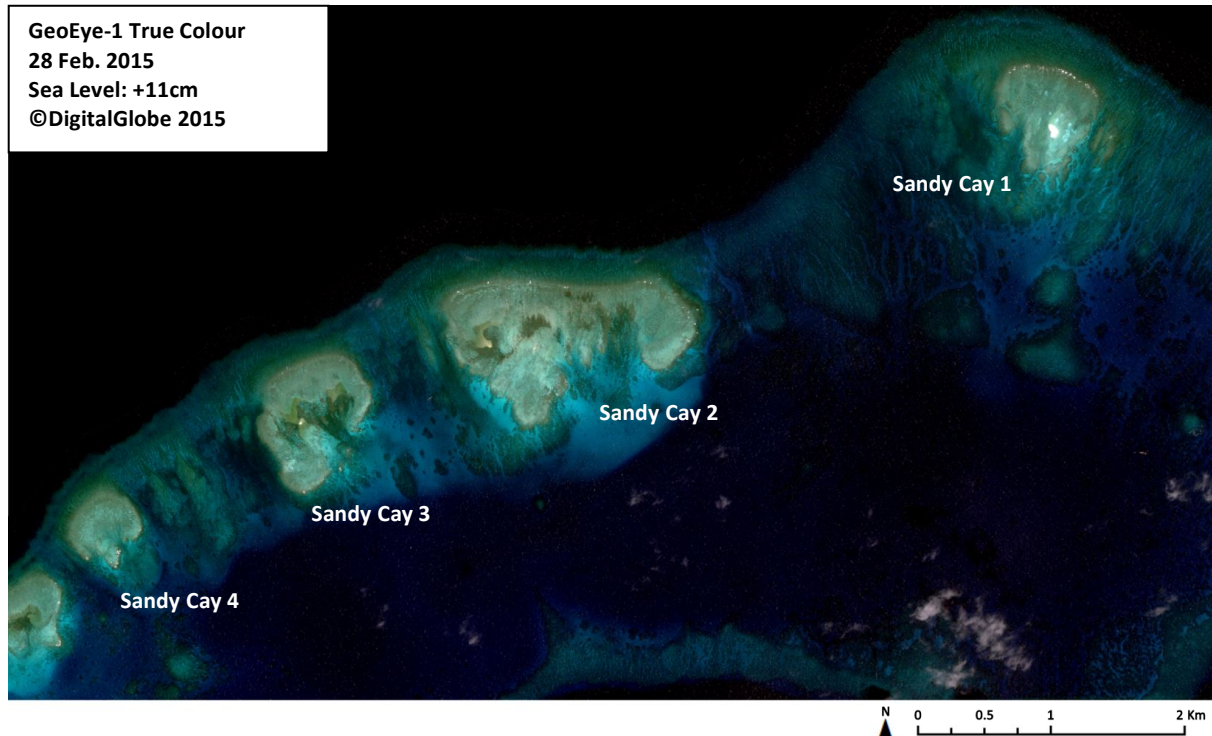


SANDY CAY (THITU REEFS)

11°03'21.95"N, 114°12'55.25"E

Geographic area

There is uncertainty as to which of the shallow platforms located west of Thitu Island on the northern side of Thitu Reefs is 'Sandy Cay', as three of them have dynamic sand banks which, based on satellite images taken over time, change shape, size and location. For the purpose of this study, the three coral flats where sand banks can be seen have been called Sandy Cay 1, Sandy Cay 2, Sandy Cay 3 and Sandy Cay 4. The reef flats of these three coral reef platforms are connected by their reef slope, which is a part of the outer ring of Thitu Reefs' western atoll and stretches over a distance of nearly 7km. Sandy Cay 1 is 1.5NM northwest of Thitu Island. Sandy Cay 3 is 0.6NM northeast of the next shallow coral reef platform on Thitu Reefs' western atoll and 9.3NM northeast of Subi Reef.



Land area above water

There is one above-water sand bank on each of these reef flats. It is 100m by 50m on Sandy Cay 1, 80m by 50m on Sandy Cay 2 and 40m by 25m on Sandy Cay 3, measured when the sea level is estimated to have been 11cm above Mean Sea Level. The sea level is therefore expected to increase by 0.69m at Mean Higher Water Spring. Past record from 22 April 2005 that is available on Google Earth show visible sand banks but of different sizes and in different locations. On Sandy Cay 1, the only visible sand bank is less than 10m by 10m, possibly submerged and is located 70m northwest of the 2015 location (based on the central point of each). On Sandy Cay 2, the 2005 sand bank is 25m by 10m and 50m northwest of the 2015 sand bank. On Sandy Cay 3, the 2005 sand bank was 130m southwest of the 2015 sand bank. In the 5 March 2014 satellite image also viewable on Google Earth, the sand banks on Sandy Cay 2 and 3 are closer to their 2015 position, but not yet there. The sand bank on Sandy Cay 1 is in the same location, though with a slightly different shape.

Human infrastructure

There are no man-made structures on these coral reef platforms as at 28 February 2015.

Intertidal and submerged area

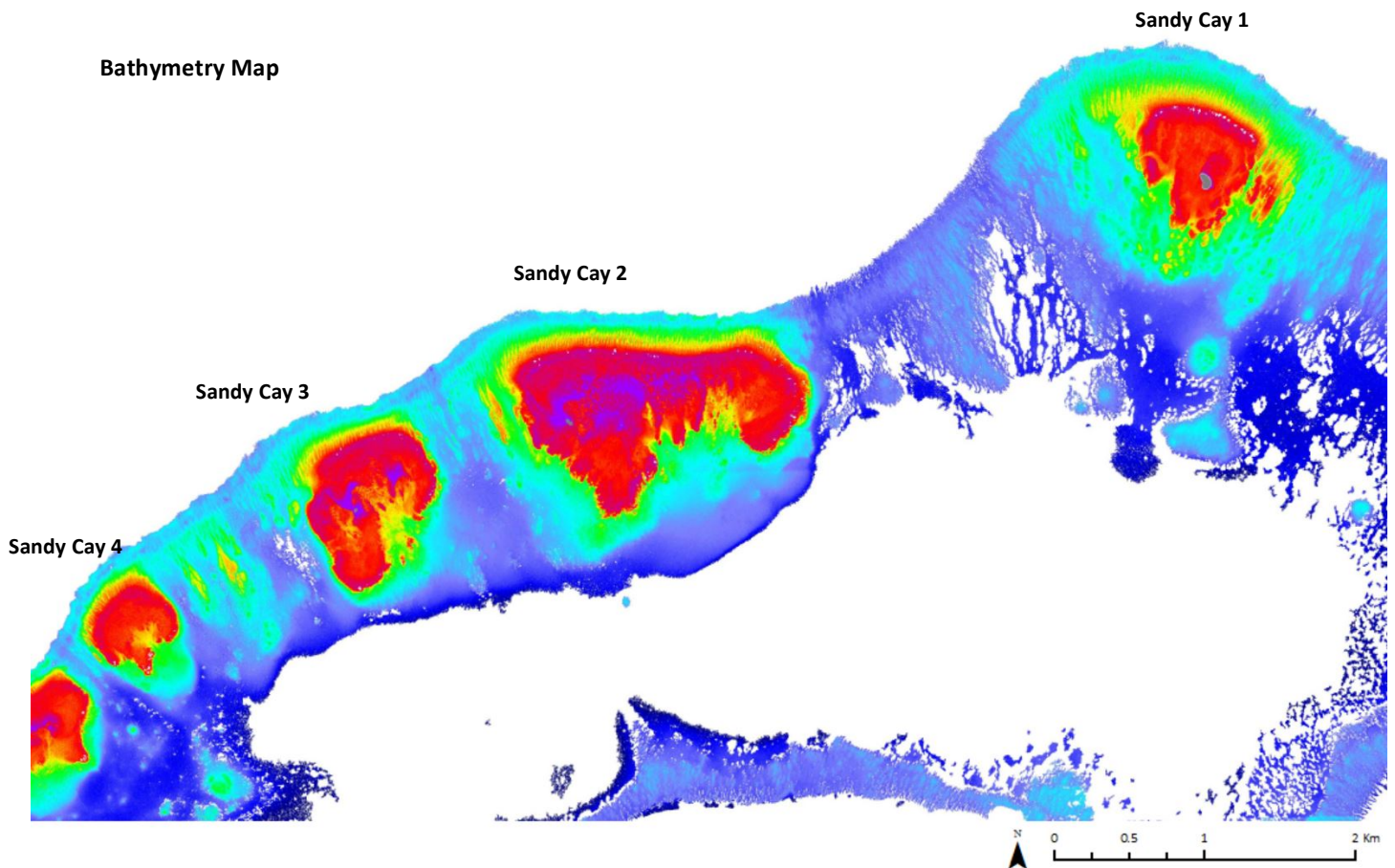
The total aerial coverage of the three reef flats is 2.54km². They are shallower in the northern part (1.2-1.4m) and deeper in the southern part (around 1.6m). The shallow parts of Sand Cay 2 and Sand Cay 3 are larger than that of Sand Cay 1; they also have small areas that are less than 1m deep around the sand bank and are expected to uncover at Lowest Astronomical Tide, when the sea level is expected to decrease by 1.20m. Pronounced spurs and grooves reaching 2.5-3m in depth are visible on the surrounding reef slopes, within 400m of the edge of the reef flats. Fishing vessels are visible southwest of Sandy Cay 2. Extensive dredging marks are visible on Sandy Cay 2 and 3 where they cover 22% of the reef flat area (0.45km²). By contrast, Sandy Cay 3 shows selective dredging marks (0.11km²). Dredging marks and areas of degraded reef total an area of 0.63km². Dredging marks are also visible on Sand Cay 2 and 3 in 2014; a row of ten 5m long dredgers in activity can be observed on Sandy Cay 2. None of these dredging marks can be seen in the 2005 satellite image.

SANDY CAY (THITU REEFS)

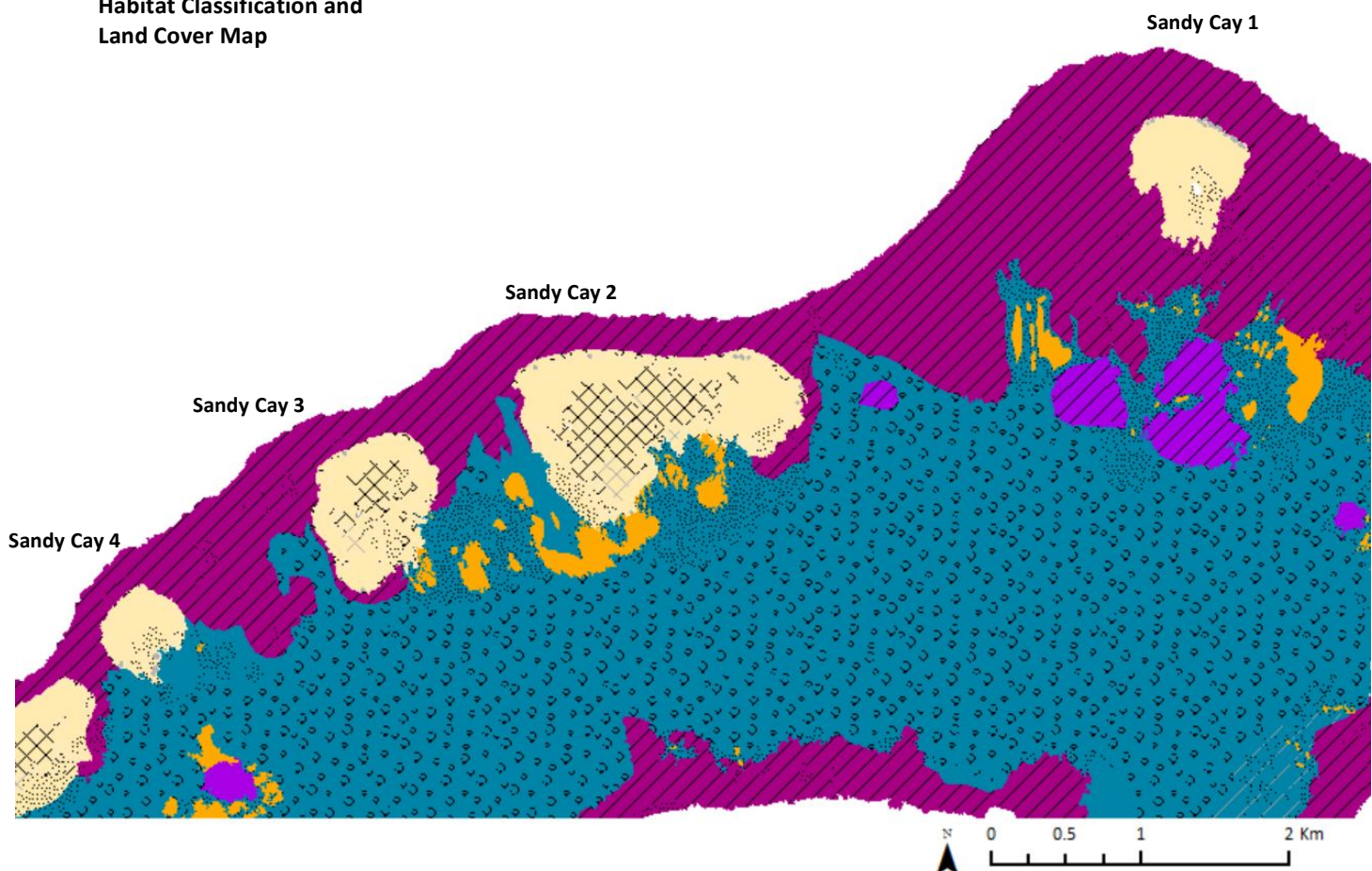
11°03'21.95"N, 114°12'55.25"E

Derived from GeoEye-1 satellite data captured on 28 February 2015 [Sea Level: +11cm]

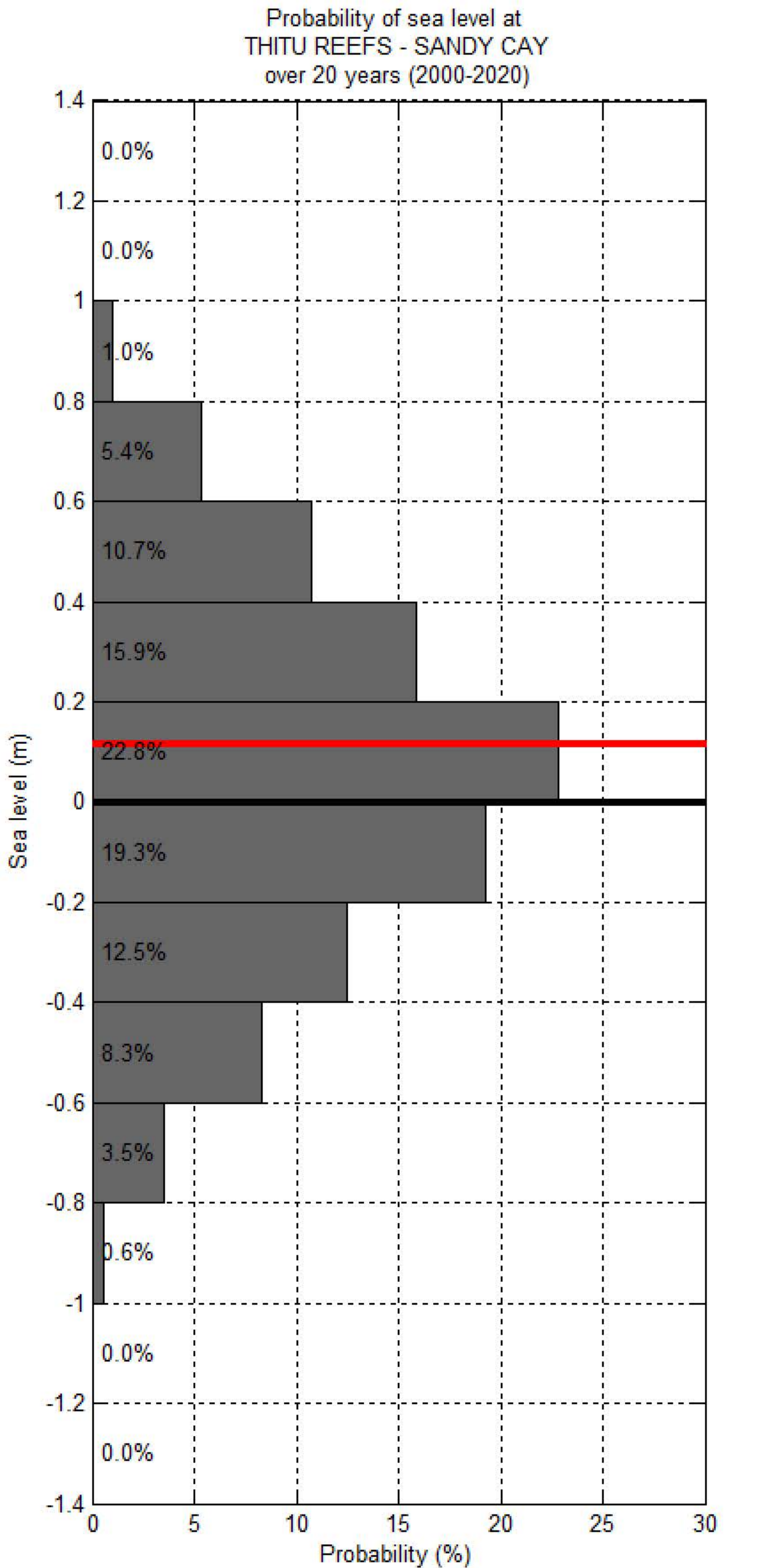
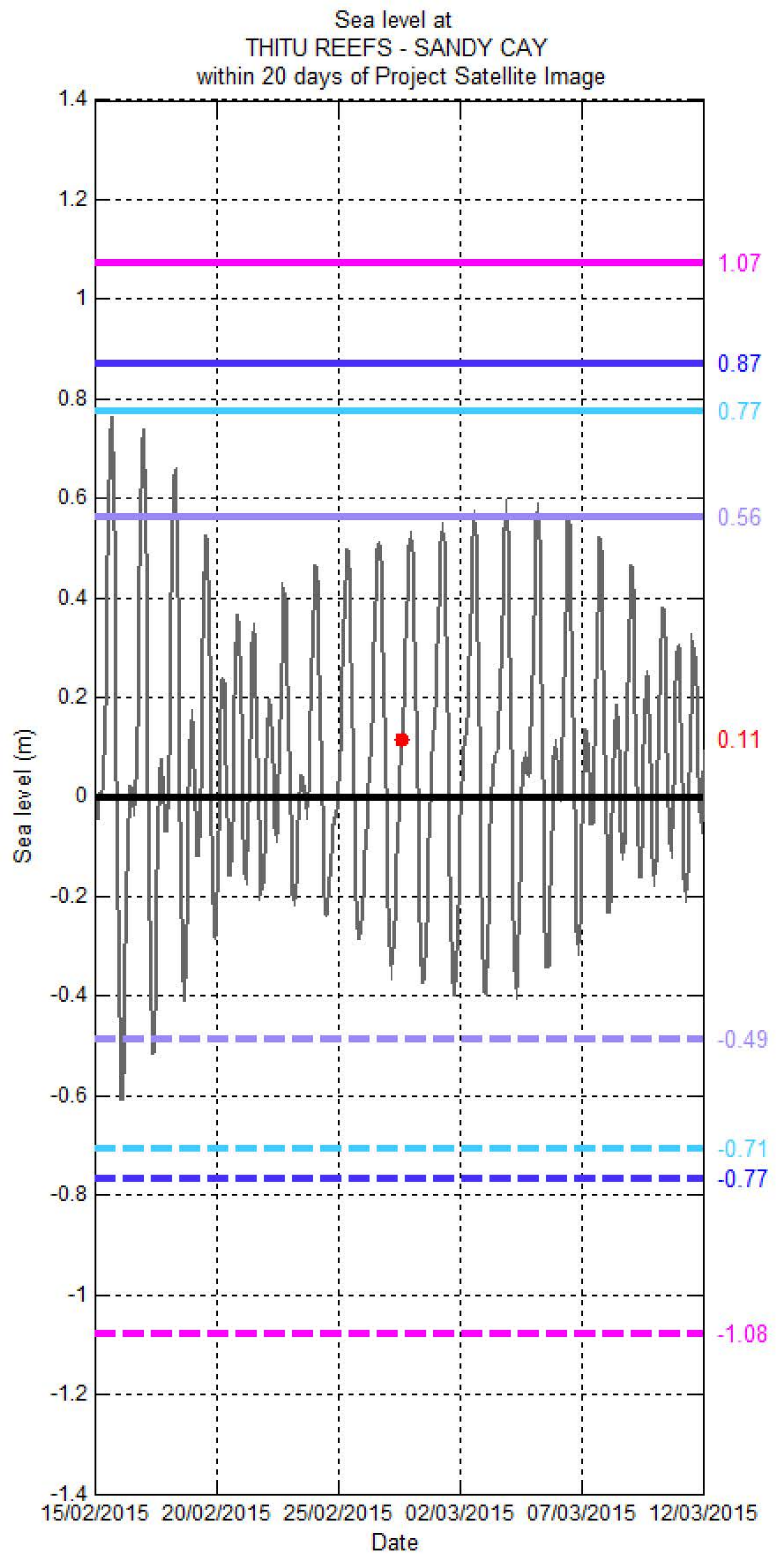
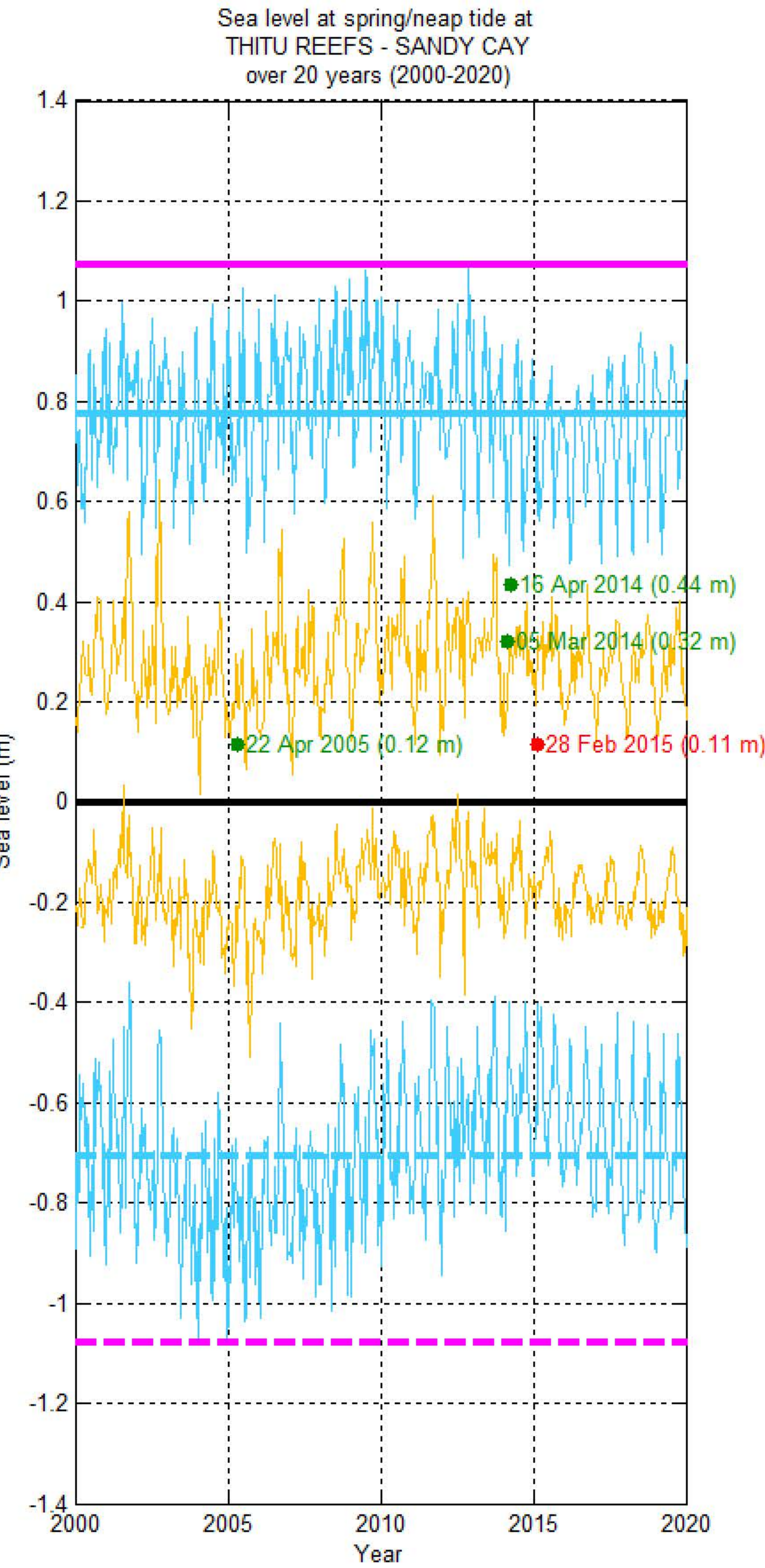
Bathymetry Map



Habitat Classification and Land Cover Map



Sea level (SL) at SANDY CAY (THITU REEFS)
[11°03'21.95"N, 114°12'55.25"E]



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