LIVOCK REEF

10°11’36.96”N, 115°17’52.79”E

Geographic area

Livock Reef is an isolated coral atoll that has developed on top of a seamount in the centre of the Spratlys. It is located less than 150NM northwest of the island of Palawan and just over 200NM northwest of the island of Borneo. The closest shallow geographic features are Hopps Reef, just over 3NM northeast, and Mischief Reef, just over 19NM southeast. Shaped like a heart, the atoll extends around 5km along its northwest-southeast axis and reaches 3.5km along its northeast-southwest axis.

Land area above water

There are numerous above-water irregular and rocky strips all along the reef flat in the 14 December 2012 satellite image that was taken when the sea level was 32cm below Mean Sea Level. The extent of those that will be submerged at high tide, or Mean High Water Spring, where the sea level is expected to increase by 1.10m is unclear given the lack of data on the height of these above-water rocky reefs. However, the irregular nature of the above-water areas and the coral cover of the reef flat suggests that these uncovered areas may be made of (partly) living hard coral, in which case it would have to be covered at high tide.

Human infrastructure

There are no man-made structures on this atoll as at 19 January 2014.

Intertidal and submerged area

The aerial coverage of this atoll is 11.88km^2 comprising a reef flat of 6.83km^2 that surrounds a lagoon of 4.44km^2 and a reef slope of 0.61km^2. The reef flat is composed of two contiguous parts along the lagoon. The outer part is a very shallow (less than 1m) band that is close to 15km long and 250-350m wide. Most of this area is expected to uncover at Lowest Astronomical Tide, with a decrease in sea level of 77cm. The inner part of the reef flat is the back reef, located between the shallow reef flat and the lagoon. It is 2-4m deep and larger at the three corners of the heart-shaped atoll. An unidentified cover of dark living matter can be observed along the northern side of the lagoon. The lagoon is over 15m deep and characterised by a reticulate reef system. Its banks are very steep as the depth drops from 4m to 10m or more in a short distance of 30-50m or less. The visible part of the reef slope is very narrow (50m or less) all around, although it reaches 100m in several parts of the northern side and 150m off the two northern tips of the atoll. The great depth of the surrounding seabed suggests that the reef slope is likely to be very steep. Dredging marks and areas of degraded coral cover can be observed, totalling 0.1km^2 (as at 14 December 2012). On 19 January 2014, additional dredging marks are visible on the reef flat where coral reef segments from the coral/seagrass cover extend into the sandy the back reef - a habitat where giant clams are commonly found.

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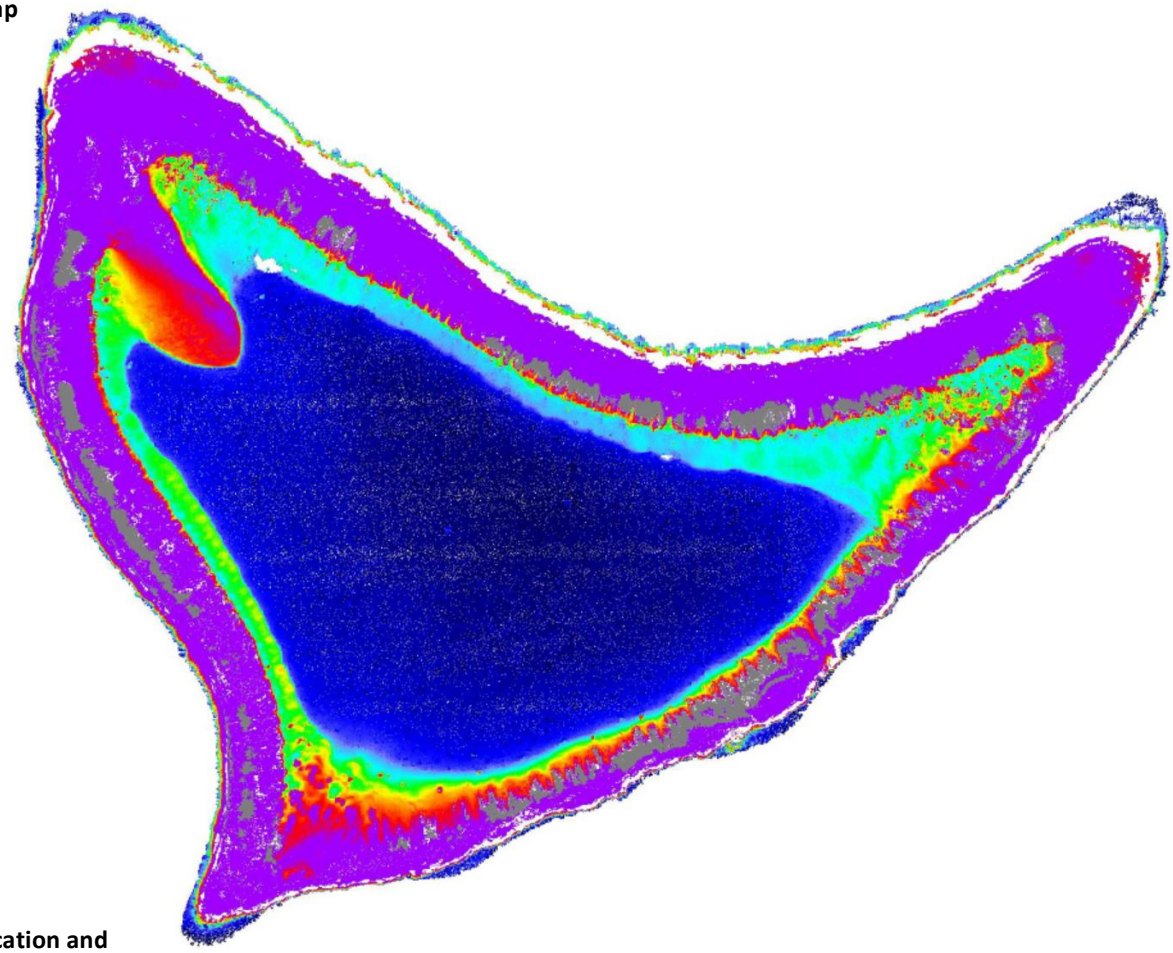
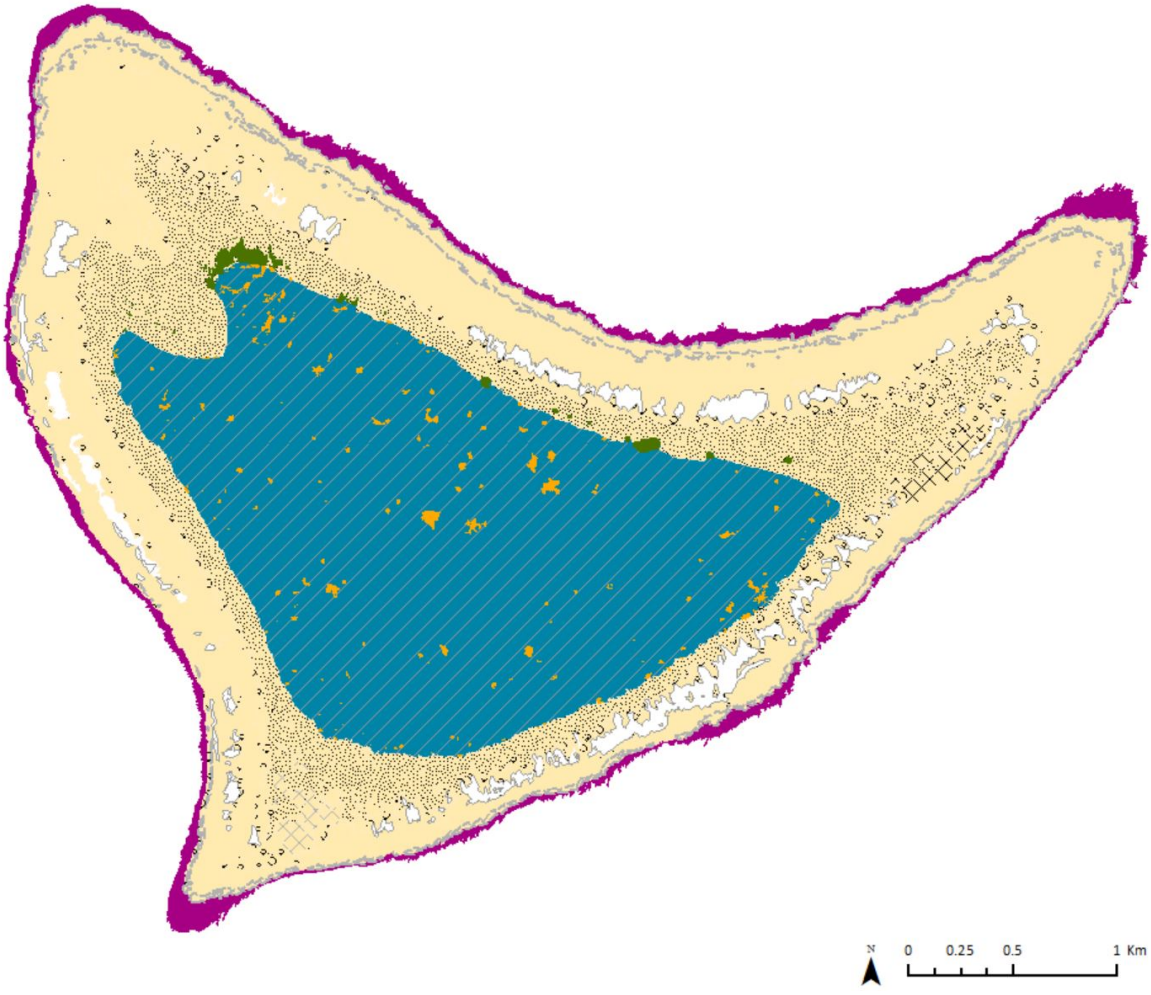
Derived from QuickBird-2 satellite data captured on 14 December 2012 [Sea Level: -32cm]

Bathymetry Map

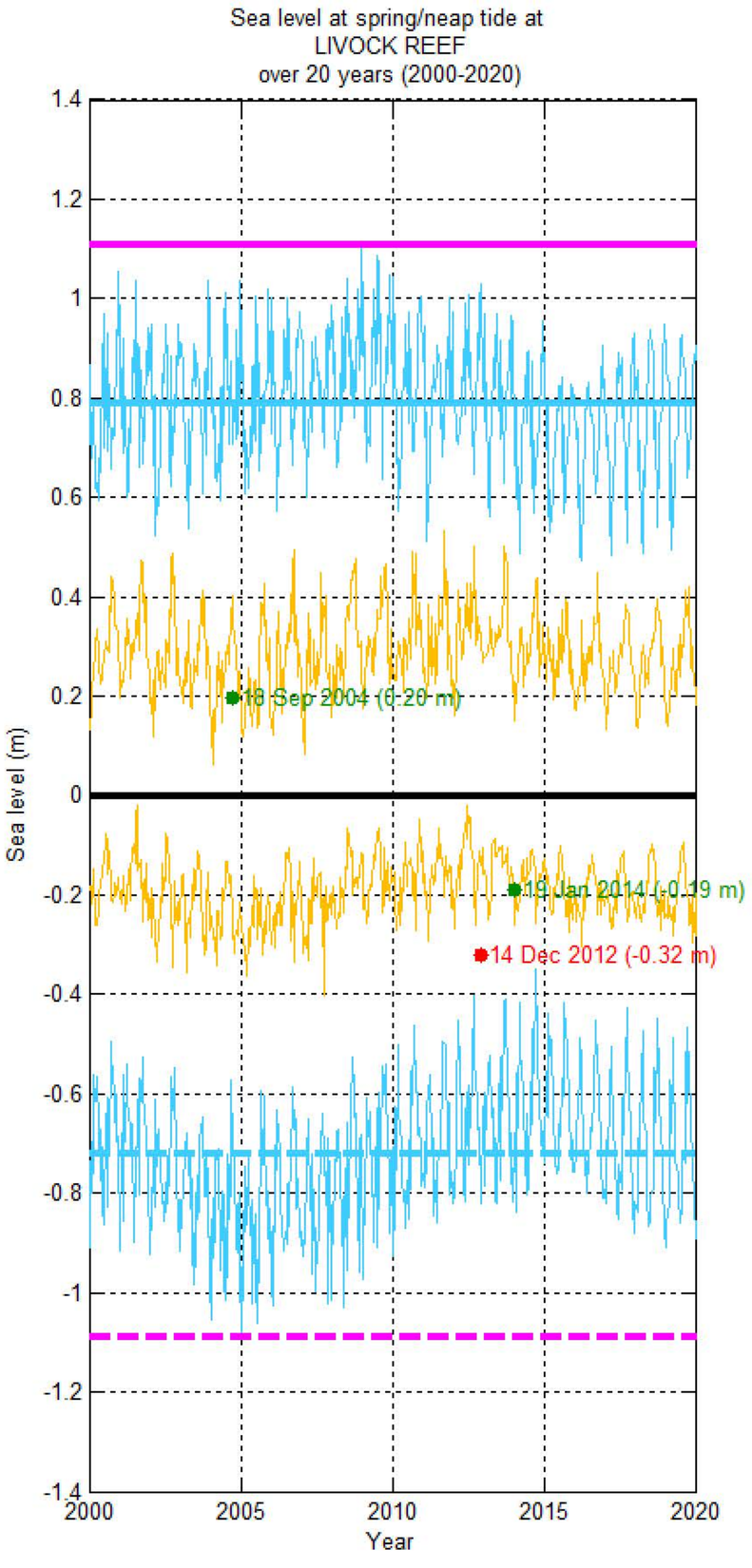


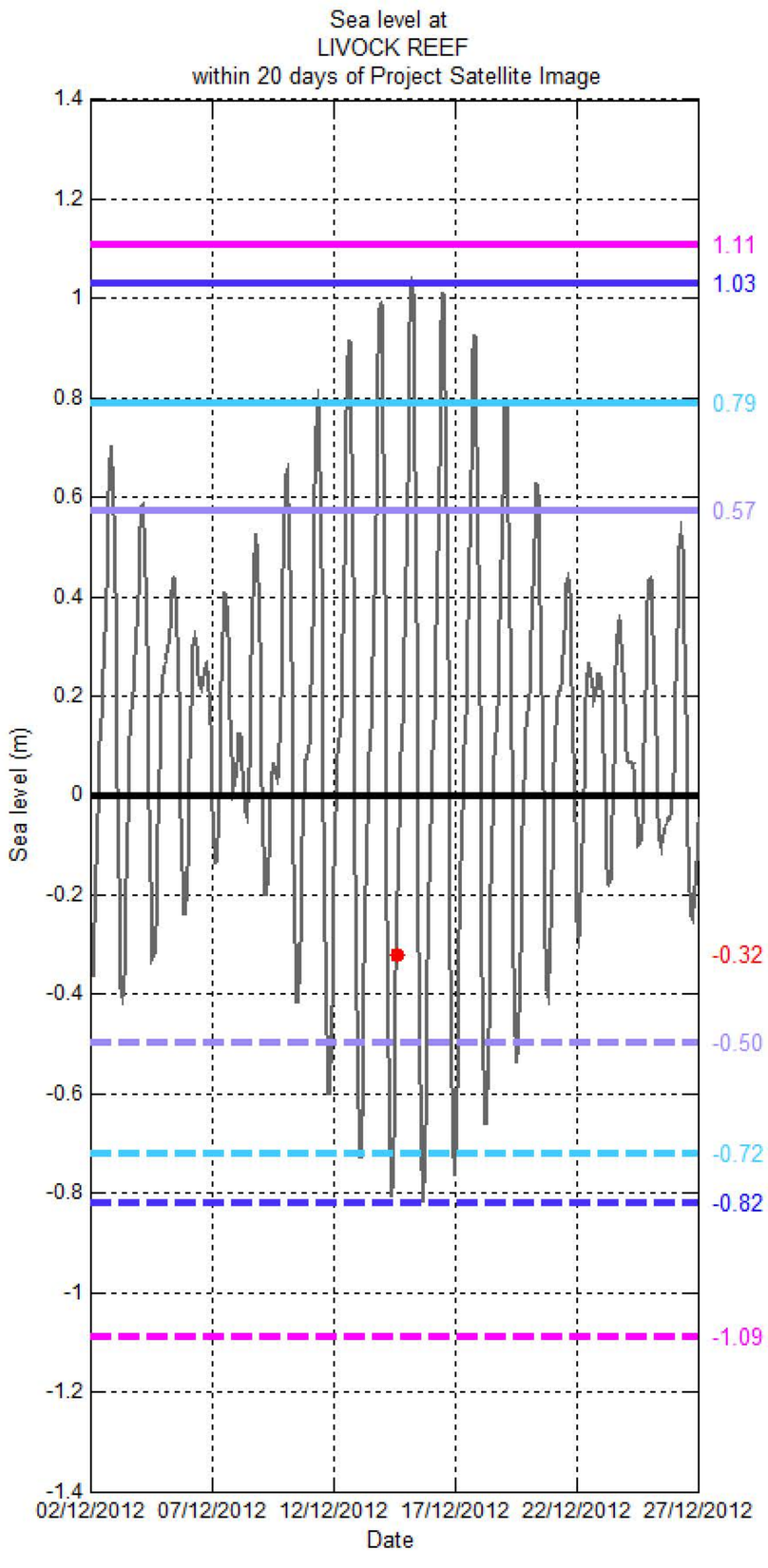
Habitat Classification and Land Cover Map

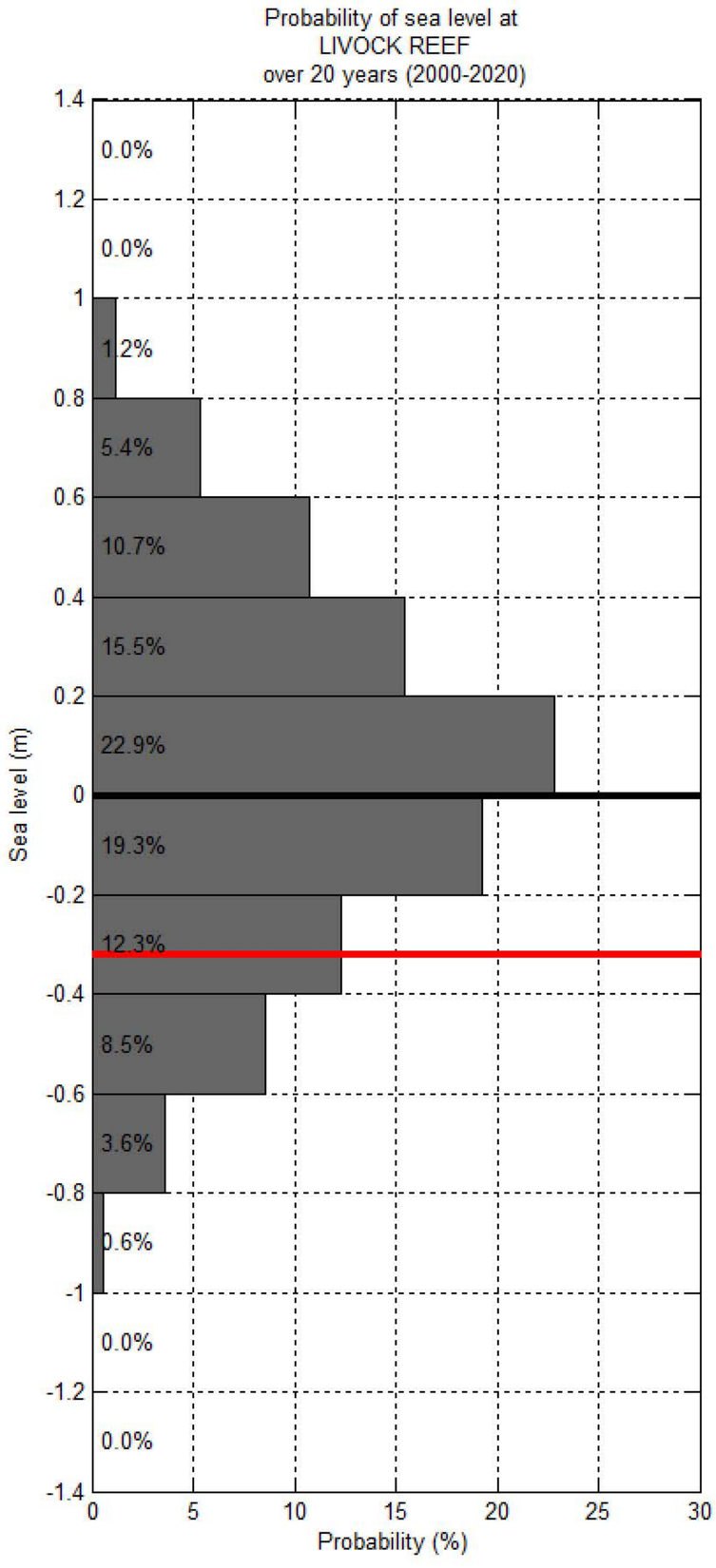


Sea level (SL) at LIVOCK REEF

[10°11'36.96"N, 115°17'52.79"E]







Hourly sea level
Mean Sea Level
SL at spring tide
SL at neap tide
SL at Mean High Water Spring
SL at Mean Low Water Spring
SL at highest tide of the year
SL at lowest tide of the year
SL at Mean Higher High Water
SL at Mean Lower Low Water
SL at Highest Astronomical Tide
SL at Lowest Astronomical Tide
Project Satellite Image
Google Earth and Landsat satellite images