete’.



ANCHORAGES

Save an Anchorage Location

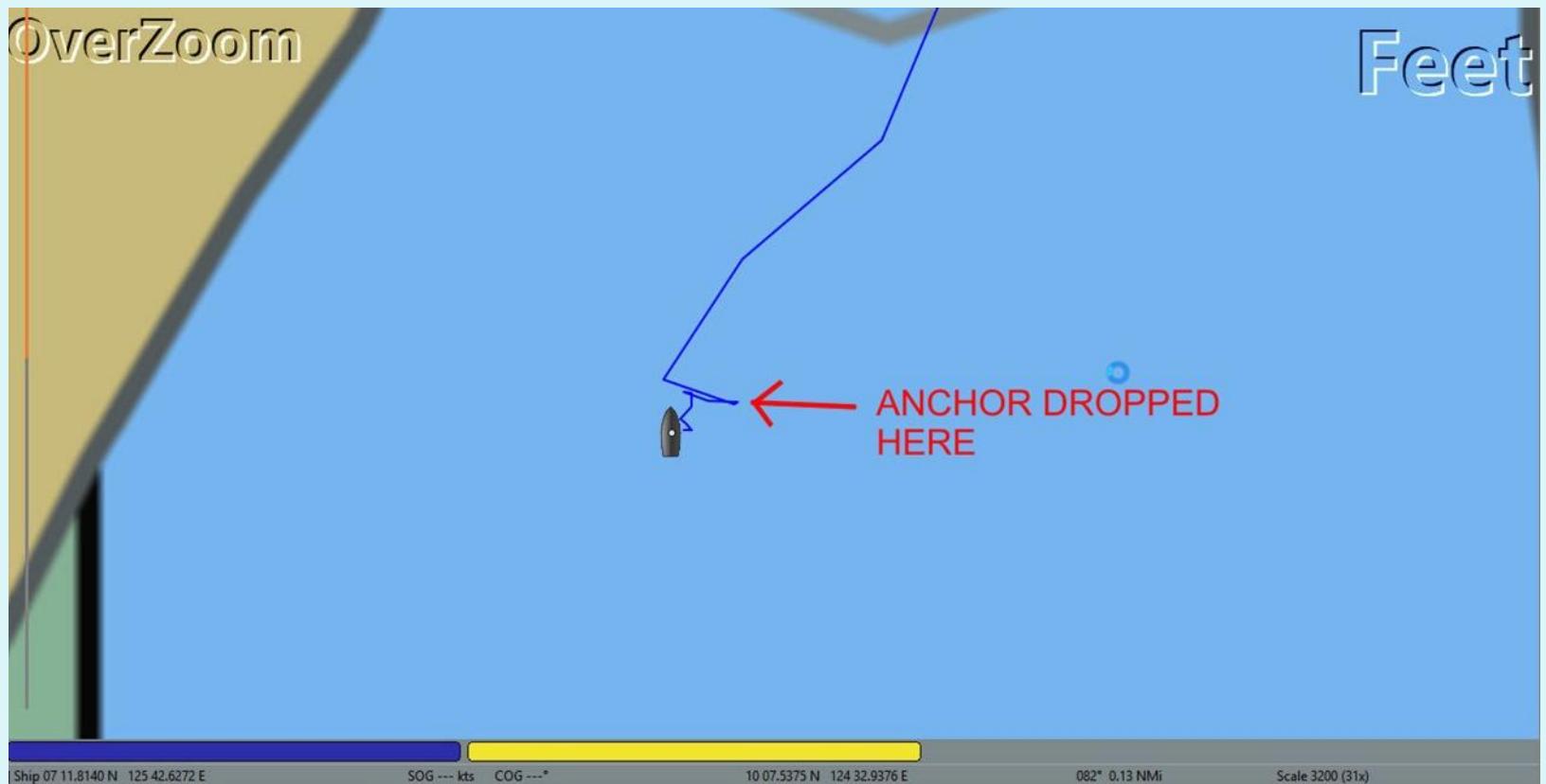
Shown below is the arrival at an anchorage. I want to save this location for future reference.



ANCHORAGES

Save an Anchorage Location

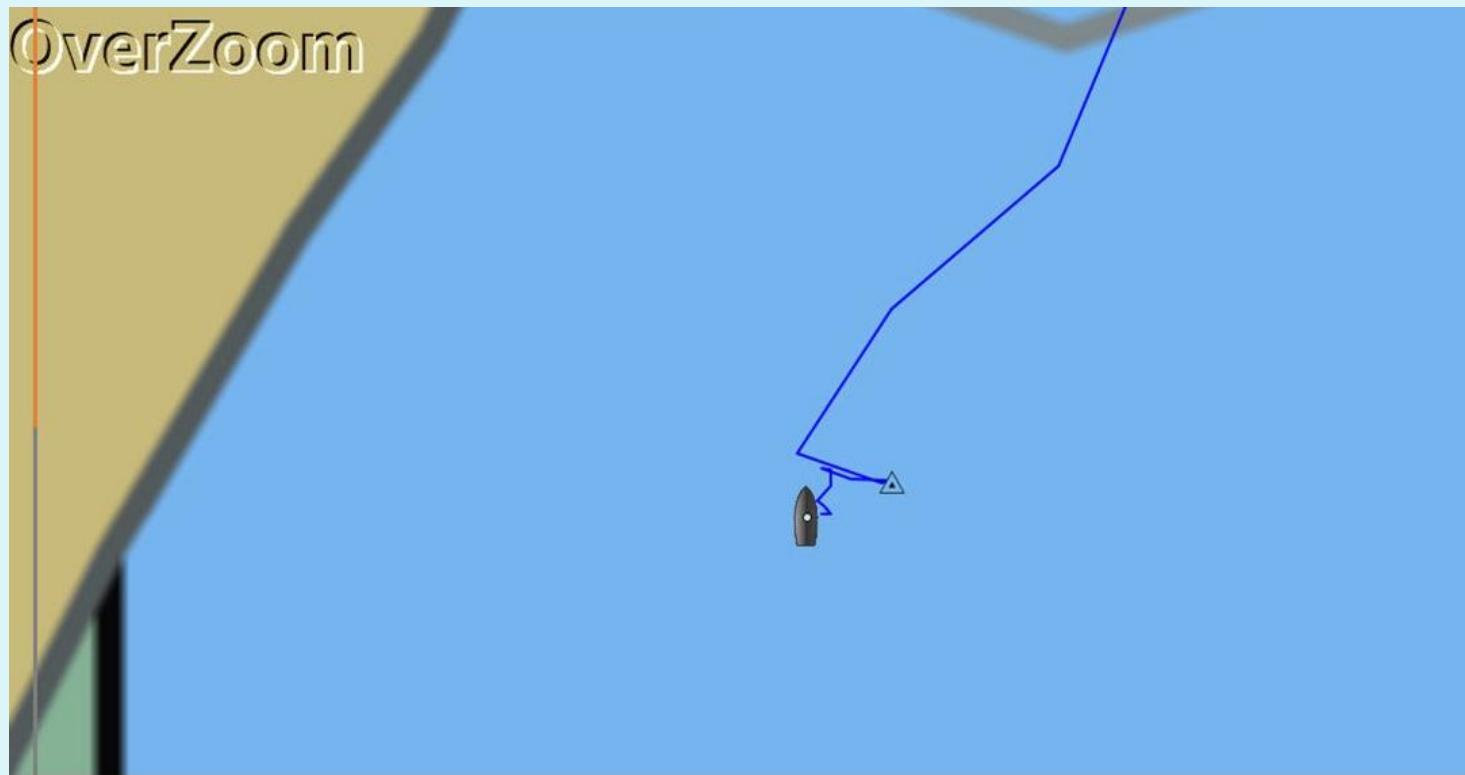
Zoom in to show where the anchor was dropped.



ANCHORAGES

Save an Anchorage Location

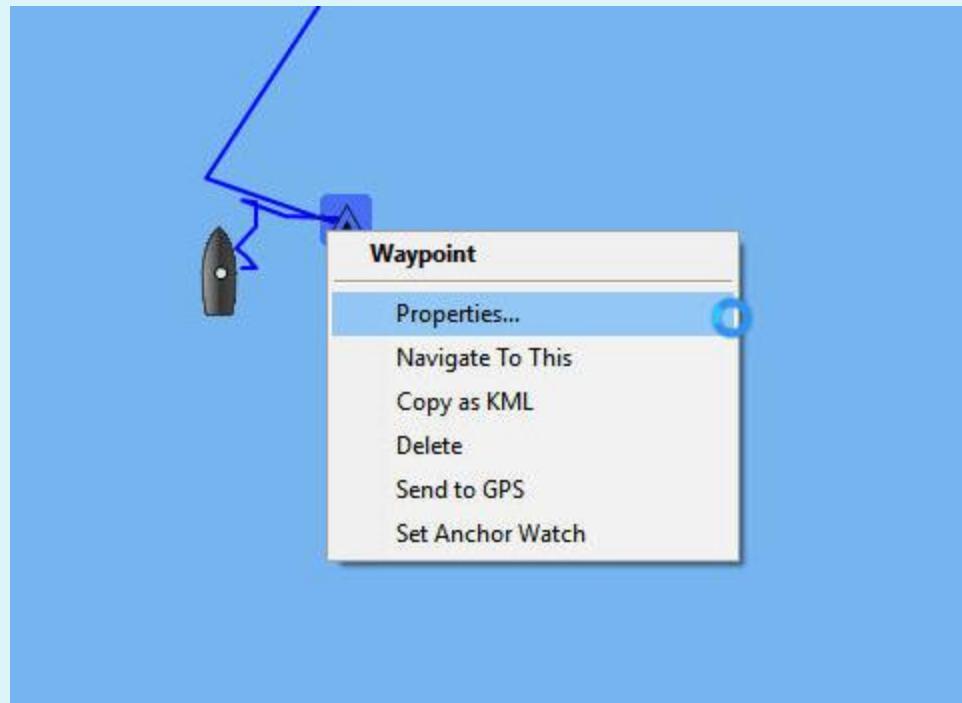
Right-click at the anchor location and click on ‘Drop Mark’ or use ‘Ctl-M’. A small triangle appears at the selected point.



ANCHORAGES

Save an Anchorage Location

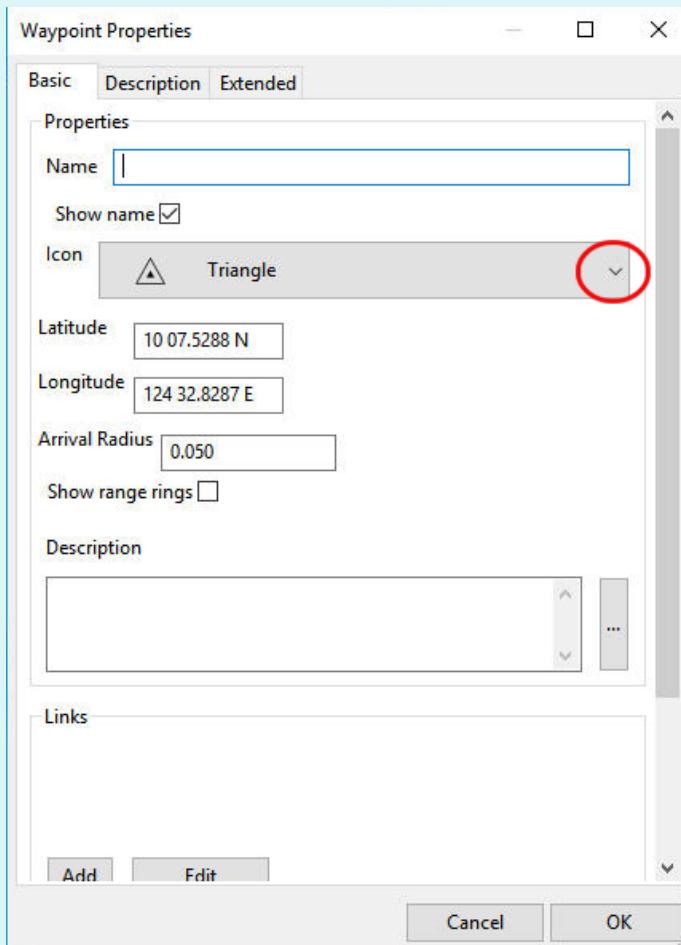
Right-click on the mark
(triangle) and click on
'Properties'



ANCHORAGES

Save an Anchorage Location

In addition to being hard to see the small triangle, a host of icons are available for marks that are easier to see and provide a better description. To view the available icons click on the elevator.

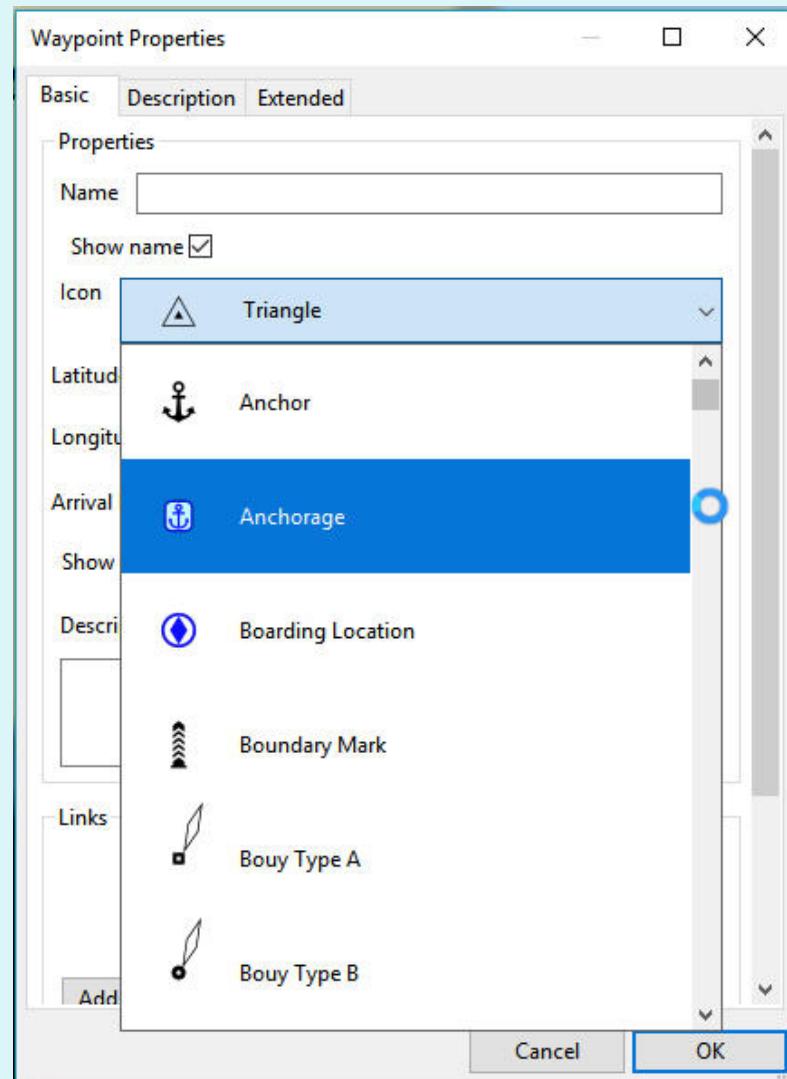


ANCHORAGES

Save an Anchorage Location

Since this is an anchorage select the 'Anchorage' icon.

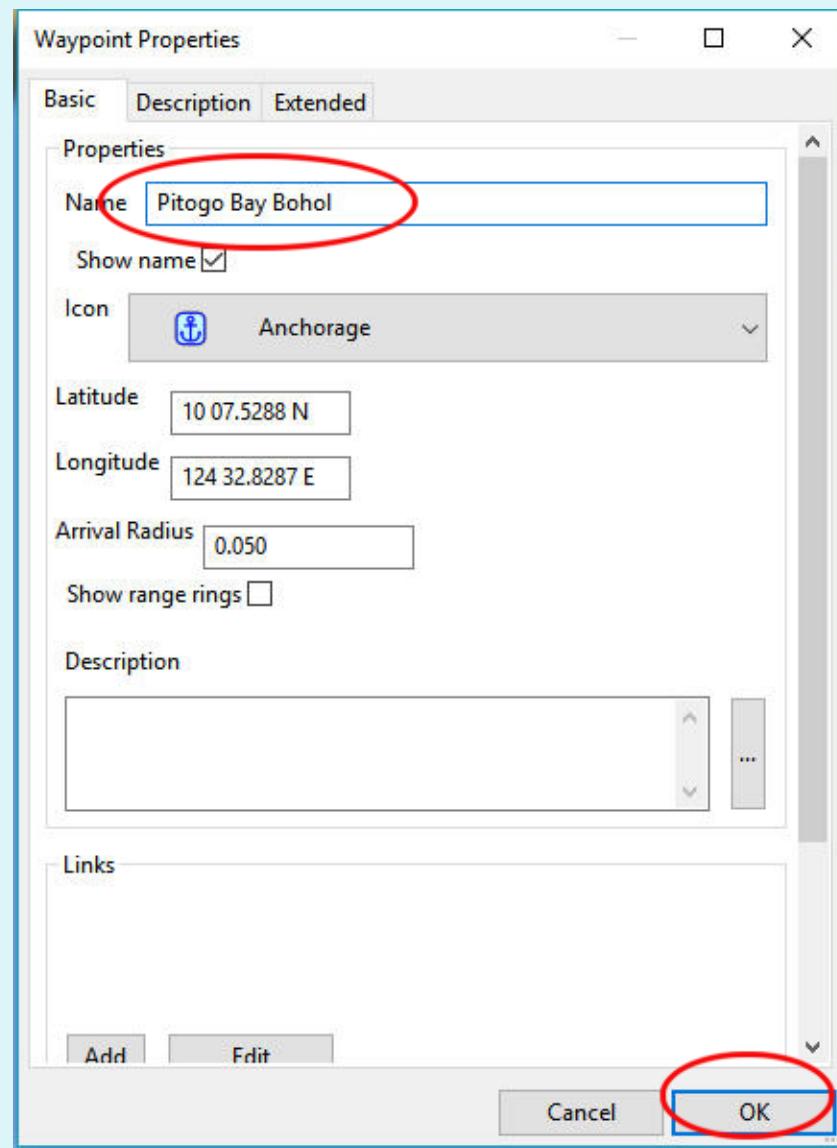
It's also a good idea to give the anchorage location a name.



ANCHORAGES

Save an Anchorage Location

Here I have entered a name to something easy to recognize in the future. When done click on 'OK'



ANCHORAGES

Save an Anchorage Location

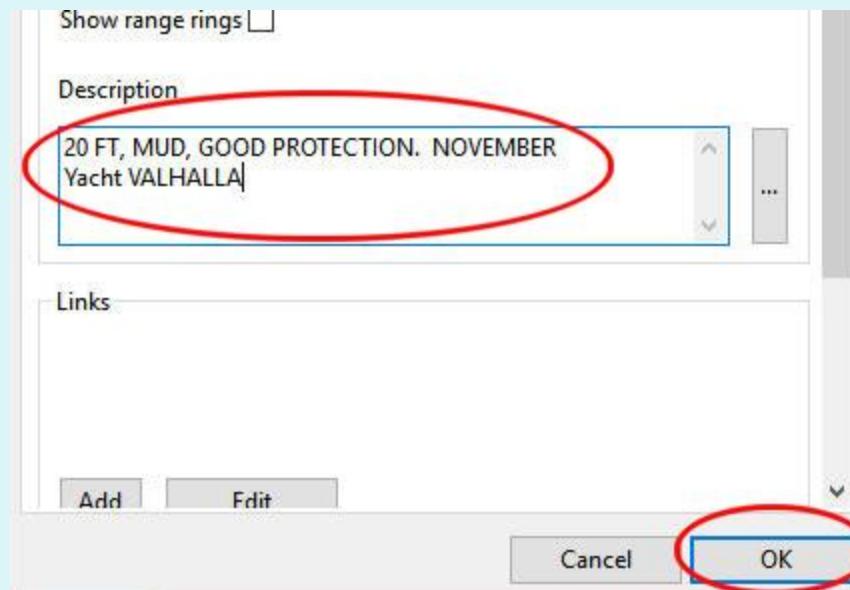
The anchorage is now created and displayed but **not saved!**



ANCHORAGES

Save an Anchorage Location

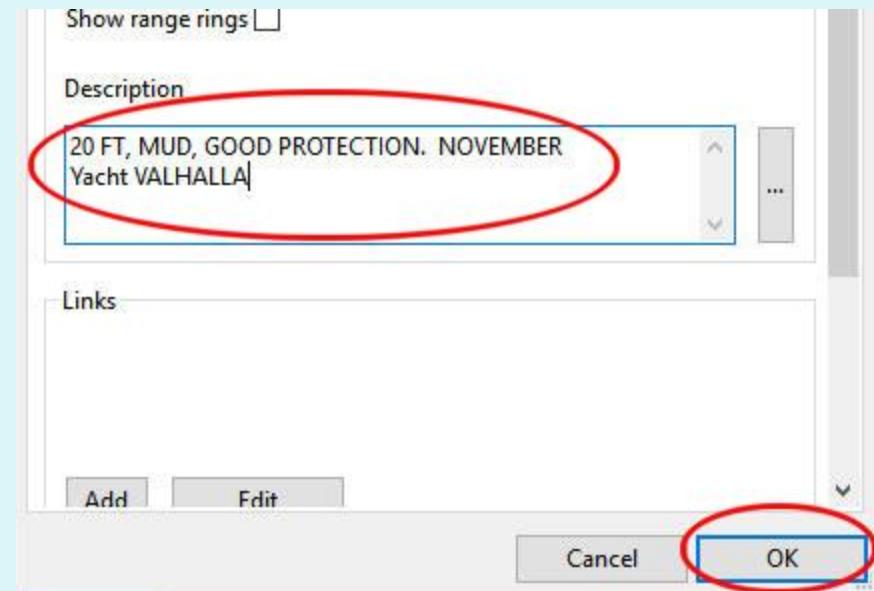
Prior to saving the anchorage location I suggest you add some information about it that can be useful to you in the future and also to any others you may share this information with. Go to the anchorage 'Properties' and enter the additional information in the 'Description' box.



ANCHORAGES

Save an Anchorage Location

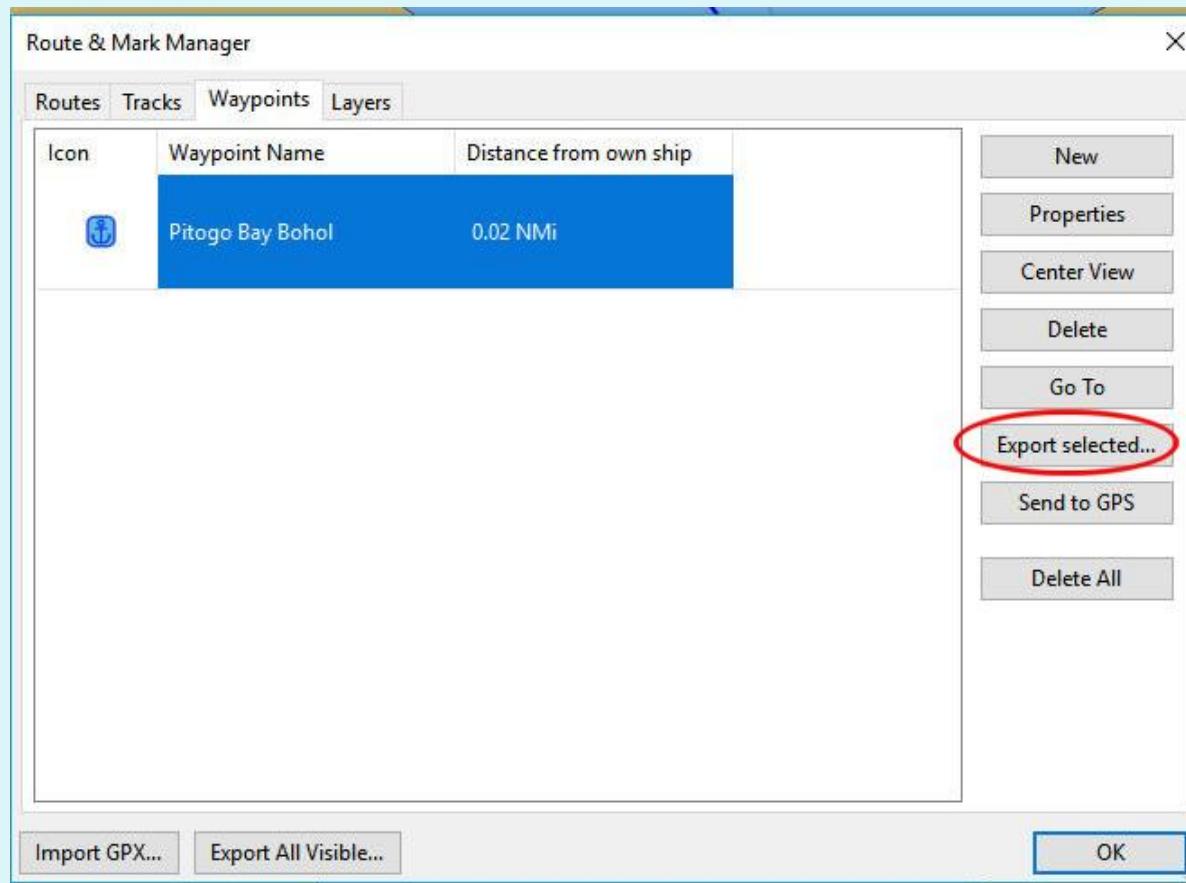
As a minimum I suggest the depth, bottom composition and other useful information. The month of the year is helpful in monsoon locations. The name of the vessel maintains an audit trail.



ANCHORAGES

Save an Anchorage Location

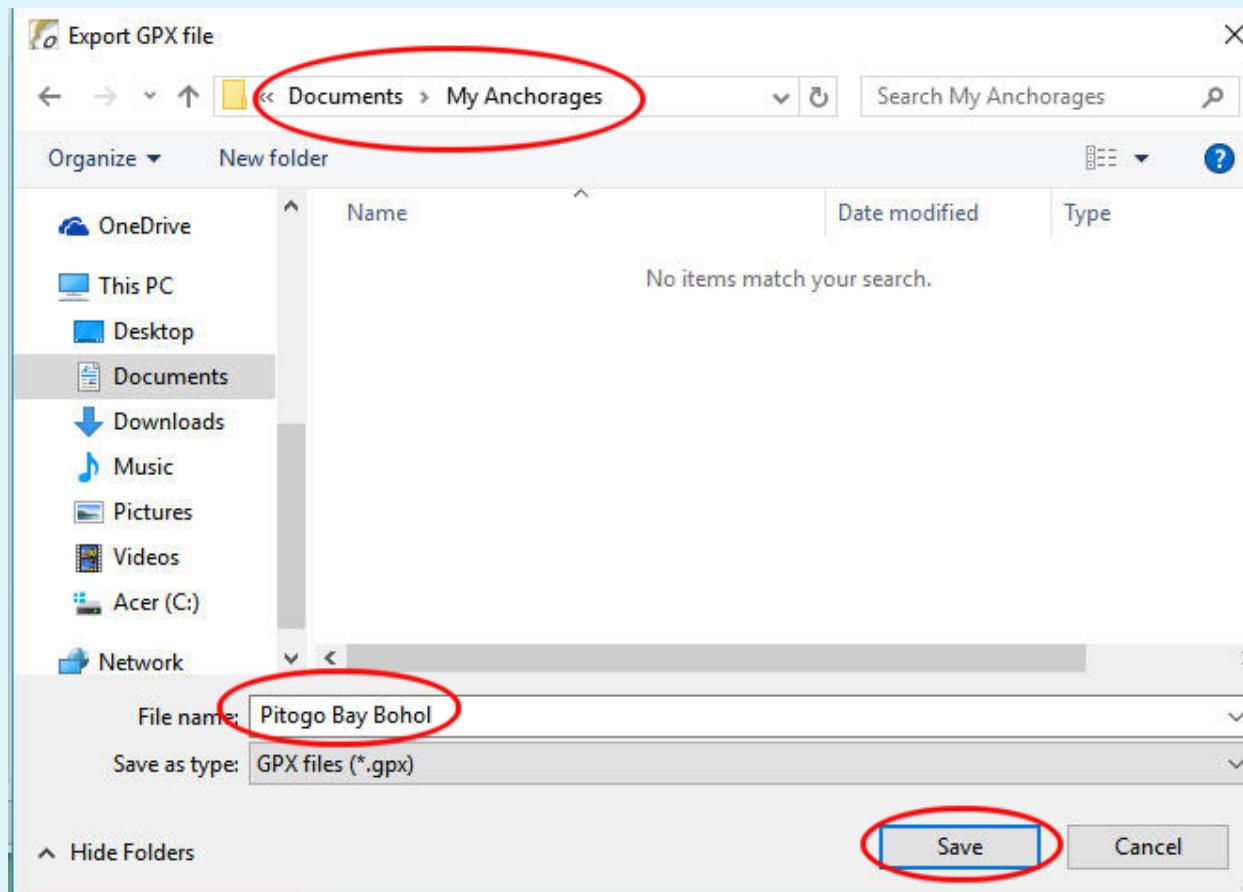
In ‘Route & Mark Manager’ highlight the anchorage and click on ‘Export selected ...’



ANCHORAGES

Save an Anchorage Location

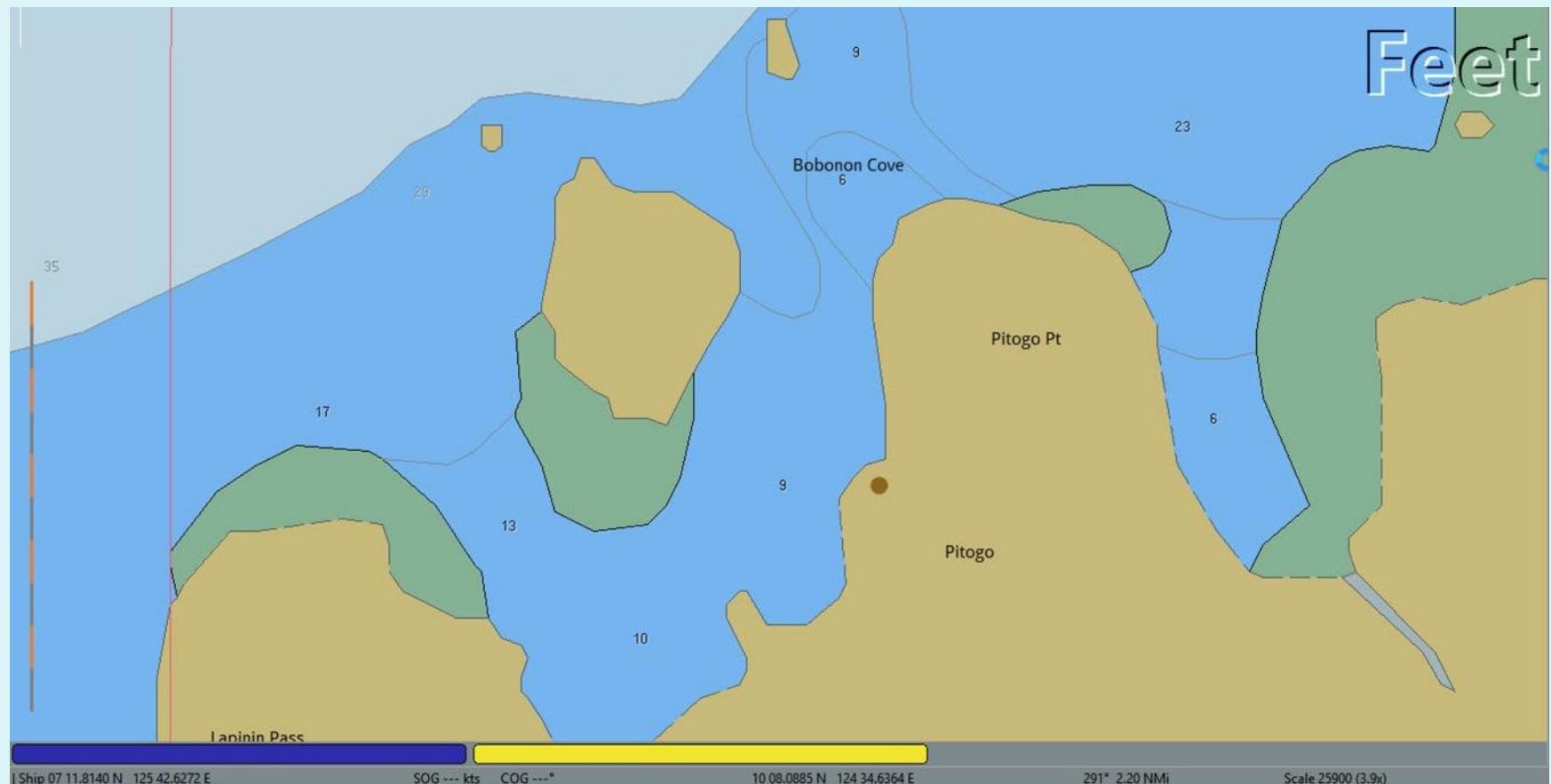
Navigate to where you save anchorages, check the file name for accuracy and click on 'Save'.



ANCHORAGES

Display a Saved Anchorage

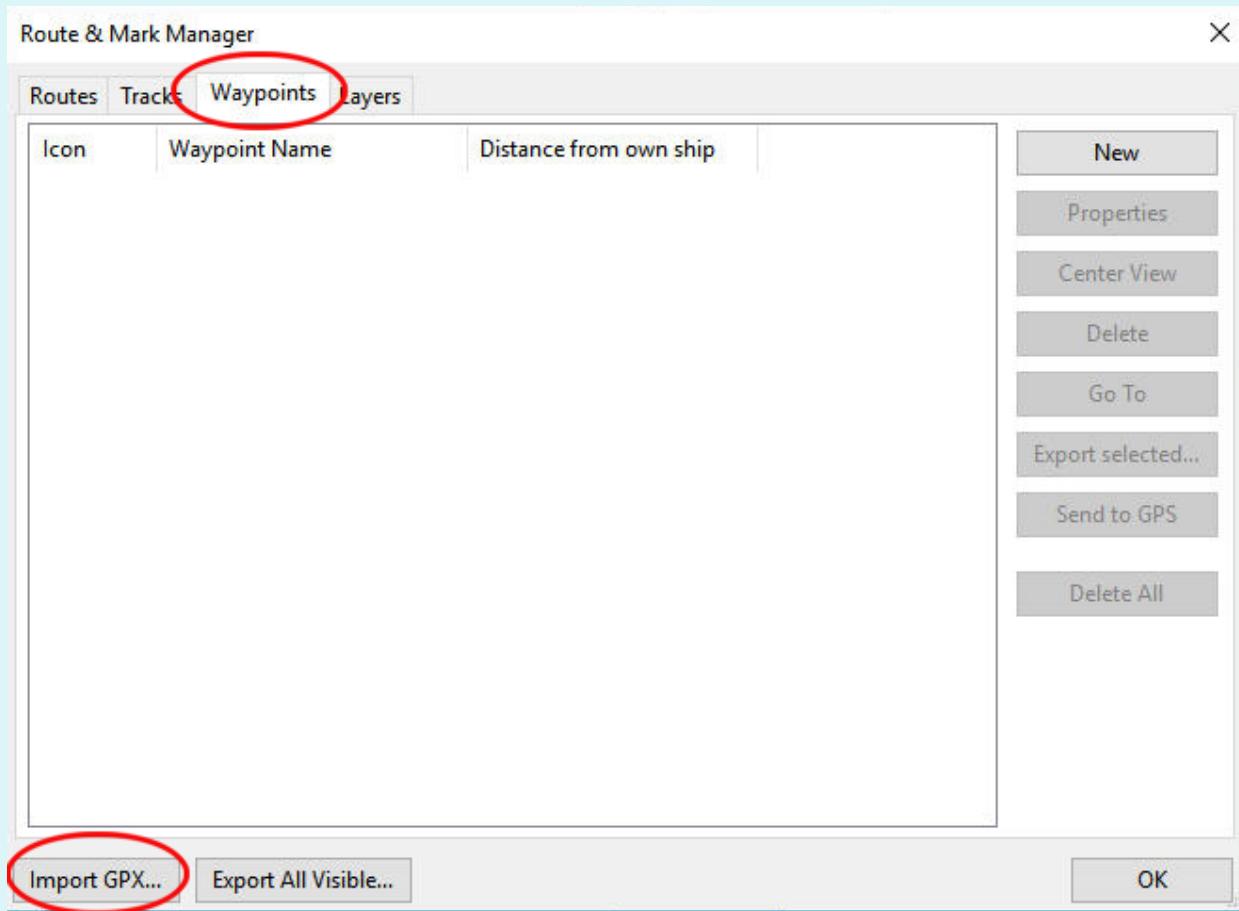
Here I wish to recall the previously saved anchorage.



ANCHORAGES

Display a Saved Anchorage

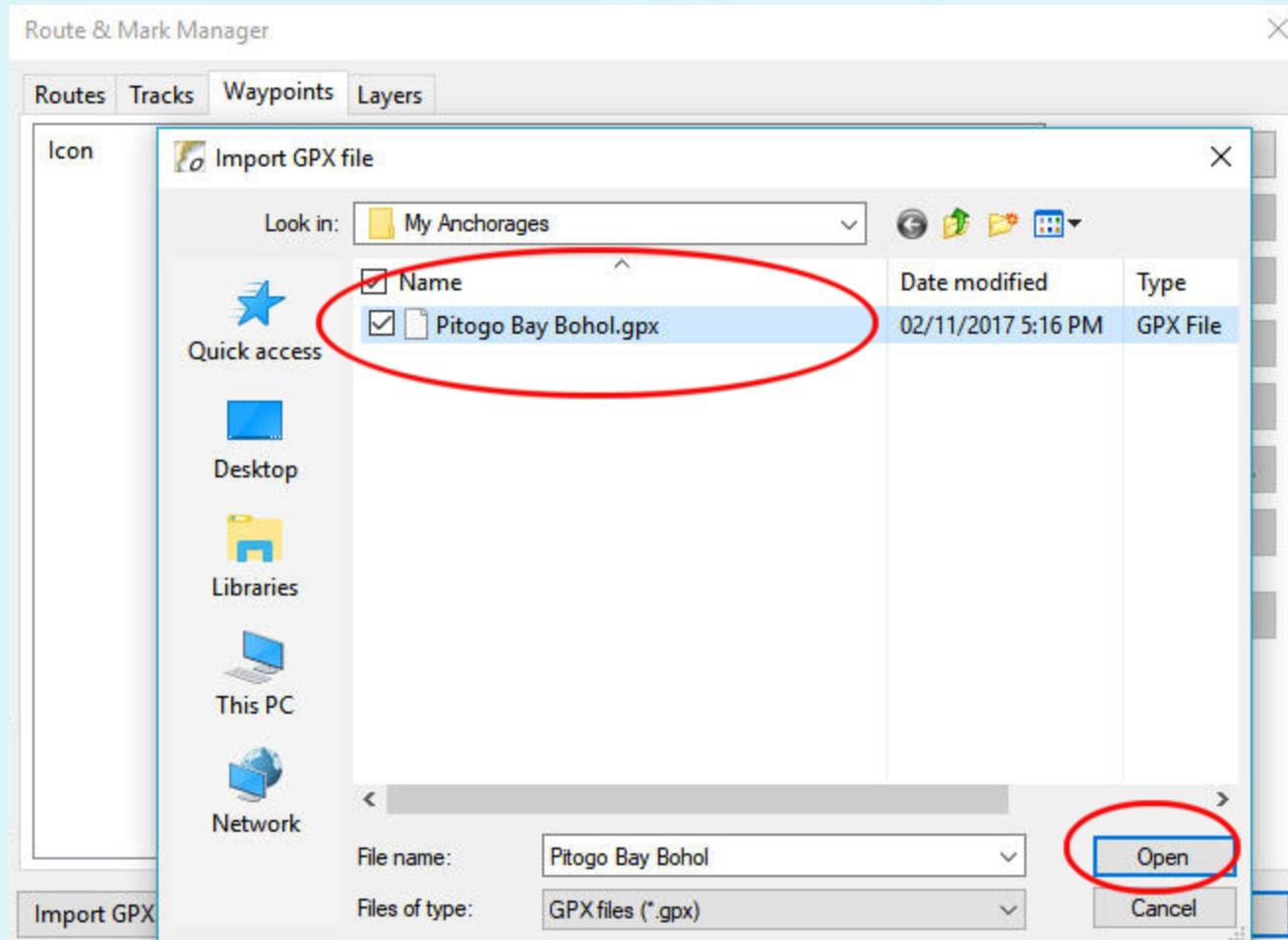
In ‘Route & Mark Manager’ select the ‘Waypoints’ tab then click on ‘Import GPX ..’



ANCHORAGES

Display a Saved Anchorage

Navigate to your saved anchorages, select the desired anchorage and click on 'Open'.



ANCHORAGES

Display a Saved Anchorage

The saved anchorage is displayed.

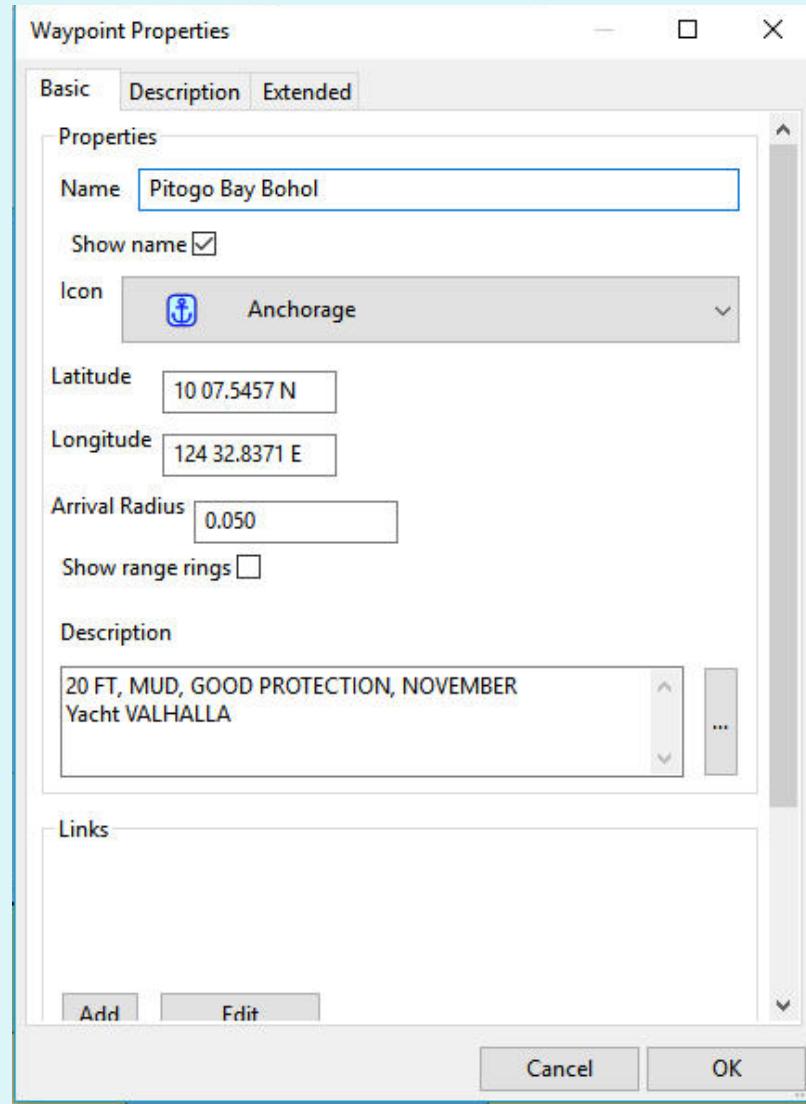


ANCHORAGES

Display a Saved Anchorage

To recall information about this anchorage, right-click on the icon and select 'Properties'.

The saved information is displayed.



LAYERS

Why Layers? There are two types:

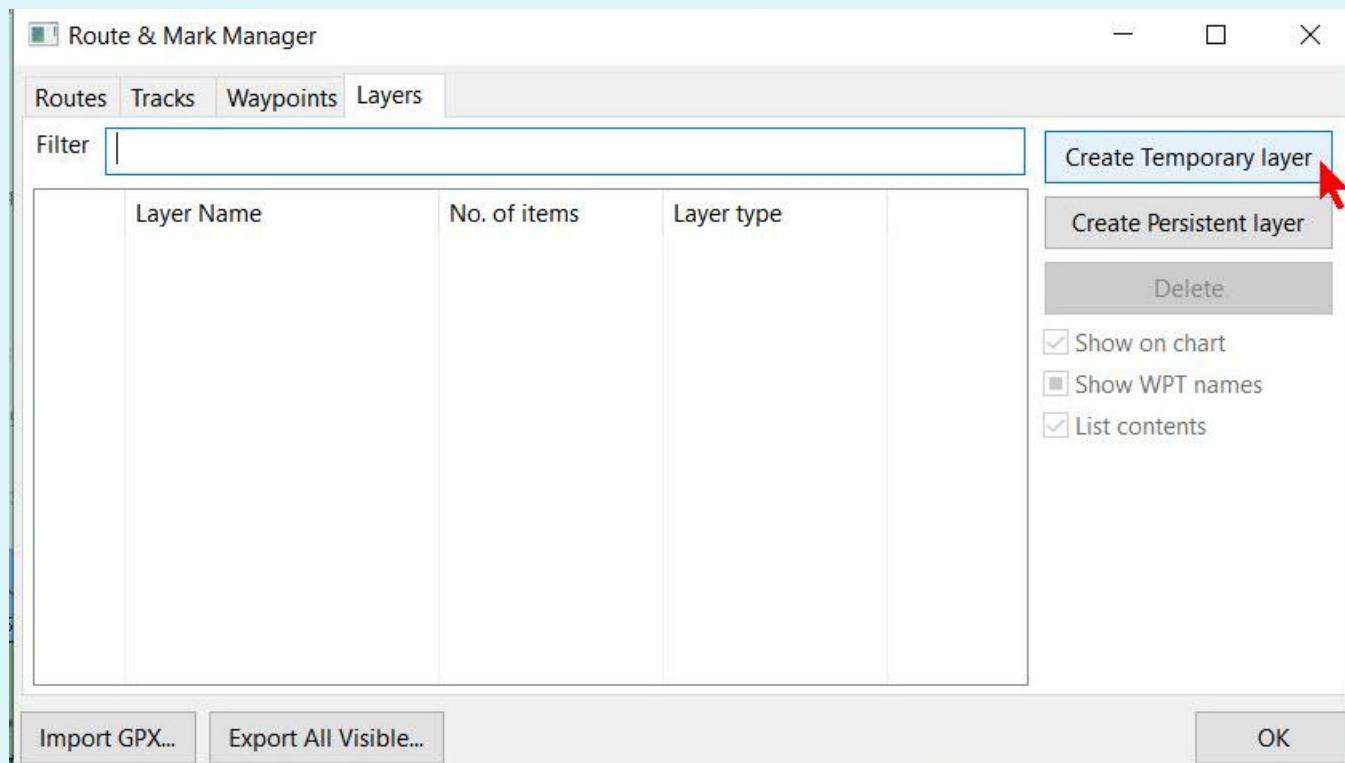
Temporary information during a session
that can be displayed at will (Temporary)

Permanent information in the program
that can be displayed at will (Persistent)

LAYERS

Temporary

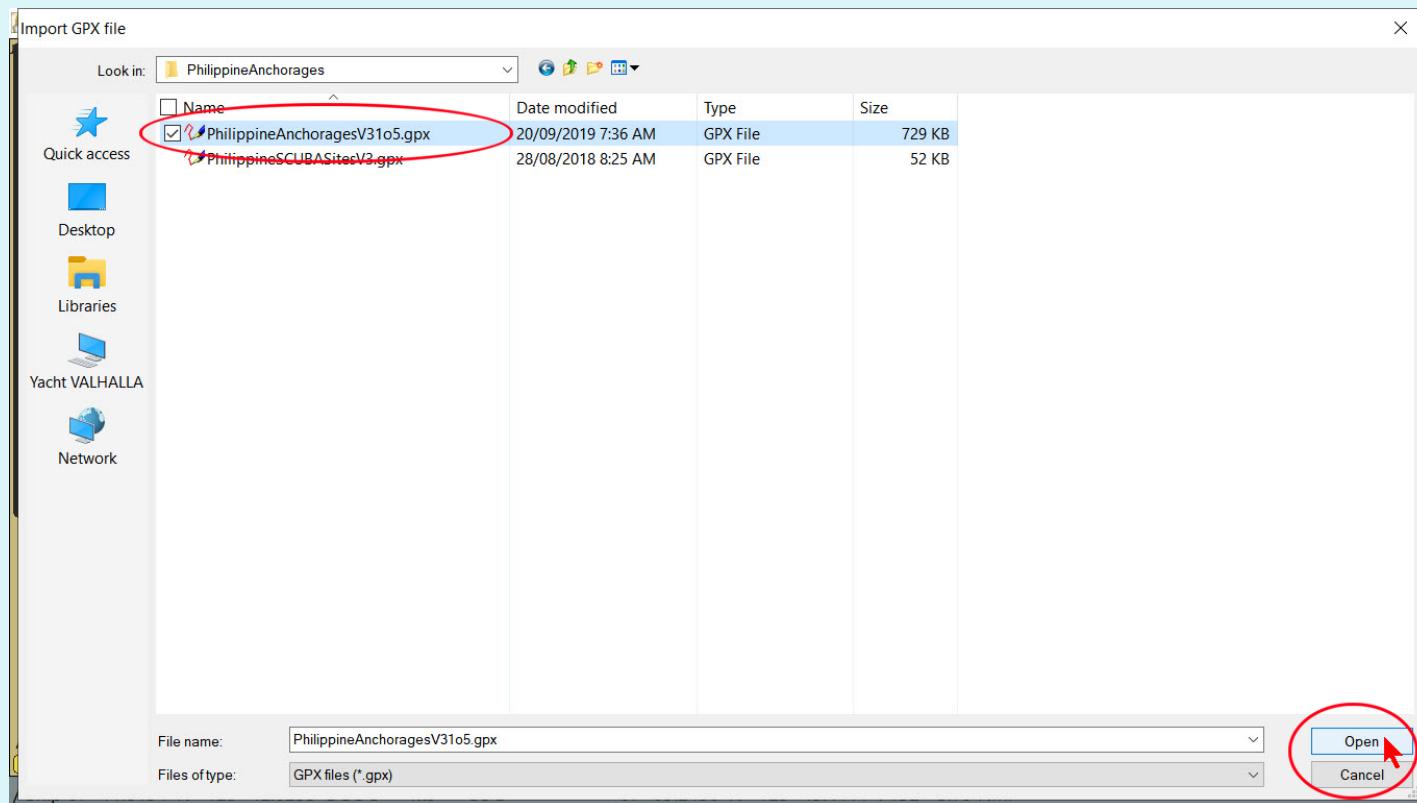
In the ‘Route & Mark Manager’ open the ‘Layers’ tab.
Click on ‘Temporary layer’.



LAYERS

Temporary

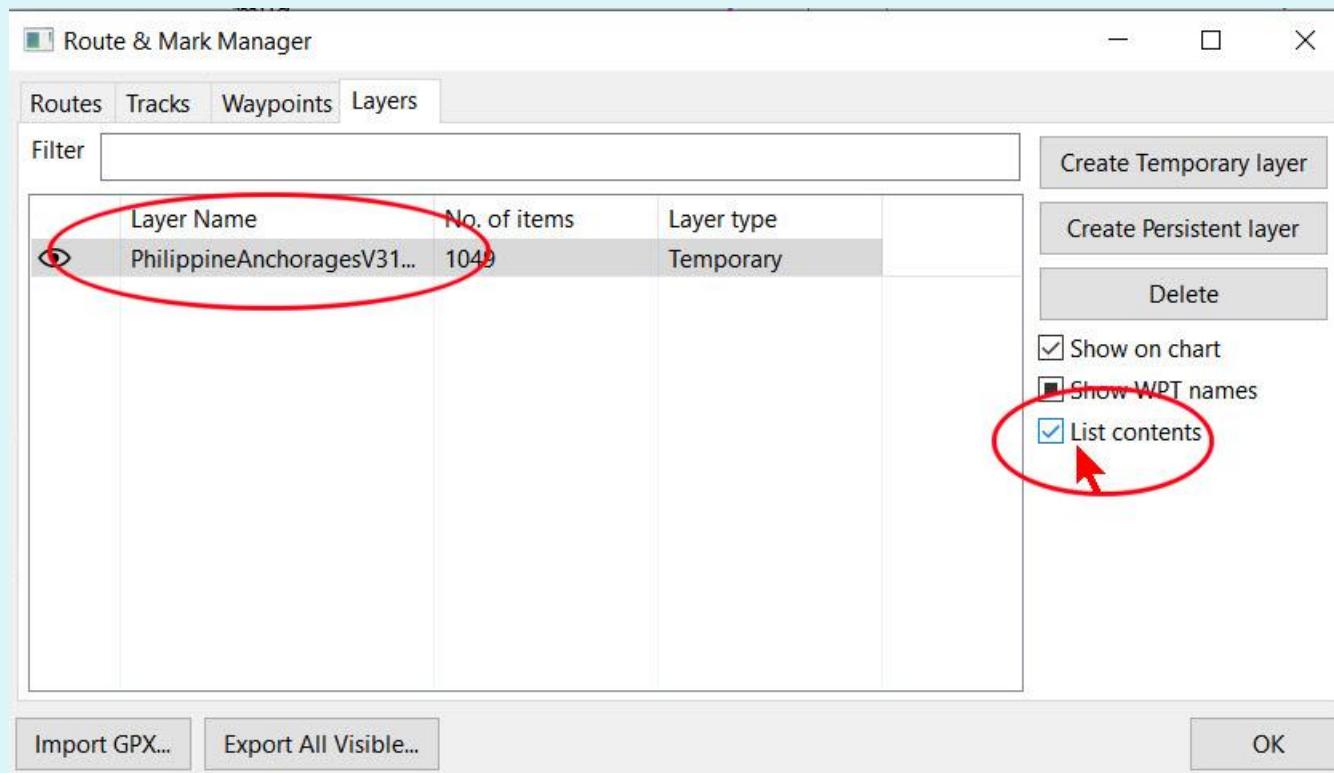
The ‘Import GPX File’ window opens. Navigate to the file you want to have in the temporary layer, highlight it and click on ‘Open’, in this case the ‘Philippine AnchoragesV31o5’.



LAYERS

Temporary

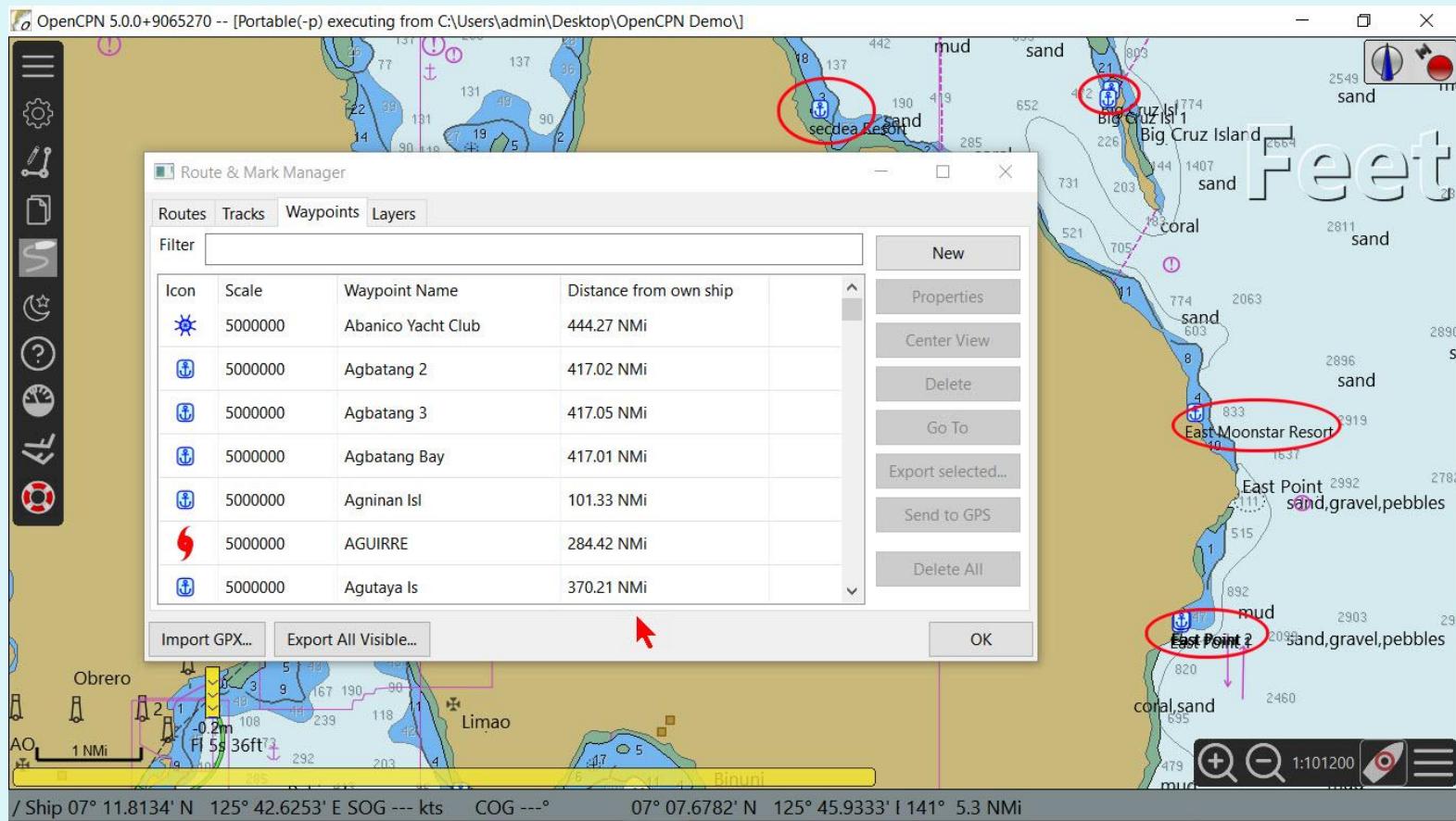
The file appears under the ‘Layers’ tab. Select the file and click on ‘List contents’ to display the anchorages under the ‘Waypoints’ tab.



LAYERS

Temporary

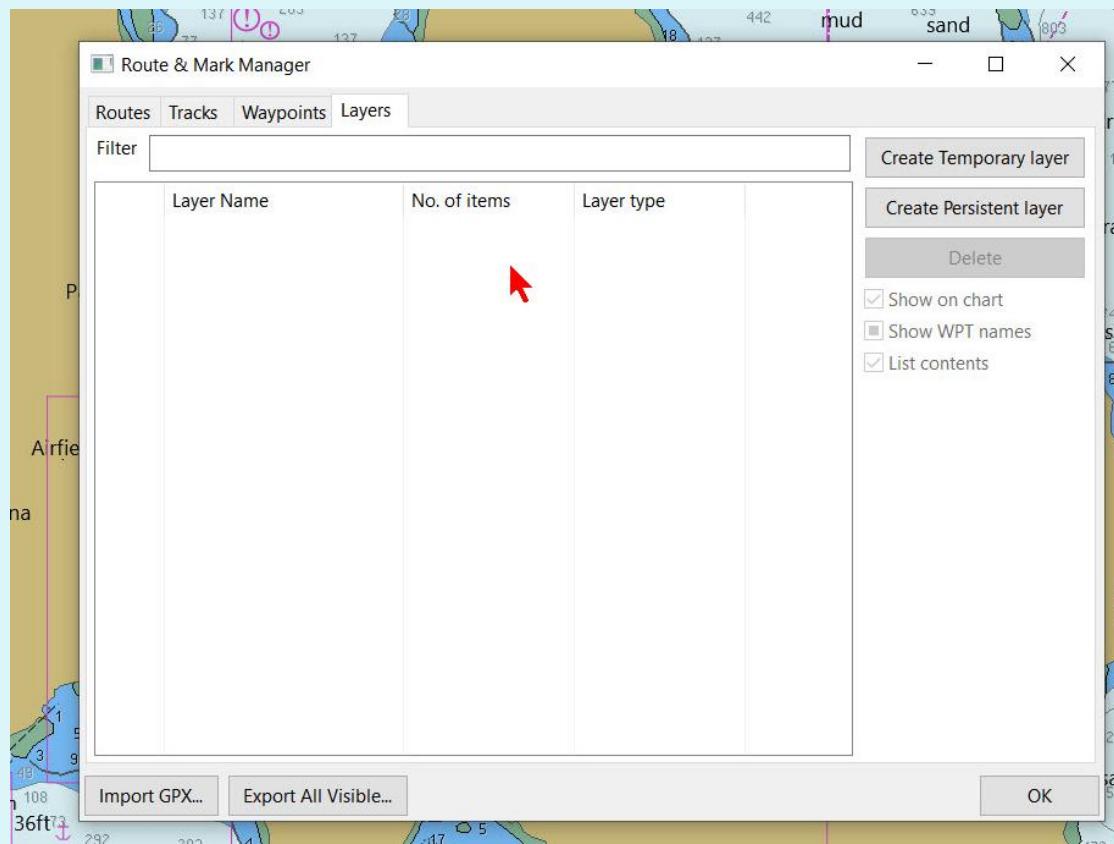
The anchorages appear under the ‘Waypoints’ tab.
The anchorage icons are displayed on the chart.



LAYERS

Temporary

If you close OpenCPN and reopen it the file is no longer there ... hence 'Temporary'.



LAYERS

Persistent

This is where the information you want to always be readily available when the program is running.
(It can be displayed or not with one click.)

Information such as anchorages, dangers, routes and the like. Though these could be imported from wherever stored on the computer as Temporary Layers, that can prove to be time-consuming and cumbersome.

Now for how to load up the ‘Layers’ folder.

LAYERS

Persistent

For layers to be *permanently* available they must be placed within the computer system.

The location is dependent on the operating system.

The OpenCPN program helps you find the location !!

LAYERS

Persistent

On OpenCPN click on the ‘About OpenCPN’ icon as you did to find the manual.



LAYERS

Persistent

The Layers folder will be installed at the OpenCPN 'Config file' location e.g. for W8-W10 at C:\Program Data\opencpn

NOTE: This is a 'hidden file' location!



LAYERS

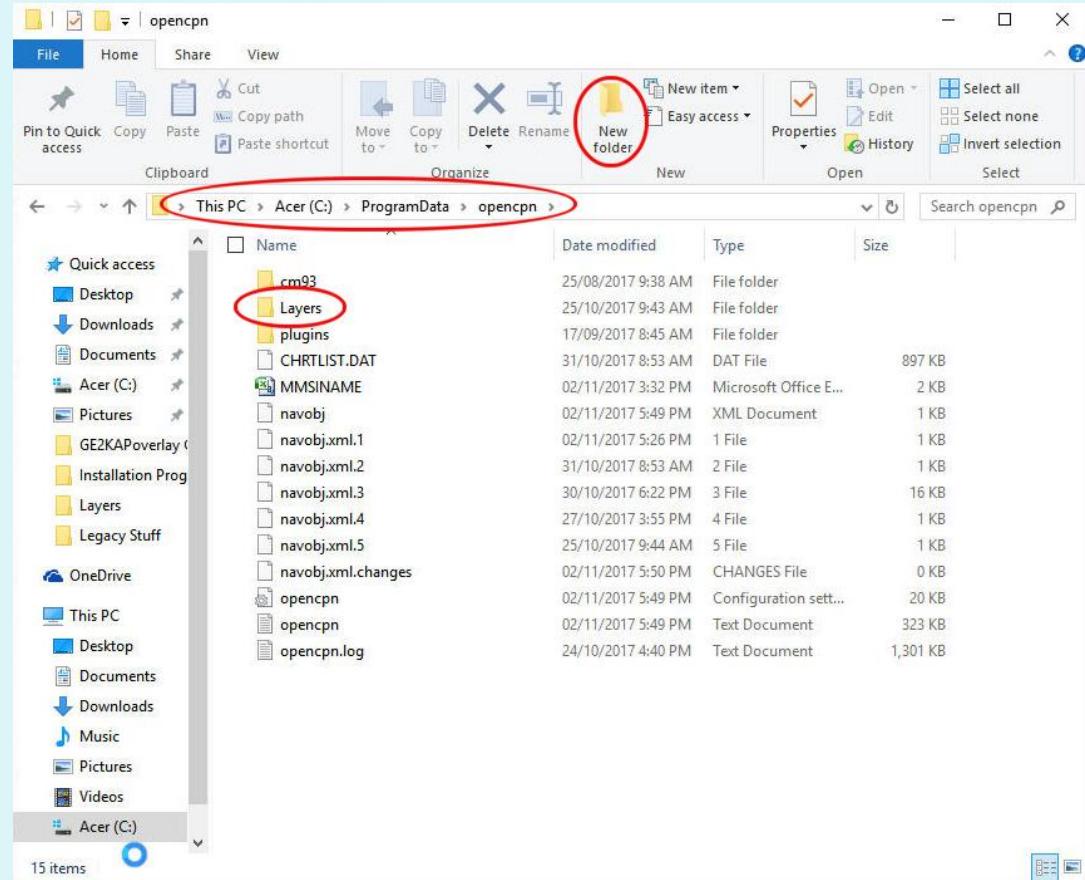
Persistent

Navigate to this file location

Create a new folder
‘Layers’ within the
‘opencpn’ folder.

It's only necessary to create this folder once.

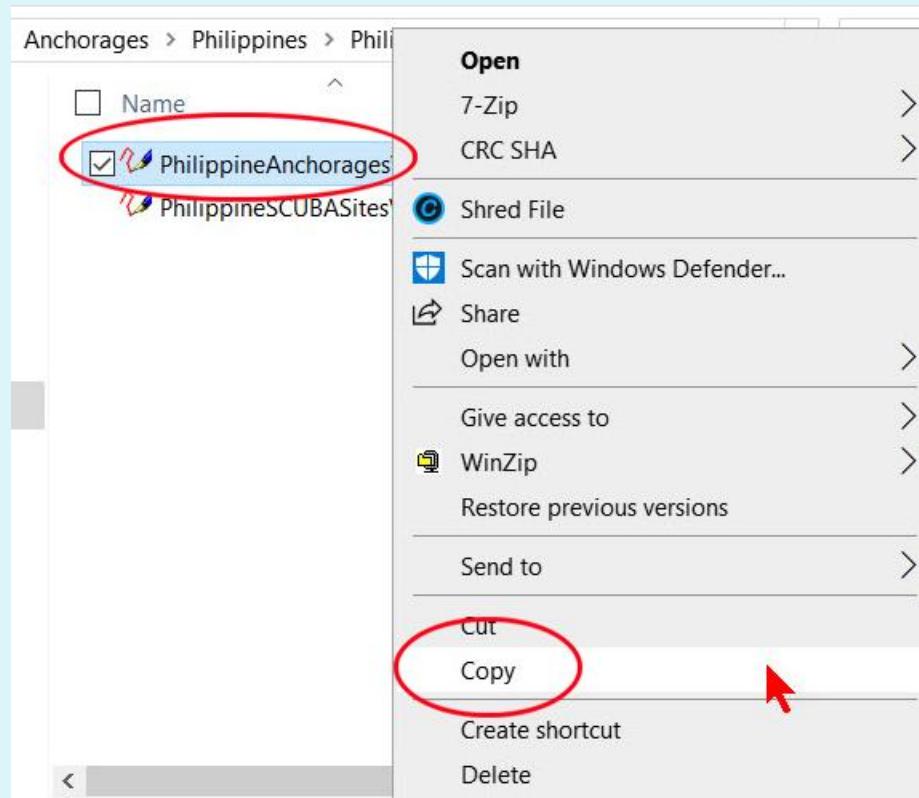
All future layer information will be placed in this folder.



LAYERS

Persistent

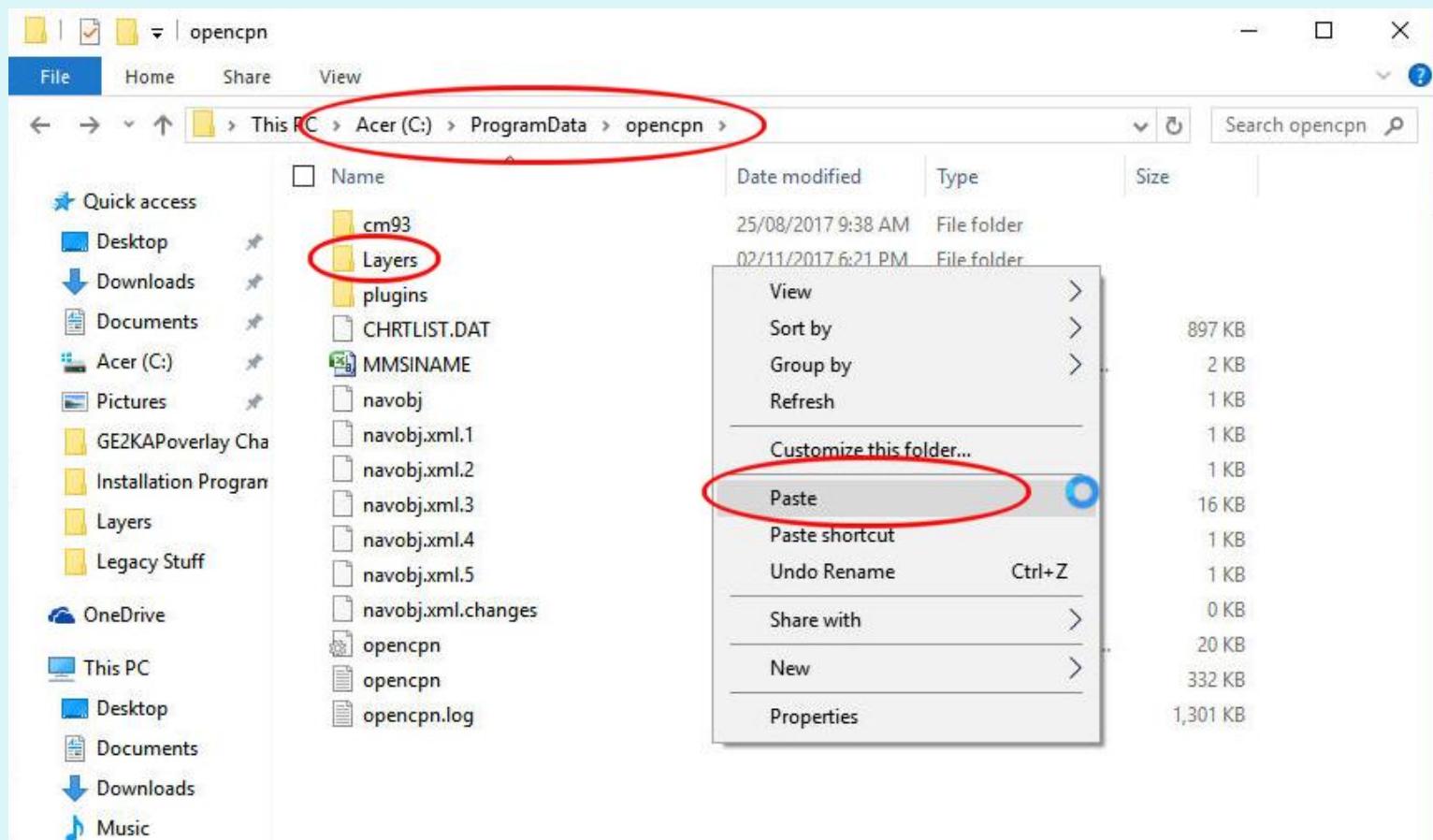
Here I have navigated to a .gpx file of 'Philippine AnchoragesV31o5, right-clicked and copied that file to the clipboard.



LAYERS

Persistent

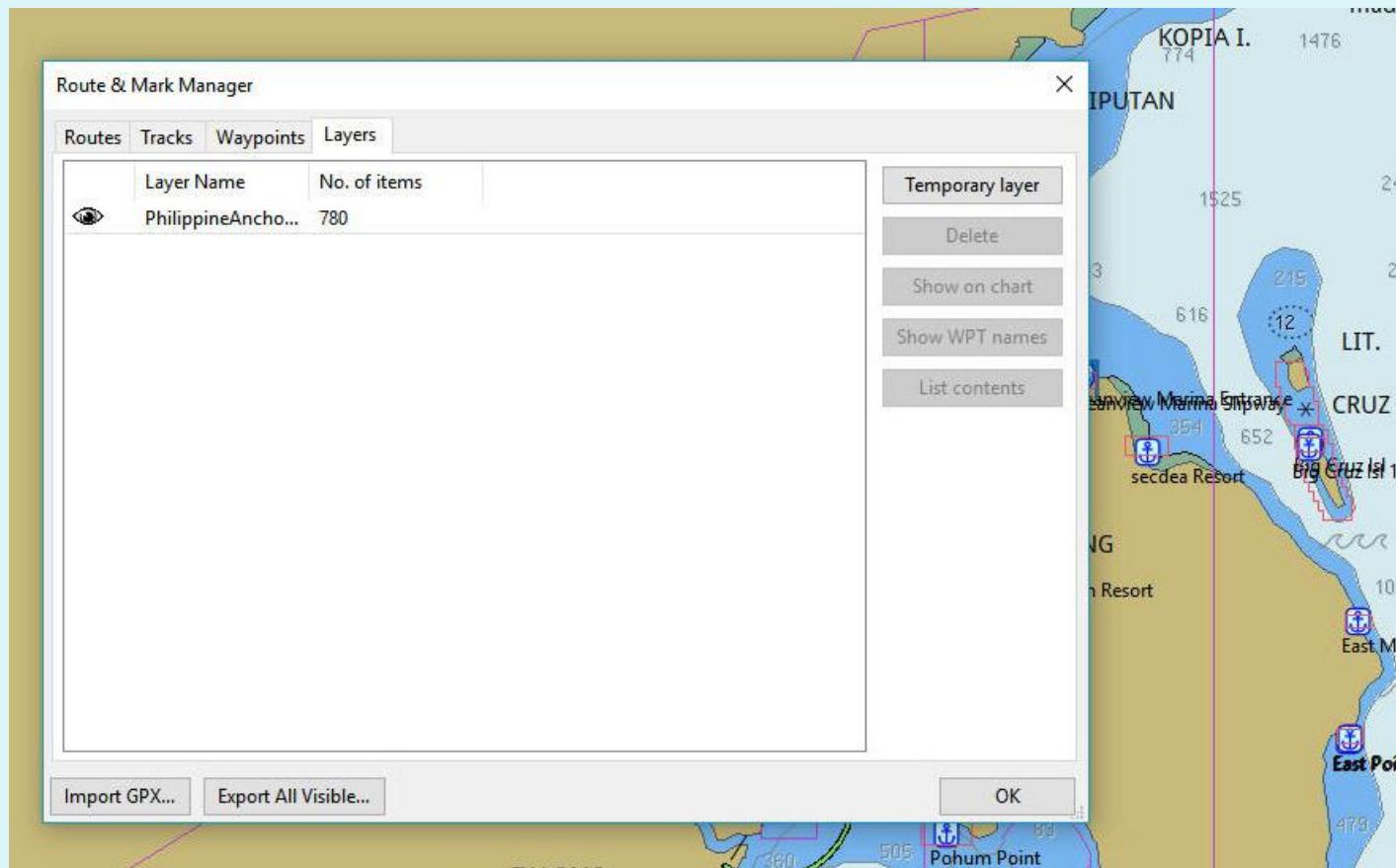
Return to the ‘Layers’ folder, right-click on it and paste the file into the folder.



LAYERS

Persistent

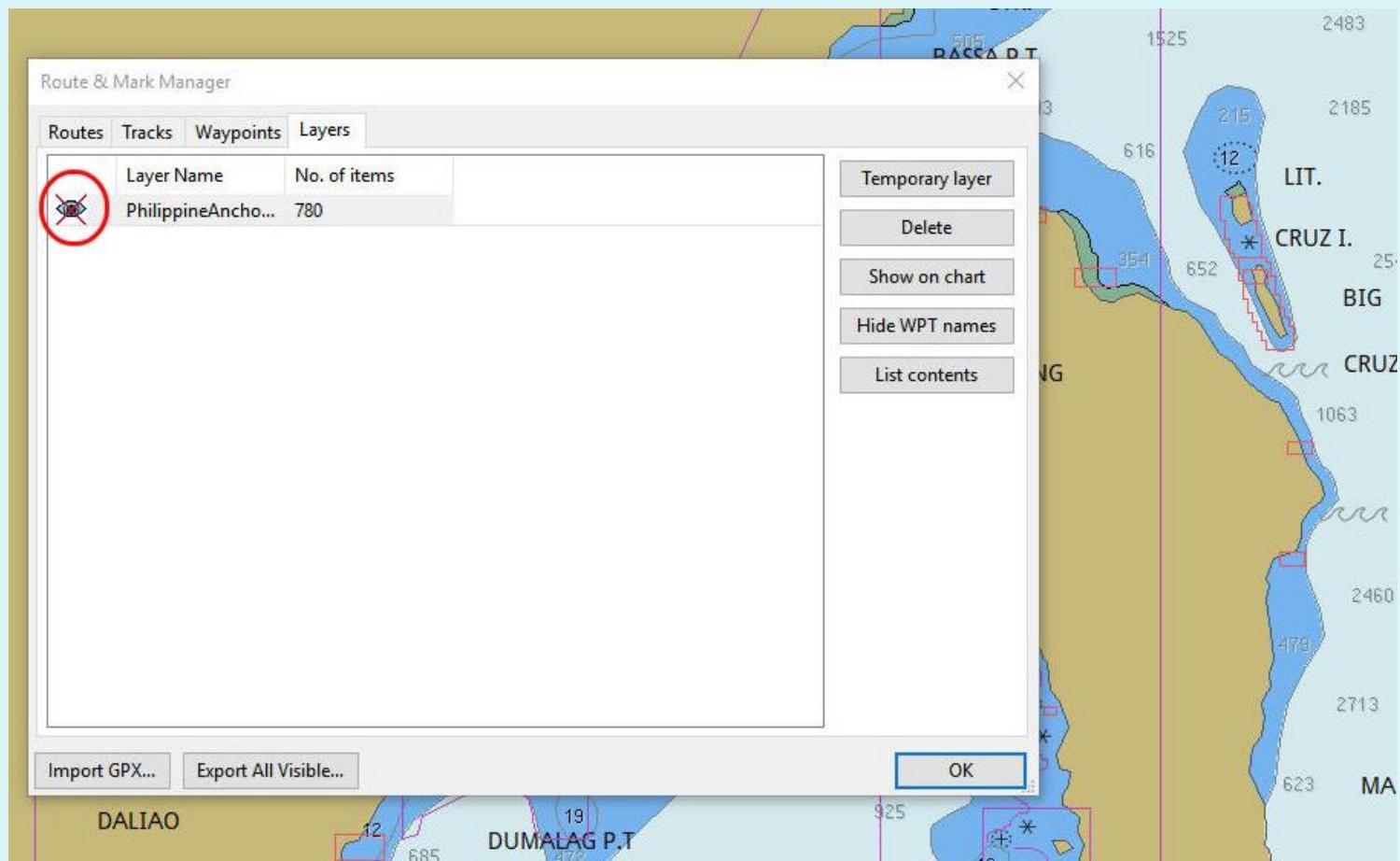
The anchorages are now shown on the ‘Layers’ tab of the ‘Route & Mark Manager’ but only after restarting OpenCPN.



LAYERS

Persistent

To remove the anchorages from the display, click on the ‘eye’ at the left of the file under the ‘Layers’ tab. (The ‘one-click I said earlier)



LAYERS

POINTS TO REMEMBER

ANY .gpx file can be put in a layer.

This includes routes, tracks, anchorages and other information that has been saved in the .gpx format.

Waypoints in a layer are locked. This prevents the unplanned movement of a waypoint while clicking on the screen. Remember how to unlock them? And they cannot be edited.

Items in ‘Layers’ can be displayed or not with a single click

PLUGINS

Plugins Included With OpenCPN

Dashboard Plugin

Plugin to display navigation data.

Grib Weather Plugin.

Plugin to display Grib weather data files.

WMM Plugin

A plugin to display the magnetic variation, based on the World Magnetic Model.

Chart Downloader

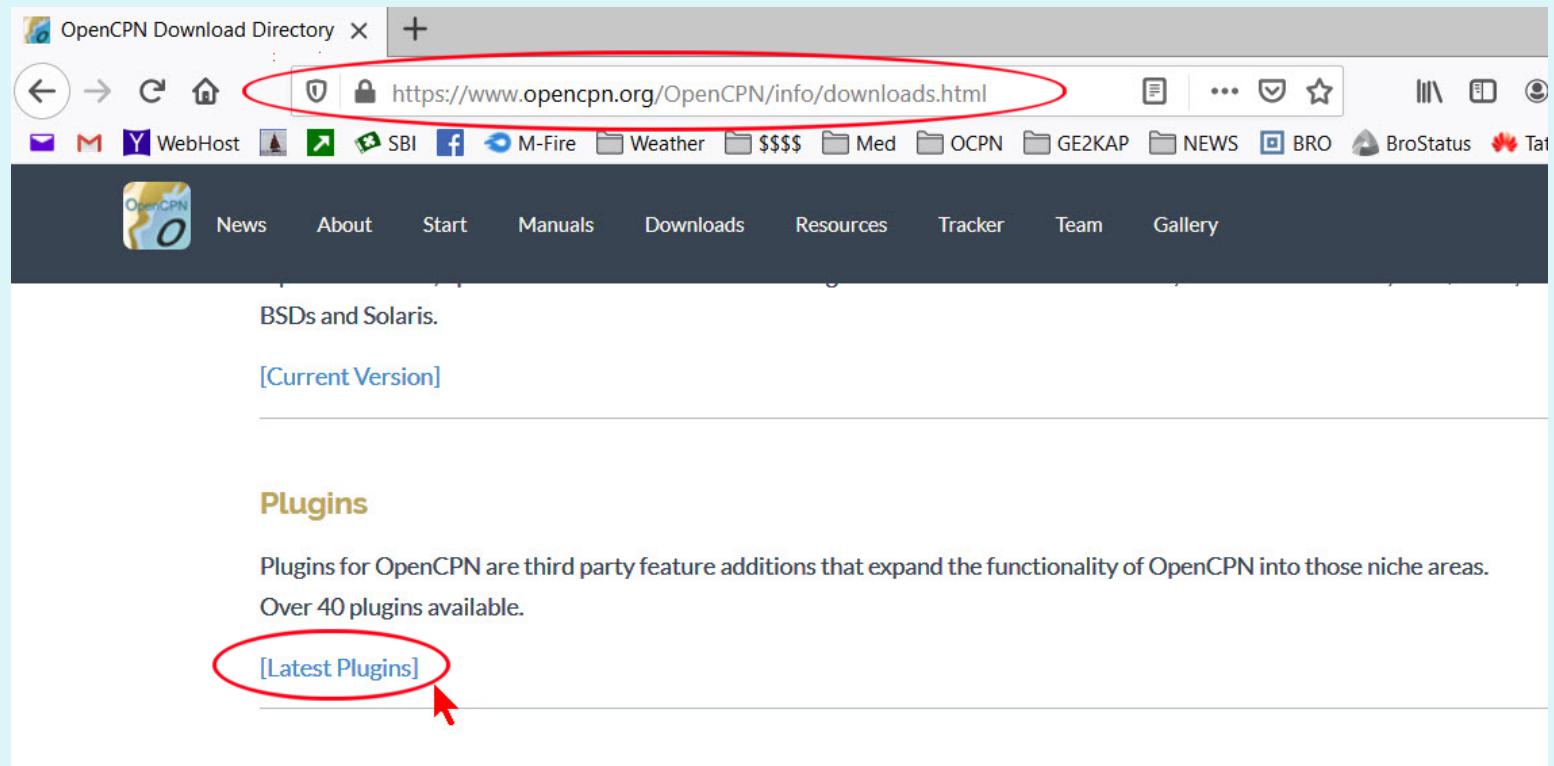
Manager for chart downloads of NOAA North America charts.

PLUGINS

Downloading Plugins

Go to the OpenCPN ‘Downloads’ page and click on [Latest Plugins]

(<http://opencpn.org/OpenCPN/info/downloads.html>)



PLUGINS

Downloading Plugins

The *installation programs* for available plugins can be downloaded from [there](#) for Windows (and also for Linux and Mac OS X)



A screenshot of a web browser window displaying the 'Plugins for OpenCPN' page. The browser's address bar shows the URL: <https://www.opencpn.org/OpenCPN/info/downloadplugins.html>. The page itself has a dark header with the 'OpenCPN' logo and navigation links for News, About, Start, Manuals, Downloads, Resources, Tracker, Team, and Gallery. Below the header, there are three blue links: Home, Downloads, and Plugins. The main content area features a large title 'Plugins for OpenCPN' and a subtitle 'Plugins for OpenCPN 4.2 and up'. It also includes a descriptive text: 'Third party features that expand the functionality of OpenCPN into niche areas.' A small circular icon with a star and gear is followed by the text 'Weather Routing Voted Captain's Choice 2018'. A red arrow points to the 'Weather Routing Voted Captain's Choice 2018' text.

Exploring OpenCPN V5

BYE !



I hope this has been useful. It took several bottles of red wine to complete. I will blame any mistakes on the wine. Questions? Email: yachties@yahoo.com

Terry Sargent
<http://yachtvalhalla.net>
1 November 2019