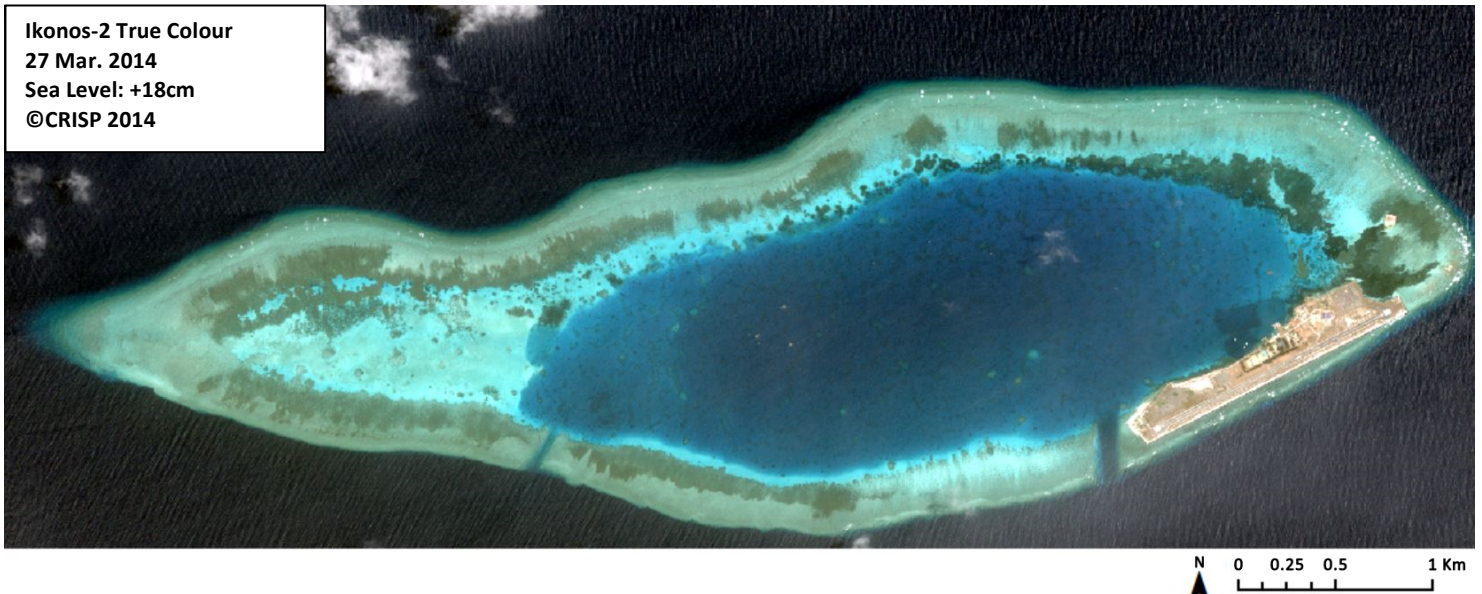


SWALLOW REEF

7°22'28.57"N, 113°49'27.02"E

Geographic area

Swallow Reef is an oceanic coral atoll that developed on top of a seamount in the southern part of the Spratlys. It is located approximately 150NM northwest of the island of Borneo and just under 200NM southwest of the island of Palawan. The closest shallow geographic features are Dallas Reef and Ardasier Reef, both just over 14NM north. This elongated atoll extends 7.5km along its west-east axis and reaches 2.2km along its north-south axis.



Land area above water

The main above-water feature on the reef is a built-up platform enclosed in straight seawalls that is 1.5km long by less than 300m wide (0.32km^2) and is located on the southeastern part of the south-facing side of the atoll. Apart from some scarce vegetation and a few small and barren areas, this platform is mostly covered by human facilities.

Human infrastructure

Two smaller above-water areas are visible on the southeastern tip of the reef flat: a concreted platform that is 60m by 60m and a 15m by 20m area that seems to be comprised of different man-made materials positioned on the reef (including a 10m by 10m platform) and is exposed at this moment of the tide cycle (being 18cm above Mean Sea Level). Numerous facilities designed for human use are visible on the largest above-water platform: at least 25 buildings and other man-made structures including a wind-turbine, storage houses, a swimming pool, three small jetties on the lagoon side, several buoys, a 1.4km run-way and a helipad. One set of mariculture cages is visible in the lagoon, close to the large above-water area and three marine research devices are positioned in the western side of the lagoon. Two man-made channels cutting through the reef flat are visible on the southern side connecting the lagoon and the open sea. The larger one is over 100m wide and 3.5-4m deep; it is located immediately west of the large above-water area. The other channel leads to the western side of the lagoon; it is 50m wide and 3m deep.

Intertidal and submerged area

The aerial coverage of this atoll is 10.91km^2 , comprising a reef flat of 5.36km^2 , a lagoon of 4.42km^2 and a reef slope of 0.77km^2 . The reef flat is a 15km long band that separates the reef slope from the lagoon. It is divided into two adjoining rings: the outer ring adjoining the reef flat and the inner ring adjoining the lagoon. The outer ring is 200-300m wide and is the shallowest (less than 1m in parts but not more than 1.8m). A substantial part of these shallow areas are expected to uncover at Lowest Astronomical Tide when the sea level is expected to decrease by more than 1.30cm of water. The inner ring of the reef flat is 2-3m deep and mostly sandy, apart from areas of distinctive seagrass/algae/cyanobacteria and seagrass/algae on the northern and eastern sides of the lagoon edge ($85,000\text{m}^2$ and 0.27km^2 , respectively). The lagoon is 5-6m deep and characterised by a dense reticulate reef system that covers it and includes numerous shallow coral heads that are 25m wide or more. The visible part of the reef slope extends around 80m seaward from the north-facing side of the reef flat but 30m from most of the south-facing side. The great depth of the surrounding seabed suggests that the reef slope is likely to be very steep.

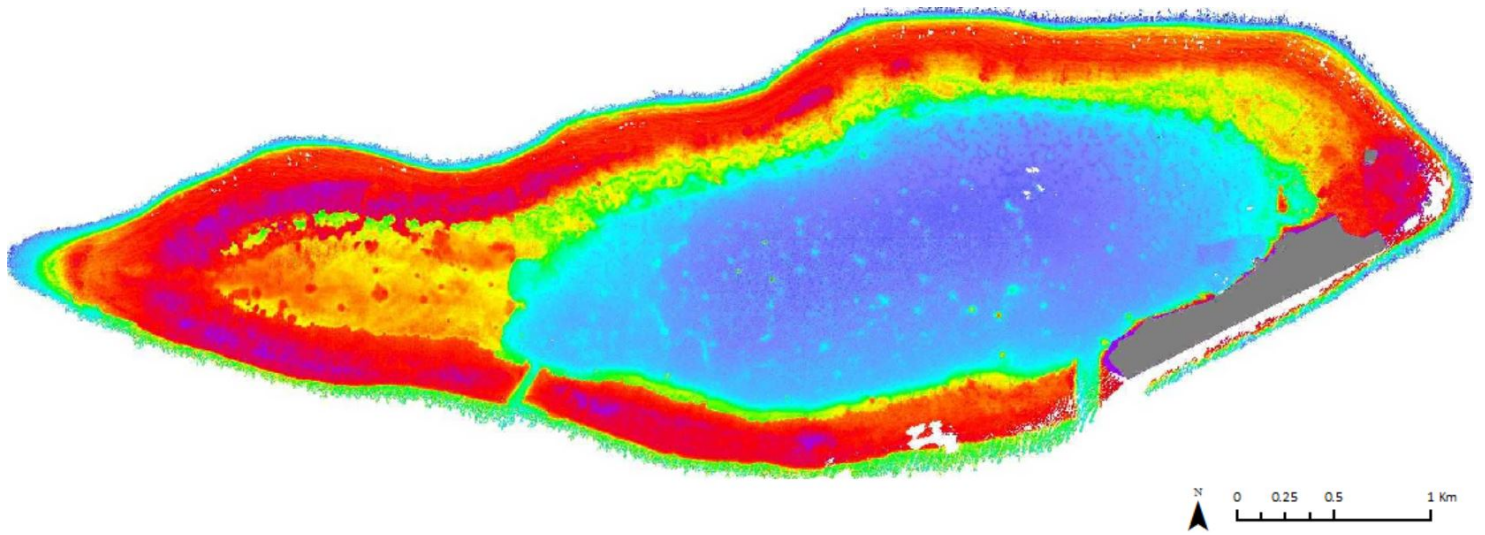
Dredging marks are visible in the lagoon by the built-up above-water area within proximity of the jetties – possibly to facilitate access to this ‘harbour’ area. A 50m-long vessel is positioned along the eastern jetty. Three 8-10m boats are on a mooring.

SWALLOW REEF

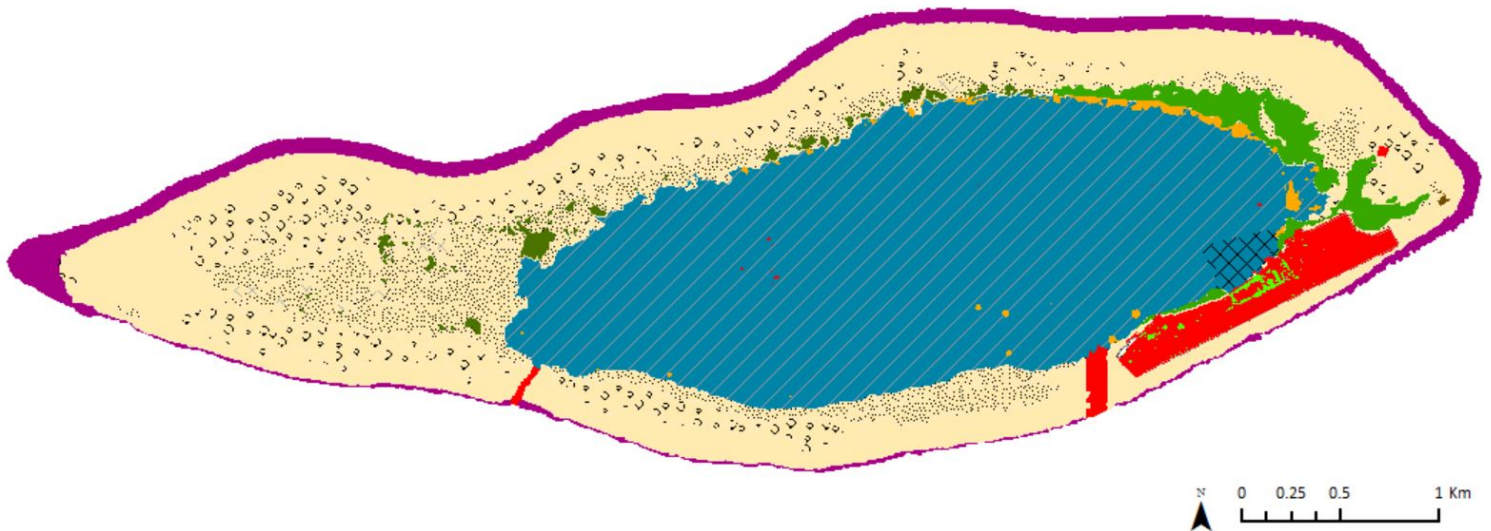
7°22'28.57"N, 113°49'27.02"E

Derived from Ikonos-2 satellite data captured on 27 March 2014 [Sea Level: +18cm]

Bathymetry Map



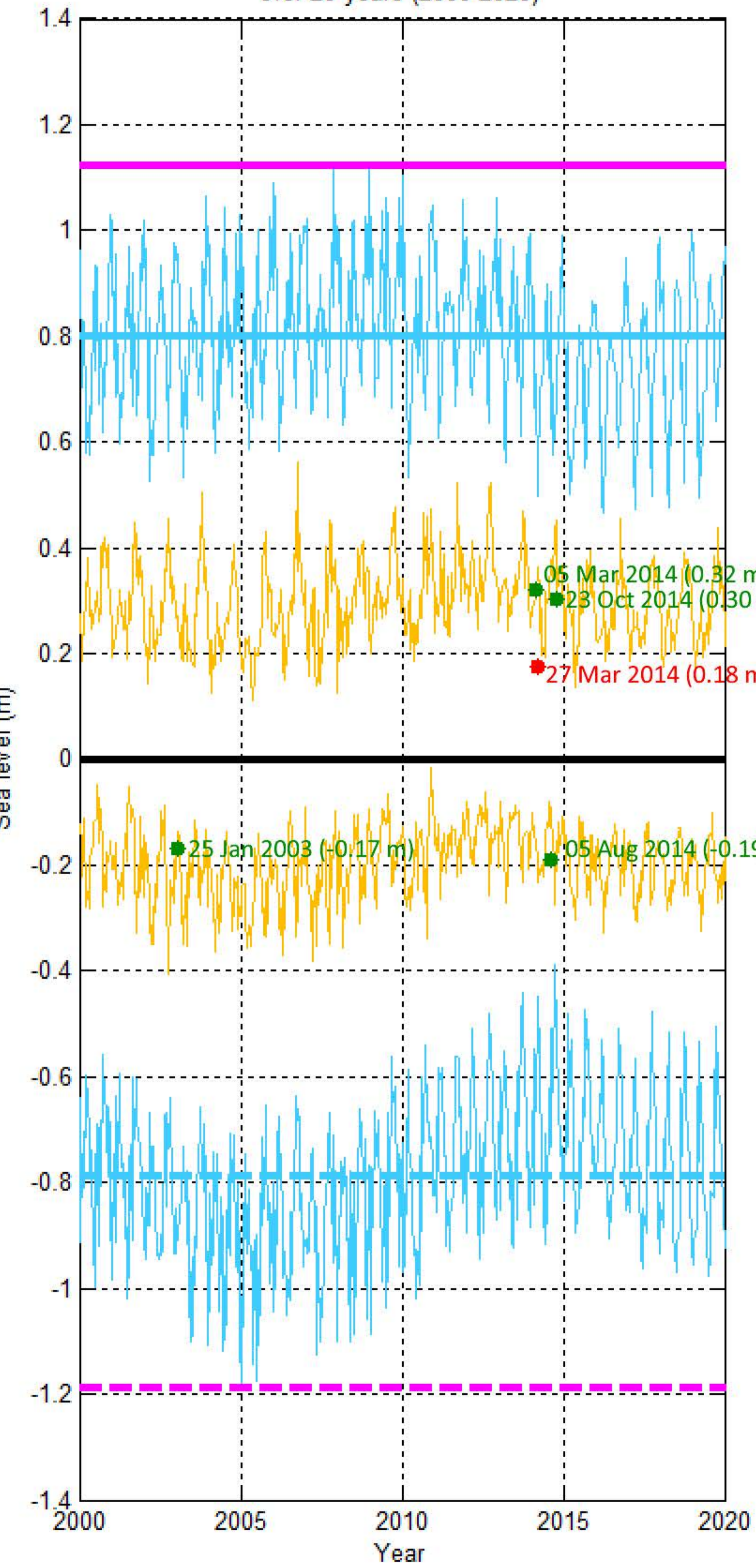
Habitat Classification and Land Cover Map



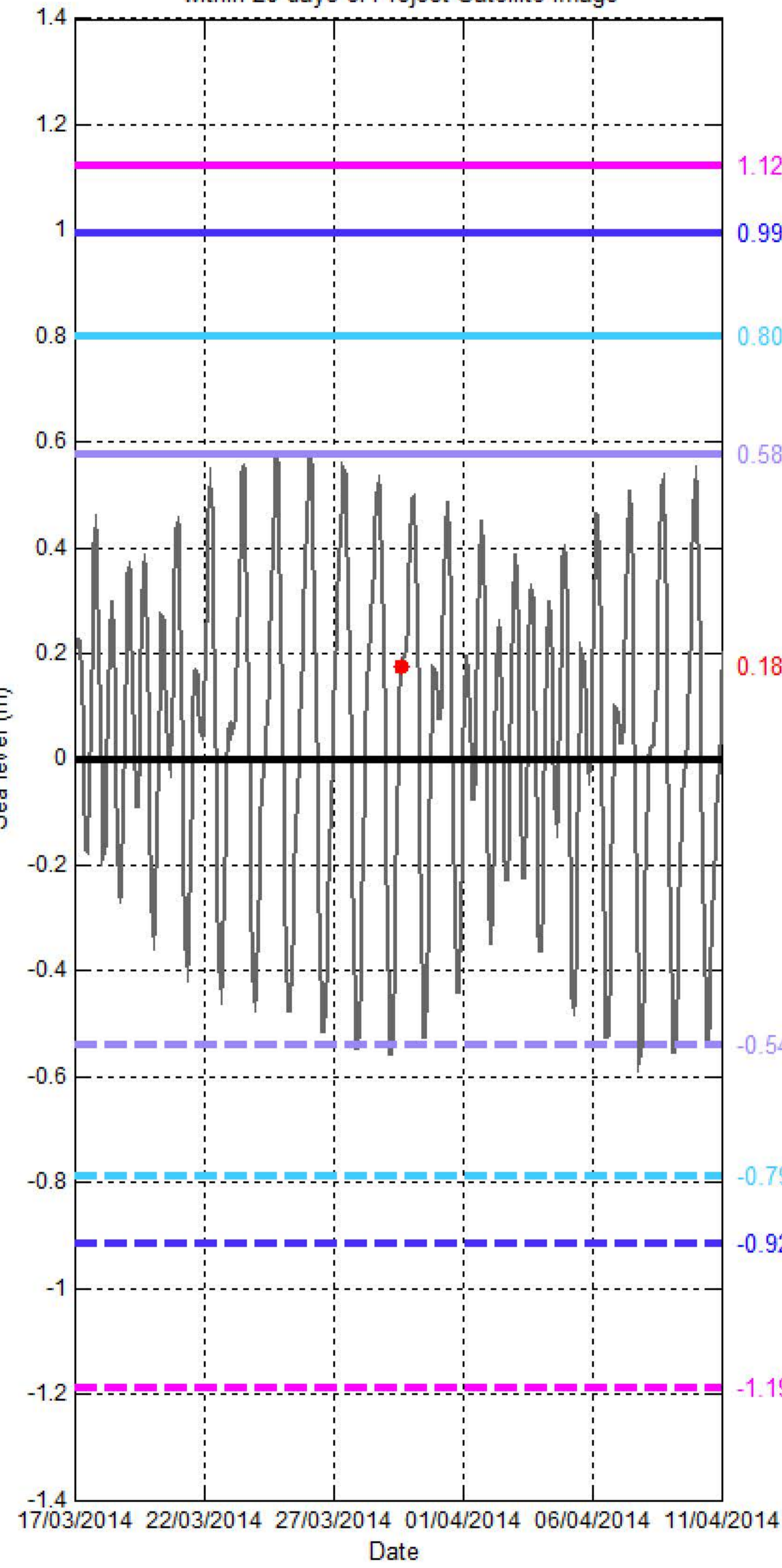
Sea level (SL) at SWALLOW REEF

[7°22'28.57"N, 113°49'27.02"E]

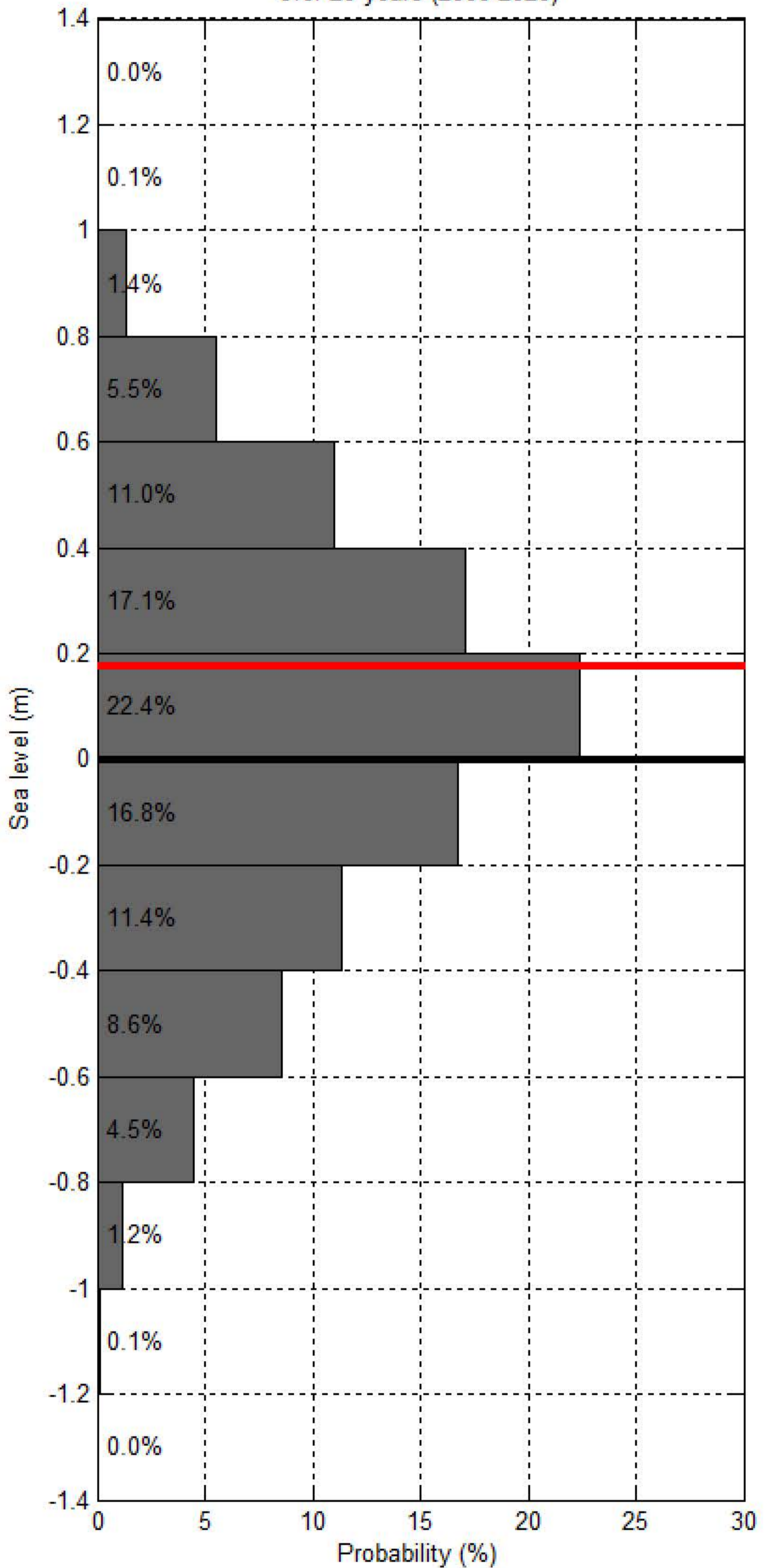
Sea level at spring/neap tide at SWALLOW REEF over 20 years (2000-2020)



Sea level at SWALLOW REEF within 20 days of Project Satellite Image



Probability of sea level at SWALLOW REEF 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