

TETLEY REEF (UNION REEFS)

9°52'06.95"N, 114°30'39.44"E

Geographic area

Tetley Reef is a shallow circular coral reef platform located on the southeast-facing side of Union Reefs between Bamford Reef (around 1.3NM northeast) and Union Reefs Unnamed Reef 1 (around 1.1NM southwest). Its diameter is close to 1.3km long.

Land area above water

Two very small above-water sand banks are visible in the 12 November 2011 satellite image (the largest being 20m by 6m at the largest axis and the other one around 4m by 4m). However, on the basis of the sea level calculations done for this study, an increase in sea level of 90cm is expected at Mean High Water Spring, which is likely to submerge these small and barren sand banks.

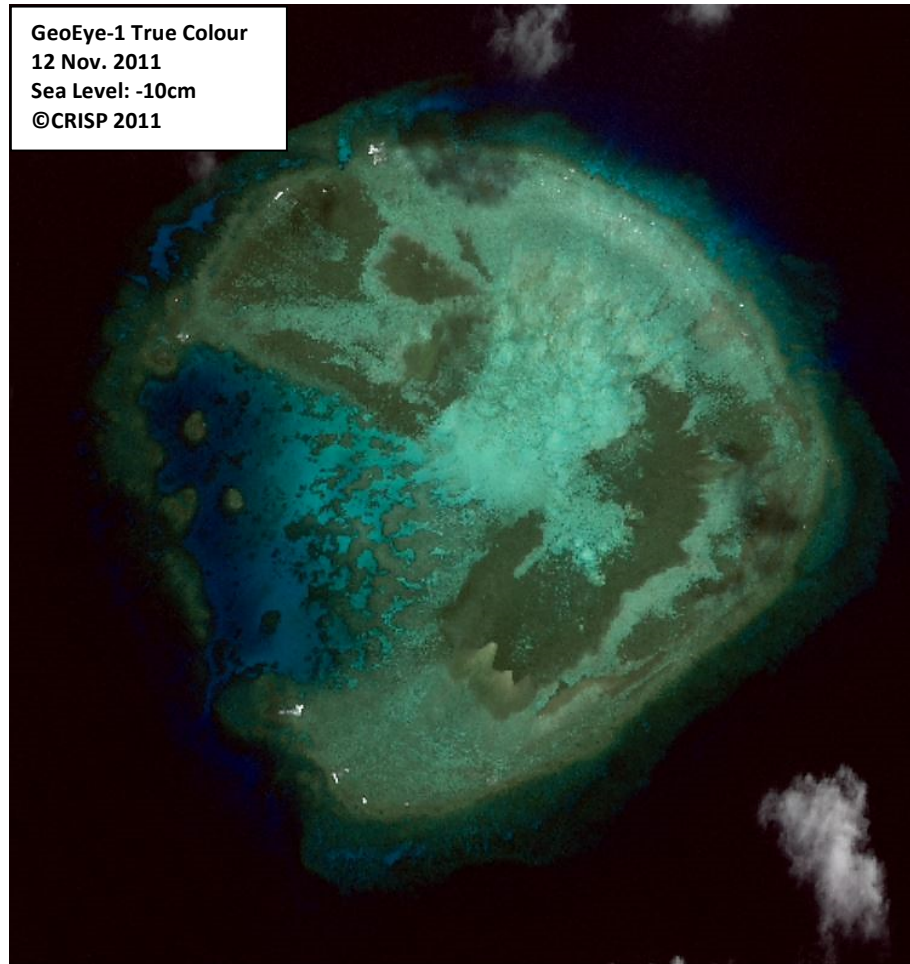
Human infrastructure

There are no man-made structures on this reef as at 26 January 2015.

Intertidal and submerged area

The reef platform covers an area of 1.32km² comprising a reef flat of 0.81km², a reef slope of 0.36km² and a lagoon of 0.15km². The reef flat is 1-2m deep for the most part and is less than 1m deep in some locations that are expected to be awash or uncover at Lowest Astronomical Tide (with a decrease in sea level of approximately 1m). The lagoon measures 500m along its north-south axis and 200m along its west-east axis, and is 4.5-5.5m deep. Two visible circular coral heads have a diameter of 20-25m. The lagoon connects to Union Reefs' deep lagoon through one narrow channel that is around 10m wide and 4.5m deep. The reef slope is longer off the eastern side of the reef flat where spurs and grooves are visible.

Extensive dredging marks are visible in the centre of the reef flat (which is sand-dominated) in the 12 November 2011 satellite image, where they cover an area of 0.16km². Further dredging marks can be observed in the 26 February 2014 and 26 January 2015 satellite images viewable on Google Earth.

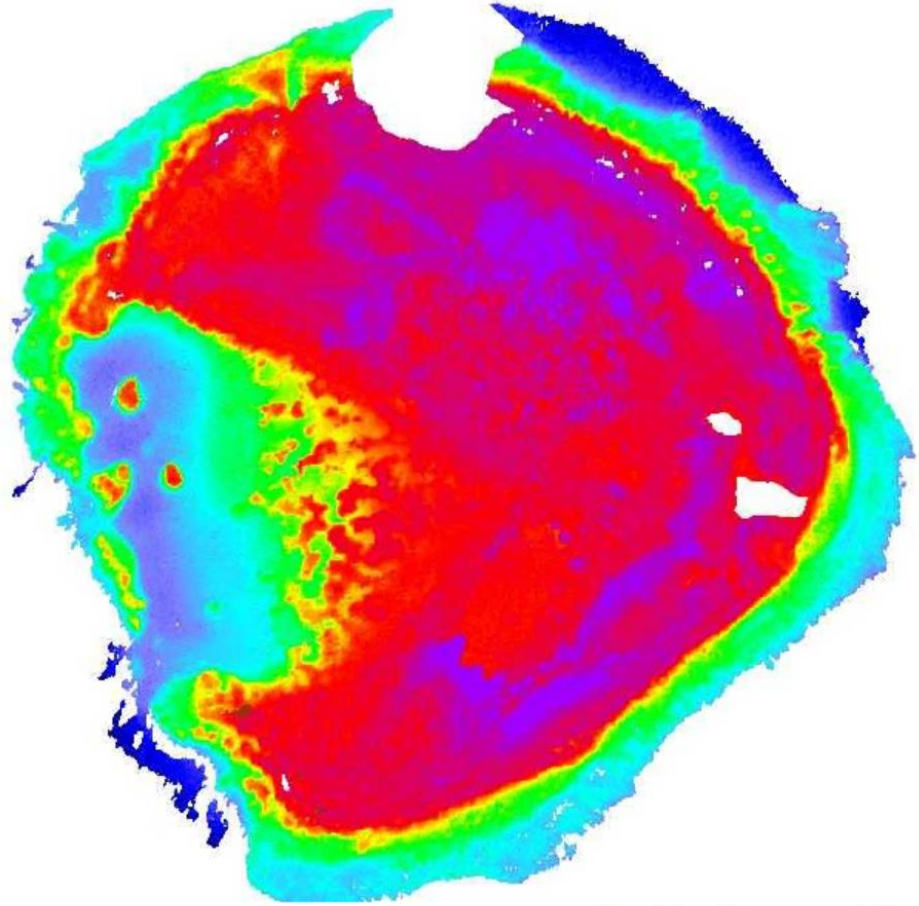


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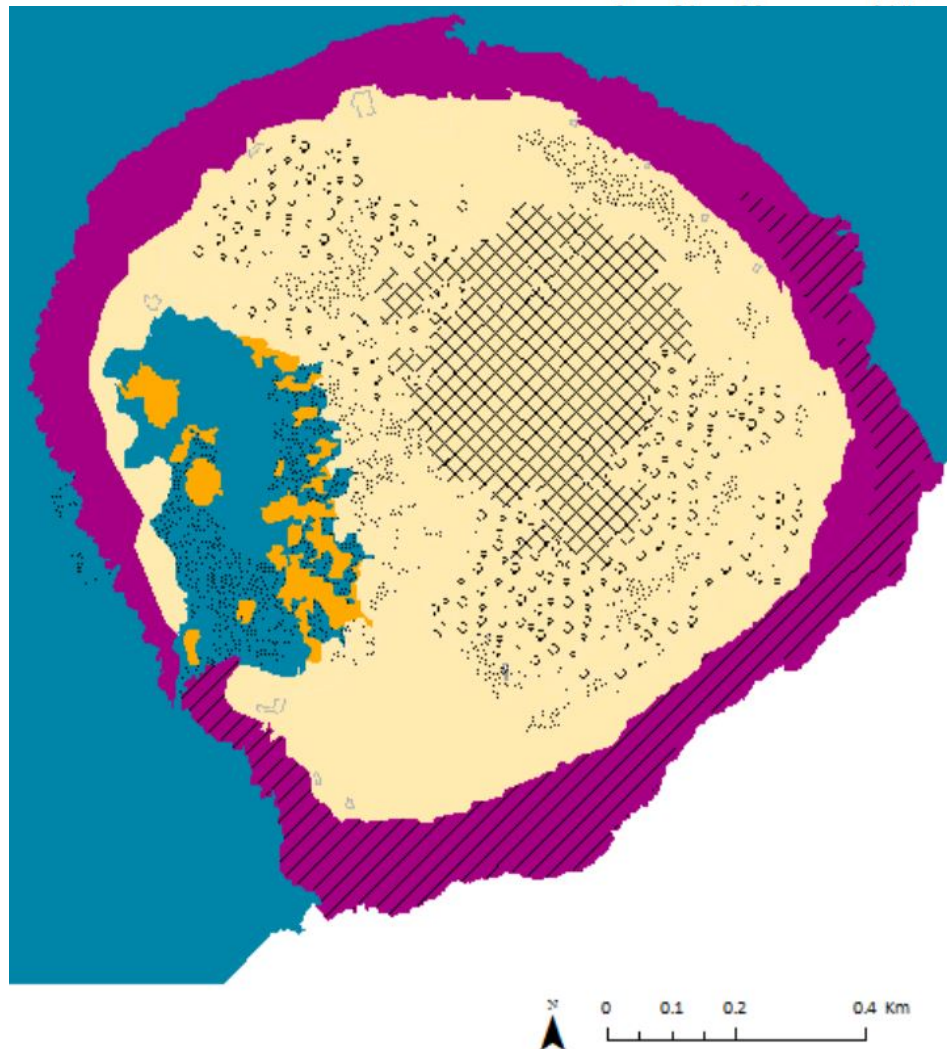
9°52'06.95"N, 114°30'39.44"E

Derived primarily from GeoEye-1 satellite data captured on 12 November 2011 [Sea Level: -10cm]

Bathymetry Map



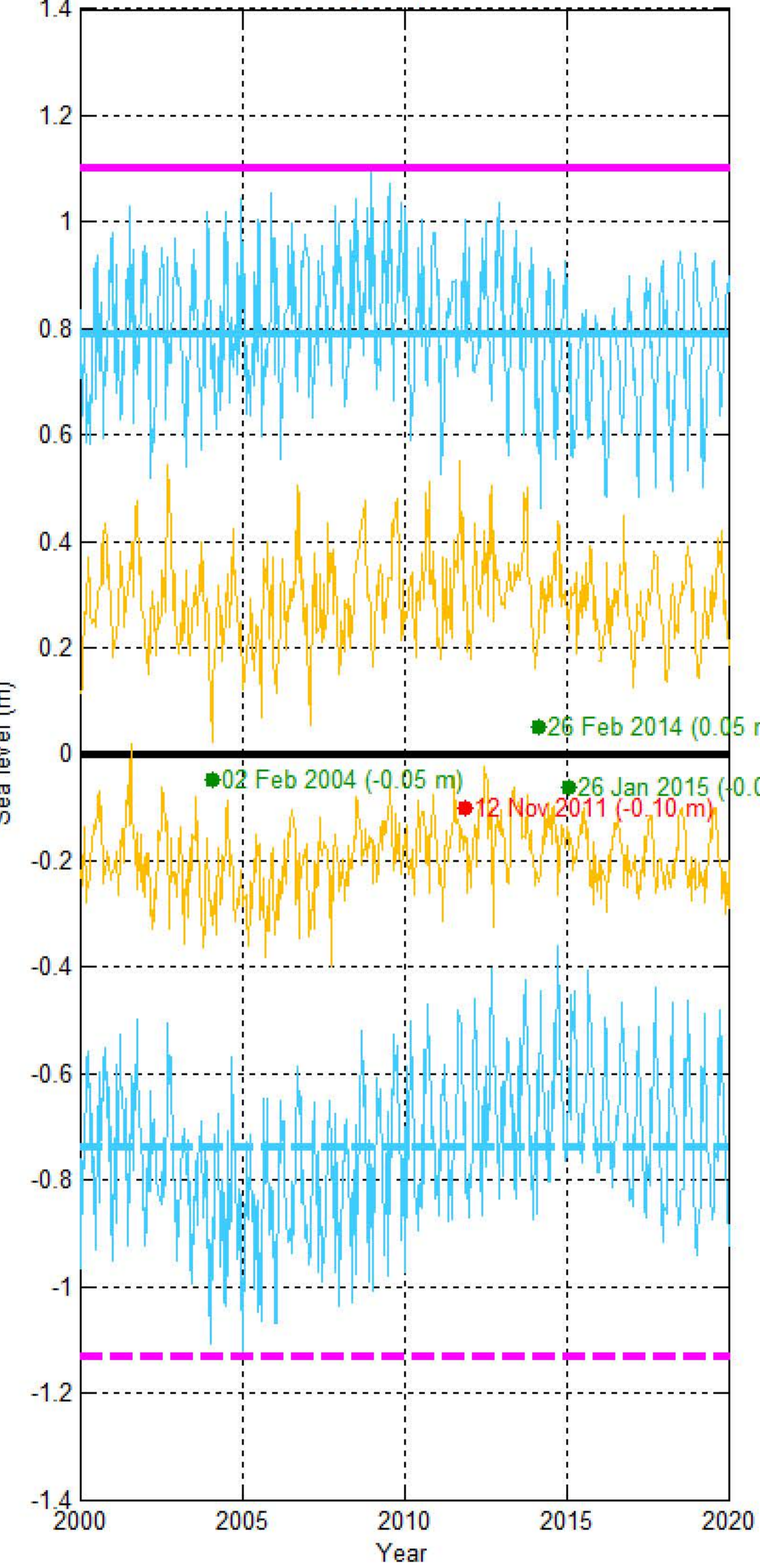
Habitat Classification and Land Cover Map



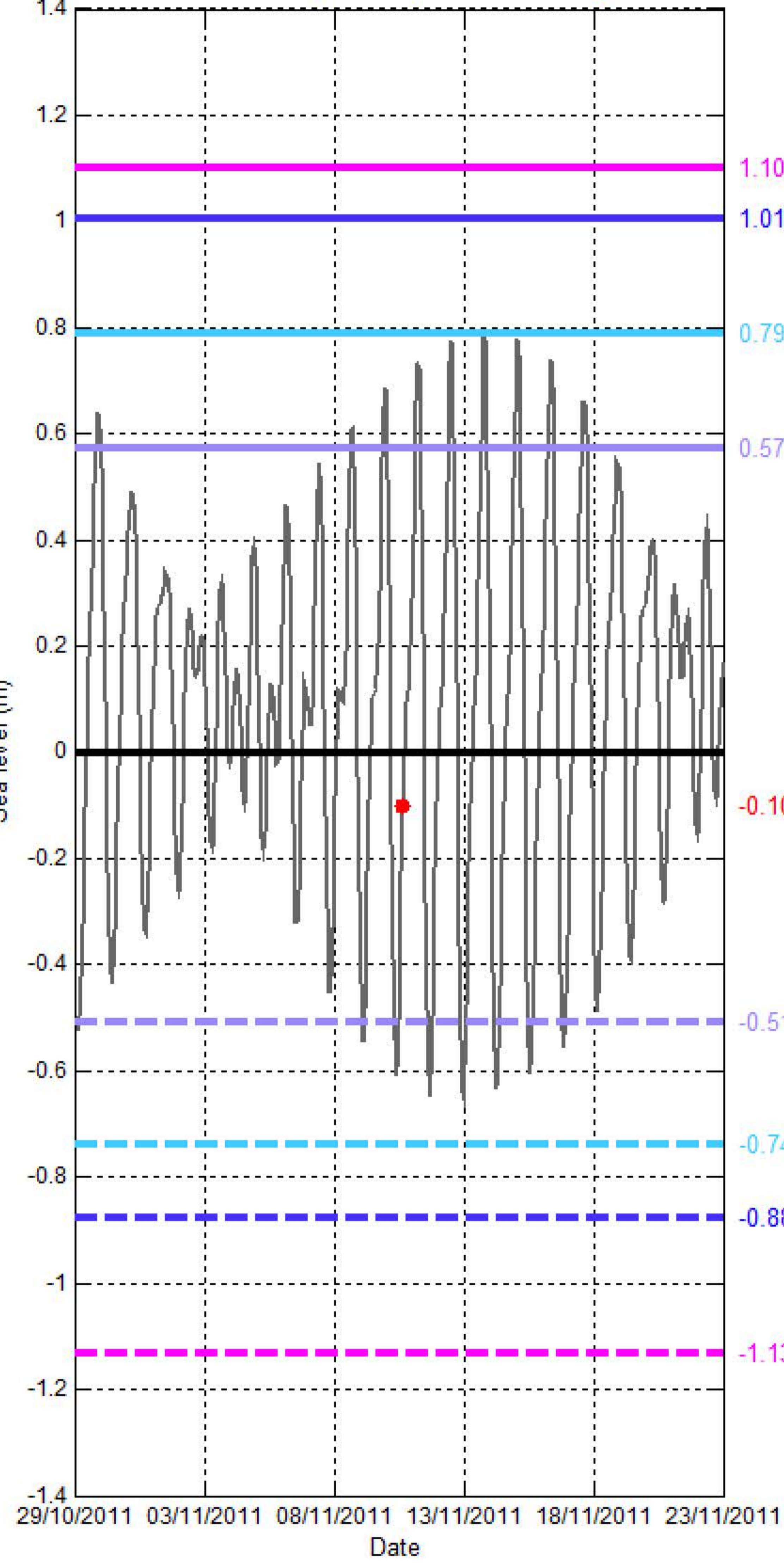
Sea level (SL) at TETLEY REEF (UNION REEFS)

[9°52'06.95"N, 114°30'39.44"E]

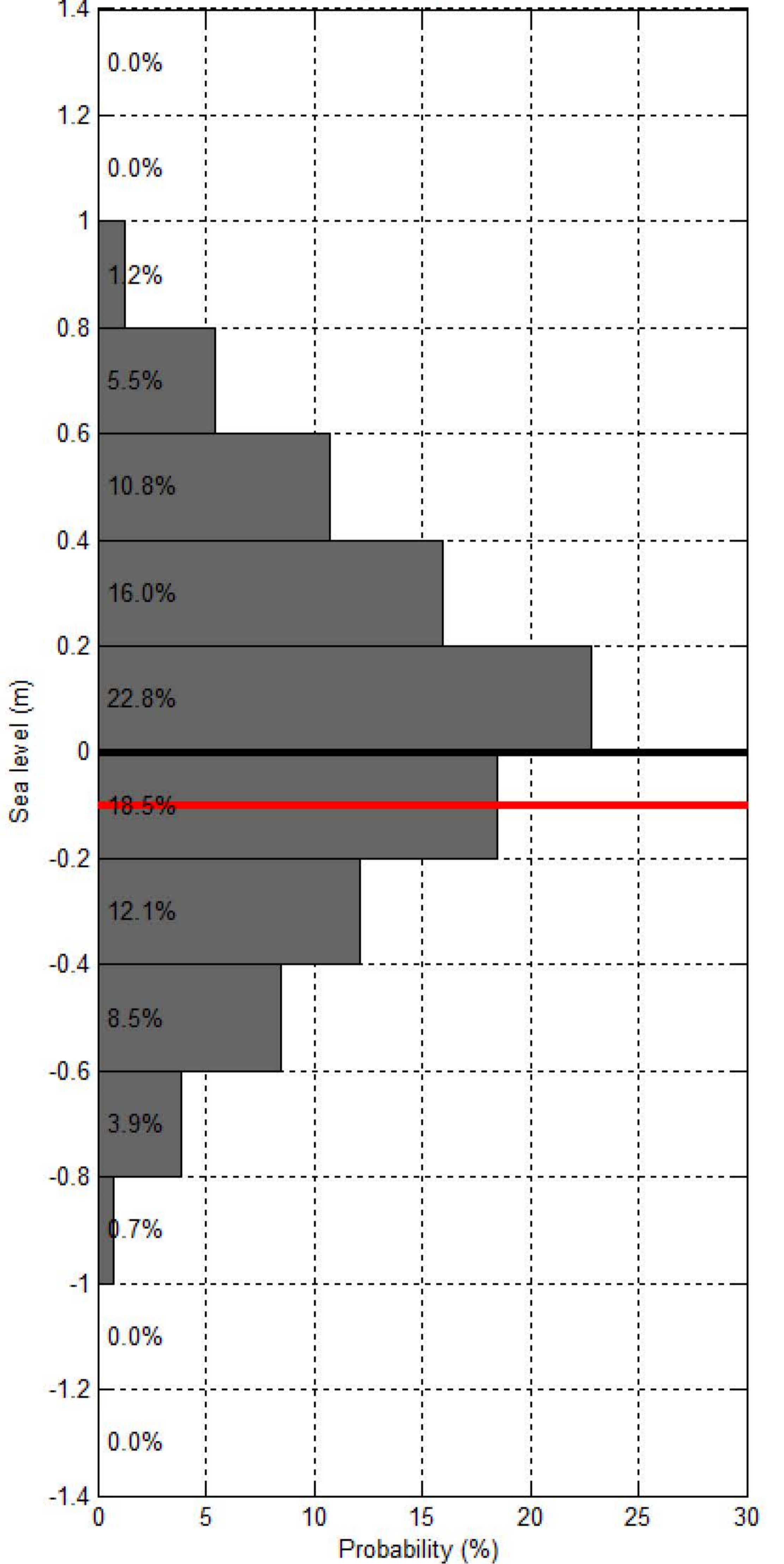
Sea level at spring/neap tide at UNION REEFS - TETLEY REEF over 20 years (2000-2020)



Sea level at UNION REEFS - TETLEY REEF within 20 days of Project Satellite Image



Probability of sea level at UNION REEFS - TETLEY REEF 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