

East Coast Passage Planner

Version 2.2

Contents:

Purpose:

This passage planner is an aide to passage planning, it is not a navigational aid.

Scope:

Cairns to Two Fold Bay (Eden), including Whitsunday detail.

Notes:

- 1) Strip charts are schematic and therefore no scaling should be assumed especially for the purposes of navigation.
- 2) The distances shown are the shortest course over ground (COG) rhumline distances taken from a normal departure point to a normal arrival point clearing all hazards by a safe margin, in the case of a marina the marina entrance, in the case of a river, the river bar.
- 3) The distances shown do not take into account the quickest route dictated by tidal and other currents.
- 4) Volunteer Marine Rescue (VMR) organizations listed in **Red** are 24/7 operation, VMR organizations in Black operate restricted hours.
- 5) When entering the pilotage areas of Gladstone and Mackay, all vessels of 10M and more in length are required to contact harbour control for approval. Failure to comply can result in a fine up to \$15,000. The approving authority, call sign and calling VHF Channels are documented within the VMR column.
- 6) During military exercise periods the Port Clinton and Island Head Creek areas become a restricted Military zone. Check with Queensland Maritime Notice to Mariners (www.msq.qld.gov.au/Home/Notices_to_mariners) and or the local VMR prior to planning trips in this area.
- 7) Queensland tidal predictions are listed under “standard ports” and “secondary places”. Standard ports have a specific tidal prediction and secondary places are referenced to specific standard ports with time and height adjustments. Queensland tidal locations within this document are shown as “**T**_{standard port}”. The specific location in question could be either a standard port or secondary place. The standard port to which the location refers is shown in subscript.
- 8) Queensland tides; North of Broad Sound (South of Mackay) tidal flood (rising tide) is southwards, and the ebb (falling tide) is northwards. South of Broad Sound tides reverse, flooding northwards and ebbing southwards. This is an important factor in planning passages along the Queensland coast.
- 9) Location symbols:

● Locations with a solid circle symbol are ports and or anchorages with full or limited facilities.

○ Locations with a hollow circle symbol are ports or anchorages without facilities.

+ Locations with a cross symbol are reference locations such as significant waypoints or tidal reference locations

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Comments:

Anyone can play a role in keeping this document up to date by leaving comments with correction or requests at <http://skipr.net/cruising/2008/06/robs-passage-planner.html>

Acknowledgement: Special thanks to Warwick Lukins for his work in documenting the first version of this chart in 2001.

QLD recreational marine driver licence

In Queensland, a marine licence is required to operate a recreational boat which is powered by a motor greater than 4.5 kW (over 6 HP).

Valid marine licences

Licences issued by Maritime Safety Queensland in accordance with the *Transport Operations (Marine Safety) Act 1994* and include:

- recreational marine driver licence
- recreational ship master's licence
- speed boat driver's licence
- current commercial marine licences as master - for example coxswain.

Valid equivalent marine licences

Licences that are issued by other safety authorities within the Commonwealth of Australia or other entities recognised by Maritime Safety Queensland and include:

- current boating licences issued in other states (excludes junior licences)
- current Small Vessel Operators Certificate (to operate a fishing ship less than 10 m in length issued by the Queensland Fishing Industry Training Council).

QLD sewerage discharge

Queensland has defined nil discharge areas, restricted discharge areas and un-restricted discharge areas for all vessels. “Restricted discharge” is the discharge of category A, B or C treated sewerage only, definitions can be found at www.msq.qld.gov.au/Home/Environment/Sewage/#sewagetypes.

Detailed discharge area maps can be down loaded from www.msq.qld.gov.au/Home/Environment/Sewage/Vessel_sewage_discharge_restriction_maps, The same information is available on the Great Barrier Reef Marine Park Management Zoning Maps.

For further information on the legislation including pumpout locations (14 only in all of QLD) go to; www.msq.qld.gov.au/Home/Environment/Sewage/#pumpoutfacilities .

Note, Queensland Maritime regularly inspect recreational boats for compliance with the legislation. In fact we have heard stories of them actually placing dye in the toilet bowls to see if holding tanks are operational. While treatment devices are allowed in restricted discharge areas, nil discharge is NO discharge and therefore you will require either a holding tank or an equivalent such as a “Porta Potty”.

Charts

AUS 192	Twofold Bay
AUS 191	Crookhaven River, Ulladulla, Batemans Bay & Bermagui
AUS 806	Gabo Island to Montague Island
AUS 807	Montague Island to Jervis Bay
AUS 193	Jervis Bay and Approaches
AUS 194	Port Kembla Including Wollongong Harbour
AUS 808	Jervis Bay to Port Jackson
AUS 197	Approaches to Port Jackson Port Hacking to the Skillion
AUS 809	Port Jackson to Port Stephens
AUS 198	Bottany Bay & Port Hacking
AUS 204	Broken Bay
AUS 207	Approaches to Newcastle
AUS 209	Port Stephens
AUS 810	Port Stephens to Crowdy Head
AUS 811	Crowdy Head to Smoky Cape
AUS 812	Smoky Cape tp Clarence River
AUS 813	Clarence River to Point danger
AUS 814	Point Danger to Cape Moreton
MB1 ¹	Moreton Bay, Manly to Mooloolaba
MB6 ¹	Moreton Bay, Nerang River to Couran
MB7 ¹	Moreton Bay, Couran to Redland Bay
MB8 ¹	Moreton Bay, Redland Bay to Cabbage tree creek
AUS 365	Cape Moreton to Sandy Cape
AUS 817	Hervey Bay
GSS1	Great Sandy Straight (South)
GSS2	Great Sandy Straight (North)
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 Islands
AUS 823	Percy Islands 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 825	Whitsunday Island to Bowen
AUS 268	Plans of Arlie Beach and Bowen
AUS 826	Bowen to Cape Bowling Green
AUS 827	Cape Bowling Green to Palm Islands
AUS 828	Palm Islands to Brook Island
AUS 259	Hinchinbrook Channel
AUS 258	Dunk Island
AUS 829	Brook Island to Russel Island
AUS 830	Russel Island to Low Island
AUS 262	Approaches to Cairns

Note:

- 1) Chart not required if bypassing area

Pilots

- 1) Cruising the NSW Coast
by Alan Lucas
A must have for cruising the NSW coast
- 2) Cruising The Coral Coast
by Alan Lucas
Only publication covering complete QLD coast
- 3) Beacon To Beacon Directory
by Maritime Safety Queensland
Very good for Moreton Bay
- 4) Curtis Coast
by Noel Patrick
A must have for Curtis coast, especially for entry to anchorages such as Island Head Creak and Port Clinton
- 5) 100 Magic Miles of the Great Barrier Reef, the Whitsunday Islands
by David Colfelt
Specializes in cruising the Withsunday area

Tide Tables

- 1) NSW Tides
by NSW Maritime
http://www.waterways.nsw.gov.au/docs/Tide_Tables.pdf
- 2) Tide Tables & Boating Safety Guide
by Maritime Safety Queensland.
Available at most boating book stores.
A must have document for cruising in QLD, full of useful information

Great Barrier Reef Marine Park Management Zoning Maps

The following maps detail sewerage discharge, access, fishing and other marine activity restrictions within the Great Barrier Reef Marine Park, covered by scope of this document. Make sure you have the necessary zoning maps for your planned cruising area. They are free and available from most QLD chandleries and marine book stores. Southport or Mooloolaba are the best and most convenient ports to obtain these maps.

MPZ30, MPZ31 & MPZ32
MPZ6 thru MPZ18

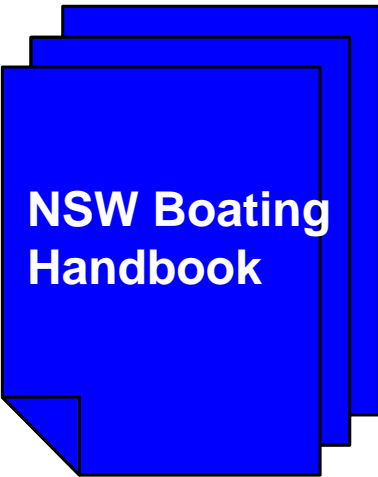
General

Minimum safety requirements and equipment are legislated by the State Governments. In the case of NSW the department responsible is NSW Maritime, in the case of QLD it is Maritime Safety Queensland. The NSW requirements are documents in the Boating Handbook at www.waterways.nsw.gov.au/sbh_pdf.html. The QLD requirements are documented at www.msq.qld.gov.au/Home/Safety/Safety_equipment/.

A composite summary of the NSW and QLD minimum safety requirements for recreational vessels equal to or greater than 12m operating in open waters is shown on this page. The requirements set by these departments are the minimum legal requirement for recreational vessels within their respective jurisdiction. The state government acts covering marine safety provide heavy penalties both fines and imprisonment for breaches of safety obligations. Personal obligations are clearly stated in the extract below from the Marine Safety Queensland site. Basically, Owners, Operators are accountable. Owners, operators, Masters and Crew are all responsible for the safety of a vessel prior to it going to sea. So if you are assisting with a passage as a crew member you are obligated by law to ensure the vessel is seaworthy.

Yachting Australia (YA) has defined minimum requirements for Yachts participating in racing events conducted by YA affiliated organizations. YA recommends these same special regulations for yachts participating in cruising events. These YA Special Regulations are documented in the Blue Book, available from most ships chandleries. The minimum YA special regulations required for passages within the scope of this document is listed under Special Regulations Category 4. These special regulations are a superset of the NSW and QLD requirements.

RPAYC has documented safety requirements for RPAYC cruising activities in their Green Book located at www.rpayc.com.au/index.php?option=com_content&task=view&id=113&Itemid=135 or by contacting reception. The minimum Green Book safety requirement for passages within the scope of this document is “Short Coastal”. This is a superset of the NSW and QLD minimum requirements.



Minimum Safety Equipment defined by Maritime NSW and Marine Safety Queensland

Note: subset only covering vessels equal or greater than 12m in Open waters

Equipment	NSW	QLD
Lifejackets (Type 1)	1 per person	1 per person
Bucket/Bailer with attached lanyard , minimum 2 litre capacity	1	NR
Bucket with attached lanyard, minimum 9 litre capacity	2	NR
Bilge pump	1 x 65 lt per min.	1 x 70 lt per min.
Fire Extinguisher	2	1
Waterproof torch	1	1
Anchor with chain/line attached, minimum 37m each anchor	2	2
Lifebuoy with 30m line attached	1	NR
Navigation lights (sunset to sunrise)	Yes	NR
Sound signal (whistle or bell)	1	NR
Marine Radio (VHF)	1	NR
EPIRB	1	1
Red hand flares	3	2
Orange hand flares	3	2
Orange "V" sheet	1	1
Fresh drinking water (NSW 2 lt pp, QLD sufficient for duration)	Yes	Yes R
Charts covering passage area	Yes	Yes R
Compass	1	1
Other direction finding or position equipment	NR	Yes R
Liferaft or boat	1	NR
Capacity Label	NR	Yes

General safety obligation (From Marine Safety Queensland web site)

As the fundamental principle of the Transport Operations (Marine Safety) legislation, the general safety obligation transfers the responsibility of safety to owners and operators and encourages risk management. The Act imposes general safety obligations on:

- ship designers, builders and surveyors about the condition of ships
- persons involved with the operation of a ship to operate it safely
- owners and masters about safety equipment.

All owners and operators, masters and crew members must ensure the ship is:

- safe
- properly equipped and crewed
- operated in a safe manner.

In short, these general safety obligations prohibit a ship from going to sea if it is not properly built and maintained, equipped, crewed and operated in accordance with its proposed operating environment.

The Act provides penalties for breach of safety obligations of up to A\$37,000 or one year imprisonment. Should the breach cause death or grievous bodily harm to a person, the penalty is up to A\$375,000 or imprisonment for two years.

Last updated 29 January 2008

Note: R = Recommended, NR = No requirement or no recommendation

Weather Forecasts

The primary source of weather forecasts within the scope of this document is the Australian Bureau of Meteorology (BOM) and can be obtained by Internet WWW access, voice telephone calls or radio (VHF and HF).

Internet WWW Access

Access to the World Wide Web (WWW) while at sea is relatively easy and very functional with the aid of a Telstra (BigPond) wireless modem and booster amplifier. Recommended WWW weather forecast sites are;

- 1) BOM www.bom.gov.au
- 2) Seabreeze www.seabreeze.com.au/graphs/
- 3) Weatherzone www.weatherzone.com.au
- 4) Coastalwatch for live web cams of sea conditions www.coastalwatch.com/templates/default.aspx

Voice Forecasts

The following telephone (voice) forecast services are provided by the BOM for NSW and QLD waters.

New South Wales

Sydney Waters Service	1900 969 955
NSW Coastal Waters Service	1900 926 101
Newcastle and Hunter Service	1900 969 954

Queensland

QLD Coastal Waters Service	1900 969 923
QLD General Warnings	1900 969 922
QLD Tropical Cyclone Warnings	1300 659 212
QLD Coastal Marine Warnings	1300 360 427
QLD Southeast Coast Service	1900 969 929
Southeast QLD Boating Weather	1900 926 115

Radio Forecasts

VHF

Marine weather forecasts are provided by the BOM and local VMR organizations on VHF frequencies. VMR stations in NSW and QLD transmit weather updates four times a day, at times depending where you are on the coast. All broadcasts are announced on VHF CH16, prior to switching to a working channel. Weather updates from VMR stations are also available on request. Within QLD, the BOM transmits the following VHF forecasts. All forecasts are first announced on VHF CH16.

Station	VHF CH	Broadcast Times (EST)
Townsville	72	0815, 1215, 1715
Home Hill	80	0815, 1215, 1715
Rockhampton	21	0720, 1010, 1210, 1705
Rockhampton	82	0640, 1140, 1640
Cairns	81	0545, 0745, 0945, 1145, 1345, 1545, 1745
Mackay (Brampton Is)	21	0615, 1215, 1645
Mackay (Knight Is)	80	0615, 1215, 1645

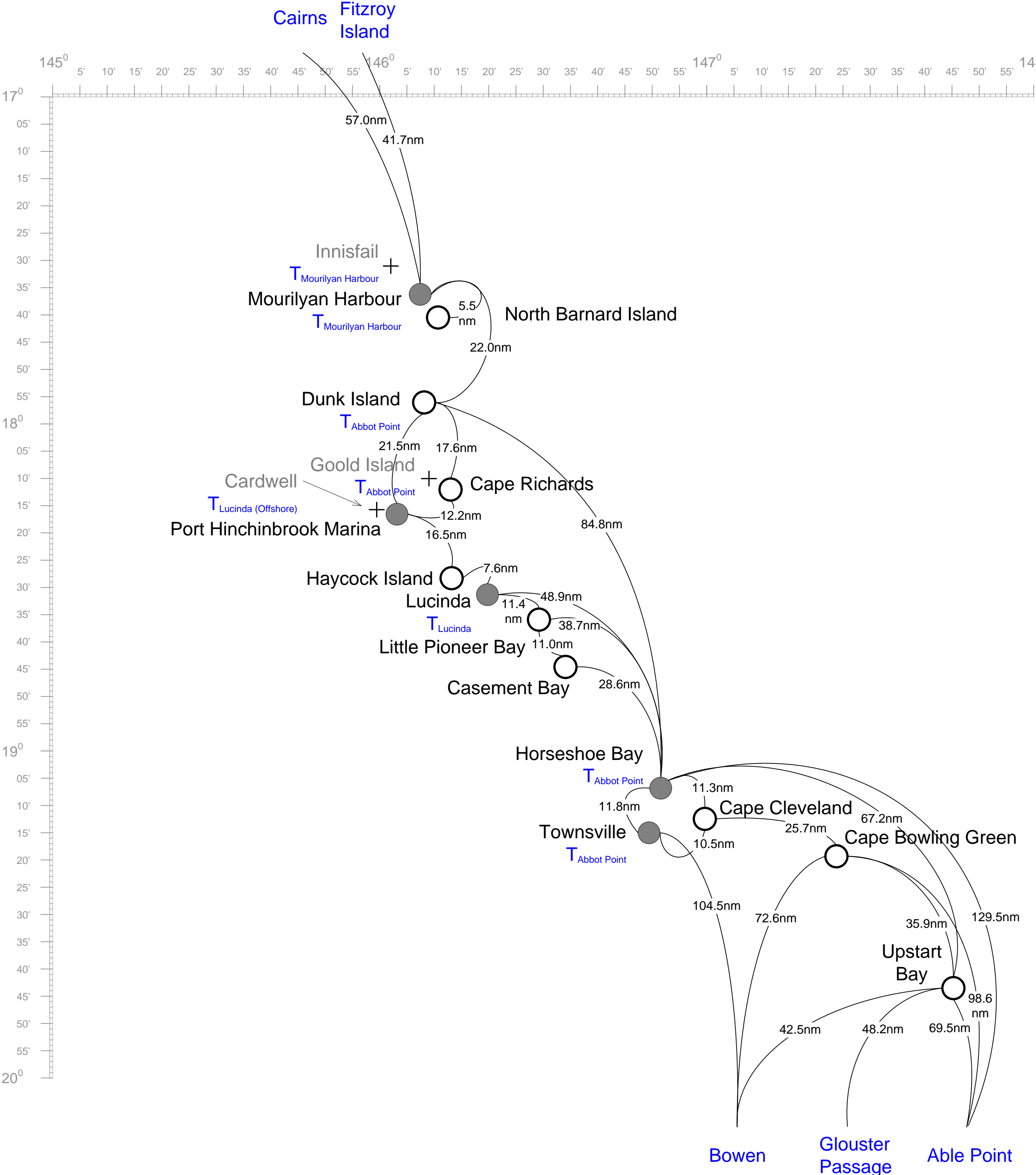
HF Radio

VMC Broadcast frequencies	
Day Time (kHz) 7 am to 6 pm EST	Night Time (kHz) 6 pm to 7 am EST
4426, 8176, 12365, 16546	2201, 6507, 8176, 12365

Warnings for QLD, NSW, VIC, TAS and SA	Every hour commencing 0000 EST
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Forecasts for Queensland	0330, 0730, 1130, 1530, 1930, 2330 EST
Forecasts for NSW	0130, 0530, 0930, 1330, 1730, 2130 EST

Weather Zones	Charts
North Tropical Waters, Cooktown to Cardwell	AUS 830
	AUS 262
	AUS 829
	AUS 258
Cardwell	AUS 828
	AUS 259
	AUS 827
Tropical Waters, Cardwell to Bowen	AUS 826



Coast Guard Cairns
VMR409, CH16,81
07 4051 2192

Coast Guard Innisfail
VMR415, CH16,21
07 4063 2396

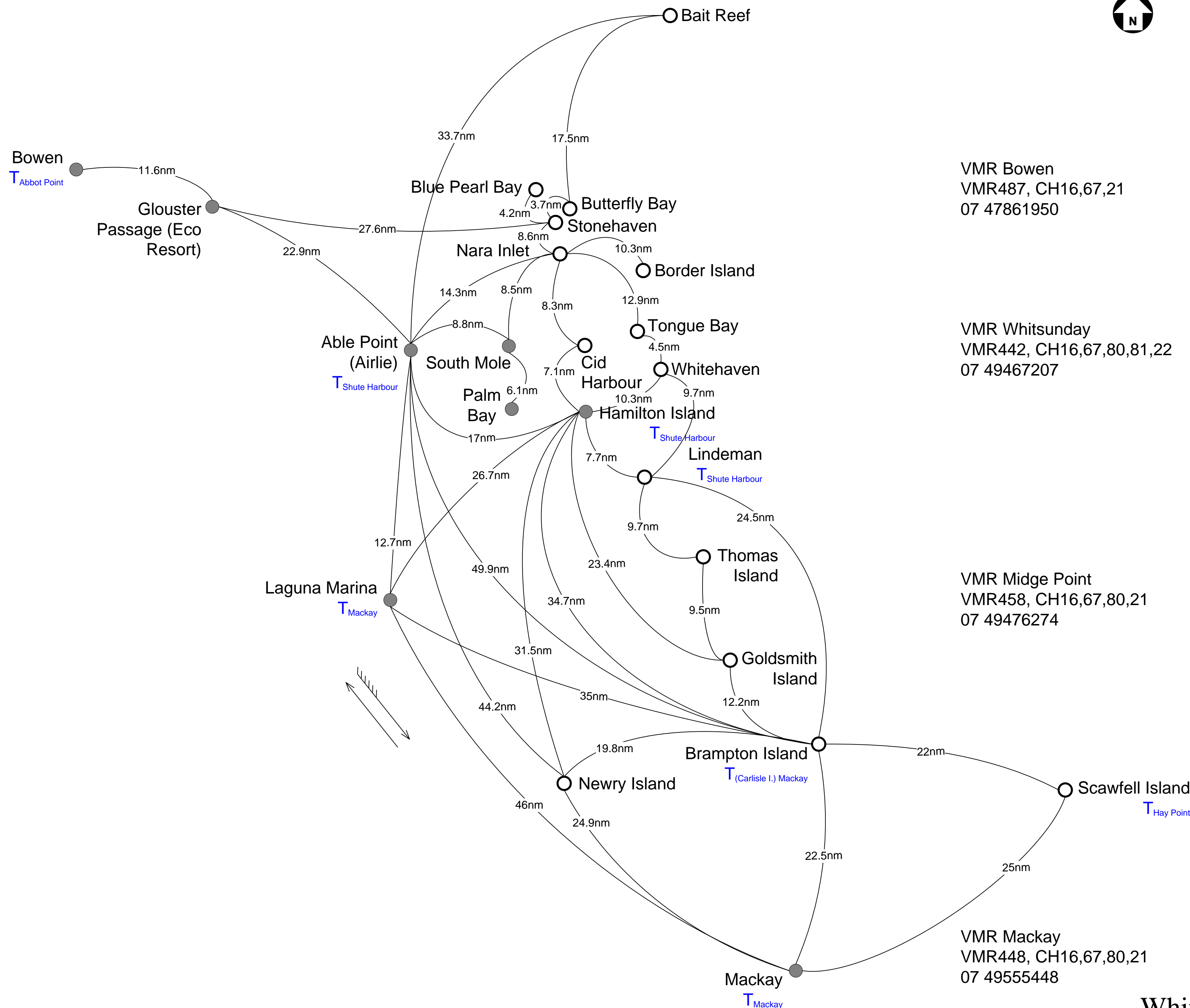
Coast Guard Tully
VMR412, CH16,80
07 4066 9300

Coast Guard Cardwell
VMR423, CH16,21,81,82
07 4066 8792

Coast Guard Ingham
VMR407, CH16,81
07 4777 8110

Coast Guard Townsville
VMR408, CH16,22,67
07 4771 4831

VMR Burdekin
VMR481, CH16,80
07 4783 1014

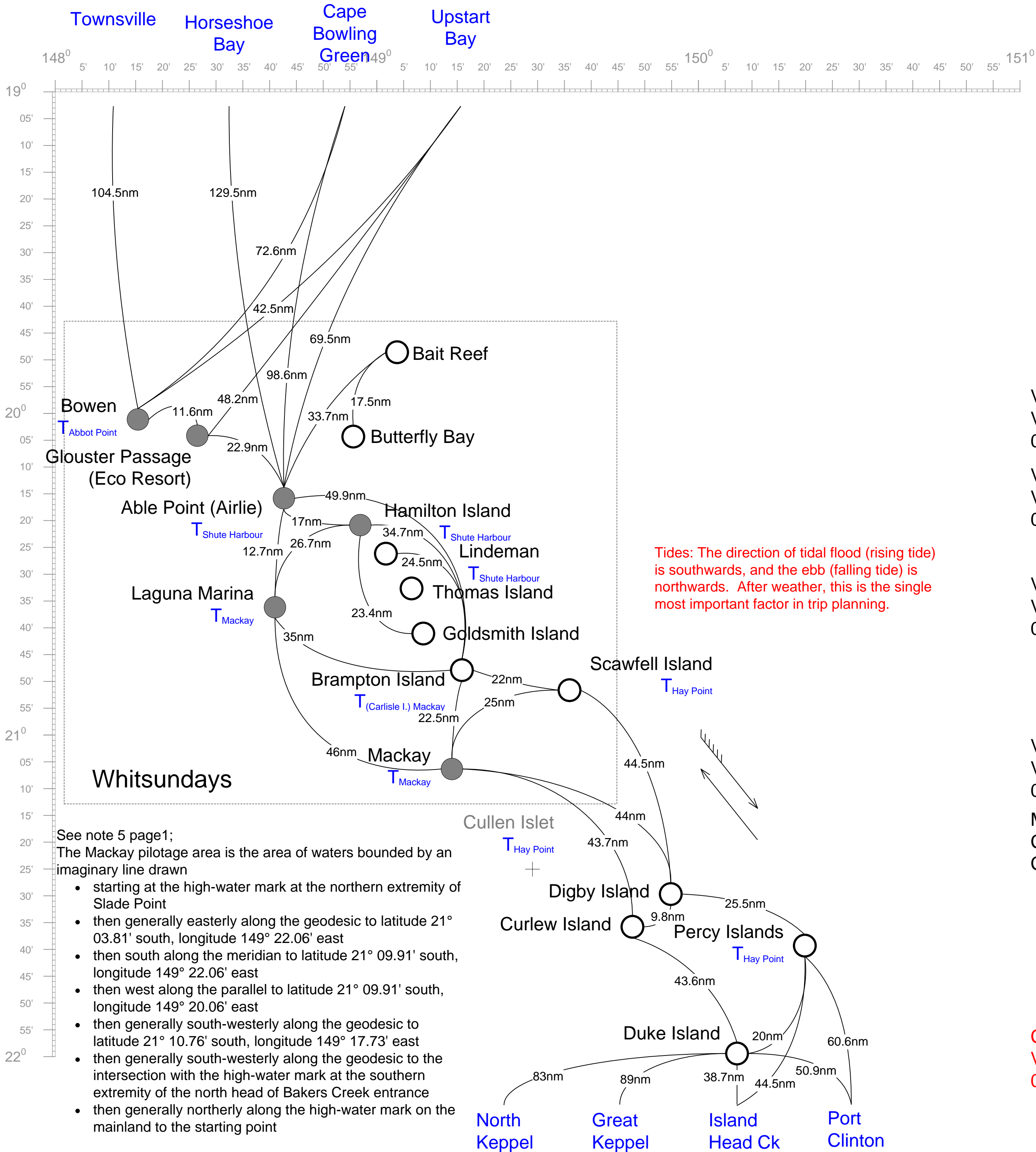


Weather Zones

Charts

Tropical Waters, Cardwell to Bowen

Central Coast Waters, Bowen to St Lawrence



VMR Bowen
VMR487, CH16,67,21
07 47861950

VMR Whitsunday
VMR442, CH16,67,80,81,22
07 49467207

VMR Midge Point
VMR458, CH16,67,80,21
07 49476274

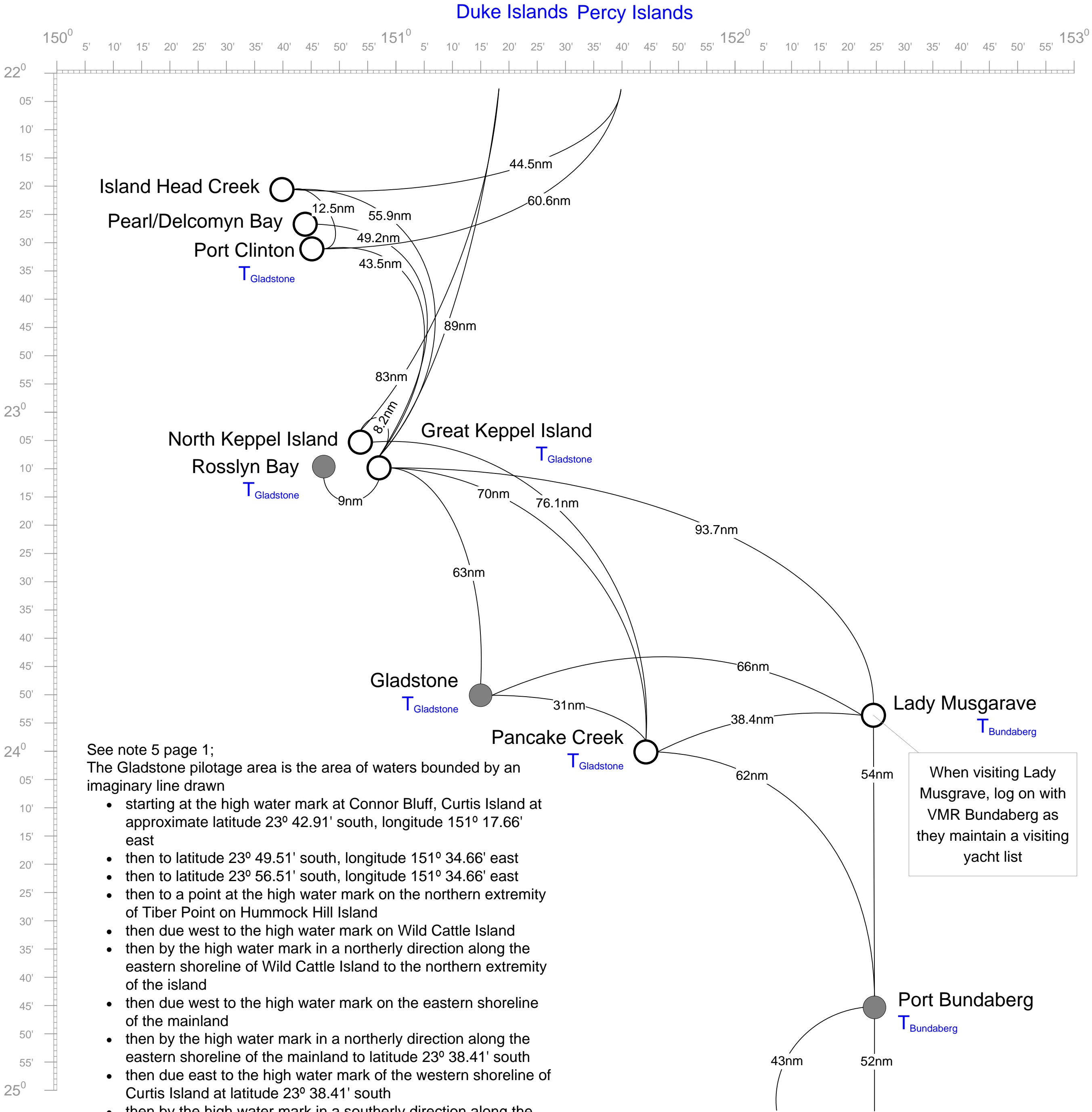
VMR Mackay
VMR448, CH16,67,80,21
07 49555448

Mackay VTS
CH14,16
Call prior to entering pilot area

Coast Guard Thirsty Sound
VMR424, CH16,81
07 49373155

Bait Reef to Percy Islands

Weather Zones	Charts
Central Coast waters	AUS 822
St. Lawrence	
Capricornia waters, St. Lawrence to Burnett Heads	AUS 820
	AUS 819
	AUS 818
Burnett Heads	AUS 817
Hervey Bay waters	



Coast Guard Thirsty Sound
VMR424, CH16,81
07 49373155

Coast Guard Yeppoon
VMR411 CH16,21,22
07 49336600

Coast Guard Keppel Sands
VMR471 CH16,67,21,22,82
07 49344906

Coast Guard Rockhampton
VMR419, CH16,22,73,81
07 49212266

VMR Gladstone
VMR446 CH16,80,82
07 49723333

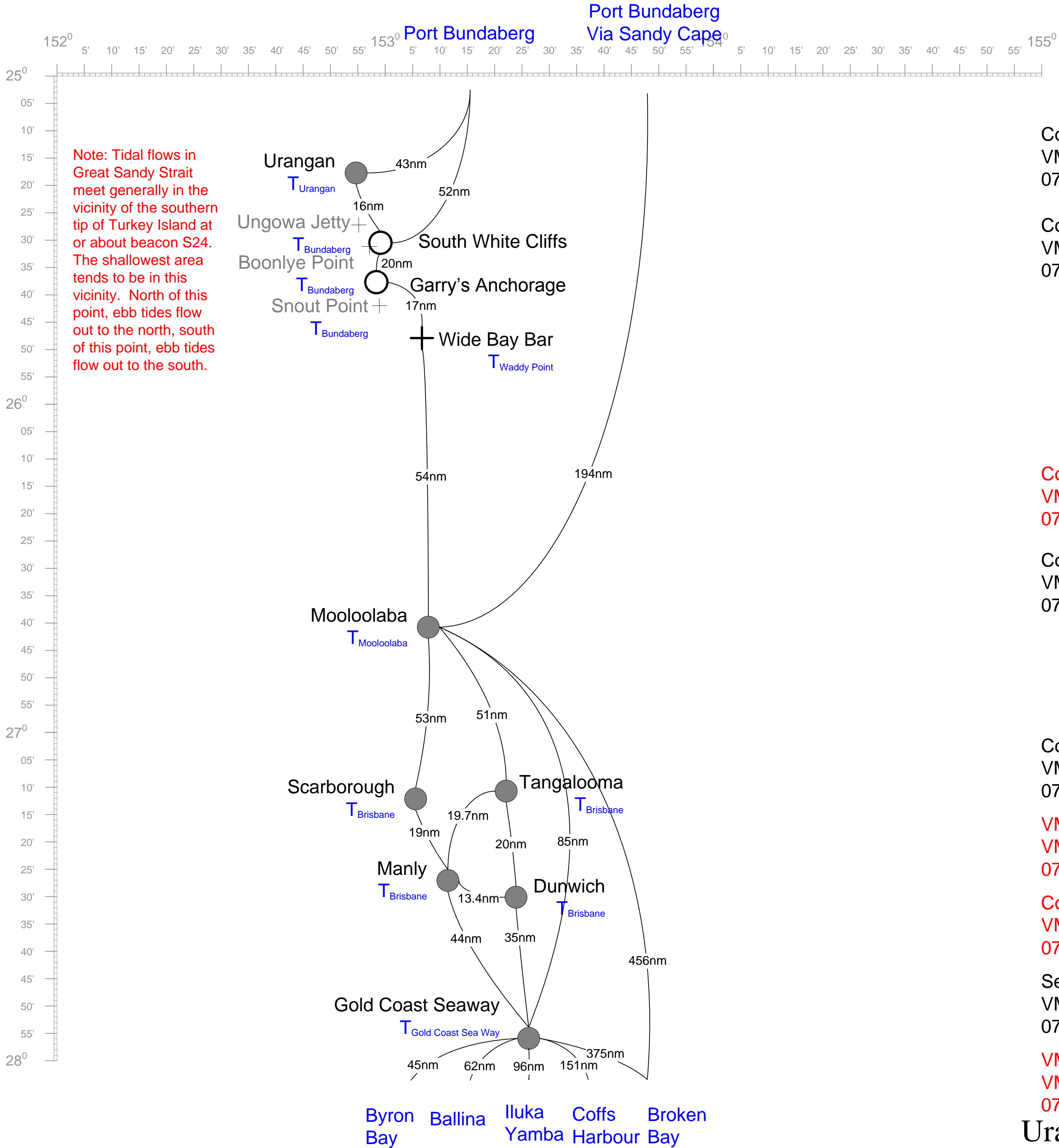
Gladstone Harbour Control
CH13,16
Call prior to entering pilot area

VMR Round Hill
VMR477 CH16,67,81,82
07 49749383

VMR Bundaberg
VMR488 CH16,67,22,80,81
07 41594349

Island Head Creek to Port Bundaberg

Weather Zones	Charts
Fraser Island offshore Hervey Bay	AUS 817 GSS2
Double I. Point	AUS 365
South Coast waters, Double Island Point to Point Danger Moreton Bay waters	AUS 814 MB1,6,7&8
Point Danger	



Coast Guard Sandy Straits
VMR421, CH16,80,82
07 41298141

Coast Guard Tin Can Bay
VMR417, CH16,80,82
07 54864290

Coast Guard Noosa
VMR405, CH16,22,80
07 54743695

Coast Guard Mooloolaba
VMR406, CH16,21,22,67,73,80,81,
07 54443222

Coast Guard Redcliffe
VMR403, CH16,67,73,81,21,63,
07 32035522

VMR Southport
VMR400, CH16,67,73,22,81,82
07 55323417

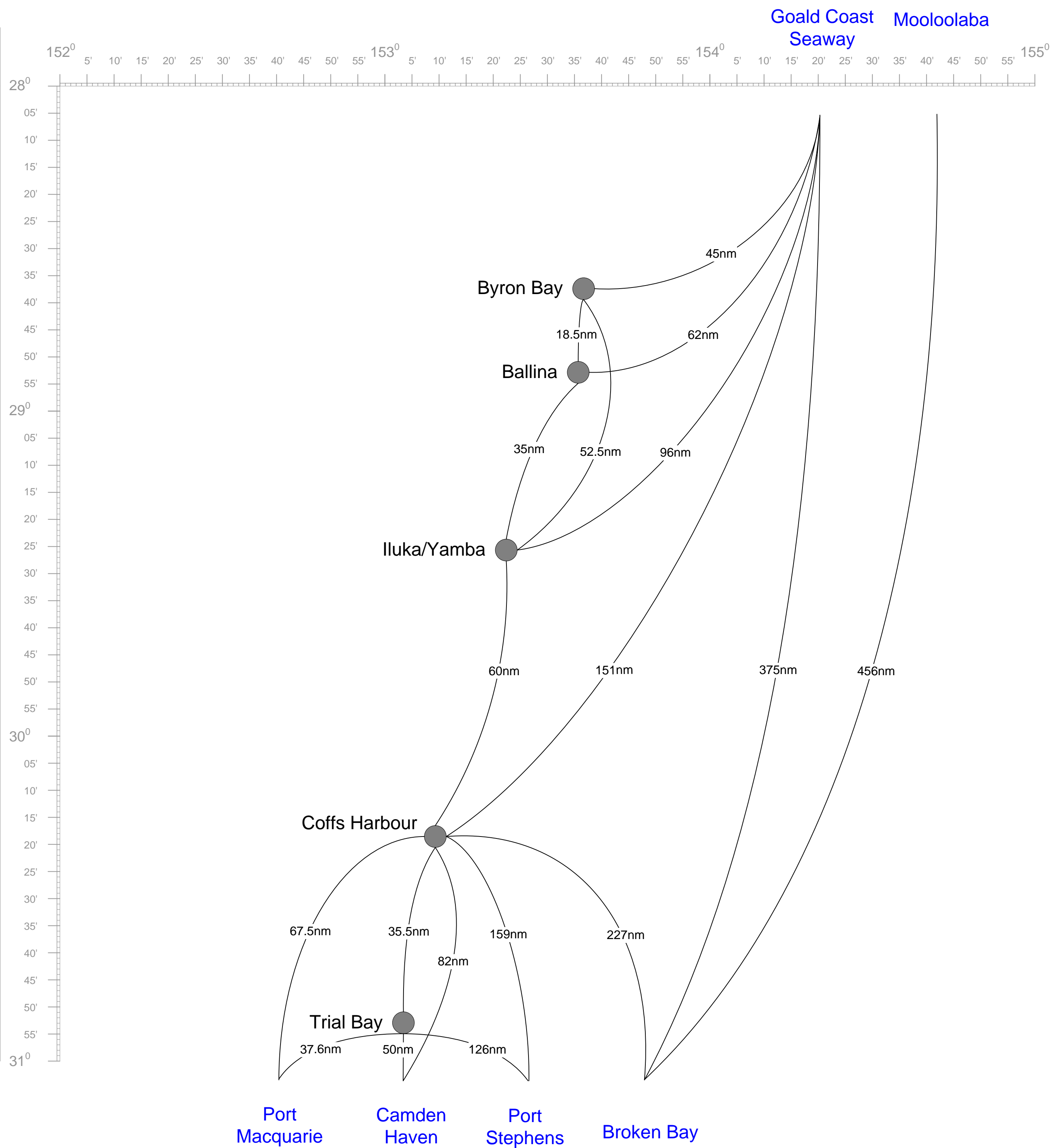
Coast Guard Southport
VMR440, CH16,21,22,67,72,73,74,80,81,82,
07 55311421

Seaway Tower
VMR403, CH16,22,67,73,82
07 55912948

VMR Point Danger
VMR460, CH16,67,73,22,81,82
07 55323417

Urangan to Gold Coast Seaway

Weather Zones	Charts
Far North Coast waters	AUS 813
Wooli	
Mid North Coast waters	AUS 812



VMR Kingscliff (Coast Guard)
VMR251, CH16,67,22
02 66742451

Coastal Patrol Byron Bay
VMR224, CH16,73,22
02 66808417

VMR Ballina (Coast Guard)
VMR250, CH16,67,21,22
02 66814700

VMR Iluka/Yamba (Coast Guard)
VMR257, CH16,67,21
02 66466311

VMR Wooli (VRA)
VMR273, CH16,67
02 66497497

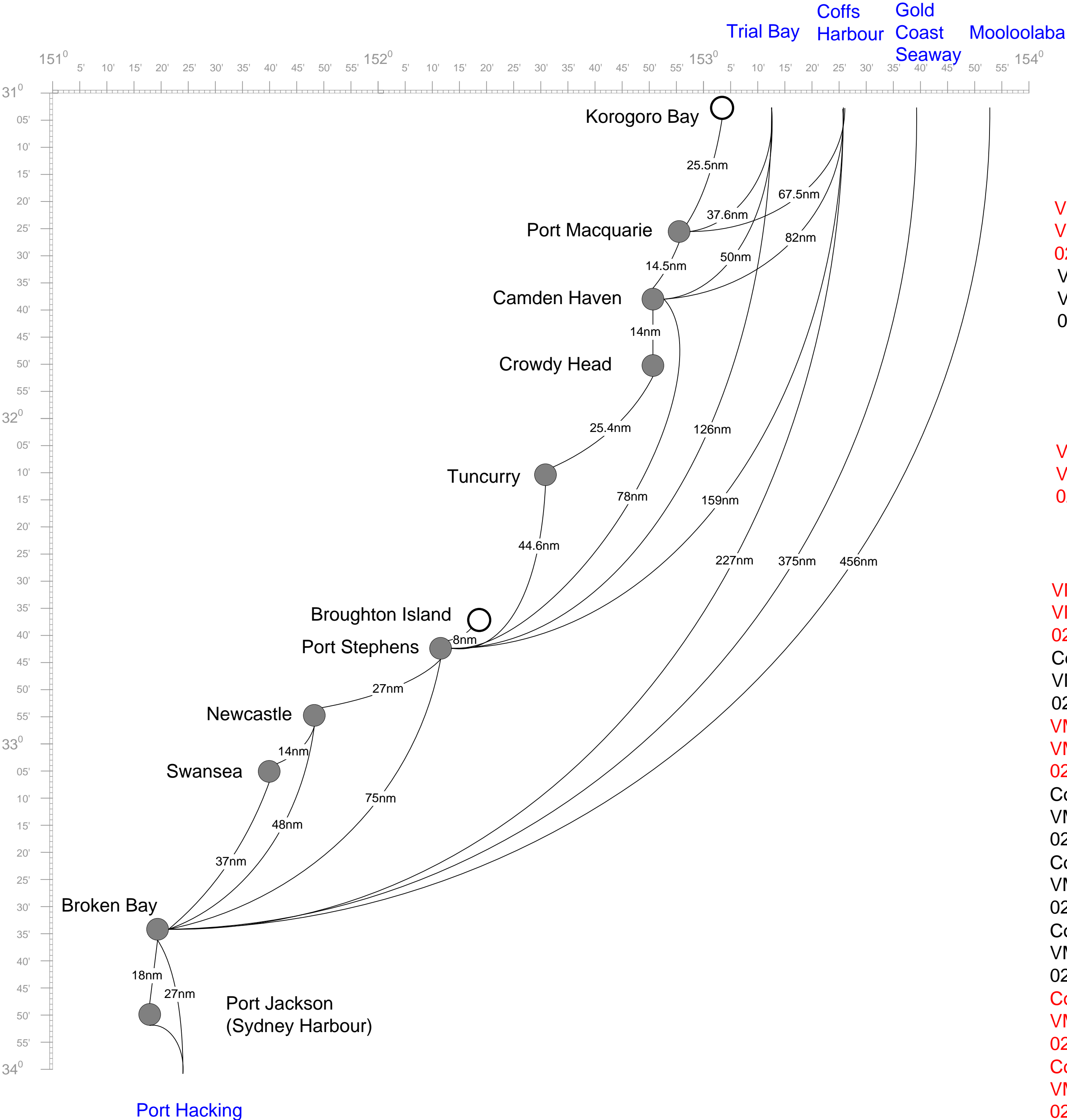
VMR Coffs Harbour (Coastal Patrol)
VMR223, CH16,67
02 66523155

Coastal Patrol Trial Bay
VMR221, CH16,67
02 65665240

Port Macquarie Camden Haven Port Stephens Broken Bay

Byron Bay to Trial Bay

Weather Zones	Charts
Mid North Coast	AUS 811
Seal Rocks	AUS 810
Hunter	AUS 809
Broken Bay	
Sydney Coastal	



VMR Port Macquarie (VRA)
VMR271, CH16,67,73,
02 65841966
VMR Camden Haven (VRA)
VMR279, CH16,67,
02 65597356

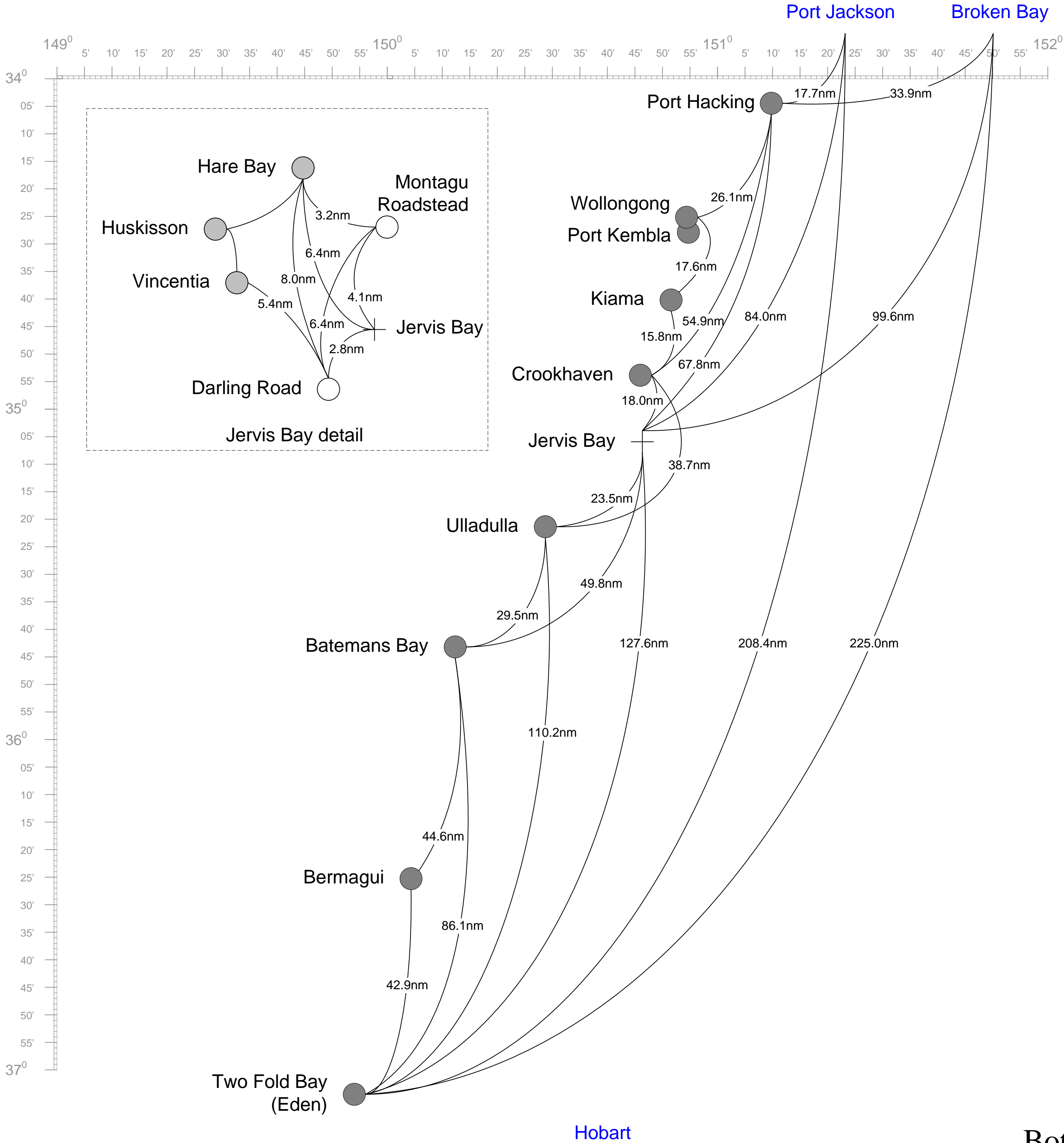
VMR Forster-Tuncurry (Coastal Patrol)
VMR218, CH16,67,
02 65545458


VMR Port Stephens (Coastal Patrol)
VMR217, CH16,67,80,
02 49813585
Coast Guard Port Stephens
VMR265, CH16,67,
02 49824981
VMR Swansea (Coast Guard)
VMR264, CH16,67,80,
02 49713498

Coastal Patrol Lake Macquarie
VMR216, CH16,67,80
02 49713723
Coastal Patrol Terrigal
VMR253, CH16,67
02 43845577
Coastal Patrol Broken Bay
VMR213, CH16,67
02 99993554
Coastal Patrol Sydney
VMR225, CH16,67,80,81
02 94502468
Coast Guard Sydney
VMR261, CH16,67
02 93375251

Korogoro Bay to Port Jackson

Weather Zones	Charts	
Port Hacking	AUS 198	↗
Illawarra Coastal Waters	AUS 808	↗
	AUS 194	↗
	AUS 191	↗
	AUS 193	↗
Ulladulla	AUS 191	↗
South Coastal Waters	AUS 807	↗
	AUS 191	↗
	AUS 806	↗
	AUS 191	↗
Gabo Island	AUS 192	↗





Coast Guard Solander
VMR, CH16,67,
02 9668 9888

Coast Guard Port Kembla
VMR, CH16,67,
02 4274 4455

VMR Shoalhaven
VMR, CH16,67,
02 4447 4466
Coastal Patrol Jervis Bay
VMR, CH16,67,
02 4441 5433

Coastal Patrol Ulladulla
VMR, CH16,67,
02 4455 3403

Coastal Patrol Batemans Bay
VMR, CH16,67,
02 4472 3060

Coastal Patrol Narooma
VMR, CH16,67,
02 4476 1443
Coastal Patrol Bermagui
VMR, CH16,67,
02 6493 4506

Coastal Patrol Eden
VMR, CH16,67,
02 6496 2167

Port Jackson

Broken Bay

Hobart

Botany Bay to Two Fold Bay

Distance in nm to run

Speed in knots															
	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0
5	0:01:40	0:01:25	0:01:15	0:01:06	0:01:00	0:00:54	0:00:50	0:00:46	0:00:42	0:00:40	0:00:37	0:00:35	0:00:33	0:00:31	0:00:30
10	0:03:20	0:02:51	0:02:30	0:02:13	0:02:00	0:01:49	0:01:40	0:01:32	0:01:25	0:01:20	0:01:15	0:01:10	0:01:06	0:01:03	0:01:00
15	0:05:00	0:04:17	0:03:45	0:03:20	0:03:00	0:02:43	0:02:30	0:02:18	0:02:08	0:02:00	0:01:52	0:01:45	0:01:40	0:01:34	0:01:30
20	0:06:40	0:05:42	0:05:00	0:04:26	0:04:00	0:03:38	0:03:20	0:03:04	0:02:51	0:02:40	0:02:30	0:02:21	0:02:13	0:02:06	0:02:00
25	0:08:20	0:07:08	0:06:15	0:05:33	0:05:00	0:04:32	0:04:10	0:03:50	0:03:34	0:03:20	0:03:07	0:02:56	0:02:46	0:02:37	0:02:30
30	0:10:00	0:08:34	0:07:30	0:06:40	0:06:00	0:05:27	0:05:00	0:04:36	0:04:17	0:04:00	0:03:45	0:03:31	0:03:20	0:03:09	0:03:00
35	0:11:40	0:10:00	0:08:45	0:07:46	0:07:00	0:06:21	0:05:50	0:05:23	0:05:00	0:04:40	0:04:22	0:04:07	0:03:53	0:03:41	0:03:30
40	0:13:20	0:11:25	0:10:00	0:08:53	0:08:00	0:07:16	0:06:40	0:06:09	0:05:42	0:05:20	0:05:00	0:04:42	0:04:26	0:04:12	0:04:00
45	0:15:00	0:12:51	0:11:15	0:10:00	0:09:00	0:08:10	0:07:30	0:06:55	0:06:25	0:06:00	0:05:37	0:05:17	0:05:00	0:04:44	0:04:30
50	0:16:40	0:14:17	0:12:30	0:11:06	0:10:00	0:09:05	0:08:20	0:07:41	0:07:08	0:06:40	0:06:15	0:05:52	0:05:33	0:05:15	0:05:00
55	0:18:20	0:15:42	0:13:45	0:12:13	0:11:00	0:10:00	0:09:10	0:08:27	0:07:51	0:07:20	0:06:52	0:06:28	0:06:06	0:05:47	0:05:30
60	0:20:00	0:17:08	0:15:00	0:13:20	0:12:00	0:10:54	0:10:00	0:09:13	0:08:34	0:08:00	0:07:30	0:07:03	0:06:40	0:06:18	0:06:00
65	0:21:40	0:18:34	0:16:15	0:14:26	0:13:00	0:11:49	0:10:50	0:10:00	0:09:17	0:08:40	0:08:07	0:07:38	0:07:13	0:06:50	0:06:30
70	0:23:20	0:20:00	0:17:30	0:15:33	0:14:00	0:12:43	0:11:40	0:10:46	0:10:00	0:09:20	0:08:45	0:08:14	0:07:46	0:07:22	0:07:00
75	1:01:00	0:21:25	0:18:45	0:16:40	0:15:00	0:13:38	0:12:30	0:11:32	0:10:42	0:10:00	0:09:22	0:08:49	0:08:20	0:07:53	0:07:30
80	1:02:40	0:22:51	0:20:00	0:17:46	0:16:00	0:14:32	0:13:20	0:12:18	0:11:25	0:10:40	0:10:00	0:09:24	0:08:53	0:08:25	0:08:00
85	1:04:20	1:00:17	0:21:15	0:18:53	0:17:00	0:15:27	0:14:10	0:13:04	0:12:08	0:11:20	0:10:37	0:10:00	0:09:26	0:08:56	0:08:30
90	1:06:00	1:01:42	0:22:30	0:20:00	0:18:00	0:16:21	0:15:00	0:13:50	0:12:51	0:12:00	0:11:15	0:10:35	0:10:00	0:09:28	0:09:00
95	1:07:40	1:03:08	0:23:45	0:21:06	0:19:00	0:17:16	0:15:50	0:14:36	0:13:34	0:12:40	0:11:52	0:11:10	0:10:33	0:10:00	0:09:30
100	1:09:20	1:04:34	1:01:00	0:22:13	0:20:00	0:18:10	0:16:40	0:15:23	0:14:17	0:13:20	0:12:30	0:11:45	0:11:06	0:10:31	0:10:00
110	1:12:40	1:07:25	1:03:30	1:00:26	0:22:00	0:20:00	0:18:20	0:16:55	0:15:42	0:14:40	0:13:45	0:12:56	0:12:13	0:11:34	0:11:00
126	1:18:00	1:12:00	1:07:30	1:04:00	1:01:12	0:22:54	0:21:00	0:19:23	0:18:00	0:16:48	0:15:45	0:14:49	0:14:00	0:13:15	0:12:36
128	1:18:40	1:12:34	1:08:00	1:04:26	1:01:36	0:23:16	0:21:20	0:19:41	0:18:17	0:17:04	0:16:00	0:15:03	0:14:13	0:13:28	0:12:48
129	1:19:00	1:12:51	1:08:15	1:04:40	1:01:48	0:23:27	0:21:30	0:19:50	0:18:25	0:17:12	0:16:07	0:15:10	0:14:20	0:13:34	0:12:54
151	2:02:20	1:19:08	1:13:45	1:09:33	1:06:12	1:03:27	1:01:10	0:23:13	0:21:34	0:20:08	0:18:52	0:17:45	0:16:46	0:15:53	0:15:06
159	2:05:00	1:21:25	1:15:45	1:11:20	1:07:48	1:04:54	1:02:30	1:00:27	0:22:42	0:21:12	0:19:52	0:18:42	0:17:40	0:16:44	0:15:54
194	2:16:40	2:07:25	2:00:30	1:19:06	1:14:48	1:11:16	1:08:20	1:05:50	1:03:42	1:01:52	1:00:15	0:22:49	0:21:33	0:20:25	0:19:24
208	2:21:20	2:11:25	2:04:00	1:22:13	1:17:36	1:13:49	1:10:40	1:08:00	1:05:42	1:03:44	1:02:00	1:00:28	0:23:06	0:21:53	0:20:48
225	3:03:00	2:16:17	2:08:15	2:02:00	1:21:00	1:16:54	1:13:30	1:10:36	1:08:08	1:06:00	1:04:07	1:02:28	1:01:00	0:23:41	0:22:30
227	3:03:40	2:16:51	2:08:45	2:02:26	1:21:24	1:17:16	1:13:50	1:10:55	1:08:25	1:06:16	1:04:22	1:02:42	1:01:13	0:23:53	0:22:42
232	3:05:20	2:18:17	2:10:00	2:03:33	1:22:24	1:18:10	1:14:40	1:11:41	1:09:08	1:06:56	1:05:00	1:03:17	1:01:46	1:00:25	0:23:12
375	5:05:00	4:11:08	3:21:45	3:11:20	3:03:00	2:20:10	2:14:30	2:09:41	2:05:34	2:02:00	1:22:52	1:20:07	1:17:40	1:15:28	1:13:30
380	5:06:40	4:12:34	3:23:00	3:12:26	3:04:00	2:21:05	2:15:20	2:10:27	2:06:17	2:02:40	1:23:30	1:20:42	1:18:13	1:16:00	1:14:00
456	6:08:00	5:10:17	4:18:00	4:05:20	3:19:12	3:10:54	3:04:00	2:22:09	2:17:08	2:12:48	2:09:00	2:05:38	2:02:40	2:00:00	1:21:36

Result days:hours:minutes

Speed/Distance table

Tacking Downwind

There are three reasons for a cruising yacht to tack downwind, that is sail a series of gybes keeping the true wind 15 or more degrees off dead run.

- 1) To reduce the risk of accidental gybe
- 2) To engage the genoa by removing the blanketing effect of the main
- 3) To increase apparent windspeed and sail efficiency in order to sail faster and reach the destination more quickly

How much you can head up, and how much you will gain will depend on yacht performance and conditions. A light boat will pick up more quickly than a heavy boat as the wind moves forward.

In the diagram below, D1 is the downwind distance between two points. D2 is the additional distance sailed as a result of the tack by angle (A). The table below shows the increase in SOG required for D2 in order to arrive at the destination had you sailed D1.

Note the tack angle (A) is COG change, not the apparent wind change.

	Angle of tack							
	10 ⁰	15 ⁰	20 ⁰	25 ⁰	30 ⁰	35 ⁰	40 ⁰	45 ⁰
Boat speed	1.0	1.0	1.1	1.1	1.2	1.2	1.3	1.4
1.5	1.5	1.6	1.6	1.7	1.7	1.8	2.0	2.1
2.0	2.0	2.1	2.1	2.2	2.3	2.4	2.6	2.8
2.5	2.5	2.6	2.7	2.8	2.9	3.1	3.3	3.5
3.0	3.0	3.1	3.2	3.3	3.5	3.7	3.9	4.2
3.5	3.6	3.6	3.7	3.9	4.0	4.3	4.6	5.0
4.0	4.1	4.1	4.3	4.4	4.6	4.9	5.2	5.7
4.5	4.6	4.7	4.8	5.0	5.2	5.5	5.9	6.4
5.0	5.1	5.2	5.3	5.5	5.8	6.1	6.5	7.1
5.5	5.6	5.7	5.9	6.1	6.4	6.7	7.2	7.8
6.0	6.1	6.2	6.4	6.6	6.9	7.3	7.8	8.5
6.5	6.6	6.7	6.9	7.2	7.5	7.9	8.5	9.2
7.0	7.1	7.2	7.4	7.7	8.1	8.5	9.1	9.9
7.5	7.6	7.8	8.0	8.3	8.7	9.2	9.8	10.6
8.0	8.1	8.3	8.5	8.8	9.2	9.8	10.4	11.3
8.5	8.6	8.8	9.0	9.4	9.8	10.4	11.1	12.0
9.0	9.1	9.3	9.6	9.9	10.4	11.0	11.7	12.7
9.5	9.6	9.8	10.1	10.5	11.0	11.6	12.4	13.4
10.0	10.2	10.4	10.6	11.0	11.6	12.2	13.1	14.2

Boat speed required for "D2" time to equal "D1" time

