



***Whitsunday Cruise 2022
Navigation***

May 2022 – November 2022

Today's Programme

Rendezvous	9:00 – 9:30
Navigation	9:30 – 10:30
Coffee Break and Discussion	10:30 – 11:00
Engine and Electrical	11:00 – 11:30
Communications	11:30 – 12:00
Provisioning, Hunting and Gathering	12:00 – 12:20
Seamanship	12:20 – 12:40
Panel Q&A and lunch	12:40 – 1:00



Navigation

First and foremost:

Do not let the thought of navigation and getting to your destination awe you.

With appropriate preparation and procedure, this is a straightforward process.

It can even be fun!



Navigation

- Not discussing
 - navigation beacons,
 - lighthouses,
 - Mercator projections,
 - chart symbols and abbreviations,
 - how to enter specific ports
- Will discuss practical tips to let you safely plan and navigate a trip to your destination
- Will also discuss the tools available to you and suggestions on how to use them



Navigation

Tools at your disposal:

- Chart plotter
- Tablet & phone Navionics app
- Other boat sensors
- Cruising guidebooks
- Paper charts
- Google Maps
- Auto helm
- Tide charts
- VMRs

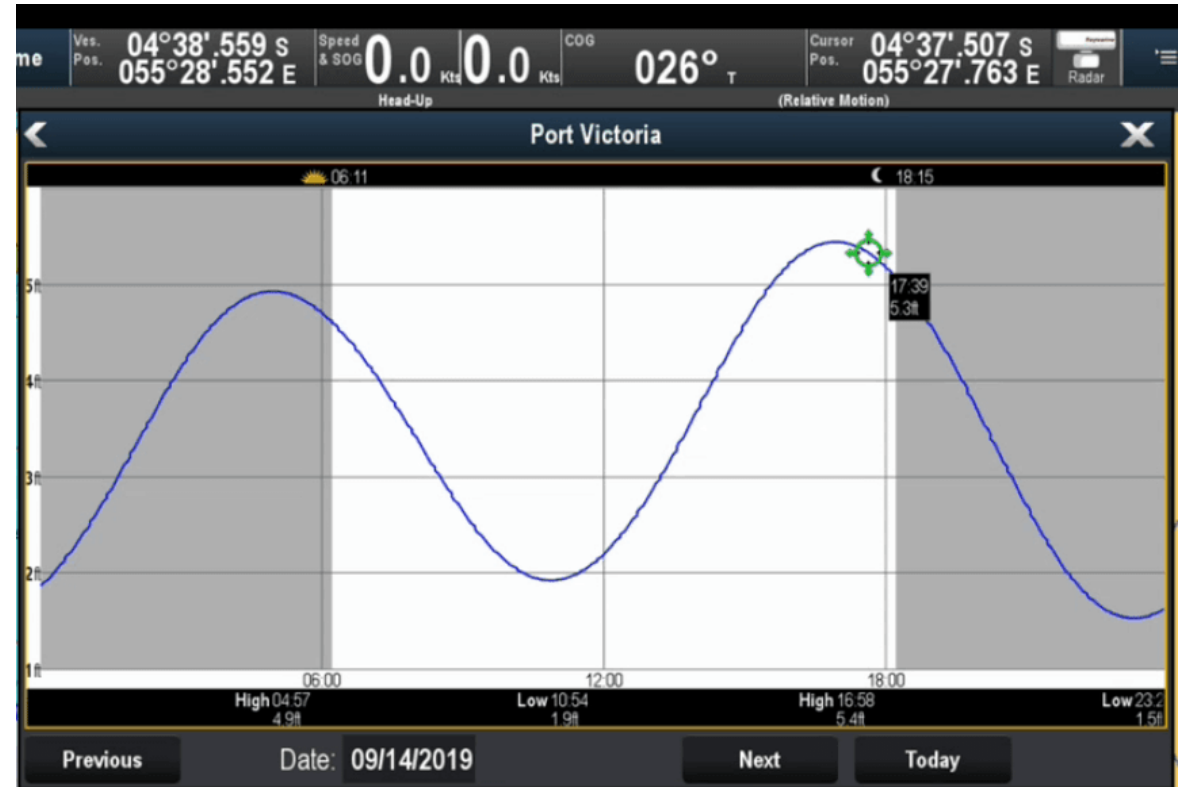


Navigation – Chart Plotters

More than just a dot on a moving map

- Gives direction and distance to destination
- Detailed information on obstacles along route
- Overlay actual wind and current directions
- Shows AIS contacts, including friends' position, speed and direction
- Detailed depth contours
- Detailed tide movements
- Tidal flow directions
- Centre of information management system

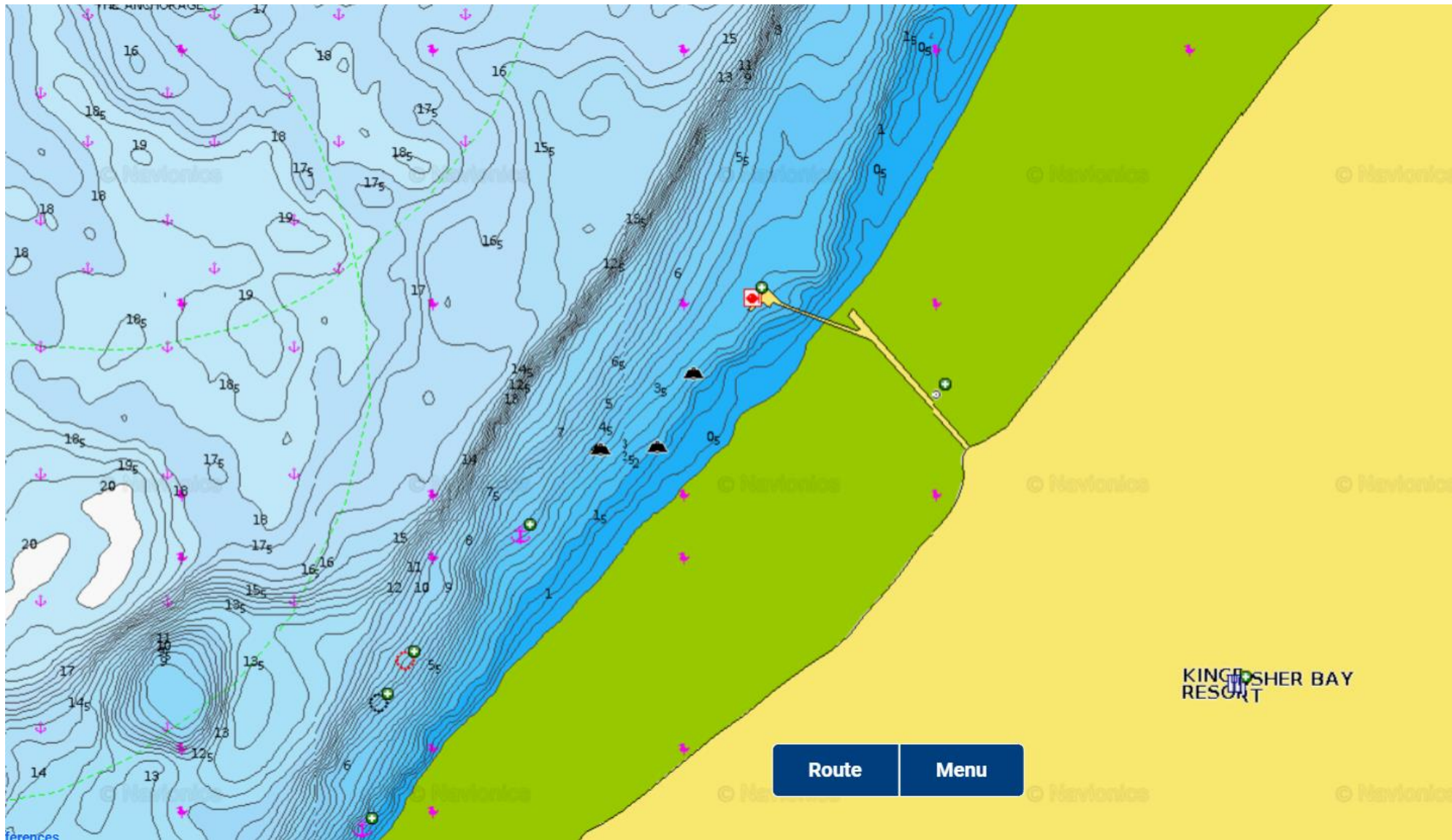
But – ALWAYS check lowest levels of resolution



Navigation – Chart Plotters



Navigation – Chart Plotters

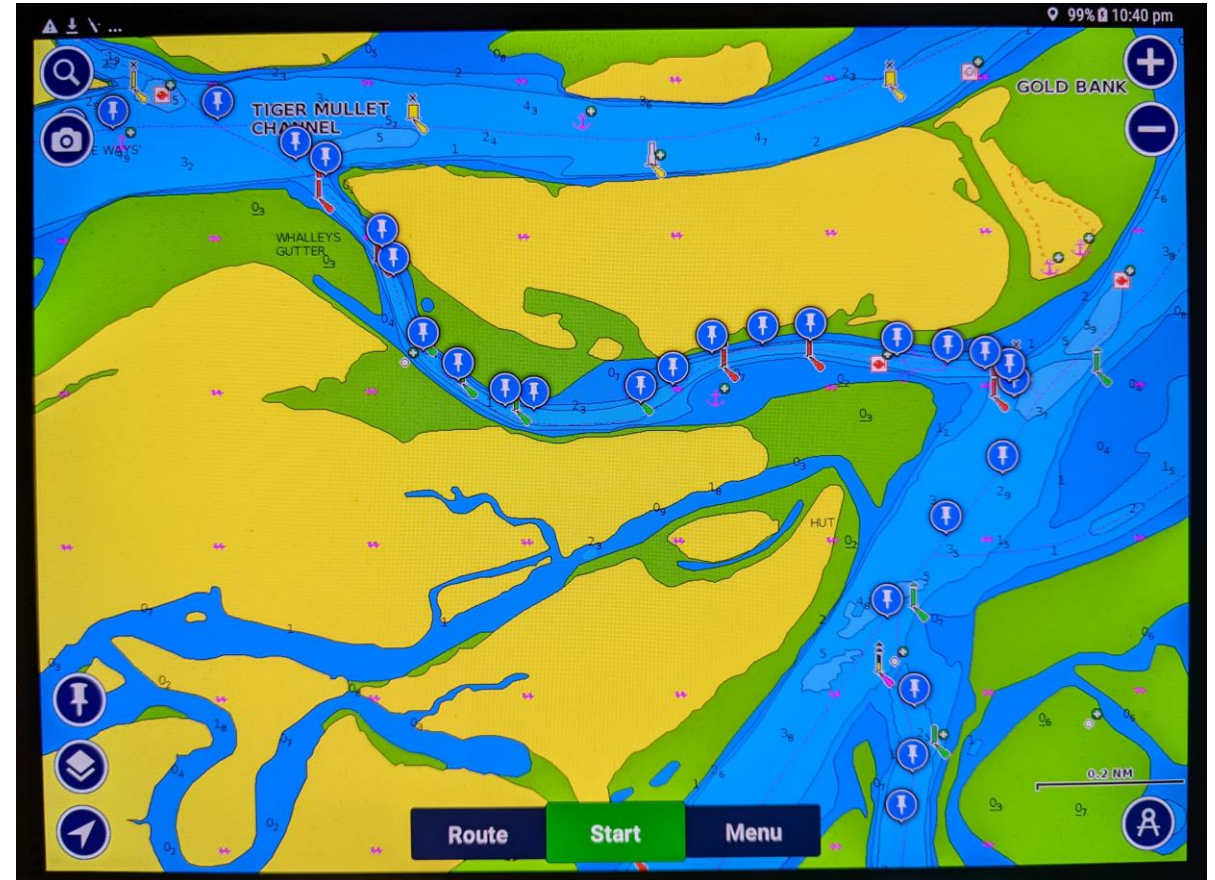


Navigation – Tablet & Phone Navionics App

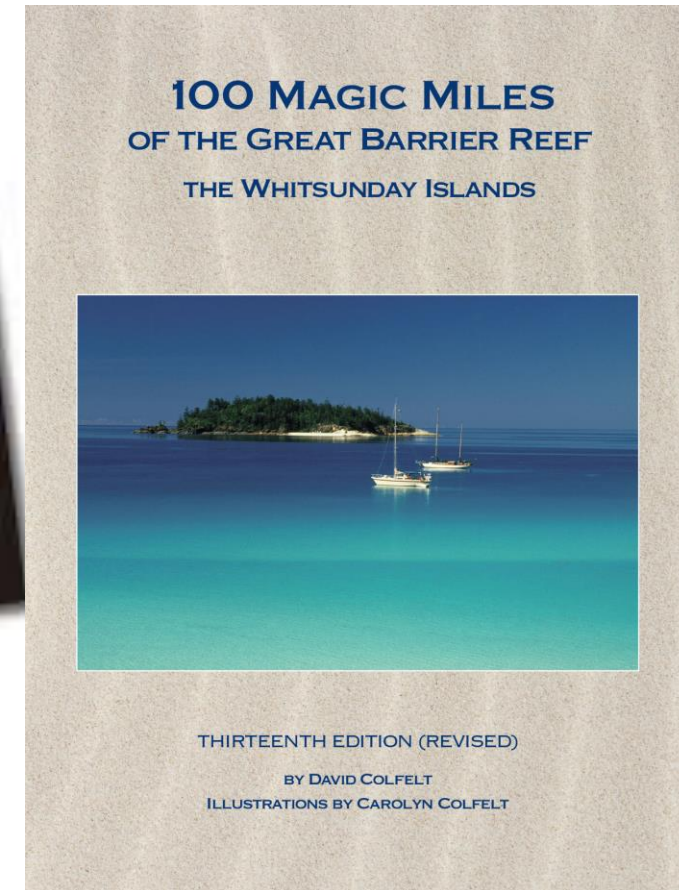
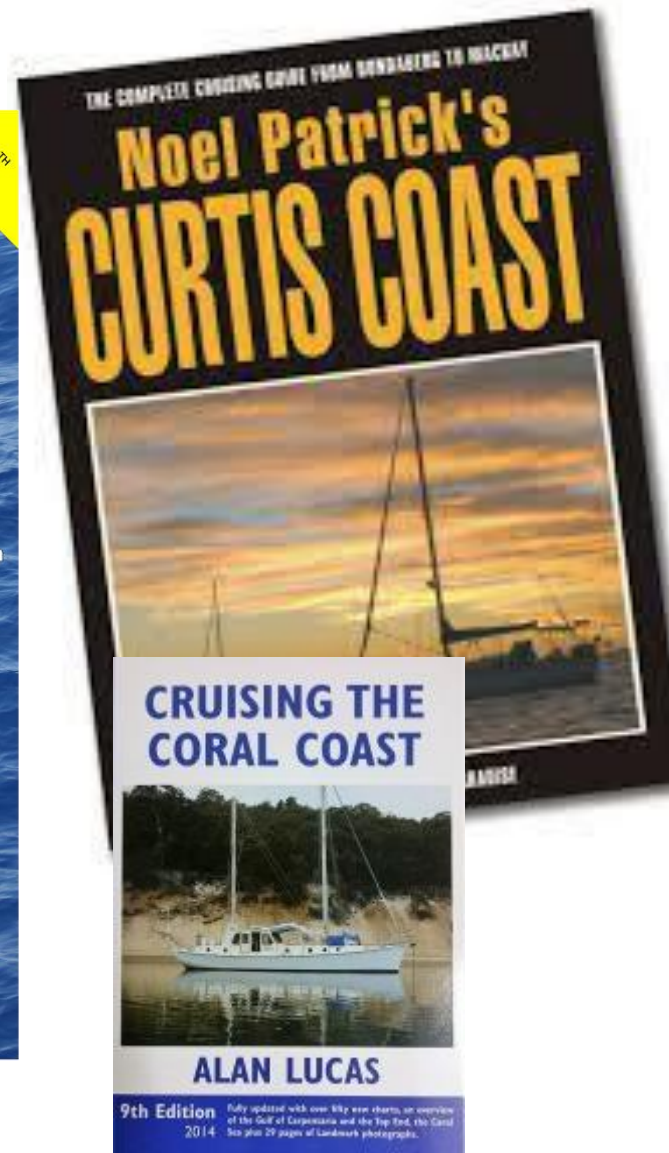
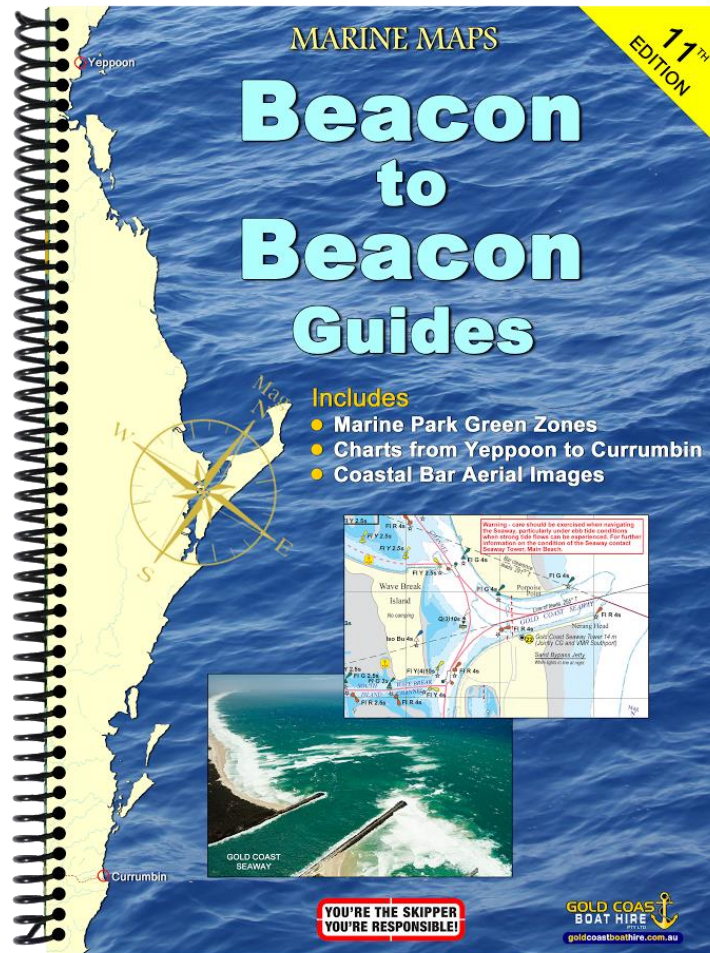
- A counterpart to main chart plotter
- Set waypoints and plan trips in the comfort of your saloon

Link tablet with main chart plotter via wifi

- Transfer waypoints and planned routes
- Daily updates to chart plotter data



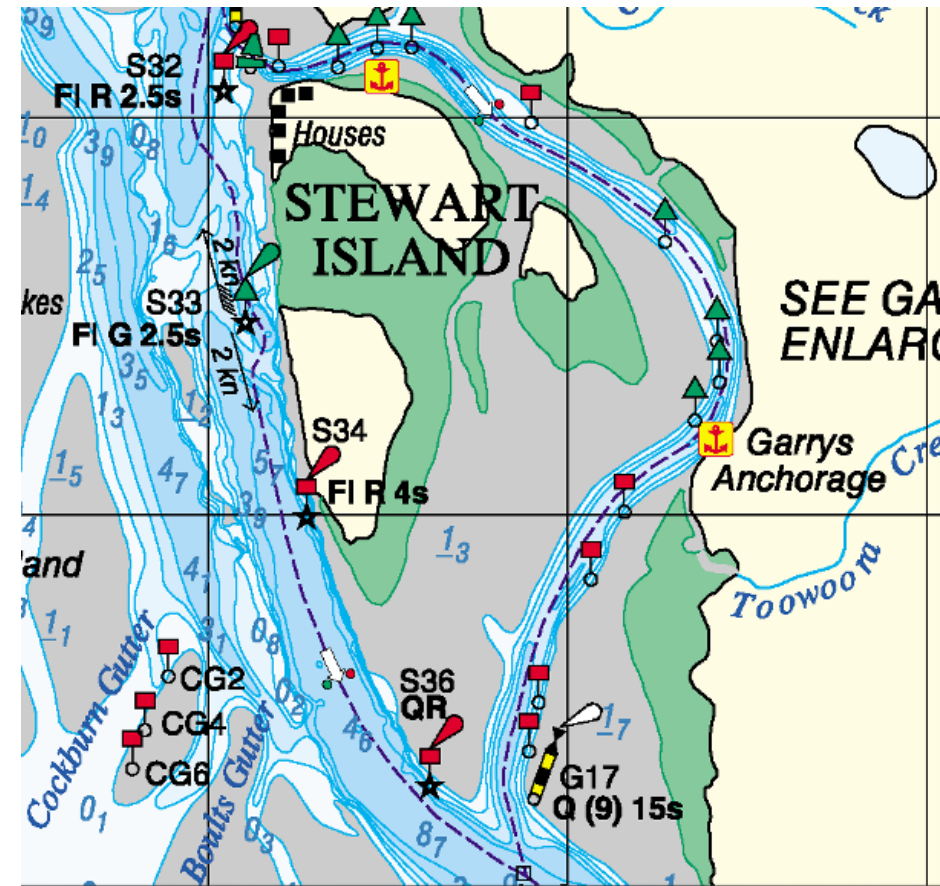
Navigation – Guidebooks



Navigation – Beacon to Beacon

Highly detailed charts of specific areas in Qld, particularly

- Gold Coast Seaway
- Great Sandy Strait
- Available to purchase hardcopy
- PDF files available to download
- Similar information available on Navionics, but not as graphic

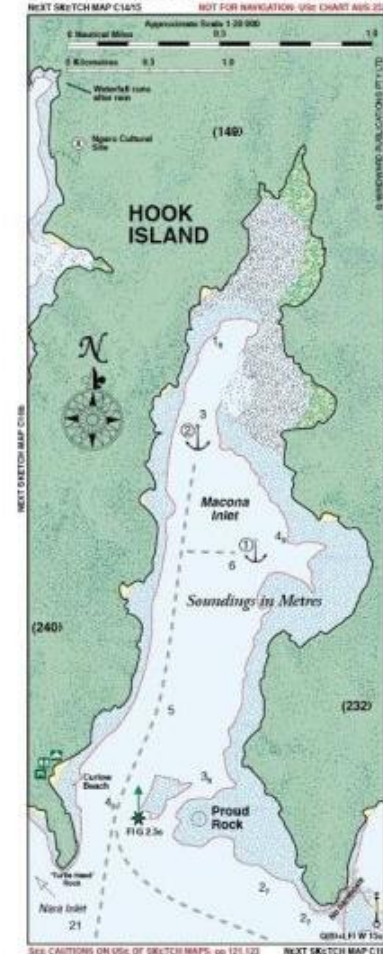


Navigation – Cruising Guidebooks

Especially good:

- 100 Magic Miles (Whitsundays)
- Noel Patrick's Curtis Coast
- Excellent compilations of vital information
- Selection of anchorages
- Anchorage approaches and obstacles
- Bottom holding
- Facilities and activities ashore
- History and trivia

MACONA C10a



ANCHORAGES / 173

MACONA INLET (C10a)



Entering Macona Inlet, keep to the port side to avoid Proud Rock. A back transit may be used to check your progress; hold Hill Rock (which is immediately west of Gid Island) to the east (left) of Pine Island.

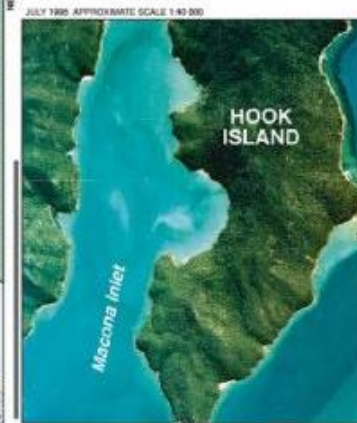
If you are coming from Hook Passage, stay outside the south cardinal mark that marks the reef off the southern extremity of Hook Island, and don't head straight for the buoy marking the reefs in the entrance to Macona or you may cut the corner too closely (the reef area around Proud Rock).

Macona Inlet is vast, and there are numbers of sand beaches to explore. Anchorage No. 1 is preferable to anchorage No. 2 in fresh south-east conditions.

MACONA INLET (C10a)



Anchor allowing sufficient swinging room.



Navigation – Paper charts

Historically the ultimate source of information

- First signs of the demise of paper charts
- Still have a lot to offer
 - Details aren't zoomed out of existence
 - Perpetual
 - Require no power
 - Broad view
 - Assists cruise planning
 - Permits old fashioned navigation
 - Looks sailorly
- However
 - Large size can be cumbersome
 - Require time consuming updates
 - Not waterproof

AUS 204 Broken Bay
AUS 207 Approaches to Newcastle
AUS 209 Port Stephens
AUS 809 Port Jackson to Port Stephens
AUS 810 Port Stephens to Crowdy Head
AUS 811 Crowdy Head to Nambucca Heads
AUS 812 Nambucca Heads to Clarence River
AUS 813 Clarence River to Point Danger
AUS 814 Point Danger to Cape Moreton
AUS 817 Great Sandy Strait and Hervey Bay
AUS 818 Sandy Cape to Bustard Head
AUS 819 Bustard Head to North Reef
AUS 820 North Reef to Port Clinton
AUS 822 Port Clinton to Percy Isles
AUS 823 Percy Isles to Mackay
AUS 824 Penrith Island to Whitsunday Islands
AUS 251 Bailey Islet to Repulse Islands
AUS 252 Whitsunday Group
AUS 253 Whitsunday Passage
AUS 254 Plans in Whitsundays
AUS 258 Whitsundays
AUS 259 Hinchinbrook Channel
AUS 825 Whitsunday Island to Bowen

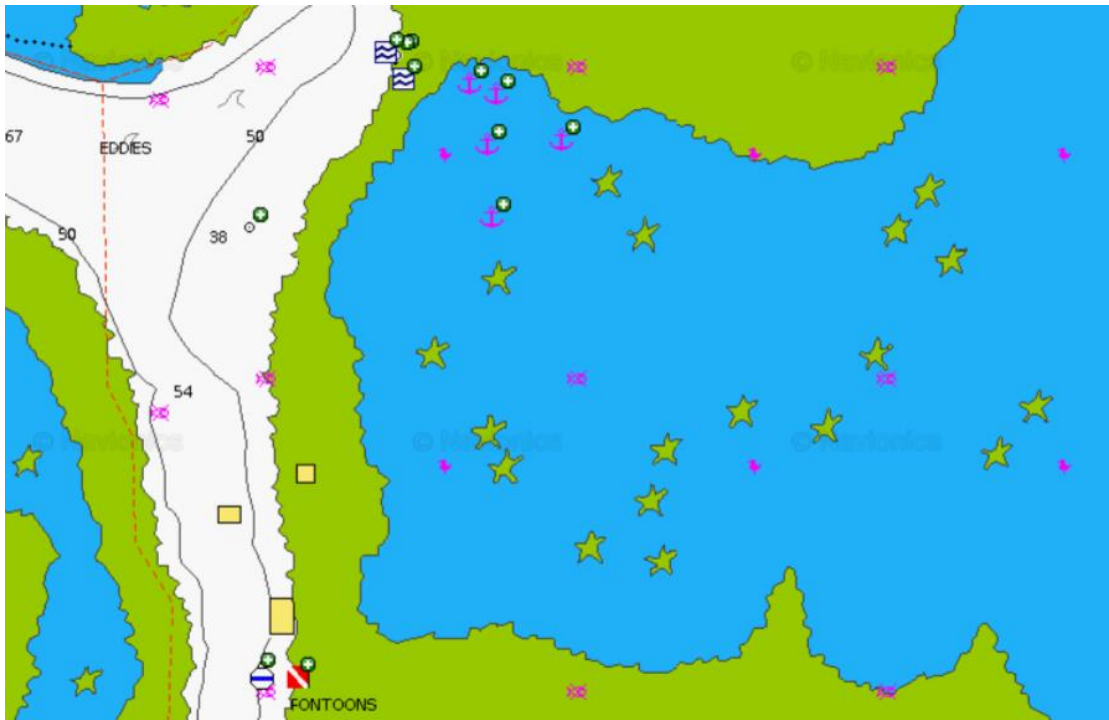


Navigation – Google Maps and other Apps

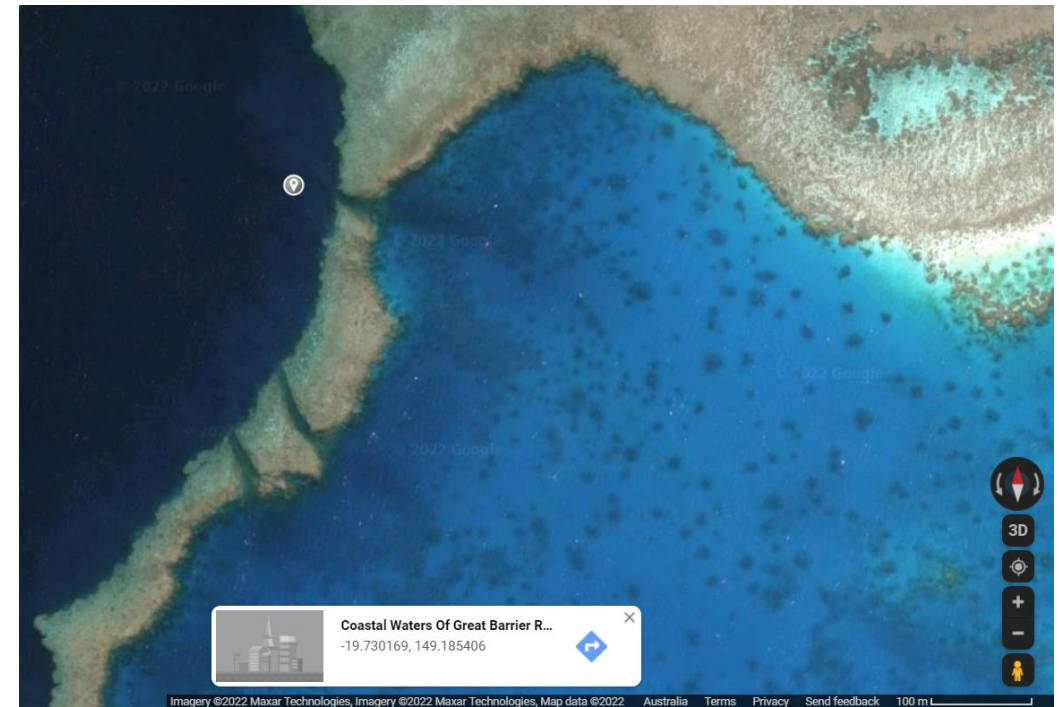
Google Maps (or Google Earth) can be of tremendous use.

However, ***don't trust your life or the safety of your boat to it***

Hardy Lagoon on Navionics software



Hardy Lagoon on Google Maps

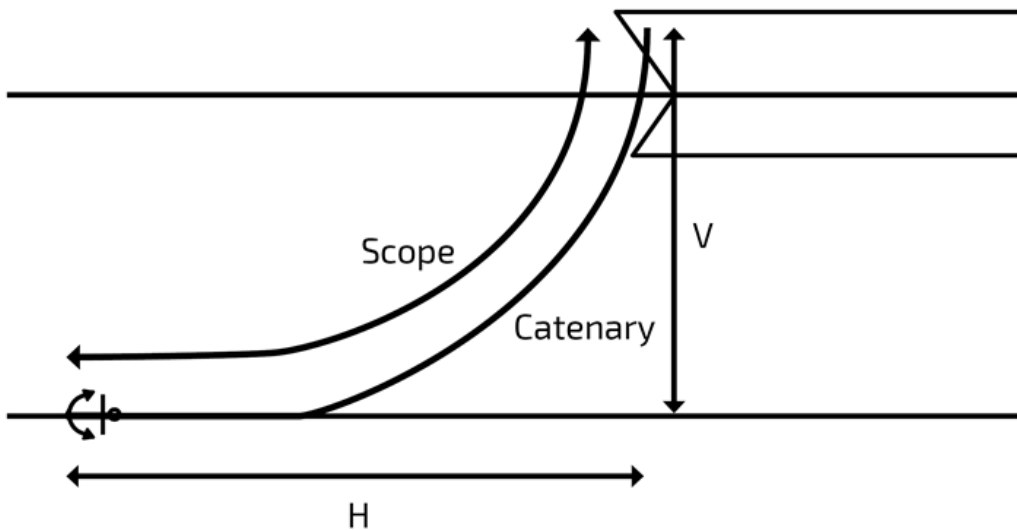


Navigation - others

- Tide charts (NSW & Qld)
- Volunteer Marine Rescue stations
- Auto helm



Anchoring



Recommended scope 5:1 but longer in stronger winds.

Remember, the longer the scope the more you swing.

3:1 is ok for daytime anchorage

4:1 is acceptable for all chain rode in mild conditions

In strong winds – less out more

V = Length from point where anchor chain attaches to the boat

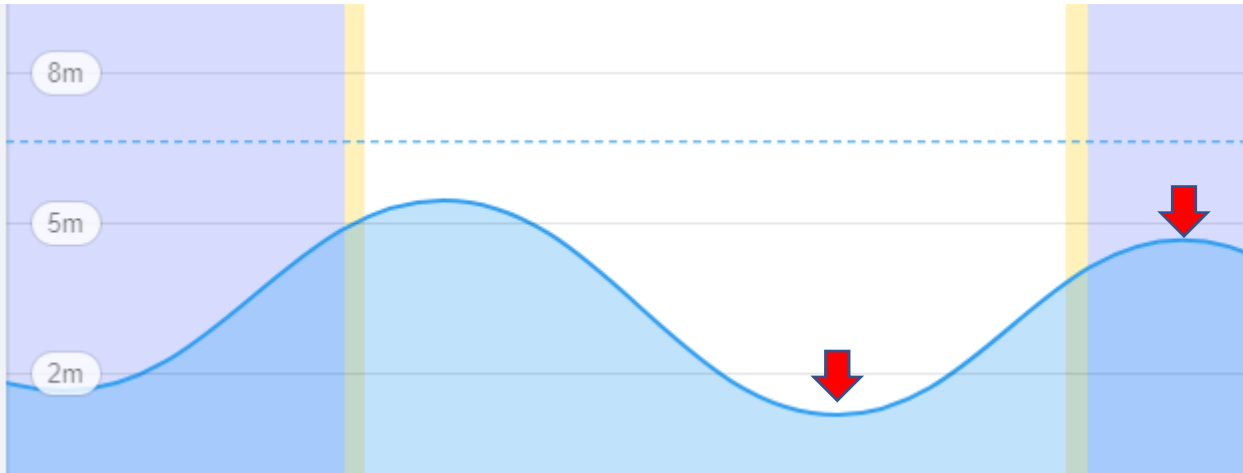
➤ Height above water line + depth of water

➤ With a 4m tide V will change with the tide

➤ Does your depth gauge measure depth below keel or depth below water line

After anchoring use your chartplotter or anchoring app to check that you are not dragging.

Anchoring Example



Arrive at 3pm – Tide 0.8M

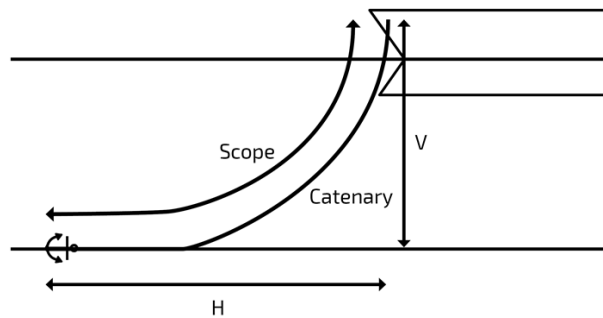
Depth below keel 3m

Keel off set 1m

Height of anchor above waterline 1.5m

Total = 3 + 1 + 1.5 = 5.5m

Scope at 5:1 is 27.5m



BUT tide at 8pm is 4.7m (additional 3.9m of water)

Total = 3 + 3.9 + 1 + 1.5 = 9.4 m

Scope at 5:1 is 47.5m

Beware

Anchor at 8am, tide is 5.4m

Depth below keel is 3m

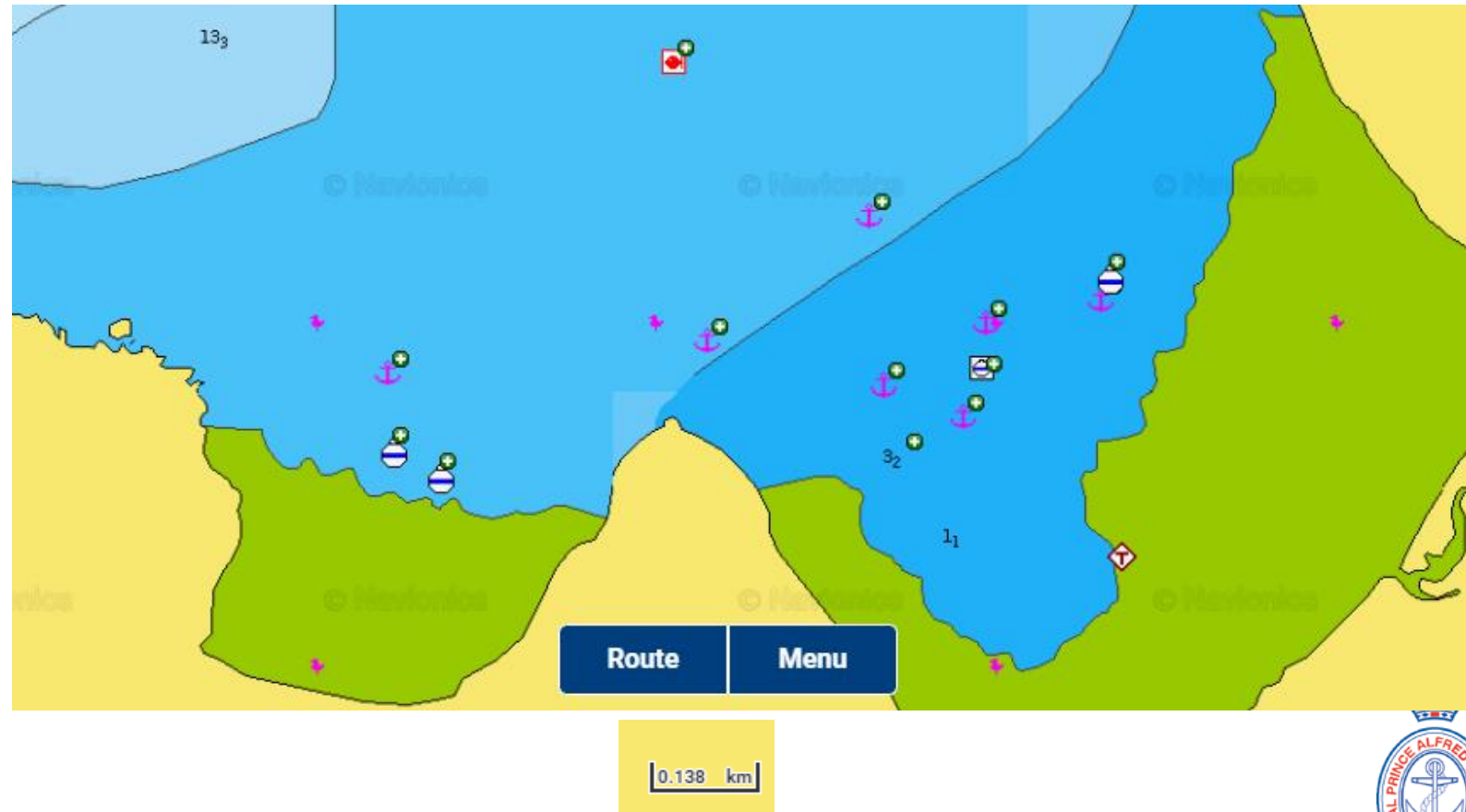
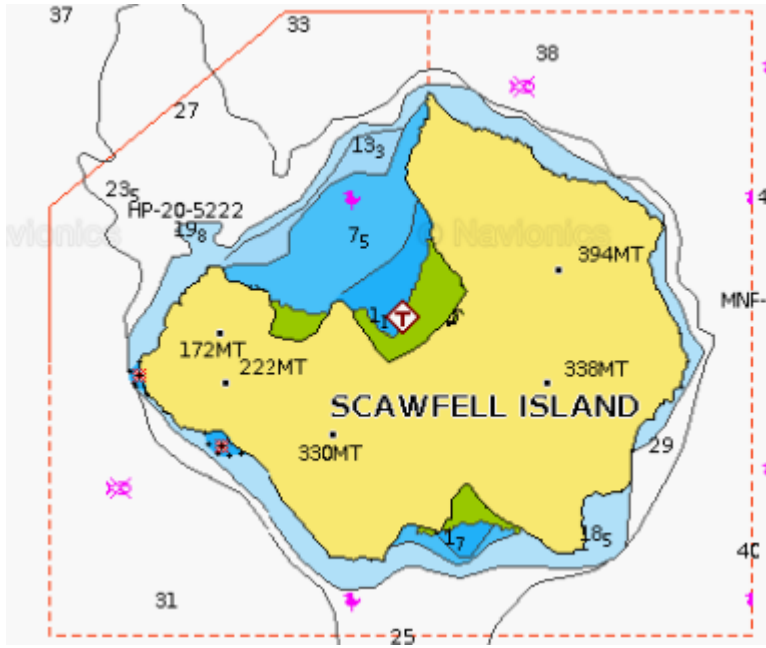
At 3pm

Depth below keel = 3 – 5.4 + 0.8 = -1.6m

Notes

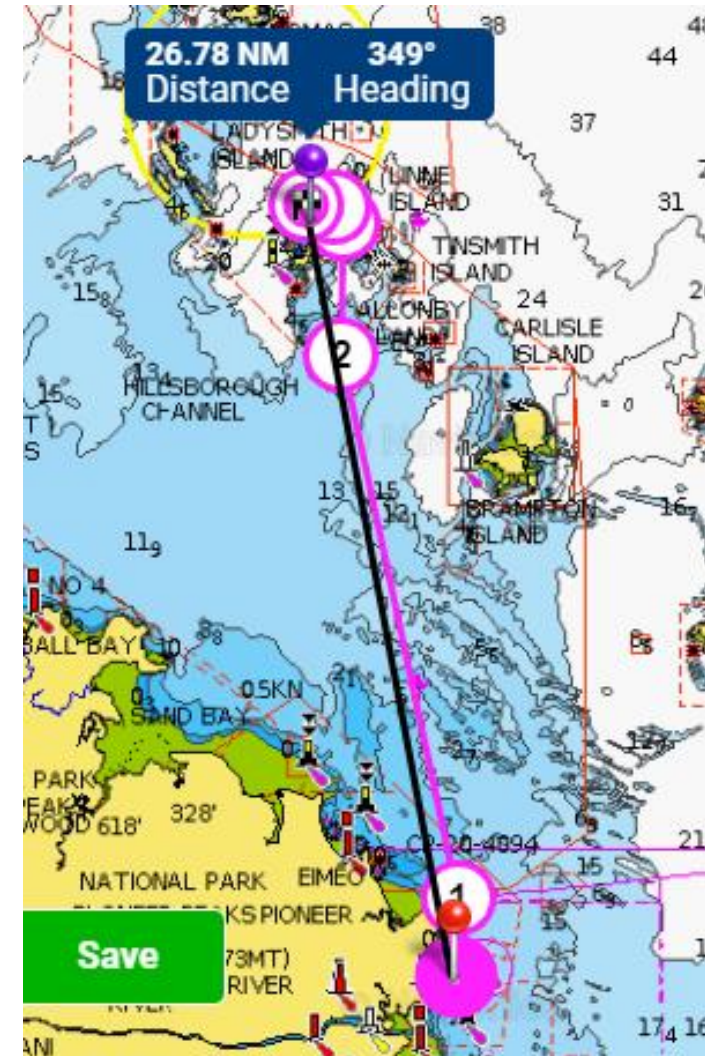
- With 47.5m of chain at low tide your swing radius is approx. 40m
- If you only let out 27.5m your scope is 3:1

Don't forget the impact of wind direction changes



Passage Planning

- How far do you need to travel
- What time do you want to arrive – do you want to anchor before sunset (if so what time is sunset, remember in the tropics the sun sets much faster)
- What is your average speed
- Effects of wind and tide
- Most chartplotters estimate time of arrival by distance / current speed
- Check any obstacles eg reefs that will increase the distance to travel
- Distance
 - Straight line 26.78 nm @ 6 knots = 4.5 hours
 - Plotted route 28.2 nm
 - With 2 knot tide against you, speed 4 knots = 7 hours



Actual distance = 28.2 nm

Navigation – Sample cruise

Let's say we want to sail from our anchorage at Stonehaven Bay to Hardy Reef

Remember – Diligent preparation is everything

Break the cruise down into parts

- Getting out of your current anchorage
- Get to clear water
- Start down the bearing to destination
- Avoid obstacles along the way
- Get into new anchorage



Navigation – Sample cruise

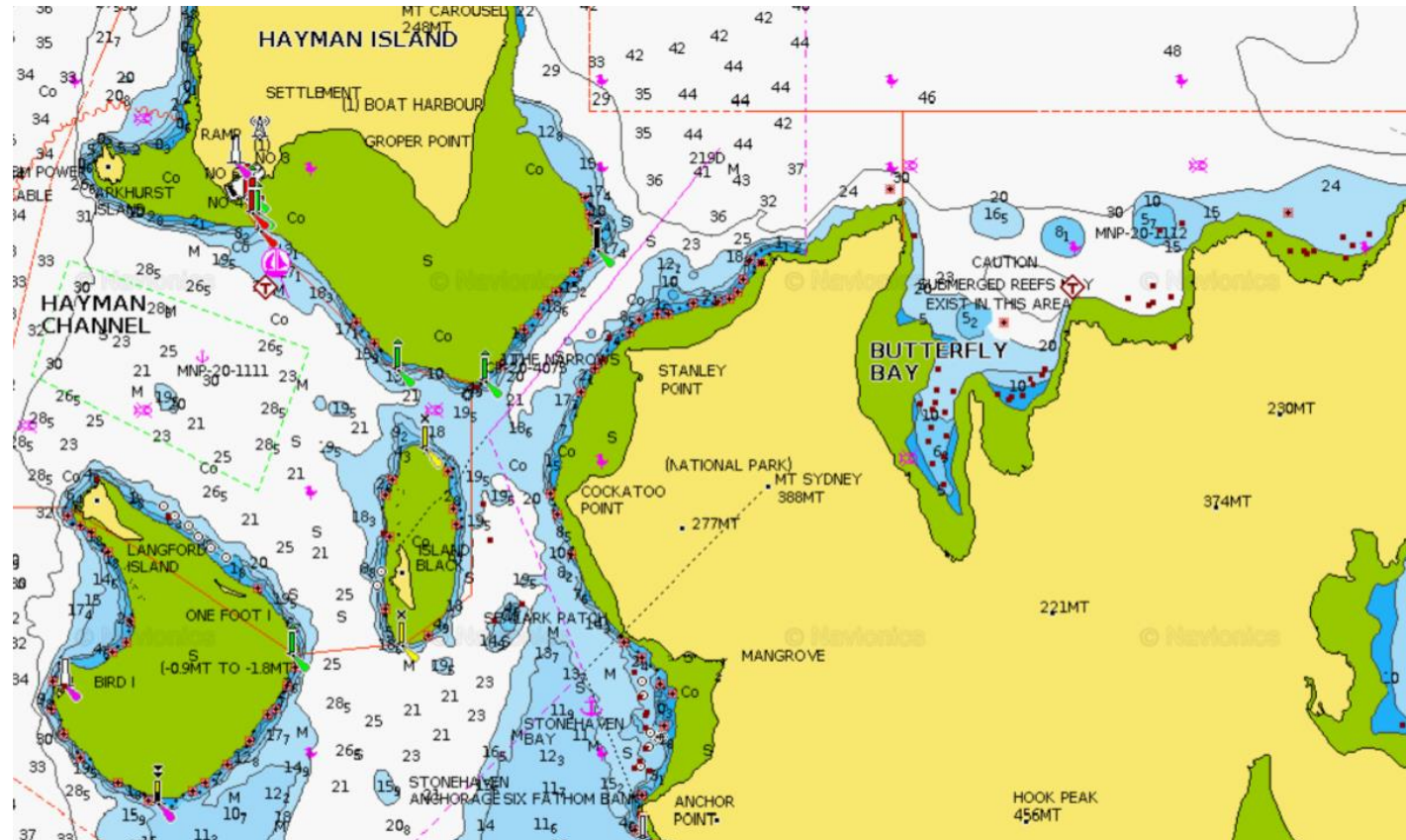
- Examine paper charts, or use Navionics on a tablet
- Understand how far it is, how much is open water, how long will it take, where are the bolt holes if things turn sour
- What are the tides and current doing, how fast and in which direction are they flowing?
- Will I need high water to get into my anchorage, what time do I need to be there for that, what time do I need to leave and how fast do I need to go?
- What identifying points will I expect to see along the way?
- Make notes on all of these things



Navigation – Sample cruise

Now, let's check the detail

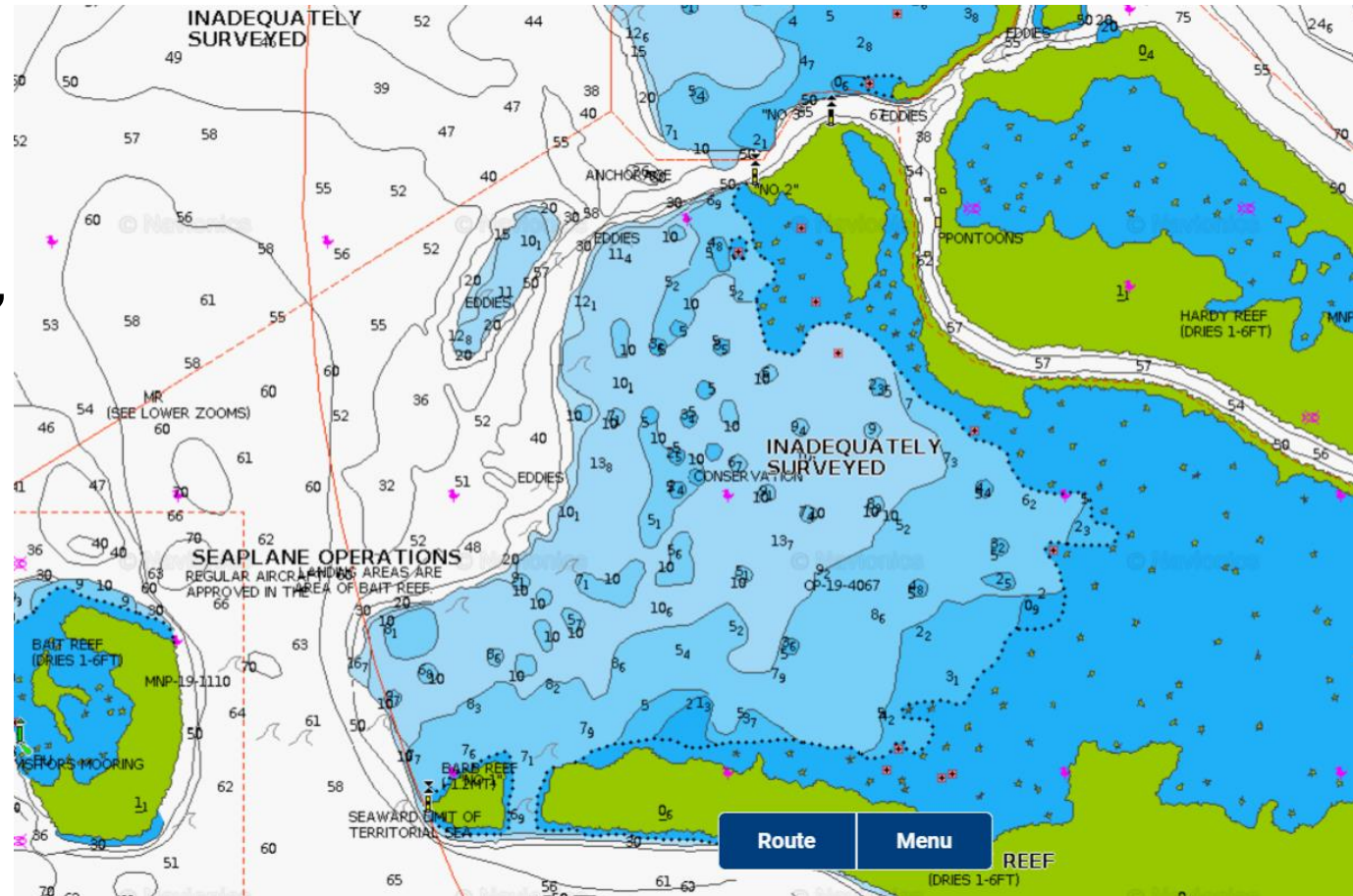
- How am I going to get out of my current anchorage?
- Zoom in on chart plotter details to check for obstructions, check 100 Magic Miles for advice
- What challenges exist along the route?
- In this case, quite a lot!
- Check 100 Magic Miles again
- Maybe check Google Maps
- Take notes on navigation marks, headings, distances, etc
- Check everything again



Navigation - Sample cruise

Now, do the same for the other end

- Again, make notes, bearing in mind you might be getting a little tired by the time you get there
- Prepare for the anchorage itself
- Where is clear water?
- What depths to expect
- Minimum and maximum depths, allowing for tidal changes
- What's on the bottom?
- Swinging room
- Consider how much chain you'll be letting out



Navigation - Sample cruise

Other stuff

- Use your chart plotter and auto helm
- Consider all the obstructions and landmarks you've already noted
- Preset waypoints on you plotter and use them
- Keep situational awareness at all times – ask for help from others on board



Navigation - Conclusion

- Preparation is key
- All of us have been somewhere for the first time – preparation has gotten us there safely
- Back yourself – remember you can prepare just as well as anyone else
- Take notes – this is not a weakness but actually a very strong navigational tool
- Constantly check your understanding of where you are against your surroundings
- Preplan alternatives for yourself
- Most importantly, enjoy the wonderful new places you're exploring

