

The logo for P&O Cruises, featuring the letters 'P&O' in a large, white, serif font. The word 'CRUISES' is written in a smaller, white, sans-serif font inside the right-hand 'O'. The background is a clear blue sky with a few wispy clouds near the horizon.

P&O
CRUISES

LIKE NO PLACE ON EARTH™

A wide-angle shot of a ship's wake in the ocean. The water is a deep blue, and the wake is a lighter, turquoise color, creating a path that leads towards the horizon. The sky is a clear, light blue.

CARNIVAL AUSTRALIA
UPDATE ON Activities IN the
south west pacific

objectives

- **General update since Noumea, SWPHC14 November 2016**
- **Overview of some operational experiences with ENC in the region**





CARNIVAL
AUSTRALIA

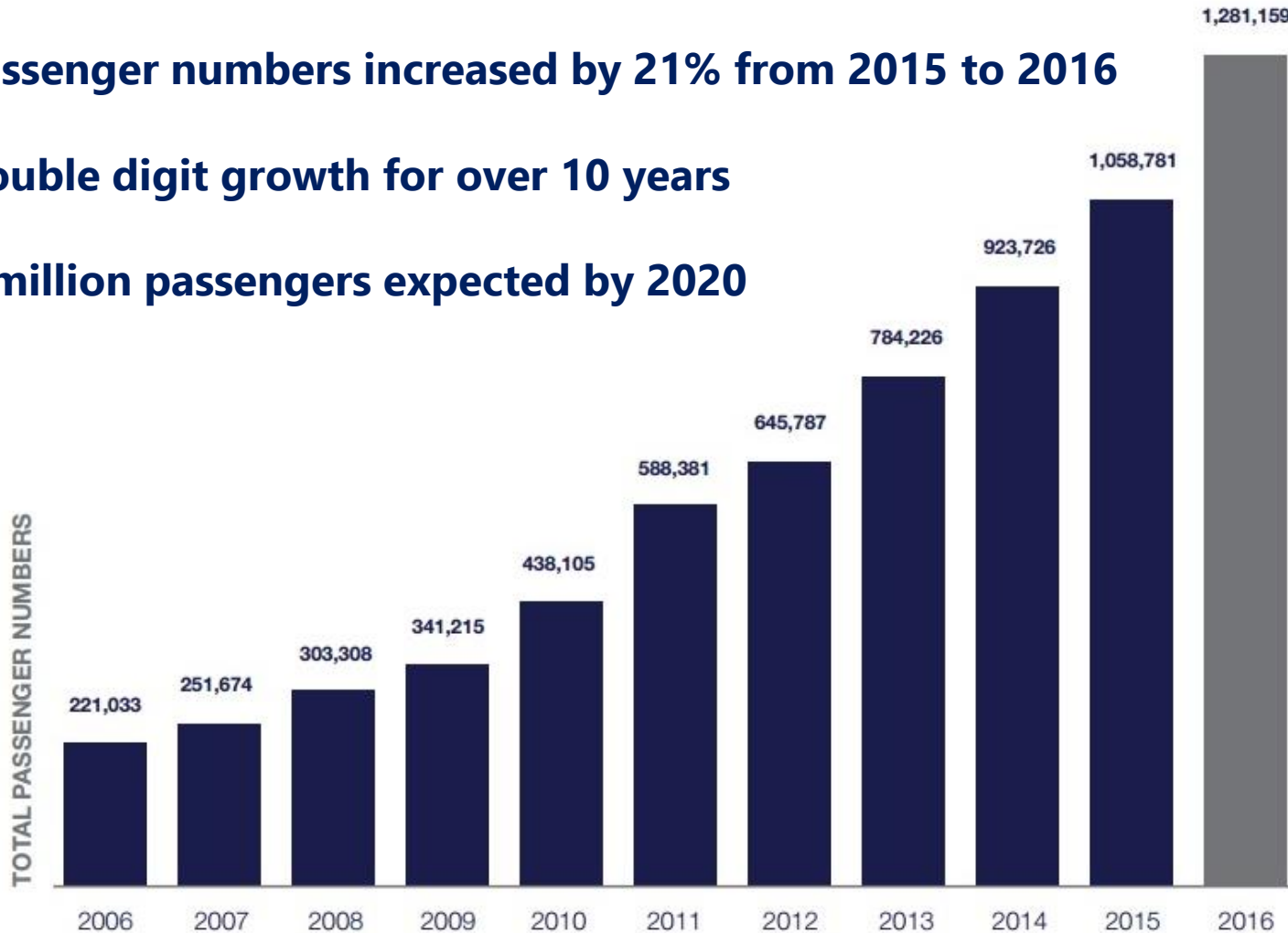


- **Regional subsidiary of Carnival Plc.**
- **7 brands within Carnival Corporation operate in the region**
- **Only cruise Corporation to remain year round in Australia**
- **1 of 7 brands operated (ISM Document of compliance) from Australia - P&O Cruises**
- **Australia is the highest penetration source market globally**
- **3rd largest market growth in 2016 behind New Zealand and China**



YEAR ON YEAR AUSTRALIAN PASSENGER GROWTH

- More Australians cruise per capita than any other nation
- Passenger numbers increased by 21% from 2015 to 2016
- Double digit growth for over 10 years
- 2 million passengers expected by 2020



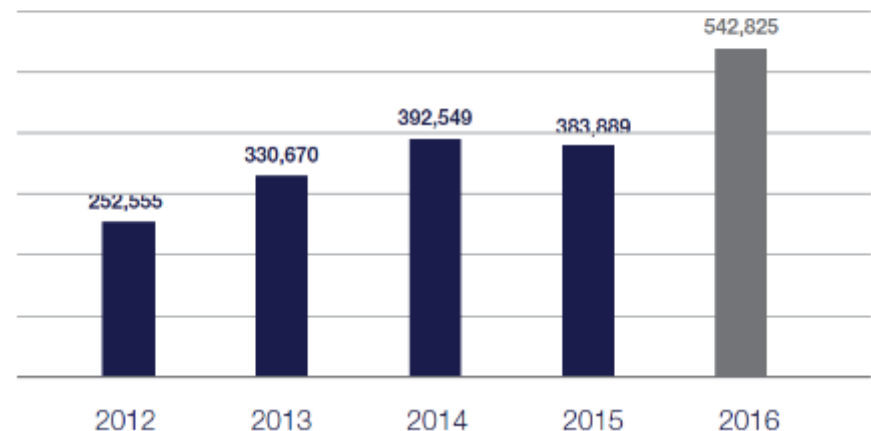
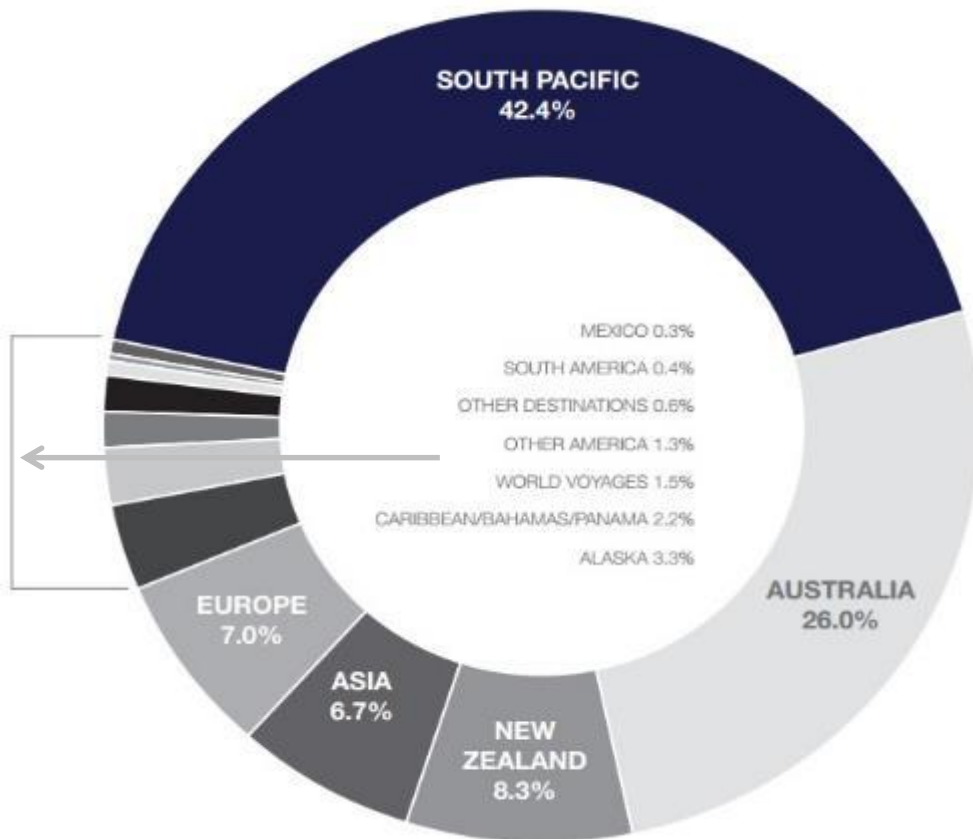
SOUTH pacific market PENETRATION FROM AUSTRALIA

- The south pacific remains Australia's favourite cruise destination
- 542,825 passengers travelled to south pacific in 2016 by cruise ship
- 41% increase from 2015
- Expanding footprint of destinations

SOUTH PACIFIC

The South Pacific held its title as Australia's favourite cruise destination, attracting 542,825 cruisers in 2016 and accounting for 42.4 per cent of the total market.

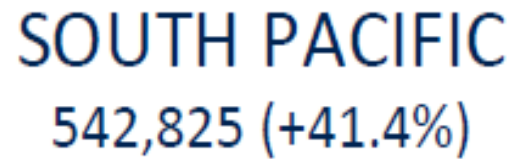
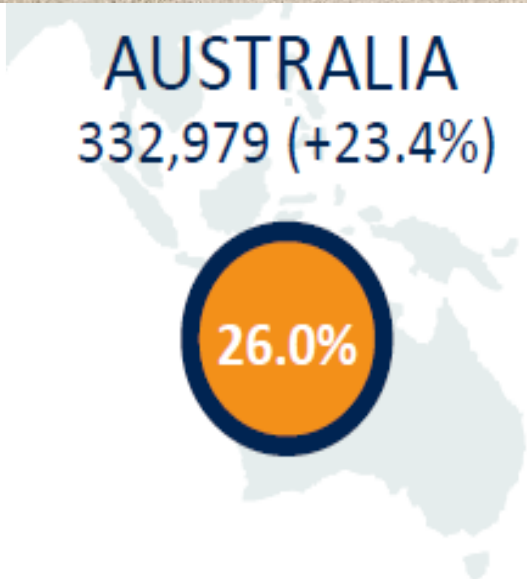
Since 2012, this popular market has grown by an impressive 115 per cent.



Regional market share



	2015	2016
FIJI	55	73
NEW CALEDONIA	318	379
PNG	51	94
SOLOMONS	2	8
VANUATU	178	213
TOTAL	604	767



Regional area of operation



DESTINATION GROWTH IN RECENT YEARS

AUSTRALIA

- Fraser Island
- Gladstone
- Kuri Bay
- Mooloolaba (QLD)
- Mornington & Portland (VIC)



NEW ZEALAND

- Stewart Island



SOLOMON ISLANDS

- Gizo & Honiara

EAST TIMOR

- Dili

THAILAND

- Ko Chang & Krabi

PNG

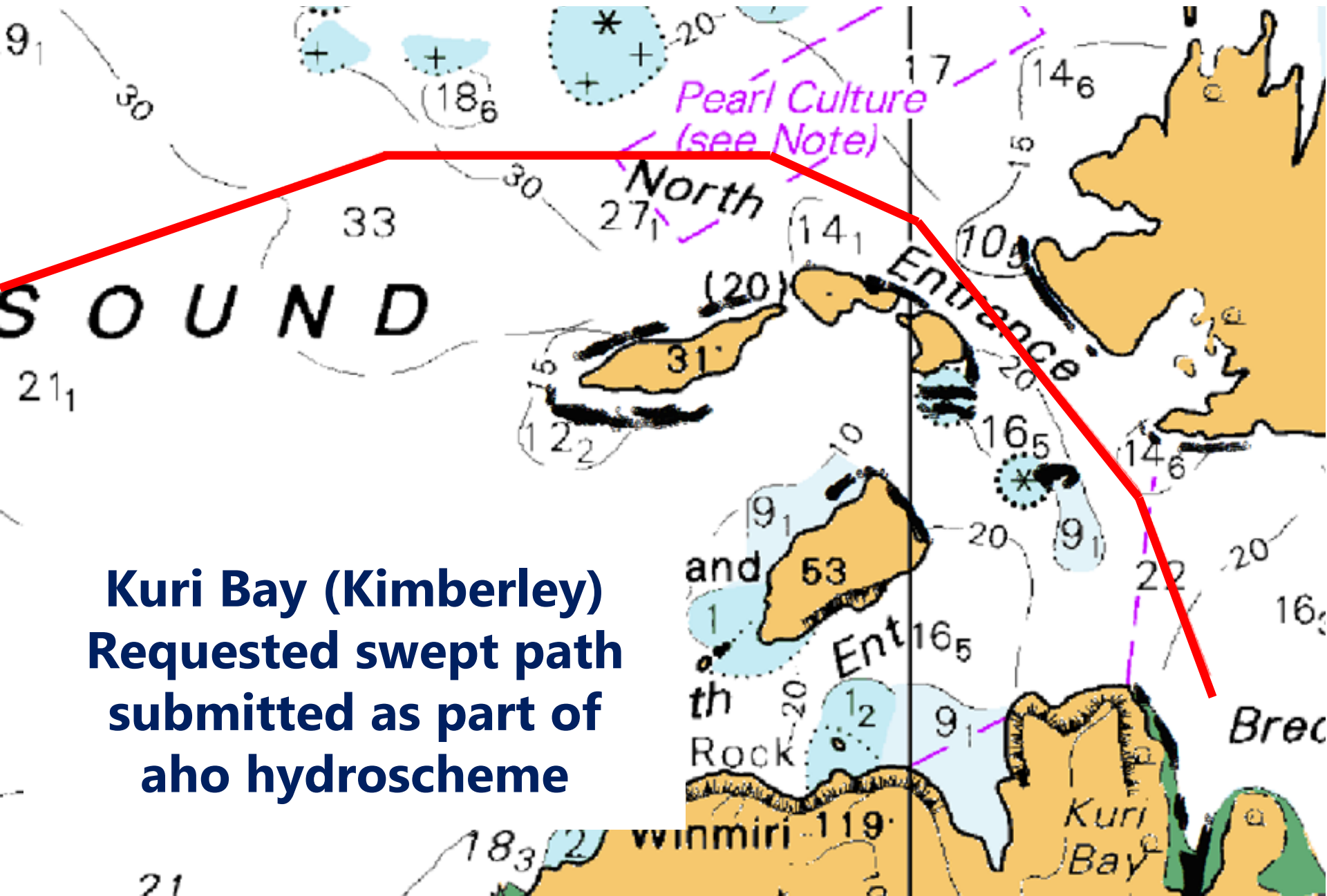
- Conflict Islands

INDONESIA

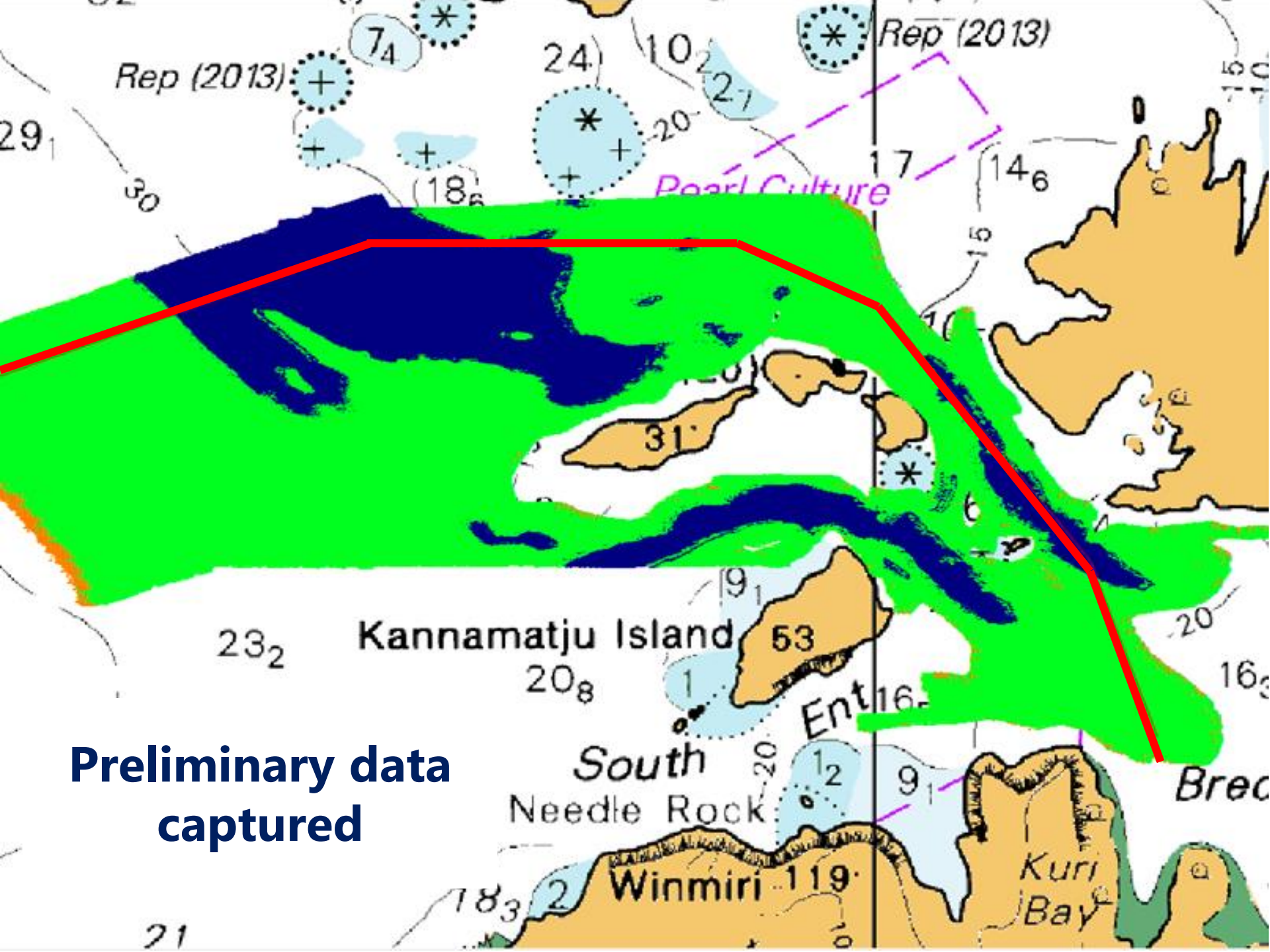
- Sabang & Probolinggo
- Benoa Alongside
- Bengsal / Lombok



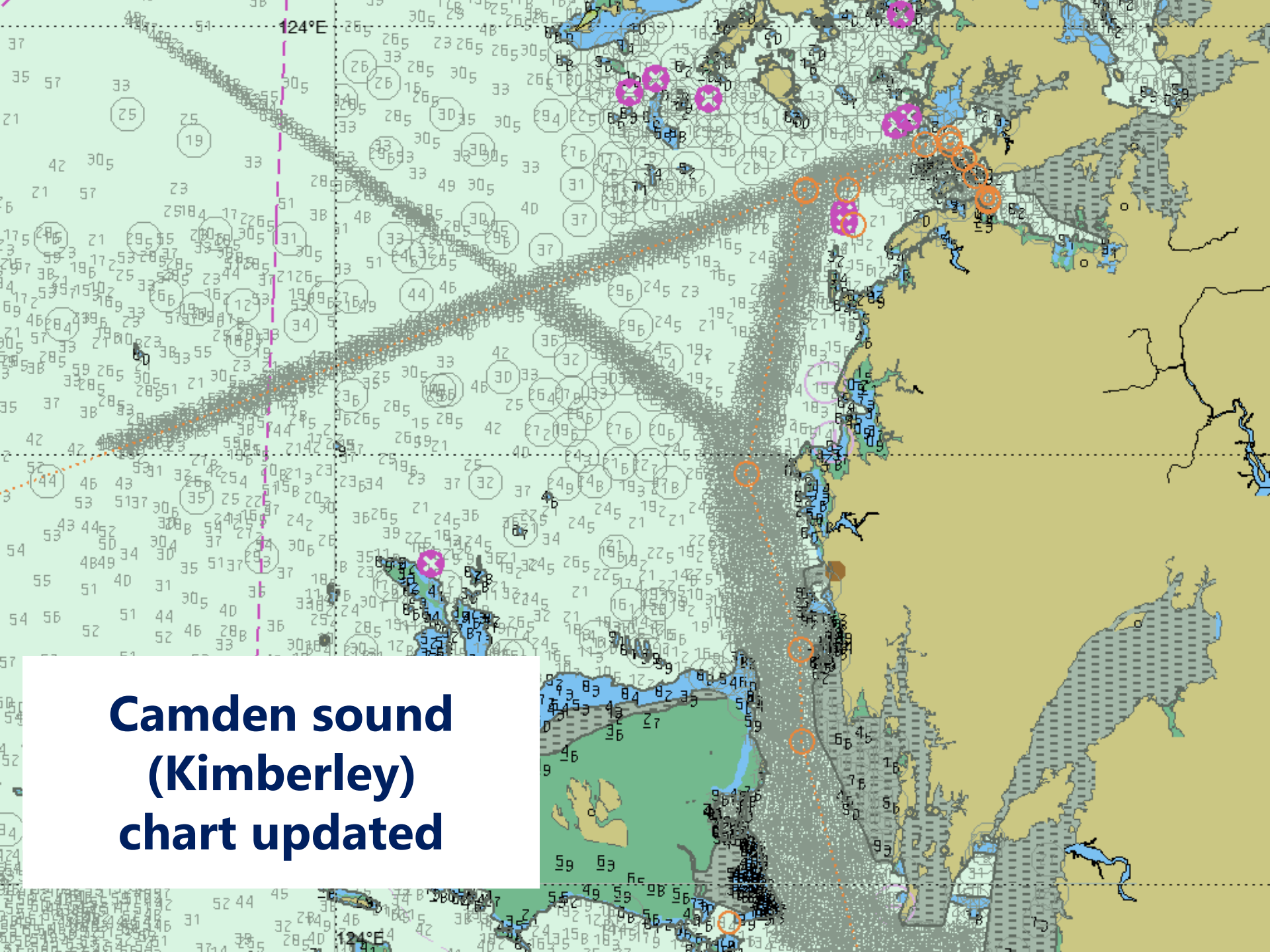
THE EVOLUTION OF A NEW DESTINATION



**Kuri Bay (Kimberley)
Requested swept path
submitted as part of
a hydro scheme**



Preliminary data captured



**Camden sound
(Kimberley)
chart updated**



**Kuri Bay (Kimberley)
now safely accessible
by large vessels**

The image is a nautical chart of Kuri Bay in the Kimberley region of Australia. The chart features various navigational elements: depth soundings in meters (e.g., 20, 15, 10, 5, 0, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80, 85, 90, 95, 100, 105, 110, 115, 120, 125, 130, 135, 140, 145, 150, 155, 160, 165, 170, 175, 180, 185, 190, 195, 200, 205, 210, 215, 220, 225, 230, 235, 240, 245, 250, 255, 260, 265, 270, 275, 280, 285, 290, 295, 300, 305, 310, 315, 320, 325, 330, 335, 340, 345, 350, 355, 360, 365, 370, 375, 380, 385, 390, 395, 400, 405, 410, 415, 420, 425, 430, 435, 440, 445, 450, 455, 460, 465, 470, 475, 480, 485, 490, 495, 500, 505, 510, 515, 520, 525, 530, 535, 540, 545, 550, 555, 560, 565, 570, 575, 580, 585, 590, 595, 600, 605, 610, 615, 620, 625, 630, 635, 640, 645, 650, 655, 660, 665, 670, 675, 680, 685, 690, 695, 700, 705, 710, 715, 720, 725, 730, 735, 740, 745, 750, 755, 760, 765, 770, 775, 780, 785, 790, 795, 800, 805, 810, 815, 820, 825, 830, 835, 840, 845, 850, 855, 860, 865, 870, 875, 880, 885, 890, 895, 900, 905, 910, 915, 920, 925, 930, 935, 940, 945, 950, 955, 960, 965, 970, 975, 980, 985, 990, 995, 1000), navigational markers (red crosses, green crosses, orange circles, yellow triangles, blue circles, and white circles), and a highlighted safe passage route (dashed orange line). The chart also shows the coastline of Kuri Bay, the surrounding landmasses, and various navigational symbols (e.g., 'U' for uncharted, 'X' for danger, '!' for warning, and '0' for zero depth). The chart is overlaid with a grid of latitude and longitude lines.



Increased government engagement

- **Close engagement with Australian Department of Foreign Affairs (DFAT) regarding expanding operations into Solomon's**
- **PNG government and Australian DFAT regarding APEC Port Moresby November 2018**
- **New Caledonian Government regarding ongoing operations in Noumea and around the country**
- **Indonesian Government to extend tourism footprint ex Bali**
- **Corporate partners Save the Children and impact on remote areas; Vanuatu and Solomon's. Health care facilities**
- **Reversing urban drift in remote communities**

F5



Fiji Islands

WESTERN BLIGH WATER

LAUTOKA

TO

YASAWA ISLANDS

DEPTHS IN METRES

SCALE 1:150000

Depths are in metres and are reduced to Chart Datum, which is approximately the level of Lowest Astronomical Tide.

Heights are in metres. Underlined figures are drying heights above Chart Datum; all other heights are above MHWS.

Projection: Transverse Mercator. Positions are based upon the International Spheroid (1956) Datum.

Authorities: The origin, scale, date and limits of the hydrographic surveys used in compiling the chart are shown in the source data diagram. Topography is derived mainly from Directories of Overseas Surveys Maps and aerial photographs.

SATELLITE DERIVED POSITIONS

Positions obtained from satellite navigation systems are necessarily referred to WGS Datum; such positions should be moved 0.1 minutes NORTHWARD and 0.25 minutes EASTWARD to agree with this chart.

STORM DAMAGE TO BEACONS

Beacons are subject to cyclonic and other damages and may take considerable time to replace or repair.

MINE DANGER AREAS

For details of areas in which mines could present a hazard with respect to anchoring, fishing or any form of submarine or seabed activity, Admiralty Sailing Directions should be consulted.

Tidal Levels Related to Datum of Soundings

Place	Lat S	Long E	Heights in metres above datum			
			MHWS	MHW	MLWN	MLWS
Lautoka	17°36'	177°20'	1.9	1.6	0.7	0.4
Masaka Bay	16°52'	177°36'	1.6	1.3	0.6	0.2
Nabukera	16°51'	177°20'	1.7	1.3	0.5	0.2

⚓ Tidal Anchorage

The lack of adequate charts in many Pacific Islands is a barrier to considering those islands for ship visits.

Aids to Navigation and Marine Safety Information is inadequate.

P&O CRUISES
LIKE NO PLACE ON EARTH

ASPIRATIONS AND OPPORTUNITY

SPICE ISLANDS



TAVANIPUPU

SOLOMON ISLANDS

Honiara

BANKS AND TORRES ISLANDS

SAVAII

SAMOA

Apia

YASAWAS

Champagne Bay

Pentecost

Santo

Wala

Vila

TANNA

Lifou

Mystery Island

Noumea

Mare

Isle of Pines

NEW CALEDONIA

LOYALTY ISLANDS

LAUTOKA

(HADI)

OVERNIGHT

FIJI

Suva

Vava'u

TONGA

Nuku'alofa

Rarotonga

COOK ISLANDS

HAAPAI

1 SEA DAY

LAU GROUP

VANUA BULAVU

2 SEA DAYS

3 SEA DAYS

Operational experience

- **Challenges relating to navigational awareness of archipelagic baselines (MARPOL). The consistency & prominence of baselines on ENC and ensuring adequate proximity alert (unintentional discharges)**
- **Symbology and context of danger (Isolated Danger symbol may not be sufficient in all cases)**
- **Feedback from Hydrographic Notes/ Marine Safety Information generated from onboard ships**
- **Timely update of Sailing Directions & Port Information**
- **Good News ; bathymetric ENC & ZOC U is reducing in regional ENC**

Baseline challenges

MARPOL "Nearest Land"

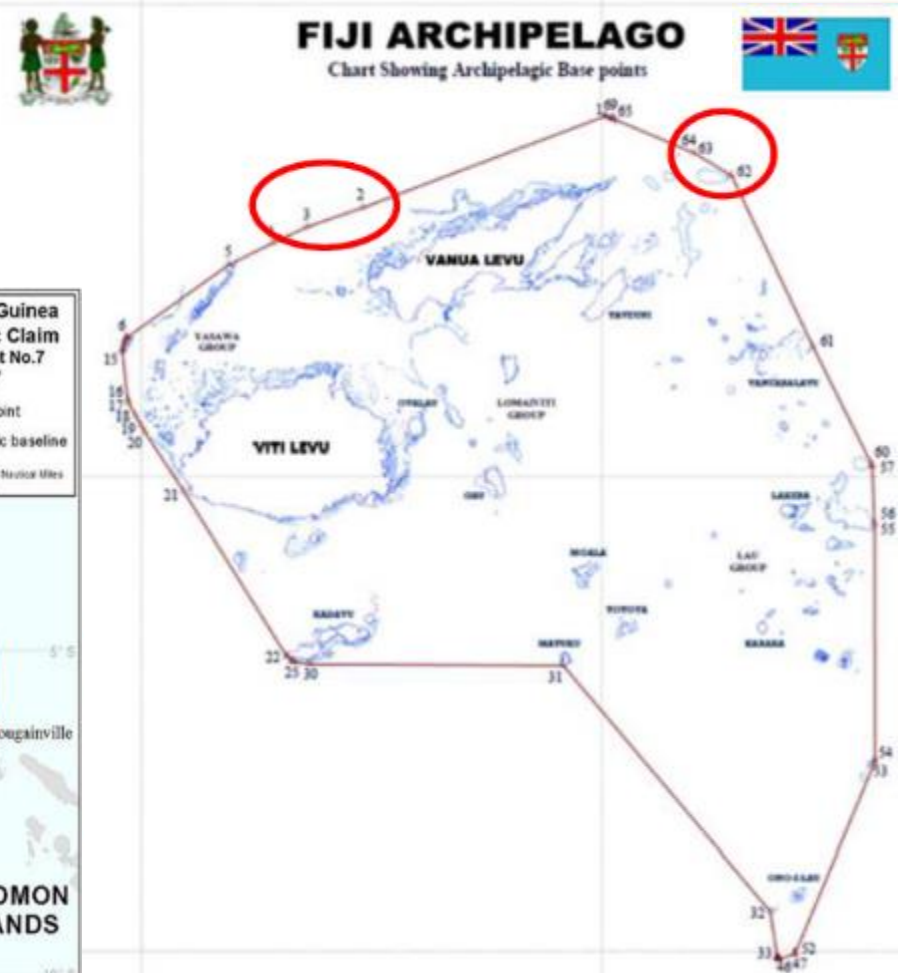
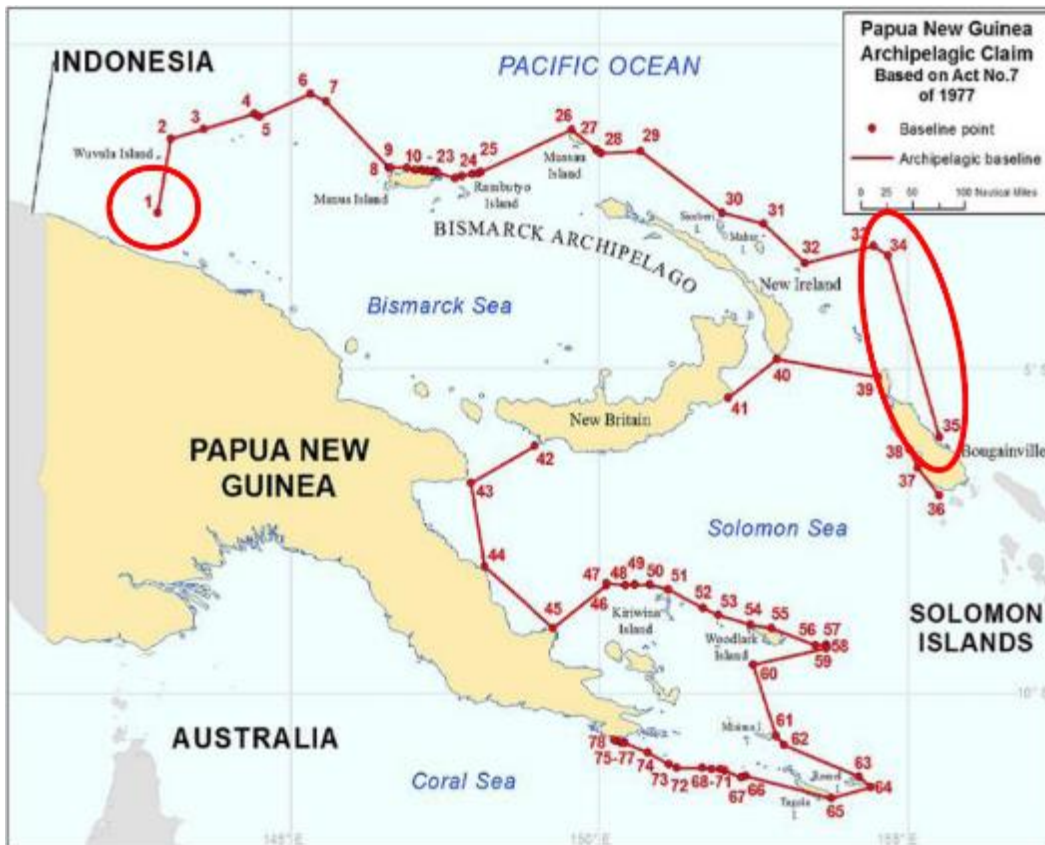
- "Nearest land" means from the *baseline* from which the territorial sea of the territory in question is established in accordance with international law.
- For the purposes of our operations, "nearest land" impacts where we can discharge sewage (Annex IV) & food (Annex V).

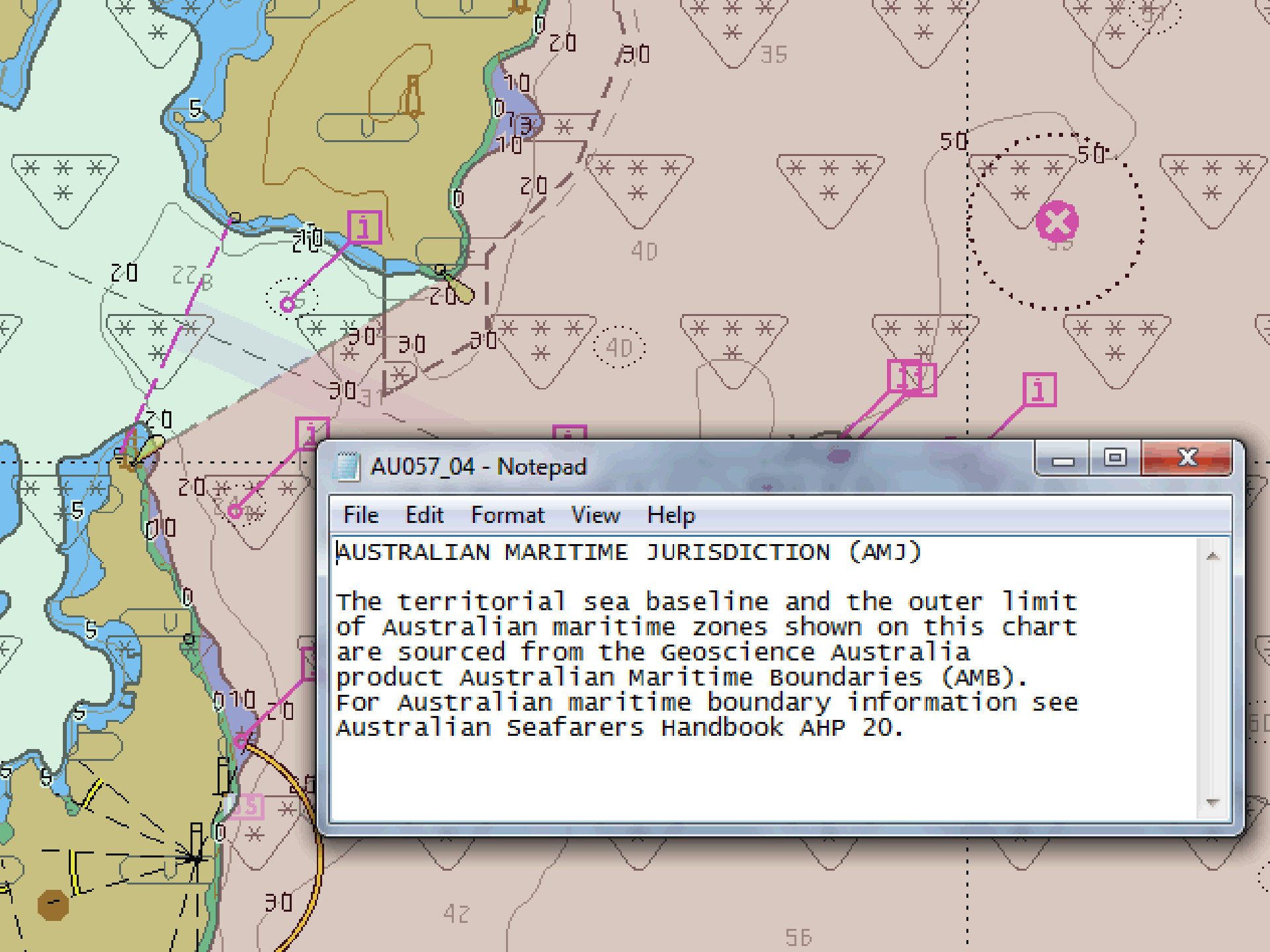
From the UN Convention on the Law of the Sea (UNCLOS)

- Except where otherwise provided in these articles, the normal *baseline* for measuring the breadth of the territorial sea is the low-water line along the coast as marked on large-scale charts officially recognized by the coastal State.
- UNCLOS has provisions allowing coastal States to claim baselines away from shore (straight or archipelagic baselines)
- Over 100 countries (coastal states) have filings with the UN for such claims

Baseline visibility

Currently not marked on all charts,
disputed in some instances





AU057_04 - Notepad

File Edit Format View Help

AUSTRALIAN MARITIME JURISDICTION (AMJ)

The territorial sea baseline and the outer limit of Australian maritime zones shown on this chart are sourced from the Geoscience Australia product Australian Maritime Boundaries (AMB). For Australian maritime boundary information see Australian Seafarers Handbook AHP 20.



ISOLATED DANGER MARKS



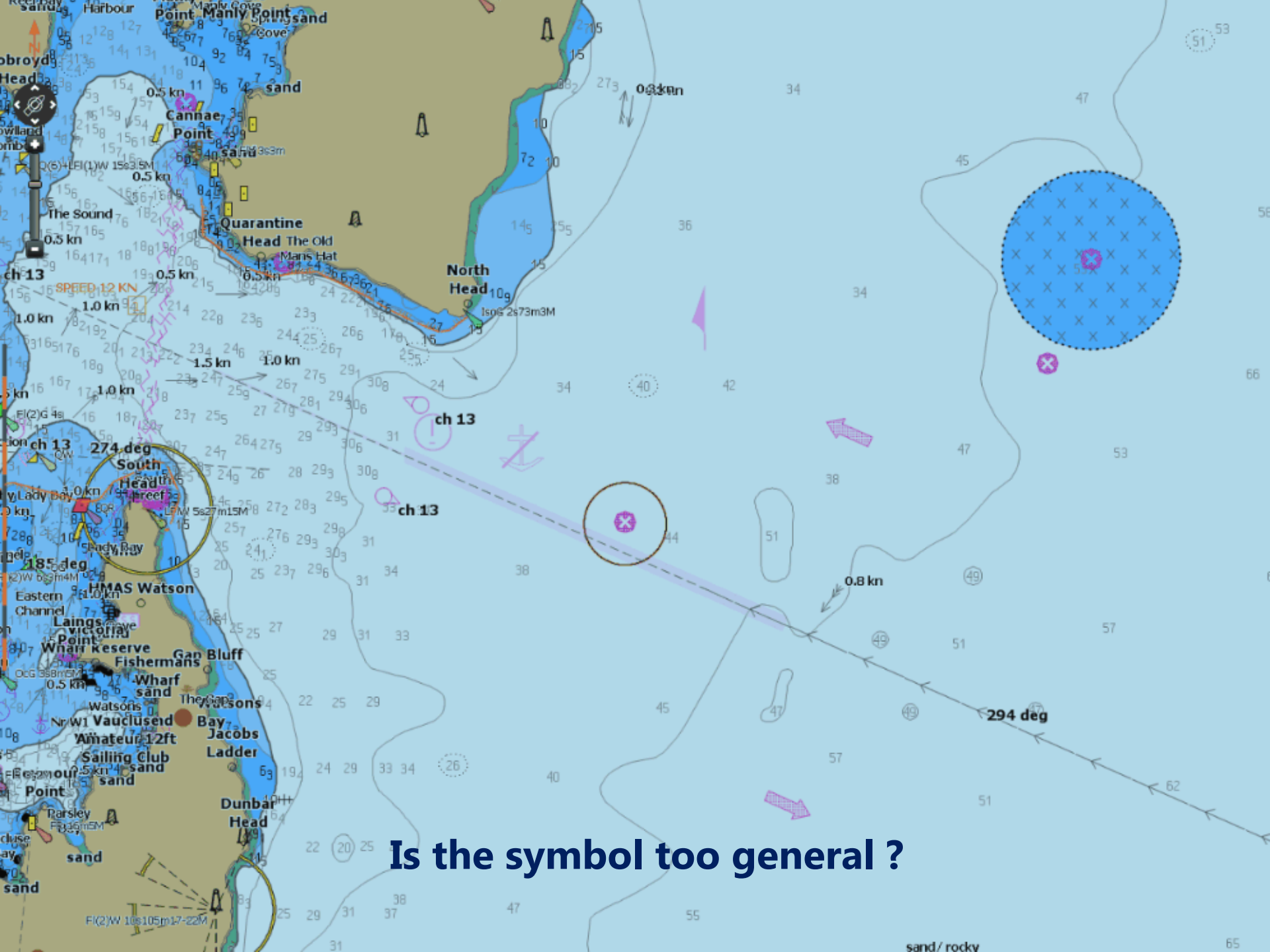
- **Isolated Dangers- “Generally, rocks, wrecks and obstructions may be displayed as the isolated danger symbol depending on the safety setting in the ECDIS combined with the encoding of the object” (NP 5012)**
- **Generally the isolated danger symbol will display for submerged rocks, wrecks and obstructions where the depth is shoaler than or equal to the contour or where the exact depth is unknown (NP 5012)**
- **Solomon's Airways Magazine (Issue 61); Kavachi “Thirteen miles to the seaward of Gatokae and Vangunu Islands the volcano spends most of its time just below the sea, erupting on a totally unpredictable but frequent basis, ranging from once a day to every two to three minutes..... ”**

ISOLATED DANGER MARKS

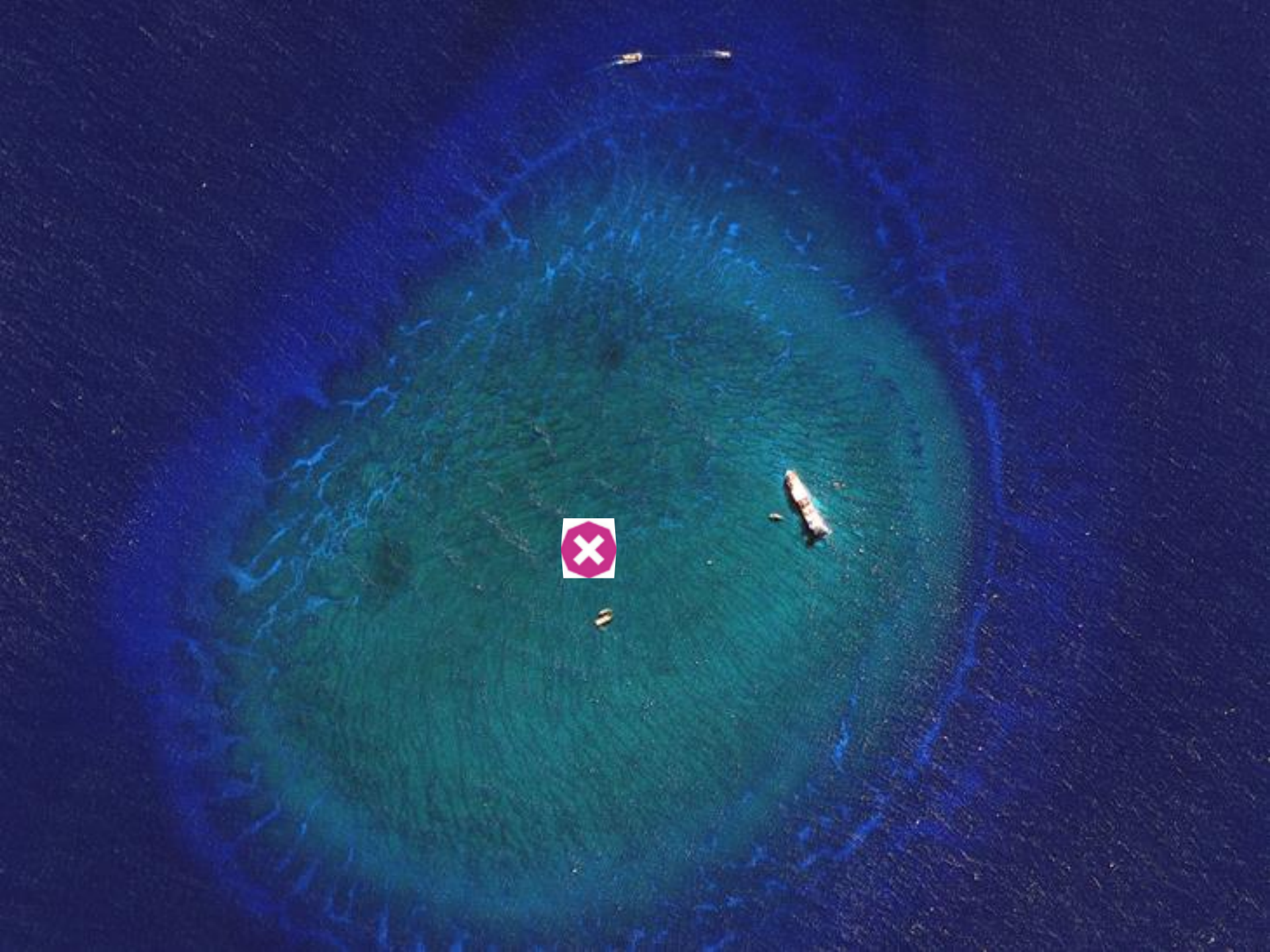


Does this SYMBOL provide context of danger to navigation ?

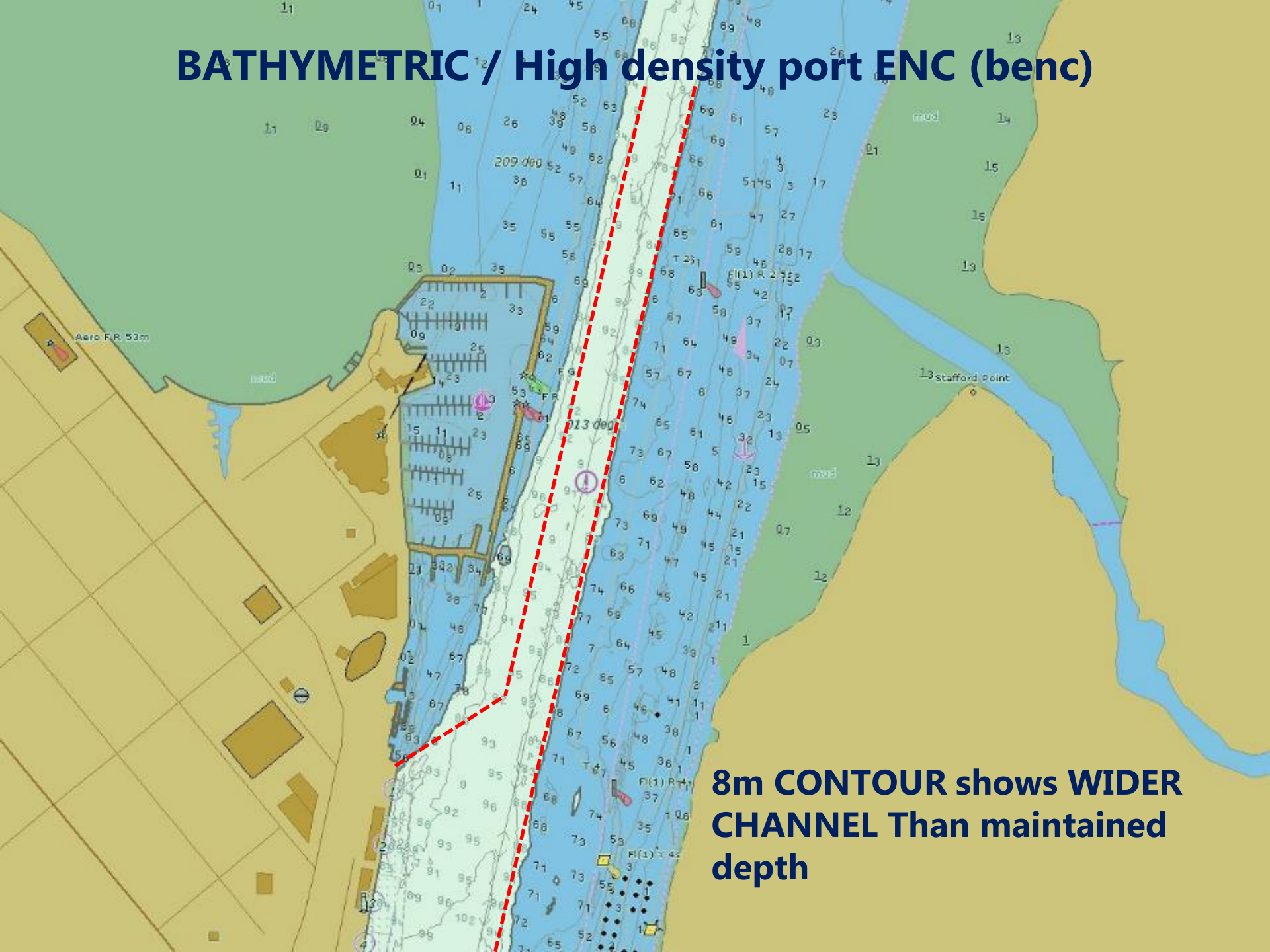
VOLCANIC ACTIVITY
Volcanic and major earthquake activity may have resulted in changes to charted depths and an uplifting of reefs throughout the area.



Is the symbol too general ?



BATHYMETRIC / High density port ENC (benc)



8m CONTOUR shows WIDER CHANNEL Than maintained depth

bENC allow for eNhanced safety of Navigation in some tight ports

SIMULATION OF BENOA:

Now an alongside call for vessels under 220m as opposed to an unreliable anchorage

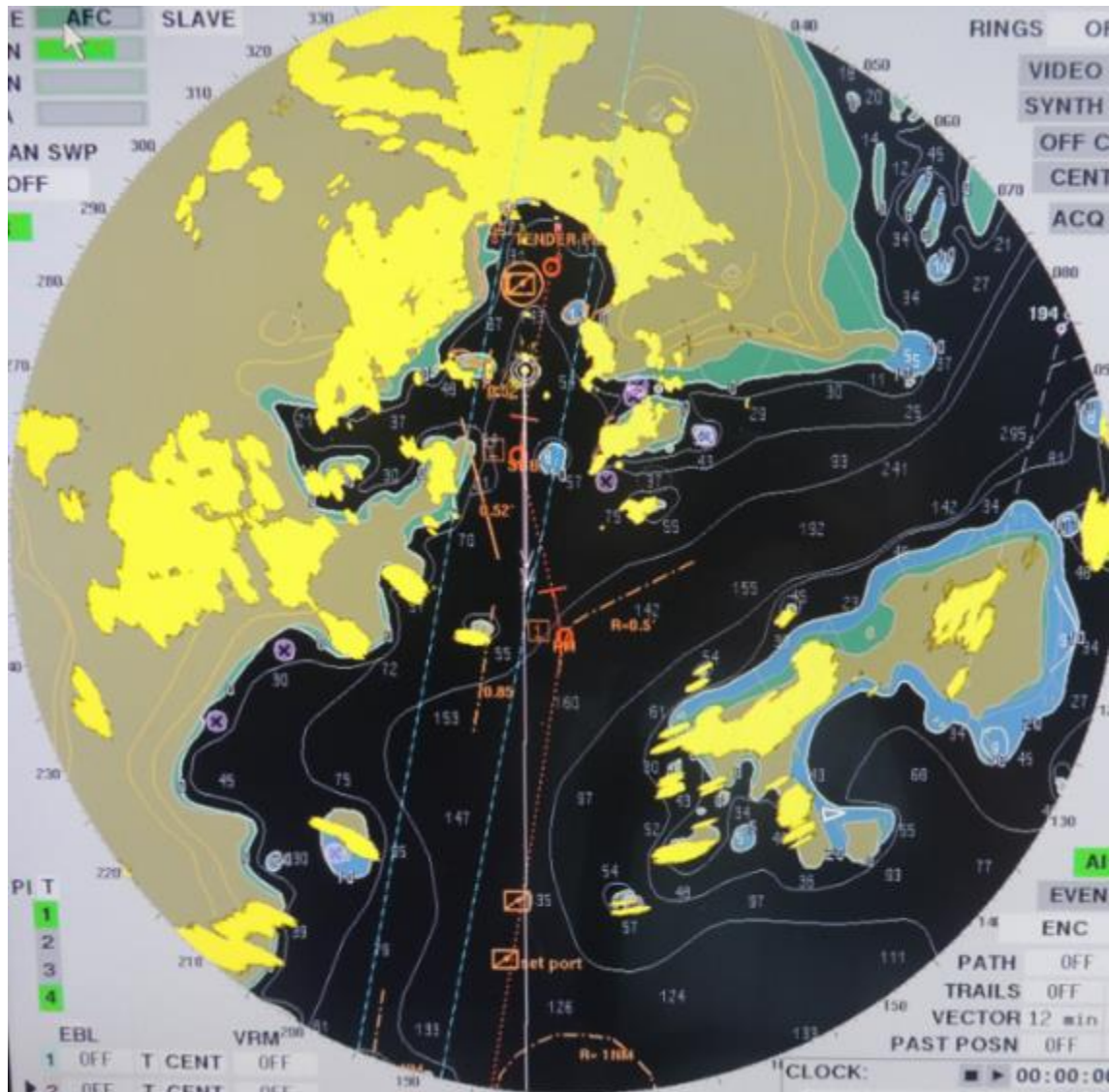
SIMULATION OF CAIRNS:

Controlled environment study and risk assessment carried out for larger vessel class access and increased situational awareness in a tight channel

FRASER ISLAND:

Precise control of UKC when passing over Urangan sand bar

Enc coverage issues



KOMODO ISLAND

ARCS 3756 - 1:87,300
used for primary navigation
with equivalent BA paper chart
and risk assessment

Also supplemented with
Indonesian Paper chart 297
Scale 1:50,000

No suitable scale ENC exists
ID300295 1:180,000

Summary

- Economic benefit increasing as cruise tourism expands in SW Pacific
- Appropriate charts & Aids to Navigation will enhance this further
- Government engagement with the cruise sector is increasing
- Hydrography as “critical infrastructure” requires constant reinforcement with Government and Aid Agencies
- Scope for improvement and communication from end user to Hydrographic Office(s) & Competent Authorities

THANK YOU