

SIN COWE ISLAND (UNION REEFS)

9°53'09.04"N, 114°19'48.45"E

Geographic area

Sin Cowe Island is located on one of the northern reef platforms of Union Reefs, between Edmund Reef around 3.2NM northeast and Gent Reef less than 1NM southwest. The reef platform of Sin Cowe Island is oval in shape and extends 1.7km along its northwest-southeast axis and 1.2km along its northeast-southwest axis. Sin Cowe Island is in the middle.



Land area above water

Sin Cowe Island is the only above-water land area on this coral platform (49,000m²). In the 18 January 2012 satellite image, it has an elongated shape with a northwest-southeast axis of 400m and a north-south axis of 140m. The central area is built-up and vegetated and surrounded by visible seawalls (2600m²). A narrow ring of white sand is visible

along the seawall. It extends 10-20m seaward, at the most, along the northeastern side and southwestern sides of the seawall. Based on the 17 February 2006 satellite image viewable on Google Earth, the western tip and southwestern end of the enclosed area may have been man-made at an earlier stage.

Human infrastructure

More than 30 man-made structures are visible within the seawall, as well as solar panels on roofs. It is clear from the 2006 and 2012 satellite images that the lighthouse which is visible in the 2012 satellite image has been built after 17 February 2006. A beacon can be seen on the reef flat, 170m west of the light house built on the western tip of Sin Cowe Island. Three non-accessibility devices have been installed on the reef flat; two in the south, one in the north. They are around 150m long. The 22 February 2015 satellite image viewable on Google Earth shows that substantial island building has occurred since 2012 that resulted in the addition of an 80m wide beach (around 38,000m²) in the north and a new harbour area that replaces 140,000m² of the reef flat up to its southern seaward edge. A man-made channel that, in 2012, cut into the reef flat south of the island seems to now be included in the recently-built harbour.

Intertidal and submerged area

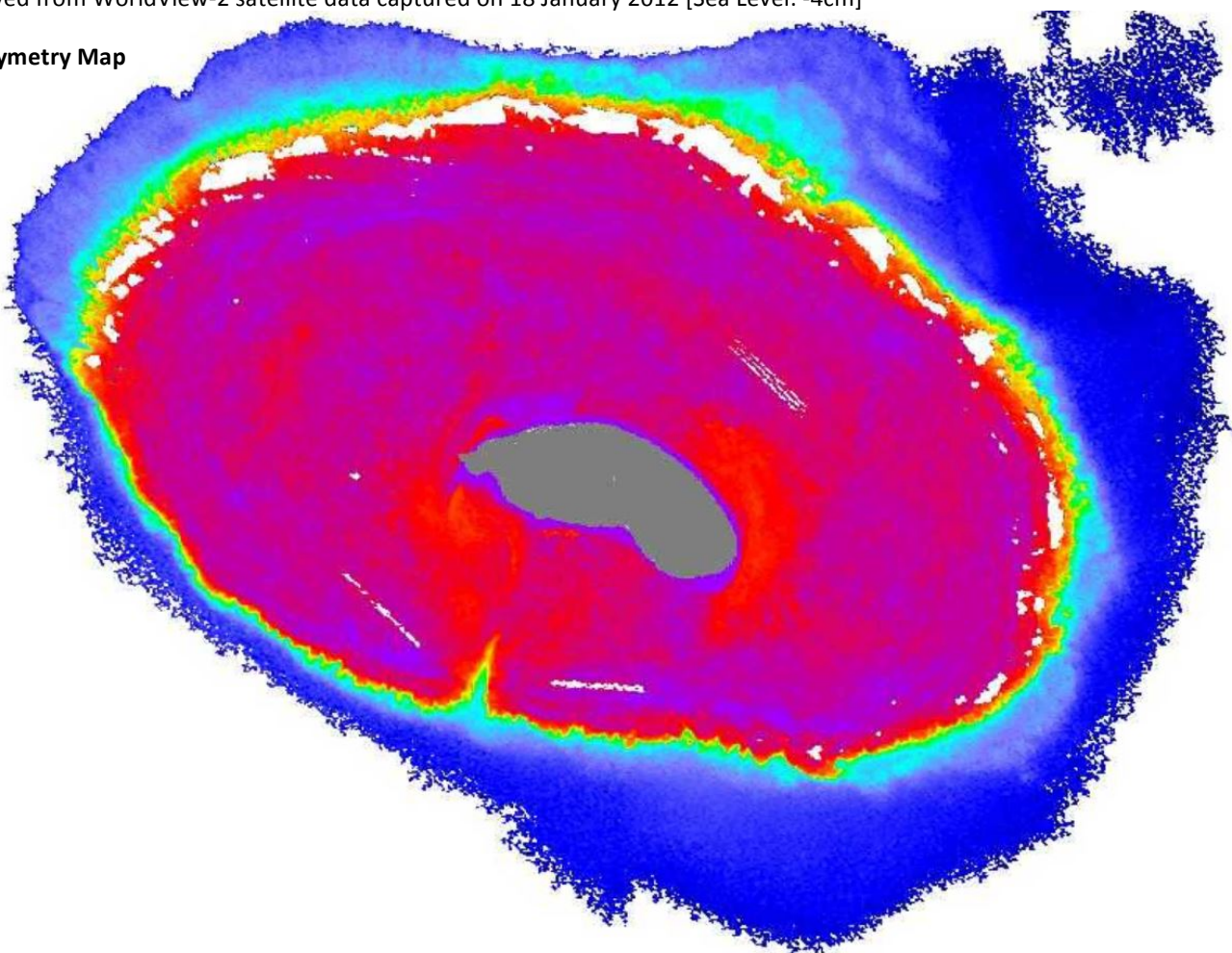
The aerial coverage of the reef platform is 1.48km² comprising a reef flat of 0.99km², a reef slope of 0.43km² and an above-water area (see above). The reef flat is mostly flat and is 1.2-1.5m deep at Mean Sea Level, which results in it remaining submerged at all times, although it would be only a few centimetres deep at Lowest Astronomical Tide. The longest reef slope areas extend 250m northeast and 130m west off the reef flat. Spurs and grooves are particularly visible in these areas.

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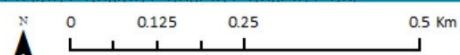
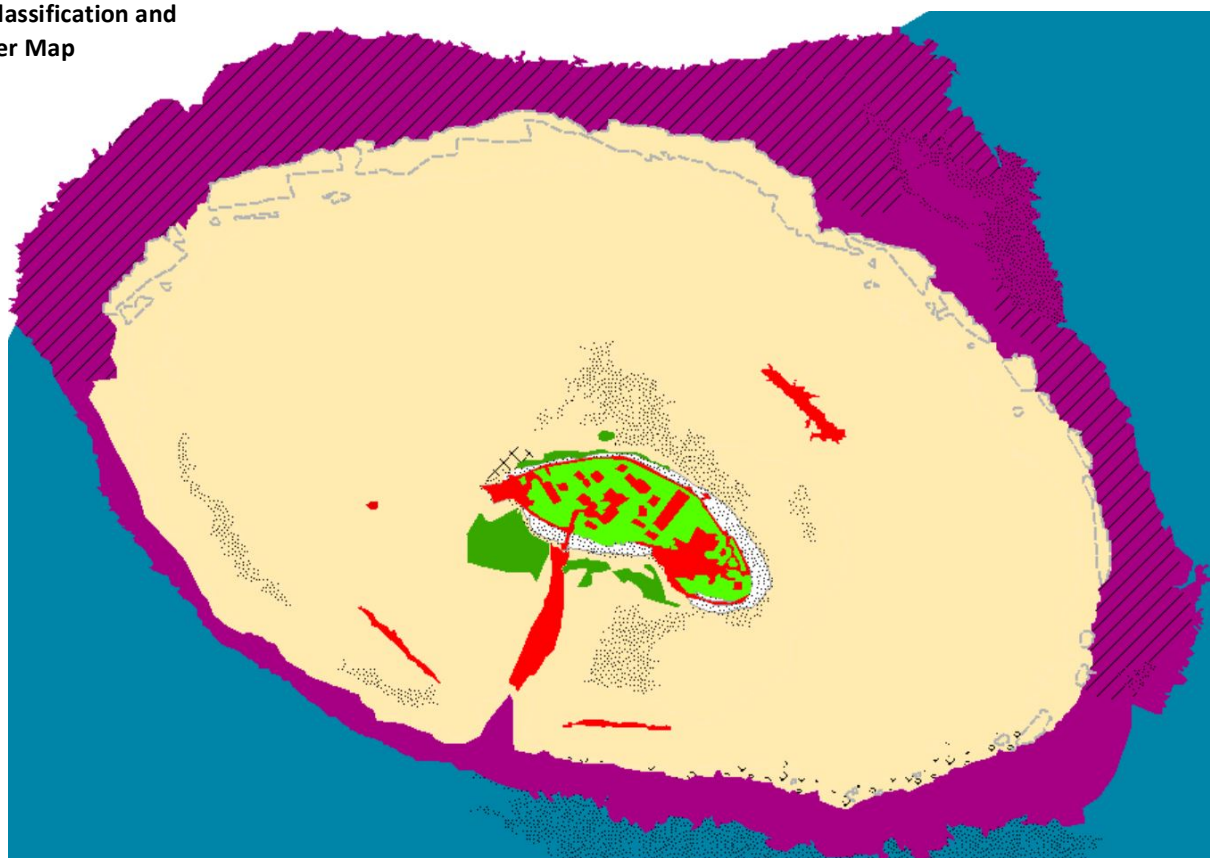
9°53'09.04"N, 114°19'48.45"E

Derived from WorldView-2 satellite data captured on 18 January 2012 [Sea Level: -4cm]

Bathymetry Map



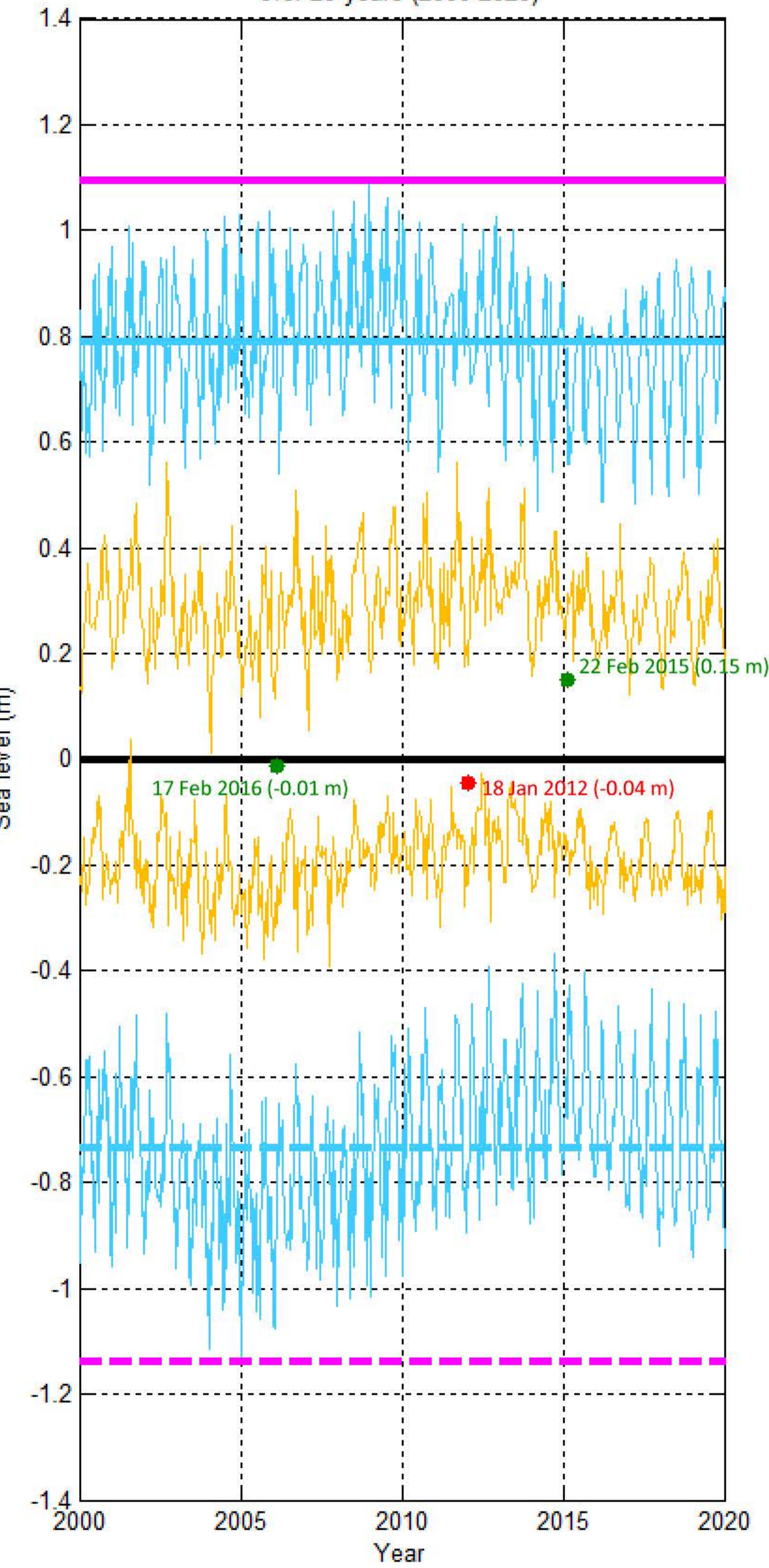
Habitat Classification and Land Cover Map



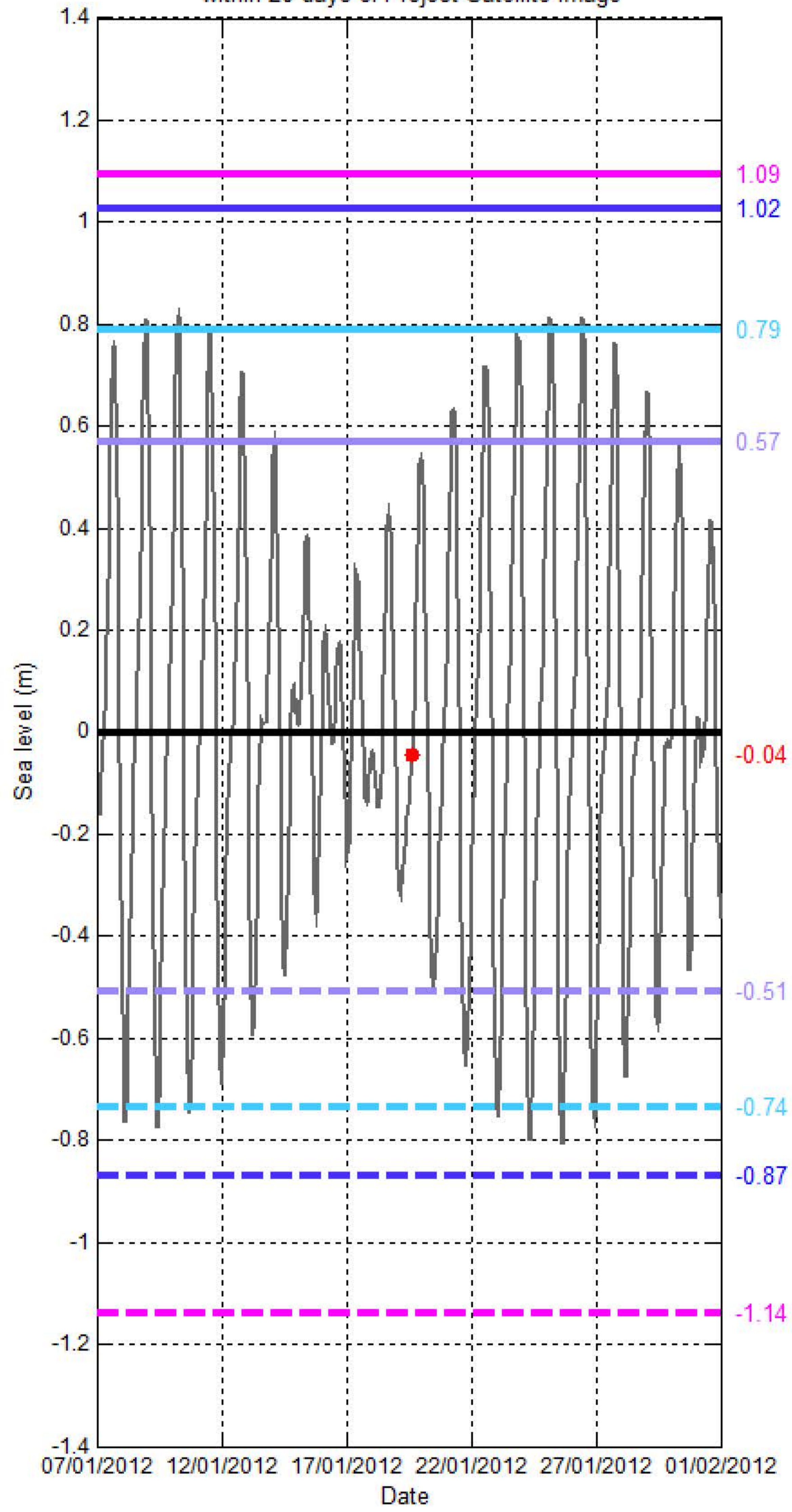
Sea level (SL) at SIN COWE ISLAND (UNION REEFS)

[9°53'09.04"N, 114°19'48.45"E]

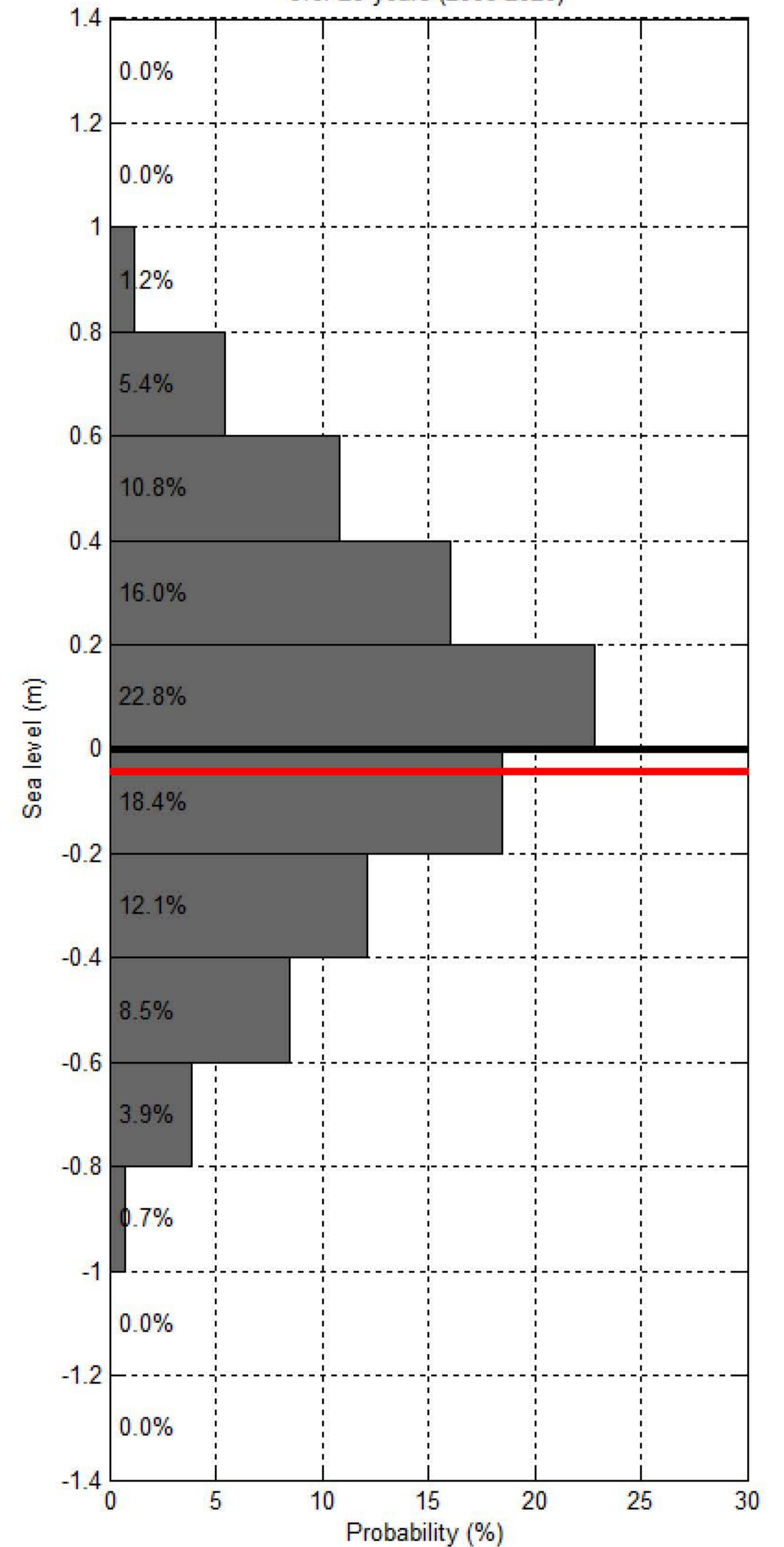
Sea level at spring/neap tide at UNION REEFS - SIN COWE ISLAND over 20 years (2000-2020)



Sea level at UNION REEFS - SIN COWE ISLAND within 20 days of Project Satellite Image



Probability of sea level at UNION REEFS - SIN COWE ISLAND over 20 years (2000-2020)



- Hourly sea level
- SL at spring tide
- SL at Mean High Water Spring
- SL at highest tide of the year
- SL at Mean Higher High Water
- SL at Highest Astronomical Tide
- Project Satellite Image
- Mean Sea Level
- SL at neap tide
- SL at Mean Low Water Spring
- SL at lowest tide of the year
- SL at Mean Lower Low Water
- SL at Lowest Astronomical Tide
- Google Earth and Landsat satellite images