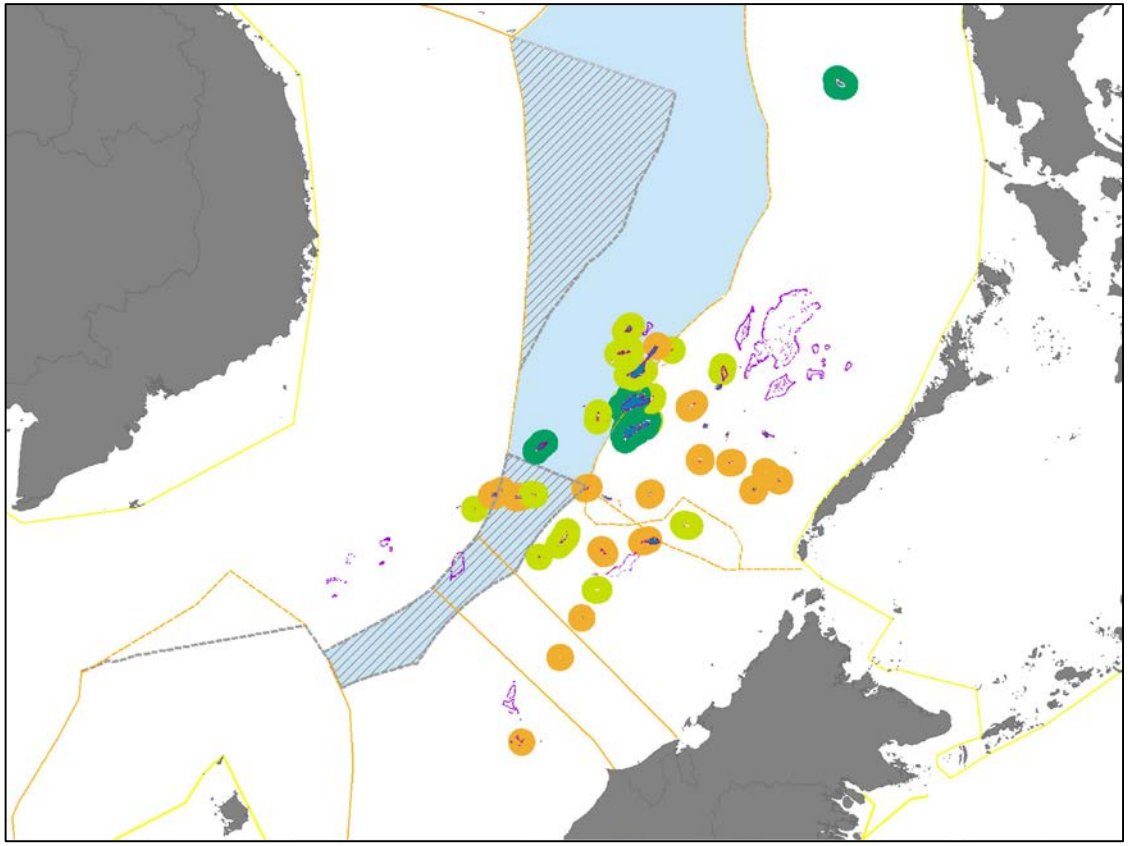
High Tide Features in the SCS Arbitration: Distinguishing small and insular land areas from seabed formations



CIL South China Sea Award Conference: The Legal Dimension

Session 4

Singapore, 5-6 January 2017

Youna Lyons, ***Centre for International Law***

CIL
CENTRE FOR INTERNATIONAL LAW
National University of Singapore

Outline

I. The Award

- Determined High Tide Features
- The Tribunal Reasoning

II. Which High Tide?

- Sea level Variation
- Different High Tides

III. Permanence Above the Sea

- Permanence Over Time and Temporary Islands
- Permanence in Same Location and Dynamic Features

IV. Implications for Other Shallow Features

- Impact of new evidence and data
- Clear Cut vs. Dubious Cases

CIL
CENTRE FOR INTERNATIONAL LAW
National University of Singapore

Introductory Comments

- **Application of UNCLOS Article 121(1): What is a naturally formed *area of land above water at high tide?***
- **The Tribunal called it a 'High Tide Feature', the term used in this presentation. A 'High Tide Feature' may be a simple 'rock' or a full fledge 'island' capable of generating an EEZ and continental shelf of its own**
- **Focus on the distinction between High-Tide Feature vs. Low Tide Feature (whether a Low-Tide Elevation or a submerged feature; Not on the distinction between Low Tide Elevation vs. fully submerged feature**
- **Which high tides can/should be used as reference?**
- **How often can a naturally formed area of land get submerged by naturally occurring tide and forseeable meteorological processes whilst still qualifying as an 'island' or 'high tide feature'?**
- **Can a high tide feature be temporary, such that it exists for a few weeks or a few months?**
- **Can it move places and still qualify as an above water area of land?**

I. The Award

Determined High-Tide Features

In addition to Itu Aba, 10 features had their status determined:

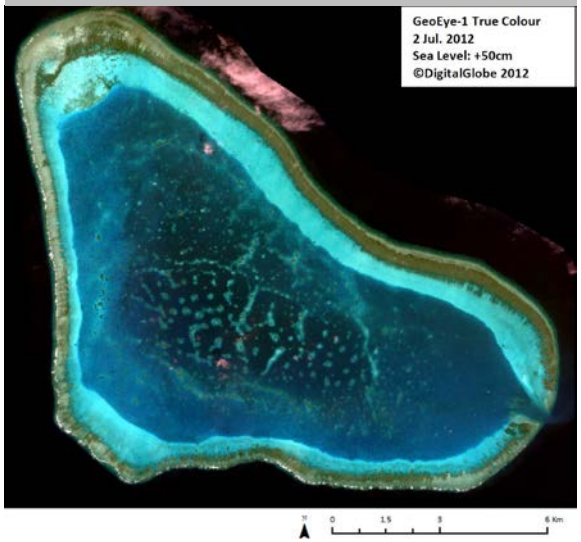
High- Tide Features	Low-Tide Features
▪ Scarborough Reef	▪ Hughes Reef
▪ Cuarteron Reef	▪ Subi Reef
▪ Fiery Cross Reef	▪ Mischief Reef
▪ Johnson Reef	▪ Second Thomas Shoal
▪ McKennan Reef	
▪ Gaven Reef North	

CIL
CENTRE FOR INTERNATIONAL LAW
National University of Singapore

I. The Award

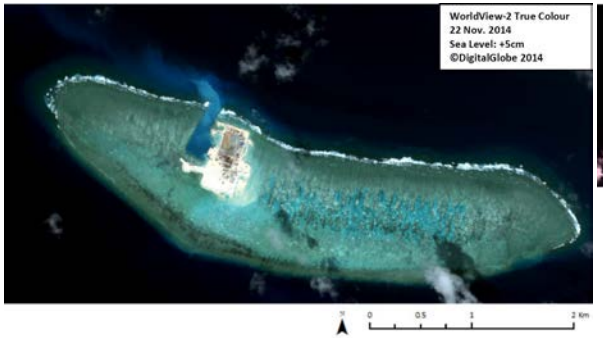
Determined High-Tide Features

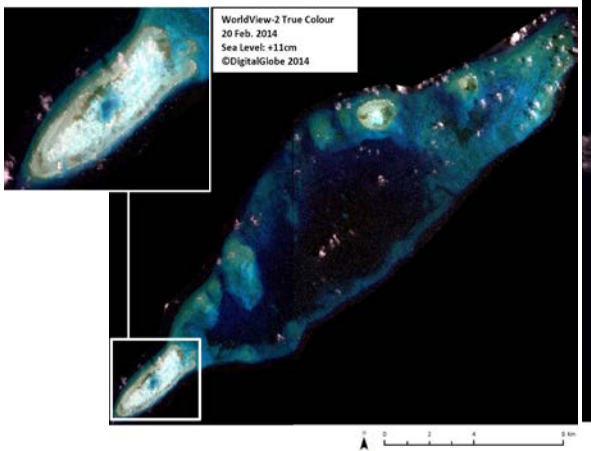
1. Scarborough Reef

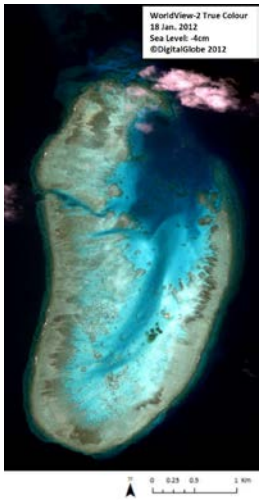


Above-water rocks, up to 3-3.5m above high tide, i.e. higher than the tidal range

2. Cuarteron Reef, Fiery Cross Reef and Johnson South Reef

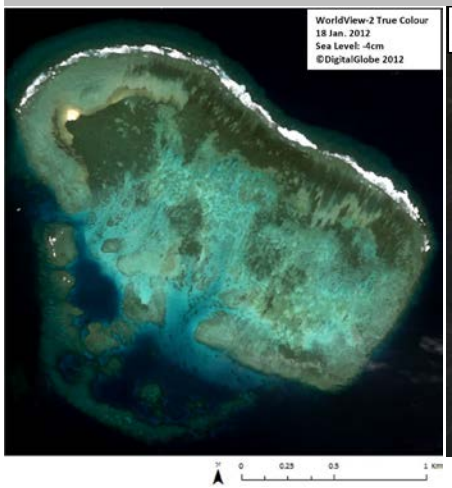






Above-water rocks in some records that are 1 to 1.5m high at the most, i.e. smaller than the tidal range

3. Mc Kennan Reef and Gaven Reef North



Above-water reef formations mentioned in some records

('reef boulders' according to the Tribunal) -

They appear to be dynamic sand formations in satellite imagery

I. The Award

The Tribunal's Reasoning

- **No rule on any particular high-water vertical datum**
- **States are free under the Convention to claim a high-tide feature or island on the basis of any high-water datum that reasonably corresponds to the ordinary meaning of the term "high tide"**
- **Either Mean Higher High Water or Mean High Water Springs would be an appropriate approximation of 'high tide'**
- **The tidal range in the SCS is comparatively <u>small</u> and the selection of a vertical datum makes no substantial difference regarding the status of the feature**
- **Most convincing evidence concerning the status of the SCS features is to be found in <u>nautical charts, records of surveys and sailing directions</u>**

I. The Award

The Tribunal's Reasoning

- **Rocks and large coral boulders cemented to the platform of a reef have a high degree of permanence and can reasonably be expected to remain largely unchanged, even over centuries. Older direct observations are thus not per se less valuable, provided they are clear in content and obtained from a reliable source**
- **Ephemeral features such as sand cays pose a greater challenge but can also be consistent over time and will often reform in the same location if dispersed by a storm**
- **In the context of this case, as for all sensitive determinations, the depiction of features on published maps is often not sufficient and it is beneficial to have recourse to original survey data, prepared by individuals with direct experience and knowledge of the area in question.**

I. The Award

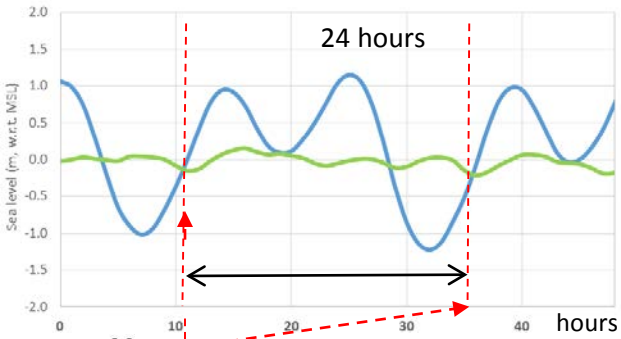
Two Issues of Permanence Above the Sea

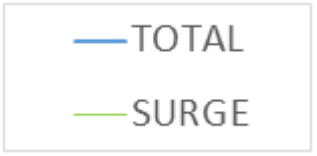
Permanence over time	▪ **High tide level: How many times a month can it be submerged whilst still qualifying as above water at high tide?** ▪ **Can it be temporary? E.g. ephemeral sand formations, effect of sea level rise (20cm in the last century), active erosion/traces of seawater infiltrations**
Permanence in same location	▪ **Dynamic sand banks: appear, disappear, re-appear in different locations, with different shapes and sizes**

CIL
CENTRE FOR INTERNATIONAL LAW
National University of Singapore

II. Which High Tide?

Tide and Sea Level Variation

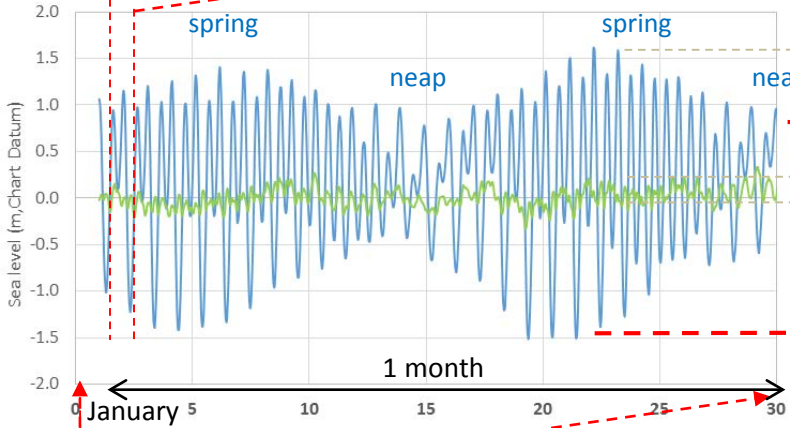


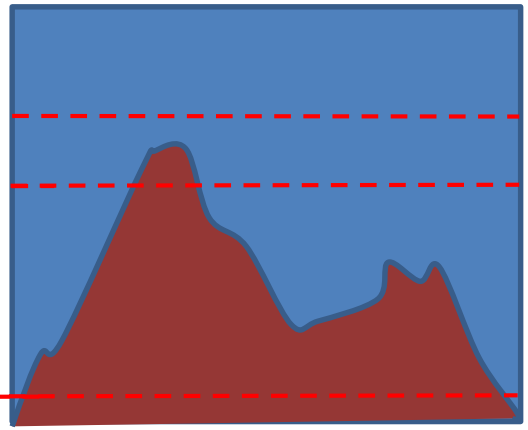


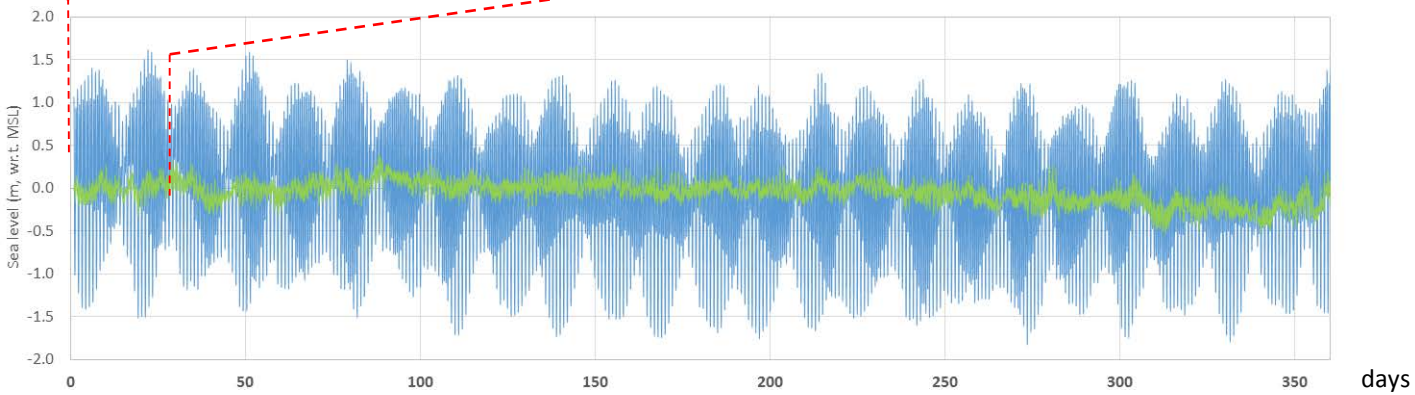
TIDE ≡ Astronomic Tide

SURGE ≡ Wind-induced Surge

TOTAL ≡ TIDE + SURGE







1 year (2011)

CIL
CENTRE FOR INTERNATIONAL LAW
National University of Singapore

II. Which High Tide?

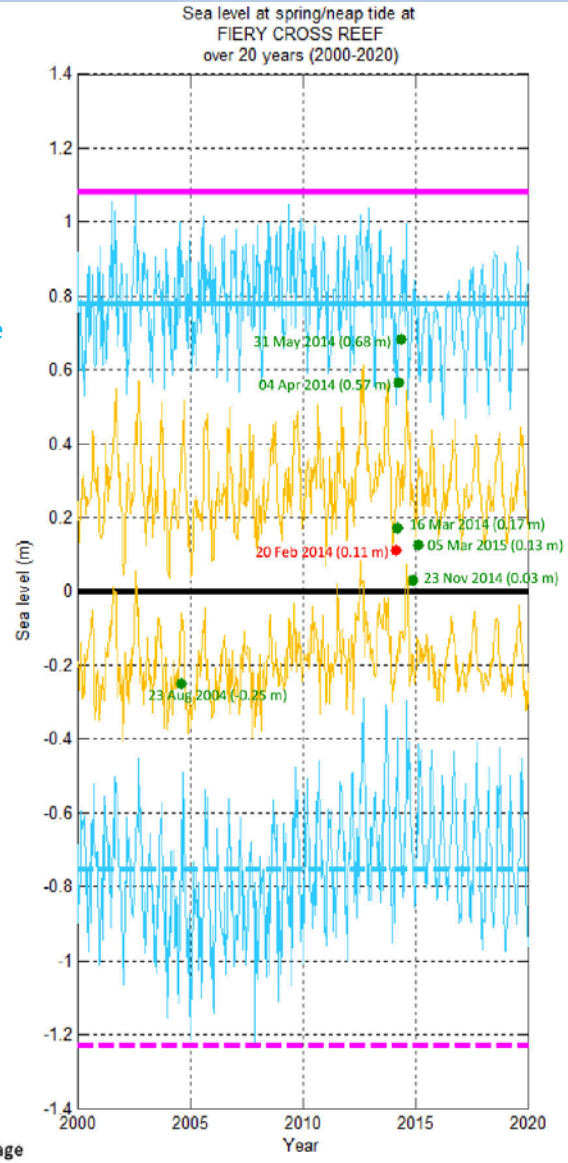
Tide and Sea Level Variation

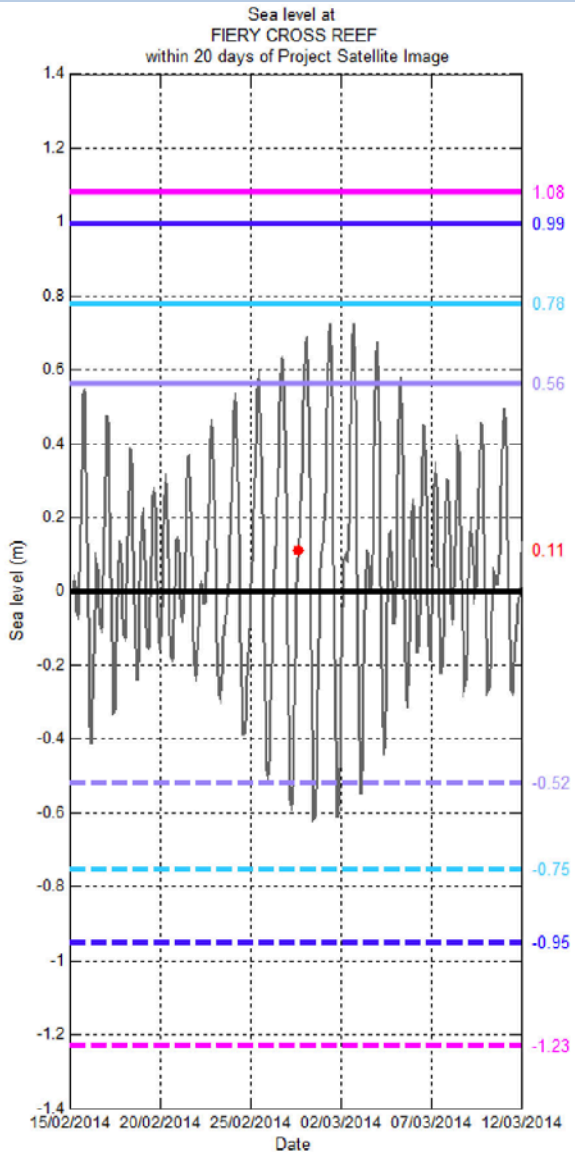
High Spring Tide

High Neap Tide

Low Neap Tide

Low Spring Tide





Highest Astronomical Tide

Highest Tide of the Year

Mean High Water Spring

Mean Higher High Water

Hourly Sea Level

Mean Sea Level

Mean Lower Low Water

Mean Low Water Spring

Lowest Tide of the Year

Lowest Astronomical Tide

● Project Satellite Image

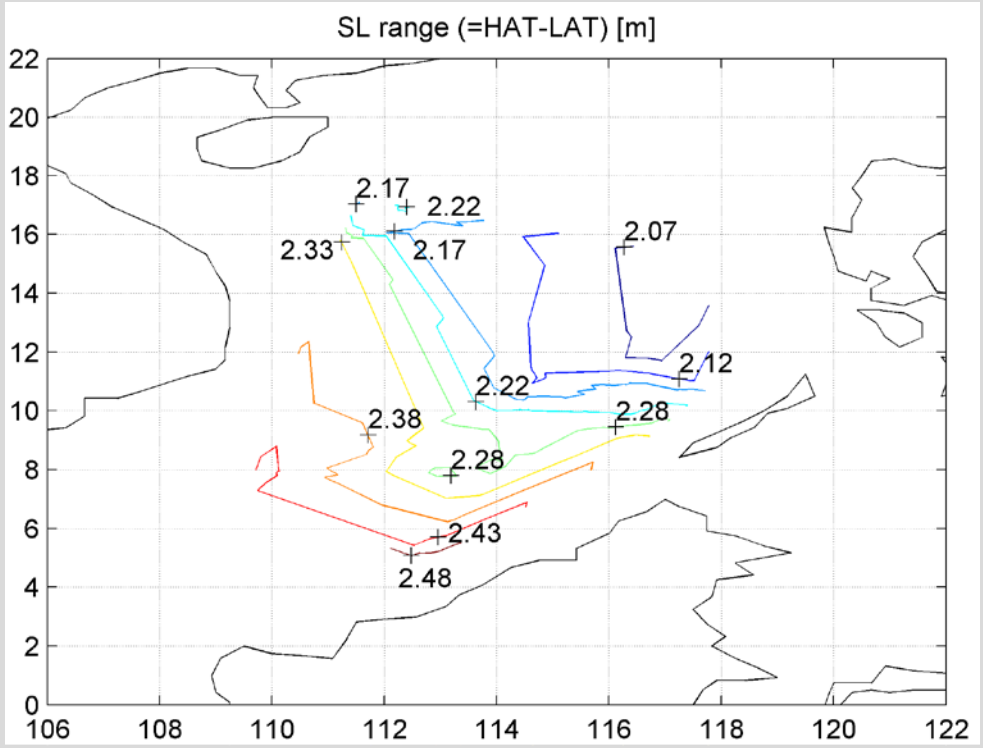
● Google Earth and Landsat satellite images

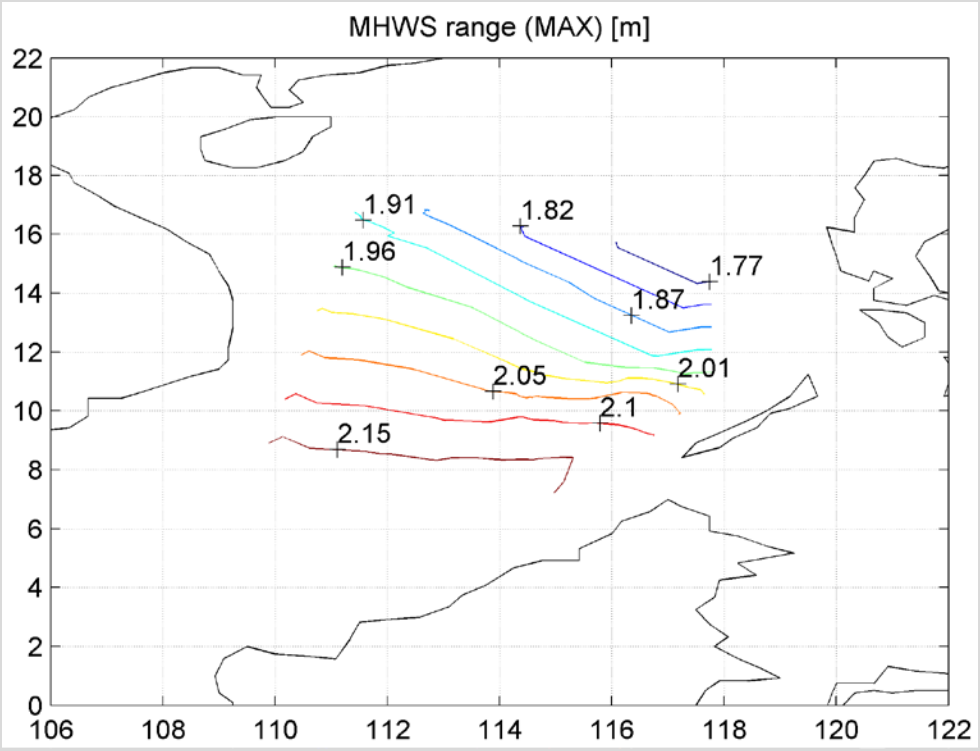
CIL
CENTRE FOR INTERNATIONAL LAW
National University of Singapore

II. Which High Tide?

Sea Level Variation

Sea Level Variation across the South China Sea





Prepared for this conference by Pavel Tkalich and Luu Quang Hung, Physical Oceanography Lab of TMSI, National University of Singapore

CIL
CENTRE FOR INTERNATIONAL LAW
National University of Singapore

II. Which High Tide?

Case Law

- **The Tribunal decided to rely primarily on historical surveys and, in doing so, departed from the view of the Court in the Nicaragua vs Columbia case on the basis that it *'must be understood in the context of that case'***
- **The Tribunal favoured any historical evidence that suggested that a feature would have been above high tide during the observation period, be it 2 weeks or less**
- **By contrast, in Nicaragua vs. Columbia, the court indicated to be taking a cautious view of what feature may qualify as a High Tide Feature as 'even the smallest island generates a 12-nautical-mile territorial sea'; it 'has to make sure that it has before it evidence sufficient to satisfy that a maritime feature meets the test of being above water at high tide'.**

II. Which High Tide?

Case Law – Lessons Learned

- **The solution adopted in Nicaragua vs. Columbia and in the SCS Arbitration are so different that that they can only be explained by the facts of each case and the evidence presented to the judges**
- **In both cases, the judges were limited by available evidence; new scientific data on sea level variations in the South China Sea would therefore help the determination of the status of still un-determined features**

III. Permanency Above Sea Level

Over Time

Does a temporary above-water land formation qualify as an 'island' or 'high tide feature'?

- **Fast sea level rise of around 20cm per century over low lying when not subsiding geographic formations**
- **Dynamic sand banks and cays which appear and disappear under the combined effects of astronomic tides, storm surges and wind-waves and rarely if ever reappear in the same location with the same shape and size**
- **Natural erosion of these low-lying formations as evidenced by seawater infiltration processes visible on several high resolution satellite images of the SCS above-water features.**

CIL
CENTRE FOR INTERNATIONAL LAW
National University of Singapore

III. Permanency Above Sea Level

Over Time

- **The SCS Award recalls that according to the *Travaux Préparatoires of Article 121(3)*, the word 'island' covers all portions of territory <u>permanently above water in normal circumstances</u> (and capable of use or habitation)**
- **However, the Tribunal refers to the 'high degree of permanence' of 'rocks and large coral boulders cemented to the platform' only to justify the reliability of old record of direct observations of such type of features; There is no discussion of permanence of High Tide Feature**
- **The Tribunal finds that ephemeral features *'can be consistent over time' (…) 'a sand cay may be dispersed by storm action and reform in the same location after a short while. The absence of a sand cay at a particular point in time is thus not conclusive evidence of the absence of a high-tide feature'***

III. Permanency Above Sea Level

Over Time

- **However, none of the High Tide Features determined by the Tribunal is characterized as a 'recurring' sand cay. Each of them is characterized as a 'rock' or a 'boulder'**
- **In Nicaragua vs. Columbia, the Court found that the fact that a High Tide Feature is composed of coral debris is irrelevant as '*international law defines an island by reference to whether it is "naturally formed" and whether it is above water at high tide, not by reference to its geological composition'.* According to the Court, what mattered was the photographic evidence which showed that the feature was *'composed of solid material, attached to the substrate, and not of loose debris.'***
- **Publicly available satellite imagery suggests that some 'boulders' may be ephemeral formations that are dynamic, under the combined effect of astronomic tides, storm surges and wind-waves and do not generally re-form in the same location**

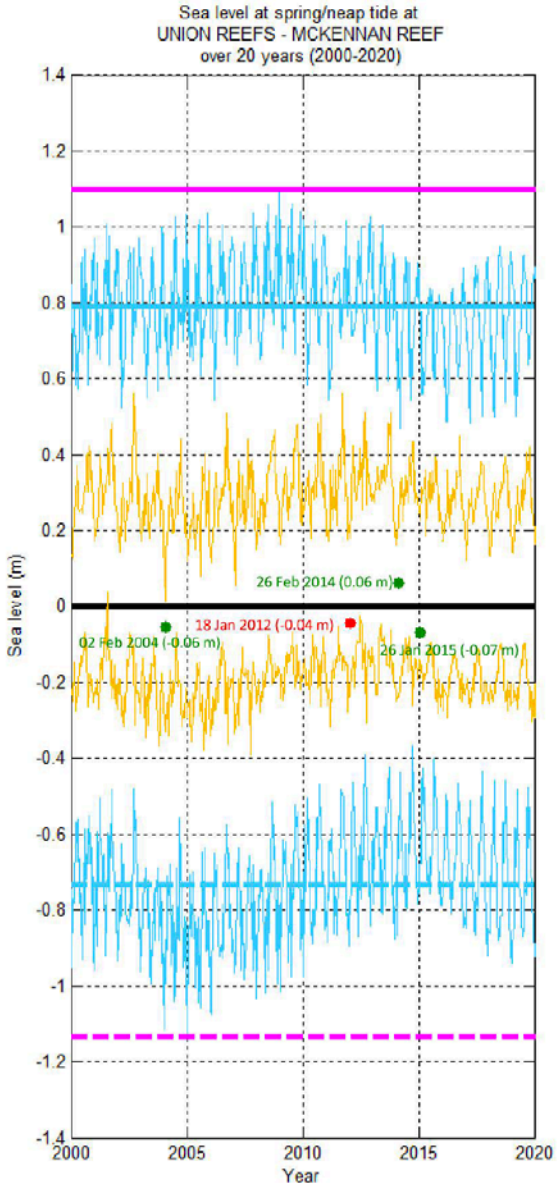
III. Permanency Above Sea Level

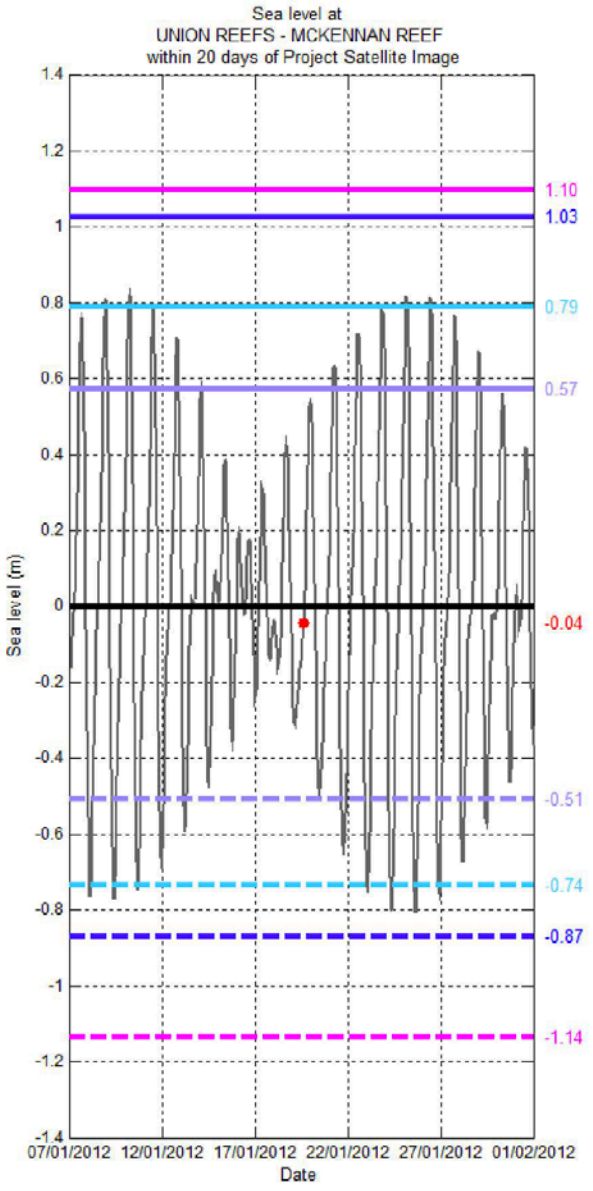
Over Time: Mc Kennan Reef

CIL
CENTRE FOR INTERNATIONAL LAW
National University of Singapore

III. Permanency Above Sea Level

Mc Kennan Reef





CIL
CENTRE FOR INTERNATIONAL LAW
National University of Singapore

III. Permanency Above Sea Level

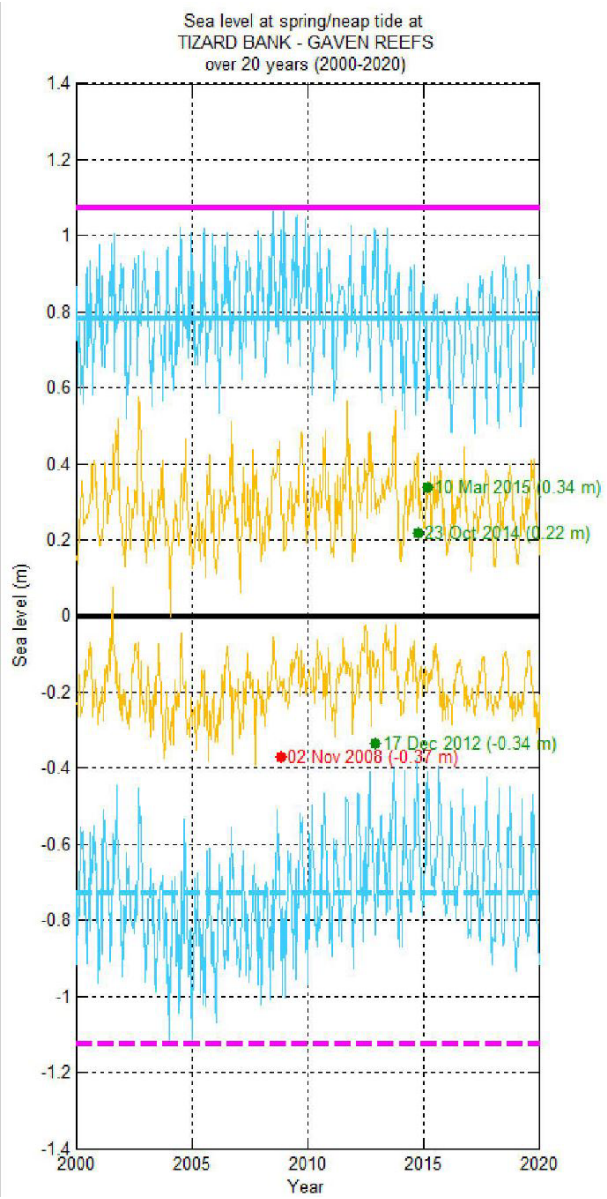
In Same Location: Gaven Reef North

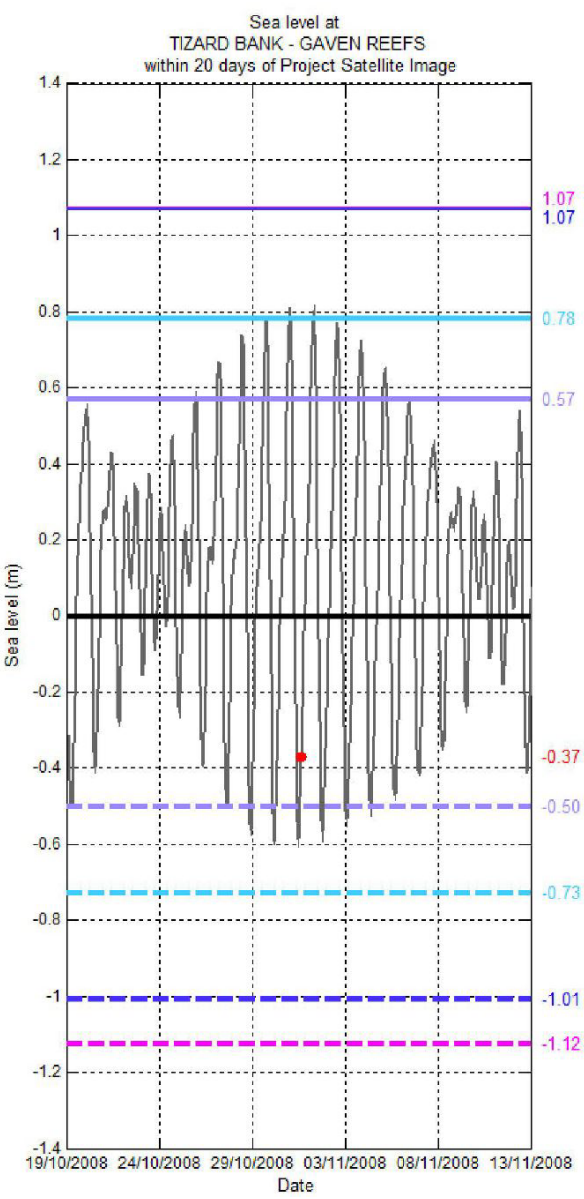
Survey by HMS Rifleman (1867)
(depicting no high-water feature)

Imperial Japanese Navy Chart No. 523
(depicting sand cay with height of 1.9 metres above Mean Sea Level)

III. Permanency Above Sea Level

Gaven Reef North

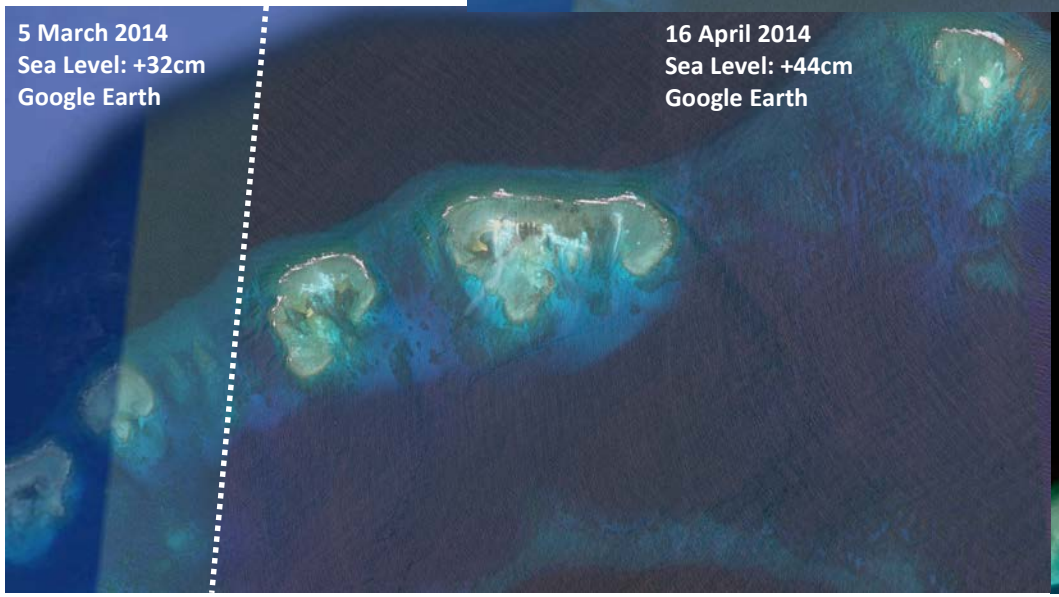




CIL
CENTRE FOR INTERNATIONAL LAW
National University of Singapore

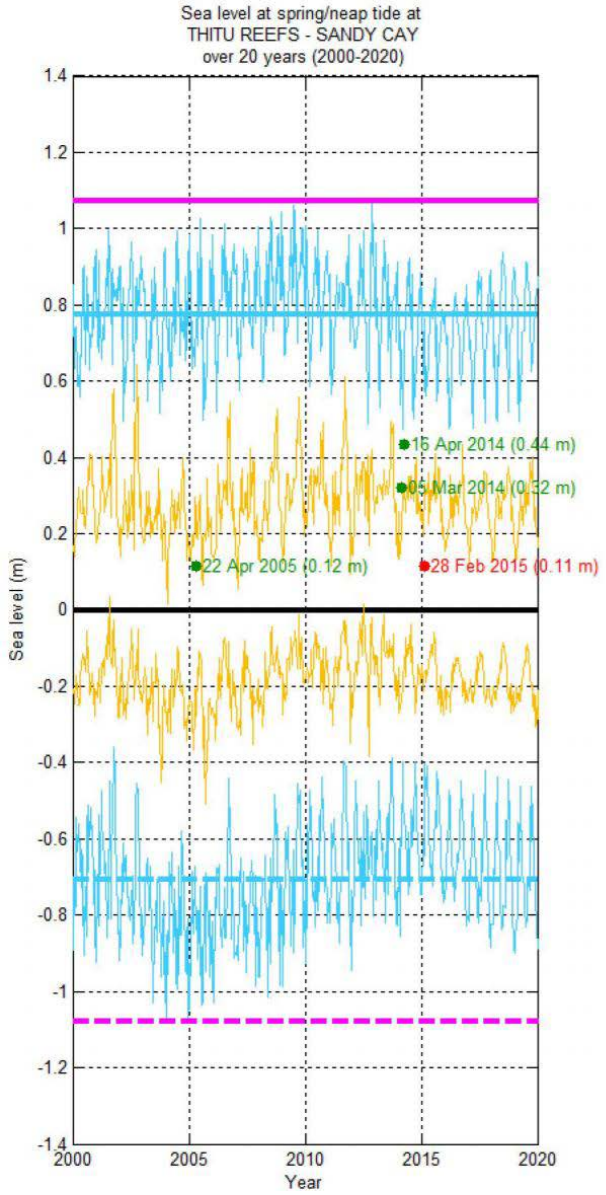
III. Permanency Above Sea Level

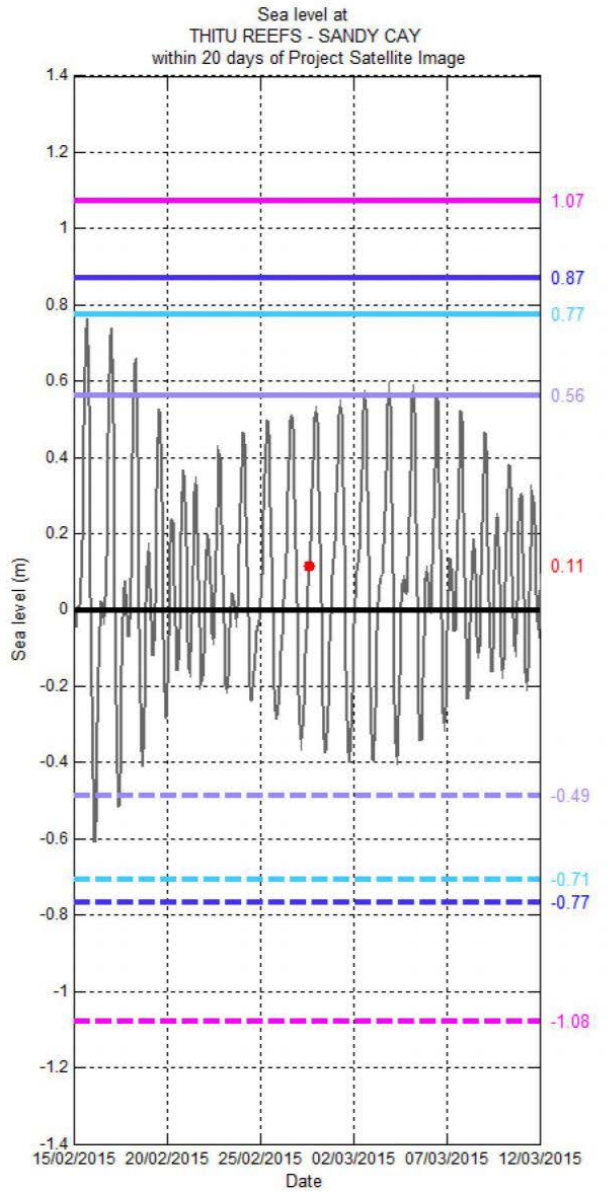
In the Same Location: Sandy Cay



III. Permanency Above Sea Level

Sandy Cay





CIL
CENTRE FOR INTERNATIONAL LAW
National University of Singapore

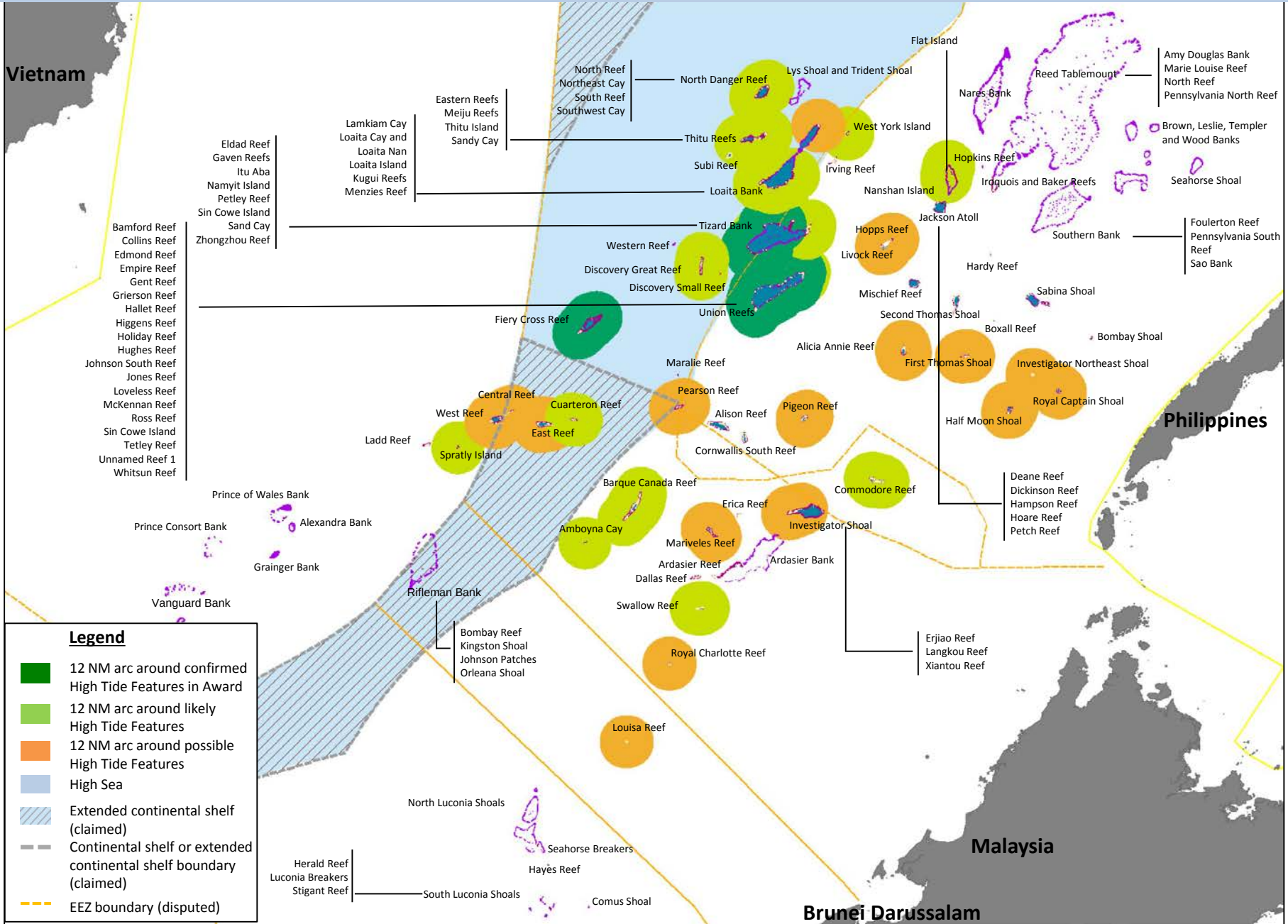
IV. Implication for Other Shallow Features

Five Categories of Features

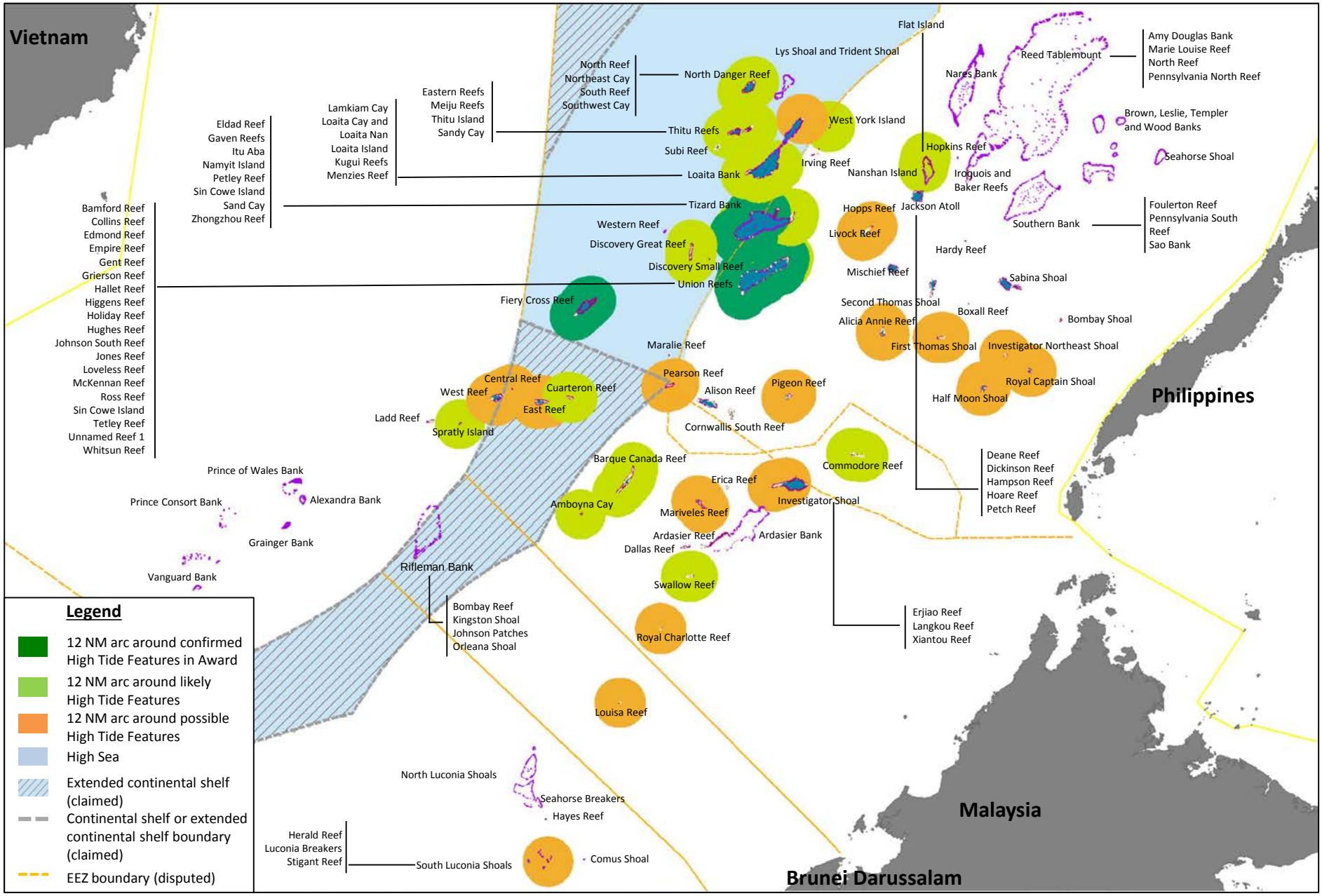
Out of around 120 disputed shallow geographic features in the SCS:

1. **Eleven features determined by the Tribunal**
2. **Largest features covered by terrestrial vegetation (not just mangrove) such as Itu Aba, Thitu Island, Spratly Island, West York, Sand Cay, Sin Cowe, Northeast Cay, Southwest Cay and Nanshan island**
3. **Features consistently found to be fully submerged or exposed at low tide only, such as Macclesfield Bank, Most of Reed Bank, Most of Ardasier Bank, Lys and trident Shoals, Vanguard Bank, Alexandra Bank, Prince Consort and Prince of Wales Banks.**
4. **Features consistently found to have above water high tide parts in sailing directions and nautical charts (and not determined by the Tribunal)**
5. **Dubious cases, whether due to the non-conclusive nature of the sailing directions, the presence of dynamic sand banks, the absence of any terrestrial vegetation, evidence of seawater infiltrations, questionable above-water formations prior to island building constructions.**

IV. Implication for Other Shallow Features



IV. Implication for Other Shallow Features



Conclusion

- Over 100 shallow geographic features that are in dispute in the South China Sea have not been the subject of a status determination in the Award
- Methodology with respect to the identification of geographic features which are above water at high tide and therefore capable of appropriation is based on the evidence available to the Tribunal and cannot be transposed to new evidence and scientific facts
- If small above-water rocks cannot be determined with certainty solely on the basis of satellite imagery, historical observations can be placed back into historiography of sea level variations based on satellite altimetry data
- Sand Cays are dynamic in the South China Sea and their movement can be monitored with certainty in satellite imagery

Thank you!

Questions?

Younalyons@nus.edu.sg

Source: Census of Marine Life:
http://www.comlmaps.org/extra/ngs/Ocean_Life_Diversity_Distribution-300dpi.pdf

CIL
CENTRE FOR INTERNATIONAL LAW
National University of Singapore