

ABLOS Conference 2017 – ABSTRACTS (Random order)

Reece Lewis

University of Bristol

Reece Lewis
University of Bristol Law School
Wills Memorial Building
Queen's Road
Bristol BS8 1RJ
United Kingdom

The Status of Maritime Features: The Perpetuation of a Legal Fiction regarding Artificial Islands

Reece Lewis

A lot of ink has been spilled on how we are to determine the status of maritime features. No doubt, this will continue in the aftermath of the decision of the Arbitration Tribunal in the South China Sea case (The Republic of Philippines v The People's Republic of China) (2016). Indeed, the extent to which this "clarifies" the distinction between fully entitled islands and other features not so entitled, is doubtful. But the presentation will demonstrate that the decision of the Arbitral Tribunal did confirm something else: that the determination of the status of certain maritime features can be an exercise in legal fiction.

Firstly, the presentation will analyse the concept of a "legal fiction" and consider their distinguishing features. Second, it will explain that the law pertaining to artificial islands and to the determination of the status of some insular features utilises fiction. Specifically, the rule that artificial islands are not entitled to gain the status of islands, results in the denial of reality. We are to maintain a discrepancy between the actual physical status of insular features and their legal status.

The presentation asks whether this fiction is something that UNCLOS should allow? It will ask what the implications of the fiction are. This will involve an analysis of the existence of legal fictions in other areas of international law and how this fiction compares to them. The presentation shall draw on the factors, themes and principles that determine the effectiveness of legal fictions in international law in order to critically evaluate the legal fiction concerning the status of "artificial" insular features.

Andrew Serdy

University of Southampton

Highfield
Southampton
SO17 1BJ
United Kingdom

Jurisdiction in Nicaragua v. Colombia (No 2) : Do Two Wrongs Make a Right?

Andrew Serdy

After the vehement reaction of Colombia to the judgment of the International Court of Justice in the first maritime boundary delimitation case between Nicaragua and Colombia in 2012, a second such case has been pending since 2013 about the continental shelf beyond 200 nautical miles from Nicaragua, which the Court declined to entertain in the earlier case. The Court took this position for lack of evidence that Nicaragua had any entitlement under Article 76 of UNCLOS to a continental shelf extending more than 200 miles from its baselines because it had not yet made its submission to the Commission on the Limits of the Continental Shelf (CLCS) under paragraph 8 of that article. After Nicaragua then made its submission and brought the second case, Colombia raised a number of jurisdictional objections including *res judicata*, the notion that the Court should not reopen an issue it had previously decided between the same parties. On the President's casting vote in a split 8-8 decision, the Court dismissed the objection in 2016 and the case will now be heard in around 2018. This paper concludes that the *res judicata* objection had considerable force, since the way in which the previous decision was couched was more definitive than it needed to be, dismissing the request to delimit a boundary beyond 200 miles from Nicaragua rather than leaving the issue open pending the making of the submission. On the other hand, the modern understanding of the effect of making (or not making) a submission suggests that it is legitimate for the Court to seek evidence of entitlement from sources other than CLCS submissions, so the 2012 decision too is questionable in that regard. Arguably, therefore, although the Court has ultimately reached what under normal circumstances should have been the right outcome, in this case it has come about by the cumulatively self-cancelling effect of two serious errors. Rounding off the paper is a preview of a new issue raised by Nicaragua's arguments which no court or tribunal has yet faced: if it succeeds in proving a *prima facie* entitlement that comes within 200 miles of Colombia, is it all in vain because there is a hierarchy of entitlements by which continental shelf within 200 miles outranks an opposite continental shelf more than 200 miles from the baseline?

Peter Croker

The M Horizon (UK) Limited

25, Kingswood Road
Chiswick
London W4 5EU
UK

Establishing the Outer Limits of Continental Shelf beyond 200 nautical miles based on Foot of Slope points on a mid-oceanic ridge - the Reykjanes Ridge model

Peter F. Croker

In March 2016, the UN Commission on the Limits of the Continental Shelf (CLCS) adopted by consensus its recommendations to Iceland regarding the western flank of the Reykjanes Ridge (RR) and subsequently published its "Summary of Recommendations of the Commission on the Limits of the Continental Shelf in regard to the submission made by Iceland in the Aegir Basin area and in the western and southern parts of Reykjanes Ridge on 29 April 2009". This was the first time that Foot of Slope (FOS) points and corresponding Outer Limit points have been established by the CLCS on an actively spreading mid-oceanic ridge. A detailed analysis of these Recommendations in this unique setting allows for the location of each FOS to be observed, and a possible 'conjugate' FOS on the eastern flank of the RR to be hypothesised. This was initially done using bathymetry only, and a series of more 'conservative' FOS points and a series of more 'adventurous' FOS points were established on the eastern flank of the RR using the best available public-domain bathymetry. As a final step, a third series of FOS points was established on the eastern flank using marine magnetic anomaly identification (MMAID) which allows for an age match of bathymetric features on either side of the spreading ridge. Within the 350 nautical mile distance from Iceland constraint recommended by the CLCS, the MMAID-derived FOS points are found to be located within the 'conservative-adventurous' FOS envelope.

Michael Linden-Vørnle

DTU Space

National Space Institute (DTU Space)
Technical University of Denmark
Diplomvej, Building 371
DK-2800 Kgs. Lyngby
Denmark

Is UNCLOS ready for autonomy?

Michael Linden-Vørnle

The development of ships with the ability to operate autonomously is well underway. In the not too far future such ships could manifest themselves as a viable supplement to traditional manned shipping. An important question is, however, whether UNCLOS in its present form is able to accommodate the introduction of autonomous ships and if not, what could be done to alleviate this situation. In this talk I will present benefits as well as challenges resulting from the introduction of autonomy to shipping both from a technical and regulatory perspective. I will also present my views on how a combined space and drone based infrastructure can support the safe, secure and economic introduction of autonomous ships.

Alina MIRON

Professor of International Law, University of Angers. Counsel and advocate in inter-state litigation

28 RUE DU SOLEIL, 75020, Paris

Philippines v. China: Are the Tribunal's Considerations on Islands Part of an Acquis Judiciaire?

Alina MIRON

The arbitral tribunal in *Philippines v. China* obviously attempted to establish a general, objective definition of rocks and islands. The tribunal's approach contrasts with the one adopted by the ICJ and ITLOS, which deliberately refused any systemization and considered maritime features under the angle of their impact on the delimitation sub judice, in particular in relation to the general configuration of the coast. The arbitral tribunal clearly meant to fill in the lacunae left by the permanent courts and thus participate to the formation of an "acquis judiciaire" (on this phrase, see ITLOS, *Bangladesh/ Myanmar*, Declaration of Judge Wolfrum and *Bangladesh v. India Award*, § 339). Questions arise as to the appropriateness of this choice in inter-state litigation.

Moreover, the very restrictive criteria adopted by the tribunal are debatable, both with regards to the textual, contextual and teleological interpretation of Article 121. For instance, the tribunal's interpretation of the phrase "habitation" and the introduction of a qualitative dimension are highly problematic. And the tribunal's quick dismissal of the relevance of state practice is even more problematic. Indeed, even if courts and tribunals are authoritative interpreters of UNCLOS, States parties remain its authentic interpreters. And State practice is far from supporting the tribunal's interpretation.

Considering all these doubts, it can hardly be considered that the tribunal's conclusions on the status of maritime features to be already the law, even if they will certainly influence the law-making process.

Snjólauug Árnadóttir

University of Edinburgh

148A Southgate Road
N13HX London
United Kingdom

Equitable Boundaries and Ambulatory Entitlements: The Relevance of Coastal Instability for Maritime Boundary Delimitation

Snjólauug Árnadóttir

Overlapping entitlements to the exclusive economic zone and continental shelf must be delimited on the basis of international law, and resulting boundaries must represent equitable solutions. Coastal geography gives rise to maritime entitlements and is, therefore, fundamental to establishing an equitable maritime boundary. Coastlines worldwide are undergoing unprecedented changes due to the emergence of the Anthropocene. However, it remains unclear whether changes to coastal geography are relevant for the delimitation of maritime boundaries and, if so, how it affects the delimitation process.

States have taken coastal instability into account in maritime boundary agreements and the ICJ chose a delimitation method by reference to foreseeable changes to coastal geography in *Nicaragua v. Honduras* in 2007. However, in 2014, an arbitral tribunal in *Bangladesh v. India* denied the relevance of coastal instability for boundary delimitation, primarily on the basis of a policy argument; because the effects of climate change should not 'jeopardize the large number of settled maritime boundaries throughout the world'. Yet, more recently, in *Philippines v. China* (decided in July 2016) the arbitral tribunal evaluated coastal features by reference to their ability to sustain human habitation 'over a continuous period of time', or to commence and continue economic 'activity over a period of time in a way that remains viable on an ongoing basis'.

The size and nature of coastal features has affected the selection of base points and subsequent adjustment of provisional boundaries in a number of judicial and arbitral decisions, for example the Black Sea case, *Nicaragua v. Colombia*, *Tunisia v. Libya* and *Qatar v. Bahrain*. The instability of coastal features could have the same effect if considered a relevant circumstance. Furthermore, the instability of viable base points led to the application of the angle bisector method in *Nicaragua v. Honduras*, and boundaries have shifted due to fluctuations of natural phenomena such as median lines and river thalwegs (e.g. *Guyana v. Suriname* and *Texas-New Mexico Boundary Dispute*). Coastal instability can, therefore, be relevant for the delimitation of equitable maritime boundaries and may affect the delimitation process in four different ways - it can: (i) affect the selection of base points; (ii) affect the adjustment of provisional boundary lines; (iii) lead to application of the angle bisector method; and (iv) lead to the construction of fluctuating boundaries.

Beatriz de Sousa Fernandes

University of Edinburgh

Hall floor flat,
10 Osborne Road,
Bristol
BS8 2HA

Imposing an international environmental jurisdiction: How developments on marine protected areas (MPAs) are fostering a new legal order for the conservation of ABNJ.

Beatriz de Sousa Fernandes

The nature and designation of marine protected areas (MPAs) has undergone a process of rapid change in the last two decades. MPAs are invading maritime zones historically conceived to enlarge the sovereign rights of states to explore and exploit living and non-living marine resources – for example, the economic exclusive zone. The extent of the area covered by MPAs in zones beyond national jurisdiction, the high seas and the Area, is also increasing. However, the compatibility of MPAs with the high seas maritime freedoms and the legislative competence to designate MPAs in ABNJ is still not straight forward. Debates at international level, particularly at the United Nations General Assembly, have led to consensus recognition of the need to develop a specific instrument under the framework of UNCLOS to support the conservation of marine biodiversity in ABNJ. Such an agreement is crucial to regulate MPAs in these areas.

This paper discusses how advances in marine conservation through a more robust promotion of MPAs can impact the way that the oceans and seas are ruled. It aims to identify how the law of the sea is responding to the changing circumstances in the marine environment, including new scientific evidence and the new emphases of the international community in its approach to marine conservation. For this purpose, it analyses how the introduction of the concepts of biological diversity and the adoption of an ecosystem approach by CBD are influencing the implementation of UNCLOS' obligation to protect the marine environment and to protect "rare or fragile ecosystems as well as the habitat of depleted, threatened or endangered species" (particularly Arts.192 and 194(5)) through the designation of MPAs. It discusses the broader interpretation of UNCLOS's provisions towards the conservation of marine living resources engendered by the South China Sea Arbitration and the Chagos Marine Protected Area cases and how they can be used to support the designation of MPAs in ABNJ. Further, it discusses states practices on the designation of MPAs in ABNJ, such as the OSPAR high seas network of MPAs and the Ross Sea MPA, in order to discuss the main obstacles currently facing the conservation of biodiversity in ABNJ.

Captain Najhan SAID, RMN

National Hydrographic Centre of Malaysia and Universiti Teknologi Malaysia

GeoCoastal Research Group (GCRG)

Faculty of Geoinformation and Real Estate Universiti Teknologi Malaysia (UTM)

81310 UTM Johor Bahru, Johor, Malaysia

Satellite-Derived Bathymetry: Optimising New Promising Technology for Low-Water Line (Baselines) Delineation

Prof. Sr Dr. Mohd Razali Mahmud and Sr Dr. Rozaimi Che Hassan

Over the years, the acquisition technique of bathymetric data has evolved from a shipborne platform to airborne and presently, utilising space-borne acquisition. The extensive development of remote sensing technology has brought in the new revolution to the hydrographic surveying. Satellite-Derived Bathymetry (SDB), a space-borne acquisition technique which derives bathymetric data from high-resolution multispectral satellite imagery for various purposes recently considered as a new promising technology in the hydrographic surveying industry. Inspiring by this latest developments, a comprehensive study was initiated by Malaysia's National Hydrographic Centre (NHC) and Universiti Teknologi Malaysia (UTM) to analyse SDB as a means for baselines delineation. The initial outcomes indicate significant results from both Stumpf and Lyzenga algorithms where the RMSE values for the derived (predicted) depths compared with a total of 2452 reference samples were 1.624 meters and 1.915 meters respectively. Therefore, this paper would deliberate in detail the findings from the study especially on the performance and practicality of SDB over the tropical environmental setting in Malaysia. In addition, this paper will also examine the advantages in adopting SDB as a tool for Territorial-Sea baselines delineation.

Keywords: Satellite-Derived Bathymetry, Baselines

Brian McGarry

Lecturer, The Graduate Institute of International and Development Studies

LL.M. in International Dispute Settlement Villa Moynier Rue de Lausanne 120 bis
1202 Geneva
Switzerland

Managing Marine Biodiversity in the Gulf of Guinea: What Role for General Principles of Law?

Brian McGarry

In September 2017, BBNJ PrepCom 4 is expected to clarify the parameters of the report that the Committee will submit to the General Assembly by year's end. The present paper responds to the use or exclusion of two sets of general legal principles in that report: the common heritage of mankind and the precautionary and ecosystem approaches. Reliance on (or dilution of) these principles in any forthcoming BBNJ instrument may bear significant long-term consequences for West African States, particularly as regards the Gulf of Guinea. The paper thus assesses these principles within the framework of this maritime region's economic, biological, climatological, and managerial concerns.

The principle question concerning the common heritage of mankind in the BBNJ context has been whether it applies to marine genetic resources, with States taking opposing or compromise positions during PrepCom negotiations thus far. West African States may have a particular interest in supporting the comprehensive application of the principle to the BBNJ instrument because incorporation of the principle may critically affect the manner in which a legal text is interpreted. As the BBNJ instrument will be an UNCLOS implementing agreement, it may be logical to directly incorporate the principle as reflected in UNCLOS, thereby ensuring complementarity as required by the Committee's mandate. Moreover, the common heritage of mankind might be easily adapted to the BBNJ context. The principle's incorporation in instruments beyond UNCLOS indicates that its scope is broader than the international seabed. Finally, while the principle's usage in UNCLOS includes benefit-sharing aspects, omitting the common heritage of mankind from the BBNJ instrument may result in the loss of its complementary feature: the preservation and conservation of the environment, in solidarity with future generations.

Alternatively, such States may wish to oppose any express reference to the principle in the PrepCom report because there has been no reference to the principle in any agreed intergovernmental document since 2011. This may suggest that diplomatic practice has shifted to a preference for a 'package deal' that uses other approaches to achieve results that are equitable among Member States. Pursuing the treaty language that provides for the greatest consensus among diverse Member States—without entering into controversial principles and non-State interests—may be seen as a legally orthodox and practically necessary approach to multilateral negotiation. In this respect, the PrepCom report may establish a benefit-sharing regime that satisfies many developing States. As proposed by the G77, this regime could be drafted in specific language that maximises the equitable sharing of benefits among Member States, in particular by linking the use of resource rights to capacity-building duties.

The paper explores a commensurate division regarding the use of precautionary and ecosystem approaches in the context of the BBNJ instrument, with a regional focus on preservation of the West African marine environment. Incorporation of these approaches into each of the discrete substantive areas covered in the PrepCom report may be logical and more efficient in devising integrated solutions when approaching global issues with diverse stakeholders. While some Member States are likely to oppose the application of these principles to the regulation of EIAs under the BBNJ instrument, the precautionary approach is commonly linked to such assessments in State practice, as well as in the customary international law governing the international seabed. The ecosystem approach may also reflect existing best practices under national jurisdictions, particularly in the field of marine spatial planning.

Alternatively, such States may wish to limit any references to these approaches to those discrete substantive areas in which they are least controversial. For example, the G77 has expressed support for these approaches in the context of establishing and regulating area-based management tools, such as marine protected areas (the substantive issue in the PrepCom report for which these approaches have the most obvious application). Exclusively referring to such principles in that context may be sufficient to ensure their influence on interpretations of the prospective BBNJ instrument, while nevertheless circumventing protracted negotiations on their direct applicability to other issues, such as EIAs.

Christophe Bondy

Volterra Fietta - partner

49 Milton Road, London SE24 0NW

Integrating the Law of the Sea with International Trade and Investment

Christophe Bondy

The world's oceans are a crucial conduit for roughly 90% of international trade, a site for increasingly intensive resource development, and a space over which States are making ever-expanding claims to sovereign rights. And yet the linkages between international trade and investment law and the Law of the Sea - including free trade agreements' bolstering of environmental and labour standards, non-discriminatory access to port facilities, and available remedies - have been little considered. This presentation will seek to sketch the outlines of interaction between these different areas of international law and consider to what extent trade and investment law may supplement and bolster the effectiveness of the law of the sea regime, going beyond traditional issues of safety and freedom of navigation to more fully integrate and make more effective these different regimes.

Christine Pichel

Graduate Institute of International and Development Studies

Friedrich-Ebert Damm 67,
bei Gregor Zjawin,
22047, Hamburg, Germany

"Island or Low-tide Elevation?: The Role of Tidal Levels for the Purpose of Defining Maritime Features"

Christine Pichel

"Island or Low-tide Elevation?: The Role of Tidal Levels for the Purpose of Defining Maritime Features"

The relationship between sea level measurement and the definition of islands and low-tide elevations (LTE) as provided by the United Nations Convention on the Law of the Sea (UNCLOS) has been relatively neglected in legal research. Yet the choice of tidal datum is crucial for distinguishing between an island and a LTE under international law: whereas an island is "above water at high tide" (article 121, paragraph 1), a LTE is "above water at low tide but submerged at high tide" (article 13, paragraph 1).

The terms "high tide" and "low tide" are not directly defined in the UNCLOS. However, an analysis of State practice and the travaux préparatoires of the UNCLOS with respect to the use of these terms shows that "high tide" and "low tide" can have different meanings. For instance, the Highest Astronomical Tide (HAT) and the Mean High Water Springs (MHWS) are among the different tidal levels used to define the term "high tide". Similarly, examples of vertical datums that define the term "low-tide" are the Lowest Astronomical Tide (LAT) and the Mean Low Water Springs (MLWN). Thus, no vertical reference datum is universally accepted in determining tidal levels for the purpose of distinguishing an island from a LTE.

In some cases, using various tidal datums in defining islands and LTE may result in the same maritime feature being qualified as an island and as a LTE. This is particularly problematic when the legal status of a maritime feature is disputed between two States in the context of maritime boundary delimitation.

After giving some introductory remarks on the adoption of various tidal datums in defining maritime features, this presentation will focus on three main points. First of all, the manner in which this issue has been addressed by State practice and case law will be analyzed. Secondly, the possible harmonization of national vertical datums and the adoption of a Unique Vertical Reference Datum will be discussed. Thirdly, some concluding remarks relating to the impact of sea-level rise in defining maritime features as islands or LTE will be made.

Fayokemi Olorundami

University of Greenwich

QM 215

Queen Mary Court, School of Law

Old Royal Naval College, Park Row, University of Greenwich London, SE10 9LS

The Diaoyu/Senkaku Island Dispute in the East China Sea: A Re-examination in Light of the Recent South China Sea Arbitration

Fayokemi Olorundami

In July 2016, an Arbitral Tribunal constituted under Annex VII of the 1982 United Nations Convention on the Law of the Sea (UNCLOS) handed down its decision in the South China Sea dispute between the Philippines and China. In addition to considering the legal status of the controversial nine-dash line, the Tribunal also provided the first judicial interpretation of Article 121 of UNCLOS, thereby shedding light on what maritime features may be regarded as islands and not rocks within the meaning of that article and therefore entitled to an exclusive economic zone (EEZ) and a continental shelf. This paper considers the decision reached by the Tribunal, and the views expressed in literature, applying them to an analysis that attempts to answer whether the Diaoyu/Senkaku Islands (sovereignty over which is disputed by China and Japan) in the East China Sea would qualify as islands or rocks and thus entitled to an EEZ and a continental shelf. This paper argues that these maritime features, although referred to as islands, are more likely, in light of the South China Sea arbitration decision and the analysis from literature, to be considered as rocks and consequently, not entitled to an EEZ and a continental shelf within the contemplation of Article 121.

Robin Cleverly

Marbdy Consulting Ltd

Inmans, Combe Florey, Taunton, TA4 3JD

Maritime Delimitation in Areas of Coastal Instability

Robin Cleverly

Baselines are fundamental to maritime claims as they provide the starting line for the measurement of maritime zones seaward. They are also fundamental to the definition of maritime boundaries in providing base points for equidistance calculations, pivotal in at least the first stages of reaching an equitable solution. Where coastlines are highly unstable showing a high degree of “morpho-dynamism” the definition of baselines for making such measurements becomes problematic. Only article 7 of UNCLOS on straight baselines mentions the problems of instability and possible coastal recession though these provisions are yet to be applied by coastal States. Nautical charts are often out of date and of little use and satellite imagery becomes the preferred dataset despite its limitations in defining the low-water line.

International attention has been mostly focused on the plight of small island States affected by sea-level rise (for example in the Pacific), and on the rights of artificial islands (for example in the Maldives and South China Sea). In addition several recent boundary cases, notably Nicaragua v Honduras, Bangladesh v India, and more recently Ghana v Cote d’Ivoire and Costa Rica v Nicaragua have had to address the problems of unstable coastlines along mainland coasts.

This paper will review the types of instability and the problems it causes, and the way that the courts and tribunals have addressed or solved the problems of defining equitable boundaries in areas of unstable coasts.

Robert van de POLL, CANADIAN
Global Manager, Law of the Sea, Fugro N.V., **Leidschendam**, The Netherlands
rvandepoll@fugro.com

and

Niels ANDERSEN, DANISH
Head of Polar DTU - DTU Center for Polar Activities, National Space Institute, Technical
University of Denmark, Lyngby, Denmark
na@space.dtu.dk

New Modern-Day 3D SSM Satellite Imagery Analysis to aid in Baseline Quality Controls

A present time, there are 162 Countries in the world with Coastlines that will make use of Baselines for all Law of the Sea Applications for the Coastal State. The United Nations considers 152 of these as “Conventional Coastal States”. There is an additional 10 Countries with “Lake Coastlines”, which could be referred to as “Non-Conventional Lake States” that also will be using Baselines and applying Principles of Law of the Sea. Of these 162 Countries, 107 will be using Straight (and/or Archipelagic) Baselines, and 126 will be using Normal Baselines (and or in many cases, combinations of both). Many of the Straight Baselines were “mapped” long ago, when technology was not as it is today. Most Countries Baselines’ (officially referred to as Territorial Sea Baseline Model (TSBM)) are in poor shape. Conducting field surveys is an expensive practice. New Satellite Imagery is now available to allow for detailed LOS GIS Desktop 3D Mapping (to undertake Quality Control (QC)) analysis, to identify areas where modern-day Baselines improvements can be made.

This paper will review many Worldwide locations (both old and new (recent present-day mapping)), where the new 3D Satellite Imagery still shows additional improvements can be made. As all Law of the Sea Measurements, for (i) LOS Limits, (ii) LOS Boundaries, and (iii) LOS Extended Continental Shelf extensions makes use of the TSMB, minor improvements using these new Technology can increase a Coastal States Maritime Territory by vast amounts.

Joanna Mossop

Victoria University of Wellington

PO Box 600
Wellington 6140
New Zealand

Marine genetic resources and the imperfect UNCLOS framework

The issue about the appropriate legal framework for MGRs has dominated discussions at the prepcom for a new internationally legally binding instrument for BBNJ. A range of views has emerged about the legal principles that apply, or should apply to MGRs. Part of the problem is the distinction that has emerged in UNCLOS between the legal principles that apply to the seabed and the water column. In the context of marine genetic resources, this distinction is increasingly unworkable. The discovery of environmental dna, for example, means that genetic material from seabed organisms can be sampled from the water. This paper will discuss the need to move away from seabed/water distinctions in favour of a more integrated set of legal principles.

Professor Natalie Klein

Macquarie Law School

Australia

The Role of the *South China Sea* Arbitrators in Interpreting Article 121(3) of UNCLOS

China's non-participation in the *South China Sea* arbitration has contributed to discussions about the validity of the Award itself as well as the potential influence of the Tribunal's decisions and its reasoning in the future. That influence may extend to state practice both within and beyond the South China Sea region more immediately and in the years ahead. The influence also goes to future decisions under the dispute settlement regime of the UN Convention on the Law of the Sea (UNCLOS). This paper reflects on the roles of judges and arbitrators in procedures resolving disputes under UNCLOS, drawing on the particular example and experience of the *South China Sea* arbitration in the interpretation of Article 121(3).

Different roles may be identified for arbitrators or judges, including: undertaking the interpretation and application of the provisions in UNCLOS; deciding questions of fact based on evidence presented; resolving the particular disputes between the parties; contributing to the resolution of a broader diplomatic dispute. How well did the *South China Sea* arbitrators perform these roles in deciding on the jurisdictional entitlement of different features in the South China Sea? We also need to consider how we can actually assess the arbitrators' performance? There may be different benchmarks to utilise in this respect that will have bearing on the future relevance of the *South China Sea* Award.

Robert van de POLL, CANADIAN
Global Manager, Law of the Sea, Fugro N.V., **Leidschendam**, The Netherlands
rvandepoll@fugro.com

and

Clive SCHOFIELD, AUSTRALIAN
Director of Research, Australian National Centre for Ocean Resources and Security, University of
Wollongong, Australia
clives@uow.edu.au

**PUSHING BEYOND THE 200 NAUTICAL MILE LIMIT:
PROGRESS AND CHALLENGES IN EXPLORATION EFFORTS ON THE EXTENDED
CONTINENTAL SHELF**

Twelve coastal States have now issued exploration blocks for oil and gas exploration seawards of the 200 nautical mile exclusive economic zone limits, providing a clear indication of exploration interest in these areas. Further, a discovery has been made in one such block located on Canada's extended continental shelf. If developed this would be the first hydrocarbons exploitation project to occur on the extended continental shelf. The paper reviews these designations of acreage for seabed energy exploration and highlights some of the practical and legal challenges that will need be addressed should such developments proceed.

In particular, attention will be devoted to the issues that arise in the interpretation and application of Article 82 of UNCLOS. International Oil Corporations (IOC's), already are faced with high royalties' costs. Further, the recent drop in world oil prices means that the deep and ultra-deep waters are now less desirable as exploration costs are several times higher to work in these challenging waters. Article 82 of UNCLOS provides for additional taxes and royalties, that will be collected for all exploitation of seabed resources within the coastal States' extended continental shelves. It is, however, unclear how Article 82 will be implemented by the coastal State. This additional uncertainty is causing a lot of additional concerns from IOC's when new current and/or future blocks bid bounds are being offered by the coastal States'. Some reluctance by the IOCs is starting to be seen, based on the undefined rules of Article 82.

All coastal States' whom put high expenses up front (to properly collect data to prove extensions of their respective extended continental shelves), assumed the promise of revenue once seabed exploitation would come in later years from these extensive continent shelf waters. The unknowns related to Article 82, with no State practice or standards yet in existence, raises a new and somewhat unexpected concern which was arguably not anticipated by the drafters of UNCLOS.

Grant Boyes^a, Mark Alcock^b

^{a, b} *Maritime Jurisdiction Advice, Geoscience Australia, GPO Box 378, Canberra, ACT, 2601, Australia*

Fixing Australia's Maritime Jurisdiction - an Imagery/Digital Approach

The extent of Australia's coastline is vast with the majority of it remote from populated areas and with territories that are even more remote. Due to resource limitations substantial portions of the delineation of the coastline for territorial baseline purposes have been based on 'secondary sources' of information (charts and maps). Geoscience Australia in collaboration with the Australian Hydrographic Service, relevant State and Territory agencies and the James Cook University are in the process of determining the coastline from 'primary sources' of information that include aerial photography based on predicted tides, satellite imagery, Laser Airborne Depth Sounding (LADS) and other advance imaging techniques.

The outcome will be a complete digital product of not only the coastline but also the territorial sea baseline and all other maritime jurisdictional limits for sovereignty, sovereign rights, resource management (living and non-living) and other administrative management areas. Computation of these limits will be geodetically computed on the spheroid and the lines to define limits and areas densified with intermediate geographic coordinates to a degree where they can be reproduced on any GIS system or electronic charting instrument with precision.

The aim is the establishment of maritime zones that provide greater certainty and repeatability, through time, for all stake holders in the marine space. The culmination being, with the assistance of the Attorney-General's Department and the Office of Parliamentary Counsel, the production of digitally based proclamations and regulations.

**Crowd Sourced Bathymetry
Origins, Current Status, Future Developments, Legal Challenges**

Andrew Schofield and Kenneth Himschoot
SeaID
andrew.schofield@sea-id.org and kenneth.himschoot@sea-id.org

Abstract

The presentation provides an overview of crowd source bathymetry (CSB) - what CSB is, where it fits in and relates to other approaches to the gathering of bathymetric data and CSB potential significance both at present and into the future. Novel developments are outlined as well as obstacles, including legal hurdles, to the take up of CSB are outlined and options to overcome these challenges explored with a view to evolutions towards Crowd Sourced Survey. In particular the paper will offer details of the IHO's pilot project on CSB, an initiative highlighted by Sea bed 2030, and a review of how the pilot project was recently run on Super Yachts as a proof of concept and method. The presentation includes coverage of the use of modern web application techniques to enable passive data collection, demonstrating how in a short period millions of soundings were collected from a tiny fleet. A synopsis of the formation of the CSB Cook Book Working group will be delivered and progress in the development of best practice summarised. Key issues and that will be explored and highlighted include the remarkable poverty of bathymetric data in near coastal waters, issues of liability, questions as to how reliable data gathered via CSB is, the obligation of the Mariner to report new navigational features and the apparent tension with legal prohibitions on the collection of soundings in territorial waters and how CSB can be integrated or aligned with traditional surveying activities in national waters and the issuing of navigational Notes to Mariners

Precautions to be taken when using Satellite Derived Bathymetry in support of Maritime Delimitations

Jean Laporte, KLH,
Eng. General (Armt. Corps Retd.)
Managing Director ARGANS Ltd.

When properly calibrated, the physics-based inversion method can yield accurate depths in shallow waters, providing turbidity and the environment factors affecting the radiance remain under control within SDB obvious limitations.

Recent experiences in West Africa have proven that accurate baselines can be retrieved from high resolution images, even in the swash and continuous surf zones, by interpolating the depths measured on both sides of the breakers. This requires merging the cross-sections extracted from the SDB model with observed beach profiles and applying rigorous tidal corrections to the averaged final results. Validation and fine-tuning of relevant environment parameters such as the atmospheric corrections, which can be aggravated considerably by aerosols, are essential.

Depending on the satellite constellation, horizontal precisions of a few metres can easily be achieved.