7th Biennial ABLOS Conference
UNCLOS IN A CHANGING WORLD
3 - 5 October 2012

Where are the imperilled limits and boundaries?[1]

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Abstract

A number of papers have been written concerning the impact of sea-level rise on specific States. This paper will attempt to step away from the local view and consider the distribution of areas of the world that may be significantly impacted by sea level changes, either as coastal areas with limited elevations that are part of States with more elevated areas, or States that may be totally impacted by sea-level rise.

The paper is being addressed from a geographic perspective, there is no assessment of the legal acquisition and retention of sovereignty and sovereign rights, the geomorphological processes associated with sea level change or the predictions of sea level change although all these aspects are pertinent to maritime boundaries and zones of jurisdiction.

United Nations Convention on the Law of the Sea 1982 (UNCLOS) requires that land contributing to limits is naturally formed (with the exception of harbour works) but consideration is given to the issues of unstable coastlines. Should a diplomatic and legal solution be found to the sovereignty of States that are significantly threatened by sea level rise perhaps (and this is completely hypothetical) some aspects may relate to extant zones and agreed boundaries. So leaving aside sovereignty and sovereign rights this paper will consider the distribution of areas that may be significantly adversely affected by sea level rise and the concurrence, or otherwise, of settled maritime boundaries.

September 2012

[1] The opinions expressed are those of the authors alone and do not necessarily represent those of the United Kingdom Hydrographic Office or the UK Government

The purpose of this paper is not to provide a rigorous analysis of legal conventions or treaties, nor to draw together and deconstruct the research on sea-level rise. Also the intent is not to highlight particular states. Instead the intent is to drift cursorily past sea-level rise, sovereignty and *United Nations Convention on the Law of the Sea* (UNCLOS) and. Then to look at where there are no publicised agreed maritime boundaries in areas that may be subject to concerns of sea-level rise and to ruminate about the spatial distribution of such limits.

Sea-Level Rise

Schofield and Arsana (2010), and Freestone and Pethick (1994) drew together some of the research on sea-level rise noting the concentration of population in low-lying coastal regions and the debates on the cause and effect of sea-level change. The various models (discussed in Puckett (2012), Schofield and Arsana (2010) and Freestone and Pethick (1994)) of sea level rise estimate between 40cm and one metre by the end of the century, or metres if the Greenland ice sheet collapses. Regional tectonic uplift and subsidence (Puckett (2012)) could also impact sea-level change, or sediment accretion through continental run-off due to increasing severe weather events (Bradnock (2009)). Geophysical feedback mechanisms may accentuate the effect of rising sea levels such as hydro-isostatic depression of coastal margins with increasing weight of water compressing soft littoral sediments – the local magnitude being a function of the resilience of the rock formation (Prescott and Bird (1989)).

Changing sea levels can have significant impact on baselines, the extent of which is partly a feature of the coastal gradient. A steep transverse profile resulting in relatively small horizontal migration of baselines; flatter profiles, in contrast, subject to a more extensive potential migration of baselines and broadening of inter-tidal areas, Schofield and Arsana (2010) and Prescott and Bird (1989). Prescott and Bird (1989) detailed the processes and results of sea-level rise associated with increasing tidal ranges, the particular impact will be a complex function of coastal and nearshore configurations, with narrow channels enhancing tidal range and broad continental shelves creating less pronounced increases in tidal range, the detailed impact of sea-level rise on tidal range depending on the specific resonance of each basin.

Further changes to baselines may result from littoral hydrological processes due to sea level change, so that some states may even experience seaward migration of baselines (Prescott and Bird (1989) and Freestone and Pethick (1994)). Freestone and Pethick (1994) discussed the sediment migration processes and the impacts on sediment transfer of hard and soft engineering to manage sea-level change. Due to the continental origin of sediments and the geomorphological processes operating on continental shelves the impact of significant coastal sediment migration is perhaps most likely to be significant on the coasts of large land masses where it may influence the coastal geometry that defines the equidistance line - the most popular geometric base for boundary delimitation (Schofield and Arsana (2010)).

Some works identify climate change and sea-level rise as a factor in coral bleaching and the destruction of coral atolls and reefs, a significant concerns to many island states, with further destruction caused by increased incidence of extreme weather events (referenced in Freestone and Pethick (1994)). However, opposing opinions have suggested that coral may grow commensurate with sea-level rise (Prescott and Bird (1989) and Freestone and Pethick (1994)).

Maritime delimitation sometimes focuses on islands, rocks, reefs, low-tide elevations: rising sea level may submerge some features, does this negate some disputes (that is possibly naïve point of view)? Sea-level rise and increasing extreme weather events may reduce habitable economically viable islands to rocks and lose their entitlement to maritime zones (Freestone and Pethick (1994) and Rayfuse (2009)). For many small island states the majority of their economic viability and resources are from their maritime zones rather than their land so the loss of maritime zones may render islands states not viable, more quickly than the loss of dry land (Grote Stoutenburg (2011), Schofield and Arsana (2010) and Rayfuse (2009) indentified press reports of islands that have already experienced inundation and evacuation.

Rayfuse (2009) and Puckett (2012) outlined significant impacts of sea-level rise on low-lying areas including displacement of populations, loss of land and resources, salinization of fresh water, change in the narrow band of conditions that some ecosystems need to function, increased vulnerability to extreme weather events. In addition, mitigation may have significant costs that can be ill-afforded or are impractical (Freestone and Pethick (1994)). Concerning maritime zones, landward movement of baselines, or loss of basepoints, could affect the available area of maritime zones for national jurisdiction and economic viability by impacting the geometry between states for median lines (in the absence of agreed boundaries) and the contribution of features. In the most extreme sense, submergence of natural baselines could be proposed to inundate the sovereignty of a state. For states composed of many islands sea-level rise may not just mean the ambulatory movement of a basepoint (and the associated movement in maritime limits), but instead, if it is an outer point anchoring a straight or archipelagic baseline it may result in the amputation of a sector of maritime access (Grote Stoutenburg (2011).

Sovereignty

Recalling a lecture (Kaikobad (2010a) the modes of acquiring title were given as: Discovery and occupation; Cession, conquest and annexation; Acquiescence, recognition and estoppel; Ancient original title; Title and geographical features. Other lectures (Kaikobad (2010b) and Volterra and Haeri (2010)) covered the *Montevideo Convention on the Rights and Duties of States* (1933), noting that a State should possess a permanent population, a defined territory, a government and a capacity to enter into relations with other states. None of the Montevideo Convention requirements mentions that the baselines have to be naturally formed, so perhaps there could still be states, even if natural baselines were submerged. Rayfuse (2009) and Freestone and Pethick (1994) noted that the concept of a de-territorialised state is already an entity in international public law so a sovereignty solution exists for the complete inundation of a state. Although, if UNCLOS comes into play, states lacking natural basepoints could remain valid states but without maritime zones and many low-lying island states depend on the maritime ecosystems for their resources and economy: depriving them of maritime zones may deprive them of economic viability.

Grote Stoutenburg's (2011) analysis of the *Vienna Convention on the Law of Treaties* 1969 considered that maritime boundary treaties are binding so there is potential for international recognition for sovereign rights in that space even if a state's baselines have receded: so a State could be defined by its mutually-settled limits rather than its naturally occurring physical baseline. Boundaries may remain in place, but limits could shrink to nothing, in which case, an exclusive economic zone (EEZ) or territorial sea (TS) boundary would have an EEZ or TS on one side, but without baselines on the other side to calculate limits what would the area then be? If sovereignty is "lost" it would be interesting to use arguments of

effectivité, occupation and historic data in a space where once there was a recognised sovereign entity. Khadem (1998) suggested that in extreme cases submergence of islands could be a source of inter-state conflict over navigation rights and access to resources while Grote Stoutenburg (2011) is concerned that the ambulatory withdrawal of maritime limits risks conflict between states by overturning recognised allocation of national authority contrary to the intent of UNCLOS as a stabilising factor in ocean governance.

UNCLOS

Rayfuse (2009) and Grote Stoutenburg (2011) analysed legal aspects of sea-level change on baselines and maritime zones, suggesting that because baselines are ambulatory, unless otherwise detailed, so must maritime limits be ambulatory, leading potentially to the reduction of islands to rocks by sea-level rise and loss of associated maritime zones and eventually de-territorialisation of the state (but not de-territorialisation in the sense of Newman (2000)). Grote Stoutenburg (2011) considered that reinforcement of natural features is legally permitted but that the costs and challenges are significant and can be economically inefficient, and may have counter-productive effects on ecosystems and coastal sediment transfers.

Articles 16, 75 and 76 (9) provide for the limits of TS, EEZ and continental shelf to be defined by the deposition of co-ordinates. One criticism of such an approach is that with the retreat of baselines, maritime zones may exceed the maximum 12 and 200M distances potentially allowing for protest and lack of acquiescence (Khadem 1998), unless fixed baseline coordinates are fixed however this then pushes the problem onto internal waters which could grow significantly as the coastline retreats - but it could be proposed that this internal water has particular social and cultural values from its previous sovereignty (Grote Stoutenburg (2011)). However it is unlikely that internal waters will be flooded in the near term to such a depth that depth that clearance is sufficient for international merchant transport so avoiding concerns of the relevant passage types.

UNCLOS allows for a baseline in the case of unstable coast. Article 7(2)) is a derivative of the original proposal for a particular scenario (Nandan, Rosenne and Grandy (eds) (1993)), but suggestions have been made that this could be revisited and used to manage the impact of sea-level rise. Article 7 (2) provides for “and other natural conditions” for unstable coastlines, but it requires the updating of baselines by the coastal state as conditions develop however this provides no respite for states who may have been left with no natural baselines . Early proposals for the provision were intended to apply to shallow near-coast waters, too shallow for navigation other than in small boats (Nandan, Rosenne and Grandy (eds) (1993)). With current sea-level rise predictions this provision could still apply to submerged islands. as there may be insufficient depth for general navigation over areas that had previously enjoyed sovereignty, culture and heritage. However, the final agreed wording for of Article 7 (2) differs from the original intent and the negotiating lines may be re-used if this provision is re-opened.

Historic title is referred to in Article 15. Grote Stoutenburg (2011) considers that the historic waters doctrine remains contingent upon acquiescence by other states (who may hold locally different political stand points, or doctrinal stands), and whilst being expanded from the subject of bays, historic waters have yet to be tested with EEZ, with the uncertainty of how much time is necessary to develop historic title, particularly as EEZ only gained international recognition from 1982. Considering the time frame again, for islands reduced to rocks, what

could be a relevant date for their economic effectiveness and claim for maritime zones considering that sea-level rise and separate economic changes are happening over years and differentially across the world?

Article 60 (8) states that "artificial islands, installations and structures do not possess the status of islands". They have no territorial sea of their own and their presence does not affect delimitation. So an assumption may be that re-enforced islands are not well received by the international community despite customary use of coastal defences and harbour works (Article 11) in many areas of the world. The test of acceptability may fail if there is no core of natural dry land. Historic waters may be considered for islands reduced to rocks, islands submerged by rising sea and re-enforced islands, although whether jurisprudence and customary acceptance of historic waters is guaranteed to preserve the zones of an island that is no longer habitable, or an island whose natural dry core is submerged is a significant gamble to take on the welfare of a state.

Art 7(2) allows for straight baselines (SBLs) to be established taking account of economic interests. However standards of evidence are not agreed, a possibility may be lack of protest by neighbours and regional resource management practices to support acceptance of straight baselines and therefore fixed maritime limits. Could this then apply to a natural island which has subsequently become submerged? Straight baselines (Article 7) and archipelagic baselines (Article 47) have specific requirements for basepoints. However if sea level rise should overwhelm basepoints there may be a potential for claiming validity on historic precepts. Freestone and Pethick (1994) discussed the viability of re-enforcing basepoints to meet the requirements of Article 7(4) as well as the potential for the "received general international recognition" to argue for features previously published and recognised as basepoints but subsequently submerged – without explaining the level of recognition and the resolution of dispute and protest.

Article 47 establishes specific proportions for archipelagic status, it could be possible that part of an archipelagic state could lose its qualification for inclusion in the archipelagic baseline, and by so doing the entire baseline system be invalidated.

There may be an interesting conundrum where Article 6 requires the seaward low-water line of a reef to be used, but such being the challenge of surveying reefs, and the minor change to navigational clearances that sea-level increase would make over reefs as to not necessitate updating charts which could remain as baselines, whereas some other items (dry features now submerged with no light) could become invalid for the same sea-level change and may have to be amended on charts and so disqualified as basepoints.

Potential Action Proposed for Imperilled States

Responses to the concerns of sea-level rise have been discussed by Grote Stoutenburg (2011), Schofield and Arsana (2010), Rayfuse (2009), Freestone and Pethick (1994) covering, in outline: hard and soft coastal protection, planned retreat and relocation and legal options for fixing baselines and maritime limits whether within domestic law, as part of regional and customary practice or a formalised treaty.

Rayfuse (2009) and Freestone and Pethick (1994) discussed the impact of sea-level rise on low-lying island states and considered options for continuing the state from federation, to hosting, to cessation of new territory but suggest that these may not be politically viable now,

instead a means to retain access and control of their current maritime spheres was preferred to leaving a maritime jurisdiction vacuum and carving out a maritime zone from other areas dependent on their coastal fringe.

If sovereignty can be a function of acquiescence, recognition and ancient title perhaps the allocation of maritime zones could be considered in a wider sense than UNCLOS. A link would need to be made between the sovereign state without natural dry territory and its historic maritime areas; Grote Stoutenburg (2011) observed that this would challenge a fundamental principle of law of the sea that land dominates the sea. Rayfuse (2009) considered that the management of a maritime zone physically separate from an evacuated population need be no different from the operation of a state and offshore islands and by maintaining a maritime entitlement would provide the original state with resources to fund sea-level rise adaptation (Grote Stoutenburg (2011)), admittedly long range maritime administration is challenging. Grote Stoutenburg (2011) commented that the declaration appended to the *Volga Case Judgment (*2002) noted that the codification of the EEZ was to serve coastal fishing communities dependent on local fisheries, uninhabitable islands remote from the displaced population may not support local fishing communities so the rationale of allocating preferential fishing rights may not be universal.

The establishment of stable maritime zones by deposition of limits was queried by Grote Stoutenburg (2011) as it would challenge established principles of law of the sea, but considered if the law of the sea could change from a position of primacy of natural land to a regime granting authority irrespective of terrain adjacency in a similar change to Article 76 (1) which broke the association with the natural continental shelf by developing the distance criteria for a juridical continental shelf: stabilisation of maritime zones preserving currently accepted allocation of authority may overrule contemporary legal doctrine.

As discussed earlier the fixing ambulatory limits may risk creating a zone whose width exceeds that agreed in UNCLOS (if the normal baseline recedes or is submerged) and so providing a reason for protest, or precedent for excess claims elsewhere. Alternatively, a general acceptance may risk a grab for maritime areas based on the exploitation of power rather than equitability. As Rayfuse (2009) noted, the ideas of freezing or fixing limits does not resolve existing disputes or protests but may provide a period of time for ecosystem and public international law evolution to better address the scenarios.

Khadem (1998) suggested that there is no specification for the currency of charts or frequency of revision for charts of baselines and basepoints, so charts and co-ordinated limits could be deposited with the United Nations and then not updated despite baseline change. As charts are primarily for navigational purposes this could contravene the *International Convention for the Safety of Life at Sea (SOLAS) 1974 Convention* Chapter V (2009) for maintaining charts up to date for the safety of mariners. An option (to avoid clutter of detail on navigational charts) could be to compile a separate series of charts designated to fulfil Articles 5, 16, 75 and 76 (9), different from the contemporary navigational charts, but this may not be in the spirit of UNCLOS.

Grote Stoutenburg (2011) noted that some of the concepts proposed (use of historic waters doctrine and stable limits) cannot be tested until a state has been submerged so the betting on outcomes is a significant risk for states. Dispute resolution would have to be an element to avoid any issues of disputes being extended until one of the parties is submerged, or the balance between a steep to and low-gradient coast favours the steep state.

Baselines provisions were developed with the understanding that coasts were likely to move seaward (Nandan, Rosenne and Grandy (eds) (1993)), with a different scenario now being considered Khadem's (1998) hope that the law of the sea is adaptable is perhaps appropriate. The South Pacific has been imaginative and pragmatic in the management of maritime space, which could perhaps stretch to addressing the challenges of maritime space managements as a result of sea-level rise.

Un-delimited maritime boundaries and outer limits in areas of significant baseline change due to rising sea-level

Whilst many states have concerns about the effects of sea-level rise on their economic success due to low-lying coasts and concentrations of populations in coastal areas, atoll island states are perhaps at the greatest risk if their sovereignty is threatened by total inundation or loss of economic viability without land for baselines to withdraw to.

Using the Vlaams Instituut voor de Zee Flanders Marine Institute (VLIZ) dataset there are a significant number of island states in the Pacific and Indian Oceans and Caribbean, many of them (Rayfuse (2009) and Freestone and Pethick (1994)) are low-lying and composed of multiple small islands. The VLIZ dataset clearly shows the relative amount of maritime space that island states administer, a major portion of the sea area between 30°N and 30°S, these islands show a variety of geology and topology.

Distributed island states occur in significant numbers in a broad tropical region which is potentially rich in maritime resources. With limited land areas and relatively significant maritime areas these are states that rely on their maritime resources and as such have much to lose by forfeiting their maritime zones. A significant portion of the ocean that is associated with accessible fish stocks and marine tourism coincides with island states where maritime boundaries are yet to be settled, the lack of treaty boundaries not apparently presenting current management concerns for the relevant states.

However, if sovereignty is threatened due to the loss of all natural territory then the managed network of resource access and conservation could be significantly disrupted if a hole in the jurisdictional framework appears. Approximately half the potential maritime boundaries in the Pacific have yet to be agreed (Charney and Alexander (1993)), and a significant number of Indian Ocean and Caribbean boundaries have yet to be settled so presenting a weak framework for proposals to stabilise maritime fiefdoms through agreed boundaries. The Indian Ocean is a specific scenario in that there are a number of island groups that are potentially totally spatially defined by maritime boundaries with neighbours. If the reverse of current contemporary philosophy (maritime space depends on coasts) could apply then the conclusion of maritime boundary treaties could be an element in the recognition and continuation of the state then there is still much work to do to establish the necessary boundaries.

Brief mention was made earlier of the potential differential impact of sediment transport on coastal geometry of neighbours and the effect on equidistant line calculations. A similar differential impact could occur between neighbouring island states, not all the island states are low-lying so where one is rocky and the other low-lying, the movement in the median line could be significantly in favour of the rocky state if peripheral low-lying basepoints are submerged (Grote Stoutenburg (2011)).

In the Caribbean, Indian, Atlantic and Pacific Oceans using agreed maritime boundaries to settle the maritime space will only be part of the management of maritime zones lost to baseline submergence. The other aspect that will have potentially more impact on the access to maritime space is the treatment of external limits bordering on the High Seas/ The Area where extensive swathes of maritime limits that front onto the High Seas and The Area that are currently defined by declarations of 200M EEZ and EFZ (exclusive fisheries zone) from UNCLOS compliant basepoints.

Another aspect to the jurisdictional framework is the possibility that island states could have agreed maritime boundaries, but lose dry sovereignty in one sector so need to draw back from 200M and leave a gap between the maximum extent of the still valid maritime zone and the zone that has receded. As for the loss of sovereignty and archipelagic sectors, the management of maritime jurisdiction could be uncertain.

Using Admiralty Annual Notice to Mariners 12 (ANM12) and UN Division for Ocean Affairs and the Law of the Sea of the Office of Legal Affairs of the United Nations (DOALOS) there are approximately twenty archipelagic states, who, while not necessarily being entirely low-lying, have archipelagic basepoints that are low-lying and, as well as some not being monumented. Should these basepoints become no longer compliant with UNCLOS Article 47 then there is a chance that a number of states could lose entitlement to archipelagic status for all or part of their maritime area, which cumulatively for all the states is a significant portion of maritime resource.

There are a few islands that have no boundaries requiring delimitation out to 200M, whether there is an under-lying geopolitical theory, but these islands are all offshore islands of mainland states, many of them being rocky islands and few of them within the main tropical belt of marine natural resources. Not that their maritime limits are any less significant for their populations and for marine administration.

A further variant of the spatial location of islands' limits and boundaries at risk of sea-level rise is that a number of the islands are overseas territories and offshore islands of continental states. Whilst the principle is that maritime zones are from coastal fronts, there could be a difference between sovereignty that resides in a mainland state as opposed to the sovereignty of island atolls that is totally submerged. The islands reported to have been evacuated (indentified in Schofield and Arsana (2010) and Rayfuse (2009)) are offshore islands of mainland states, the evacuation will have been distressing for the residents but has not indicated the lack of economic viability and loss of an entire state.

Freedom of navigation will possibly be the least effected aspect of the maritime operations as for merchant marine operations the impact on the mode of passage is not significant when crossing into 200M and 12M limits. However, the pattern of maritime jurisdiction does impact merchant marine operations through the discharge of SOLAS responsibilities. Admiralty Ocean Passages for the World (2004) details how many ocean passages are incident on the maritime zones of islands that may be at risk of sea-level rise. What may possibly be particularly significant for the island states is the exclusive access to resources, resource management for long-term generation of national resource and revenue and sovereign resource exploitation through licensing and sovereign pride in perceived marine heritage.

The distribution of maritime limits and boundaries that are at risk due to sea-level rise has several aspects: a significant number of maritime boundaries that have yet to be delimited; 200M and outer limits that are dependent on low-lying basepoints and baselines; neighbouring sovereign states and off-lying islands; more than half of the tropical zones currently being administered under national jurisdictions but a significant portion could change jurisdictional status if sea-level rise submerges low-lying basepoints; adjacent island states have different topography so the relative impact of sea-level rise will be different between neighbours. Any work to address the effect of sea level rise on maritime zones will need to be multifaceted to cope with the many scenarios.

Conclusions

Sea-level rise has been extensively discussed in theoretical and practical fields, the potential impact is proposed to submerge the natural land of some island states. Extensive academic work has been done by many specialists on options of addressing the allocation of sovereignty and means of stabilising outer limits of maritime zones to provide continuation of resource and sovereignty allocation.

This light discussion looked at where these potential imperilled limits and boundaries maybe. Significant portions of the Caribbean, Indian and Pacific Oceans are potentially impacted, their extent provides resources and natural security for entire states. The distribution of the states and their particular circumstances indicate not one but several issues that need addressing if maritime zones for current island states are to be managed.

The questions that need resolution are the international approach to sovereignty in the face of sea-level rise and the relation with UNCLOS, the potential need to manage a maritime framework being altered by sea-level rise, and the interface between states that have different topography so different responses to sea-level rise.

There are diplomatic, legal and political challenges to be faced, both regionally and globally, however it may be pertinent to quote the wisdom of Pope's Homer as cited by Ransome (1931) "By mutual confidence and mutual aid, Great deeds are done, and great discoveries made".

Selected references:

Bradnock, R. W. (2009) *Successive rivers and successive river disputes II: South Asia – the Ganges and Indus systems* Lecture. King's College London

Charney, J. I., Alexander, L. M., (eds.) (1993) *International Maritime Boundaries* Volume I p.300. Leiden/ Boston: Martinus Nijhoff Publishers.

UN Division for Ocean Affairs and the Law of the Sea of the Office of Legal Affairs of the United Nations *DOALOS: Countries*. (2010). Available from: http://www.un.org/Depts/los/LEGISLATIONANDTREATIES/regionslist.htm [Accessed 4 July 2012].

Division for Ocean Affairs and the Law of the Sea Office of Legal Affairs. (1997) *United Nations Convention on the Law of the Sea 1982.* New York: United Nations.

Freestone, D. and Pethick, J. (1994) Sea Level Rise and Maritime boundaries International Implications of Impacts and Responses. In: G. H. Blake (ed) *Maritime Boundaries*. World Boundaries Volume V. World Boundaries Series Abingdon: Routledge, 73 – 90.

Grote Stoutenburg, J. (2011) Implementing a New Regime of Stable Maritime Zones to Ensure the (Economic) Survival of Small Island States Threatened by Sea-level Rise. *The International Journal of Marine and Coastal Law* 26 (2011) 263 – 311.

International Maritime Organization. (2009) *International Convention for the Safety of Life at Sea (SOLAS) 1974*. London: United Nations

Kaikobad, K. H. (2010a) *The Acquisition of Title to Territory*. Lecture. King's College London

Kaikobad, K. H. (2010b) *Statehood and Self Determination*. Lecture. King's College London

Khadem, A. (1998) Protecting Maritime Zones from the Effects of Sea Level Rise. *Boundary and Security Bulletin*. Autumn 1998. Durham: International Boundaries Research Unit.

Nandan, S. N., Rosenne, S. and Grandy, N. R. (eds.) (1993) *United Nations Convention on the Law of the Sea Commentary*. Volume II. Article 7. Dordrecht: Martinus Nijhoff Publishers

Newman, D. (2000) Boundaries, Territory and Postmodernity: Toward Shared or Separate Spaces. *In:* M. A. Pratt and J. A Brown (eds.) *Borderlands under Stress.* Dordrecht: Kluwer, 17 – 34.

Prescott, V and Bird, E. (1989) The Influence of Rising Sea Levels on Baselines from which National Maritime Claims are Measured and an Assessment of the Possibility of Applying Article 7 (2) of the 1982 Convention on the Law of the Sea to Offset Any Retreat of the Baseline. P.279 – 301. International Boundaries and Boundary Conflict Resolution. 1989 Conference Proceedings Durham: International Boundaries Research Unit

Puckett, K. (2012) Preparing a Defence. *Modus* No. 19 (2912) 15 – 19.

Ransome, A. (1931) *Swallowdale.* London: Jonathan Cape.

Rayfuse, R. (2009) W(h)ither Tuvalu? International Law and Disappearing States. Available from: Http://law.bepress.com/unswwps/flrps09/art9 [Accessed 6 June 2012] University of New South Wales: The Berkeley Electronic Press:

Schofield, C. H. And Arsana, I. M. A. (2010) Imaginary Islands? Options to Preserve Maritime Jurisdictional Entitlements and Provide Stable Maritime Limits in the Face of Coastal Instability. Advisory Board on Law of the on Law of the Sea Conference 2010 Contentious Issues in UNCLOS – Surely Not? International Hydrographic Organization – International Association of Geodesy: Monaco

United Kingdom Hydrographic Office. (2012). *Annual Notices to Mariners*. Taunton: United Kingdom Hydrographic Office.

United Kingdom Hydrographic Office. NP 136. (2004). *Admiralty Ocean Passages for the World*. Fifth Edition. Taunton: United Kingdom Hydrographic Office.

Vlaams Instituut voor de Zee Flanders Marine Institute. (2009) *MARBOUND. VLIZ Maritime Boundaries Geodatabase: Maritime Boundaries of the world*. Available from: http://www.vliz.be/vmdcdata/marbound/download.php [Accessed 30 September 2009].

Volterra, R. and Haeri, H. (2010) *International Land Boundaries and State Territory in International Law*. Lecture. King's College London.