

KUGUI REEFS (LOAITA BANK)

10°45'41.26"N, 114°35'20.23"E

Geographic area

Kugui Reef North and Kugui Reef South (Kugui Reefs) are located 1.5NM away from each other on the southeast-facing side of Loaita Bank. The closest shallow geographical features on Loaita Bank are Lankiam Cay, 4.4NM southwest; Loaita Bank Unnamed Reef 1, 9NM southwest; Loaita Island, less than 12NM southwest; and Loaita Nan/Loaita Cay, over 13NM southwest. The closest shallow geographic feature outside Loaita Bank is Irving Reef, around 19NM northeast. The reef platform on which Kugui Reef North and Kugui Reef South are located connects with the main outer coral ring of Loaita atoll (on Loaita Bank). It extends over 8km from its northern tip to its southwestern tip; its width varies between 600m and 1.7km.

Land area above water

One 30m by 10m above-water sand bank is visible in the centre of the reef flat of Kugui Reef North. It is located on a shallow bank that is approximately 70m by 20m and is less than 30cm deep (if not awash) when the sea level is 11cm below Mean Sea Level. It is therefore likely that this sand bank gets submerged at Mean High Water Spring when the sea level is expected to increase by 89cm. Furthermore, this sand bank is not visible in the satellite images from 18 February 2014 and 4 October 2014 viewable on Google Earth. Instead, a larger sand bank can be observed in the February image, but is located over 100m further east. In place of this sand bank, two smaller sand banks of less than 20m by 5m can be seen in the October image, another 10-20m farther east. This change in shape and location of the sand bank suggests that its formation may follow some tidal and/or meteorological cycle and is in any case temporary.

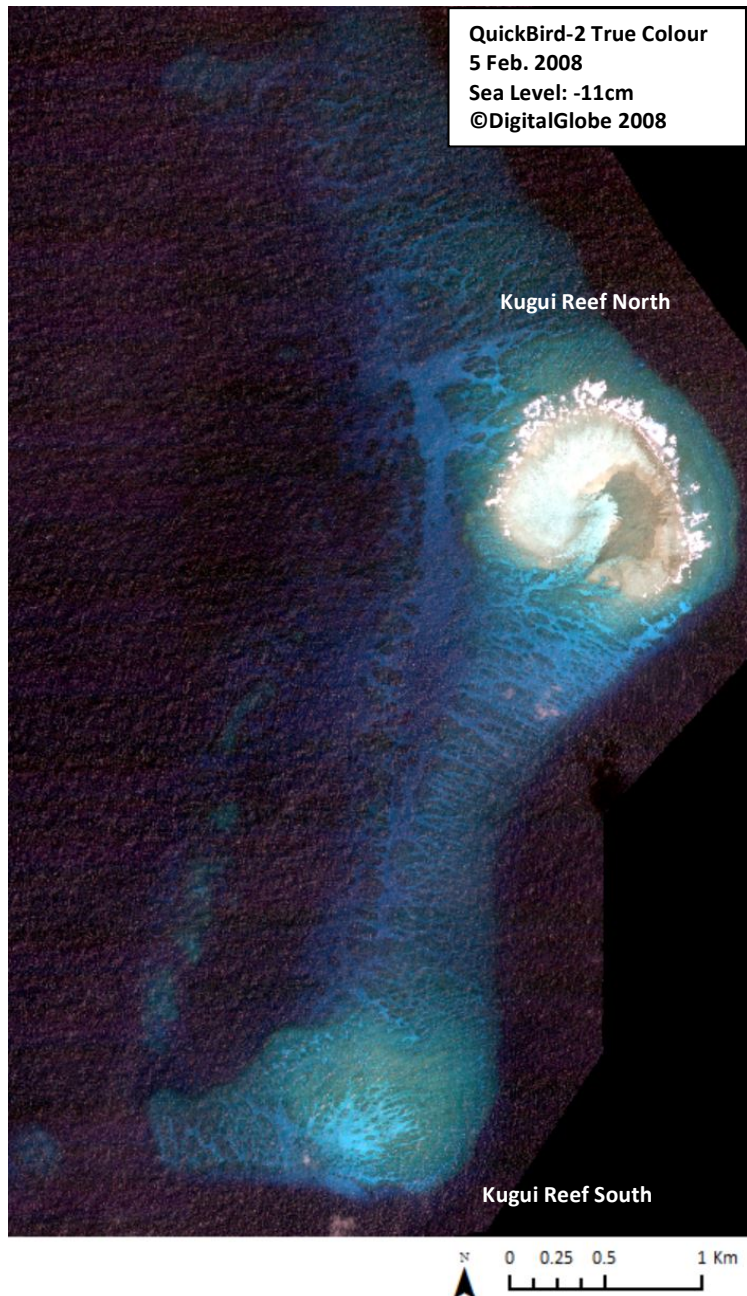
Human infrastructure

There are no man-made structures on this coral reef platform as at 4 October 2014.

Intertidal and submerged area

The total aerial coverage of this coral reef platform and connected deeper reef formations is 7.11km²; the reef flat (of Kugui Reef North) covers 0.79km² and the reef slope covers 6.32km². The reef flat of Kugui Reef North is of uneven depth. The eastern side is shallowest with a general depth of 1-1.5m, but several parts are less than 1m deep. The northwestern and western sides are generally deeper (1.2-1.8m), although the outer edge is shallower. A sand-dominated area that extends from the centre to the southern edge of the reef flat (along the reef slope) is around 2m deep. Kugui Reef South has no reef flat. It is covered with deep spurs and grooves and has a sandy area located on the southwest-facing side. The spurs are often 3-5m deep but the grooves, though narrow (around 5m), can be 5m deep or more, reaching a depth of over 9m. On the northern side of Kugui Reef North, the reef slope has characteristics similar to Kugui Reef South, i.e., pronounced spurs and grooves with deep and narrow grooves.

No dredging marks are visible on Kugui Reefs in the 2008 satellite image. However, dredging marks are visible on most of the reef flat of Kugui Reef North in the two satellite images from 2014 viewable on Google Earth.

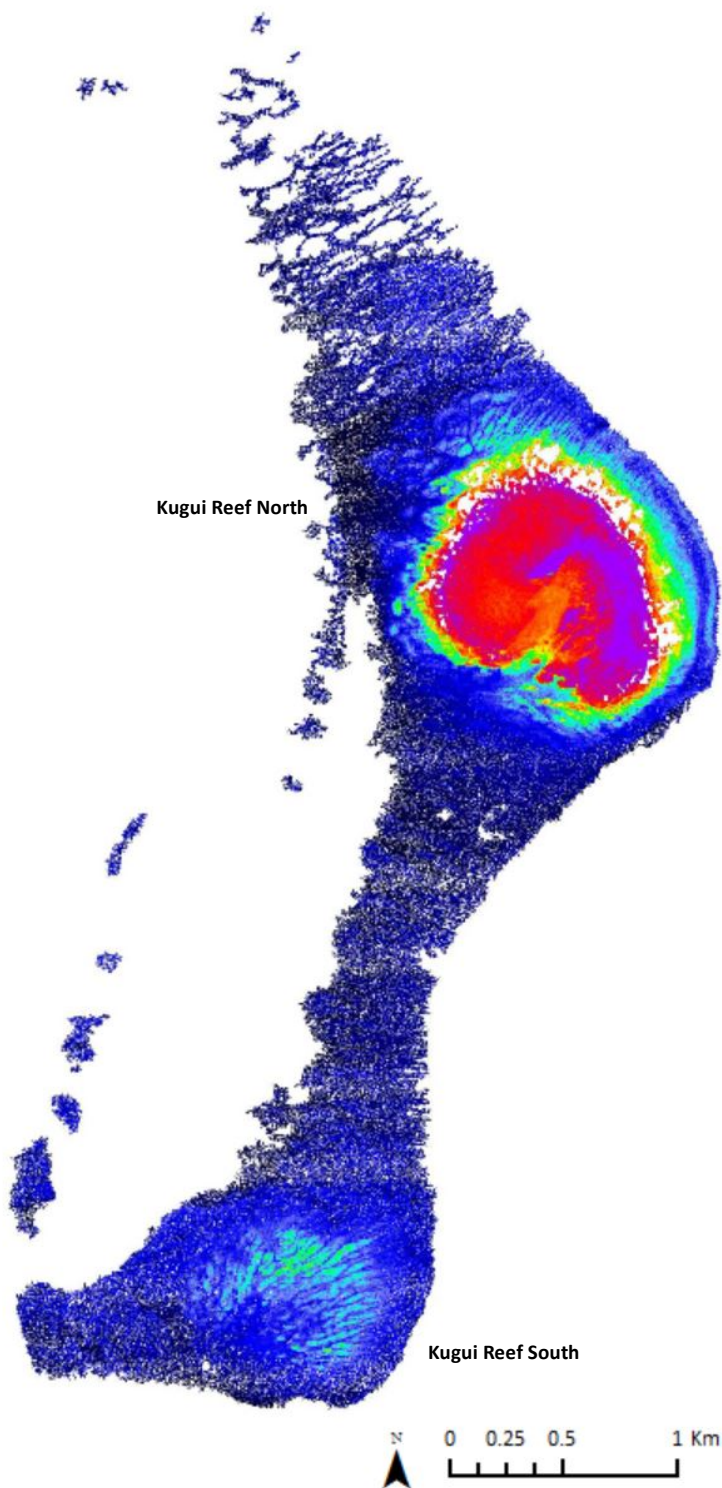


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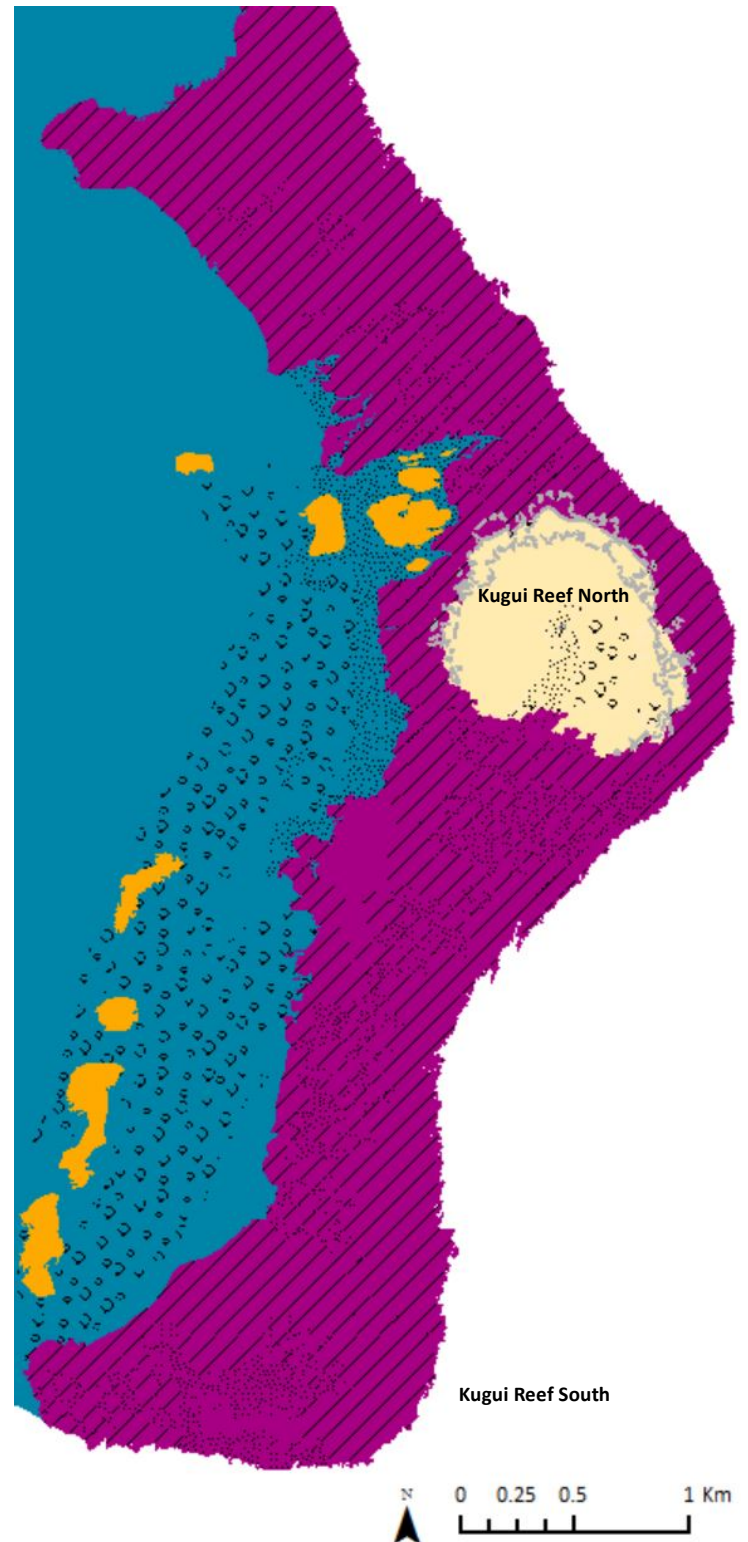
10°45'41.26"N, 114°35'20.23"E

Derived from QuickBird-2 satellite data captured on 5 February 2008 [Sea Level: -11cm]

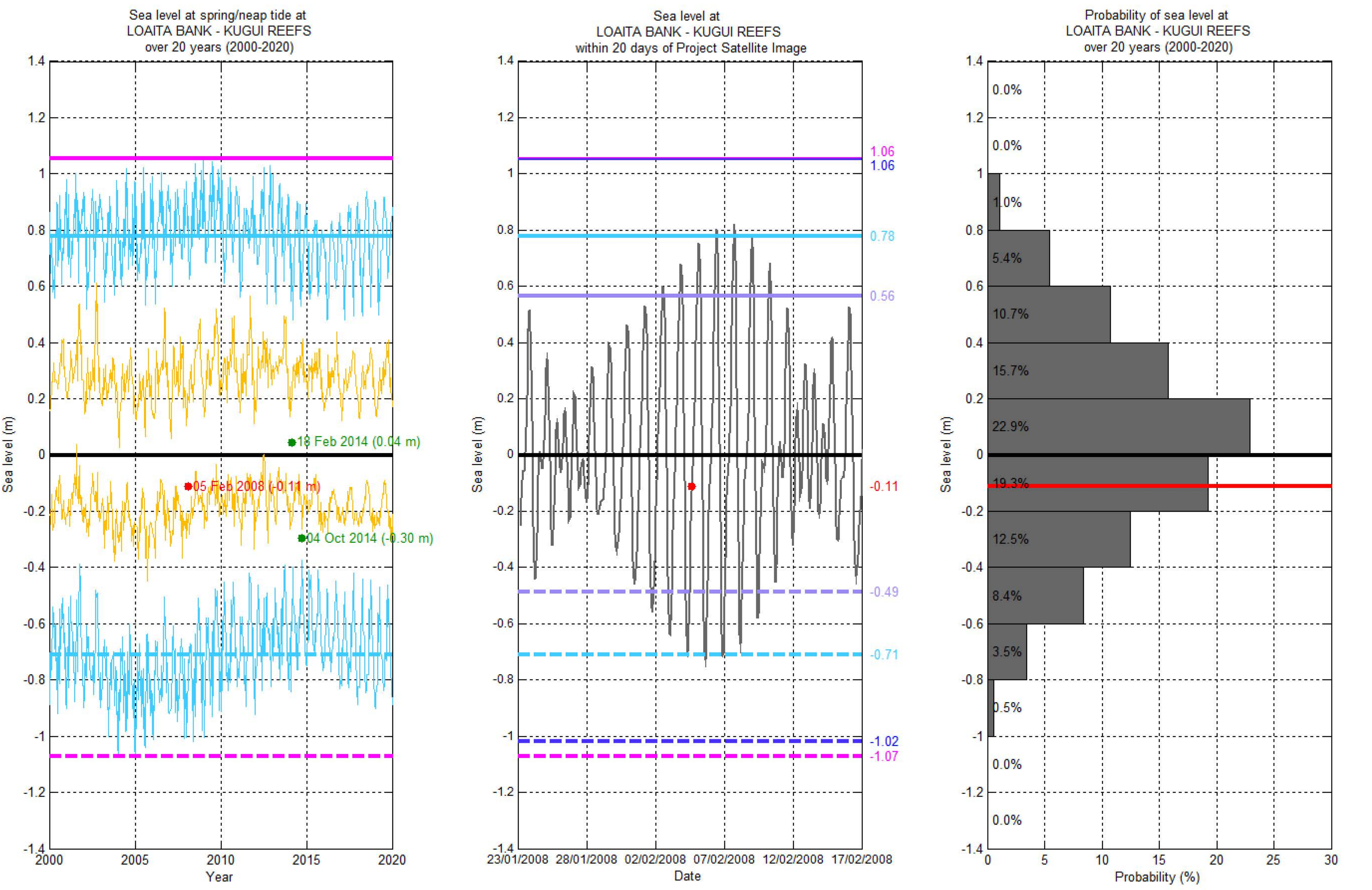
Bathymetry Map



Habitat Classification and Land Cover Map



Sea level (SL) at KUGUI REEFS (LOAITA BANK)
[10°45'41.26"N, 114°35'20.23"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