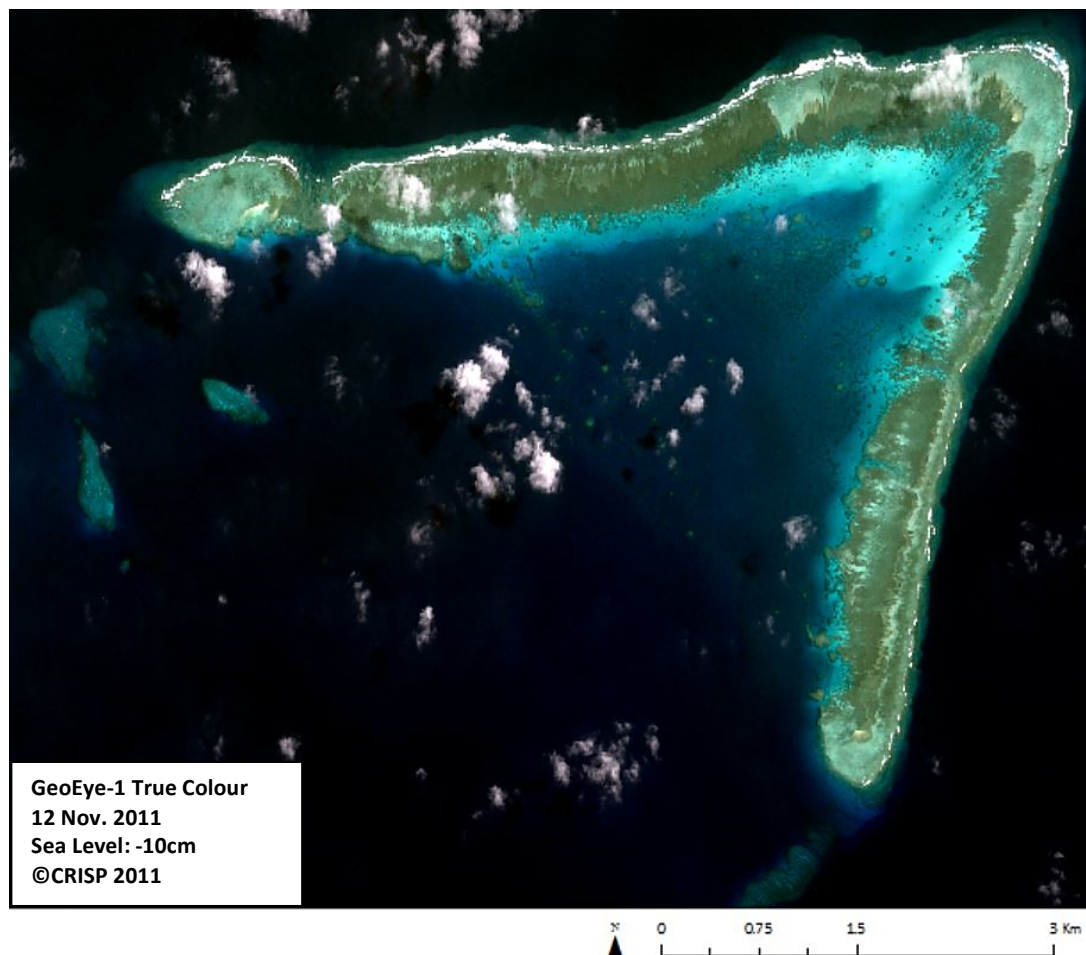


## WHITSUN REEF (UNION REEFS)

9°59'28.97"N, 114°38'57.33"E

### **Geographic area**

Whitsun Reef is a large shallow coral reef platform of Union Reefs, located at its northeast extreme limit and shaped like a boomerang. The closest shallow geographic feature in Union Reefs is Empire Reef, 1.3NM southwest. Outside Union Reefs, the closest are Namyt Island and Eldad Reef from Tizard Bank, around 18NM northwest and north, respectively.



### **Land area above water**

The satellite image captured on 12 November 2011 shows three small above-water sand banks on the western, northeastern and southern tips of this coral reef platform. The first one is the largest, and includes two separate above-water sand banks less than 80 m from one another. The larger is around 100m by 30m, the smaller one is less than 20m by 40m. The other two areas have smaller above-water banks measuring 40m by 40m and 60m by 20m, respectively. These banks are small, barren and dynamic (under the combined effect of astronomic tides, storm surges and wind-waves), They are also unlikely to remain above water at Mean High Water Spring when the sea level increases by 90cm as expected at Mean High Water Spring. This is confirmed by satellite images viewable on Google Earth from 15 January 2012, 26 February 2014 and 4 October 2014, which show some sand banks in the same area but in different locations (distance of 10-100m compared to the 12 November 2011 satellite image), with different shapes and of different sizes. Sometimes they even seem to disappear altogether.

### **Human infrastructure**

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

### **Intertidal and submerged area**

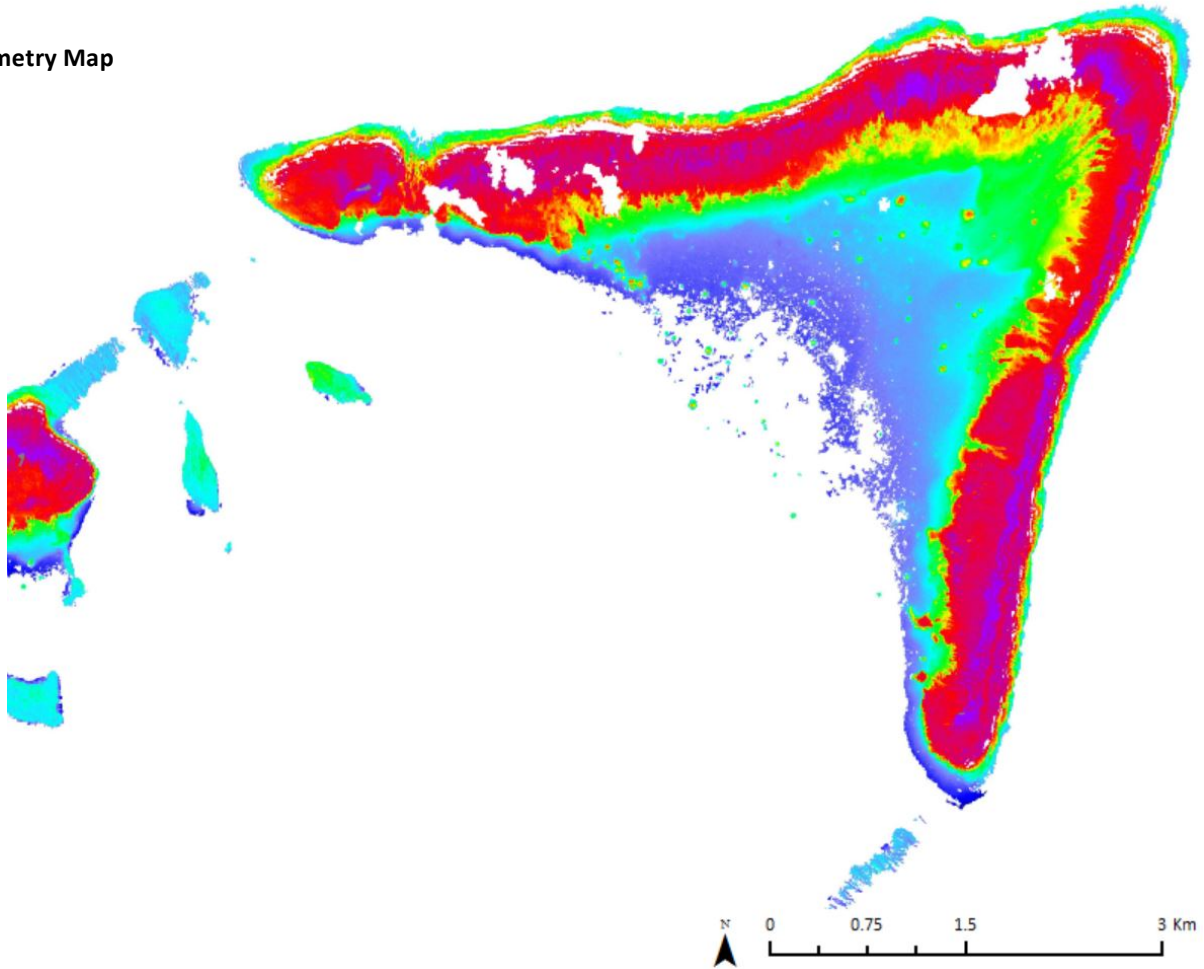
The aerial coverage of the coral reef area is 10.91km<sup>2</sup> and comprises a reef flat that covers 9.04km<sup>2</sup> and a reef slope that covers an area of 1.87km<sup>2</sup>. The reef flat extends 12km between its northwestern and southern extremities and has a width of 1km. The reef flat is dominated by living coral, seagrass or algae, (3.93km<sup>2</sup> or 43% of the reef flat) rather than sand, except in areas where it has been dredged. The reef flat is mostly 1-1.5m deep at Mean Sea Level on the outer side that follows the reef slope so that few shallow areas are expected to uncover at Lowest Astronomical Tide. The inner side of the reef flat, located along Union Reefs' central lagoon is deeper and sandy between coral heads that connect to form a reticulate reef system. The reef slope is narrow and steep all around. The longest reef slope areas extend 610m northeast, 430m southwest, and 300m north. Spurs and grooves are particularly marked on the reef slope located on the outside of the reef (facing north and east). Dredging marks are visible on the back reef, totaling a surface area of 0.22km<sup>2</sup>. Areas of degraded reef total 10,000m<sup>2</sup>.

## WHITSUN REEF (UNION REEFS)

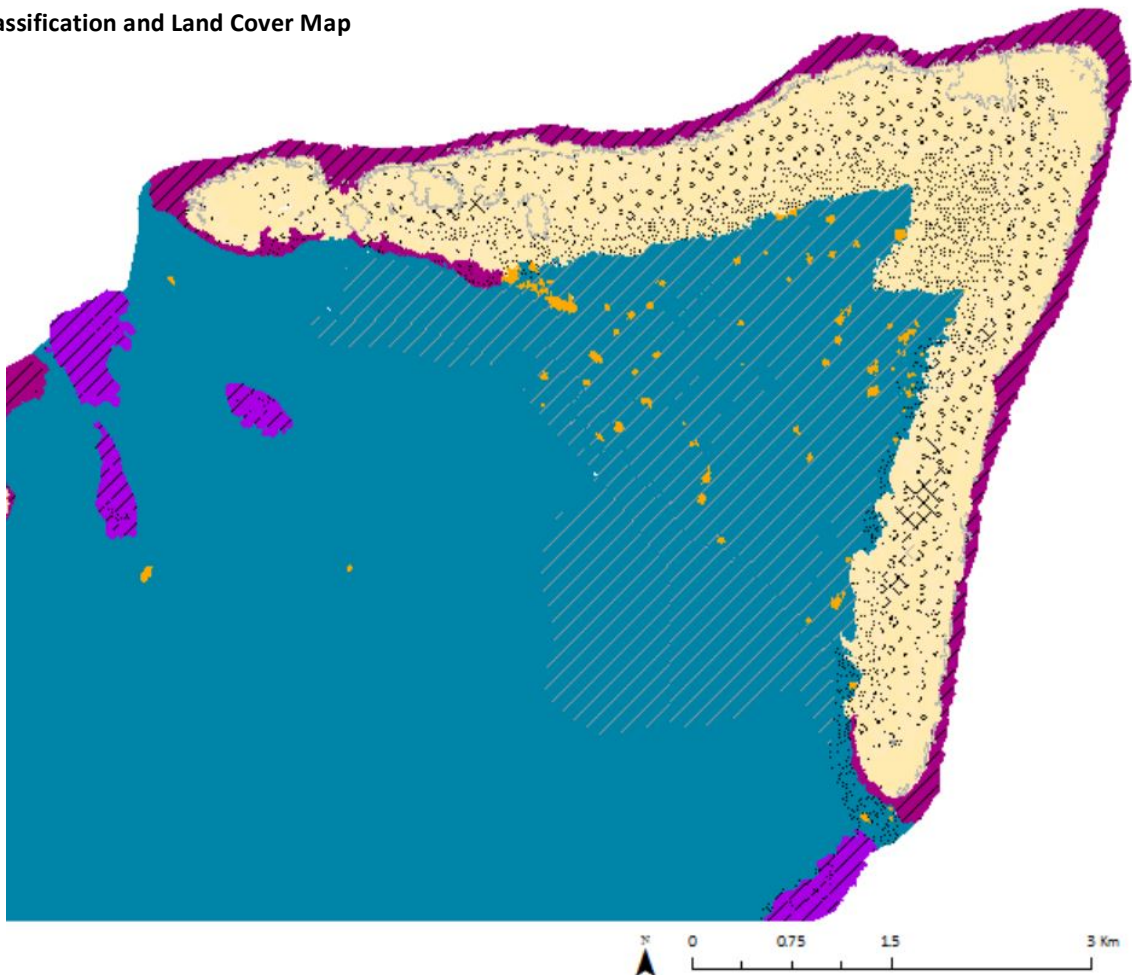
9°59'28.97"N, 114°38'57.33"E

Derived from GeoEve-1 satellite data captured on 12 November 2011 [Sea level: -10cm]

**Bathymetry Map**

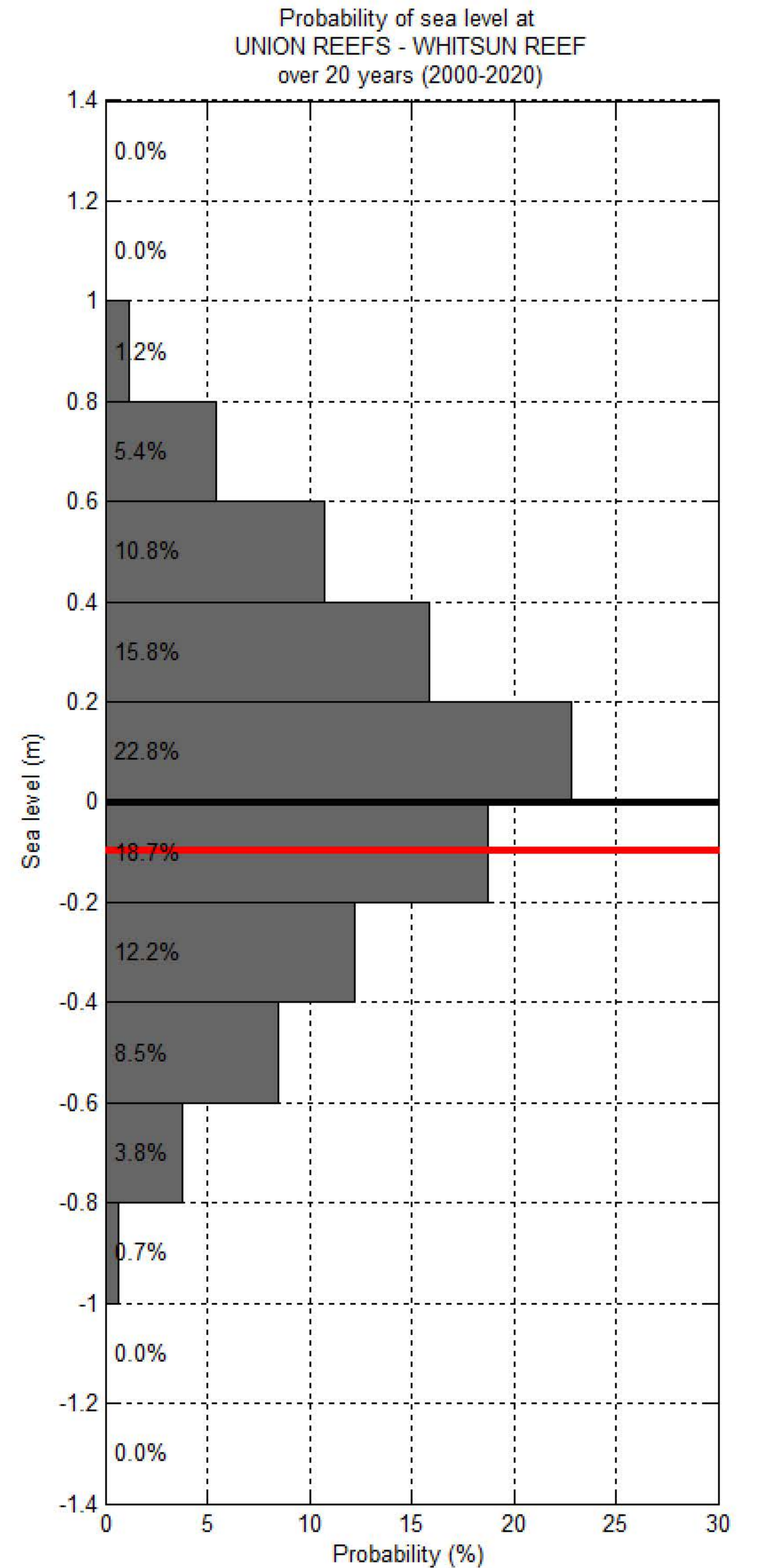
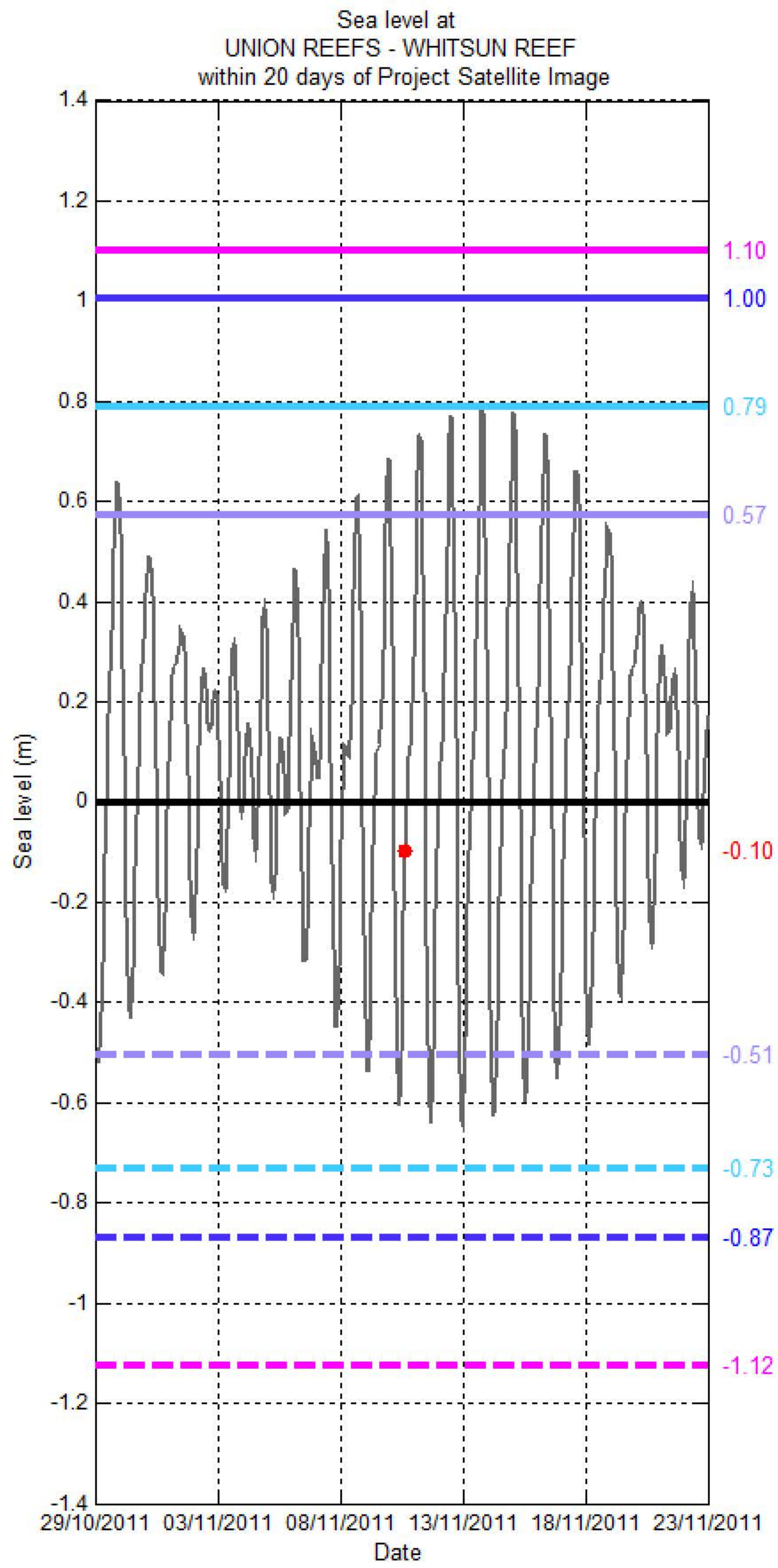
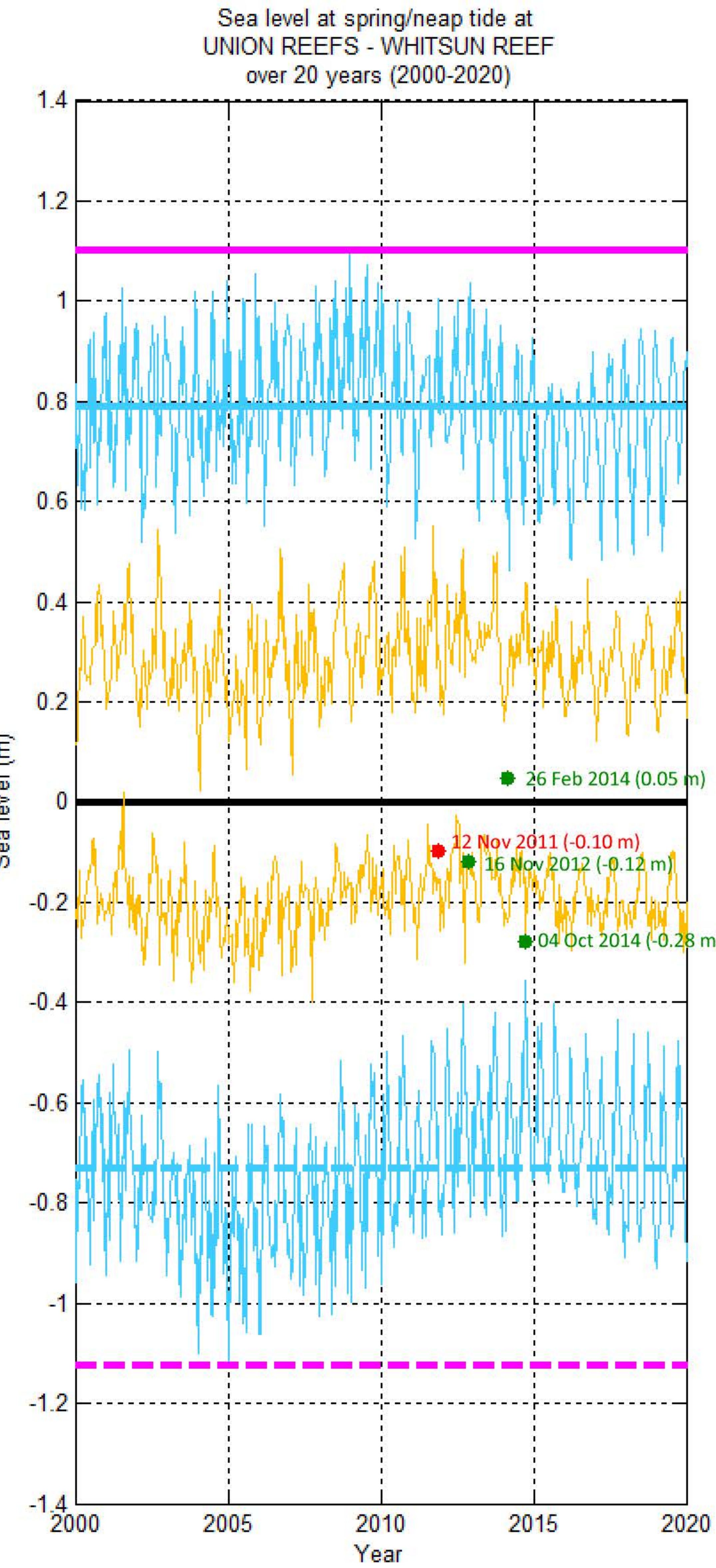


**Habitat Classification and Land Cover Map**





Sea level (SL) at WHITSUN REEF (UNION REEFS)  
[9°59'28.97"N, 114°38'57.33"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