

# The Impact of Sea Level Rise on Maritime Boundary Delimitation



*Image © George Steinmetz/National Geographic*

*A seawall now protects Maale, capital of the Maldives, an Indian Ocean archipelago that is the lowest, flattest country on Earth. By 2100 rising seas may force Maldivians to abandon their home. More than 100,000 live on this island, on three-quarters of a square mile.*



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# Sea Level Rise ?



IPCC Report  
2013

- The mean rate of global averaged sea level rise was 1.7mm per year between 1901 and 2010, 2.0mm per year between 1971 and 2010, and 3.2mm per year between 1993 and 2010(reveals stunning acceleration of sea level rise)



Estimation

- IPCC report estimated that a further rise of 0.26 to 0.82(variable according to RCPs) meters by the end of the century in comparison with the sea level of 1986–2005
- UN Secretary-general report estimated that, at current levels of greenhouse gas emissions, the sea level will rise by 0.5 to 1.4 meters by the end of the century
- Experts at NASA are even estimating of 2.25 meters
- Acceleration of sea level rise due to increased ocean warming, increased loss of mass from glaciers and ice sheets



Problems?

- Numerous legal issues are raised because of acceleration of sea level rise
- Focus on the concerns on baselines and on the delimitation of maritime zones

# Sea Level Rise in East Asia

## China

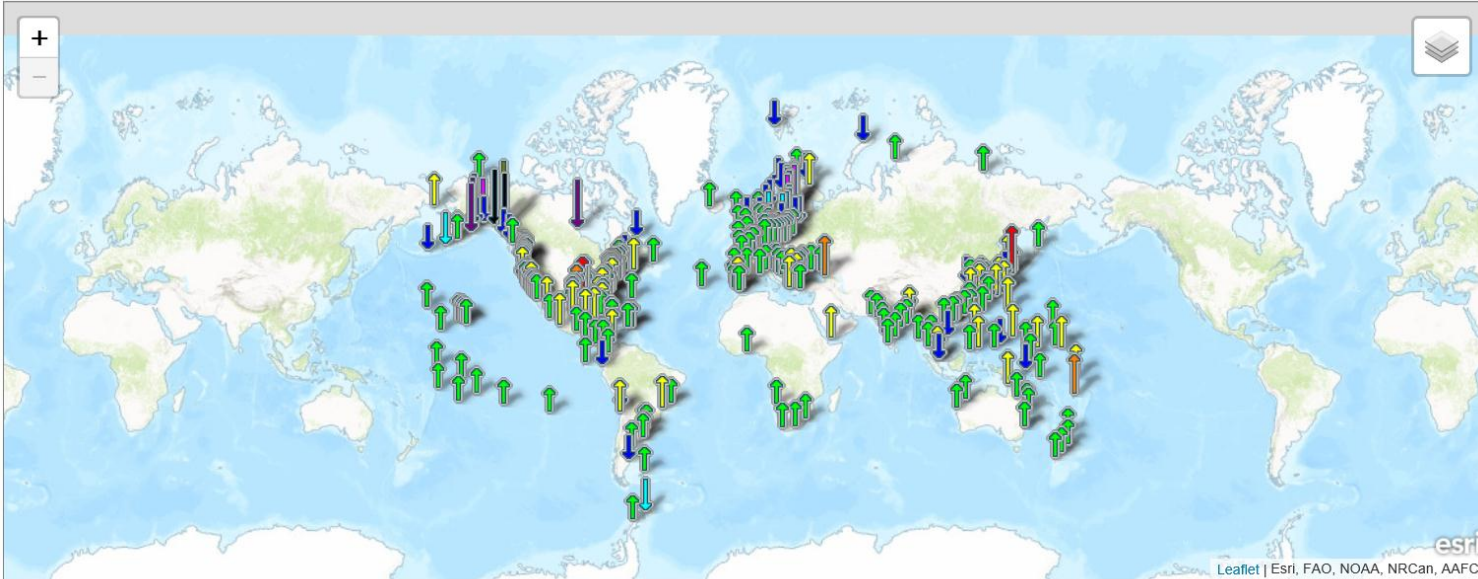
- China's coastal regions – An annual sea level increase of 3mm per year between 1980-2014, higher than the world aver.(SOA)

## Japan

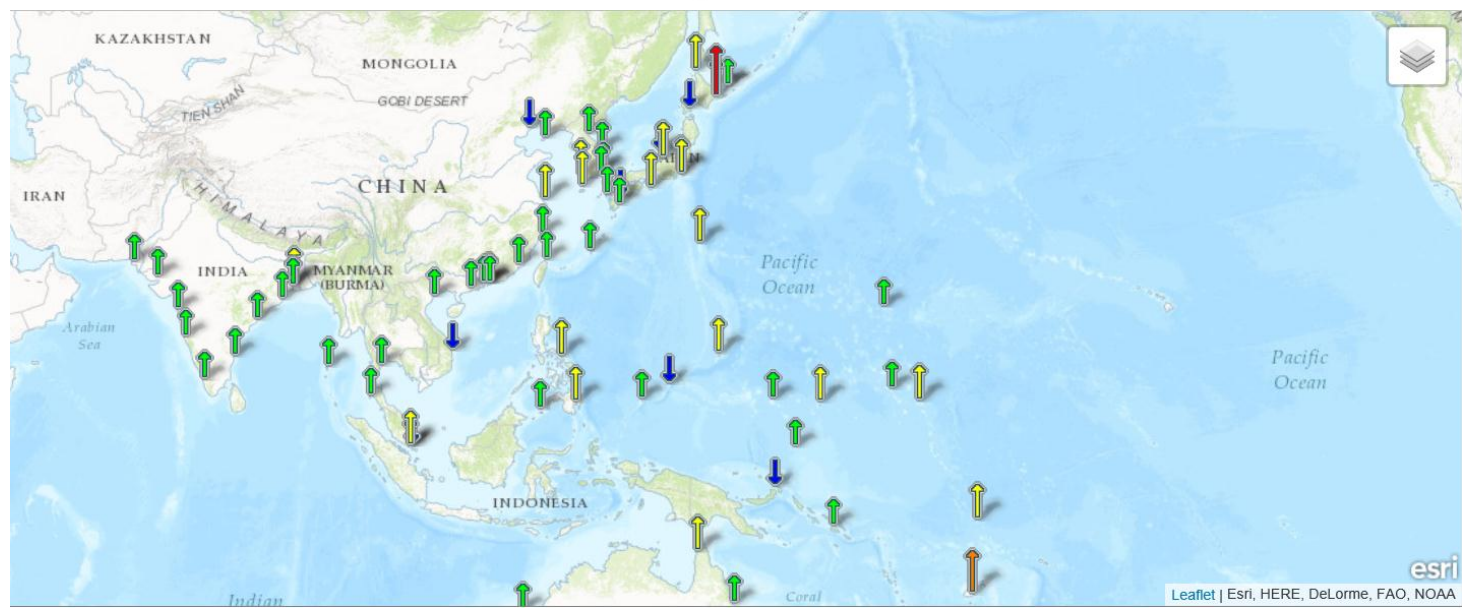
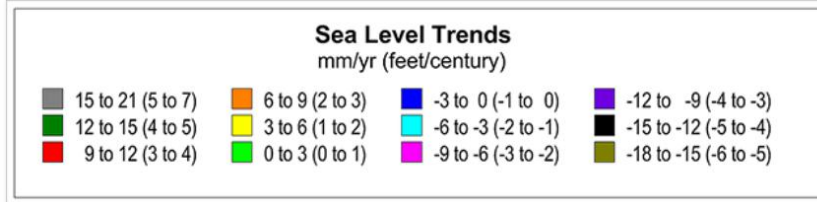
- Rate of sea level rise – 1.2mm per year between 1960-2015, 2.0mm per year between 1971-2010, 2.8mm per year(JMA)

## Korea

- Jeju island's coastal regions – 6mm per year between 1970-2007(22.8cm rise of sea level)
- South coast – 3.4mm
- East coast -1.4mm
- West coast – 1.0mm

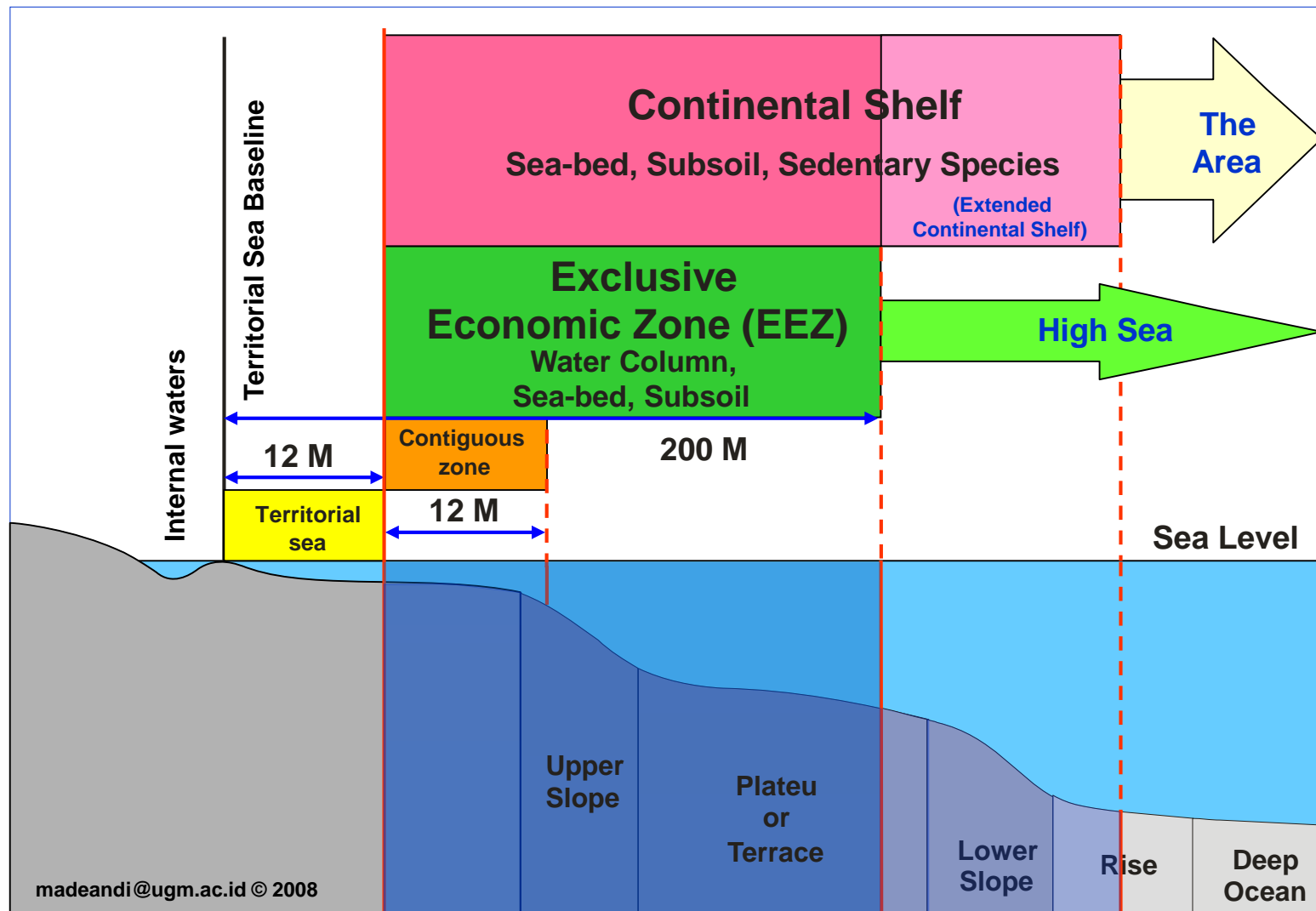


The map above illustrates regional trends in sea level, with arrows representing the direction and magnitude of change. Click on an arrow to access additional information about that station.



Source : NOAA

# Maritime Jurisdictional Zones(1)



# Maritime Jurisdictional Zones(2)

## ➤ Maritime zones can be divided mainly into six areas(UNCLOS, 1982)

- Internal waters : These are located on the landward side of the baselines and comprise the maritime waters adjacent to the land territory of the coastal state(Art. 8, para.1)
- Territorial sea : With a breadth of 12M from the baseline, it is the zone of sea adjacent to the internal waters(Art.2, para.1&3).
- Contiguous zone : It is a belt of sea contiguous to the territorial sea stretching for 24M from the baseline(Art.33). In this zone, coastal state has only policing powers in relation to its customs, fiscal, sanitary and immigration laws and regulations
- EEZ : It is no more than 200M wide from the baseline(Art.57). Coastal state has sovereign rights on this zone in respect of exploration and use of natural resources, environmental protection, scientific research
- Continental shelf : It constitutes the submerged prolongation of the coastal state's land territory and stretches for 200M from the baselines when the outer edge of the continental margin is less, or up to 350M(or 100M from the 2,500m isobaths) if it is wider. Coastal state has sovereign rights over this area in relation to the exploitation and exploration of natural resources(Art.77, para.1)
- High seas : Located beyond the external limit of the EEZ(Art.86)



# Baselines(1)

## ➤ Main roles :

- ① division of territory/internal waters from territorial sea
- ② delineation of outer limits of maritime jurisdictional zones(the limits measured from baselines)
- ③ delimitation of boundaries dividing one state's maritime area from another state's maritime area(baselines are the starting point for determining title to maritime areas subject to overlapping coastal state claims)

## ➤ Normal baseline vs. Straight baseline

### Normal baseline

- ✓ The low-water line along the coast as marked on large-scale chart officially recognized by the coastal State for measuring the breadth of the territorial sea(Art.5)

### Straight baseline

- ✓ 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(Art.7, para.1)
- ✓ where because of the presence of a delta and other natural conditions the coastline is highly unstable, the appropriate points may be selected along the furthest seaward extent of the low-water line(Art.7, para.2)

# Baselines(2)

## ➤ Low-water line ?

- No uniformity in State practice as to the meaning of low-water line(the mean low-water spring line, the lowest astronomical tide or some other ?)
- Most common normal baseline used, LAT – a very low low water line
- Korea – Approximate Lowest Low Water, A.L.L.W.



# Sea Level Rise & Migrating Baselines(1)

## 1. Consequences of sea level rise

- Generate an acceleration of coastline erosion & flood a extensive low-lying coastal areas
- Low-altitude islands, rocks or low-tide elevations can be submerged(legal status will be changed under Art.121)
- Migrating baselines – slight changes to sea level vertically could cause dramatic horizontal shifts to baselines
- No provision on the consequences of the sea level rise on the baselines, islands and low-tide elevations under UNCLOS

## 2. Migrating baselines

- Traditional interpretation : ambulatory baselines and consequently shifting maritime limits(maritime limits are established on the basis of baselines which are themselves drawn on the low-water line)
- Art.7, para.2(delta area straight baseline) prescribes that the baseline shall remain effective until changed by the coastal state, notwithstanding subsequent regression of low-water line
- Art.76, para.9(outer limits of continental shelf) show the possibility of fixation of outer limits of CS with the word of 'permanently'

# Sea Level Rise & Migrating Baselines(2)

## 3. Interpretation of normal baseline

- Art. 5 is interpreted and applied in two ways
  - ① The normal baseline is the low-water line depicted on the charts officially recognized by the coastal state; or
  - ② The normal baseline is the low-water line along the coast at the vertical, or tidal, datum indicated on the charts officially recognized by the coastal state
- ① concluded as the charted low-water line is the legal normal baseline irrespective of the physical realities of the coast, and ② concluded as the actual low-water line is the legal normal baseline
- The concerned interpretation is pretty much academic, but this interpretation and its application may have significant real-world consequences(ex. The transformation of a low-tide elevation into a fully submerged feature could result from only a small physical change but could significantly reduce the size of a state's territorial sea)
- Recent two international judicial decisions referred this concern like as “that the baseline depicted on the chart did not reflect the situation on the ground”( *Nicaragua v. Honduras*, Judgment, I.C.J. Reports 2007/ *Guyana v Suriname* (Arbitration under Annex VII of UNCLOS) (2008) 47 ILM 166) and other cases are also likely to contain baseline issues

# Baselines & Delimitation of Maritime Jurisdictional Zones(1)

## 1. Baselines and Delimitation

- The territorial sea delimitation provisions of the Conventions refer to baselines with an exception for historic title and other special circumstances

“Where the coasts of two States are opposite or adjacent to each other, neither of the two States is entitled, failing agreement between them to the contrary, to extend its territorial sea beyond the median line every point of which is equidistant from the nearest points on the baselines from which the breadth of the territorial seas of each of the two States is measured.”

### ▪EEZ & CS

- ① The maritime delimitation jurisprudence appears to give a procedural presumption to the construction of a provisional delimitation line measured from baselines(*Romania v. Ukraine* 2009 ICJ 61, 108, *Bangladesh/Myanmar* ITLOS case No.16), even though UNCLOS do not refer to baselines as a starting point of delimitation
- ② The limits of EEZ & CS measured from baselines anyway

- Even though the baseline is largely a unilateral concern toward the interests of the coastal state, in the delimitation role a coastal state's baseline is a bilateral concern

# Baselines & Delimitation of Maritime Jurisdictional Zones(2)

## 2. Legal baselines selected along the low-water line

- The actual low-water line vs. the charted low-water line
  - The difference between the two may be attributed to any combination of ① the actual low-water line is elusive, ② coastal zones are highly dynamic zones experiencing constant morphologic change, ③ the main purpose of nautical charts is safety of navigation, and ④ there is a significant lag time in the charting process
- The difference between the two may cause a dispute over the delimitation procedure between states
- ILA's conclusion according to the international judicial decisions and national legislation and judicial decisions
  - ① "The ILA concludes that the legal normal baseline is the actual low-water line along the coast at the vertical datum(chart datum) indicated on charts officially recognized by the coastal State."
  - ② "The phrase 'as marked on large-scale charts officially recognized by the coastal state' provides for coastal state discretion to choose the vertical datum at which that state measures and depicts its low-water line."
  - ③ "For proving the location of the normal baseline, the charted line appears to enjoy a strong presumption of accuracy. "

# Baselines & Delimitation of Maritime Jurisdictional Zones(3)

## 3. The impact of sea level rise on maritime boundary delimitation

### ▪Establishing boundary

- Actual low-water line need to be considered for delimiting of maritime jurisdictional zones, even though it is not sure whether States need to change their baselines based on the change of actual low-water line, and how often States need to change

### ▪Established boundary

- Maritime boundaries are normally set by the bilateral or multilateral agreements, or sometimes the decisions of the International Court or Tribunal followed by delimitation agreement
- Art.62, para.2(a) specifies that “*a fundamental change of circumstances may not be invoked as a ground for terminating or withdrawing from a treaty if the treaty establishes a boundary*”, this provision means that a line delimiting maritime zones between signatories of conventions is definitive
- What if whole islands, rocks or low-tide elevations is permanently submerged ?
- Current treaties may be based on fragile principles and legal uncertainty may contributes to maintaining tensions between states



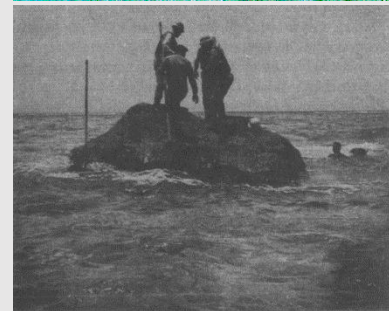
# Possible Responses(1)

## 1. Fix normal baselines physically ?

- Basepoints may be preserved through sea defenses, building-up and/or reclamation ?
- Unrealistic for long coastlines ? A temporary remedy?



Image © George Steinmetz/National Geographic



Reproductie van kleurenfoto in Yomiuri shinbun (avondeditie, 21 mei 1988). De redders van Okino-tori Shima doen in en boven het water onderzoeken.



# Possible Responses(2)

## 2. Using a concept of 'historical waters'

- To allow states to claim historical rights on the relevant maritime zones irrespective of migrating baselines
- The relevant maritime zones are part of coastal state's jurisdictional zones if coastal state has exercised its sovereignty over the relevant maritime zones clearly, effectively and without interruption during a considerable period of time with the consent of the international community
- This theory has been a target of wide criticism notably due to the fact that it is intended to apply only exceptionally in special situations and, unlike a new international custom, it risks leading to unequal treatment if used on a global scale



# Possible Responses(3)

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## 3. Using straight segments along unstable coastlines

- Baselines that are formed by straight segments are more resilient to shoreline migration because these are only at their extremities that they come in contact with land
- During Caracas Session of Third UNCLOS, Bangladesh had proposed a similar solution
- It would produce baselines that are situated further out to sea than is sanctioned by the traditional international rules

# Possible Responses(4)

## 4. Conclusion of bilateral or multilateral treaties

- To conclude of bilateral or multilateral treaties between coastal states expressly providing of the immutability of maritime zones, i.e., the freezing of maritime zones
- Non-party states may insist their navigational interests and etc. in association with the regression of baselines
- Difficulties ?
  - ① Only 64 states have published and filed with the Secretary-General of UN the maps of their maritime zones showing the straight baselines and the outer limits of maritime zones
  - ② There are ongoing numerous disputes concerning the delimitation of maritime borders

# Possible Responses(5)

## 5. Amending the UNCLOS ?

- Gradual submersion and large-scale flooding of coastal area cannot be completely avoided
- It is only possible to minimize the adverse impact from such phenomena as much as possible
- Two options as to the amending of the UNCLOS ?
  - ① The baselines to be frozen
  - ② The outer limits of maritime jurisdictional zones to be frozen

# Possible Responses(6)

## The baselines to be frozen

- New sea areas resulting from submersion of land inside the frozen baselines would be ‘internal waters’(the right of innocent passage not to be allowed in the new sea area)
- This option is favorable for coastal states than the latter one
- Possible new rules for the law of the sea would be considered with a core provision reading something as follows :
  - “Art.xxx Freeze of baselines
    1. A coastal State may declare the baselines established in accordance with the relevant provisions of UNCLOS as permanent once it has shown them on charts of a scale or scales of adequate or described them by a list of geographical co-ordinates of points, notwithstanding subsequent changes in geographic features of coasts or islands due to sea level rise.
    2. The coastal State shall give due publicity to such charts or lists of geographical co-ordinates and shall deposit a copy of each such chart or list with the Secretary-General of the United Nations.”
- In case of permanent submersion of islands, rocks or low-tide elevation – violation of legal dictum of “the land dominates the sea”??

# Possible Responses(7)

## The outer limits to be frozen

- The baselines need to be adjusted, and the waters outside the new baselines would become territorial sea(the right of innocent passage to be allowed in the new sea area)
- In this case, the territorial sea and EEZ would exceed the maximum distance allowed under the UNCLOS



Thank you~

“An urgent international action to reduce emissions commensurate with the science and associated impacts of climate change and ocean acidification is vital for the livelihoods, security and well-being of the peoples of the world.”