



Australian Government
Geoscience Australia



Fixing Australia's Maritime Jurisdiction an Imagery/Digital Approach

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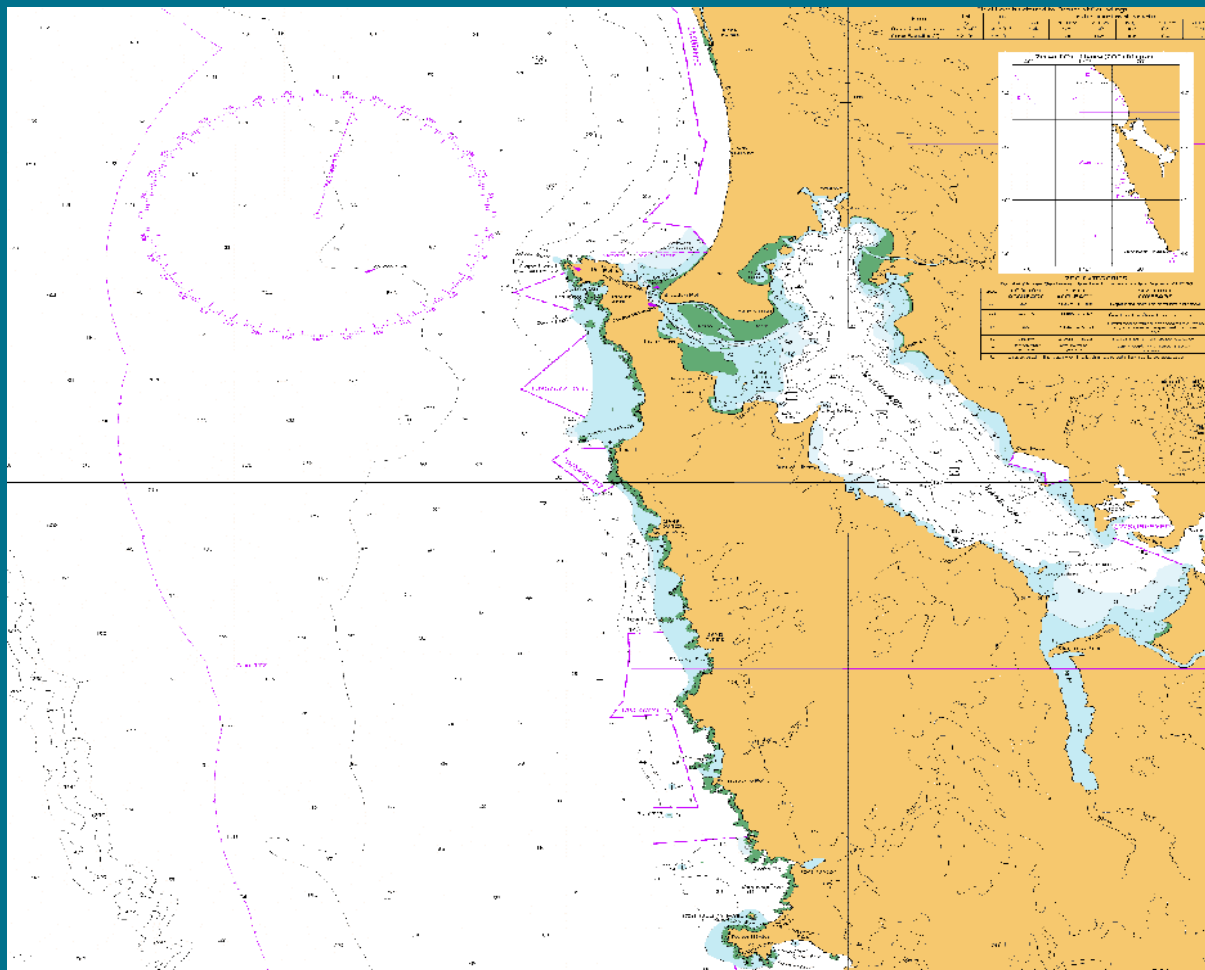
Maritime Jurisdiction Advice, National Location Information Branch, Environmental Geoscience Division

Australia's Domestic Situation

- The High Court of Australia – determined in 1975 that constitutional limits of the States ended at the low-water line of the coastline (i.e. the physical coastline) except for waters that were internal at Federation (1901)
- Since the 1980's there have been several versions interpreting the location of the baseline
- These have been determined largely from secondary sources of information
- In the current revision the location of the low-water line is being determined from primary sources
 - Aerial photography – using photogrammetry
 - Laser Airborne Depth Sounding (LADS)
 - Satellite imagery – particularly for features in remote areas

Tasmania - West Coast

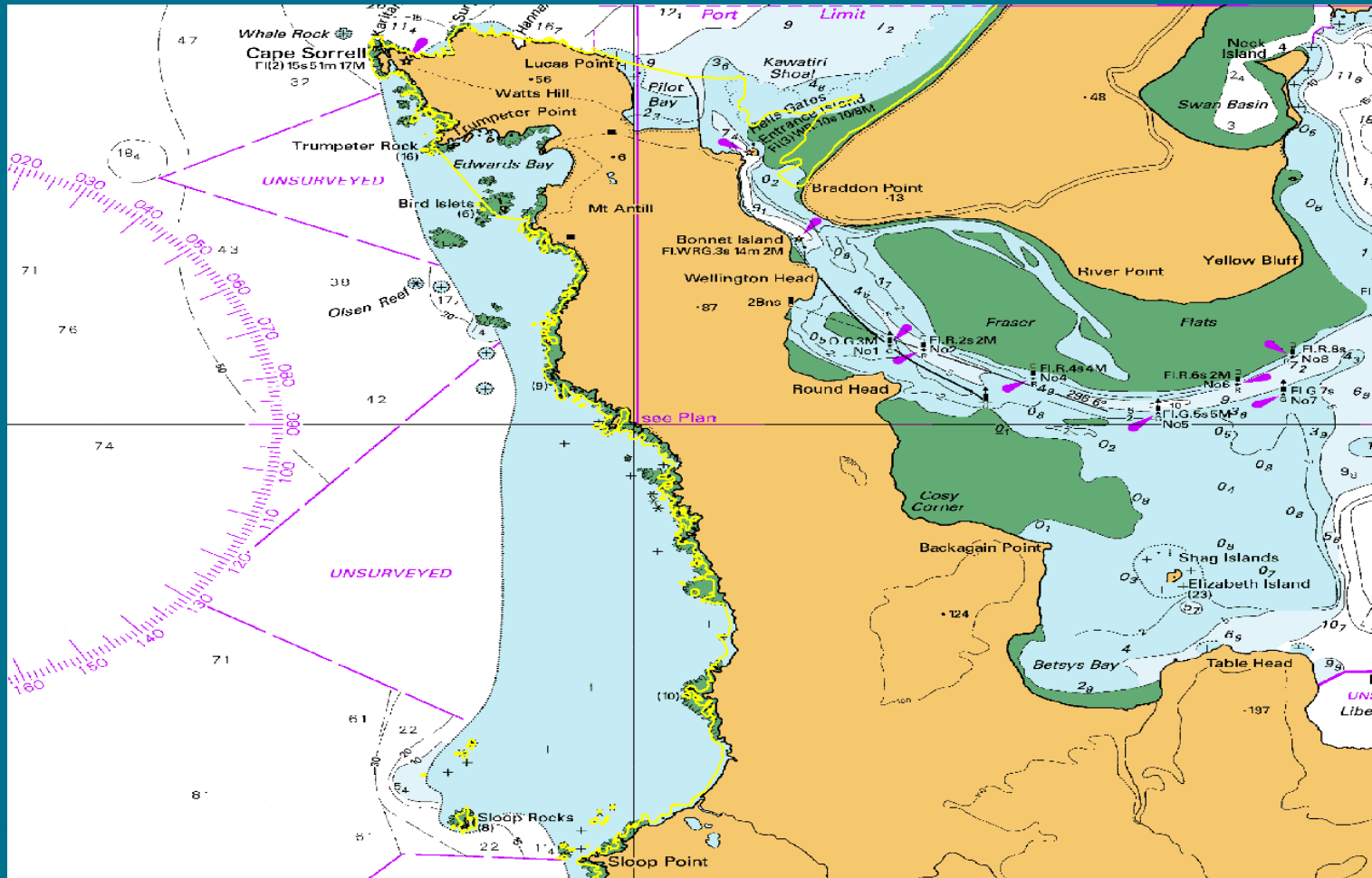
Tidal Range $\approx 1\text{m}$



Scale 1:75,000 at Lat 42°17'

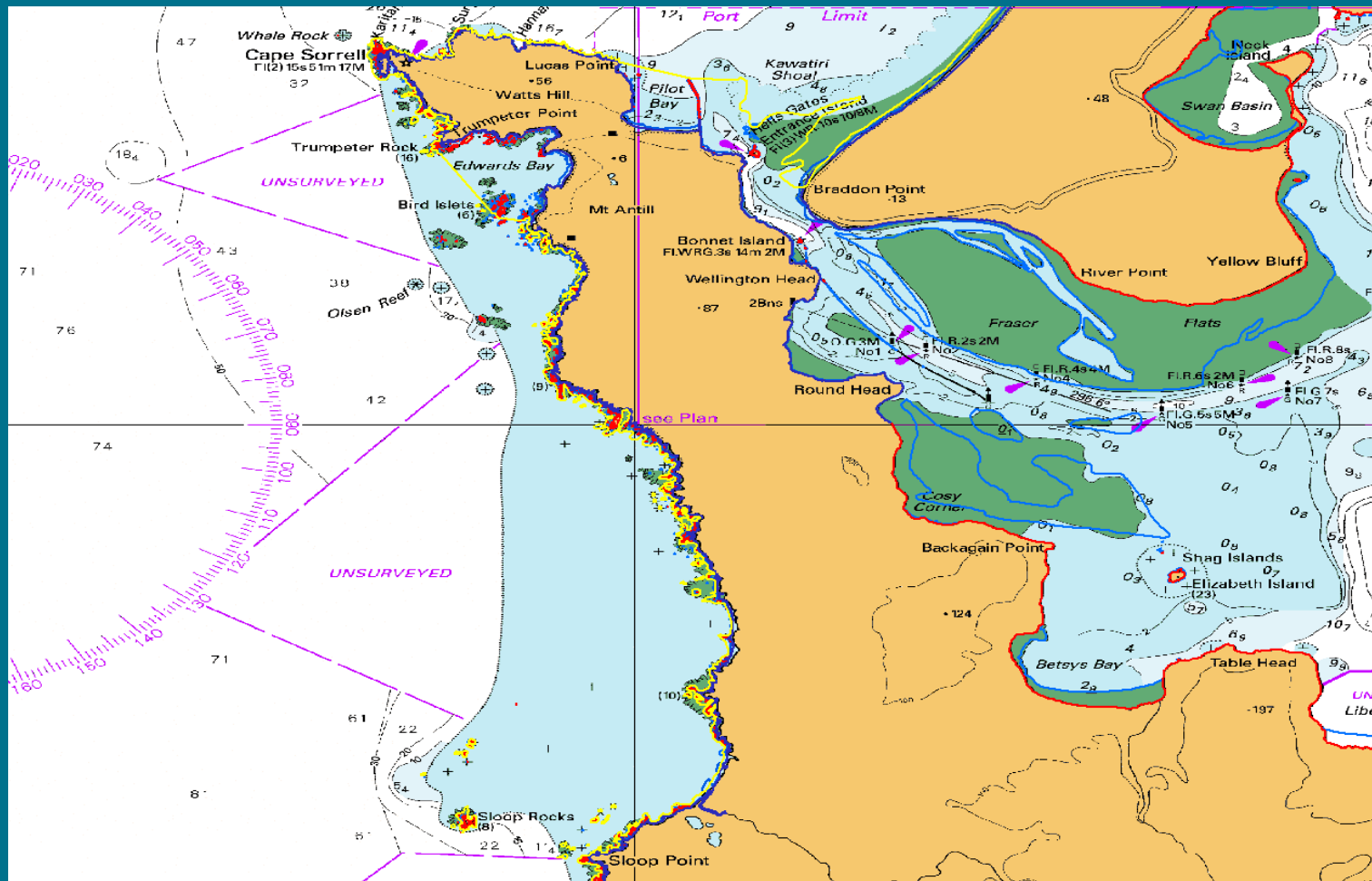


Yellow line is current baseline (AMB2014)



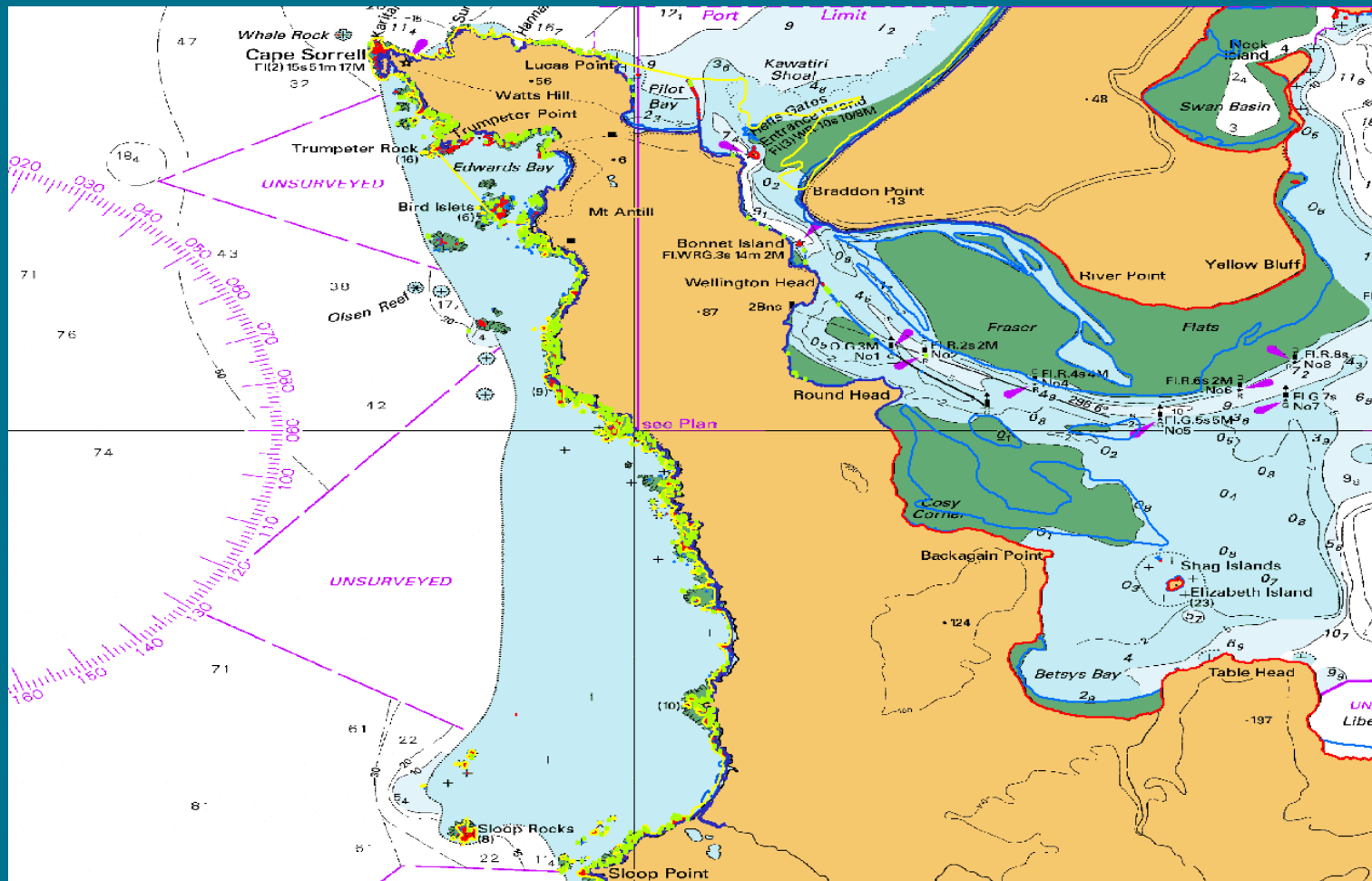
Revised Coastline from Aerial Photography

Resolution 50cm – Red MHW, Blue LAT



Revised Coastline

Light Green is symbolised additional exposing rocks



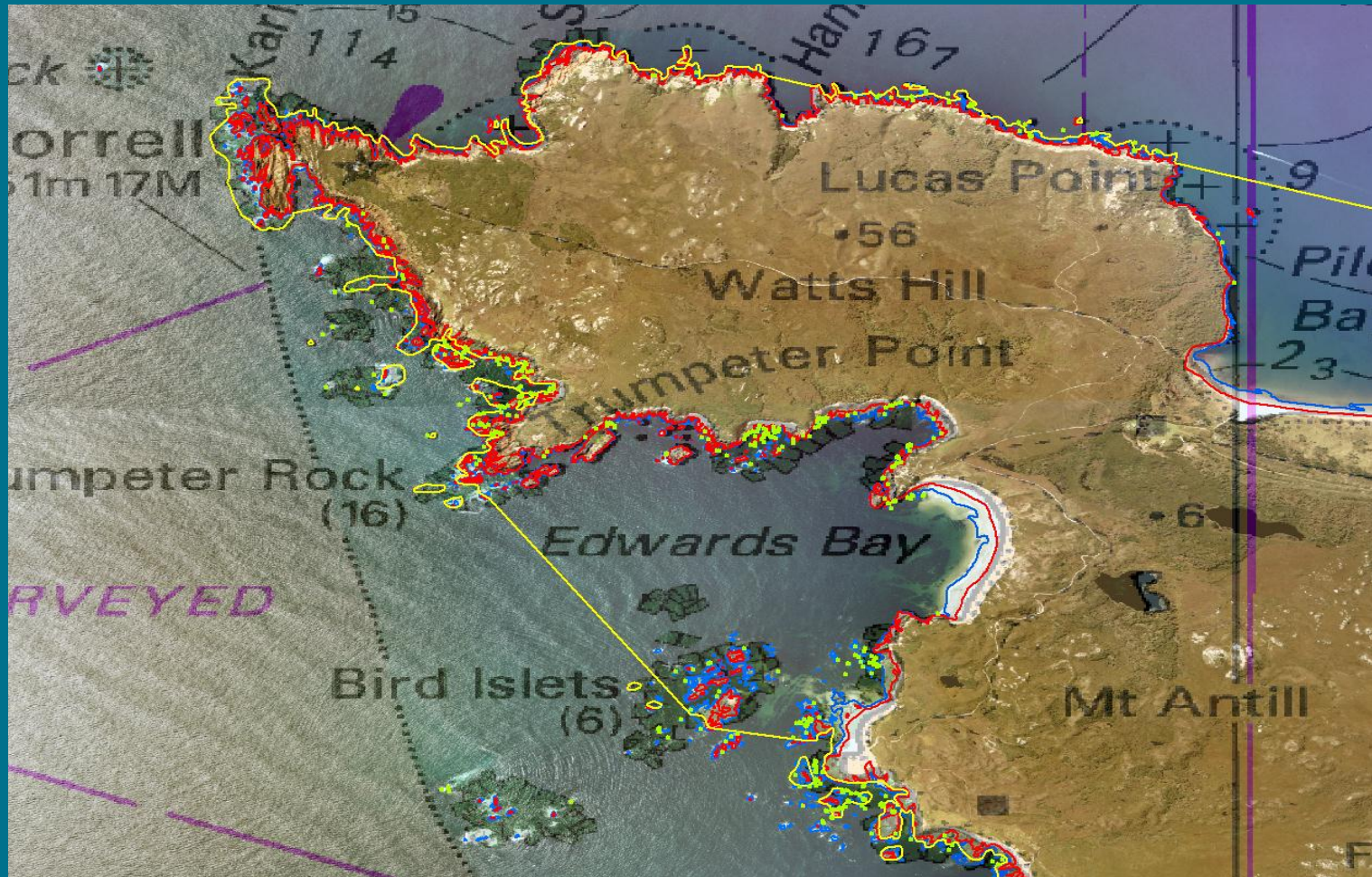
Sample of Aerial Photography

With current baseline (yellow) & Revised Water Lines



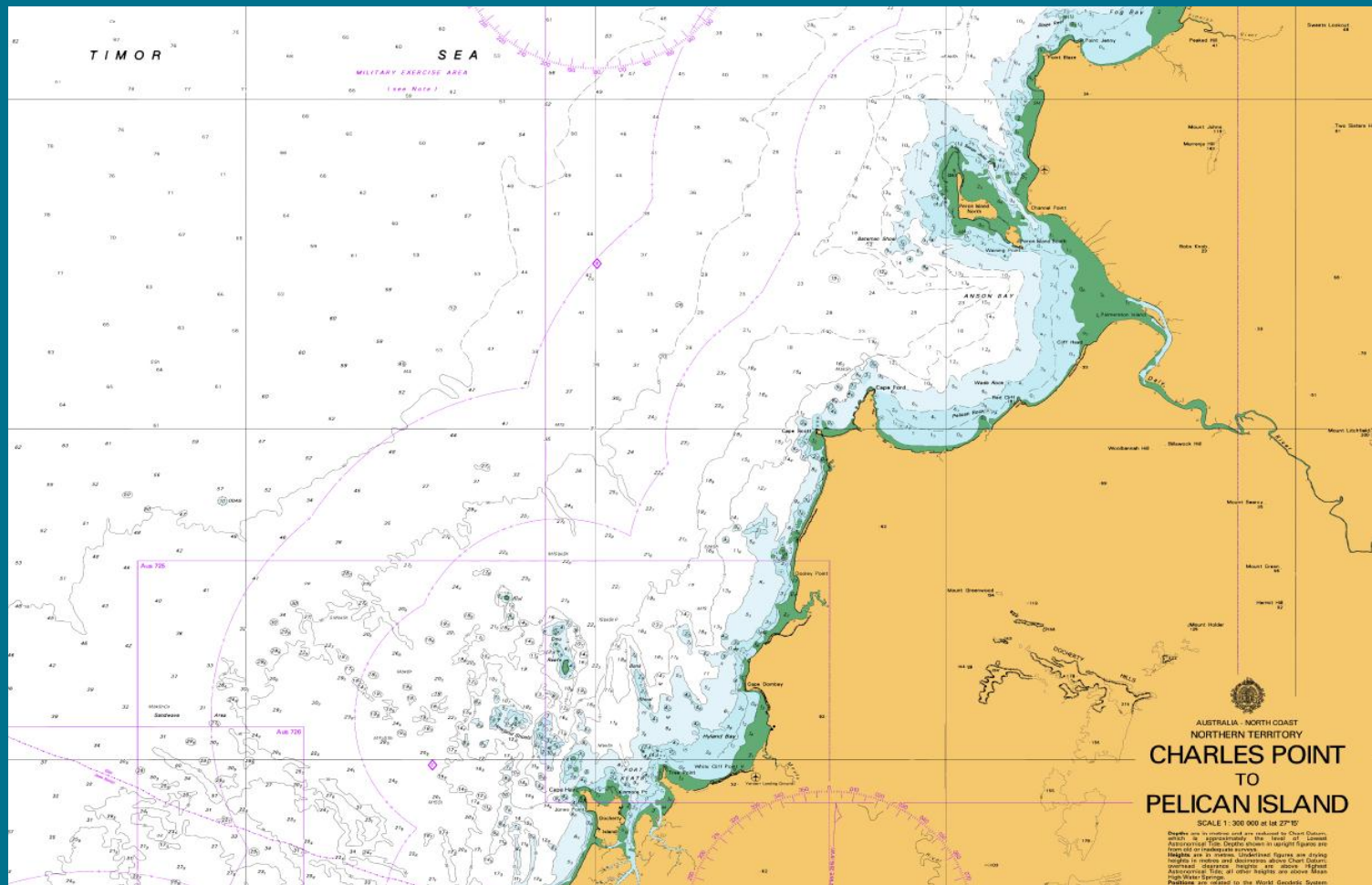
Sample of Aerial Photography

Overlaid on large scale chart AUS177



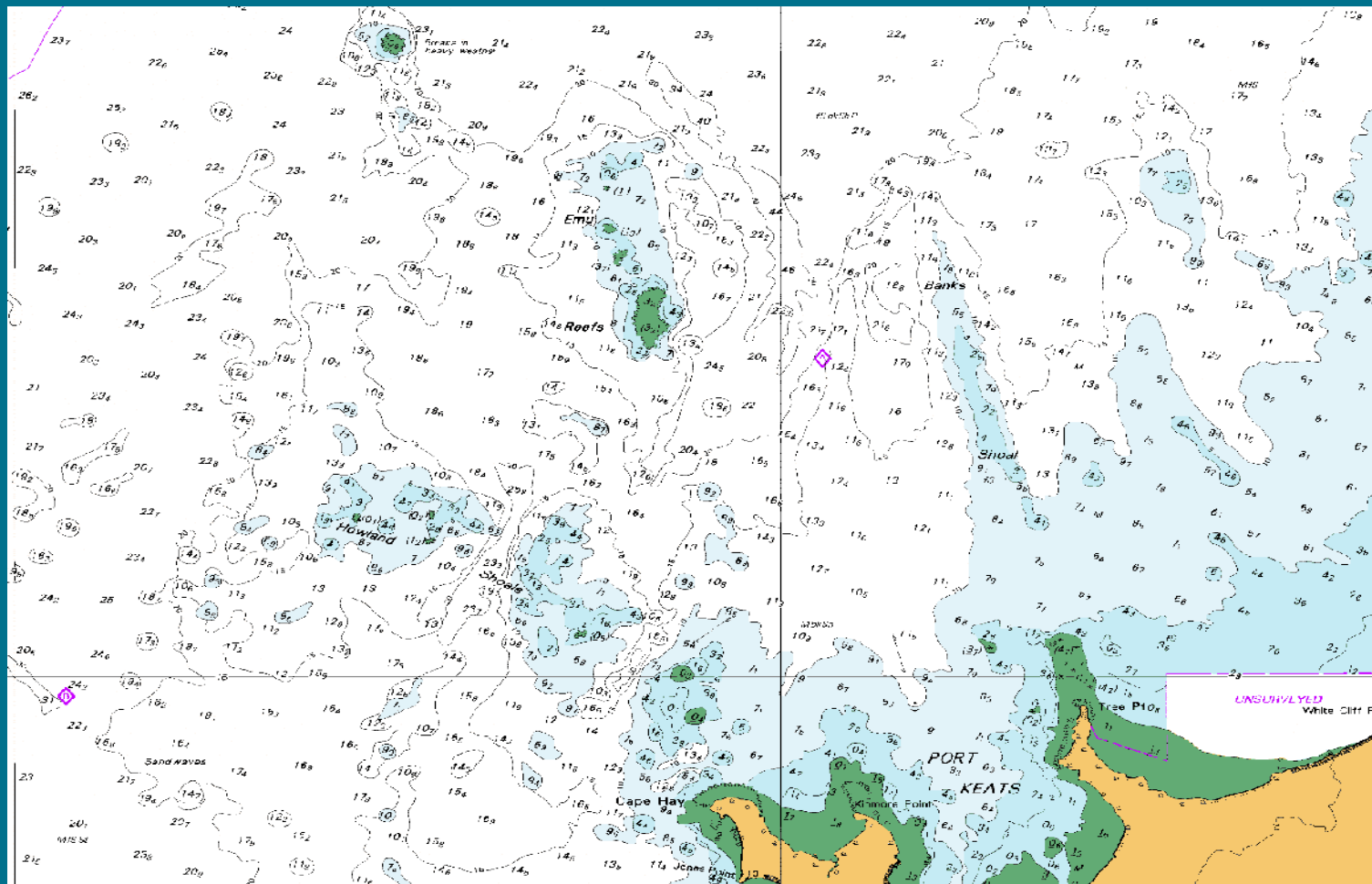
Western Coast – Northern Territory

Chart AUS316



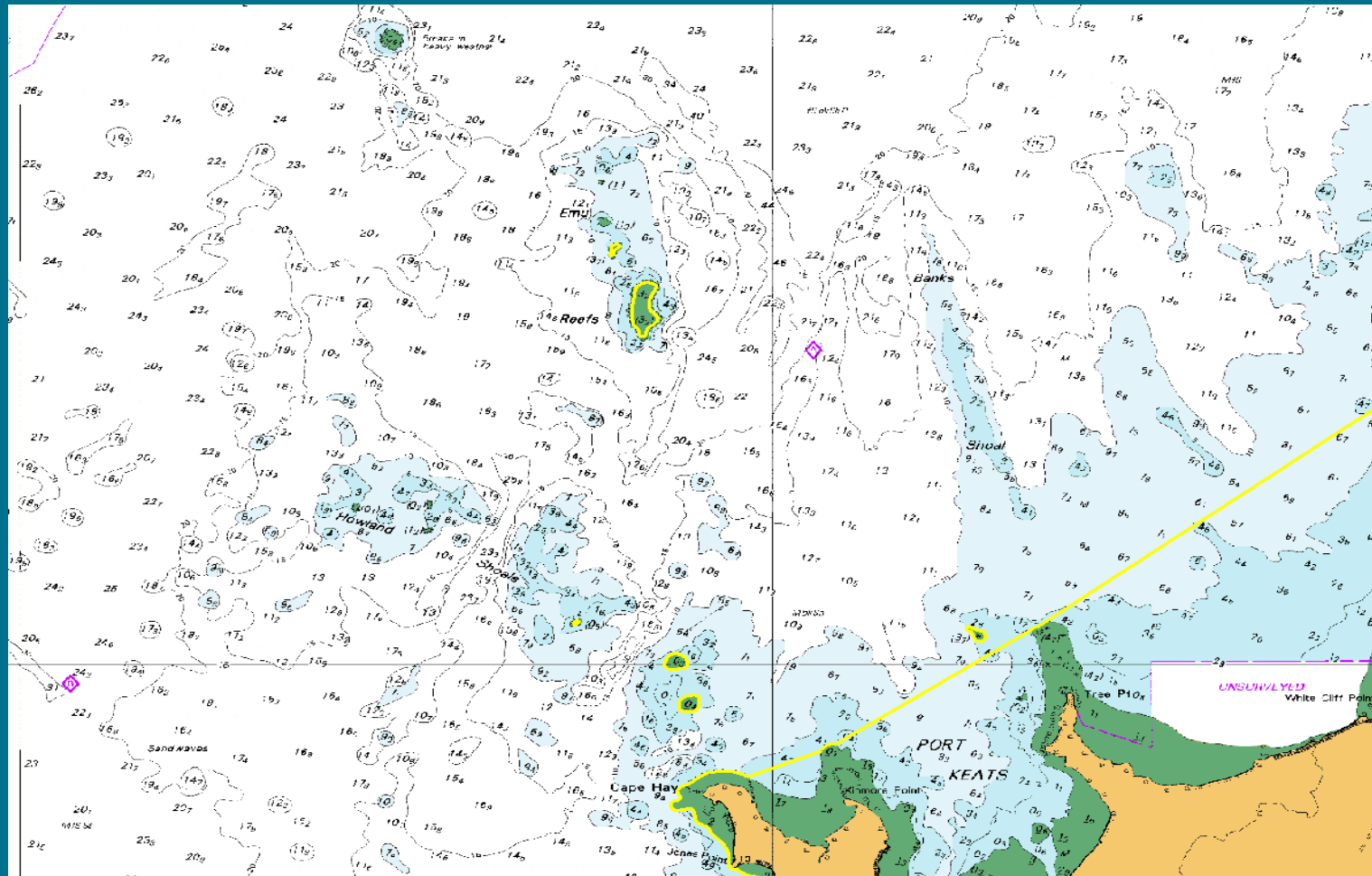
Port Keats Area

Chart AUS725 – Tidal Range $\approx 5.5\text{m}$

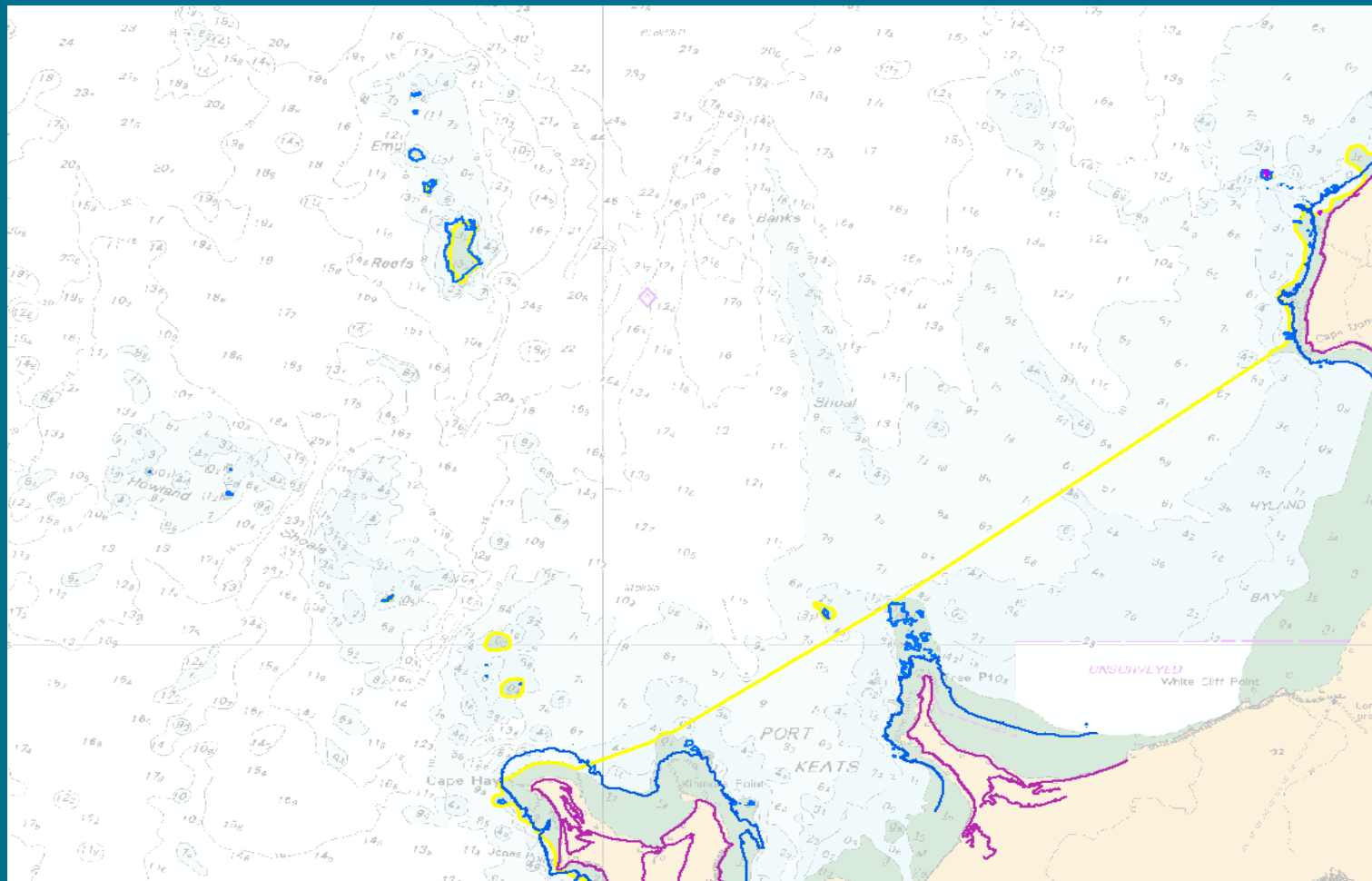


Current baseline - yellow (AMB2014)

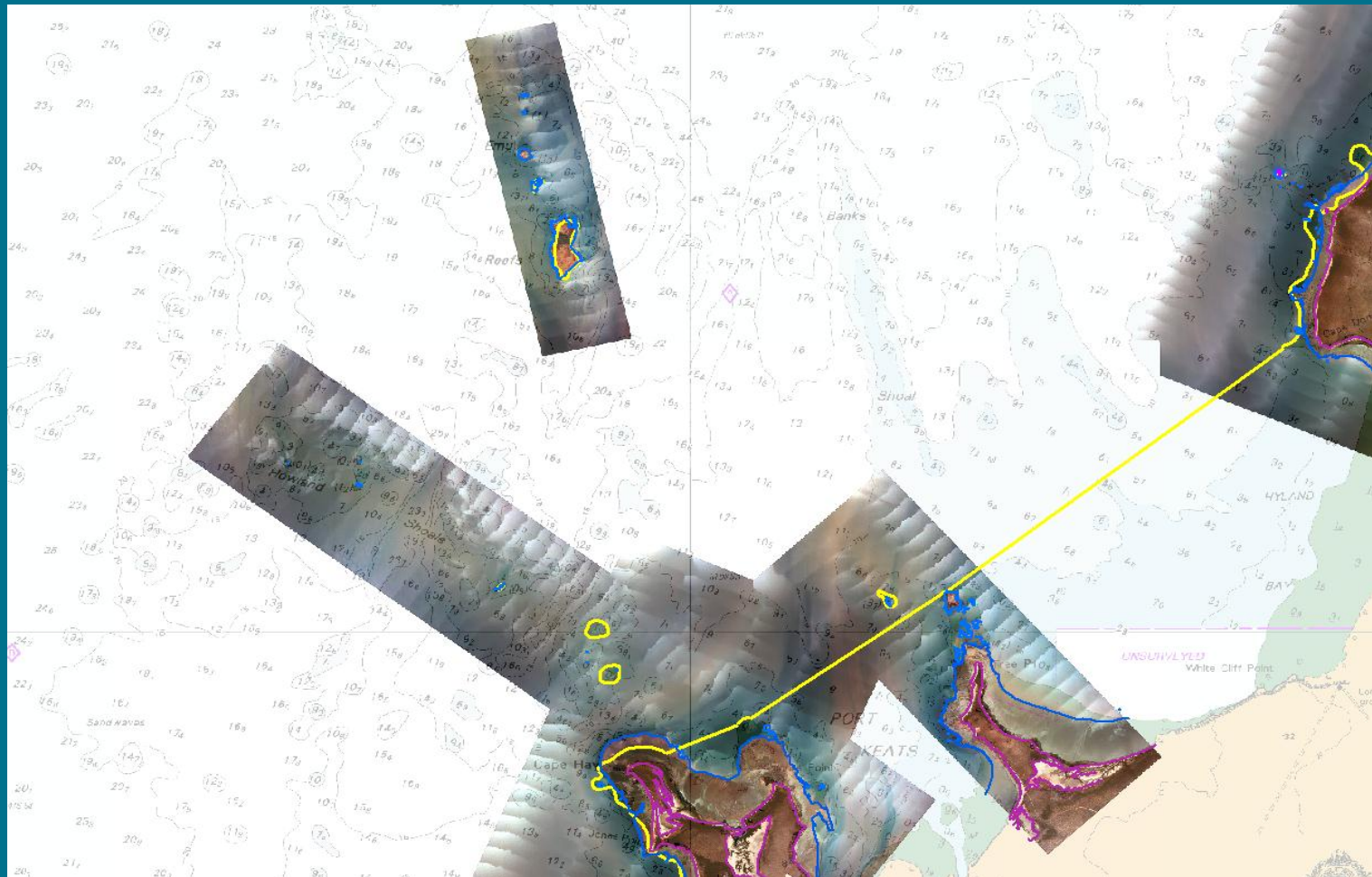
Note: no baseline over some offshore features



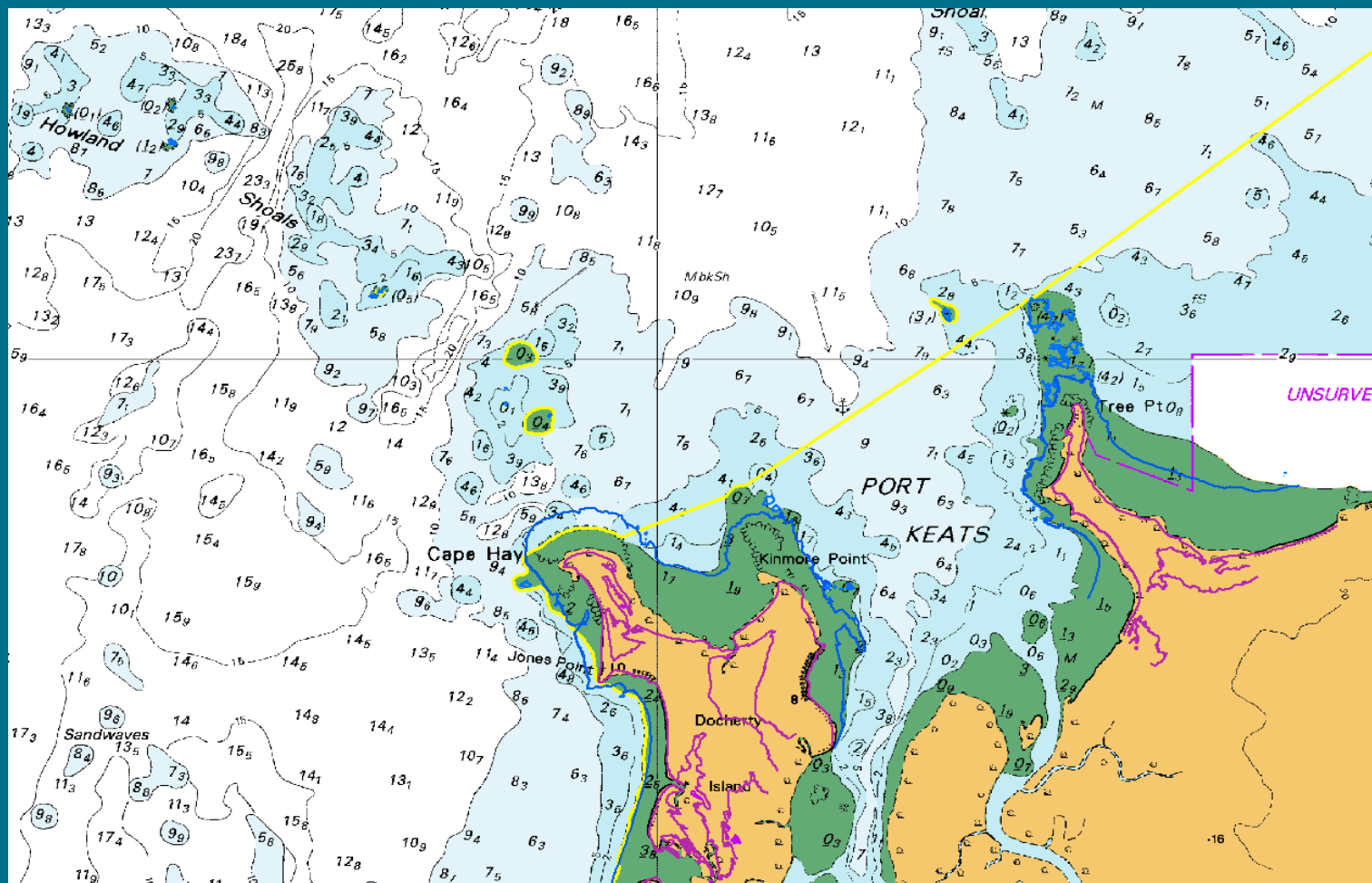
Revised low-water lines - blue



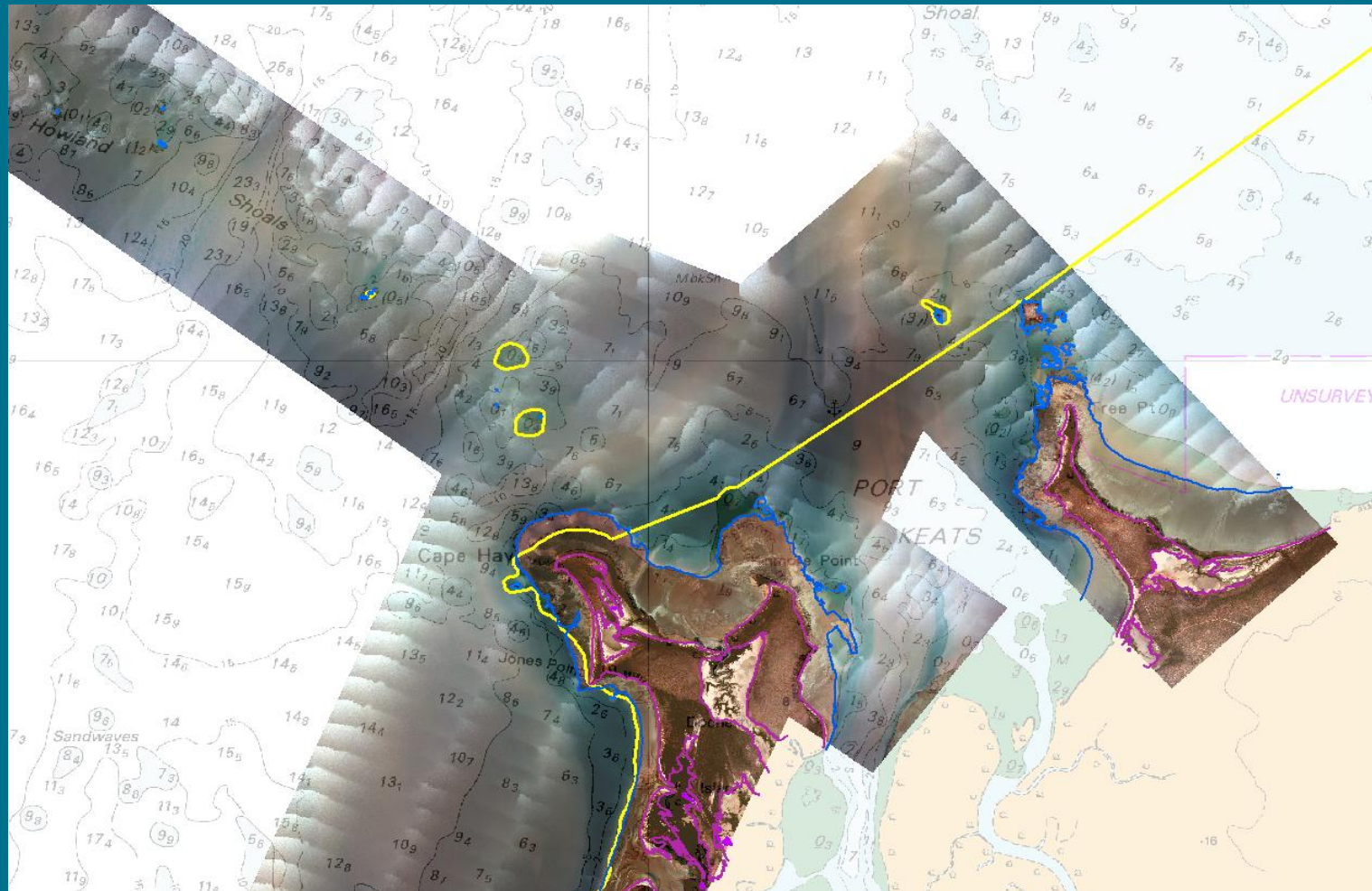
50cm Aerial Photography Composite



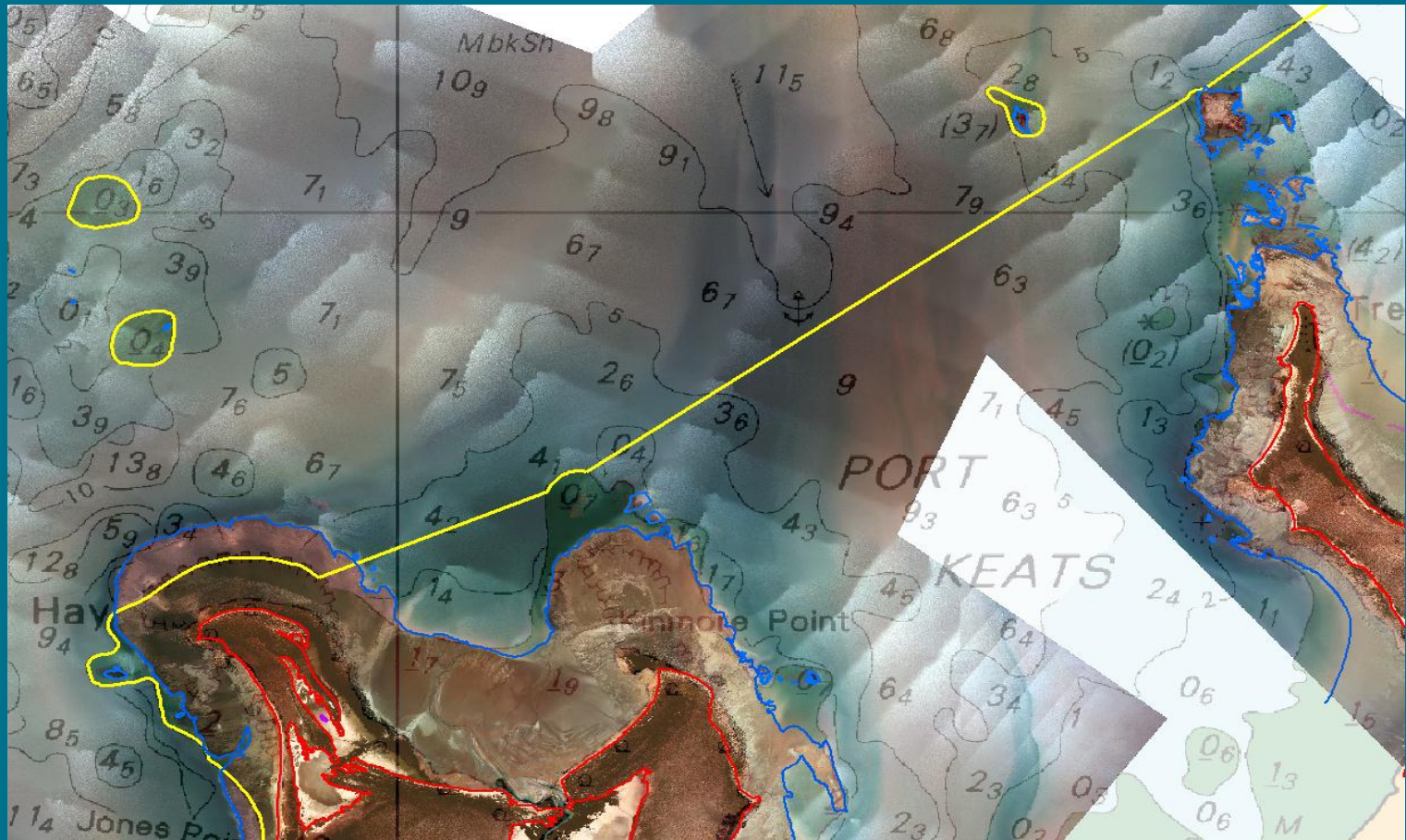
Detail of Port Keats & Howard Shoals



Aerial Photography Composite of Port Keats & Howard Shoals

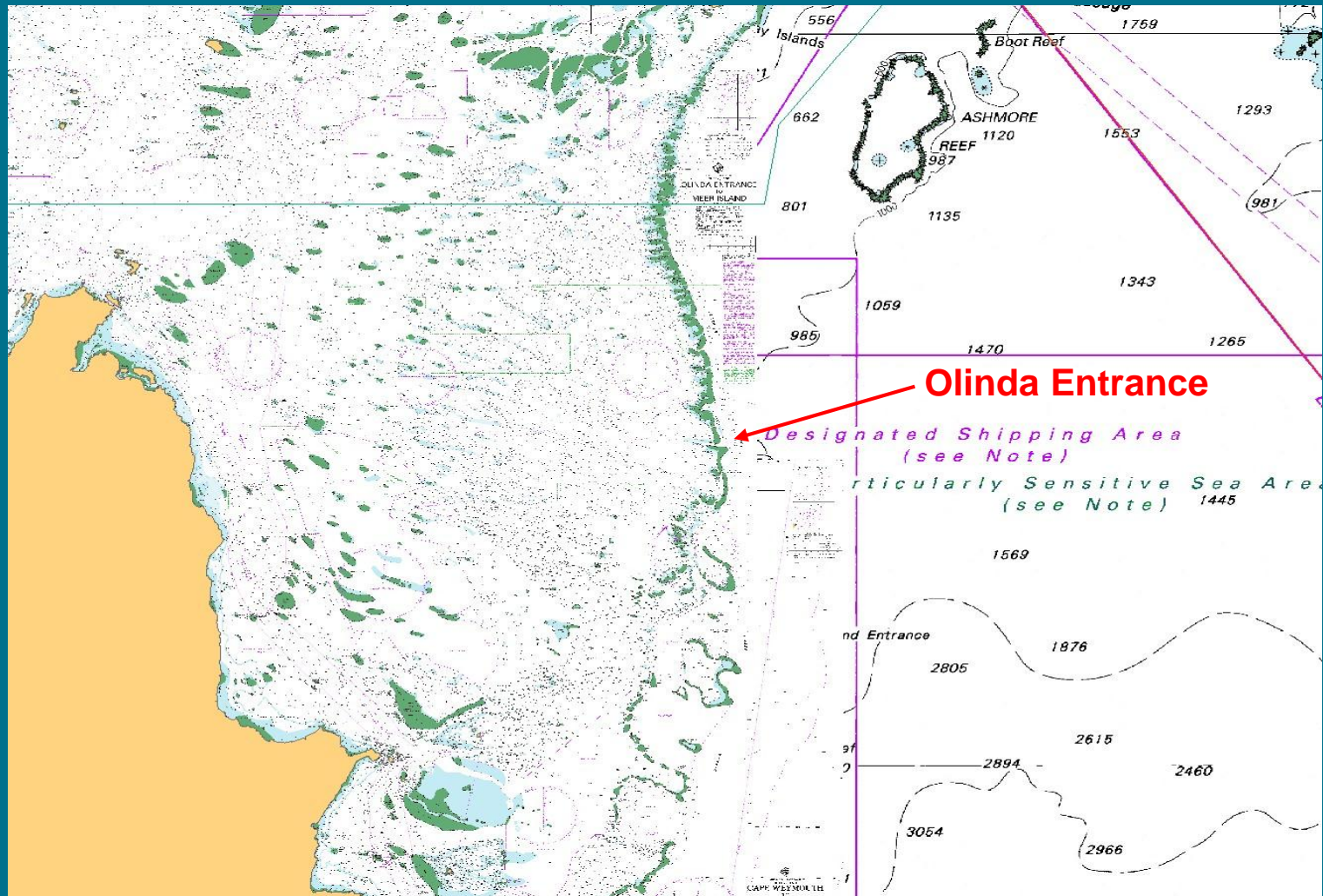


Detail of Port Keats



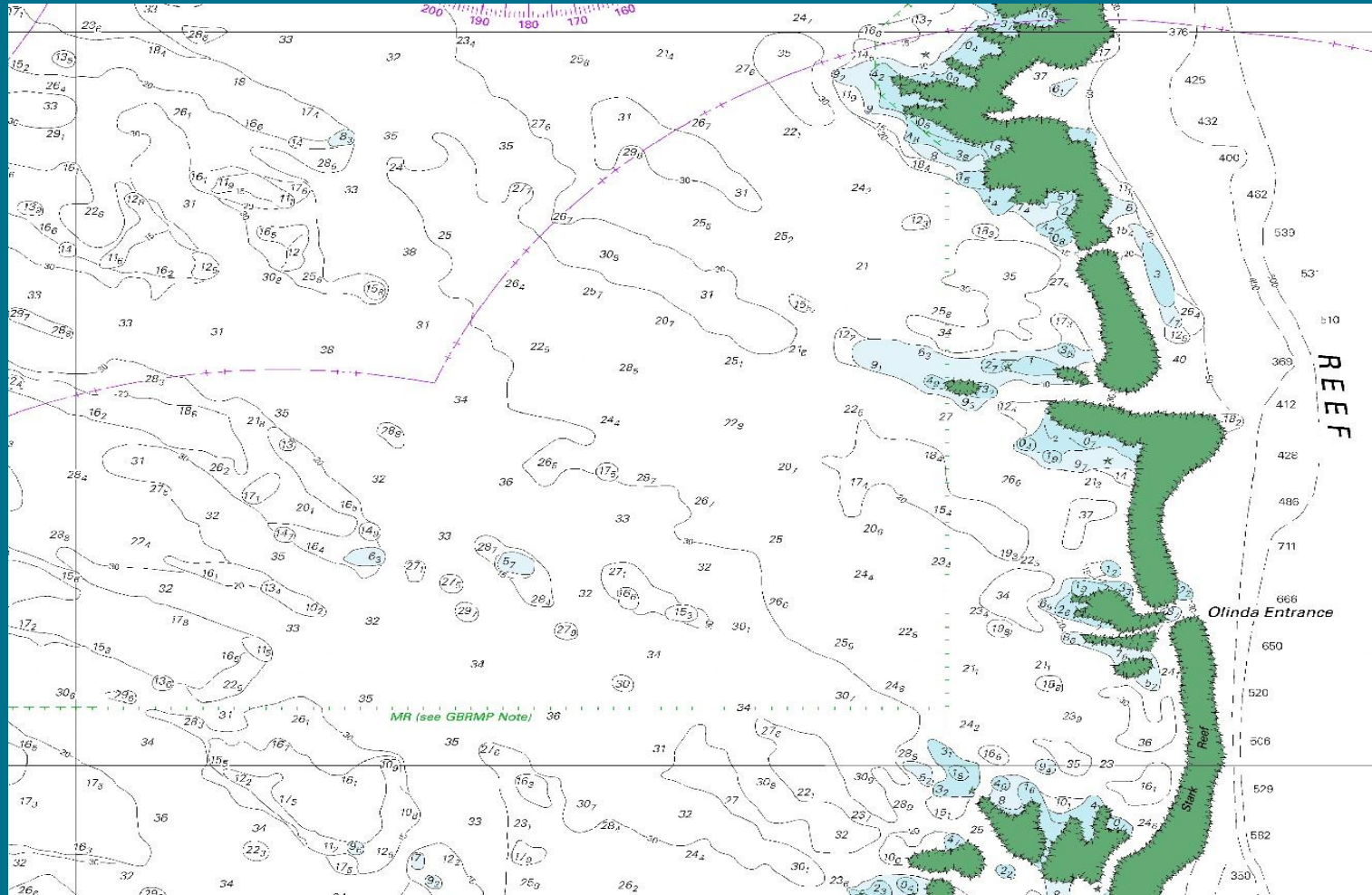
North-eastern Australia

Torres Strait and Great Barrier Reef



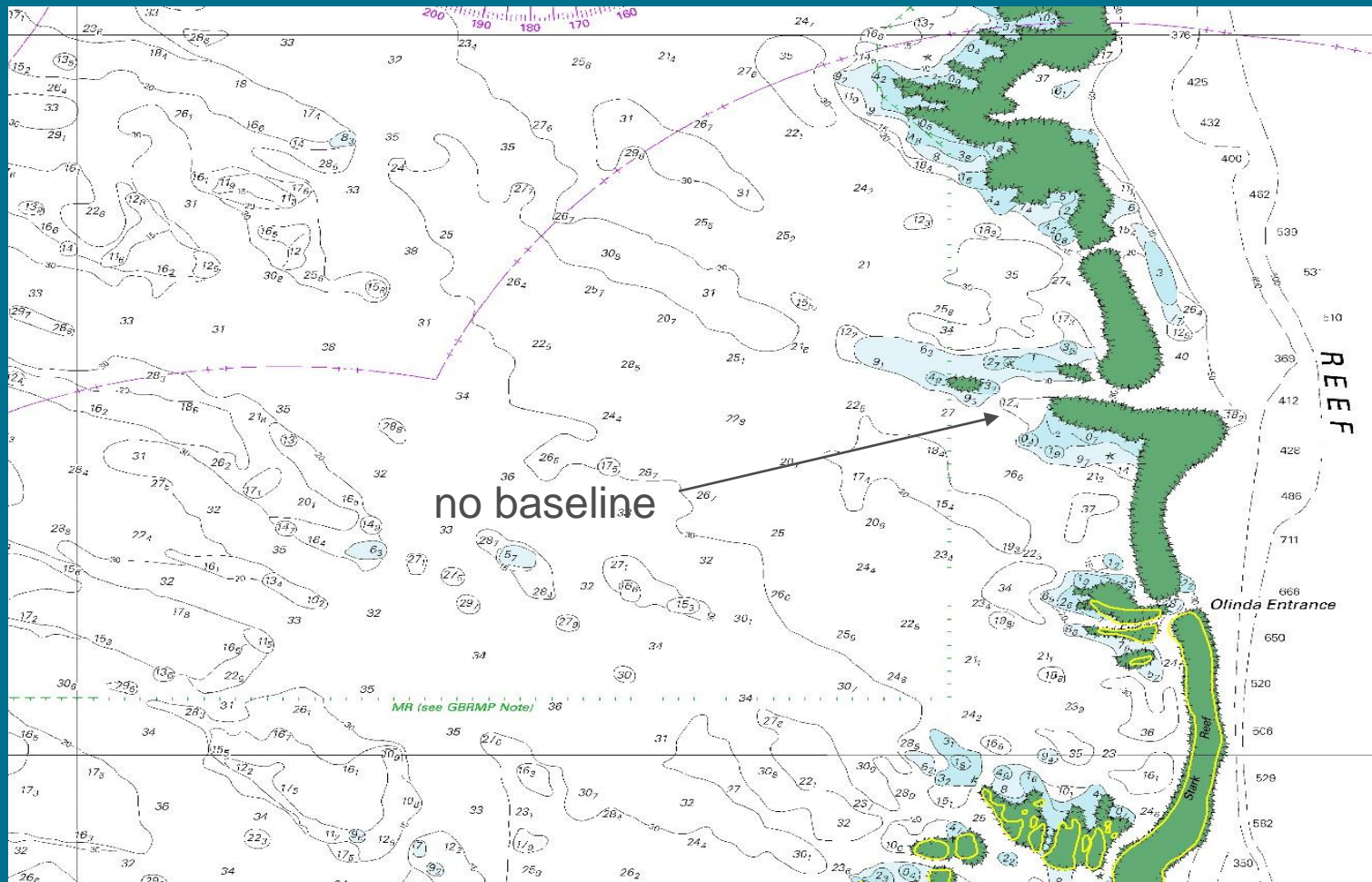
Olinda Entrance - Torres Strait

Chart AUS837 – Tidal Range $\approx 2.3\text{m}$



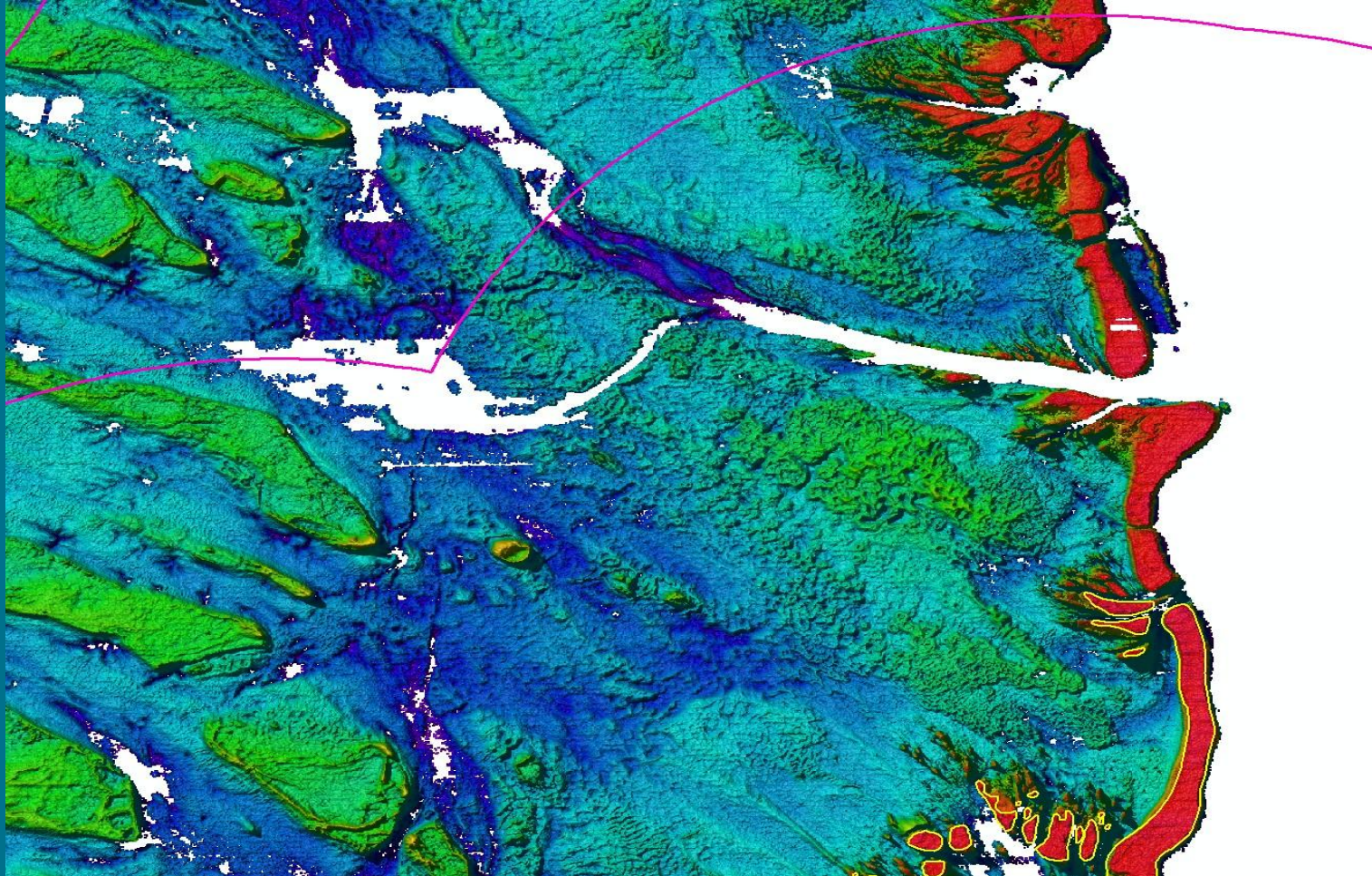
Yellow line is current baseline (AMB2014)

Note: no baseline north of Olinda Entrance



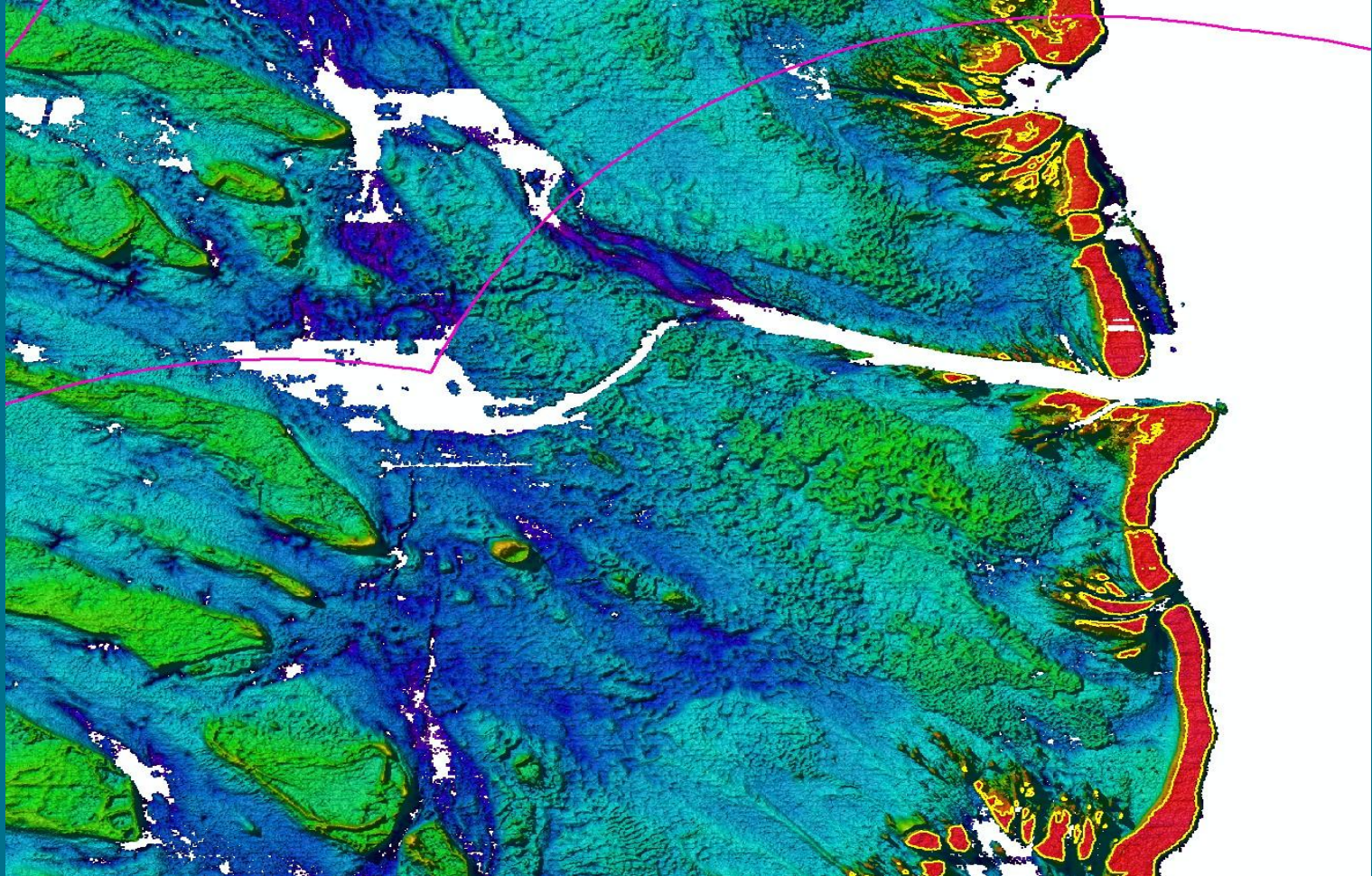
Laser Airborne Depth Sounding (LADS1) data

at $\approx 12.5\text{m}$ point spacing - gridded to 20m – to depths of $\approx 50\text{ m}$

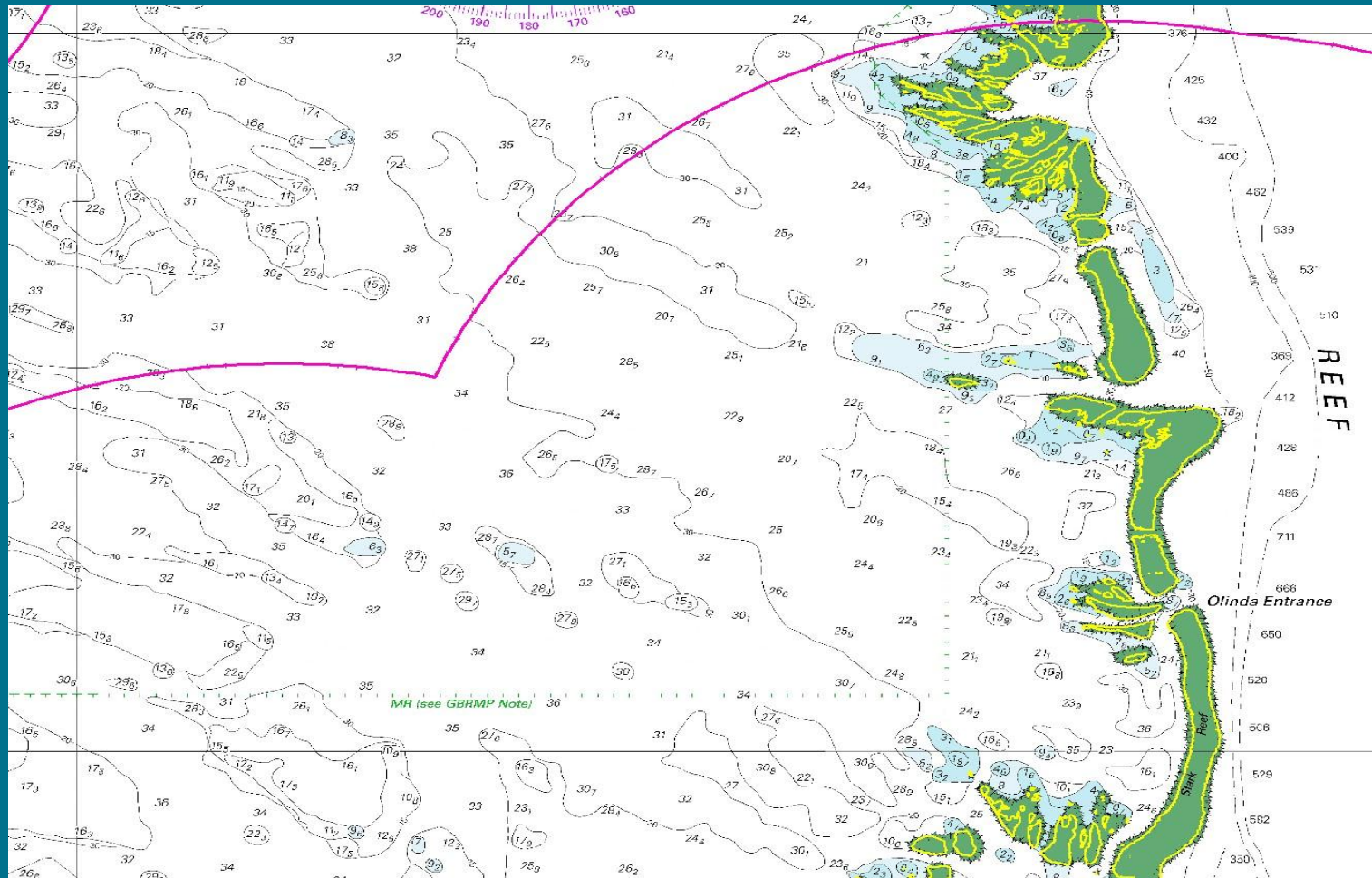


Revised Low Water Line Extent

red indicates 0 datum at about LAT

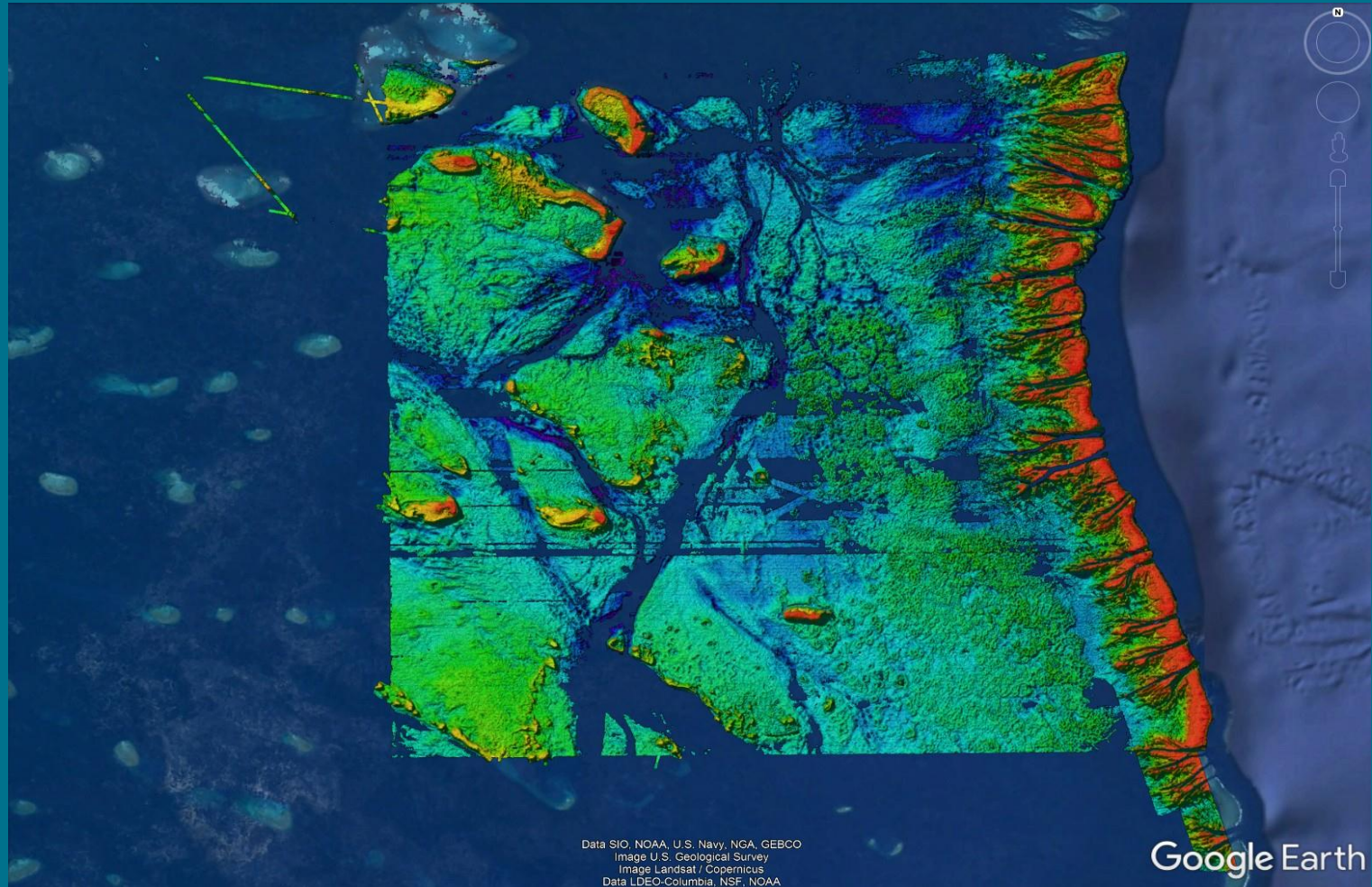


Revised low water line overlaid on Aus chart 837



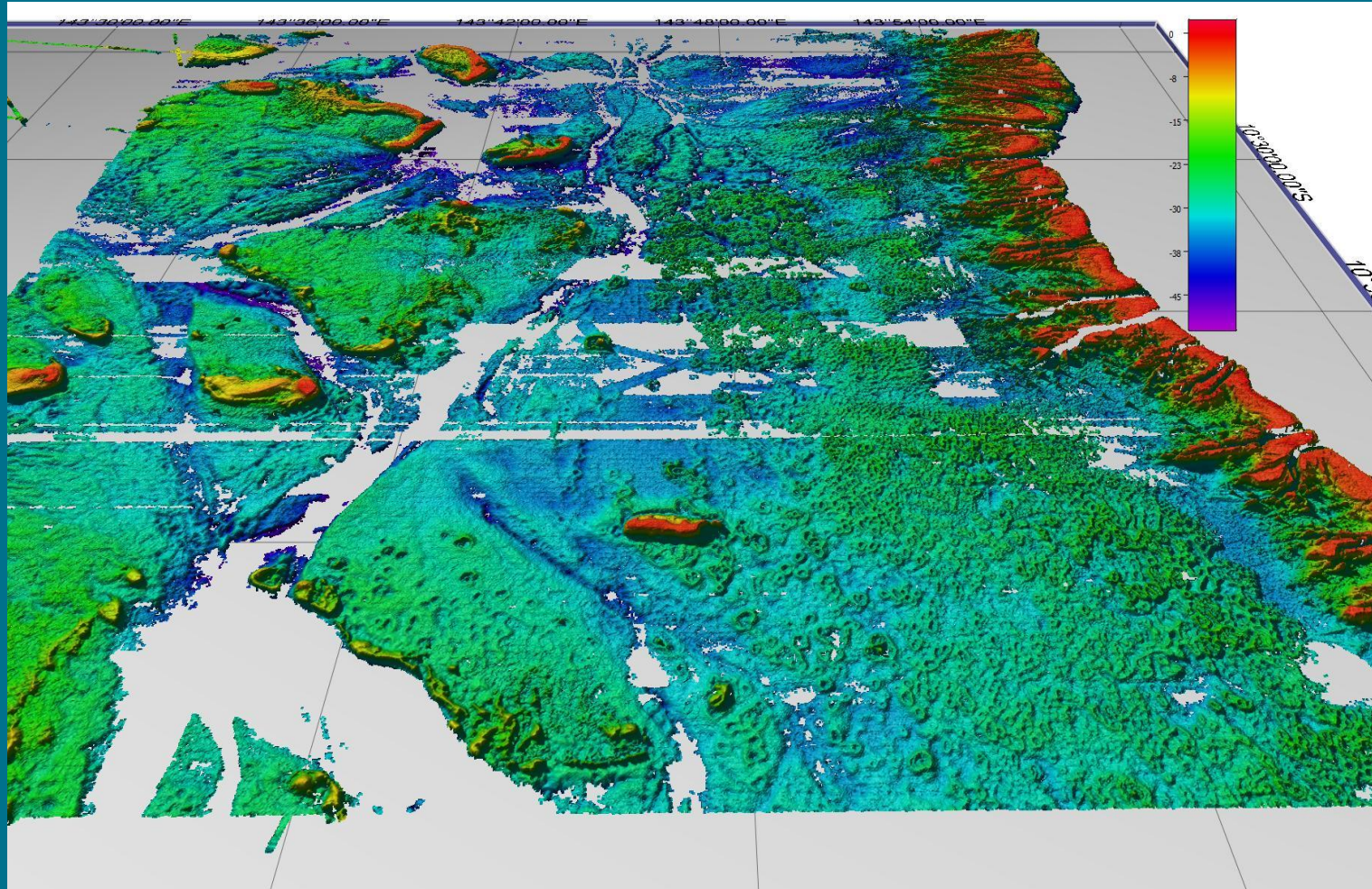
LADS1 – Olinada Entrance

Google Earth view – tile $\approx 80 \times 55$ km



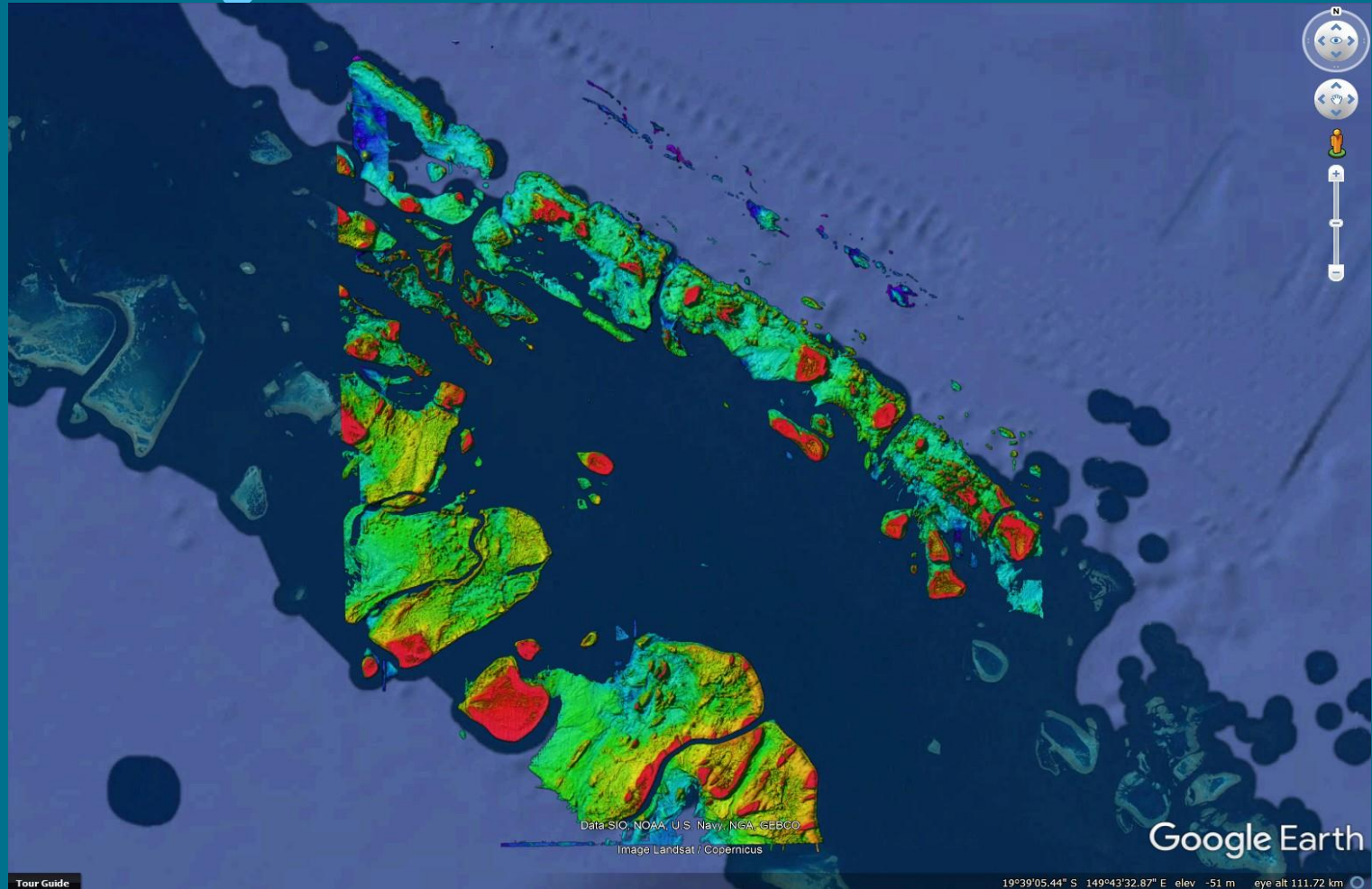
LADS1 – Olinada Entrance

Fledermaus view – tile $\approx 45 \times 45$ km



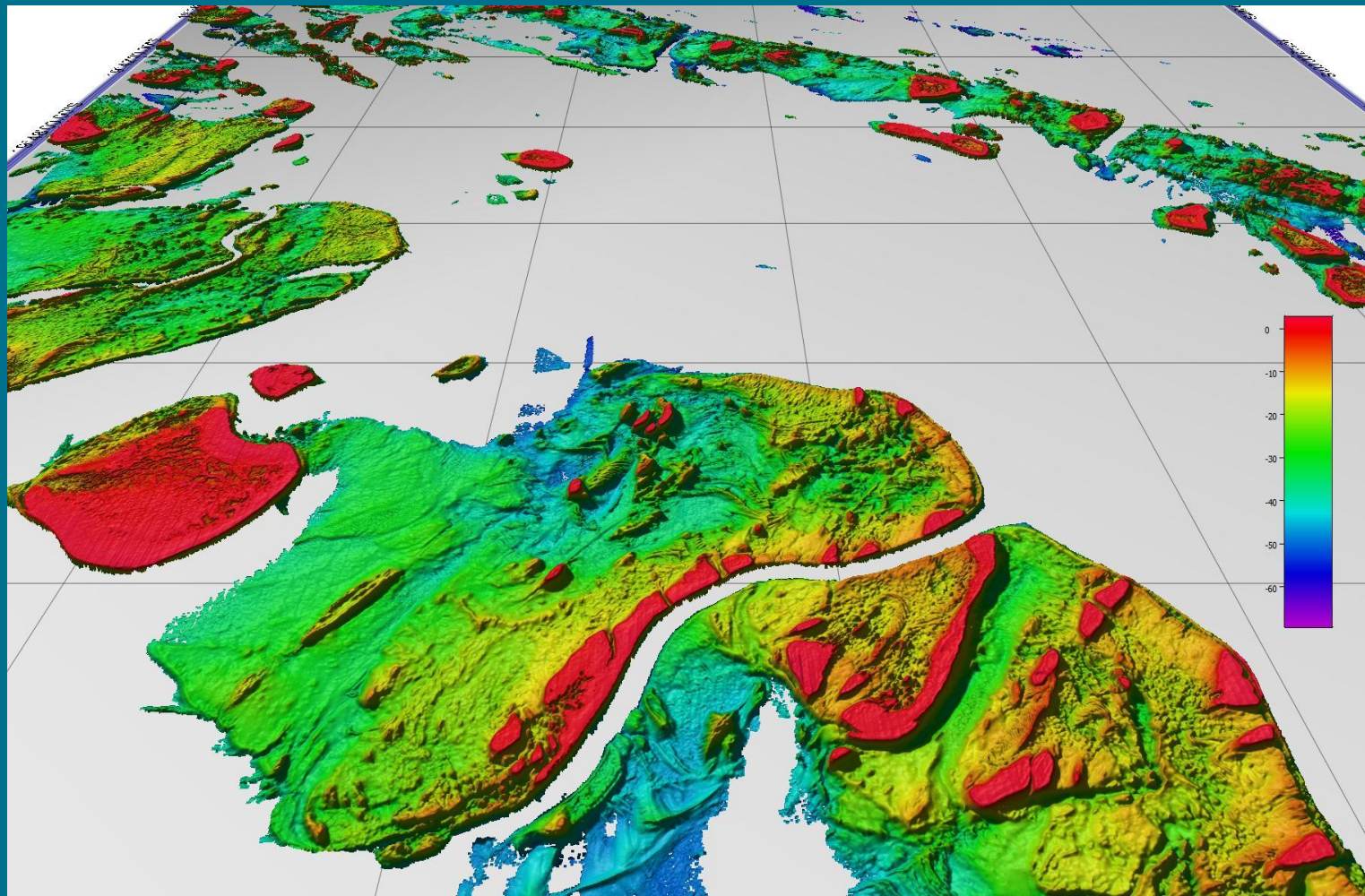
LADS2 – Square Reef

Google Earth view – tile $\approx 130 \times 90$ km



LADS1 – Olinada Entrance

Fledermaus view – tile $\approx 50 \times 65$ km



The Future Digital Proclamations

- Agreement in principle with the Office of Parliamentary Counsel to make proclamations in the offshore jurisdiction in digital form
 - Format will conform to the proposed S121 if it is adopted. This standard for data management may also have application for land boundaries which may lead to greater integration of land and sea administration
 - Digital data enables the geodetic densification of lines without generating reams of paper proclamations
 - Data expressed in terms of the specific proclaimed geodetic datum, will be correct regardless of the projection, scale or the display platform
 - Provides certainty and repeatability - which is a desirable quality for most who are involved in the marine space



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Thank you

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