

## LOAITA CAY AND LOAITA NAN (LOAITA BANK)

10°42'46.91"N, 114°20'07.78"E

### **Geographic area**

Loaita Cay and Loaita Nan are located on the southwestern end of Loaita Bank. The closest shallow geographical features on Loaita Bank are Loaita Island, 5NM southeast, Loaita Unnamed Reef 1, 7NM southeast and Lankiam Cay, around 10NM east. The closest shallow geographical feature outside Loaita Bank is Subi Reef, 18NM northwest. The reef platform of Loaita Cay and Loaita Nan extends over 12km along its northeast-southwest axis and reaches 3.6km along its northwest-southeast axis. They surround a small lagoon that connects with the southern lagoon of Loaita Bank.

### **Land area above water**

Three above-water sand banks are located on Loaita Cay and none on Loaita Nan, although some areas are extremely shallow and possibly just awash in the satellite image that was captured when the sea level has been estimated to have been 41cm above Mean Sea Level. The sand banks on Loaita Cay are aligned and parallel to the southern side of the reef flat. From west to east, the first one is 130m long, but only

10m wide, and is therefore likely to be submerged at a higher tide, such as Mean High Water Spring, when the sea level is expected to increase by 41cm, unless this narrow band is elevated. This seems unlikely based on the 10 March 2015 satellite image viewable on Google Earth where the bank is split in three sections in slightly different locations and looks awash if not submerged. The second sand bank is the largest, measuring nearly 400m long and 30m wide. Although the extremities have a different shape and location in the 2015 satellite image, the central part looks possibly more stable (when comparing satellite images at different dates) than for the first bank. It is therefore possible that a small part of this bank remains above water at high tide and in the same location, although it could easily be washed away by a high tide or an extreme meteorological event. The third sand bank is circular in shape with a diameter of around 40m diameter. It appears to be slightly elevated with dark material accumulated on its top. The data available is not sufficient to determine whether it remains above water at all times.

### **Human infrastructure**

There are two small buildings on Loaita Cay as at 10 March 2015.

### **Intertidal and submerged area**

The total aerial coverage of the two reef flats is 4.74km<sup>2</sup>, of the reef slope of these platforms is 10.71km<sup>2</sup> and of the lagoon is 8.59km<sup>2</sup>. The reef flat of Loaita Nan is 1-1.5m deep along its outer edge where localised narrow strips of shallow areas are also visible. The northeastern side is deeper at around 2m. The reef flat of Loaita Cay is shallower. It is 1-1.5m at the most with large areas that are less than 1m on the eastern side and around the western sand bank. Large areas are expected to uncover on both reef flats at Lowest Astronomical Tide where the sea level is expected to decrease by 1.49m. The surrounding reef slope is steep. Pronounced spurs and grooves are visible at a depth of 10m or more. Extensive and deep circular dredging marks are visible on Loaita Nan where they cover 59% of the reef flat and are visible on the bathymetry map. Dredged areas had a sand-dominated and mixed sand and coral/seagrass/algae cover. Similar dredging marks are also visible on the western and southern parts of Loaita Cay (15% of the reef flat), as at 26 May 2014.

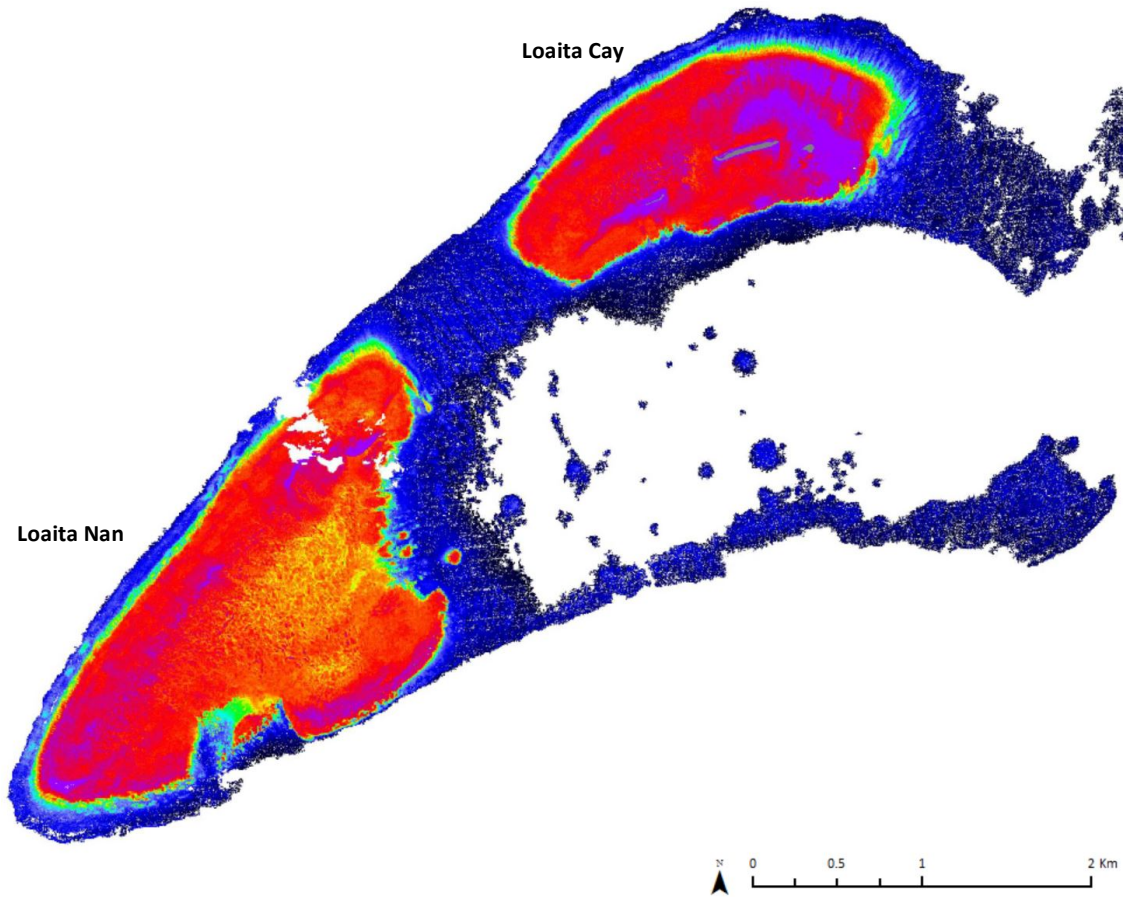


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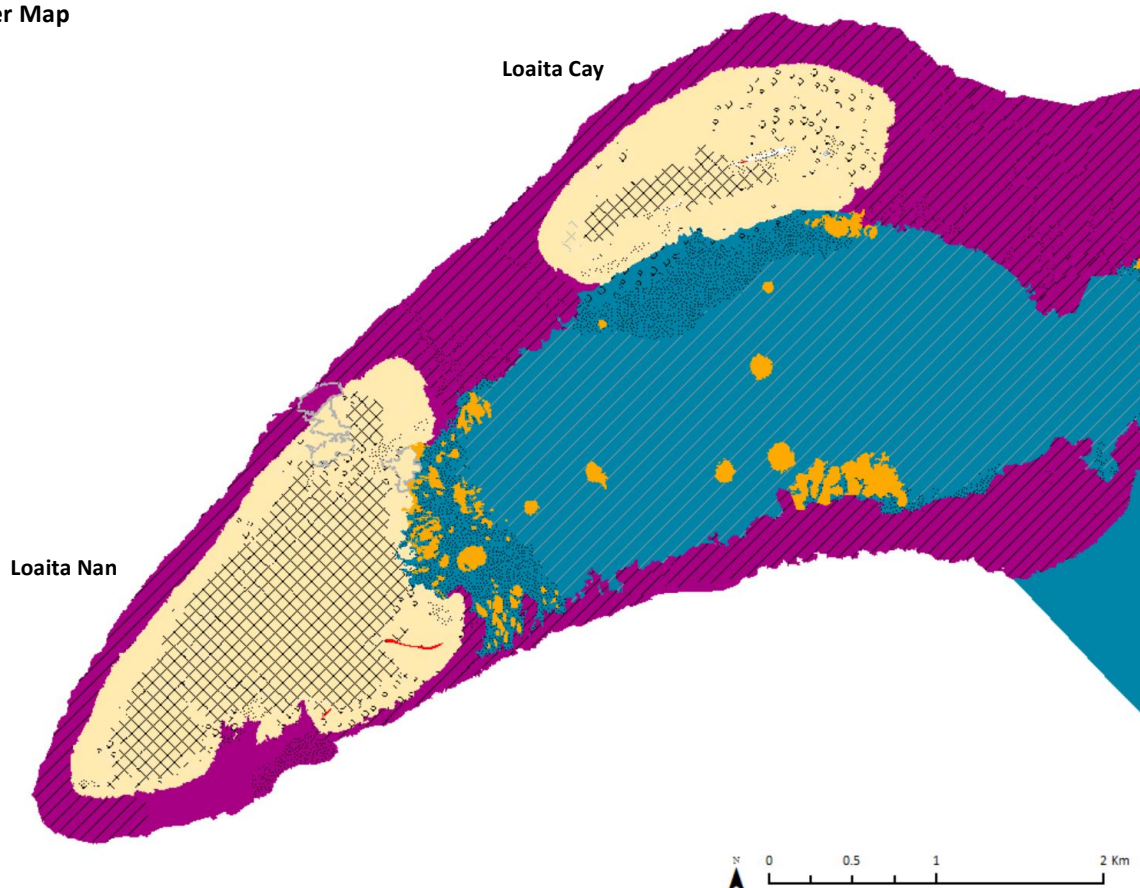
10°42'46.91"N, 114°20'07.78"E

Derived from QuickBird-2 satellite data captured on 26 May 2014 [Sea Level: +41cm]

## Bathymetry Map



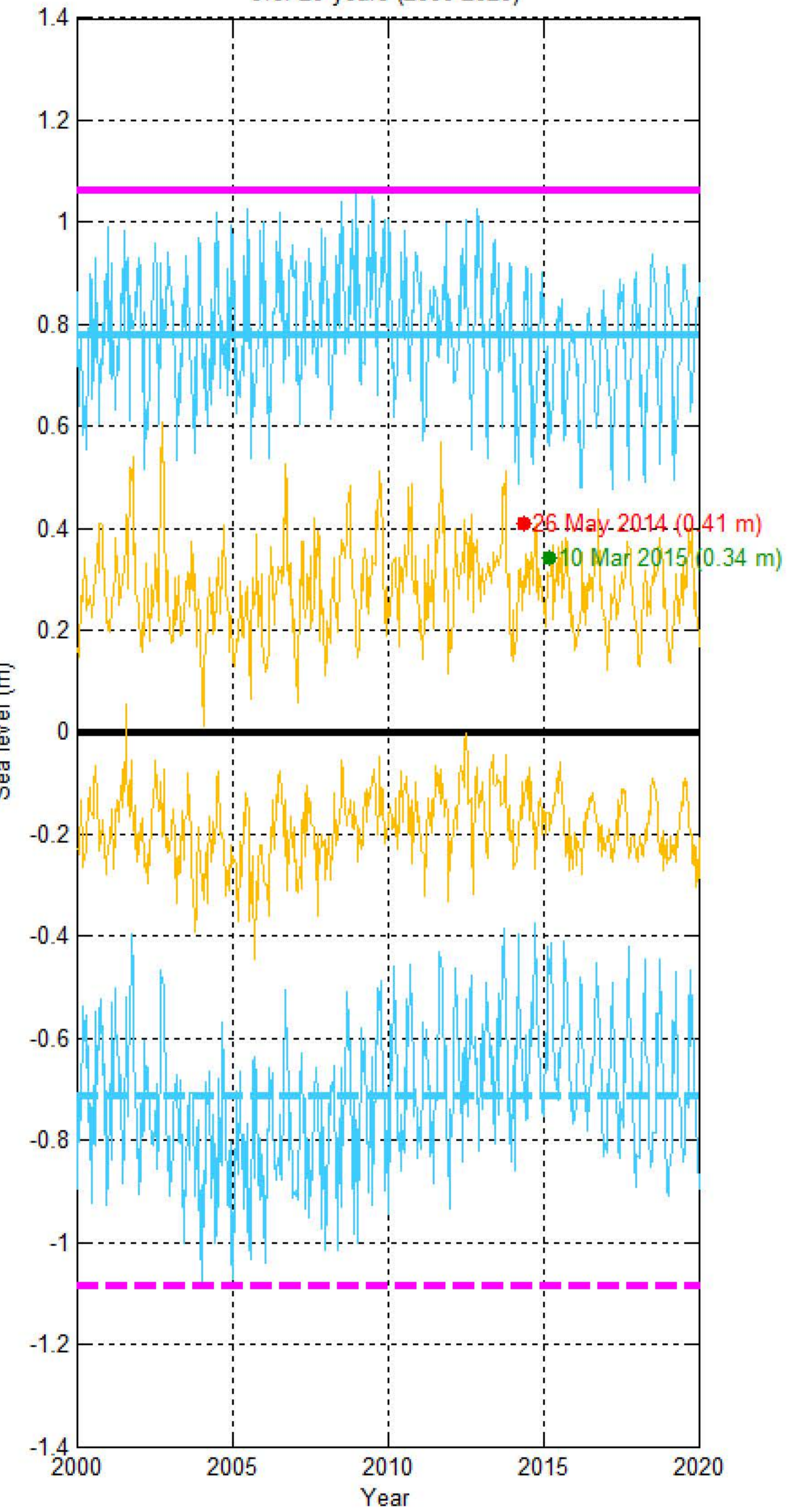
## Habitat Classification and Land Cover Map



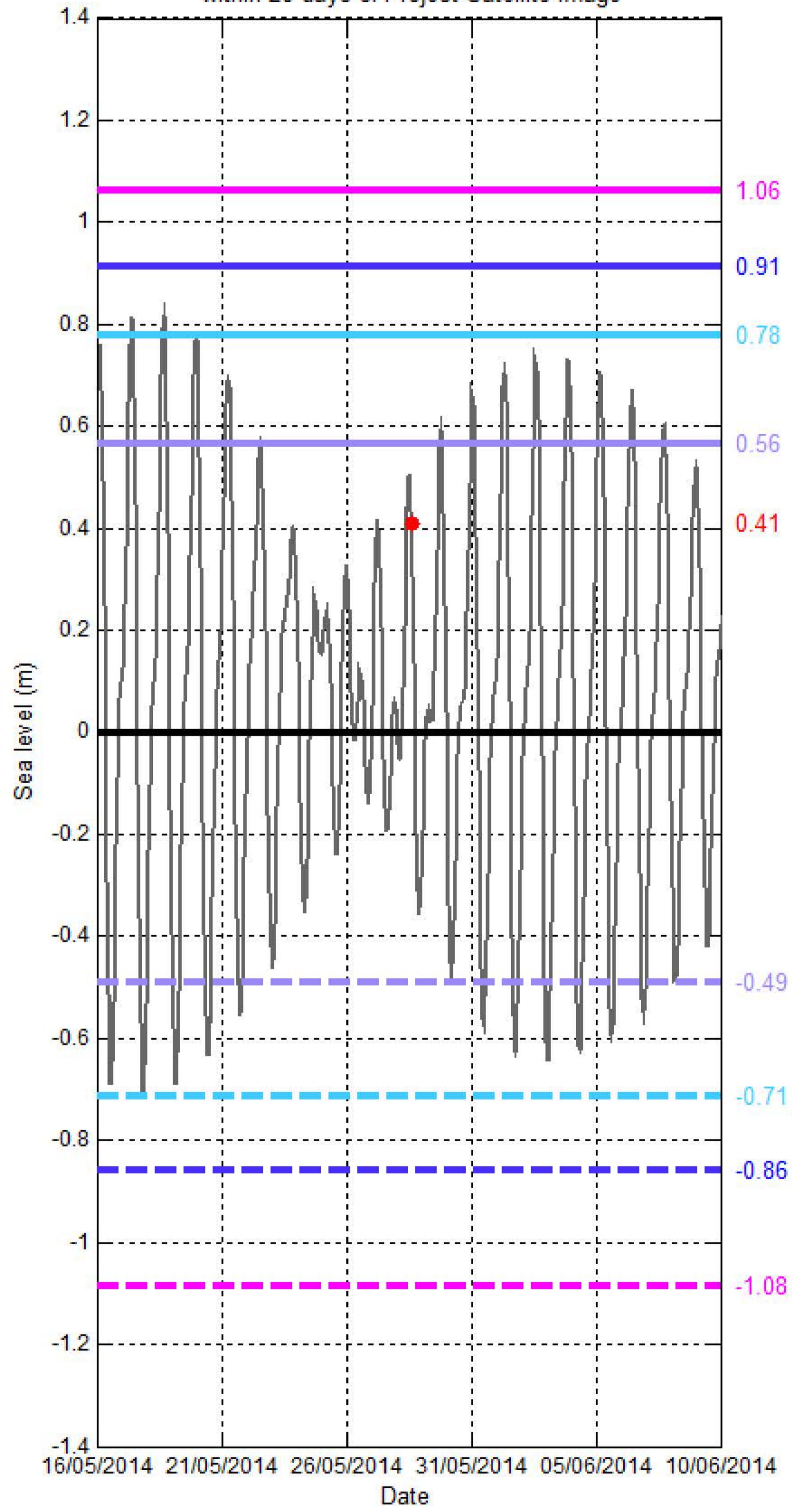
# Sea level (SL) at LOAITA CAY AND LOAITA NAN (LOAITA BANK)

[10°42'46.91"N, 114°20'07.78"E]

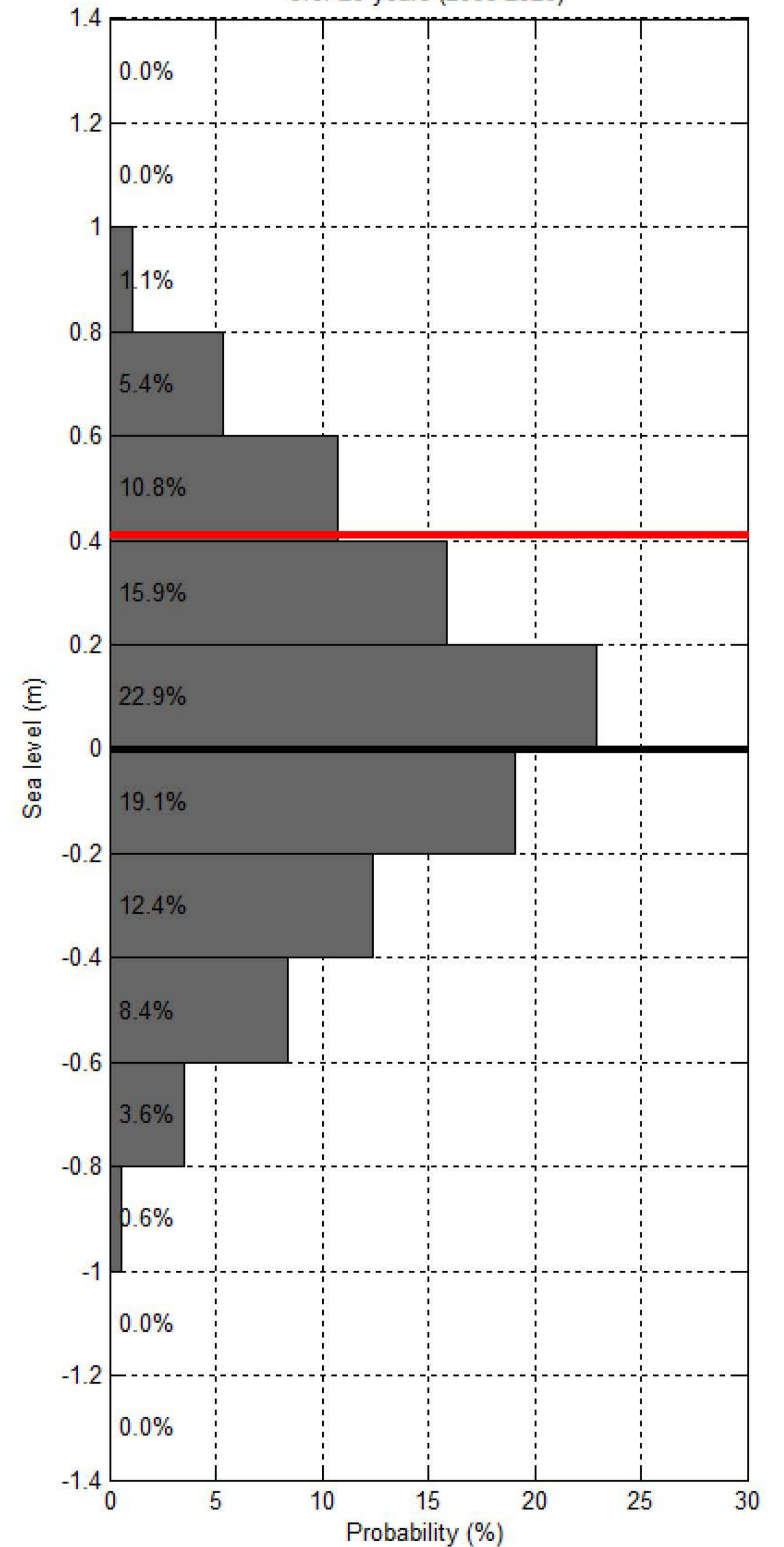
Sea level at spring/neap tide at LOAITA BANK - LOAITA CAY AND LOAITA NAN over 20 years (2000-2020)



Sea level at LOAITA BANK - LOAITA CAY AND LOAITA NAN within 20 days of Project Satellite Image



Probability of sea level at LOAITA BANK - LOAITA CAY AND LOAITA NAN 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