

MENZIES REEF (LOAITA BANK)

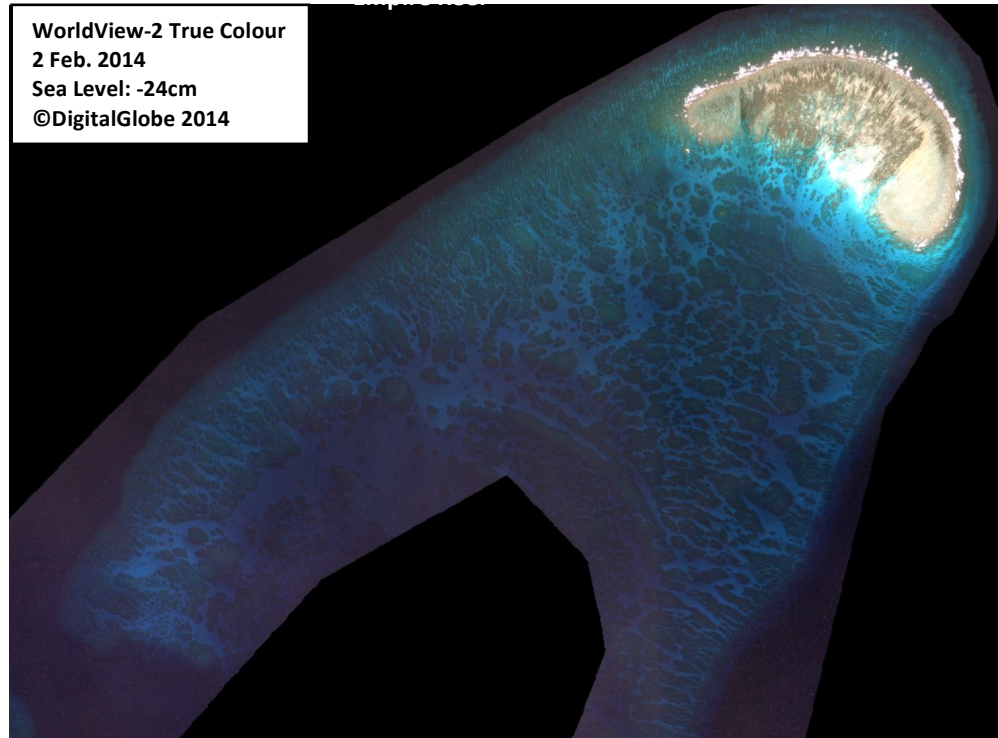
11°09'03.49"N, 114°47'47.74"E

Geographic area

Menzies Reef is the northernmost shallow reef platform of Loaita Bank. The closest shallow reef platform on Loaita Bank is Kugui Reef North, more than 25NM southwest. Outside Loaita Bank, the closest shallow geographic features are West York Island, over 13NM southeast and Irving Reef, over 16NM south-southeast. Eastern Reef on Thitu reefs is 24NM southwest. The coral platform of Menzies Reef is shaped like a fingertip pointing northeast. It extends over 11km along its northwest-southeast axis and 8.5km along its northeast-southwest axis.

Land area above water

There are two above-water sand banks in the 2 February 2014 satellite image; both are on the eastern side of the reef flat in areas where the seabed shows deep dredging marks and sand plumes. The widest is 70m by 40m; the second one is long and narrow, being around 100m by 15m. The sea level in this image is 24cm below Mean Sea Level. It is



expected that both sand banks are submerged when the sea level increases by over 1m at Mean High Water Spring. This is consistent with the observation that these two sand banks cannot be seen in the 27 February 2005 and 10 March 2013 satellite images available on Google Earth in which the sea level is estimated to be higher than in the 2014 satellite image. In 2005, another narrow strip of sand is visible 30m northwest of one of the 2014 sand banks. Sand plumes are also visible in the area. In 2013, this sand bank has been replaced by another one positioned farther north. The two sand banks observed in the 2014 satellite image therefore appear to be unstable and intertidal.

Human infrastructure

There are no man-made structures on this coral reef platform as at 2 February 2014.

Intertidal and submerged area

The reef flat covers 1.96km², the reef slope covers 9.47km² and the knolls and coral heads between the northwest-facing and southeast-facing sides of the reef slope cover 18.31km². The reef flat resembles a mushroom head with a base of 2.2km (along the northwest-southeast axis) by around 1km at the most (along the northeast-southwest axis). The seaward side has a clear edge marked by the reef crest, whereas the side facing Loaita Bank's deep lagoon is characterised by coral reef segments that extend onto the back reef and into Loaita Bank's lagoon (over the reef slope). Several sand plumes flowing southwest from the sand banks and dredged areas can also be observed. The reef flat is of uneven depth with localised areas that are less than 1m whilst others can reach 2m or more, especially along the edge of the reef flat facing the lagoon. All areas that are 82cm deep or less are expected to uncover at Lowest Astronomical Tide. Pronounced spurs and grooves are visible throughout.

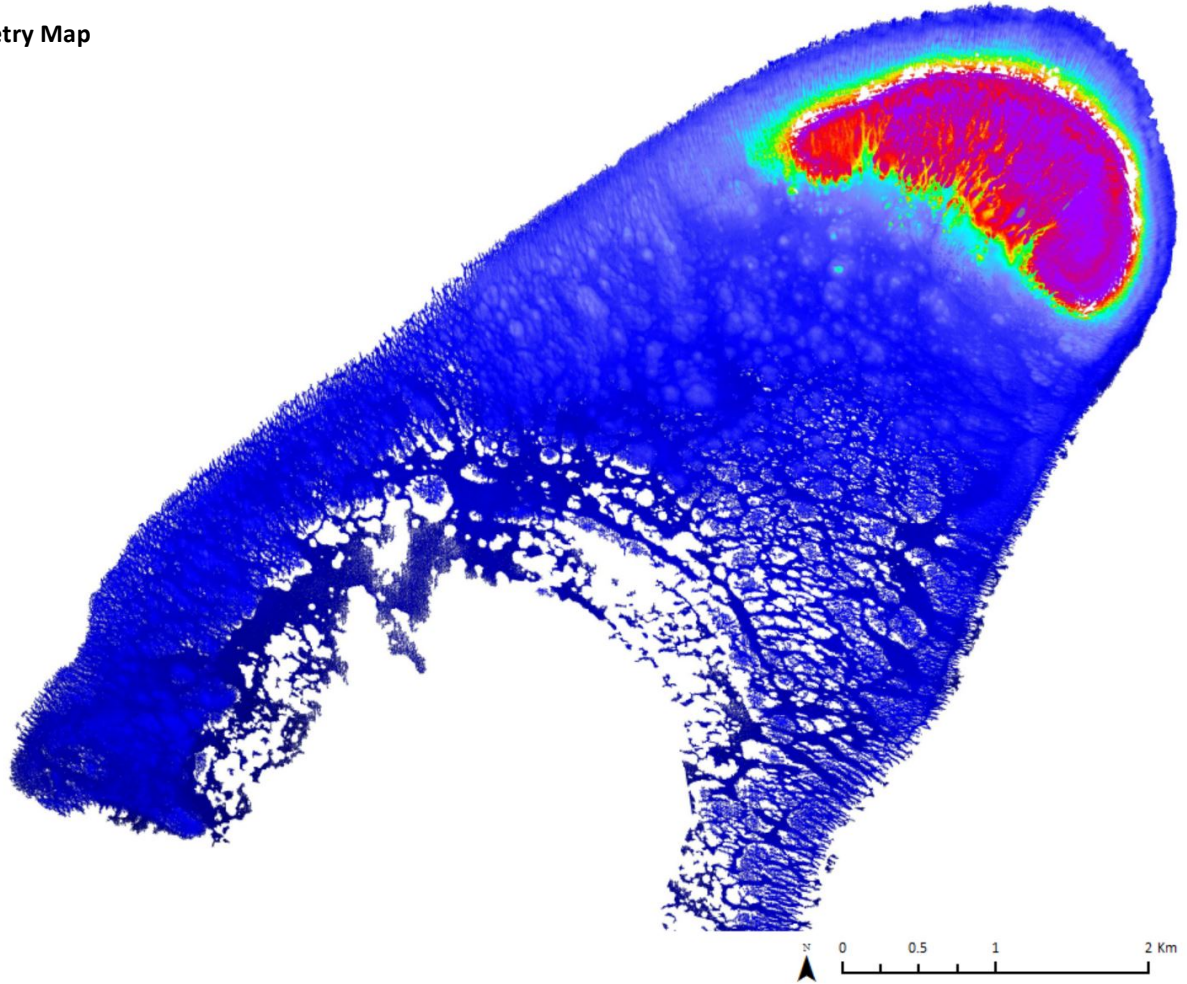
Circular dredging marks (a dozen dredgers and two support vessels are visible in the 2013 satellite image) that are so deep that they are visible on the bathymetry profile can be observed on most of the reef flat. Areas where the reef flat has been dredged or is degraded total 0.85km².

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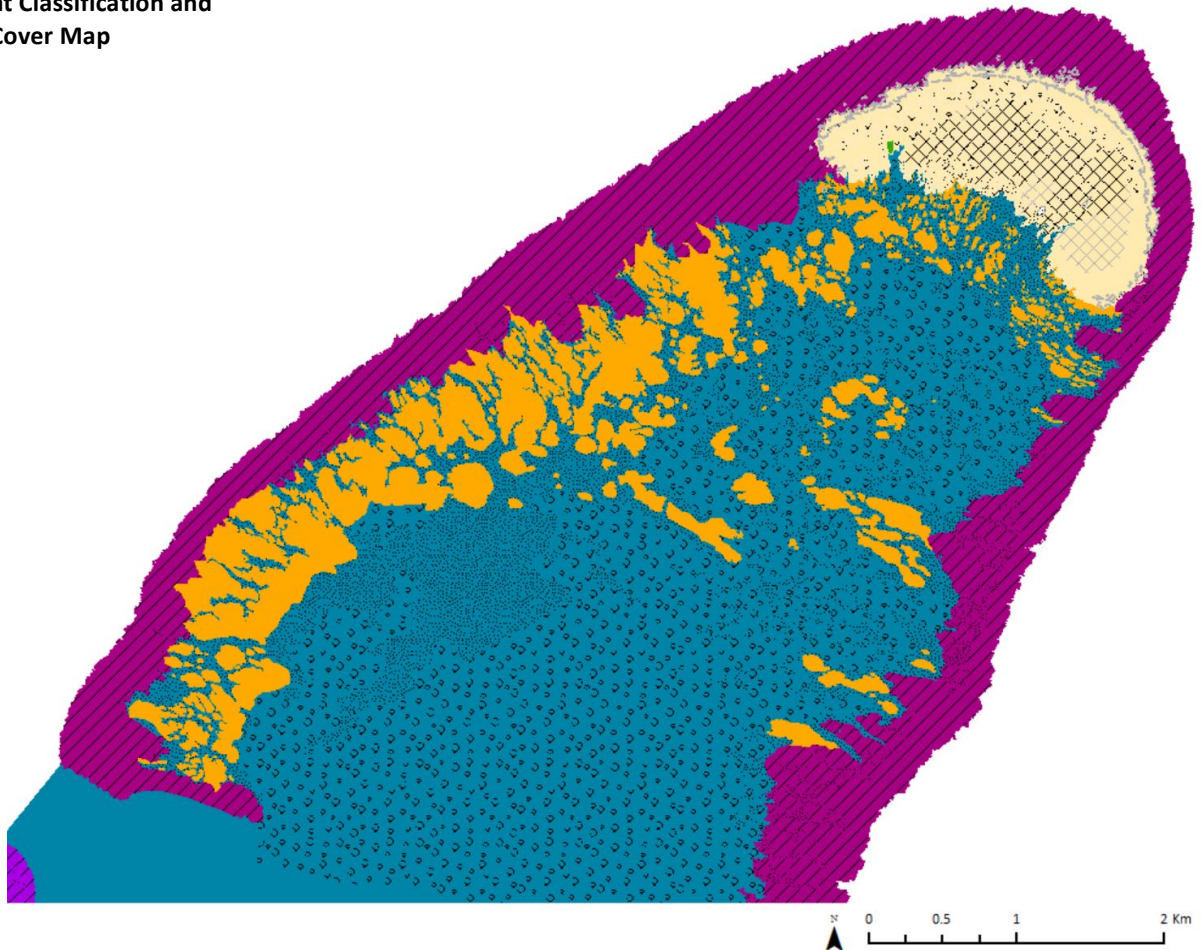
11°09'03.49"N, 114°47'47.74"E

Derived from WorldView-2 satellite data captured on 2 February 2014 [Sea Level: -24cm]

Bathymetry Map

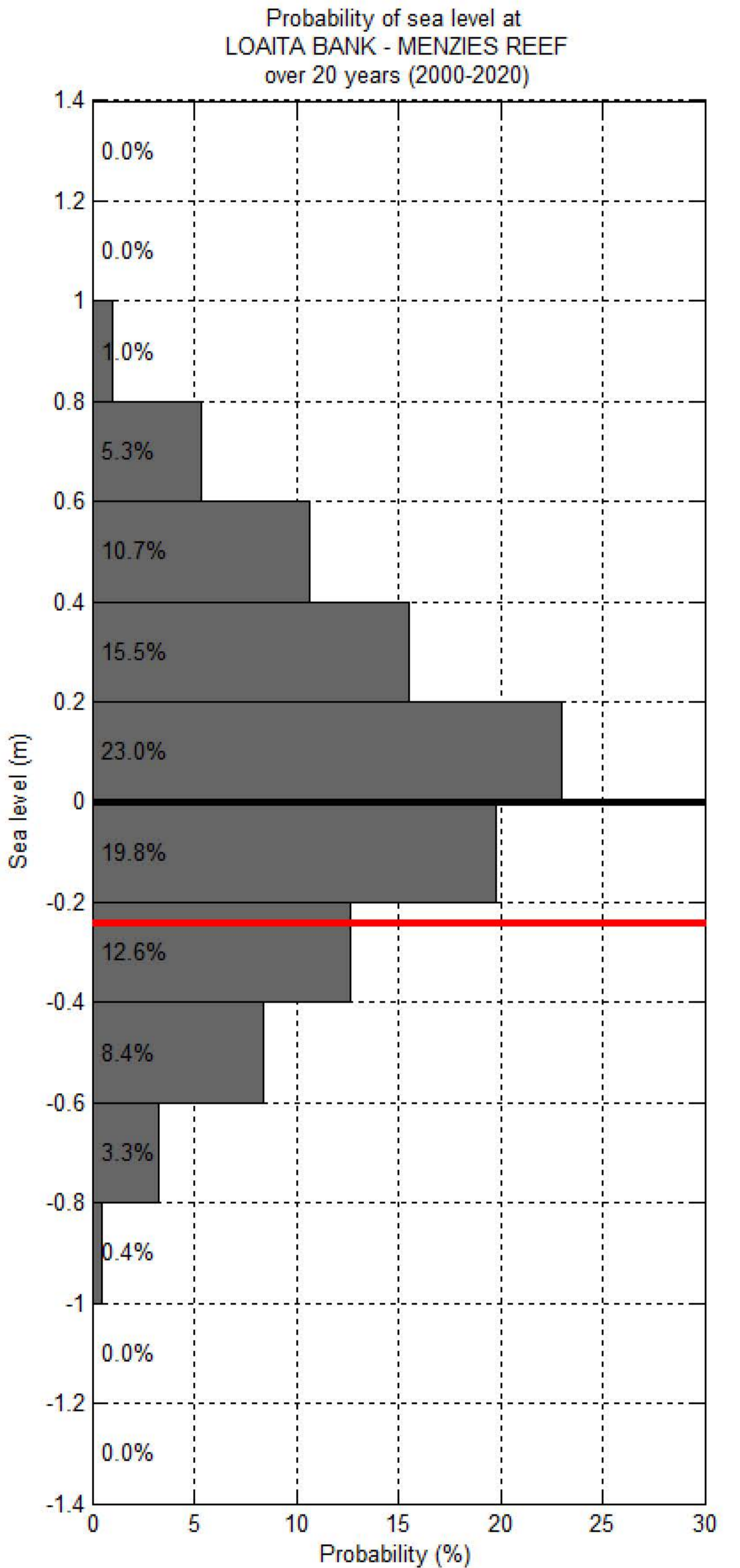
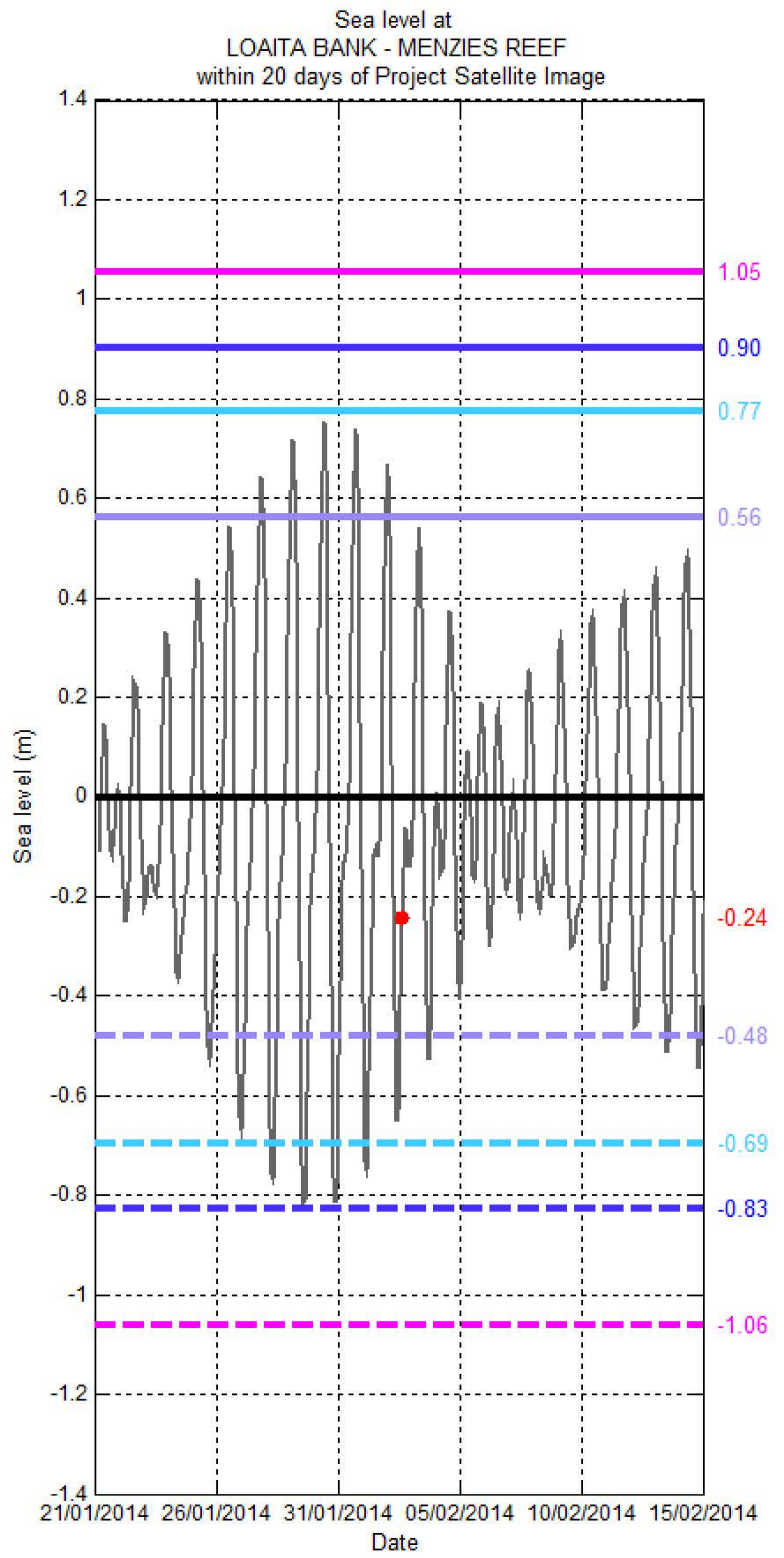
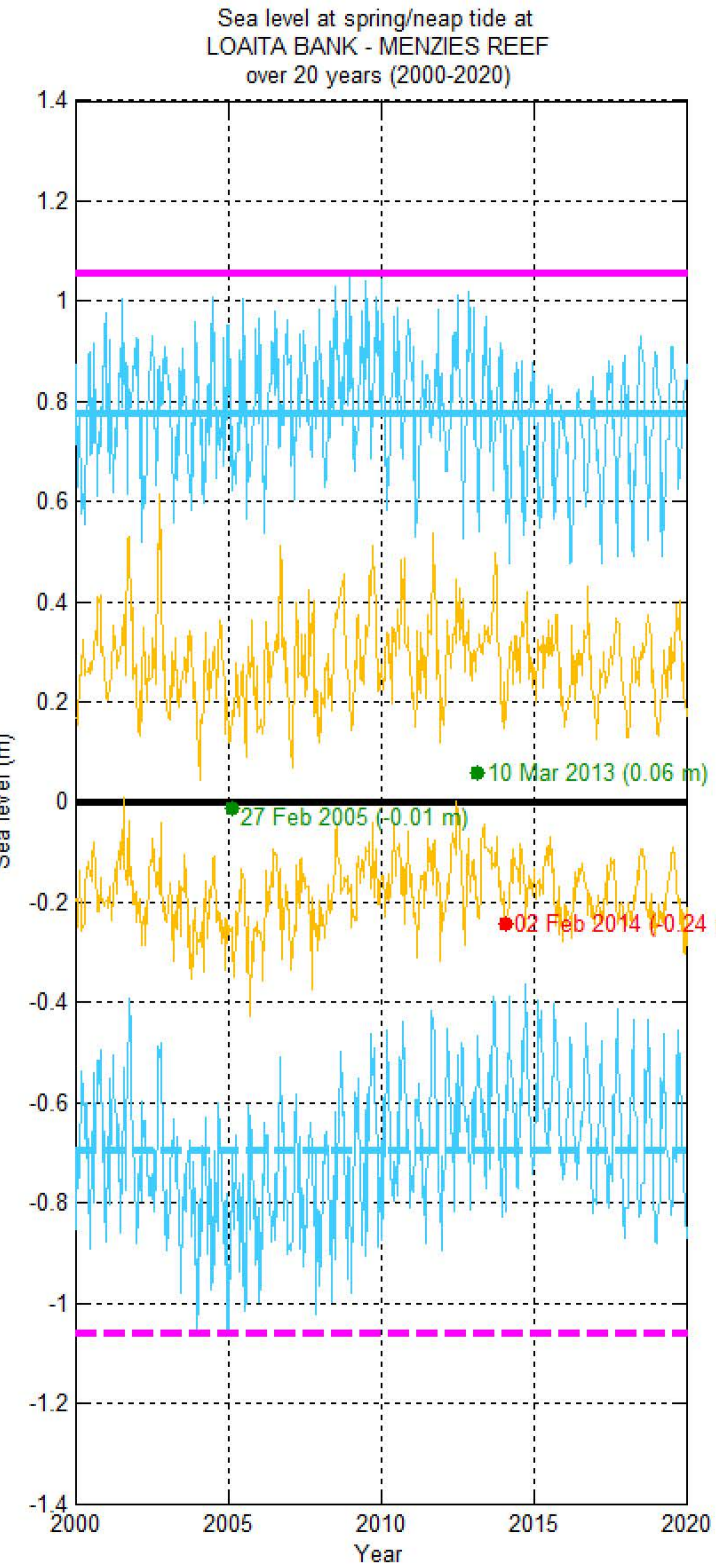


Habitat Classification and Land Cover Map



Sea level (SL) at MENZIES REEF (LOAITA BANK)

[11°09'03.49"N, 114°47'47.74"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