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Beyond the Limits?: Outer Continental Shelf Opportunities and Challenges in East and Southeast Asia

CLIVE SCHOFIELD AND I MADE ANDI ARSANA

This article examines the process by which certain coastal states in East and Southeast Asia may confirm their sovereign rights over areas of continental shelf more than 200 nautical miles from their baselines — areas commonly termed the “outer” or “extended” continental shelf. The article provides an overview and explanation of this legally and technically complex process. It also highlights some of the numerous issues and uncertainties in respect of both the interpretation of the relevant provisions of the international law of the sea and practical aspects of the implementation of the process itself. Many states around the world, including in East and Southeast Asia, are striving to meet a deadline for submissions related to the outer continental shelf of May 2009. Existing and potential submissions are outlined. The potential opportunities and challenges associated with outer continental shelf are then discussed.

Key words: continental shelf, law of the sea, Article 76, sovereign rights, seabed resources, ocean management.

In November 2008 Japan took steps to “add” around 740,000 km² of seabed to its maritime jurisdiction. Such areas, located seaward of

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the limits of the 200 nautical mile (nm) Exclusive Economic Zones (EEZ), are often referred to as the “outer” or “extended” continental shelf.

In accordance with the terms of the United Nations Convention on the Law of the Sea (hereafter UNCLOS or “the Convention”),¹ the process through which an interested coastal state can confirm its sovereign rights over areas of outer continental shelf is by making a submission on proposed outer continental shelf limits to a specialized United Nations scientific body — the United Nations Commission on the Limits of the Continental Shelf (hereafter referred to as “the Commission” or CLCS). The CLCS considers the information submitted and makes recommendations. On the basis of these recommendations, the coastal state may then define “final and binding” outer continental shelf limits.²

A deadline for making submissions to the CLCS does, however, exist. The deadline applicable to many, though not all, coastal states has been set as 13 May 2009 (see below regarding this choice of date). In the context of East and Southeast Asia, Japan’s submission to the CLCS joined those of the Russian Federation (September 2001) and a partial submission by Indonesia (June 2008). A submission on behalf of Myanmar has also now been made (December 2008) in respect of outer continental shelf areas in the Bay of Bengal. With the May 2009 deadline looming it is understood that a number of other states around the region are in the process of urgently finalizing their submissions.

The relevant provisions of the Convention are multifaceted, require the gathering of detailed scientific information, give rise to a number of interpretational and practical challenges and are all too readily misunderstood. This article therefore sets out to explore and, at least to an extent, to clarify the complex legal and geoscientific dimensions of the process of preparing for and making a submission in respect of continental shelf areas seaward of the 200 nm limit, with particular reference to East and Southeast Asia. Firstly, claims to maritime jurisdiction and the key concept underpinning sovereign rights over outer continental shelf areas — natural prolongation — are introduced. An overview and explanation of the interwoven series of formulae and criteria relevant to outer continental shelf rights laid down in the relevant provisions of the law of the sea is then provided. The composition and competence of the CLCS and its approach will then be considered and a number of practical and interpretational ambiguities and uncertainties highlighted. Attention will then turn to submissions already made to the Commission and the potential

for such further submissions will be noted, with particular reference to those from states located in East and Southeast Asia. Finally, the significance of the potential opportunities represented by this process, together with some of the challenges that may arise for the coastal states involved are explored.

Maritime Claims and Continental Shelf Rights

The rights and duties of coastal states in relation to the continental shelf are detailed in Part VI of UNCLOS. There exists wide international acceptance of the Convention as the maritime jurisdictional framework for ocean affairs and those parts of the Convention dealing with maritime claims and maritime boundary delimitation can be considered to be part of customary international law.³ For example, the vast majority of East and Southeast Asian coastal states are parties to the Convention.⁴ It is also the case that these states have proved to be enthusiastic claimants in terms of maritime jurisdictional zones. Territorial seas of 12 nm breadth and 200 nm EEZs have thus become the regional and international norm.⁵

It is the case, however, that continental shelf rights substantially predate the 1982 Convention. Following on from the proliferation of claims sparked by the so-called Truman Proclamation of 1945, when the United States claimed rights over the continental shelf seaward of its then three nm territorial sea limit, coastal state rights over the continental shelf were enshrined in the Continental Shelf Convention of 1958.⁶ The International Court of Justice (ICJ), through its Judgment in the North Sea Continental Shelf cases of 1969, introduced the concept of “natural prolongation” such that coastal states have rights over that part of the continental shelf that constitutes “a natural prolongation of its land territory” and determined that this should be a key consideration in delimiting the continental shelf.⁷

A significant evolution in the international law of the sea took place with the introduction of the EEZ, codified through UNCLOS. In accordance with the EEZ concept, every coastal state has the right to claim sovereign rights over both the seabed and water column extending to 200 nm. Thus, every coastal state has a right to the continental shelf out to the 200 nm limit as part of the EEZ, regardless of whether the continental margin actually extends that distance offshore. These rights are, however, governed in accordance with Part VI (dealing with the continental shelf) of the Convention rather than Part V (dealing with the EEZ). A key achievement of the Convention, in respect of the continental shelf specifically, was the drafting of Article 76 which

provides for a definable outer limit to the continental shelf claims of coastal states — a significant step forward from the open-ended exploitability criteria contained in the 1958 Convention.⁸

It is also important to observe that continental shelf rights are inherent and “do not depend on occupation, effective or notional, or on any express proclamation”.⁹ Additionally, the rights of a coastal state over the continental shelf “do not affect the legal status of the superjacent waters”.¹⁰ The term “extended” continental shelf therefore gives a somewhat misleading impression that coastal states are somehow extending or advancing claims to “additional” areas of continental shelf. This is not quite the case as the sovereign rights enjoyed by the coastal state over the continental shelf are, as indicated above, inherent. In a sense then, the coastal states making submissions to the CLCS are merely seeking to confirm their existing sovereign rights over parts of “their” continental shelf beyond the 200 nm limit.

Defining the Outer or Extended Continental Shelf

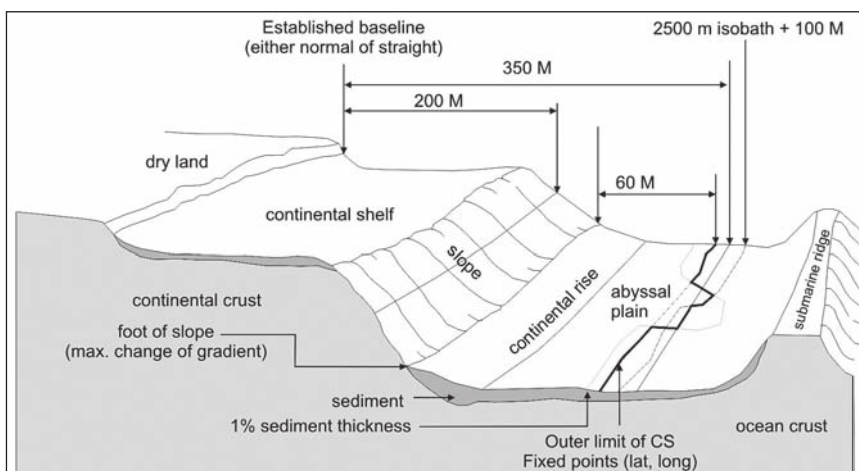
Article 76(1) of UNCLOS establishes that the continental shelf of a coastal state consists of “the seabed and subsoil of submarine areas” and extends to a distance of 200 nm from relevant baselines. Thus, in accordance with the right of coastal states to claim a 200 nm EEZ, coastal states are entitled to at least a 200 nm continental shelf provided that there is no overlapping claim with neighbouring states. However, where a coastal state is located on a broad continental margin, and that margin extends beyond 200 nm from its relevant baselines, UNCLOS provides that the coastal state may be able to assert rights over that part of the continental shelf beyond the 200 nm limit that forms part of its natural prolongation. Article 76(1) goes on to provide an alternative to the 200 nm limit such that the continental shelf extends, “throughout the natural prolongation of its land territory to the outer edge of the continental margin”. While no sure figure can be determined until all outer continental shelf submissions have been considered by the CLCS, it has been estimated that outer continental shelf areas may encompass around five per cent of the ocean floor.¹¹

Article 76 provides a complex series of provisions relating to the coastal state establishing the location of the outer edge of the continental margin where that margin extends beyond 200 nm from its baselines. Essentially, Article 76 provides two formulae according to which coastal states can establish the continental shelf beyond the 200 nm limit and two maximum constraints, or “cut-off” lines.

Both of the entitlement formulae are measured from the foot of the continental slope which is defined as the point of maximum change in gradient at the base of the continental slope.¹² From the foot of the continental slope the existence of a continental margin seaward of the 200 nm limit may be established either through reference to depth or thickness of sedimentary rocks overlying the continental crust (the Gardiner Line), or by using a distance formula (the Hedberg Line), which consists of a line no more than 60 nm from the foot of continental slope.¹³ The coastal state has the option of applying whichever of these two formulae is most advantageous to it.

The two entitlement formulae or criteria described above (the Hedberg and Gardiner Lines) allow a coastal state to establish that a continental margin exists beyond 200 nm from its baselines. However, Article 76 also contains two constraints on the outer limits of a state's continental shelf. The first of these "cut-off" lines is defined as "350 nautical miles from the baselines from which the breadth of the territorial sea is measured".¹⁴ This is therefore a distance-based cut-off line composed of an envelope of 350 nm arcs from the coastal state's baselines. The alternative constraint line involves both distance and water depth consisting of "100 nautical miles from the 2,500 metre isobath", which is a line connecting the depth of 2,500 metres.¹⁵ Figure 1 illustrates the outer limits of continental shelf.

Figure 1
**Schematic of the Continental Shelf Showing Outer Continental Shelf
Entitlement and Constraint Lines**



SOURCE: Authors' research.

Article 76 also contains specific, though potentially problematic, provisions concerning how the constraint lines mentioned above are to be applied to submarine ridges and analogous features (see below). Furthermore, Article 76 provides that the coastal state shall define the outer limits of its continental shelf where it extends beyond 200 nm from its baselines “by straight lines not exceeding 60 nautical miles in length, connecting fixed points defined by coordinates of latitude and longitude”.¹⁶

The United Nations Commission on the Limits of the Continental Shelf (CLCS)

The procedure for establishing a claim to continental shelf areas beyond 200 nm from the coast is for an interested coastal state to prepare a submission for consideration by the CLCS. The Commission is a body consisting of twenty-one scientists. One important aspect to note is that the Commission is not a legal body and it does not therefore adjudicate on submissions. Instead, the Commission has technical capacity to evaluate whether or not the outer limits of the continental shelf delineated by coastal states fulfil the requirements set in Article 76 of the Convention. The CLCS will then make “recommendations” to the coastal state on the basis of which the coastal state can establish limits that are “final and binding”.¹⁷ A submission to the Commission is required if the coastal state wants to confirm its sovereign rights over continental shelf beyond 200 nm from the baseline.

There exist contrasting views on the role of the CLCS. Some commentators see the role of the Commission as, in effect, a guardian against excessive national claims and protector of the international seabed beyond national jurisdiction, known as the “Area”, which forms part of the common heritage of mankind.¹⁸ This is not, however, necessarily quite the case. Instead, the Commission appears to be more adopting the role of partner to the submitting states, working to help them realize their ambitions to confirm their sovereign rights over the maximum area of outer continental shelf possible, rather than acting as some kind of “gamekeeper” and defender of the international seabed.

Issues and Uncertainties

The question of outer continental shelf claims in accordance with Article 76 of the Convention is undoubtedly both legally and scientifically complex. A number of notable “complexities and ambiguities” have arisen in relation to both the interpretation and

implementation of Article 76 of UNCLOS and with respect to the way in which the Commission works.¹⁹ These are and will be of relevance to the coastal states of East and Southeast Asia as they prepare for and make their submissions and a number of these issues are outlined below.

Data Gathering and Uncertainties in the Application of Article 76

It is clear from the foregoing review of the key provisions of Article 76 that demonstrating to the Commission that seabed areas beyond the 200 nm limit properly form part of a coastal state's extended continental shelf is no easy task. Detailed geoscientific information is required in respect of the geology (composition) and morphology (shape) of the continental margins in question. Additionally, bathymetric (depth) data is needed, as are geodetically robust (that is, accurate) distance measurements from the coastal state's coastal baselines. As existing data sets may well be incomplete, unreliable or conflicting,²⁰ this necessitates the gathering of additional scientific information specific to the task, notably through seismic and bathymetric surveys.²¹ This data then needs to be interpreted and readied for presentation ahead of a submission to the Commission. Clearly, this endeavour is time-consuming and requires the application of considerable scientific, technical, human and financial resources, including expertise in geology, hydrography, geophysics and geodesy.

With regard to data gathering a number of uncertainties may arise. While distance measurements are unlikely to result in significant errors, especially where geodetically robust calculations are being computed, unless human error creeps in, the same cannot be said in relation to other types of technical procedure. Thus, applying the sediment thickness formula and locating the 2,500 metre isobath line, which rely on acoustic measurement technologies, can lead to errors of the order of tens of kilometres, particularly as errors may also occur in the interpretation of the data gathered.²² Additionally, there is considerable scope for subjective interpretation, for example as to the precise location of the foot of the continental slope where several options are available.²³ It should also be anticipated that errors may be amplified by a combination of error sources, compounding the problem.

Thus, if coastal states collect data independently, their differing data sets are likely to lead to distinct outer continental shelf limits being constructed. Furthermore, even when identical data sets are in use, different analytical approaches, methodologies and interpretations

may likewise lead to different outer continental shelf limits being constructed. This means that where coastal states share the same continental margin, their proposed outer continental shelf limits are likely to be at variance. This type of scenario suggests that cooperative, or at least coordinated submissions may well be advantageous to all concerned. Such approaches might promote the development of common methodologies and, potentially, allow for the pooling of scientific data.

The Question of Ridges

An especially problematic issue in this context relates to the question of ridges and in particular how to distinguish between “submarine elevations” and “submarine ridges” and the application of cut-off lines to such features.²⁴ This issue is complex, contentious and has generated considerable debate.²⁵ The language used in Article 76 on this issue has been termed “manifestly unhelpful”²⁶ and has not been substantially clarified by the Commission’s Scientific and Technical Guidelines, which merely state, rather unhelpfully, that “the issue of ridges will be examined on a case-by-case basis.”²⁷ This perhaps indicates that the Commission itself faces serious challenges in developing rules applicable to all circumstances.

Indeed, in view of the uncertainties and ambiguities associated with Article 76, the time-consuming and expensive process of preparing a submission to the CLCS, especially where ridges are involved, has led one leading commentator to liken the process of defining final and binding outer continental shelf limits to a high-stakes poker game. Unfortunately, however, it appears to be a game where not only are the players unsure about what the rules are and thus the value of their cards, but where the dealer (that is, the Commission) may ultimately rule a player’s hand to be essentially worthless.²⁸

The issue of ridges is set to be a major concern in the analysis of the claims of, for example, Japan and Palau, in East Asia (see below).

Deadline Issues and Submission Requirements

The drafters of Article 76 of the Law of the Sea Convention included a deadline for the submission of information on the outer limits of the continental shelf which was defined as “10 years of the entry into force of this Convention for that State”.²⁹ The Convention itself entered into force on 16 November 1994, twelve years after its adoption in Montego Bay. Accordingly, the deadline set for coastal

states that were party to the Convention when it entered into force was 16 November 2004.

As that date approached, however, it became clear that many states, which might potentially possess outer continental shelf rights, were likely to require additional time to prepare their submissions. Consequently, the deadline was pushed back. As an alternative deadline the adoption of the Scientific and Technical Guidelines of the Commission on 13 May 1999 was instead taken as the commencement date of the ten-year “clock”. For states that had become parties to the Convention before 13 May 1999, therefore, the deadline was shifted to 13 May 2009.³⁰

As detailed below, however, submissions to the Commission have been relatively slow to materialize (17 to date, a number which are either joint or partial in nature). As it has been estimated that there may be as many as 74 coastal states with potential claims to areas of outer continental shelf,³¹ it became clear that, once again, many potentially interested states were in danger of missing the deadline.

In recognition of this issue, in June 2008 a meeting of the State Parties to the Convention took the decision that, although the current deadline would remain unchanged, the requirements to meet it would be significantly relaxed. In accordance with this decision, coastal states, instead of submitting a complete submission (including comprehensive data and documents), may submit “preliminary information indicative of the outer limits of the continental shelf beyond 200 nautical miles and a description of the status of preparation and intended date of making a submission”.³² Supporting data and other requirements may be provided at a later date.

It is worth noting that the deadline of May 2009 only applies to those states that were parties to the Convention when the Commission’s Scientific and Technical Guidelines were adopted in May 1999. States which have become parties to UNCLOS after this date have the full ten-year time-frame to prepare their submissions to the Commission. States that are not yet parties to the Convention, most notably the United States, of course will have no deadline set unless and until they become parties to the Convention.

It can be argued that the procedural fiction of creating a deadline for the confirmation of what are, it should be recalled, inherent rights has proved useful in stimulating action. It appears that the existence of a deadline has been advantageously deployed by advocates on behalf of the preparation of outer continental shelf submissions. In particular, interested technical agencies have been better able to

secure government backing in order to conduct, for example, costly hydrographic surveys, which might very well not have taken place otherwise. Consequently, it can be argued that were it not for Article 76, the significant advances in seabed data gathering that have been achieved to date would not have come to pass.

The Workload and Practice of the Commission

The existence of a deadline for submissions to the CLCS necessarily has had implications in respect of the Commission's workload and is likely to result in a surge of submissions around the time of the deadline. Clearly, formulating a submission in accordance with Article 76 requires that a multidisciplinary team be assembled, detailed technical surveys be undertaken and considerable volumes of scientific observations and data be collected, interpreted and presented. Undoubtedly the CLCS is faced with a dauntingly complex task and it is thus unsurprising that the Commission's own scientific assessment procedures for examining submissions is similarly exacting and robust, even though there has been debate as to whether such a rigorous approach is entirely justified.³³ Accordingly, even though the Commission is undoubtedly highly active and conscientious in its valuable work, the time-frame for the consideration of a submission cannot be readily described as swift.

Given the number of states that may be interested in making a submission, allied to the methodical approach of the CLCS itself, it appears that it will be a considerable time before all outer continental shelf limits are defined and the CLCS is out of business. Indeed, at the current rate at which the CLCS is considering submissions (around two per annum) the implication is that the Commission will be in existence until 2035 before final and binding outer limits to national continental shelf claims can be fixed.³⁴

A limiting factor to the pace of progress in the consideration of submissions is the fact that the Commissioners themselves, unlike for instance Judges on the International Tribunal on the Law of the Sea (ITLOS) (another body established under UNCLOS) are not remunerated by the UN. Instead, Commissioner's salaries and costs are covered by the nominating state (usually their own national government). As membership of the Commission is determined in accordance with standard UN geographical voting practices, a number of the Commissioners hail from developing states. Given the considerable costs involved in attending meetings and engaging in Commission-related activities in New York, this presents practical difficulties for

Commissioners involved in sub-Commissions considering individual submissions. The burden of the costs involved in CLCS work may therefore potentially hamper certain Commissioners attendance at meetings in New York, thus potentially slowing, or at least detracting from the proper running of, the process of considering outer continental shelf submissions.

It has also been argued that the financial relationship between the nominating state and individual Commissioners is potentially problematic as this tends to “create perceptual problems that undermine the impartiality of the Commission”.³⁵ A related and potentially problematic issue is the fact that some Commissioners undertake consultancy activities on behalf of interested governments. While Commissioners involved in the preparation of a particular state’s submission do not participate in the relevant sub-Commission tasked with examining that submission, they are still entitled to vote in the final consideration of that submission by the full Commission. This creates a concerning perception that Commissioners may be “available for hire”, something that must tend to undermine the impartiality and integrity of the CLCS.³⁶

Baselines and Undelimited Boundaries and Disputes

The Commission is tasked to examine the data and methodology relating to the construction of the 200 nm EEZ limit and the 350 nm constraint line. However, the Commission will not analyse the baselines from which these limits are measured and, in particular, will not assess their consistency with the relevant provisions of UNCLOS.³⁷ In large part this is because the choice of types of baselines to apply and the definition of national claims to maritime jurisdiction are unilateral political acts. In essence, issues related to baselines, maritime claims and boundaries are intimately connected to the coastal state’s sovereignty — something that states tend to guard most jealously.³⁸

This is, however, a potentially problematic issue, especially in the context of East and Southeast Asia, where excessive claims to straight baselines are commonplace.³⁹ Were the Commission to uncritically accept, though not necessarily endorse, arguably excessive baselines as the basis for the 200 and 350 nm limits used in its deliberations, as appears to be the case, other coastal states, whose interests are affected would in all likelihood object. This, in turn, raises questions over the validity of the Commission’s recommendations and the final and binding nature of the outer continental shelf limits defined by

the coastal state on the basis of those recommendations. In effect, a maritime dispute would result, or an existing one would tend to be exacerbated.⁴⁰

In this context it is also not the Commission's role to either settle maritime and territorial disputes or to divide up areas of outer continental shelf where there are overlapping claims. Instead, the Commission is concerned with determining the outer limit of the continental shelf. With regard to maritime boundary delimitation, paragraph 10 of Article 76 is explicit: "The provisions of this article are without prejudice to the question of delimitation of the continental shelf between states with opposite or adjacent coasts."⁴¹ This is also important in East and Southeast Asia where there exist numerous maritime disputes, often associated with contested island sovereignty. It is also the case that many broad continental margins are shared by more than one coastal state, raising the possibility of overlapping outer continental shelf claims.⁴²

Thus, the preparation of a submission to the CLCS relating to outer continental shelf rights by one state does not impact on the rights of a neighbouring state where the potential maritime boundary between them remains undelimited. No "final and binding" outer continental shelf limits for one coastal state may be established on the recommendations of the Commission where a maritime boundary delimitation remains unsettled or overlapping claims exist. It is therefore up to the coastal states concerned, rather than the Commission, to resolve any overlapping claims and to delimit maritime boundaries.⁴³

There are, however, ways around this potentially problematic issue. In principle, a coastal state should have little objection to the Commission considering a submission made by a neighbouring state concerning areas of outer continental shelf to which it may also have rights as the determination by the Commission that an area beyond 200 nm from the coast is indeed outer continental shelf does not prejudice its rights and Article 76(10) contains a clear guarantee that the recommendations of the Commission will be without prejudice to the delimitation of a continental shelf boundary. For example, several states, in making their submissions have noted that they have consulted with neighbouring states and those neighbours have indicated that they have no objection to the Commission considering the submission in question, without prejudice to future delimitation negotiations.⁴⁴ Under this scenario, the Commission would proceed with issuing recommendations on the limits of the shared outer continental shelf on the basis

of one state's submission, the other interested state would in due course make its own submission in respect of the same area and the two (or potentially more) states would then divide the outer continental shelf areas beyond their 200 nm limits between them through a maritime boundary agreement, up to the outer shelf limits established in accordance with the Commission's recommendations. Alternatively, partial submissions may be made, in order to avoid consideration of areas subject to a land or maritime dispute or a joint submission could be considered. Thus, although mechanisms exist to circumvent the problem of overlapping claims and undelimited maritime boundaries, it is the case that submissions to the CLCS may in fact serve to highlight the existence of maritime and territorial disputes (see discussion below related to the submissions of Indonesia and Japan).

Issues of Confidentiality

The confidentiality requirements surrounding the Commission's recommendations and decision-making process are also potentially problematic.⁴⁵ This secrecy means that coastal states preparing submissions remain largely in the dark as to why, for example, aspects of a particular submission were accepted or rejected. It is therefore difficult for future claimant states to utilize the experience of those states that have gone before and benefit from previous state practice in analogous situations. Consequently, a submitting state may, for instance, "make the same faulty assumptions concerning ridges and elevations that caused problems for other coastal states", forcing a costly and time-consuming re-evaluation and resubmission as a result.⁴⁶ Unfortunately this situation may also result in "suspicion and scepticism" on the part of interested states denied access, on the basis of confidentiality, to the data used to justify a particular submission, and indeed the Commission's rationale for accepting such a submission, potentially breeding "concerns about the impartiality and the integrity of the process".⁴⁷

One way in which these problematic issues of confidentiality may be overcome is through coastal states that are approaching or have reached the end of the process sharing the details of the recommendations made to them. There is no provision in the Convention or in the Commission's Scientific and Technical Guidelines that prevents a coastal state from revealing the content of the recommendations it receives from the Commission. New Zealand has opted for this approach, publishing the recommendations it received

in full.⁴⁸ It can be observed that the publication of recommendations means that the Commission's reasoning will be analysed not only by the coastal state in question but also by a much wider audience. Arguably this type of action on the part of coastal states that have already gone a considerable distance in their own journey towards fixing their outer continental shelf limits will enhance the transparency of the Article 76 process. Most importantly, the availability of previous recommendations is likely to be of considerable assistance to other states in the preparation of their own submissions.

Outer Continental Shelf Submission in East and Southeast Asia

Just as the vagaries of coastal and political geography dictate that some coastal states, such as Indonesia, benefit from expansive maritime claims, whilst others, for instance Singapore, have much more restricted maritime entitlements, access to outer continental shelf rights are not distributed evenly. Indeed, by no means all coastal states will possess potential outer continental shelves beyond 200 nm from their baselines. In East and Southeast Asia, for example, the configuration of coasts and islands, the proximity of other states resulting in states being "shelf-locked" and breadth of continental margins all conspire to mean that only a select few states are likely to be able to make credible submissions to the CLCS.

Existing Submissions

As noted, at the time of writing, a total of seventeen submissions had been lodged with the CLCS.⁴⁹ Four states located (or partially located) in East and Southeast Asia, Indonesia, Japan, Myanmar and the Russian Federation, had made submission to the CLCS.

Russia was the first state in the world to submit a claim to the CLCS, doing so on 20 September 2001.⁵⁰ Although the Russian submission is predominantly concerned with areas of potential outer continental shelf in the Arctic Ocean, part of the Russian submission related to the so-called "peanut hole" in the Sea of Okhotsk (see Figure 2). This is a relatively small area of seabed in the central part of the Sea of Okhotsk, entirely surrounded by Russia's EEZ claims, which Russia asserts is part of its continental shelf.

Shortly after Russia made its submission, Japan delivered a diplomatic *note verbale* to the Secretary General of the UN relating to Russia's submission. In this communication Japan objected to the Russia's use of basepoints located on the islands of Etorofu,

Figure 2
The Sea of Okhotsk “Peanut Hole”



SOURCE: Authors'research.

Kunashiri, Shikotan and Habomai in the maps used in the Russian submission, on the basis that they are “inherent Japanese territory”.⁵¹ Collectively, the four islands form what are often termed the Southern Kuril Islands (by Russia) or the Northern Territories (by Japan). Japan similarly objected to Russia’s unilateral definition of a line on these maps in the vicinity of the four islands and Japan’s Hokkaido Island as defining the outer limit of Russia’s continental shelf and EEZ on the basis that no maritime boundary delimitation agreement between the two states had ever existed in this area. Japan, moreover, noted

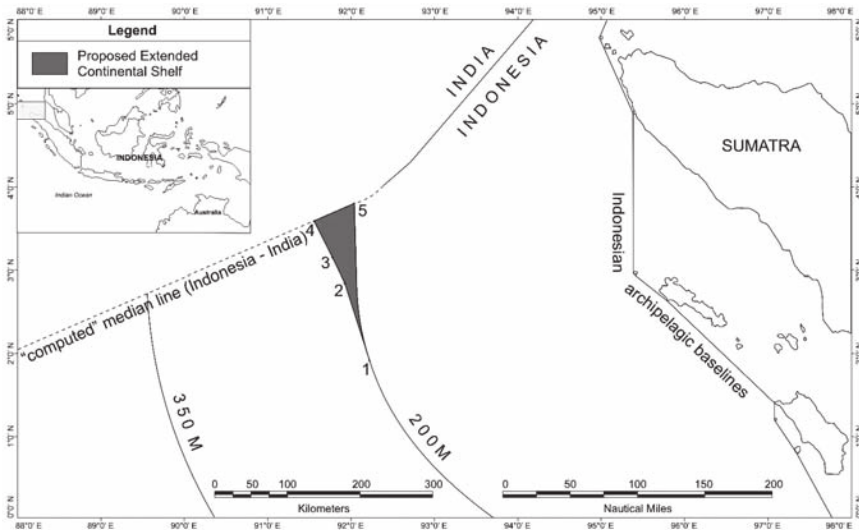
the existence of ongoing negotiations in relation to their sovereignty of the disputed islands and termed Russia's inclusion of maps which ignore this situation as "extremely regrettable".⁵²

In 2002, the Commission indicated that Russia should make a revised submission.⁵³ Russia is understood to be presently engaged in undertaking surveys aimed at gathering additional information, especially in the Arctic Ocean, to be included in Russia's revised submission. With regard to the Sea of Okhotsk, the Commission recommended that Russia "make a well documented partial submission for its extended continental shelf in the northern part of that sea".⁵⁴ The Commission therefore appears to have accepted Japan's contention that a dispute with Russia exists which may touch on at least part of the peanut hole area which is thus recommended to be shelved for the time being.⁵⁵

Indonesia was the next Asian State, as well as the first Southeast Asian State, to make a submission to the Commission. Indonesia made its submission to the CLCS on 16 June 2008.⁵⁶ Indonesia's submission is a partial one, relating only to an area of outer continental shelf located to the northwest of Sumatra. It is, however, understood that Indonesia is preparing submissions in respect of two further potential areas of outer continental shelf located south of Nusa Tenggara and north of Papua respectively.⁵⁷ Indonesia's submission is relatively modest in terms of its dimensions, encompassing an area of outer continental shelf of 3,915 km², defined by five points (see Figure 3).

One intriguing aspect of Indonesia's partial submission is that although Indonesia asserted to the CLCS that the area subject to its submission was "not the subject to any dispute between Indonesia with any other State",⁵⁸ this may not, in fact, be the case. The north-western limit of the area defined as part of its outer continental shelf by Indonesia in its submission (joining points 4 and 5) is defined as being located on a computed median line between Indonesia and India (see Figure 3). This theoretical equidistance line appears to have been calculated by Indonesia unilaterally and is not subject to any agreement between the two neighbouring states. Furthermore, it appears that Indonesia did not consult with India on this issue prior to submission.⁵⁹ Although the "computed median line" used by Indonesia is consistent with a continuation of the existing continental shelf boundary between India and Indonesia concluded in 1977 further to the northeast,⁶⁰ which is also based on equidistance, it remains to be seen whether India will prove to be in accord with Indonesia's unilateral definition of the two states respective outer continental shelf rights in this area.

Figure 3
Indonesia's Partial Outer Continental Shelf Submission



SOURCE: Adapted from Figure 2 of the Executive Summary of the Continental Shelf Submission of the Indonesia Republic of Indonesia.⁶¹

As noted above Japan made a submission to the CLCS on 12 November 2008.⁶² The Japanese submission relates to seven distinct areas as follows:

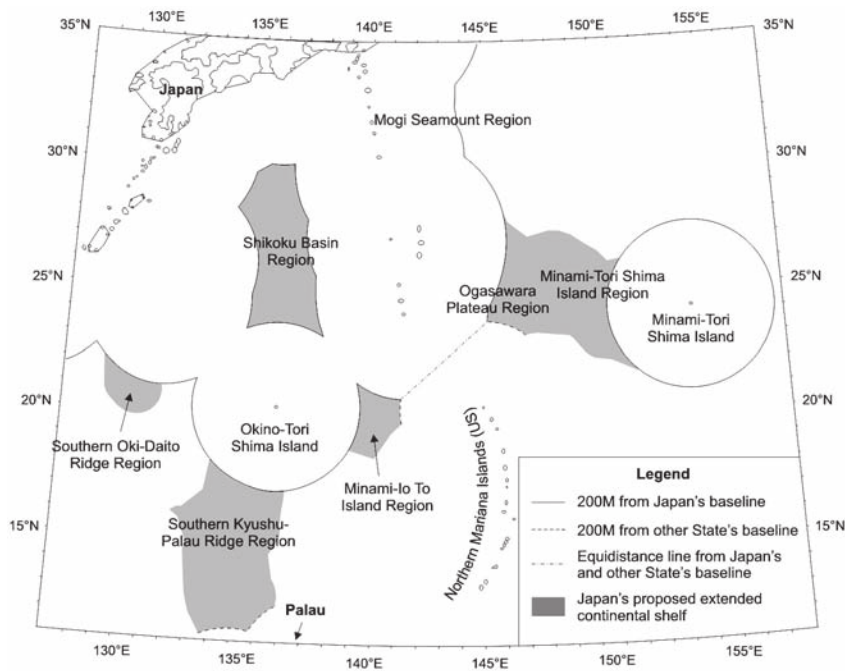
- The Southern Kyushu-Palau Ridge Region;
- The Minami-Io To Island Region;
- The Minami-Tori Shima Island Region;
- The Mogi Seamount Region;
- The Ogasawara Plateau Region;
- The Southern Oki-Daito Ridge Region; and,
- The Shikoku Basin Region.

The area of outer continental shelf encompassed by Japan's submission reportedly totals around 740,000 km² (215,750 sq. nm) (see Figure 4).⁶³ It is understood that Japan invested well in excess of 52 billion yen (US\$500 million) in preparing its submission — emphasizing the time-consuming and costly nature of the gathering and interpreting the complex geoscientific information required.⁶⁴

Potential overlapping outer shelf entitlements exist with both the United States (between Japan's Minami-Io To and Minami-Tori

Shima Island Regions on the one hand and the US's Northern Mariana Islands on the other), and Palau (in respect of the Kyushu-Palau Ridge region). However, in contrast to Indonesia's apparent approach, the executive summary of Japan's submission makes it clear that in both cases consultations have taken place between Japan and these two governments and that both the United States and Palau have indicated that they have no objection to the Commission making recommendations in respect of these areas without prejudice to the delimitation of maritime boundaries between them, with the former issuing a diplomatic note to that effect.⁶⁵ Once the Commission provides recommendations on Japan's submission, therefore, these other states and Japan will be in a position to divide the area of outer continental shelf in question between them. Although technically these states will also have to make submissions to the Commission, this process is likely to be much simplified in the wake of the Japanese submission.⁶⁶

Figure 4
Japan's Outer Continental Shelf Submission



SOURCE: Adapted from Figure 1.1 of the Executive Summary of Japan's Submission to the Commission on the Limits of the Continental Shelf.⁶⁷

The Southern Kyushu-Palau Ridge Region is of particular interest, and is potentially controversial, not only because Palau is also likely to have overlapping claims to parts of this area (Japan's submission in this area extends southwards to the 200 nm limit from Palau), but also because of the uncertainties associated with the issue of how the Commission is to deal with the question of ridges, as alluded to above. Furthermore, Japan's claims in this area extend southwards from the insular feature Okinotorishima (Oki-no-Tori Shima), the status of which is disputed by at least one other state.

This feature, or features, also known as Douglas Reef, is a reef platform surmounted by a number of very small rocks, which are marginally above the high-tide level.⁶⁸ While the reef platform itself is reasonably substantial, measuring approximately five by two kilometres, at high tide only two small rocks measuring only a few metres in area are left above water.⁶⁹ Japan takes the view that these features can be classified as islands capable of generating claims to continental shelf and EEZ rights.⁷⁰ Consequently, Japan has used the features that make up Okinotorishima as basepoints for its claim to an EEZ.

The above high tide features that make up Okinotorishima are mushroom-shaped and connected to the underlying reef platform by fragile columns which, in their natural state, are vulnerable to being undercut by wind and wave action. In the early 1980s there were reported to be four above high-tide features, but two of these have succumbed to erosion.⁷¹ In order to preserve the remaining above high tide features from erosion, and thus Japan's extensive maritime claims from them, in the late 1980s Japan embarked on an ambitious plan to protect and preserve them. Sea defences have been constructed around the rocks that form Okinotorishima which entirely encircle them and are vertically higher than the rocks themselves are above the high-tide level. The costs associated with these major engineering works in such a remote location reportedly exceeded US\$200 million.⁷²

Others have contended that the islets that make up Okinotorishima are no more than "rocks" and are thus incapable of generating continental shelf or EEZ rights.⁷³ In 2004 the People's Republic of China (hereafter "China") informed Japan that, in its view, Okinotorishima was no more than a rock.⁷⁴ Chinese vessels have subsequently repeatedly ventured into the Japanese claimed EEZ around Okinotorishima and conducted survey activities, pointedly not requesting permission from the Japanese to do so, in order to emphasize the point.⁷⁵ For its part Japan has protested over what it

views as these violations of its EEZ rights and has also sought to bolster its contention that Okinotorishima is an island rather than a rock by seeking to develop the feature.⁷⁶

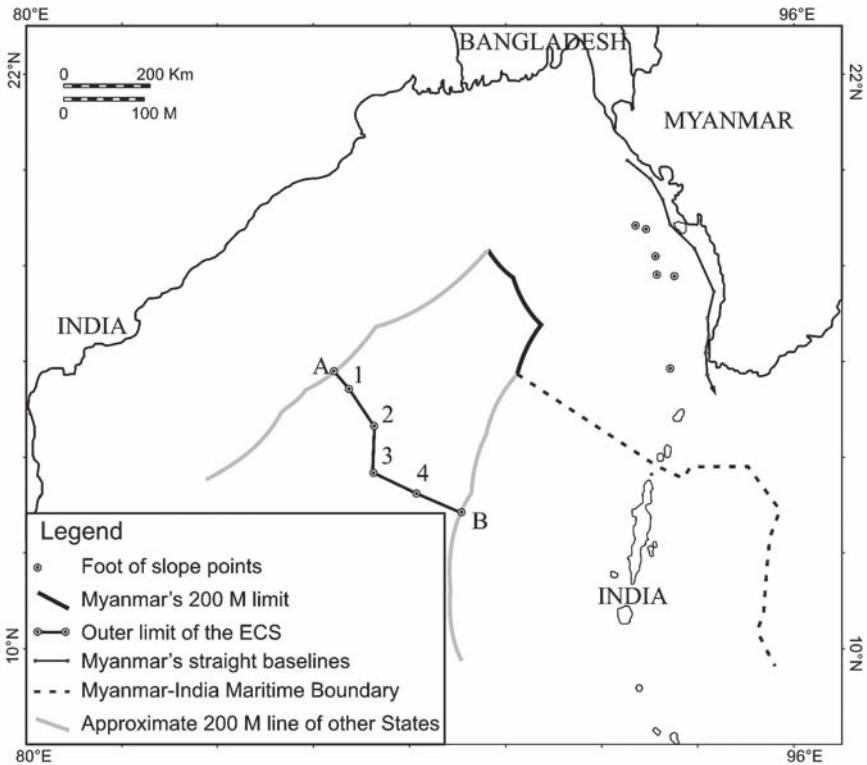
Okinotorishima is the southernmost point of Japan's territory and Japan's submission in respect of the Southern Kyushu-Palau Ridge in particular relies on Japan's natural prolongation from Okinotorishima southwards. In light of China's views on the status of Okinotorishima, it was perhaps unsurprising that China issued a diplomatic note on Japan's submission, highlighting this aspect of Japan's submission. In a *note verbale* of 6 February 2009 addressed to the UN Secretary General, China asserted that states making outer continental shelf submissions should have "respect" for the extent of the "International Seabed Area" and should ensure that its extent is not subject to "illegal encroachment".⁷⁷ The Chinese note went on to question whether it was appropriate for Japan to base its submission for outer continental shelf rights relating to the Shikoku Basin, Minami-Io To and Southern Kyushu-Palau Ridge Regions in Okinotorishima on the grounds that the feature in question "is in fact a rock as referred to in Article 121(3) of the Convention".⁷⁸ China furthermore stated that "available scientific data fully reveal" that on the basis of its "natural conditions" the "rock" Okinotorishima "obviously cannot sustain human habitation or economic life of its own" and is therefore not entitled to an EEZ or continental shelf.⁷⁹ In light of these observations, China "kindly requested" the Commission not to take any action in relation to those areas of outer continental shelf dependent on Japan's natural prolongation from Okinotorishima.⁸⁰ The Commission may, therefore, in due course refrain from making recommendations in respect of at least part of the areas mentioned in the Chinese note although it is difficult to assert this with absolute confidence in view of the commission's past reluctance to entertain interventions from states not directly affected by a particular submission. As noted above, the United States also issued a diplomatic note in relation to Japan's submission. Somewhat remarkably, in light of its diminutive size and the dramatic maritime claims Japan makes on its behalf, the US note is silent on the issue of Okinotorishima.

In December 2008, Myanmar also made a submission regarding outer continental shelf rights in the Bay of Bengal "off Rakhine" and referred to as "the Rakhine Continental Shelf" (see Figure 5).⁸¹ The executive summary of Myanmar's submission observes that "the abyssal plain in the northern Bay of Bengal is underlain by the Bengal Submarine Fan System" and that in consequence a

“fundamental prolongation” between the land mass and deep ocean floor can be established. Myanmar’s submission therefore may well raise complex issues associated with deep sea fans including the “Statement of Understanding” on these issues adopted during the Third United Nations Conference on the Law of the Sea which led to the conclusion of UNCLOS.⁸²

The executive summary of Myanmar’s submission goes on to state that the area of continental shelf subject to the submission “is not subject to any dispute between Myanmar and other States”.⁸³ This statement is made on the grounds that Myanmar and India agreed a maritime boundary in 1986 and delimitation negotiations between Myanmar and Bangladesh were ongoing. It is, however, highly likely

Figure 5
Myanmar’s Outer Continental Shelf Submission



SOURCE: Adapted from Figure 1 of the Executive Summary of the Continental Shelf Submission of the Union of Myanmar.⁸⁴

that both Bangladesh and India will take a keen interest in the areas of outer continental shelf subject to Myanmar's submission to the Commission and diplomatic notes from these interested states may well be forthcoming.

Potential Submissions

A number of other coastal states in East and Southeast Asia are understood to be urgently preparing submissions. These include Palau, Papua New Guinea and the Philippines. As mentioned above, Palau shares the same ridge system that Japan's Okinotorishima forms part of — what Japan terms the Southern Kyushu-Palau Ridge. Just as Japan has made a submission in respect of areas to the south of its territory (that is, the Okinotorishima islets), so it can be anticipated that Palau will be able to make a submission in respect of areas northwards up the same ridge feature. Palau may also be in a position to make a submission in respect of areas to the west, in the direction of the Philippines Trench.

With regard to the Philippines, the precise areas where the Philippines may be able to make an outer continental shelf submission in relation to are somewhat unclear. This is largely due to the fact that the debate in the Philippines on this issue has been dominated by issues related to efforts to redefine and update the country's baselines system. The promulgation of a new law on the baselines of the Philippines was the subject of controversy, especially on the issue of whether the islands claimed by the Philippines in the South China Sea, what the Philippines calls the Kalayaan Islands Group, should be included in a new system of straight archipelagic baselines or defined in the bill as subject to the regime of islands under UNCLOS and left outside the archipelagic baselines.⁸⁵ The latter option was ultimately chosen and on 10 March 2009 the new Philippines Archipelagic Baselines Law was signed into law by Philippines President Gloria Macapagal-Arroyo, despite strong protests from China, which stated that it possessed "indisputable sovereignty" over Huangyan Island (Scarborough Shoal) and the Nansha (Spratly) Islands and that any claims to territorial sovereignty over these islands by other states were "illegal and invalid".⁸⁶

The Philippines has identified three areas of potential outer continental shelf. One area is the Benham Rise located on off the east coast of the Philippines. There have also been indications that the Philippines considers that it may have outer continental shelf areas in the vicinity of Scarborough Shoal and the Kayalaan Islands

Group (KIG) (i.e. the Spratly Islands). The latter claims are surprising as they seem to indicate that the Philippines considers parts of the central South China Sea as potentially part of its outer continental shelf. For example, the Reed Bank, in the South China Sea, as part of the extended continental shelf of the Philippines.⁸⁷ This is an intriguing proposition, not least for the other South China Sea islands claimant states (Brunei, China/Taiwan, Malaysia and Vietnam). If EEZs are defined from mainland, or main island, points around the periphery of the South China Sea, a large area beyond these 200 nm limits exists in the central South China Sea. This would raise the possibility of all of the South China Sea littoral states — Brunei, China/Taiwan, Malaysia, the Philippines and Vietnam potentially making submissions to the CLCS in relation to areas of outer continental shelf in the central South China Sea. However, if the disputed islands of the South China Sea, including the Paracel and Spratly Islands groups, are indeed islands rather than mere rocks in accordance within the meaning of Article 121 of UNCLOS and are capable of generating continental shelf and EEZ claims, this area potentially beyond national jurisdiction disappears.

Additionally, as mentioned above, Indonesia is preparing submissions in respect of two additional areas of outer continental shelf over and above the area already submitted to the Commission. One of Indonesia's areas of interest is located to the north of the island of New Guinea. It appears that neighbouring Papua New Guinea will also be able to make a submission in relation to adjacent areas of outer continental shelf to the north of New Guinea. Both of these submissions relate to areas of outer continental shelf regarding which the Federated States of Micronesia may also be making a submission. Papua New Guinea may also be able to include areas to the northeast of the Bismarck Archipelago and Bougainville in its submission to the CLCS. These areas of outer continental shelf are, however, likely to be shared with Nauru (to the east), the Federated States of Micronesia (to the northwest) and the Solomon Islands (to the southwest).

Furthermore, it is understood that both China and South Korea are considering making submissions in respect of parts of the East China Sea which they assert form part of their continental margin and natural prolongation, notwithstanding the fact that these areas are within 200 nm of Japan's Ryukyu Islands.⁸⁸ The Chinese and Korean contention in this context would be that seabed areas to the east of the median line in the East China Sea, and thus closer to

Japan than either China or Korea, in fact form part of the natural prolongation of their territory rather than Japan's, by virtue of the existence of the deep Okinawa trench to the west of Japan's Ryukyu Islands. This is likely to be a controversial issue as Japan is highly likely to insist that those areas of continental shelf that are closest to its own territory are part of its maritime jurisdiction, consistent with the 200 nm EEZ concept. In essence, therefore, the dispute will turn on which of the two potential limits to the continental shelf contained in paragraph 1 of Article 76, that is to a distance of 200 nm from relevant baselines or "throughout the natural prolongation of its land territory to the outer edge of the continental margin" should be applied. In the context of the East China Sea there is a clear tension between these two options. However, such a dispute, as noted above, is not one that the CLCS will be able to resolve — this will be up to the coastal states themselves.

The fact that in mid-2008 China and Japan were able to reach "principled consensus" on cooperation in the East China Sea, including agreement on joint development of a specified block of seabed straddling the median line in the central East China Sea as a "first step" towards making the East China Sea a "sea of peace cooperation and friendship" provides some foundation for hopes that the East China Sea littoral states may be able to resolve their maritime disputes, including in relation to continental shelf issues, amicably.⁸⁹ Nonetheless, the prospect of submissions to the CLCS related to areas of the East China Sea within 200 nm of Japan on the part of China and South Korea would seem to potentially add an unwelcome extra dimension to an already complex and contentious maritime dispute. At the time of writing, however, China and Korea had yet to make submissions to the CLCS.

Opportunities and Challenges Beyond the Limits

Outer continental shelf areas represent a potential opportunity for coastal states. How significant is this opportunity though? In essence, is it worth the potentially considerable investment in time and money involved in preparing a submission? After all, if the Japanese experience is taken as a precedent, where in excess of US\$500 million was committed to the task, the costs involved may be daunting, particularly for developing states.

Perhaps the most obviously compelling reason that states are motivated to confirm their rights over areas of continental shelf

beyond 200 nm from their relevant baselines is a very traditional one: there is an issue touching on the sovereignty, or more precisely, in respect of the continental shelf, sovereign rights, at stake. Even in a globalized world, this can represent a powerful motivating factor.

As noted above, in a strict legal sense a State's rights over the continental shelf are inherent and are therefore not necessarily lost, *per se*, if no submission is made to the Commission by the relevant deadline. However, even if continental shelf rights are legally inherent, it has been argued that there remains a deadline for demonstrating that entitlement beyond the 200 nm limit, meaning that the deadline is a real one.

Claims to maritime jurisdiction often tend to be viewed in resource access terms. With regard to the continental shelf, including areas of outer continental shelf, UNCLOS Article 77(1) provides that coastal states exercise sovereign rights over the continental shelf "for the purpose of exploring it and exploiting its natural resources". Are outer continental shelf claims likely to be worthwhile in resource terms? This is an extremely difficult question to answer with any certainty. However even though relatively little is known about the resources of the continental shelf beyond the EEZ, a number of possible resources can be readily identified.

One salient consideration is the possibility that outer continental shelf areas may hold considerable seabed hydrocarbon resources. Dramatic technological advances in the oil and gas industry in recent years, particularly in respect of deep and ultra-deep offshore areas, including the drilling of deeper and deeper wells, as well as significant innovations in the design of production platforms and in terms of geophysical exploration technologies have significantly enhanced the chances of success in deep seabed exploration and exploitation.⁹⁰ These advances mean that the exploitation of seabed resources from outer continental shelf areas, should they be discovered to exist, now represents a far more realistic prospect.

Oil and gas probably represent the most obvious economically attractive resource potentially present in outer continental shelf areas. However, there are a range of other types of seabed resources that may potentially be exploited on the outer continental shelf. These include placer deposits, phosphorites, evaporates, polymetallic sulphides, gas hydrates, and manganese nodules. Although the exploitation of many of these resources does not appear to be commercially viable at present, this situation may well change over time as requirements and prices change and technologies develop.⁹¹

In addition to mineral and other non-living resources contained in the seabed and subsoil of the outer continental shelf, coastal states also have sovereign rights over “living organisms belonging to sedentary species”, defined as “organisms which, at the harvestable stage, either are immobile on or under the seabed or are unable to move except in constant physical contact with the seabed or the subsoil”.⁹² These sedentary living resources of the outer continental shelf, including marine genetic resources, may also prove to have considerable value.

Advancement in technologies to explore the seabed has led to the discovery of features such as seamounts, hydrothermal vents, methane seeps and deep sea sediments. The marine species and micro-organisms that have evolved to exist in these extreme environments may provide developmental potential for a range of valuable applications in a number of sectors including medicine and pharmaceutical industries. This has led to the emergence of “bioprospecting” and the deep seabed, including outer continental shelf areas, are likely to be a focus for these activities.⁹³ This represents a potentially rich resource and opportunity for coastal states. Indeed, marine biotechnology related products were estimated to be worth US\$100 billion in 2000 alone.⁹⁴

Thus, although the direct economic benefits from an outer continental shelf submission may seem difficult to realize in the short term, and therefore difficult to justify the considerable costs likely to be incurred in making a submission, it may be wise to “take the long view”.⁹⁵ This view is underpinned by the realization that our knowledge and understanding of the potential utility of the seabed and subsoil of the outer continental shelf is incomplete. The future may reveal precious and as yet unlooked for and untapped resources, especially as technology advances. It should, however, be noted in this context that when a coastal state exploits the natural resources of the outer continental shelf, it is obliged to make annual payments through the International Seabed Authority, which are then distributed to the states that are party to the convention pursuant to Article 82(3) of the Law of the Sea Convention.

Finally, it is worth observing that, to date, much of the debate on the outer continental shelf has focussed on the intricacies of Article 76, the particulars and peculiarities of making a submission and the Commission’s procedures and processes. In other words the focus has been on the urgent issue of securing entitlements, spurred on by the existence of a deadline, rather than on managing

the “extra” areas of continental shelf secured. The confirmation of outer continental shelf areas for a coastal state is not, however, the end of the process. Features of the outer continental shelf such as seamounts and hydrothermal vents (to name but two) represent foci for marine biodiversity. This means that the coastal states which confirm their rights over outer continental shelf areas face management responsibilities and challenges as well as resource exploitation opportunities.⁹⁶ Serious management issues may well arise on the outer continental shelf, for example as a consequence of competing and potentially conflicting uses such as biodiversity preservation with a view to bioprospecting on the one hand and bottom trawling on the part of the fishing industry on the other.⁹⁷ A significant challenge also exists, for instance, in distinguishing between marine scientific research on the one hand and commercial bioprospecting on the other.⁹⁸ The fact that outer continental shelf areas are, by their very nature, remote and peripheral, will tend to compound these regulatory and enforcement challenges. It is to be hoped and anticipated that considerably more attention will be devoted to these issues of ocean management and governance in the future as outer continental shelf areas are confirmed as part of the maritime jurisdictions of East and Southeast Asian states.

NOTES

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¹ United Nations, *United Nations Conventions on the Law of the Sea*, UN Sales No. E.97.V.10 (1983). See 1833 UNTS 3, signed 10 December 1982 at Montego Bay, Jamaica (entered into force 16 November 1994), available at <http://www.un.org/Depts/los/convention_agreements/convention_overview_convention.htm>.

² UNCLOS, Article 76(8).

³ At the time of writing there were 157 parties to the Convention (156 states plus the European Community). See United Nations, *Status of the United Nations Convention on the Law of the Sea, of the Agreement relating to the implementation of Part XI of the Convention and of the Agreement for the implementation of the Convention relating to the conservation and management of straddling fish stocks and highly migratory fish stocks*, New York, updated to 7 November 2008, available at <www.un.org/Depts/los/reference_files/status2008.pdf> .

⁴ Ibid. The notable exceptions within the region are Cambodia, the Democratic People's Republic of Korea (DPRK) and Thailand which have all signed the Convention but have not yet become parties to it. The Democratic Republic of Timor-Leste has yet to sign the Convention.

- ⁵ See Division for Ocean Affairs and the Law of the Sea, Office of Legal Affairs, United Nations, *Table of Claims to Maritime Jurisdiction* (2008), available at <http://www.un.org/Depts/los/LEGISLATIONANDTREATIES/PDFFILES/table_summary_of_claims.pdf>.
- ⁶ *Convention on the Continental Shelf*, opened for signature 29 April 1958, 499 UNTS 311 (entered into force 10 June 1964). This Convention and three others (related respectively to Territorial Sea and Contiguous Zone, the High Seas and on Fishing and Conservation of the Living Resources of the High Seas) arose from the first United Nations Conference on the Law of the Sea, held in Geneva in 1958.
- ⁷ The ICJ ruled that: “delimitation is to be effected ... in such a way as to leave as much as possible to each party all those parts of the continental shelf that constitute a natural prolongation of its land territory into and under the sea, without encroachment on the natural prolongation of the land territory of another state” (ICJ, *North Sea Continental Shelf (Federal Republic of Germany/Denmark; Federal Republic of Germany/Netherlands) (1967–1969)*, Judgment of 20 February 1969 (The Hague: ICJ Reports, 1969), at para. 101.
- ⁸ Article 1 of the Convention on the Continental Shelf of 1958, defines the continental shelf as “the seabed and subsoil of the submarine areas adjacent to the coast but outside the area of the Territorial Sea to a depth of 200 metres”, “or to a depth beyond that limit where exploitation of resources was possible”. McDorman has stated that the fact that “the real achievement” of Article 76 of UNCLOS lie not in the complexity of its provisions or in the establishment of the Commission but in the fact that it provides for “a definable limit” to continental shelf claims “however difficult the defining of that limit may be”. See, T. McDorman, “The Role of the Commission on the Limits of the Continental Shelf: A technical body in a political world”, *International Journal of Marine and Coastal Law* 17, no. 3 (2002): 301–24.
- ⁹ UNCLOS, Article 77(3). In the above-mentioned North Sea Continental Shelf cases the ICJ stated in explicit terms that: “the rights of the coastal state in respect of the area of continental shelf that constitutes a natural prolongation of its land territory into and under the sea exist, *ipso facto* and *ab initio*, by virtue of its sovereignty over the land” and that “In short here there is an inherent right.” See, *North Sea Continental Shelf*, 1969, para. 19.
- ¹⁰ UNCLOS, Article 78(1).
- ¹¹ P.J. Cook and C.M. Carleton, eds., *Continental Shelf Limits: The Scientific and Legal Interface* (Oxford: Oxford University Press, 2000), p. 3.
- ¹² Unless there is “evidence to the contrary”. See, UNCLOS, Article 76(4)(b).
- ¹³ Specifically, the “Gardiner Line”, is delineated by reference to the outermost fixed points at each of which the thickness of sedimentary rocks is at least 1 per cent of the shortest distance from such point to the foot of the continental slope. Thus, if it is determined that the thickness of sedimentary rocks is 1 nm, so the Gardiner line will be located 100 nm seaward of the foot of slope. See, UNCLOS, Article 76(4)(a)(i). Regarding the Hedberg Line see, UNCLOS, Article 76(4)(a)(ii).
- ¹⁴ UNCLOS, Article 76(5).
- ¹⁵ *Ibid.*

- ¹⁶ UNCLOS, Article 76(7); See also, Cook and Carleton, *Continental Shelf Limits*, op. cit. All the straight lines and distances referred to in the Convention are geodesics, that is straight lines on the surface of a mathematical model (reference ellipsoid) of the Earth.
- ¹⁷ UNCLOS, Article 76(8).
- ¹⁸ See, for example, McDorman, "The Role of the Commission on the Limits of the Continental Shelf", op. cit., pp. 311–13. See also, P.F. Croker, "The Commission on the Limits of the Continental Shelf: Progress to Date and Future Challenges", in *Legal and Scientific Aspects of Continental Shelf Limits*, edited by M.H. Nordquist, J.H. More, and T.H. Heidar (The Hague: Martinus Nijhoff Publishers, 2004), p. 467.
- ¹⁹ R. Macnab, "The Outer Limit of the Continental Shelf in the Arctic Ocean", in *Continental Shelf Limits*, op. cit., pp. 301–11. Macnab has also provided a very useful analysis of "sources of ambiguity in the implementation of Article 76". See, Macnab, "The Case for Transparency in the Delimitation of the Outer Continental Shelf in accordance with LOSC Article 76" (2004): 1–17, at pp. 2–9. Generally, see also Cook and Carleton, *Continental Shelf Limits*, op. cit.
- ²⁰ See, Macnab, "The Case for Transparency in the Delimitation of the Outer Continental Shelf", op. cit., p. 3.
- ²¹ The objective of bathymetric surveys is to measure the depth of ocean in such a way as to define the morphology of the ocean floor. The aim of seismic surveys, in contrast, is to define the thickness of sedimentary rock on the ocean floor.
- ²² R. Macnab, "Initial Assessment", in *Continental Shelf Limits*, op. cit., p. 266.
- ²³ Macnab notes that the location of the foot of slope is "extremely sensitive" to the nature and quality of the bathymetric data set used for analysis, the "ambiguities" that can occur when determining the location of the foot of slope from separate data sets "that purport to describe the same piece of ocean floor", as well as the existence of "scope for multiple solutions within single data sets". See, "The Case for Transparency in the Delimitation of the Outer Continental Shelf", op. cit., pp. 4–5.
- ²⁴ With regard to "submarine ridges", the 350 nm cut-off applies. However, this constraint does not apply to "submarine elevations that are natural components of the continental margin, such as plateaux, rises, caps, banks and spurs". See, UNCLOS, Article 76(5–6).
- ²⁵ See, for example, P.A. Symonds, M.F. Coffin, G. Taft, and H. Kagami, "Ridge Issues", in *Continental Shelf Limits*, edited by Cook and Carleton, op. cit., pp. 285–307; Macnab, "The Outer Limit of the Continental Shelf in the Arctic Ocean", op. cit., p. 303–04.
- ²⁶ R. Macnab, "Submarine Elevations and Ridges: Wild Cards in the Poker Game of Article 76", *Ocean Development and International Law*, vol. 39 (2008): 223.
- ²⁷ Available at <http://www.un.org/Depts/los/clcs_new/commission_documents.htm#Guidelines>.
- ²⁸ Macnab, "Submarine Elevations and Ridges", op. cit., pp. 2–3, 6.
- ²⁹ LOSC, Annex II, Article 4.
- ³⁰ A meeting of the States Parties to the LOSC in 2001 decided that the ten-year time period referred to in Article 4 of Annex II to the LOSC "shall be taken

to have commenced on 13 May 1999” considering that “it was only after the adoption by the Commission of its Scientific and Technical Guidelines on 13 May 1999 that states had before them the basic documents concerning submissions in accordance with Article 76, paragraph 8, of the Convention”. See also: SPLOS/72 <http://www.un.org/Depts/los/meeting_states_parties/SPLOS_documents.htm>.

³¹ The figure of 74 coastal states with potential outer continental shelf rights is a maximalist one which depends on hypothetical maritime boundary delimitations which depart from the application of strict equidistance lines. Such maritime boundaries, if agreed among the states concerned, would give apparently zone and shelf-locked states a 200 nm limit and thus the potential for an outer continental shelf beyond that limit. See, R. Van de Poll, “The United Nations Convention on the Law of the Sea: The latest global summary for all 155 Coastal States in the world today”, presentation at UNCLOS Symposium, 33rd International Geological Congress, Oslo, 7 August 2008; and, R. Van de Poll personal communication, January 2009.

³² See also: Decision of the eighteenth Meeting of State Parties, SPLOS/183 <http://www.un.org/Depts/los/meeting_states_parties/SPLOS_documents.htm>.

³³ See, in particular, McDorman, “The Role of the Commission on the Limits of the Continental Shelf”, op. cit., pp. 319–24.

³⁴ The projection of 2035 assumes that the current rate at which the CLCS deals with submissions (two per annum) is maintained and that in total there are 65 submissions in total. In fact, as noted above, the potential number of claimants exceeds this figure. This indicates strongly that the CLCS faces serious challenges in dealing with anticipated submissions by the relevant deadlines (R. Macnab, personal communication, December 2007).

³⁵ McDorman, “The Role of the Commission on the Limits of the Continental Shelf”, op. cit., p. 312.

³⁶ Ibid. See also Macnab, “The Case for Transparency in the Delimitation of the Outer Continental Shelf”, op. cit., pp. 13–14.

³⁷ CLCS documents clearly state that “The Commission is not entitled by the Convention to issue any recommendations with respect to the delineation of baselines from which the breadth of the territorial sea is measured. Its role is limited to a potential request for information about the geodetic position and definition of the baselines used in the submission by the coastal state.” Commission on the Limits of the Continental Shelf, *Scientific and Technical Guidelines of the Commission on the Limits of the Continental Shelf*, CLCS/11, 13 May 1999, available at <<http://daccessdds.un.org/doc/UNDOC/GEN/N99/171/08/IMG/N9917108.pdf?OpenElement>>.

³⁸ McDorman, “The Role of the Commission on the Limits of the Continental Shelf”, op. cit., pp. 308–10.

³⁹ See, for example, J.A. Roach and R.W. Smith, *United States Responses to Excessive Maritime Claims* (The Hague: Martinus Nijhoff, 1996), pp. 57–161.

⁴⁰ It is, however, open to debate whether a dispute over the application of baselines represents a “maritime dispute” within the meaning of the Commission’s Rules of Procedure. See, for example, A.G.O. Elferink and C. Johnston, “Outer Limits of the Continental Shelf and “Disputed Areas”: State Practice concerning Article 76(10) of the LOS Convention”, *The International Journal of Marine and Coastal*

Law 21, no. 4 (2006): 461–87; C.R. Symmons, “The Irish Partial Submission to the Commission on the Limits of the Continental Shelf in 2005: A Precedent for Future Such Submissions in the Light of the “Disputed Areas” Procedures of the Commission?”, *Ocean Development and International Law* 37 (2006): 299–317; and D.R. Rothwell, “Issues and Strategies for Outer Continental Shelf Claims”, *The International Journal of Marine and Coastal Law* 23 (2008): 185–211.

⁴¹ UNCLOS, Article 76(10).

⁴² For example Prescott in a 1998 study identified 29 continental margins extending beyond the 200 nm limit. Only 7 of these areas were likely to prove to be part of the outer continental shelf of only one state — the remaining 22 were all likely to be shared continental margins. J.R.V. Prescott, “National Rights to Hydrocarbon Resources of the Continental Margin Beyond 200 Nautical Miles”, pp. 51–81, in *Boundaries and Energy: Problems and Prospects*, edited by G.H. Blake, M.A. Pratt and C.H. Schofield (The Hague: Kluwer Law International, 1998), pp. 56–58.

⁴³ See, Annex II of UNCLOS and the Rules of Procedure of the Commission on the Limits of the Continental Shelf. The current version of the Rules is contained in Doc. CLCS/40/Rev.1 of 17 April 2008. Available at <http://www.un.org/Depts/los/clcs_new/commission_documents.htm#Rules%20of%20Procedure>. See also, McDorman, “The Role of the Commission on the Limits of the Continental Shelf”, op. cit. and, for a detailed legal consideration of these issues, see Elferink and Johnston, “Outer Limits of the Continental Shelf and Disputed Areas”, op. cit.

⁴⁴ For example, Australia adopted this approach and the Executive Summary to the Australian Submission notes that: “France and Norway have both indicated to Australia that they have no objection to such areas being included in this part of Australia’s submission, without prejudice to the eventual delimitations between Australia and each of the two states.” See, “United Nations Convention on the Law of the Sea: Submission to the Commission on the Limits of the Continental Shelf on the Outer Limits of Australia’s Continental Shelf Extending Beyond 200 Nautical Miles from the Territorial Sea Baseline — Executive Summary” (Canberra: Commonwealth of Australia, AUS-DOC-ES, 2004). Source: UN <www.un.org/Depts/los/clcs_new/submissions_files/aus04/Documents/aus_doc_es_web_delivery.pdf>. Japan has adopted a similar approach with regard to Palau and the United States (see below).

⁴⁵ See, in particular, Macnab, “The Case for Transparency in the Delimitation of the Outer Continental Shelf”, op. cit., pp. 11–14; and Macnab, “Submarine Elevations and Ridges: Wild Cards in the Poker Game of Article 76”, op. cit., pp. 224–25.

⁴⁶ Macnab, “Submarine Elevations and Ridges: Wild Cards in the Poker Game of Article 76”, op. cit., p. 225.

⁴⁷ Macnab, “The Case for Transparency in the Delimitation of the Outer Continental Shelf”, op. cit., p. 12.

⁴⁸ See the website of New Zealand’s Ministry of Foreign Affairs and Trade <<http://mfat.govt.nz/downloads/global-issues/cont-shelf-recommendations.pdf>>.

⁴⁹ For a list of submissions see <http://www.un.org/Depts/los/clcs_new/clcs_home.htm>.

- ⁵⁰ See <http://www.un.org/Depts/los/clcs_new/submissions_files/submission_rus.htm>.
- ⁵¹ See <http://www.un.org/Depts/los/clcs_new/submissions_files/rus01/CLCS_01_2001_LOS_JPNtext.pdf>, p. 1. See also, Elferink and Johnston 2006, pp. 469–70.
- ⁵² Ibid., p. 2.
- ⁵³ *Oceans and the Law of the Sea; Report of the Secretary-General; Addendum*, Fifty-seventh session of the General Assembly, A/57/57/Add.1, paras. 27–41, at para. 41. See <<http://daccessdds.un.org/doc/UNDOC/GEN/N02/629/28/PDF/N0262928.pdf?OpenElement>>.
- ⁵⁴ The Commission also recommended that Russia make efforts to reach agreement on this issue so that a joint submission, or separate submissions to the same area of outer continental shelf could be prepared (in accordance with paragraph 4 of Annex I of the Rules of Procedure). A summary of the Commission's recommendations to the Russian Federation are provided in *Oceans and Law of the Sea; Report of the Secretary-General; Addendum*, note 36, paras. 38–41. See, Elferink and Johnston, “Outer Limits of the Continental Shelf and Disputed Areas”, op. cit., p. 472.
- ⁵⁵ Symmons notes that the Commission appears to have “given Japan some benefit of the doubt on this issue” though he goes on to note that others have viewed this decision as “overly cautious”. See Symmons, “The Irish Partial Submission to the Commission on the Limits of the Continental Shelf”, op. cit., p. 309.
- ⁵⁶ Continental Shelf Submission of Indonesia: Partial Submission in respect of the area of North West of Sumatra, Executive Summary (hereafter “Executive Summary of the Indonesian Submission”), available at <http://www.un.org/depts/los/clcs_new/submissions_files/submission_idn.htm>.
- ⁵⁷ The continental shelf team of Indonesia's National Coordinating Agency for Surveys and Mapping (Bakosurtanal) handed the submission document over to Indonesia's Ministry of Foreign Affairs on 11 July 2008. Available at <<http://www.bakosurtanal.go.id/?m=30&p=2&view=200>> (in Bahasa Indonesia).
- ⁵⁸ Executive Summary of the Indonesian Submission, op. cit., p. 6.
- ⁵⁹ Personal communication with Ms Tripatmasari, a member of the Indonesian submission team from Bakosurtanal, 4 August 2008 and also with Mr Arif Havas Oegroseno, Director of Treaties for Political, Security and Territorial Affairs of the Indonesian Ministry of Foreign Affairs, 20 September 2008.
- ⁶⁰ See, J.I. Charney and L.M. Alexander, eds., *International Maritime Boundaries*, Vol. II (The Hague: Martinus Nijhoff, 1993), pp. 1371–78.
- ⁶¹ Executive Summary of Indonesia's submission, op. cit., p. 7.
- ⁶² Japan's Submission to the Commission on the Limits of the Continental Shelf, Executive Summary (hereafter “Executive Summary of Japan's Submission”), available at <http://www.un.org/Depts/los/clcs_new/submissions_files/submission_jpn.htm>.
- ⁶³ See, for example, “Japan extends claim to undersea territory”, *Japan Times Online*, 1 November 2008. Available at <<http://search.japantimes.co.jp/cgi-bin/nn20081101a2.html>>.
- ⁶⁴ S. Tani, “Continental Shelf Survey of Japan”, paper presented on 16 October 2008 at the Advisory Board on the Law of the Sea (ABLOS) Conference on

Difficulties in Implementing the Provisions of UNCLOS, 15–17 October 2008, Monaco, available at <<http://www.gmat.unsw.edu.au/ablos/ABLOS08Folder/Session4-Paper4-Tani.pdf>>.

⁶⁵ “Executive Summary of Japan’s Submission”, op. cit., pp. 7–8. The United States subsequently sent a diplomatic note to the CLCS confirming that it “does not object” to the Commission considering Japan’s submission, without prejudice either to the delimitation of continental shelf boundaries between the two countries or “the establishment of the outer limits of its continental shelf by the United States”. See, United States Mission to the United Nations, New York, “Diplomatic Note”, 22 December 2008, available at <http://www.un.org/Depts/los/clcs_new/submissions_files/jpn08/usa_22dec08.pdf>.

⁶⁶ This is always assuming that Japan is ready to share the data it has gathered with Palau. As a party to UNCLOS, its neighbours will still be required to make a submission to the CLCS in order to establish their outer continental shelf rights. With regard to non-parties such as the United States, it has been argued that Article 76 is now part of customary international law, placing an obligation on non-state parties to apply Article 76 including use of the Commission. It has been observed that there is certainly nothing in the mandate of the Commission to indicate that would prevent a non-state party to UNCLOS from making a submission to it. See, McDorman, “The Role of the Commission on the Limits of the Continental Shelf”, op. cit., pp. 303–04.

⁶⁷ “Executive Summary of Japan’s Submission”, op. cit., p. 6.

⁶⁸ J.R.V. Prescott and C.H. Schofield, *Maritime Political Boundaries of the World* (Leiden/Boston: Martinus Nijhoff, 2005), pp. 84–85. Yann-huei Song notes that “highest tide” the two above tide features are only 16 and 6 centimetres above the surface of the water respectively. See Y.H. Song, “Okinotorishima: A “Rock” or an “Island”? Recent Maritime Boundary Controversy between Japan and Taiwan/China”, pp. 145–76, in *Maritime Boundary Disputes, Settlement Processes, and the Law of the Sea*, edited by S.Y. Hong and J.M. Van Dyke, Publications on Ocean Development, vol. 65 (The Hague: Martinus Nijhoff, 2009), p. 148.

⁶⁹ J. Brown, A. Colling, D. Park, J. Phillips, D. Rotehery, and J. Wright, *Case Studies in Oceanography and Marine Affairs* (Oxford: Pergamon Press, 1991), pp. 84–85. The two rocks are known, in English, as North Dew Rock and East Dew Rock.

⁷⁰ Article 121(1) of UNCLOS states that: “An island is a naturally formed area of land, surrounded by water, which is above water at high tide.” The second paragraph of Article 121 makes it clear that the general rule is that the maritime claims made from islands, including in relation to continental shelf and EEZ rights, are to be determined in the same way as for “other land territory”.

⁷¹ Brown et al., *Case Studies in Oceanography and Marine Affairs*, op. cit., p. 84.

⁷² Ibid. Brown et al., writing in 1991, put the estimated cost of the project at £135 million. Silverstein (“Okinotorishima: Artificial Preservation of a Speck of Sovereignty”, op. cit., p. 410), quoting Japanese sources, states that the three-year project, starting in 1988, was set to cost US\$240 million. See, A.L. Silverstein, “Okinotorishima: Artificial Preservation of a Speck of Sovereignty”, *Brooklyn Journal of International Law* XVI, no. 2 (1990): 410. Tisdall put the figure at US\$250 million. See, S. Tisdall, “China aims for US to hit rock bottom in Asia”, *The Guardian*, 8 April 2005.

- ⁷³ UNCLOS Article 121(3) states that “Rocks which cannot sustain human habitation or an economic life of their own shall have no exclusive economic zone or continental shelf.” See, for example, J. Van Dyke, “Speck in the Ocean Meets Law of the Sea”, letter to the editor, *New York Times*, 21 January 1988, available at <<http://query.nytimes.com/gst/fullpage.html?res=940DE3D9163DF932A15752C0A96E948260&sec=&spon=#>>; and, Silverstein, “Okinotorishima: Artificial Preservation of a Speck of Sovereignty”, op. cit.
- ⁷⁴ M. Fackler, “Japan’s ultranationalists: Stuck between a rock and a hard sell”, *The Wall Street Journal*, 20 February 2005.
- ⁷⁵ See, Y. Yoshikawa, “Okinotorishima: Just the Tip of the Iceberg”, *Harvard Asia Quarterly* IX, no. 4 (Fall 2005), available at <<http://www.asiaquarterly.com/content/view/29/1/>>. See also, Song, “Okinotorishima: A “Rock” or an “Island”?”, op. cit., pp. 151–54.
- ⁷⁶ Japan has maintained a marine research station at Okinotorishima since 1988. More recently there have been moves to install radar facilities and there are reportedly plans to build a lighthouse and build accommodation facilities. See, for example, Fackler 2005 and Yoshikawa 2005. The threat that sea level rise poses to Okinotorishima is also being addressed through a project to plant juvenile coral in order to help build up the reef and avoid submergence. See, “Japan Plants Coral to Save Sinking Territory”, Agence France-Presse, 18 June 2007, available at <http://www.terradaily.com/reports/Japan_Plants_Coral_To_Save_Sinking_Territory_999.html>. See also, Song, “Okinotorishima: A “Rock” or an “Island”?”, op. cit., pp. 156–61.
- ⁷⁷ *Note verbale* from the Permanent Mission of the People’s Republic of China to H.E. Mr Ban Ki-Moon, Secretary General of the United Nations, 6 February 2009, CML/2/2009 (translation), available at <http://www.un.org/Depts/los/clcs_new/submissions_files/jpn08/chn_6feb09_e.pdf>.
- ⁷⁸ Ibid.
- ⁷⁹ Ibid.
- ⁸⁰ Ibid.
- ⁸¹ Continental Shelf Submission of the Union of Myanmar, Executive Summary. See <http://www.un.org/Depts/los/clcs_new/submissions_files/mmr08/mmr_es.pdf>.
- ⁸² G. Taft and B. Haq, “Deep Sea Fan Issues”, in *Continental Shelf Limits: The Scientific and Legal Interface*, edited by Cook and Carleton, op. cit., pp. 308–11. Article 3(a) of Annex II of UNCLOS, dealing with the CLCS, lists one of the functions of the Commission as being “to consider the data and other material submitted by coastal states concerning the outer limits of the continental shelf in areas where those limits extend beyond 200 nautical miles, and to make recommendations in accordance with Article 76 and the Statement of Understanding adopted on 29 August 1980 by the Third United Nations Conference on the Law of the Sea.”
- ⁸³ Ibid., p. 4.
- ⁸⁴ Continental Shelf Submission of the Union of Myanmar, Executive Summary, op. cit., p. 6.
- ⁸⁵ The proposed legislation stimulated considerable debate. Proponents of the Bill have stressed that the establishment of archipelagic baselines is a necessary pre-requisite of advancing an extended continental shelf claim pursuant to

UNCLOS. Opponents of the Bill have argued that passage of the Bill would escalate an ongoing territorial dispute between the Philippines, Vietnam and China regarding the Spratly Islands. See, for example, “Senators to oppose Santiago plan to kill baselines bill”, *Philippine Headline News Online*, 27 April 2008 <<http://www.newsflash.org/2004/02/hl/hl107390.htm>>; and “Angara defends baselines measure”, *Manila Times*, 5 November 2008 <<http://www.manilatimes.net/national/2008/nov/05/yehey/metro/20081105met1.html>>.

⁸⁶ “Republic Act 9522, An Act to Amend Certain Provisions of Republic Act No. 3046, as Amended by Republic Act No. 5446, to Define the Archipelagic Baselines of the Philippines, and for Other Purposes”. Philippines Department of Foreign Affairs Executive Director Henry Bensurto noted that the law is a “clinical and technical adjustment” of the existing baseline law as required by UNCLOS. See, “PGMA signs baselines bill into law”, The Official Website of the Government of the Philippines, 11 March 2009, available at <<http://www.gov.ph/news/?i=23835>>. See also, “Chinese embassy protests Philippines law to extend territorial claim in S China”, *Chinaview.net*, available at <http://news.xinhuanet.com/english/2009-03/11/content_10993008.htm>.

⁸⁷ Philippines Senator Eduardo Angara stated that the loss of an extended continental shelf (ECS) claim for the Philippines (because of delays over the baselines bill) would have “disastrous effects” before noting that “The Reed Alone reed bank, which is potential ECS for the Philippines, is said to contain the following energy resources: 3.9 cubic feet of gas, 35 million barrels of oil and 21 billion barrels of condensate. The Department of Energy puts the value of those resources at \$19.9 million, \$2.1 billion and \$1.2 billion, respectively.” See, “Senators to oppose Santiago plan to kill baselines bill”, *Philippine Headline News Online*, 27 April 2008.

⁸⁸ An issue touched highlighted but not dealt with in detail by A. Serdy, “Is there a 400 mile rule in UNCLOS Article 76(8)?”, paper presented on 16 October 2008 at the Advisory Board on the Law of the Sea (ABLOS) Conference on Difficulties in Implementing the Provisions of UNCLOS, 15–17 October 2008, Monaco, available at <<http://www.gmat.unsw.edu.au/ablos/ABLOS08Folder/Session1-Paper2-Serdy.pdf>>. Serdy concludes that “China would be well advised, if it wishes to safeguard its legal interest in the seabed area on its side of the Okinawa Trough, to include it in its forthcoming submission to the CLCS” (*Ibid.*, p. 954). Presumably the same logic would apply to the Republic of Korea, Japan, unsurprisingly did not include parts of the East China Sea in its own submission because those parts of the East China Sea that it claims are all within 200 nm of its territory.

⁸⁹ “China, Japan reach principled consensus on East China Sea issue”, Xinhua News Agency, 18 June 2008 <www.chinadaily.com.cn/china/2008-06/18/content_6774860.htm>. The joint area to be explored “under the principle of mutual benefit”, straddles the median line between the parties’ coasts and has an area of approximately 2,700 km². Additionally, the two countries agreed to allow a Japanese corporation to invest in the Chinese entity already engaged in development activities in relation to the Chunxiao gas field (called the Shirakaba gas field by Japan), located on the Chinese side of but in close proximity to the theoretical median line. The agreement reached on 16 June 2008 has yet to be converted into a formal treaty.

- ⁹⁰ P.L. Kelly, "Deepwater Oil Resources: The Expanding Frontier", pp. 413–19, in *Continental Shelf Limits*, op. cit., 414–16.
- ⁹¹ Regarding developments in seafloor polymetallic massive sulphide mining see, P.M. Herzig, "Seafloor Massive Sulfide Deposits and Hydrothermal Systems", pp. 446, in *Continental Shelf Limits*, op. cit., p. 467.
- ⁹² UNCLOS, Article 77(4).
- ⁹³ S. Arico and C. Salpin, "Bioprospecting of Genetic Resources in the Deep Seabed: Scientific, Legal and Policy Aspects", UNU-IAS Report (United Nations University, 2005), p. 25, available at <www.ias.unu.edu/binaries2/DeepSeabed.pdf>.
- ⁹⁴ Arico and Salpin, "Bioprospecting of Genetic Resources in the Deep Seabed: Scientific, Legal and Policy Aspects", p. 17; see also, J. Mossop, "Protecting Marine Biodiversity on the Continental Shelf beyond 200 Nautical Miles", *Ocean Development and International Law* 38 (2007): 285.
- ⁹⁵ Personal communication with Professor J.R. Victor Prescott, the University of Melbourne, 24 June 2008.
- ⁹⁶ As noted, Article 77 of UNCLOS provides coastal states with sovereign rights regarding the exploration for and exploitation of resources on the continental shelf, including the outer continental shelf. Although Article 77 is silent with regard to balancing obligations to protect and conserve the resources of the continental shelf (in contrast, for example, to Article 61 dealing with the EEZ), there does exist a general obligation for coastal states to "protect and preserve the marine environment" (UNCLOS, Article 192).
- ⁹⁷ See for example, Mossop, "Protecting Marine Biodiversity on the Continental Shelf", op. cit., pp. 285–87.
- ⁹⁸ Ibid., pp. 292–96.