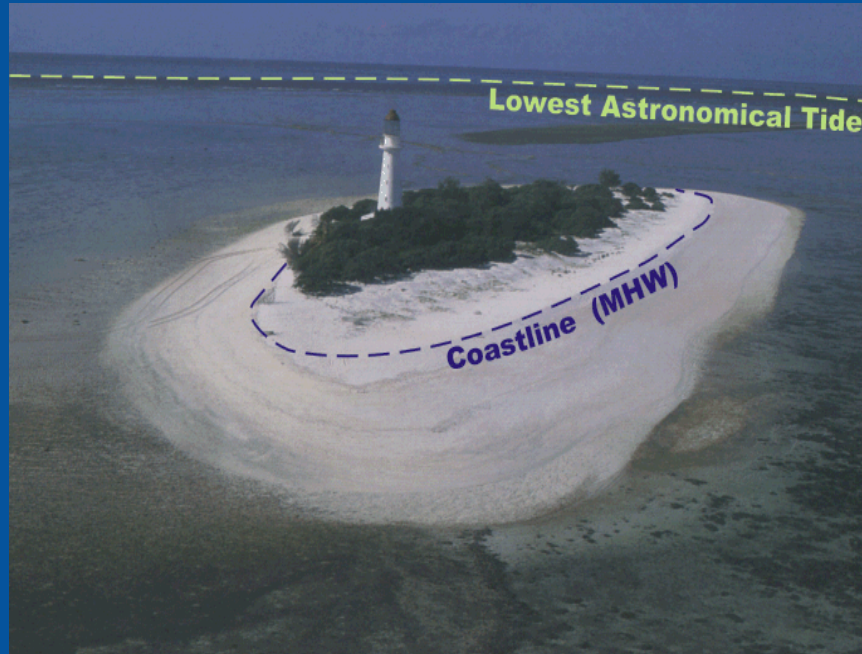


# Baselines Issues in the South China Sea

## Challenges in Defining the 'Boundary' between Land and Sea



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Director of Research

Australian National Centre for Ocean Resources and Security

VISIONARY / PASSIONATE / DYNAMIC  
CONNECT: UOW



UNIVERSITY OF  
WOLLONGONG  
FACULTY OF LAW



# Baselines depend on sovereignty over coastal territory...



Q.H. En #1

*The land dominates the sea and it dominates it by  
the intermediary of the coastal front.*

Prosper Weil, 1989.

# Baseline Issues

- Why important?
- Baselines versus basepoints
- Types of Baseline under UNCLOS:
  - **Normal**
  - **Reefs**
  - **Straight**
  - Mouths of rivers
  - Bays
  - Ports and harbour works
  - Combination of methods
  - **Archipelagic**
- Applicability to the South China Sea
  - Baselines of insular features
  - Baselines of mainland coasts
  - Baselines of archipelagoes

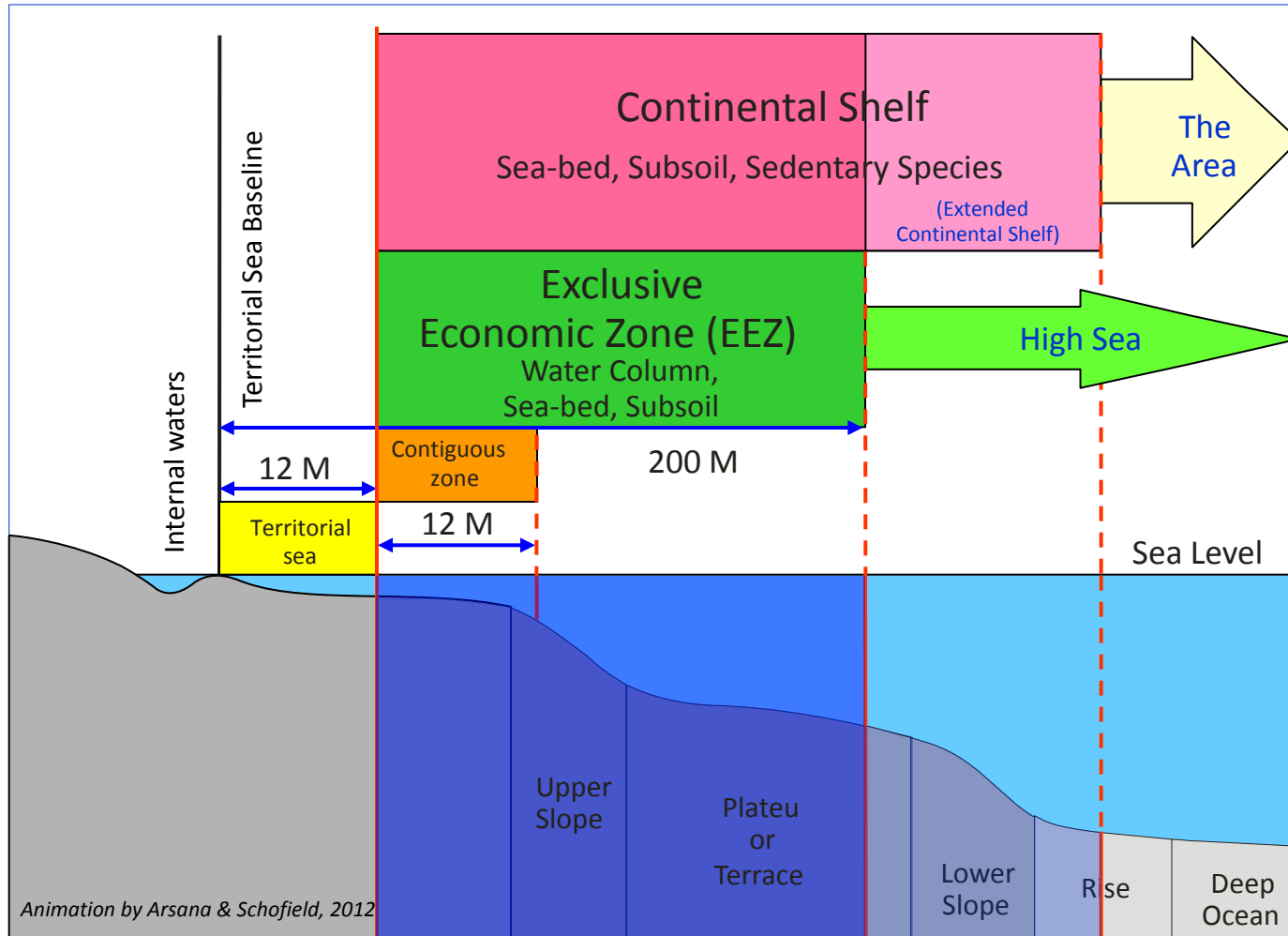


# The Importance of Baselines

- Define the land/sea interface
  - The 'boundary' of territory at the coast
- Fundamental to maritime claims
  - Provide the starting point for claiming maritime zones
  - Provide basepoints for generation of limits of national maritime claims



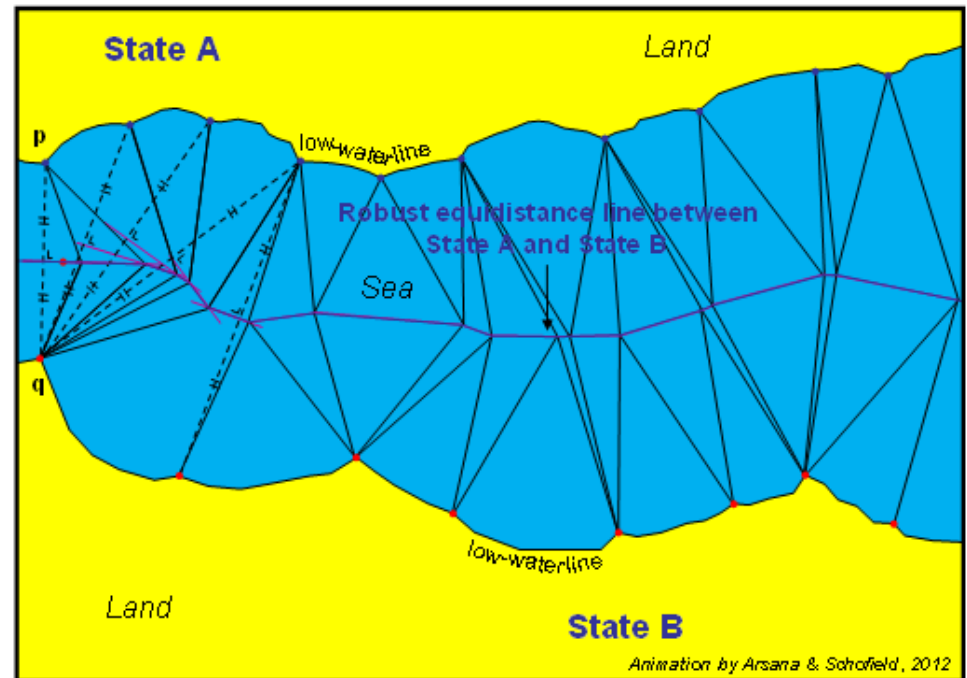
# Baselines and Maritime Zones



**Baselines are fundamental to maritime claims**

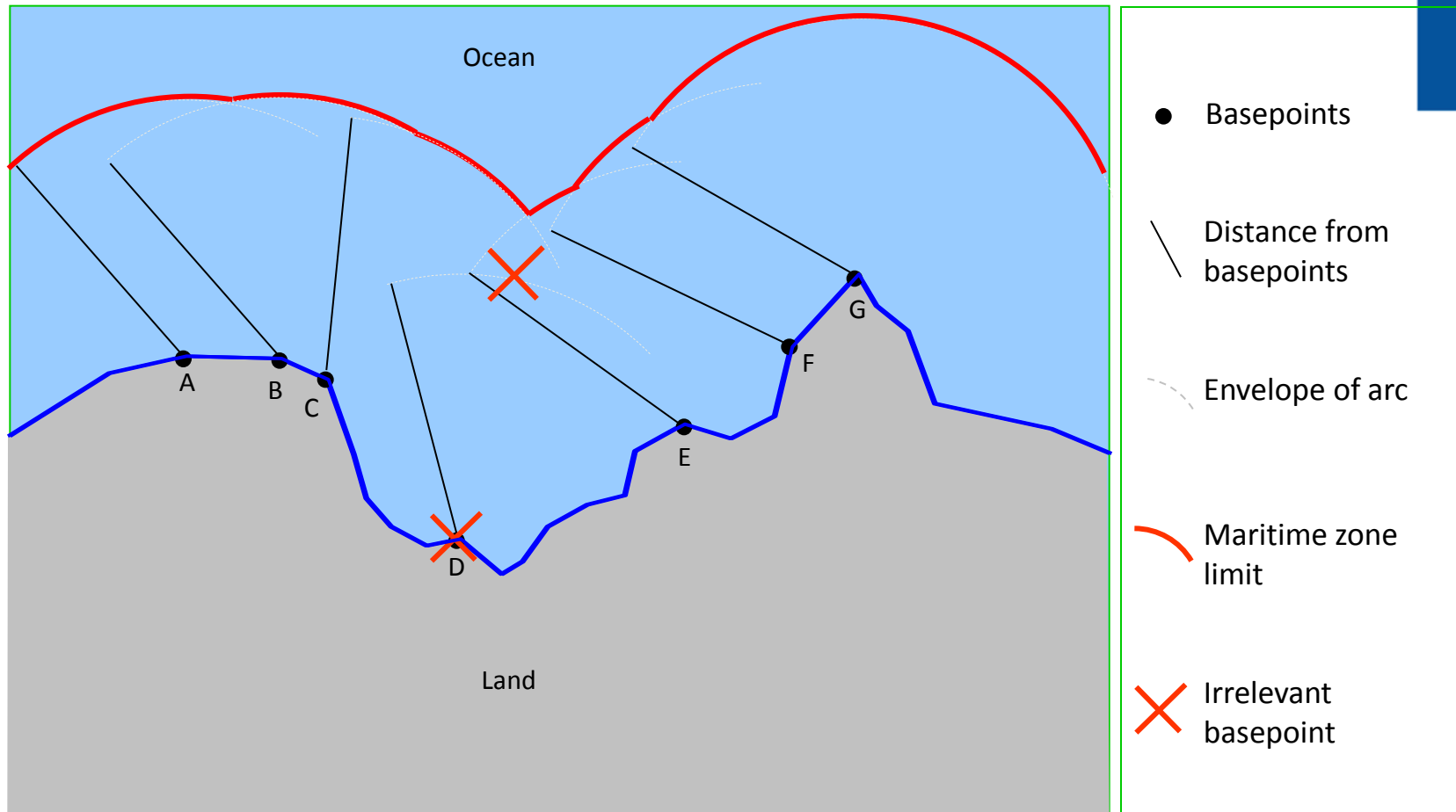
# The Importance of Baselines

- Fundamental to maritime boundary delimitation
  - Determine basepoints for construction of equidistance lines
  - Equidistance lines often used at least as the starting point for maritime delimitation
  - Majority of maritime boundary agreements based on equidistance



Source: TALOS Manual (5<sup>th</sup> edition, October 2012)

# Defining Maritime Limits: The Envelope of Arcs



**Baselines versus Basepoints:**  
Not all of the baseline contributes to defining the limits of maritime jurisdiction

# Where does the Land End and the Sea Begin?

## “Normal” Baselines

Article 5 of the LOSC states:

Except where otherwise provided in this Convention, the normal baseline for measuring the breadth of the territorial sea is the low-water line along the coast as marked on large-scale charts officially recognised by the coastal State.

- In effect a State's default baseline
- Key issue: what is meant by the term “**low-water line**”?



# The Meaning of “Low-water Line”

- Low-water line dependent on choice of vertical datum
- Vertical datum = level of reference for vertical measurements (depths, height of tide, elevations) – the ‘zero’ line
- Many options
- **Lowest Astronomical Tide (LAT)** frequently used as vertical datum for charting
- A particularly low or conservative low-water line:
  - normal baseline advanced further ‘down the beach’
  - land territory/internal waters increased
  - maritime zones potentially increased



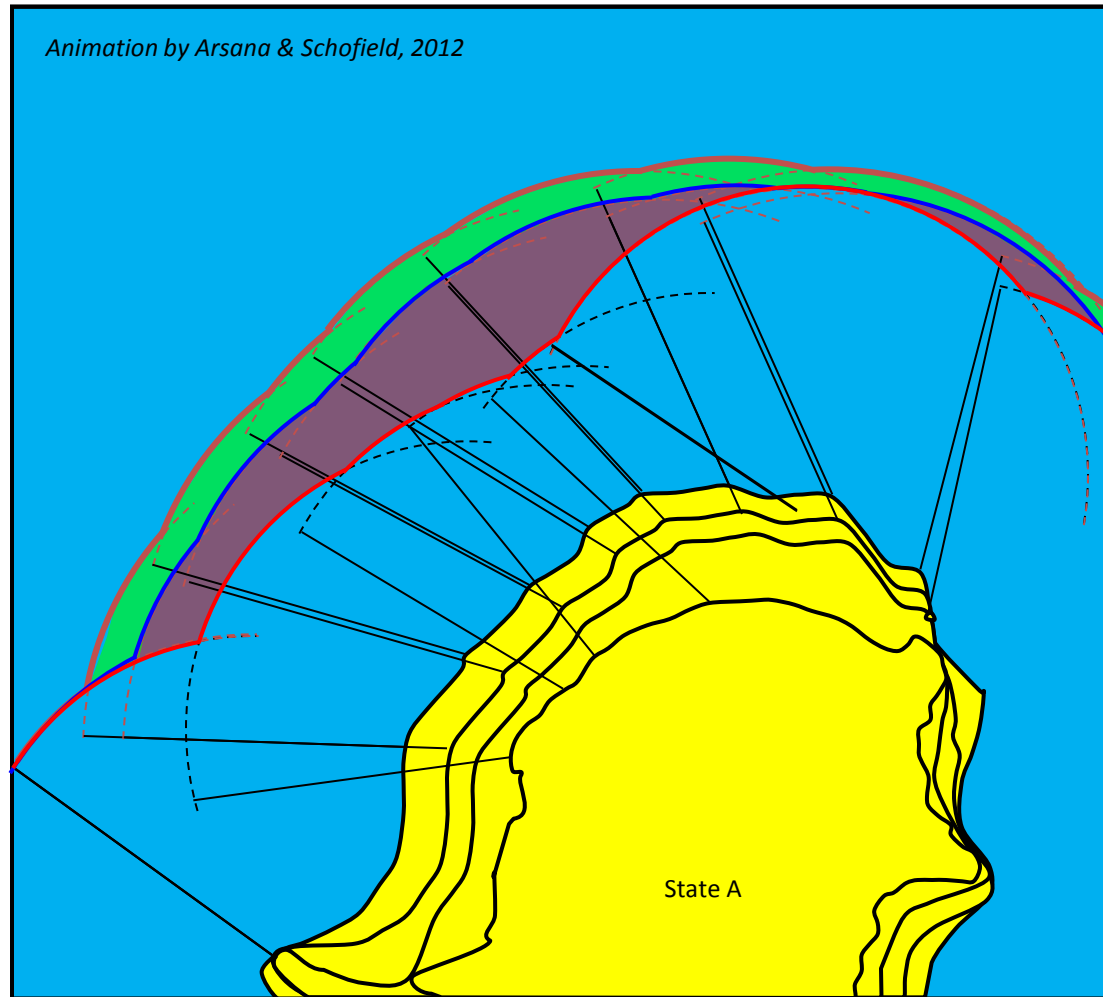
## Ambulatory Baselines and Shifting Limits

- Coastlines dynamic and move over time
  - Deposition along the shore
  - Erosion leading to shoreline retreating inland
- Normal baselines potentially “**ambulatory**” – unstable and subject to sometimes rapid change
- Implications for:
  - Extent and limits of maritime claims
    - Dramatic horizontal shifts to normal baselines possible from slight changes to sea level vertically
  - Enforcement issues
  - Delimitation of maritime boundaries
- Normal baselines relevant to South China Sea:
  - Brunei
  - China and Vietnam on the Gulf of Tonkin
  - Baselines of islands

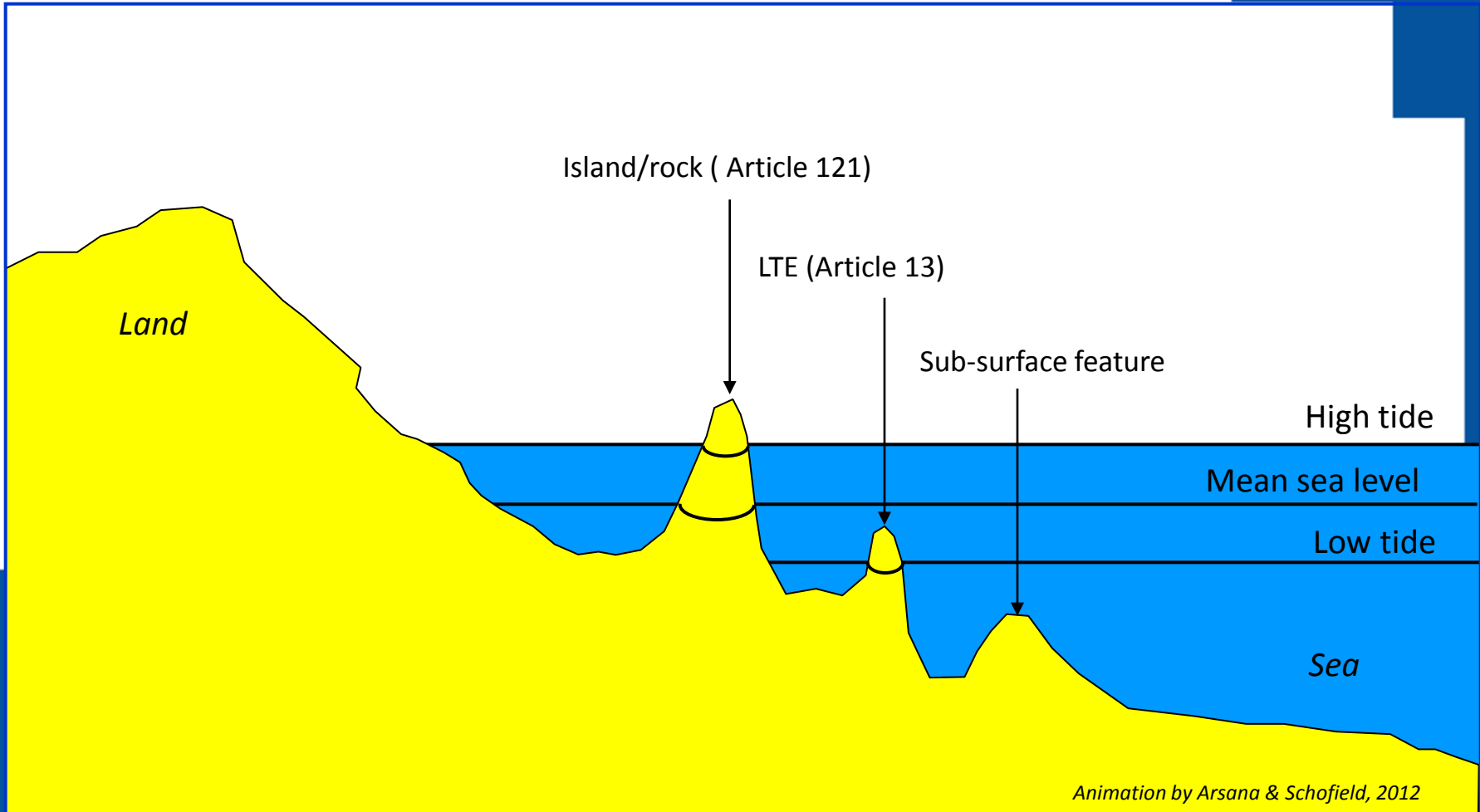


# Shifting Maritime Limits

*Animation by Arsana & Schofield, 2012*



# Sea Level and Insular Features



Source: TALOS Manual (5<sup>th</sup> edition, March 2013)

# The Spratly Islands:

## *“A Labyrinth of Detached Shoals”*

(Findlay, 1889)

- **What?** Profusion of different types of feature: submerged banks and shoals, reefs, cays and low-tide elevations, rocks and islets
- **Where?** Scattered over c.240,000km<sup>2</sup> of the southern South China Sea
- **How many?** Estimates vary.
  - Only 48 above water at high tide?
- **How big?**
  - Largest (Itu Aba): 1.4km long, area of c.50 hectares
  - Total surface area of 13 largest features estimated at less than 2km<sup>2</sup>

# Spratly Island



- Normal baselines apply
- Sea wall constructed with the aim of stabilising the coastline/baselines

# Reefs

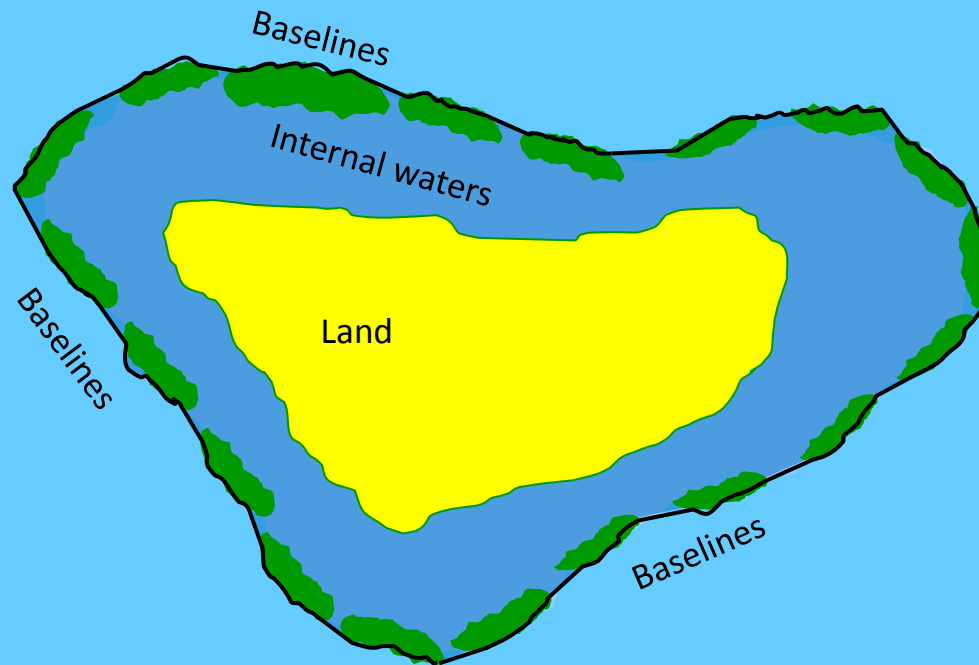
## LOSC, Article 6

In the case of islands situated on **atolls** or of islands having **fringing reefs**, the baseline for measuring the breadth of the territorial sea is the seaward low-water line of the reef, as shown by the appropriate symbol on charts officially recognized by the coastal state.

- The terms “atoll” and “fringing reef” have strict geomorphological meanings
- No evidence that the drafters of LOSC meant these terms to be restrictive
- Uncertainties over closing lines



# Fringing Reefs



Animation by Arsana and Schofield (2013)





# Atolls



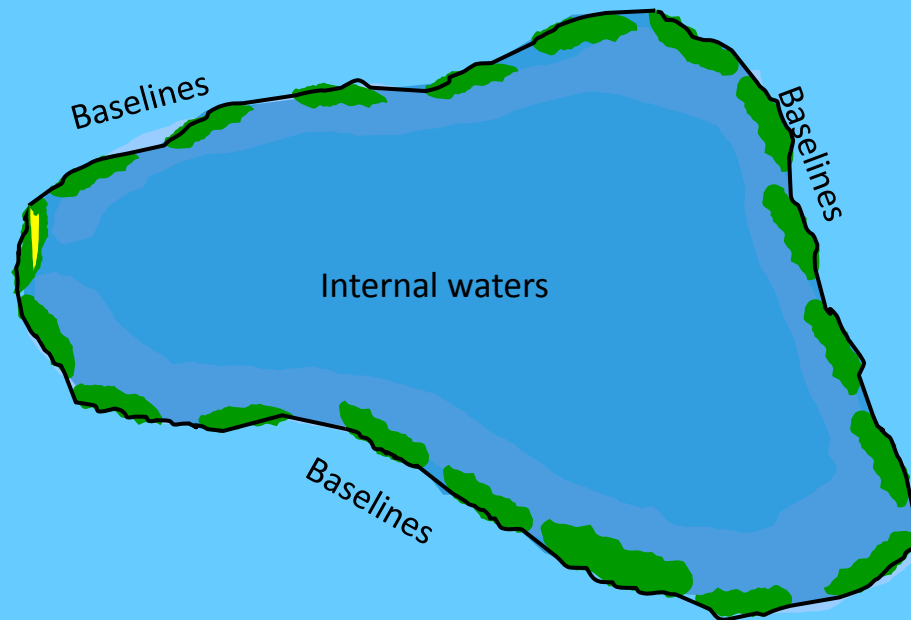
Animation by Arsana and Schofield (2013)



# Scarborough Reef



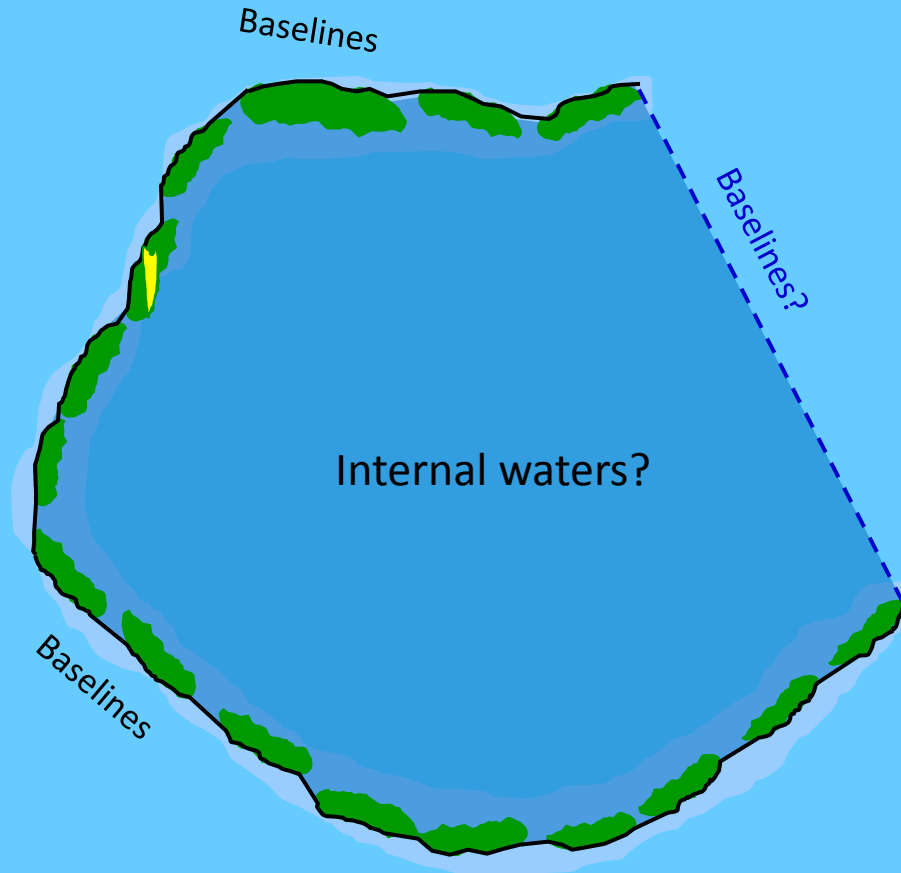
# Atolls



Animation by Arsana and Schofield (2013)



# Almost Atolls



Animation by Arsana and Schofield (2013)



# North Danger Reef



Data SIO, NOAA, U.S. Navy, NGA, GEBCO  
Image © 2013 DigitalGlobe

5.01 km



# Low-tide Elevations (LTEs)

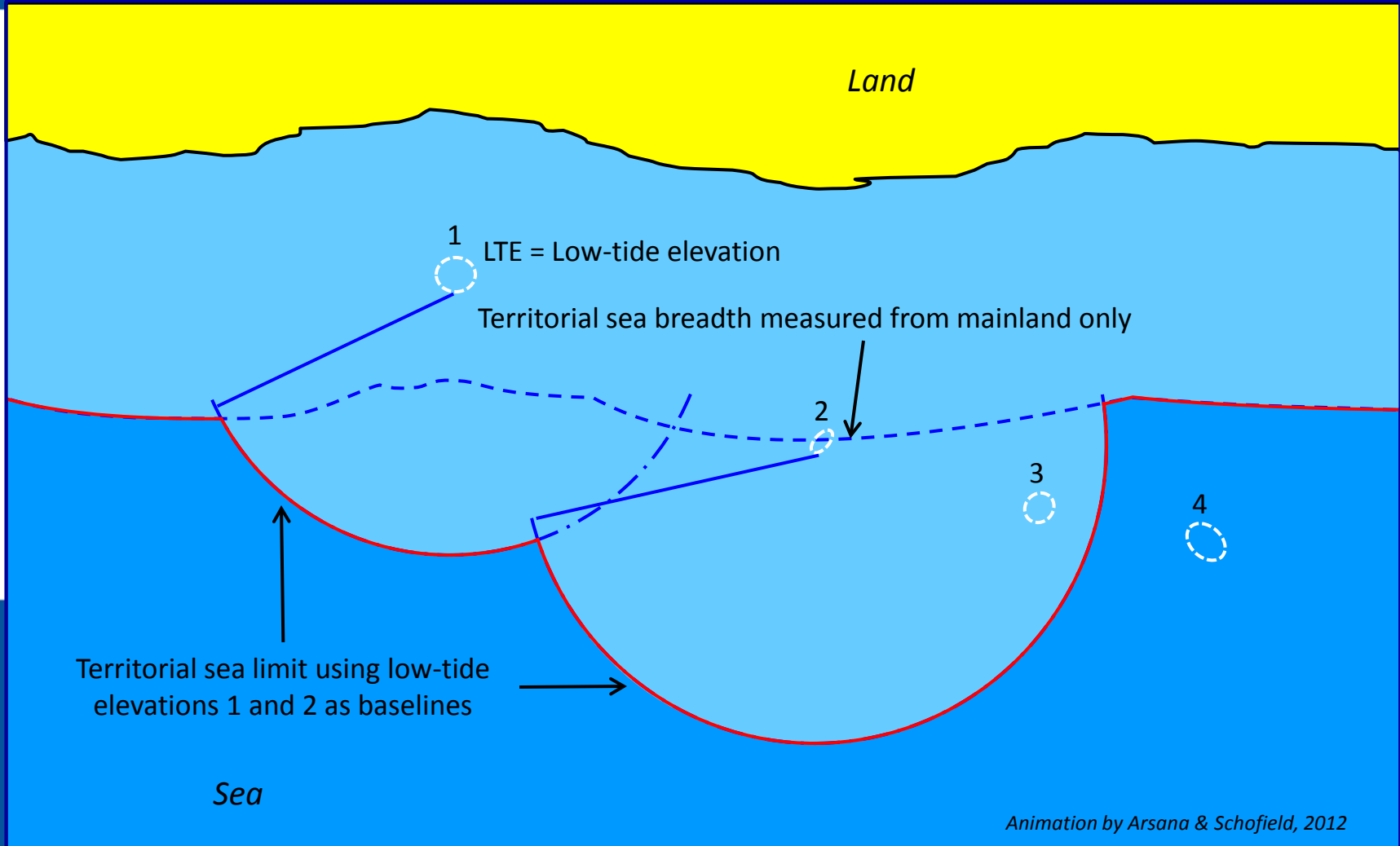
## Article 13

### *Low-tide Elevations*

1. A low-tide elevation is a naturally formed area of land which is surrounded by and above water at low tide but submerged at at high tide. Where a low-tide elevation is situated wholly or partly at a distance not exceeding the breadth of the territorial sea from the mainland or an island, the low-water line on that elevation may be used as the baseline for measuring the breadth of the territorial sea.
  2. Where a low-tide elevation is situated at a distance exceeding the territorial sea from the mainland or an island, it has no territorial sea of its own.
- So-called “parasitic basepoints” (Clive Symmons, 1995)
  - Can be used as basepoints if wholly or partially within 12 nautical miles of an above high-tide feature
  - Especially vulnerable to change

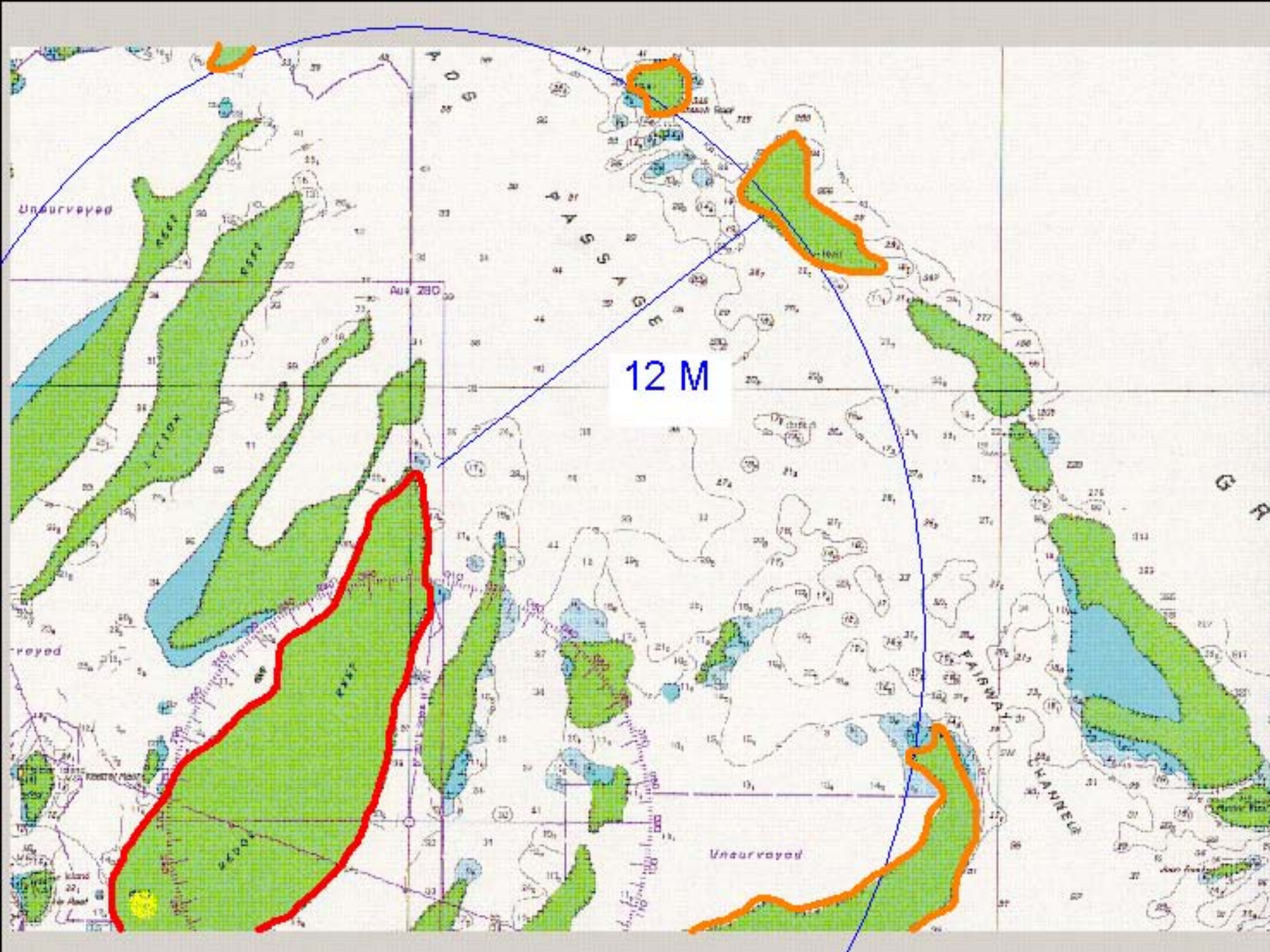


# Influence of LTEs



Source: TALOS Manual (5<sup>th</sup> edition, March 2013)







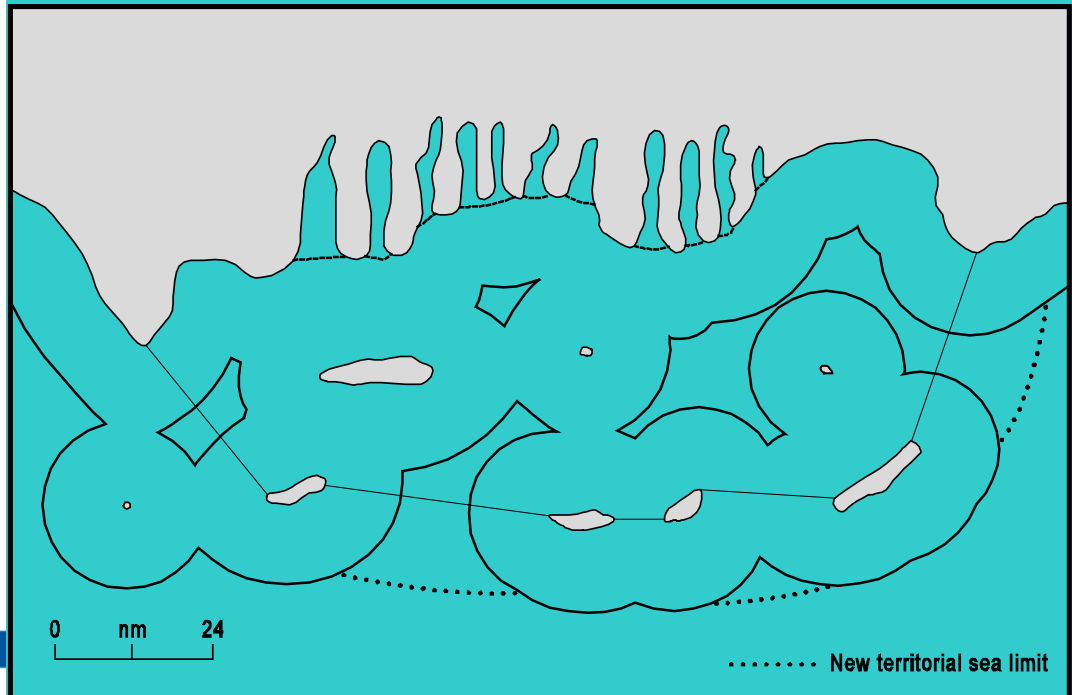
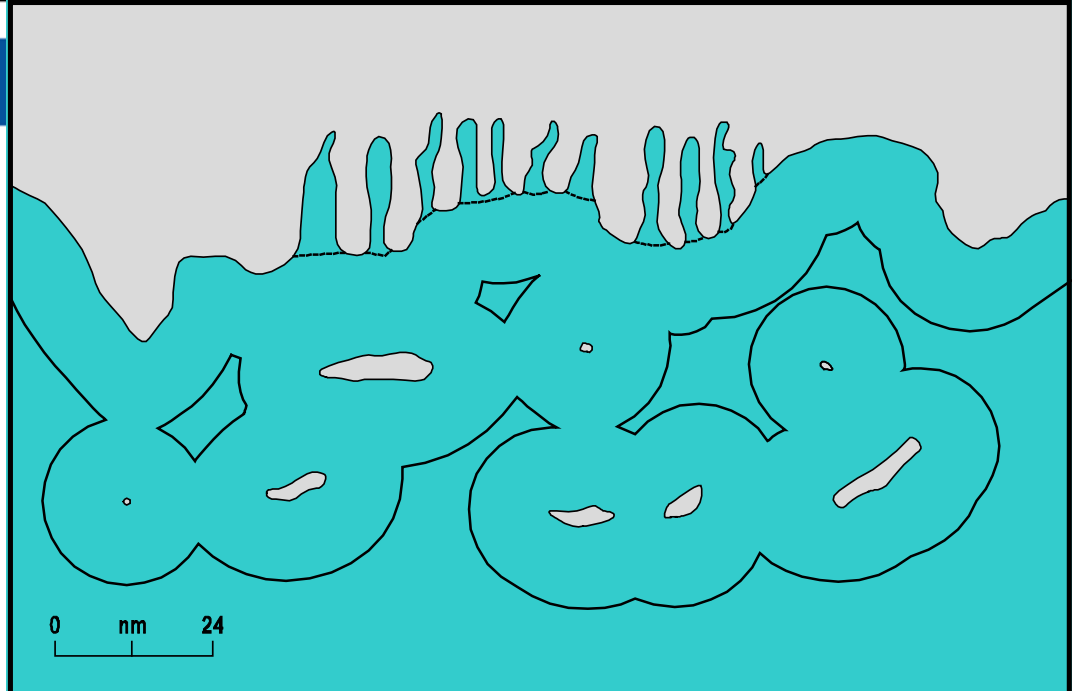
# Straight Baselines

## The Intentions of UNCLOS, Article 7

- Cater for unusual coastal geography
- Avoid situations where normal/bay closing lines result in enclaves of non-territorial sea
- Avoid complex mosaic of territorial sea and non-territorial sea areas
- Simplify marine management



**United Nations, *Baselines:*  
*An Examination of the*  
*Relevant Provisions of the*  
*United Nations Convention*  
*on the Law of the Sea, 1989***



# Deeply indented or Fringe of Islands

1. In localities where the coastline is deeply indented and cut into, or if there is a fringe of islands along the coast in its immediate vicinity, the method of straight baselines joining appropriate points may be employed in drawing the baseline from which the breadth of the territorial sea is measured.



# Archipelagic States

According to Article 46 of the LOSC an archipelagic state is one constituted wholly by one or more archipelagos but may also include other islands.

Archipelagos themselves are defined in Article 46 as:

...a group of islands, including parts of islands, interconnecting waters and other natural features which are so closely interrelated that such islands, waters and other natural features form an intrinsic geographical, economic and political entity, or which historically have been regarded as such.

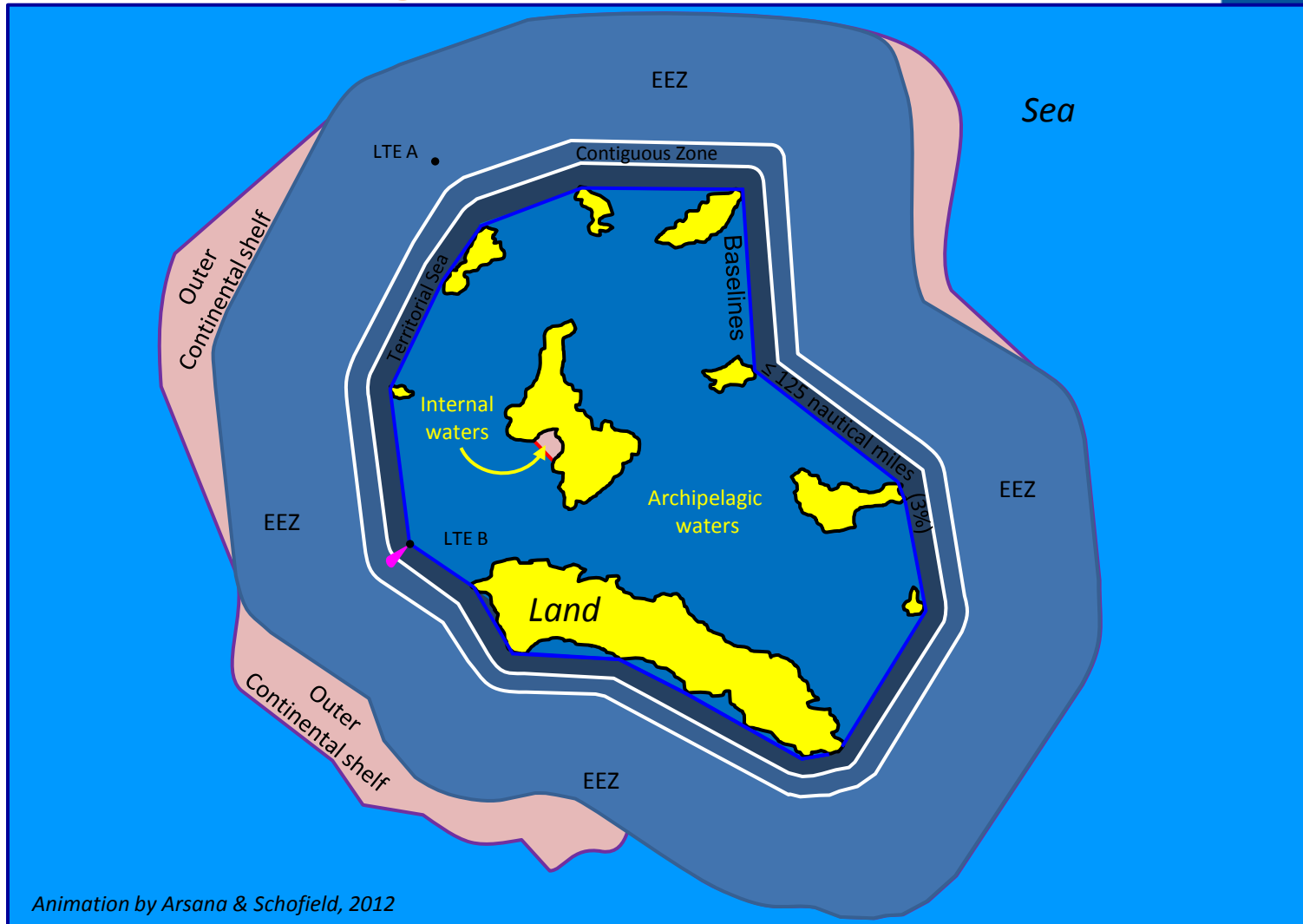
# Key Requirements for Archipelagic Baselines

In order to apply archipelagic baselines in accordance with the LOSC, therefore, five conditions have to be met:

- Straight archipelagic baselines joining the outermost points of the outermost islands and drying reefs of the archipelago may be drawn so long as the claimant State's "main islands" are included within the archipelagic baseline system
- The ratio of water to land within the baselines must be between 1:1 and 9:1
- The length of any single baseline segment must not exceed 125 nautical miles
- No more than three percent of the total number of baseline segments enclosing an archipelago may exceed 100 nautical miles
- Such baselines "shall not depart to any appreciable extent from the general configuration of the archipelago"



## Archipelagic baselines and maritime zones



Animation by Arsana & Schofield, 2012

Source: TALOS Manual (5<sup>th</sup> edition, October 2012)



# The South China Sea

Mainland and main island coasts

South China Sea Insular features

Claimed Baselines (archipelagic, straight)

Archipelagic waters

Internal waters

12nm from baselines and islands

200nm from mainland coasts

200nm from mainland baselines

200nm from Spratly, Thitu Island, Itu Aba Island, Woody Island, Pratas Island, and Scarborough Reef